

Appendix RF test data for WIFI2.4G

1. Duty Cycle

1.1 Test Result

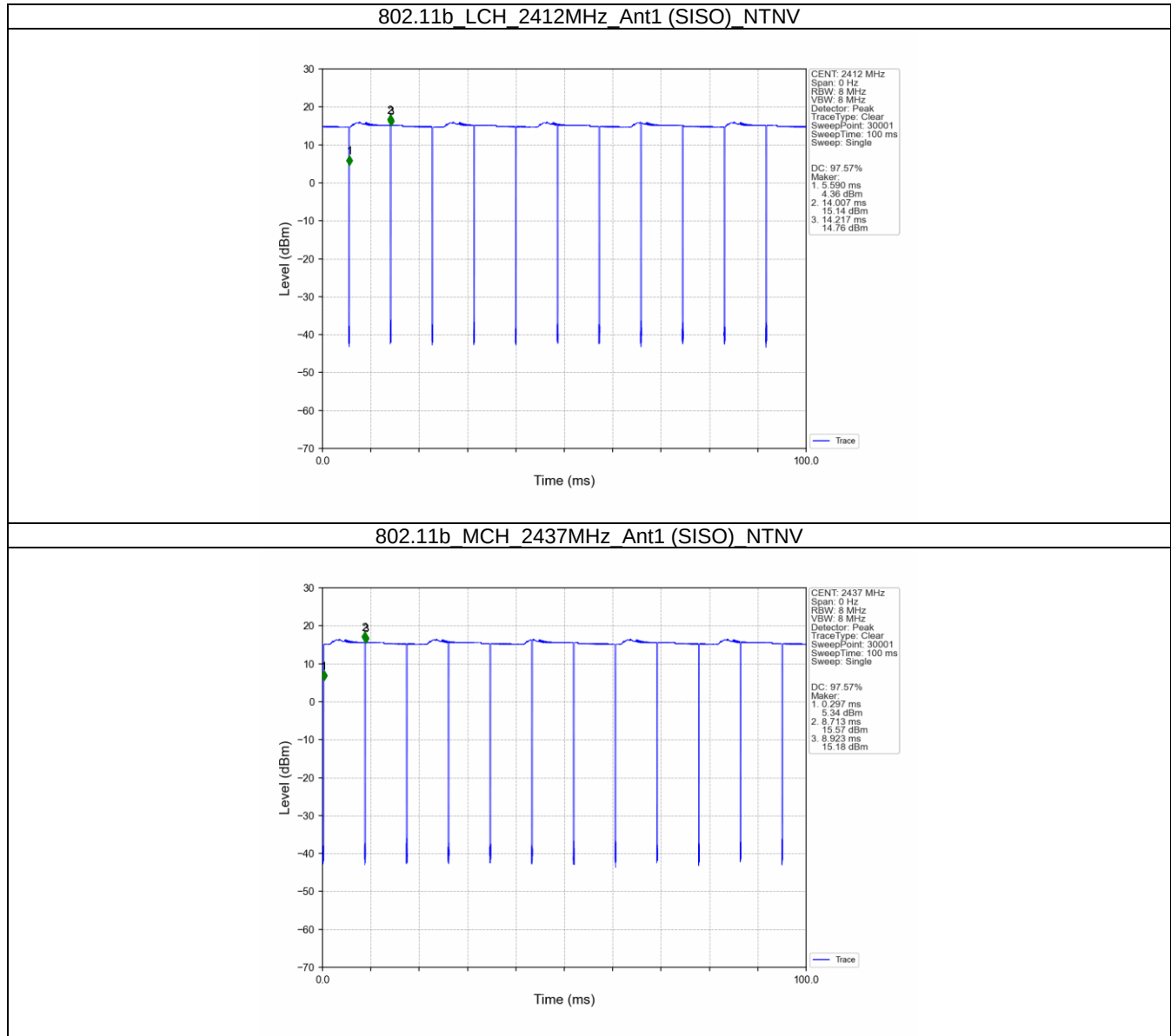
1.1.1 Ant1

Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	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	/	/	8.416	8.626	97.57	0.11	0.04
		2462	/	/	8.417	8.627	97.57	0.11	0.04
802.11g	MIMO	2412	/	/	1.396	1.606	86.92	0.61	0.03
		2437	/	/	1.396	1.604	87.03	0.60	0.03
		2462	/	/	1.397	1.605	87.04	0.60	0.03
802.11n (HT20)	MIMO	2412	/	/	1.308	1.518	86.17	0.65	0.03
		2437	/	/	1.308	1.517	86.22	0.64	0.03
		2462	/	/	1.308	1.517	86.22	0.64	0.03
802.11n (HT40)	MIMO	2422	/	/	0.649	0.858	75.64	1.21	0.04
		2437	/	/	0.649	0.857	75.73	1.21	0.04
		2452	/	/	0.648	0.857	75.61	1.21	0.04
802.11ax (HEW20)	MIMO	2412	SU	/	0.208	0.417	49.88	3.02	0.05
		2437	SU	/	0.207	0.417	49.64	3.04	0.06
		2462	SU	/	0.208	0.417	49.88	3.02	0.08
802.11ax (HEW40)	MIMO	2422	SU	/	0.204	0.413	49.39	3.06	0.06
		2437	SU	/	0.203	0.412	49.27	3.07	0.05
		2452	SU	/	0.203	0.413	49.15	3.08	0.08

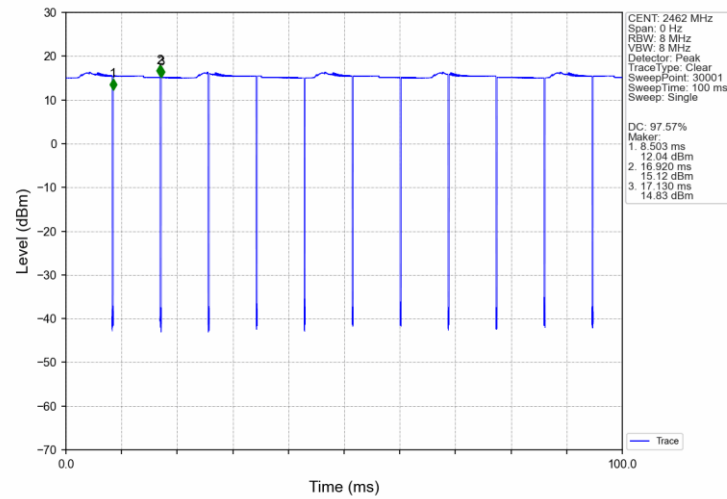
Note: All antennas were test and recorded worst result of Ant 1.

1.2 Test Graph

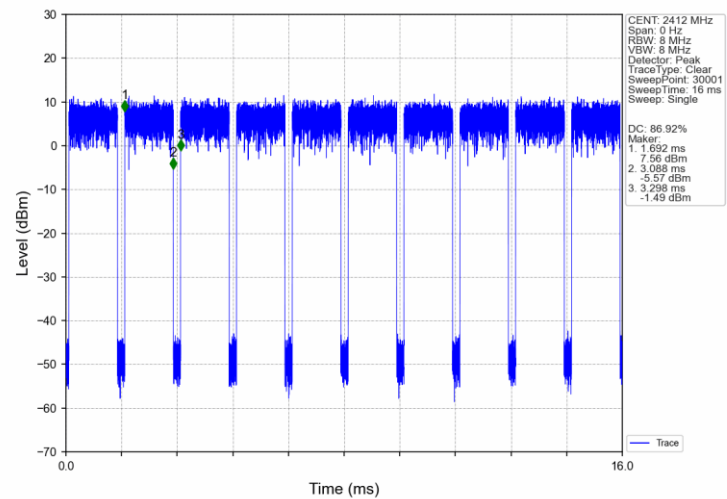
1.2.1 Ant1



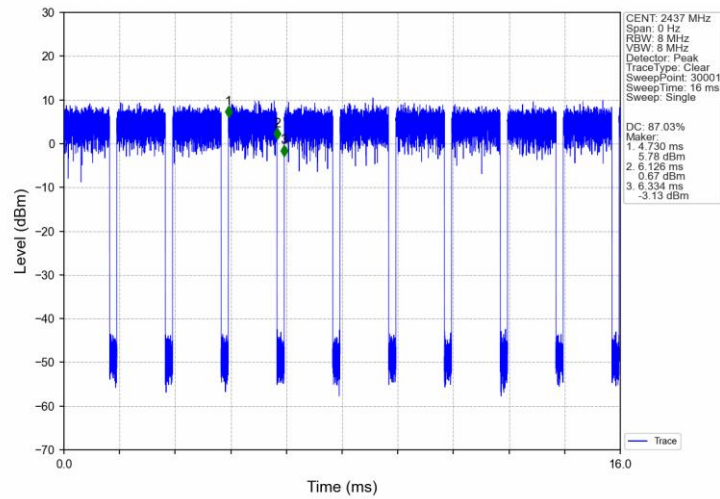
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



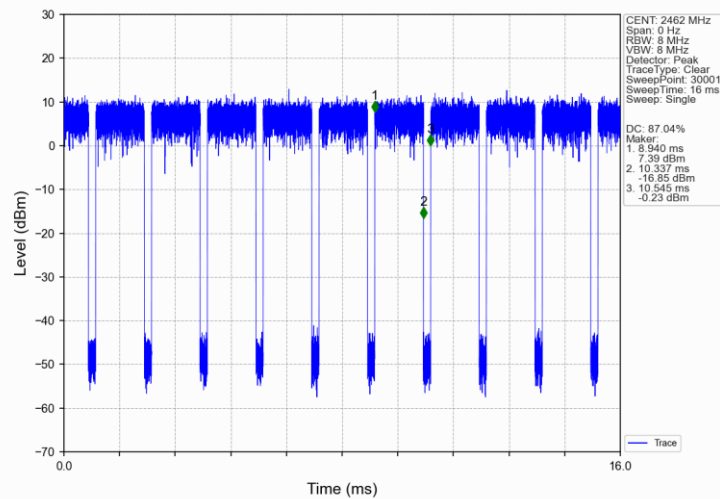
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



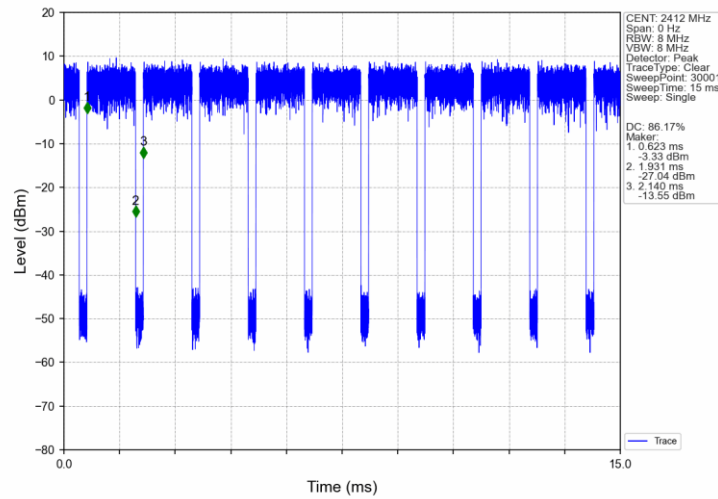
802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



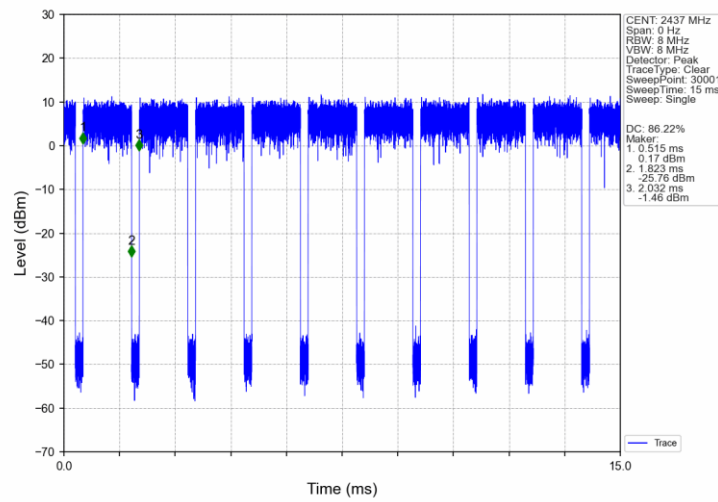
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



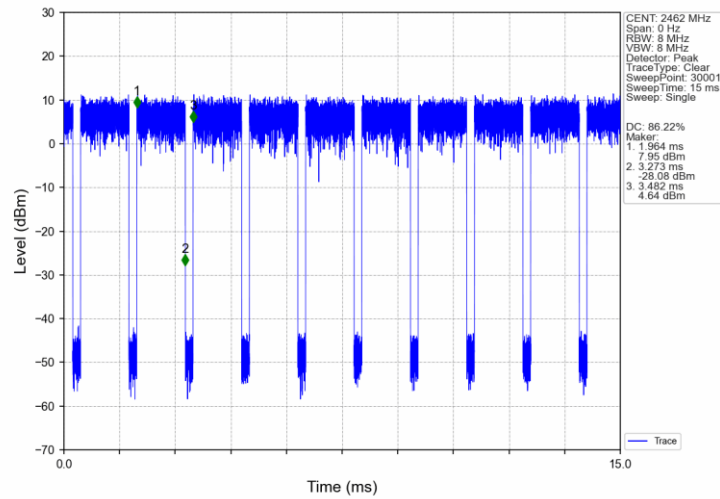
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



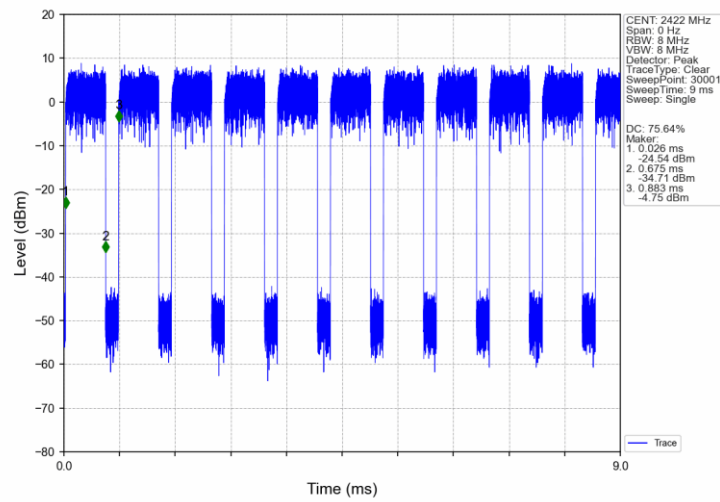
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



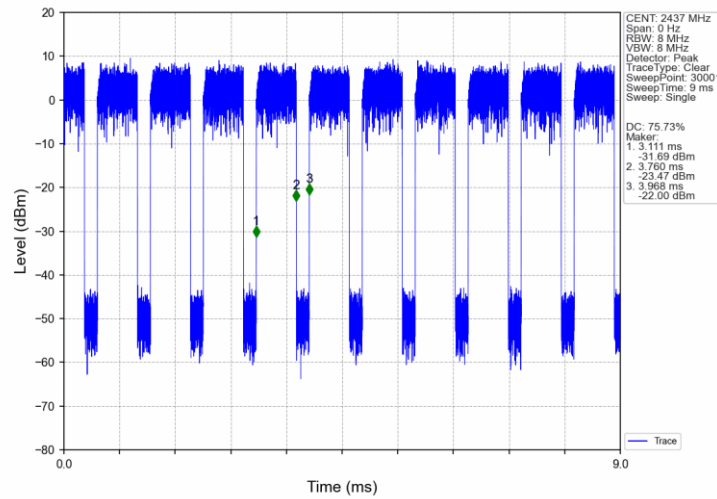
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



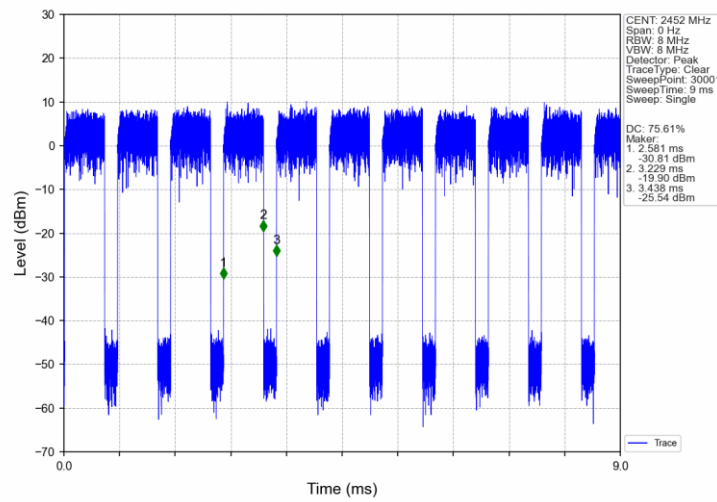
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



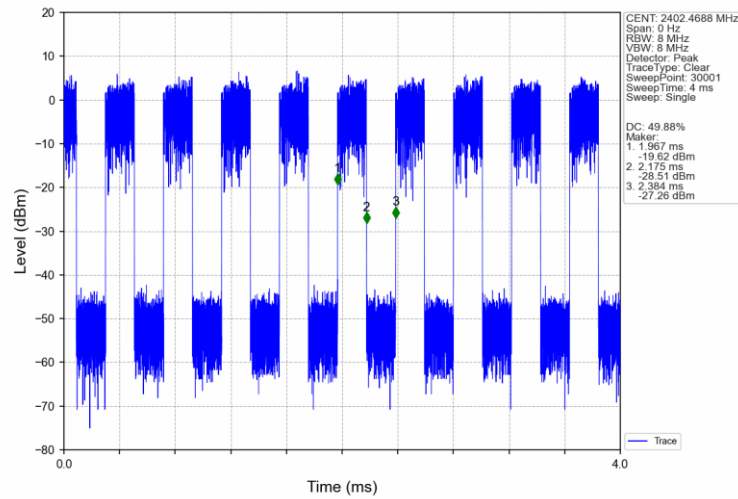
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



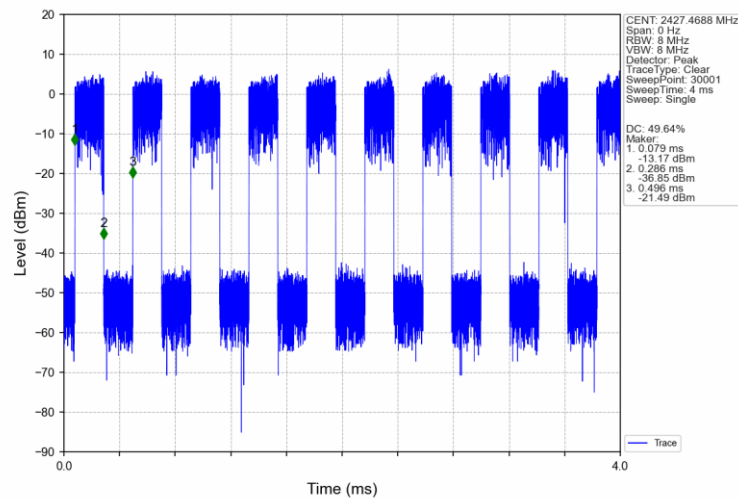
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



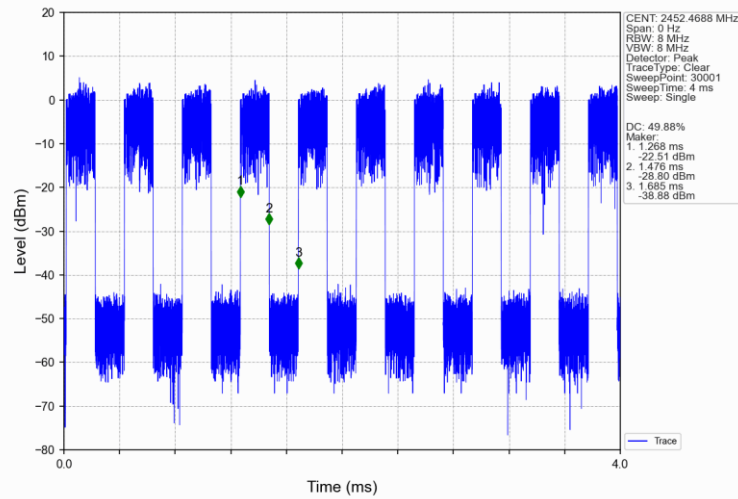
802.11ax(HEW20)_LCH_2412MHz_SU / _Ant1 (MIMO)_NTNV



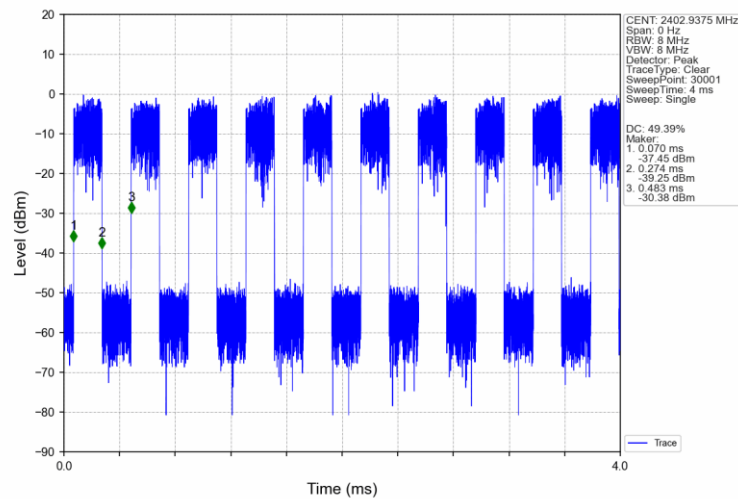
802.11ax(HEW20)_MCH_2437MHz_SU / _Ant1 (MIMO)_NTNV



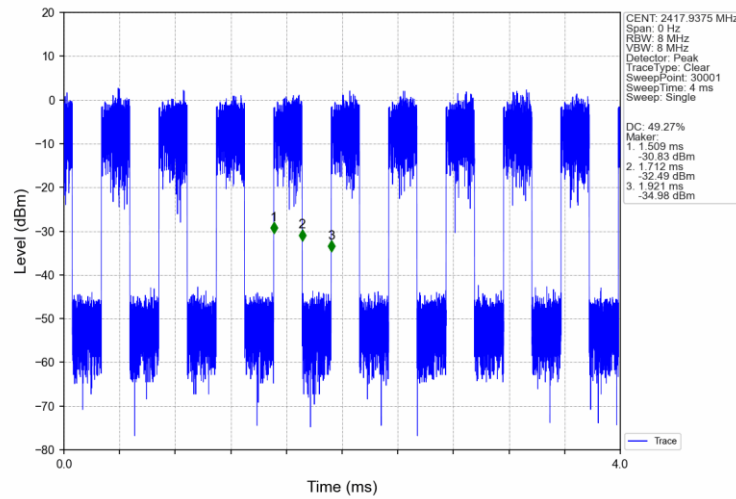
802.11ax(HEW20)_HCH_2462MHz_SU_/_Ant1 (MIMO)_NTNV



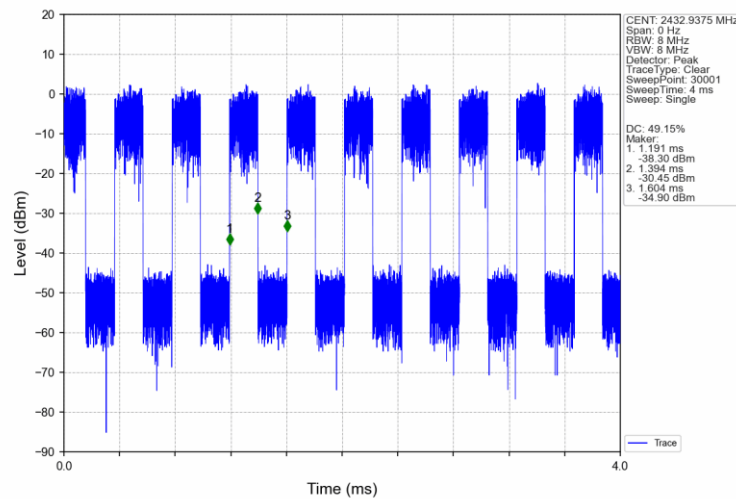
802.11ax(HEW40)_LCH_2422MHz_SU_/_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_SU_/_Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_SU_/_Ant1 (MIMO)_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	12.337	/	Pass
		2437	/	/	1	12.348	/	Pass
		2462	/	/	1	12.381	/	Pass
802.11g	MIMO	2412	/	/	1	17.385	/	Pass
		2437	/	/	1	17.381	/	Pass
		2462	/	/	1	17.413	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	18.191	/	Pass
		2437	/	/	1	18.423	/	Pass
		2462	/	/	1	18.405	/	Pass
802.11n (HT40)	MIMO	2422	/	/	1	36.458	/	Pass
		2437	/	/	1	36.610	/	Pass
		2452	/	/	1	36.497	/	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	1	18.851	/	Pass
		2437	SU	/	1	19.111	/	Pass
		2462	SU	/	1	19.131	/	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	1	37.805	/	Pass
		2437	SU	/	1	37.839	/	Pass
		2452	SU	/	1	37.848	/	Pass

Note: All antennas were test and recorded worst result of Ant 1.

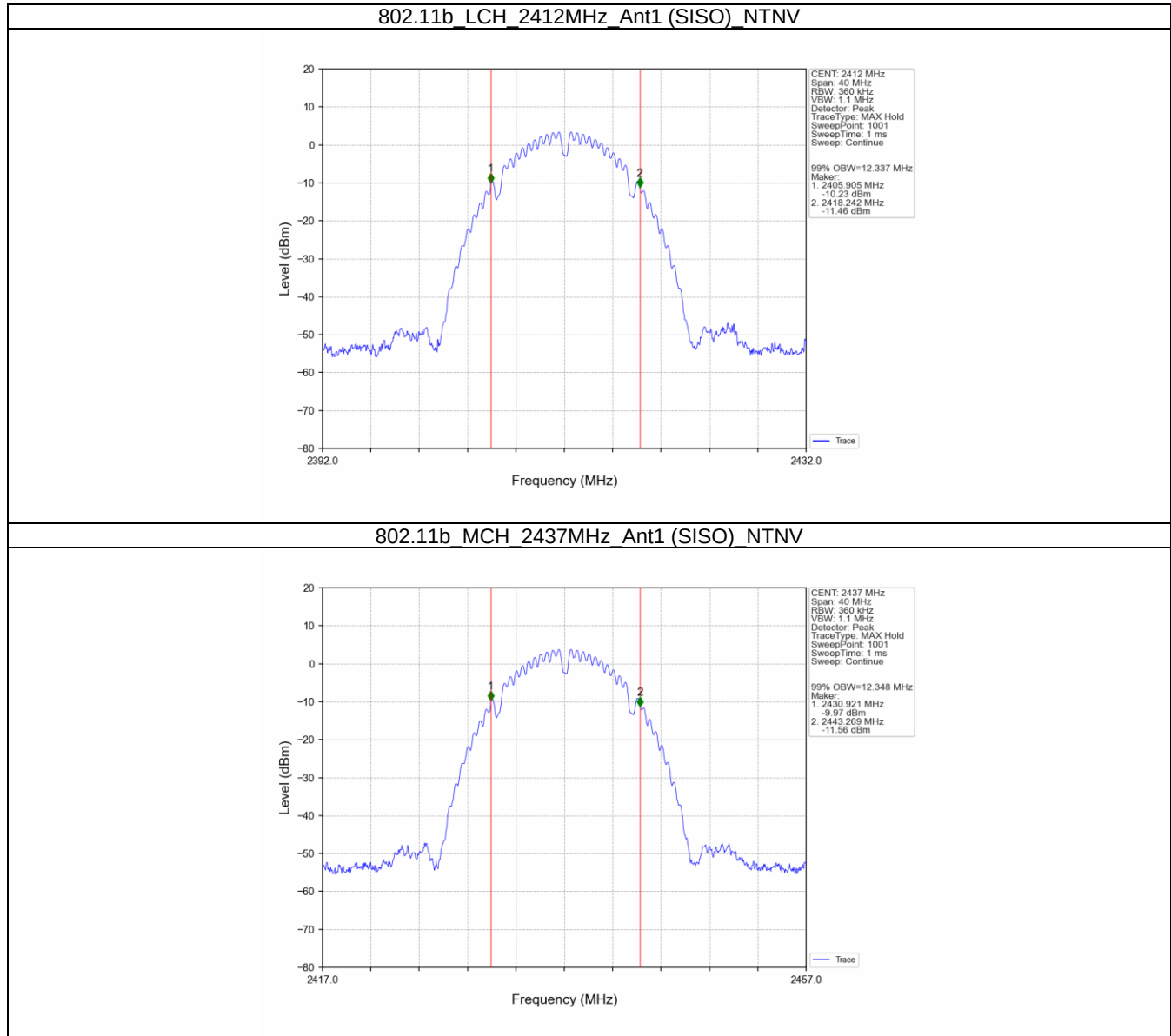
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	SISO	2412	/	/	1	8.073	≥ 0.5	Pass
		2437	/	/	1	8.052	≥ 0.5	Pass
		2462	/	/	1	7.585	≥ 0.5	Pass
802.11g	MIMO	2412	/	/	1	15.114	≥ 0.5	Pass
		2437	/	/	1	15.110	≥ 0.5	Pass
		2462	/	/	1	15.184	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	15.181	≥ 0.5	Pass
		2437	/	/	1	15.110	≥ 0.5	Pass
		2462	/	/	1	15.111	≥ 0.5	Pass
802.11n (HT40)	MIMO	2422	/	/	1	35.131	≥ 0.5	Pass
		2437	/	/	1	35.084	≥ 0.5	Pass
		2452	/	/	1	35.105	≥ 0.5	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	1	15.177	≥ 0.5	Pass
		2437	SU	/	1	15.168	≥ 0.5	Pass
		2462	SU	/	1	15.178	≥ 0.5	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	1	35.133	≥ 0.5	Pass
		2437	SU	/	1	35.124	≥ 0.5	Pass
		2452	SU	/	1	35.125	≥ 0.5	Pass

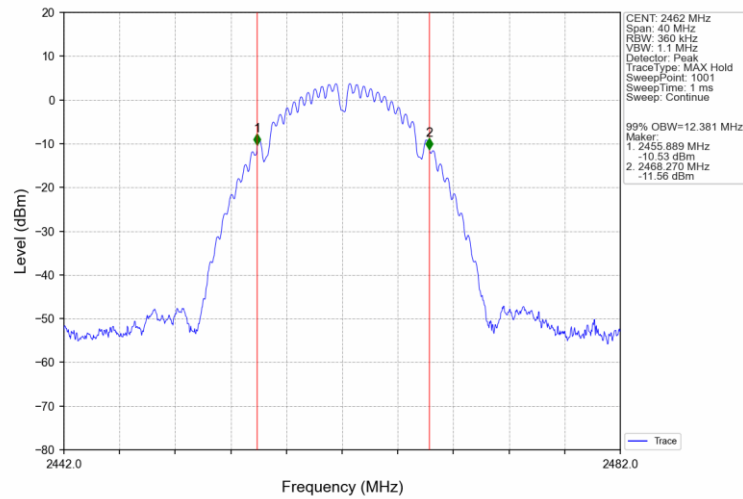
Note: All antennas were test and recorded worst result of Ant 1.

2.2 Test Graph

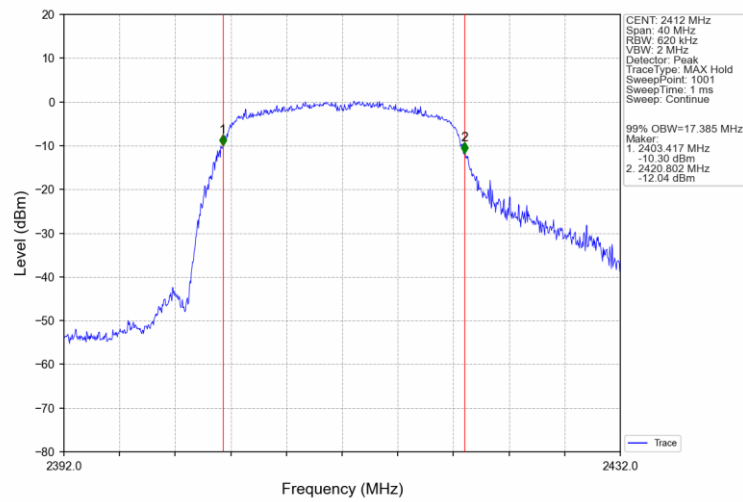
2.2.1 OBW



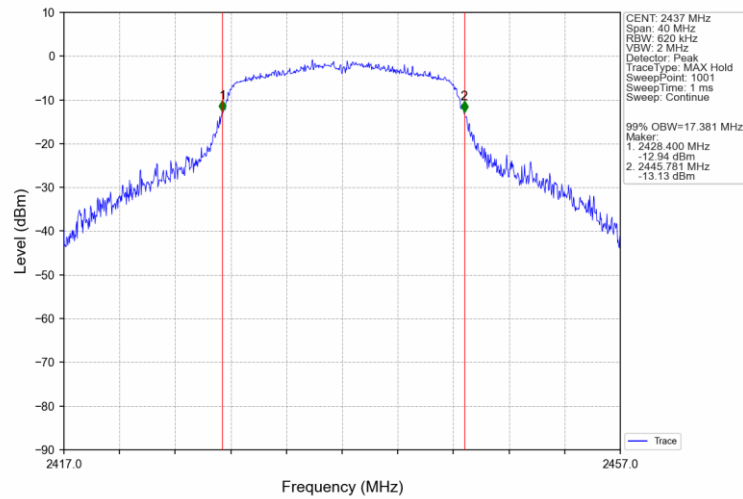
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



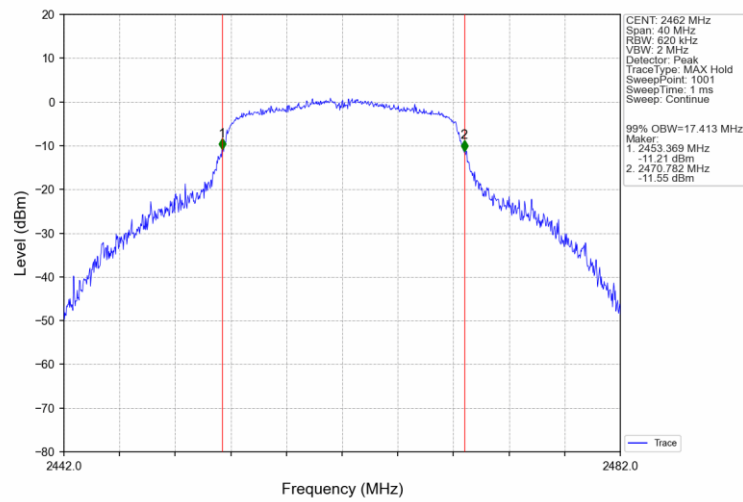
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



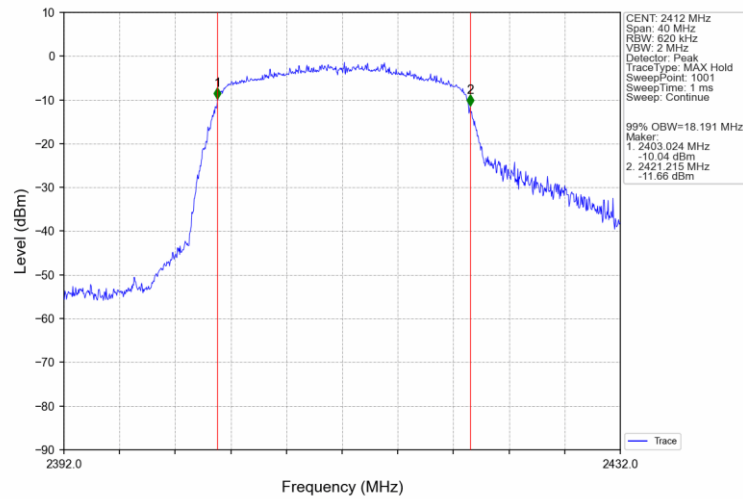
802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



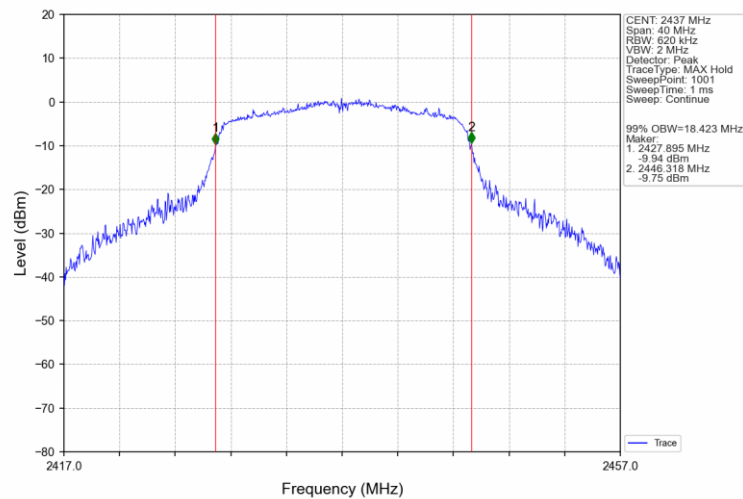
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



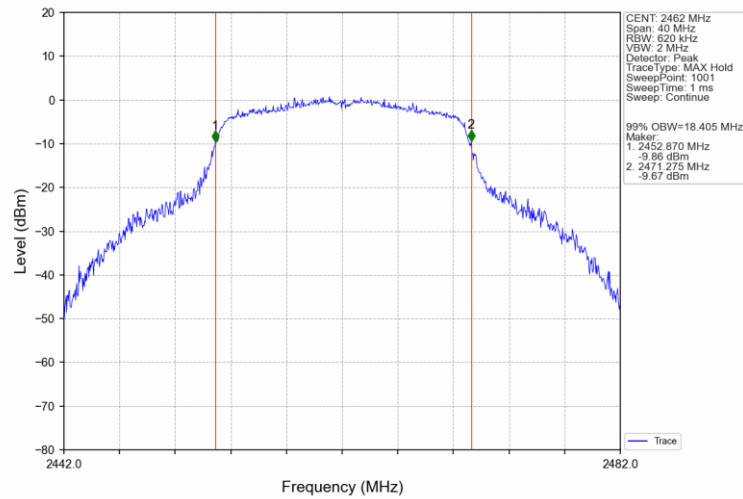
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



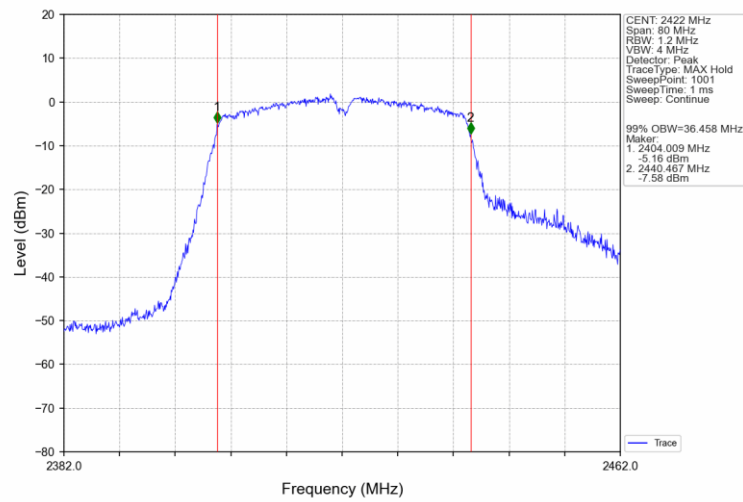
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



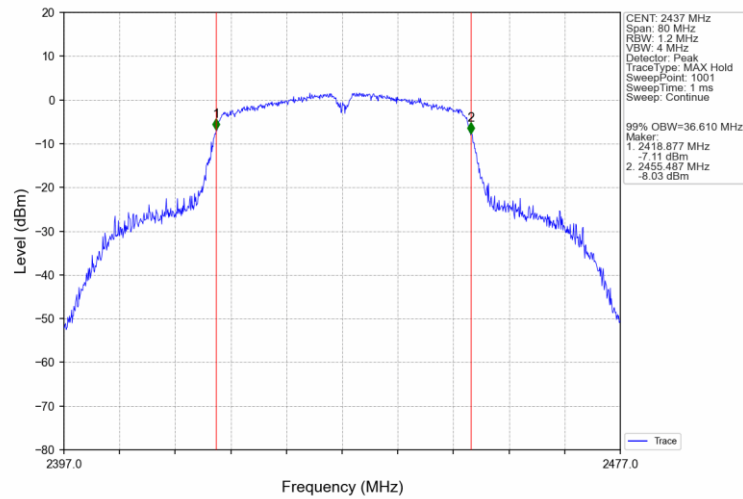
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



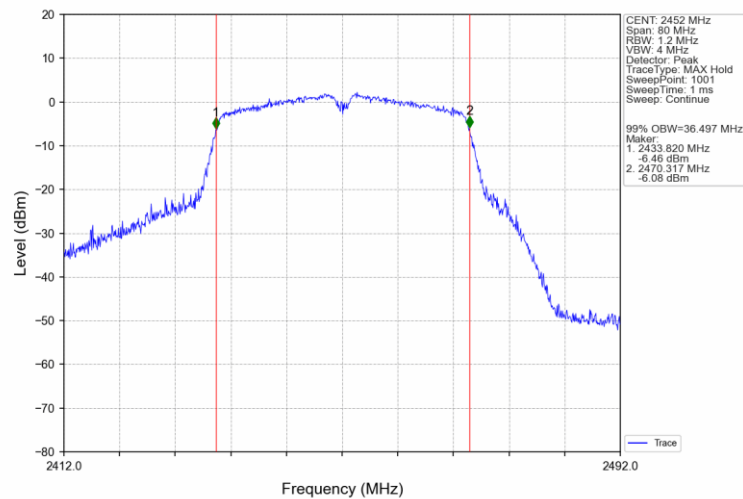
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



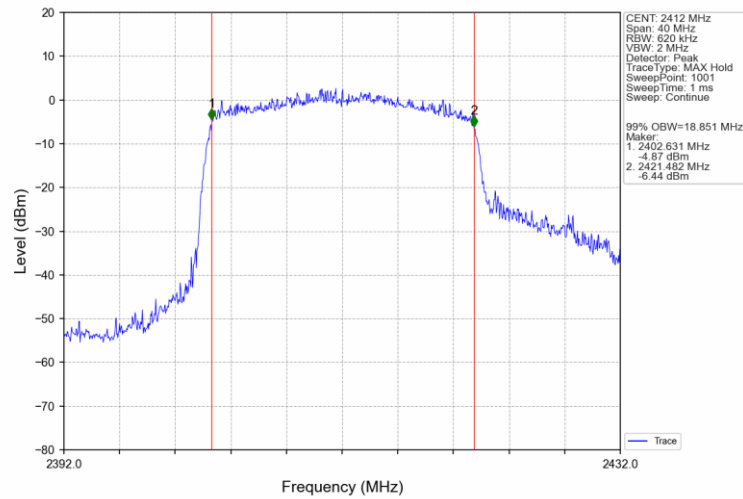
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



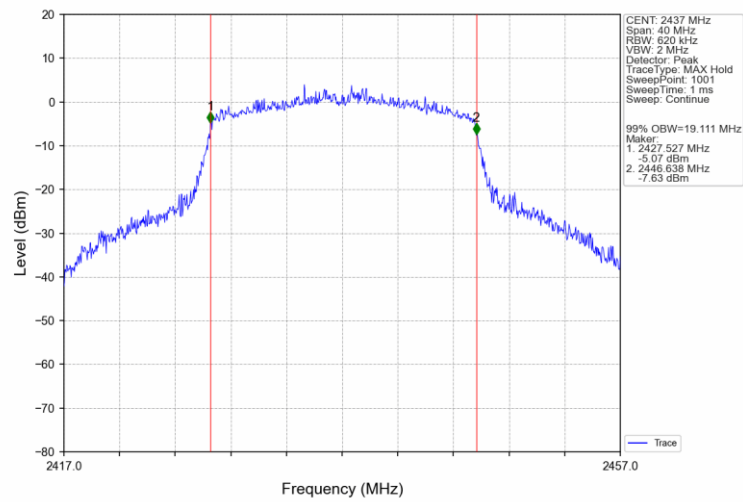
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



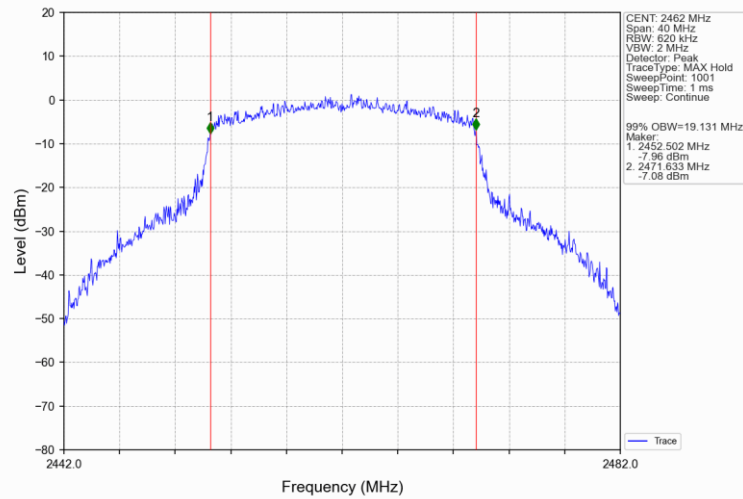
802.11ax(HEW20)_LCH_2412MHz_SU / _Ant1 (MIMO)_NTNV



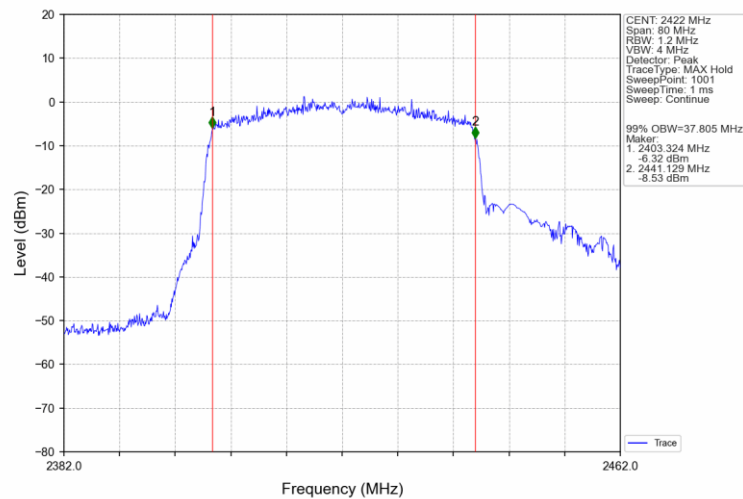
802.11ax(HEW20)_MCH_2437MHz_SU / _Ant1 (MIMO)_NTNV



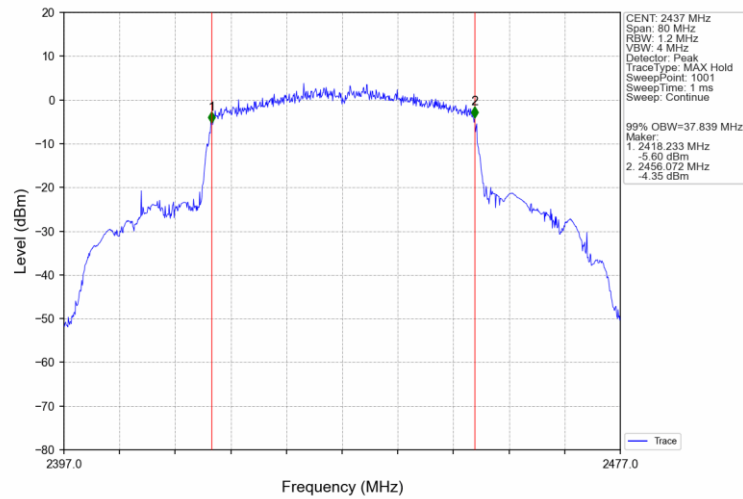
802.11ax(HEW20)_HCH_2462MHz_SU / _Ant1 (MIMO)_NTNV



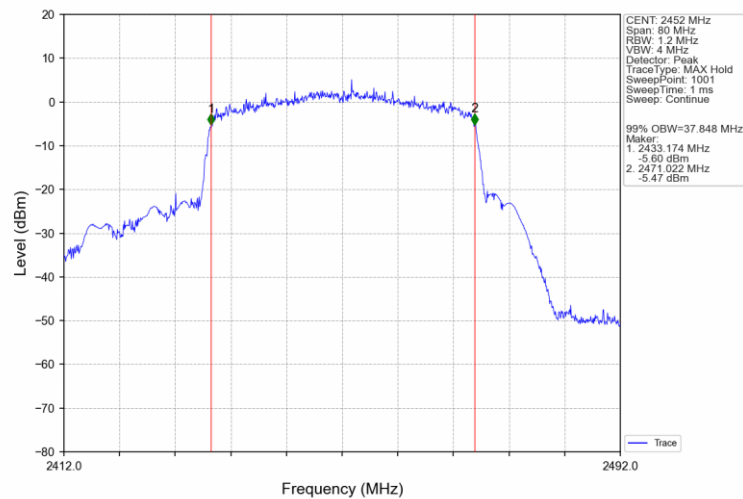
802.11ax(HEW40)_LCH_2422MHz_SU / _Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_SU / _Ant1 (MIMO)_NTNV

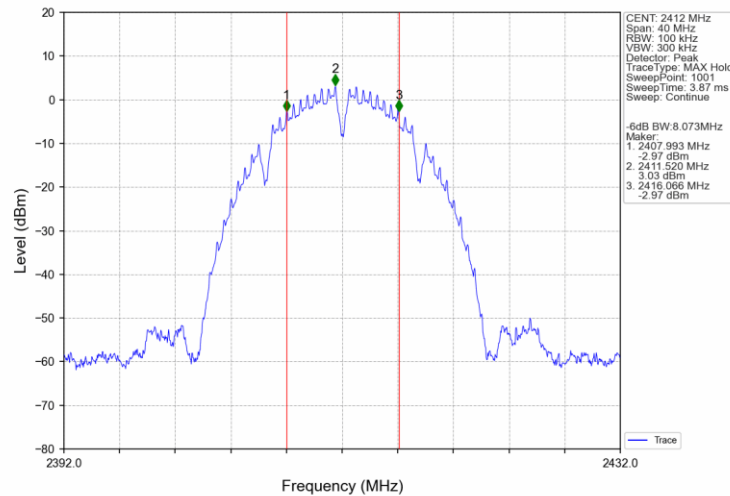


802.11ax(HEW40)_HCH_2452MHz_SU / _Ant1 (MIMO)_NTNV

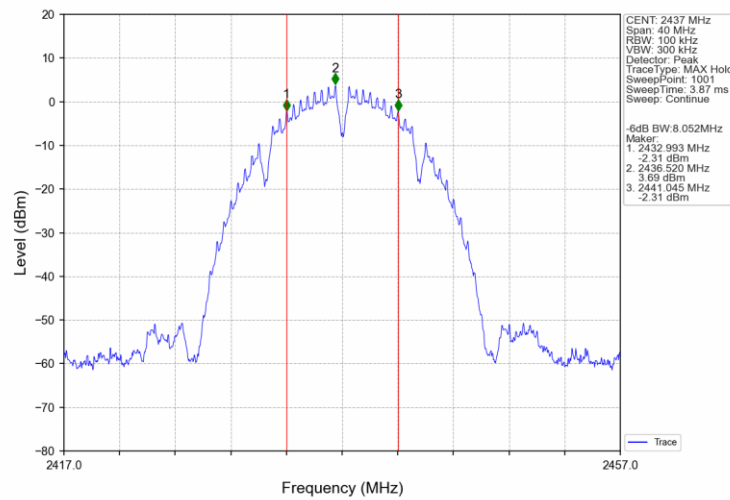


2.2.2 6dB BW

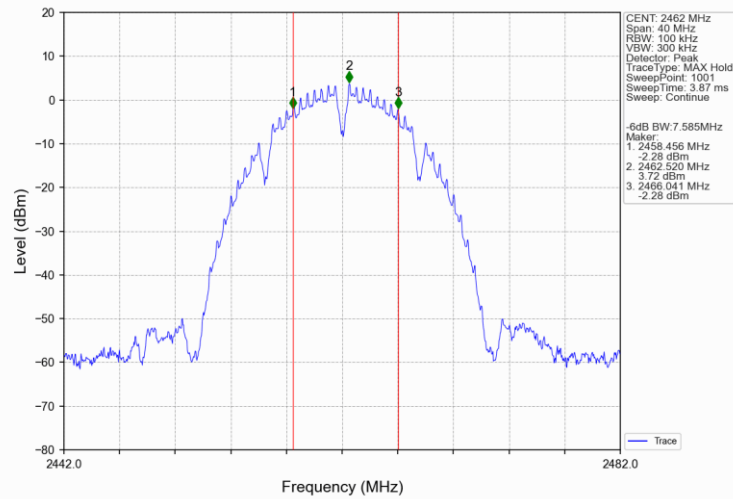
802.11b LCH 2412MHz_Ant1 (SISO)_NTNV



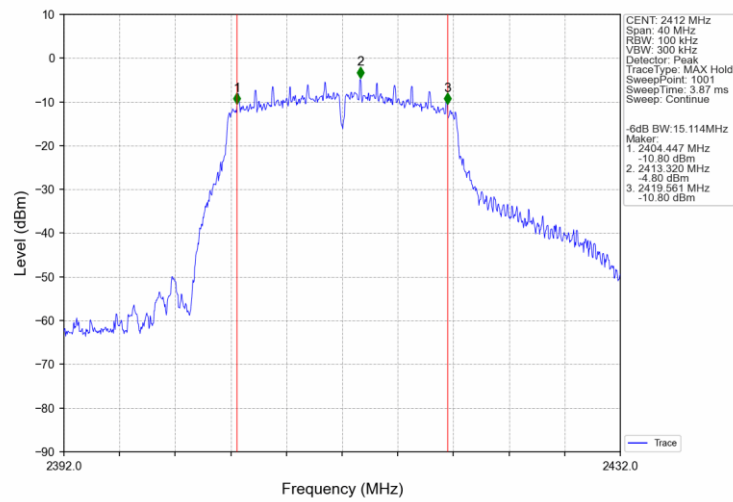
802.11b MCH 2437MHz_Ant1 (SISO)_NTNV



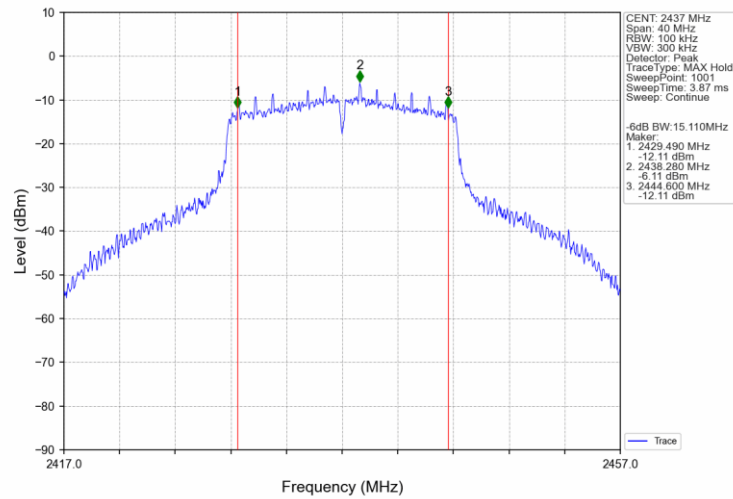
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



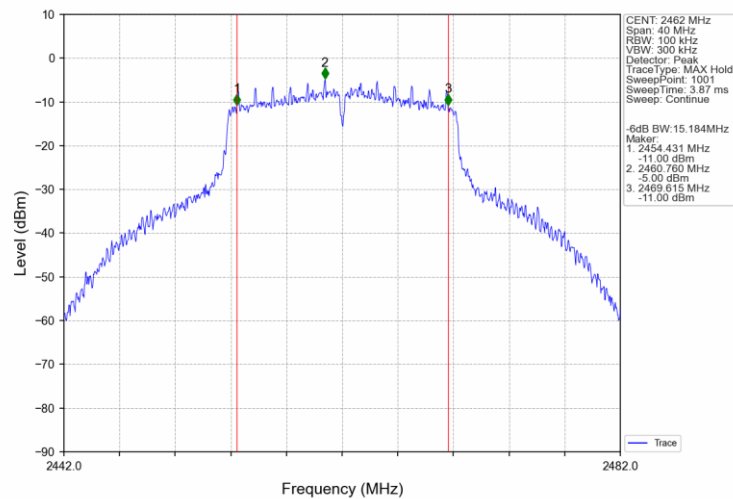
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



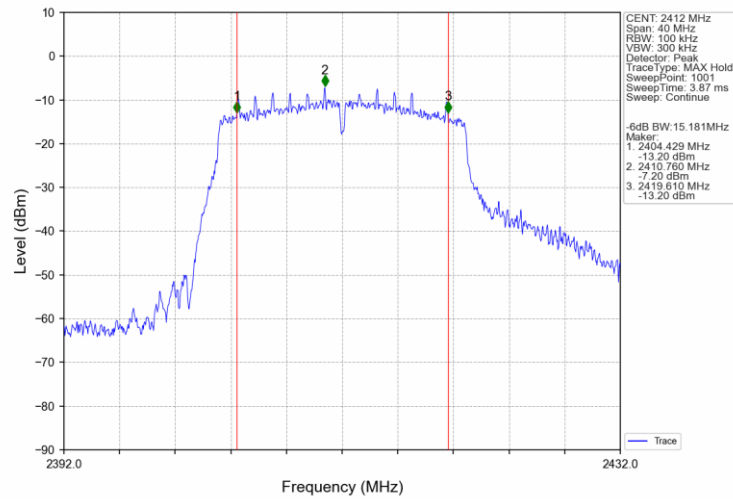
802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



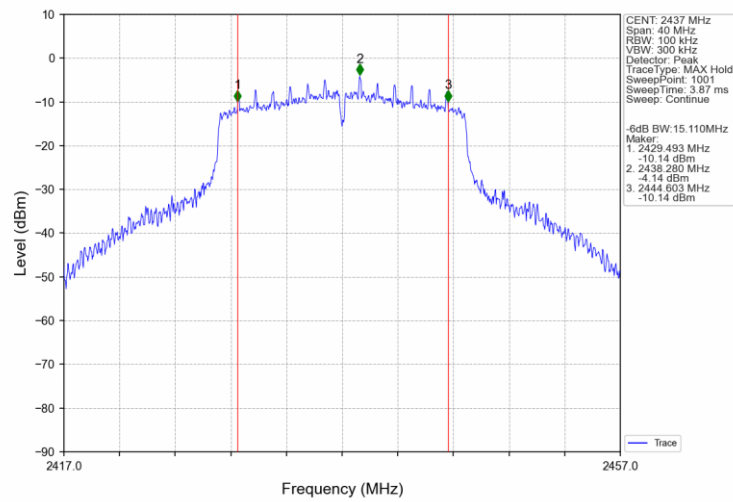
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



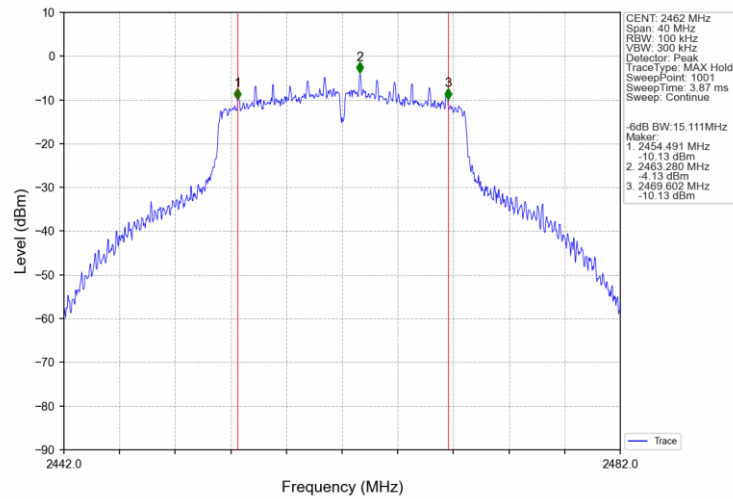
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



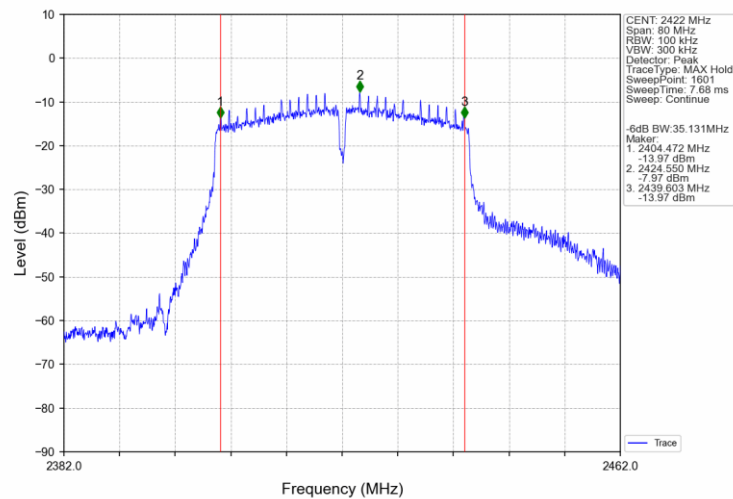
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



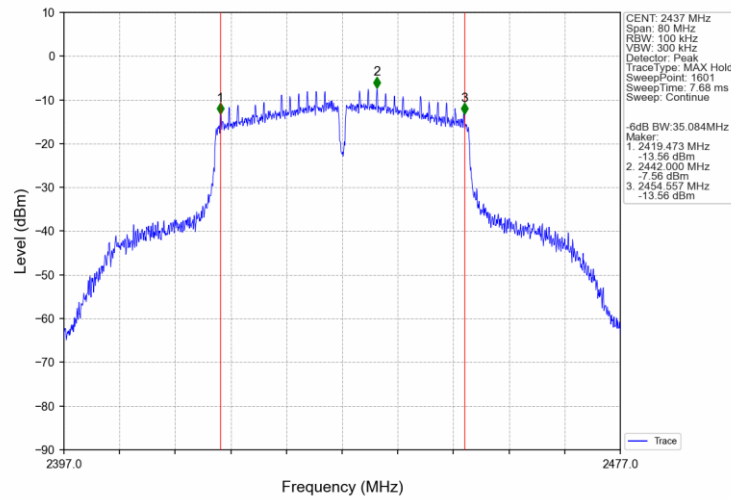
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



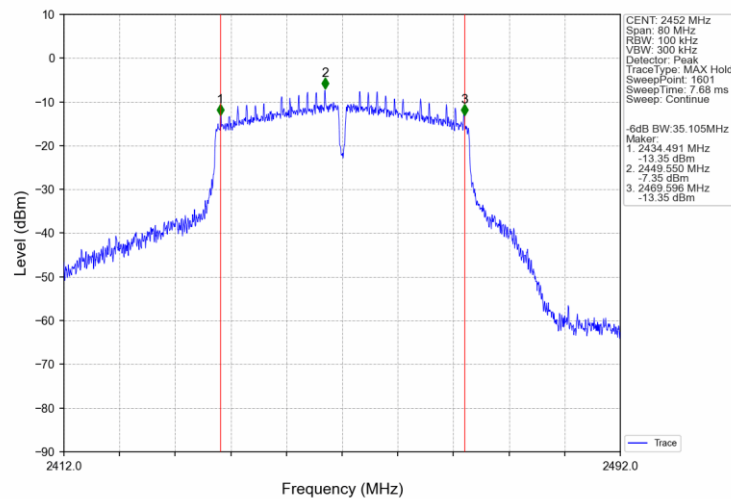
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



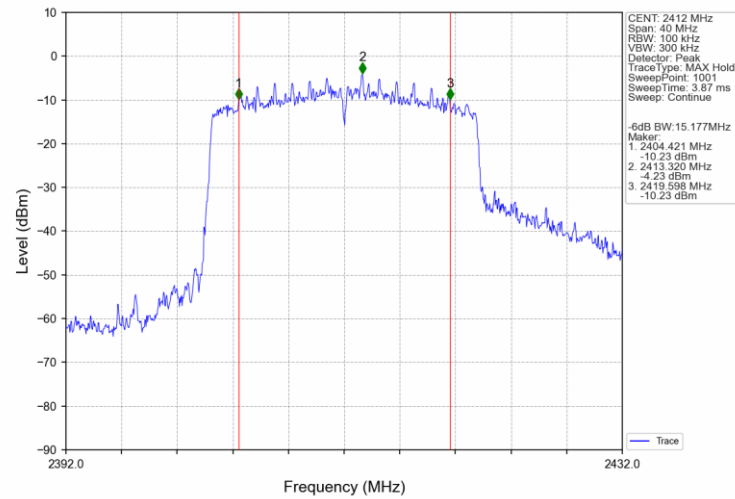
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



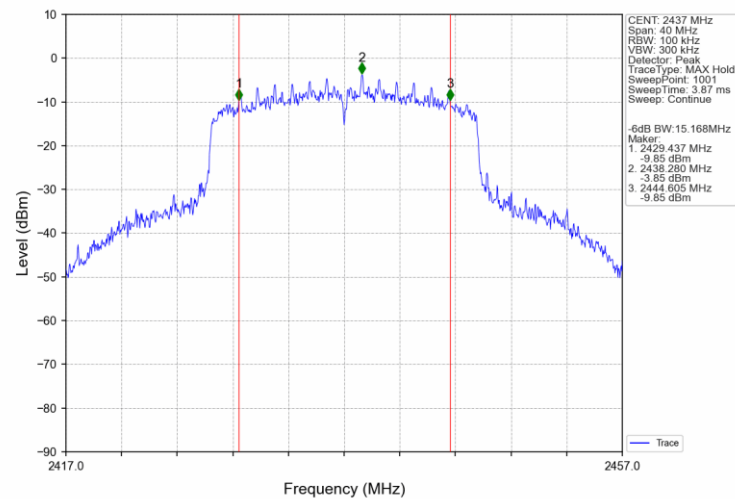
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



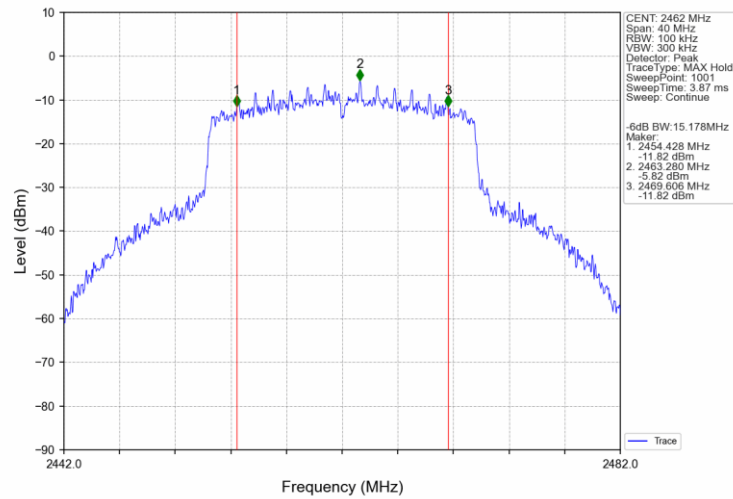
802.11ax(HEW20)_LCH_2412MHz_SU / _Ant1 (MIMO)_NTNV



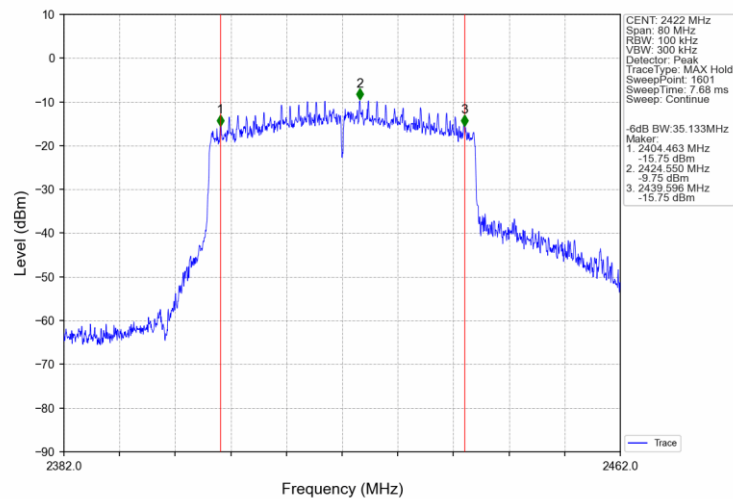
802.11ax(HEW20)_MCH_2437MHz_SU / _Ant1 (MIMO)_NTNV



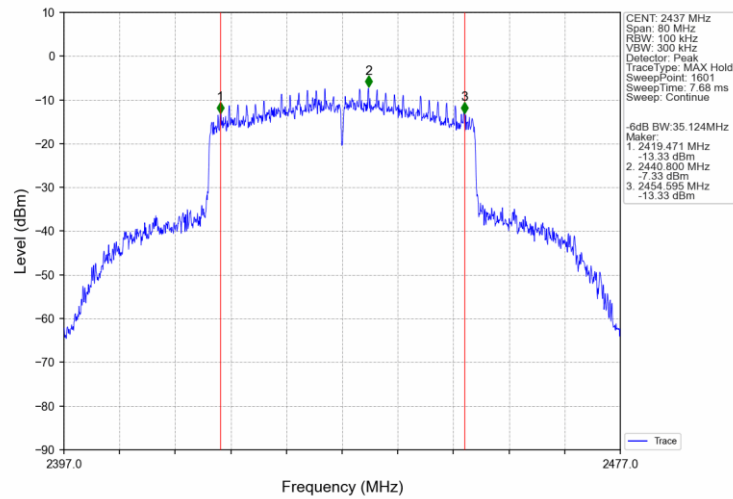
802.11ax(HEW20)_HCH_2462MHz_SU / _Ant1 (MIMO)_NTNV



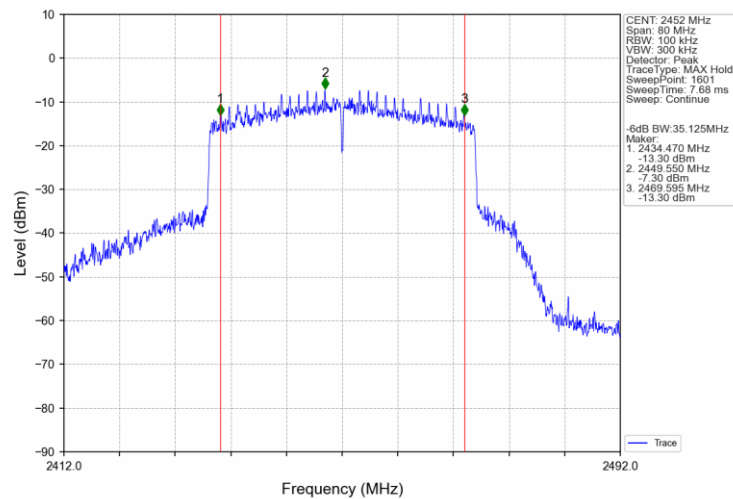
802.11ax(HEW40)_LCH_2422MHz_SU / _Ant1 (MIMO)_NTNV



802.11ax(HEW40)_MCH_2437MHz_SU / _Ant1 (MIMO)_NTNV



802.11ax(HEW40)_HCH_2452MHz_SU / _Ant1 (MIMO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Peak Conducted Output Power (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	13.67	13.13	/	<=29.32	Pass
		2437	/	/	13.91	11.98	/	<=29.32	Pass
		2462	/	/	16.43	14.52	/	<=29.32	Pass
802.11g	MIMO	2412	/	/	12.79	11.08	15.03	<=26.31	Pass
		2437	/	/	11.03	11.10	14.08	<=26.31	Pass
		2462	/	/	13.13	10.89	15.16	<=26.31	Pass
802.11n (HT20)	MIMO	2412	/	/	12.62	11.93	15.30	<=26.31	Pass
		2437	/	/	12.76	11.95	15.38	<=26.31	Pass
		2462	/	/	12.85	11.13	15.08	<=26.31	Pass
802.11n (HT40)	MIMO	2422	/	/	13.10	11.59	15.42	<=26.31	Pass
		2437	/	/	13.41	11.60	15.61	<=26.31	Pass
		2452	/	/	13.57	12.23	15.96	<=26.31	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	13.29	11.59	15.53	<=26.31	Pass
		2437	SU	/	13.69	12.11	15.98	<=26.31	Pass
		2462	SU	/	11.67	11.75	14.72	<=26.31	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	11.83	12.45	15.16	<=26.31	Pass
		2437	SU	/	14.22	12.58	16.49	<=26.31	Pass
		2452	SU	/	14.26	12.94	16.66	<=26.31	Pass

Note1: Antenna Gain: Ant1: 6.68dBi; Ant2: 6.68dBi;

Note2: Directional Gain: Band1: 9.69dBi

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

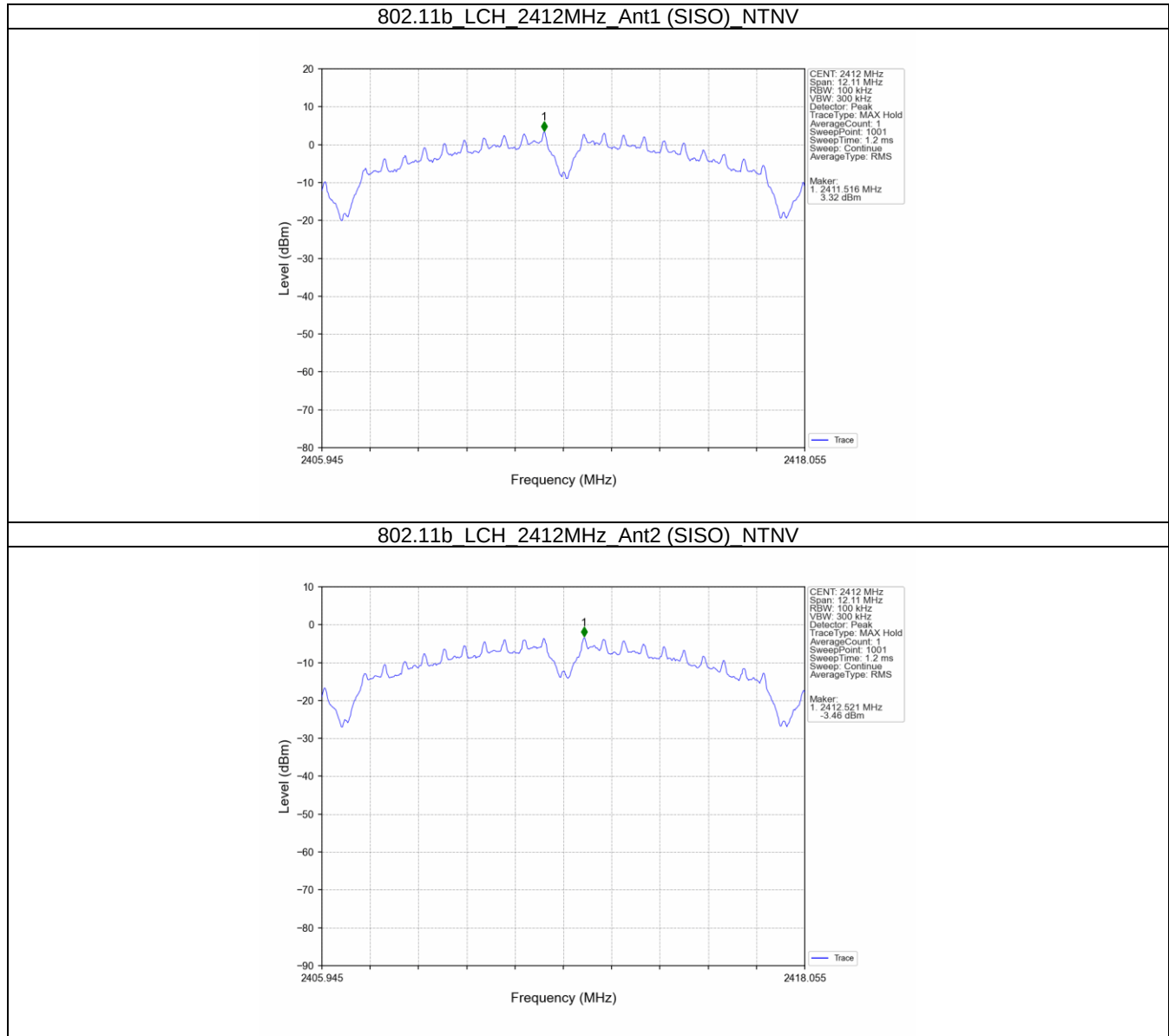
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	3.32	-3.46	/	<=7.32	Pass
		2437	/	/	3.49	-2.95	/	<=7.32	Pass
		2462	/	/	3.51	-3.53	/	<=7.32	Pass
802.11g	MIMO	2412	/	/	-4.43	-6.72	-2.41	<=4.31	Pass
		2437	/	/	-6.22	-7.00	-3.58	<=4.31	Pass
		2462	/	/	-4.12	-7.33	-2.43	<=4.31	Pass
802.11n (HT20)	MIMO	2412	/	/	-4.48	-5.49	-1.94	<=4.31	Pass
		2437	/	/	-4.13	-5.95	-1.94	<=4.31	Pass
		2462	/	/	-4.22	-6.66	-2.30	<=4.31	Pass
802.11n (HT40)	MIMO	2422	/	/	-7.90	-10.10	-5.89	<=4.31	Pass
		2437	/	/	-7.54	-9.54	-5.43	<=4.31	Pass
		2452	/	/	-7.35	-8.73	-4.97	<=4.31	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	-4.16	-6.42	-2.13	<=4.31	Pass
		2437	SU	/	-3.82	-6.13	-1.82	<=4.31	Pass
		2462	SU	/	-5.82	-6.53	-3.16	<=4.31	Pass
802.11ax (HEW40)	MIMO	2422	SU	/	-9.76	-9.21	-6.46	<=4.31	Pass
		2437	SU	/	-7.29	-9.05	-5.19	<=4.31	Pass
		2452	SU	/	-7.23	-8.27	-4.71	<=4.31	Pass

Note1: Antenna Gain: Ant1: 6.68dBi; Ant2: 6.68dBi;

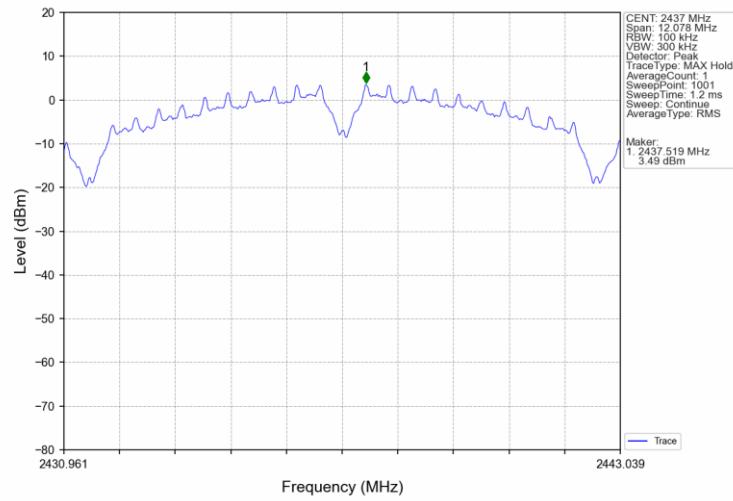
Note2: Directional Gain: Band1: 9.69dBi

4.2 Test Graph

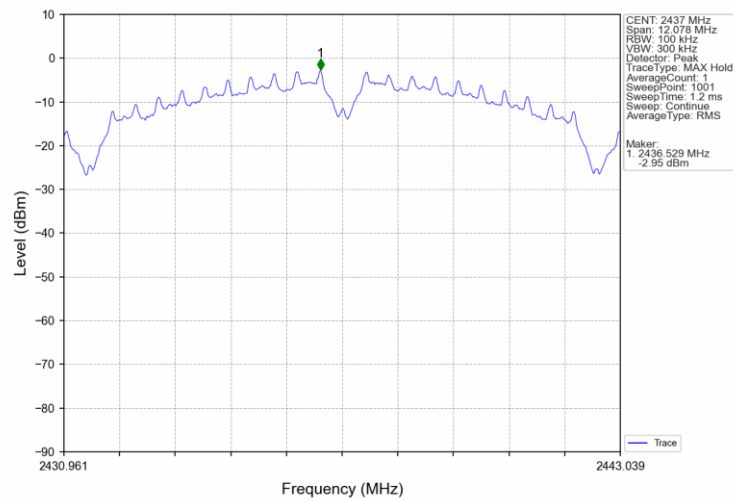
4.2.1 PSD



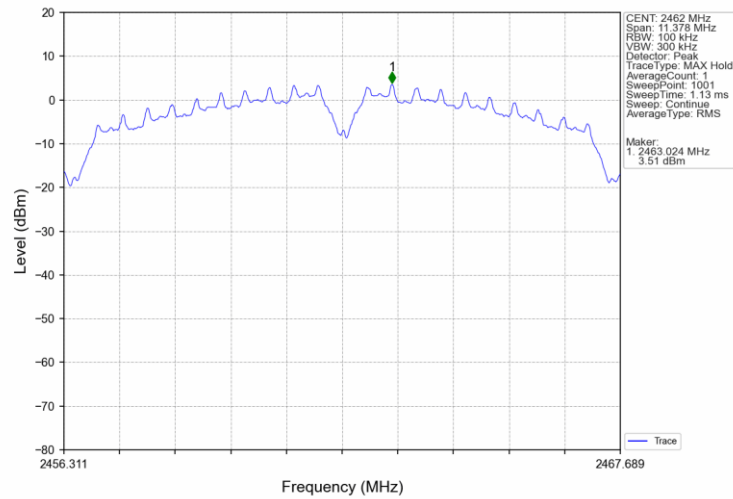
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



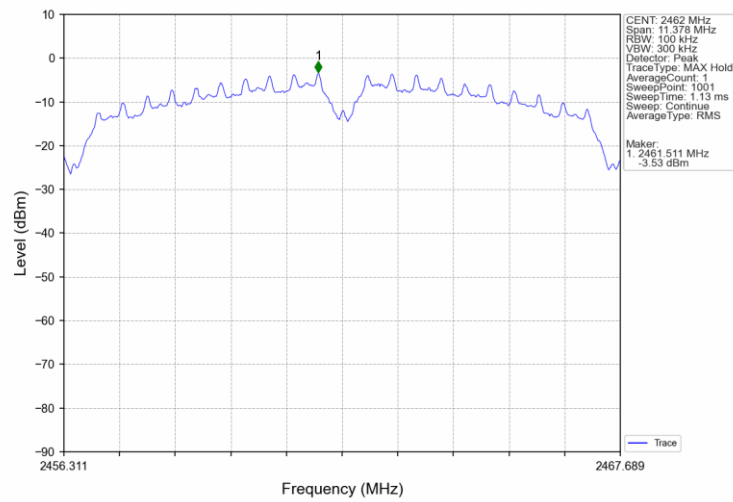
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



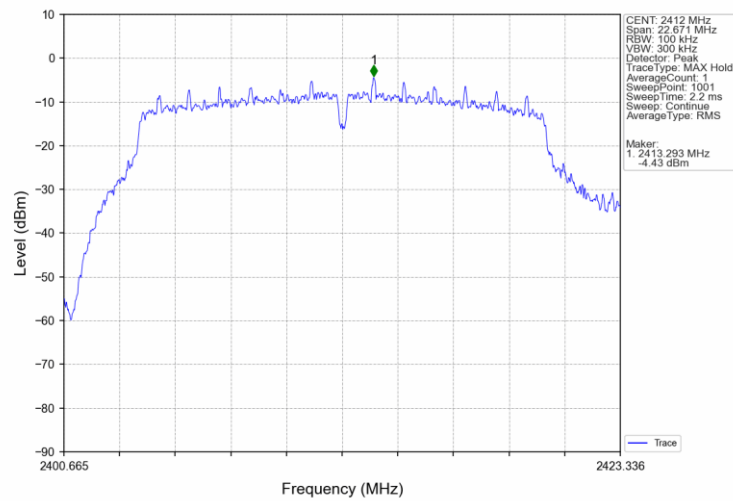
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



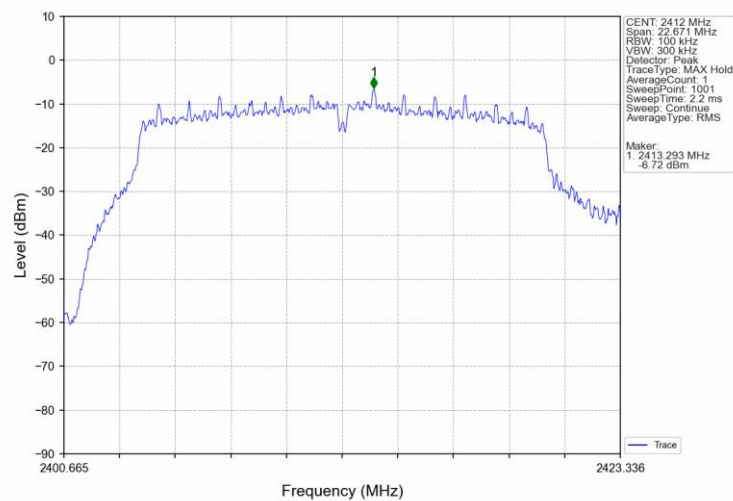
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



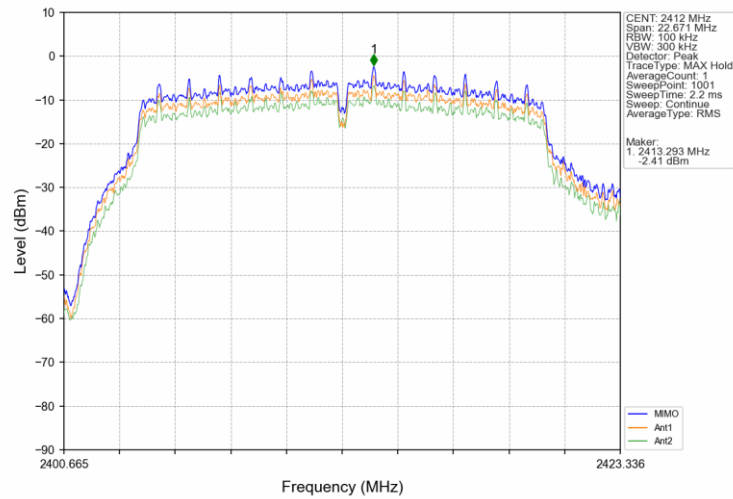
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11g_LCH_2412MHz_Ant2 (MIMO)_NTNV



802.11g_LCH_2412MHz_MIMO_NTNV



802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV

