

Appendix RF Test Data for 2.4G WIFI

Company: : **Starpower Network Co., Ltd.**

EUT : **Ziea One**

FCC ID: : **2BG5R-ZIEAONE**

Model Number : **ZIEA One**

Report No. : **HTT202602080F01**

Reviewed By : **Heber He**

1. Duty Cycle

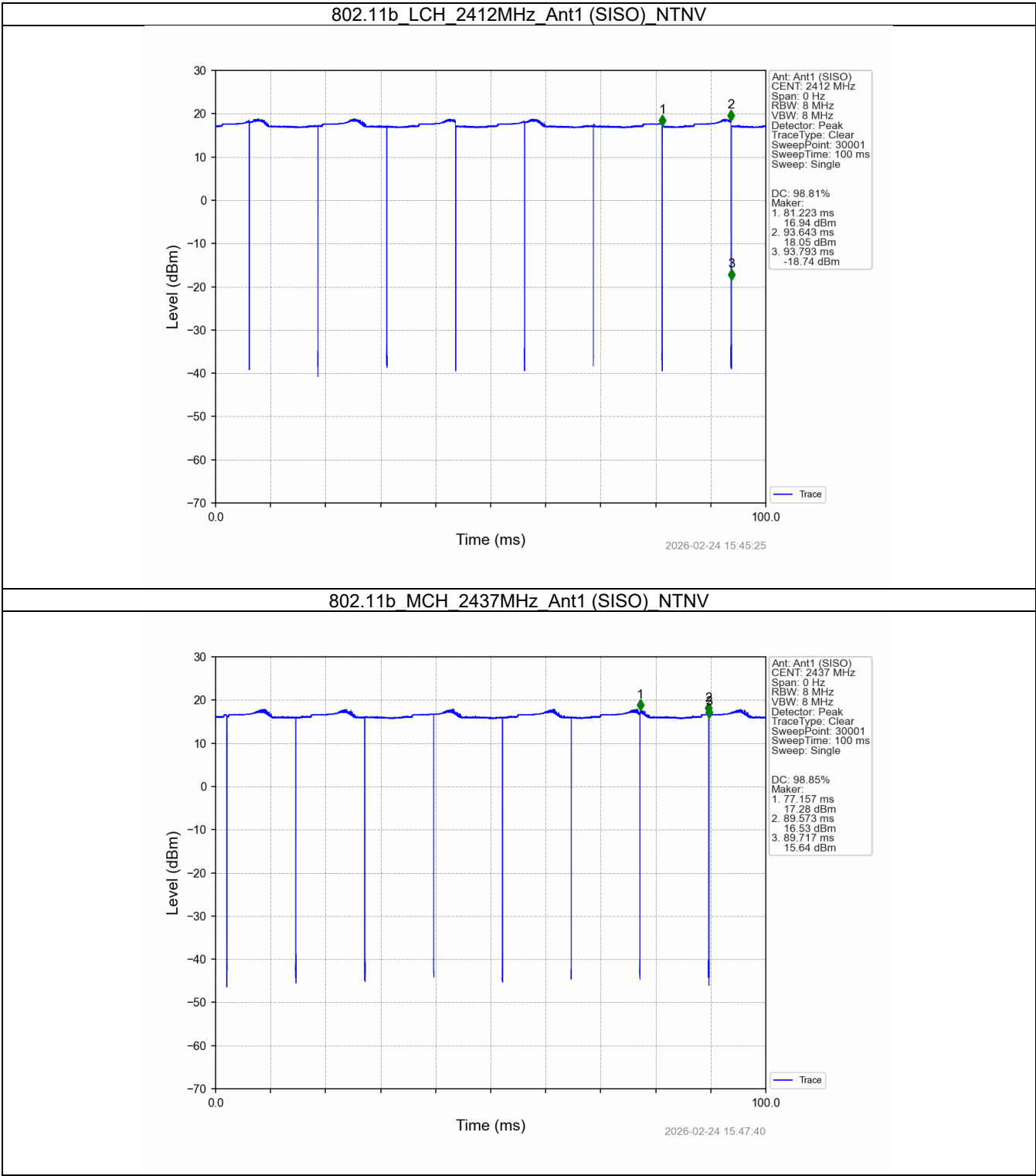
1.1 Test Result

1.1.1 Ant1

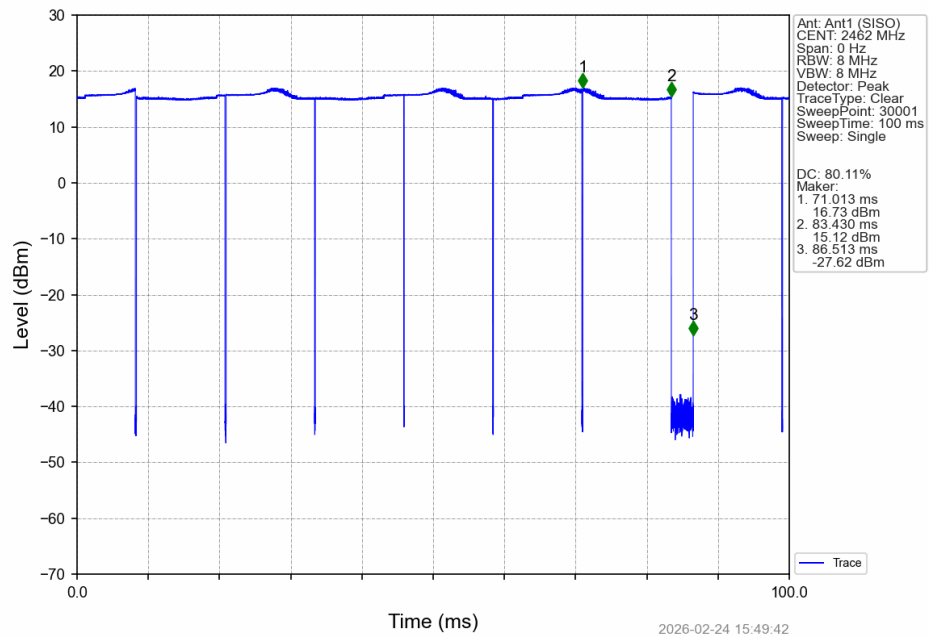
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	12.420	12.570	98.81	0.05	0.93
		2437	12.416	12.560	98.85	0.05	0.79
		2462	12.417	15.500	80.11	0.96	19.47
802.11g	SISO	2412	2.071	2.199	94.18	0.26	4.44
		2437	2.065	2.235	92.39	0.34	4.69
		2462	2.065	2.190	94.29	0.26	3.65
802.11n (HT20)	SISO	2412	1.926	2.090	92.15	0.35	6.36
		2437	1.920	2.090	91.87	0.37	5.43
		2462	1.926	2.073	92.91	0.32	5.58
802.11n (HT40)	SISO	2422	0.950	1.107	85.82	0.66	11.06
		2437	0.950	1.115	85.20	0.70	11.78
		2452	0.950	1.088	87.32	0.59	9.57

1.2 Test Graph

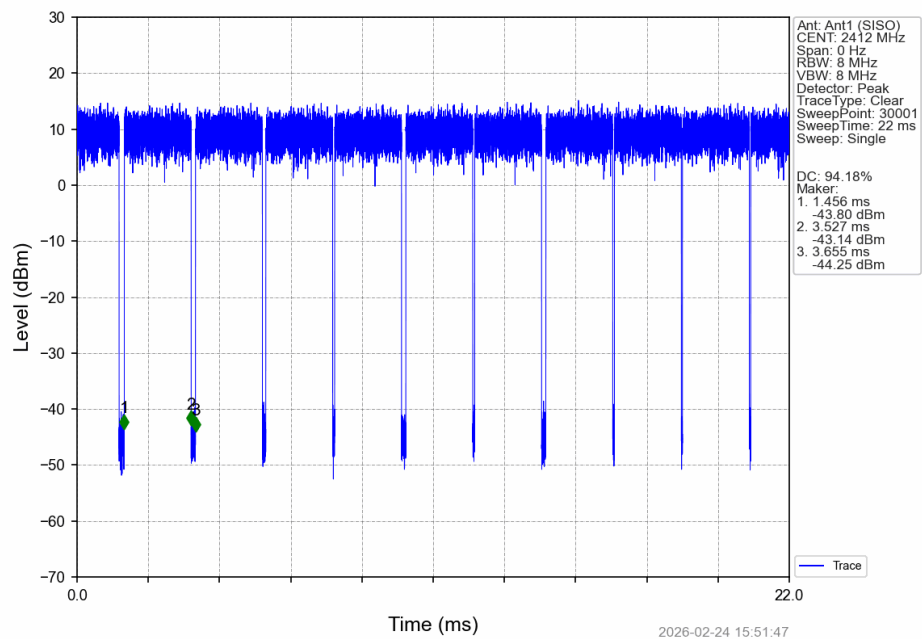
1.2.1 Ant1



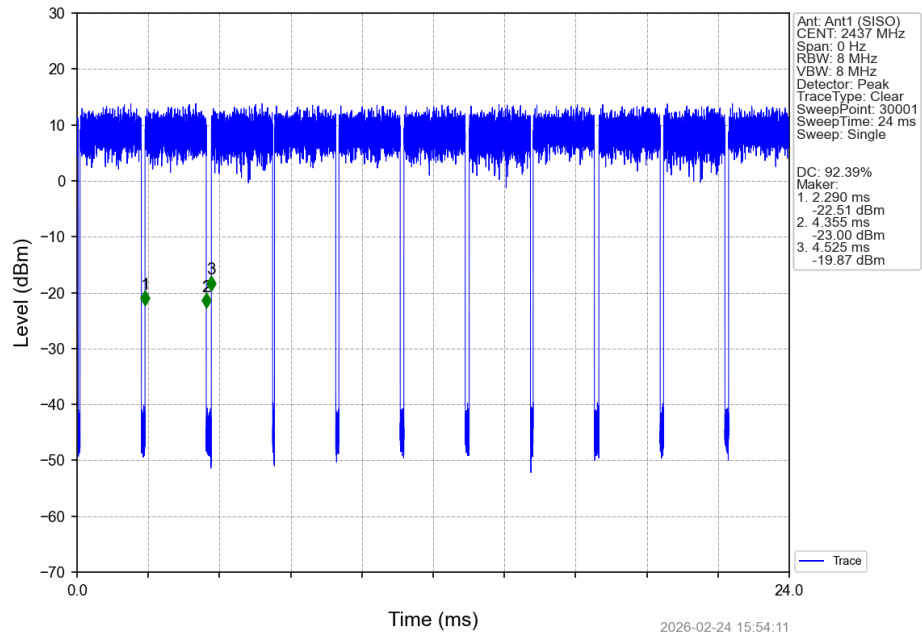
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



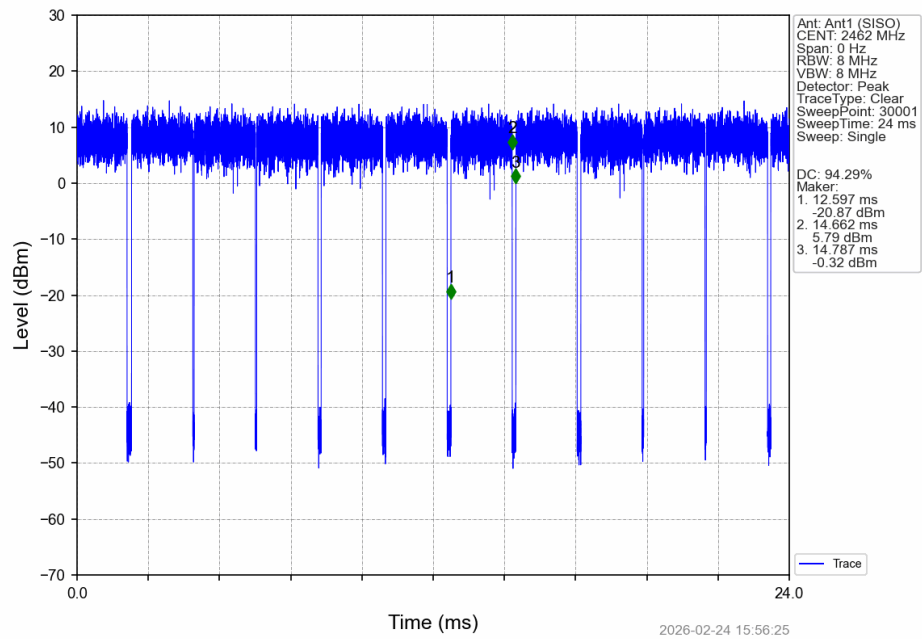
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



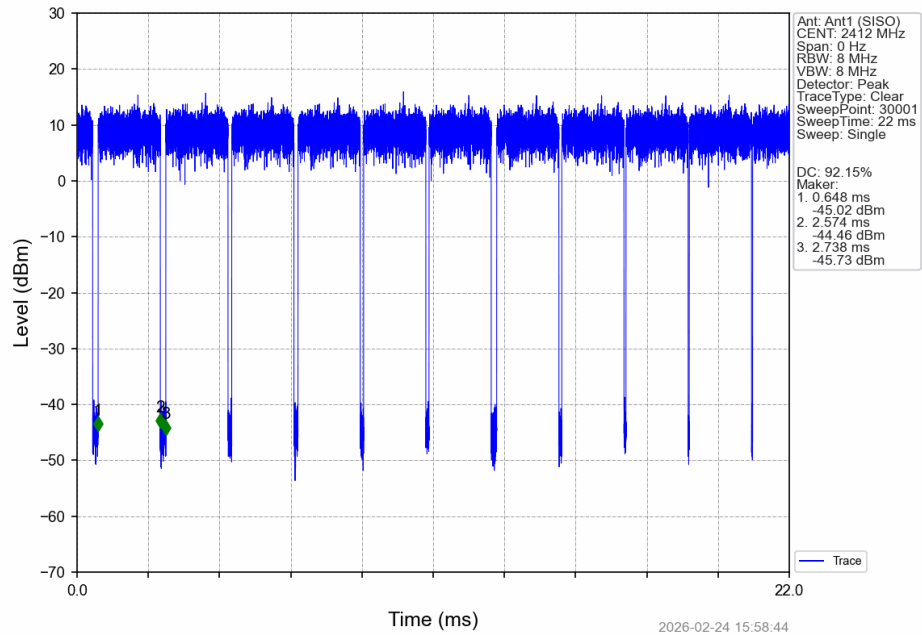
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



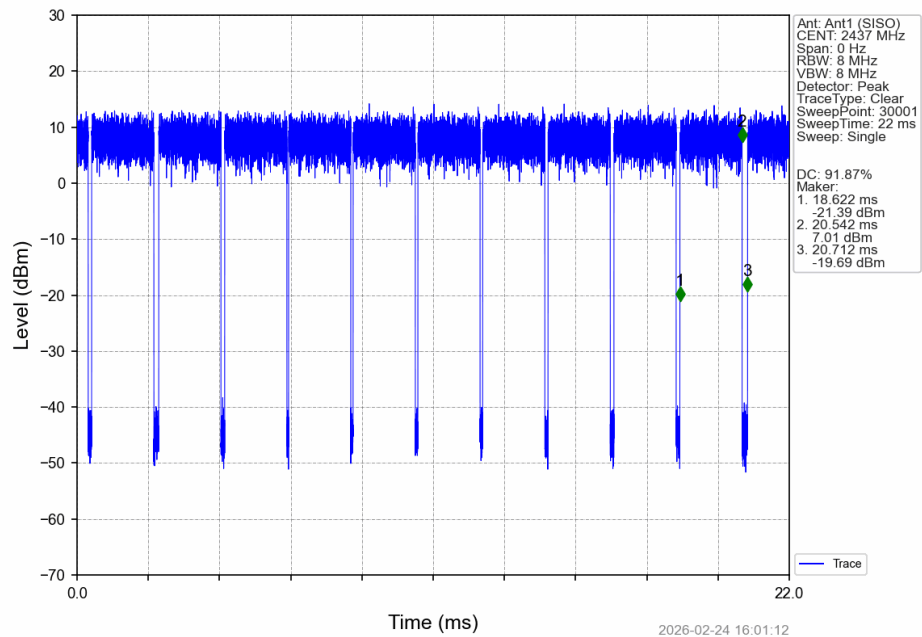
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



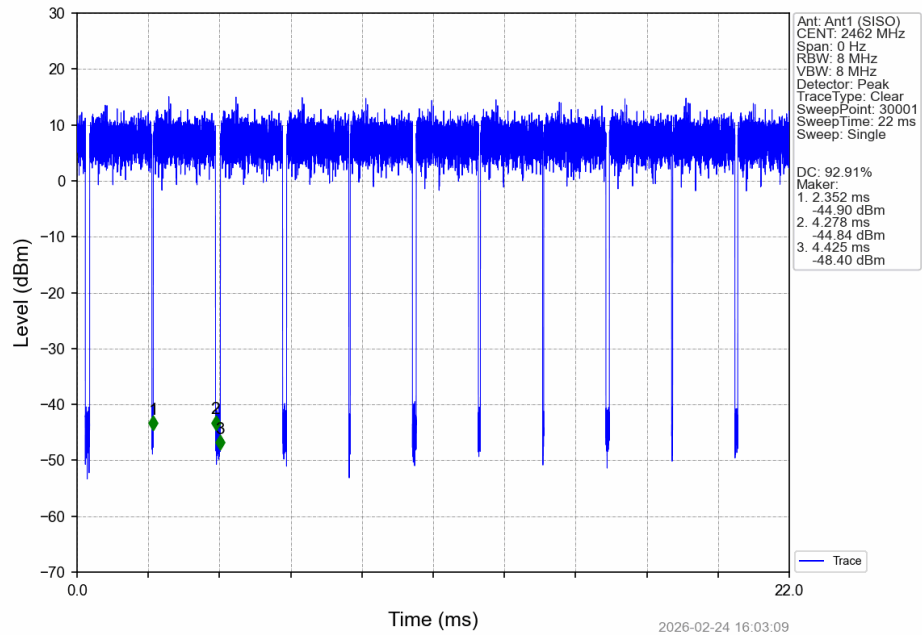
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



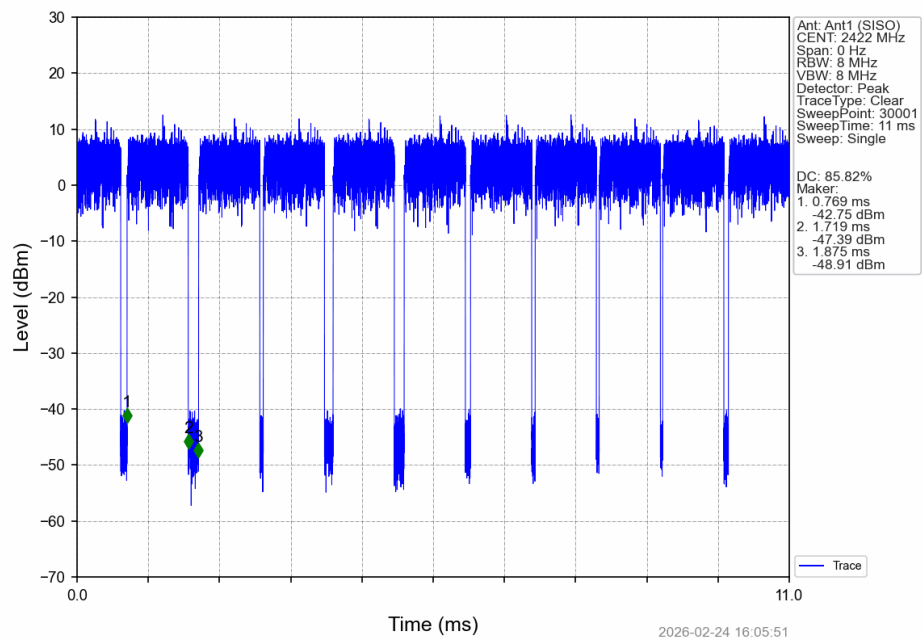
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



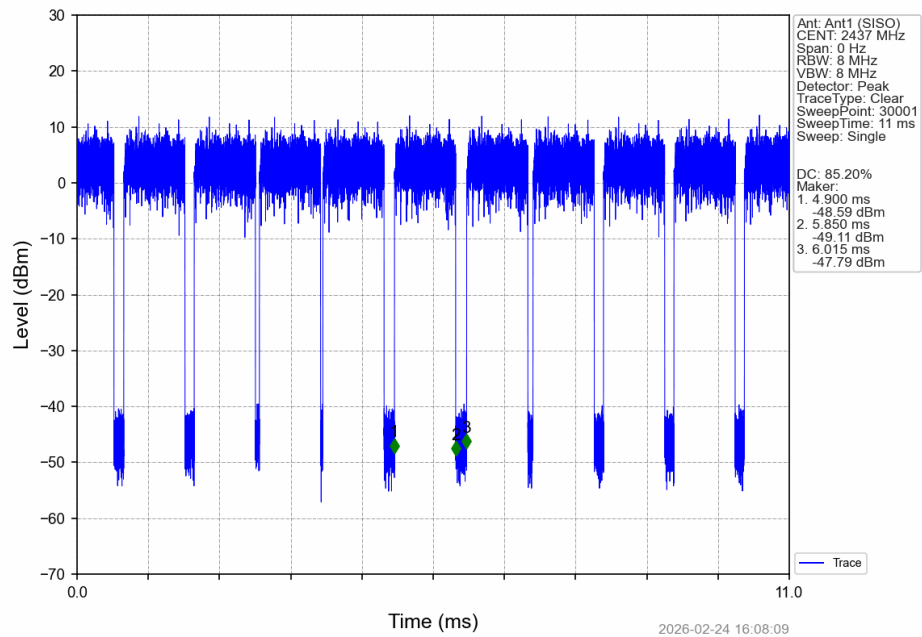
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



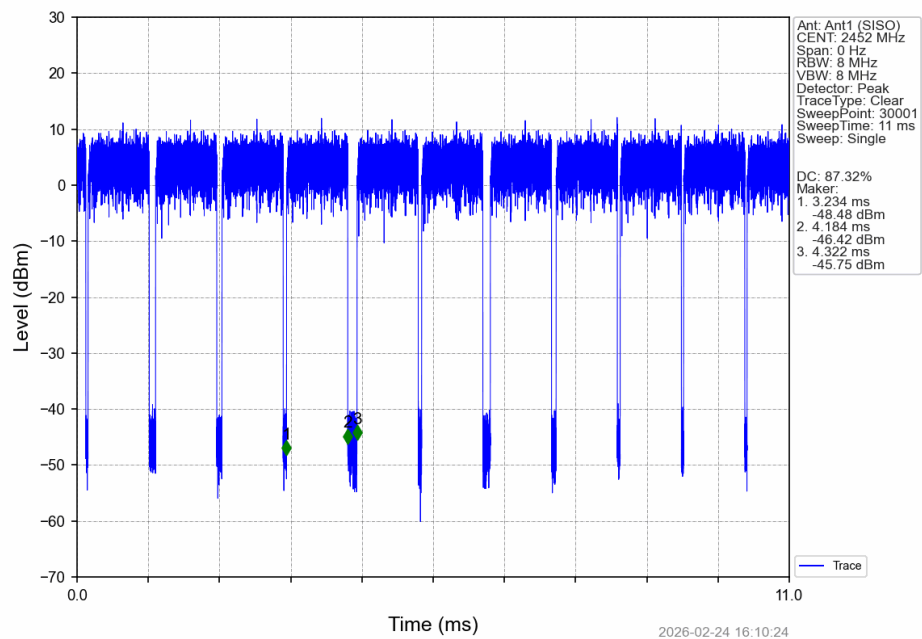
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

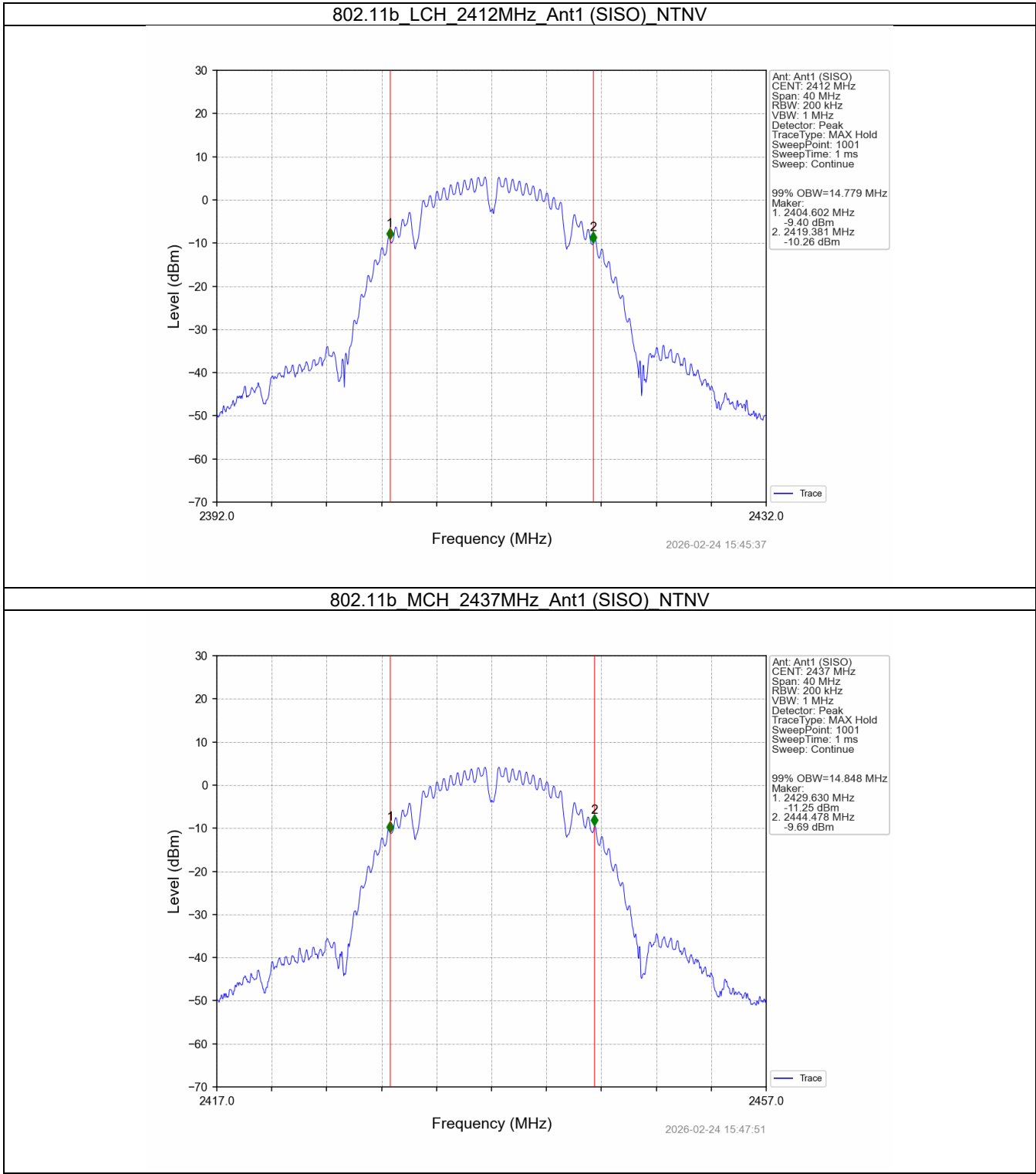
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	14.779	/	Pass
		2437	1	14.848	/	Pass
		2462	1	14.825	/	Pass
802.11g	SISO	2412	1	16.635	/	Pass
		2437	1	16.681	/	Pass
		2462	1	16.562	/	Pass
802.11n (HT20)	SISO	2412	1	17.724	/	Pass
		2437	1	17.719	/	Pass
		2462	1	17.725	/	Pass
802.11n (HT40)	SISO	2422	1	35.962	/	Pass
		2437	1	35.914	/	Pass
		2452	1	35.832	/	Pass

2.1.2 6dB BW

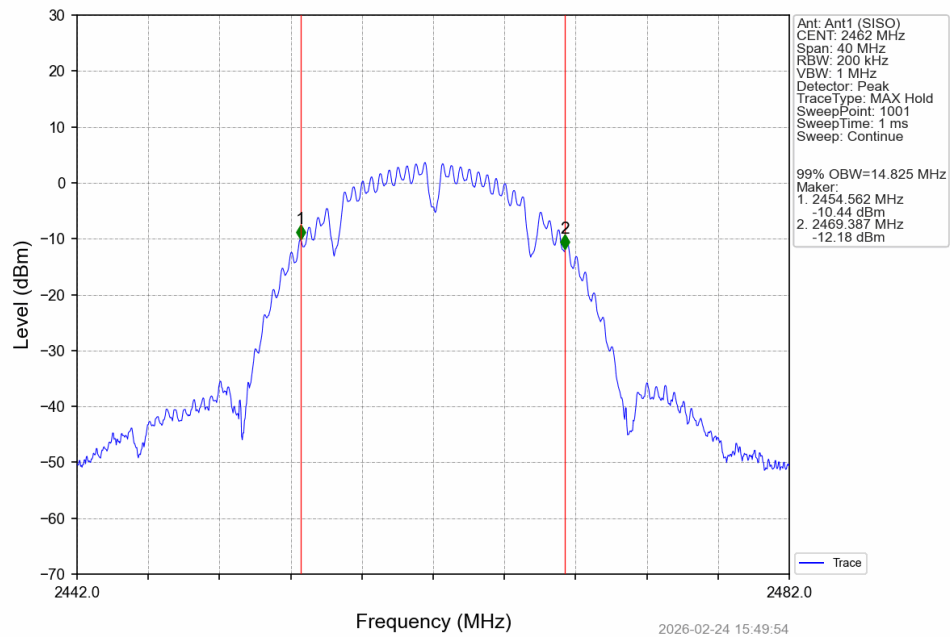
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	9.617	≥ 0.5	Pass
		2437	1	9.642	≥ 0.5	Pass
		2462	1	9.739	≥ 0.5	Pass
802.11g	SISO	2412	1	16.509	≥ 0.5	Pass
		2437	1	16.601	≥ 0.5	Pass
		2462	1	16.736	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	17.644	≥ 0.5	Pass
		2437	1	17.853	≥ 0.5	Pass
		2462	1	17.825	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	36.012	≥ 0.5	Pass
		2437	1	36.094	≥ 0.5	Pass
		2452	1	35.112	≥ 0.5	Pass

2.2 Test Graph

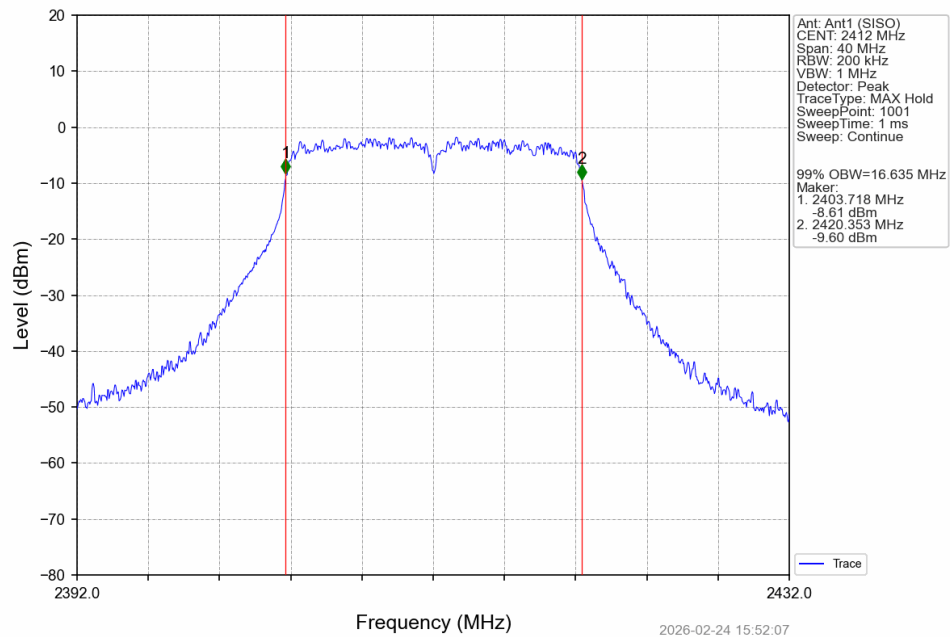
2.2.1 OBW



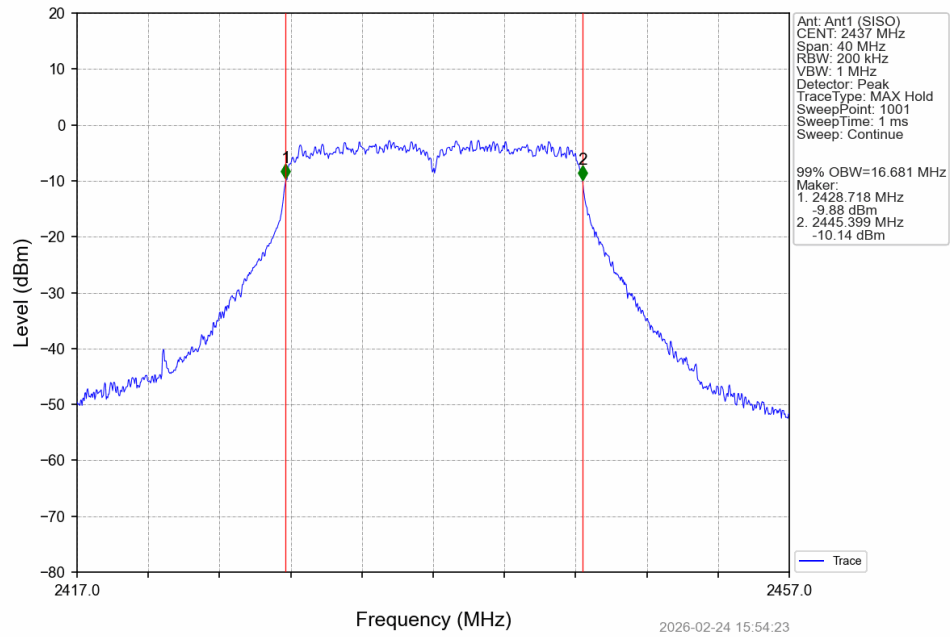
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



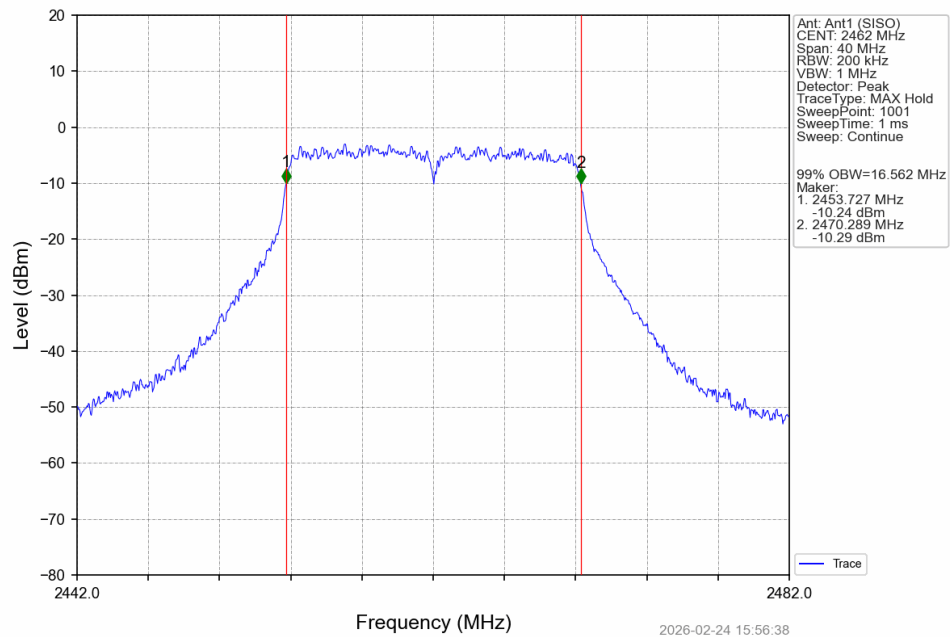
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



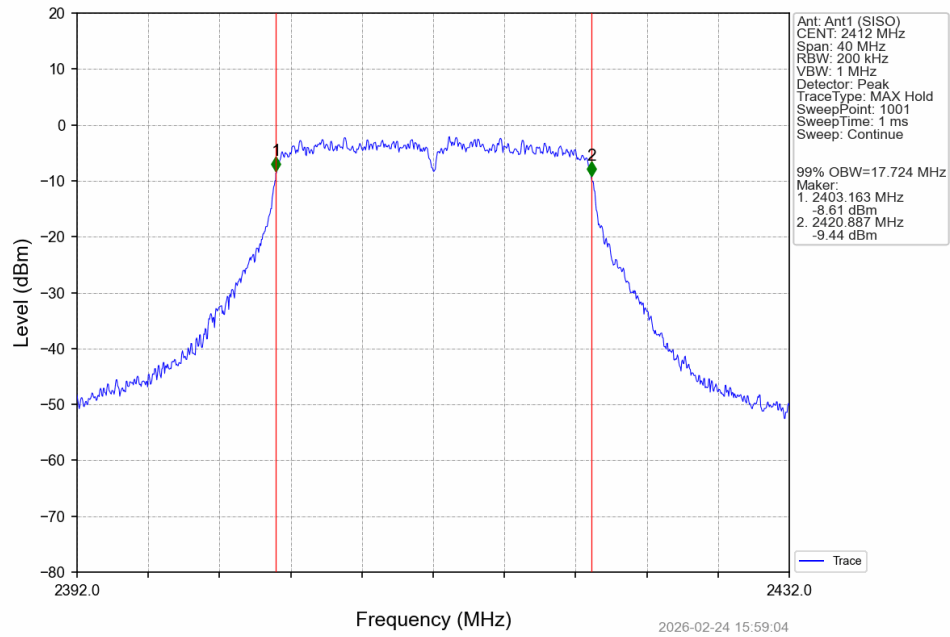
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



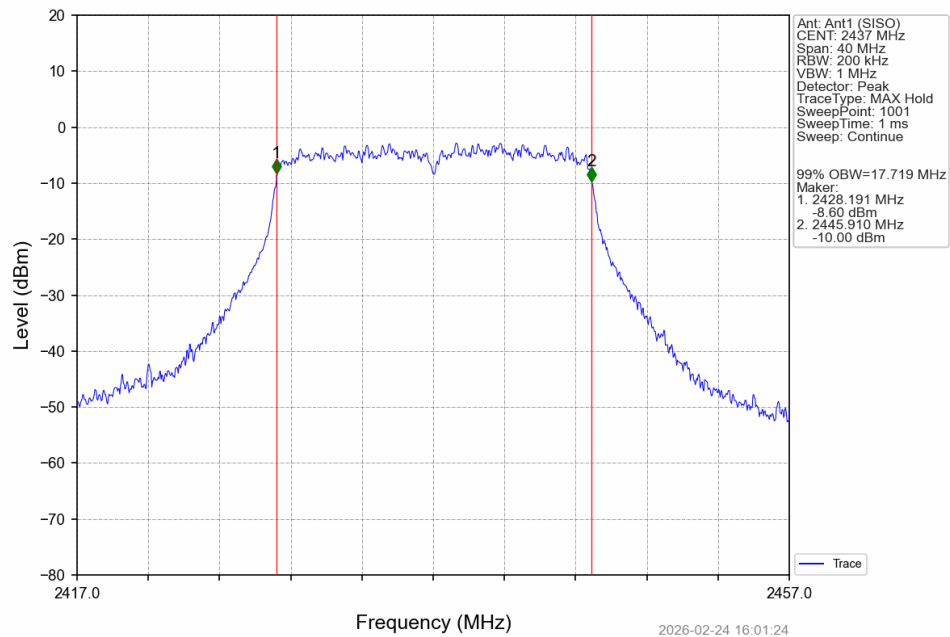
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



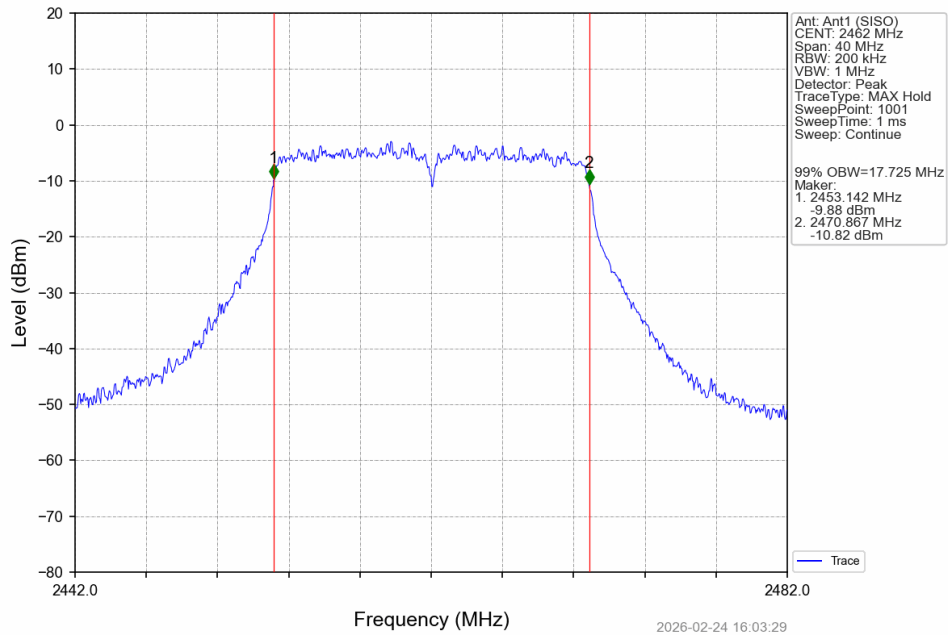
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



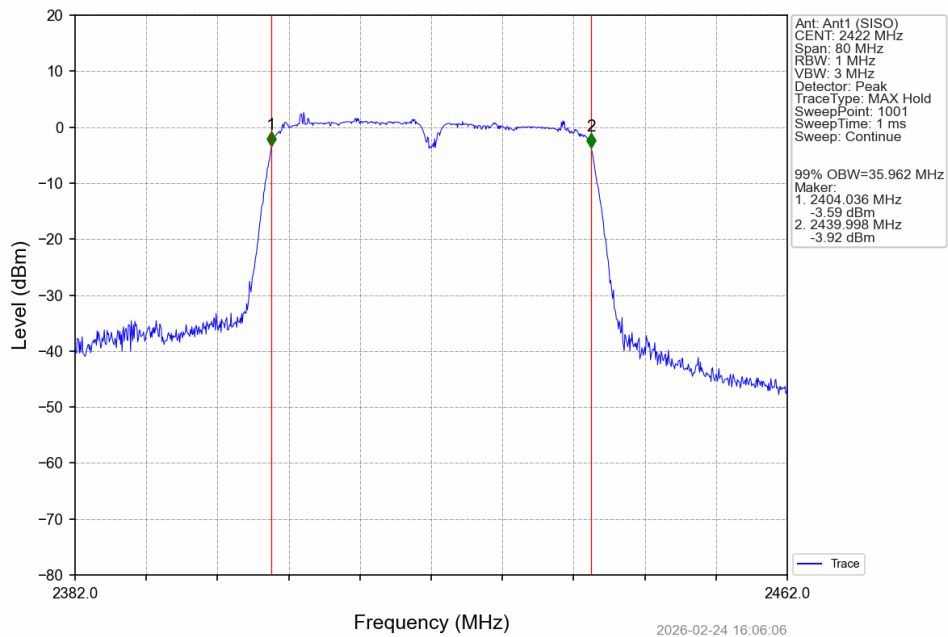
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



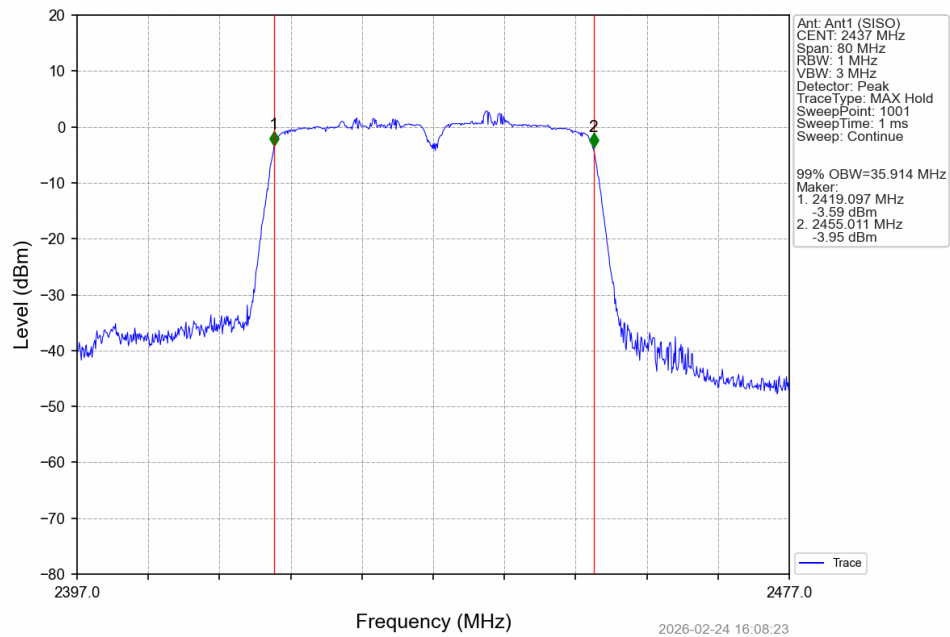
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



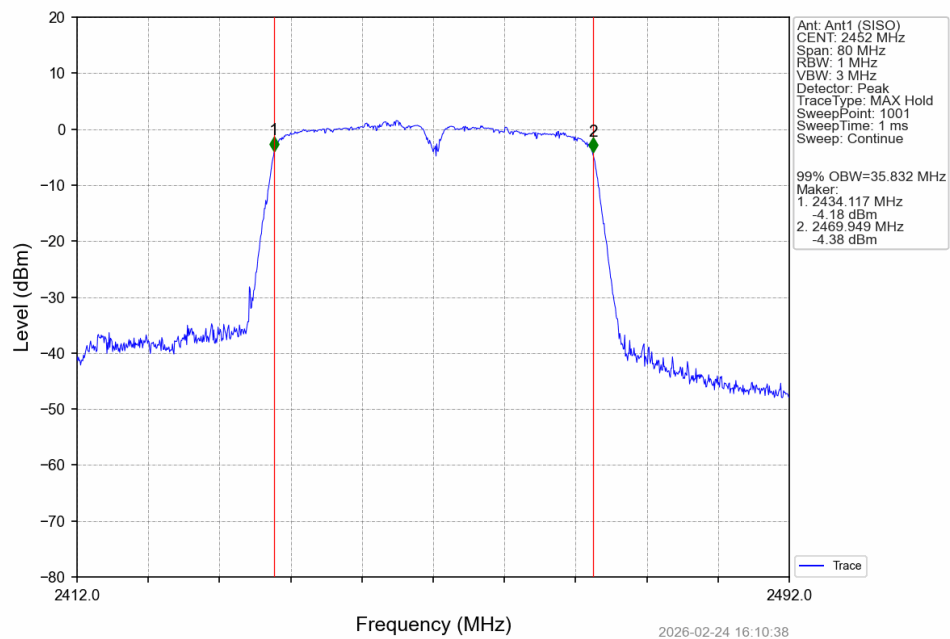
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



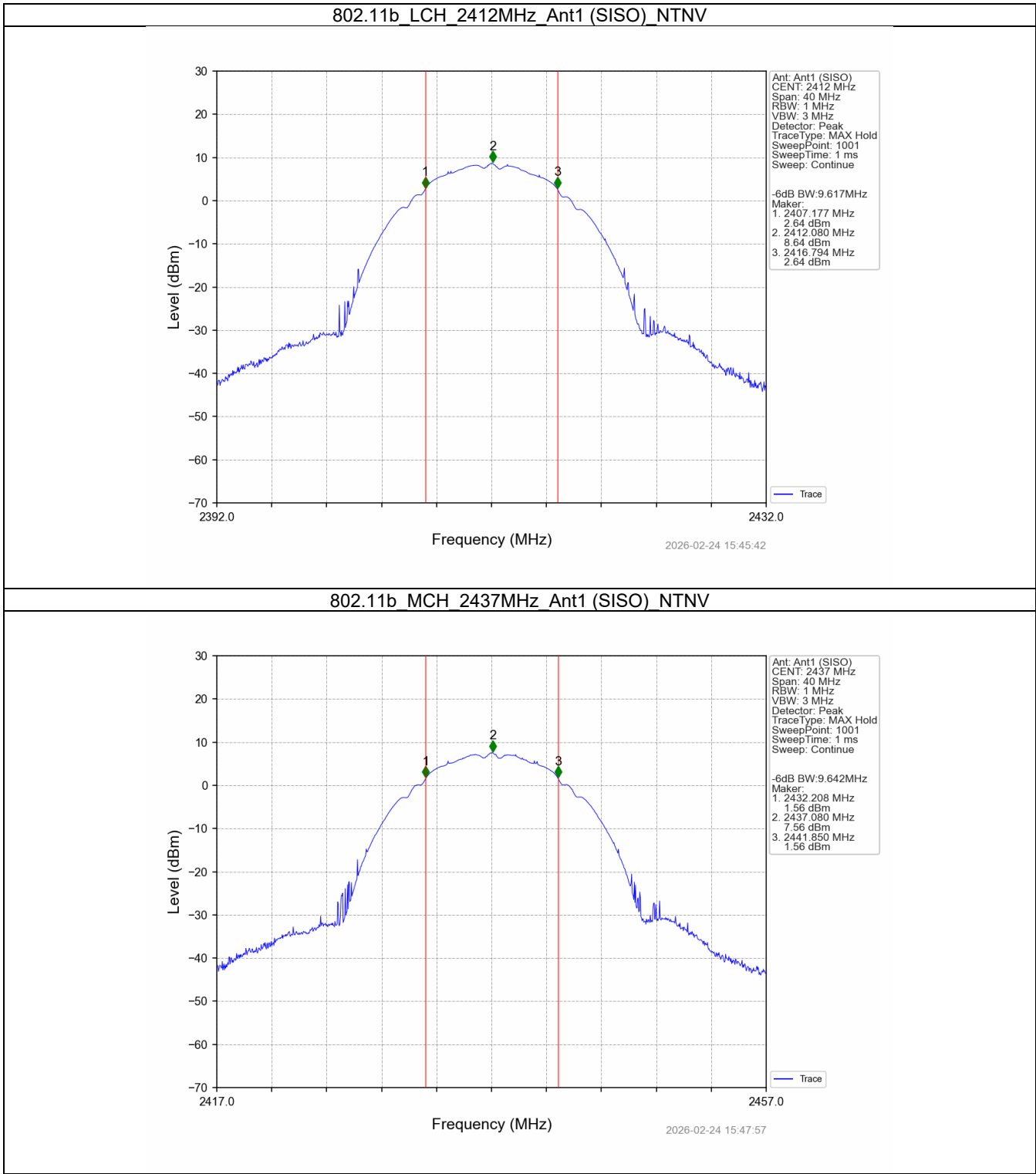
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



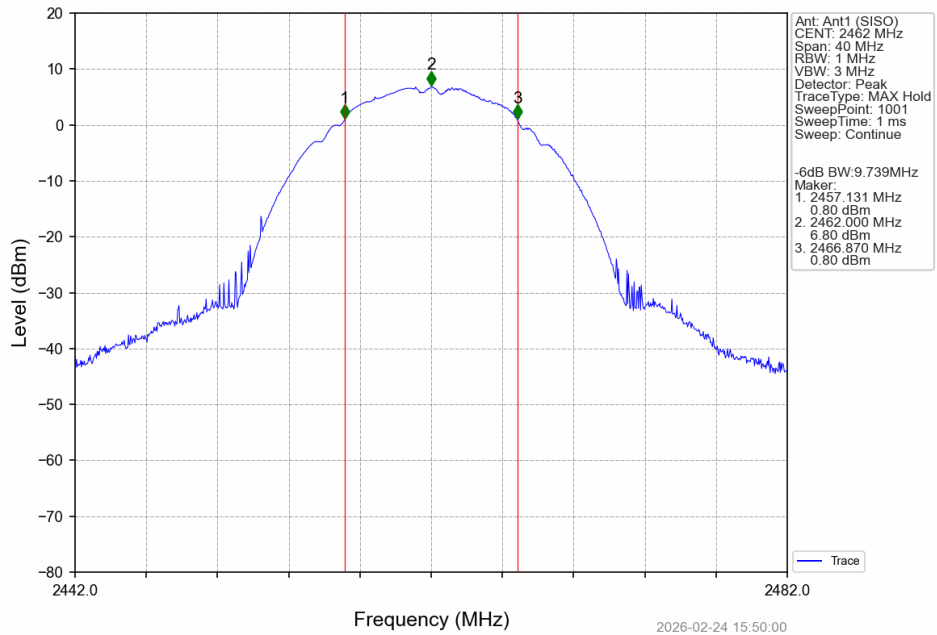
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



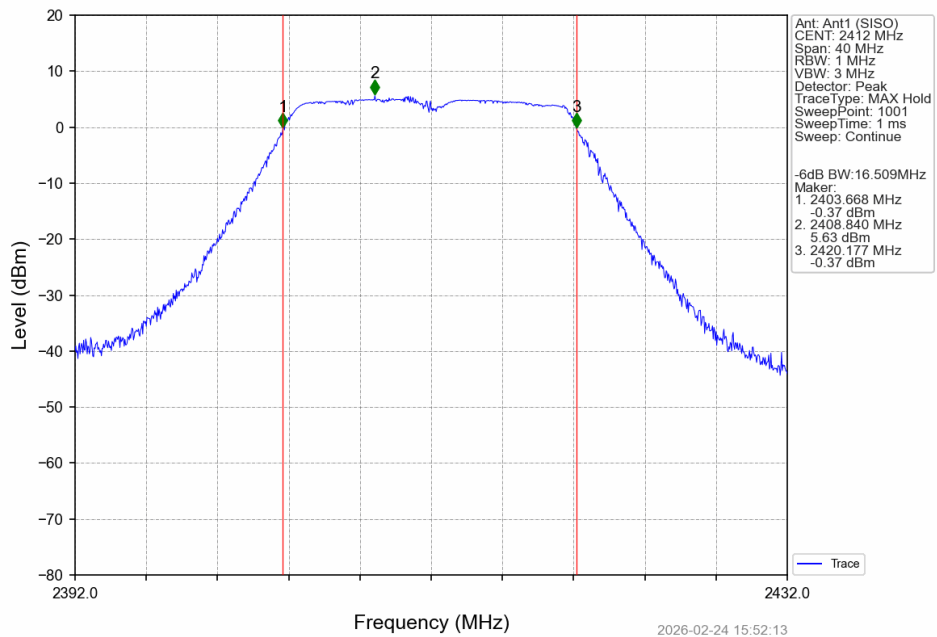
2.2.2 6dB BW



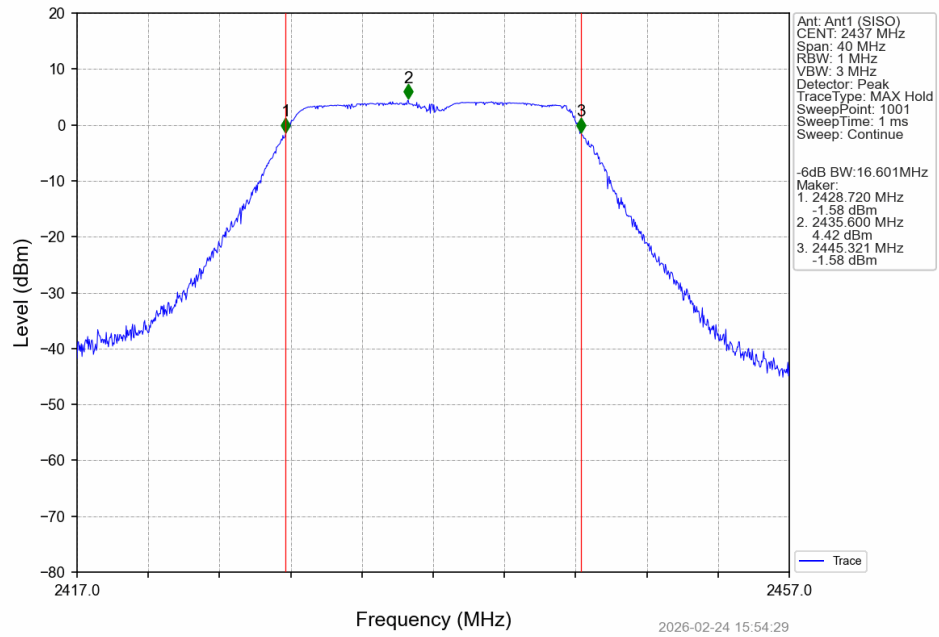
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



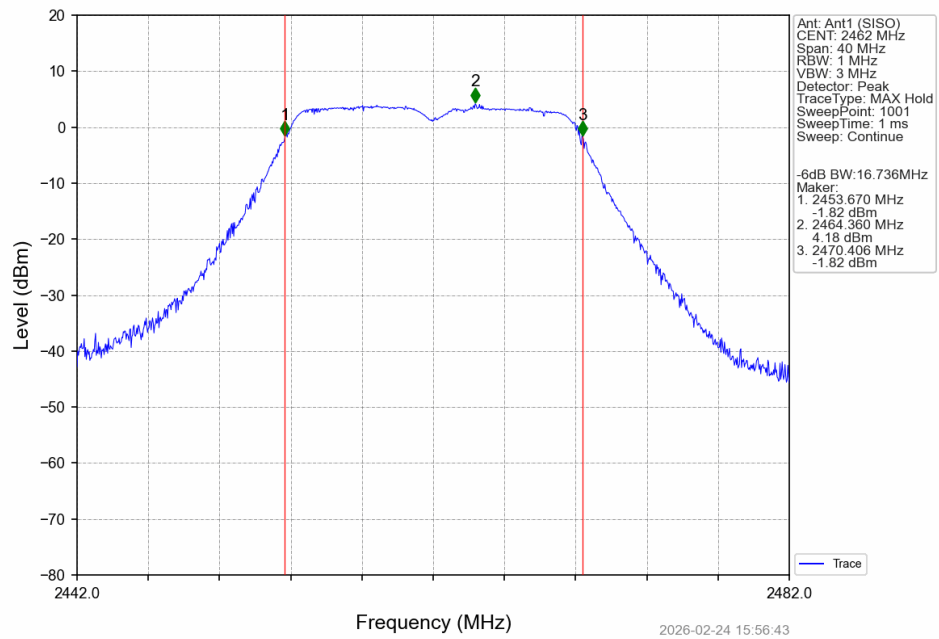
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



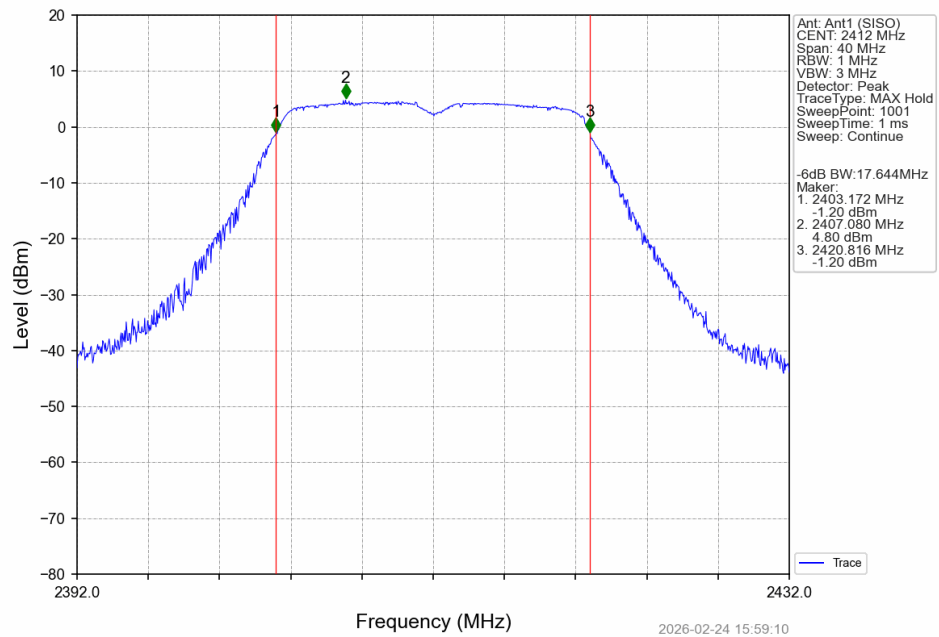
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



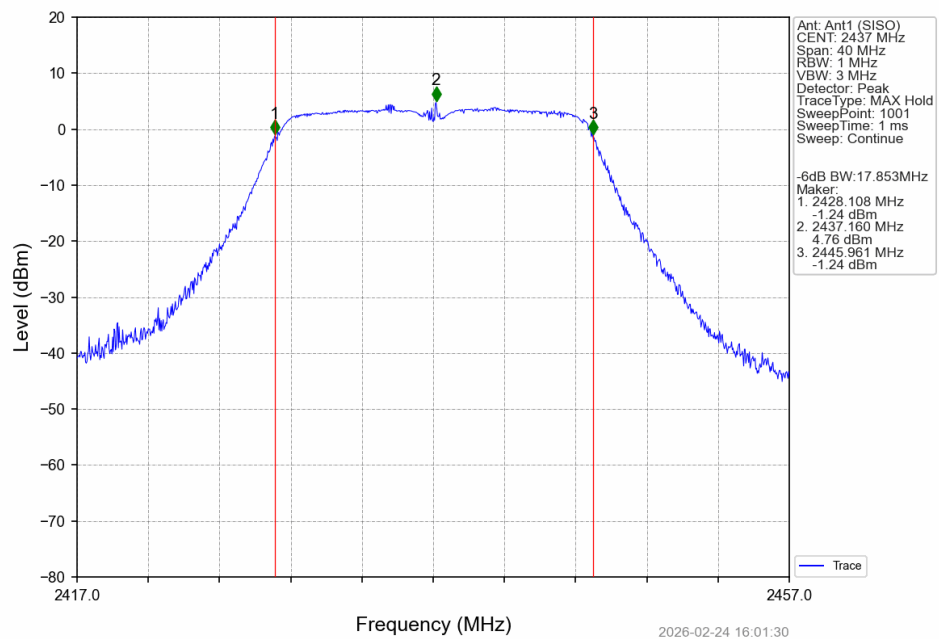
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



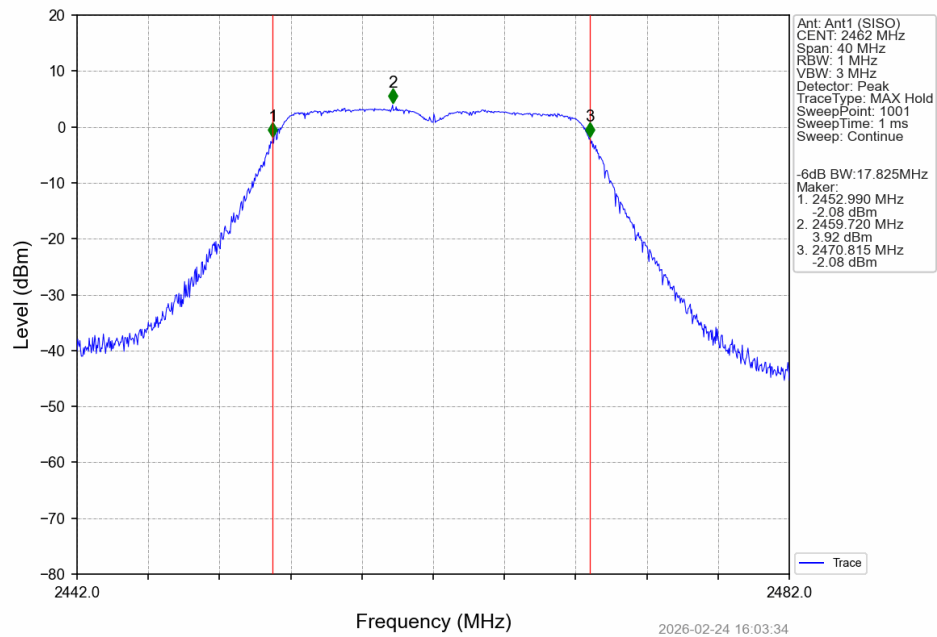
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



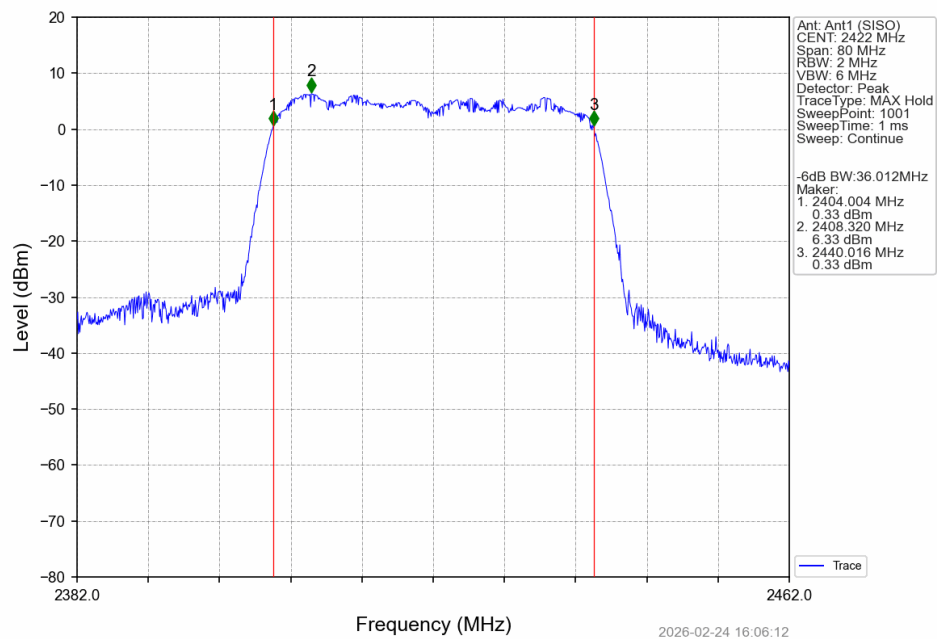
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



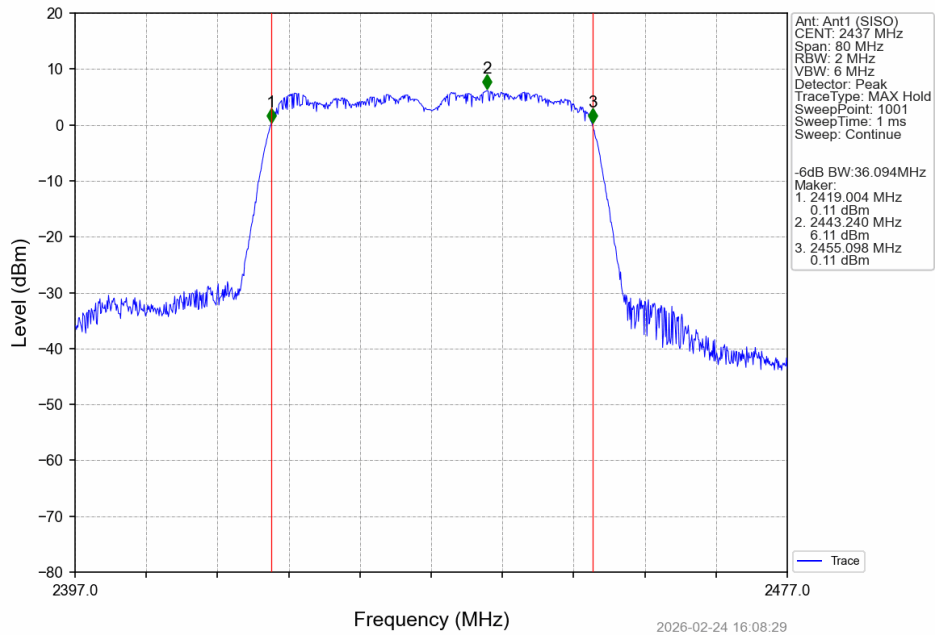
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



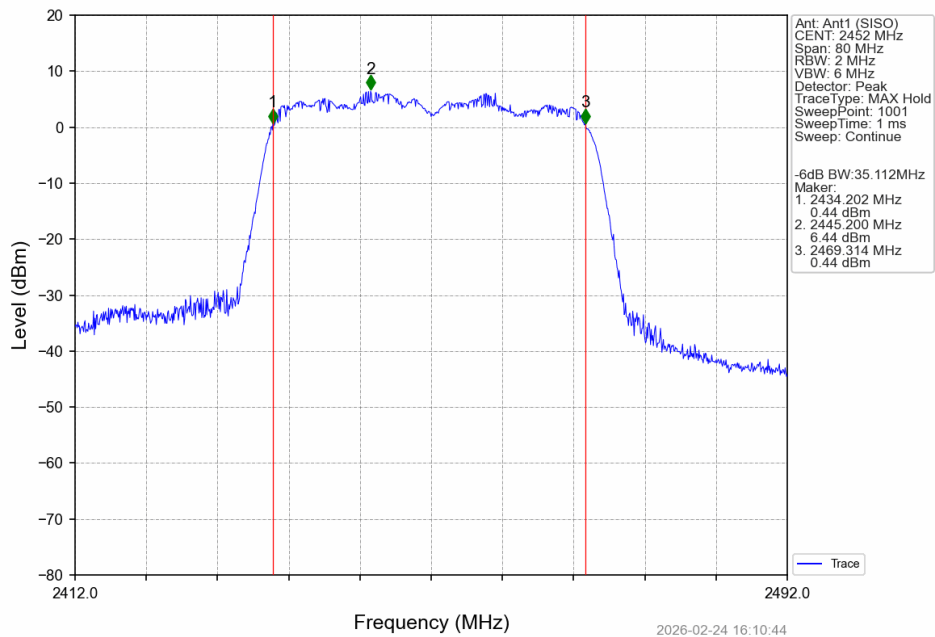
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	16.28	<=30	Pass
		2437	15.20	<=30	Pass
		2462	14.68	<=30	Pass
802.11g	SISO	2412	16.12	<=30	Pass
		2437	15.29	<=30	Pass
		2462	14.78	<=30	Pass
802.11n (HT20)	SISO	2412	15.77	<=30	Pass
		2437	15.06	<=30	Pass
		2462	14.52	<=30	Pass
802.11n (HT40)	SISO	2422	15.45	<=30	Pass
		2437	15.30	<=30	Pass
		2452	14.83	<=30	Pass

4. Maximum Power Spectral Density

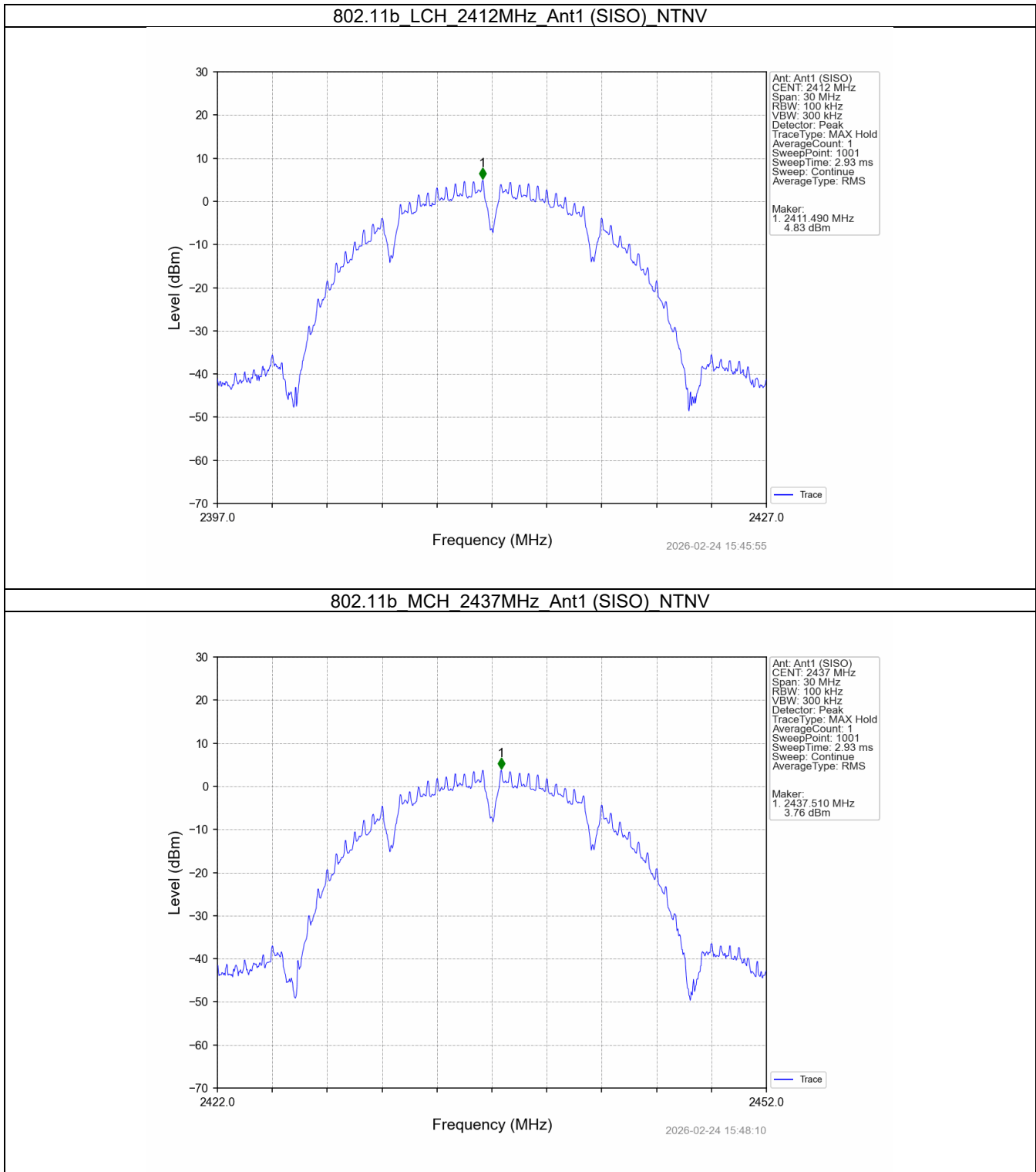
4.1 Test Result

4.1.1 PSD

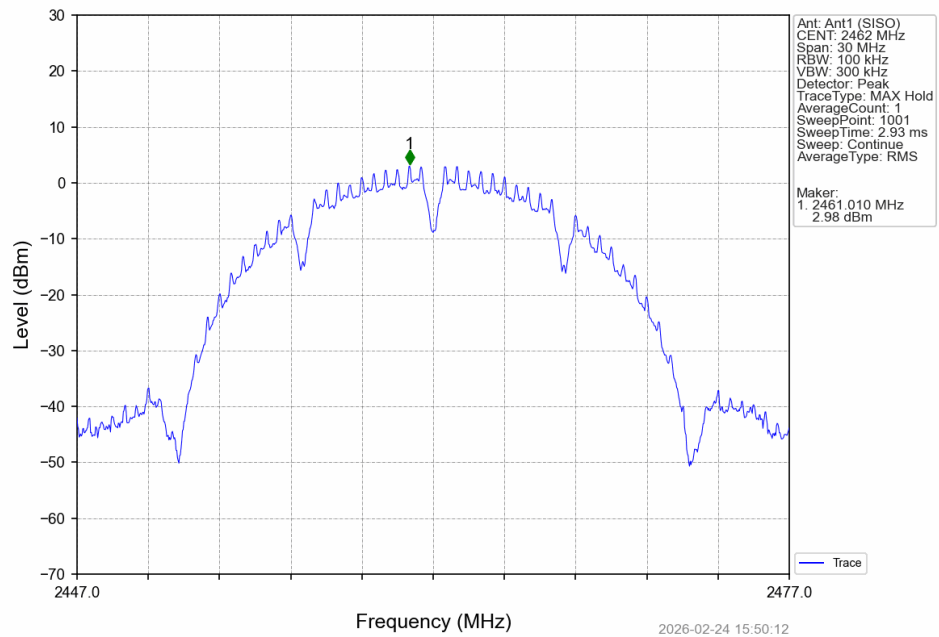
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	4.83	≤ 8	Pass
		2437	3.76	≤ 8	Pass
		2462	2.98	≤ 8	Pass
802.11g	SISO	2412	-2.75	≤ 8	Pass
		2437	-3.57	≤ 8	Pass
		2462	-4.21	≤ 8	Pass
802.11n (HT20)	SISO	2412	-2.99	≤ 8	Pass
		2437	-3.91	≤ 8	Pass
		2462	-4.47	≤ 8	Pass
802.11n (HT40)	SISO	2422	-6.20	≤ 8	Pass
		2437	-6.69	≤ 8	Pass
		2452	-6.66	≤ 8	Pass

4.2 Test Graph

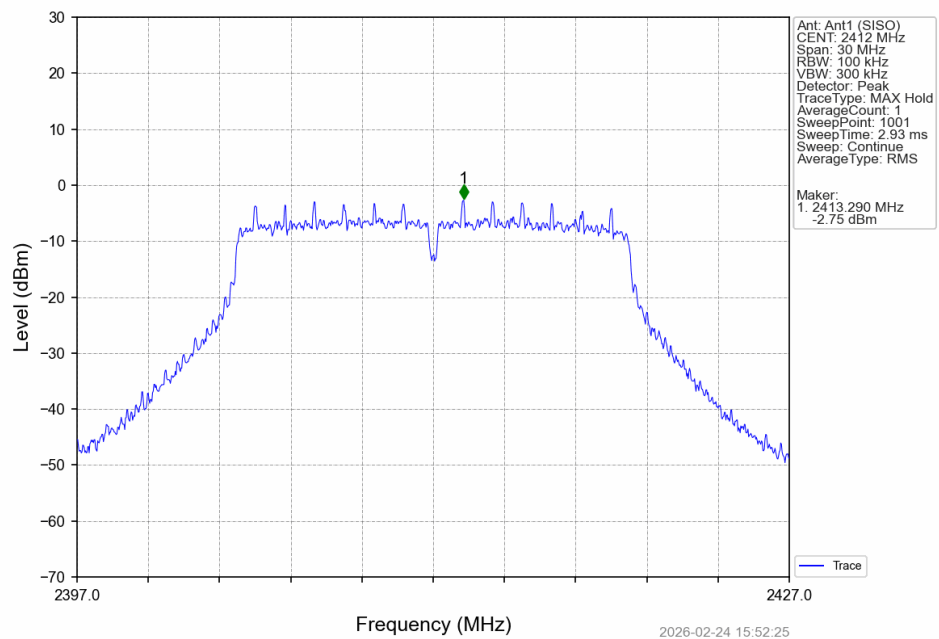
4.2.1 PSD



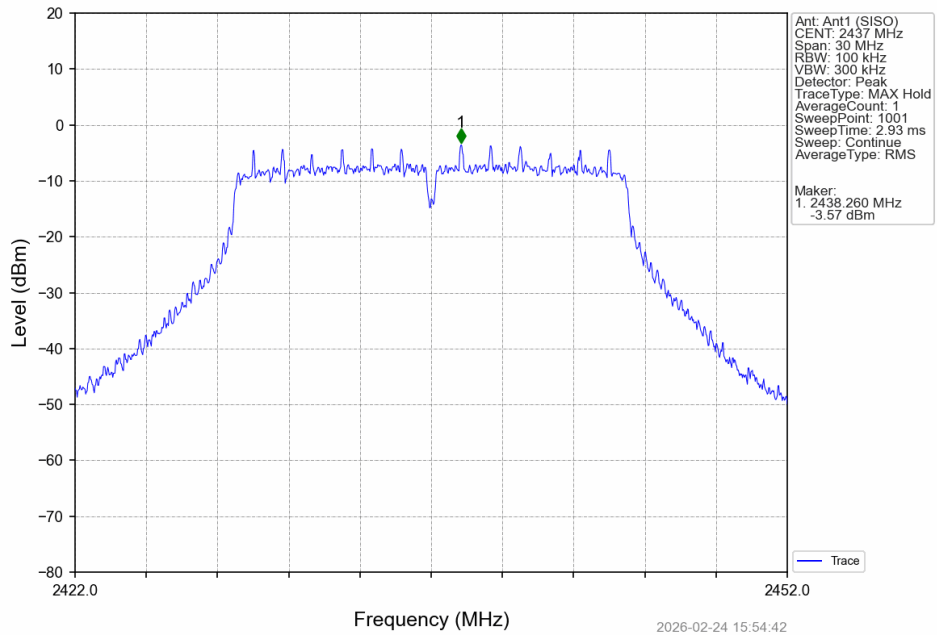
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



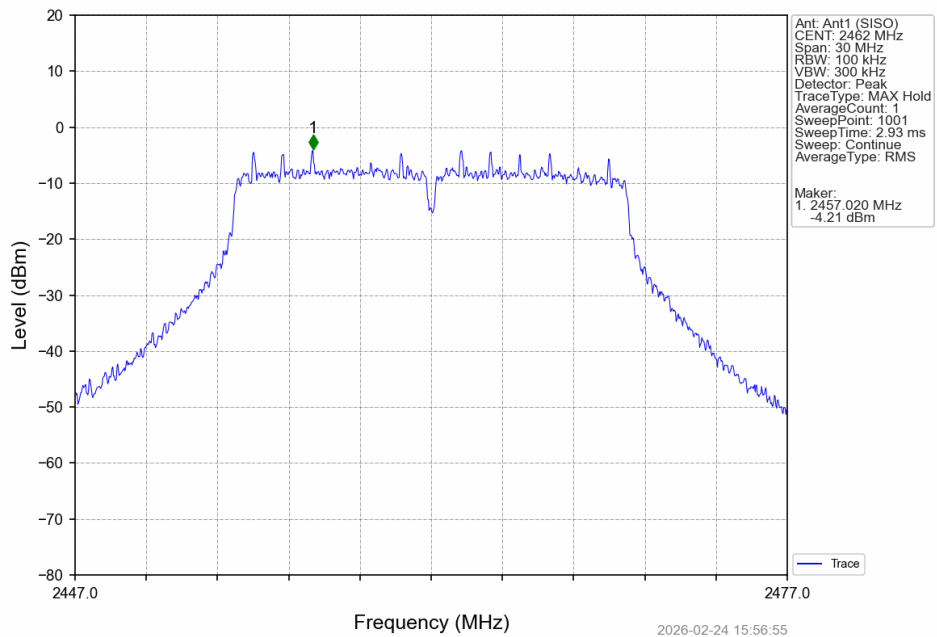
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



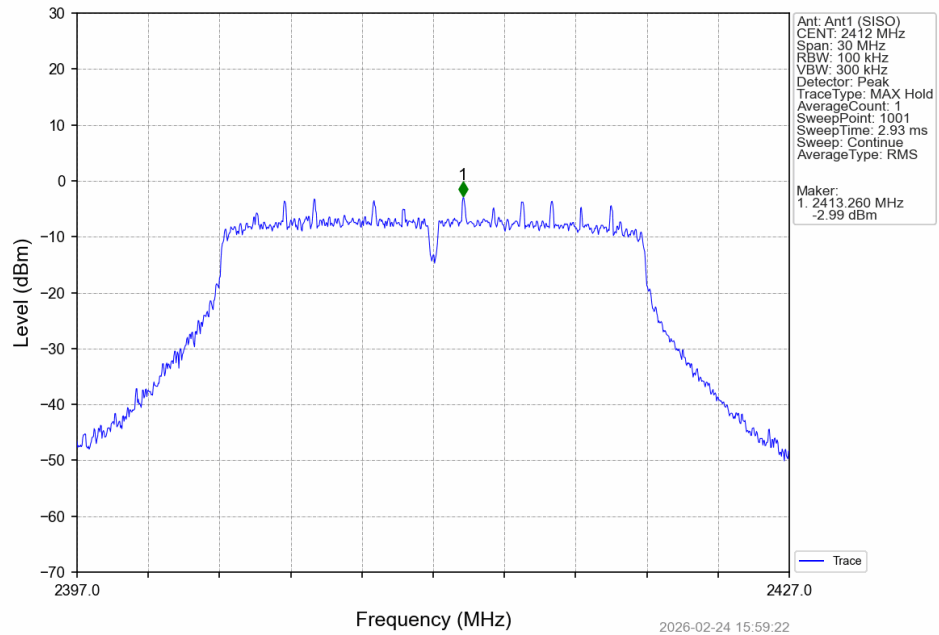
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



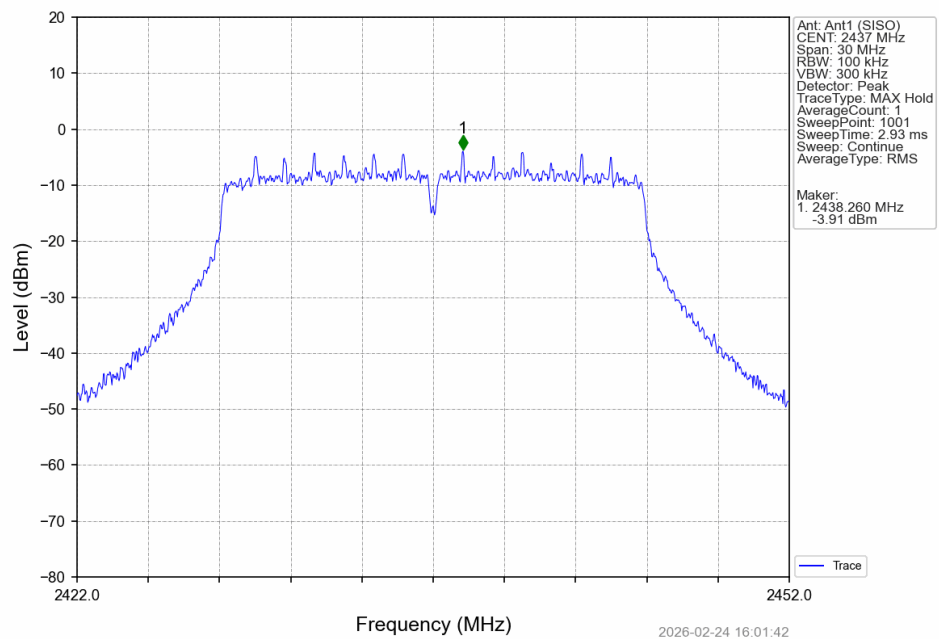
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



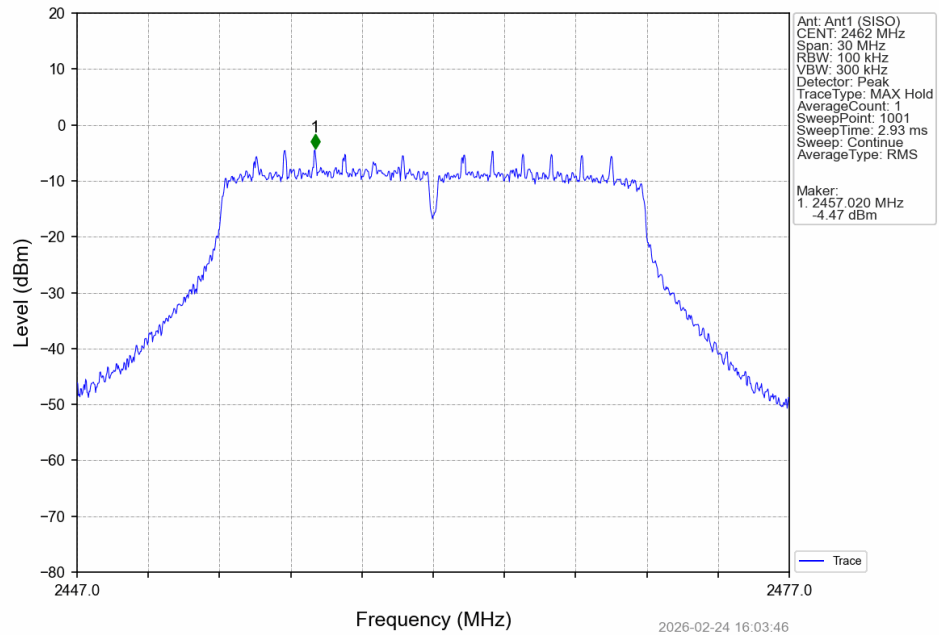
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



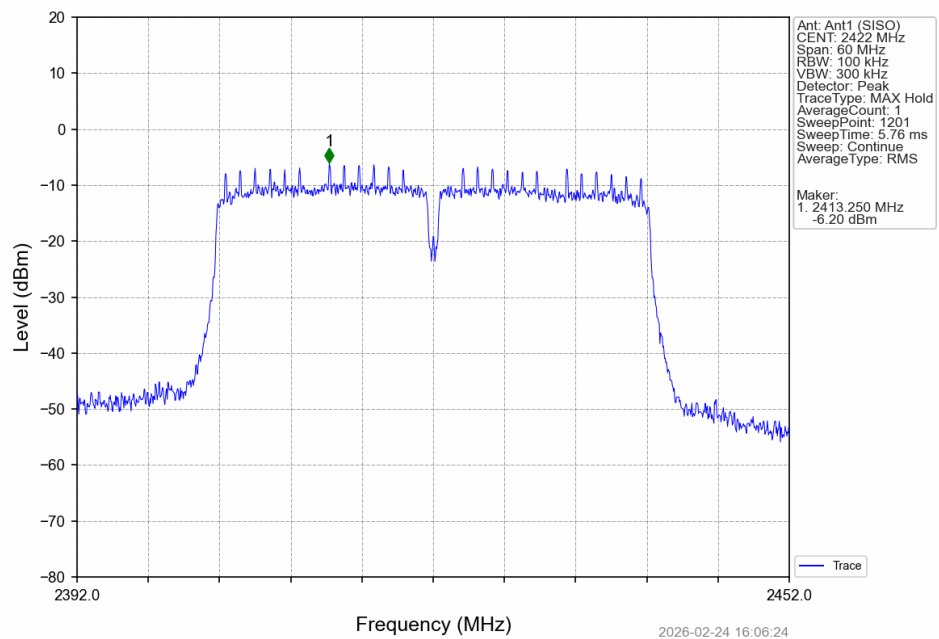
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



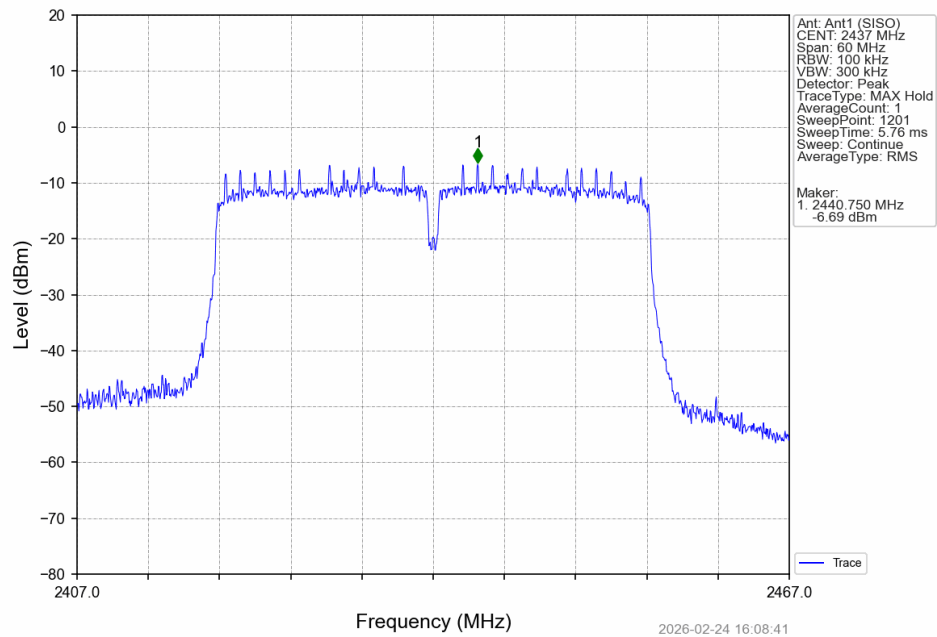
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



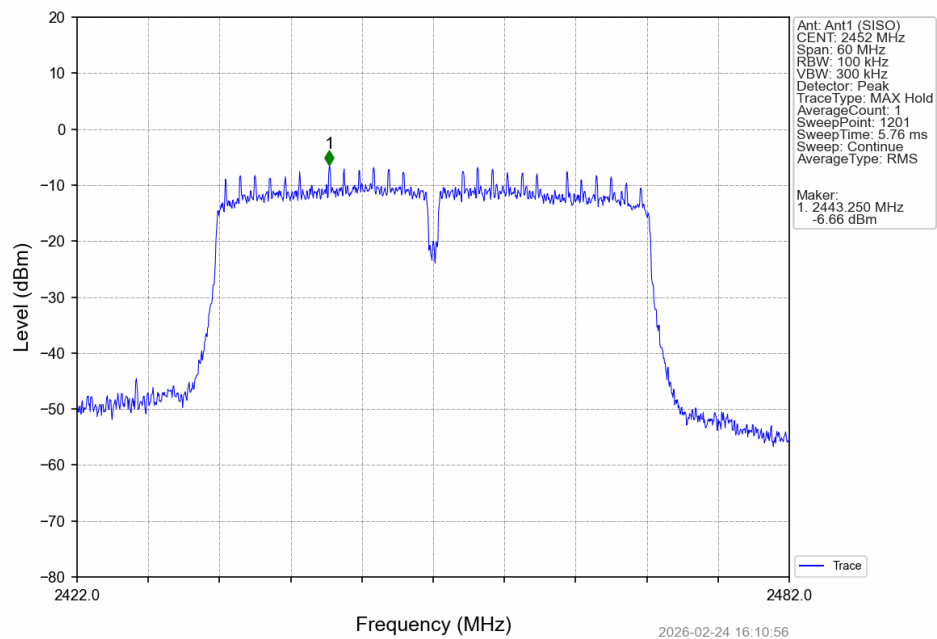
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

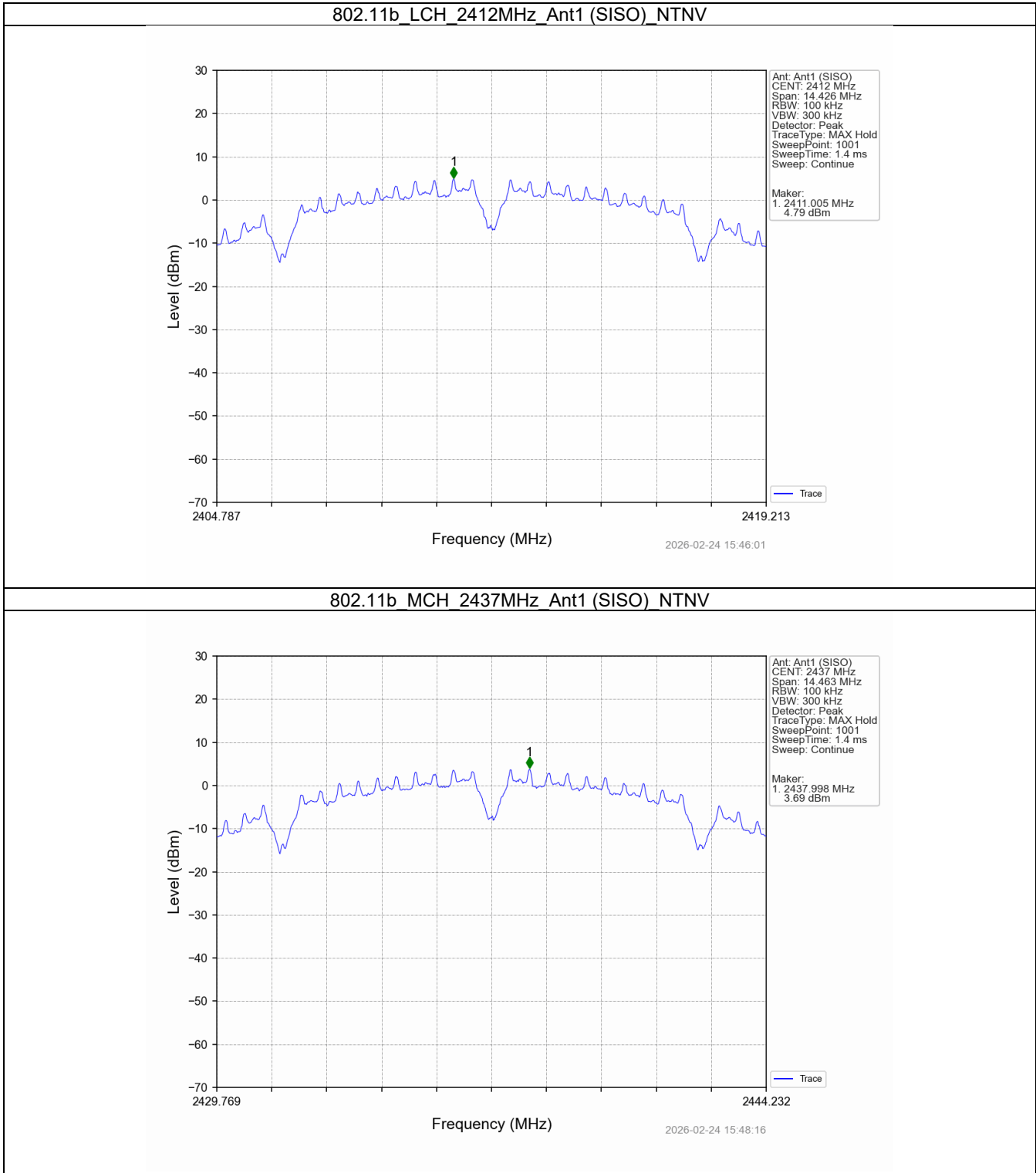
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	4.79
		2437	1	3.69
		2462	1	2.90
802.11g	SISO	2412	1	-3.02
		2437	1	-3.75
		2462	1	-4.26
802.11n (HT20)	SISO	2412	1	-3.25
		2437	1	-3.85
		2462	1	-4.48
802.11n (HT40)	SISO	2422	1	-6.53
		2437	1	-6.67
		2452	1	-6.87

5.1.2 CSE

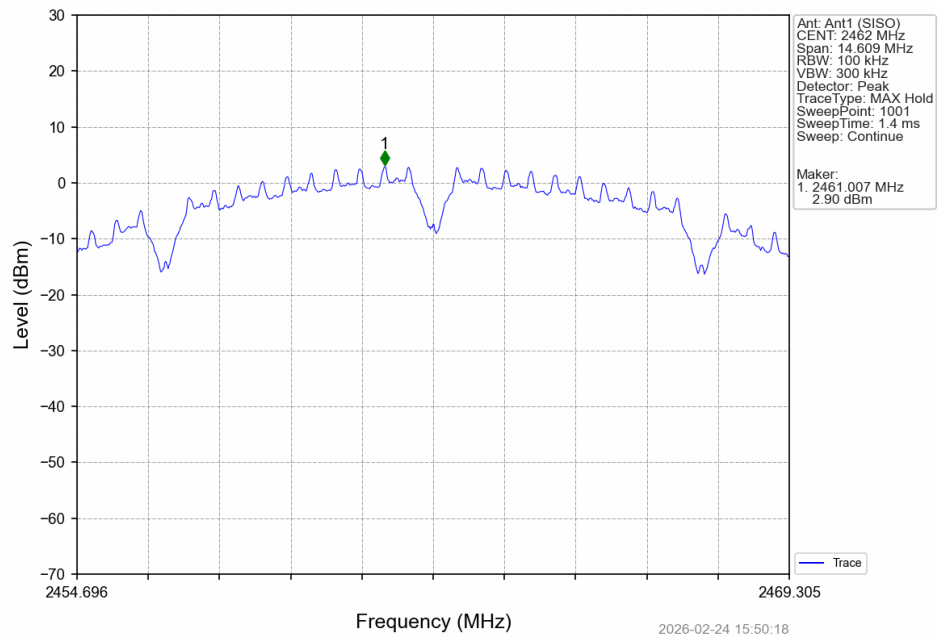
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.79	-15.21	Pass
		2437	1	3.69	-16.31	Pass
		2462	1	2.90	-17.10	Pass
802.11g	SISO	2412	1	-3.02	-23.02	Pass
		2437	1	-3.75	-23.75	Pass
		2462	1	-4.26	-24.26	Pass
802.11n (HT20)	SISO	2412	1	-3.25	-23.25	Pass
		2437	1	-3.85	-23.85	Pass
		2462	1	-4.48	-24.48	Pass
802.11n (HT40)	SISO	2422	1	-6.53	-26.53	Pass
		2437	1	-6.67	-26.67	Pass
		2452	1	-6.87	-26.87	Pass

5.2 Test Graph

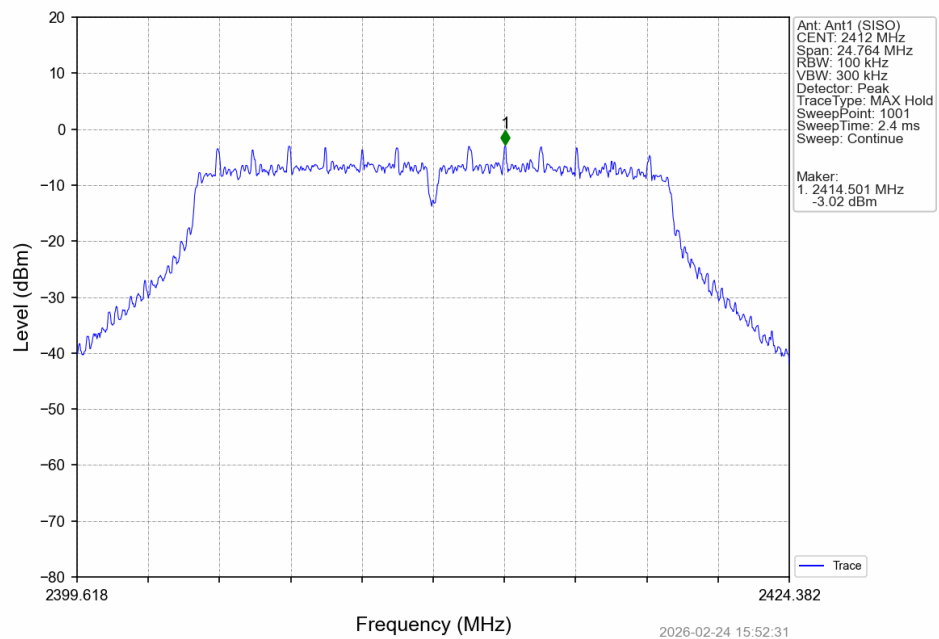
5.2.1 Ref



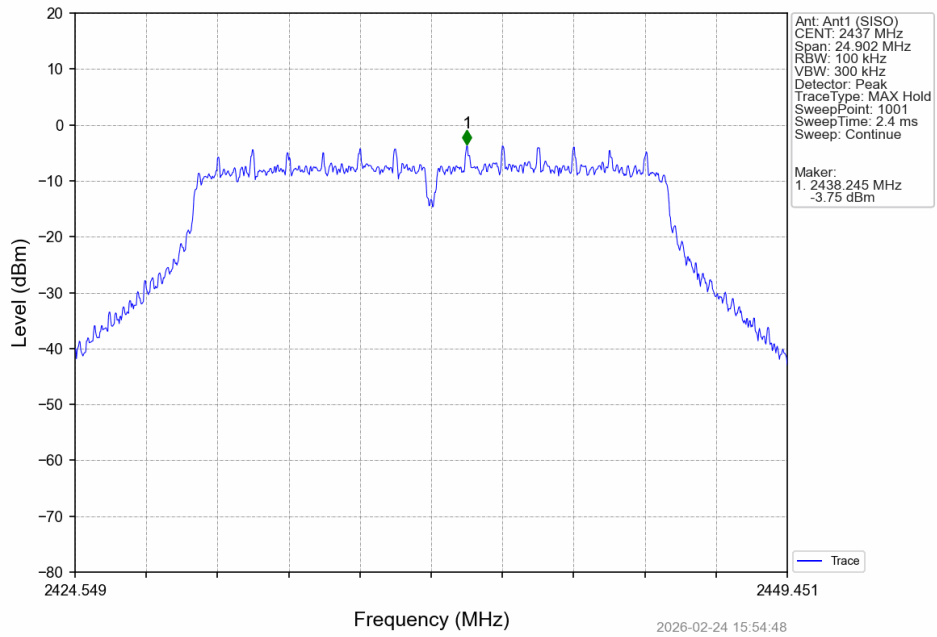
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



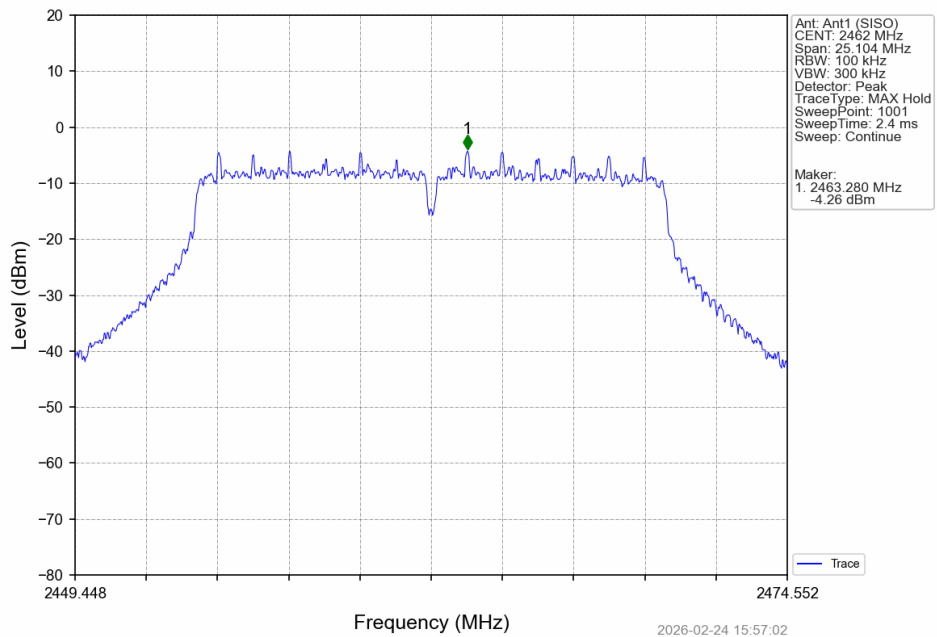
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



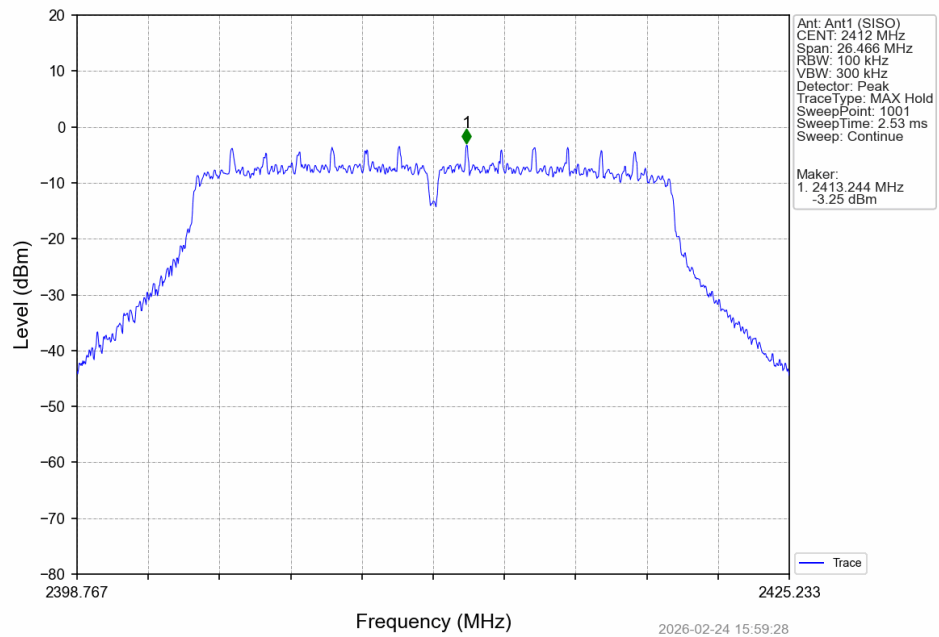
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



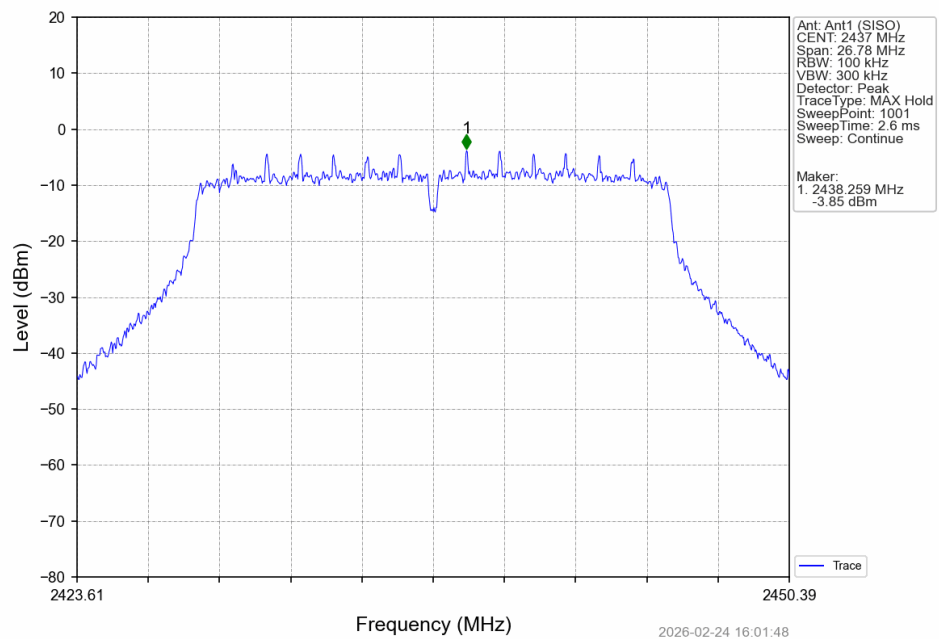
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



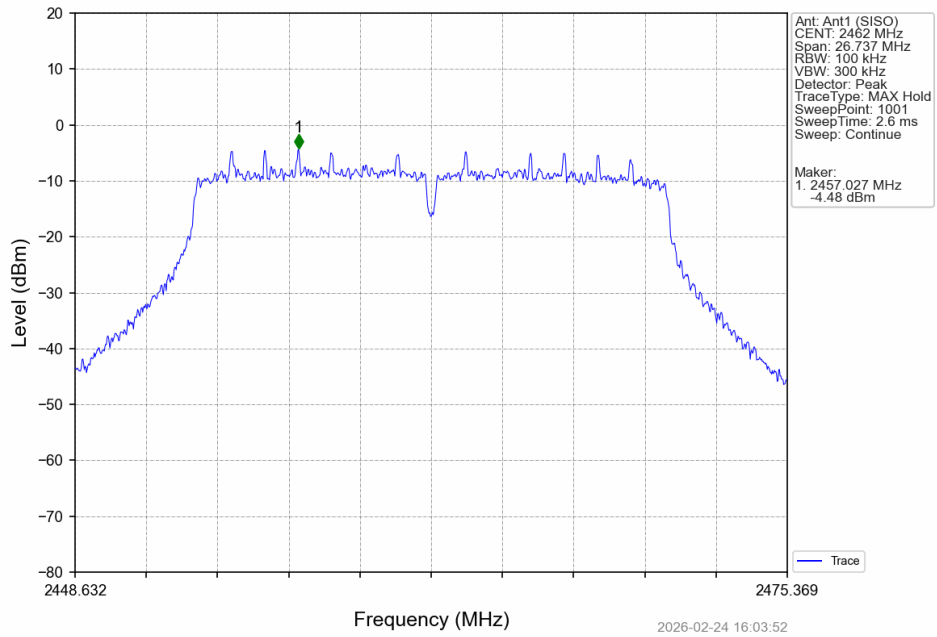
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



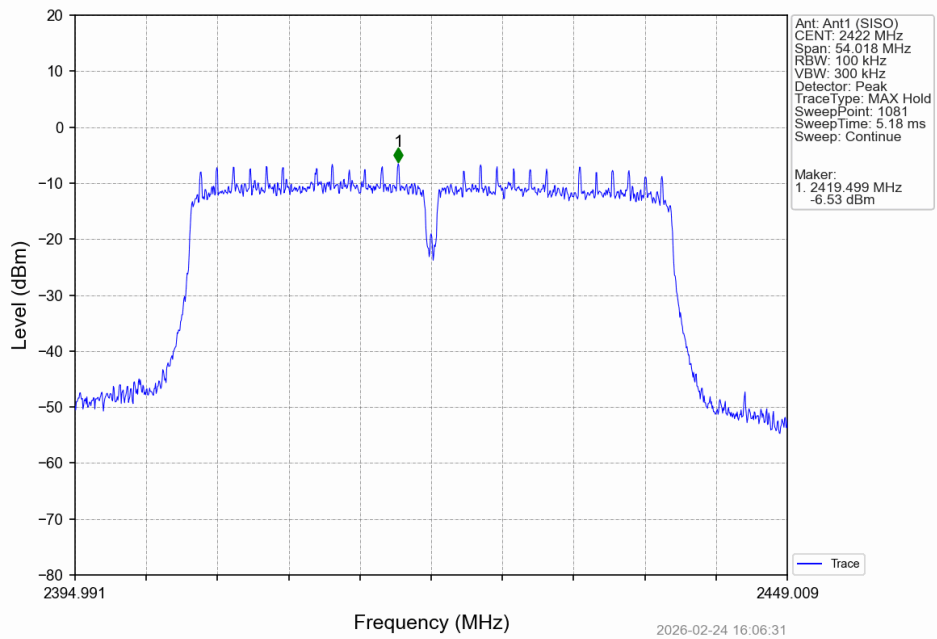
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



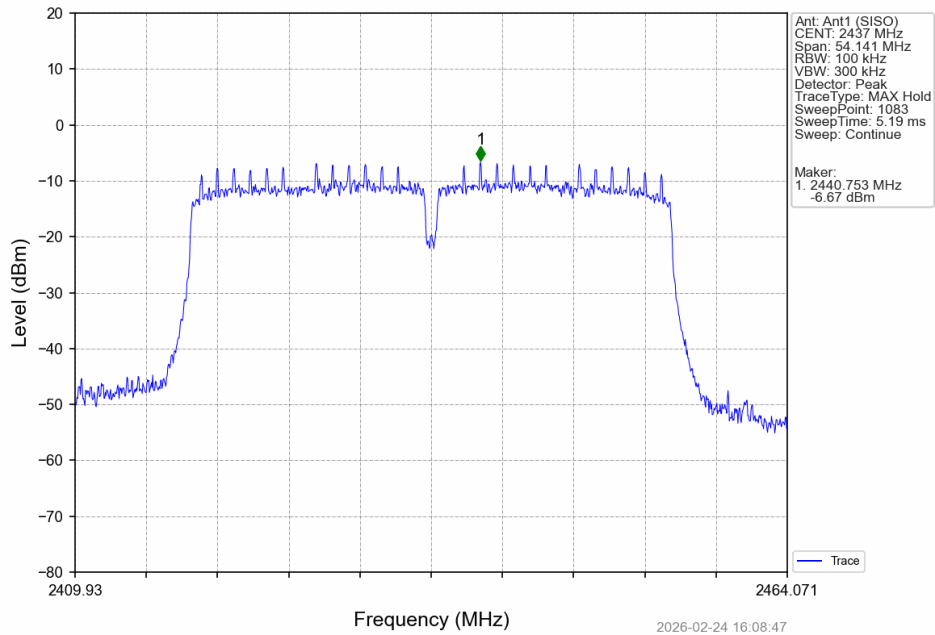
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



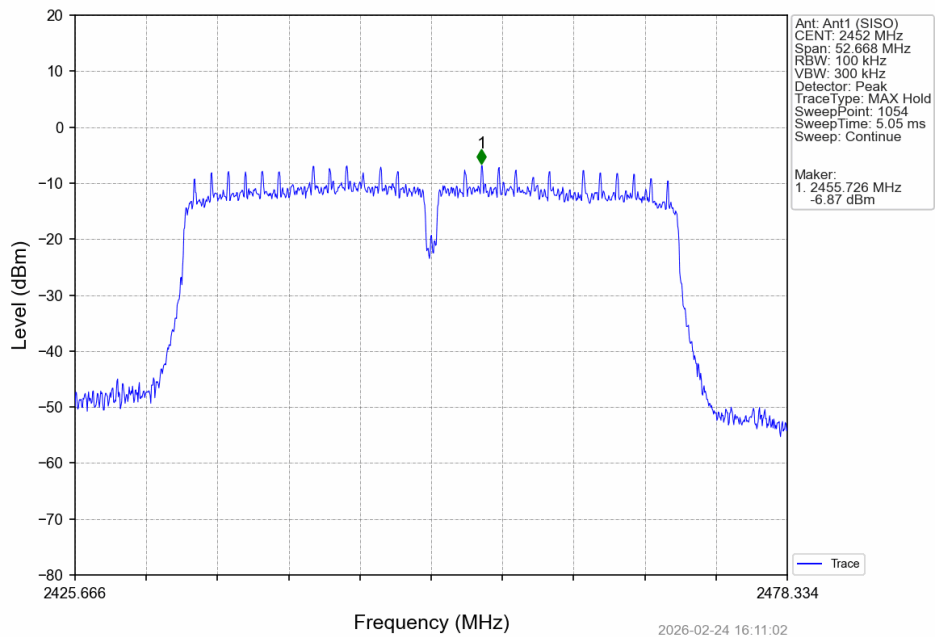
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



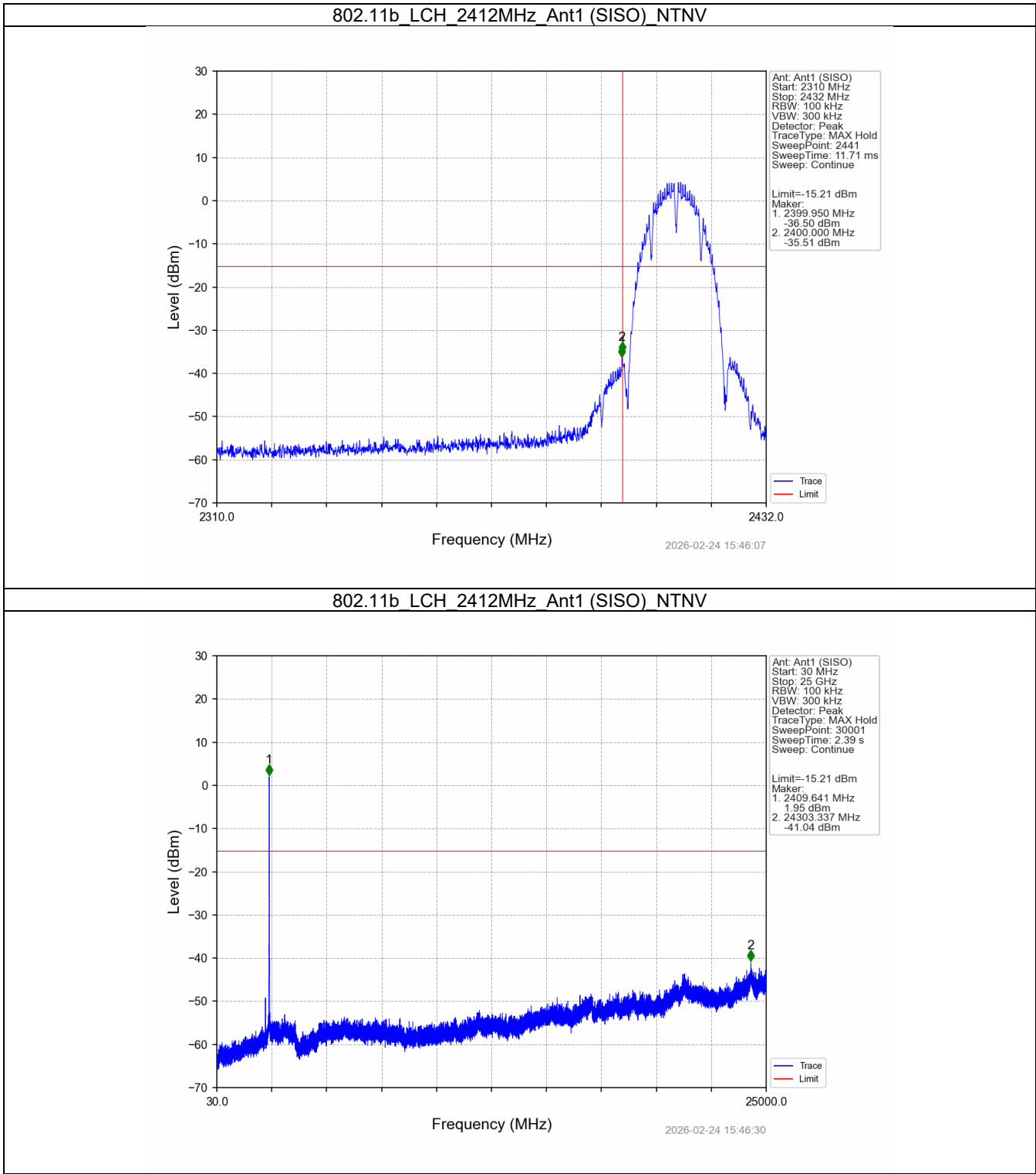
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



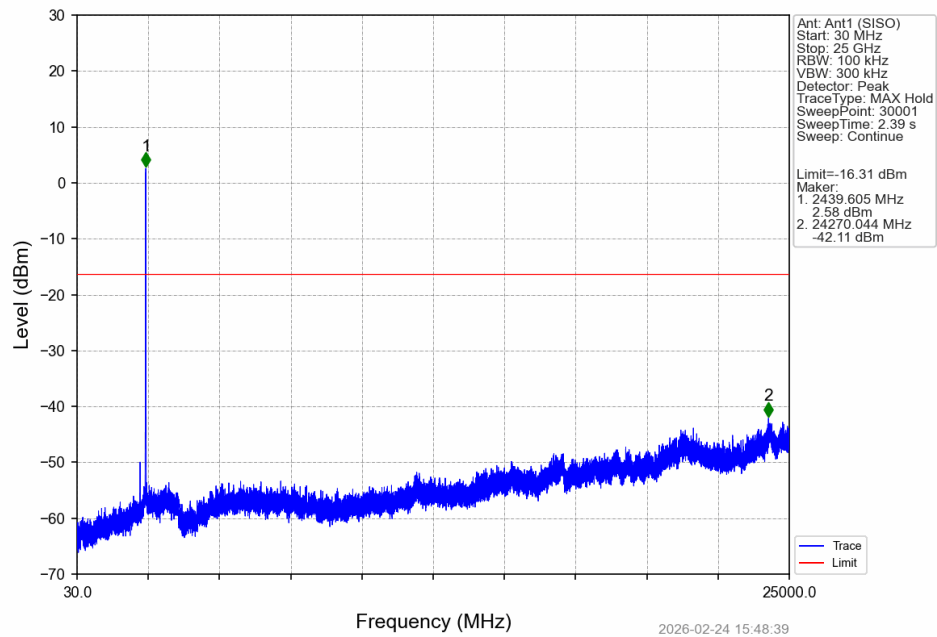
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



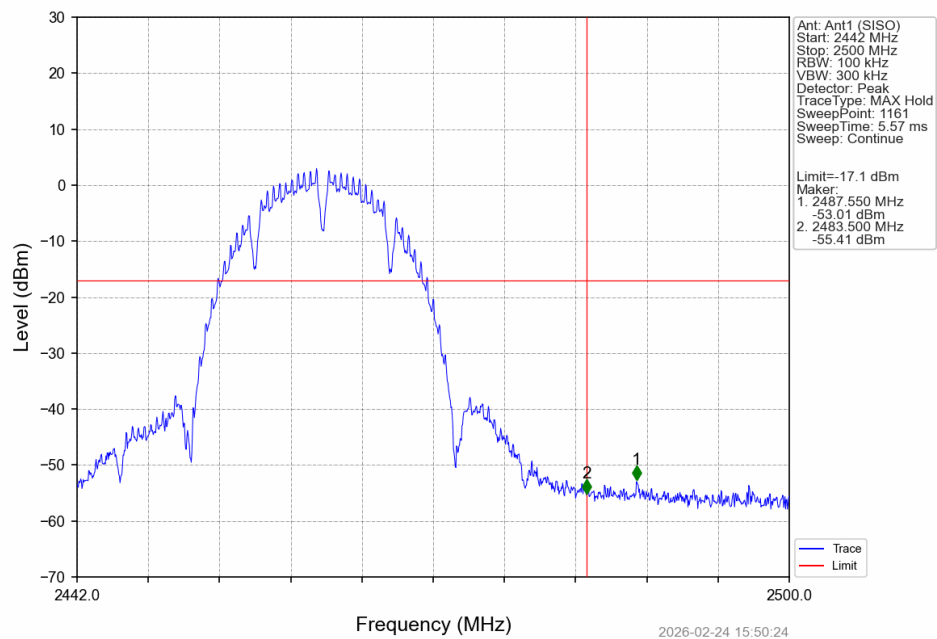
5.2.2 CSE



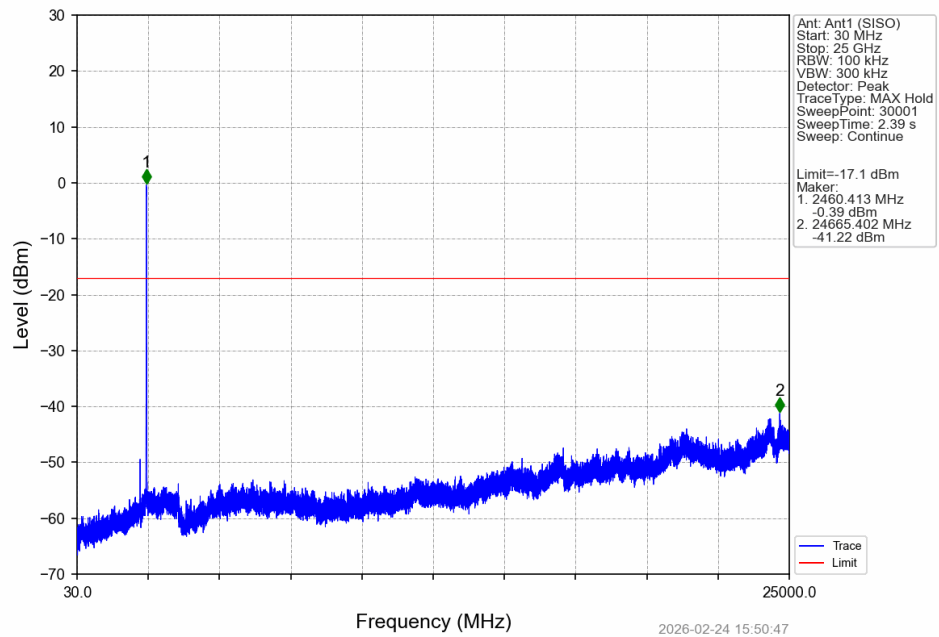
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



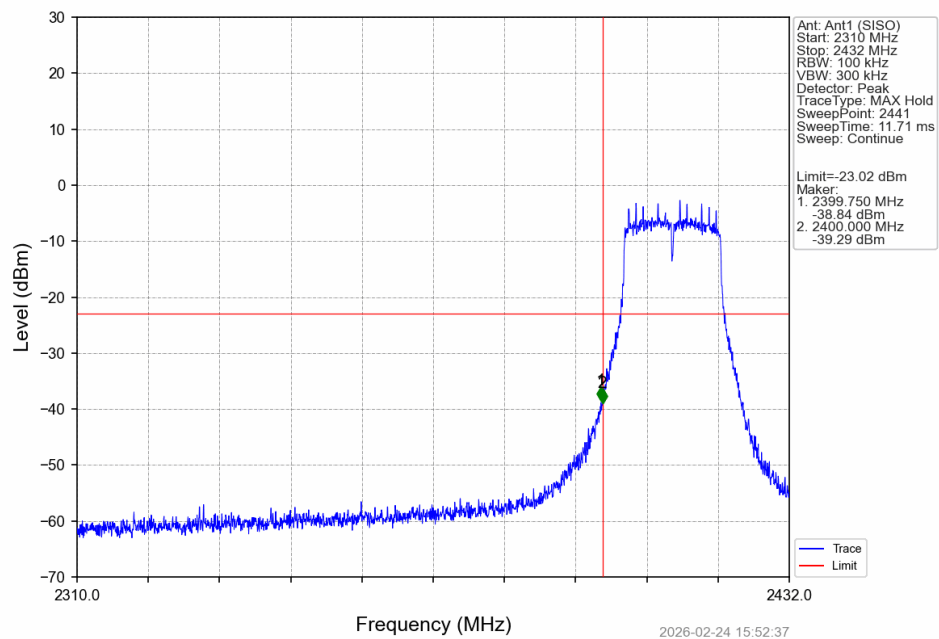
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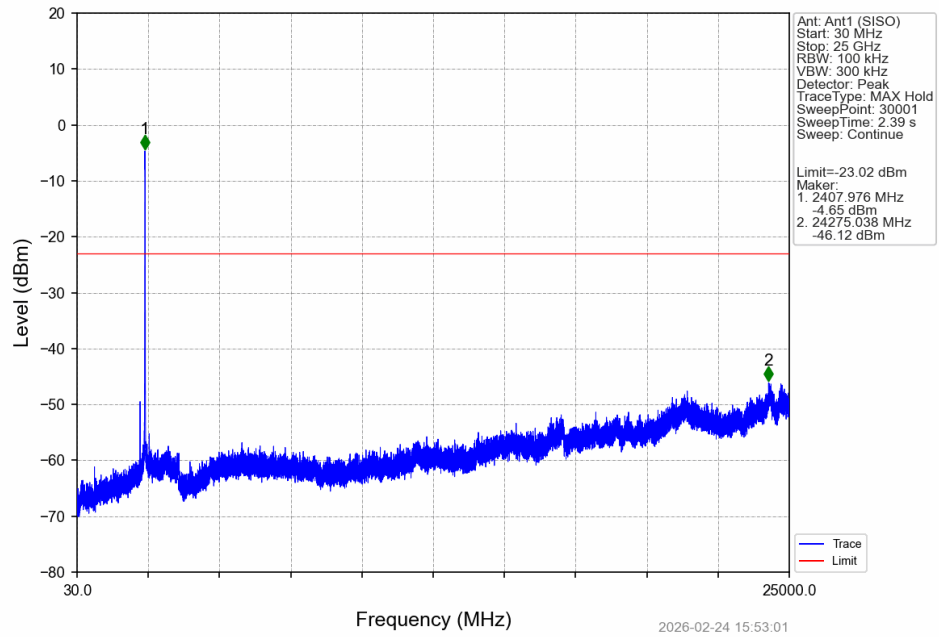
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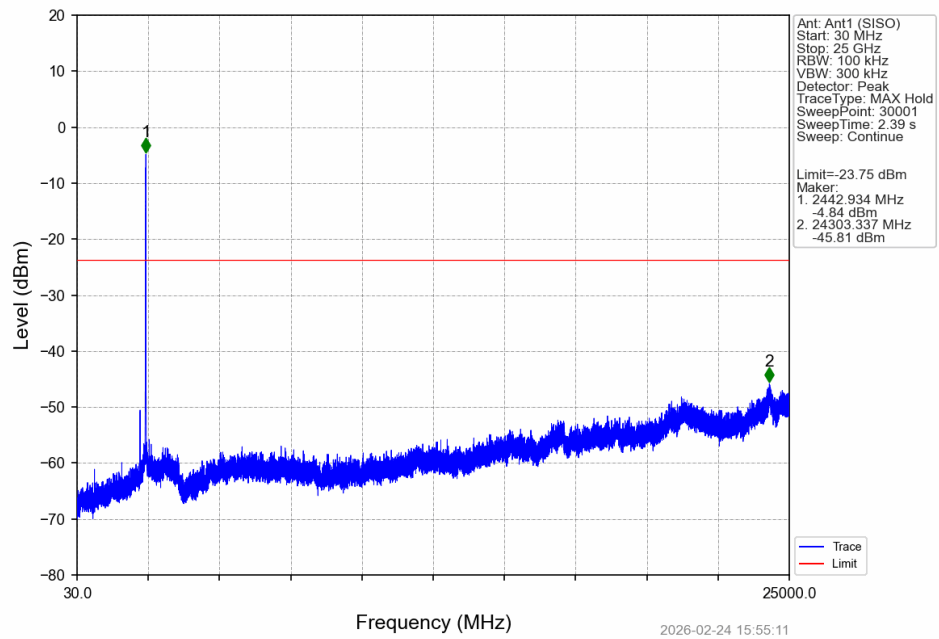
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



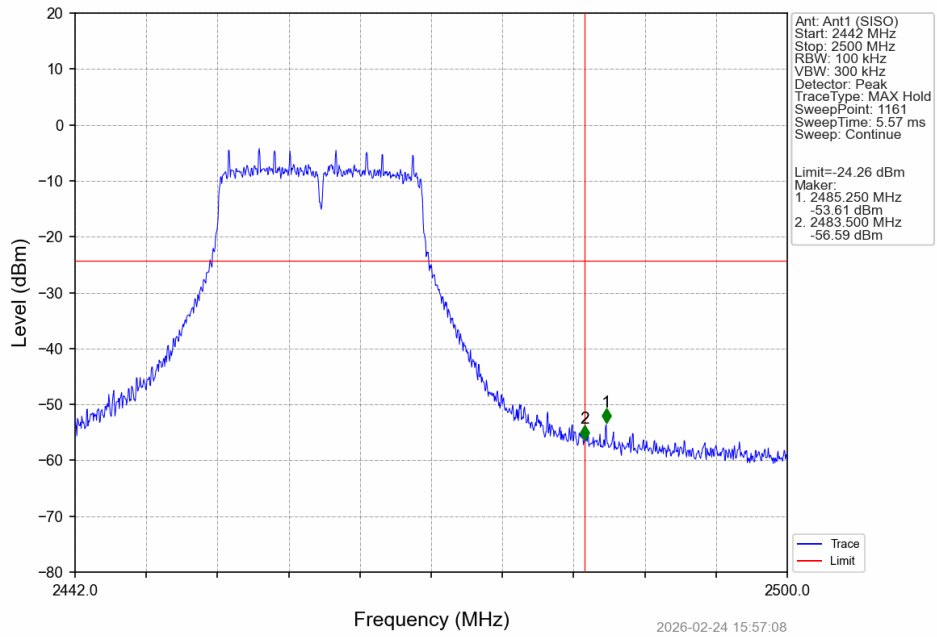
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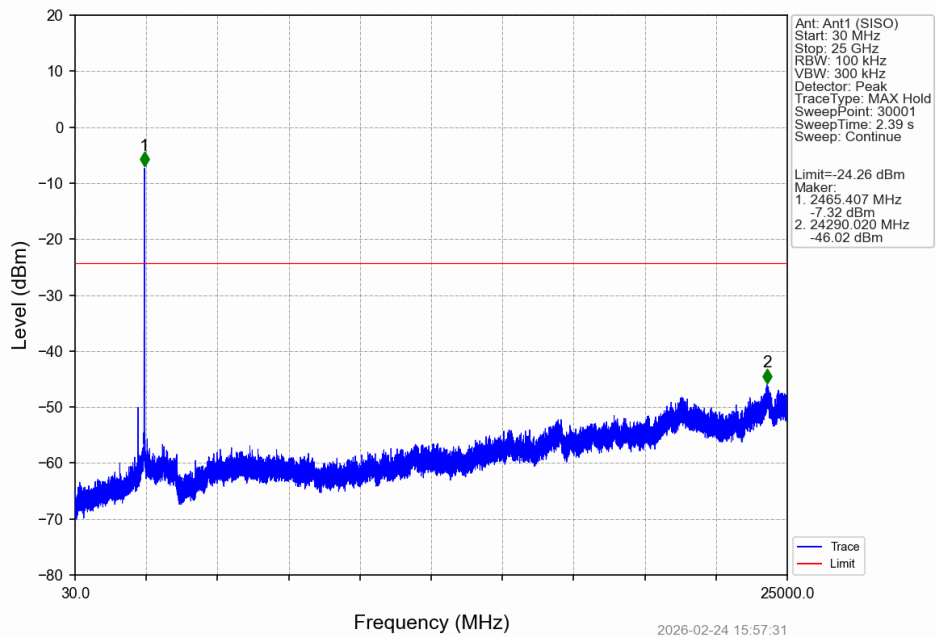
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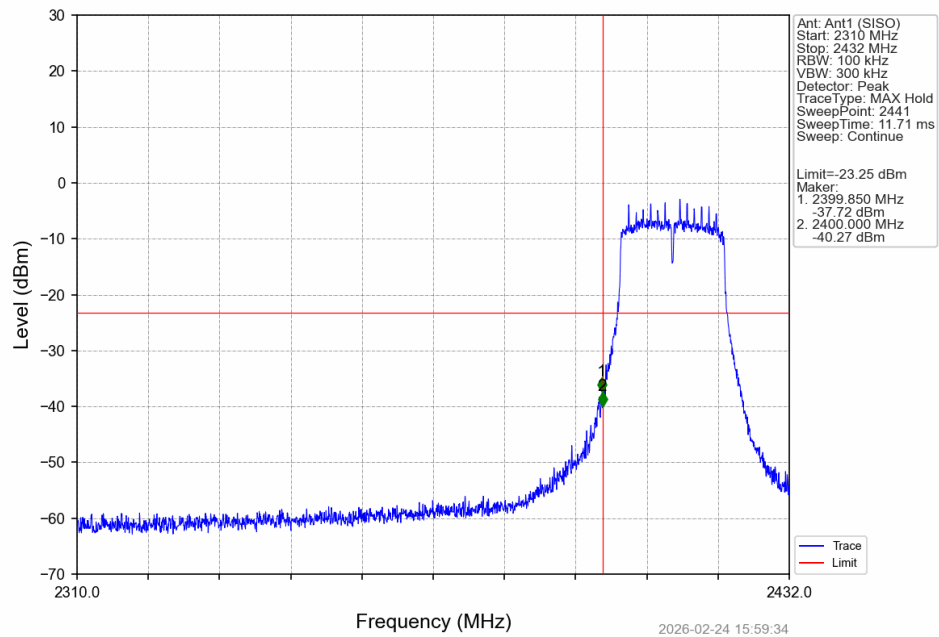
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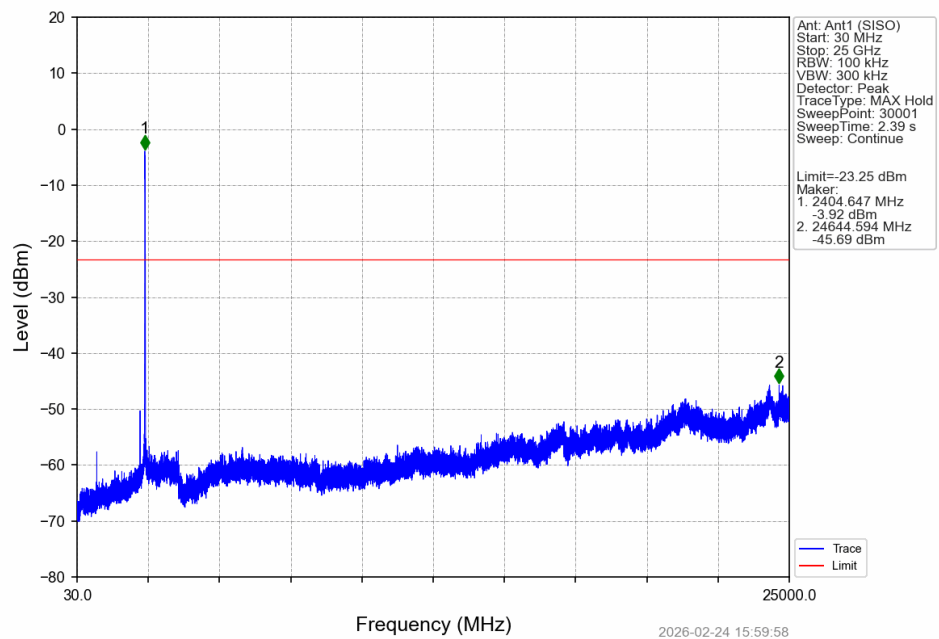
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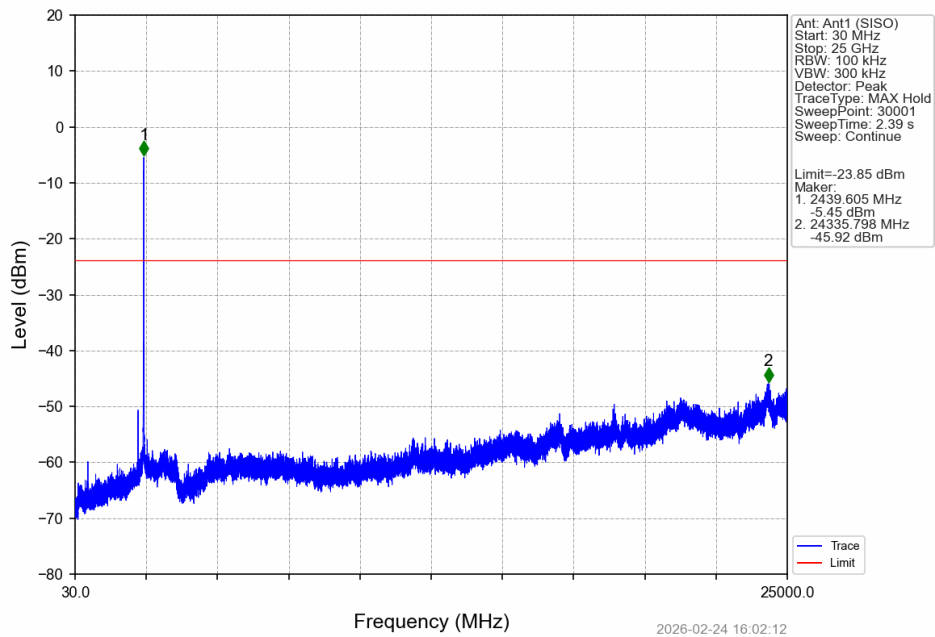
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



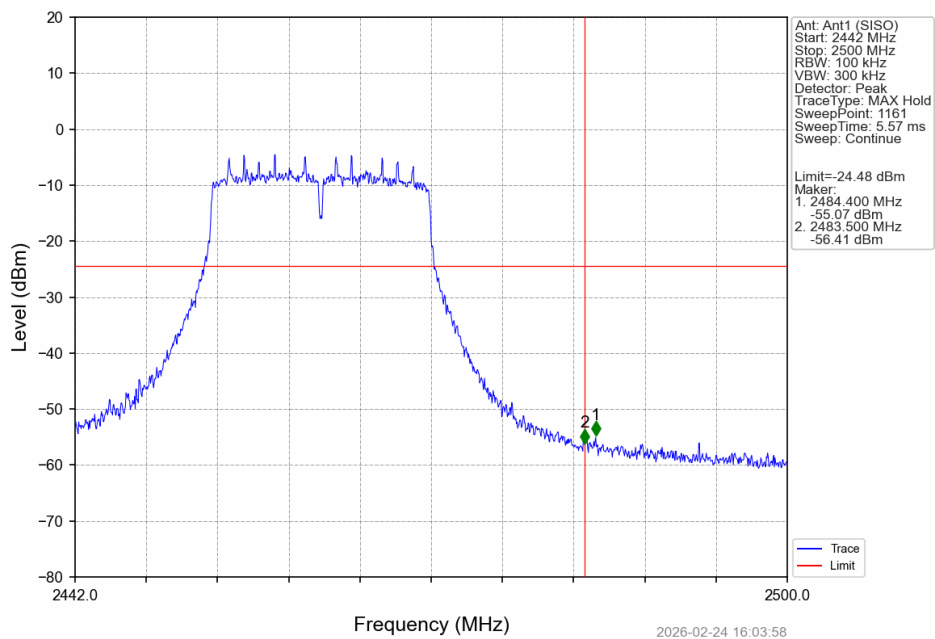
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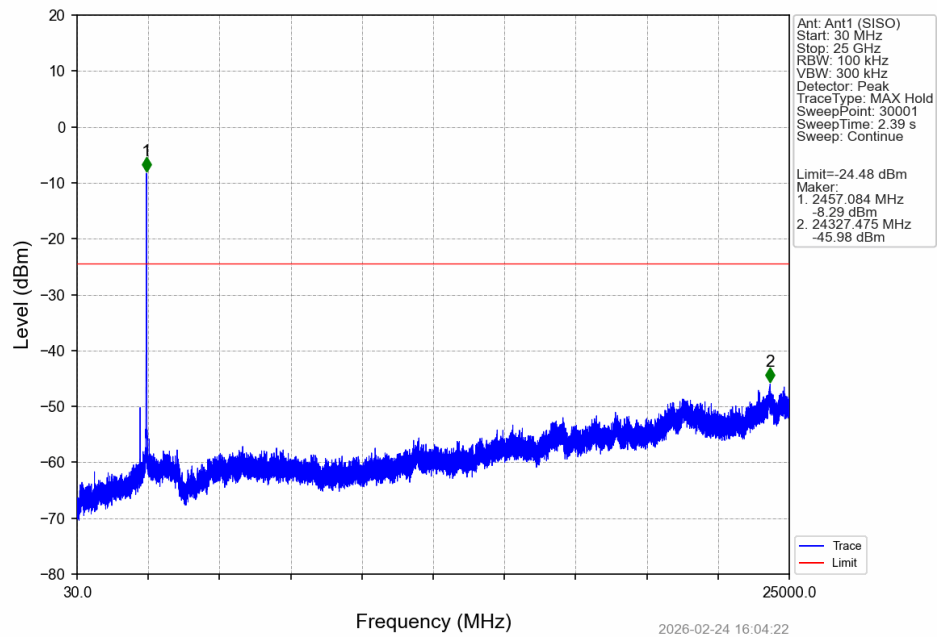
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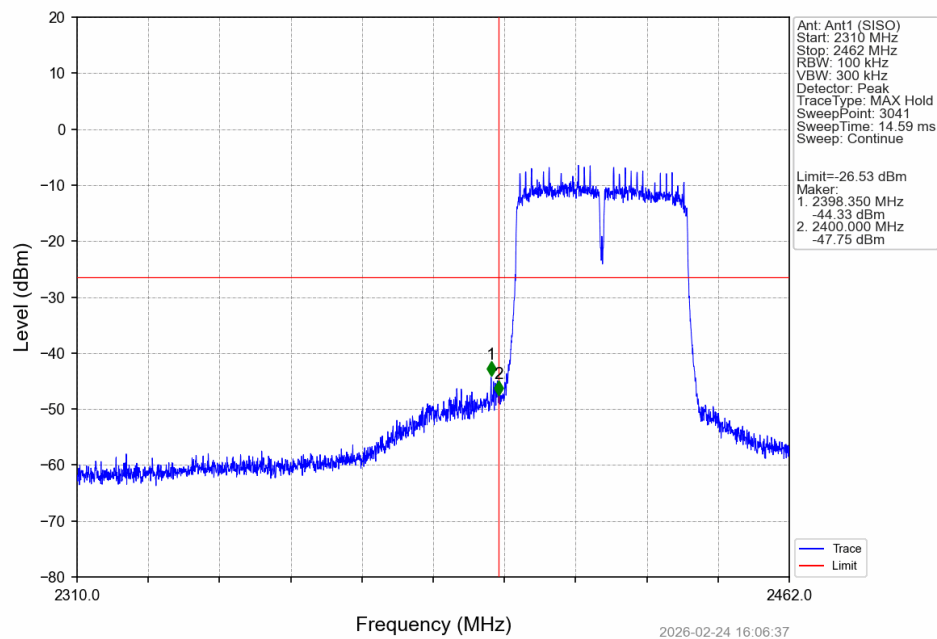
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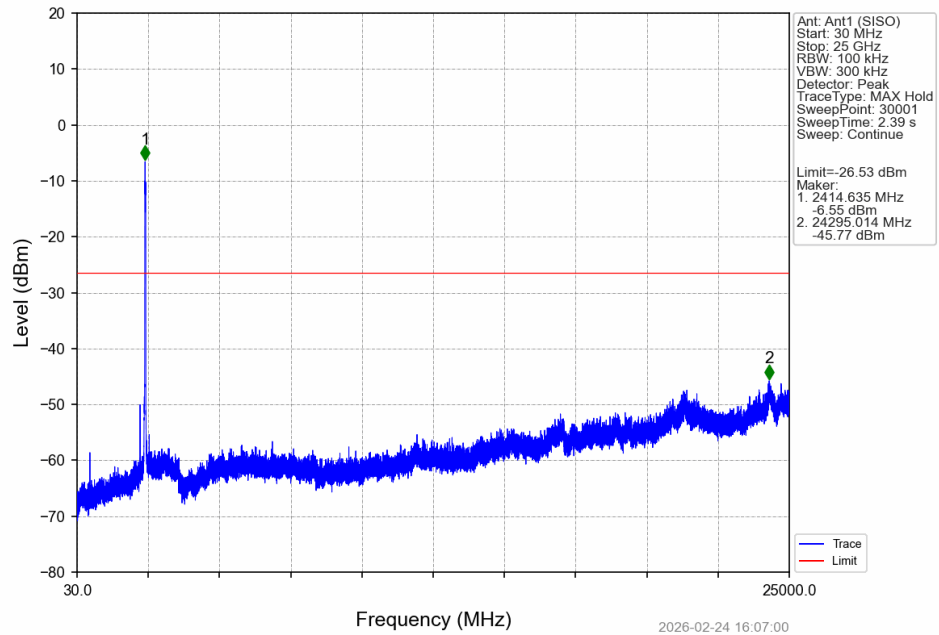
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



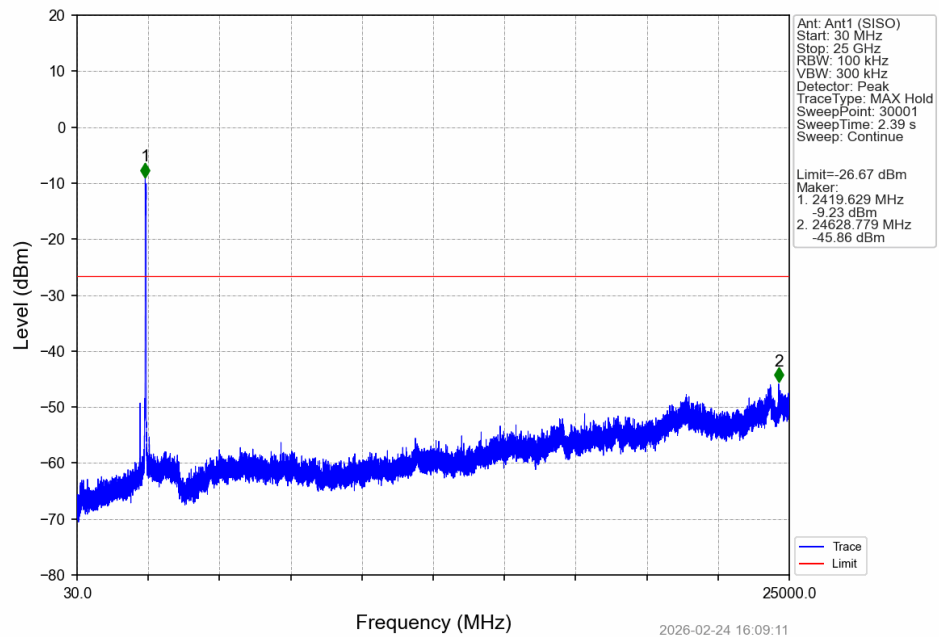
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



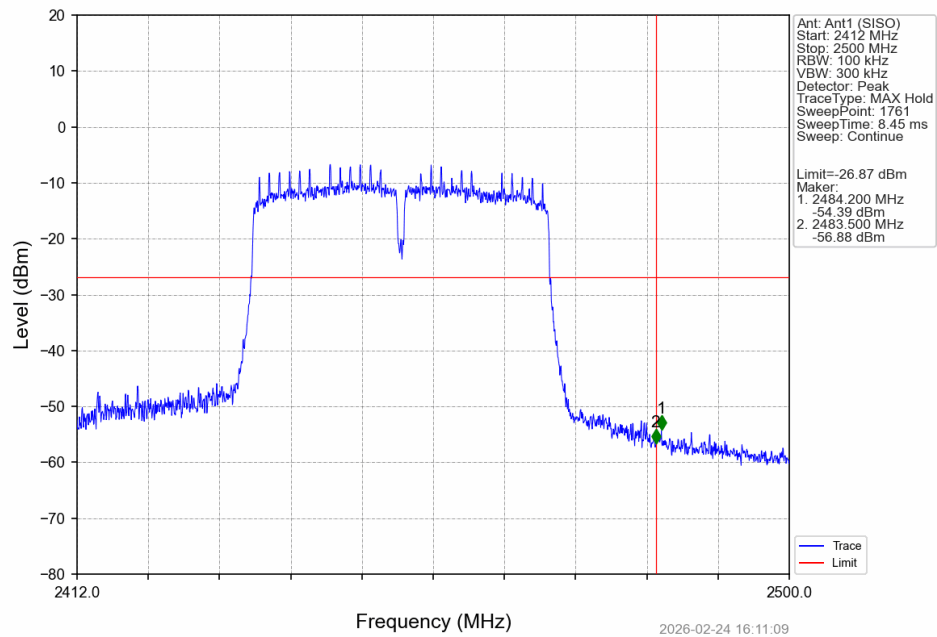
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV

