

Appendix RF Test Data for 2.4G WIFI

Company: : Shenzhen Havis Touch Technology Company Limited

EUT : mini PC

FCC ID: : 2BVOK-HWST07

Model Number : HWST07-12th OPS PC

Report No. : HTT2026031186F01

Reviewed By : Heber He

1. Duty Cycle

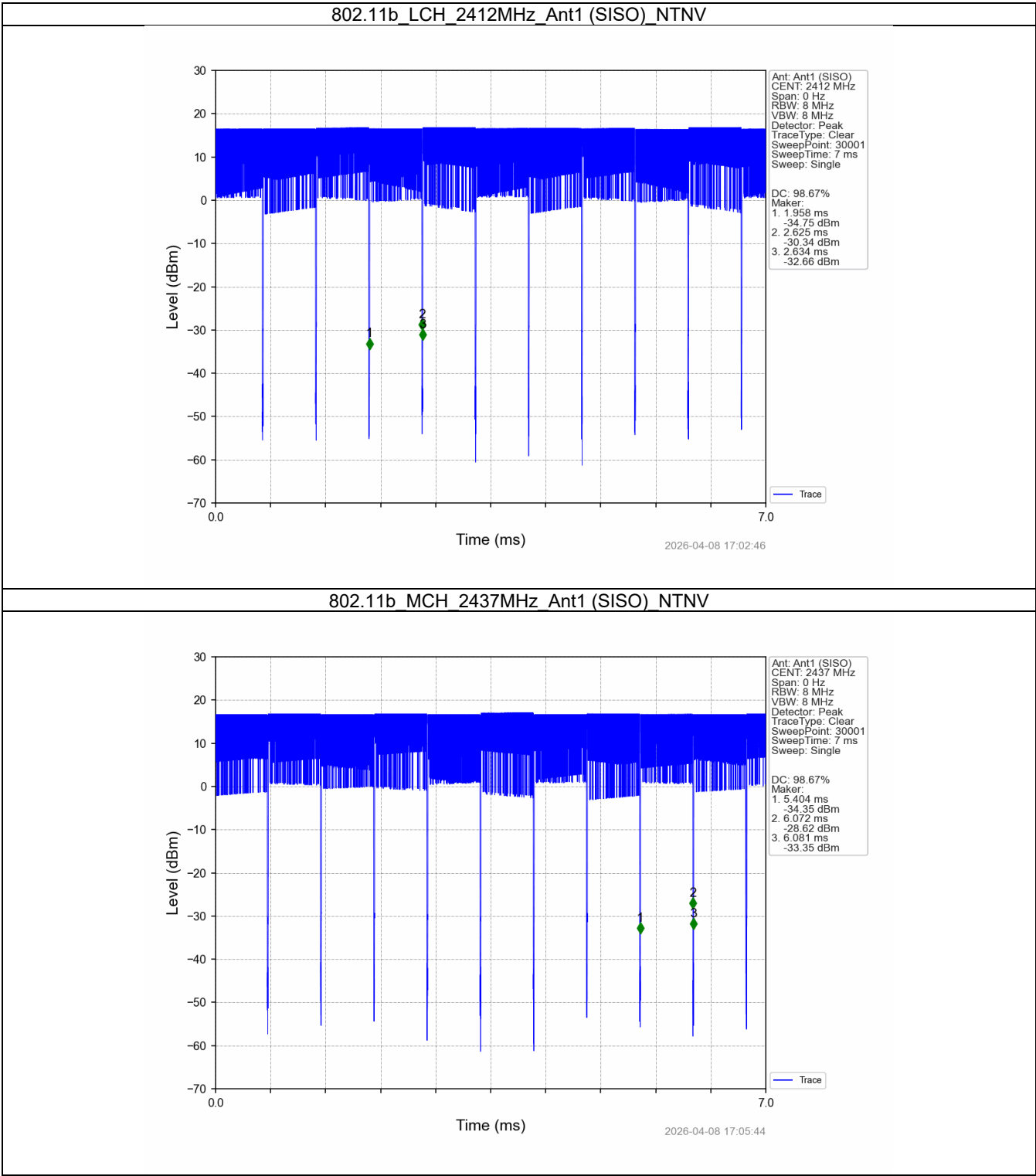
1.1 Test Result

1.1.1 Ant1

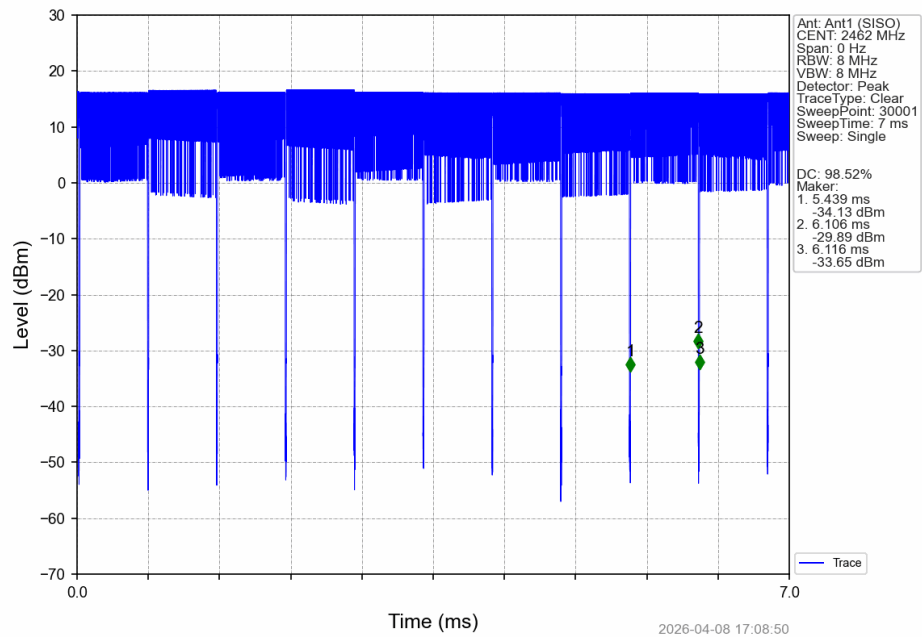
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	0.667	0.676	98.67	0.06	0.03
		2437	0.668	0.677	98.67	0.06	0.03
		2462	0.667	0.677	98.52	0.06	0.10
802.11g	SISO	2412	2.097	2.112	99.29	0.03	0.03
		2437	2.096	2.112	99.24	0.03	0.03
		2462	2.096	2.112	99.24	0.03	0.03
802.11n (HT20)	SISO	2412	5.428	5.444	99.71	0.01	0.00
		2437	5.430	5.444	99.74	0.01	0.00
		2462	5.430	5.444	99.74	0.01	0.00
802.11n (HT40)	SISO	2422	5.428	5.443	99.72	0.01	0.03
		2437	5.428	5.444	99.71	0.01	0.04
		2452	5.428	5.444	99.71	0.01	0.04

1.2 Test Graph

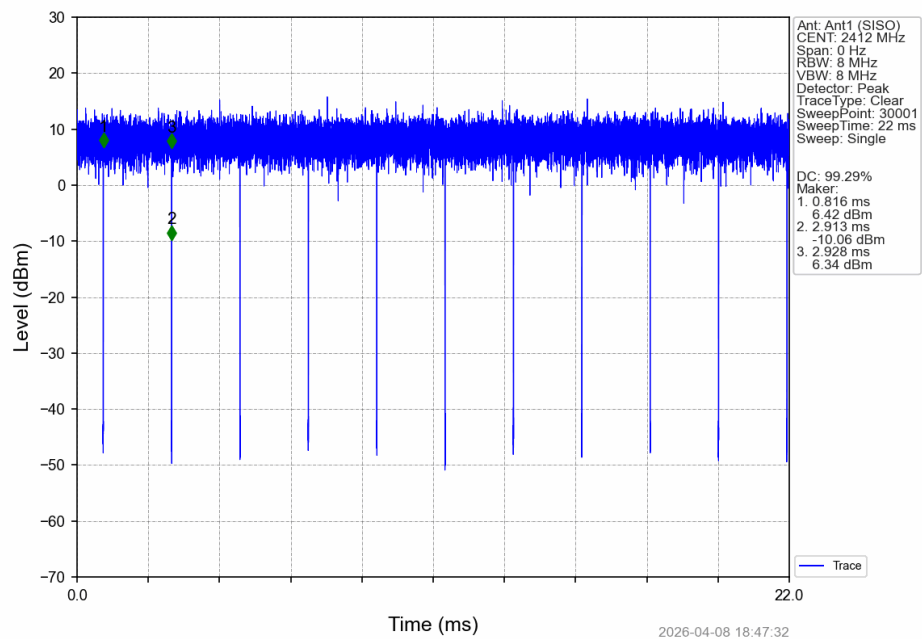
1.2.1 Ant1



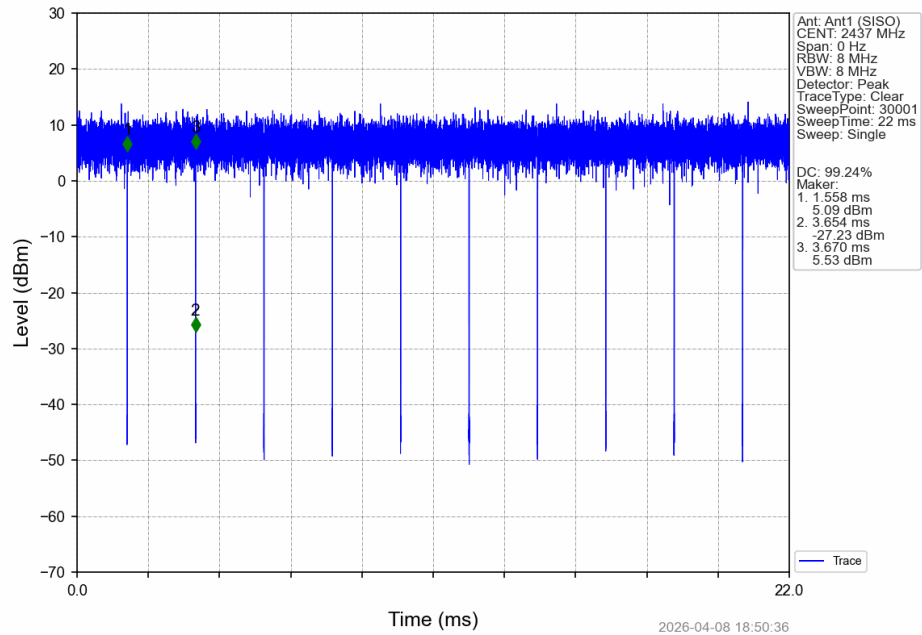
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



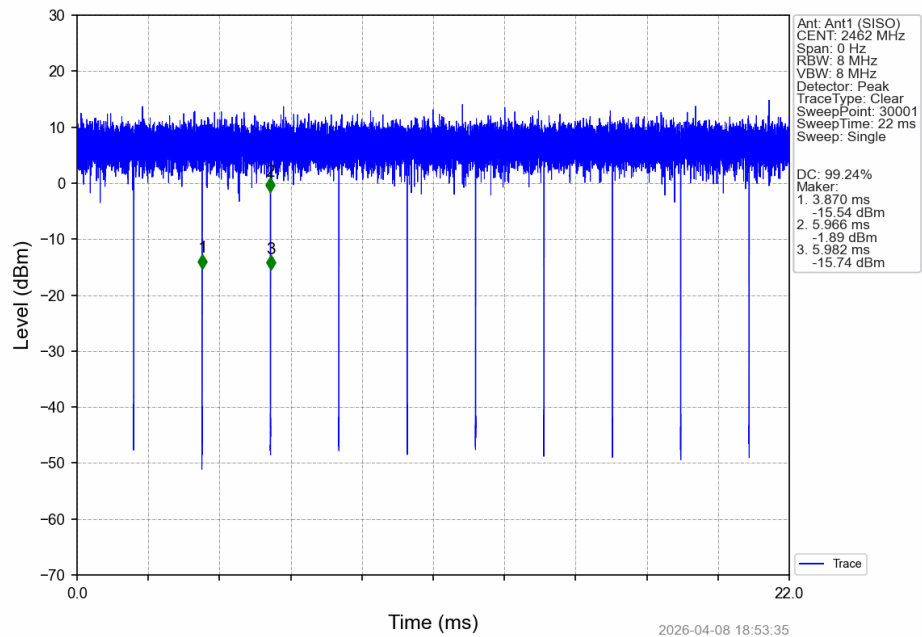
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



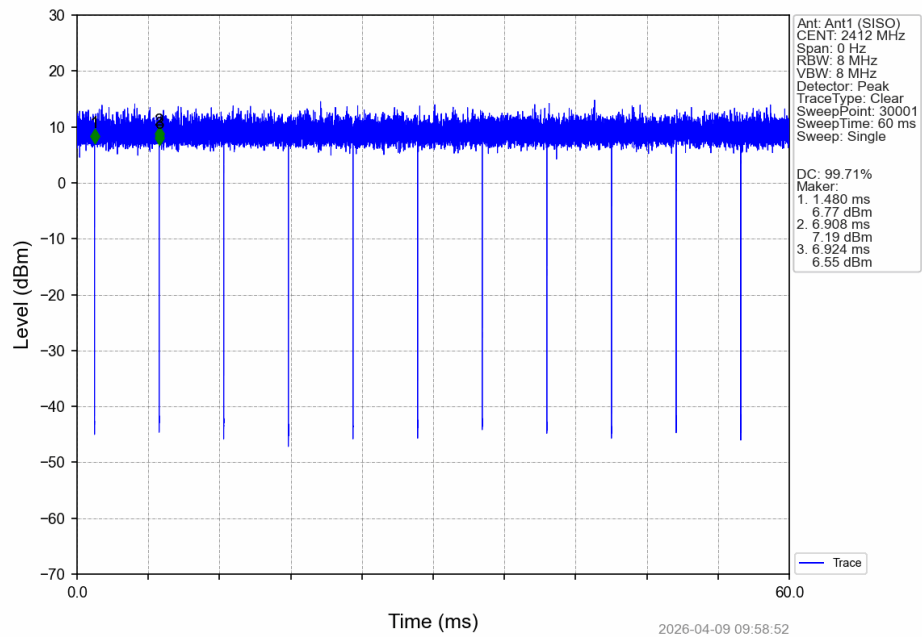
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



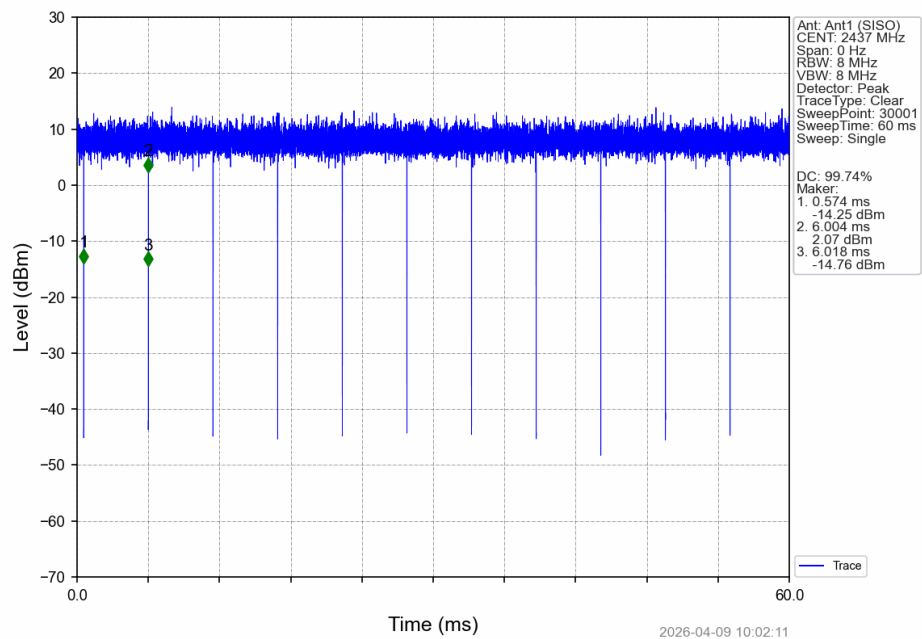
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



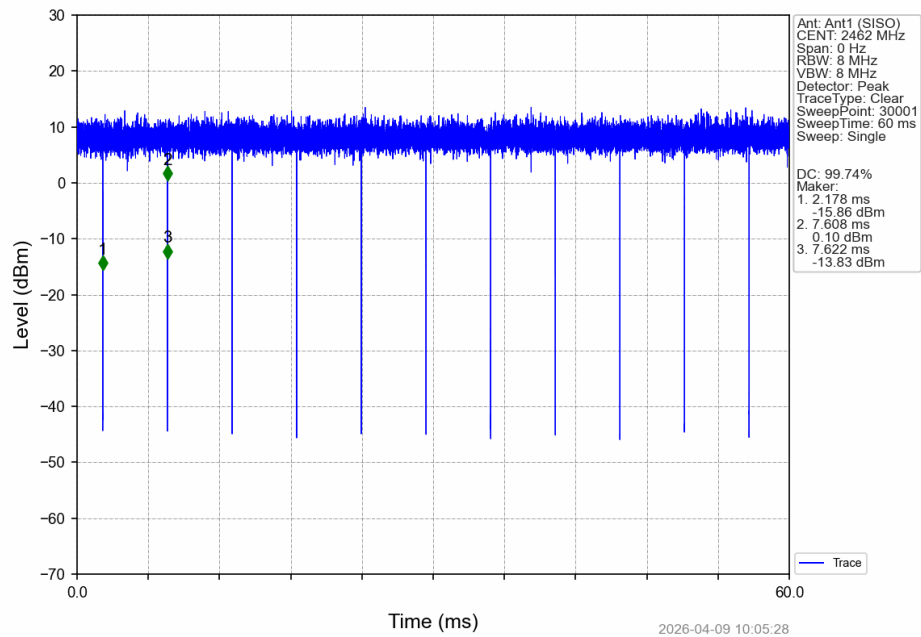
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



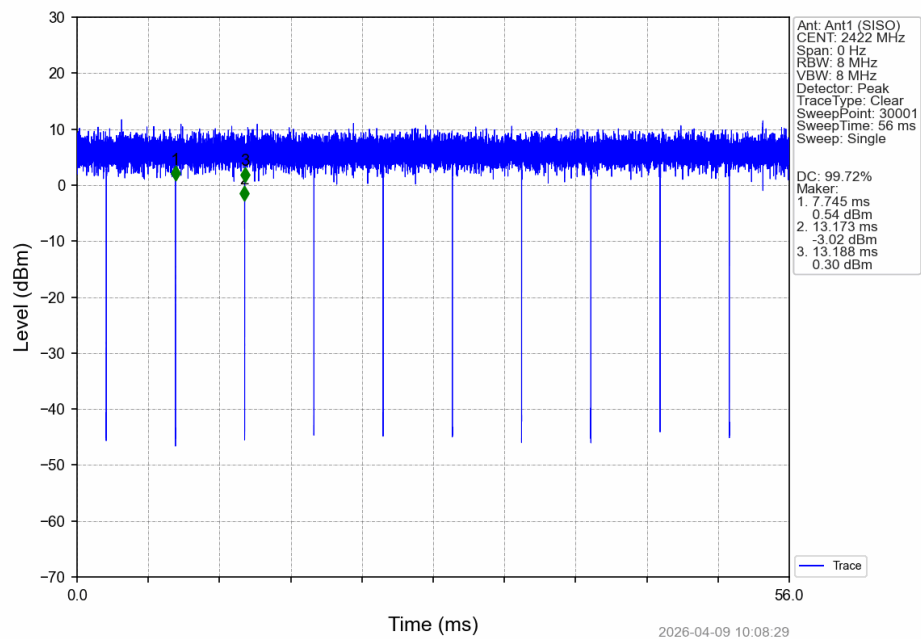
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



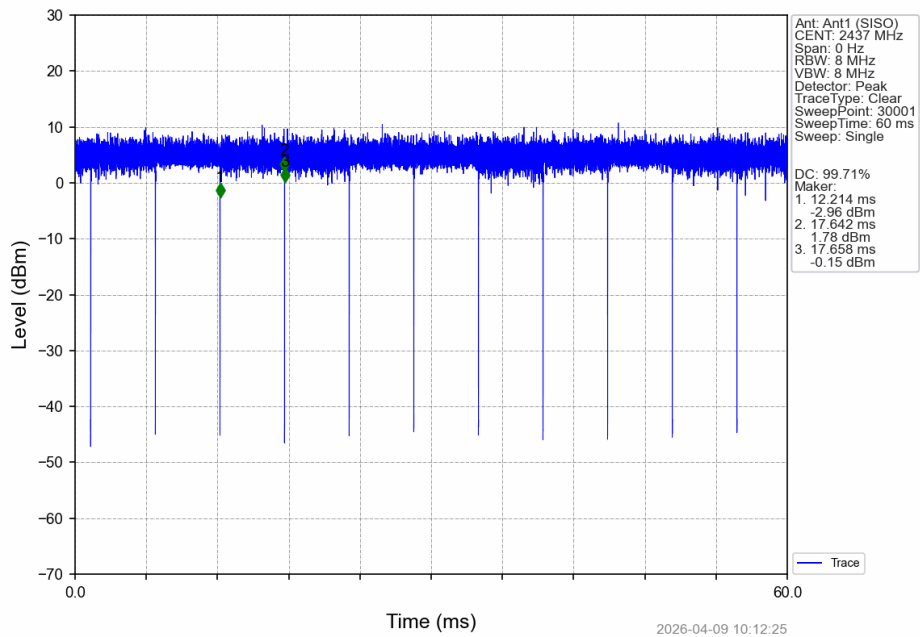
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



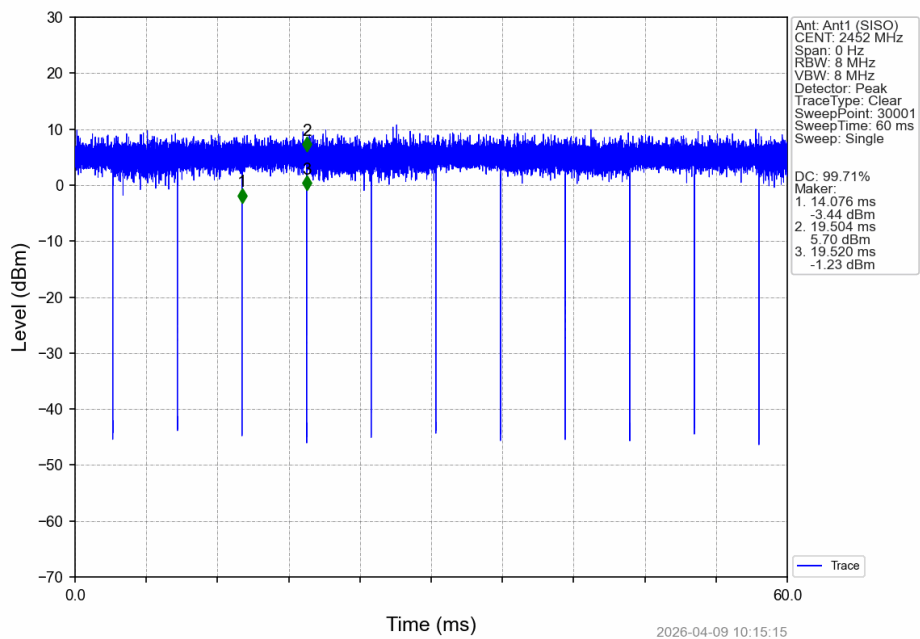
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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

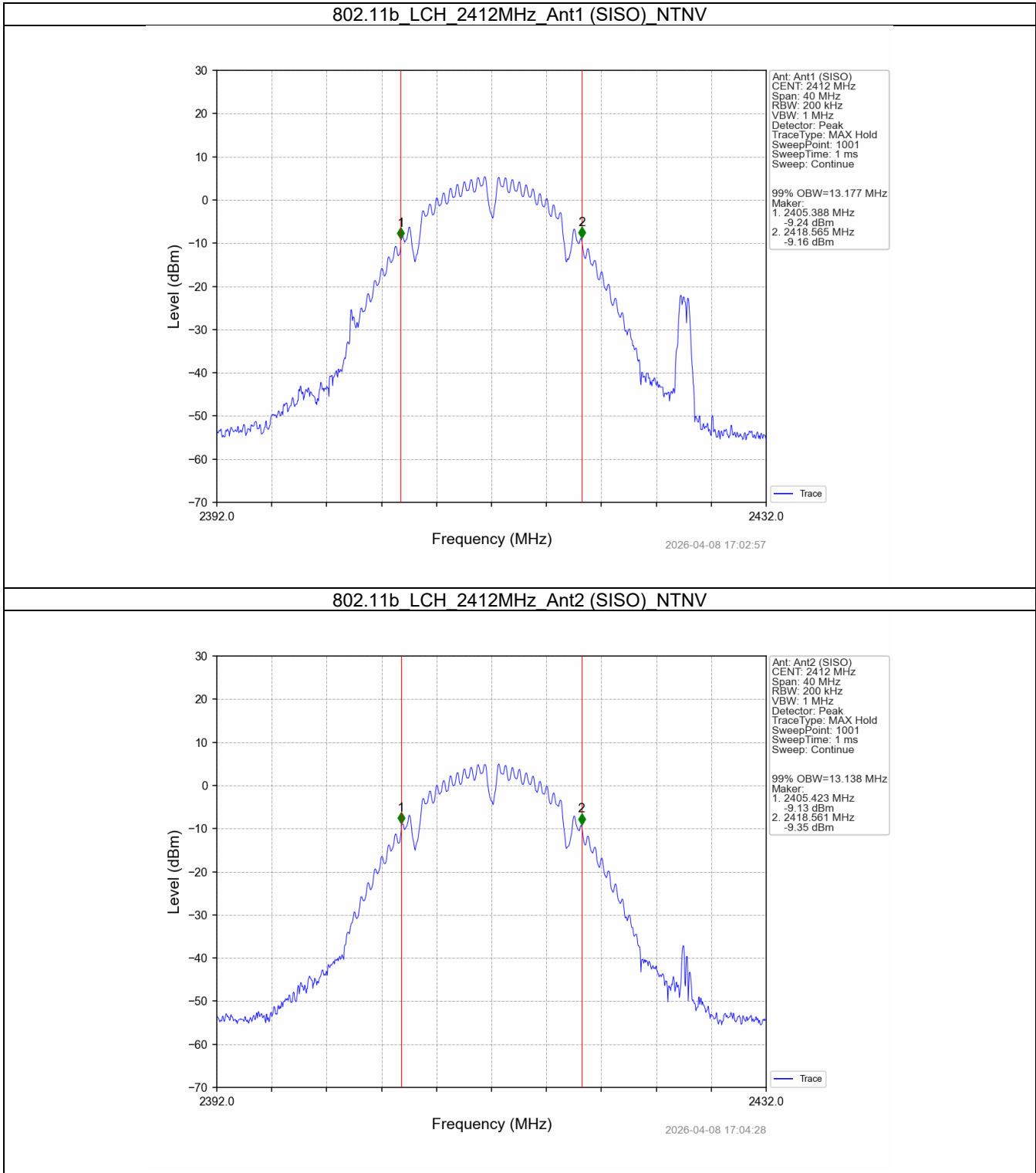
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.177	/	Pass
			2	13.138	/	Pass
		2437	1	13.121	/	Pass
			2	13.083	/	Pass
		2462	1	13.144	/	Pass
			2	13.150	/	Pass
802.11g	SISO	2412	1	16.385	/	Pass
			2	16.381	/	Pass
		2437	1	16.368	/	Pass
			2	16.382	/	Pass
		2462	1	16.386	/	Pass
			2	16.389	/	Pass
802.11n (HT20)	SISO	2412	1	17.568	/	Pass
			2	17.556	/	Pass
		2437	1	17.557	/	Pass
			2	17.533	/	Pass
		2462	1	17.647	/	Pass
			2	17.563	/	Pass
802.11n (HT40)	SISO	2422	1	36.316	/	Pass
			2	36.249	/	Pass
		2437	1	36.198	/	Pass
			2	36.157	/	Pass
		2452	1	36.309	/	Pass
			2	36.251	/	Pass

2.1.2 6dB BW

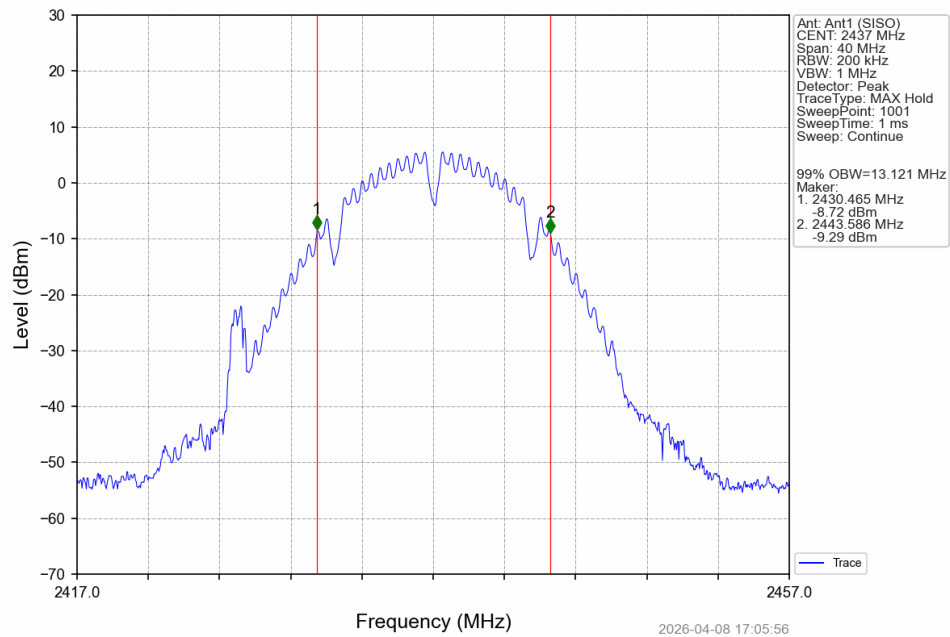
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.169	>=0.5	Pass
			2	8.166	>=0.5	Pass
		2437	1	8.174	>=0.5	Pass
			2	8.169	>=0.5	Pass
		2462	1	8.167	>=0.5	Pass
			2	8.180	>=0.5	Pass
802.11g	SISO	2412	1	16.370	>=0.5	Pass
			2	16.450	>=0.5	Pass
		2437	1	16.367	>=0.5	Pass
			2	16.437	>=0.5	Pass
		2462	1	16.416	>=0.5	Pass
			2	16.445	>=0.5	Pass
802.11n (HT20)	SISO	2412	1	17.587	>=0.5	Pass
			2	17.609	>=0.5	Pass
		2437	1	17.553	>=0.5	Pass
			2	17.625	>=0.5	Pass
		2462	1	17.591	>=0.5	Pass
			2	17.613	>=0.5	Pass
802.11n (HT40)	SISO	2422	1	35.980	>=0.5	Pass
			2	36.110	>=0.5	Pass
		2437	1	36.049	>=0.5	Pass
			2	35.935	>=0.5	Pass
		2452	1	36.132	>=0.5	Pass
			2	36.032	>=0.5	Pass

2.2 Test Graph

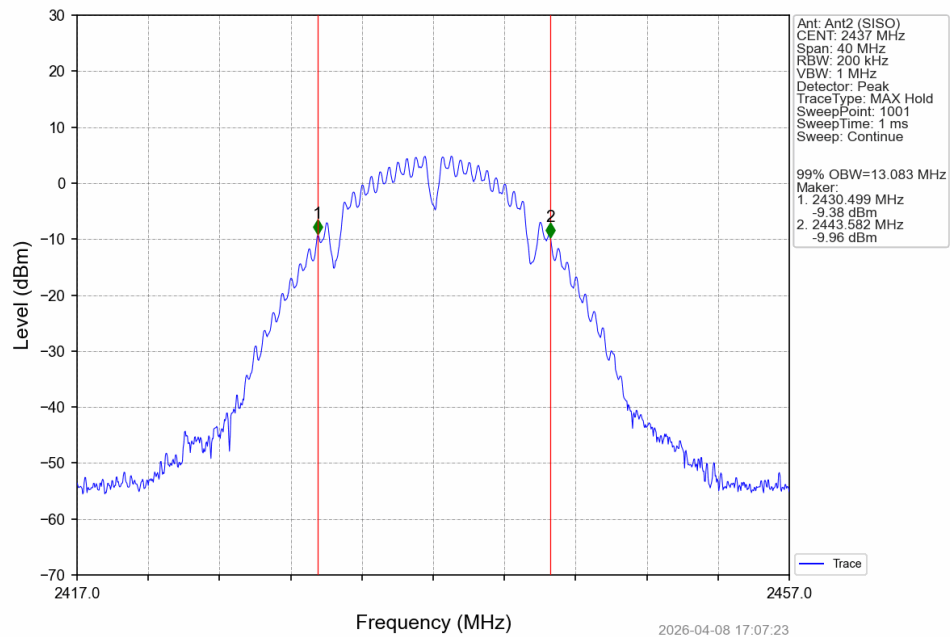
2.2.1 OBW



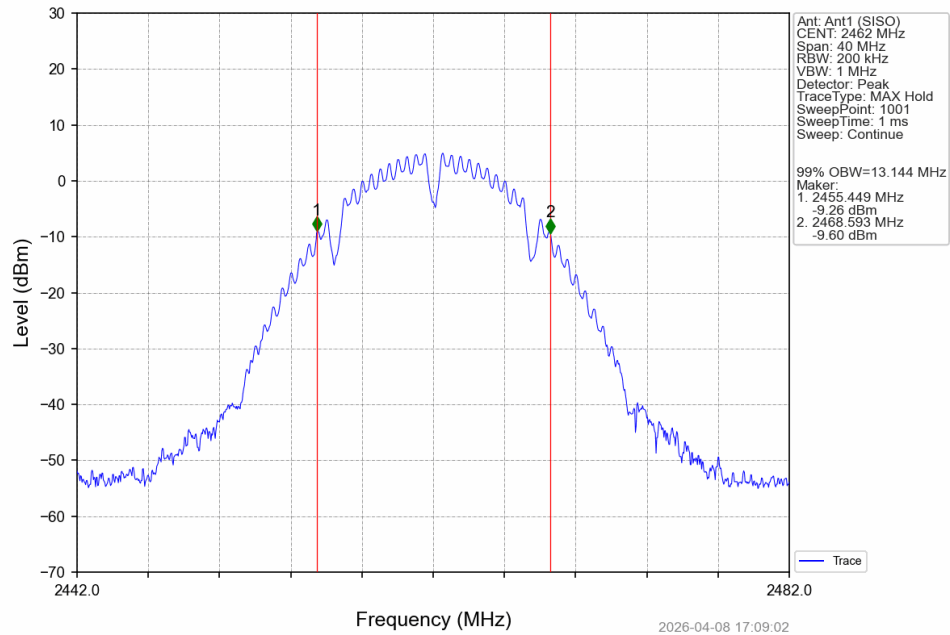
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



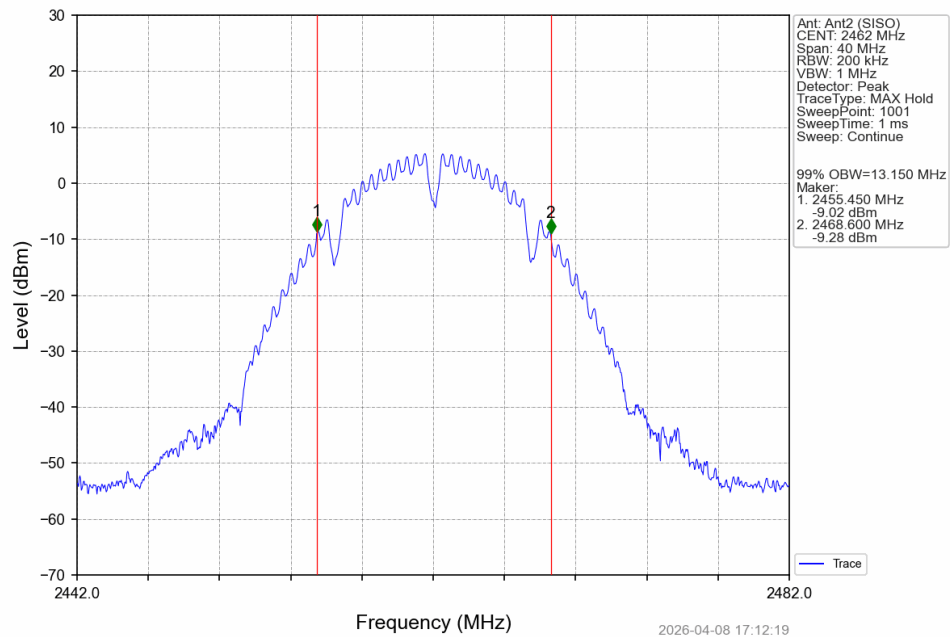
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



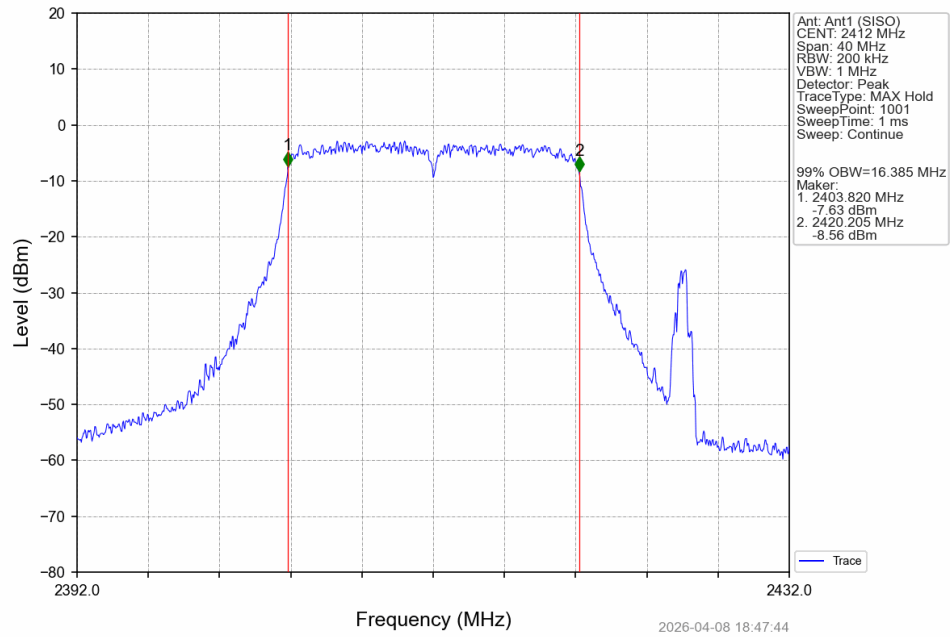
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



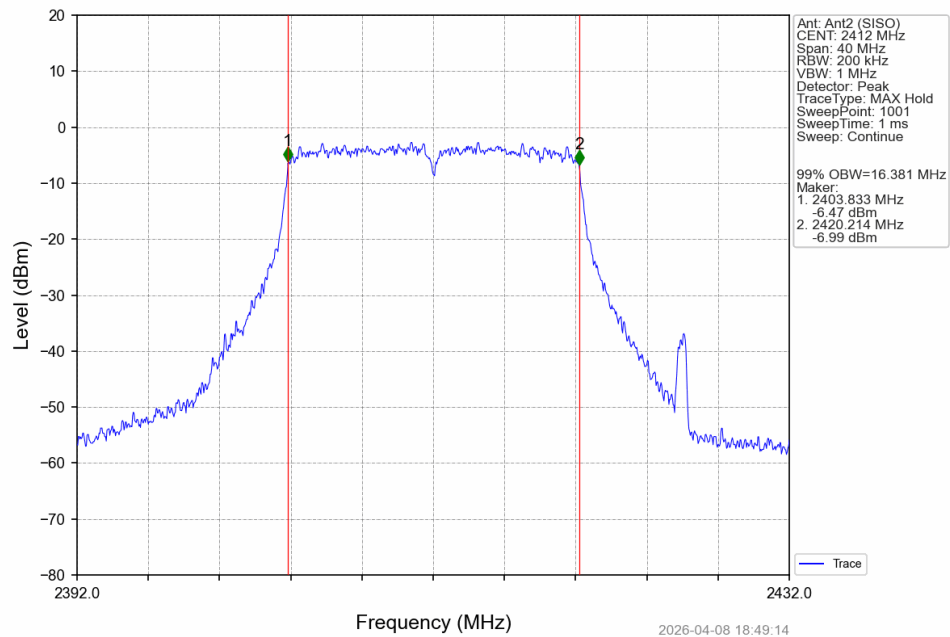
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



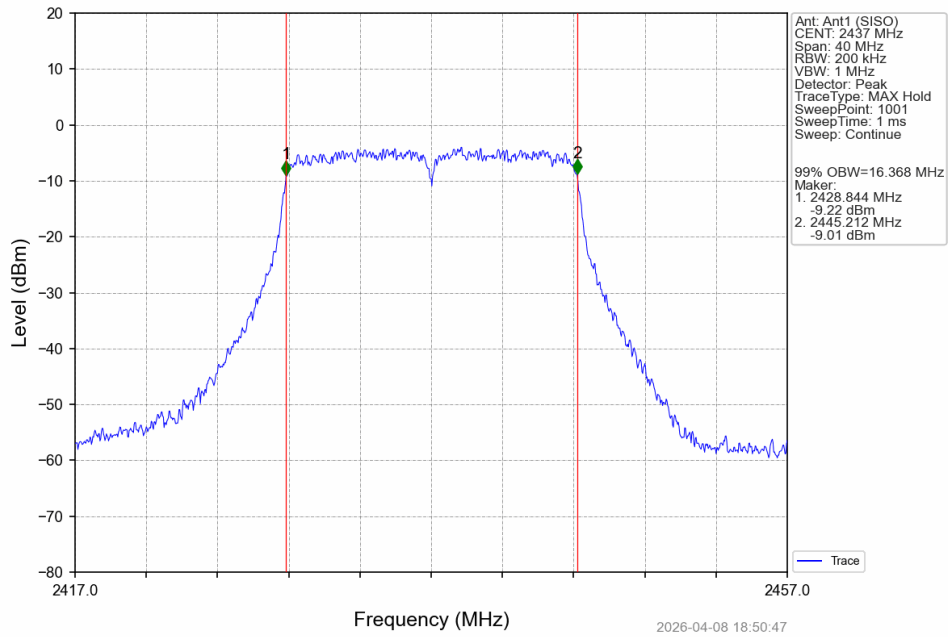
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



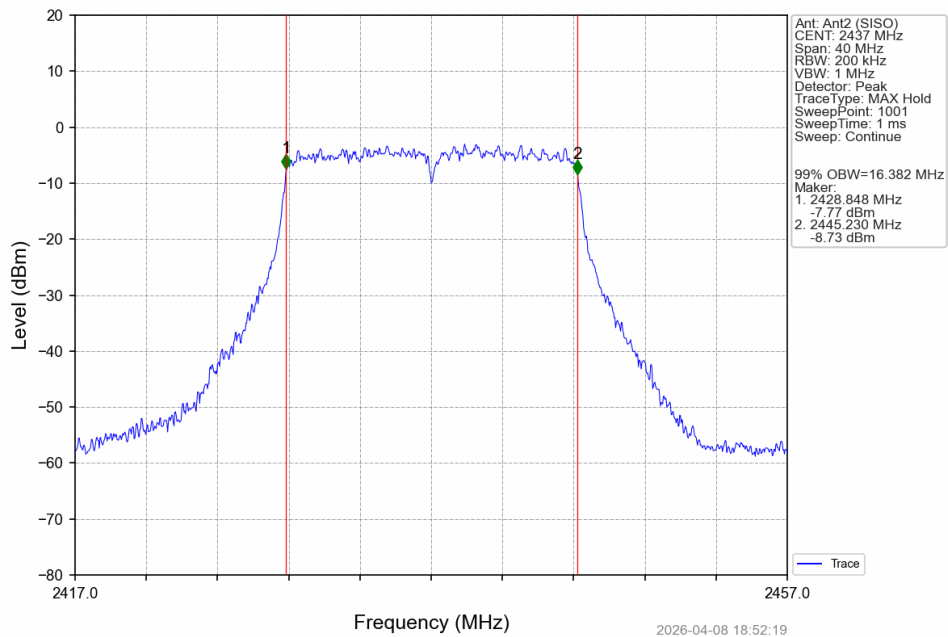
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



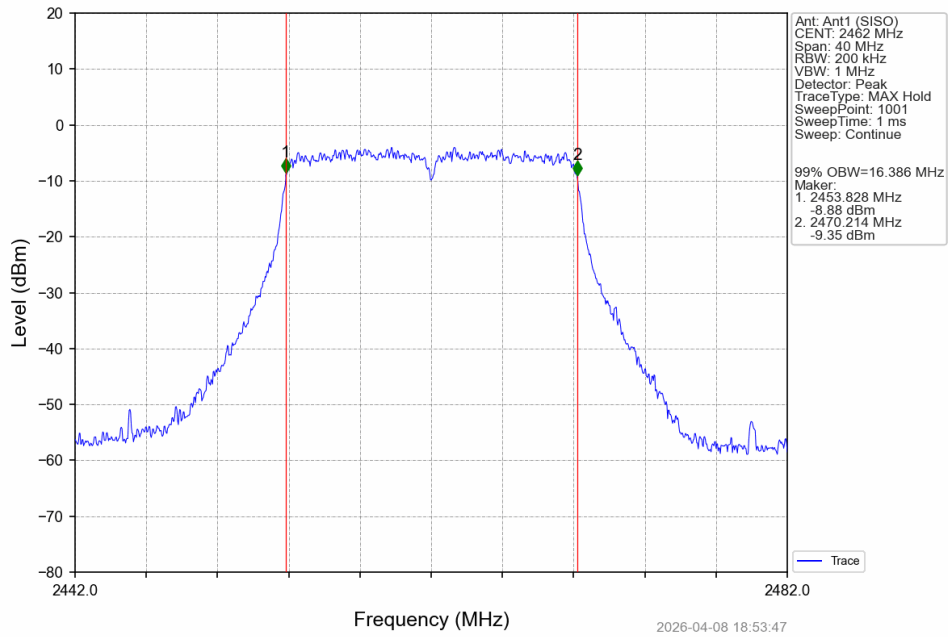
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



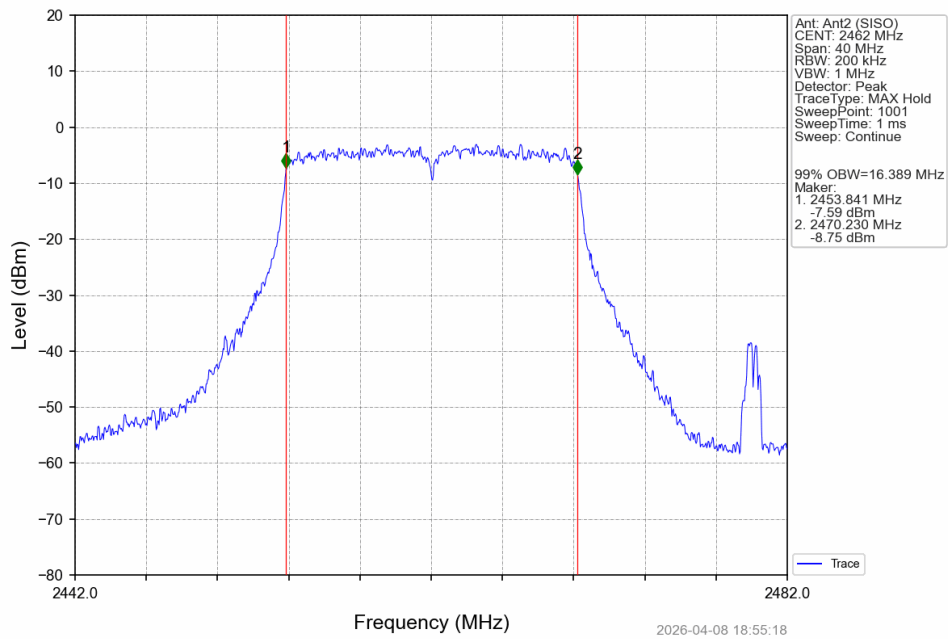
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



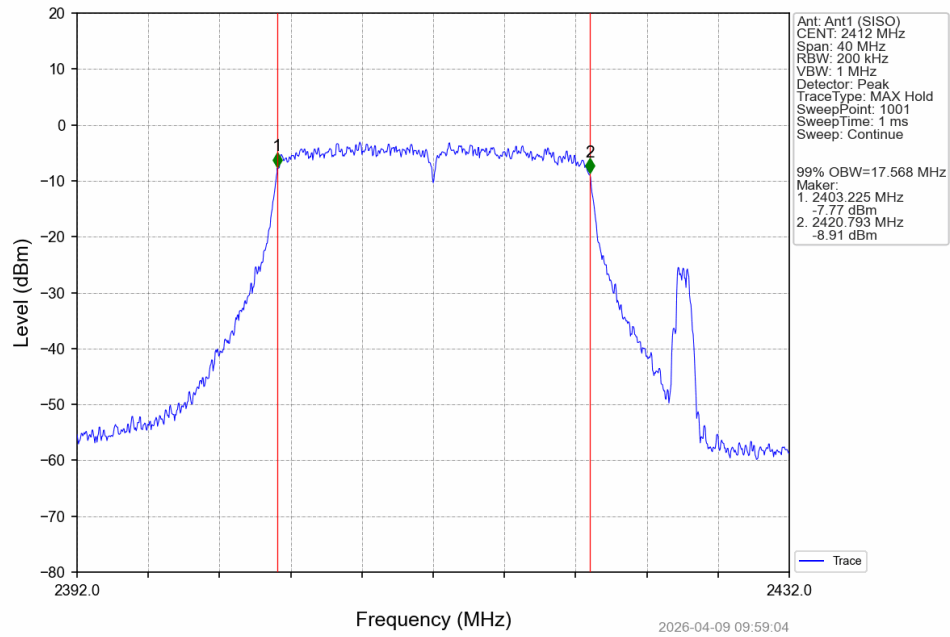
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



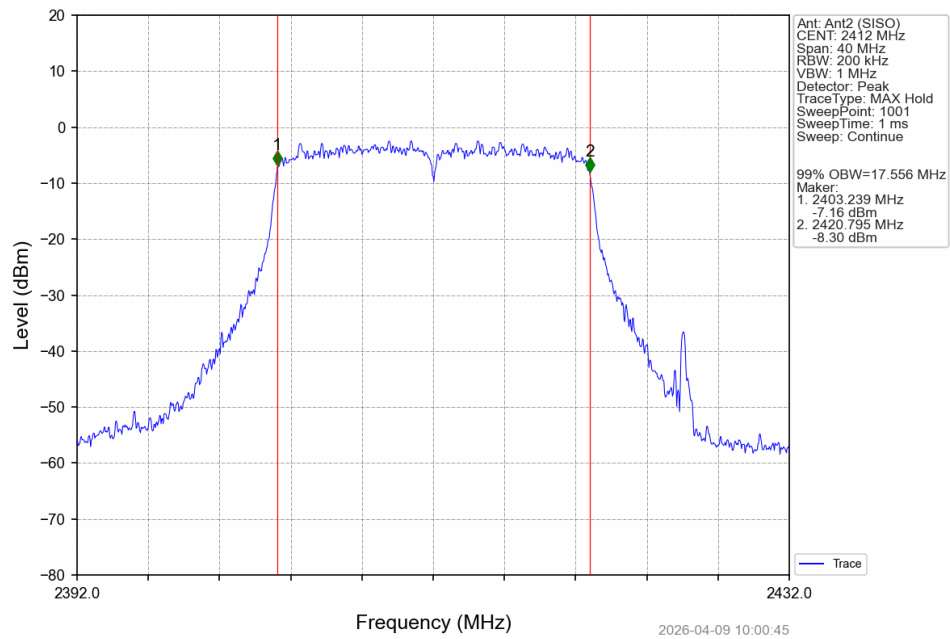
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



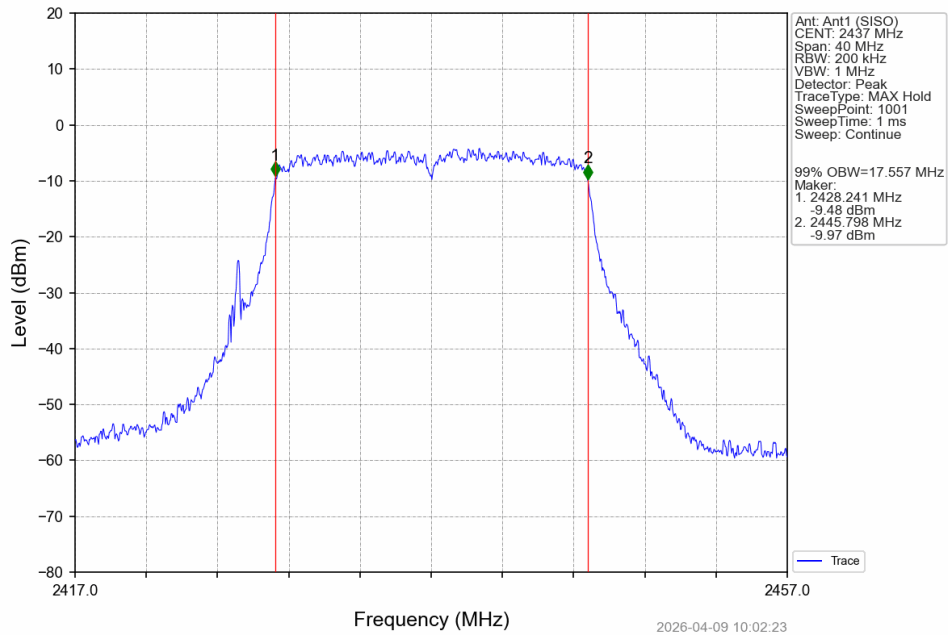
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



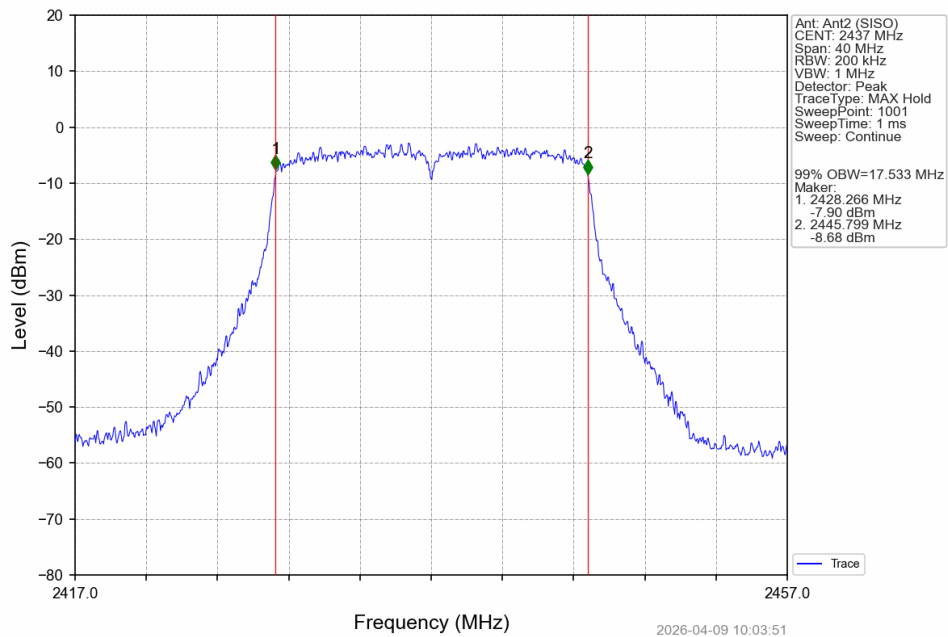
802.11n(HT20)_LCH_2412MHz_Ant2 (SISO)_NTNV



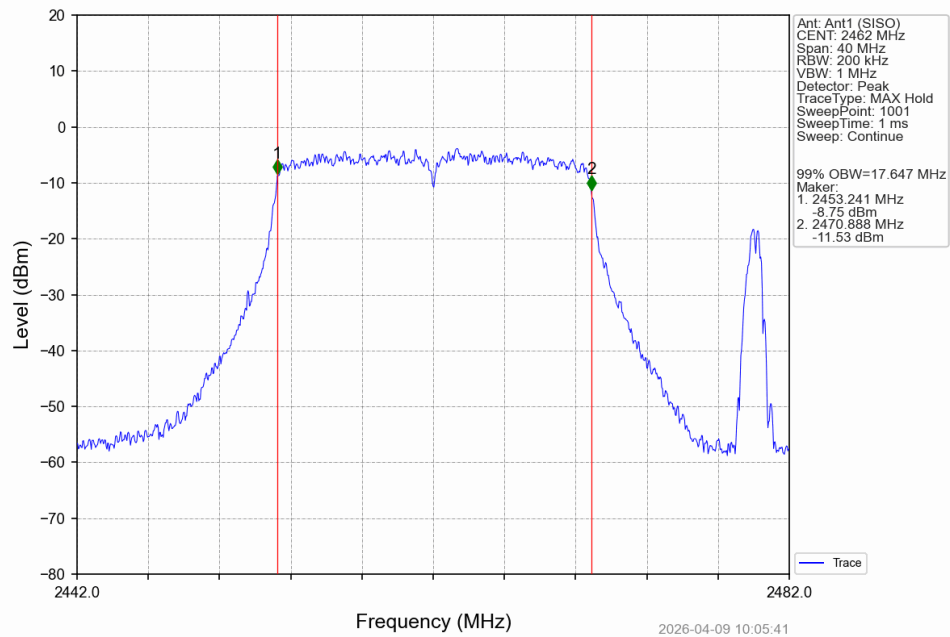
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



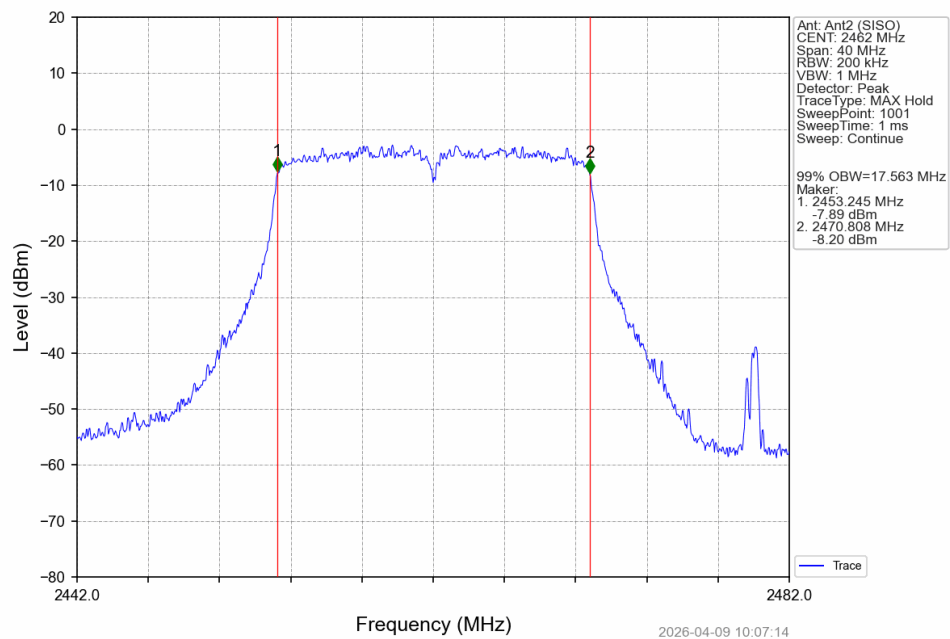
802.11n(HT20)_MCH_2437MHz_Ant2 (SISO)_NTNV



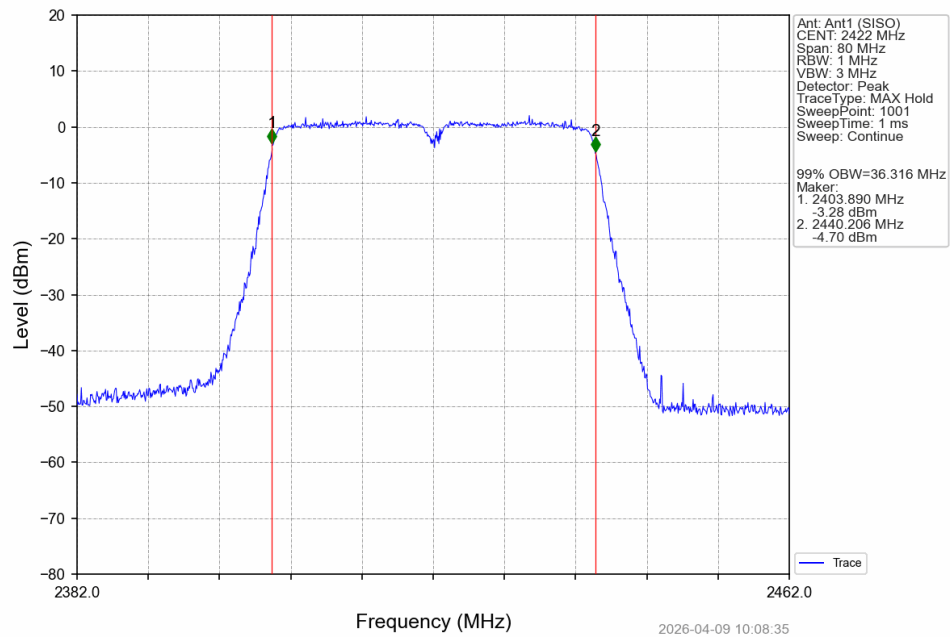
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



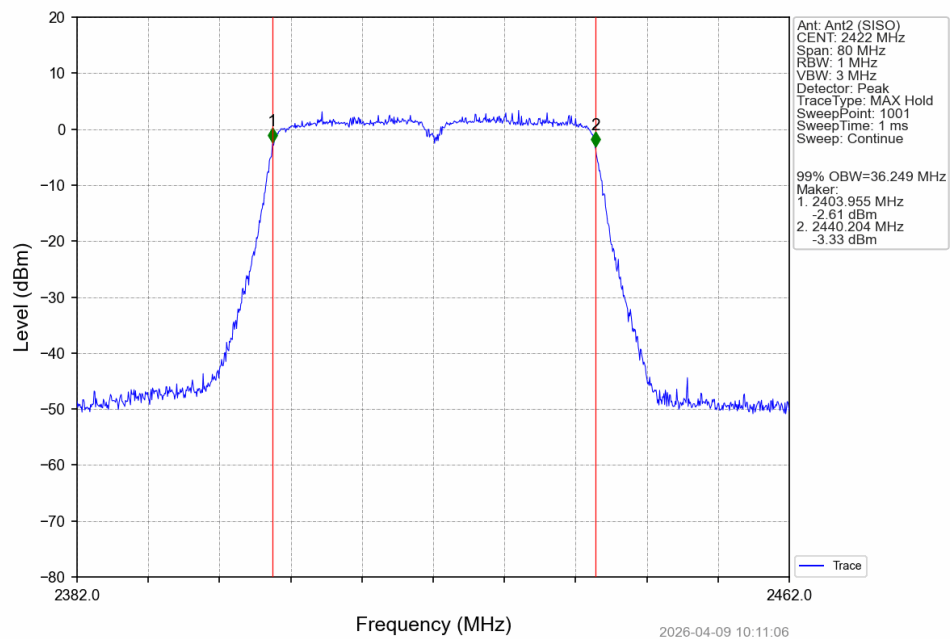
802.11n(HT20)_HCH_2462MHz_Ant2 (SISO)_NTNV



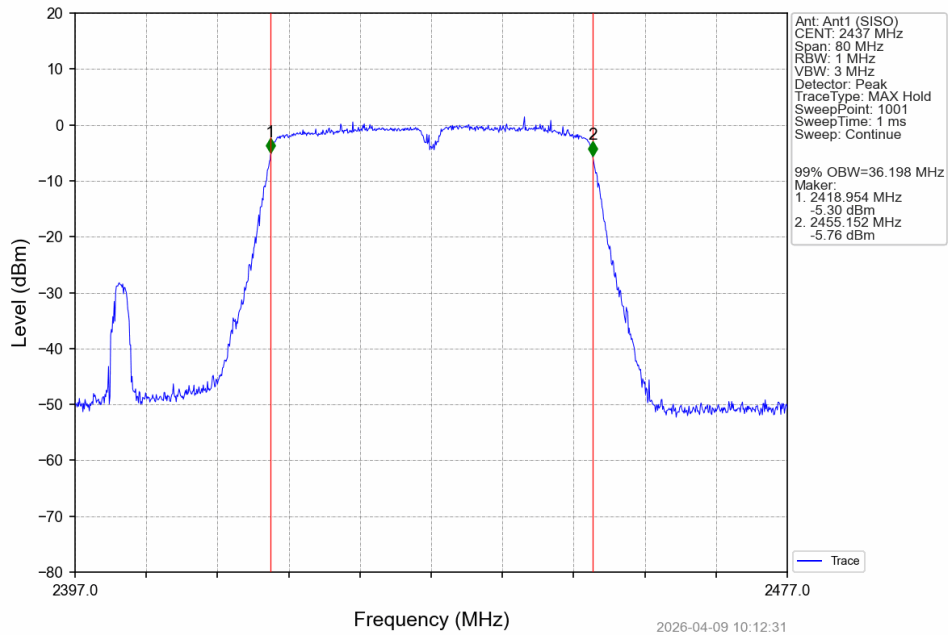
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



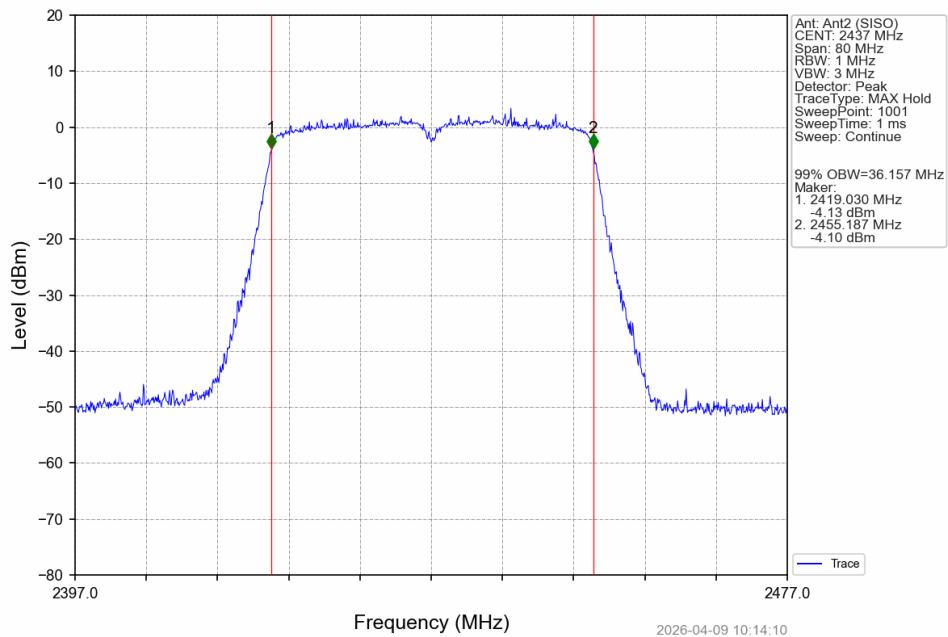
802.11n(HT40)_LCH_2422MHz_Ant2 (SISO)_NTNV



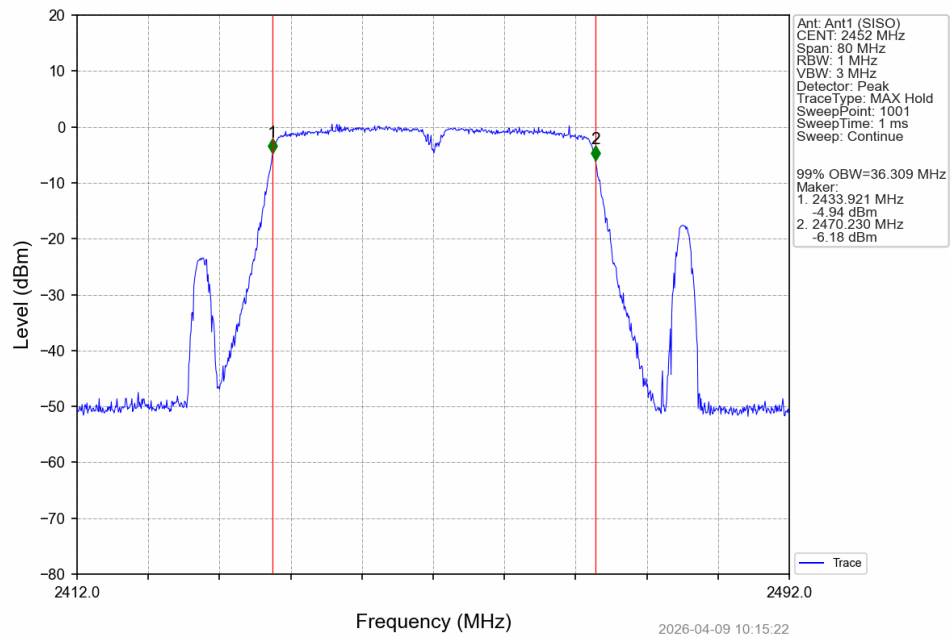
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



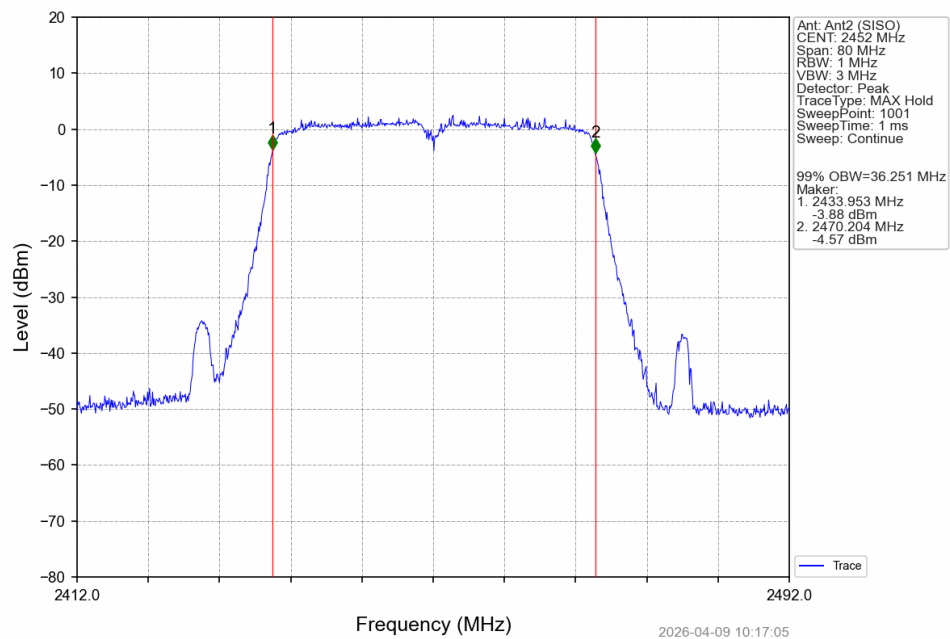
802.11n(HT40)_MCH_2437MHz_Ant2 (SISO)_NTNV



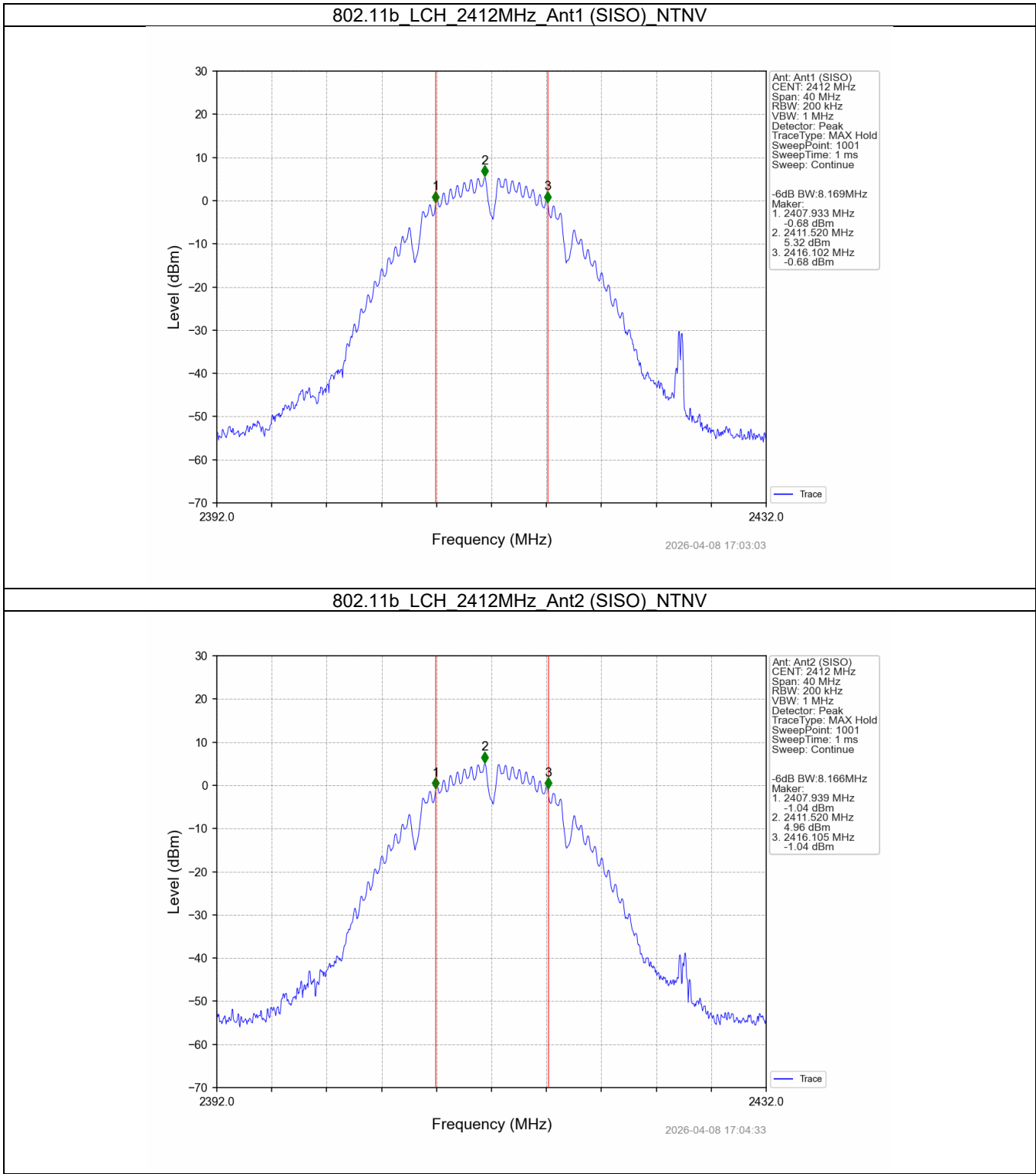
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



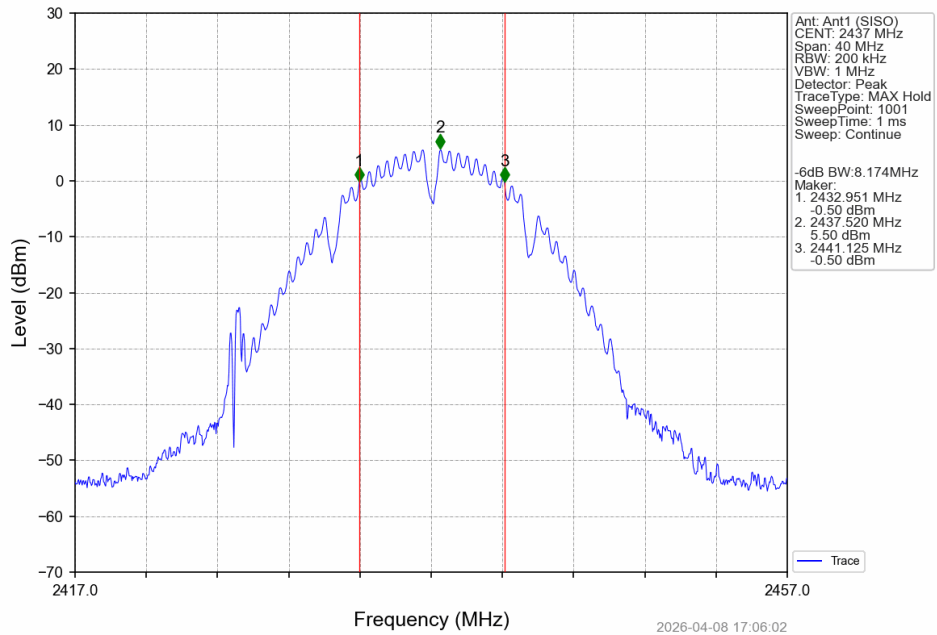
802.11n(HT40)_HCH_2452MHz_Ant2 (SISO)_NTNV



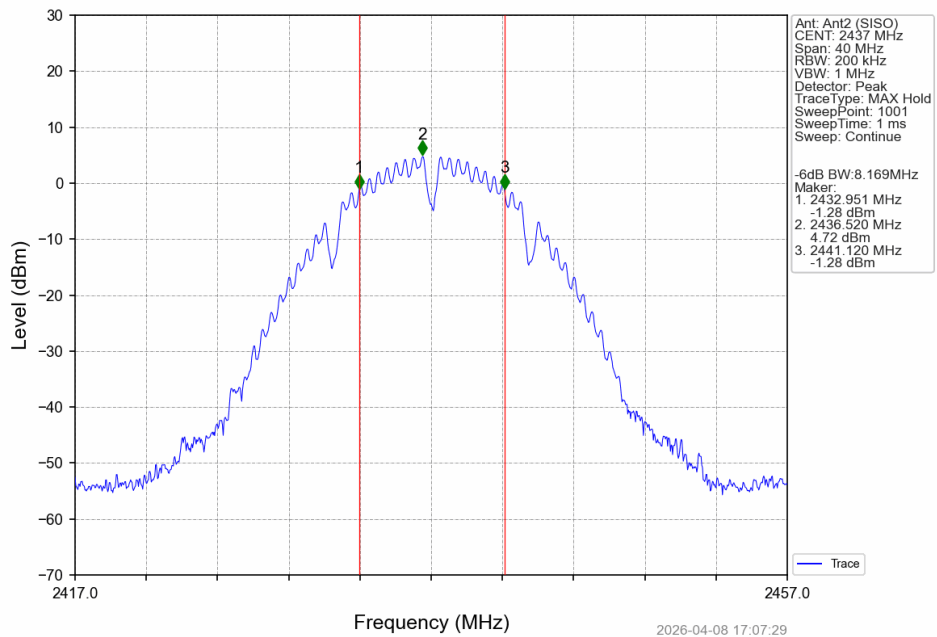
2.2.2 6dB BW



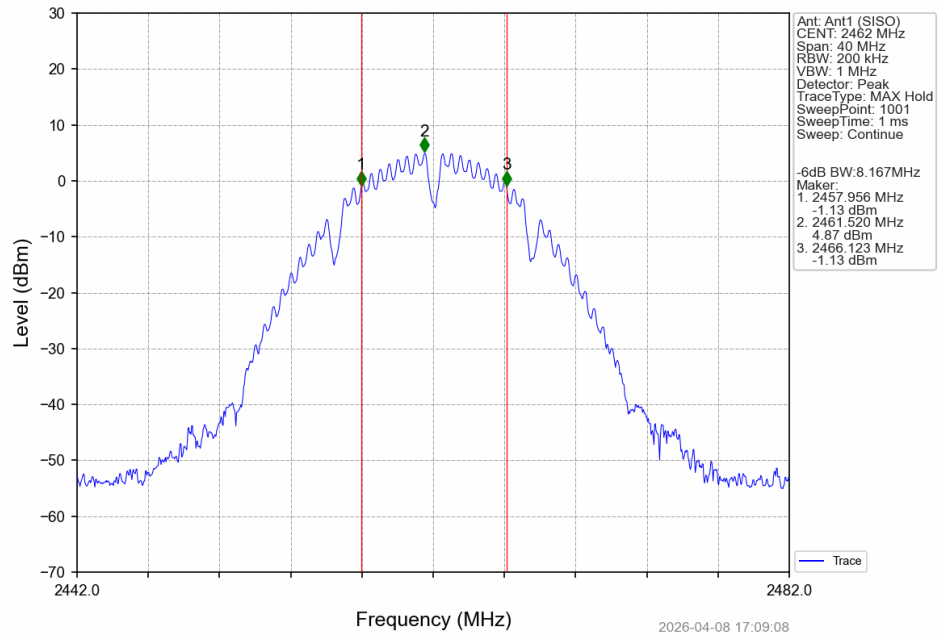
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



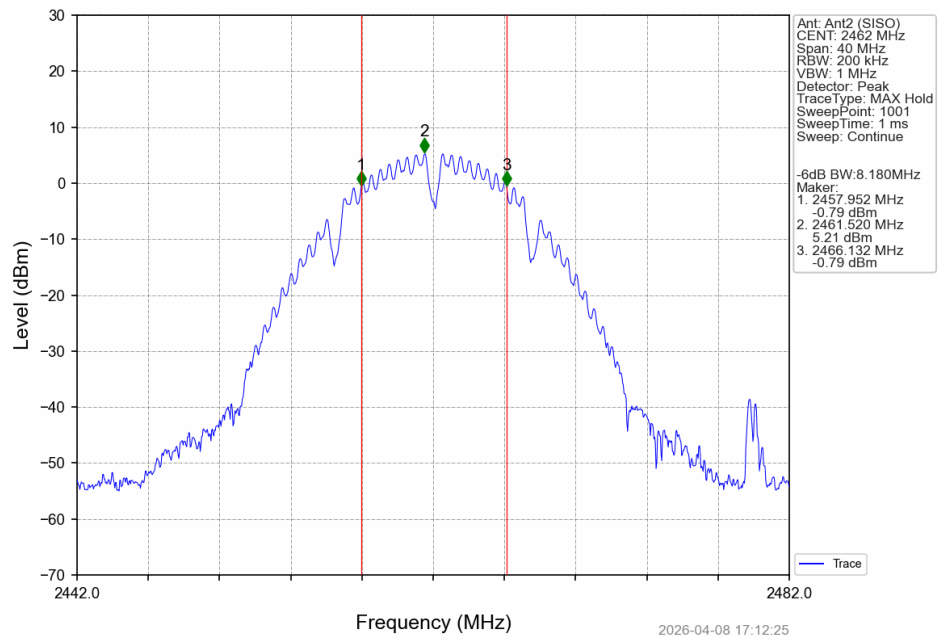
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



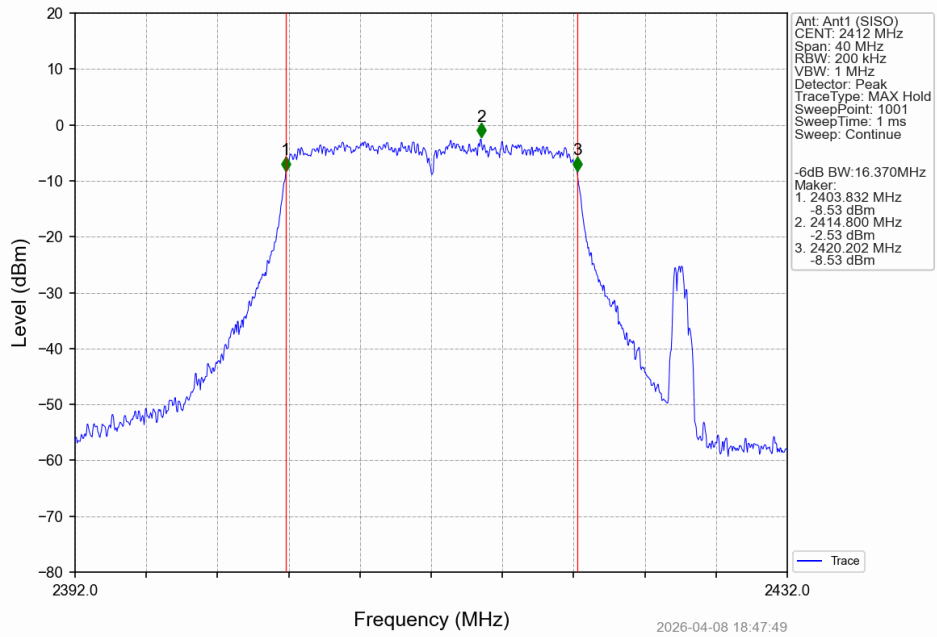
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



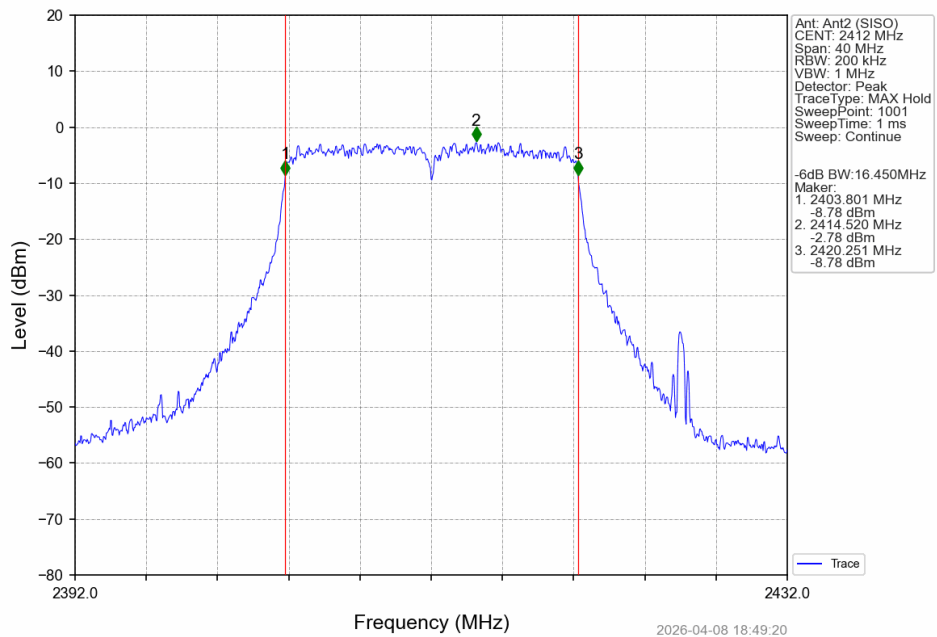
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



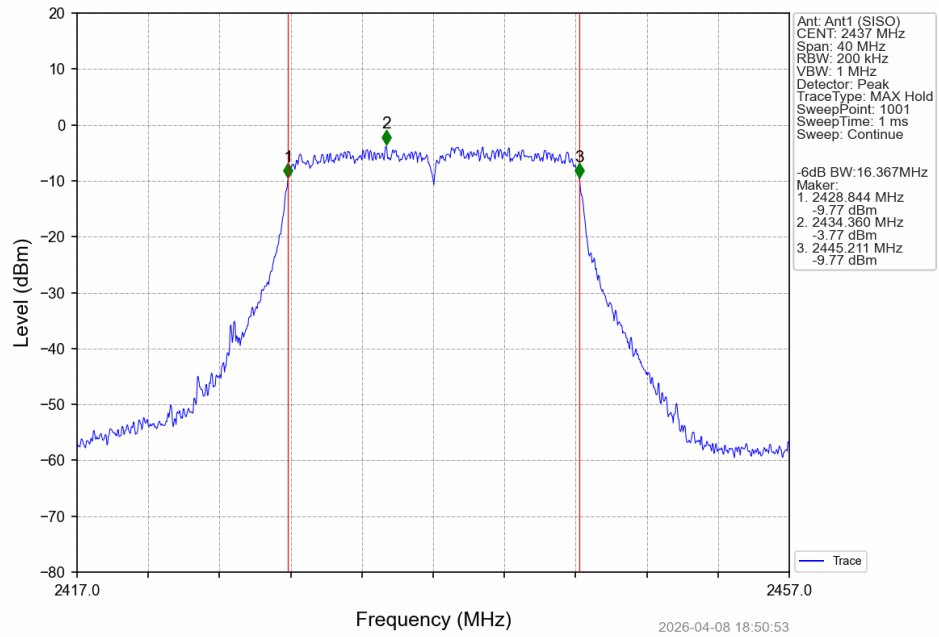
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



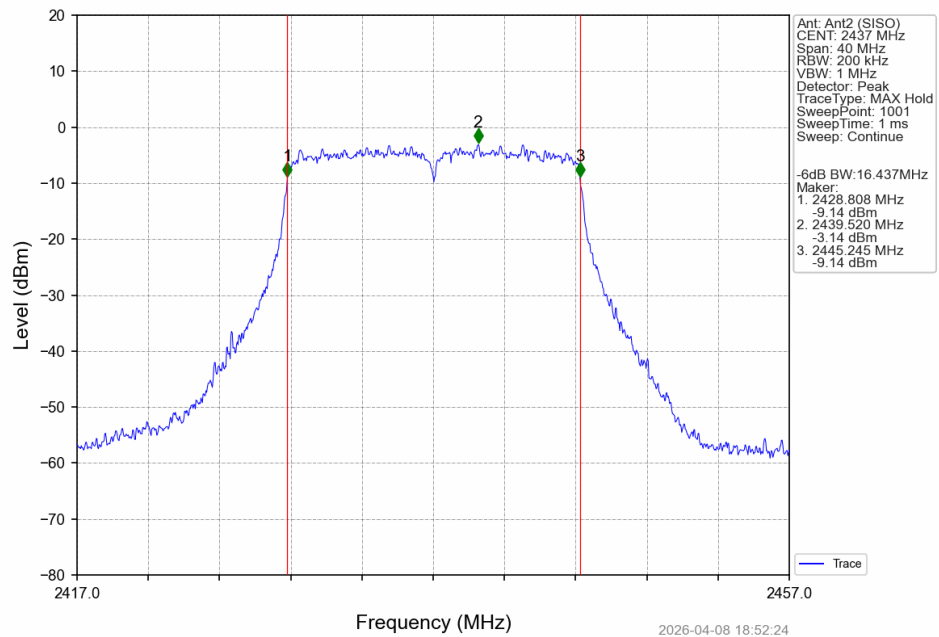
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



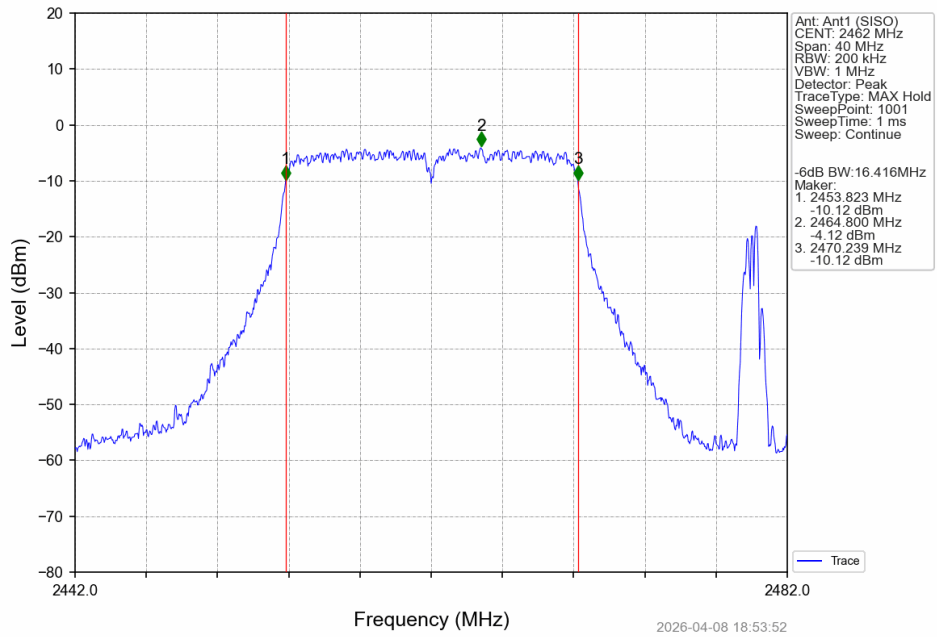
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



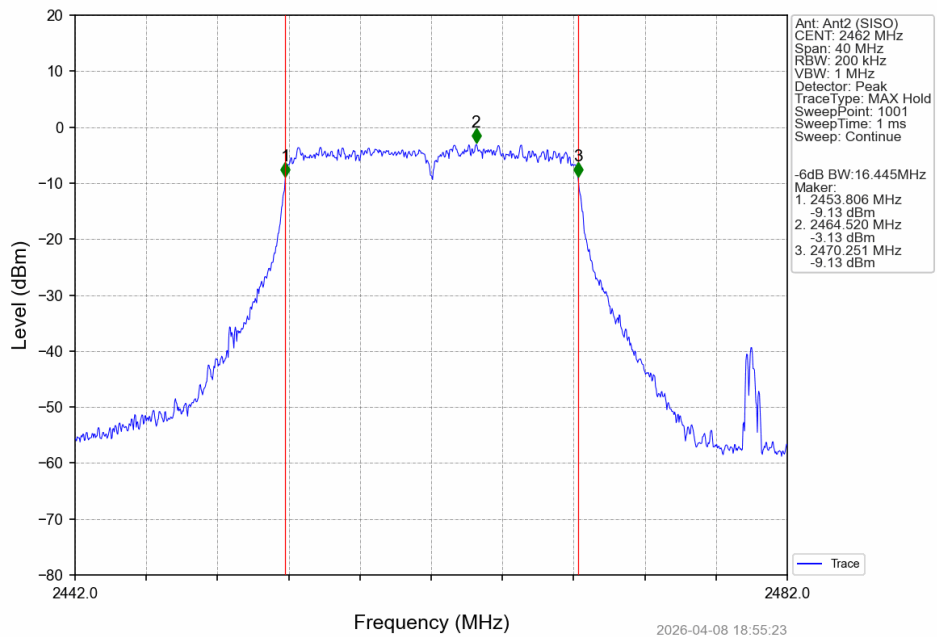
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



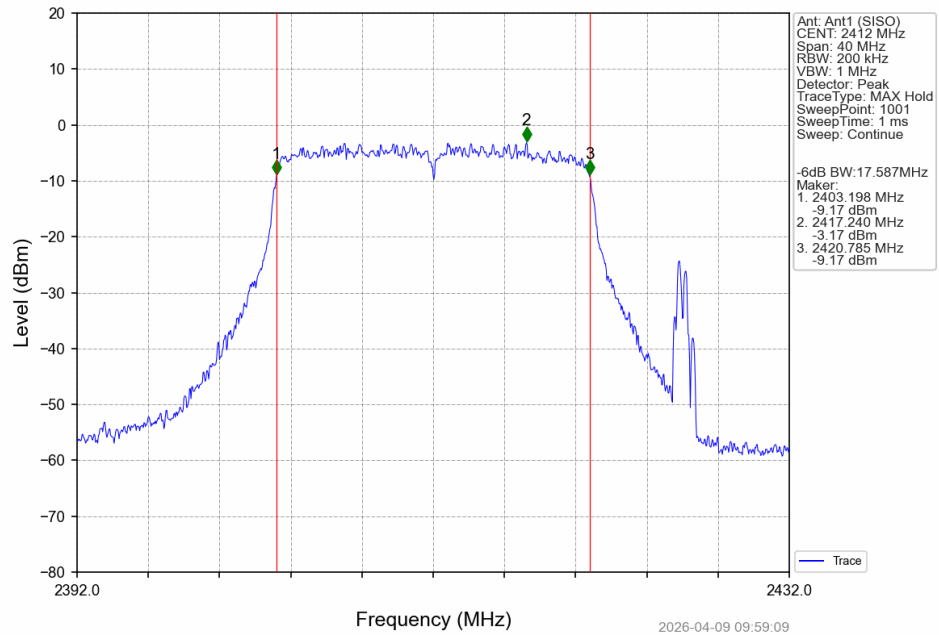
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



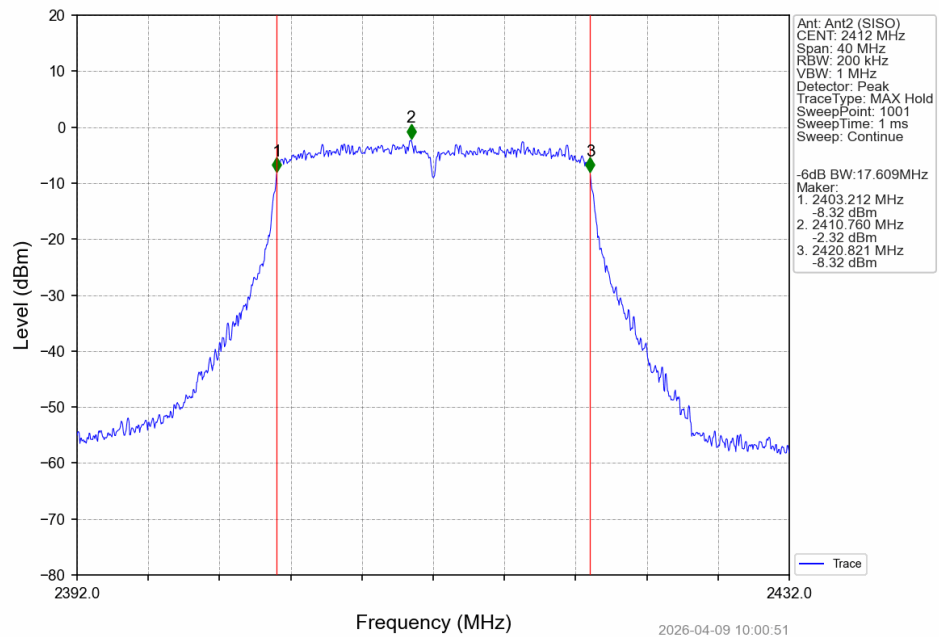
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



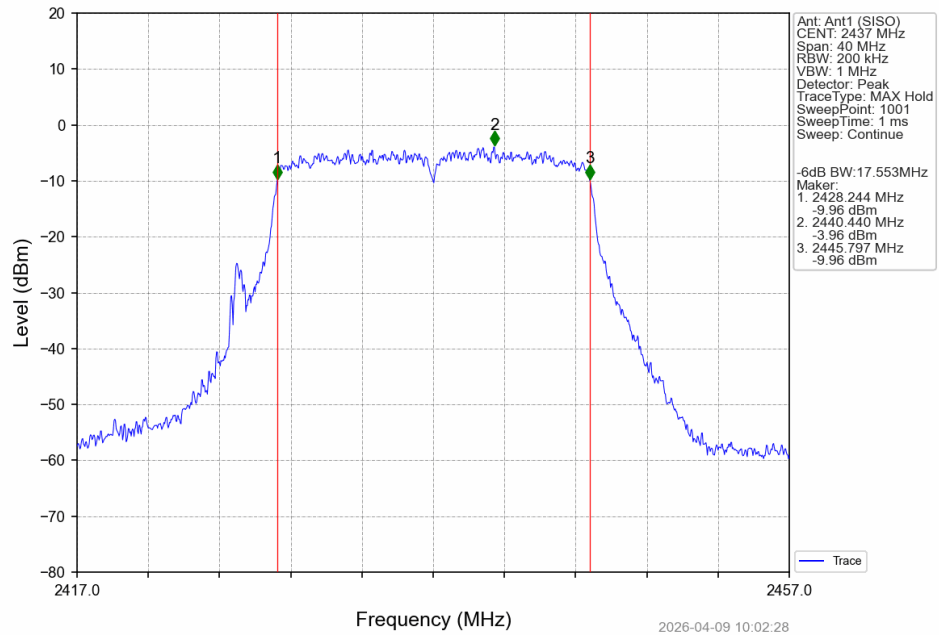
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



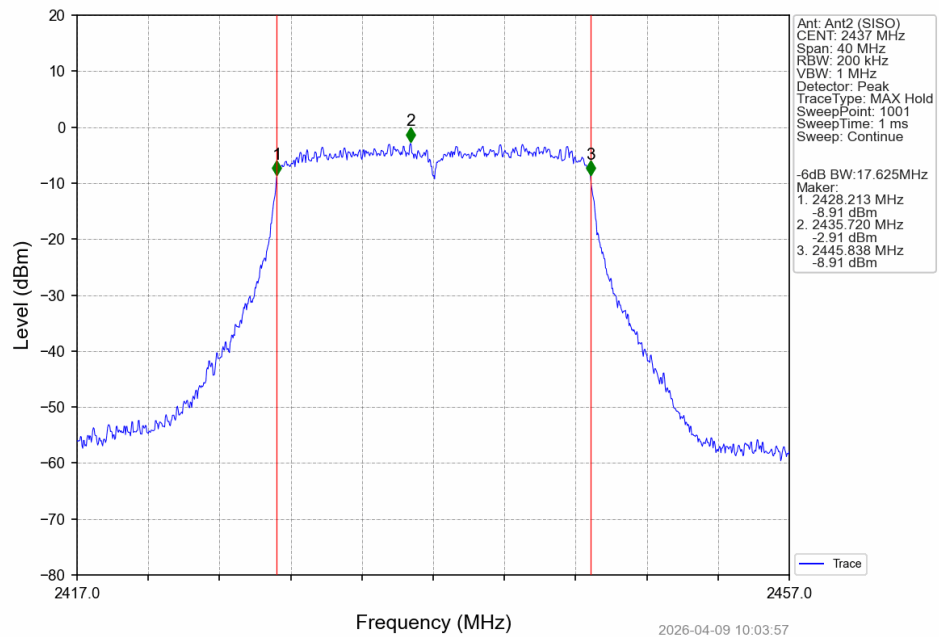
802.11n(HT20)_LCH_2412MHz_Ant2 (SISO)_NTNV



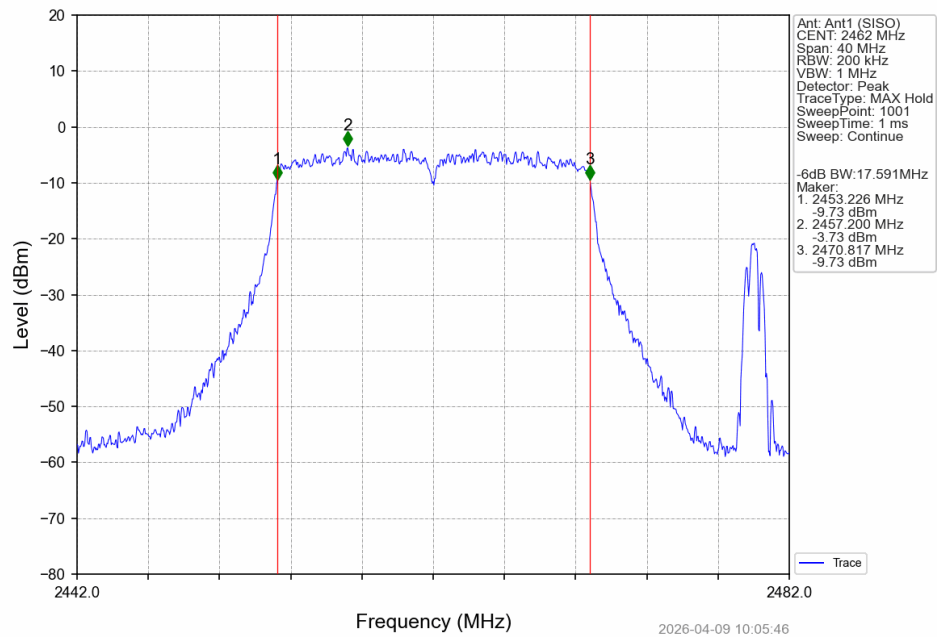
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



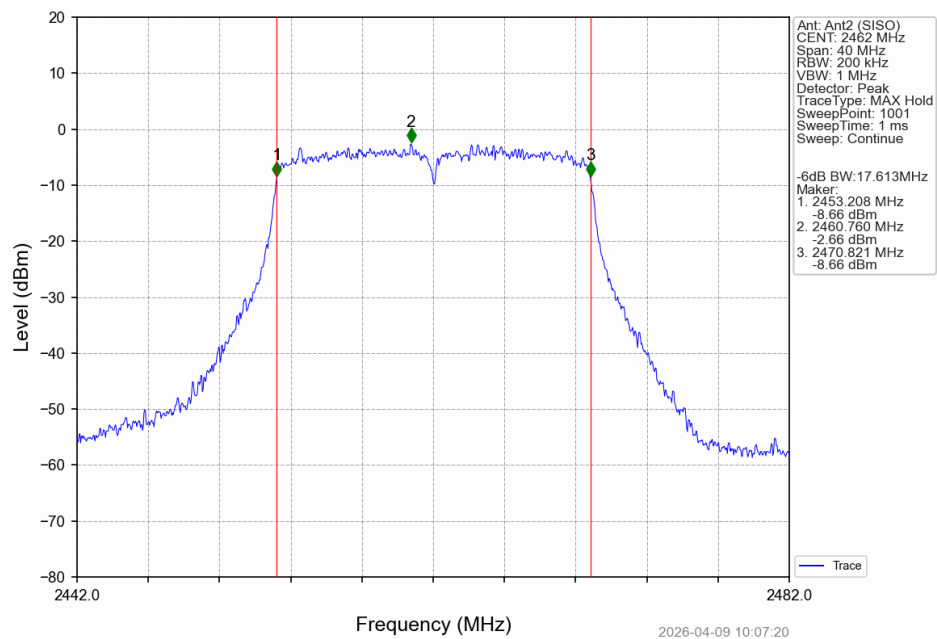
802.11n(HT20)_MCH_2437MHz_Ant2 (SISO)_NTNV



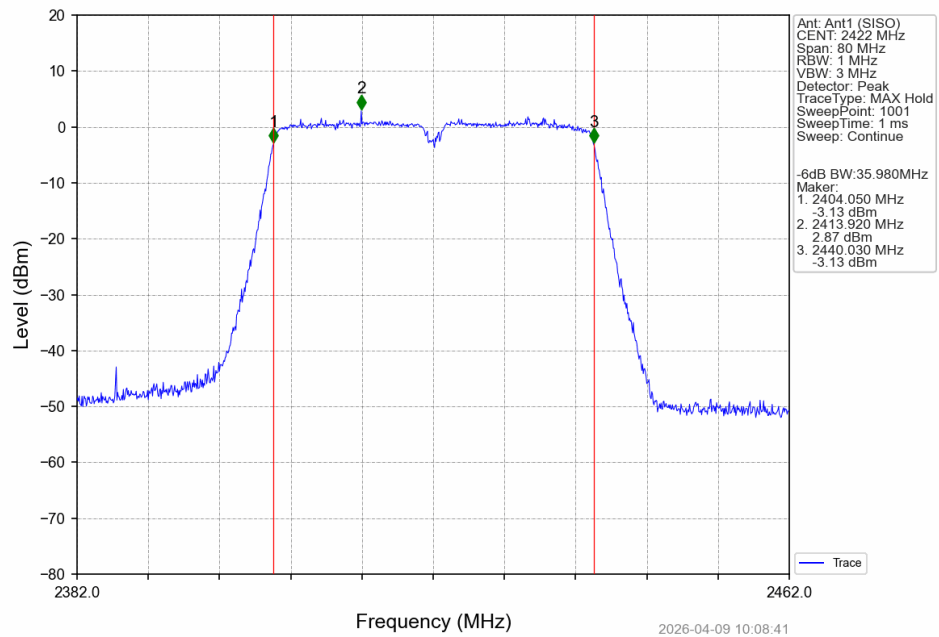
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



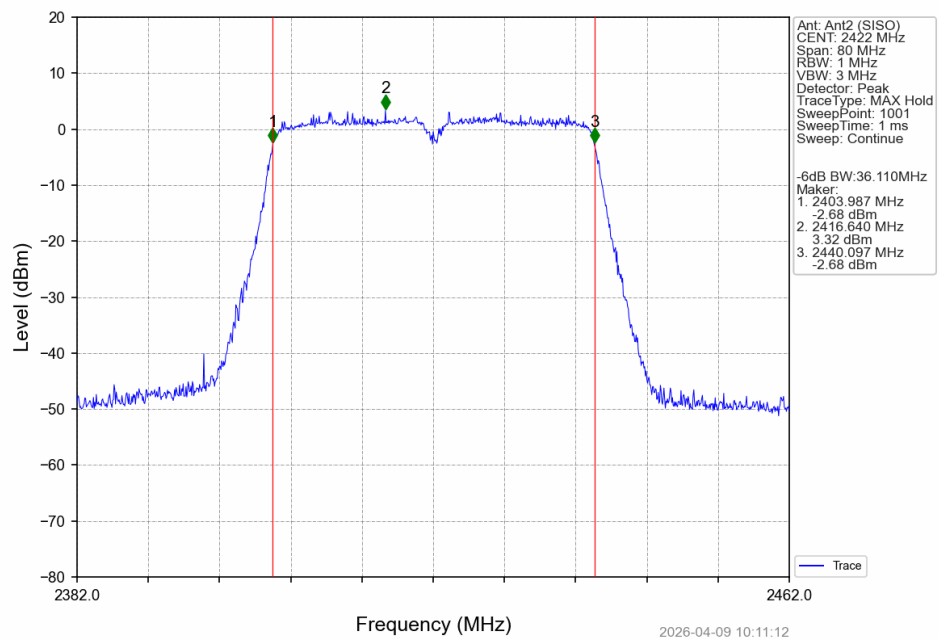
802.11n(HT20)_HCH_2462MHz_Ant2 (SISO)_NTNV



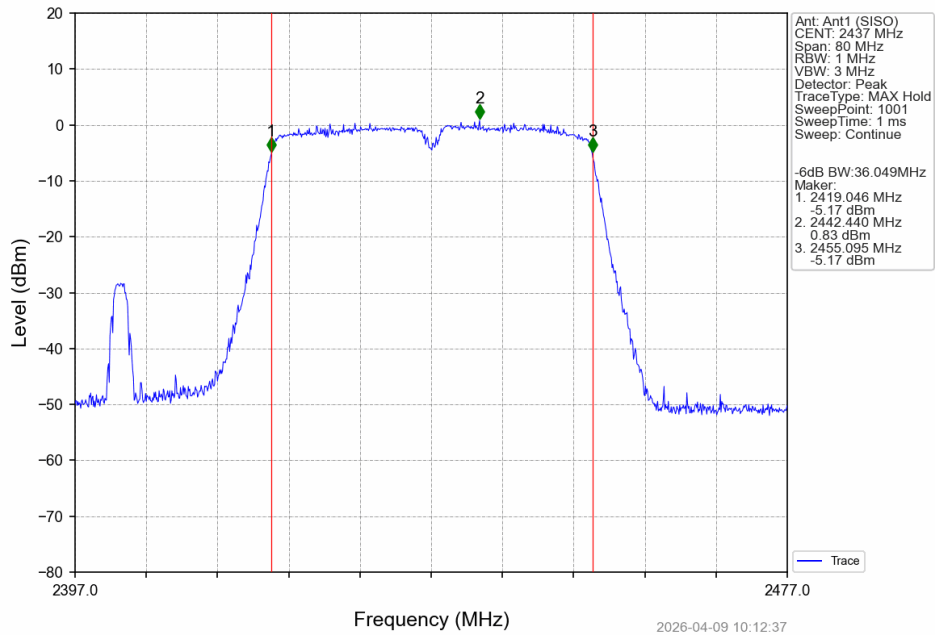
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



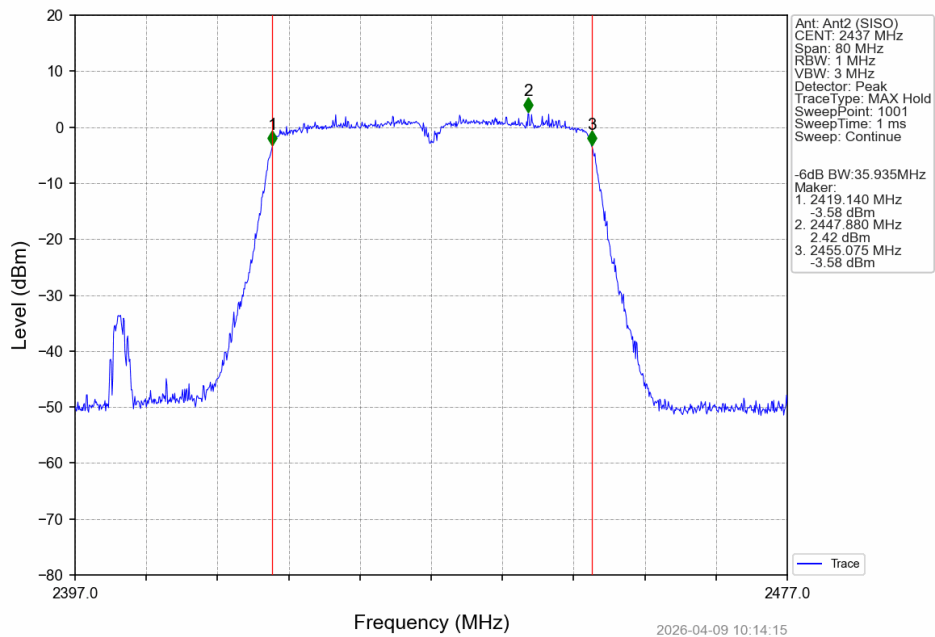
802.11n(HT40)_LCH_2422MHz_Ant2 (SISO)_NTNV



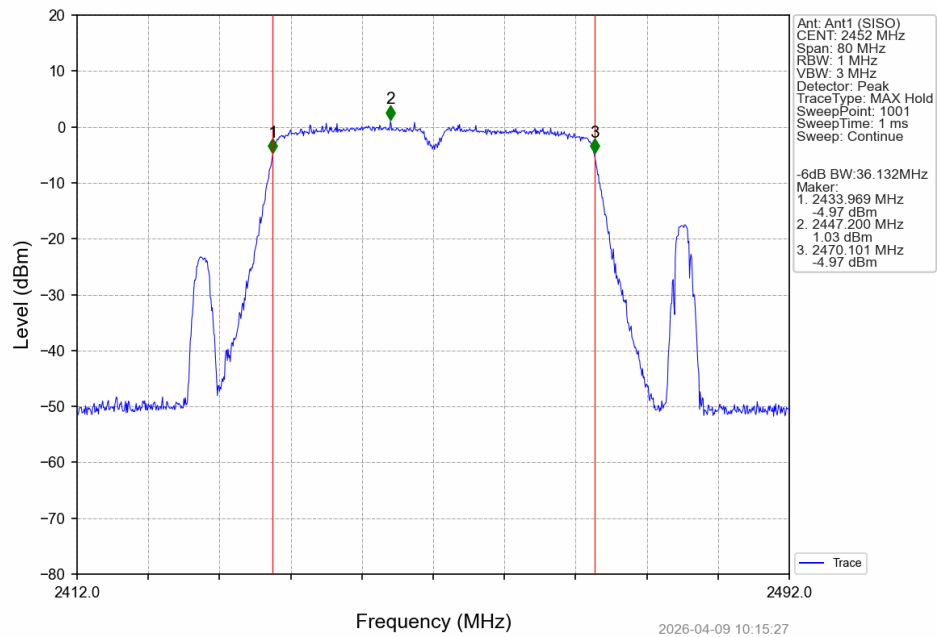
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



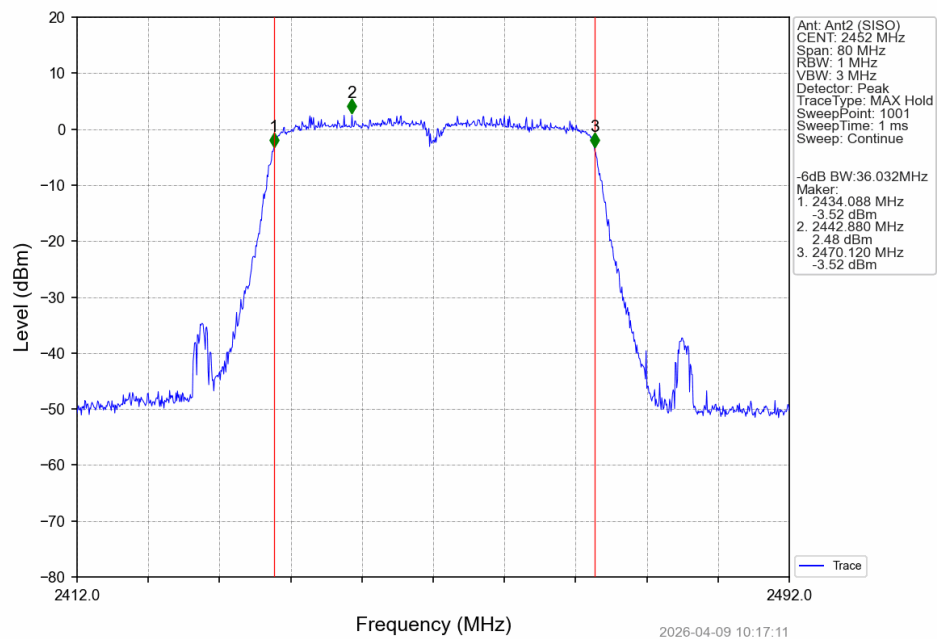
802.11n(HT40)_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)				Verdict
		ANT1	ANT2	MIMO	Limit	
802.11b	2412	15.60	15.36	/	<=30	Pass
	2437	15.76	15.20	/	<=30	Pass
	2462	15.20	15.59	/	<=30	Pass
802.11g	2412	15.12	15.87	/	<=30	Pass
	2437	13.89	15.25	/	<=30	Pass
	2462	13.88	15.40	/	<=30	Pass
802.11n (HT20)	2412	14.88	15.72	18.33	<=30	Pass
	2437	13.85	15.26	17.62	<=30	Pass
	2462	13.98	15.45	17.79	<=30	Pass
802.11n (HT40)	2422	15.48	16.30	18.92	<=30	Pass
	2437	14.14	15.53	17.90	<=30	Pass
	2452	14.37	15.83	18.17	<=30	Pass

4. Maximum Power Spectral Density

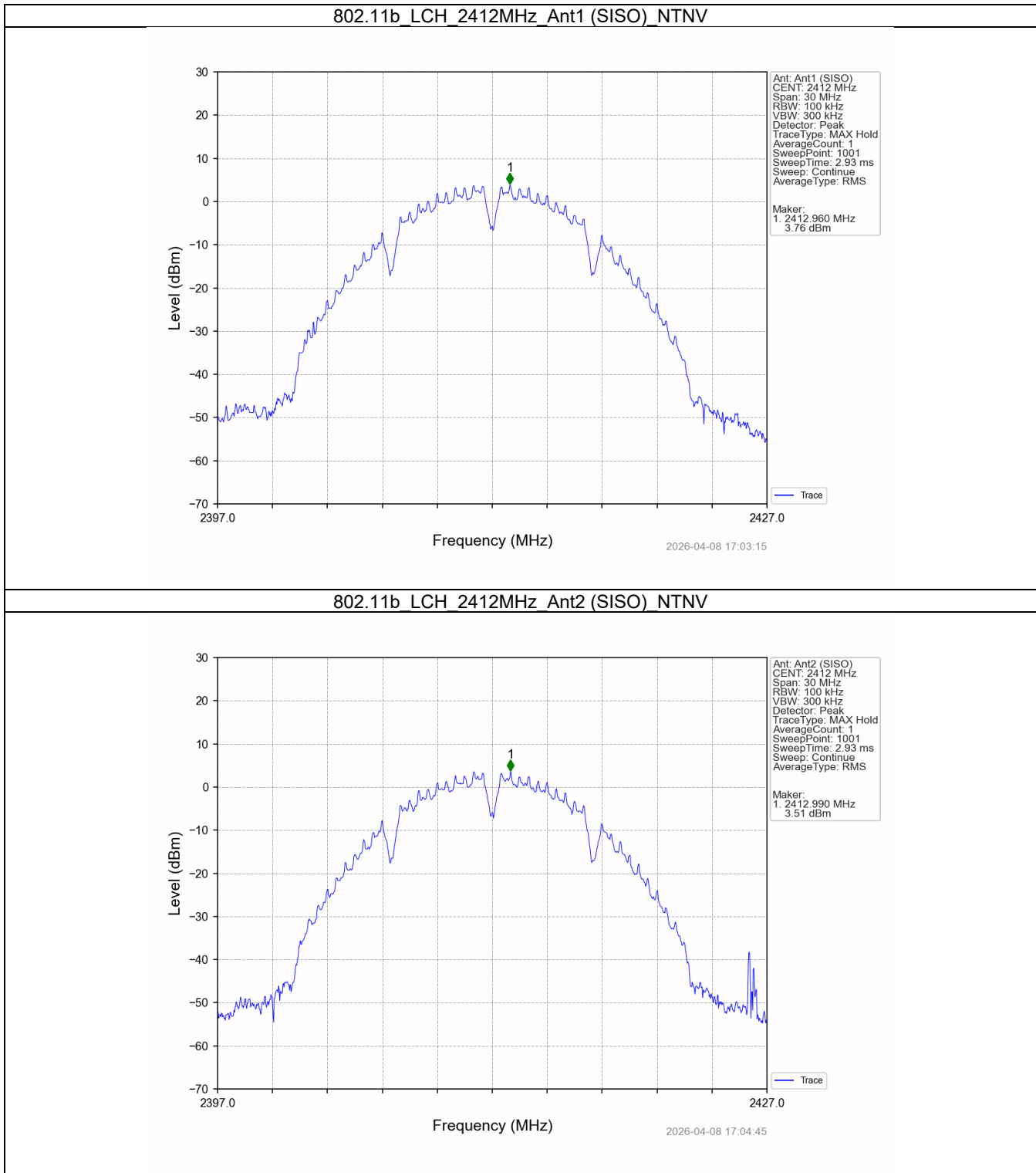
4.1 Test Result

4.1.1 PSD

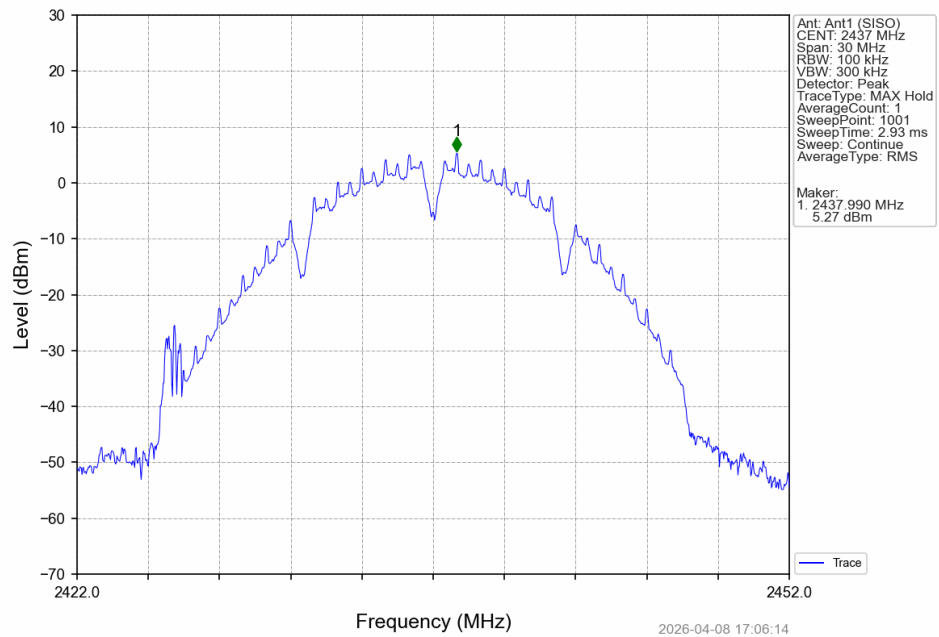
Mode	Frequency (MHz)	Maximum PSD (dBm)				Verdict
		ANT1	ANT2	MIMO	Limit	
802.11b	2412	3.76	3.51	/	<=8	Pass
	2437	5.27	4.13	/	<=8	Pass
	2462	3.89	4.21	/	<=8	Pass
802.11g	2412	-3.79	-3.74	/	<=8	Pass
	2437	-5.29	-4.13	/	<=8	Pass
	2462	-5.34	-4.14	/	<=8	Pass
802.11n (HT20)	2412	-4.28	-3.52	-0.87	<=8	Pass
	2437	-5.77	-4.01	-1.79	<=8	Pass
	2462	-5.52	-4.18	-1.79	<=8	Pass
802.11n (HT40)	2422	-6.69	-6.26	-3.46	<=8	Pass
	2437	-7.86	-6.60	-4.17	<=8	Pass
	2452	-8.22	-6.59	-4.32	<=8	Pass

4.2 Test Graph

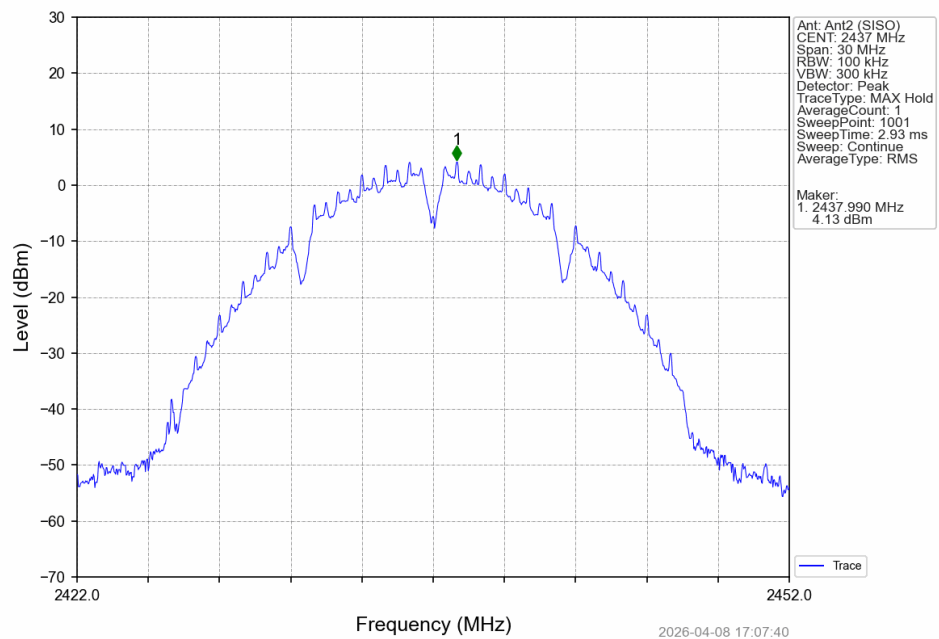
4.2.1 PSD



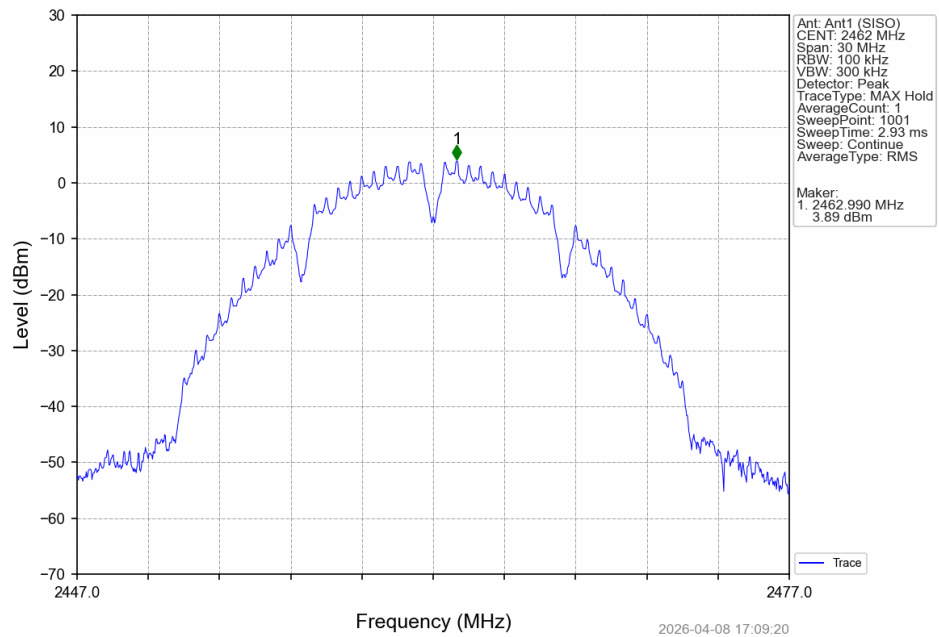
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



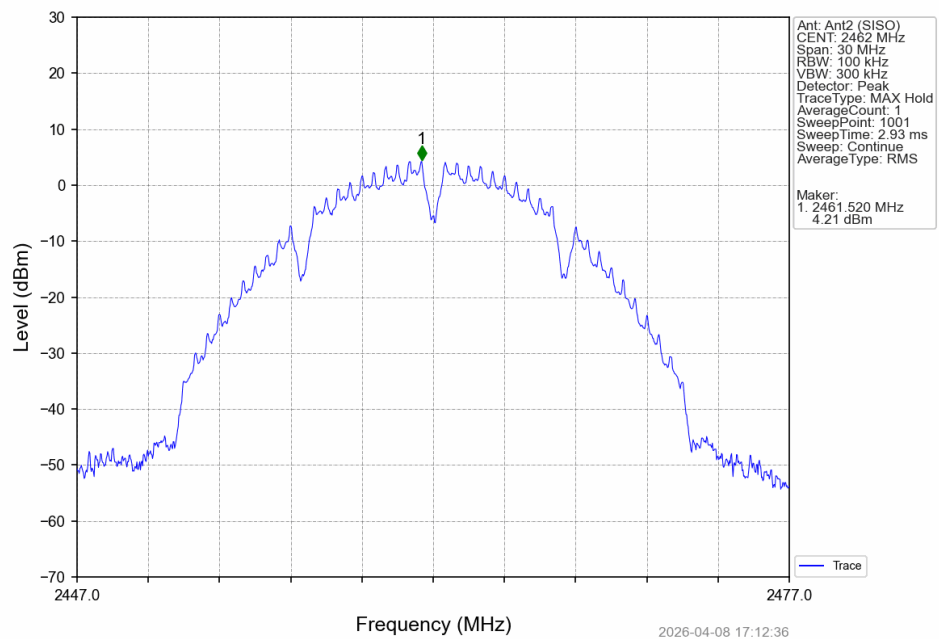
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



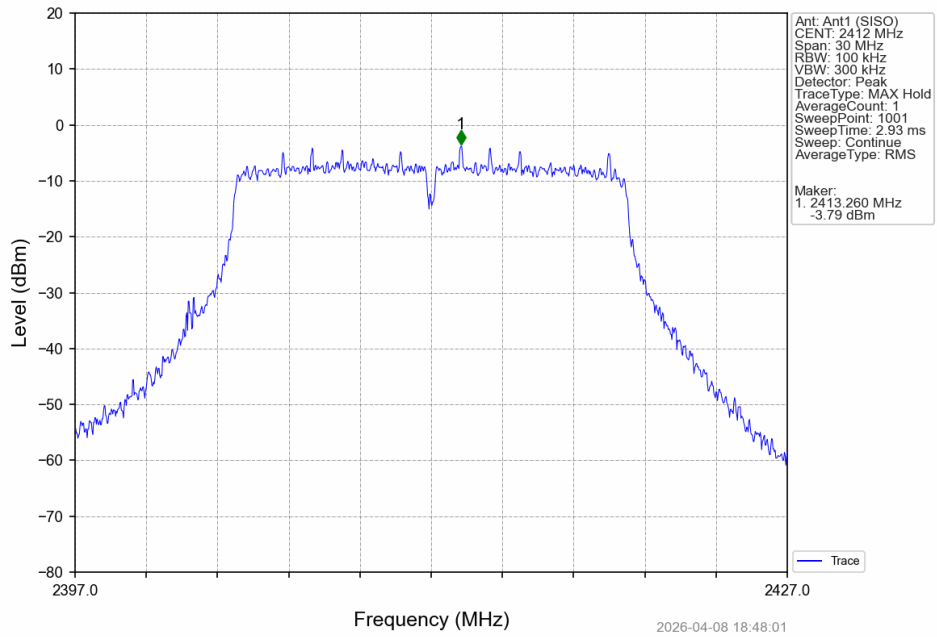
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



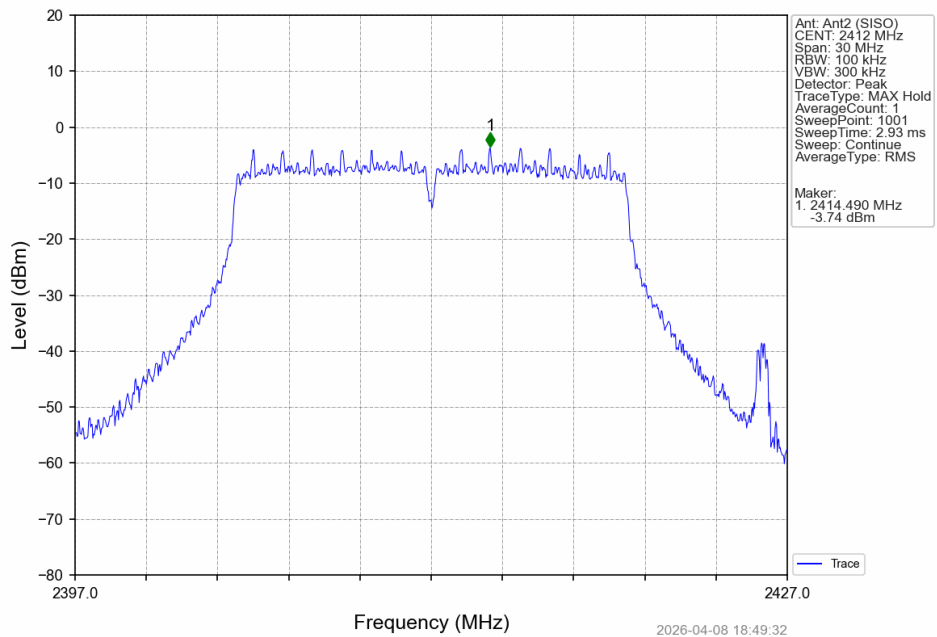
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



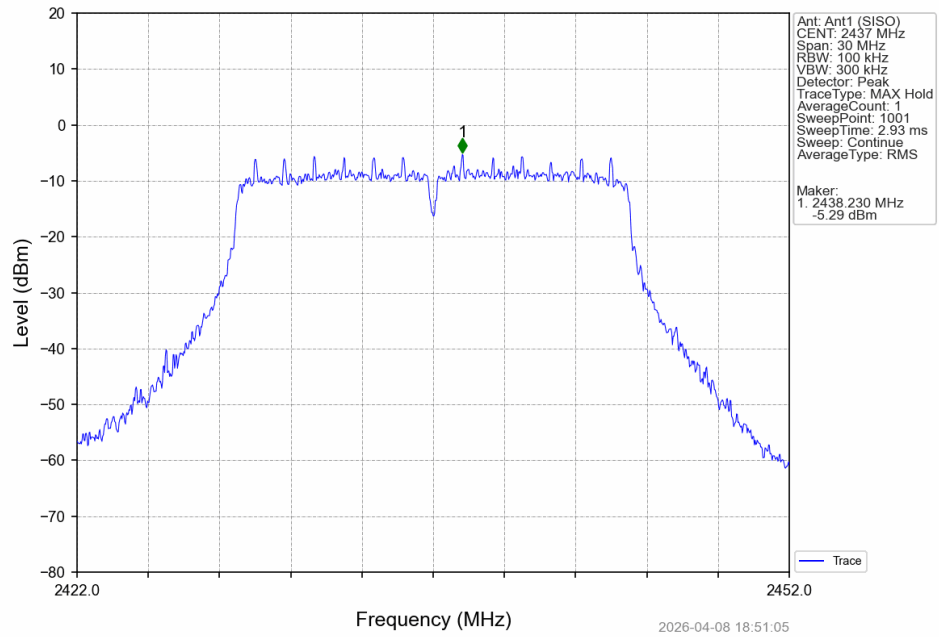
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



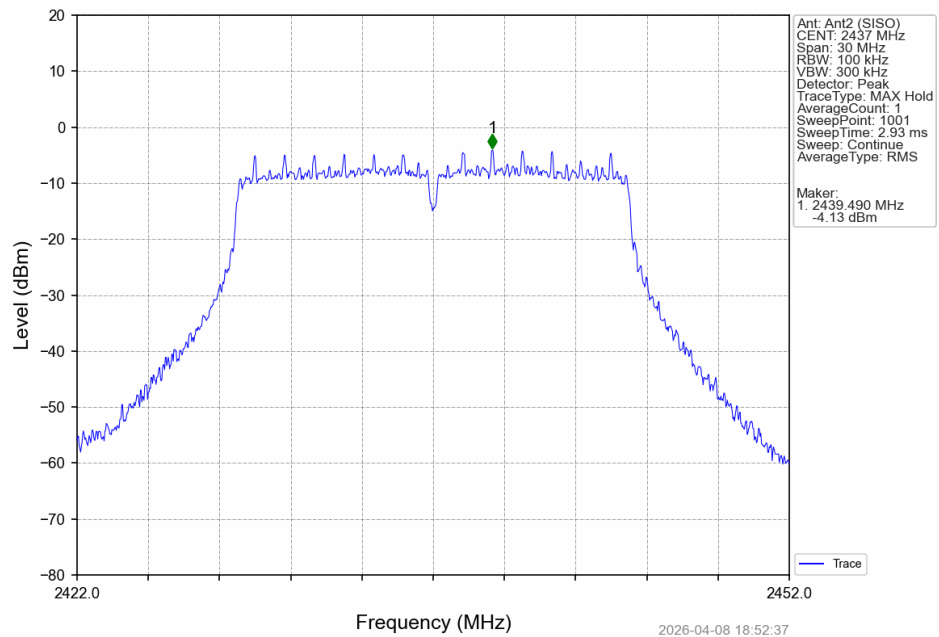
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



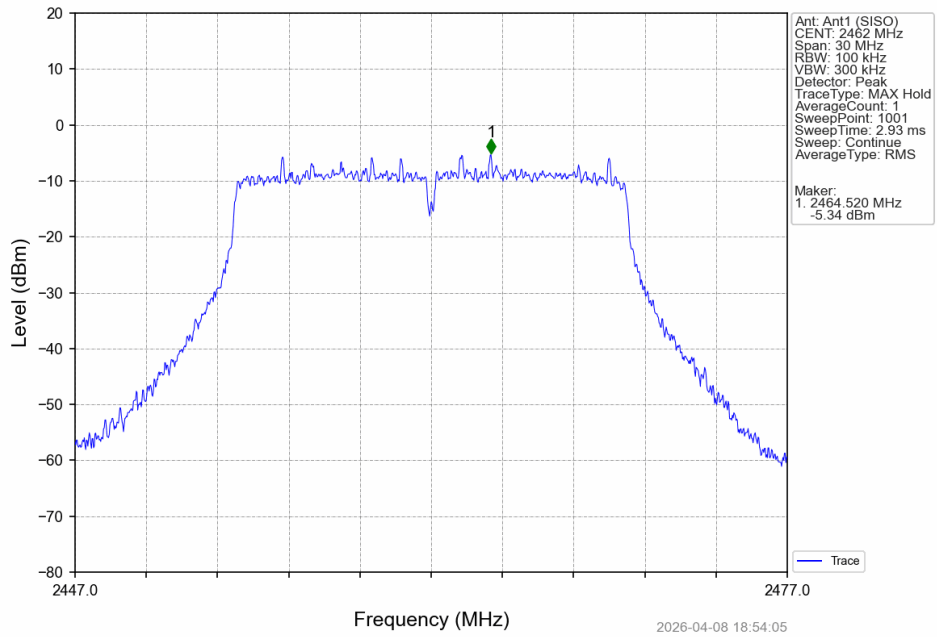
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



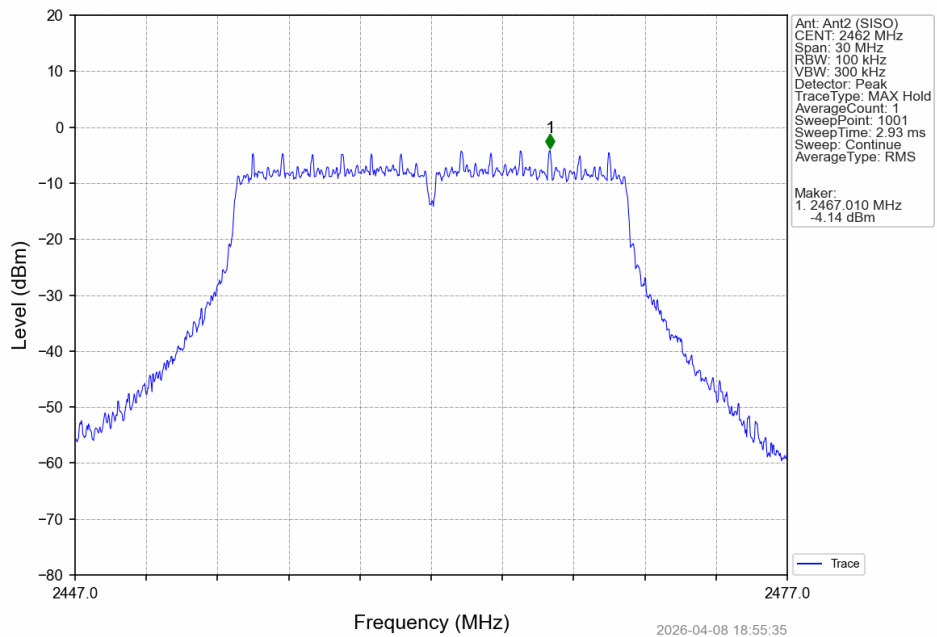
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



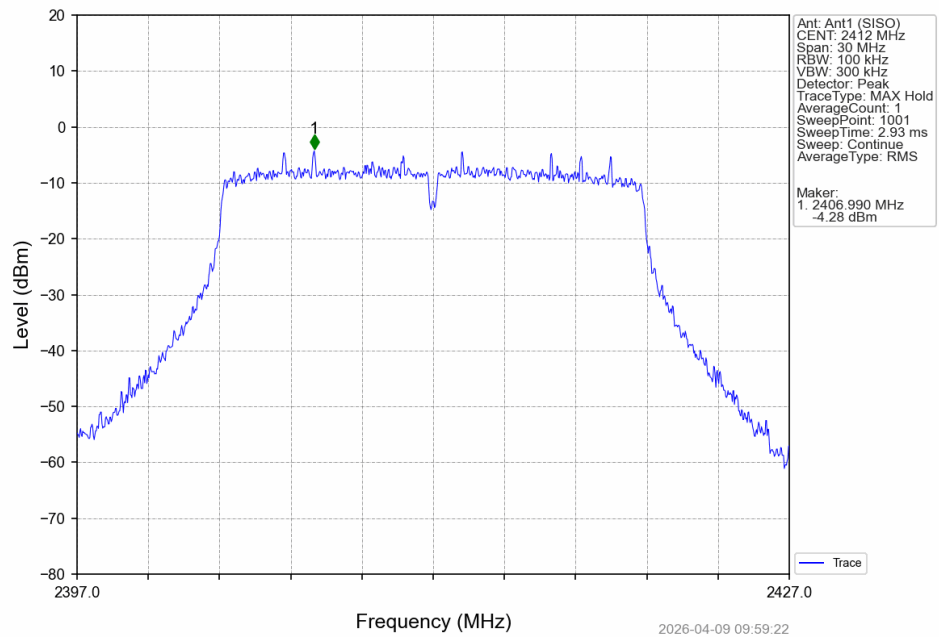
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



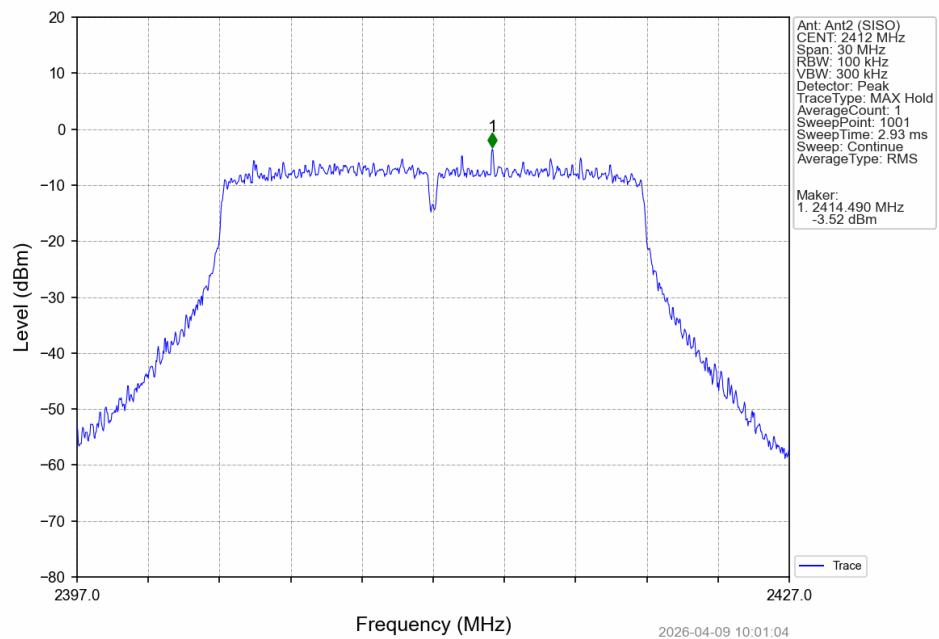
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



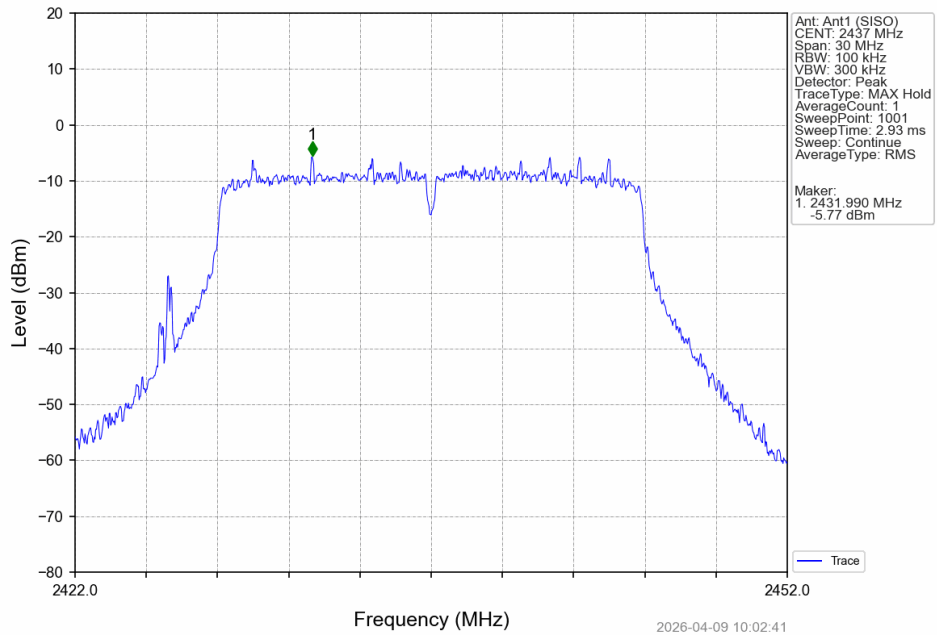
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



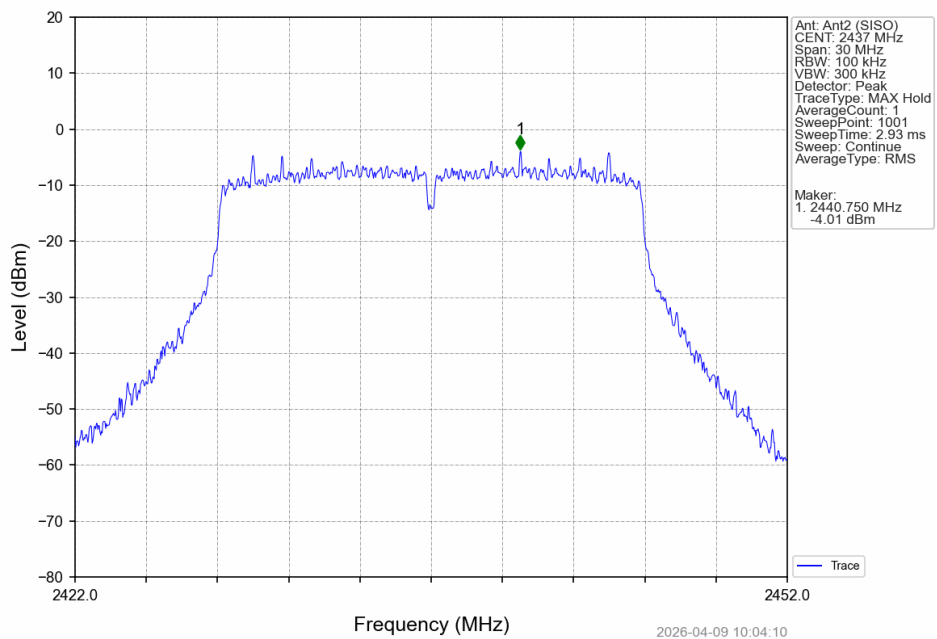
802.11n(HT20)_LCH_2412MHz_Ant2 (SISO)_NTNV



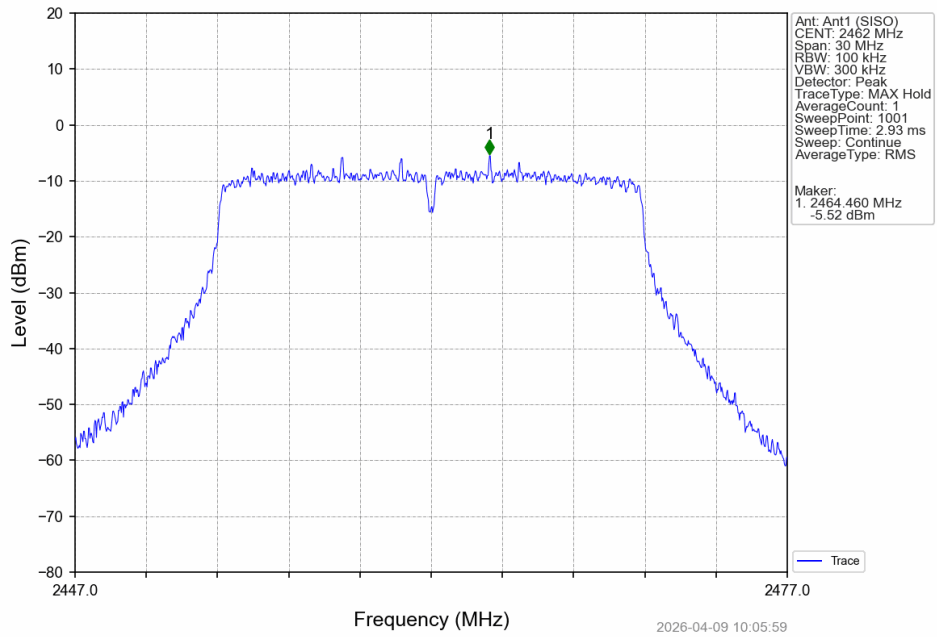
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



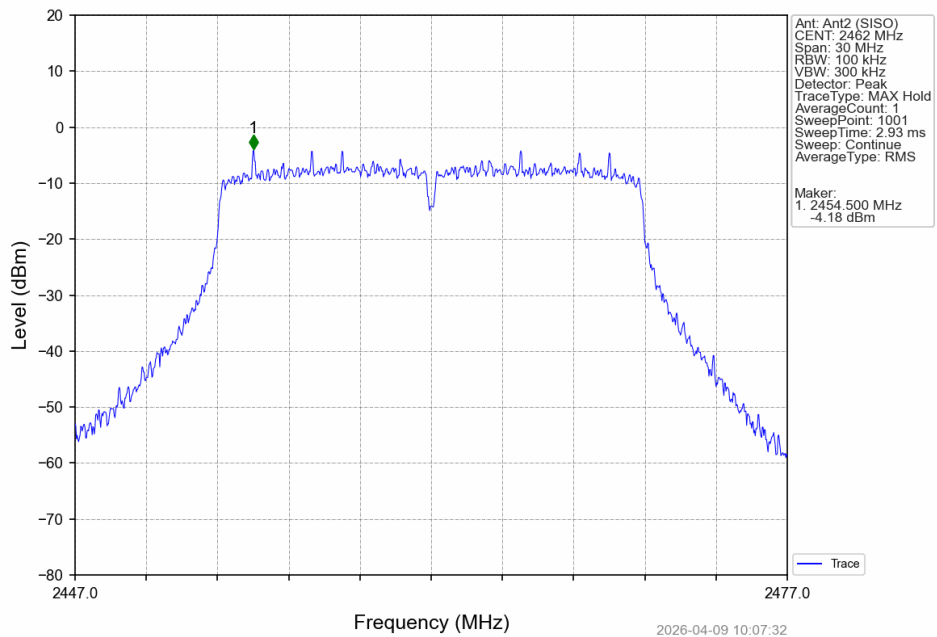
802.11n(HT20)_MCH_2437MHz_Ant2 (SISO)_NTNV



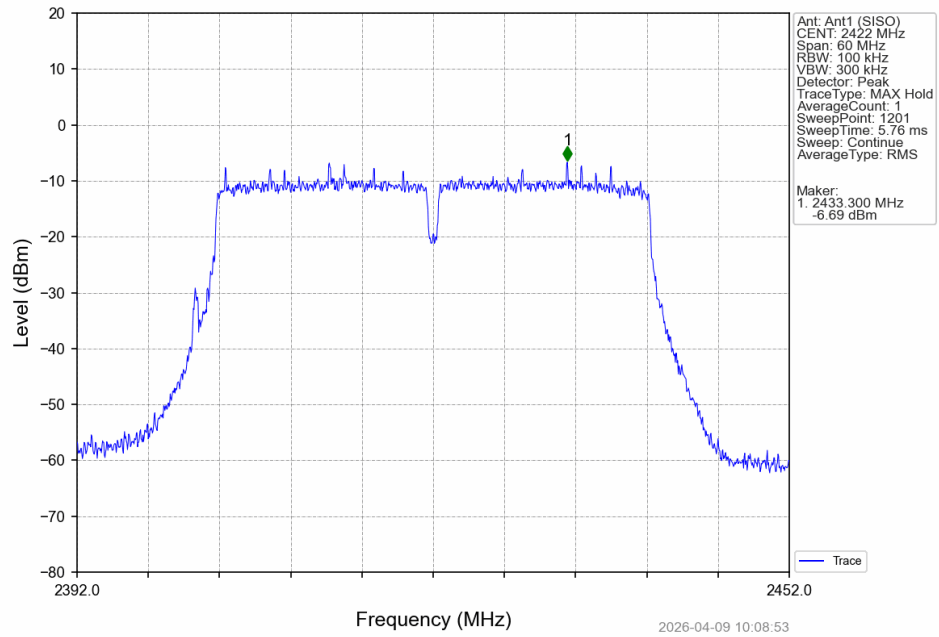
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



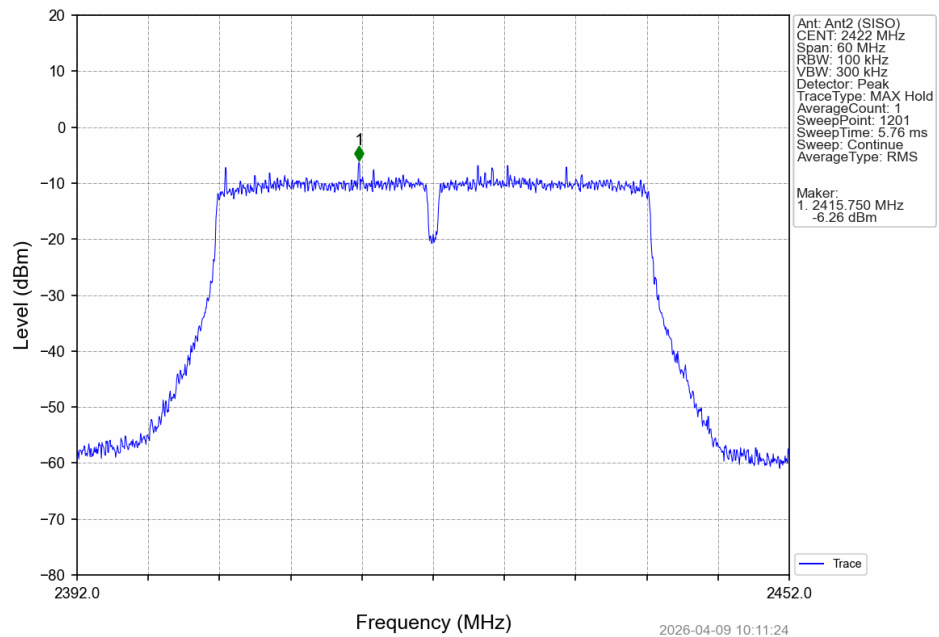
802.11n(HT20)_HCH_2462MHz_Ant2 (SISO)_NTNV



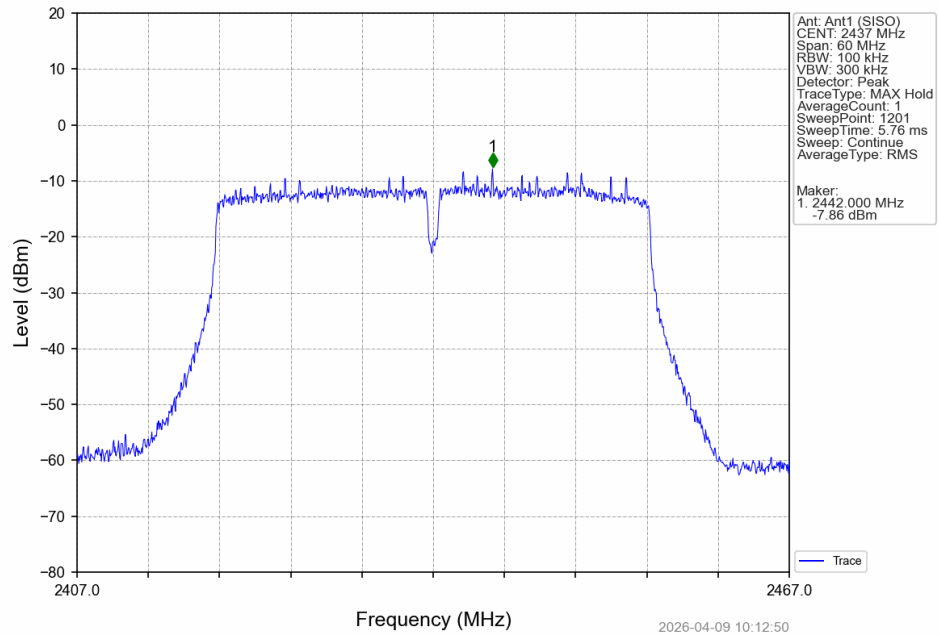
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



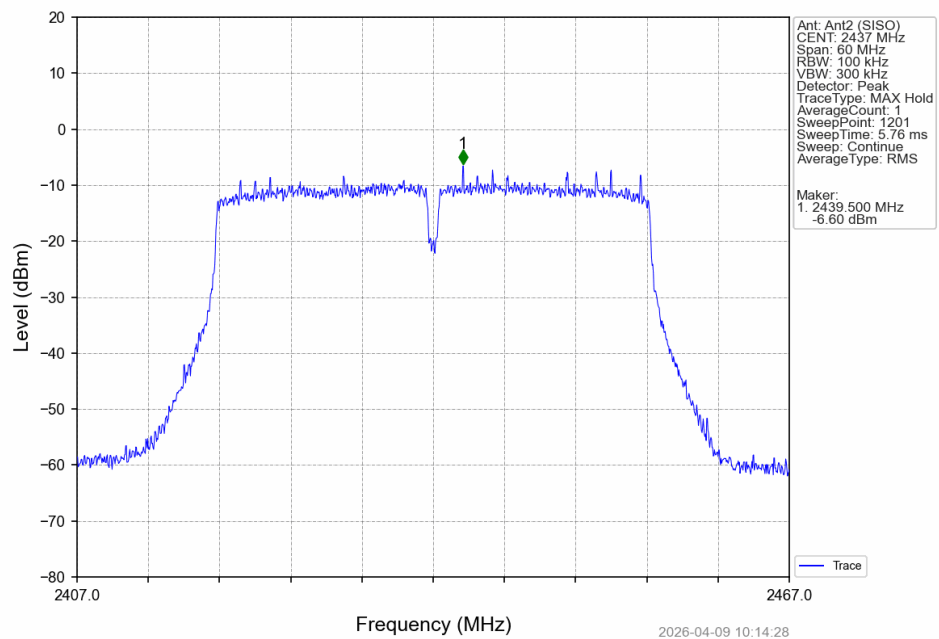
802.11n(HT40)_LCH_2422MHz_Ant2 (SISO)_NTNV



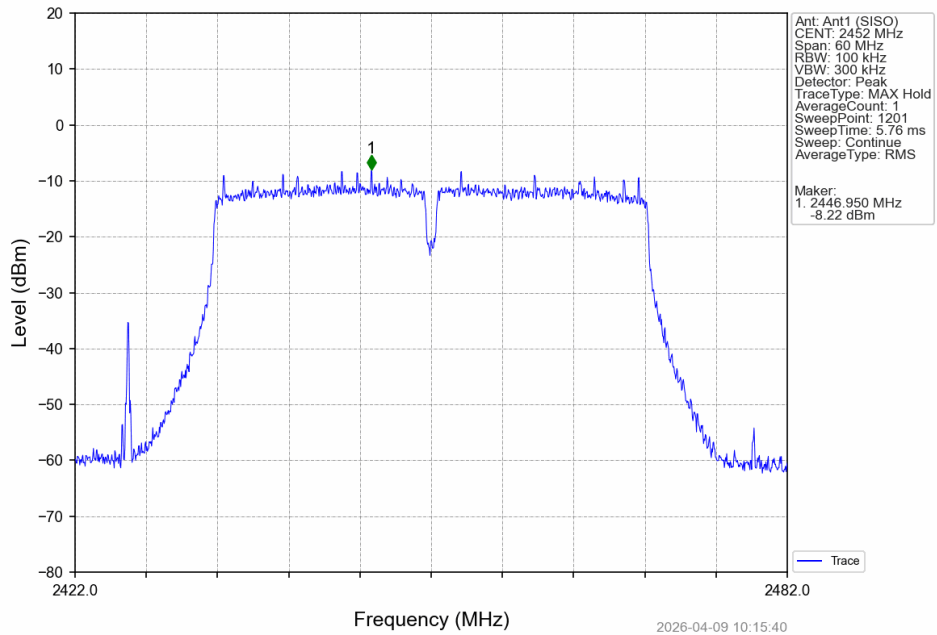
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



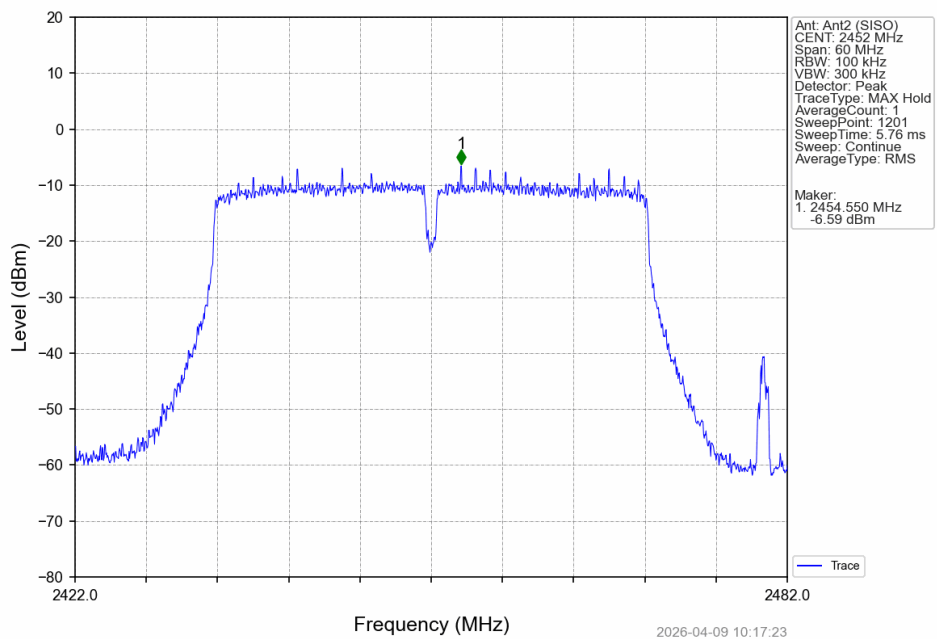
802.11n(HT40)_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (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	4.23
			2	3.67
		2437	1	5.26
			2	4.54
		2462	1	3.98
			2	4.30
802.11g	SISO	2412	1	-3.78
			2	-3.70
		2437	1	-5.17
			2	-4.19
		2462	1	-5.19
			2	-4.09
802.11n (HT20)	SISO	2412	1	-4.29
			2	-3.84
		2437	1	-4.76
			2	-4.07
		2462	1	-4.77
			2	-4.28
802.11n (HT40)	SISO	2422	1	-6.93
			2	-6.18
		2437	1	-8.12
			2	-7.36
		2452	1	-7.24
			2	-6.55

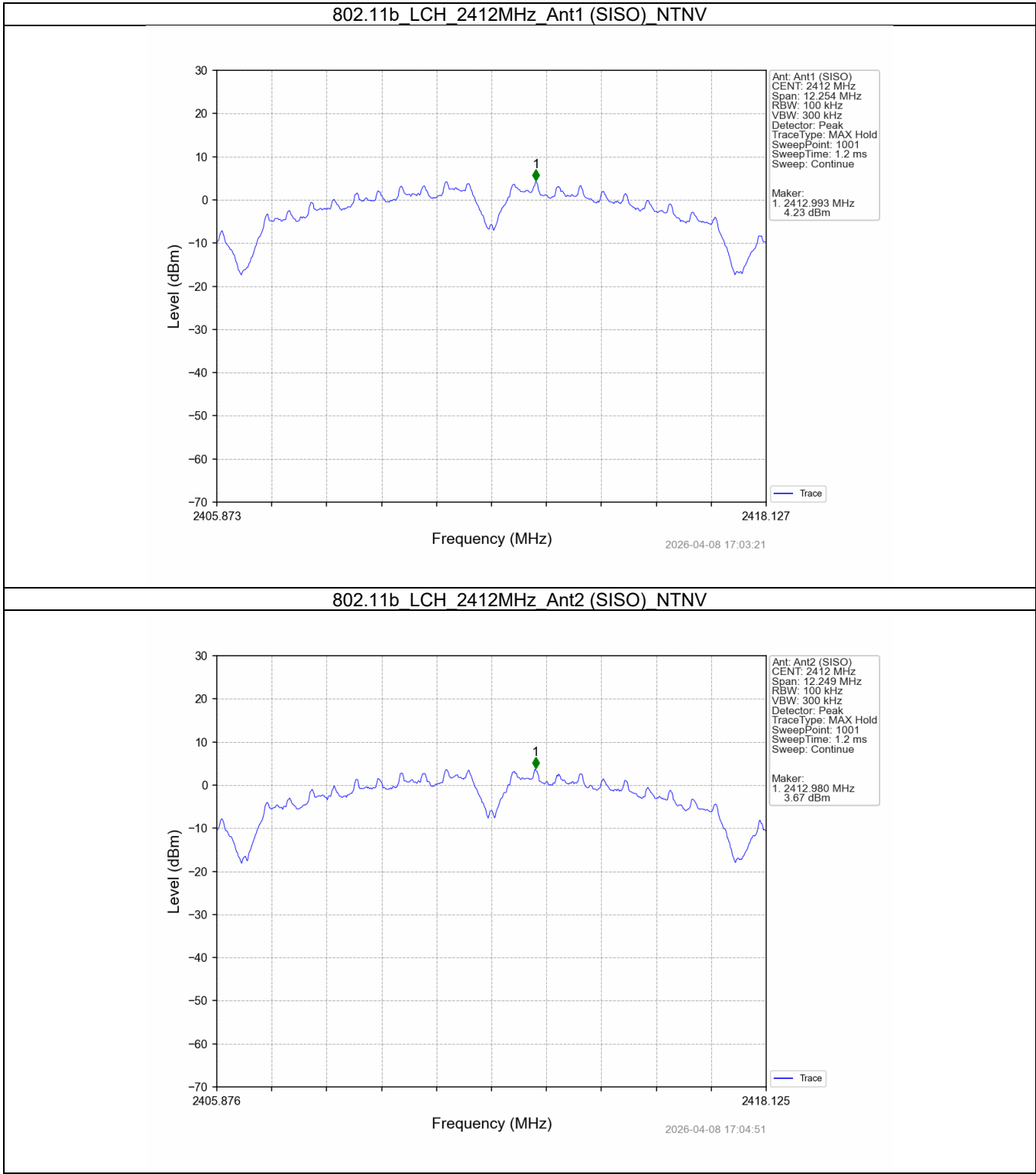
5.1.2 CSE

Mode	Tx Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.23	-15.77	Pass
			2	3.67	-16.33	Pass
		2437	1	5.26	-14.74	Pass
			2	4.54	-15.46	Pass
		2462	1	3.98	-16.02	Pass
			2	4.30	-15.70	Pass
802.11g	SISO	2412	1	-3.78	-23.78	Pass
			2	-3.70	-23.70	Pass
		2437	1	-5.17	-25.17	Pass
			2	-4.19	-24.19	Pass
		2462	1	-5.19	-25.19	Pass
			2	-4.09	-24.09	Pass
802.11n (HT20)	SISO	2412	1	-4.29	-24.29	Pass
			2	-3.84	-23.84	Pass
		2437	1	-4.76	-24.76	Pass
			2	-4.07	-24.07	Pass
		2462	1	-4.77	-24.77	Pass
			2	-4.28	-24.28	Pass

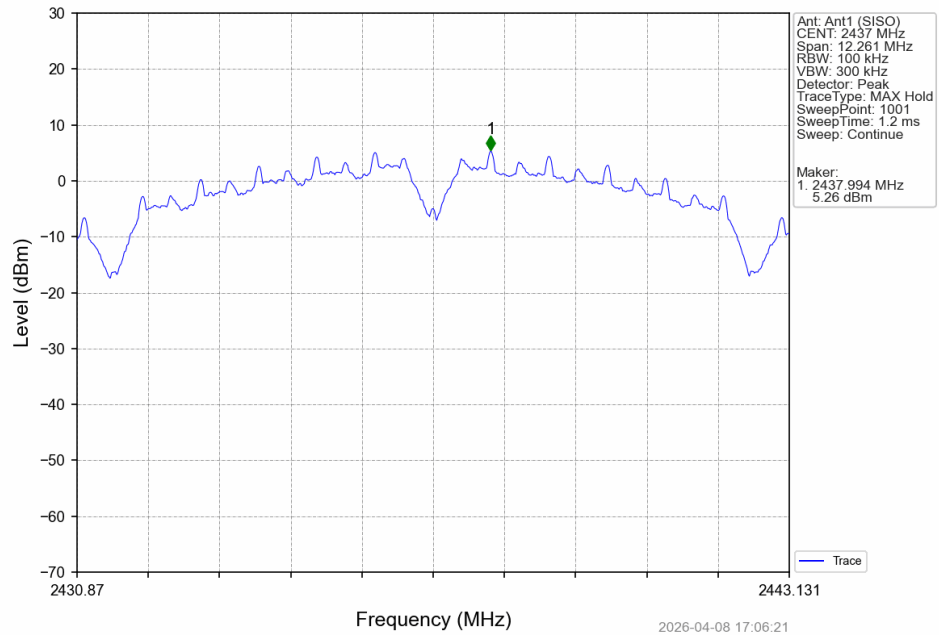
			2	-4.28	-24.28	Pass
802.11n (HT40)	SISO	2422	1	-6.93	-26.93	Pass
			2	-6.18	-26.18	Pass
		2437	1	-8.12	-28.12	Pass
			2	-7.36	-27.36	Pass
		2452	1	-7.24	-27.24	Pass
			2	-6.55	-26.55	Pass

5.2 Test Graph

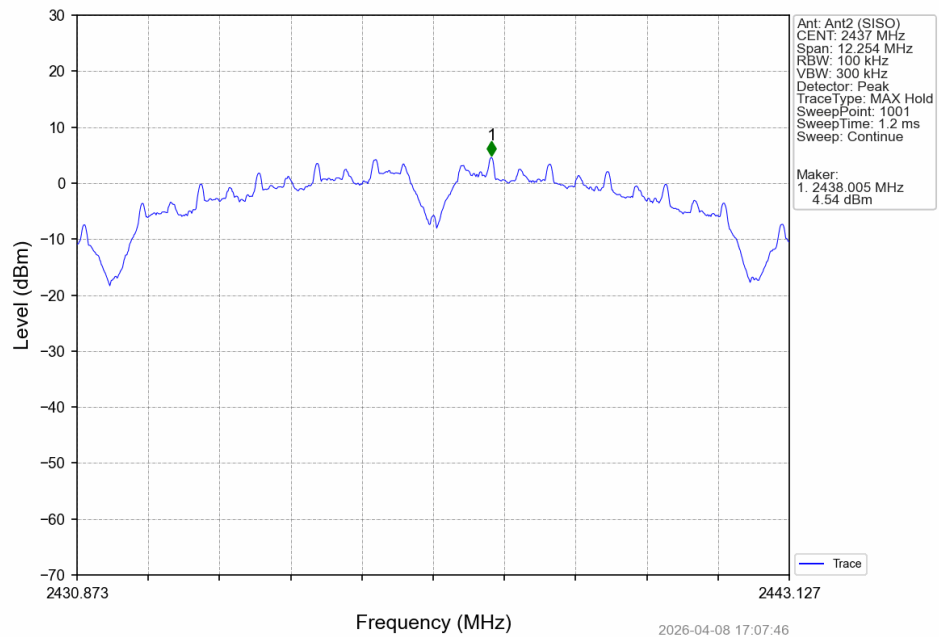
5.2.1 Ref



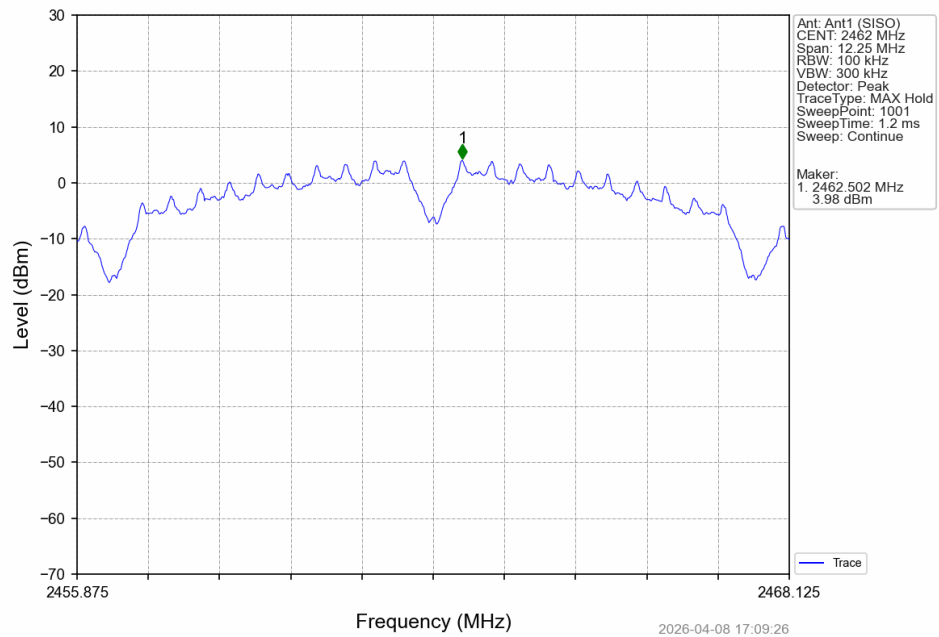
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



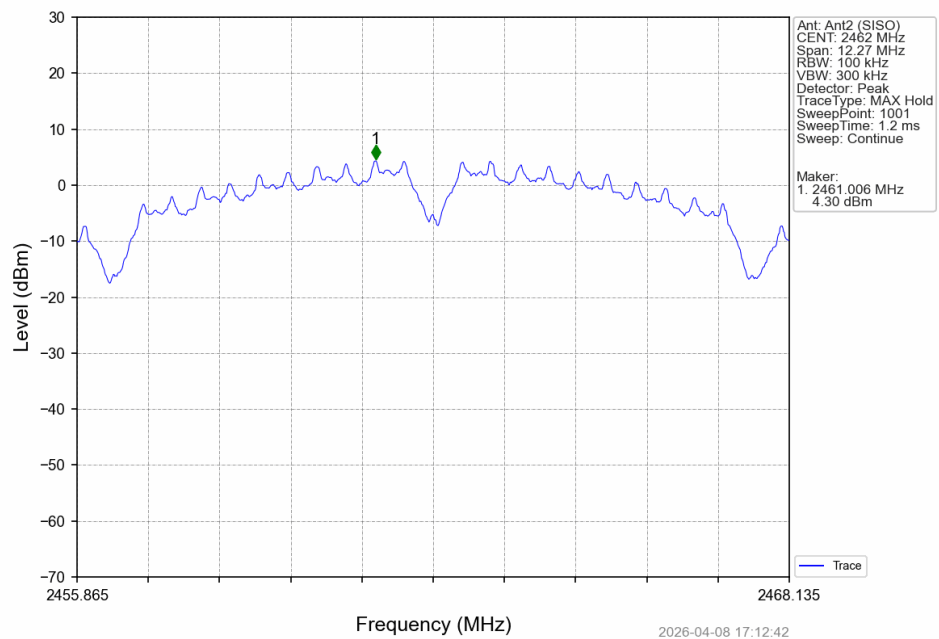
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



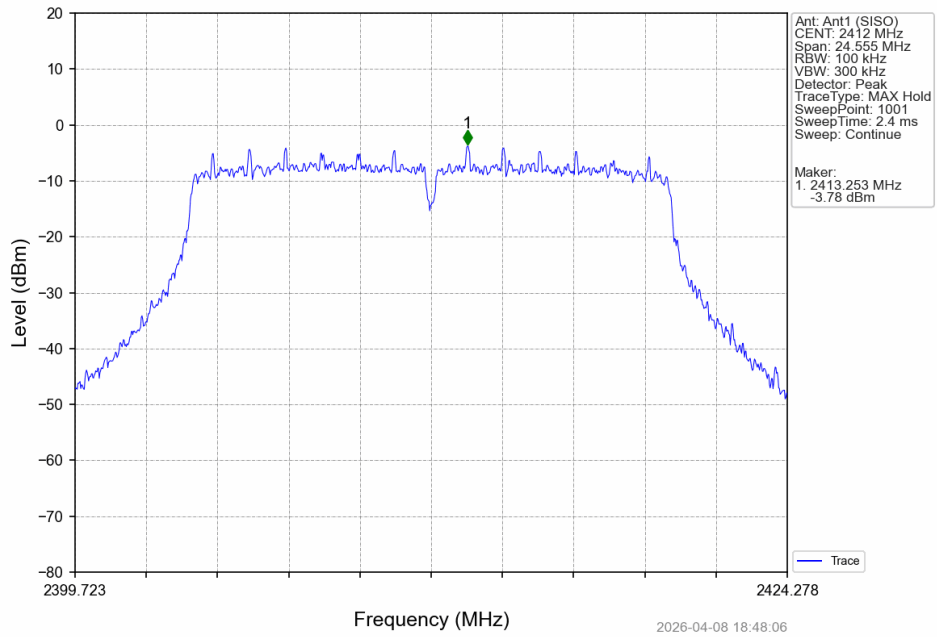
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



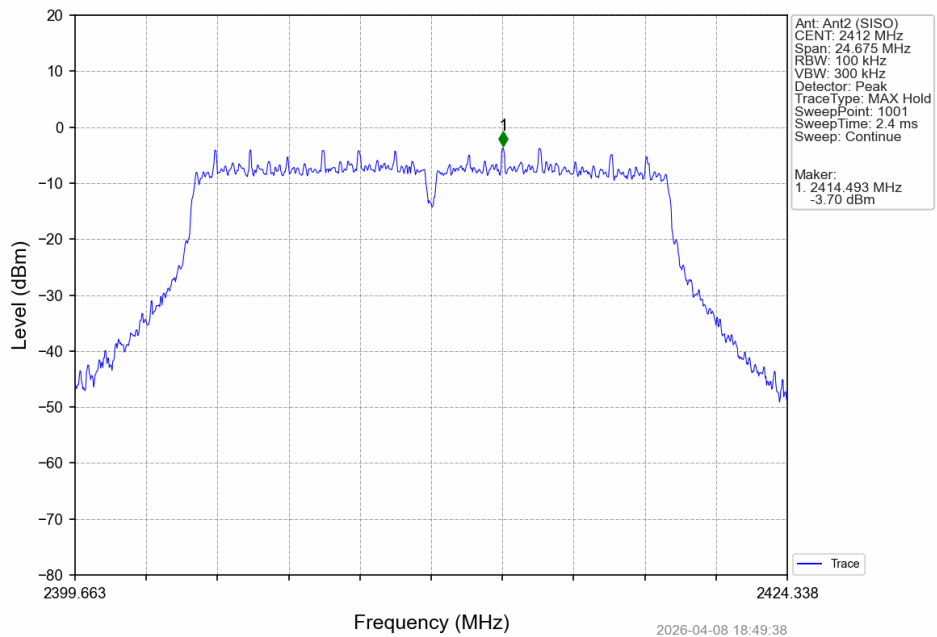
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



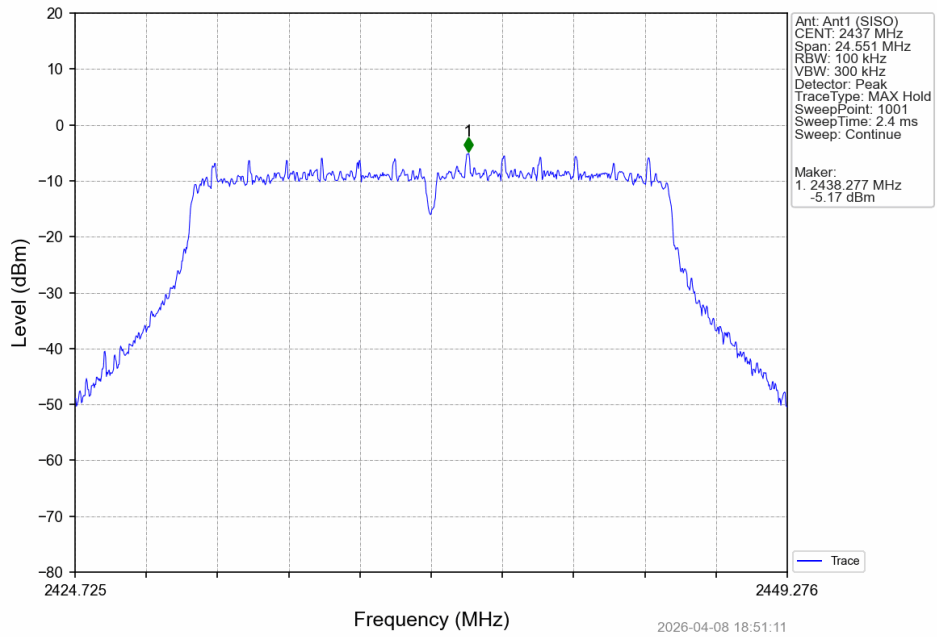
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



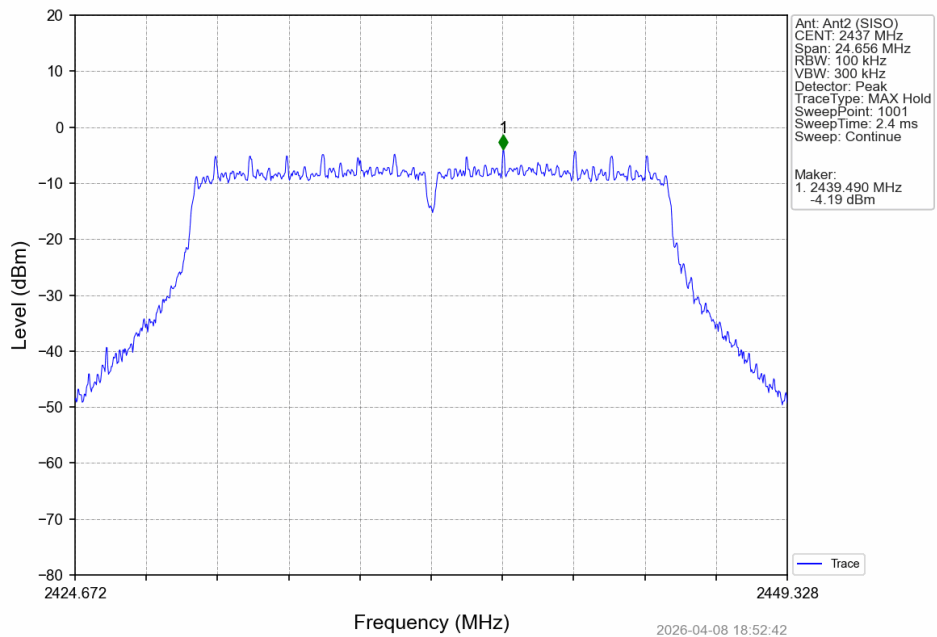
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



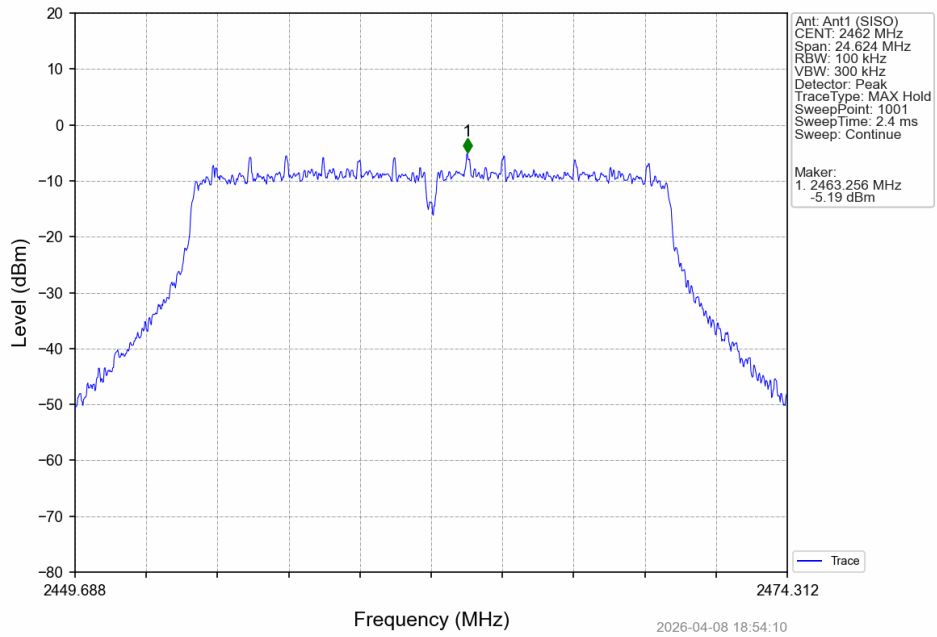
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



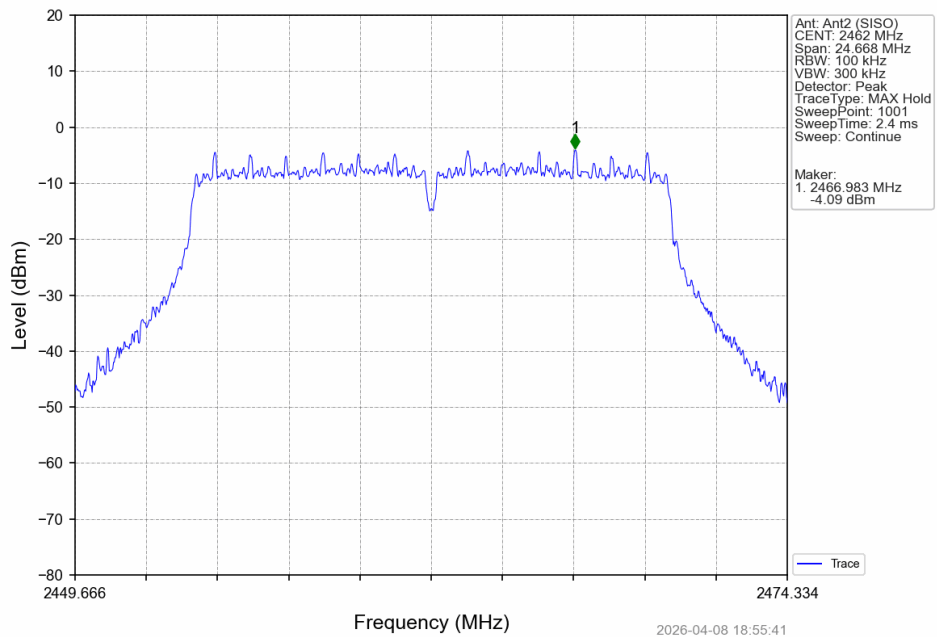
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



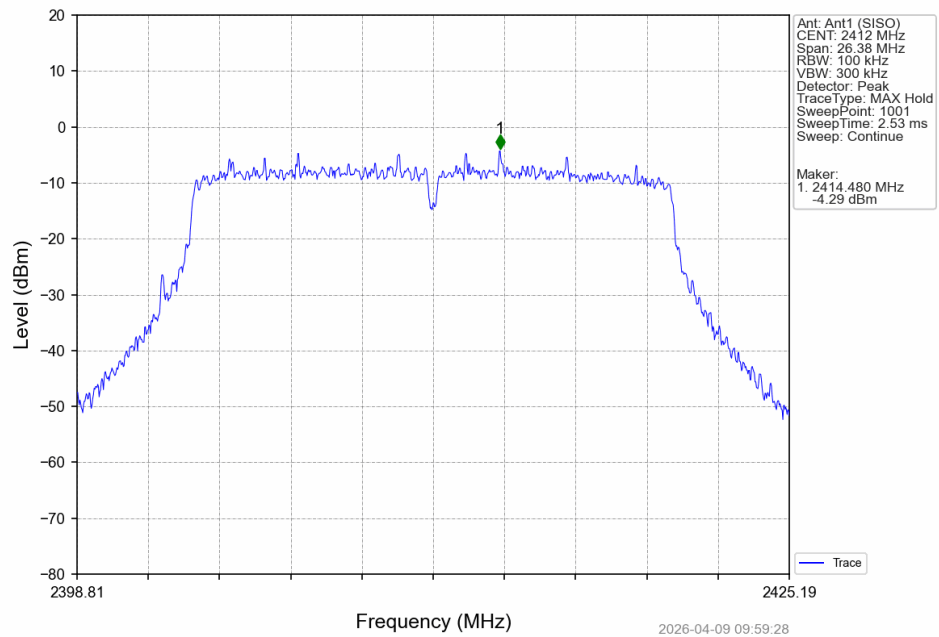
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



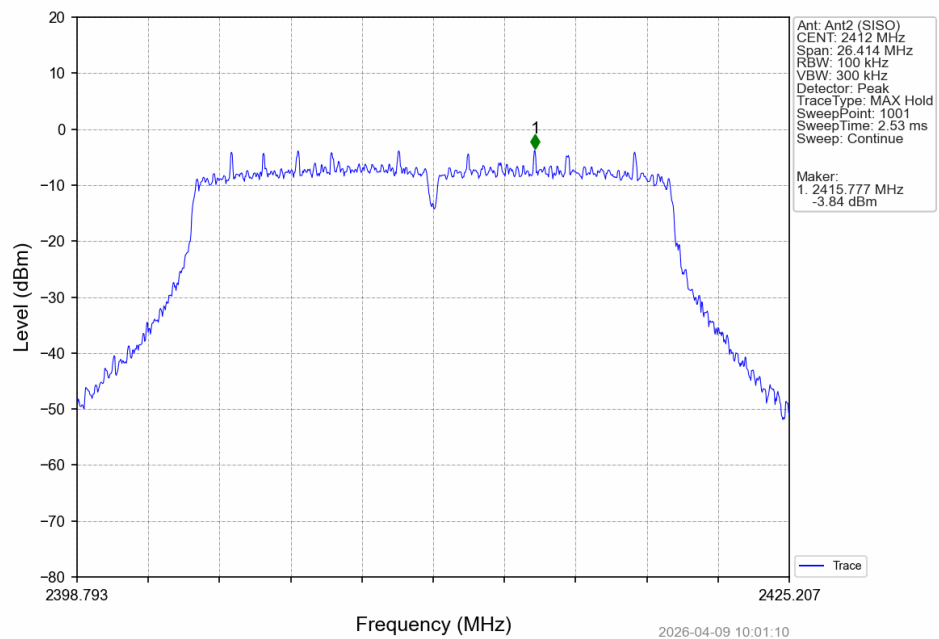
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



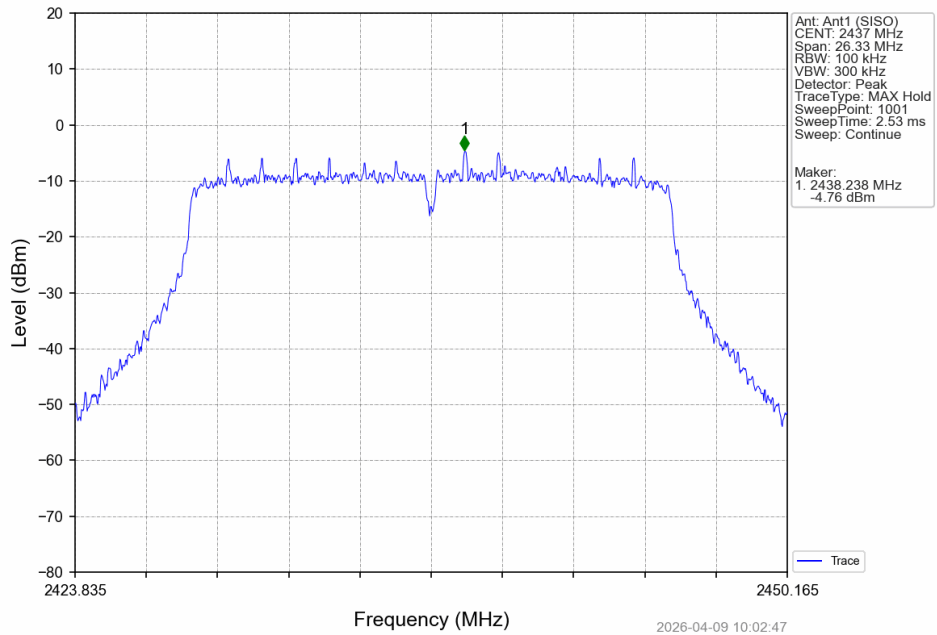
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



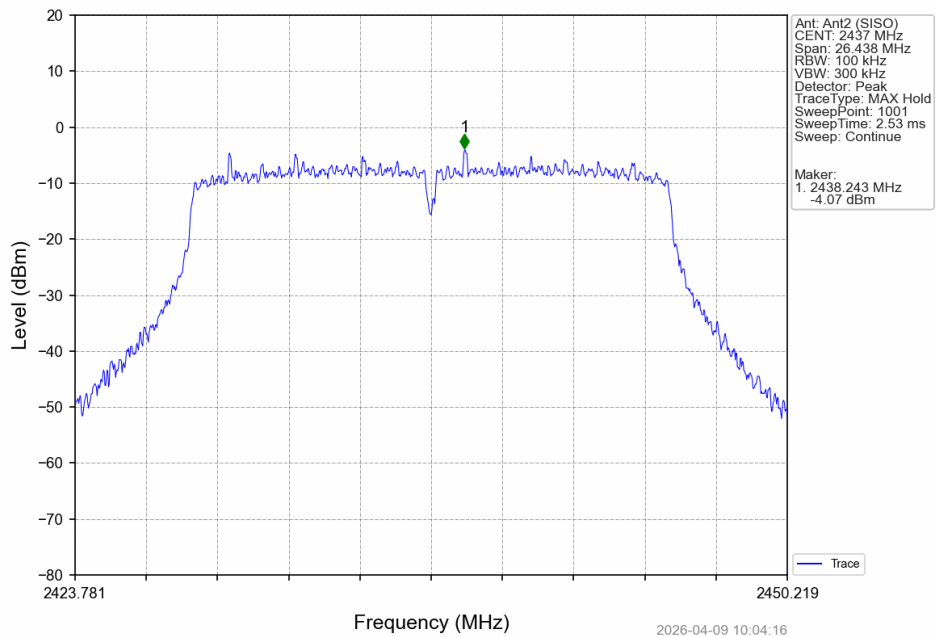
802.11n(HT20)_LCH_2412MHz_Ant2 (SISO)_NTNV



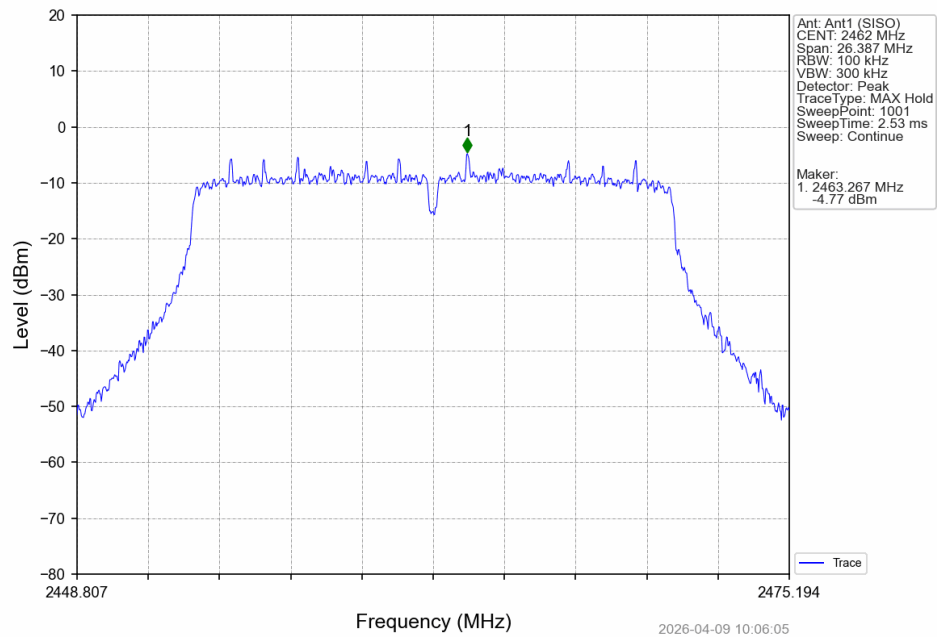
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



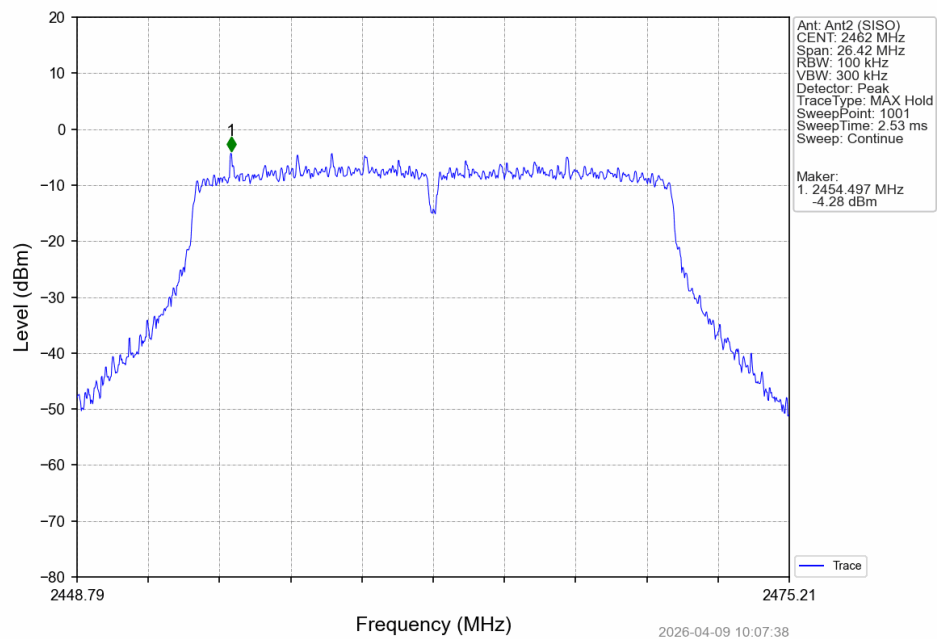
802.11n(HT20)_MCH_2437MHz_Ant2 (SISO)_NTNV



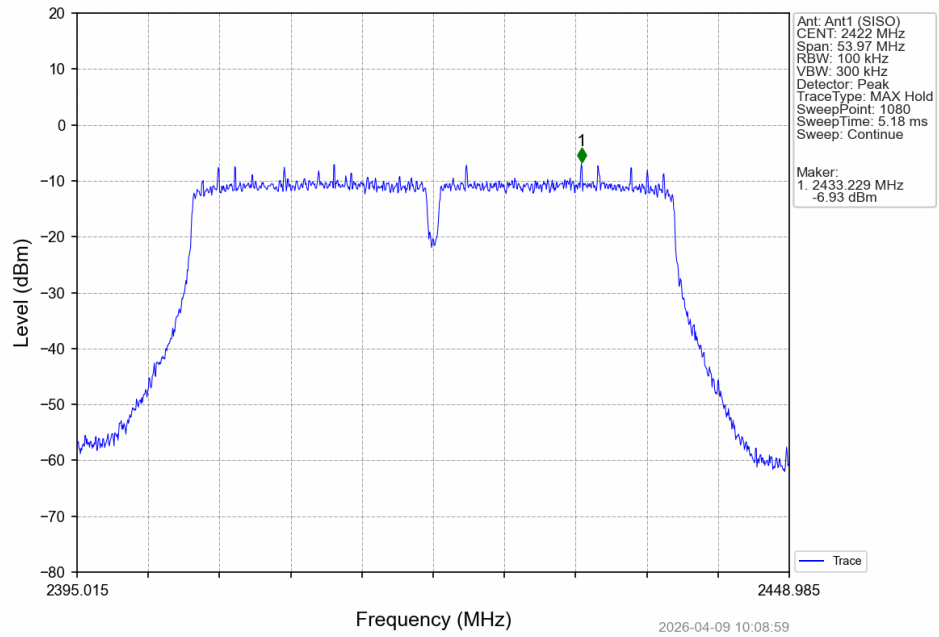
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



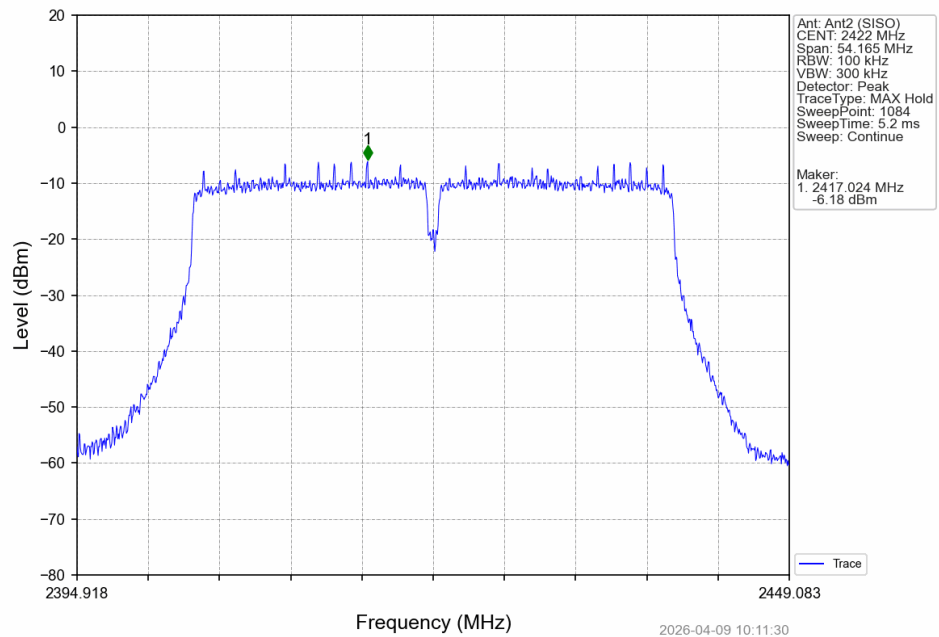
802.11n(HT20)_HCH_2462MHz_Ant2 (SISO)_NTNV



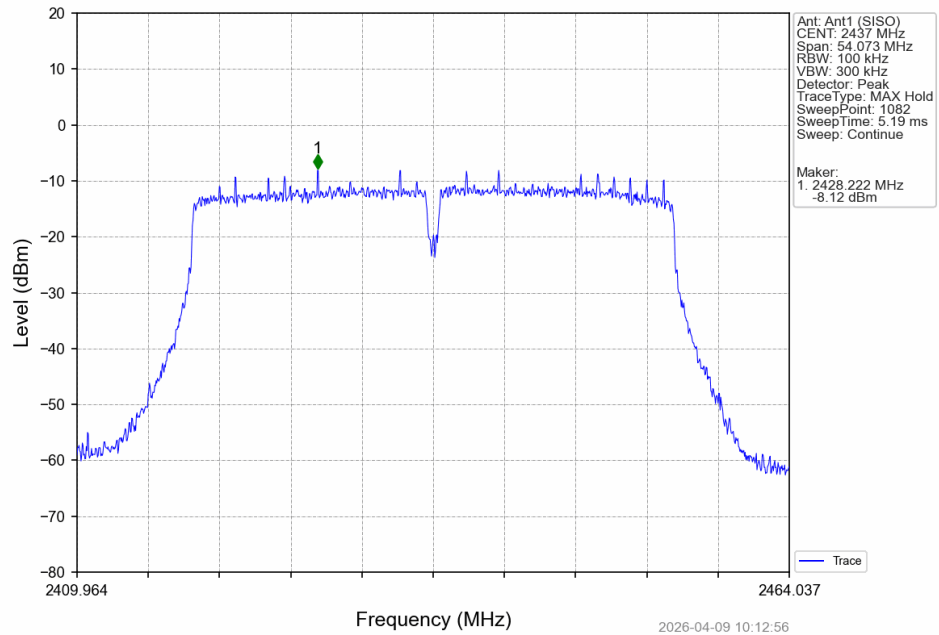
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



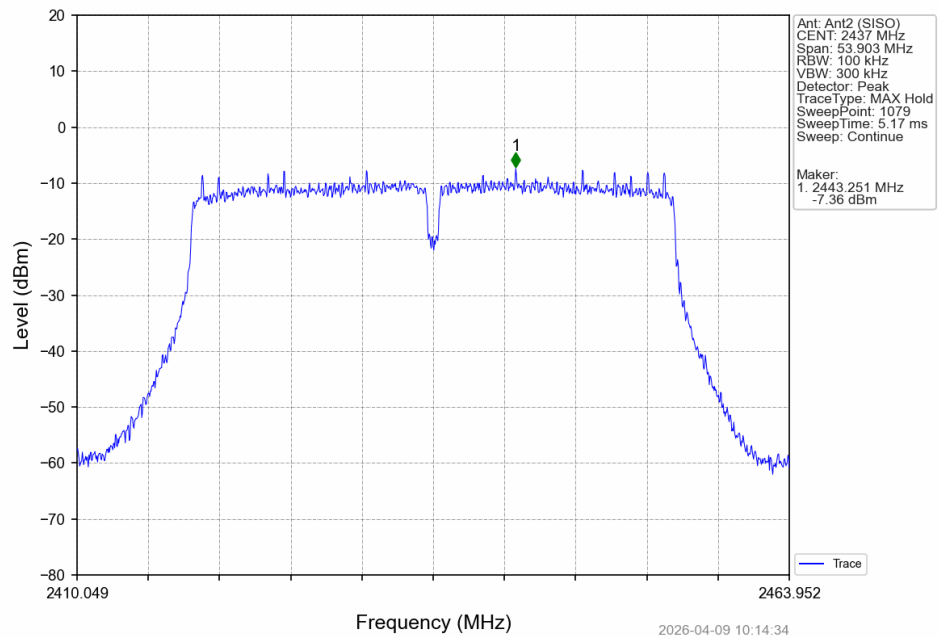
802.11n(HT40)_LCH_2422MHz_Ant2 (SISO)_NTNV



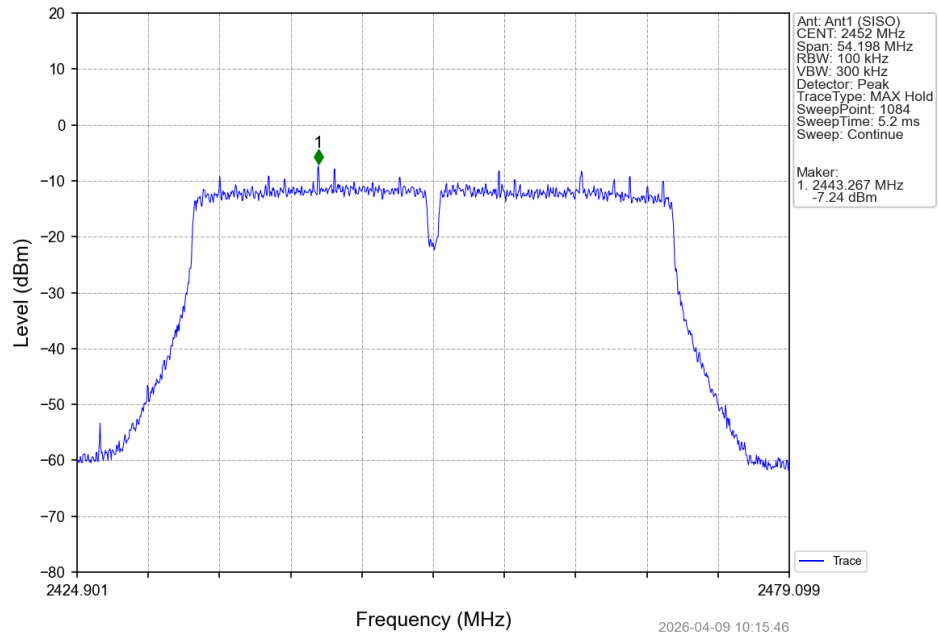
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



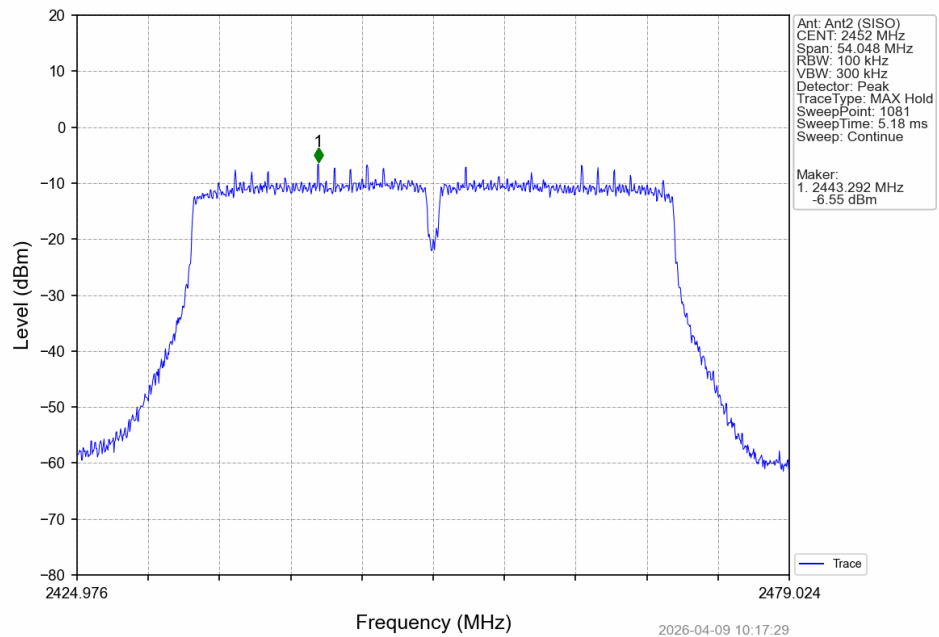
802.11n(HT40)_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (SISO)_NTNV



5.2.2 CSE

