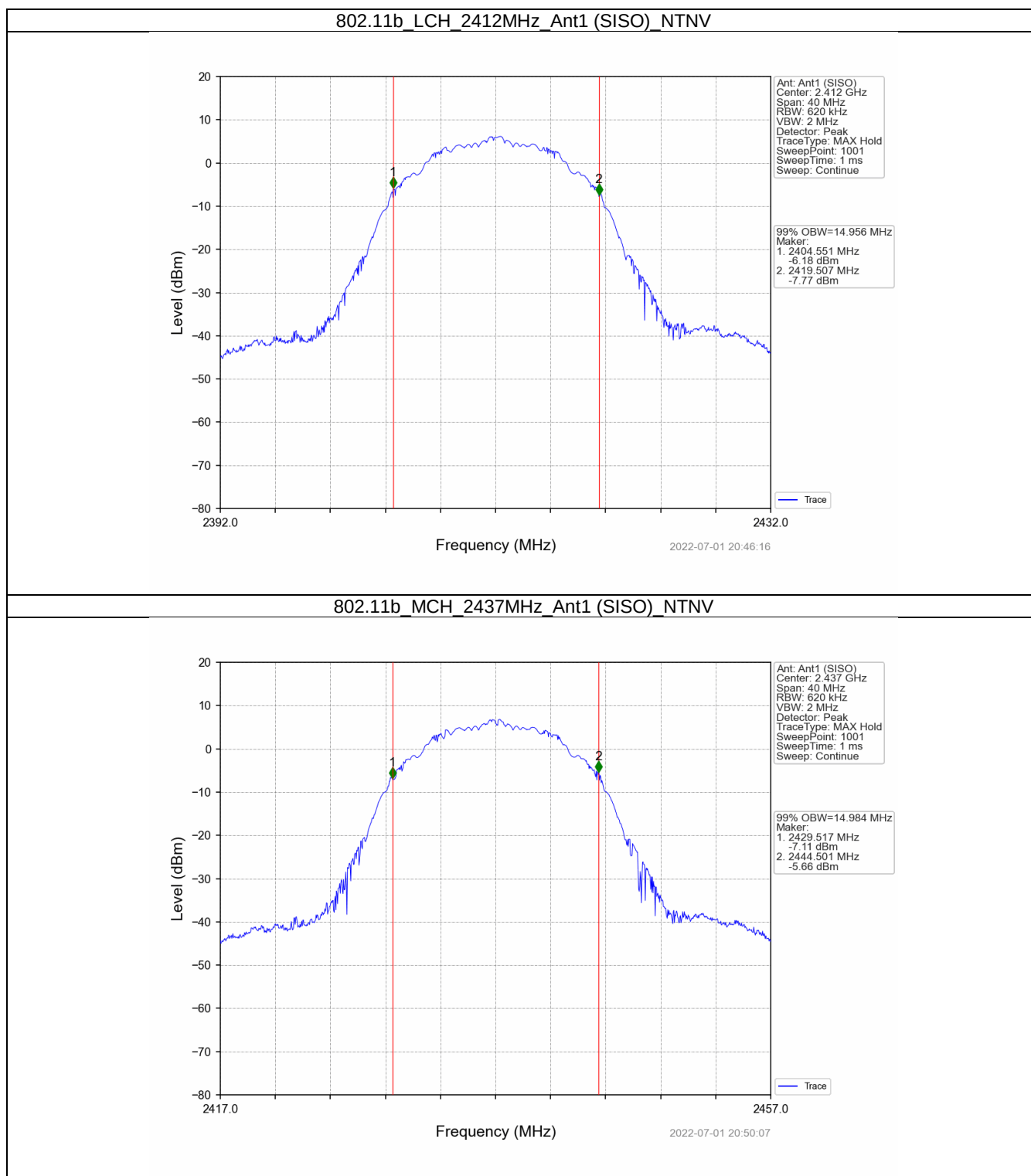


Test Data for 2.4G_WIFI
Product Name: Laser Projector
Test Model: PJ90

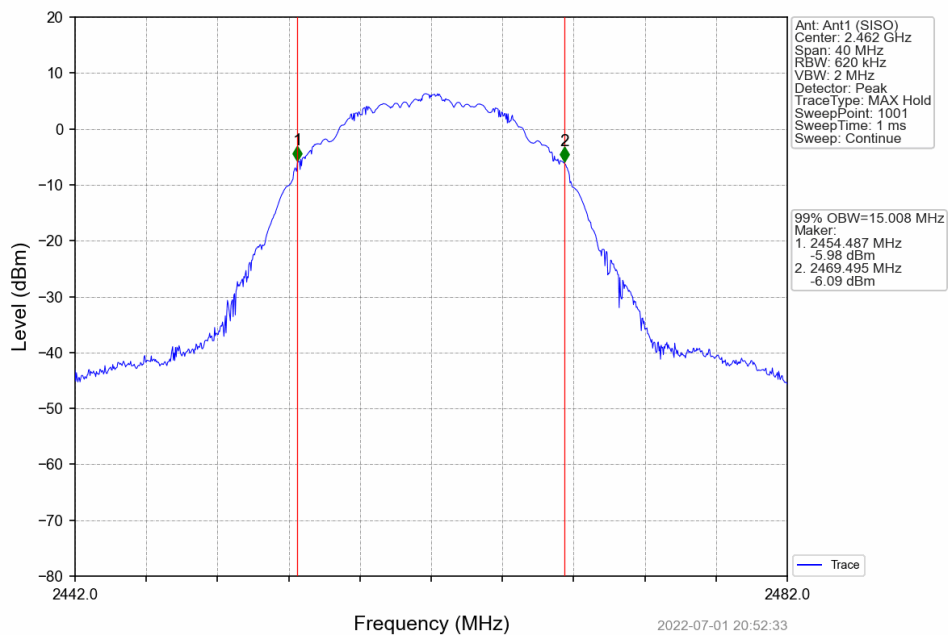
1. Bandwidth**1.1 OBW****1.1.1 Test Result**

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	14.956	Pass
		2437	1	14.984	Pass
		2462	1	15.008	Pass
802.11g	SISO	2412	1	17.318	Pass
		2437	1	17.322	Pass
		2462	1	17.307	Pass
802.11n (HT20)	SISO	2412	1	18.231	Pass
		2437	1	18.236	Pass
		2462	1	18.237	Pass
802.11n (HT40)	SISO	2422	1	36.938	Pass
		2437	1	36.969	Pass
		2452	1	36.964	Pass

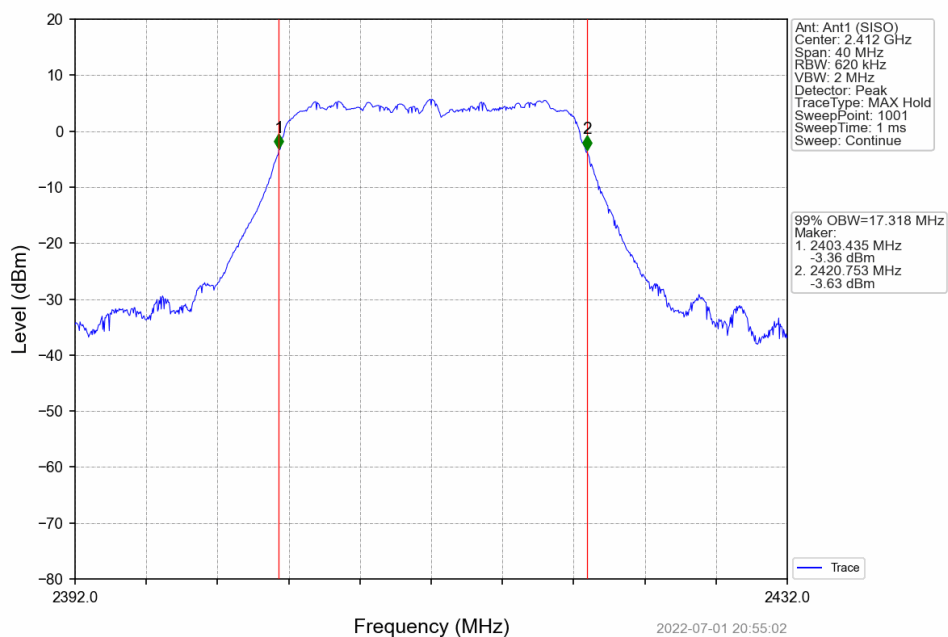
1.1.2 Test Graph



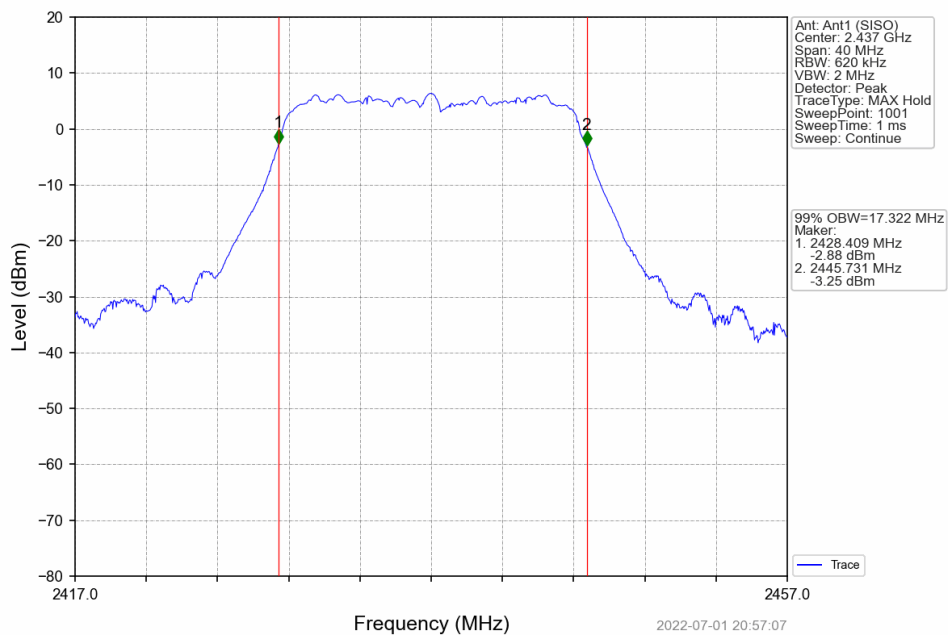
802.11b HCH 2462MHz Ant1 (SISO) NTN



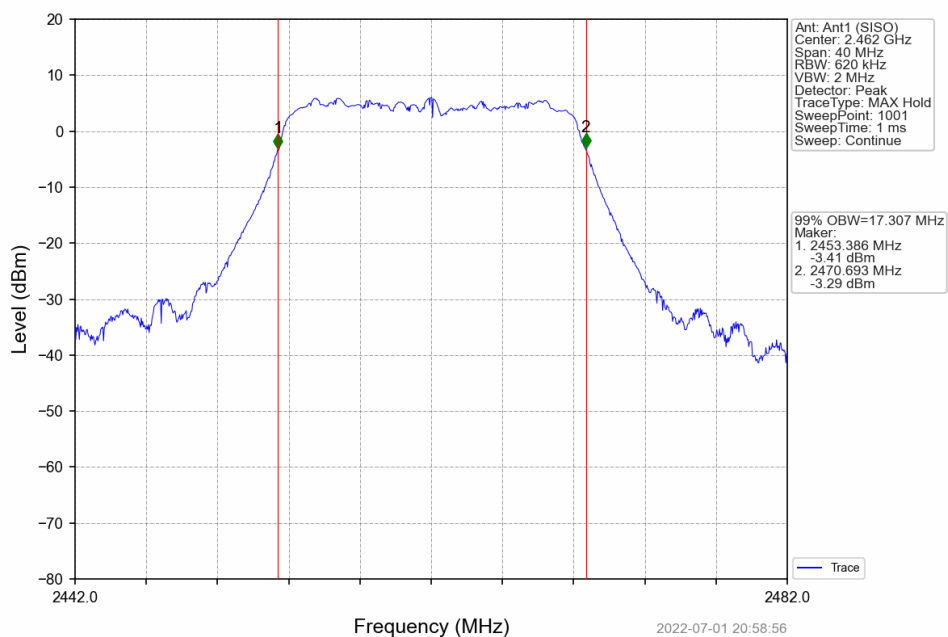
802.11g LCH 2412MHz Ant1 (SISO) NTN



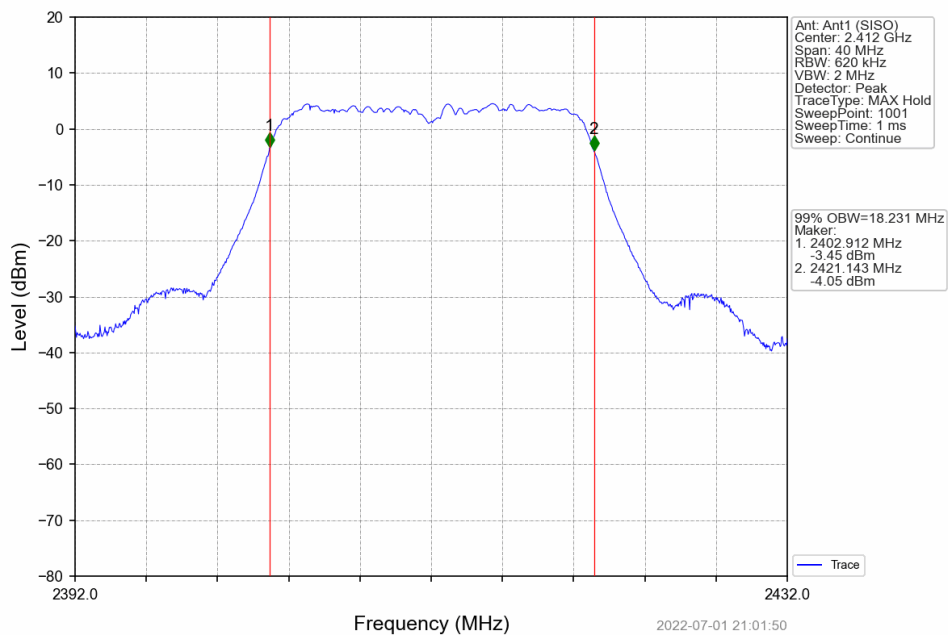
802.11g MCH 2437MHz Ant1 (SISO) NTN



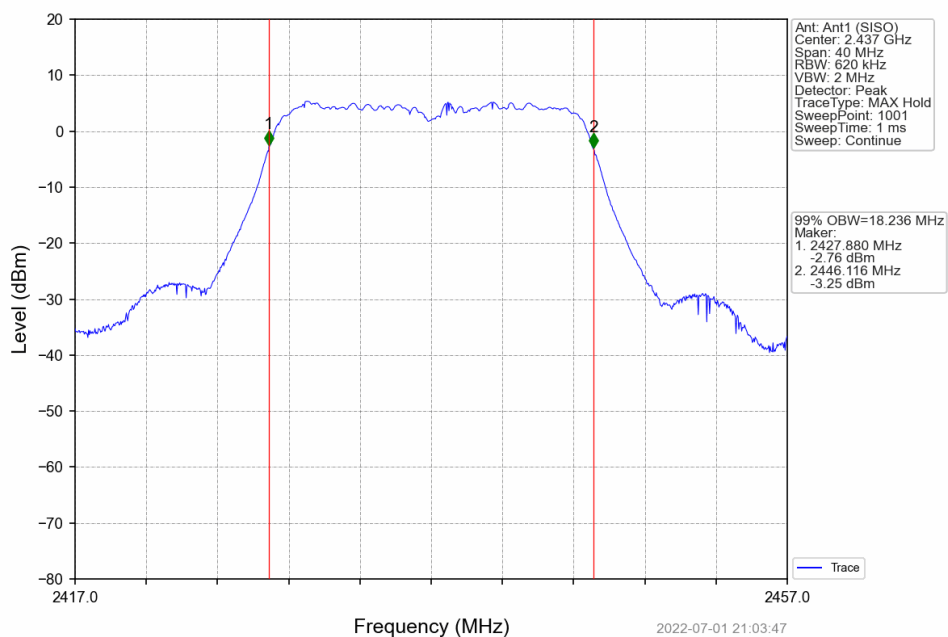
802.11g HCH 2462MHz Ant1 (SISO) NTN

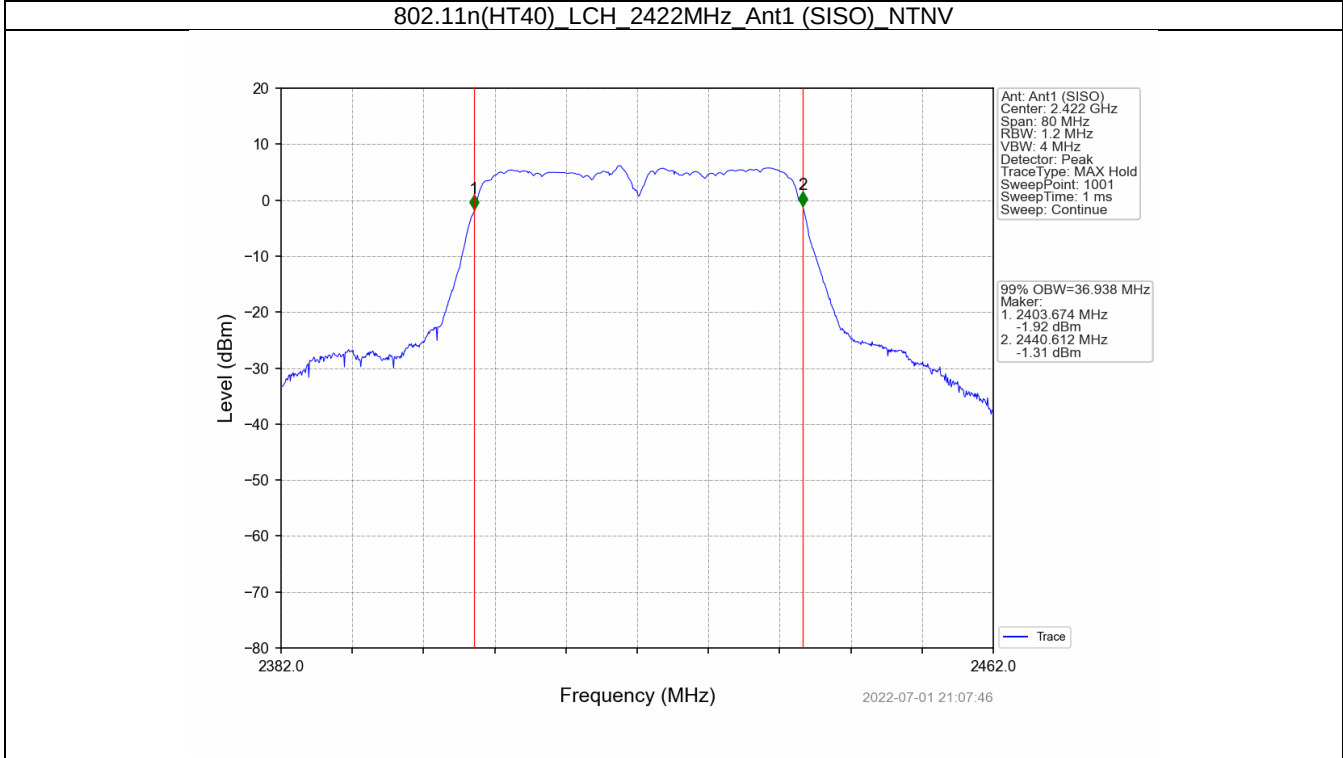
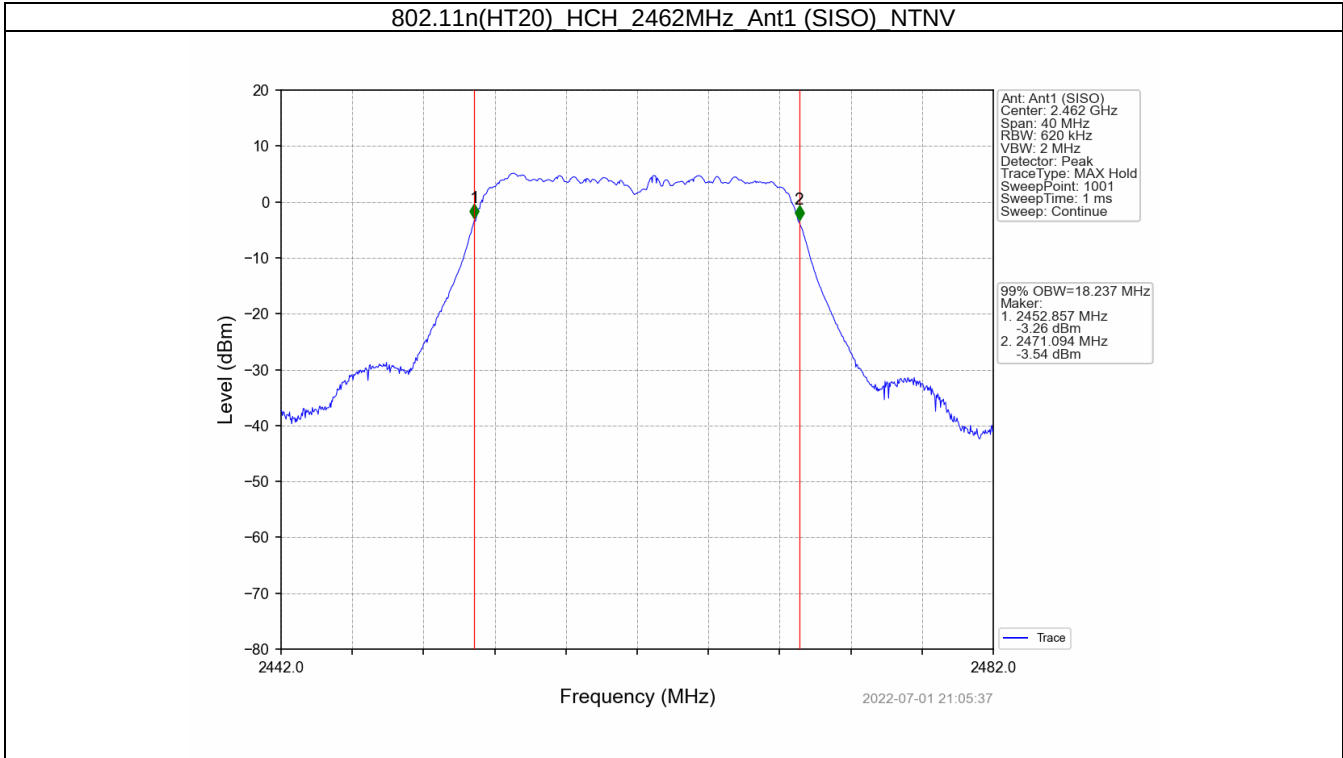


802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV

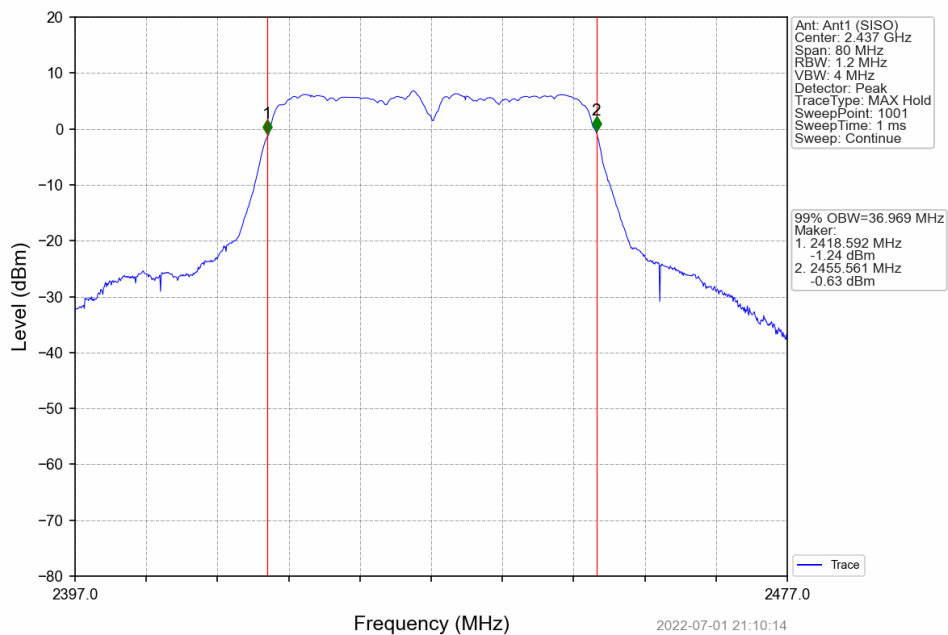


802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV

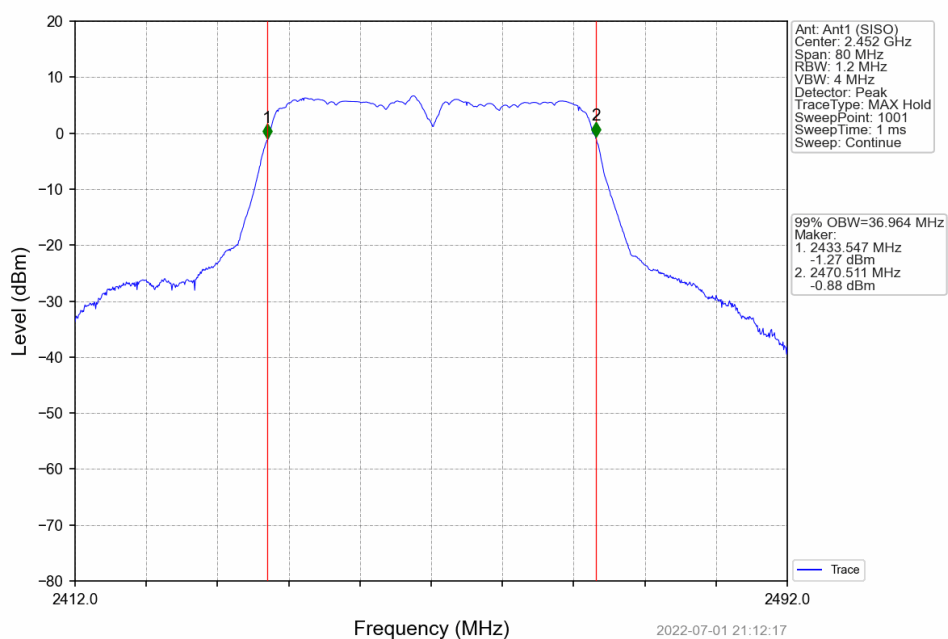




802.11n(HT40) MCH_2437MHz_Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTN

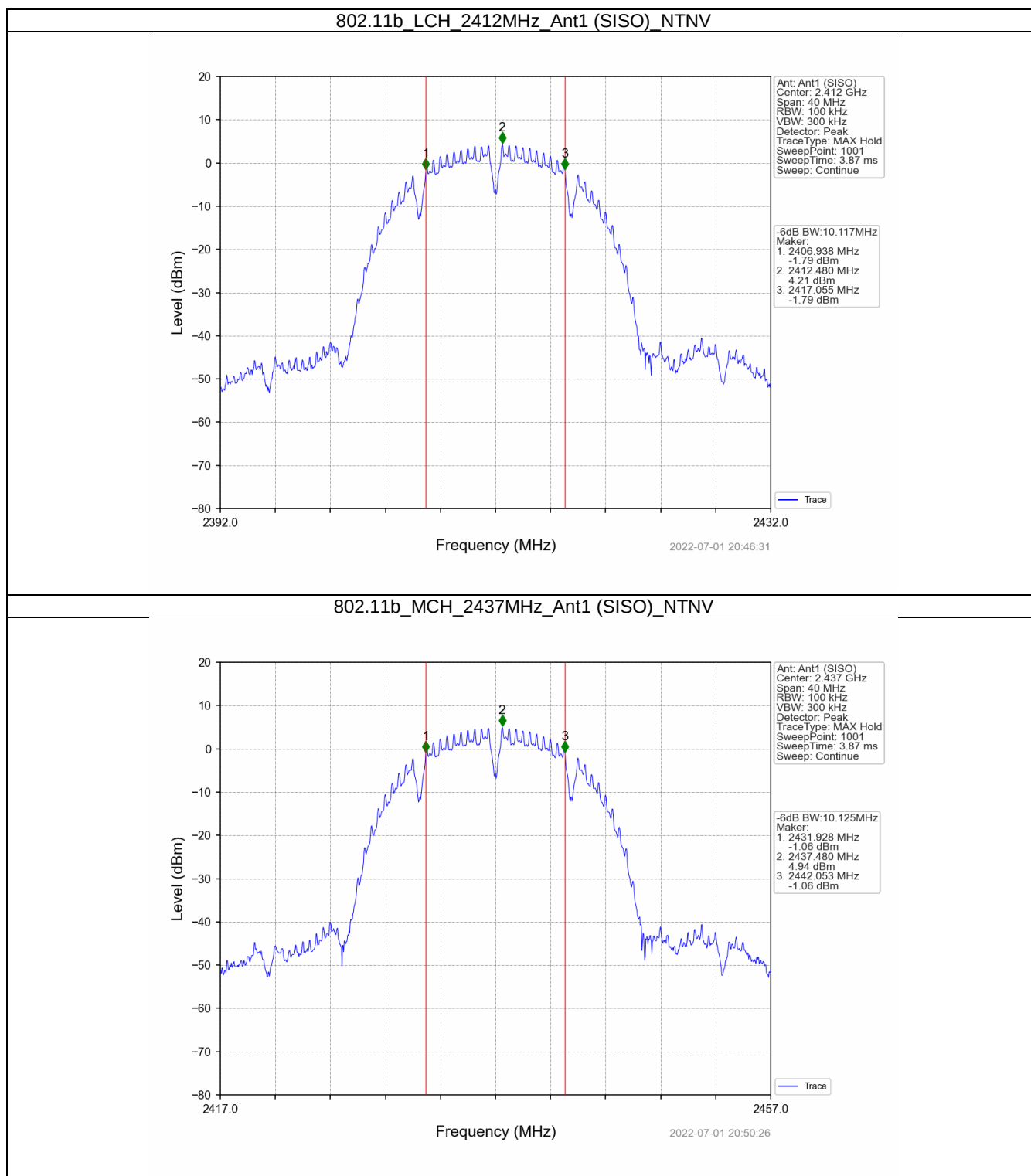


1.2 6dB BW

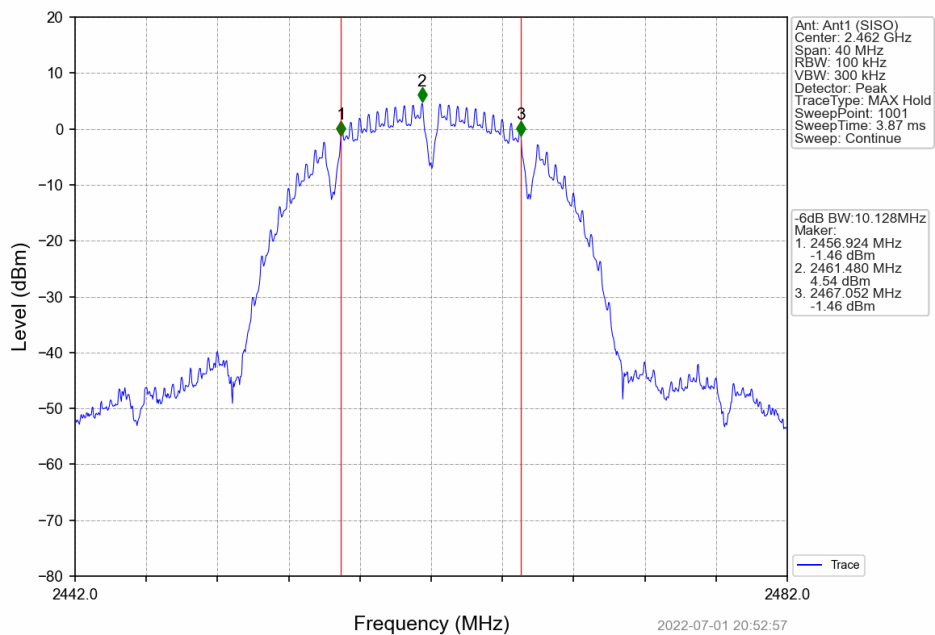
1.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.117	≥ 0.5	Pass
		2437	1	10.125	≥ 0.5	Pass
		2462	1	10.128	≥ 0.5	Pass
802.11g	SISO	2412	1	16.342	≥ 0.5	Pass
		2437	1	16.348	≥ 0.5	Pass
		2462	1	16.327	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	16.947	≥ 0.5	Pass
		2437	1	17.055	≥ 0.5	Pass
		2462	1	16.843	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.214	≥ 0.5	Pass
		2437	1	35.219	≥ 0.5	Pass
		2452	1	35.224	≥ 0.5	Pass

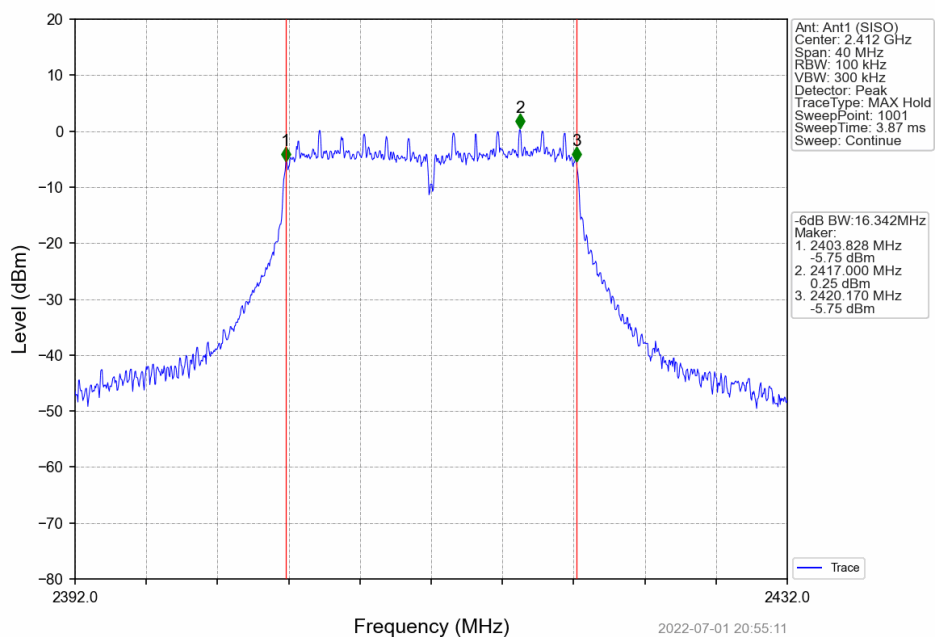
1.2.2 Test Graph

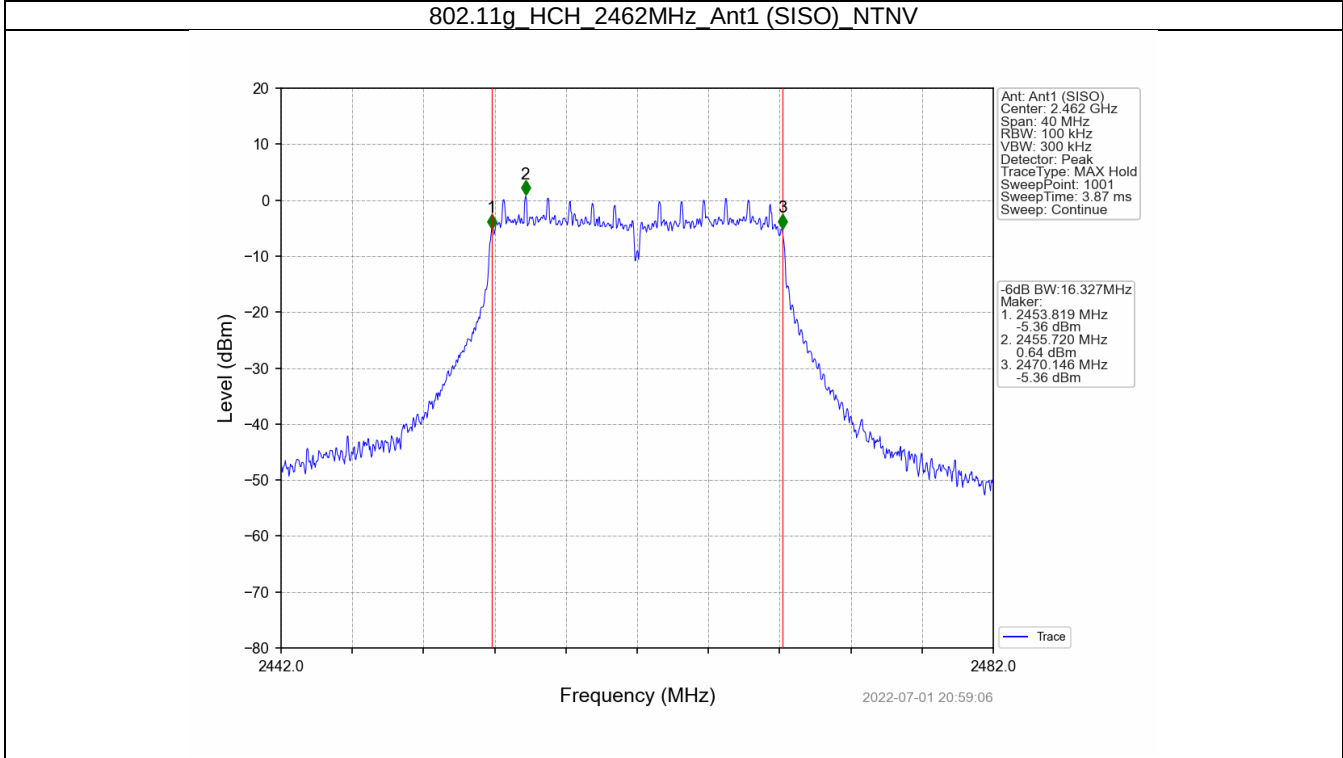
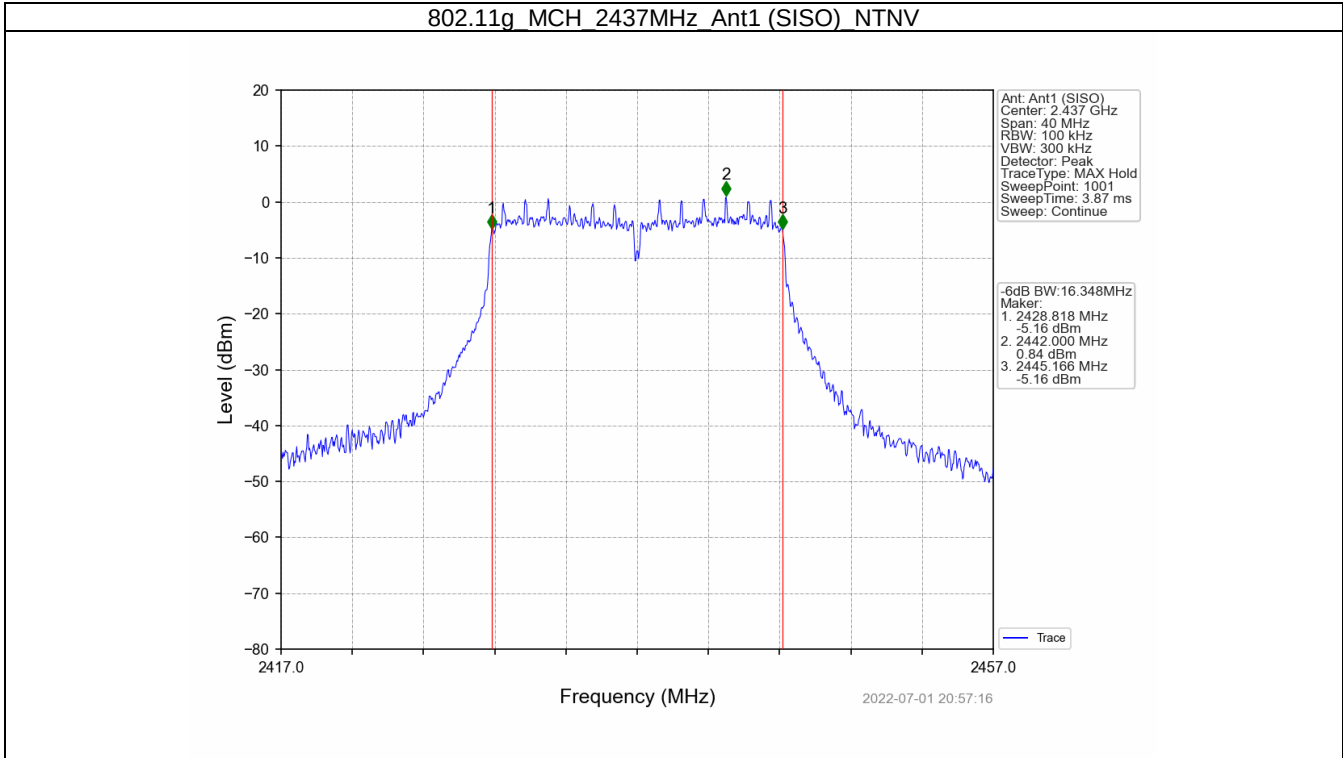


802.11b HCH 2462MHz Ant1 (SISO) NTN

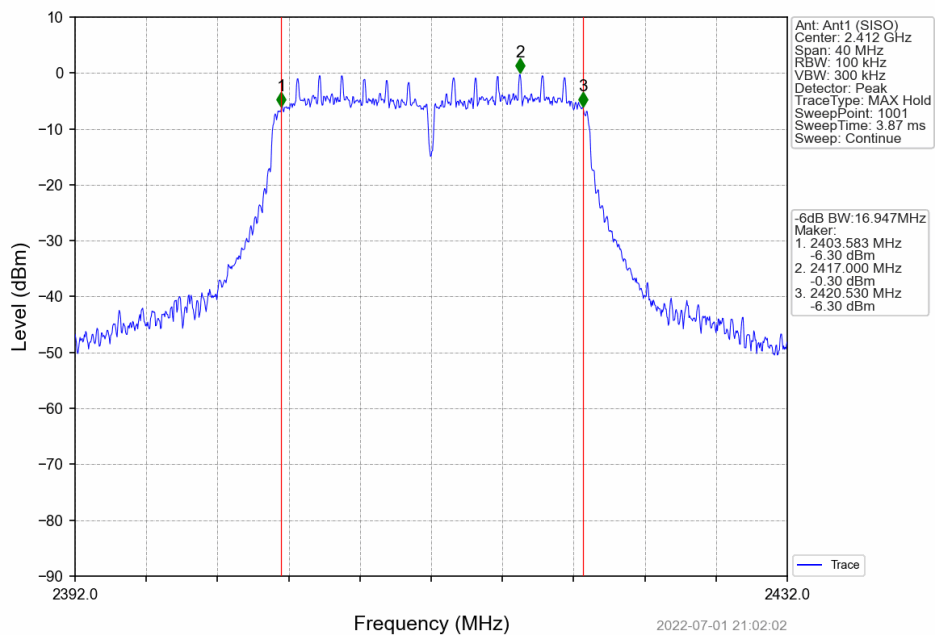


802.11g LCH 2412MHz Ant1 (SISO) NTN

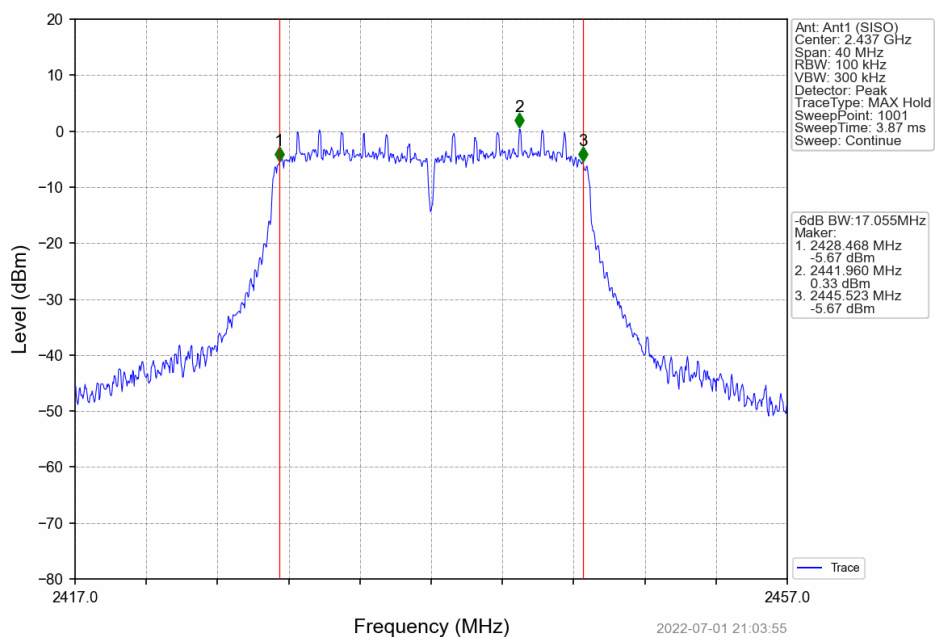




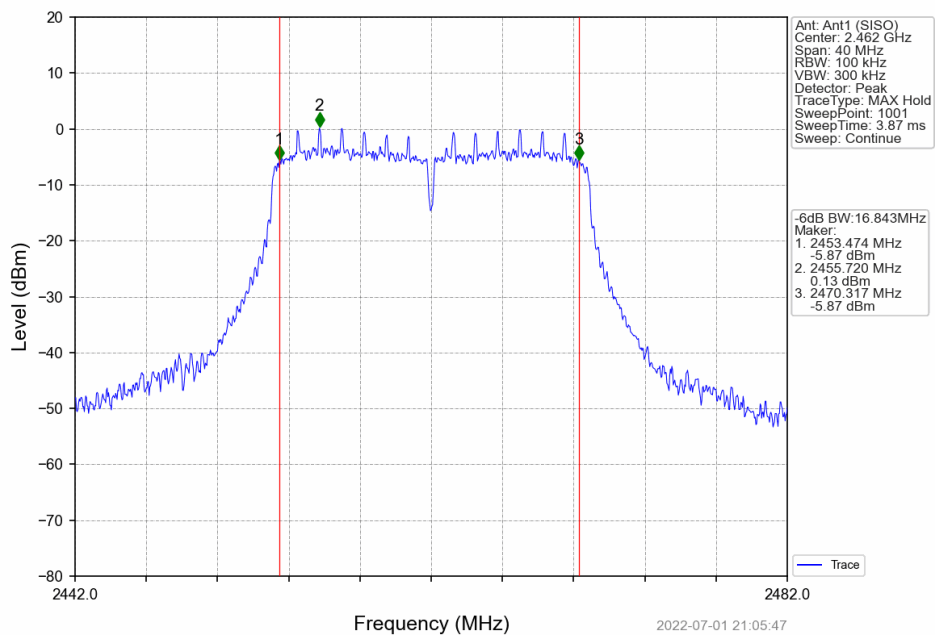
802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTN



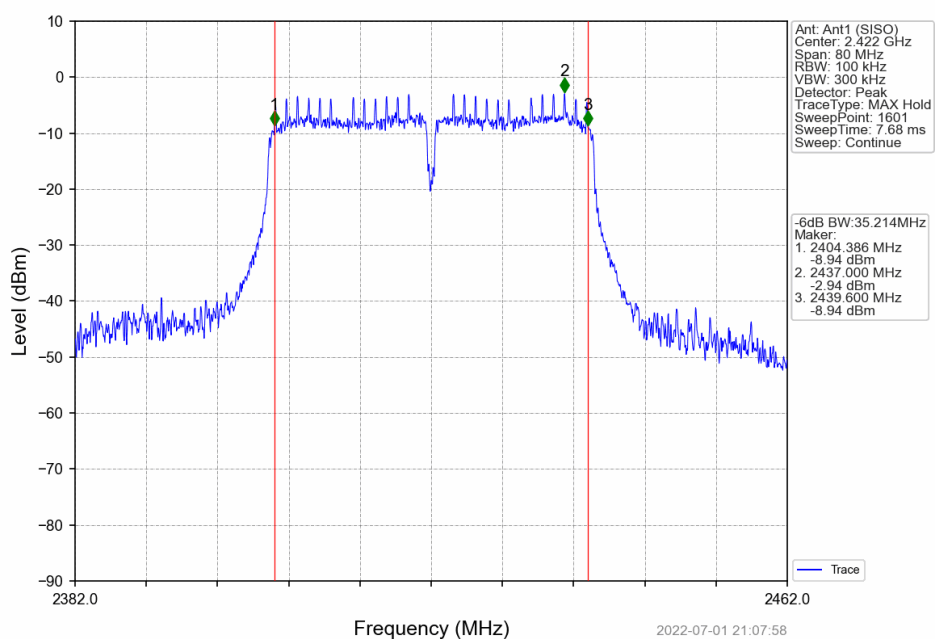
802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTN



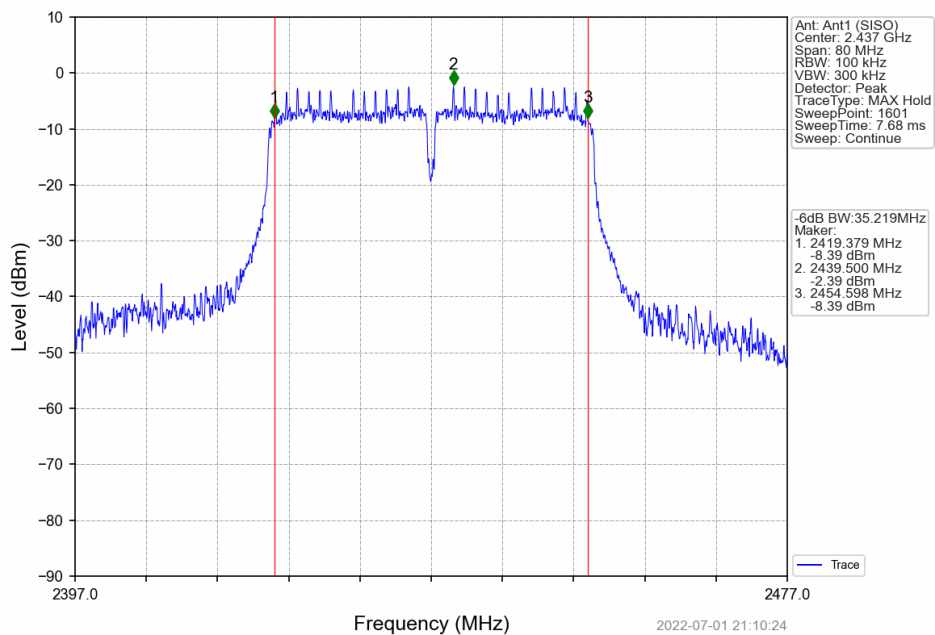
802.11n(HT20) HCH 2462MHz Ant1 (SISO) NTN



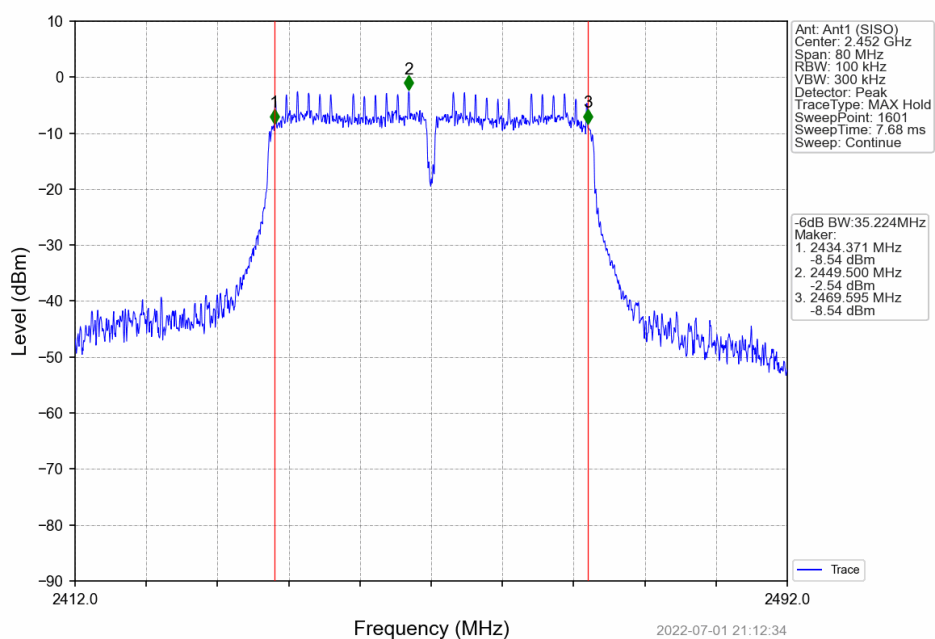
802.11n(HT40) LCH 2422MHz Ant1 (SISO) NTN



802.11n(HT40) MCH_2437MHz_Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTN



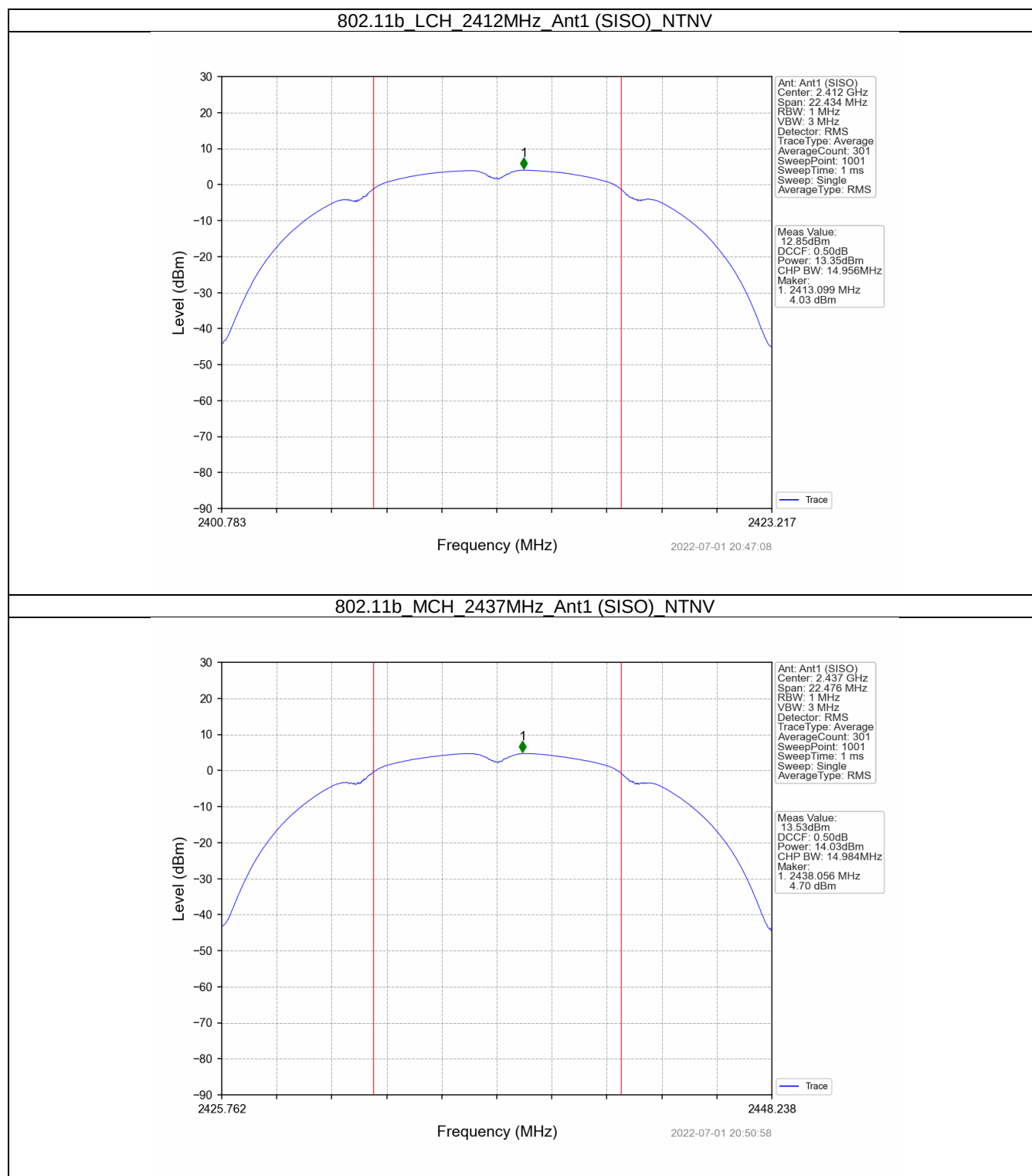
2. Maximum Conducted Output Power

2.1 Power

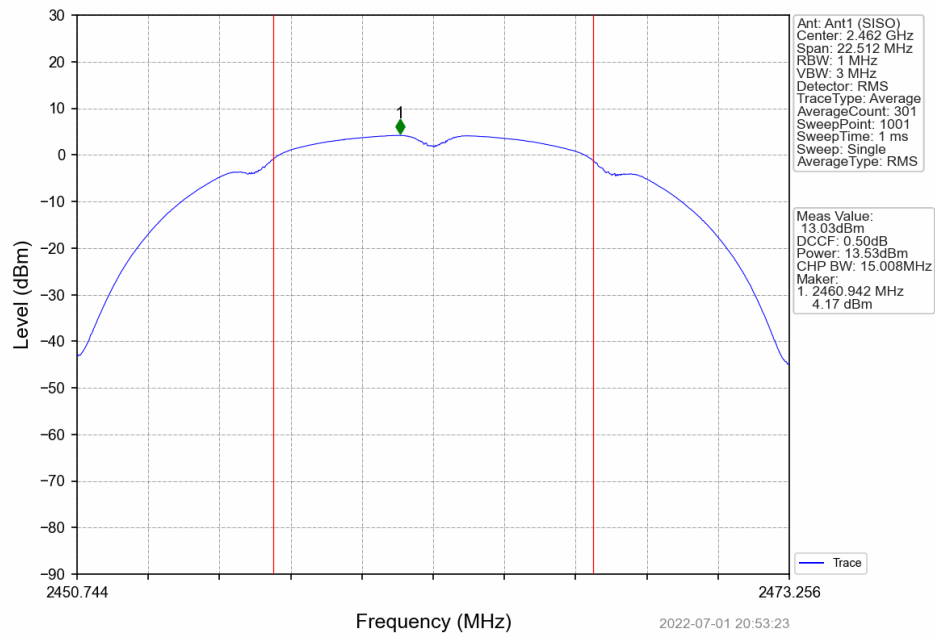
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	13.35	<=30	Pass
		2437	14.03	<=30	Pass
		2462	13.53	<=30	Pass
802.11g	SISO	2412	10.91	<=30	Pass
		2437	11.68	<=30	Pass
		2462	11.39	<=30	Pass
802.11n (HT20)	SISO	2412	10.29	<=30	Pass
		2437	11.10	<=30	Pass
		2462	10.83	<=30	Pass
802.11n (HT40)	SISO	2422	10.94	<=30	Pass
		2437	11.54	<=30	Pass
		2452	11.13	<=30	Pass
Note1: Antenna Gain: Ant1: 2.86dBi;					

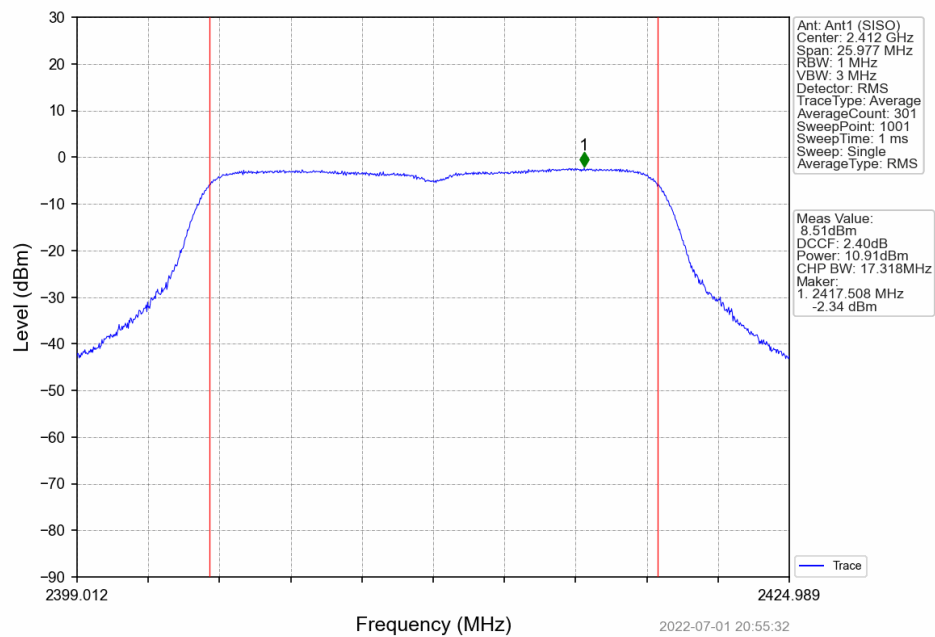
2.1.2 Test Graph



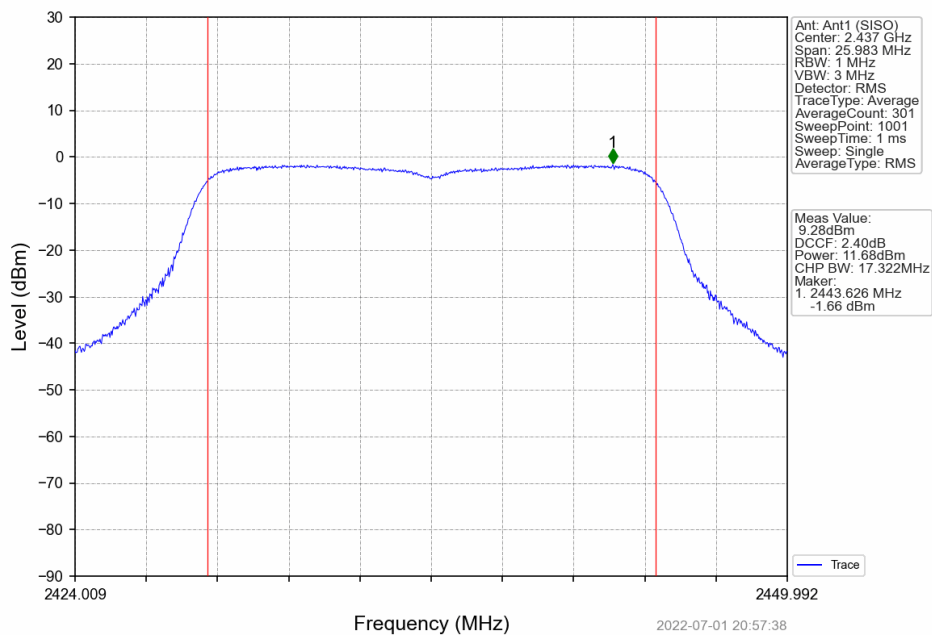
802.11b HCH 2462MHz Ant1 (SISO) NTN



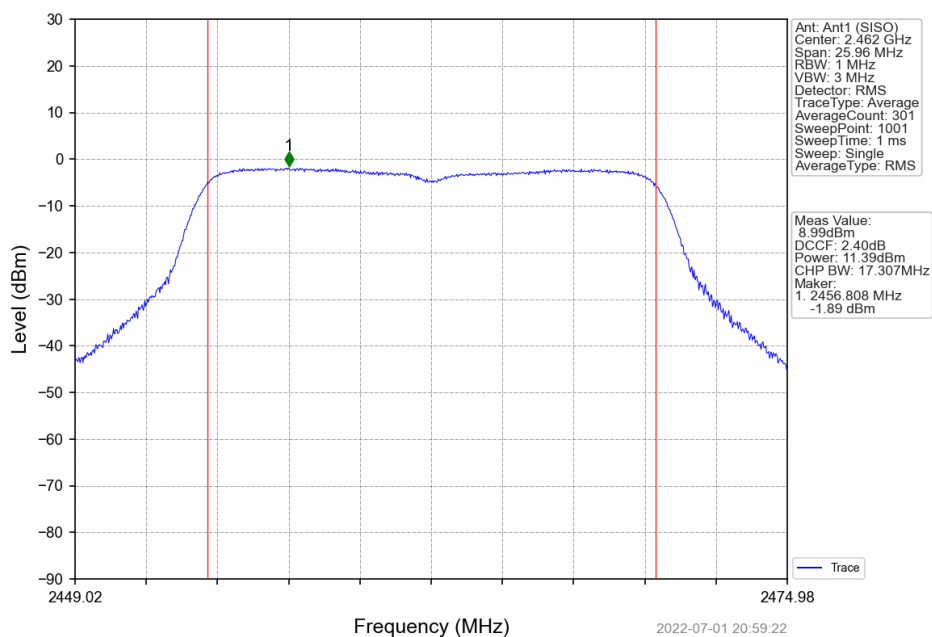
802.11g LCH 2412MHz Ant1 (SISO) NTN



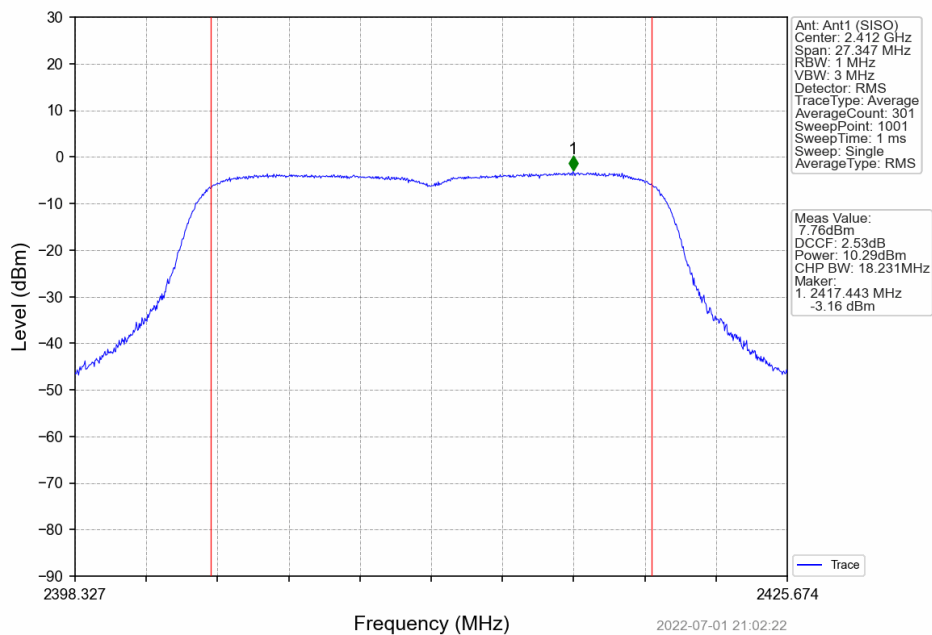
802.11g MCH 2437MHz Ant1 (SISO) NTN



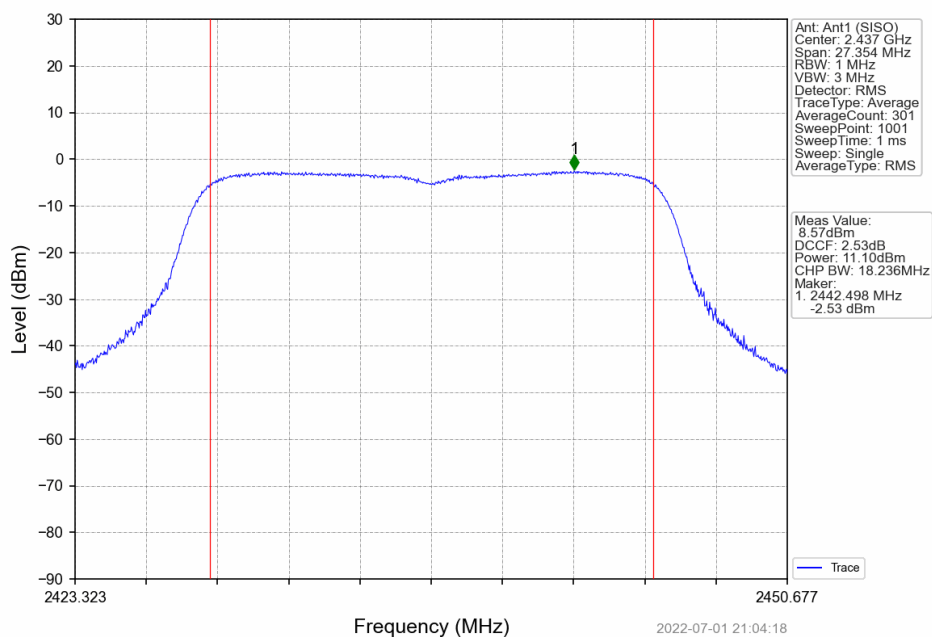
802.11g_HCH_2462MHz_Ant1 (SISO) NTN



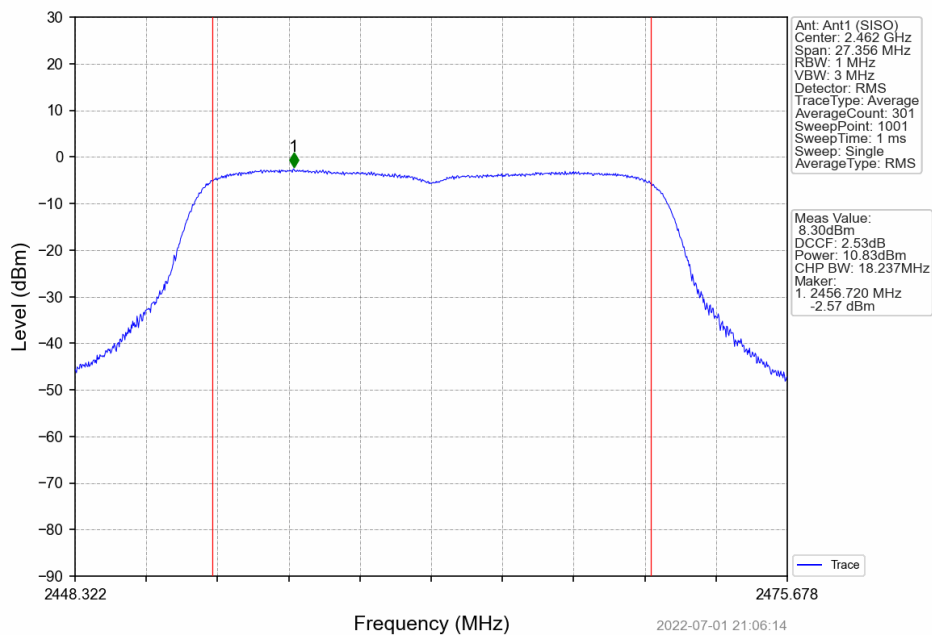
802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



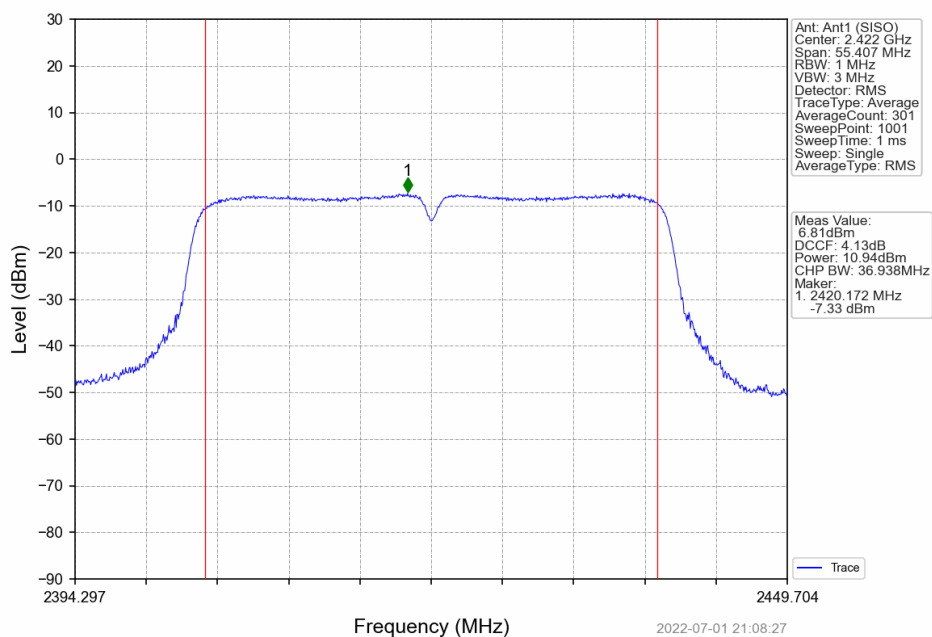
802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV



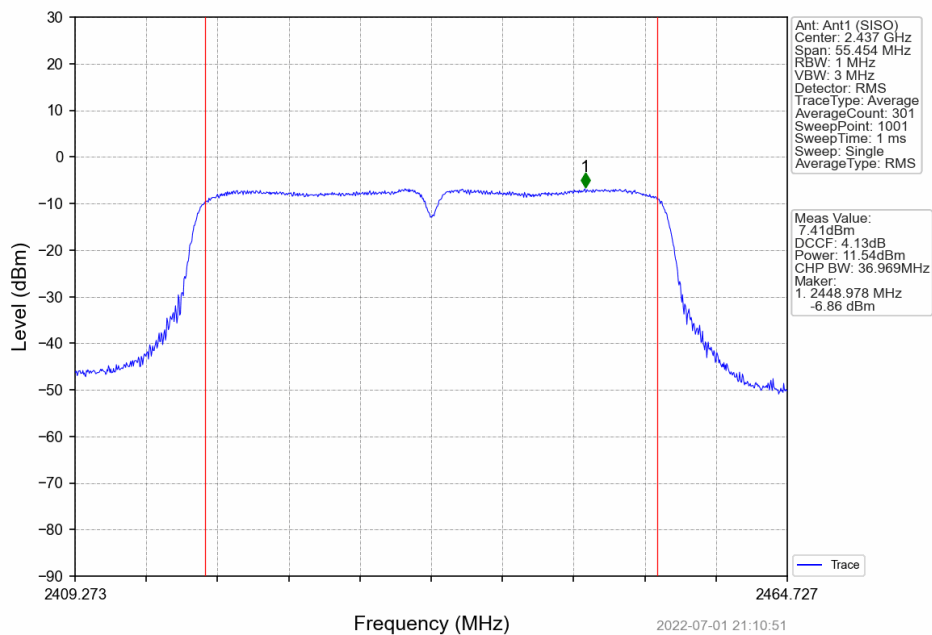
802.11n(HT20) HCH 2462MHz Ant1 (SISO) NTN



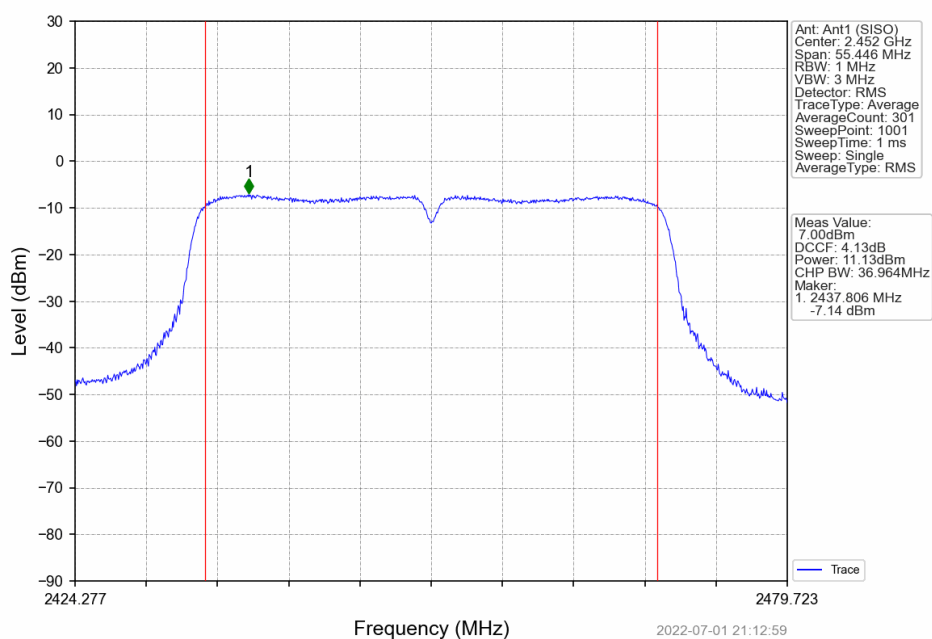
802.11n(HT40) LCH 2422MHz Ant1 (SISO) NTN



802.11n(HT40) MCH_2437MHz_Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTN



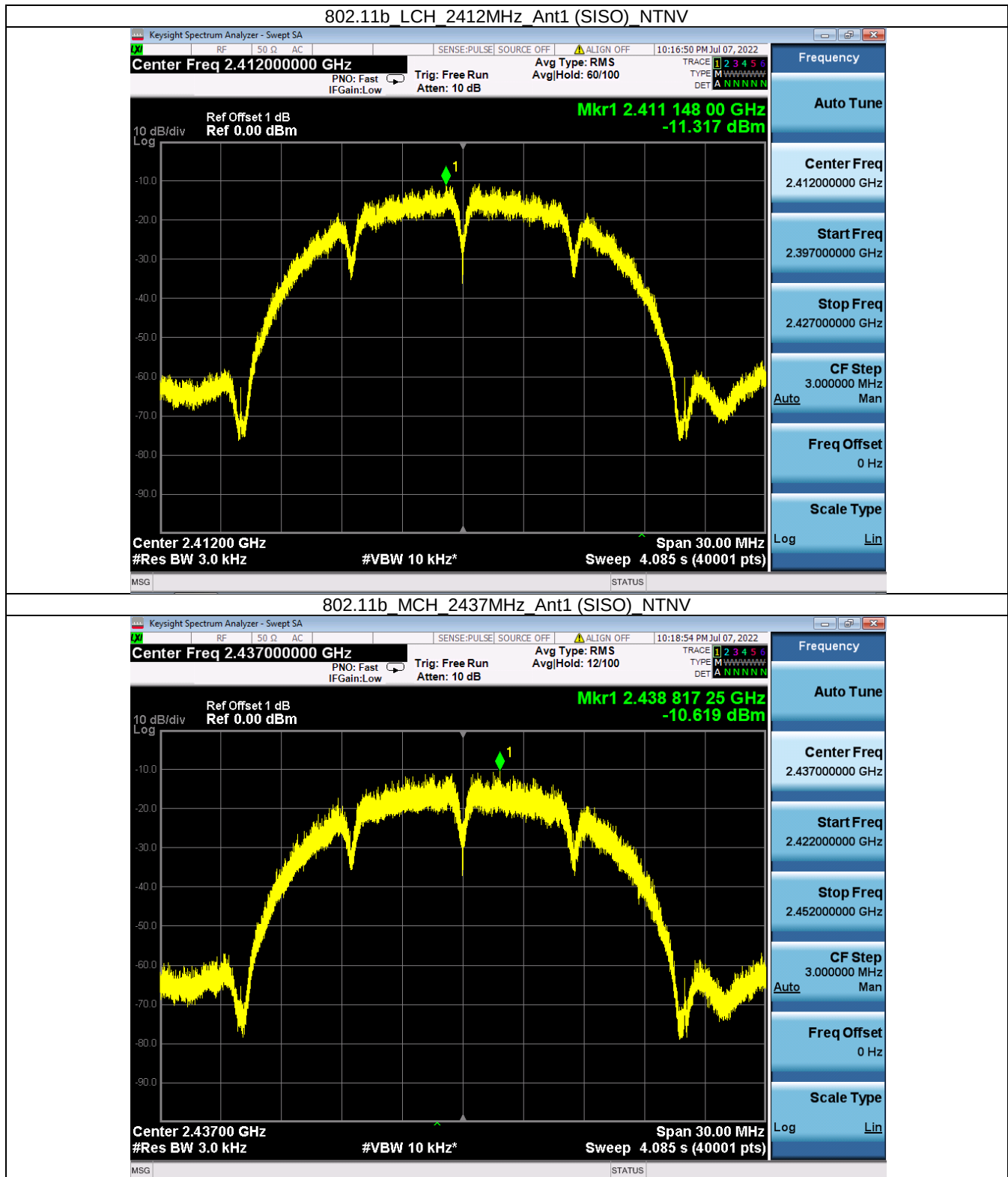
3. Maximum Power Spectral Density

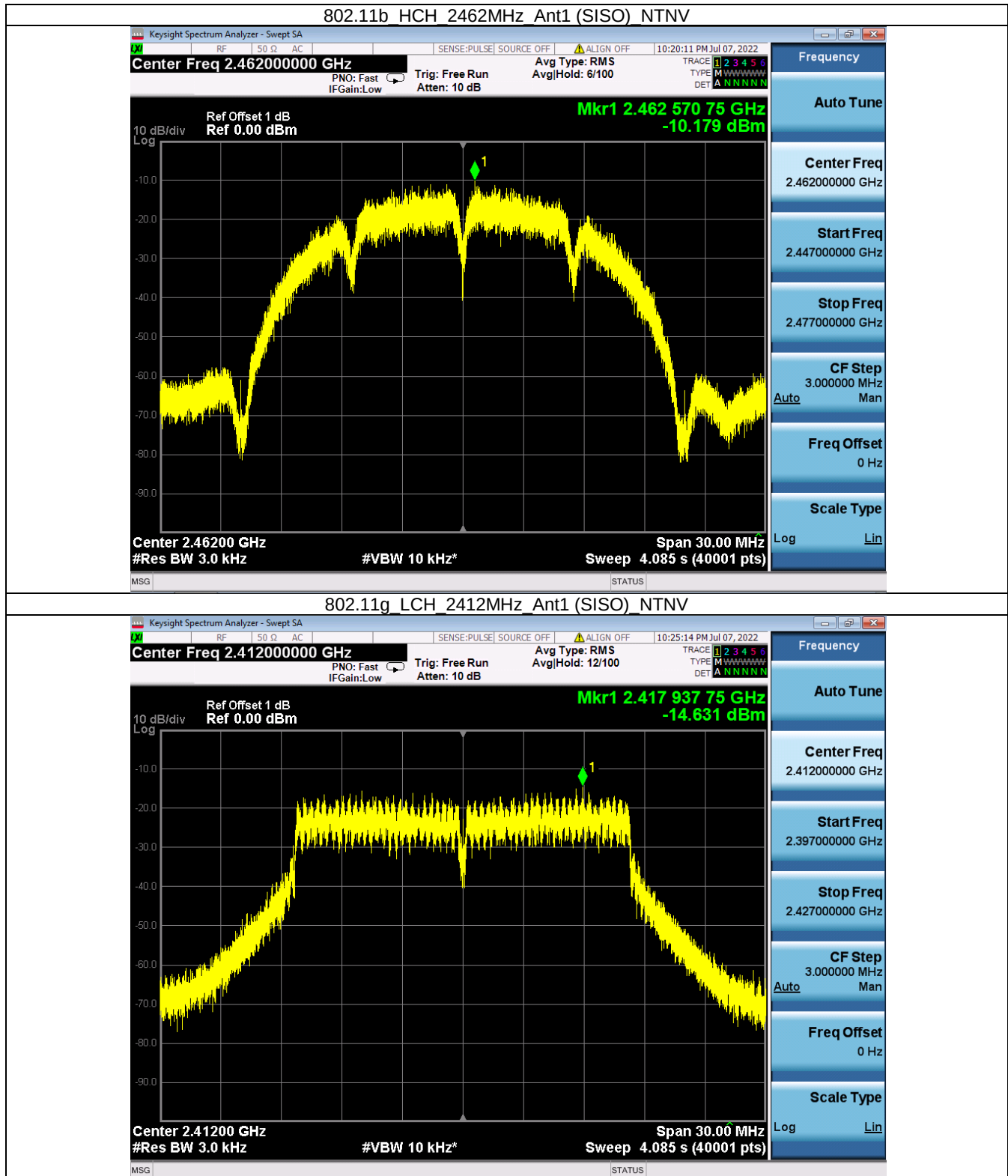
3.1 PSD

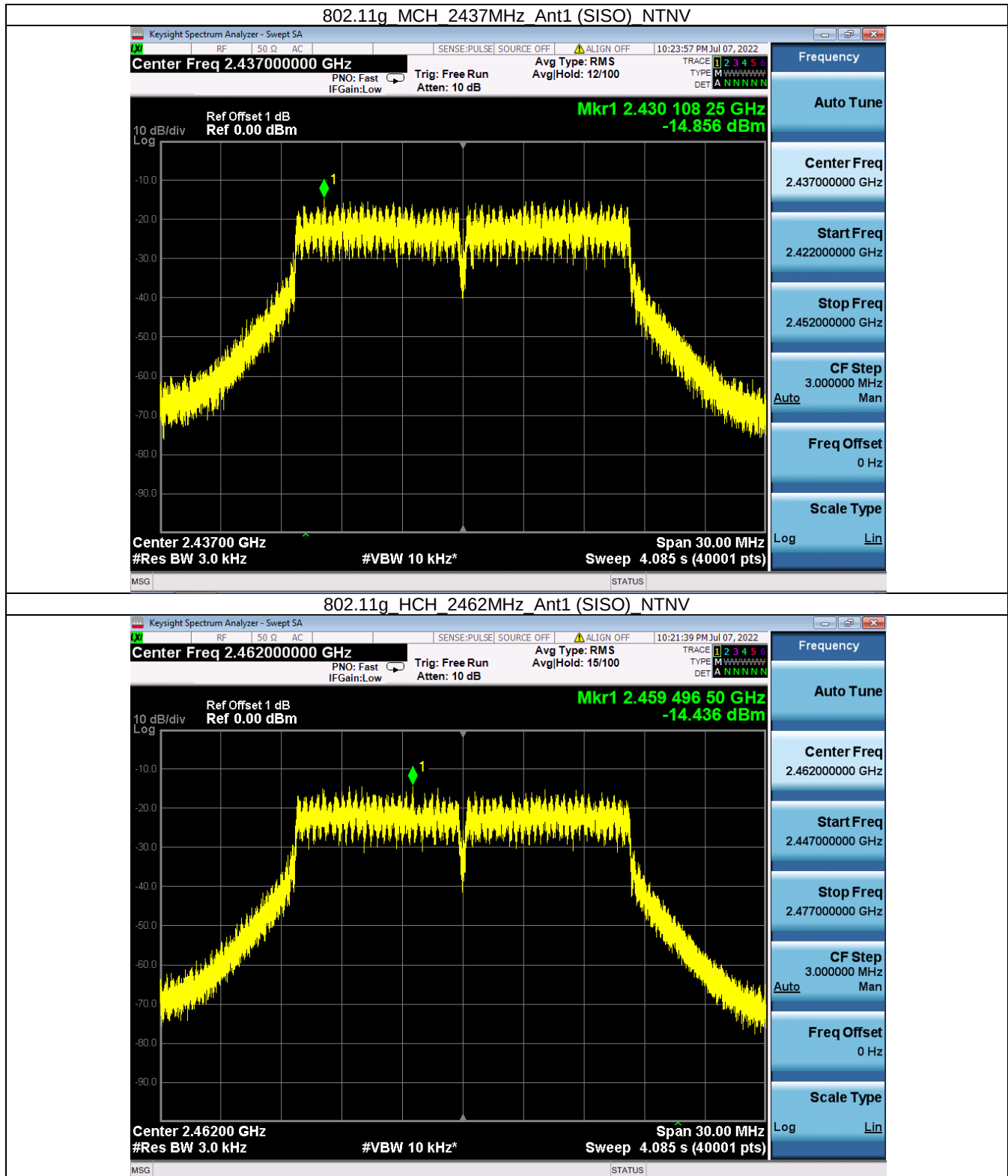
3.1.1 Test Result

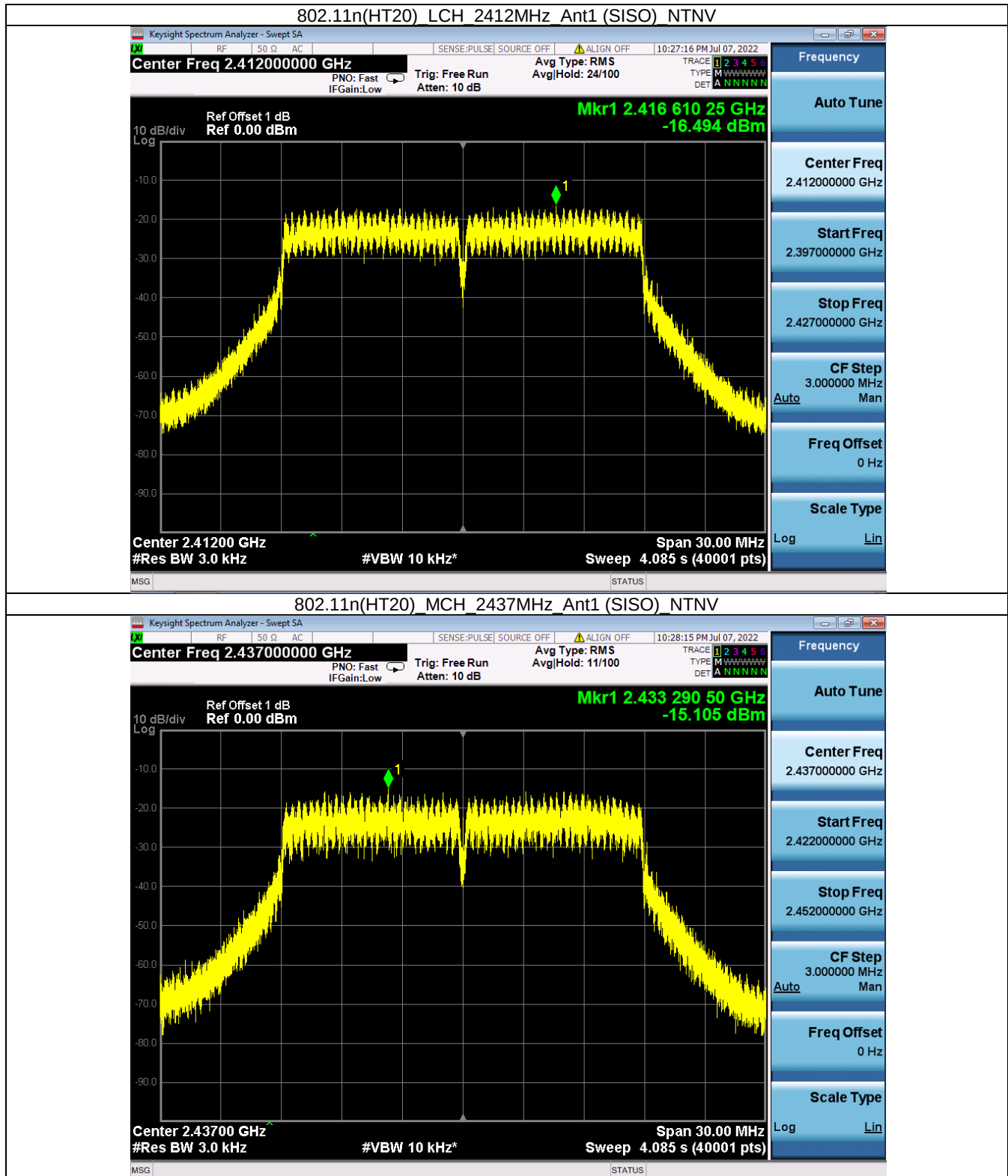
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-11.32	<=8	Pass
		2437	-10.62	<=8	Pass
		2462	-10.18	<=8	Pass
802.11g	SISO	2412	-14.63	<=8	Pass
		2437	-14.86	<=8	Pass
		2462	-14.44	<=8	Pass
802.11n (HT20)	SISO	2412	-16.49	<=8	Pass
		2437	-15.11	<=8	Pass
		2462	-15.04	<=8	Pass
802.11n (HT40)	SISO	2422	-18.27	<=8	Pass
		2437	-18.59	<=8	Pass
		2452	-19.39	<=8	Pass
Note1: Antenna Gain: Ant1: 2.86dBi;					

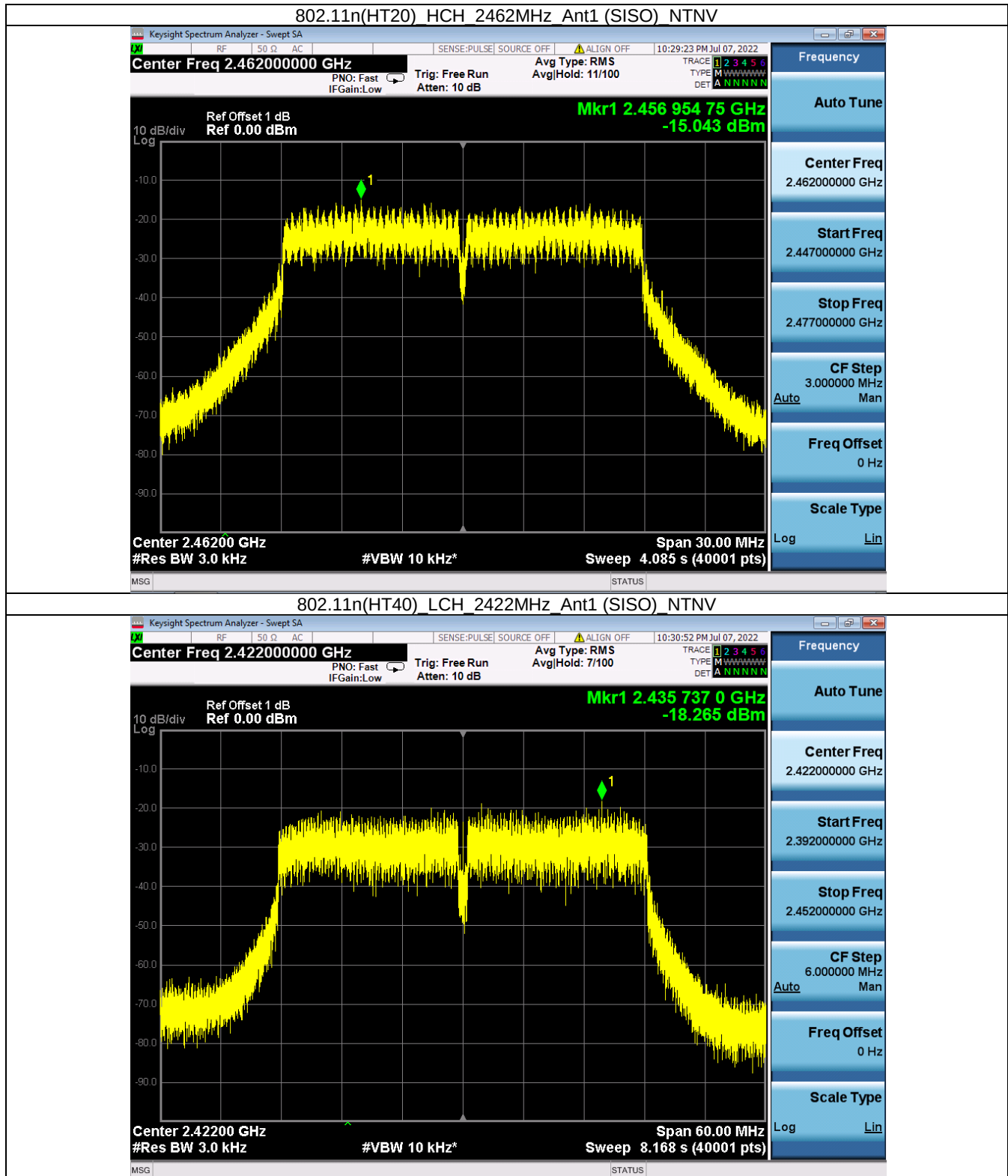
3.1.2 Test Graph

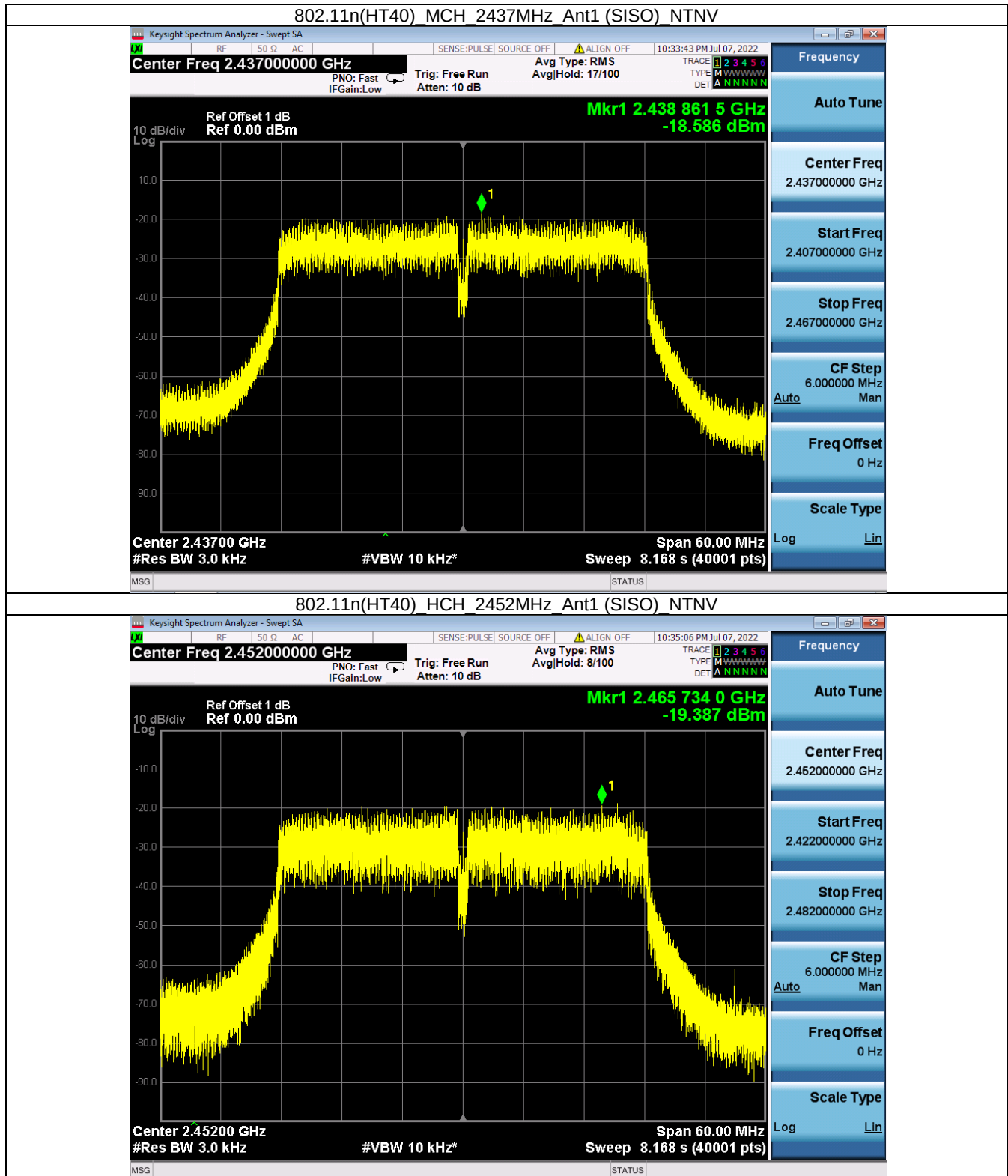












4. Unwanted Emissions InStandard Non-restricted Frequency Bands

4.1 Ref

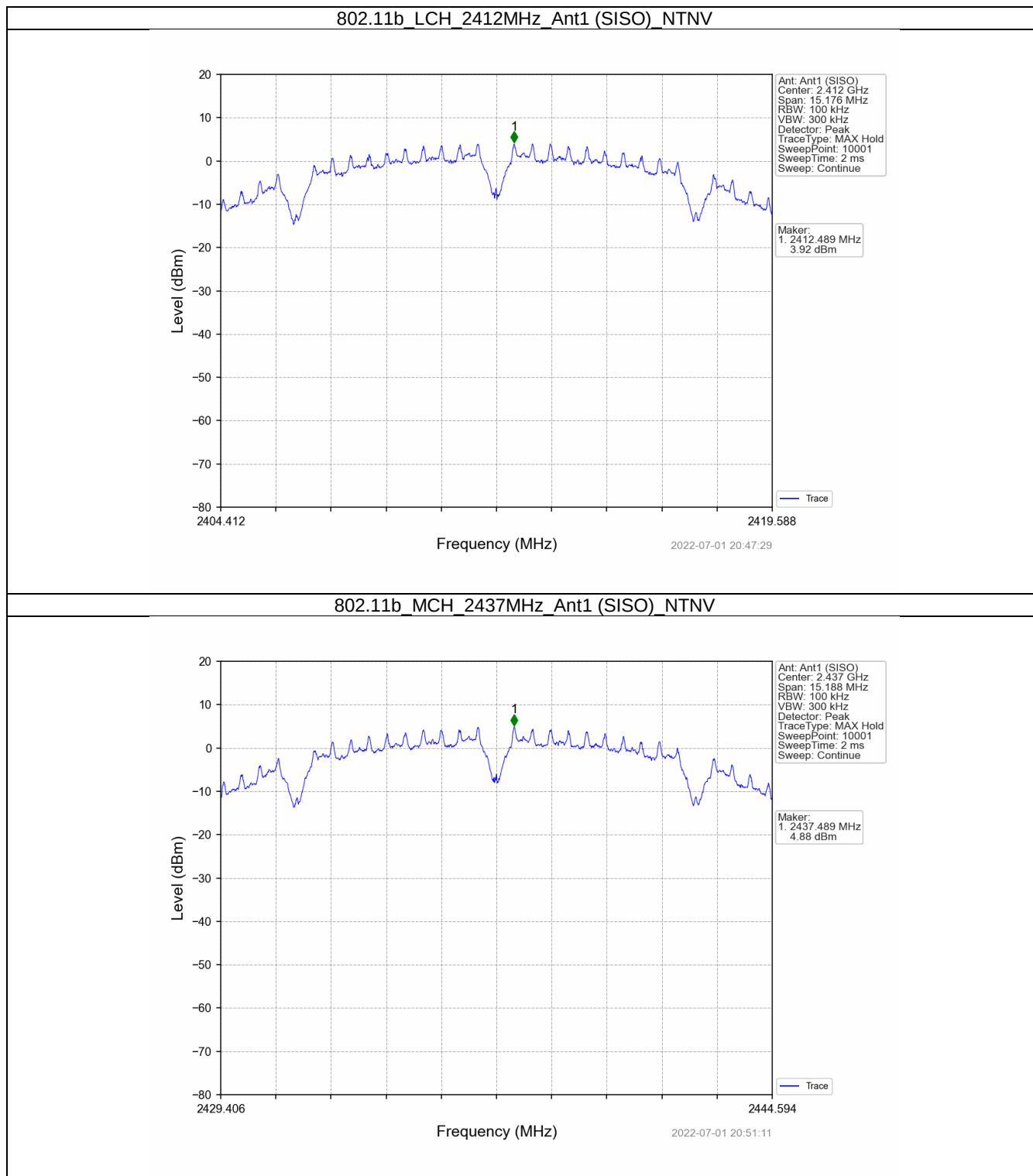
4.1.1 Test Result

Mode	Tx Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	3.92
		2437	1	4.88
		2462	1	4.31
802.11g	SISO	2412	1	0.04
		2437	1	0.78
		2462	1	0.61
802.11n (HT20)	SISO	2412	1	-0.43
		2437	1	0.38
		2462	1	-0.19
802.11n (HT40)	SISO	2422	1	-3.05
		2437	1	-2.47
		2452	1	-2.58

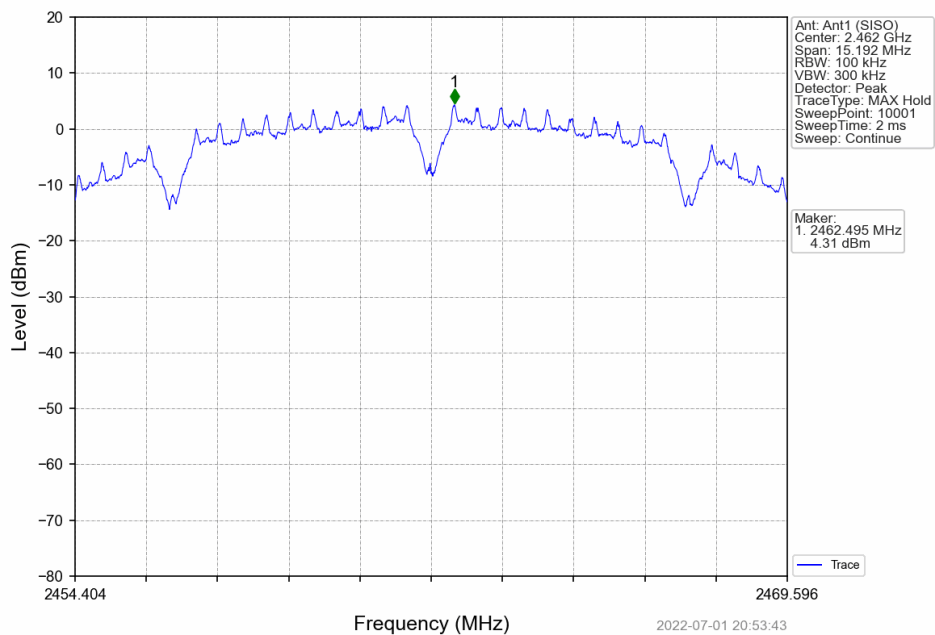
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

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.

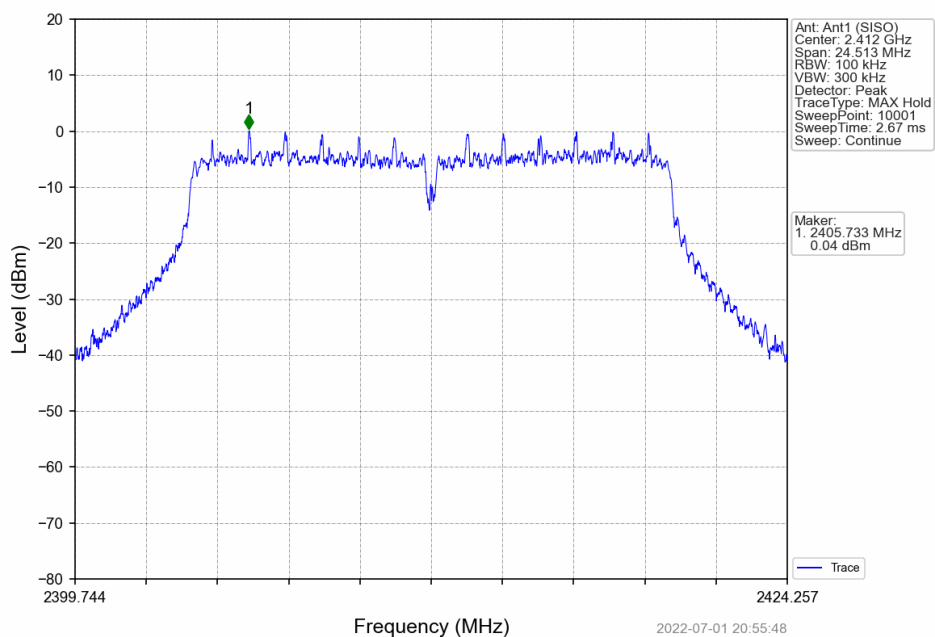
4.1.2 Test Graph



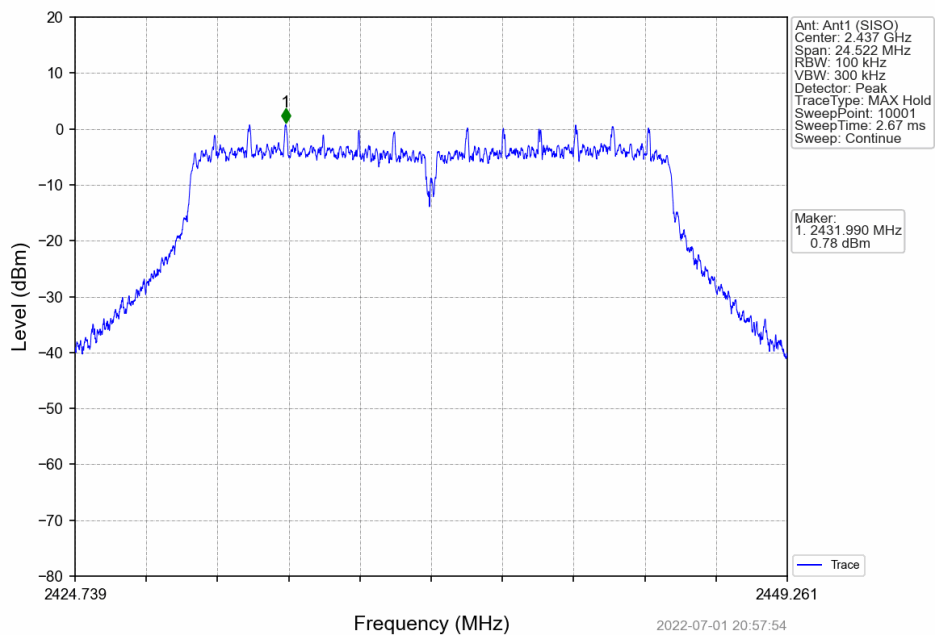
802.11b HCH 2462MHz Ant1 (SISO) NTN



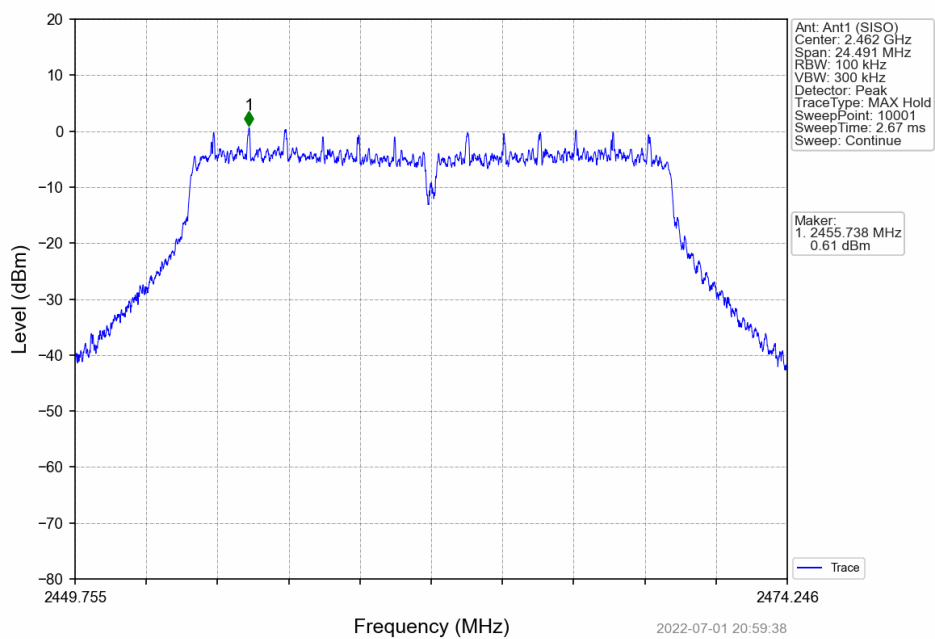
802.11g LCH 2412MHz Ant1 (SISO) NTN



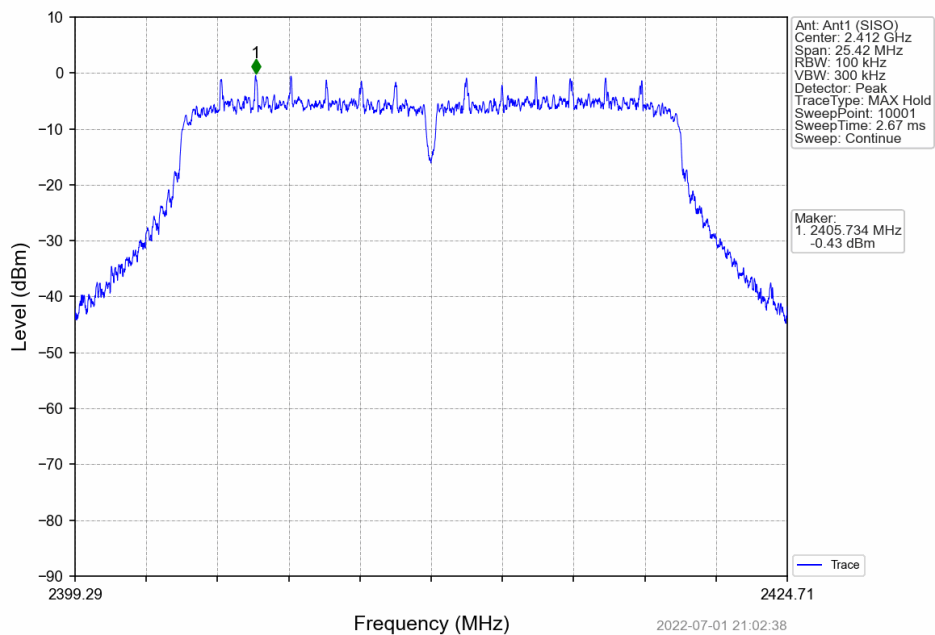
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



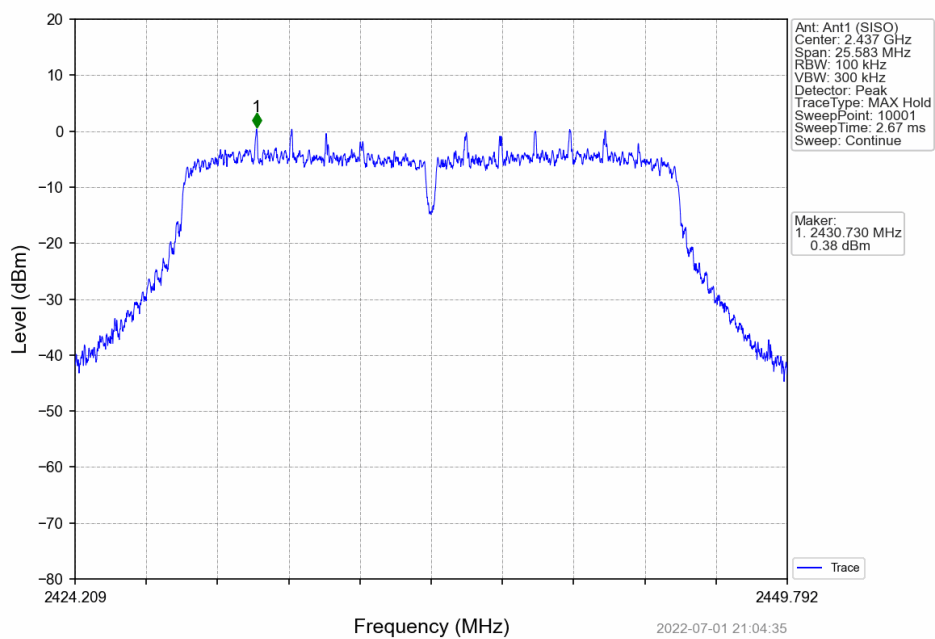
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



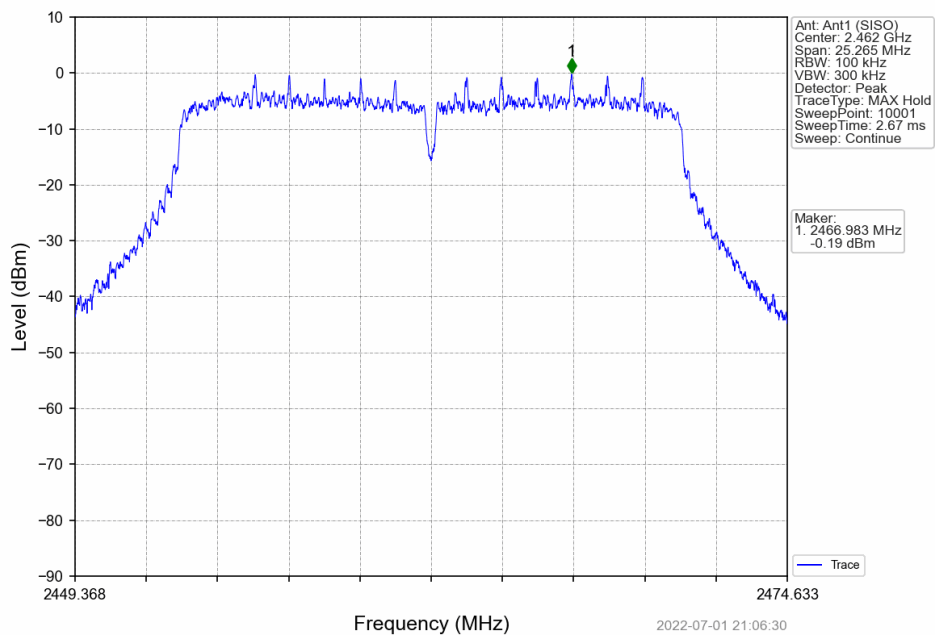
802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



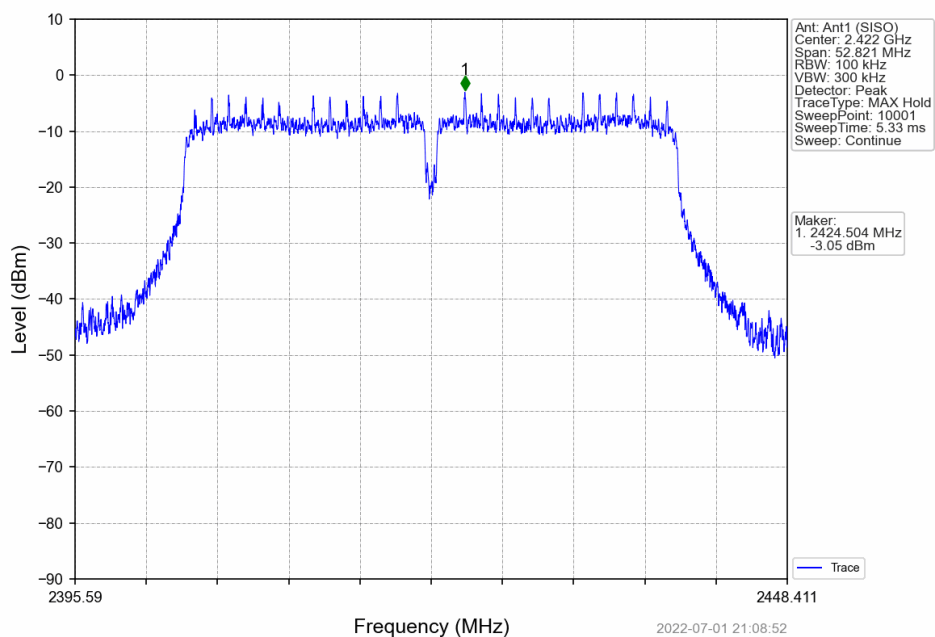
802.11n(HT20) MCH 2437MHz Ant1 (SISO) NTNV



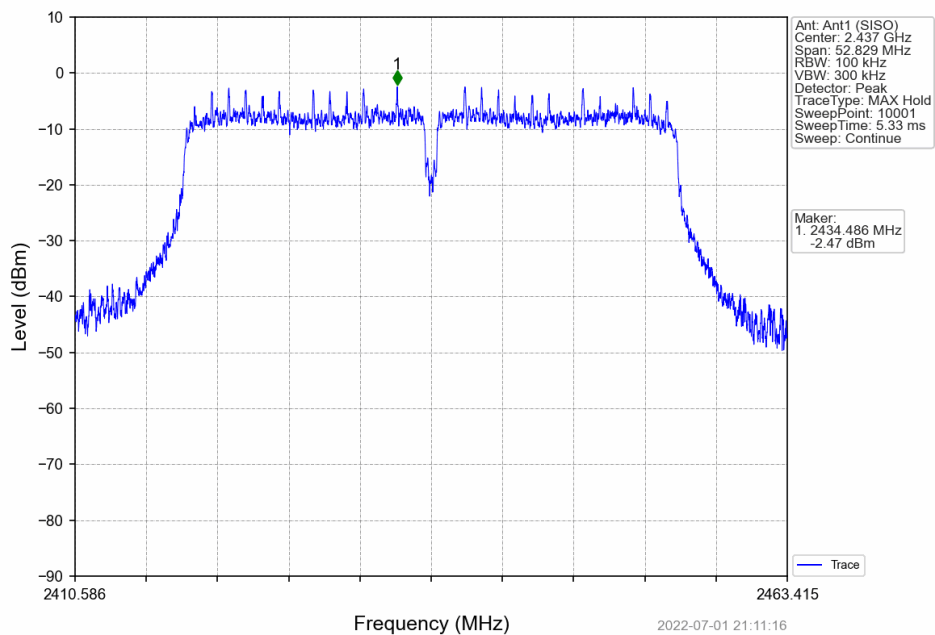
802.11n(HT20) HCH 2462MHz Ant1 (SISO) NTNV



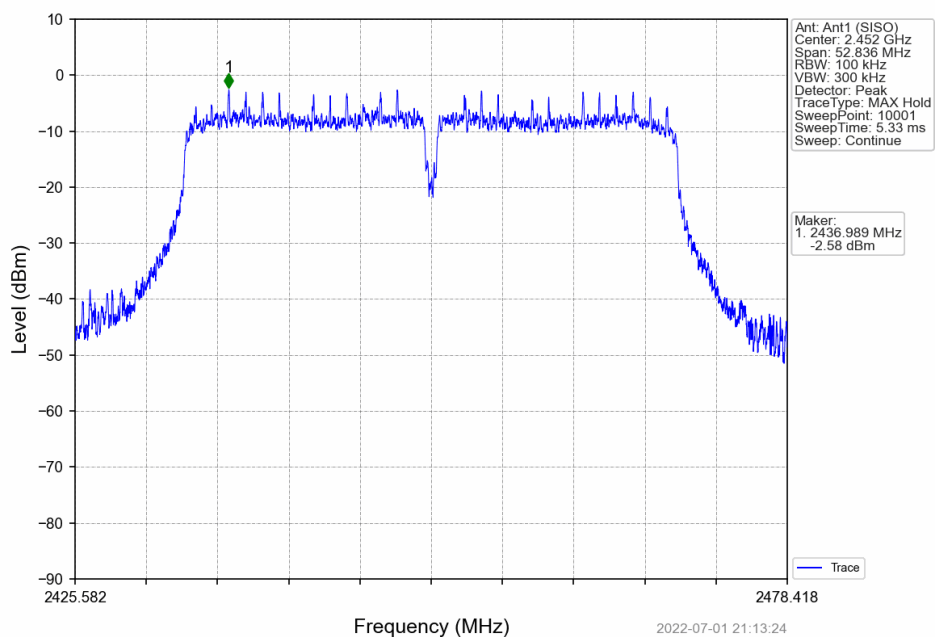
802.11n(HT40) LCH 2422MHz Ant1 (SISO) NTNV



802.11n(HT40) MCH_2437MHz_Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTN



4.2 CSE

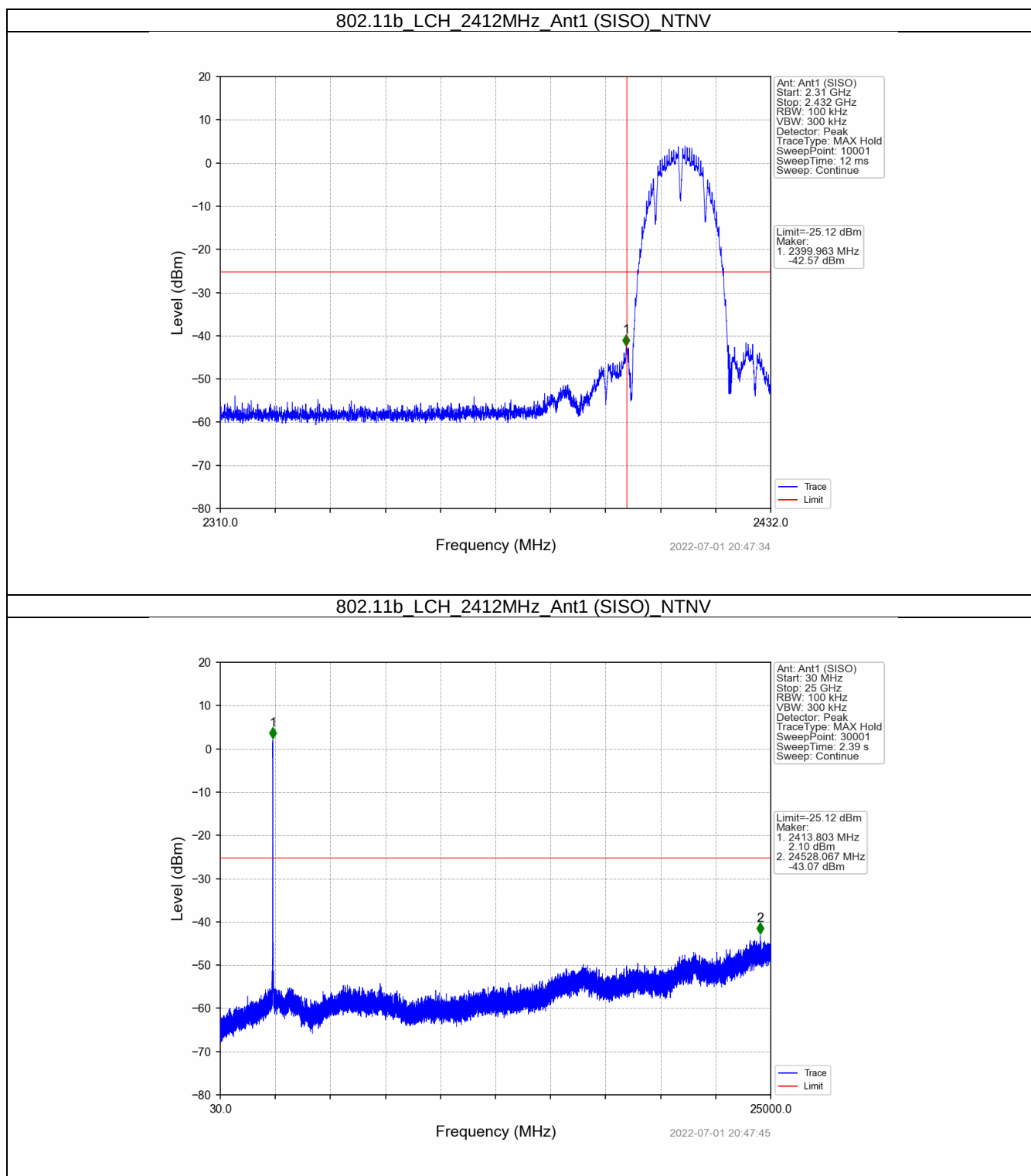
4.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.88	-25.12	Pass
		2437	1	4.88	-25.12	Pass
		2462	1	4.88	-25.12	Pass
802.11g	SISO	2412	1	0.78	-29.22	Pass
		2437	1	0.78	-29.22	Pass
		2462	1	0.78	-29.22	Pass
802.11n (HT20)	SISO	2412	1	0.38	-29.62	Pass
		2437	1	0.38	-29.62	Pass
		2462	1	0.38	-29.62	Pass
802.11n (HT40)	SISO	2422	1	-2.47	-32.47	Pass
		2437	1	-2.47	-32.47	Pass
		2452	1	-2.47	-32.47	Pass

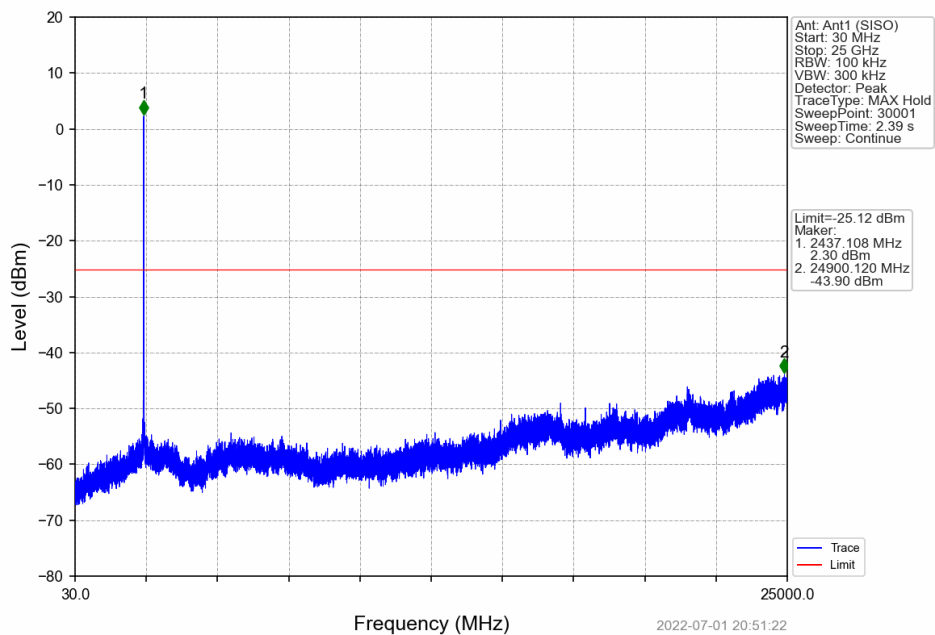
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

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.

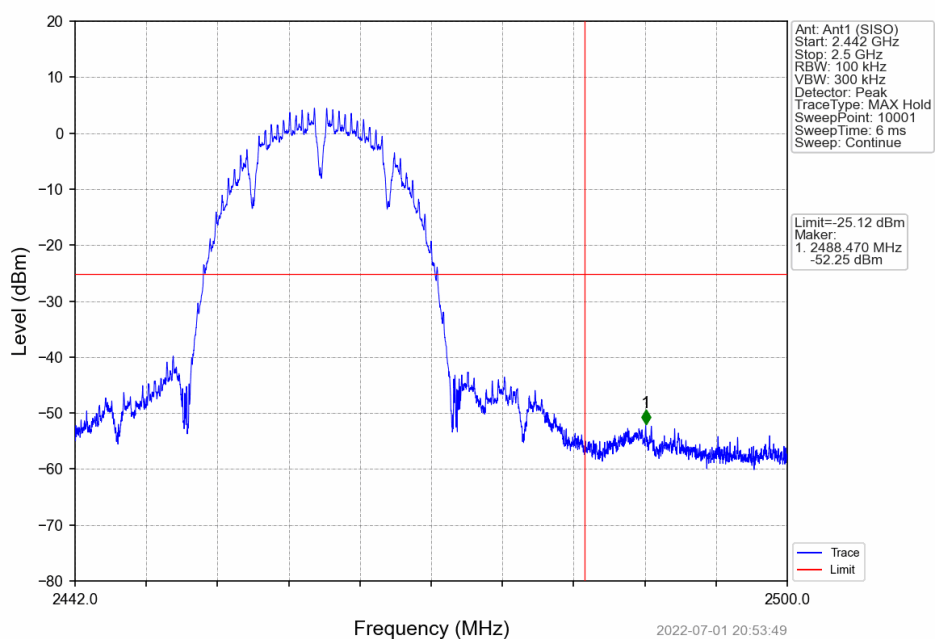
4.2.2 Test Graph



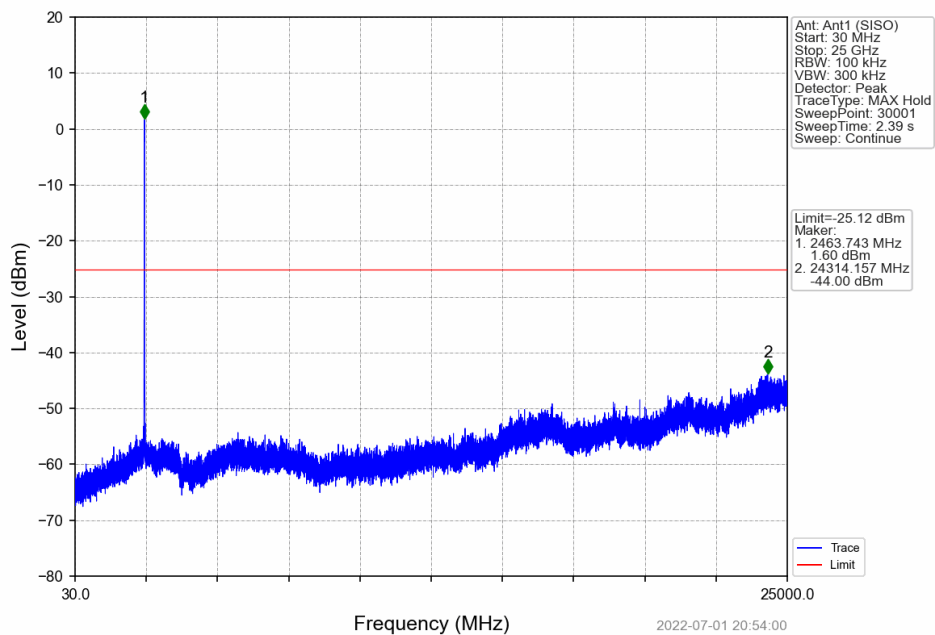
802.11b MCH 2437MHz Ant1 (SISO) NTN



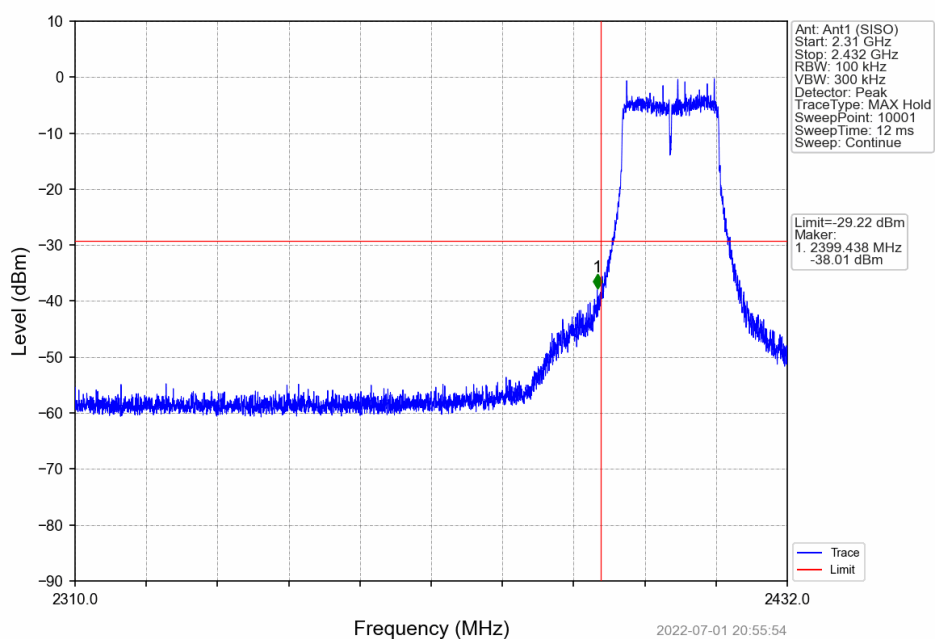
802.11b_HCH_2462MHz_Ant1 (SISO) NTN



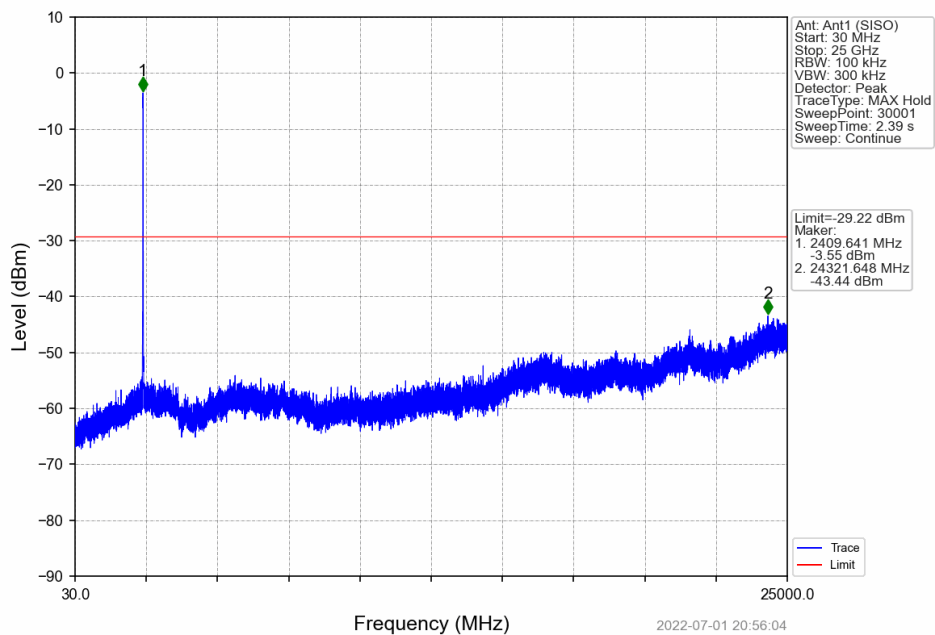
802.11b HCH 2462MHz Ant1 (SISO) NTN



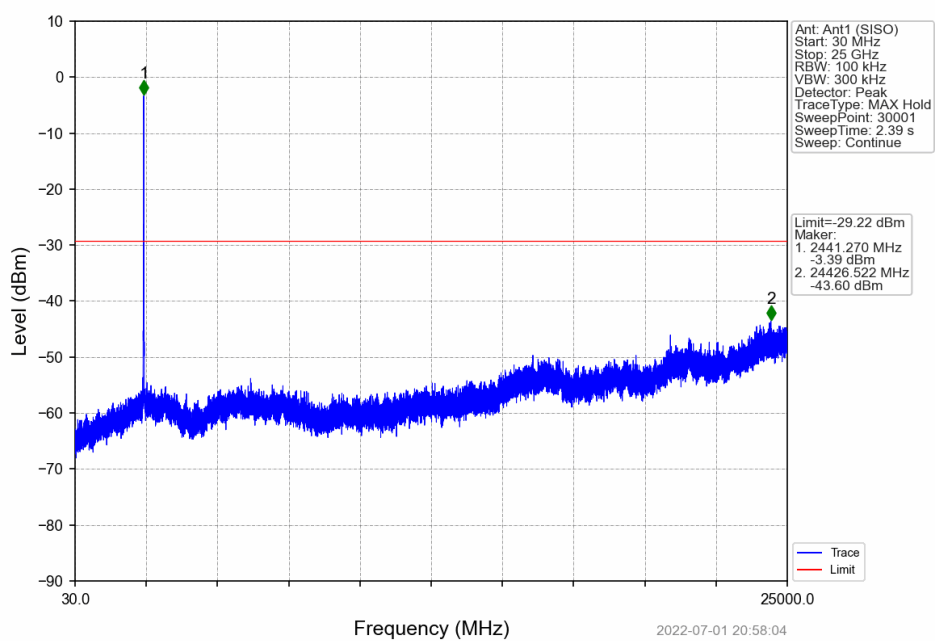
802.11g LCH 2412MHz Ant1 (SISO) NTN



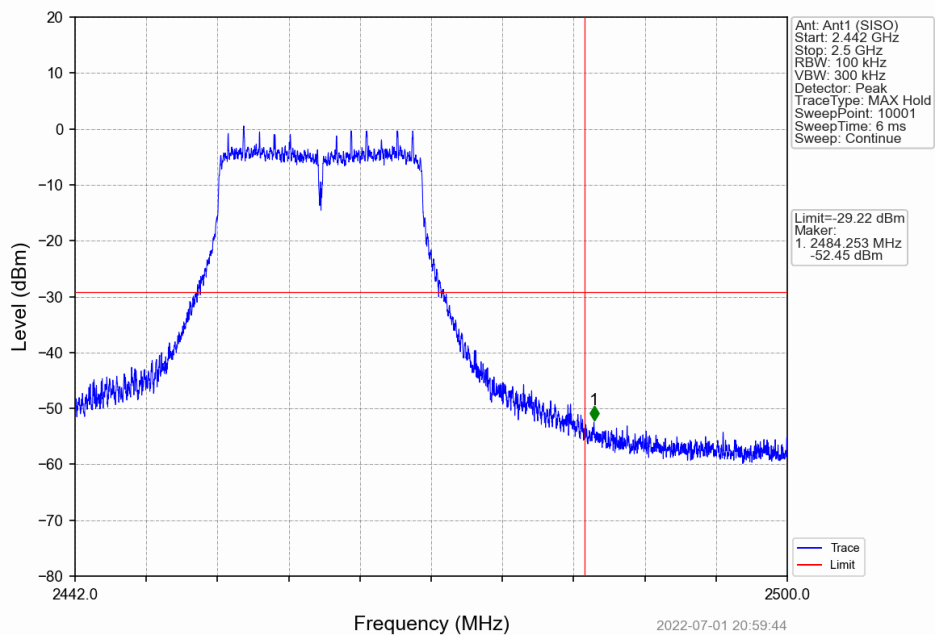
802.11g LCH 2412MHz Ant1 (SISO) NTN



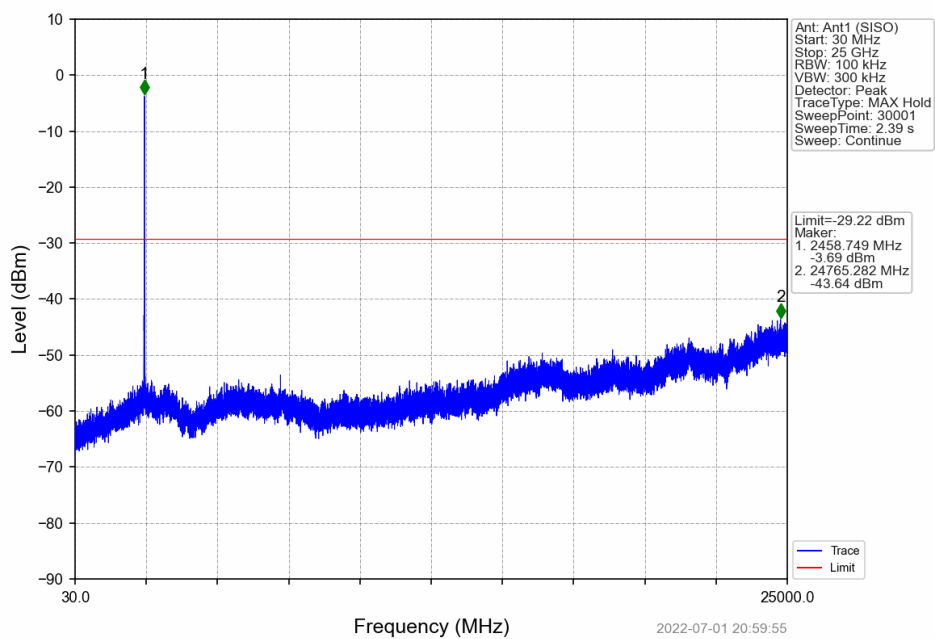
802.11g_MCH_2437MHz_Ant1 (SISO) NTN



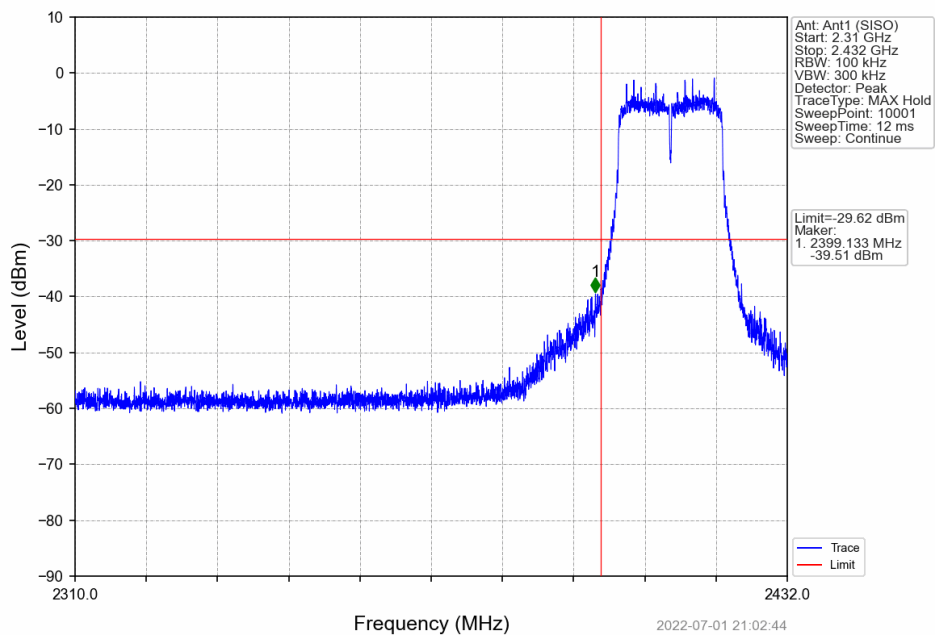
802.11g HCH 2462MHz Ant1 (SISO) NTN



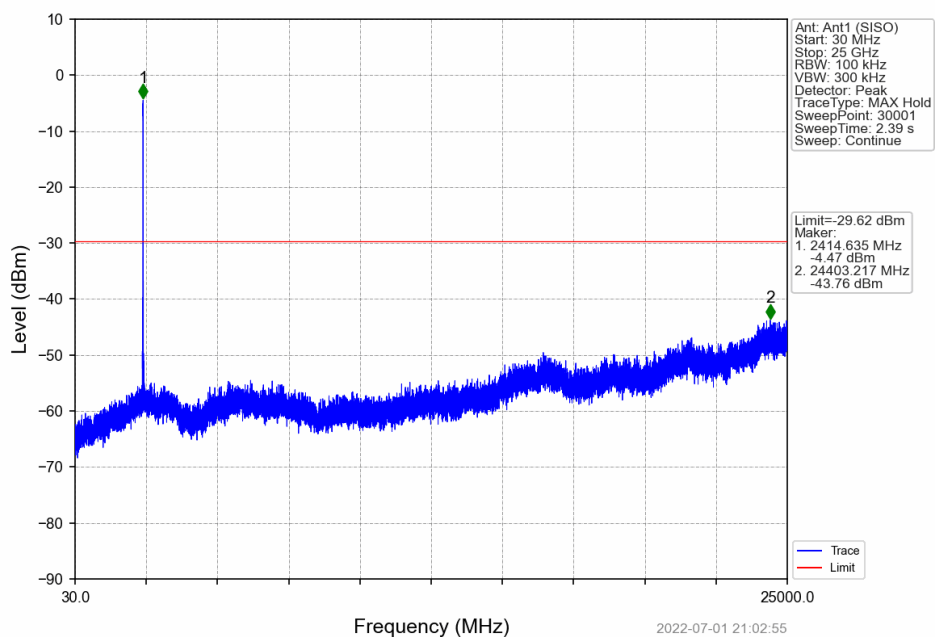
802.11g HCH 2462MHz Ant1 (SISO) NTN



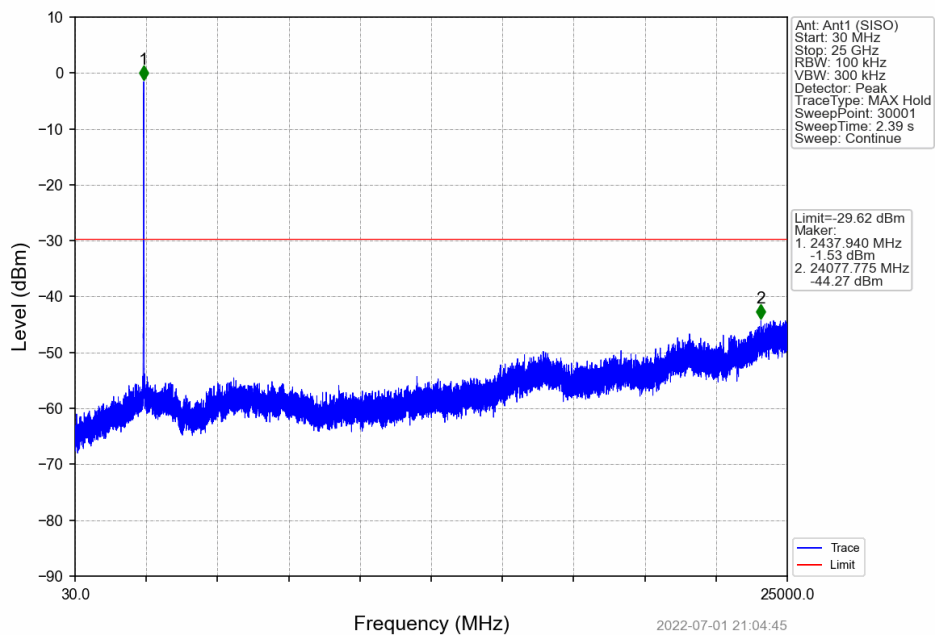
802.11n(HT20) LCH_2412MHz_Ant1 (SISO) NTN



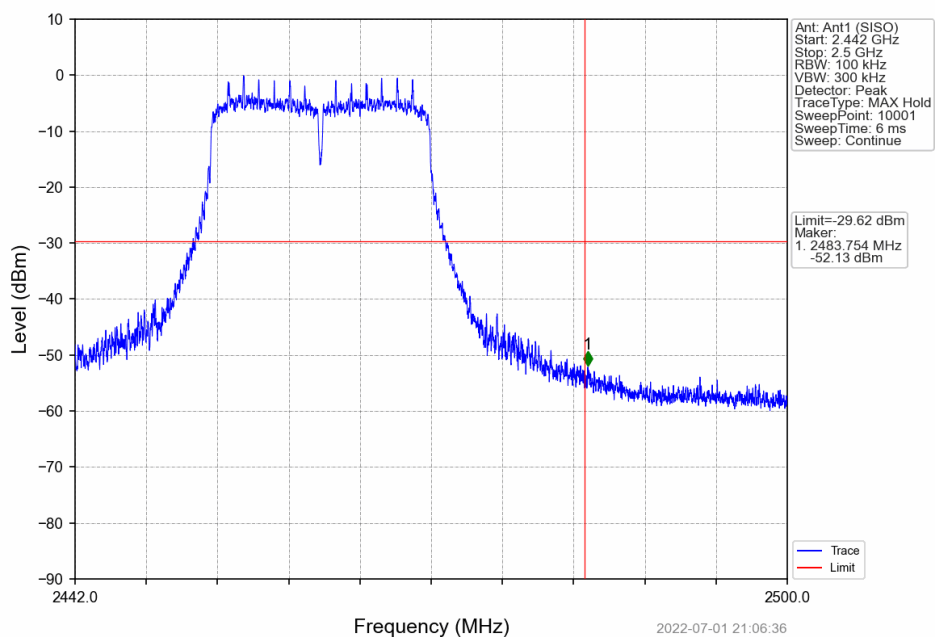
802.11n(HT20) LCH_2412MHz_Ant1 (SISO) NTN



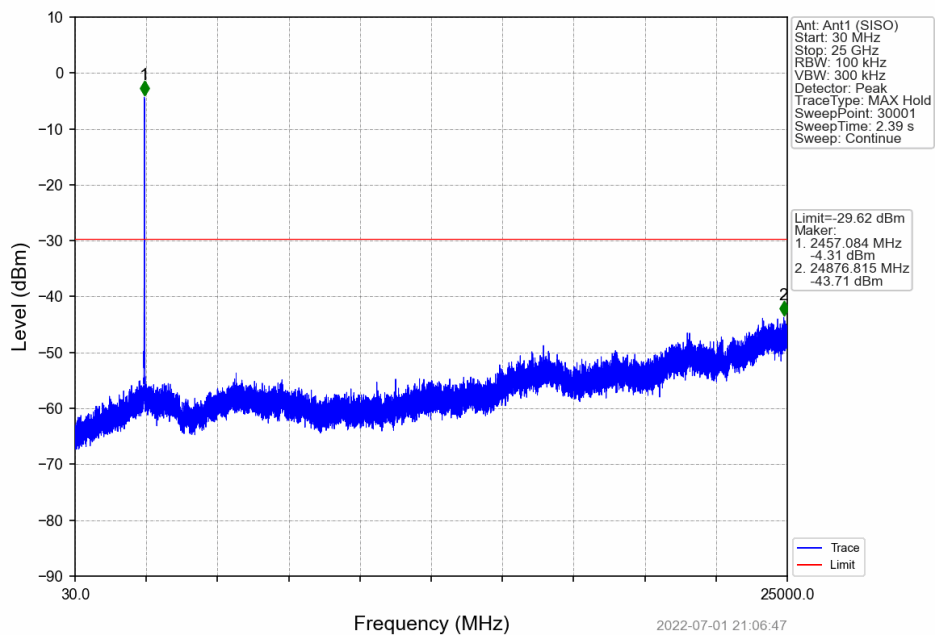
802.11n(HT20) MCH_2437MHz_Ant1 (SISO) NTNV



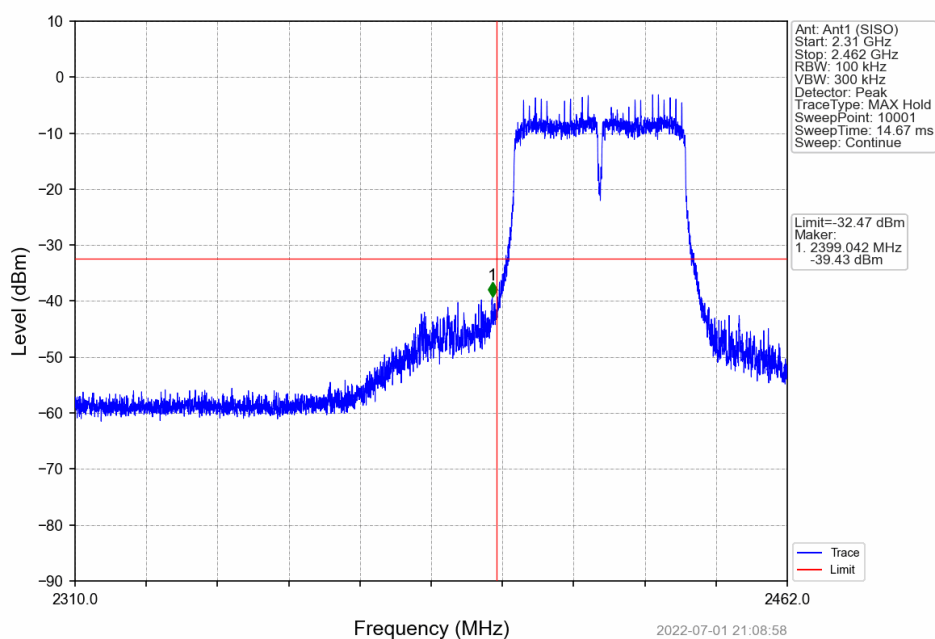
802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTNV



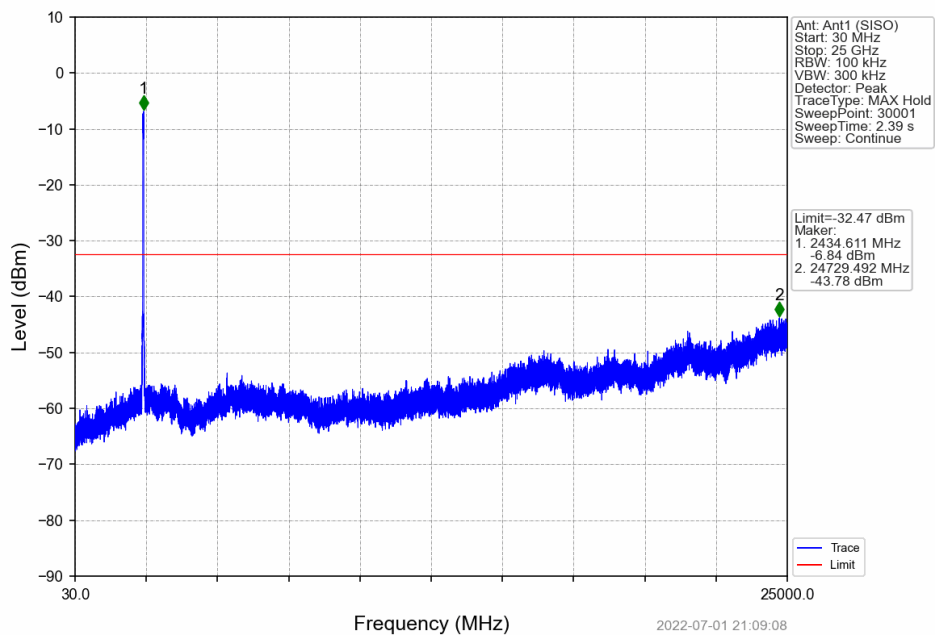
802.11n(HT20) HCH 2462MHz Ant1 (SISO) NTNV



802.11n(HT40) LCH 2422MHz Ant1 (SISO) NTNV



802.11n(HT40) LCH 2422MHz Ant1 (SISO) NTNV



802.11n(HT40) MCH 2437MHz Ant1 (SISO) NTNV

