



Shenzhen CTL Testing Technology Co., Ltd.

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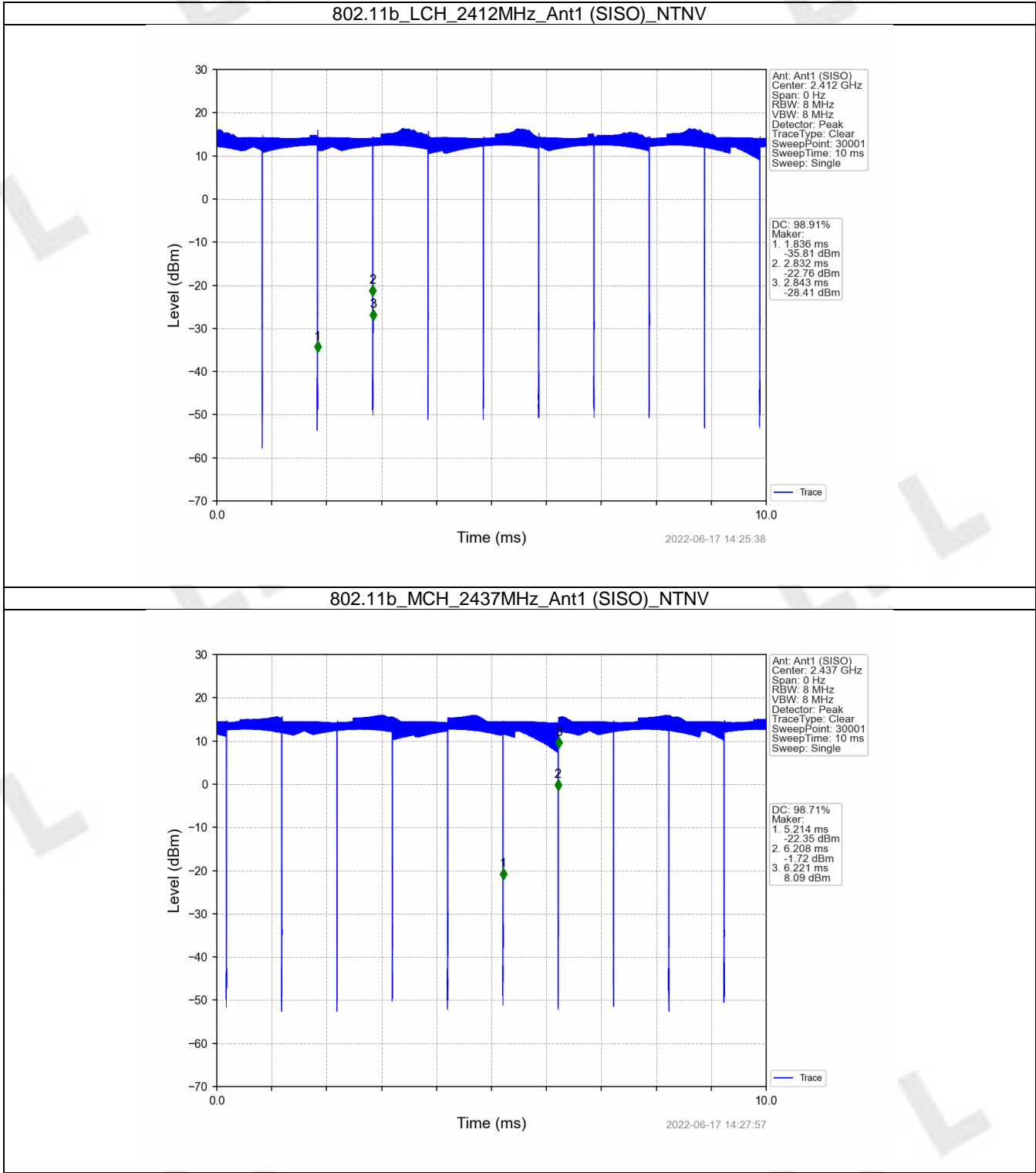
1. Duty Cycle

1.1 Ant1

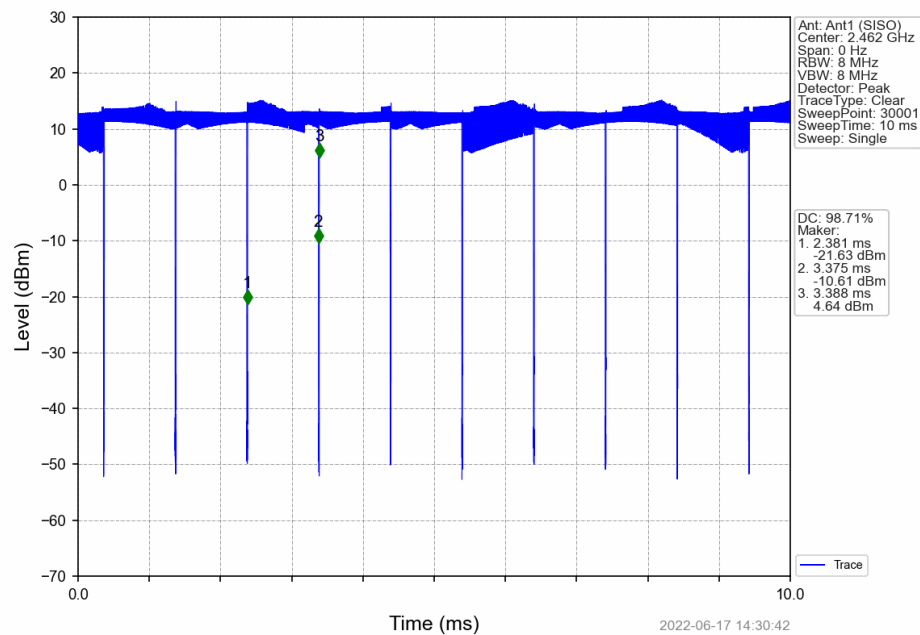
1.1.1 Test Result

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	0.996	1.007	98.91	0.05	0.03
		2437	0.994	1.007	98.71	0.06	0.03
		2462	0.994	1.007	98.71	0.06	0.03
802.11g	SISO	2412	0.695	0.703	98.86	0.05	0.03
		2437	0.694	0.702	98.86	0.05	0.00
		2462	0.695	0.703	98.86	0.05	0.03
802.11n (HT20)	SISO	2412	0.658	0.666	98.80	0.05	0.04
		2437	0.658	0.666	98.80	0.05	0.04
		2462	0.658	0.666	98.80	0.05	0.07
802.11n (HT40)	SISO	2422	0.336	0.343	98.06	0.09	0.04
		2437	0.336	0.343	98.06	0.09	0.08
		2452	0.336	0.342	98.25	0.08	0.04

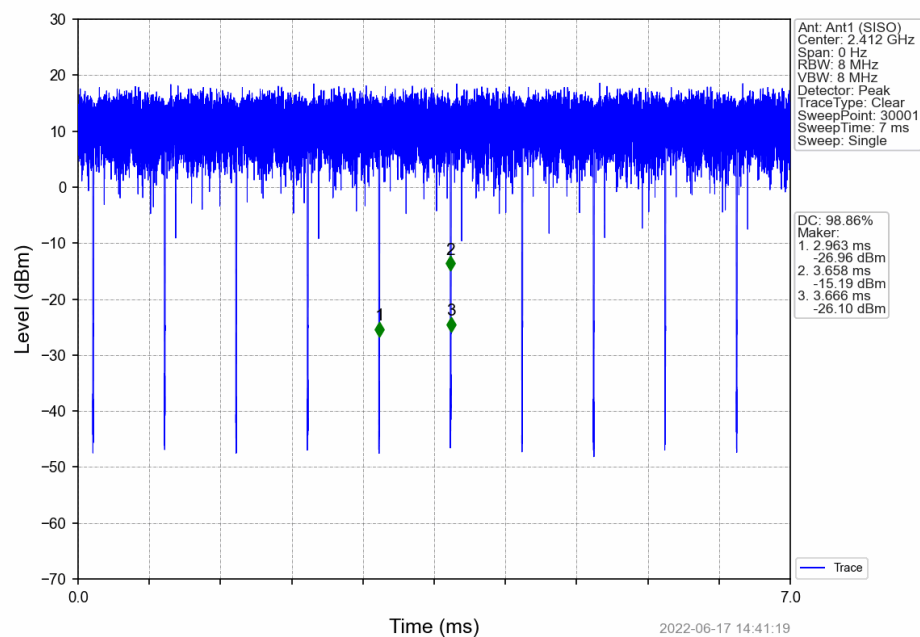
1.1.2 Test Graph



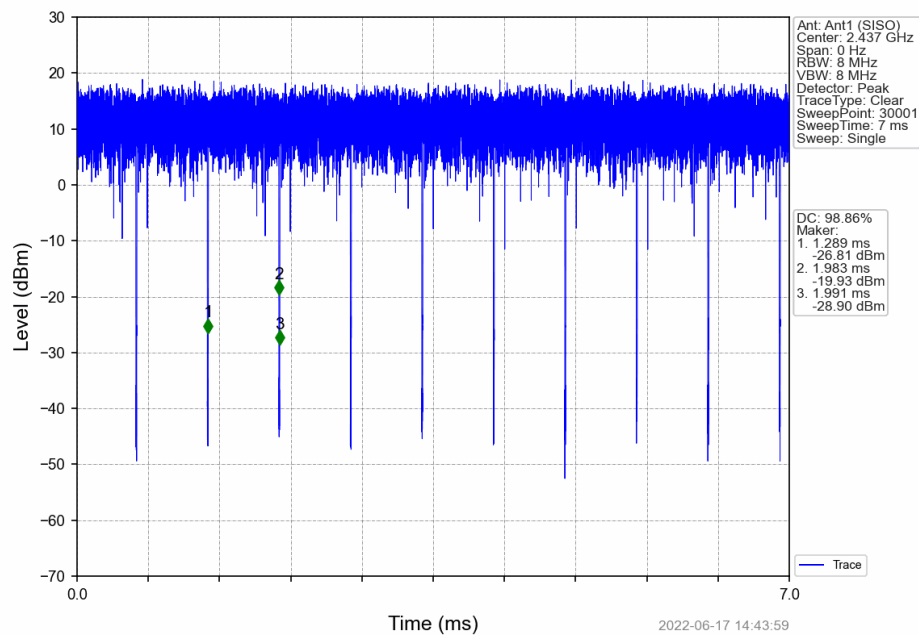
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



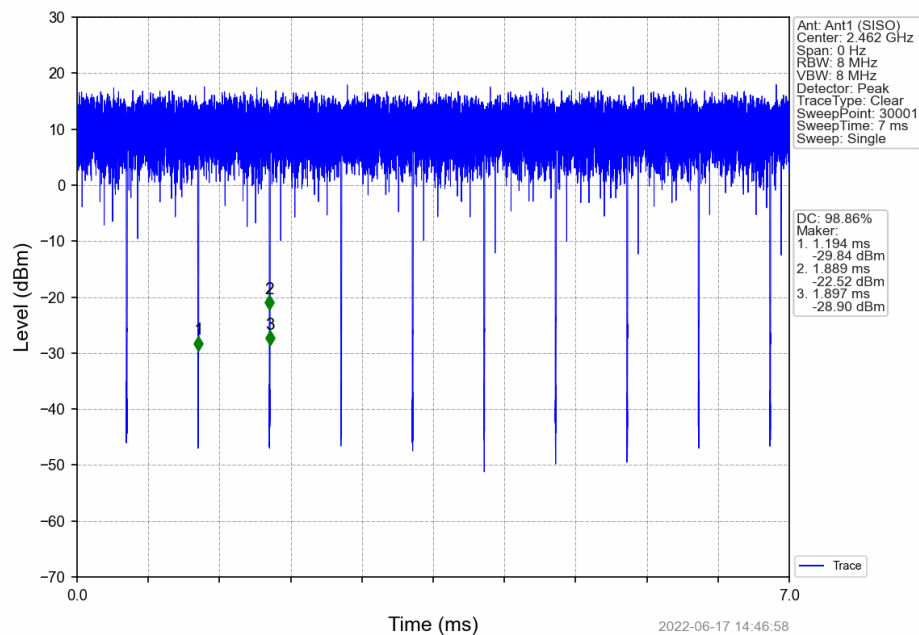
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



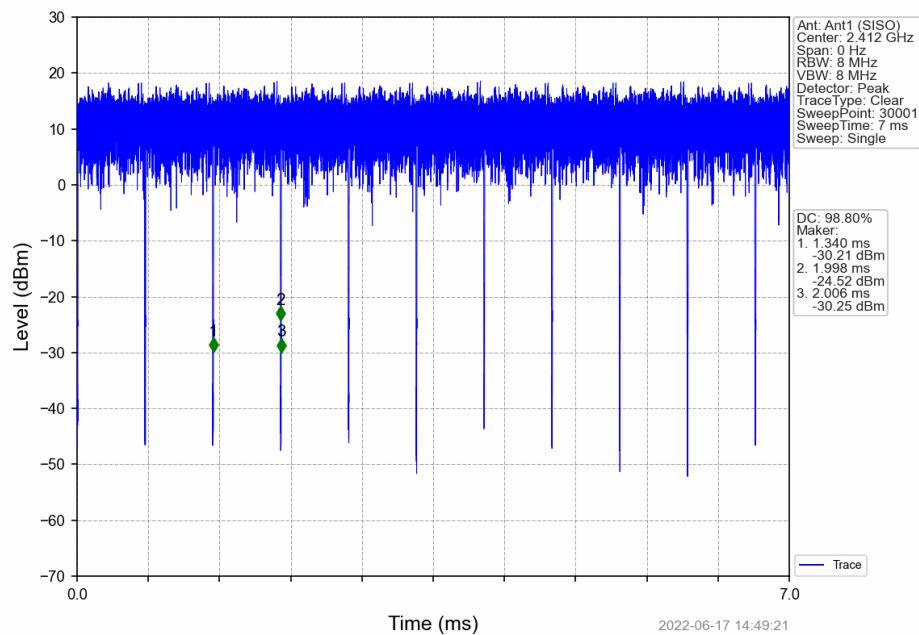
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



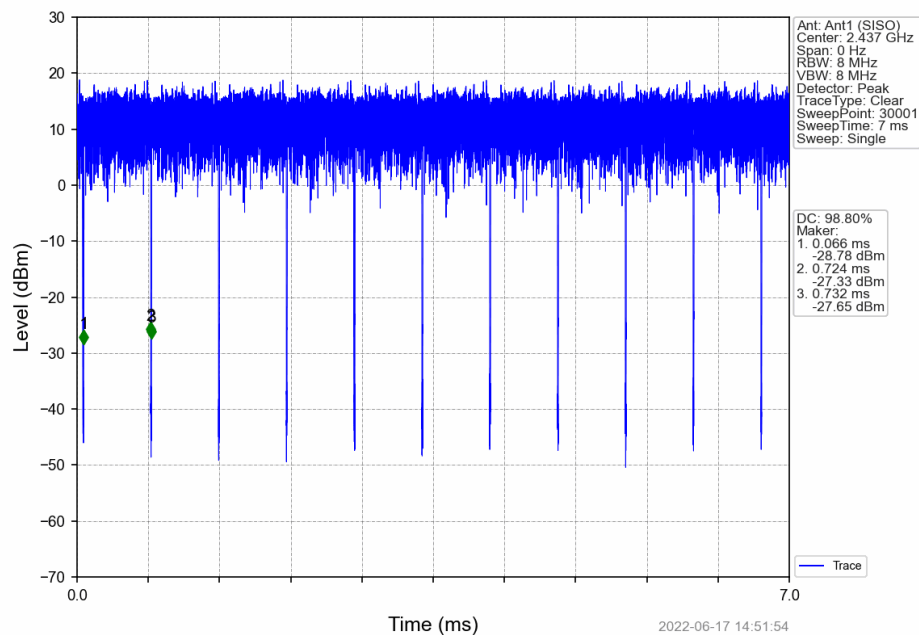
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



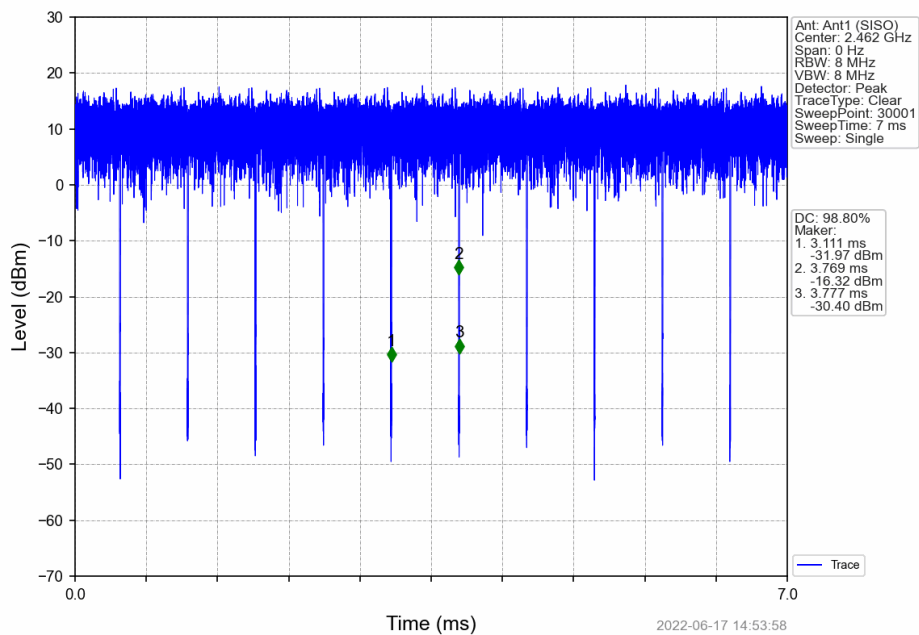
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



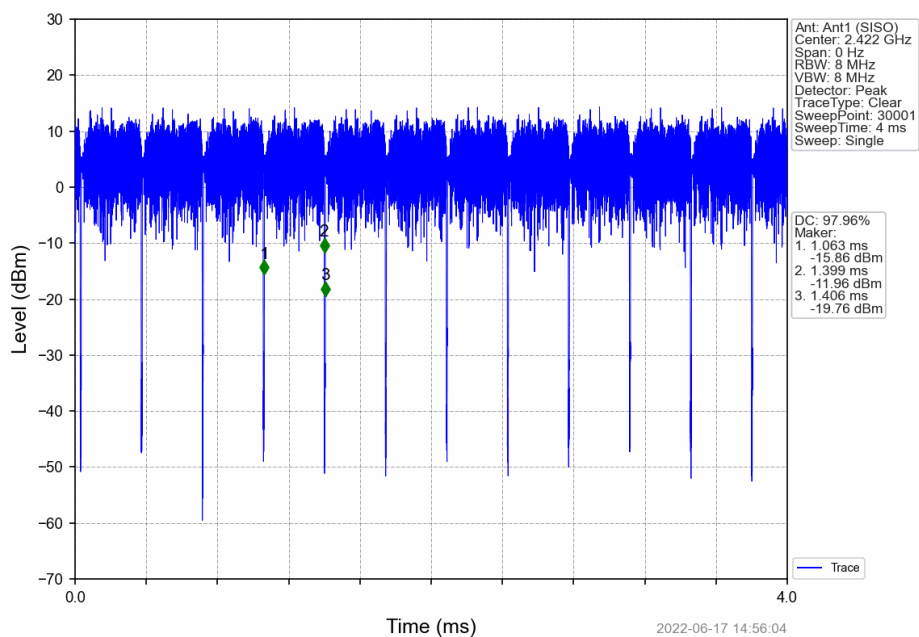
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



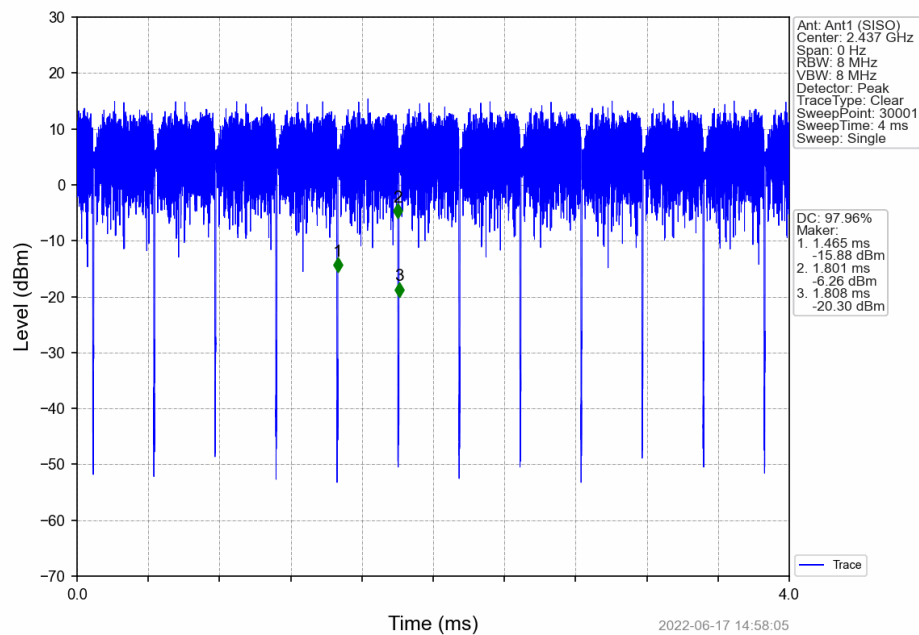
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



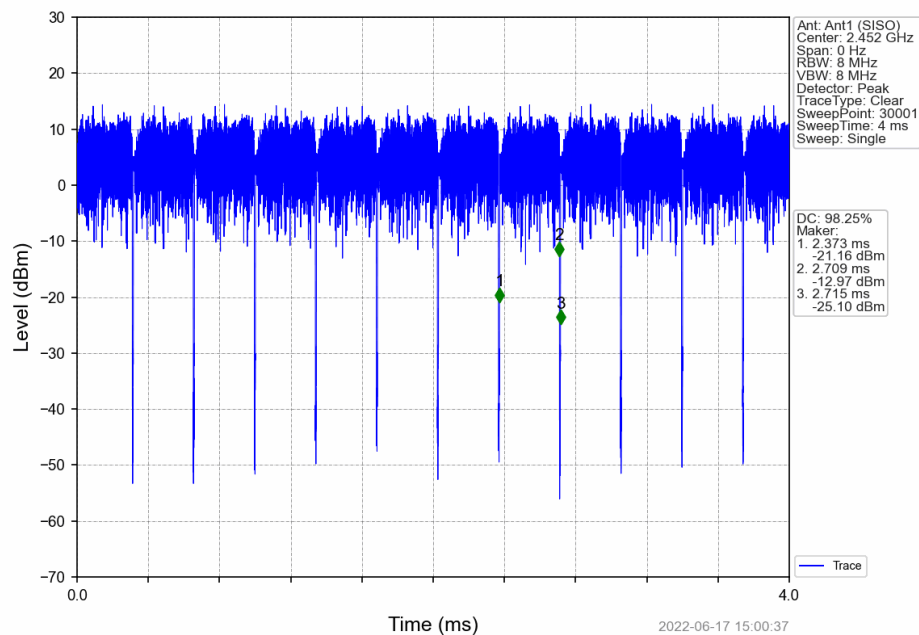
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



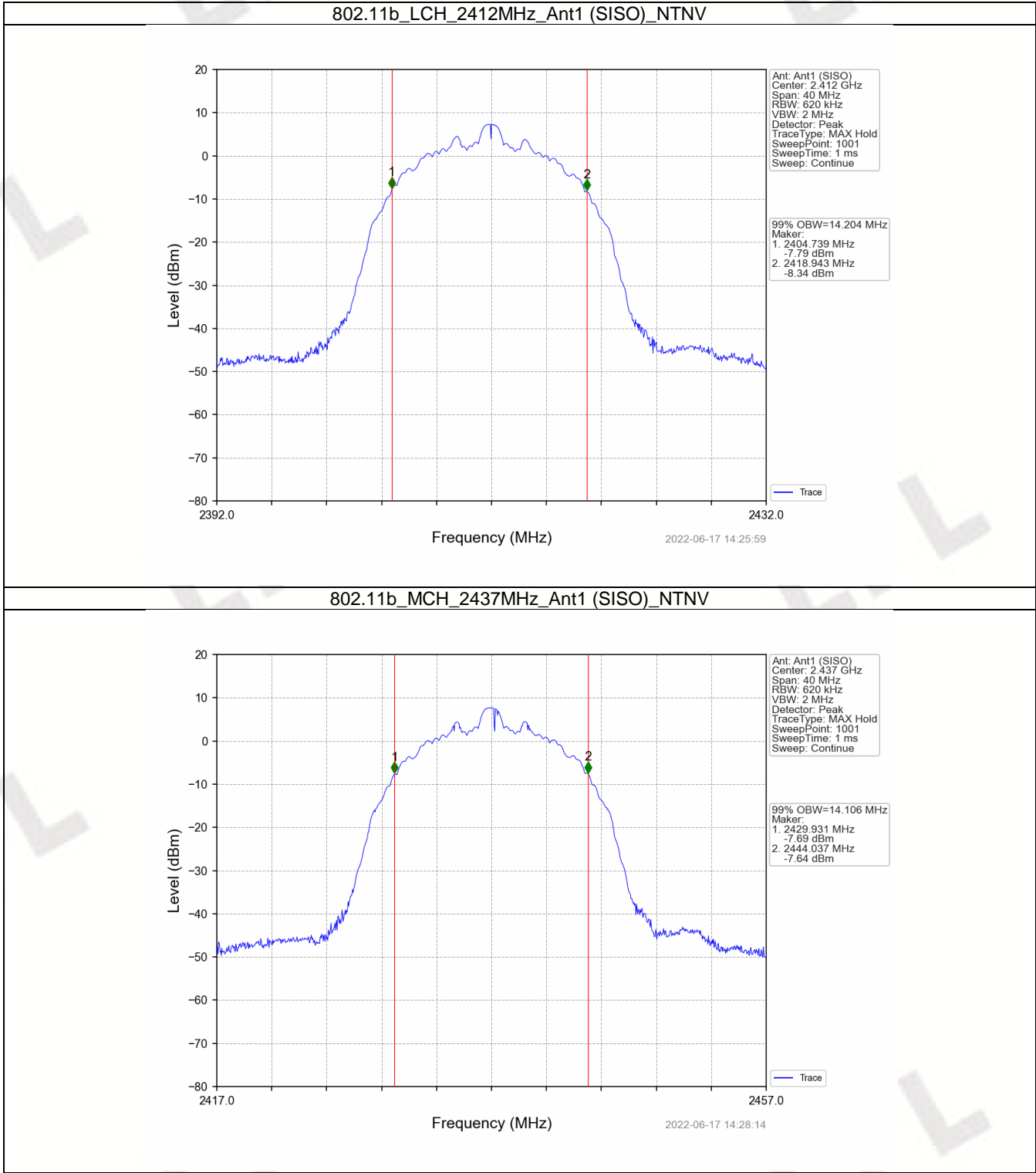
2. Bandwidth

2.1 OBW

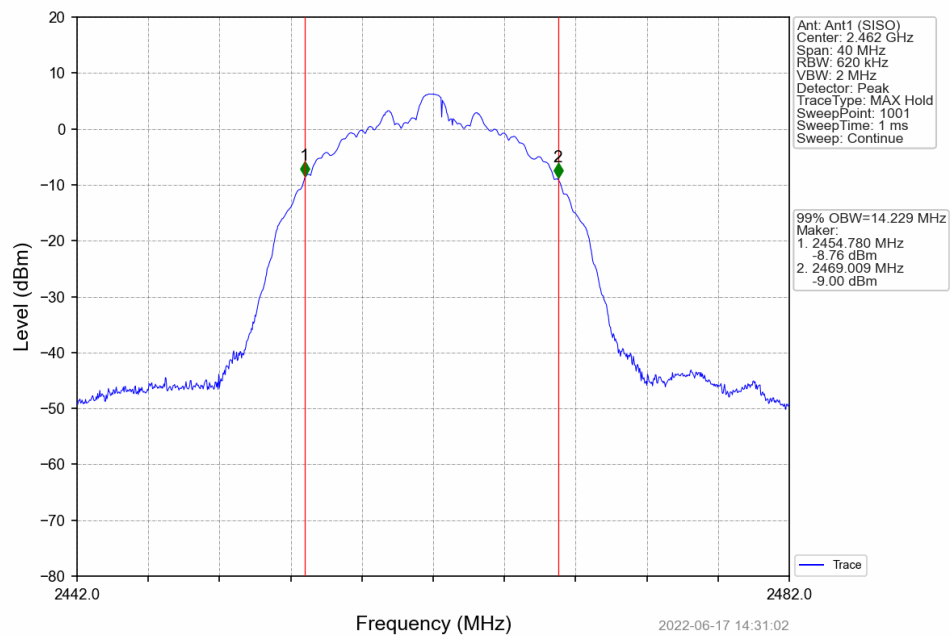
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	14.204	Pass
		2437	1	14.106	Pass
		2462	1	14.229	Pass
802.11g	SISO	2412	1	17.024	Pass
		2437	1	16.942	Pass
		2462	1	17.016	Pass
802.11n (HT20)	SISO	2412	1	17.857	Pass
		2437	1	17.734	Pass
		2462	1	17.866	Pass
802.11n (HT40)	SISO	2422	1	35.729	Pass
		2437	1	35.209	Pass
		2452	1	35.383	Pass

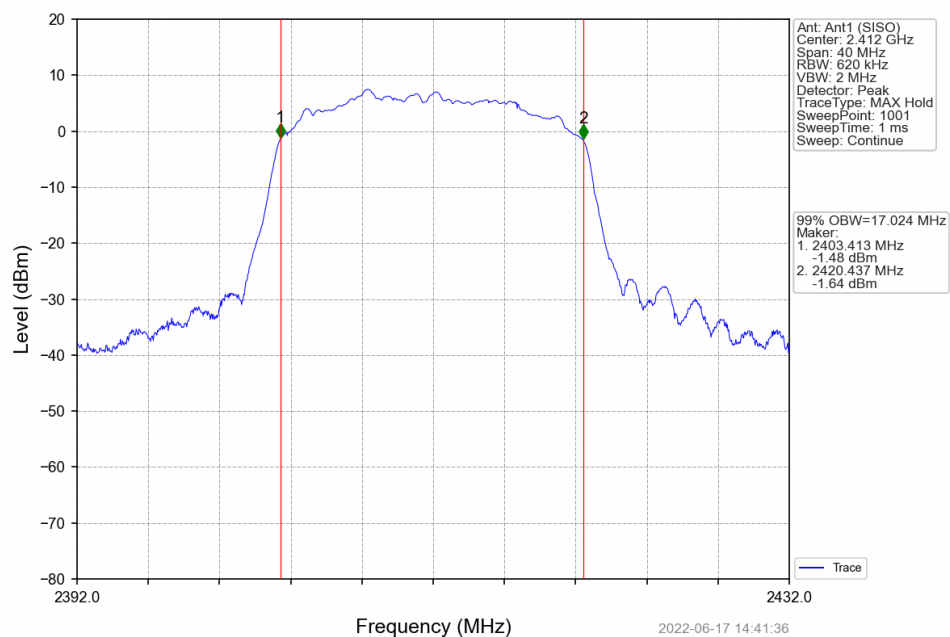
2.1.2 Test Graph



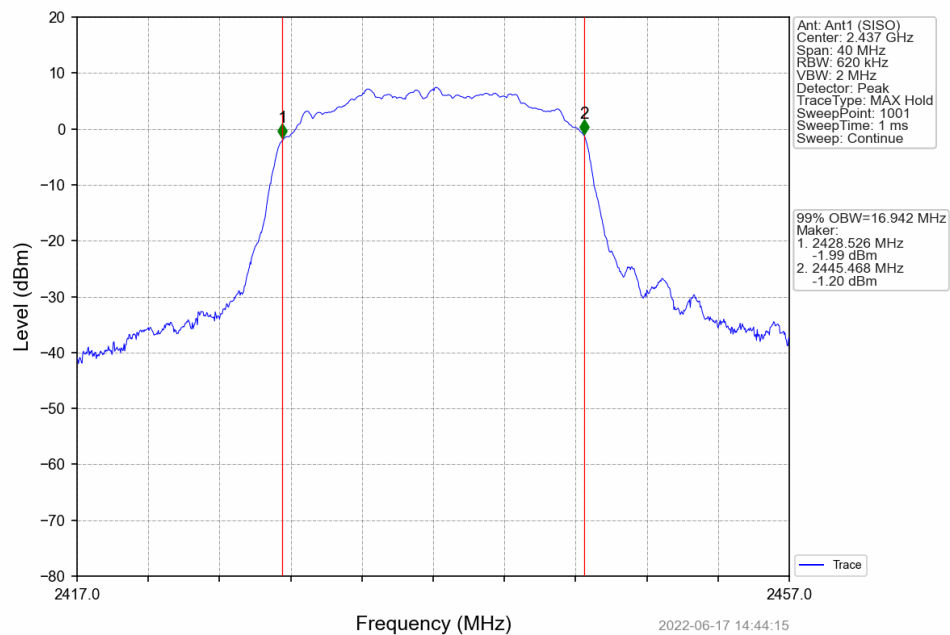
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



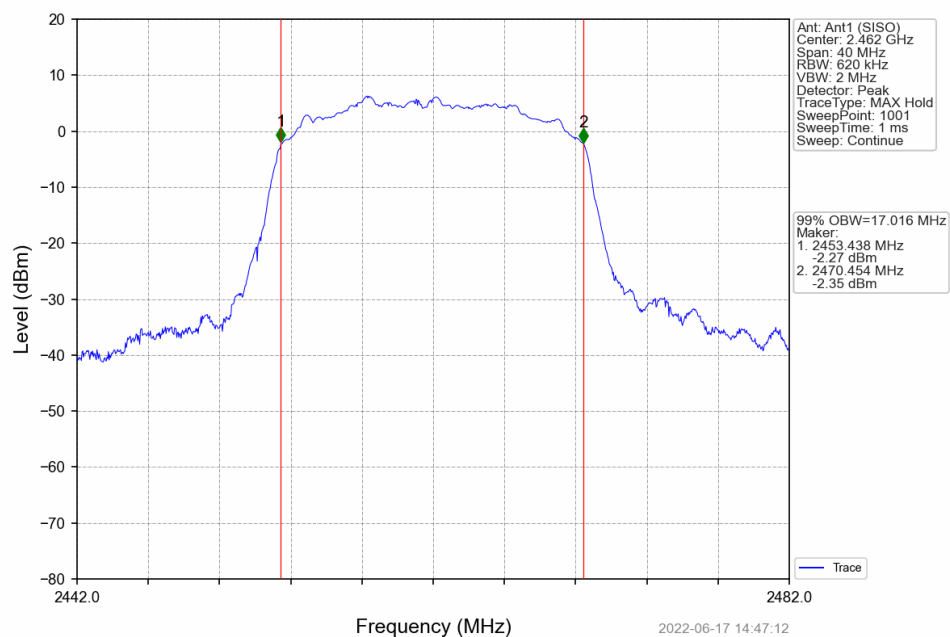
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



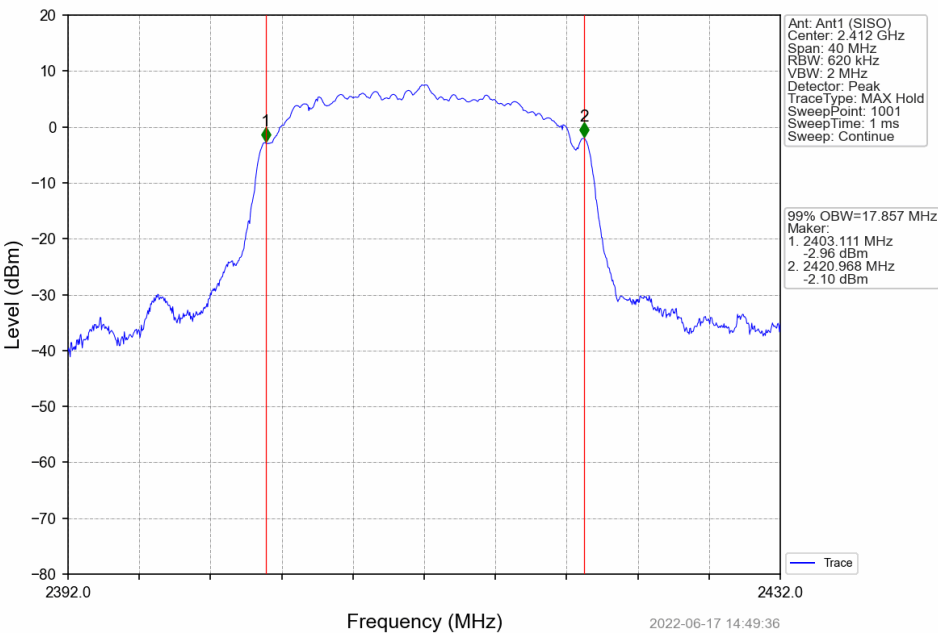
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



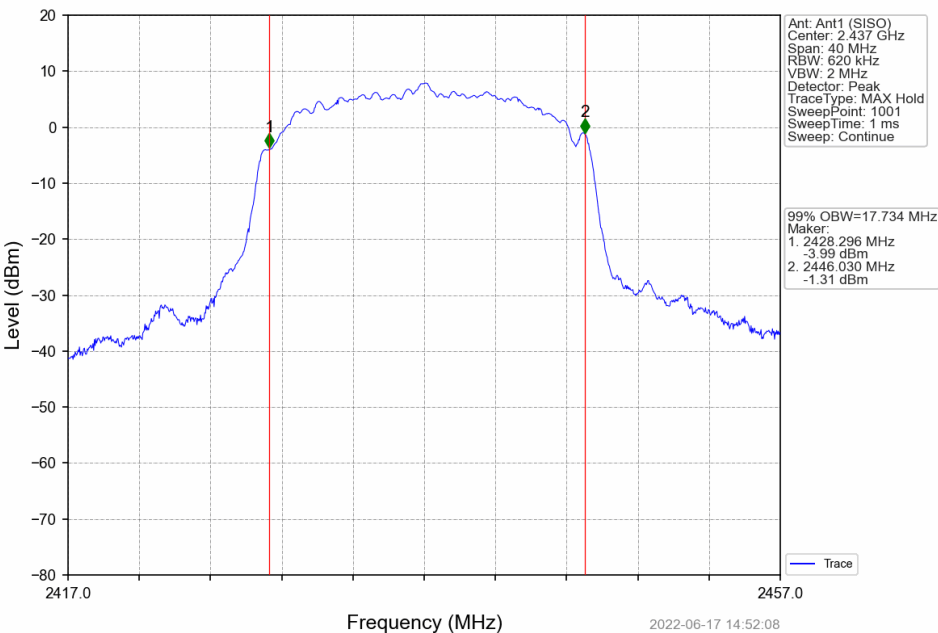
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



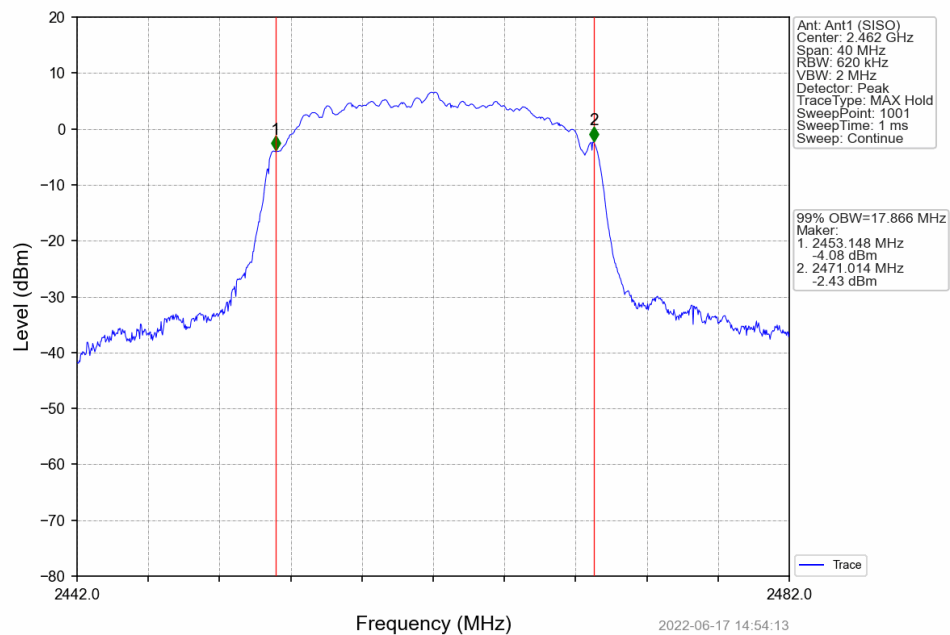
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



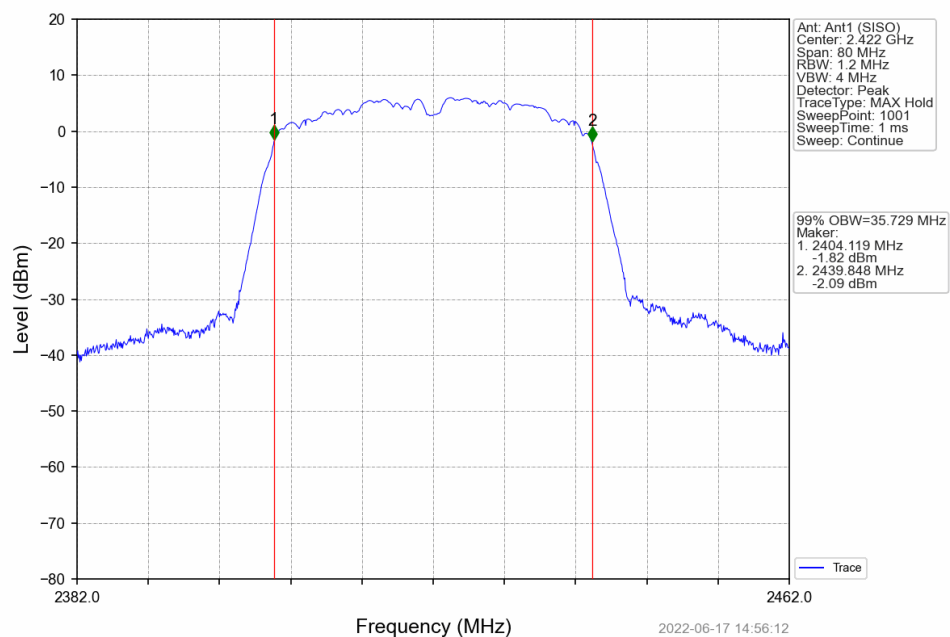
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



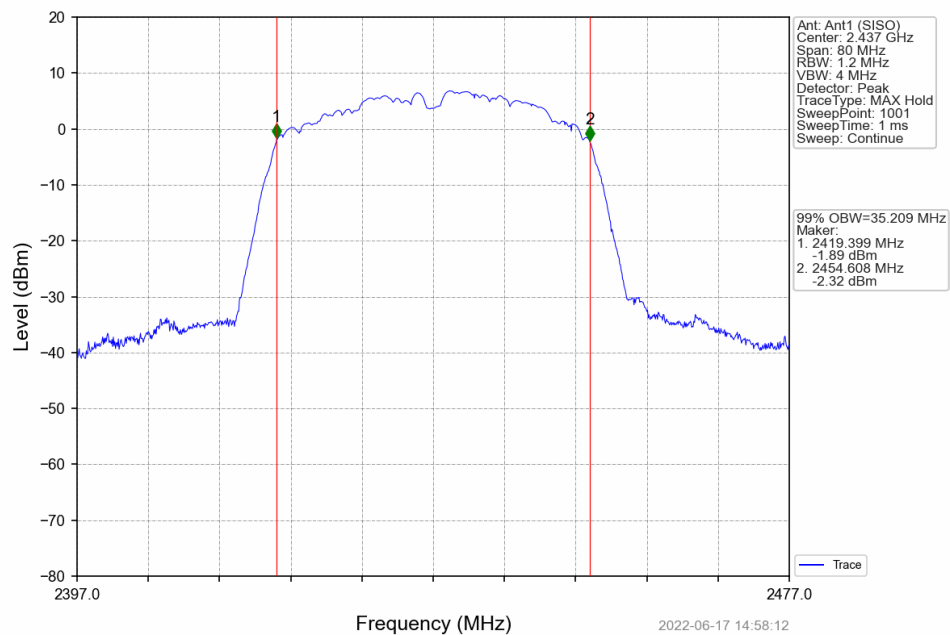
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



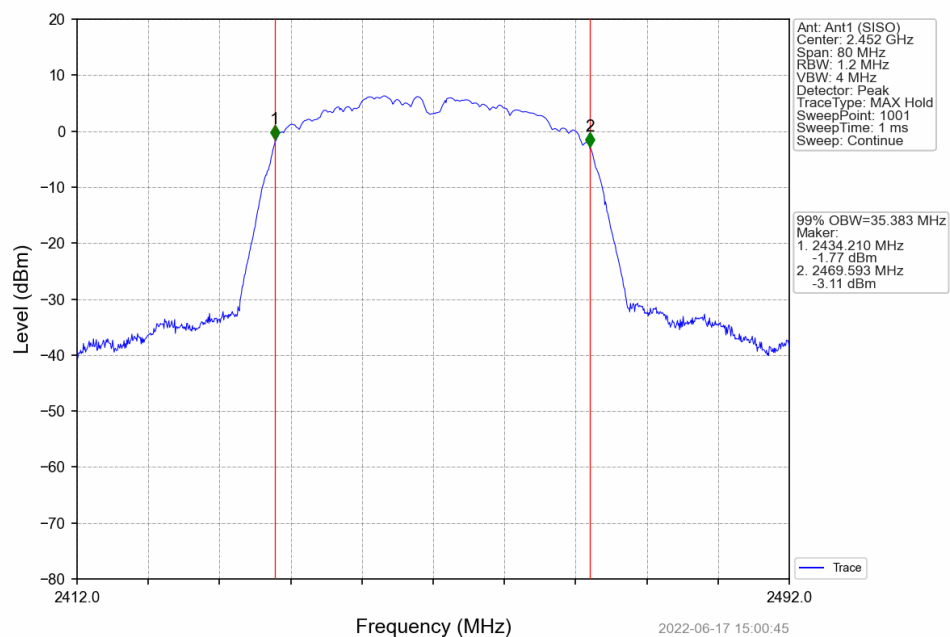
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV

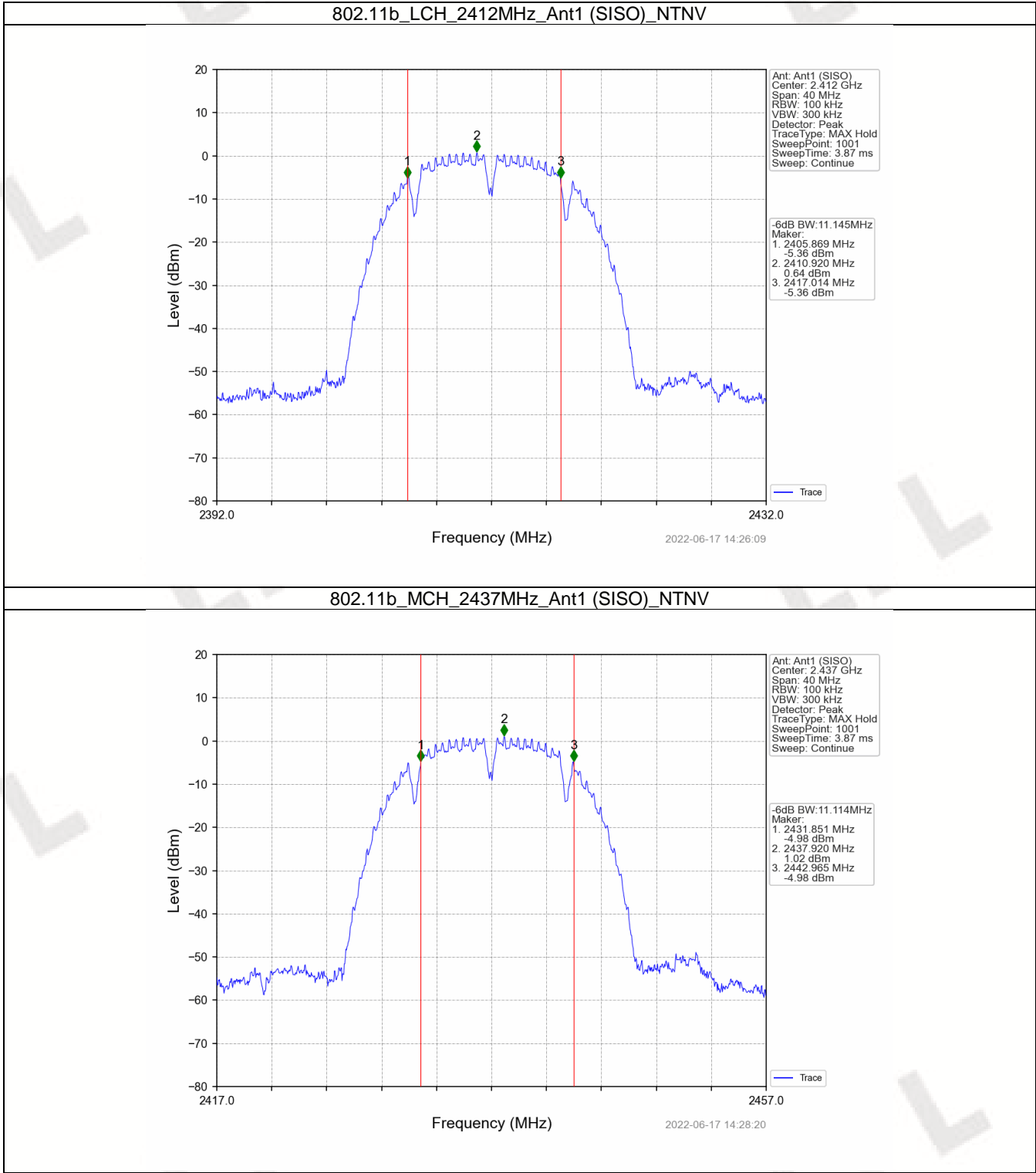


2.2 6dB BW

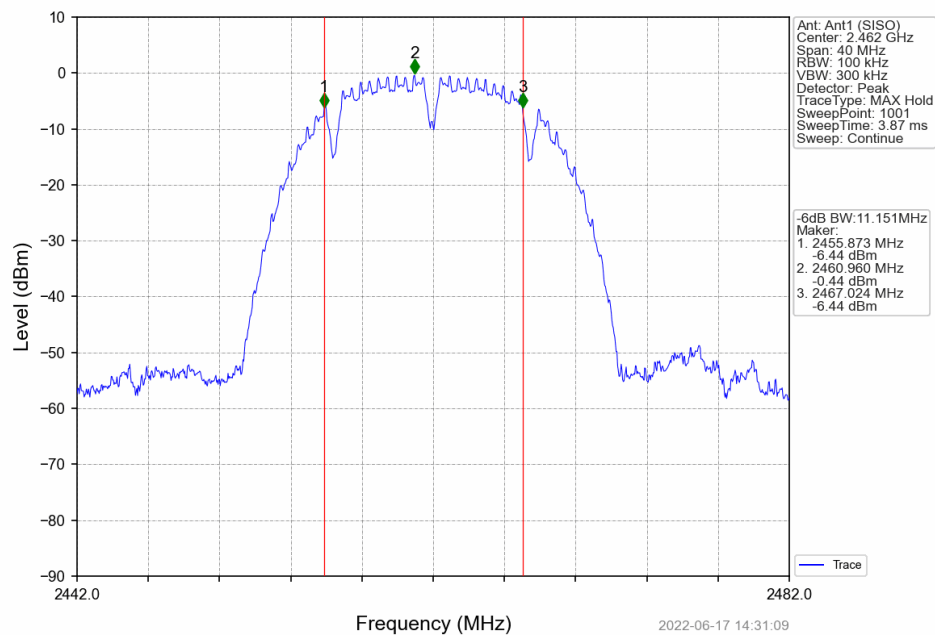
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	11.145	≥ 0.5	Pass
		2437	1	11.114	≥ 0.5	Pass
		2462	1	11.151	≥ 0.5	Pass
802.11g	SISO	2412	1	15.135	≥ 0.5	Pass
		2437	1	15.108	≥ 0.5	Pass
		2462	1	15.133	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	15.136	≥ 0.5	Pass
		2437	1	15.104	≥ 0.5	Pass
		2462	1	15.135	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.110	≥ 0.5	Pass
		2437	1	30.075	≥ 0.5	Pass
		2452	1	31.337	≥ 0.5	Pass

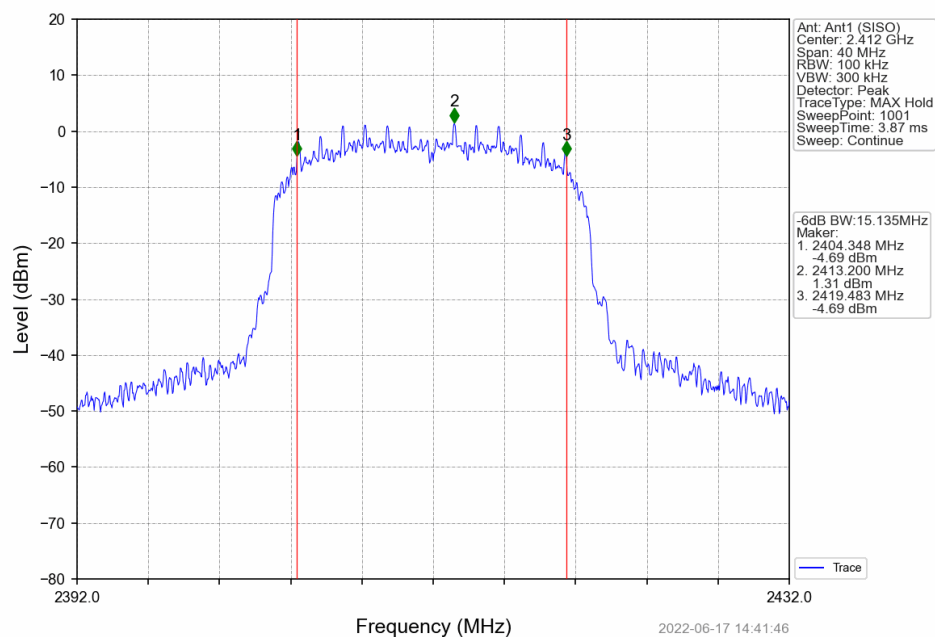
2.2.2 Test Graph



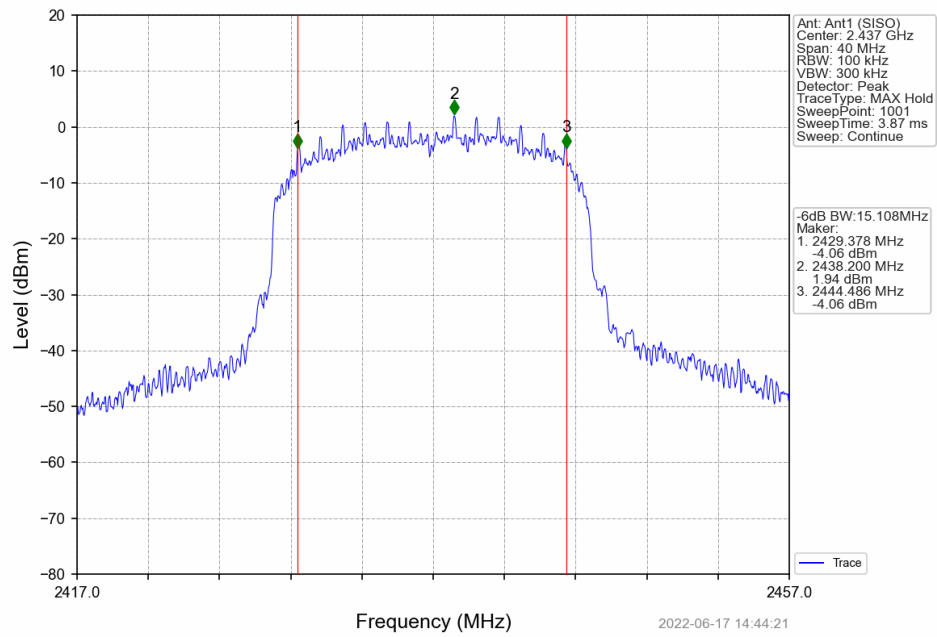
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



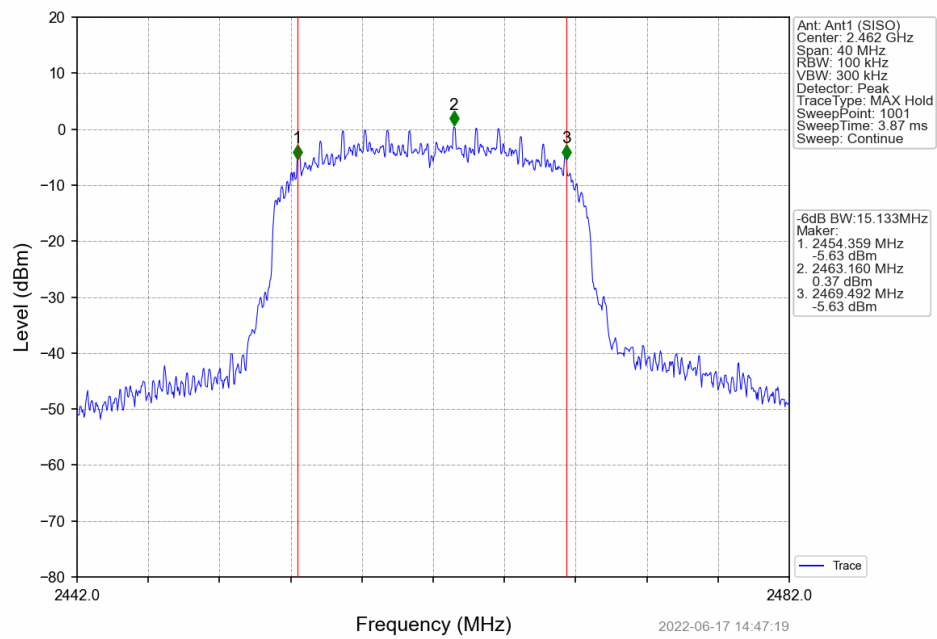
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



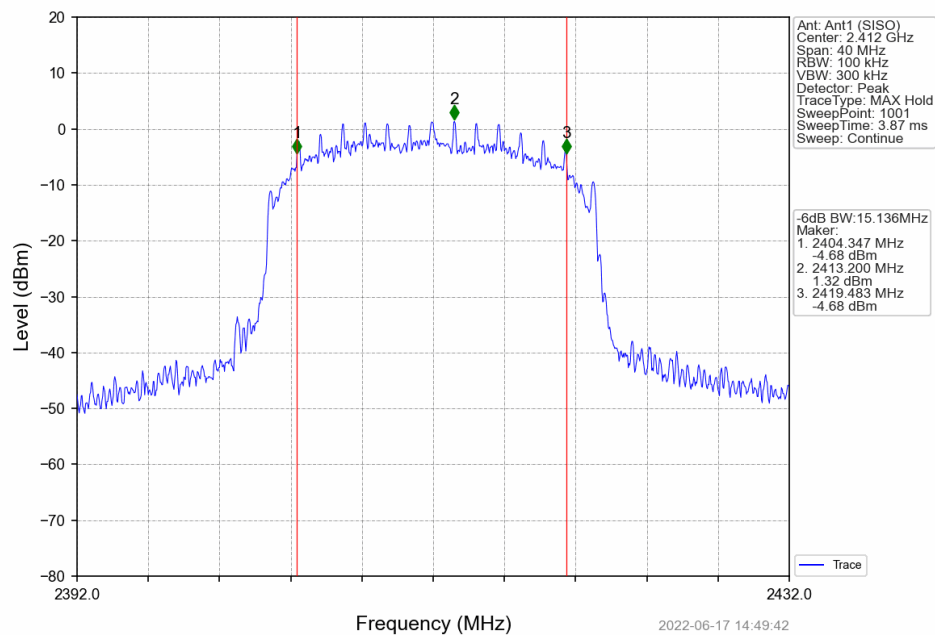
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



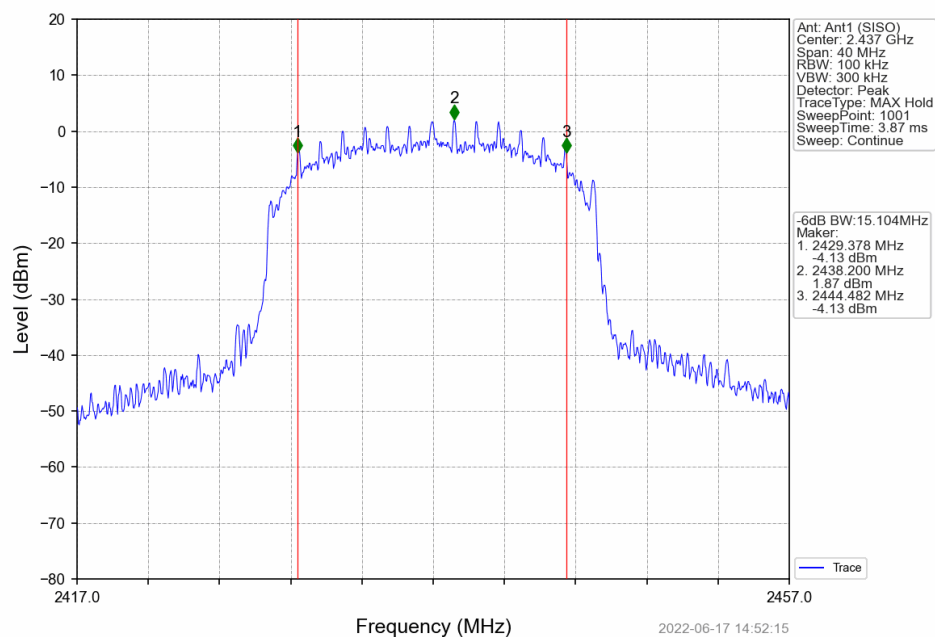
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



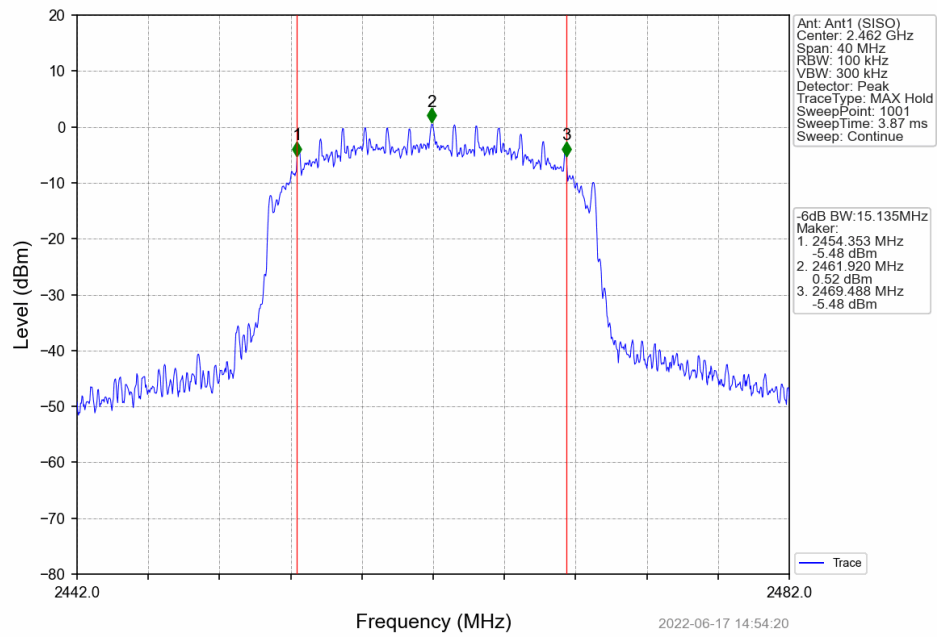
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



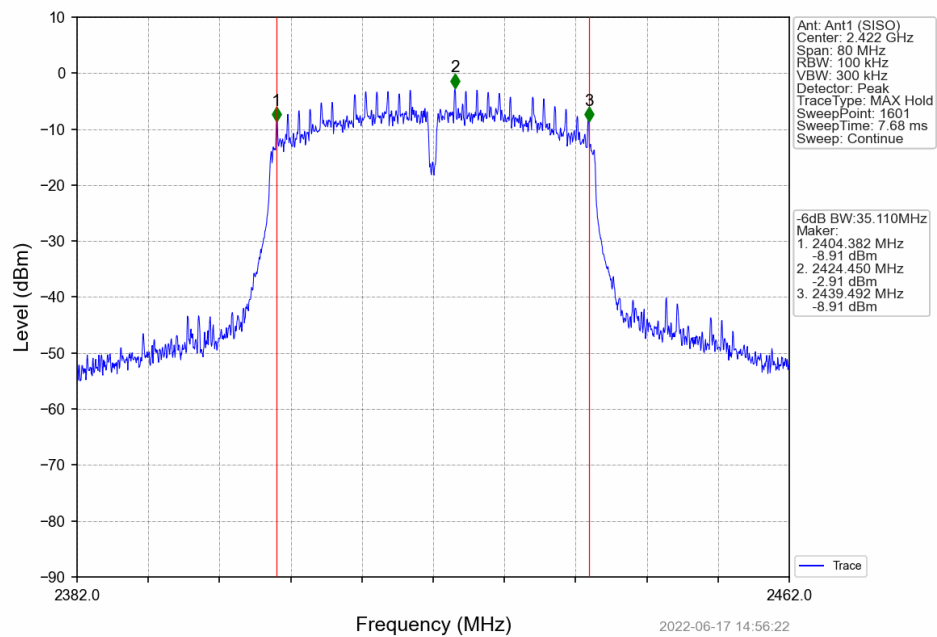
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



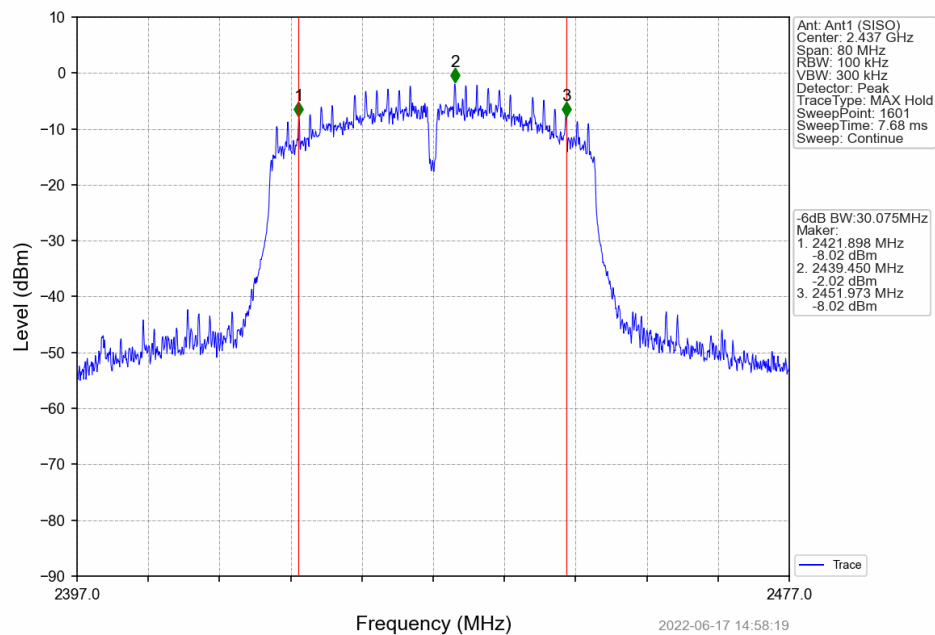
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



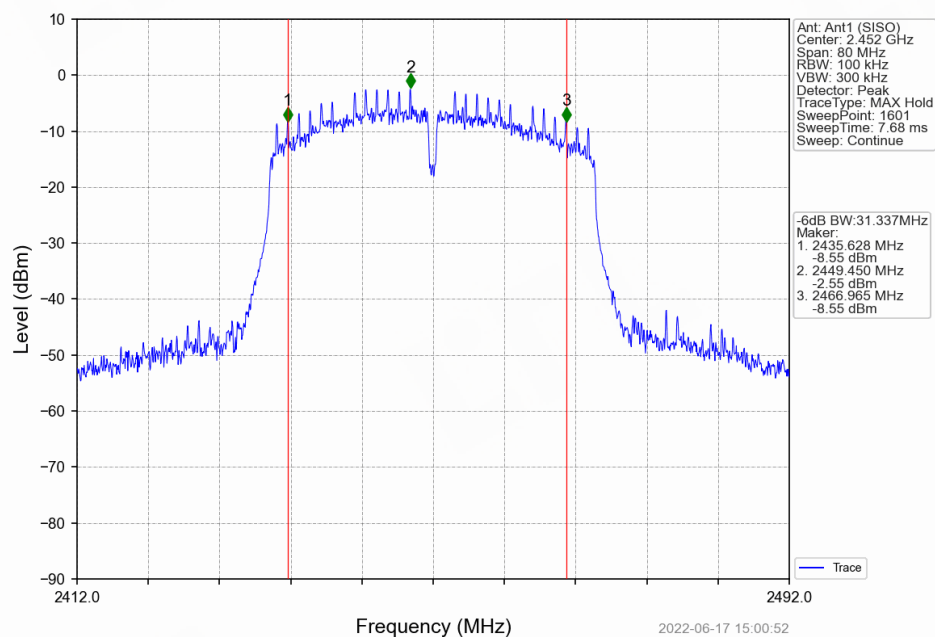
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



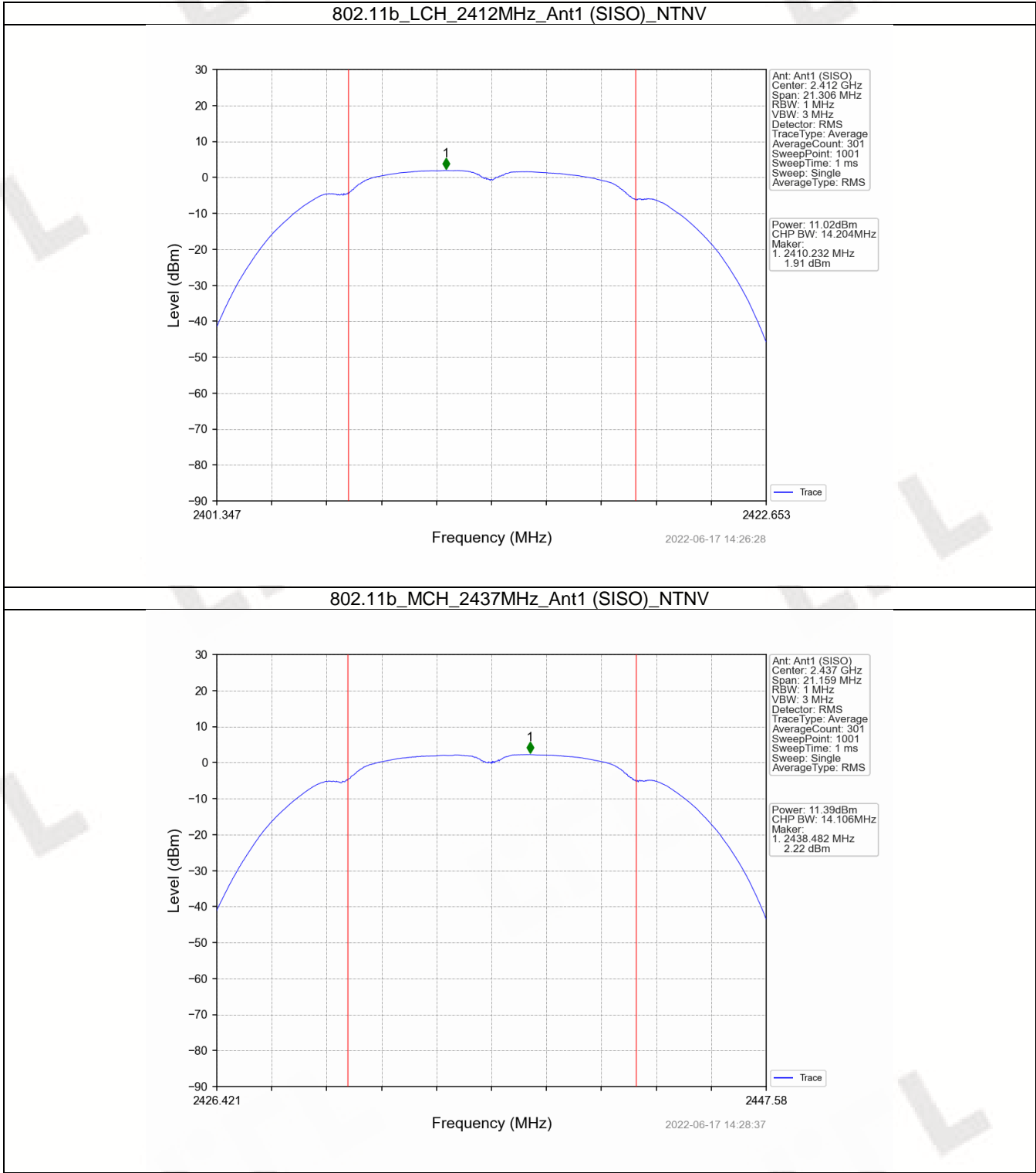
3. Maximum Conducted Output Power

3.1 Power

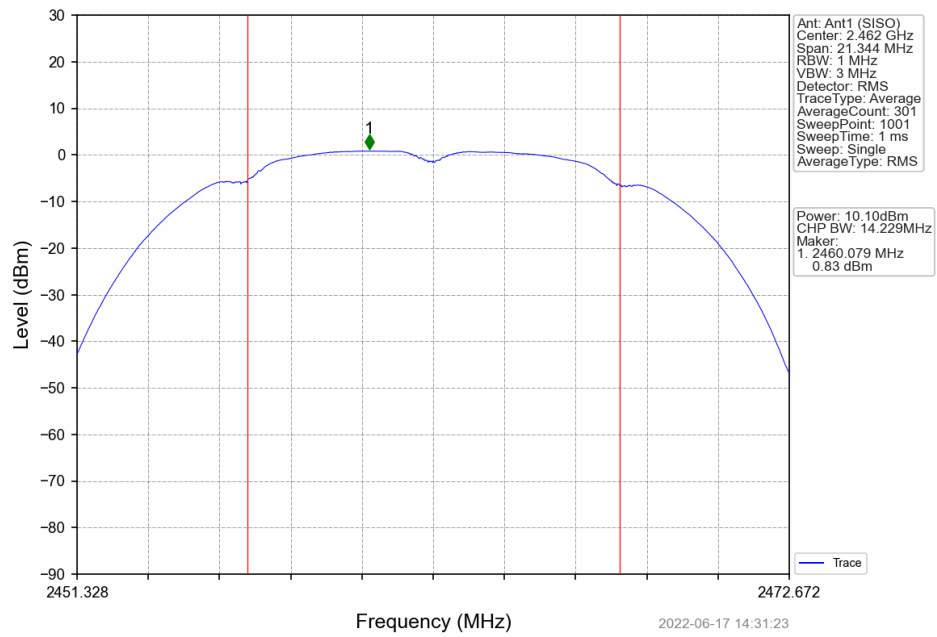
3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	11.02	<=30	Pass
		2437	11.39	<=30	Pass
		2462	10.10	<=30	Pass
802.11g	SISO	2412	11.64	<=30	Pass
		2437	11.89	<=30	Pass
		2462	10.71	<=30	Pass
802.11n (HT20)	SISO	2412	11.39	<=30	Pass
		2437	11.67	<=30	Pass
		2462	10.53	<=30	Pass
802.11n (HT40)	SISO	2422	10.12	<=30	Pass
		2437	10.29	<=30	Pass
		2452	9.93	<=30	Pass
Note1: Antenna Gain: Ant1: 2.21dBi;					

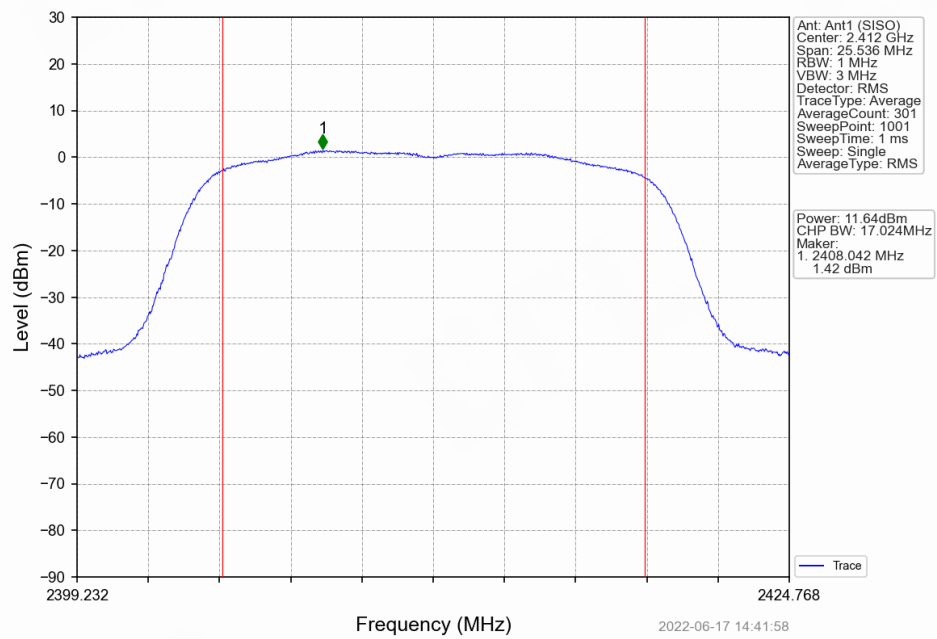
3.1.2 Test Graph

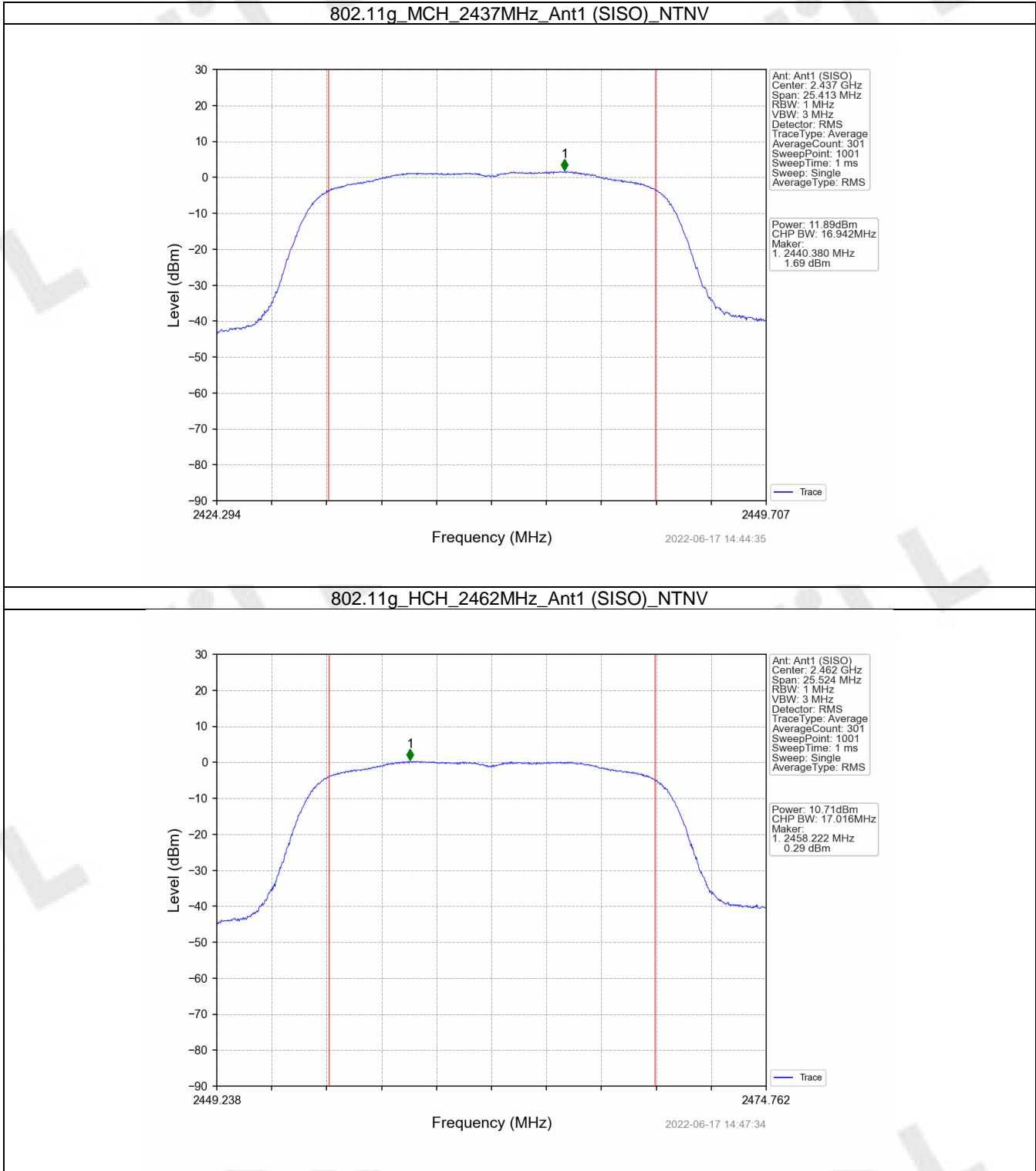


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

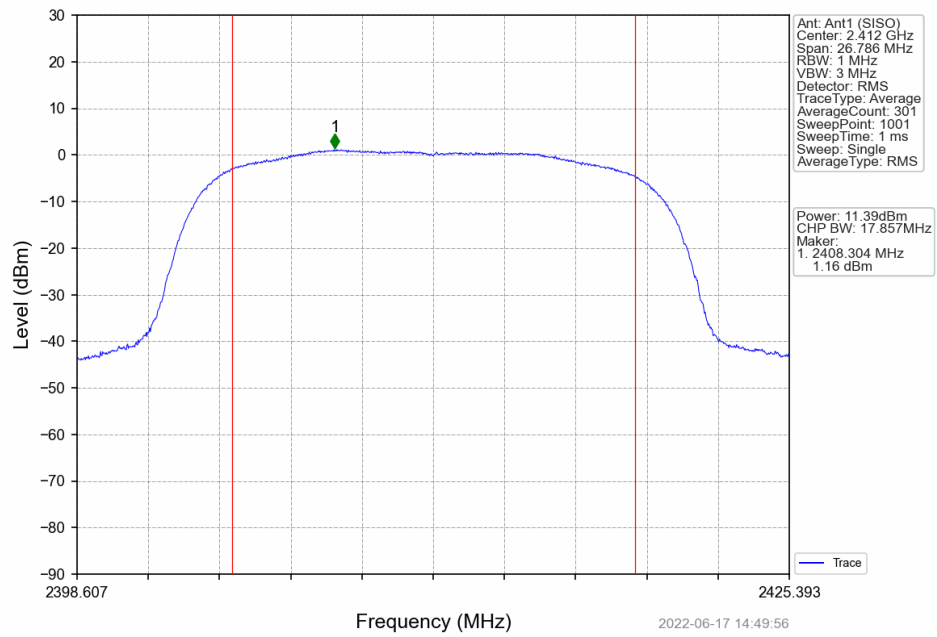


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

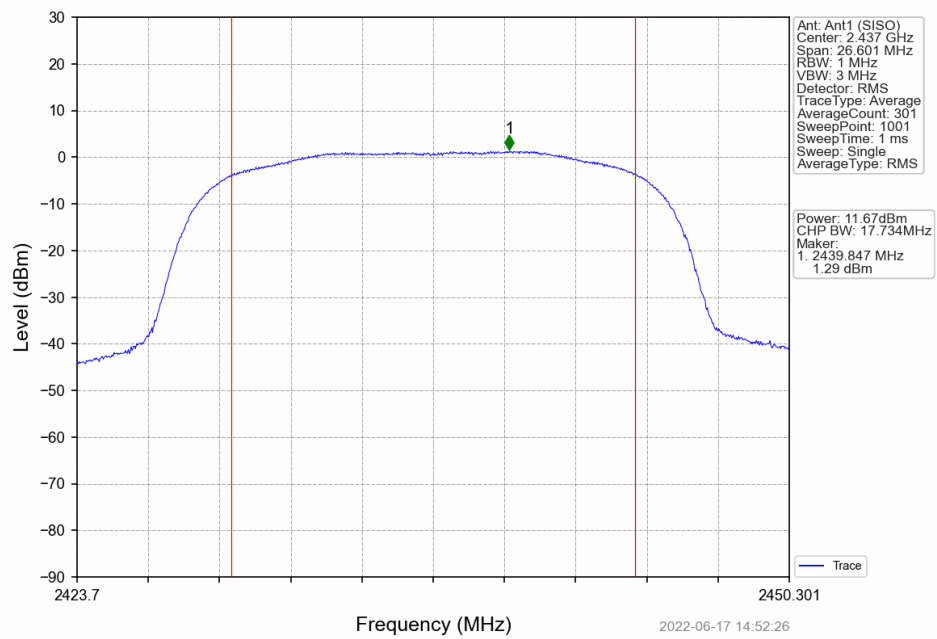




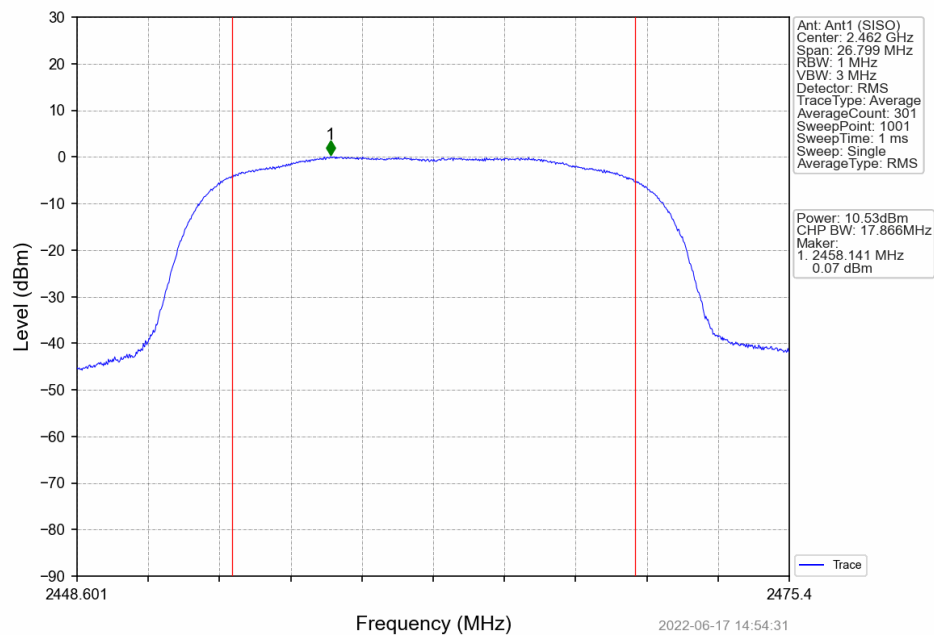
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



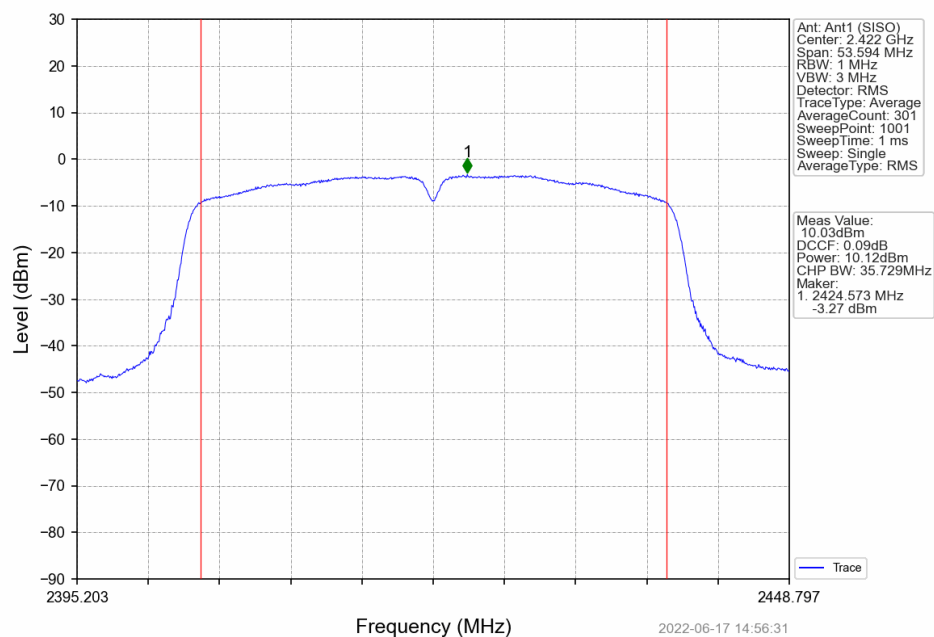
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



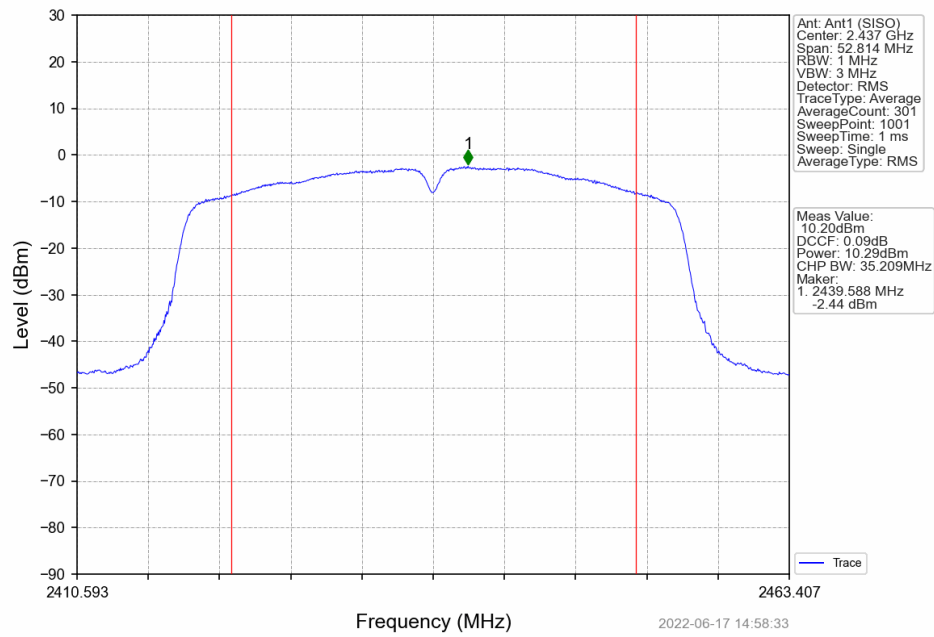
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



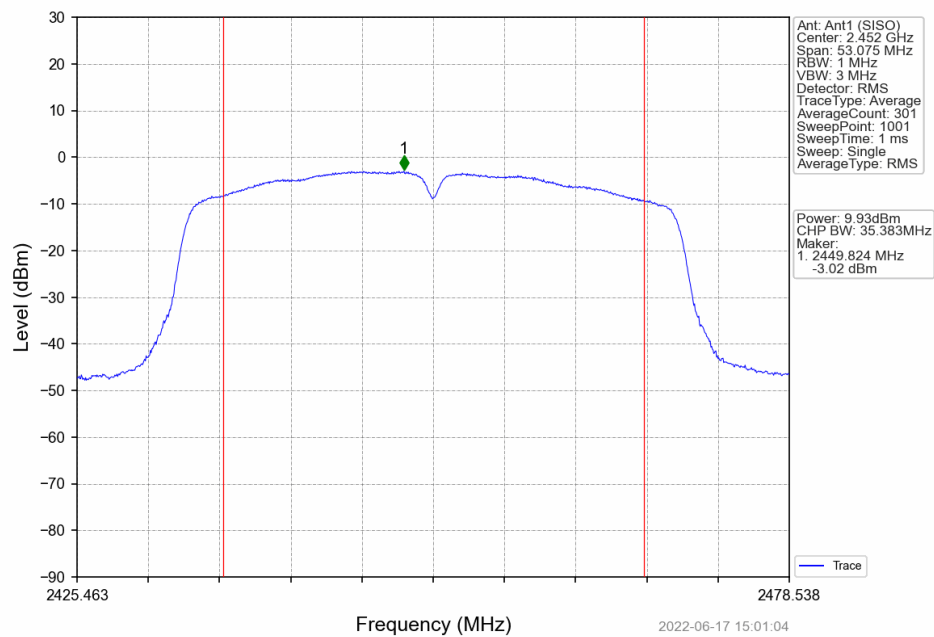
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



4. Maximum Power Spectral Density

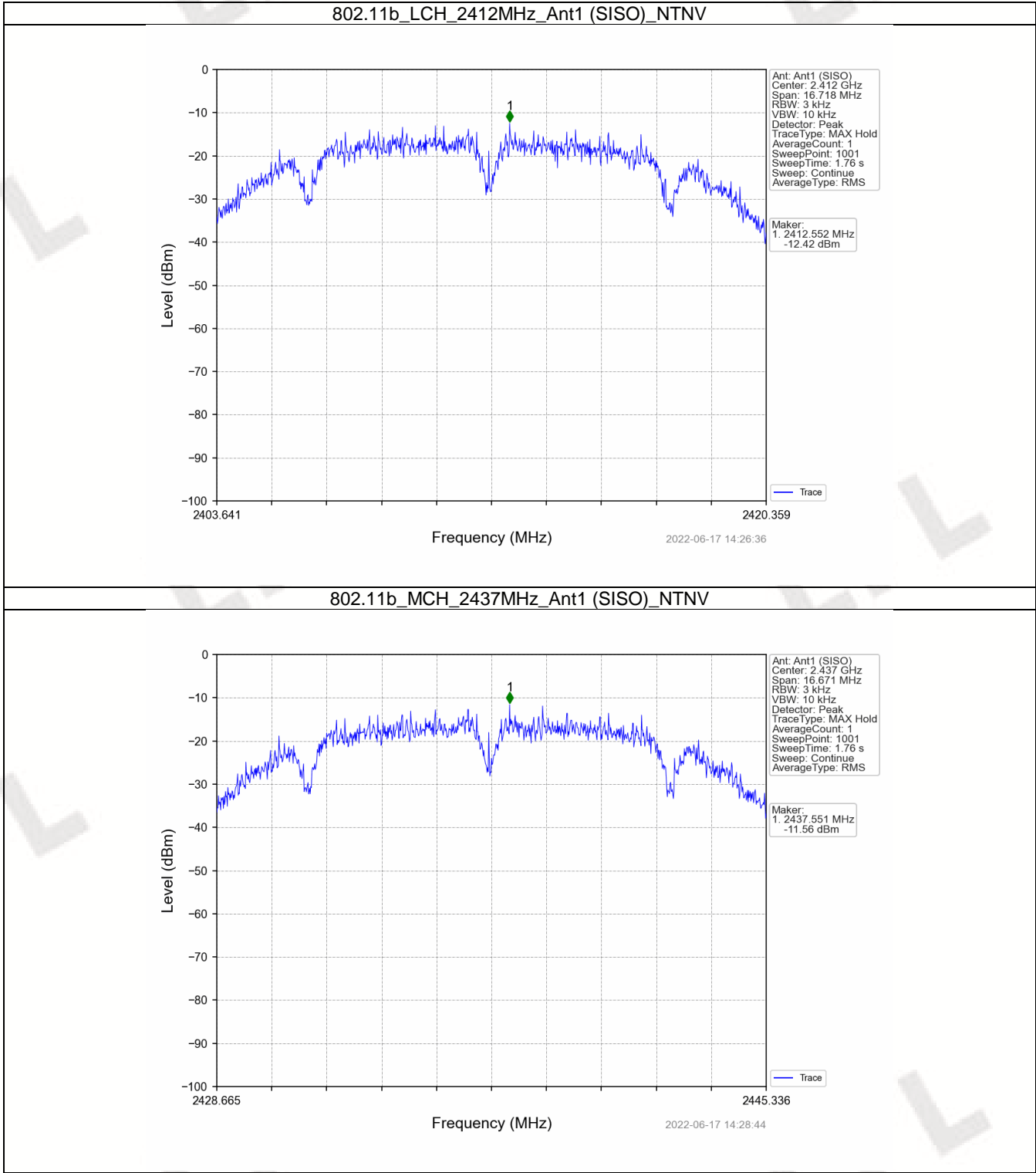
4.1 PSD

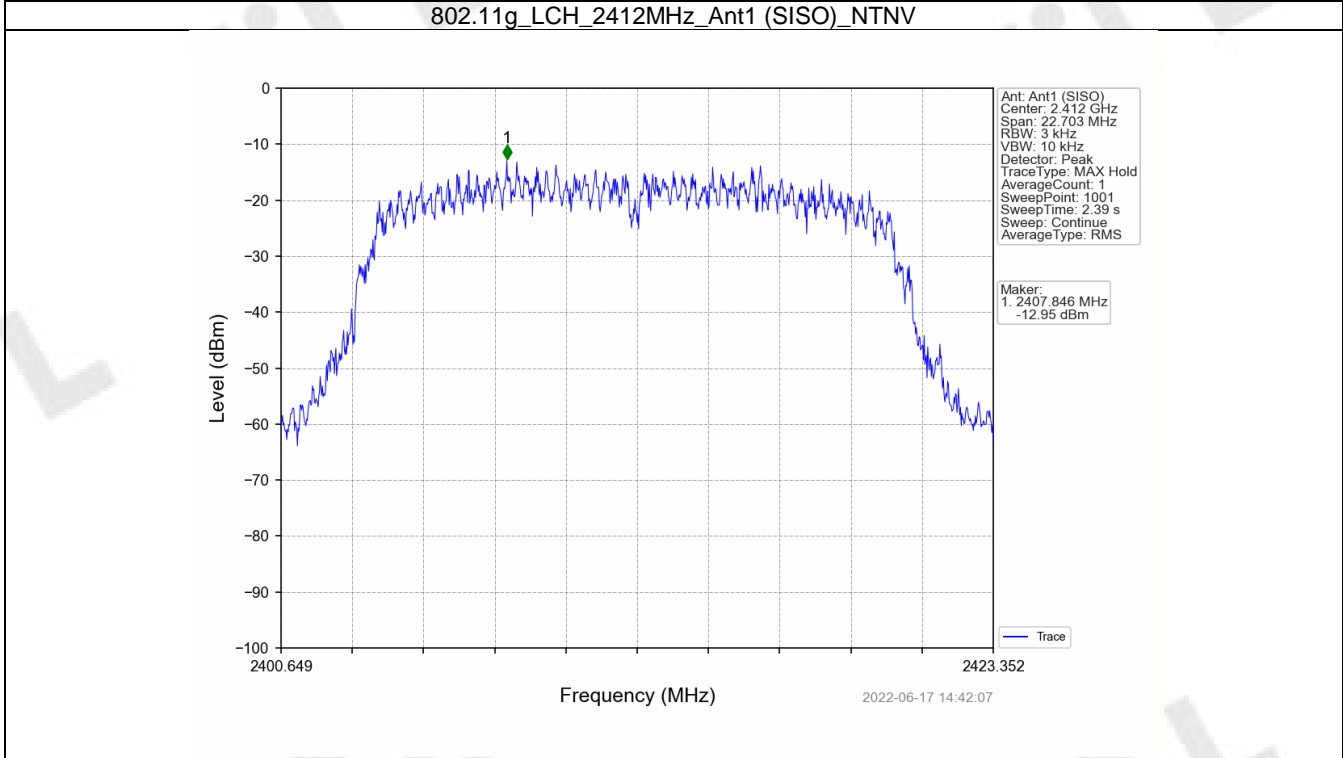
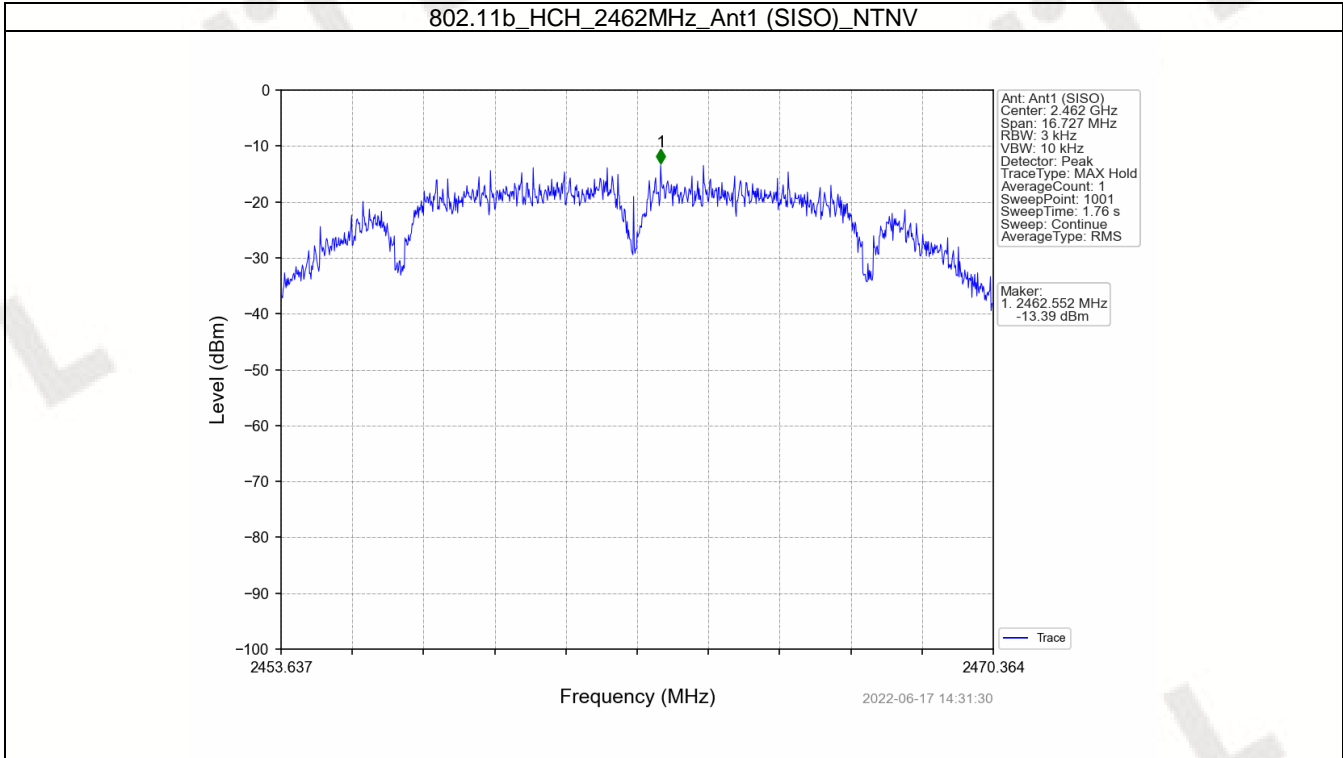
4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-12.42	<=8	Pass
		2437	-11.56	<=8	Pass
		2462	-13.39	<=8	Pass
802.11g	SISO	2412	-12.95	<=8	Pass
		2437	-12.43	<=8	Pass
		2462	-13.93	<=8	Pass
802.11n (HT20)	SISO	2412	-13.71	<=8	Pass
		2437	-13.40	<=8	Pass
		2462	-14.79	<=8	Pass
802.11n (HT40)	SISO	2422	-16.89	<=8	Pass
		2437	-15.86	<=8	Pass
		2452	-16.15	<=8	Pass

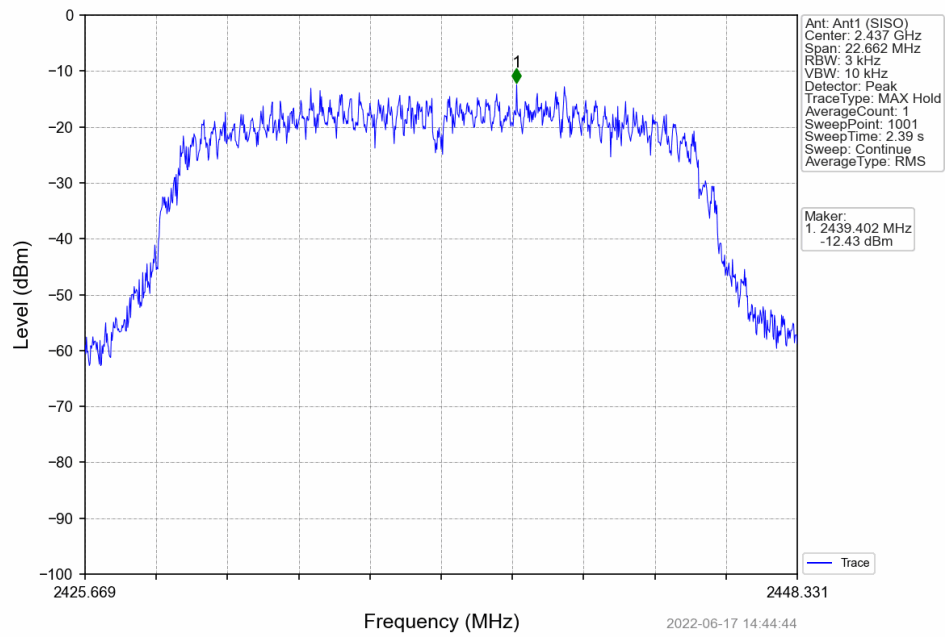
Note1: Antenna Gain: Ant1: 2.21dBi;

4.1.2 Test Graph

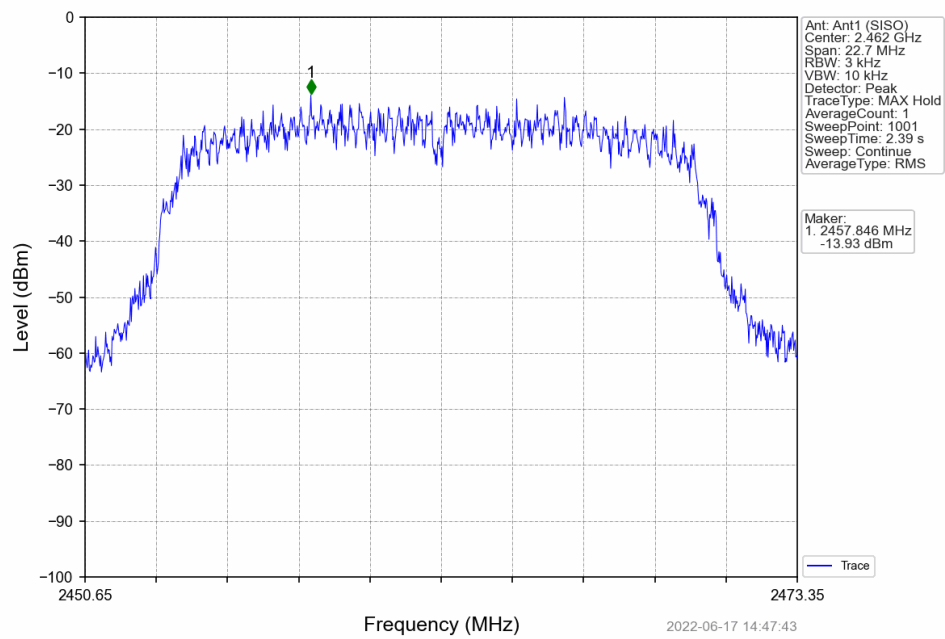




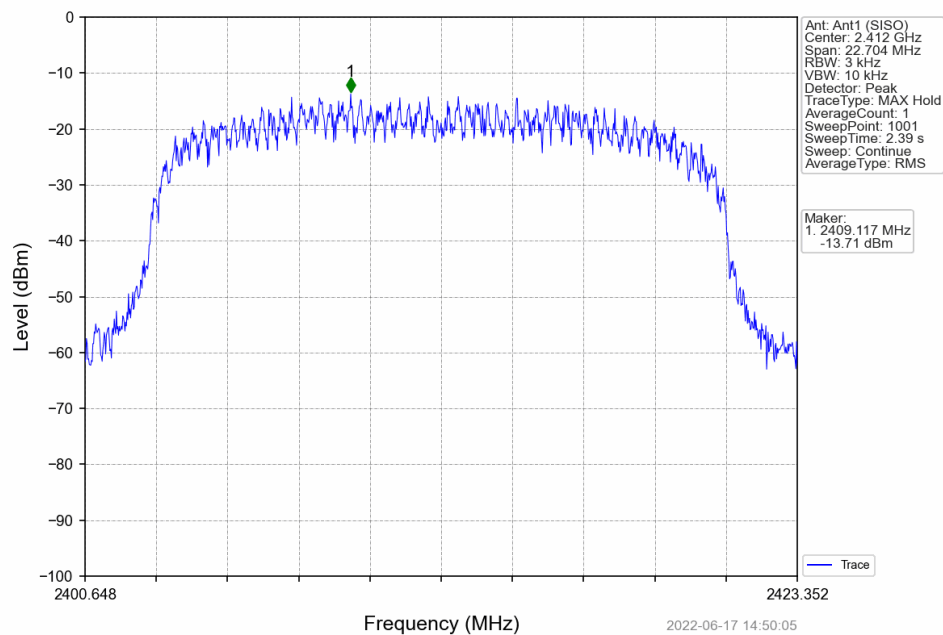
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



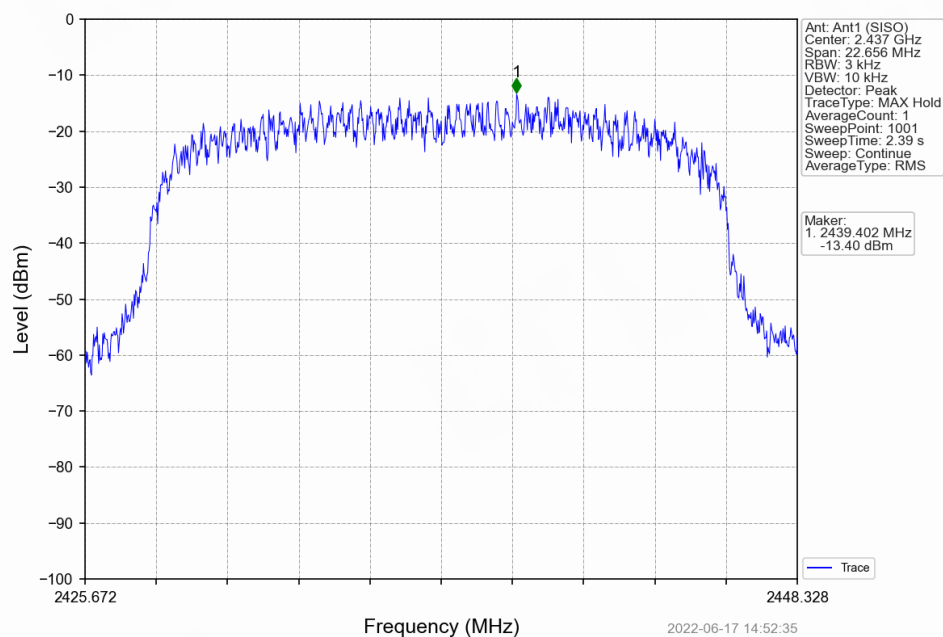
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



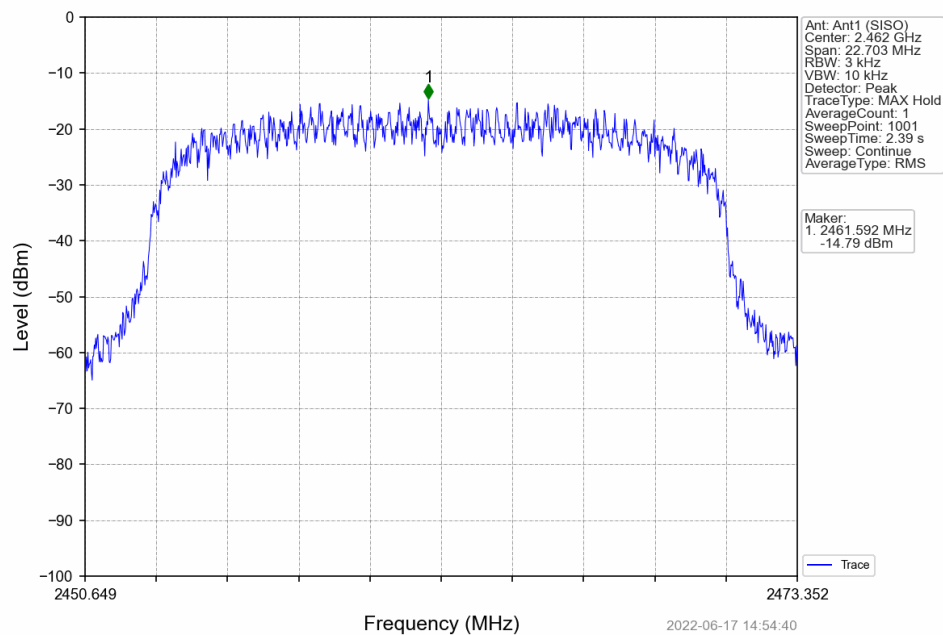
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



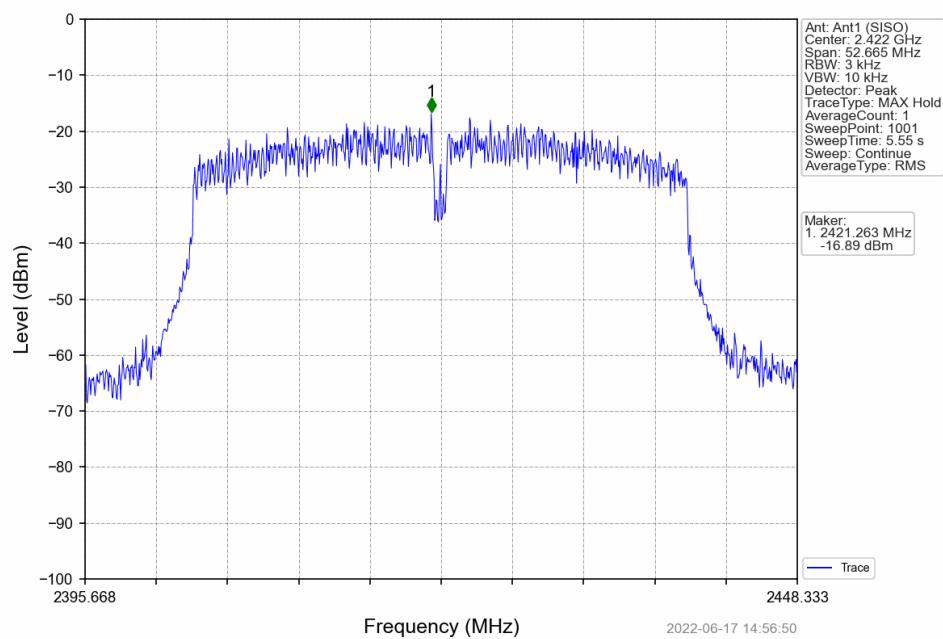
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



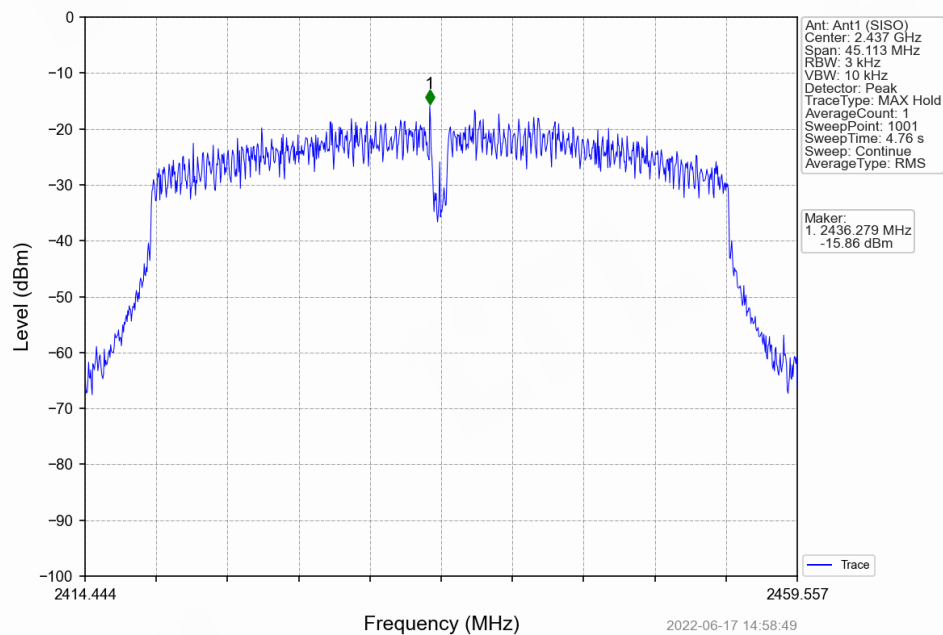
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



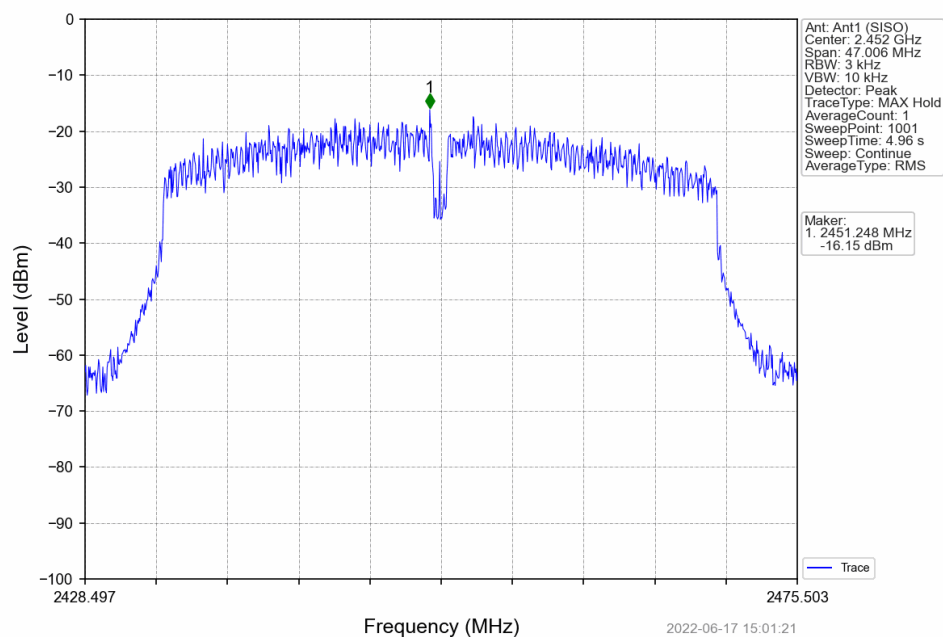
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Ref

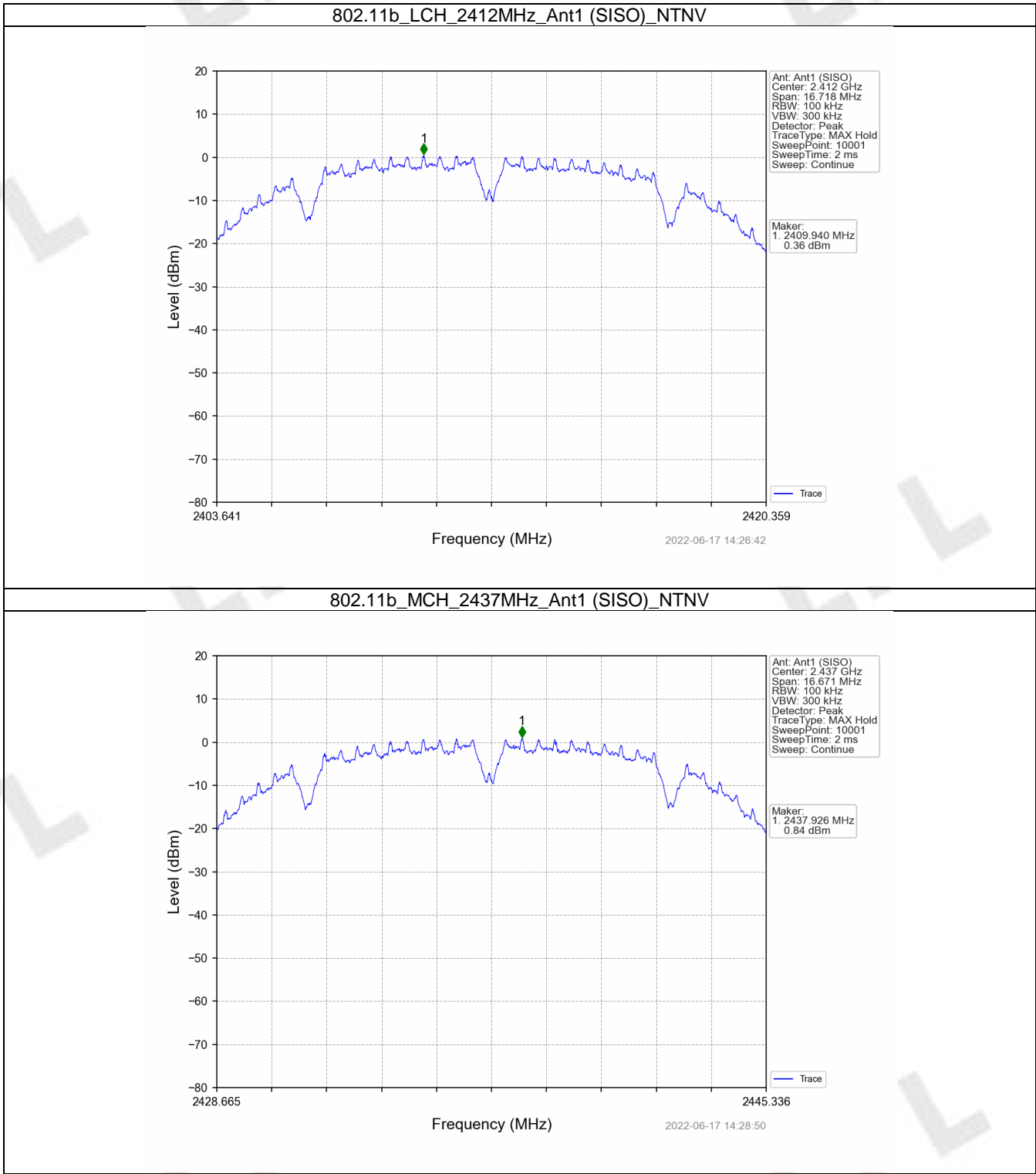
5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	0.36
		2437	1	0.84
		2462	1	-0.59
802.11g	SISO	2412	1	1.13
		2437	1	1.73
		2462	1	0.27
802.11n (HT20)	SISO	2412	1	1.04
		2437	1	1.74
		2462	1	0.30
802.11n (HT40)	SISO	2422	1	-3.09
		2437	1	-2.14
		2452	1	-2.58

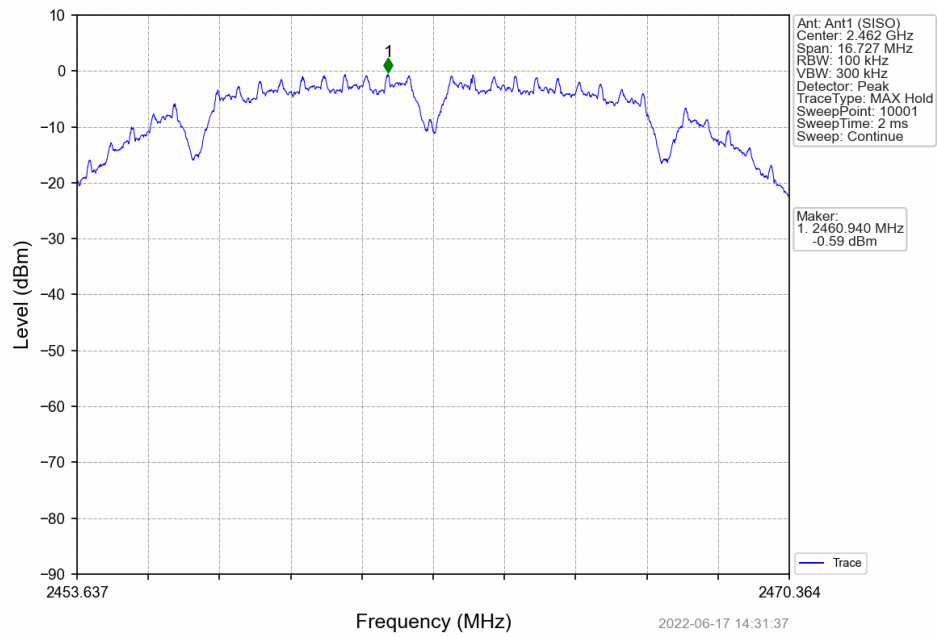
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.

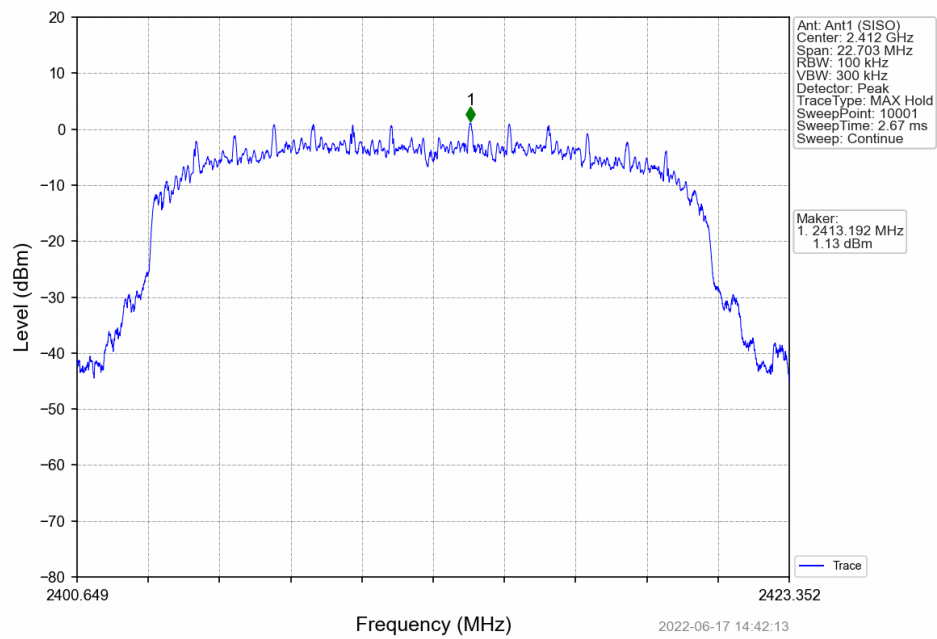
5.1.2 Test Graph



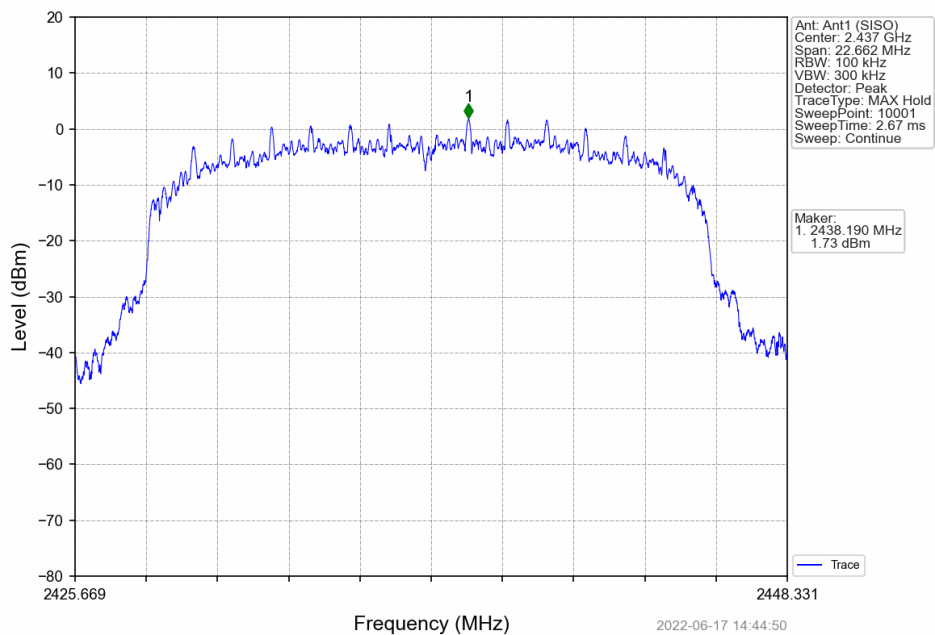
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



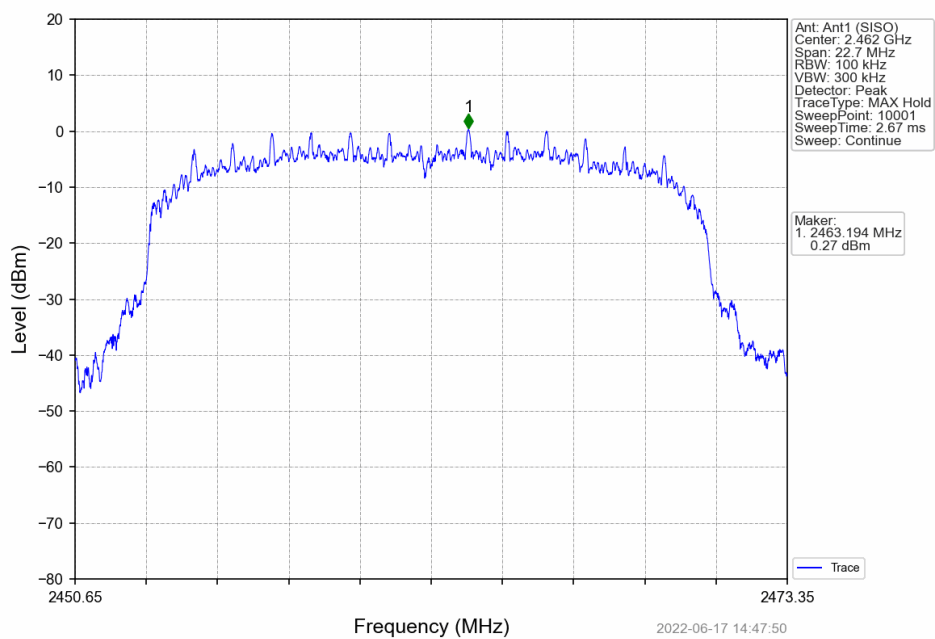
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



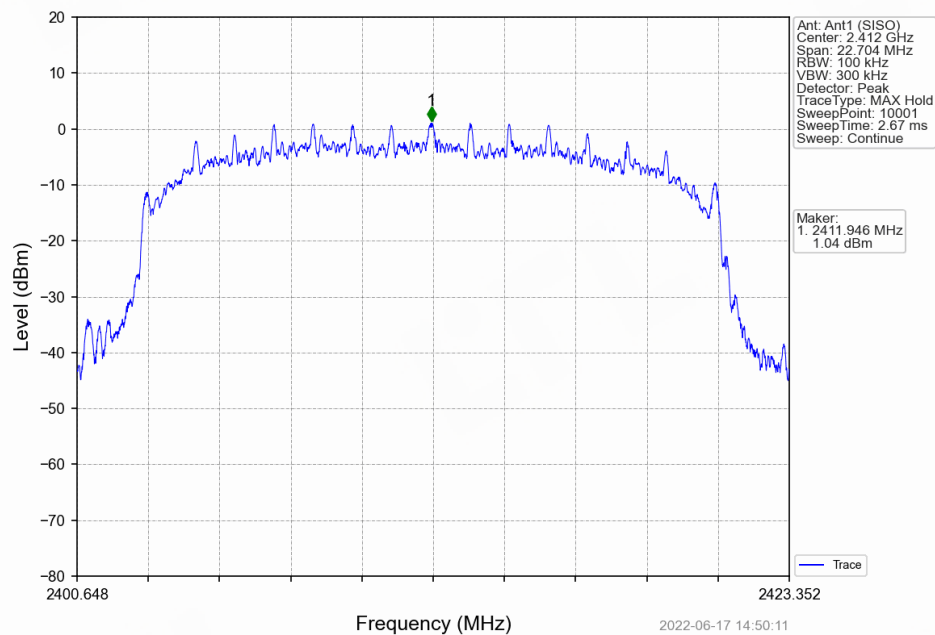
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



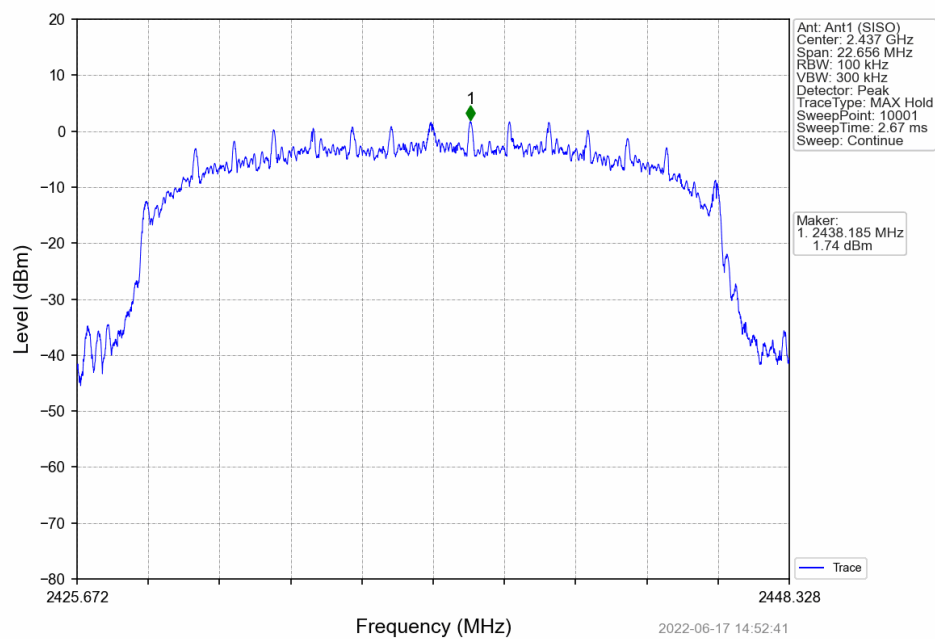
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



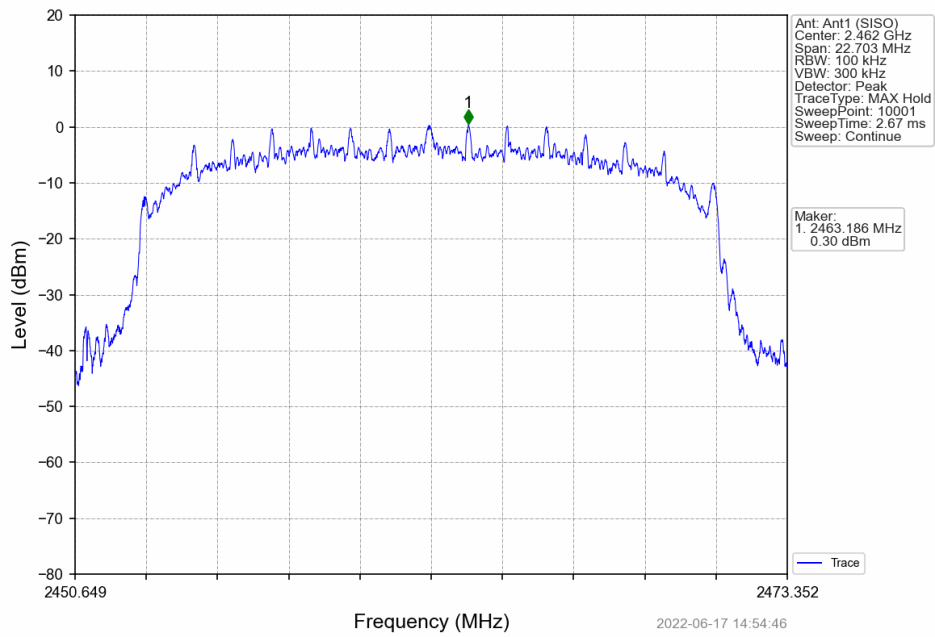
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



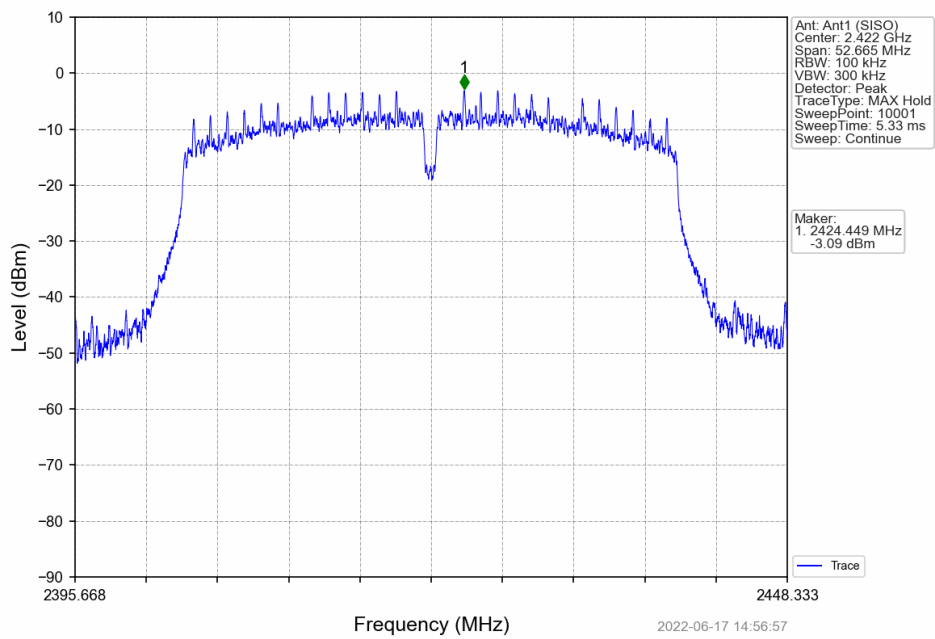
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



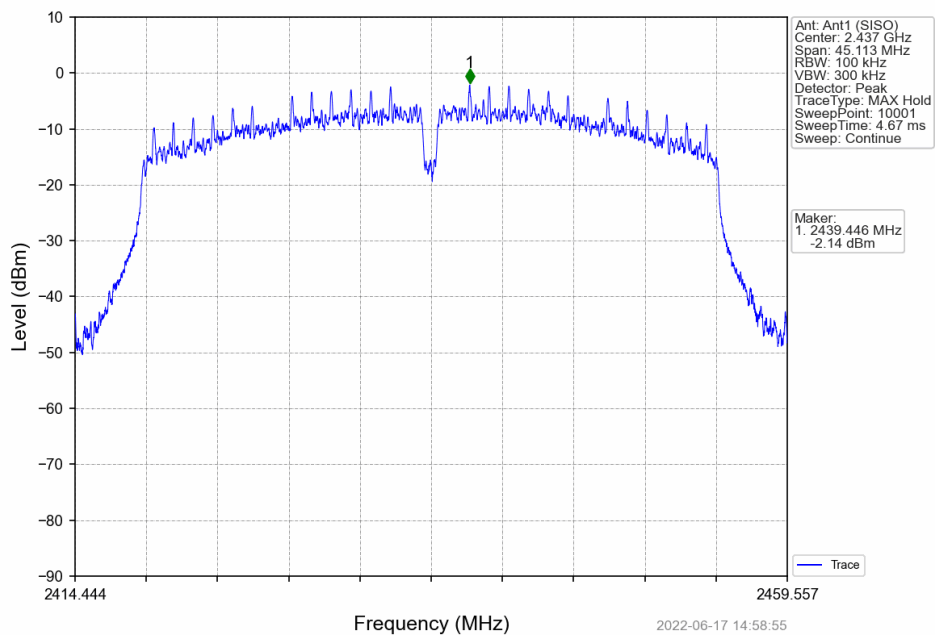
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



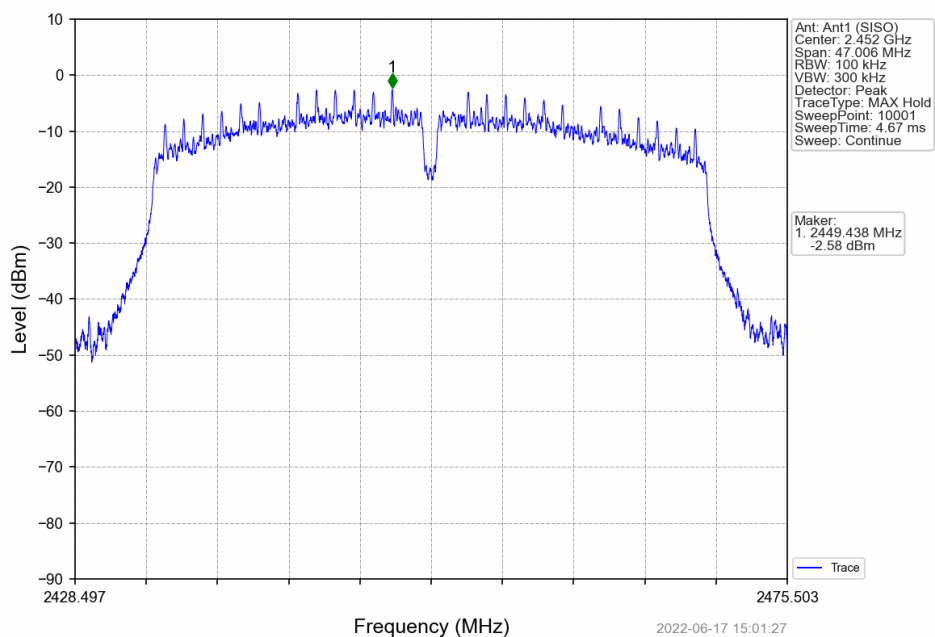
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



5.2 CSE

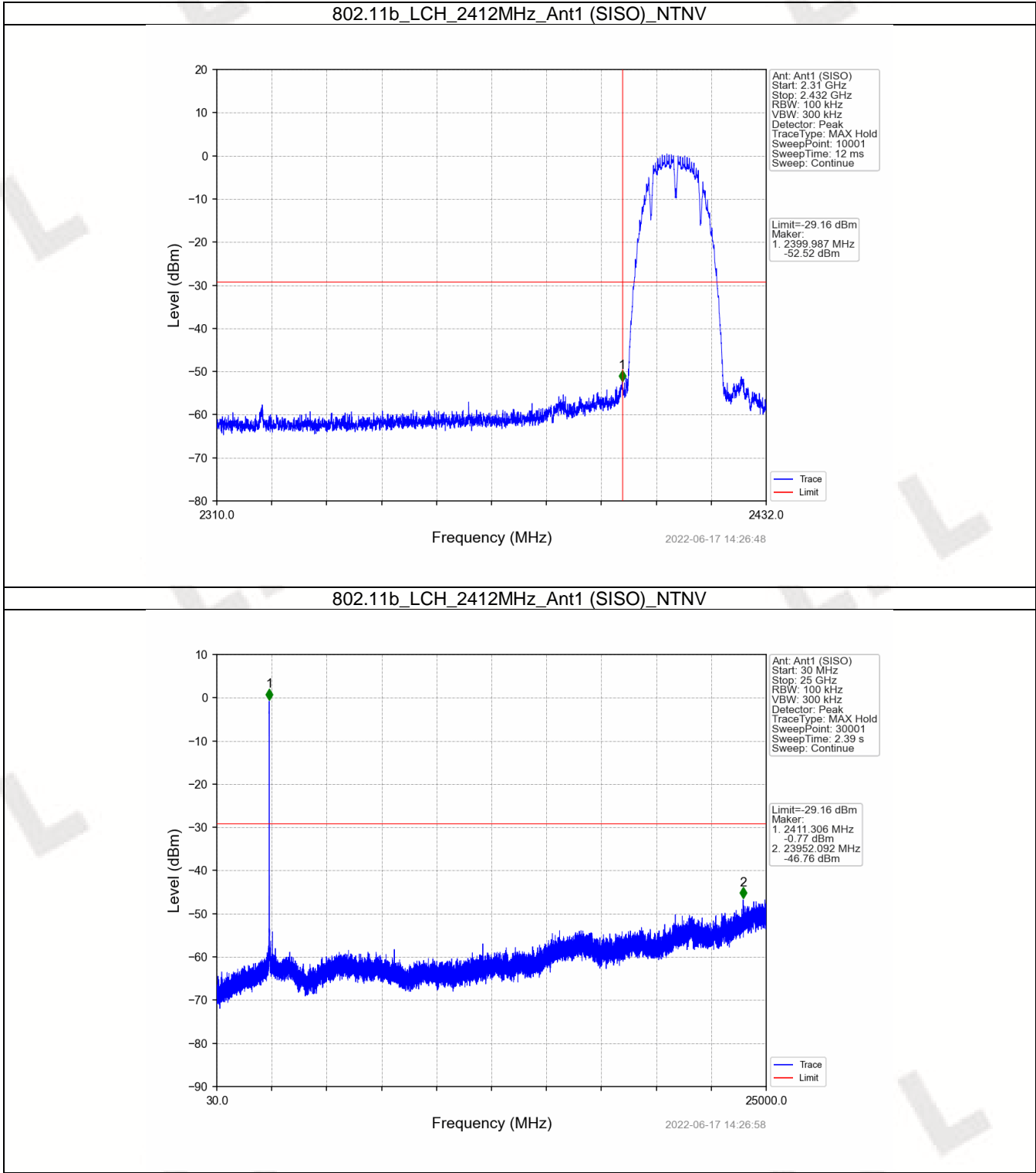
5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	0.84	-29.16	Pass
		2437	1	0.84	-29.16	Pass
		2462	1	0.84	-29.16	Pass
802.11g	SISO	2412	1	1.73	-28.27	Pass
		2437	1	1.73	-28.27	Pass
		2462	1	1.73	-28.27	Pass
802.11n (HT20)	SISO	2412	1	1.74	-28.26	Pass
		2437	1	1.74	-28.26	Pass
		2462	1	1.74	-28.26	Pass
802.11n (HT40)	SISO	2422	1	-2.14	-32.14	Pass
		2437	1	-2.14	-32.14	Pass
		2452	1	-2.14	-32.14	Pass

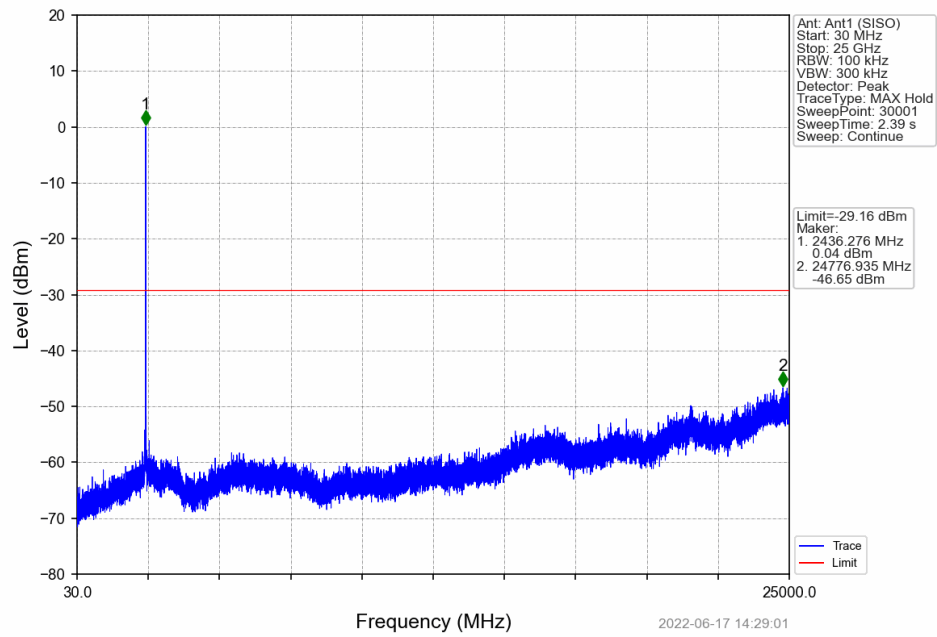
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.

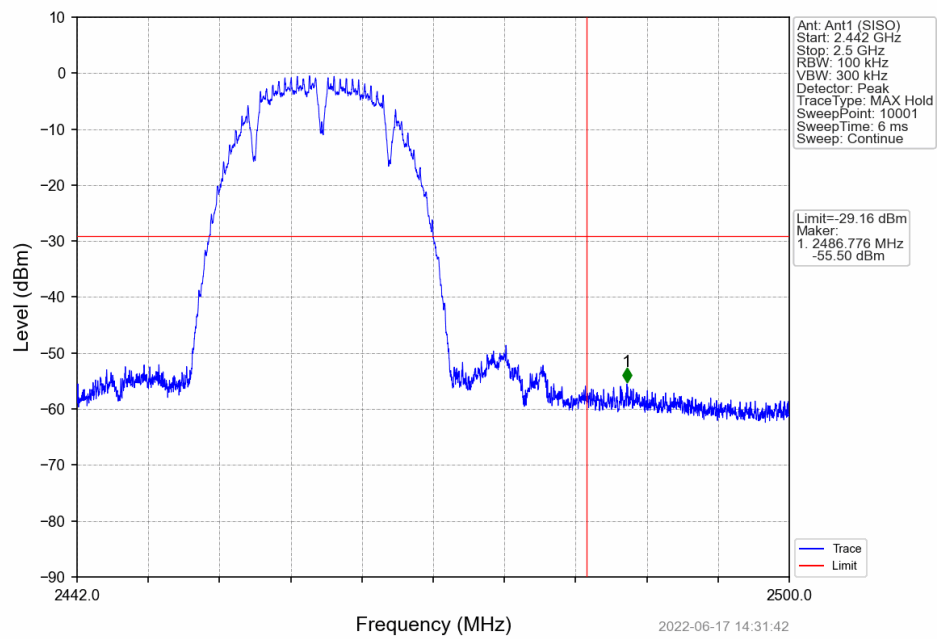
5.2.2 Test Graph



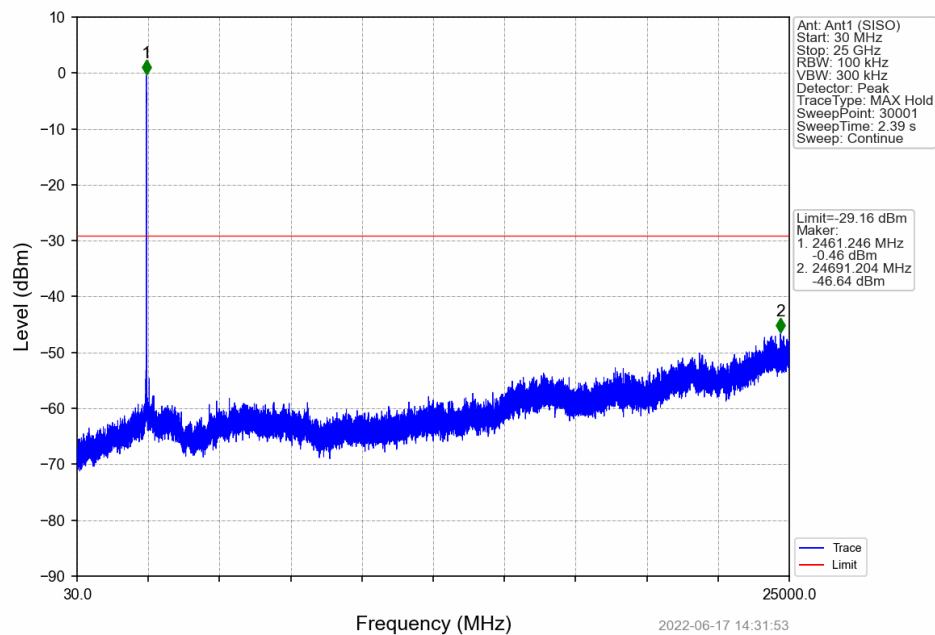
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



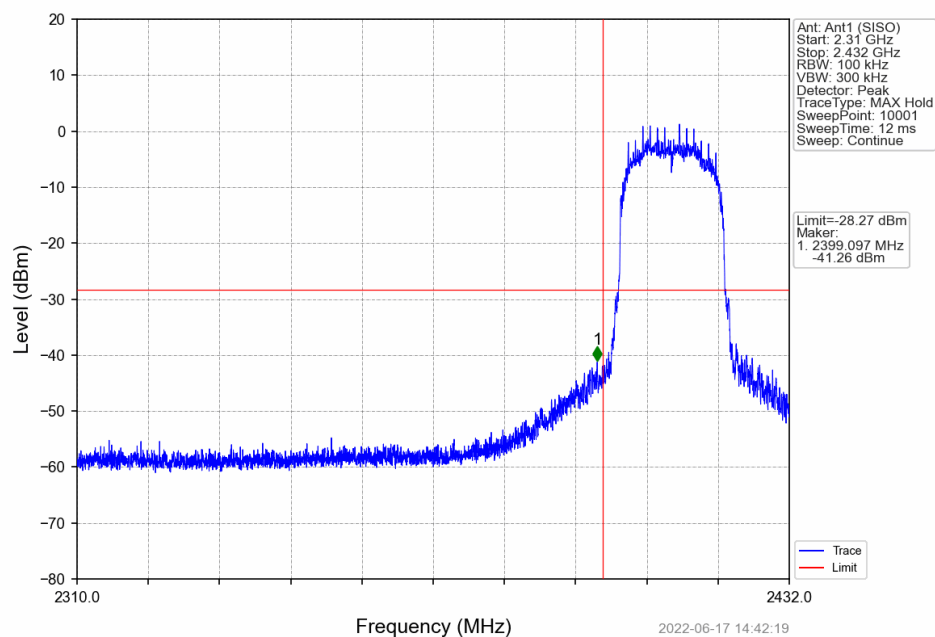
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



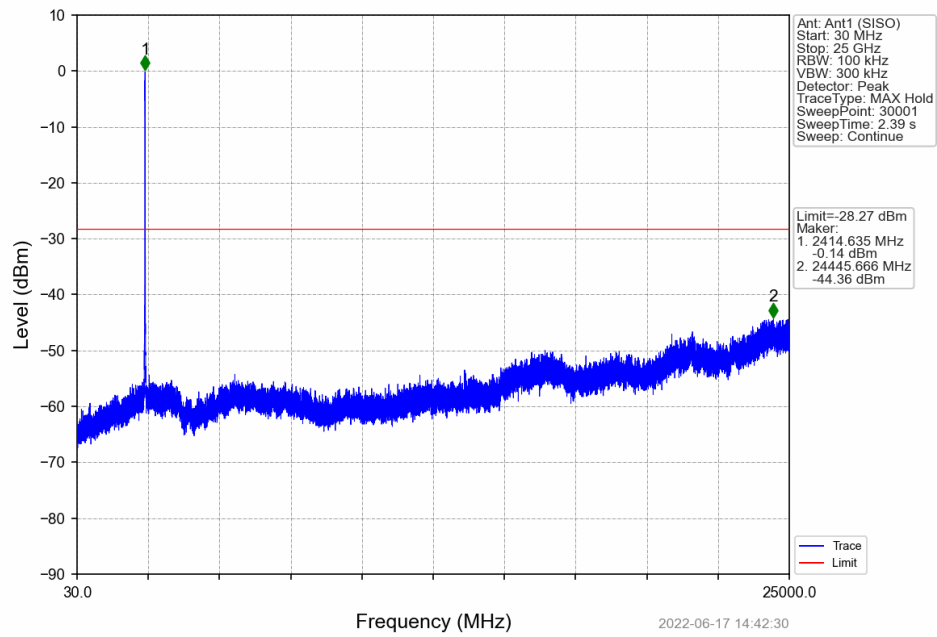
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



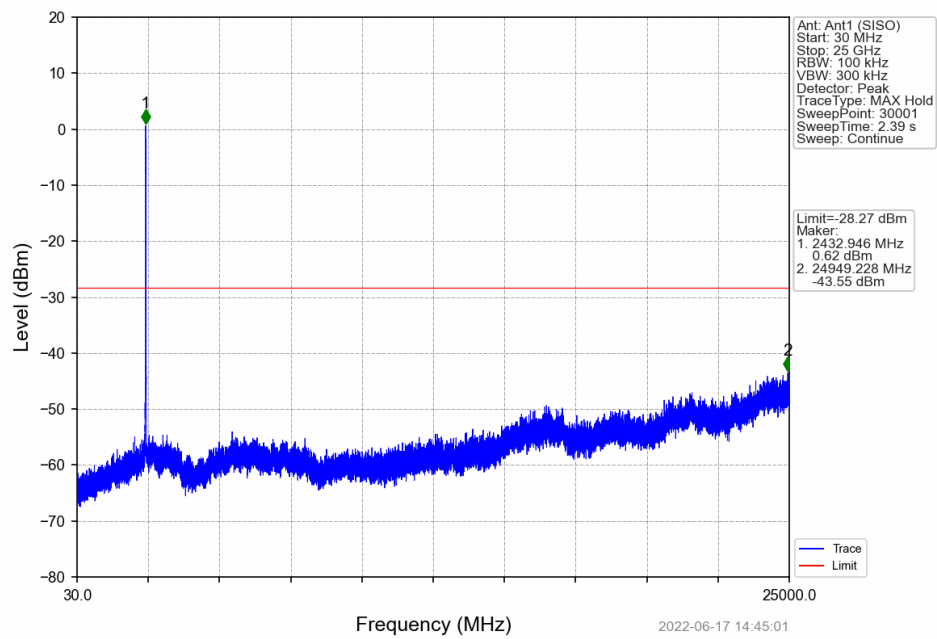
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



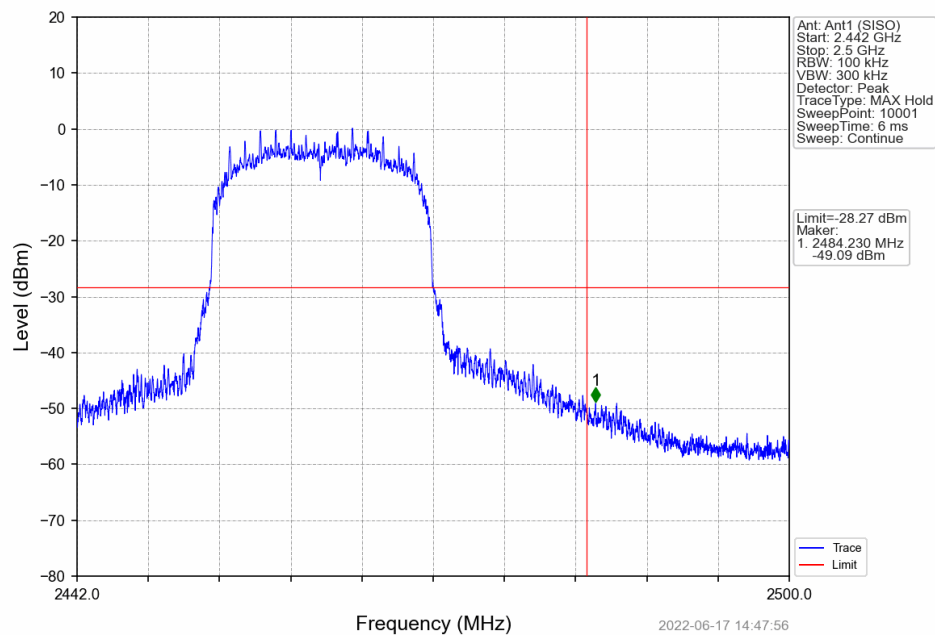
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



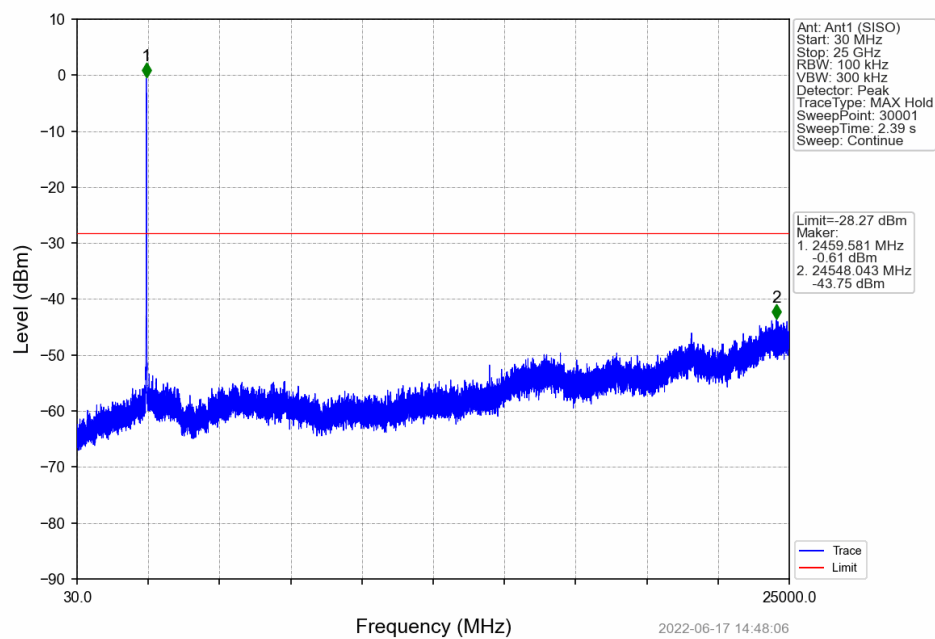
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



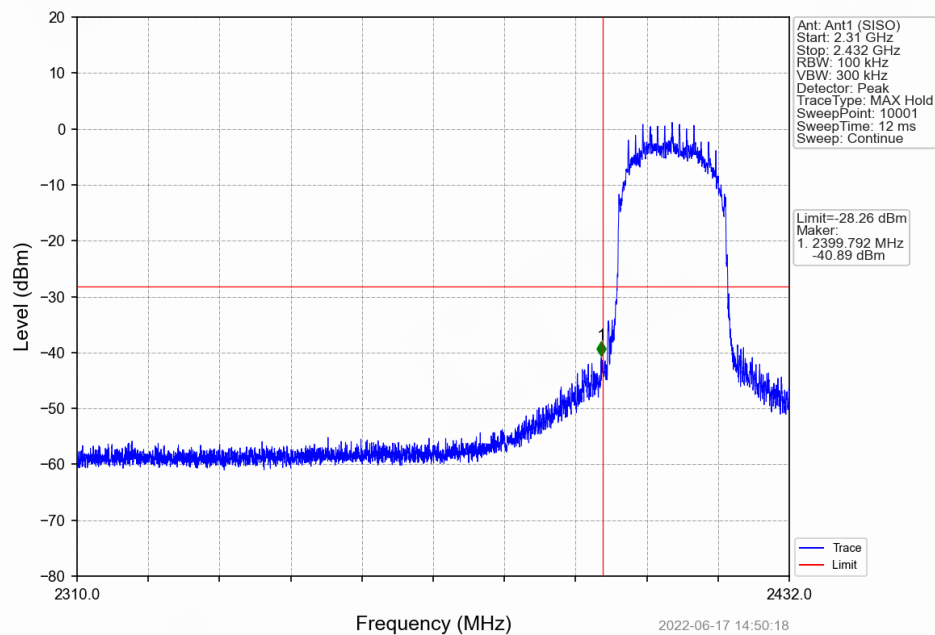
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



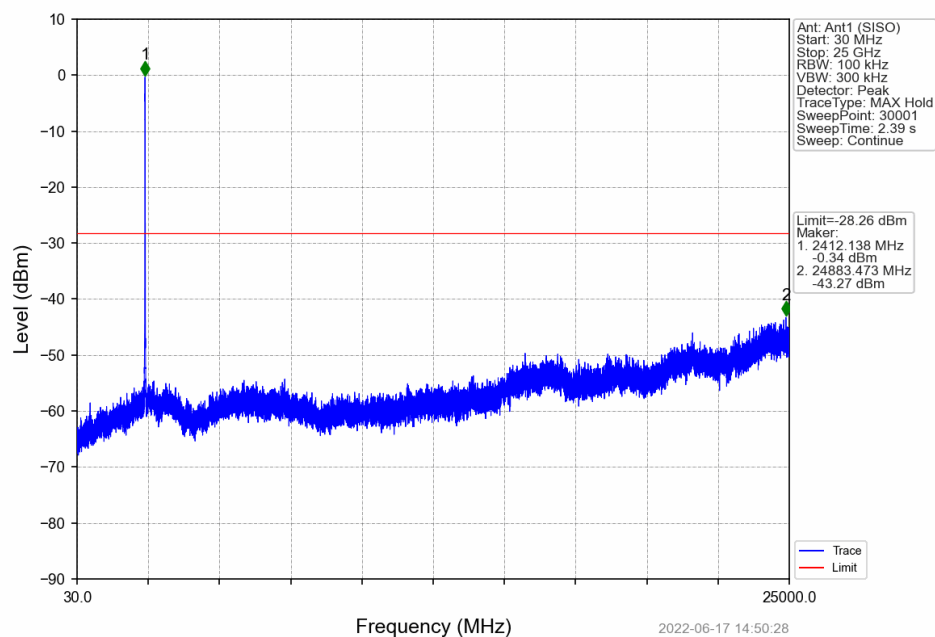
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



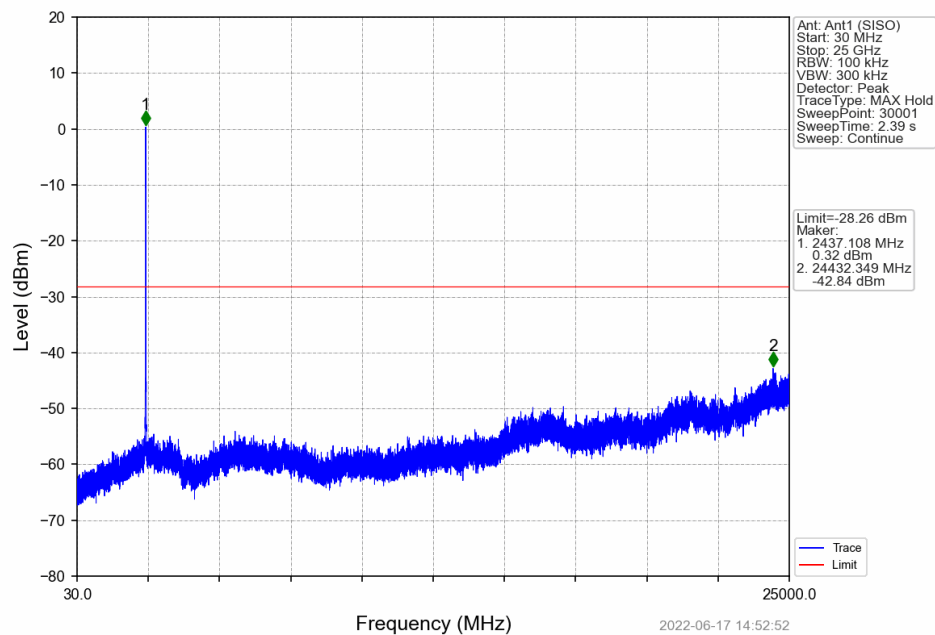
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



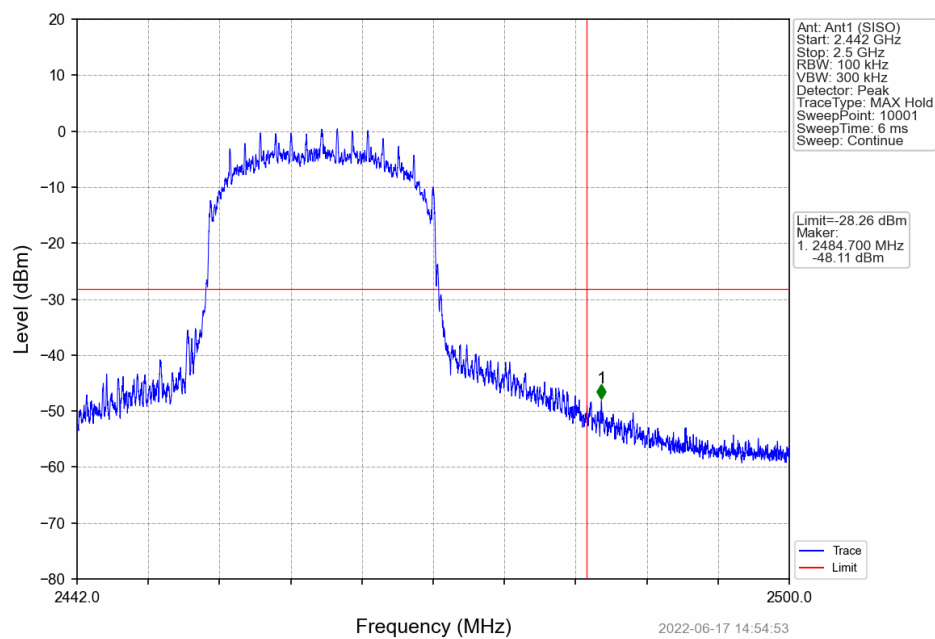
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



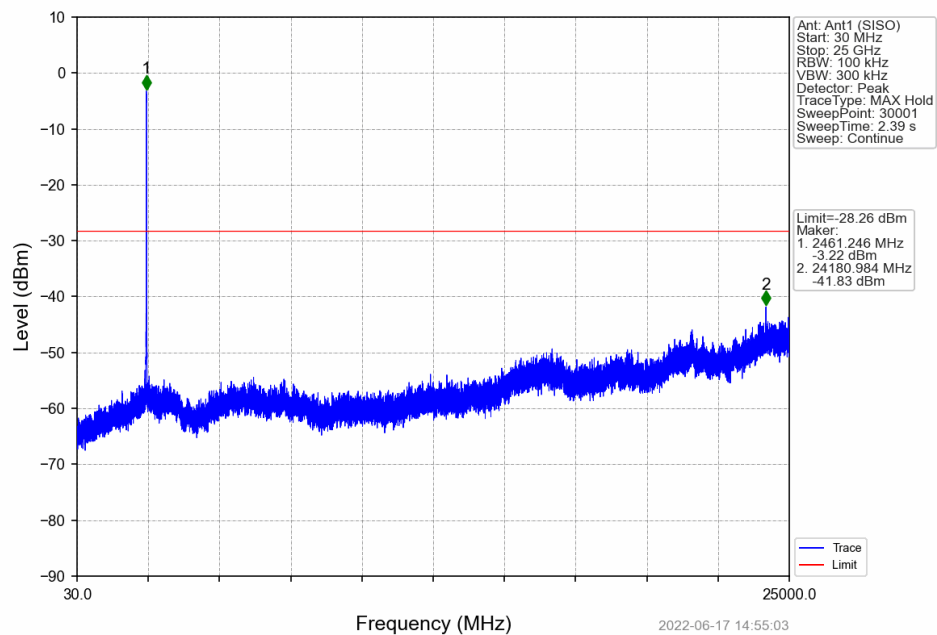
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



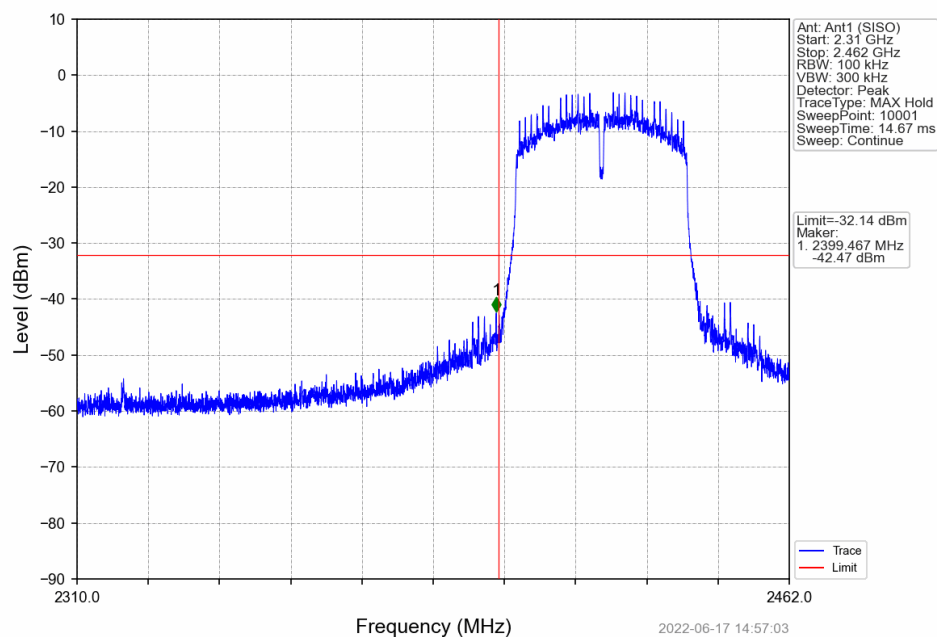
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



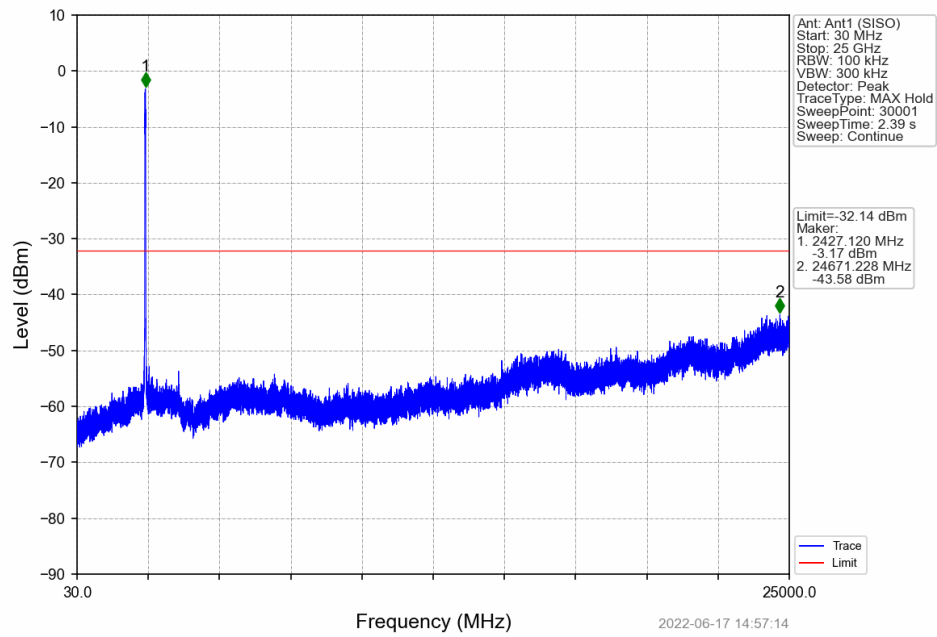
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



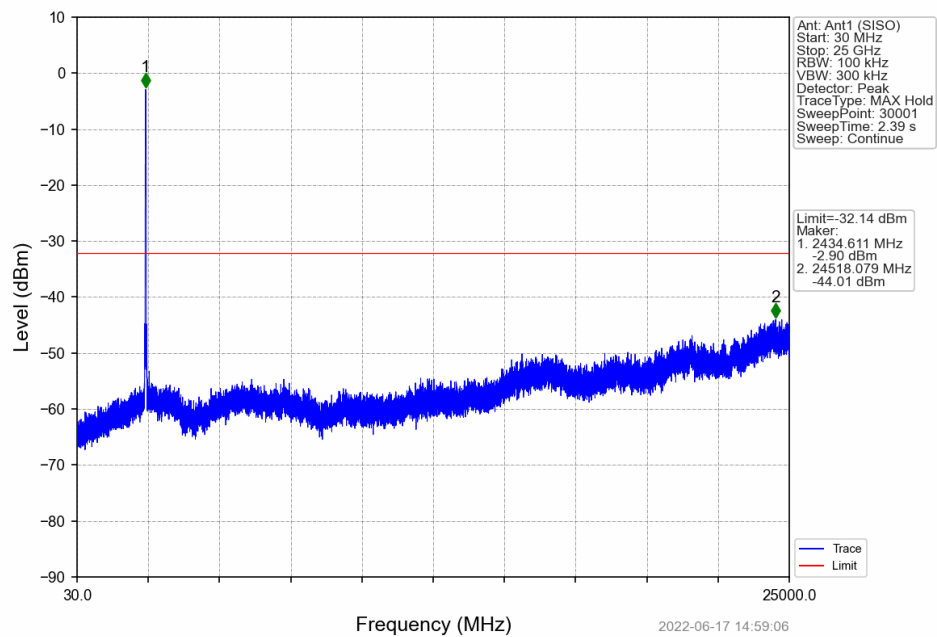
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



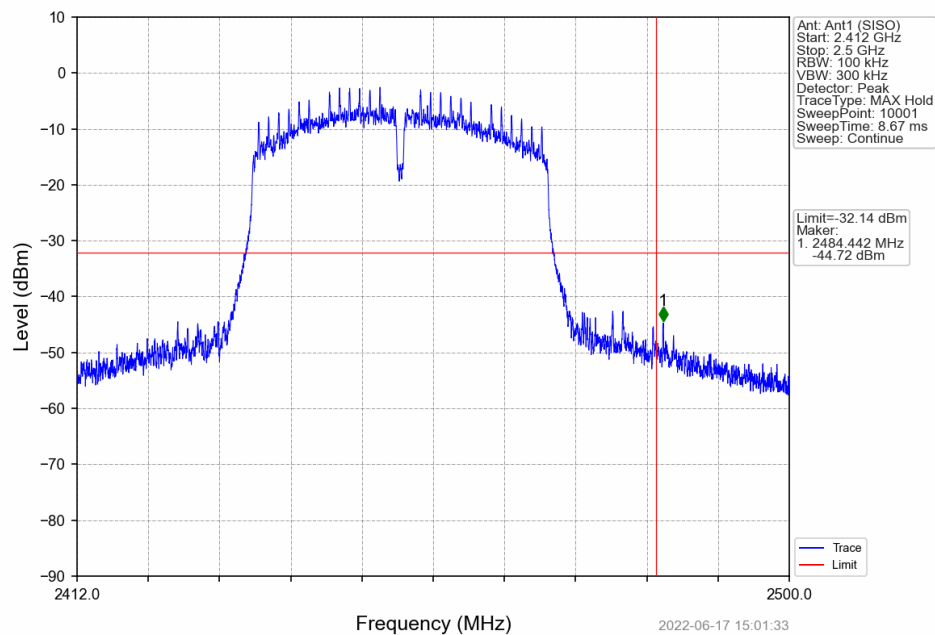
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV

