

Appendix RF Test Data for 2.4GWIFI

Company: : Shenzhen car Dong car electronics Co., LTD.

EUT : Dash camera/Car DVR

FCC ID: : 2BNIO-F5

Model Number : F5

Report No. : HTT2025071312F01

Reviewed By : Heber He

1. Duty Cycle

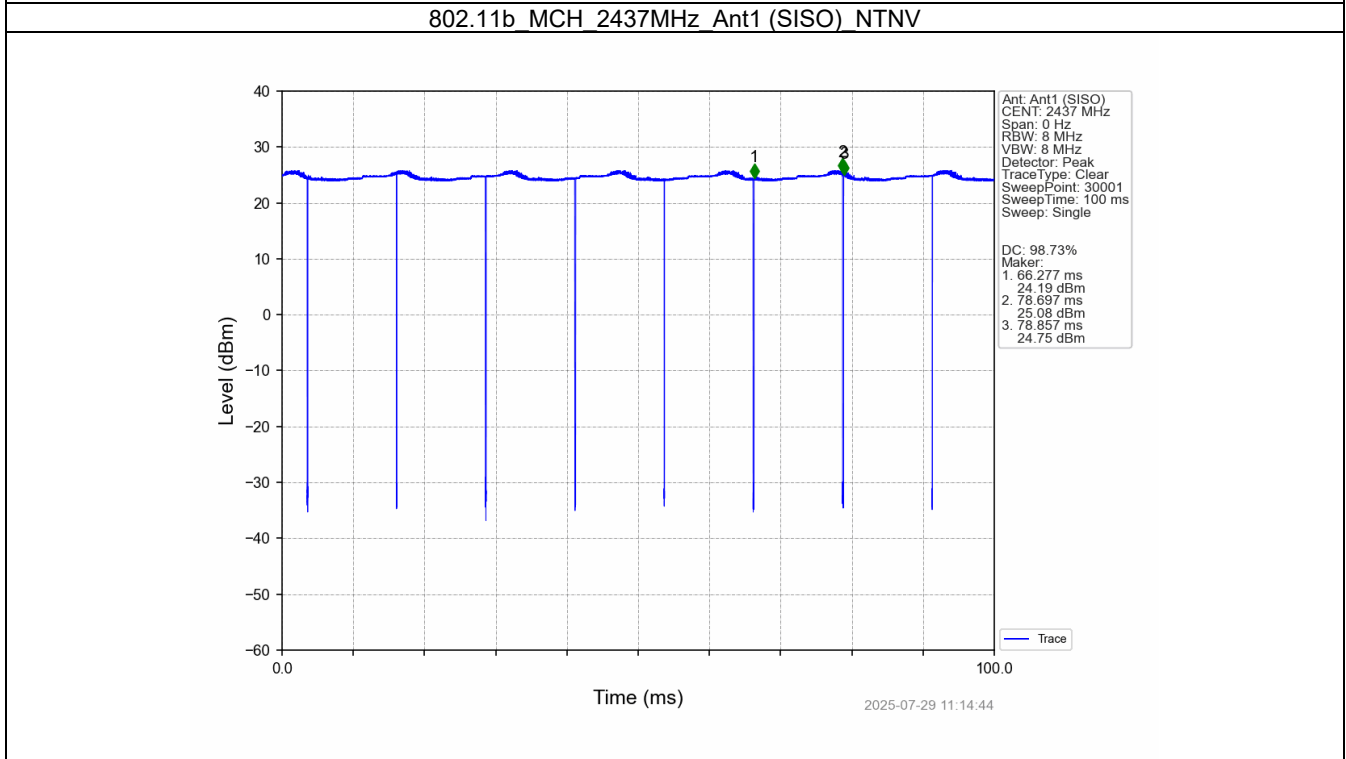
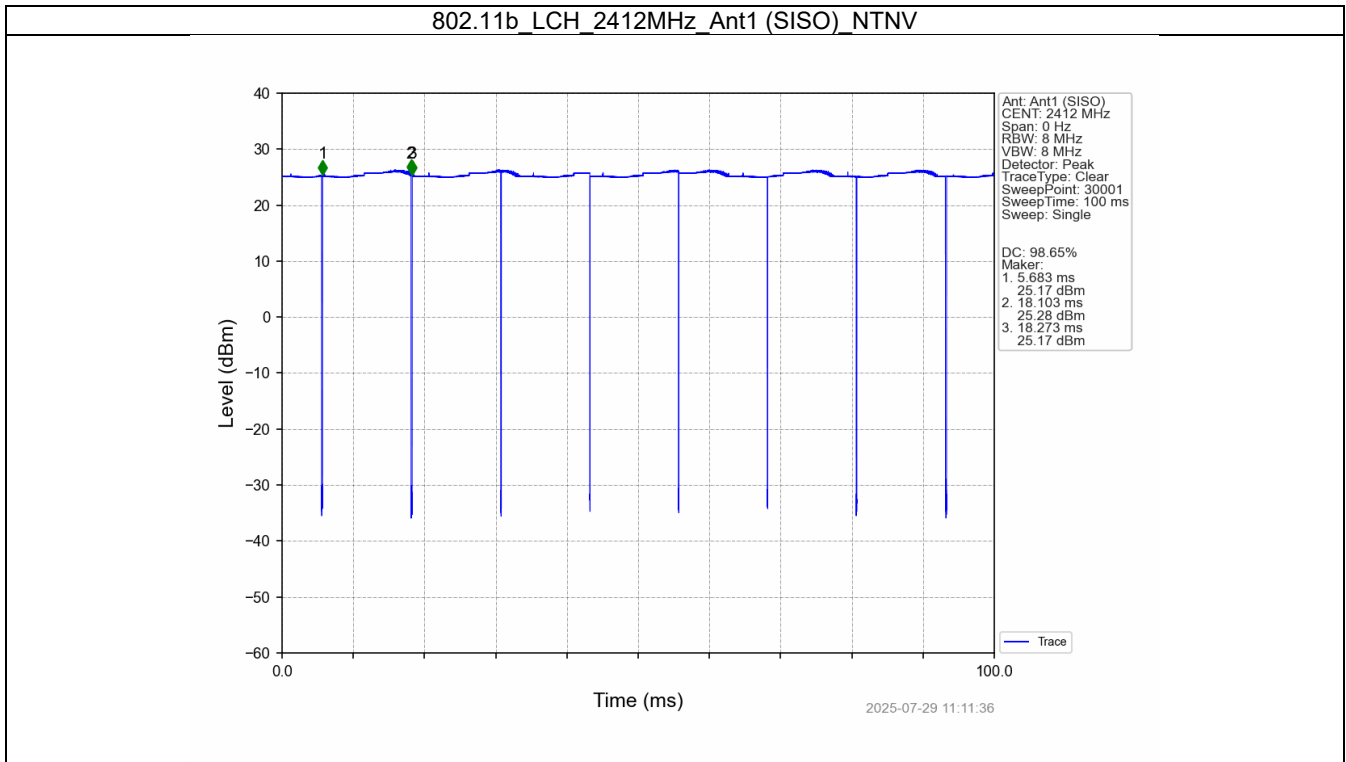
1.1 Test Result

1.1.1 Ant1

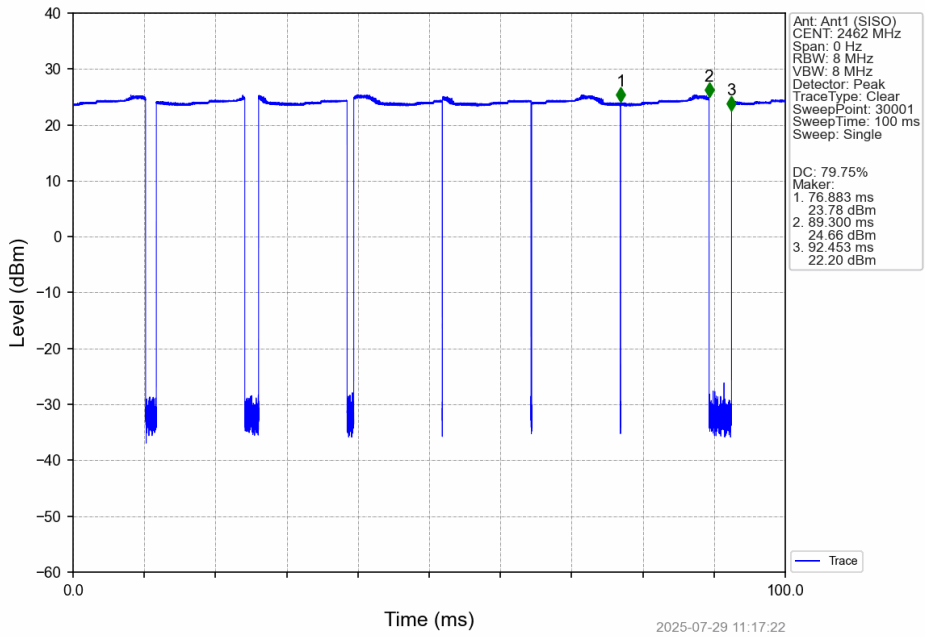
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	12.420	12.590	98.65	0.06	1.08
		2437	12.420	12.580	98.73	0.06	0.84
		2462	12.417	15.570	79.75	0.98	19.96
802.11g	SISO	2412	2.071	2.236	92.62	0.33	6.04
		2437	2.070	2.225	93.03	0.31	5.59
		2462	2.070	2.234	92.66	0.33	5.93
802.11n (HT20)	SISO	2412	1.926	2.091	92.11	0.36	6.39
		2437	1.927	2.092	92.11	0.36	5.95
		2462	1.922	4.452	43.17	3.65	55.07
802.11n (HT40)	SISO	2422	0.949	1.116	85.04	0.70	11.67
		2437	0.945	1.097	86.14	0.65	6.84
		2452	0.945	1.115	84.75	0.72	9.97

1.2 Test Graph

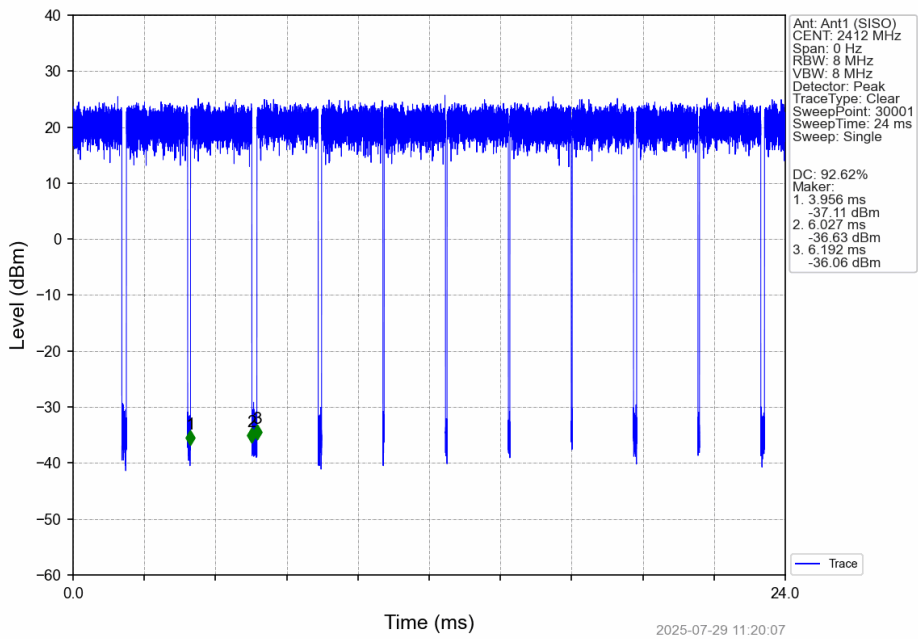
1.2.1 Ant1



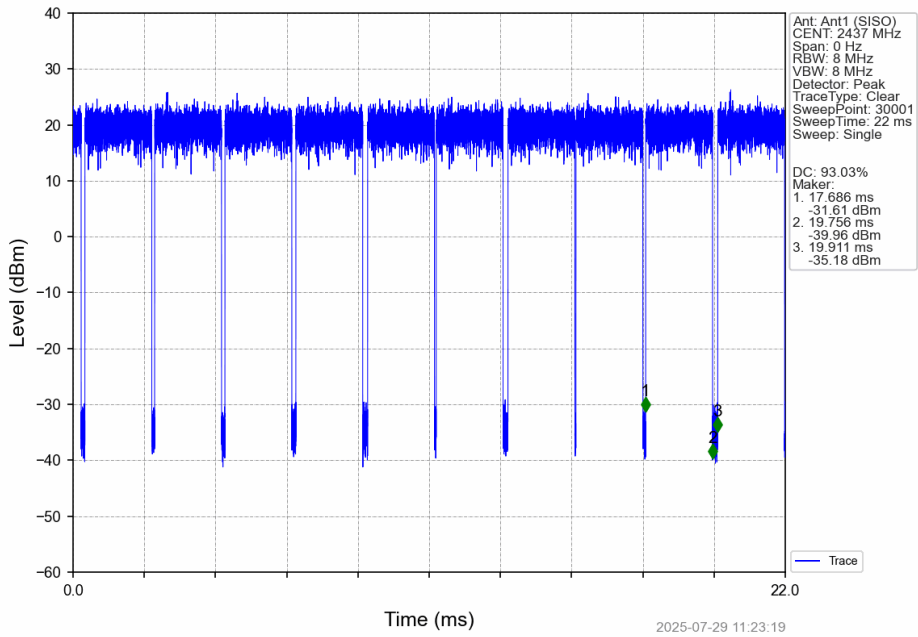
802.11b_HCH_2462MHz_Ant1 (SISO) NTN



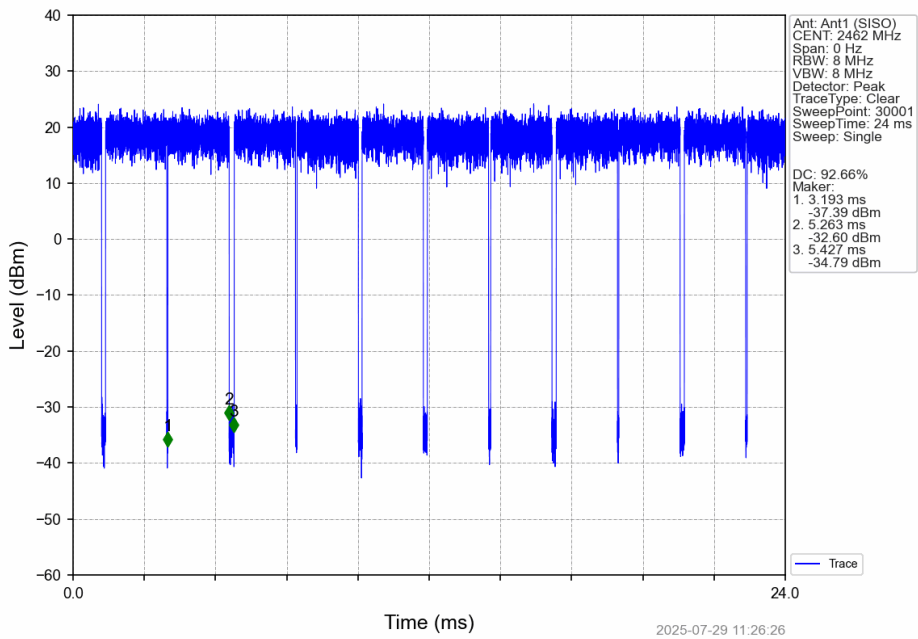
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



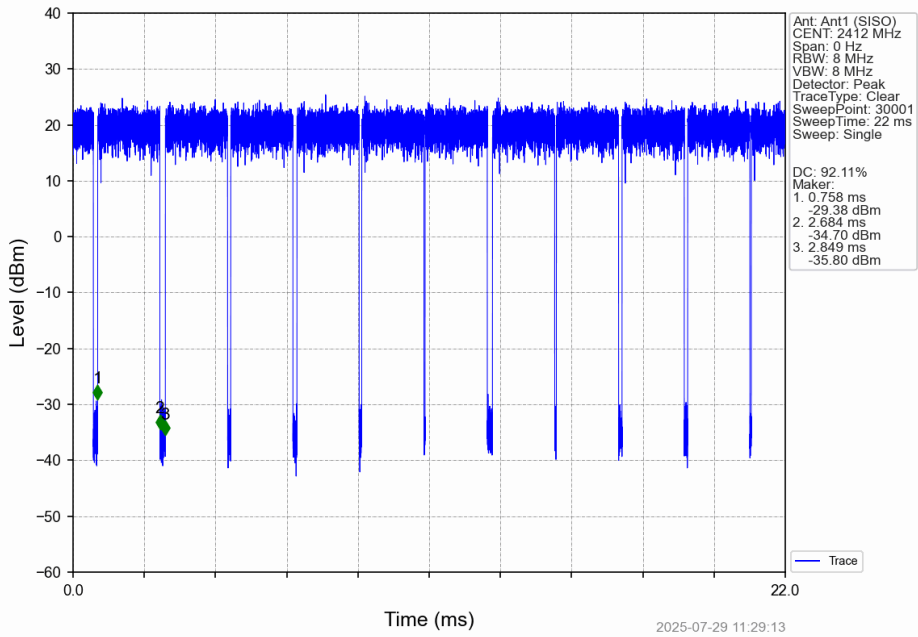
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



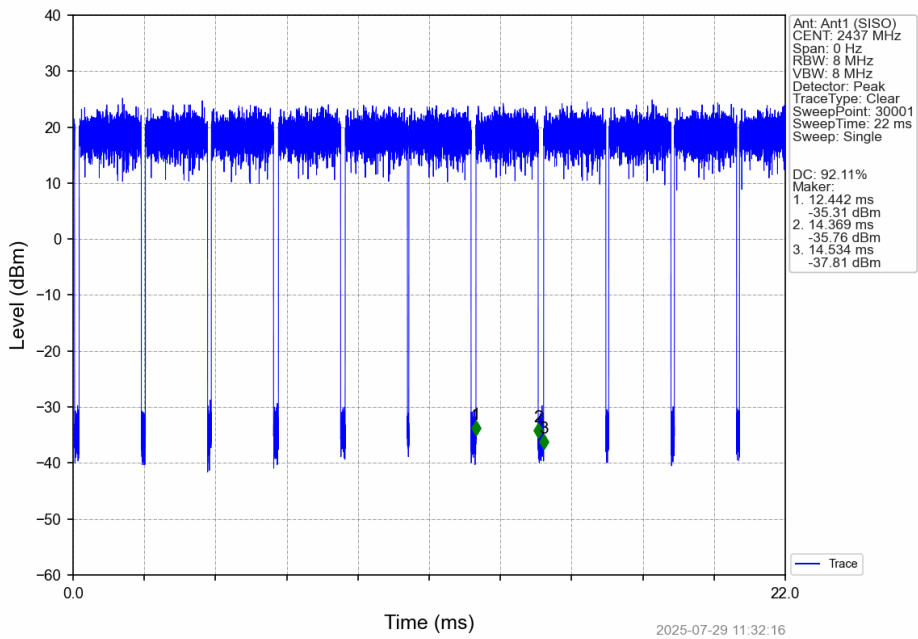
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



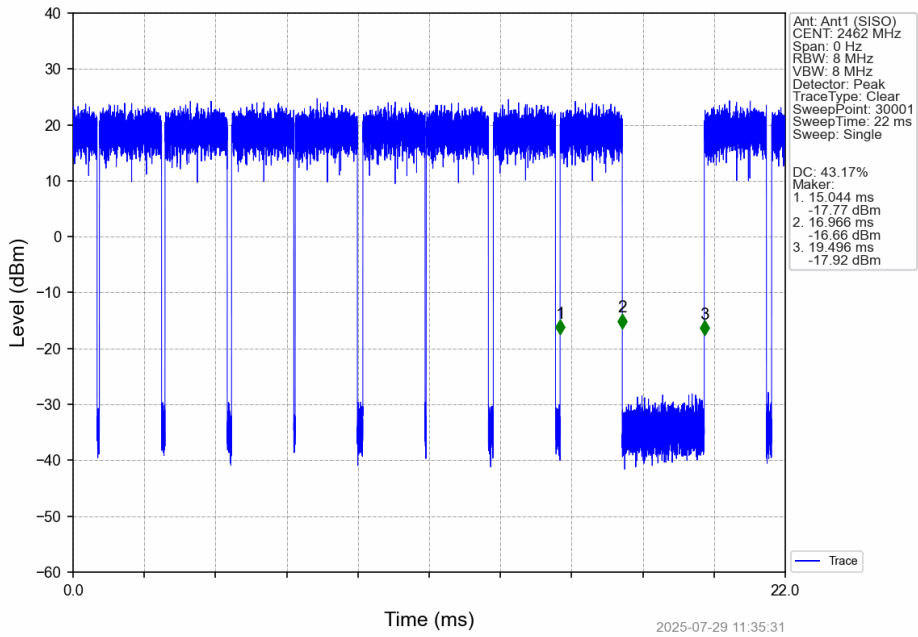
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



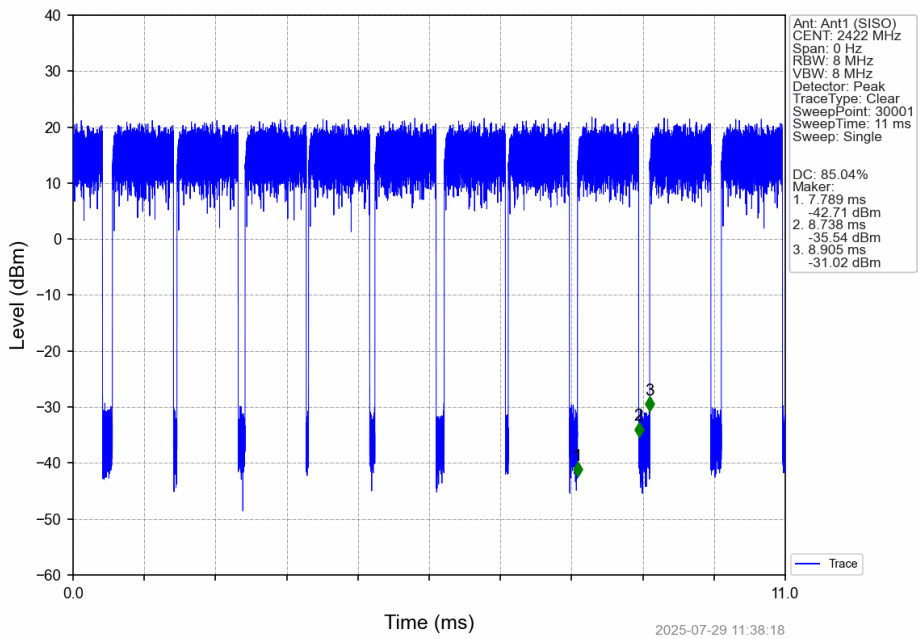
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



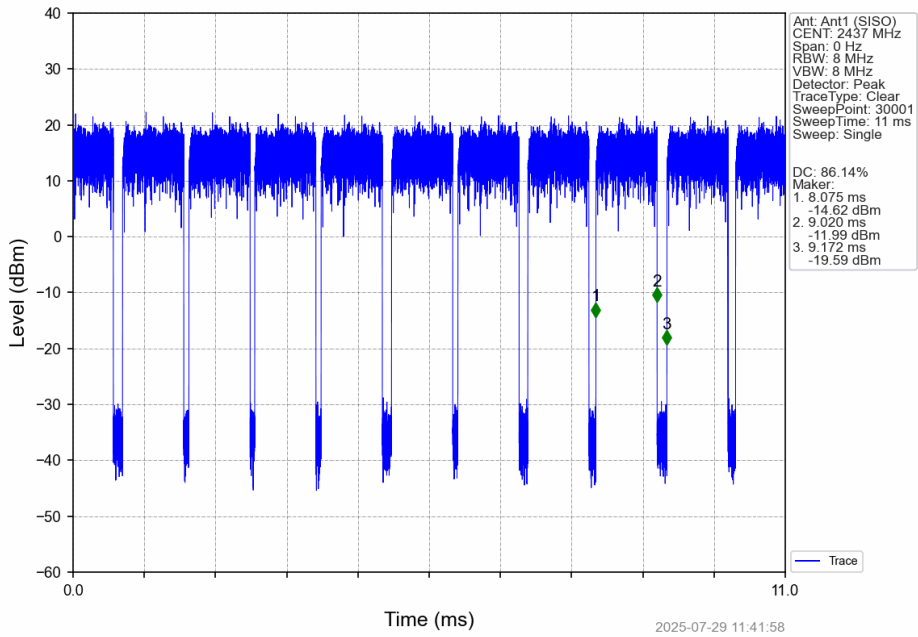
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



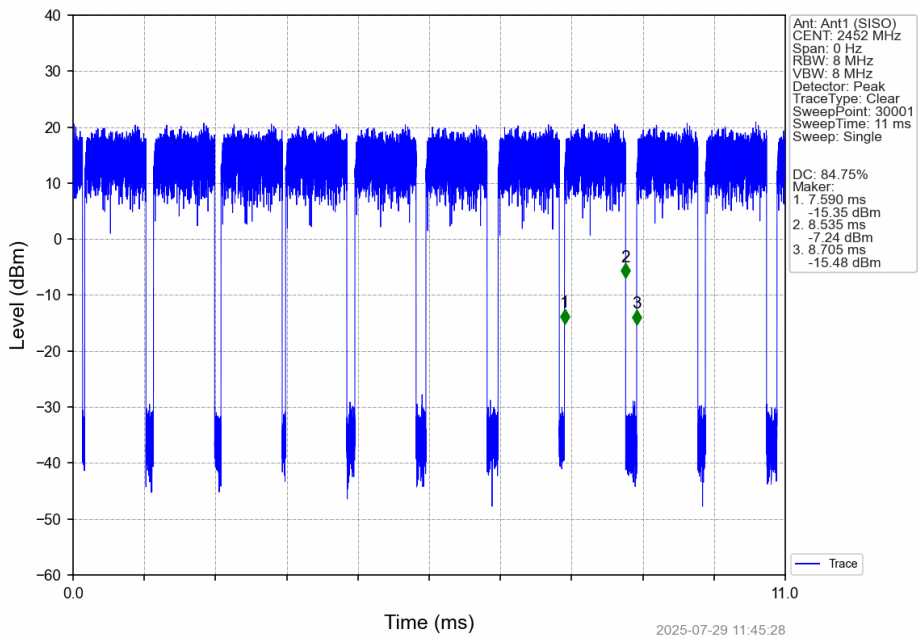
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

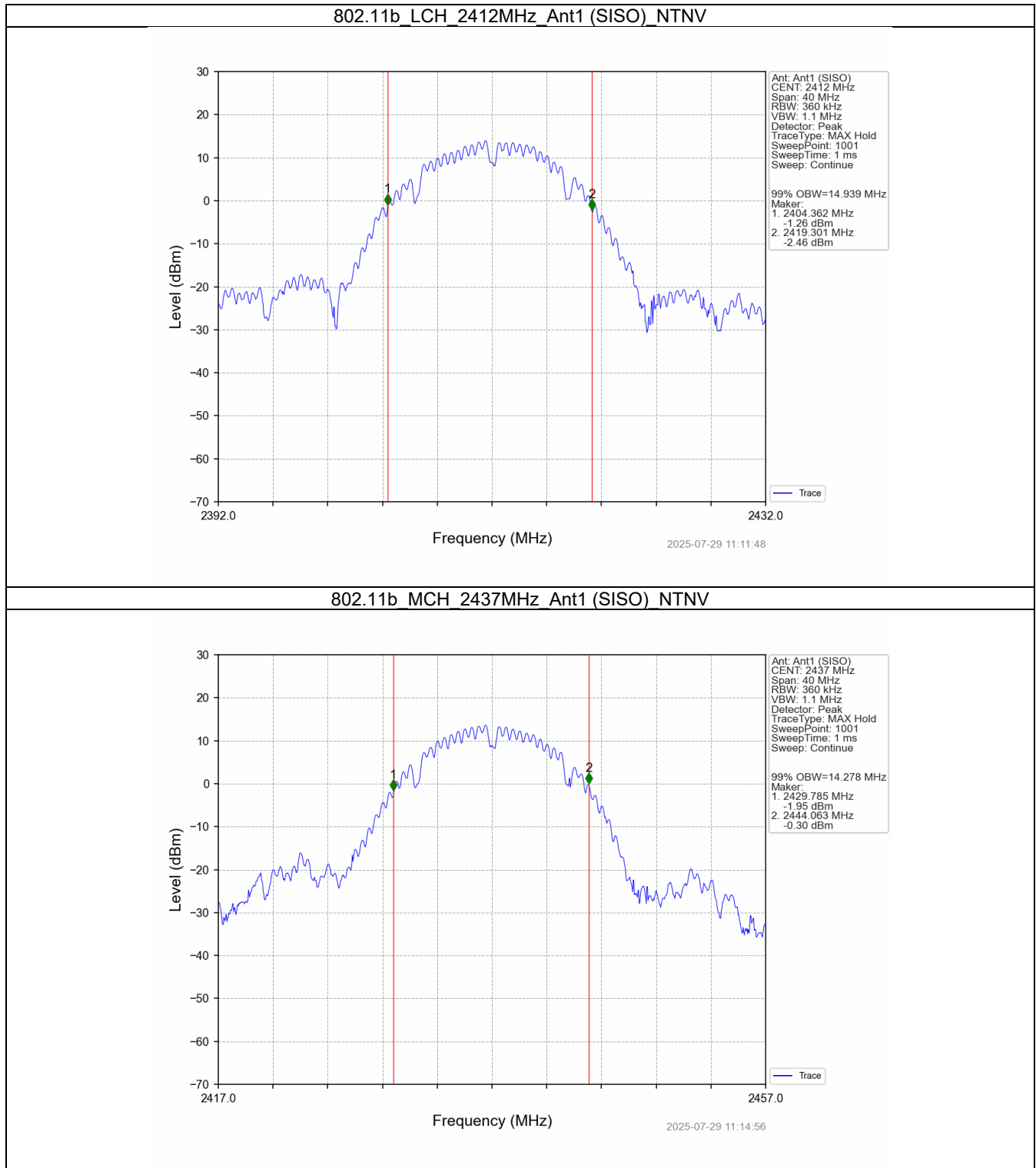
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	14.939	/	Pass
		2437	1	14.278	/	Pass
		2462	1	13.989	/	Pass
802.11g	SISO	2412	1	21.763	/	Pass
		2437	1	20.853	/	Pass
		2462	1	18.082	/	Pass
802.11n (HT20)	SISO	2412	1	21.177	/	Pass
		2437	1	20.008	/	Pass
		2462	1	18.595	/	Pass
802.11n (HT40)	SISO	2422	1	38.902	/	Pass
		2437	1	38.674	/	Pass
		2452	1	37.752	/	Pass

2.1.2 6dB BW

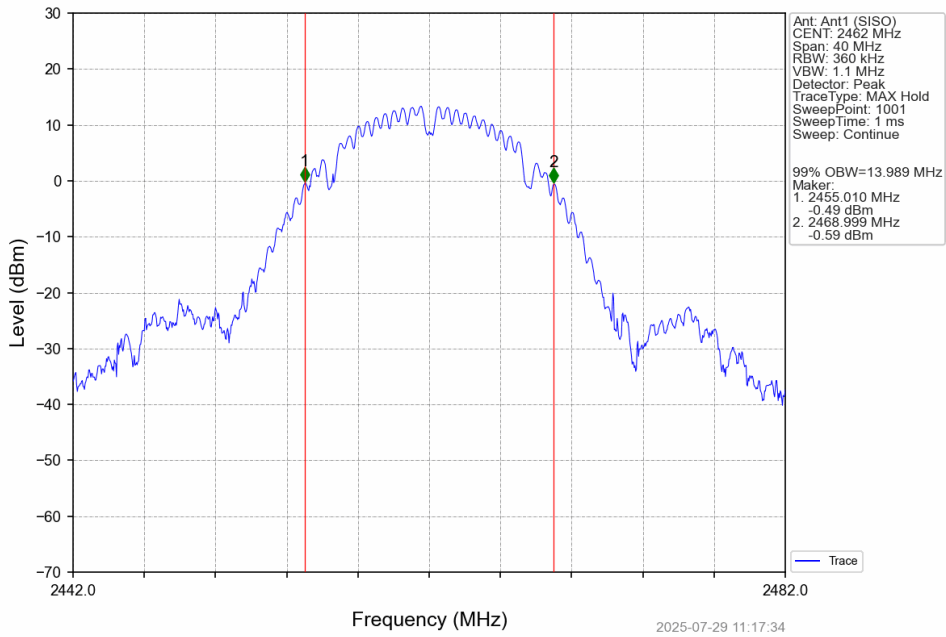
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.022	>=0.5	Pass
		2437	1	9.575	>=0.5	Pass
		2462	1	9.098	>=0.5	Pass
802.11g	SISO	2412	1	16.360	>=0.5	Pass
		2437	1	16.381	>=0.5	Pass
		2462	1	16.359	>=0.5	Pass
802.11n (HT20)	SISO	2412	1	17.310	>=0.5	Pass
		2437	1	17.204	>=0.5	Pass
		2462	1	17.207	>=0.5	Pass
802.11n (HT40)	SISO	2422	1	35.186	>=0.5	Pass
		2437	1	35.525	>=0.5	Pass
		2452	1	35.746	>=0.5	Pass

2.2 Test Graph

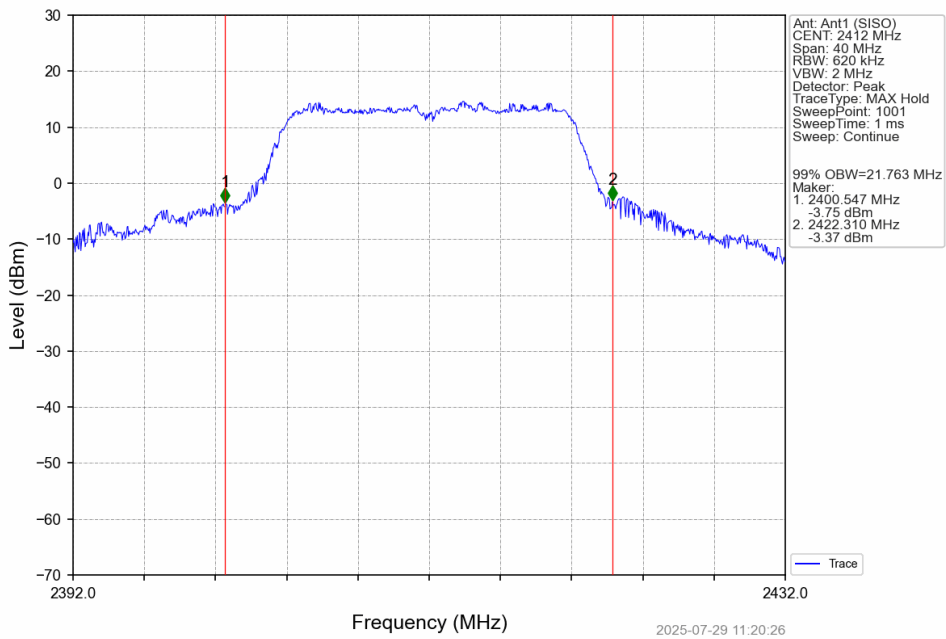
2.2.1 OBW



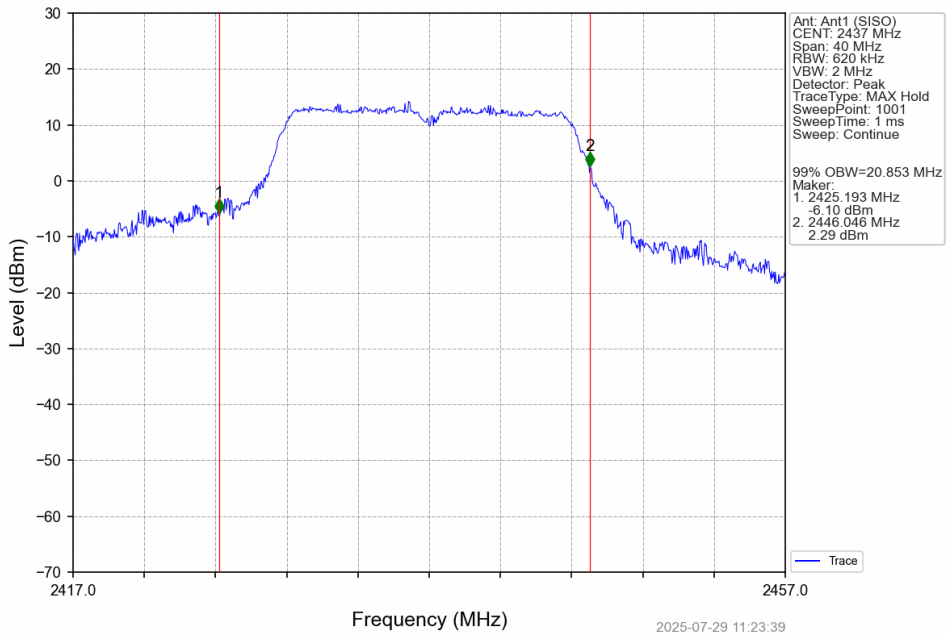
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



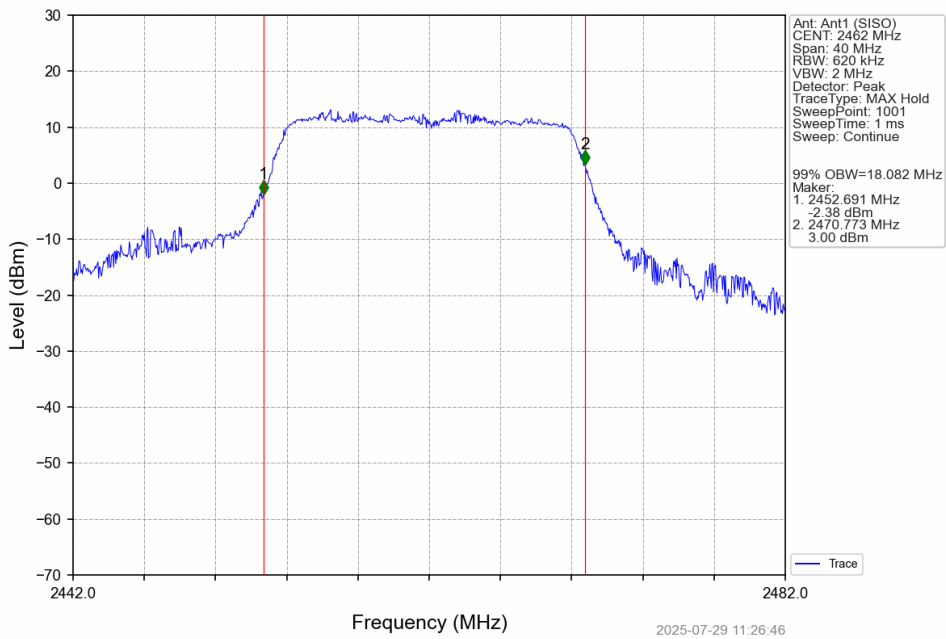
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



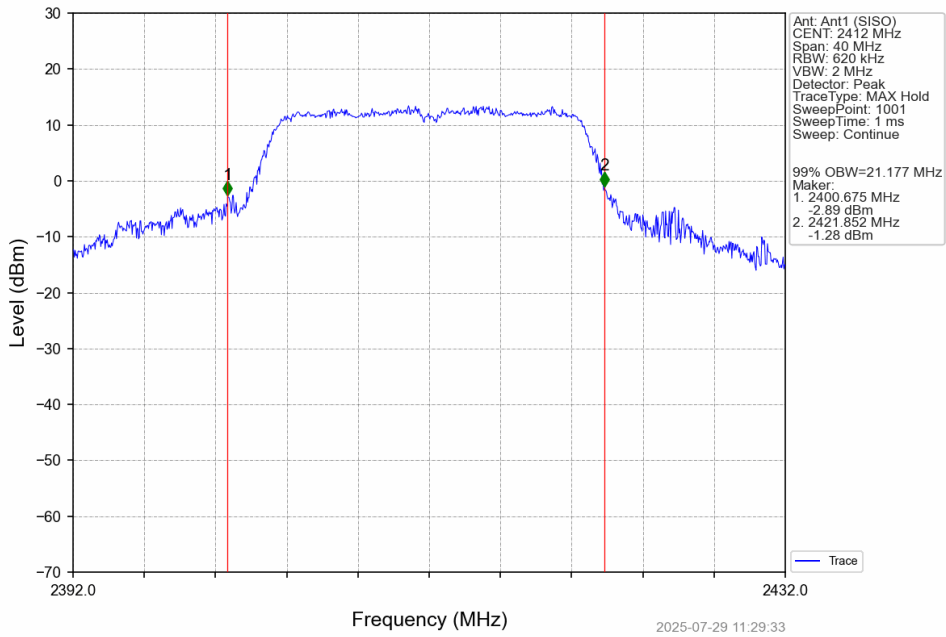
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



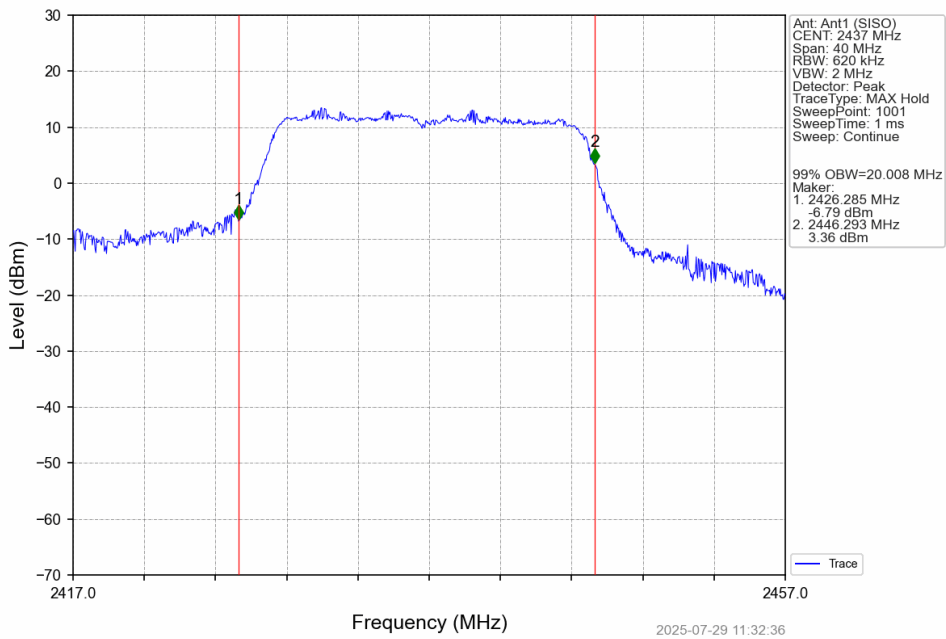
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



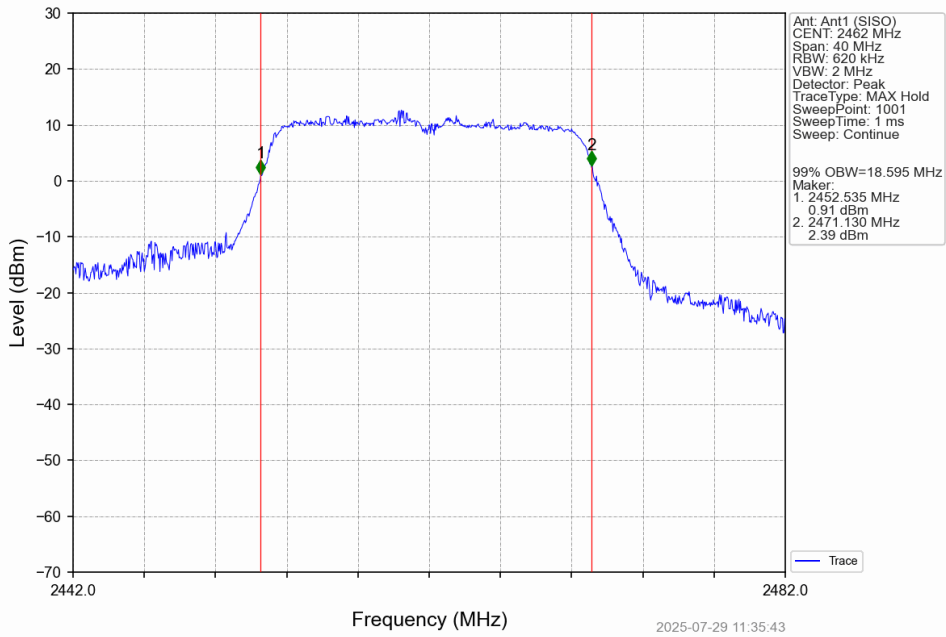
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



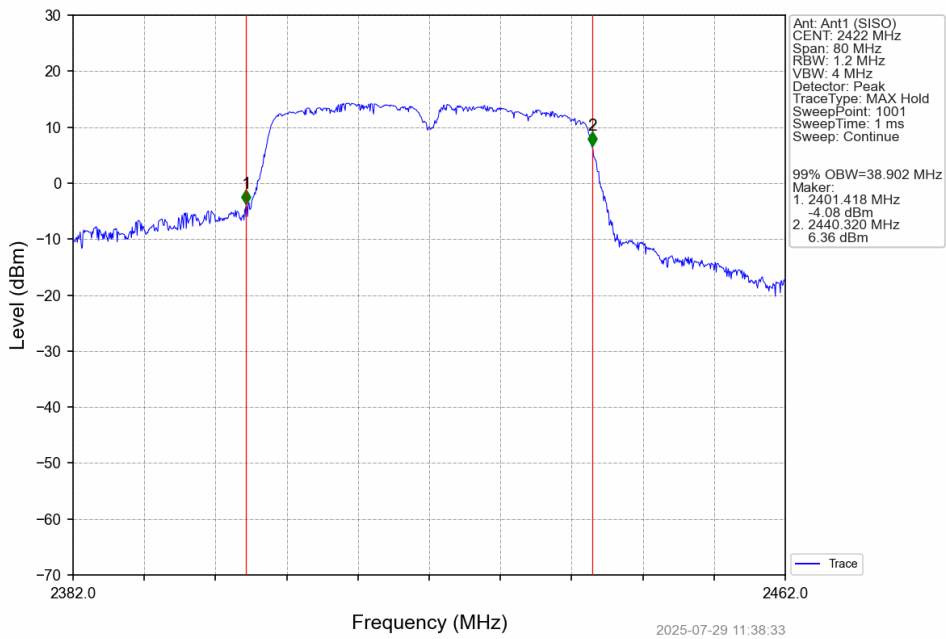
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



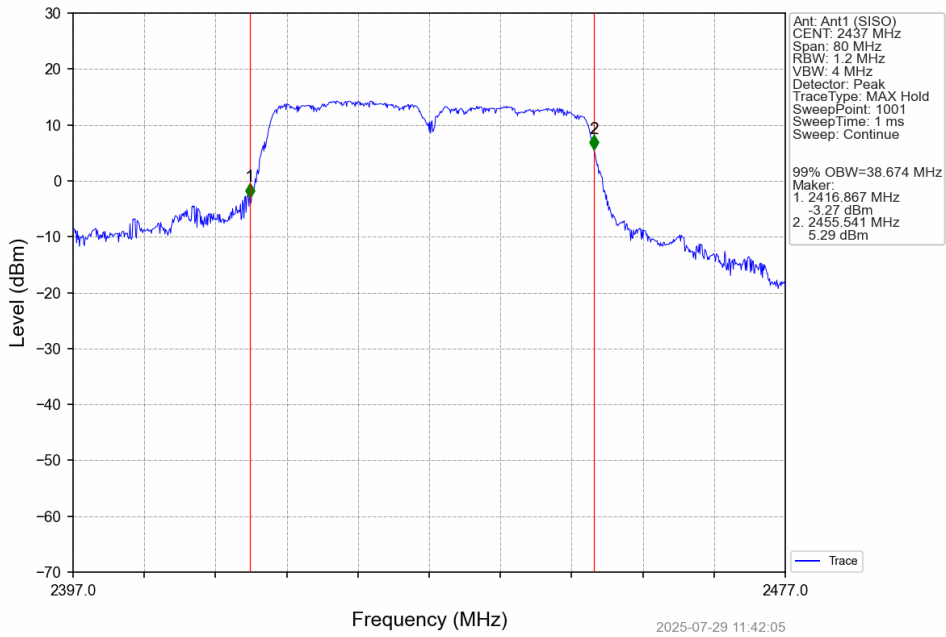
802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTN



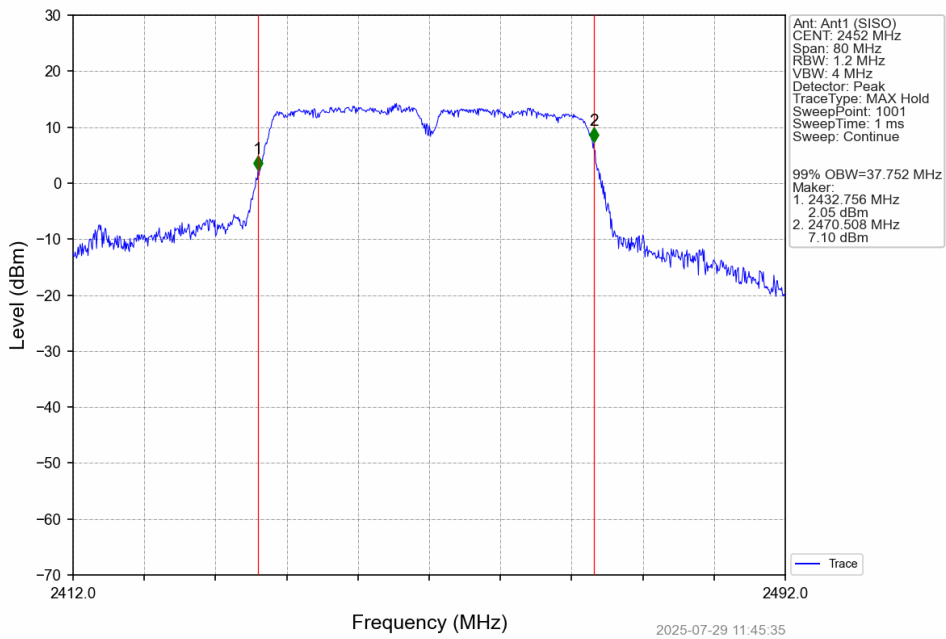
802.11n(HT40) LCH_2422MHz_Ant1 (SISO) NTN



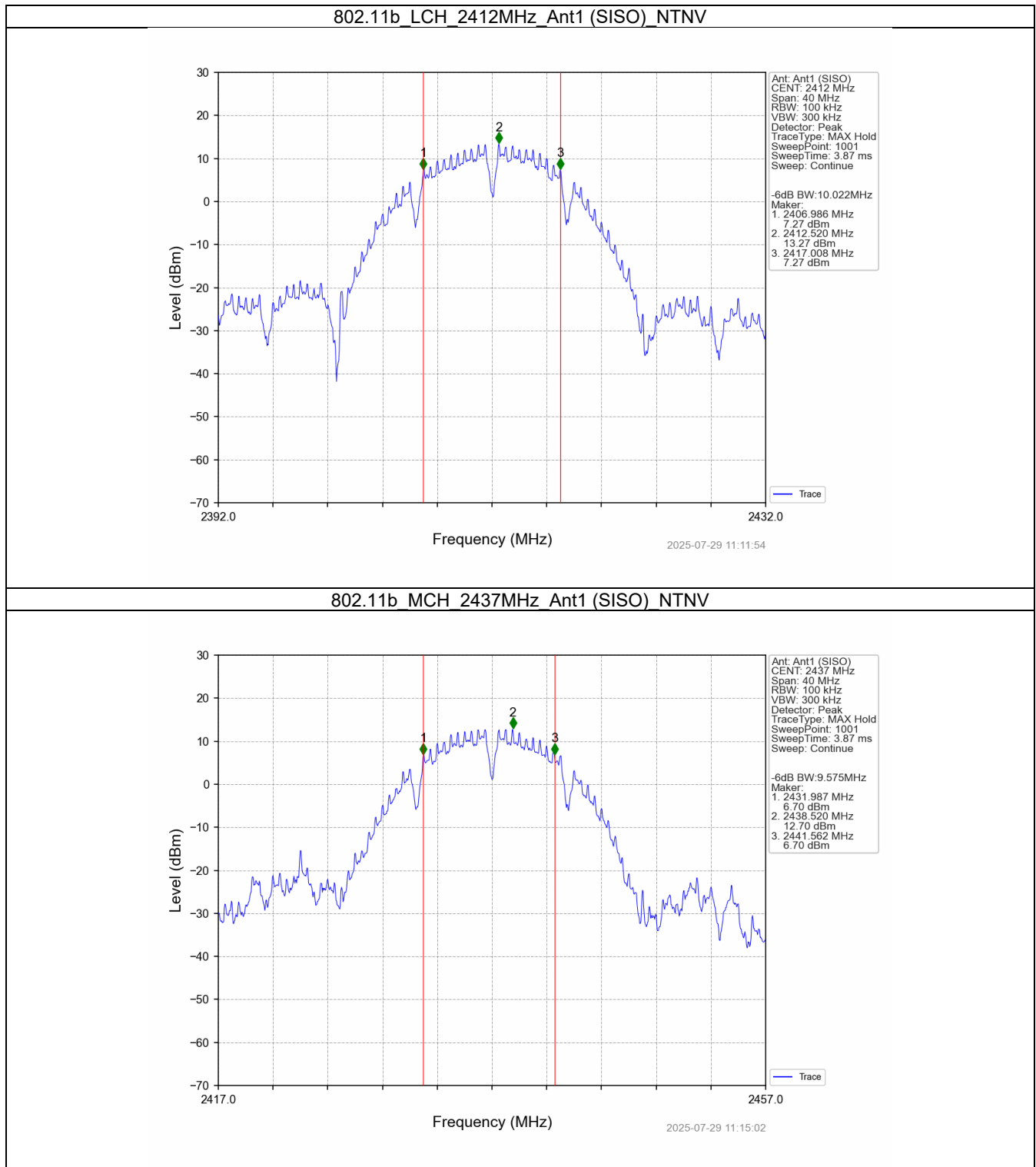
802.11n(HT40)_MCH_2437MHz_Ant1(SISO)_NTNV



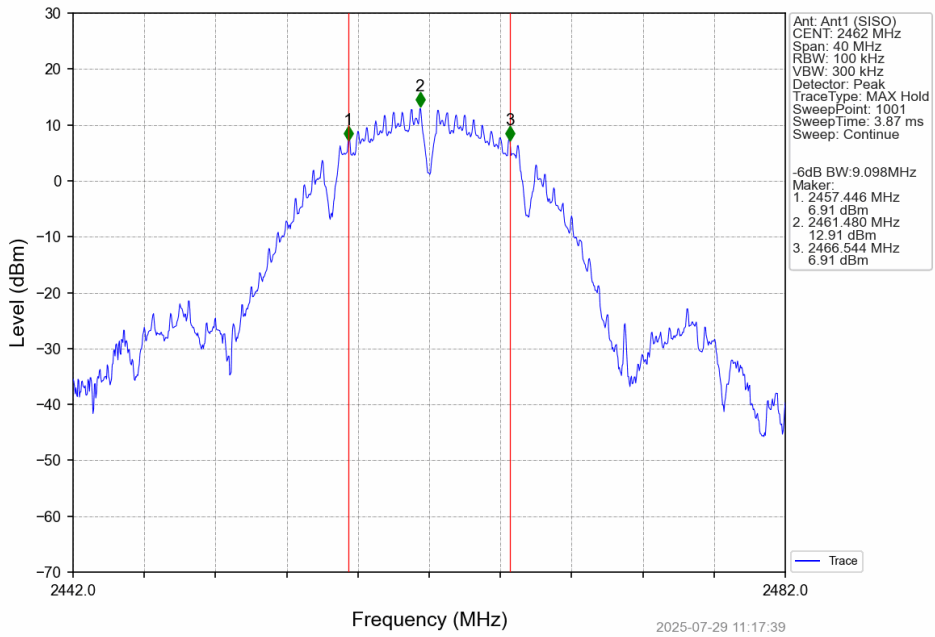
802.11n(HT40)_HCH_2452MHz_Ant1(SISO)_NTNV



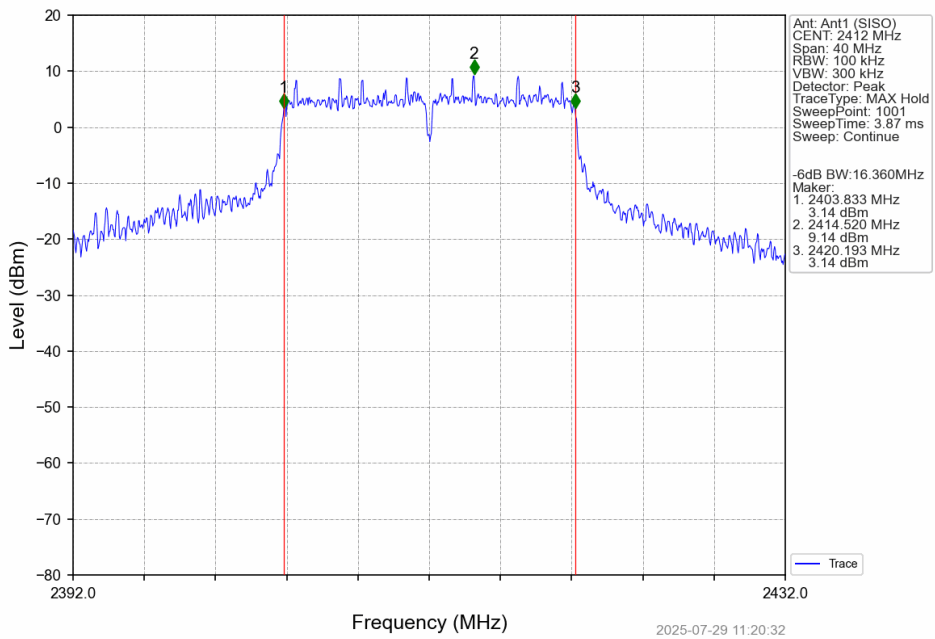
2.2.2 6dB BW



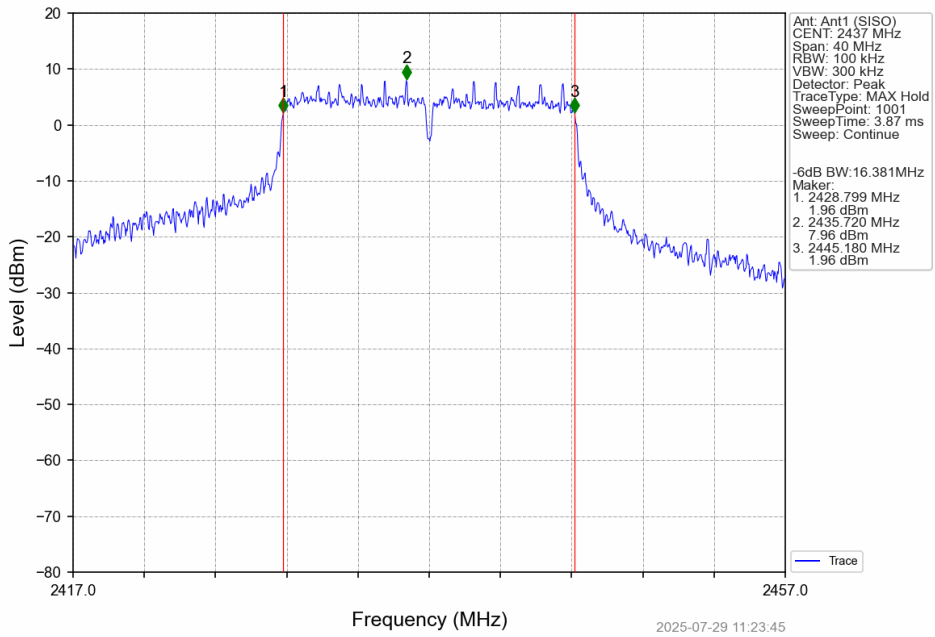
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



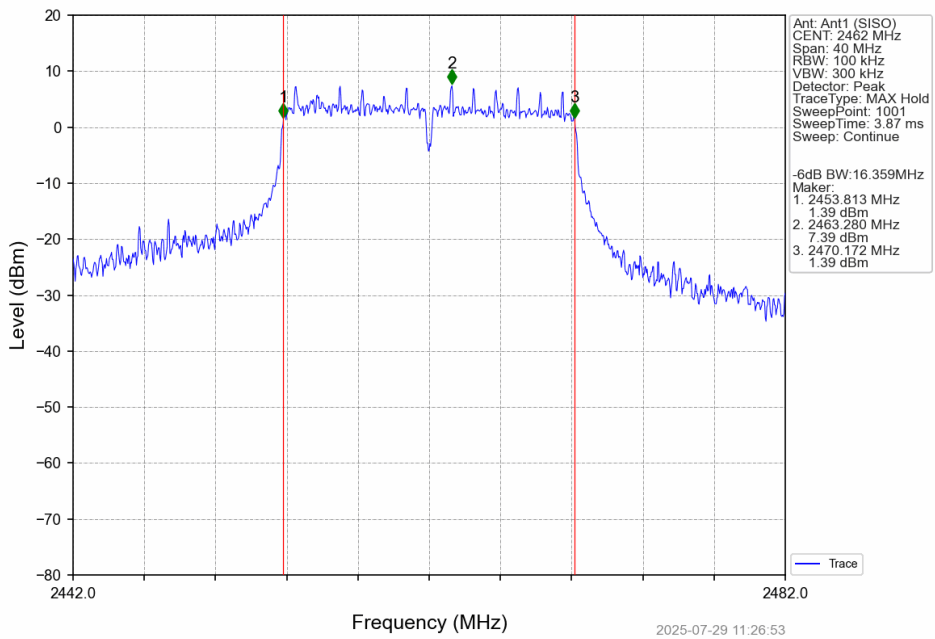
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



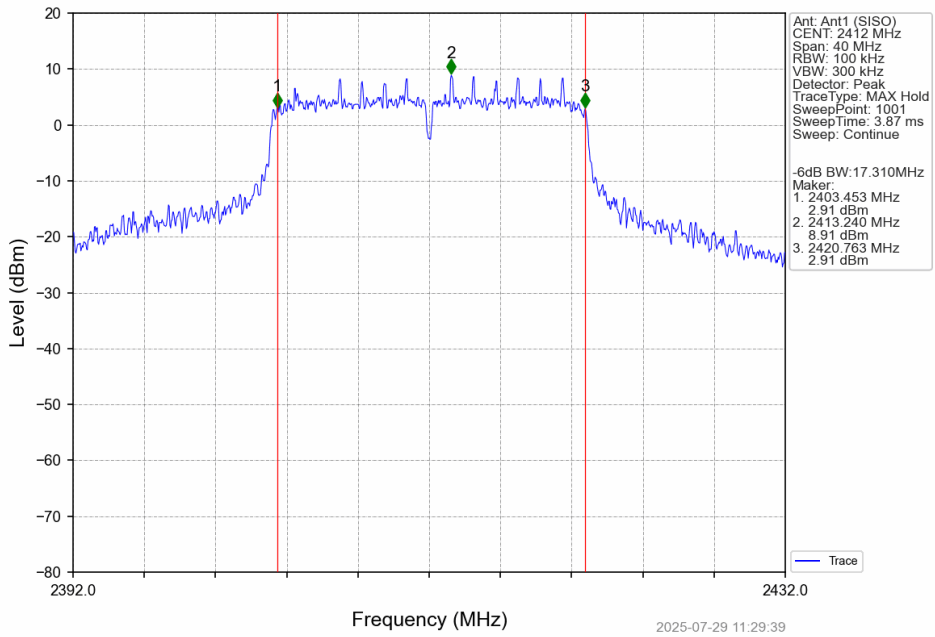
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



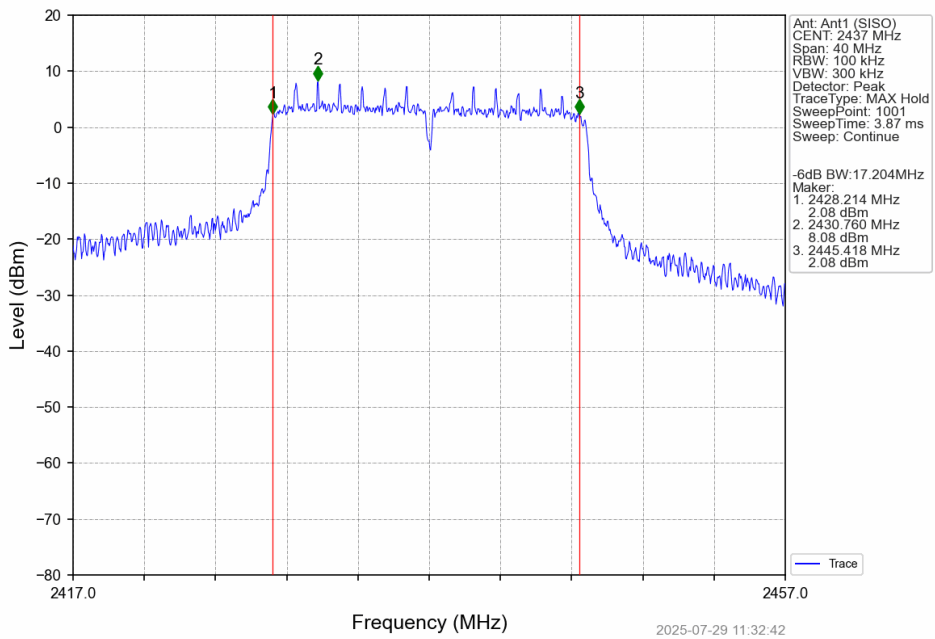
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



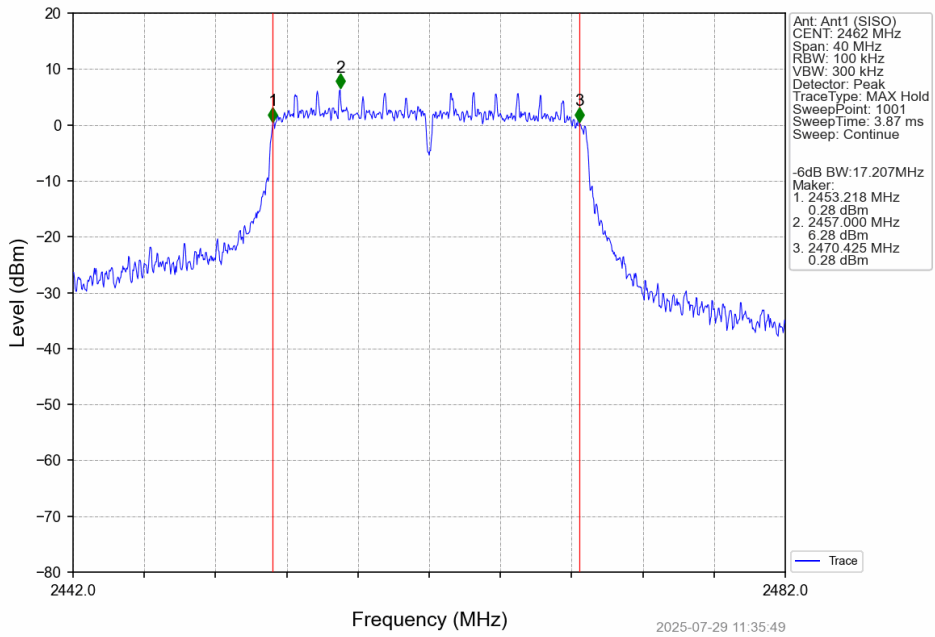
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



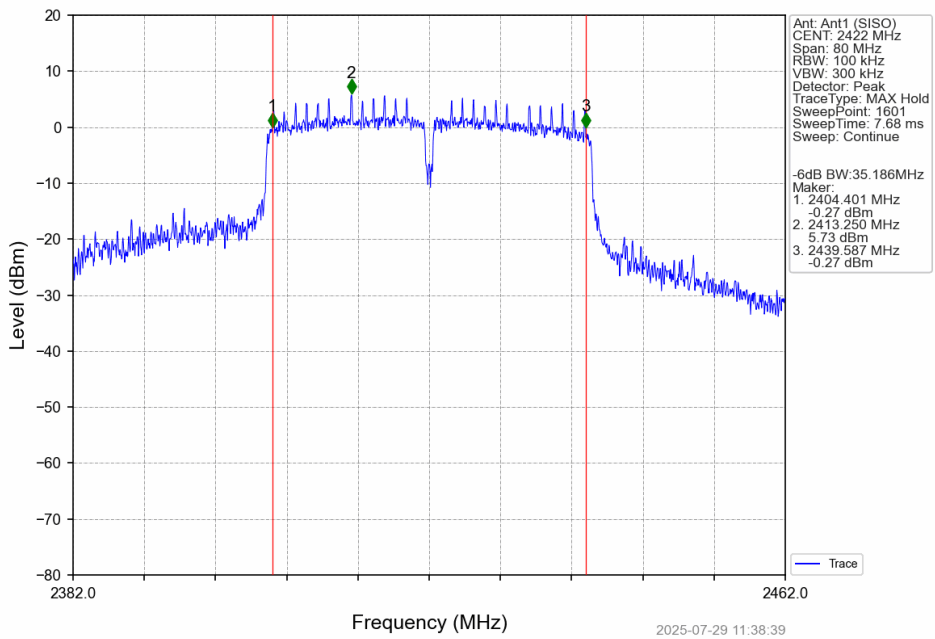
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



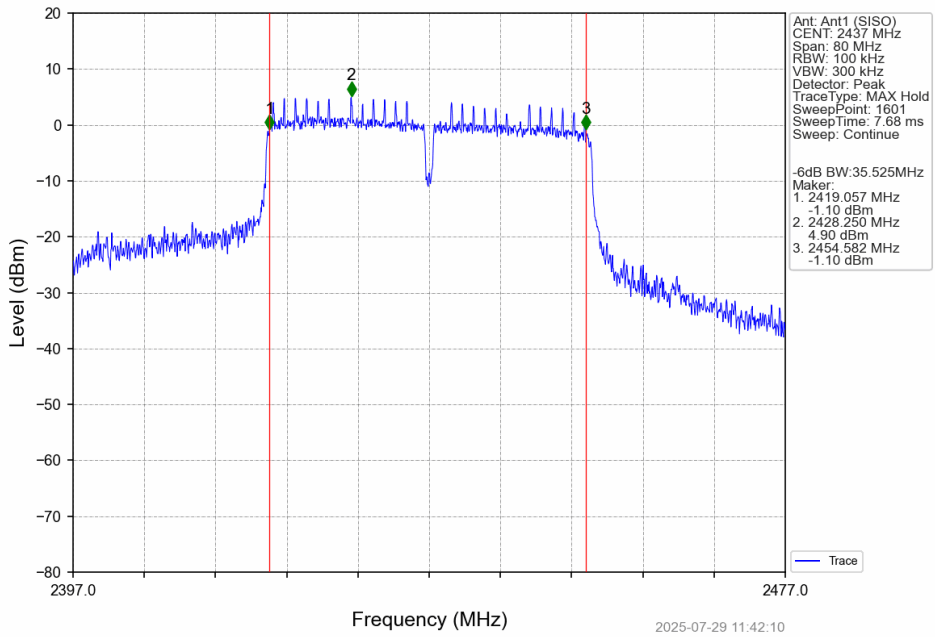
802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTN



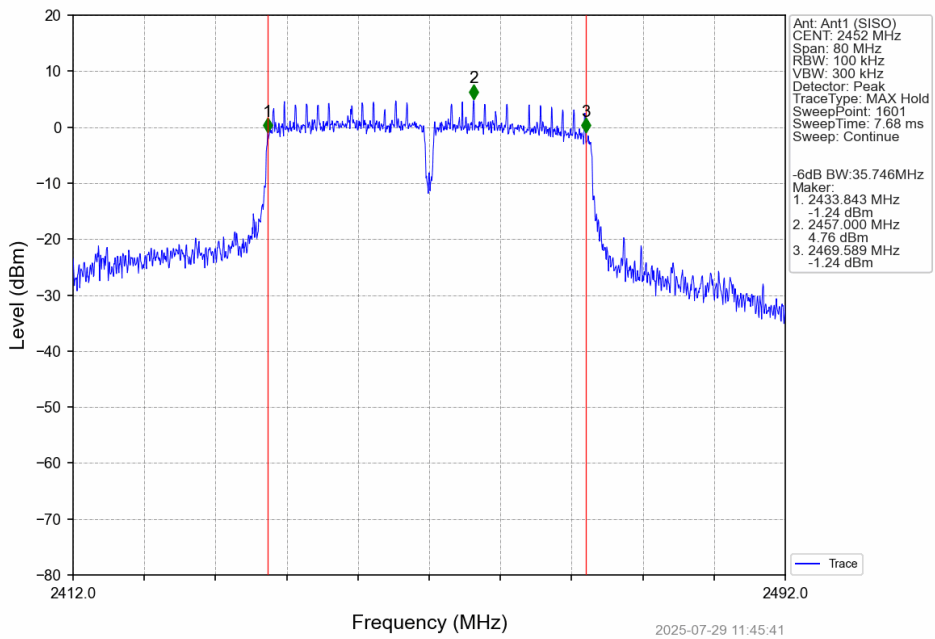
802.11n(HT40) LCH_2422MHz_Ant1 (SISO) NTN



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	24.77	<=30	Pass
		2437	24.49	<=30	Pass
		2462	24.31	<=30	Pass
802.11g	SISO	2412	27.77	<=30	Pass
		2437	27.09	<=30	Pass
		2462	26.09	<=30	Pass
802.11n (HT20)	SISO	2412	27.25	<=30	Pass
		2437	26.35	<=30	Pass
		2462	25.09	<=30	Pass
802.11n (HT40)	SISO	2422	27.12	<=30	Pass
		2437	26.35	<=30	Pass
		2452	26.53	<=30	Pass

4. Maximum Power Spectral Density

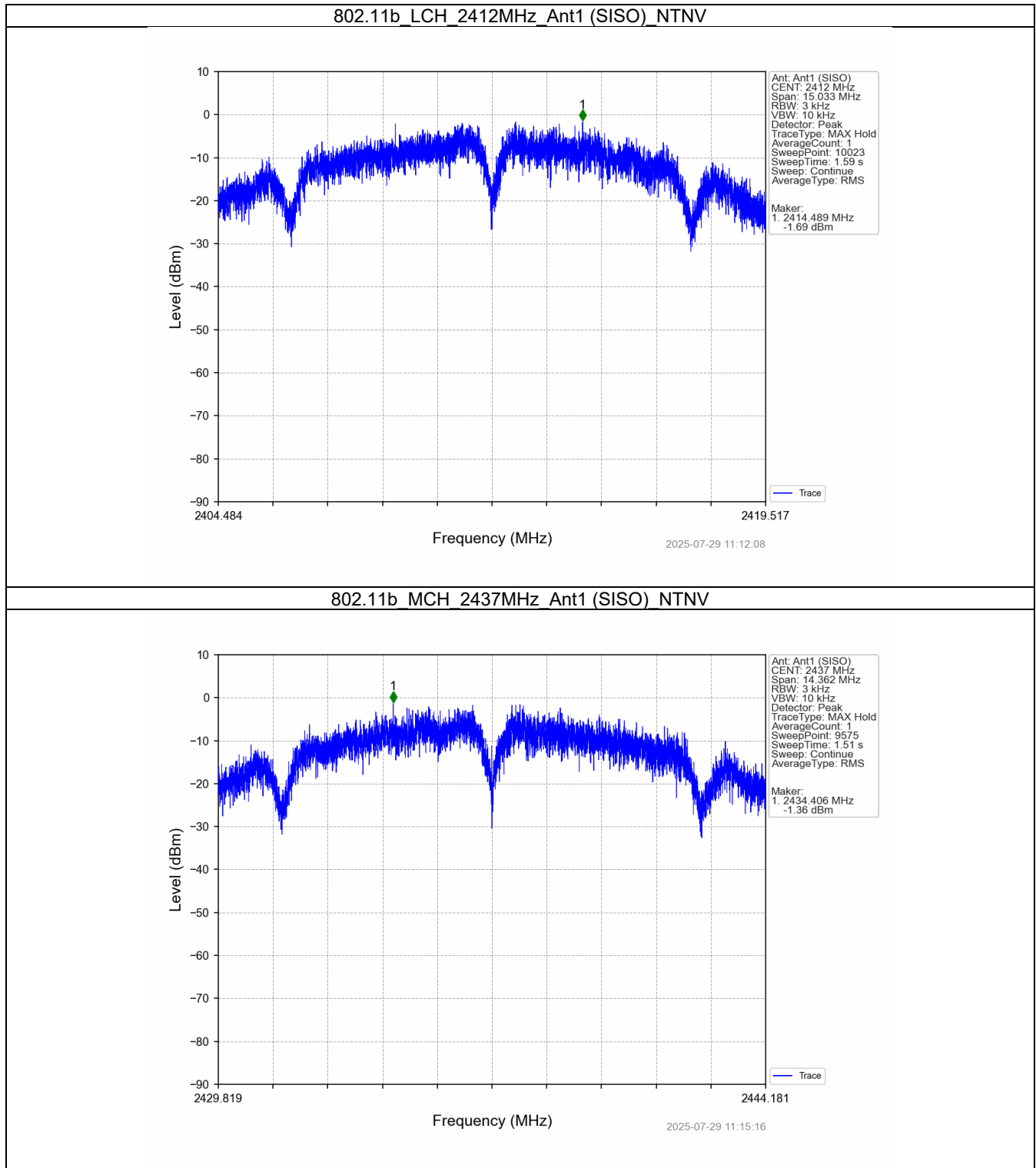
4.1 Test Result

4.1.1 PSD

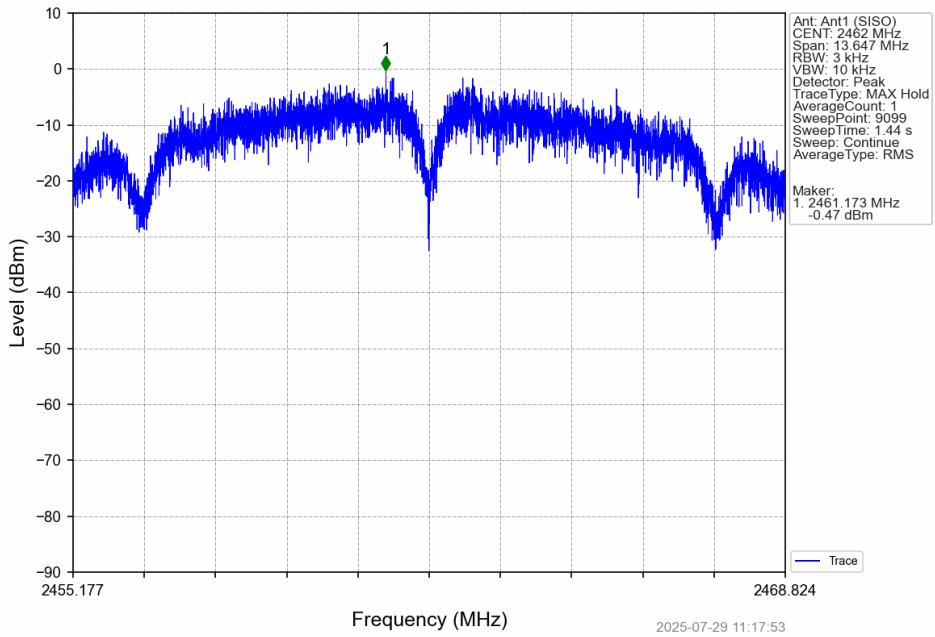
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-1.69	<=8	Pass
		2437	-1.36	<=8	Pass
		2462	-0.47	<=8	Pass
802.11g	SISO	2412	-4.11	<=8	Pass
		2437	-6.48	<=8	Pass
		2462	-6.90	<=8	Pass
802.11n (HT20)	SISO	2412	-6.46	<=8	Pass
		2437	-6.94	<=8	Pass
		2462	-7.86	<=8	Pass
802.11n (HT40)	SISO	2422	-8.80	<=8	Pass
		2437	-9.41	<=8	Pass
		2452	-10.23	<=8	Pass

4.2 Test Graph

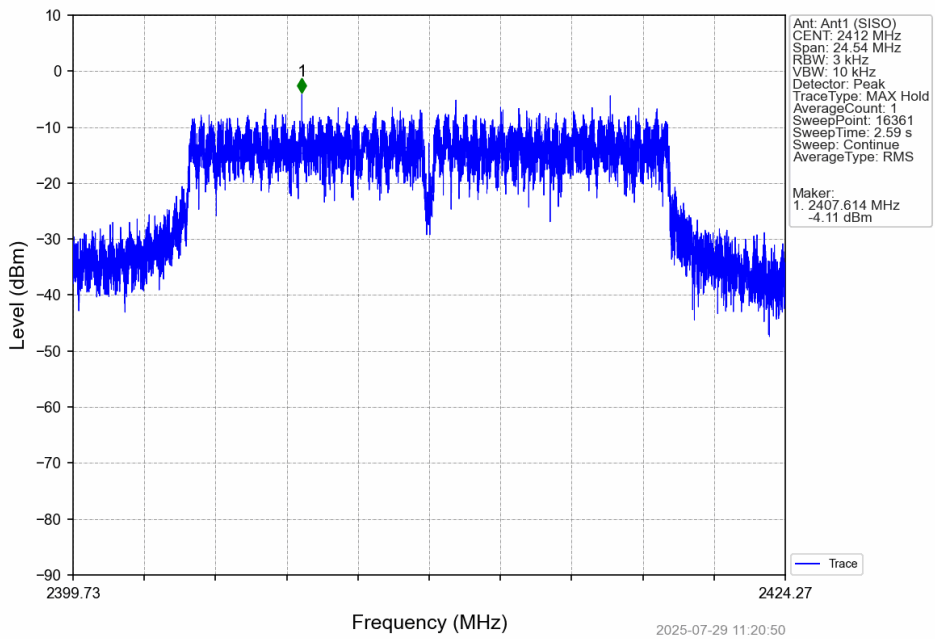
4.2.1 PSD



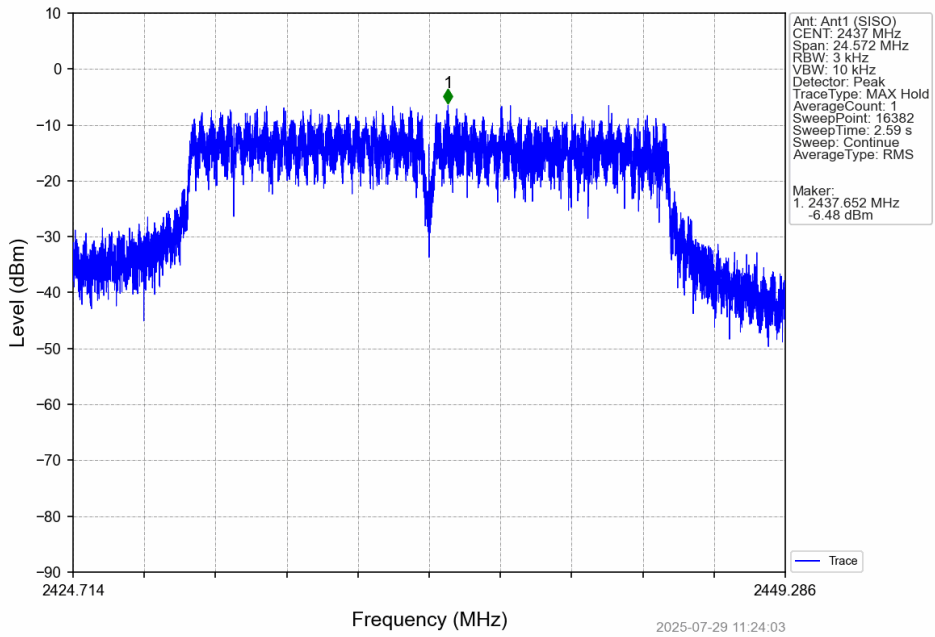
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



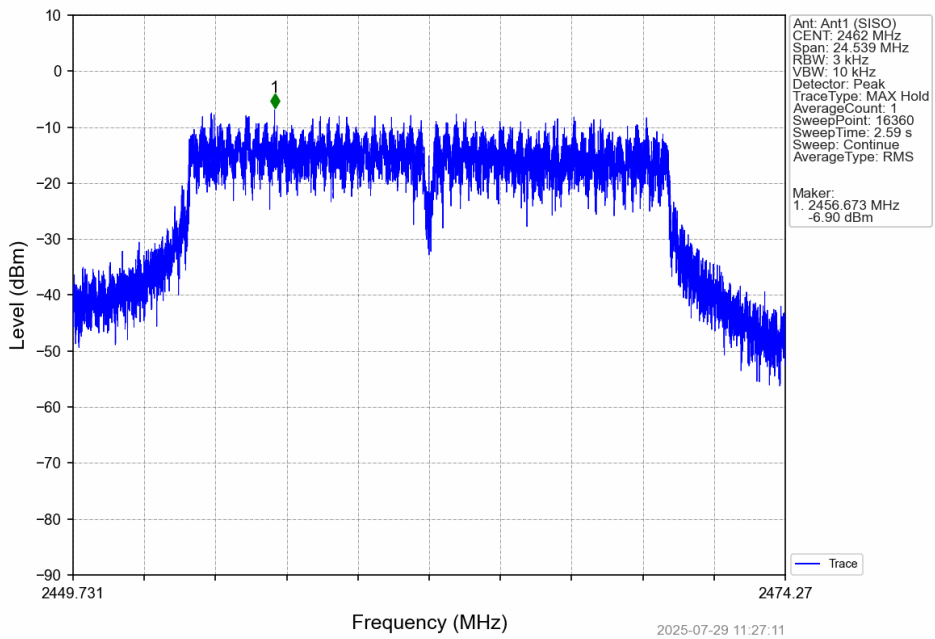
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



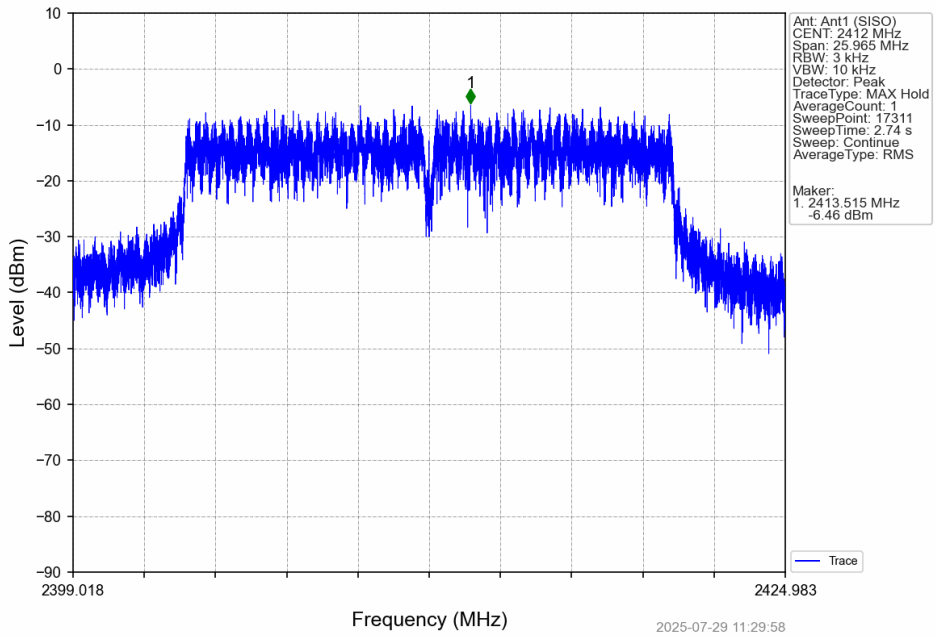
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



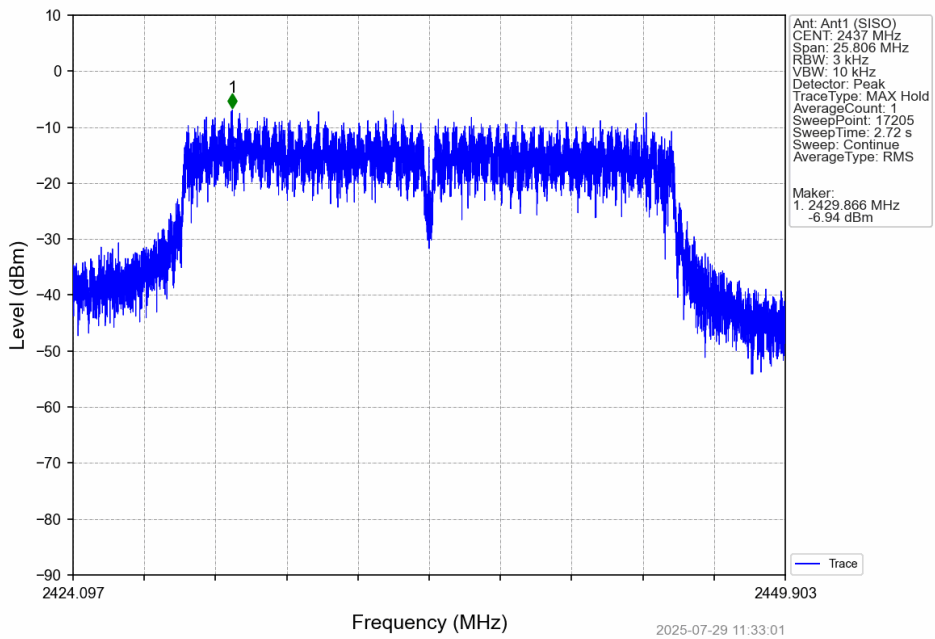
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



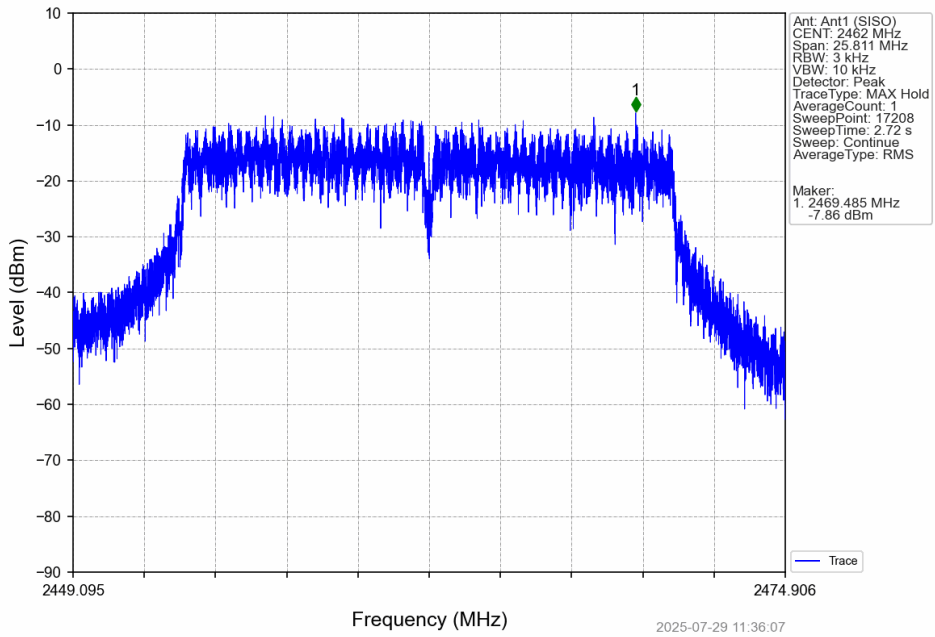
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



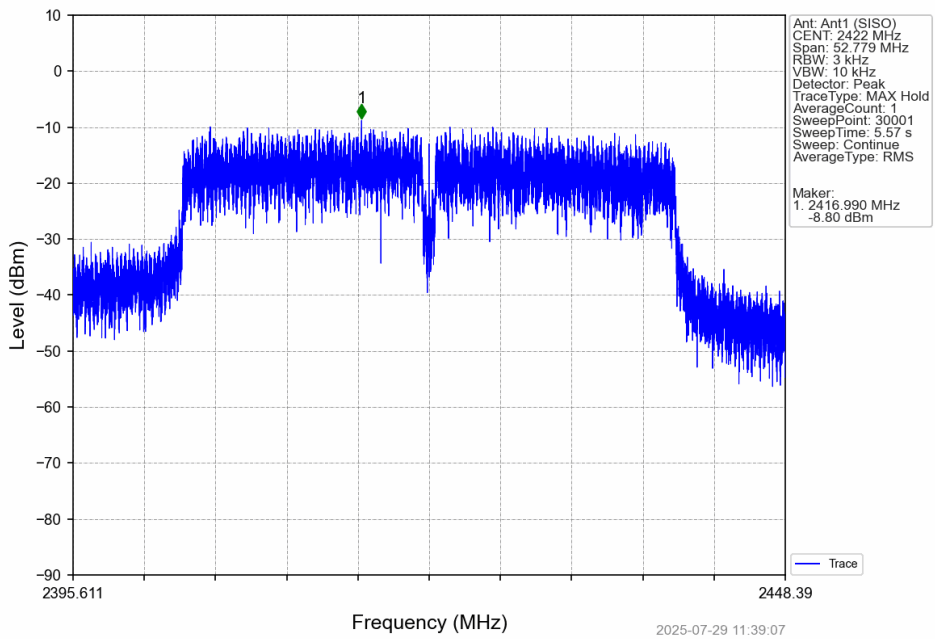
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



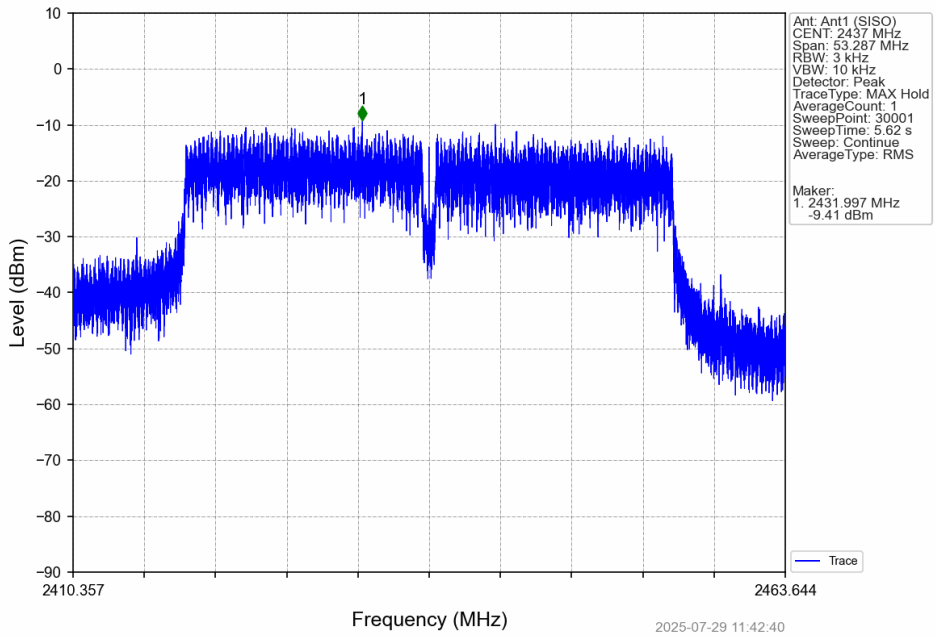
802.11n(HT20) HCH_2462MHz_Ant1 (SISO)_NTNV



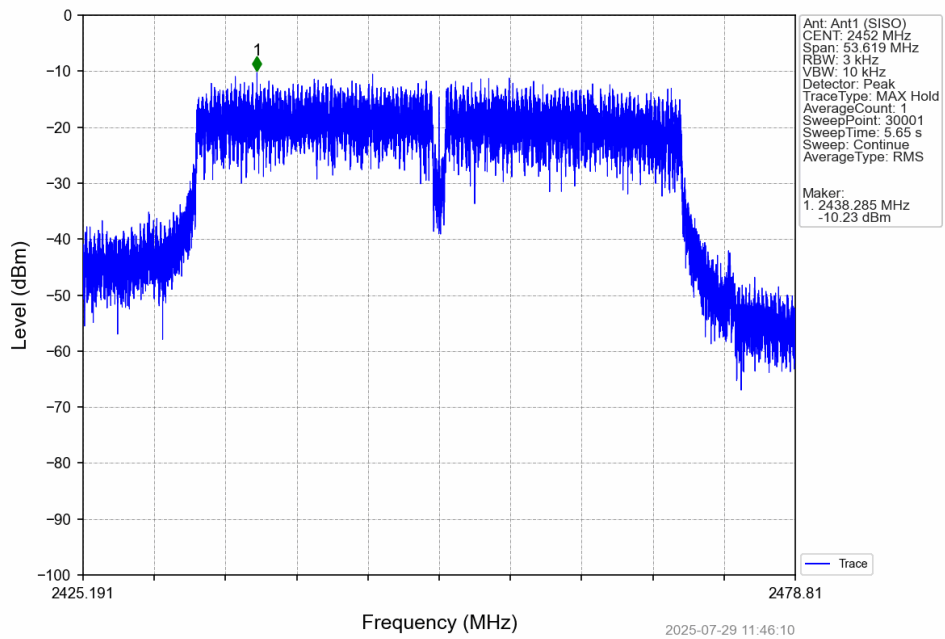
802.11n(HT40) LCH_2422MHz_Ant1 (SISO)_NTNV



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	13.64
		2437	1	12.95
		2462	1	13.06
802.11g	SISO	2412	1	9.13
		2437	1	8.68
		2462	1	7.17
802.11n (HT20)	SISO	2412	1	8.94
		2437	1	7.76
		2462	1	6.44
802.11n (HT40)	SISO	2422	1	5.95
		2437	1	5.11
		2452	1	4.36

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.

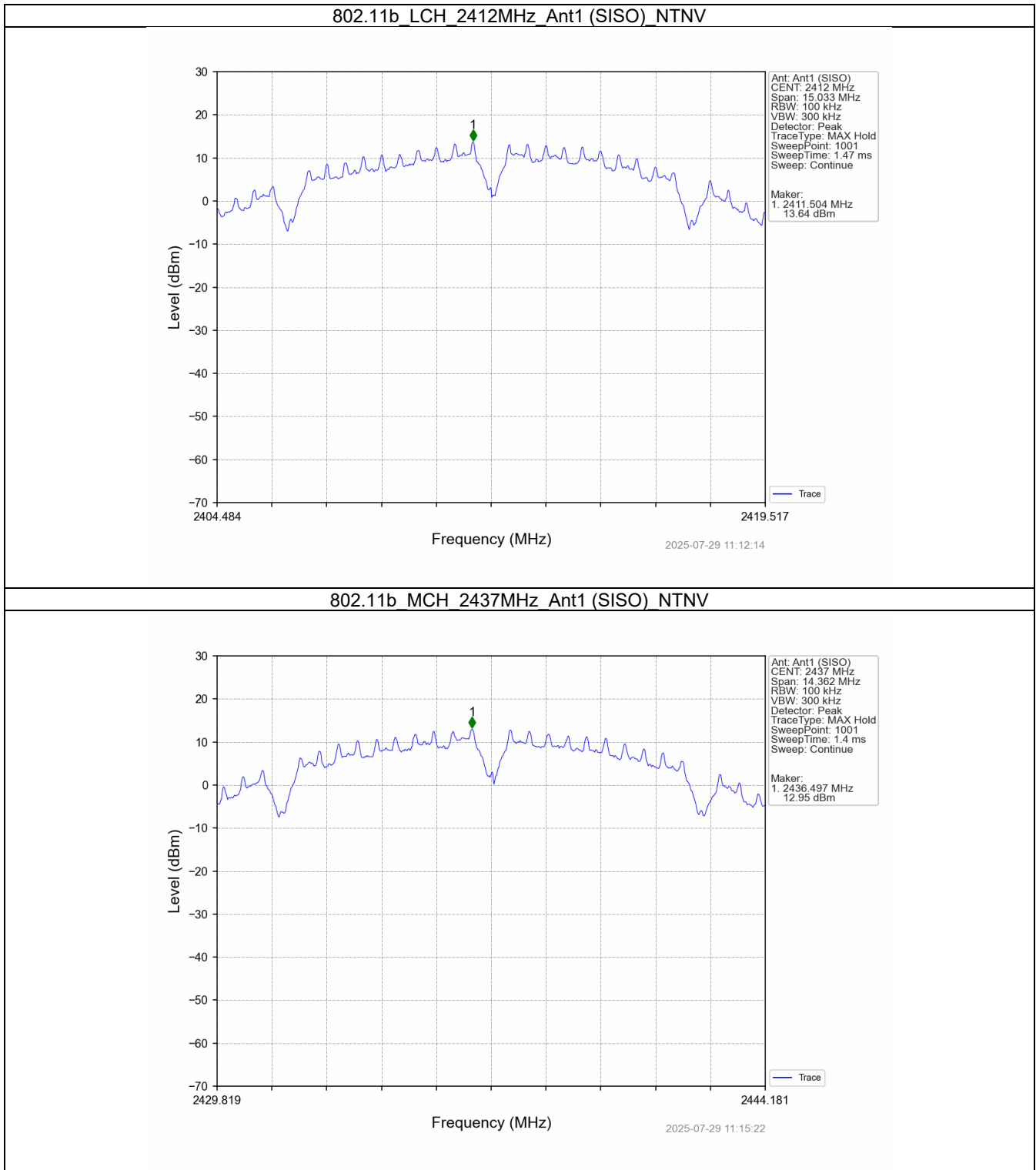
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	13.64	-6.36	Pass
		2437	1	13.64	-6.36	Pass
		2462	1	13.64	-6.36	Pass
802.11g	SISO	2412	1	9.13	-10.87	Pass
		2437	1	9.13	-10.87	Pass
		2462	1	9.13	-10.87	Pass
802.11n (HT20)	SISO	2412	1	8.94	-11.06	Pass
		2437	1	8.94	-11.06	Pass
		2462	1	8.94	-11.06	Pass
802.11n (HT40)	SISO	2422	1	5.95	-14.05	Pass
		2437	1	5.95	-14.05	Pass
		2452	1	5.95	-14.05	Pass

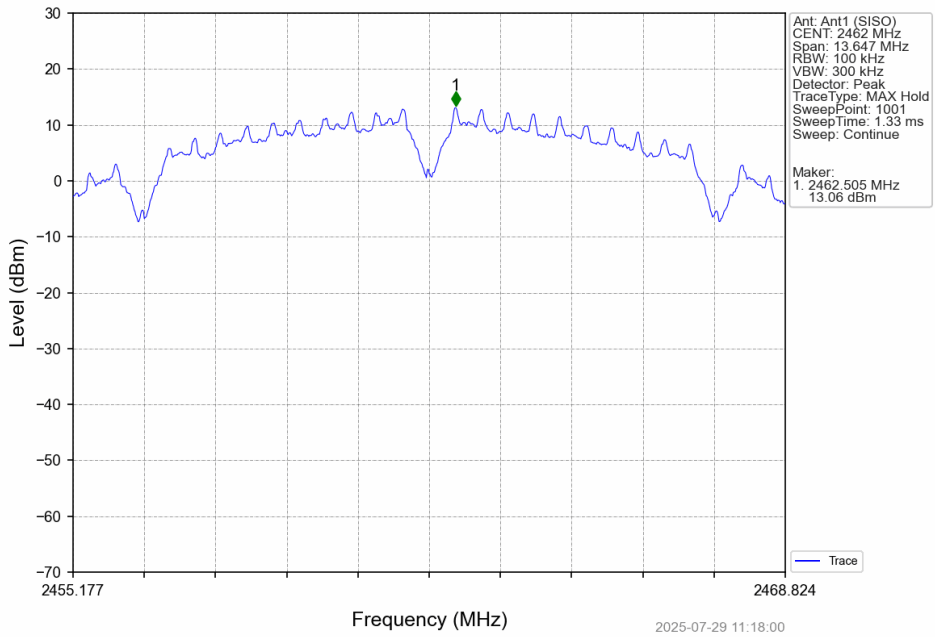
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.2 Test Graph

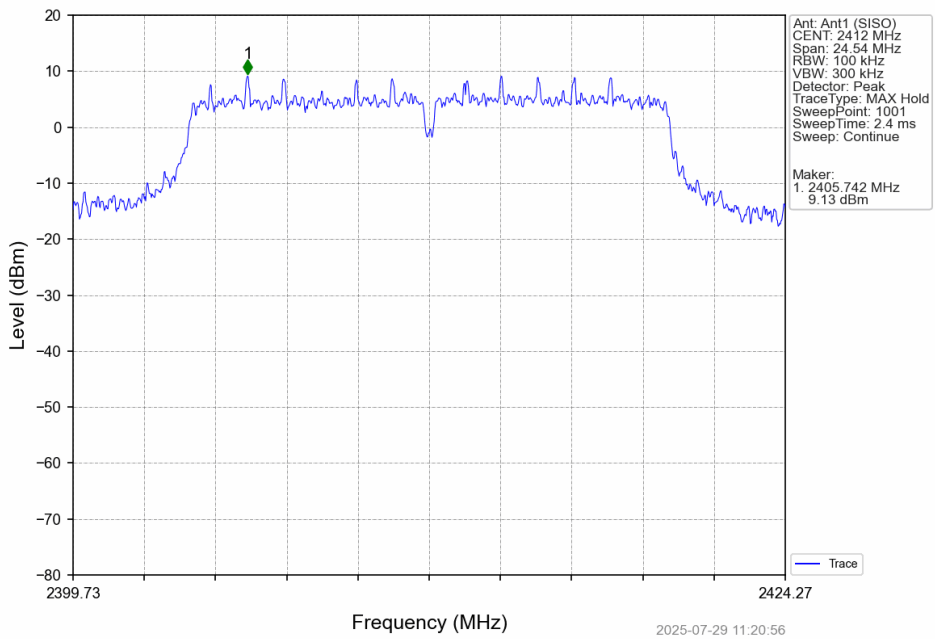
5.2.1 Ref



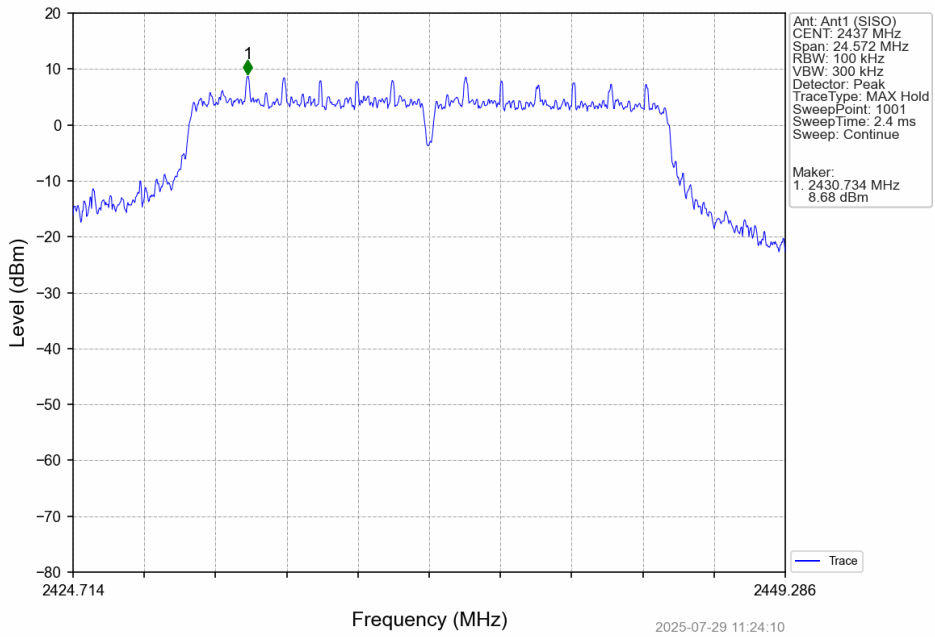
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



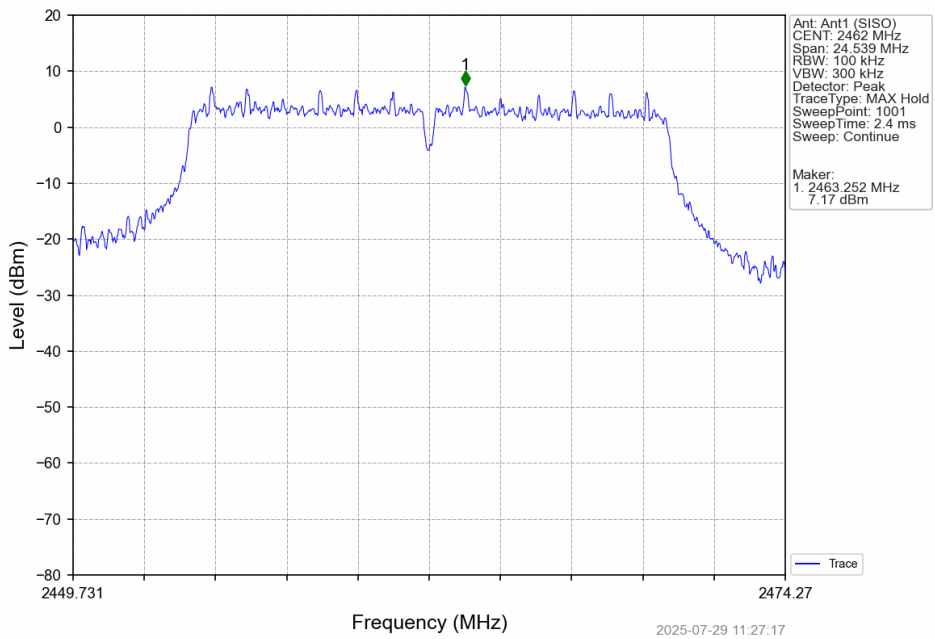
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



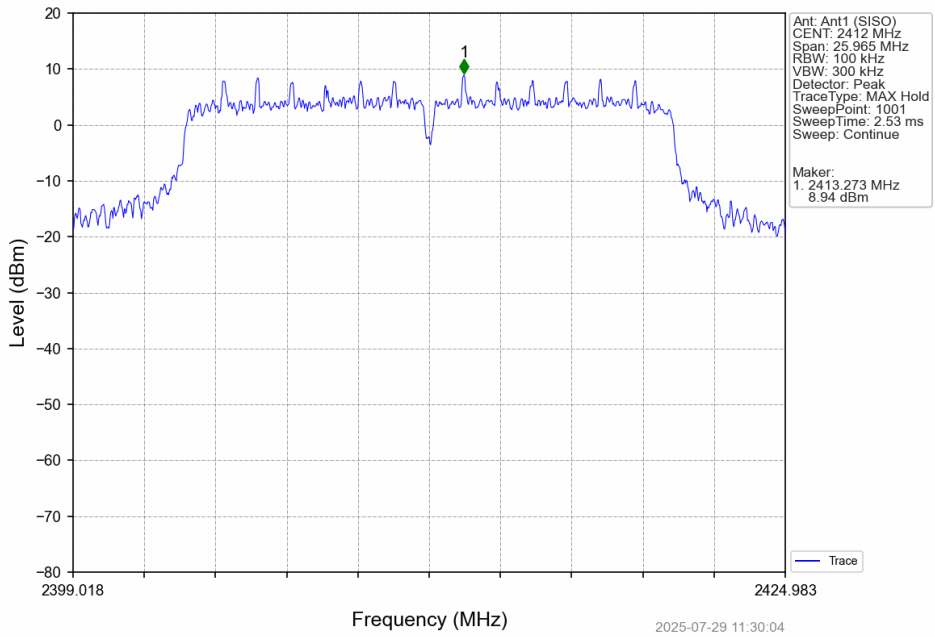
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



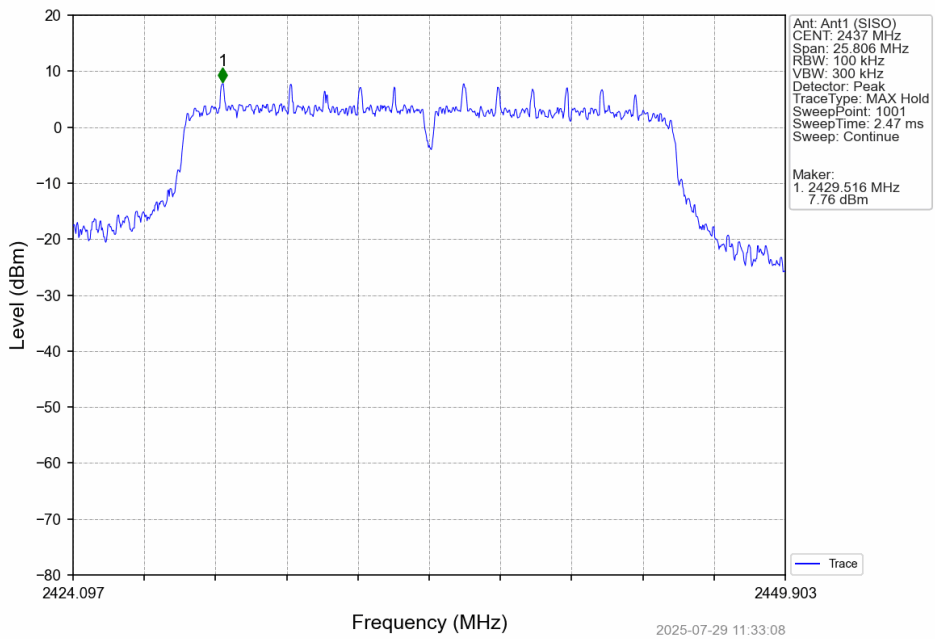
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



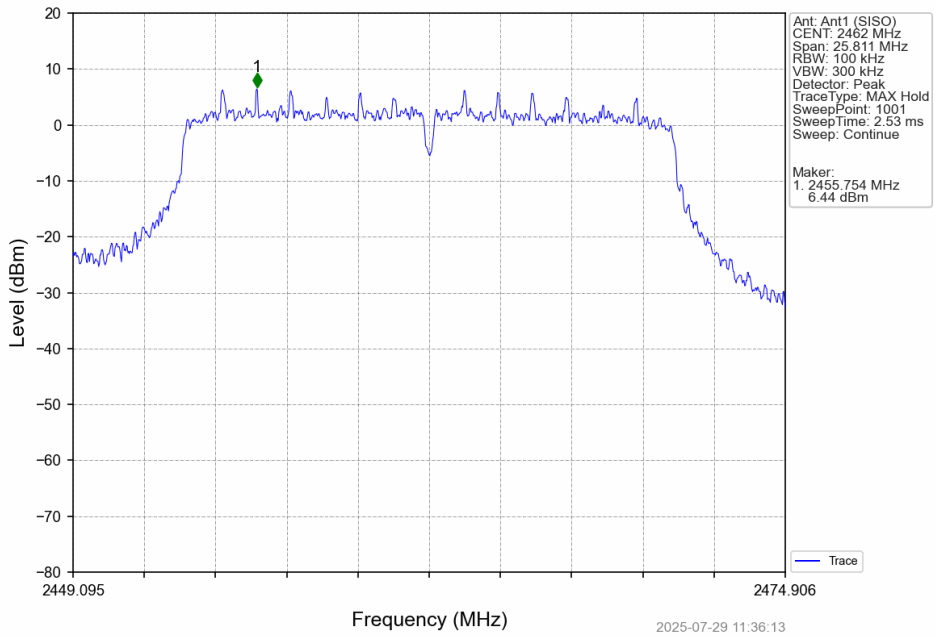
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



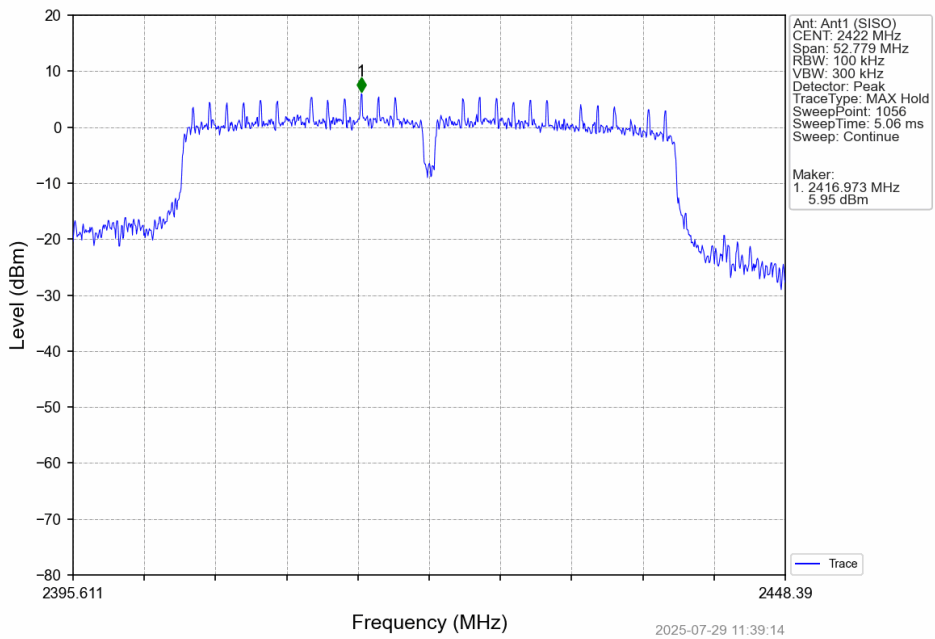
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



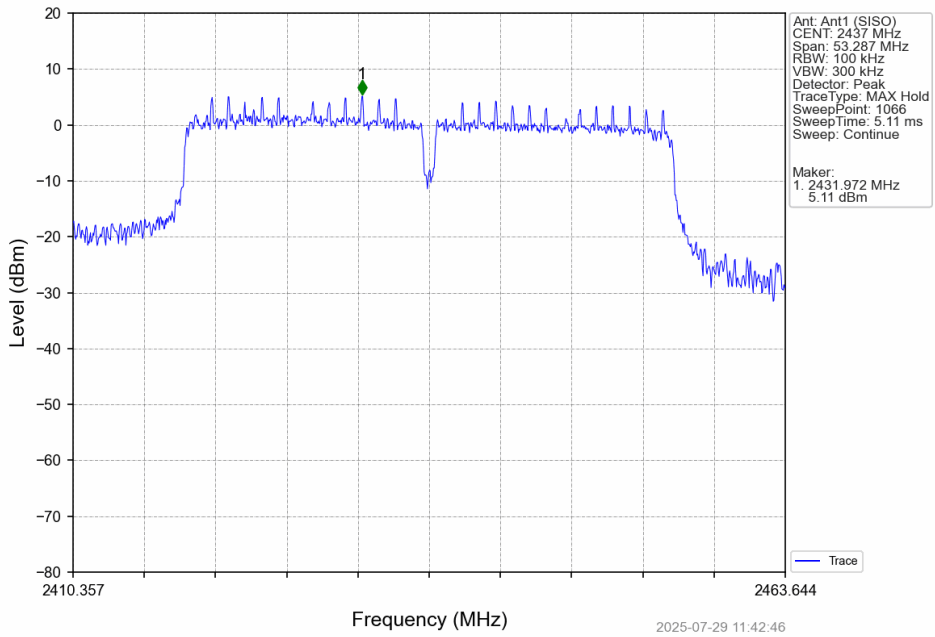
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



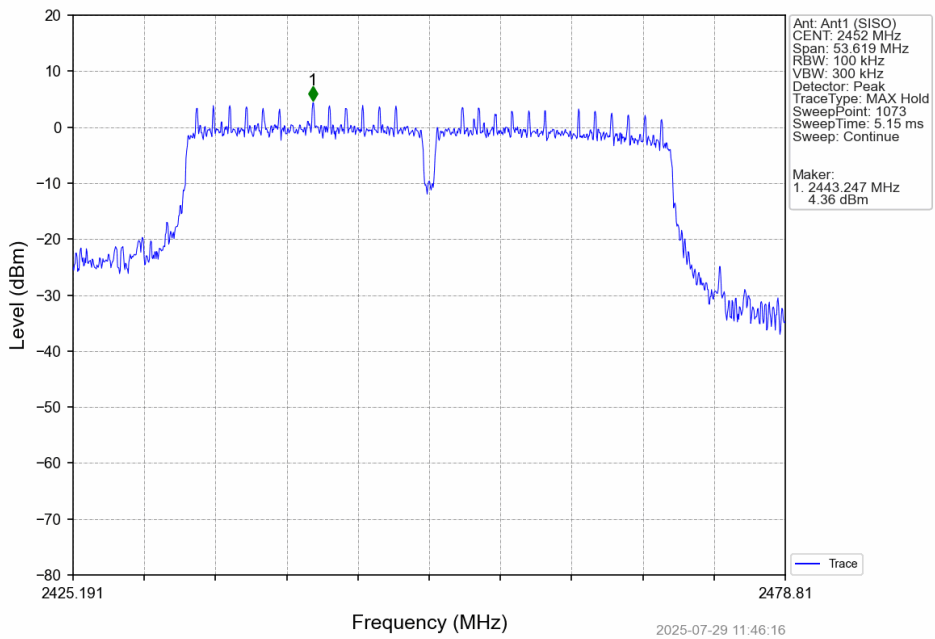
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



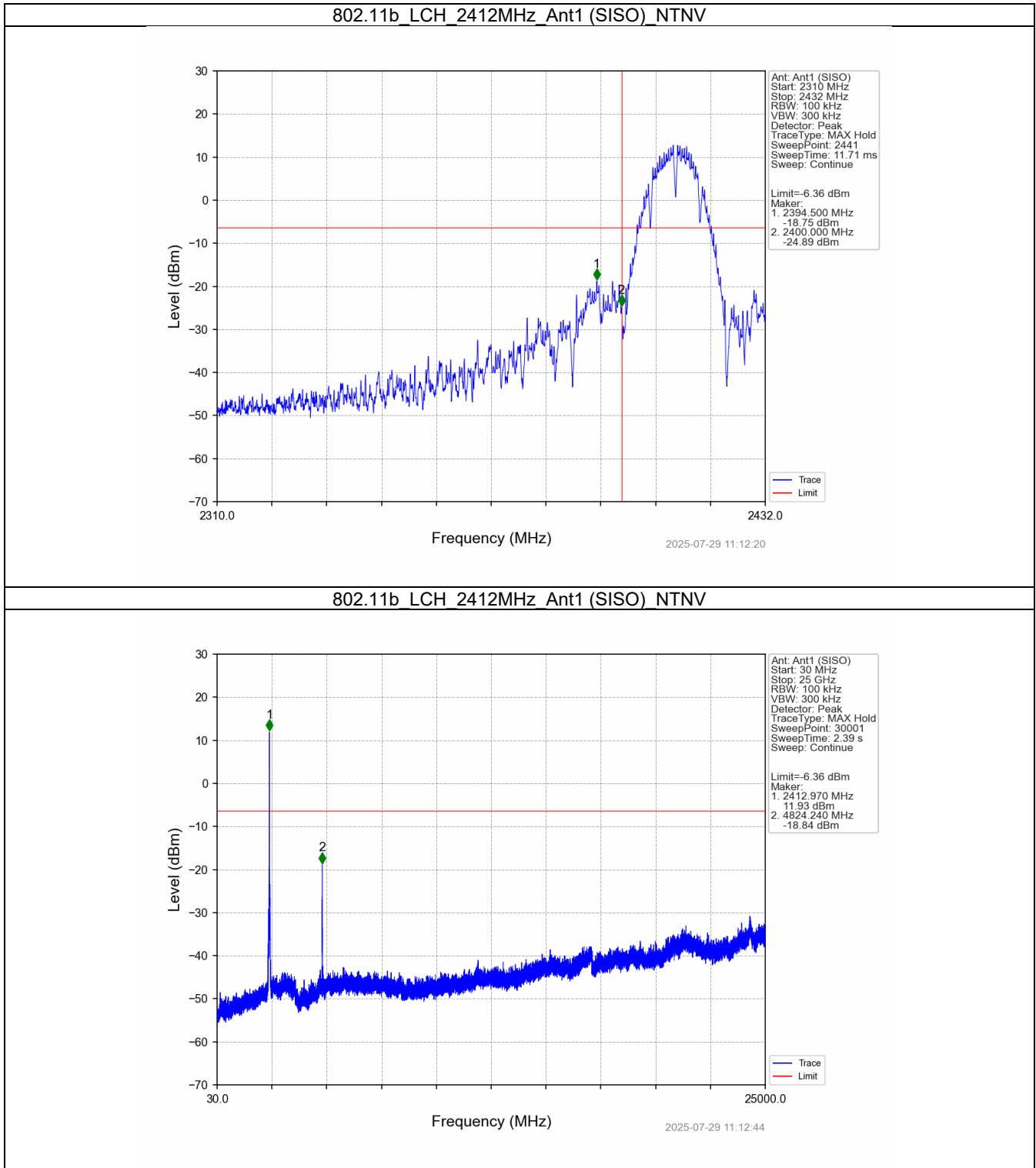
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



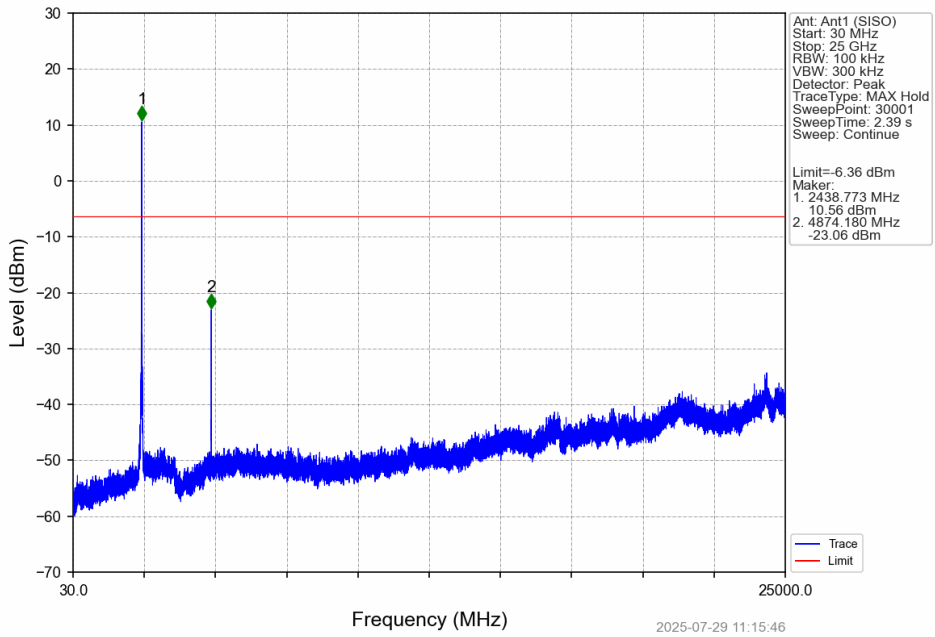
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



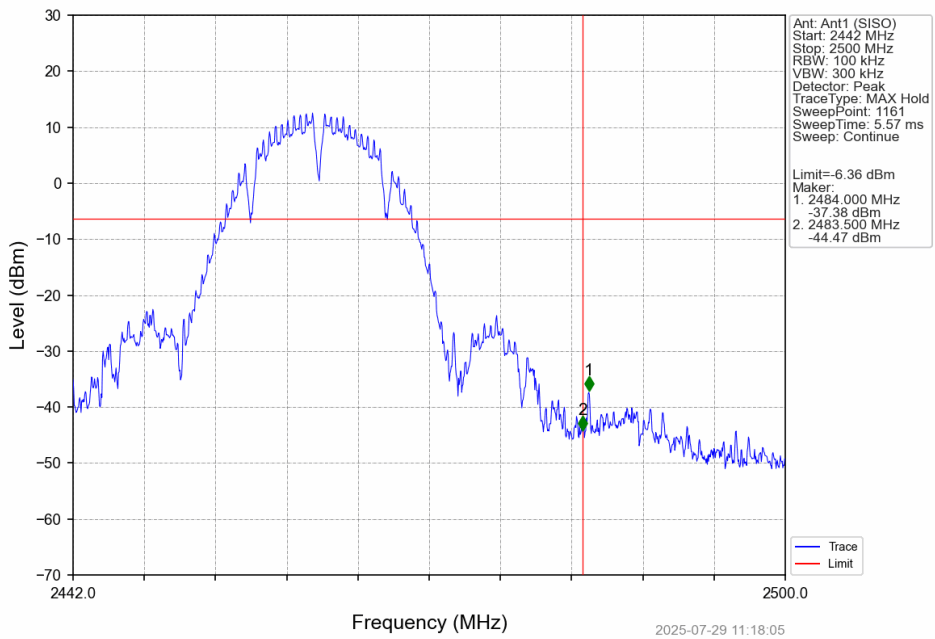
5.2.2 CSE



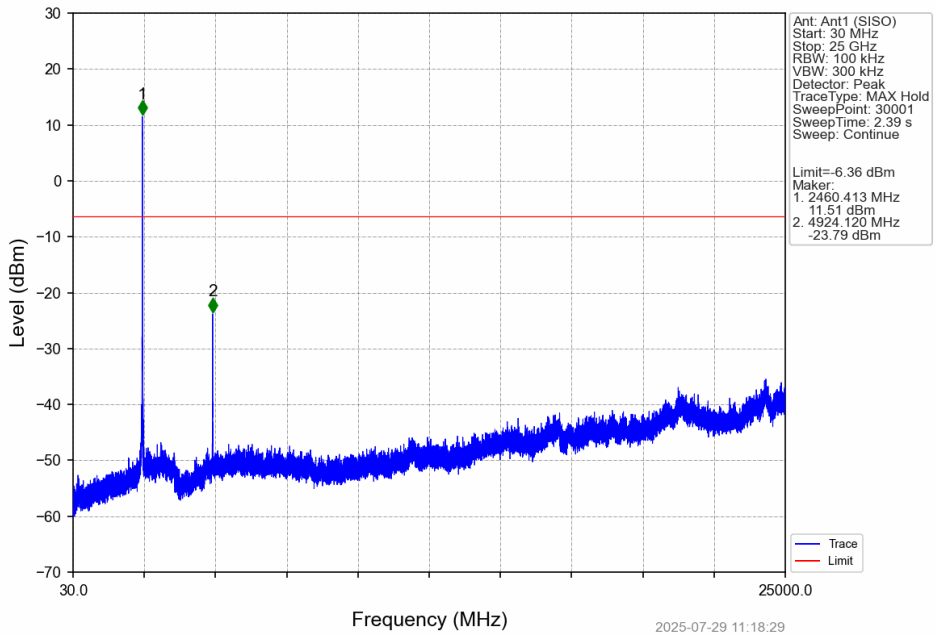
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



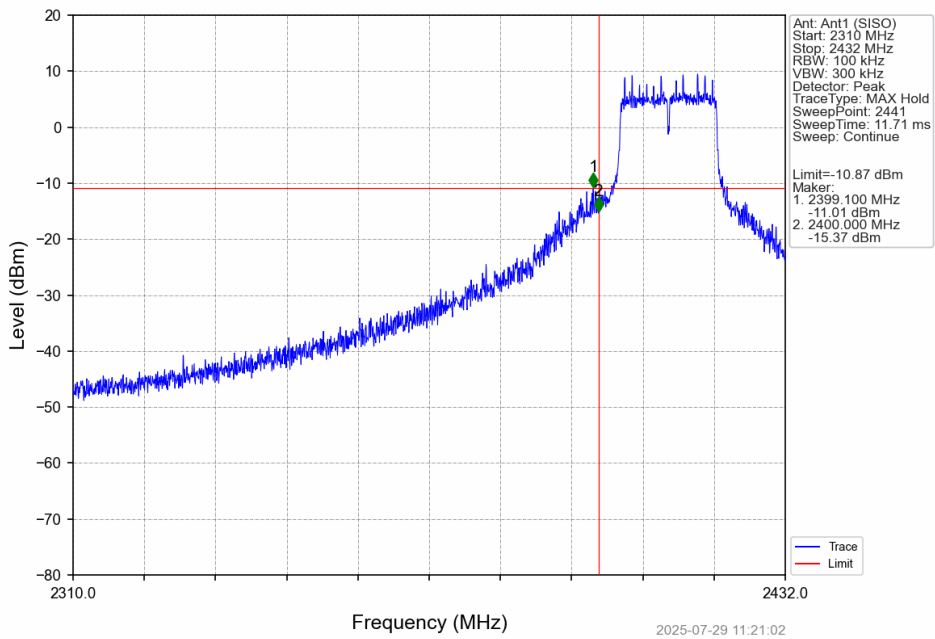
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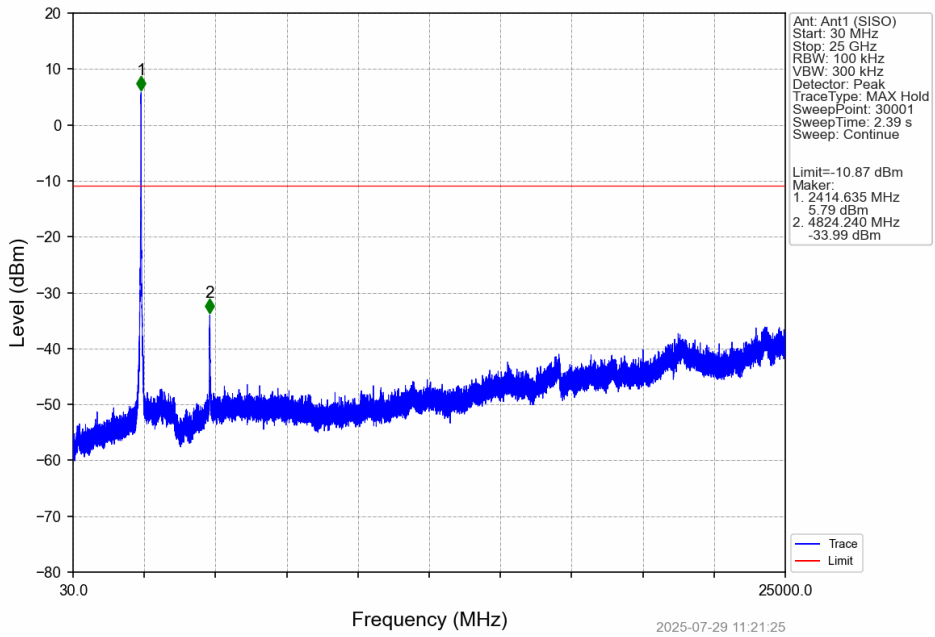
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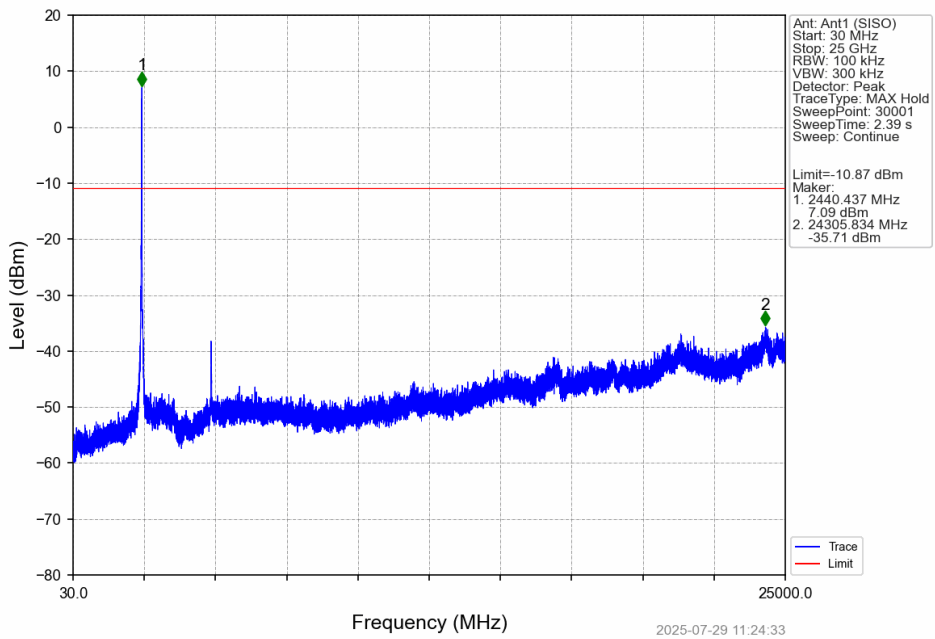
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



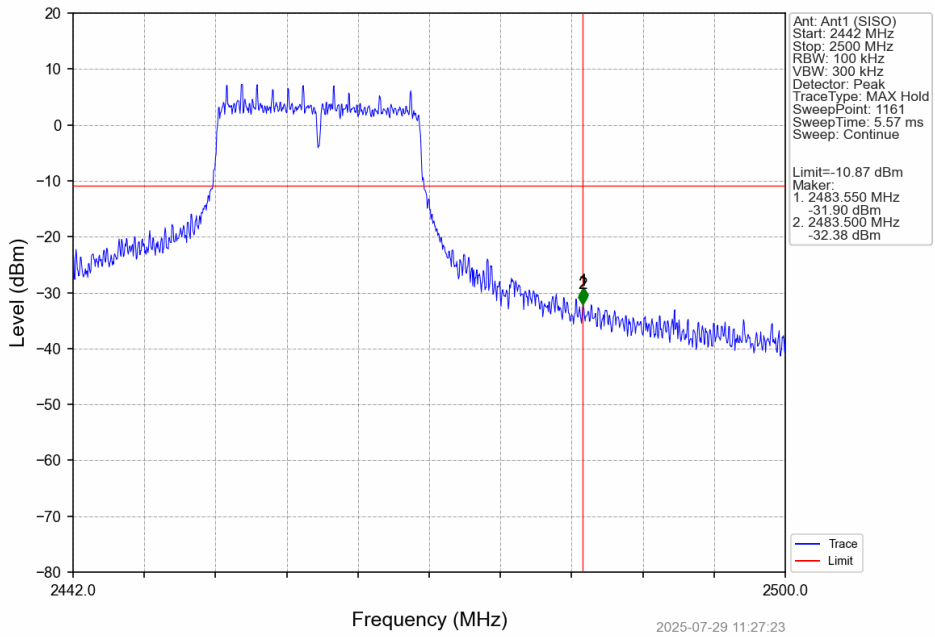
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



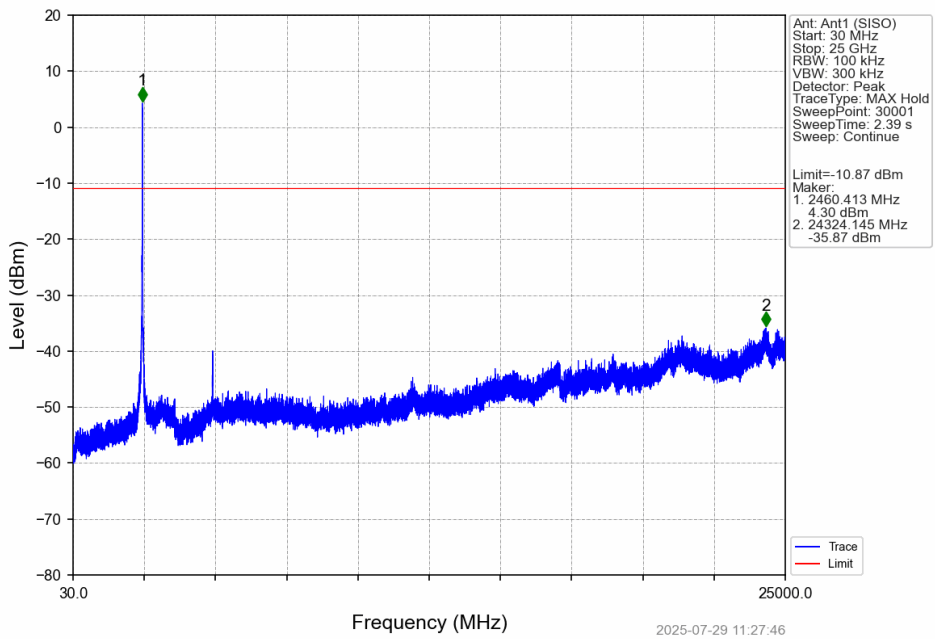
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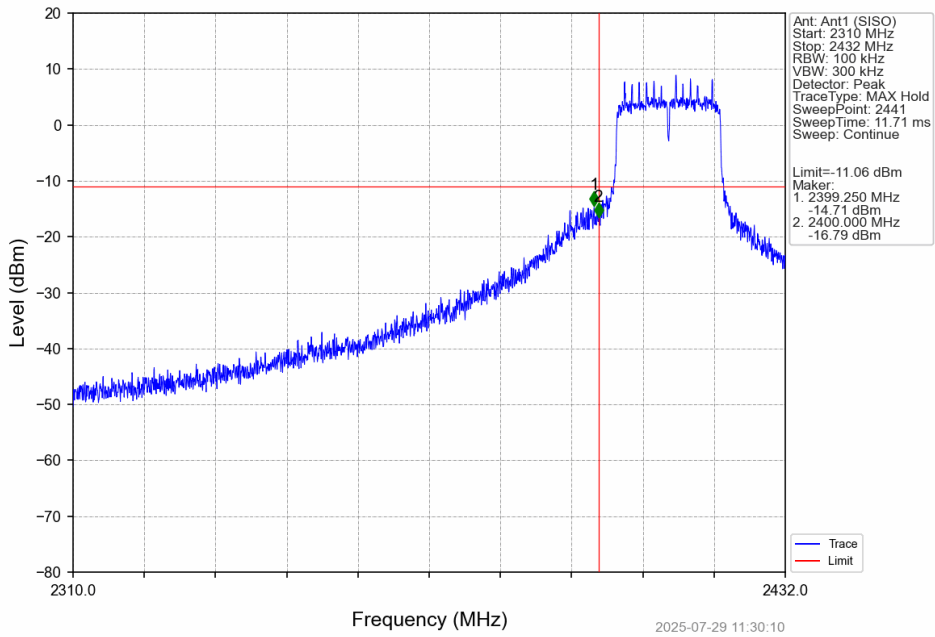
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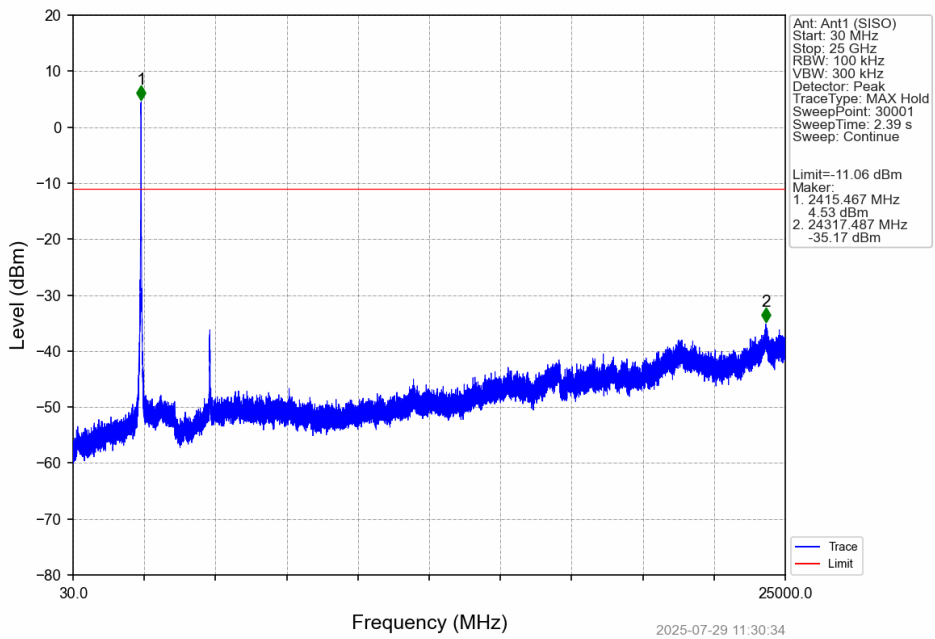
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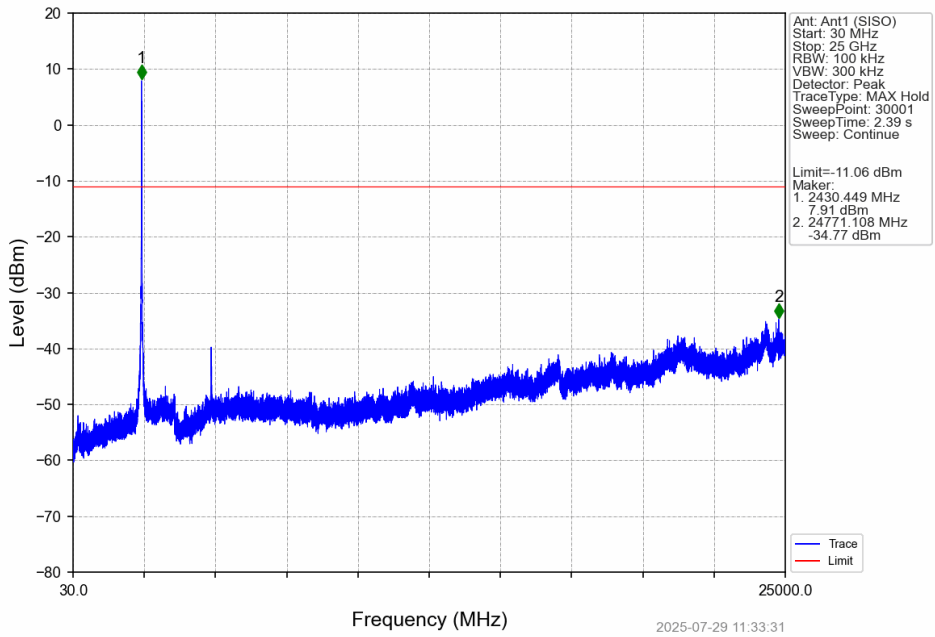
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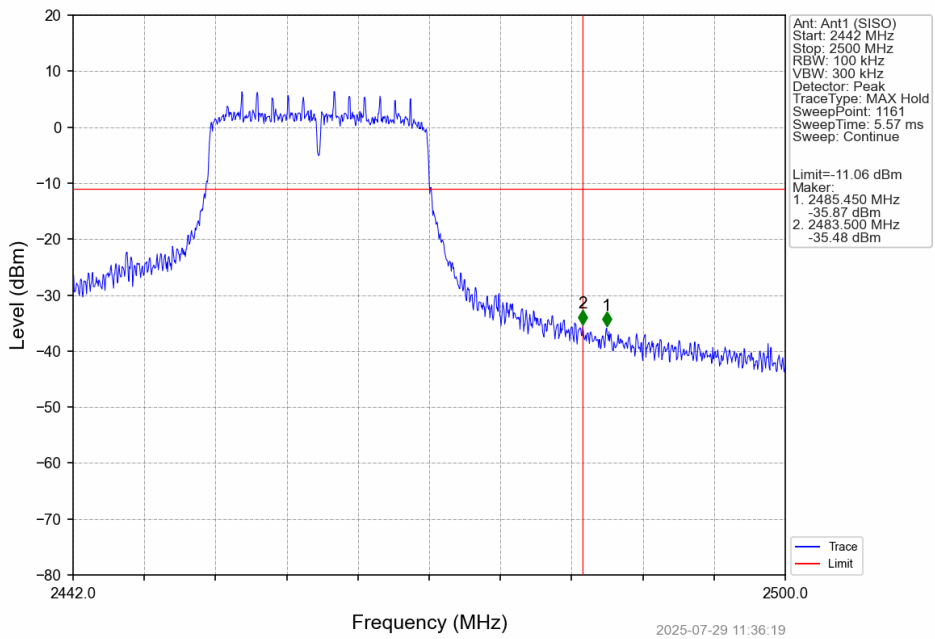
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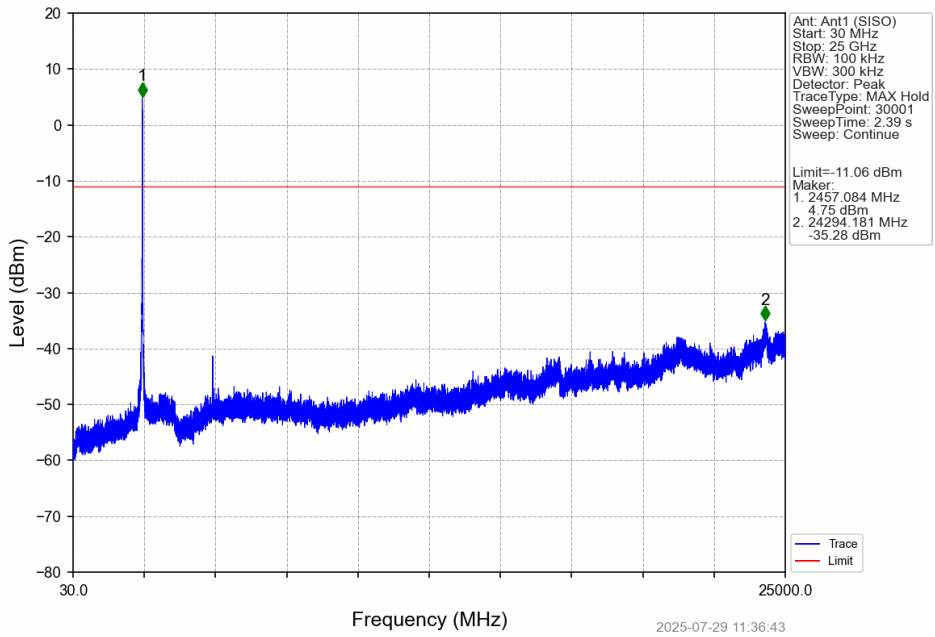
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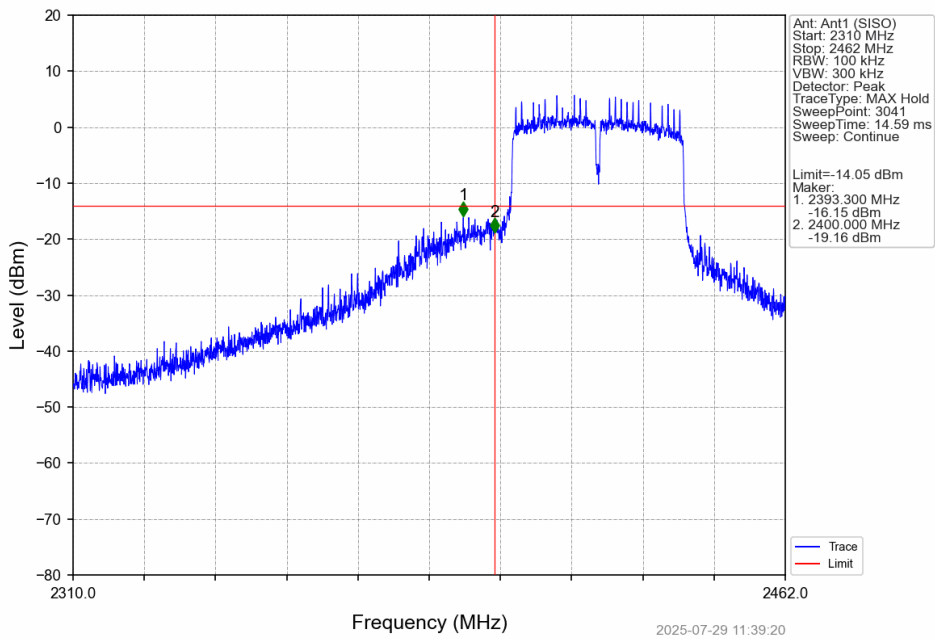
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



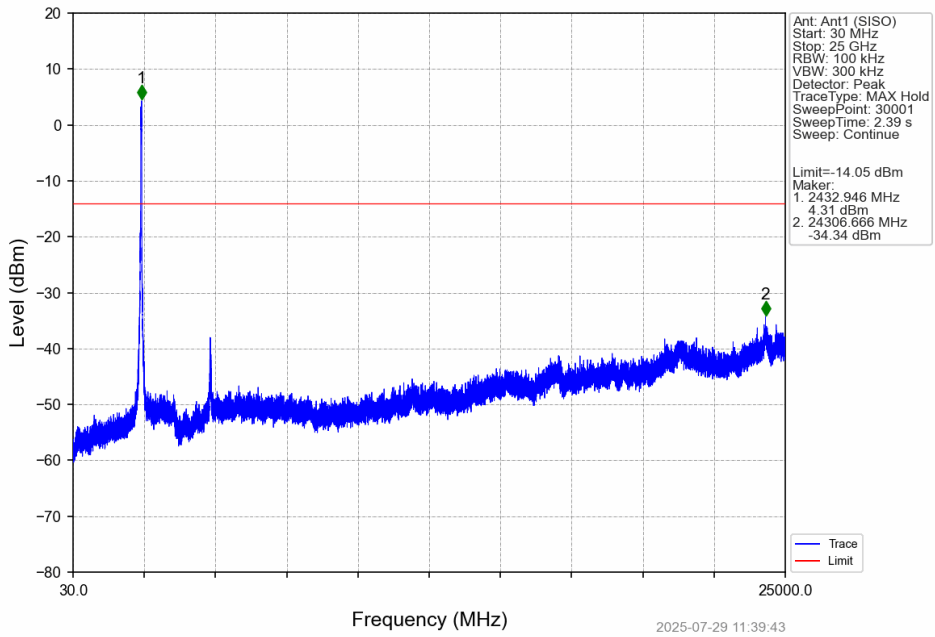
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



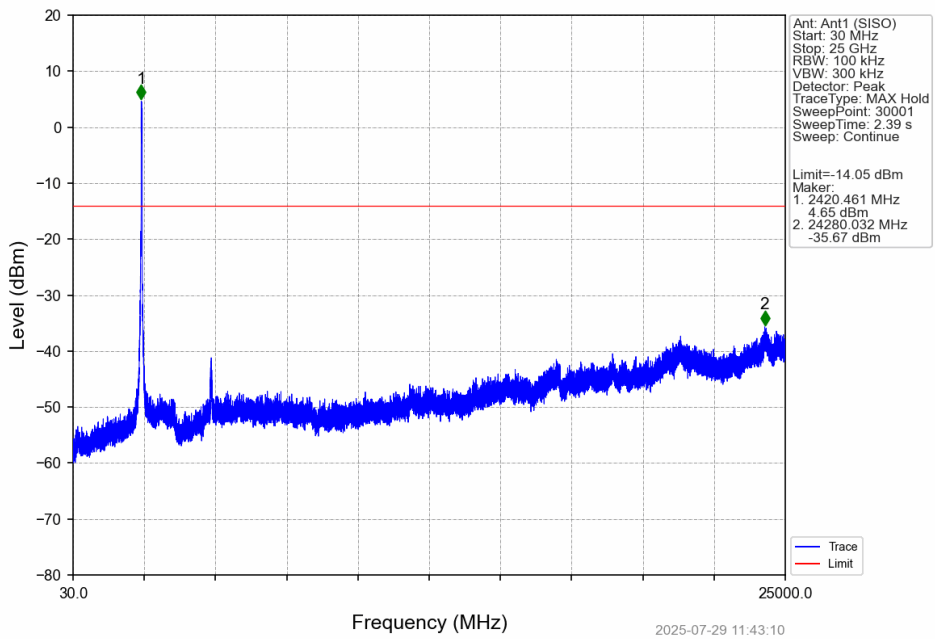
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



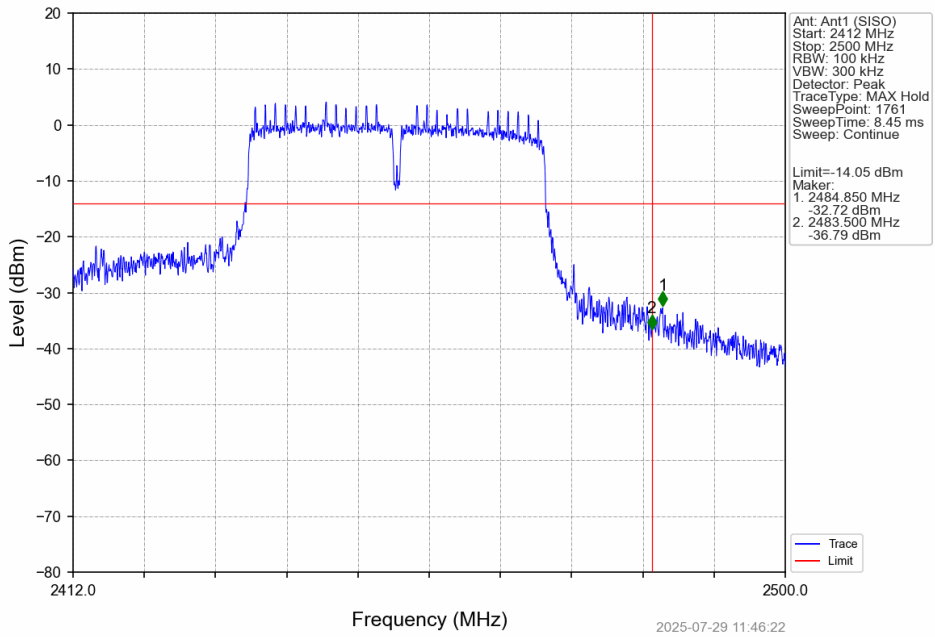
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTV



802.11n(HT40) HCH_2452MHz_Ant1 (SISO) NTV

