ANNEX F TEST DATA

For

Project No.:	8235EU011403W
Client:	Solaborate Inc.
Product Description:	RoomSign
Model No.:	HC2183T
FCC ID:	2AW3M-HC2183T
Technology:	WiFi 2.4G
Test Engineer:	Mikey zhu
Test Date:	2024-11-19

Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Unwanted Emissions In Non-restricted Frequency Bands	Pass

1. Duty Cycle

1.1 Test Result

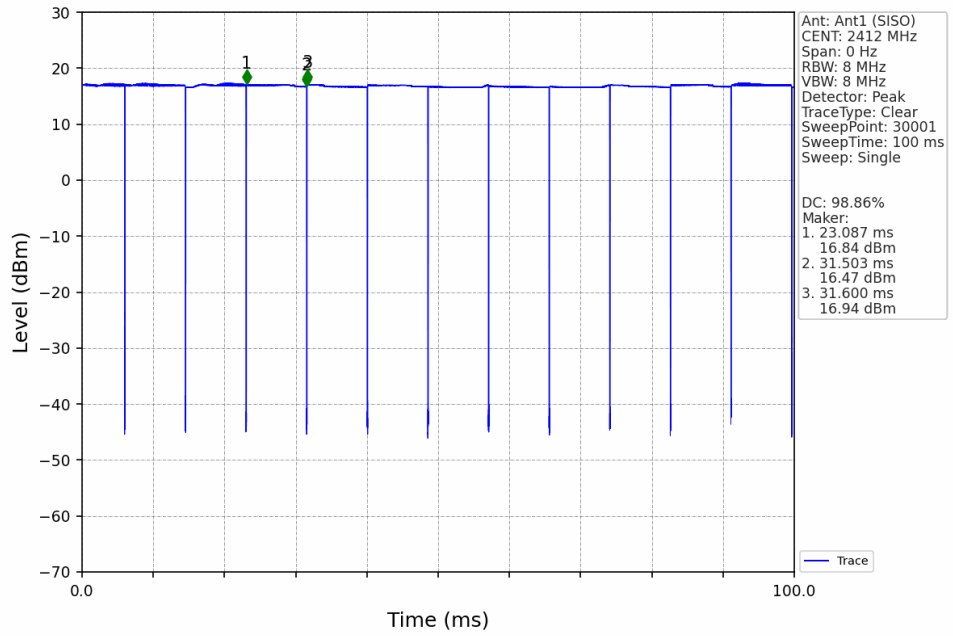
1.1.1 Ant1

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	8.416	8.513	98.86	0.05	0.04
		2437	8.417	8.514	98.86	0.05	0.04
		2462	8.416	8.513	98.86	0.05	0.04
802.11g	SISO	2412	1.398	1.500	93.20	0.31	0.03
		2437	1.397	1.500	93.13	0.31	0.07
		2462	1.397	1.499	93.20	0.31	0.04
802.11n (HT20)	SISO	2412	1.310	1.412	92.78	0.33	0.06
		2437	1.310	1.411	92.84	0.32	0.03
		2462	1.309	1.411	92.77	0.33	0.03

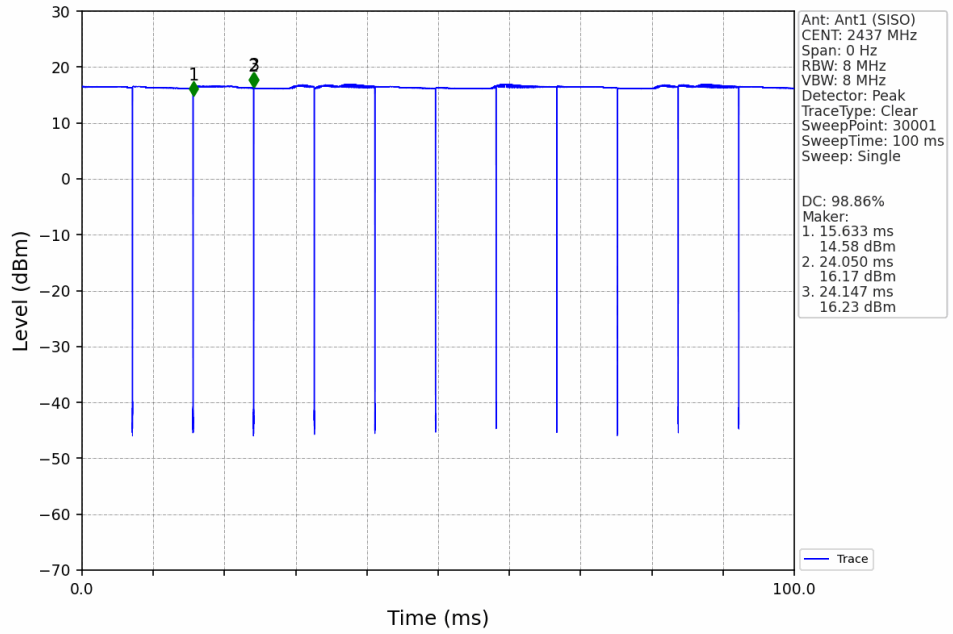
1.2 Test Graph

1.2.1 Ant1

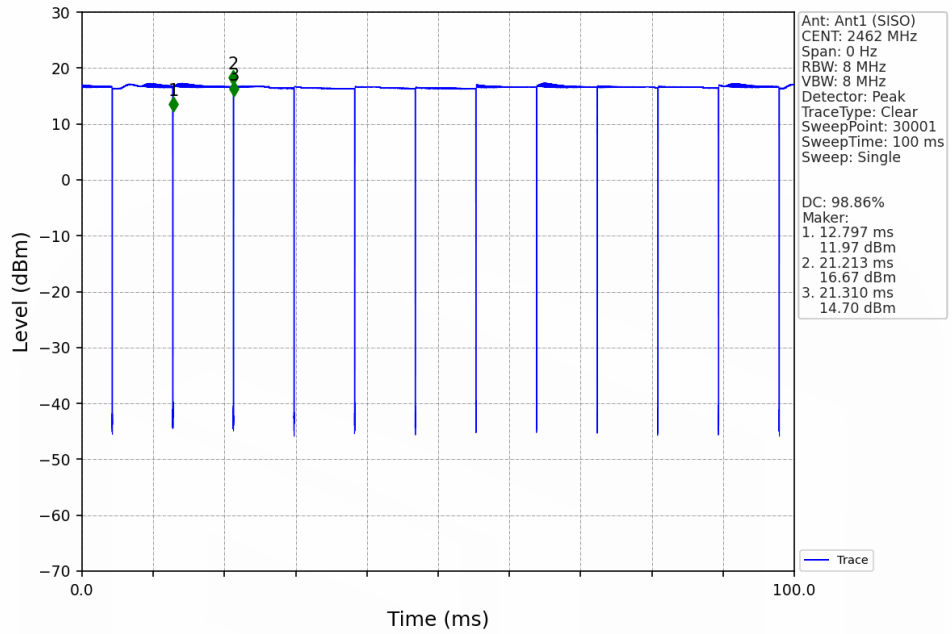
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



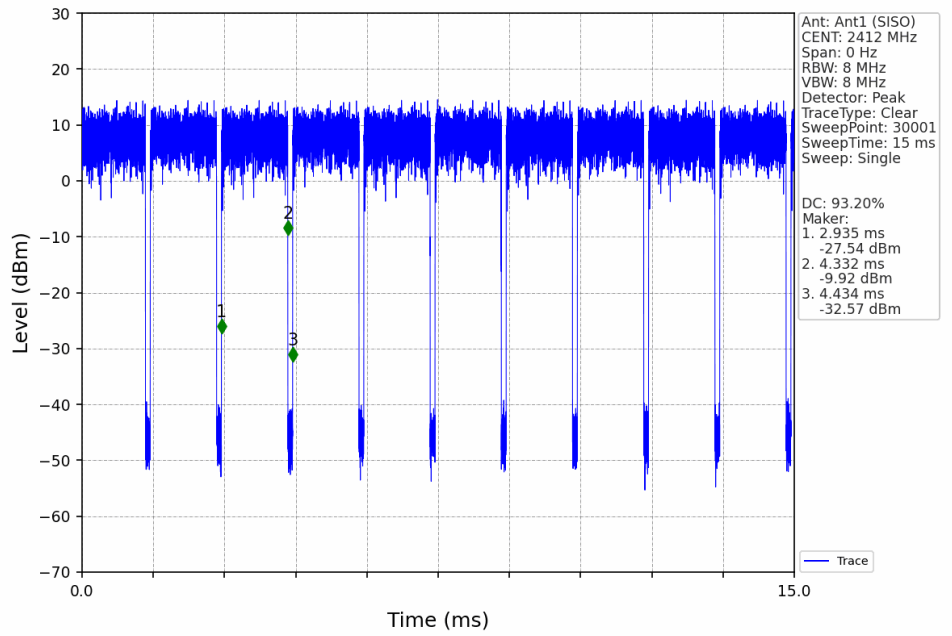
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



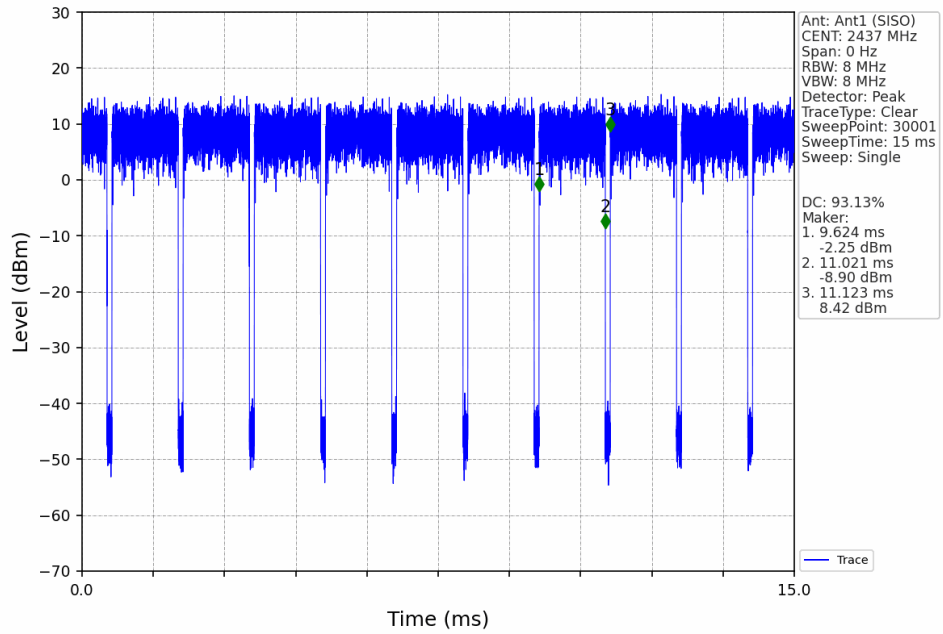
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



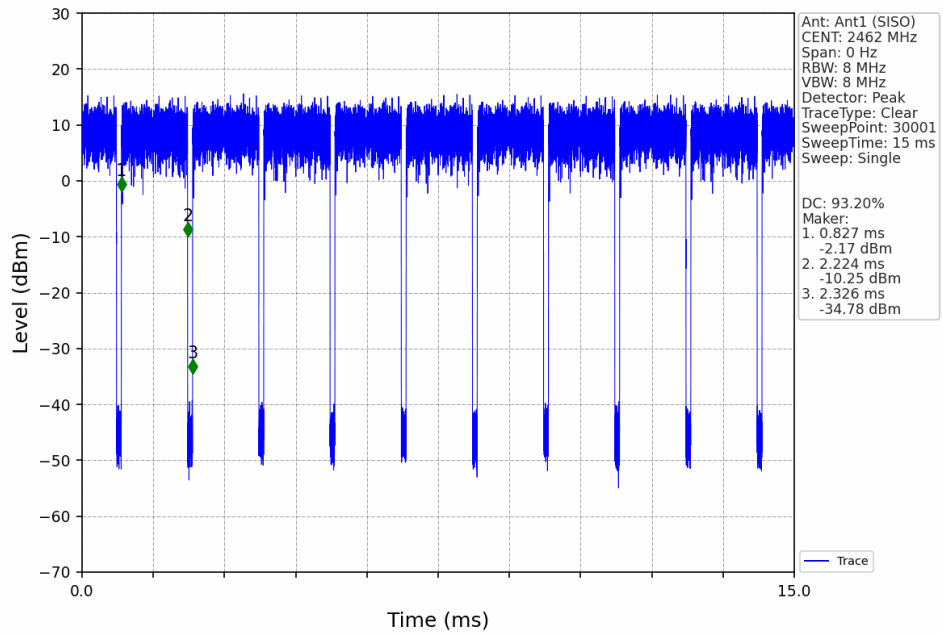
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



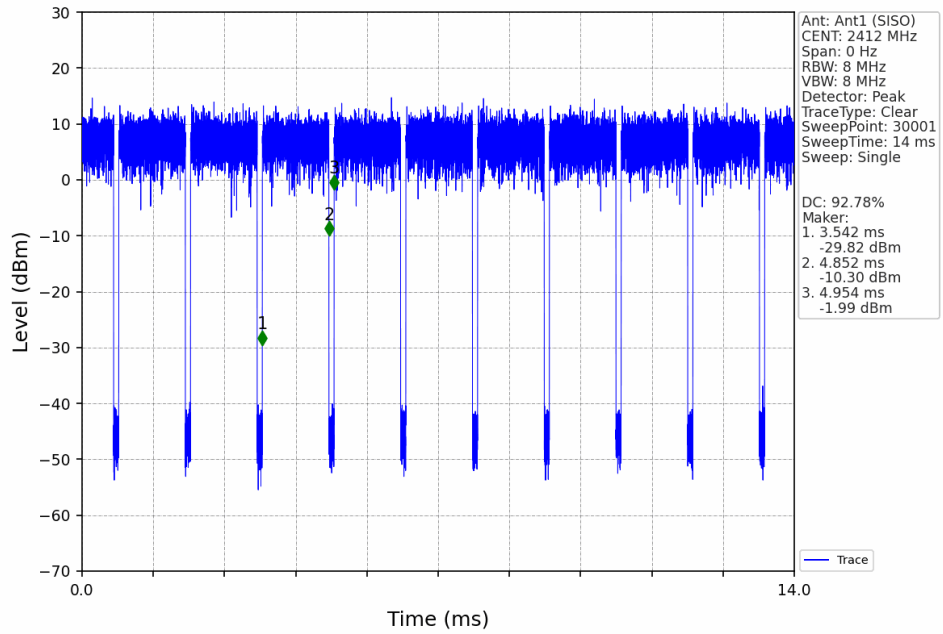
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



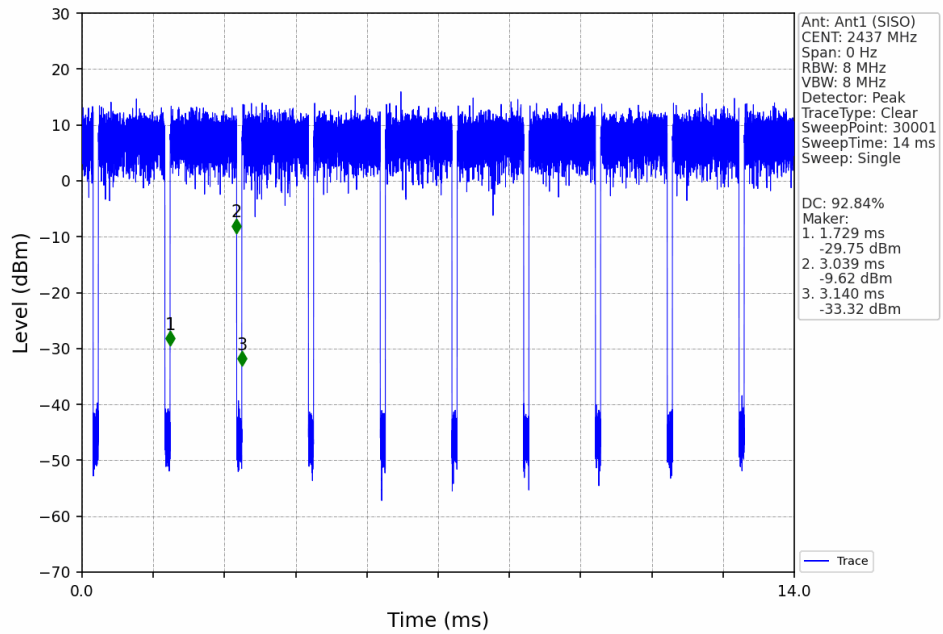
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



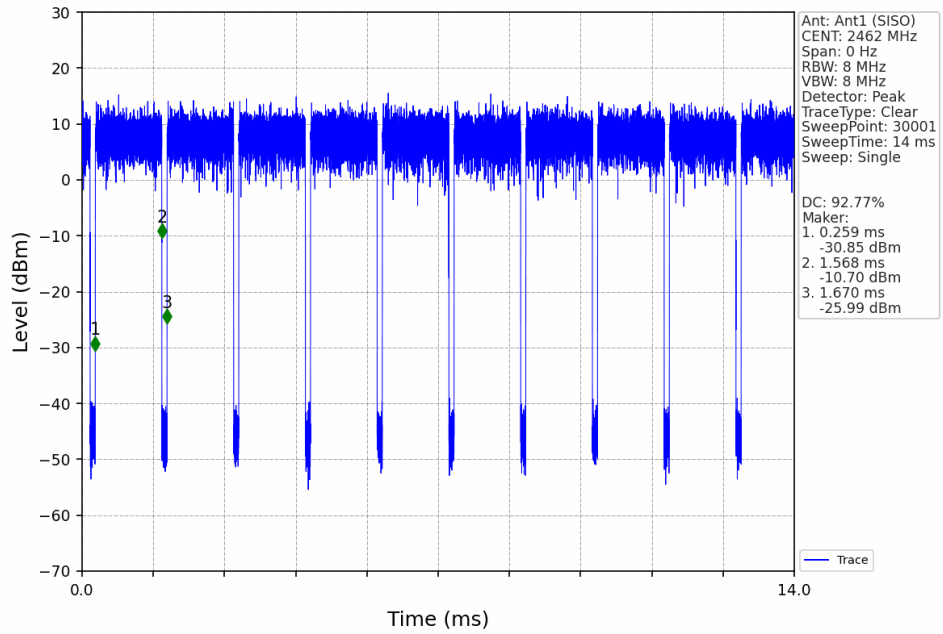
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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	11.149	/	Pass
		2437	1	10.849	/	Pass
		2462	1	10.934	/	Pass
802.11g	SISO	2412	1	17.713	/	Pass
		2437	1	17.686	/	Pass
		2462	1	17.491	/	Pass
802.11n (HT20)	SISO	2412	1	18.491	/	Pass
		2437	1	18.516	/	Pass
		2462	1	18.311	/	Pass

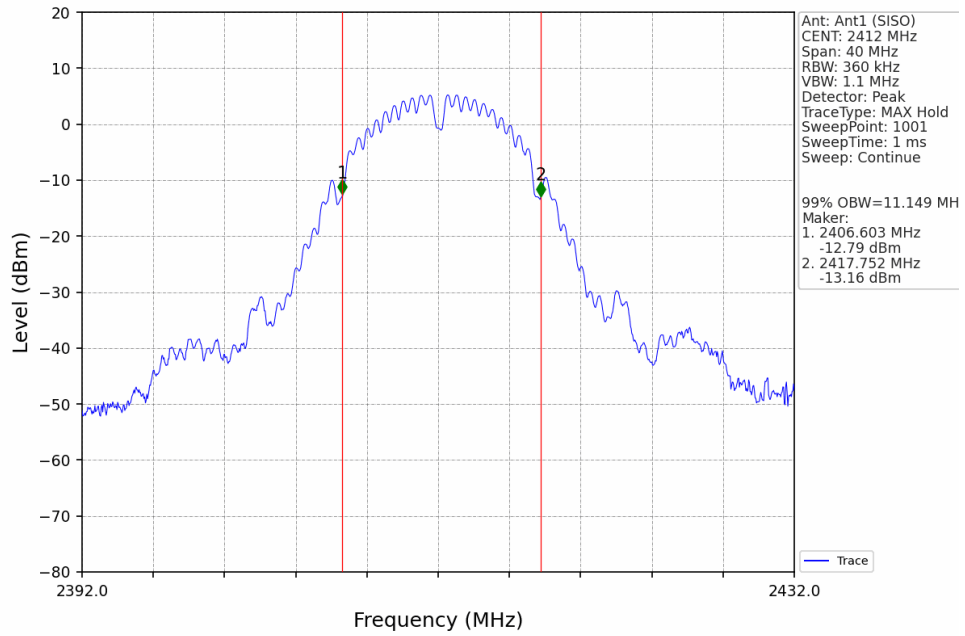
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.101	>=0.5	Pass
		2437	1	8.127	>=0.5	Pass
		2462	1	8.162	>=0.5	Pass
802.11g	SISO	2412	1	14.592	>=0.5	Pass
		2437	1	14.480	>=0.5	Pass
		2462	1	11.772	>=0.5	Pass
802.11n (HT20)	SISO	2412	1	15.584	>=0.5	Pass
		2437	1	15.600	>=0.5	Pass
		2462	1	13.703	>=0.5	Pass

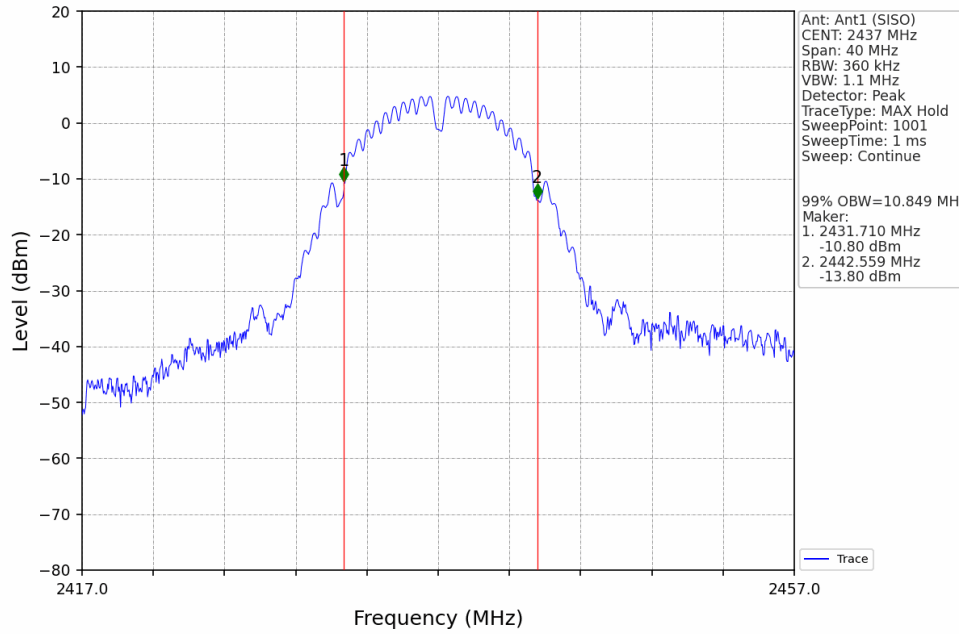
2.2 Test Graph

2.2.1 OBW

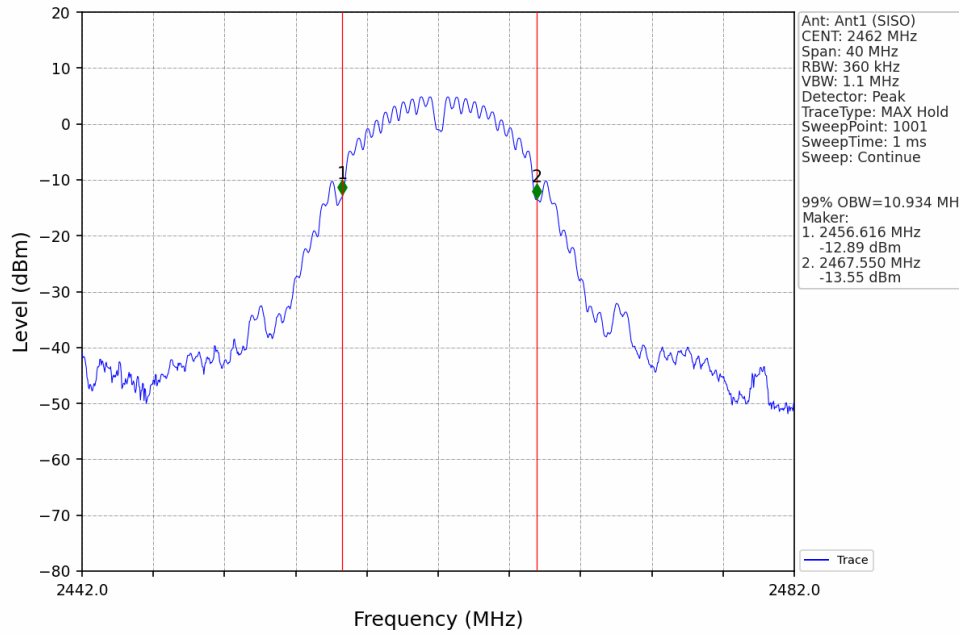
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



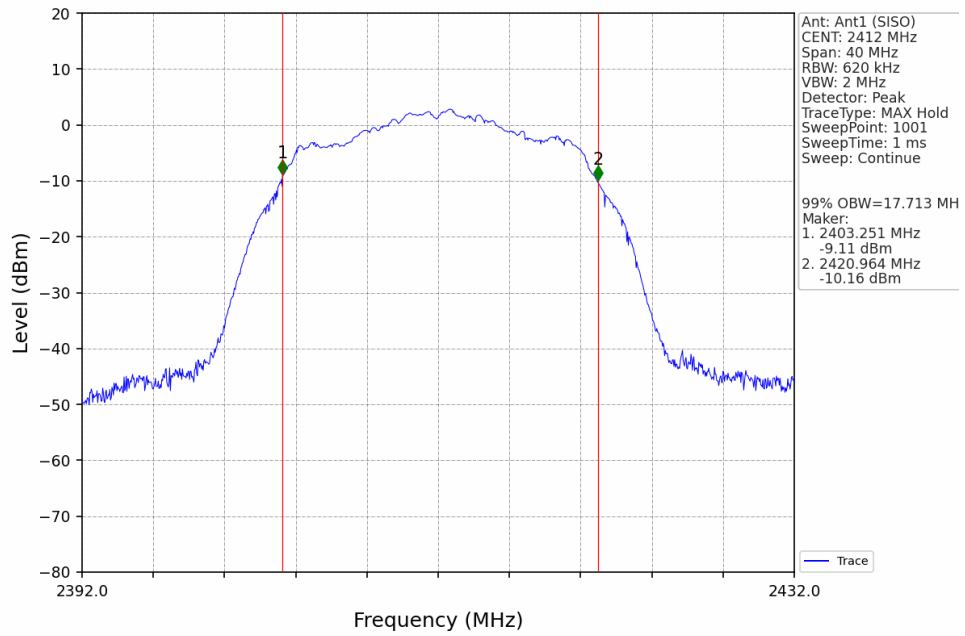
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



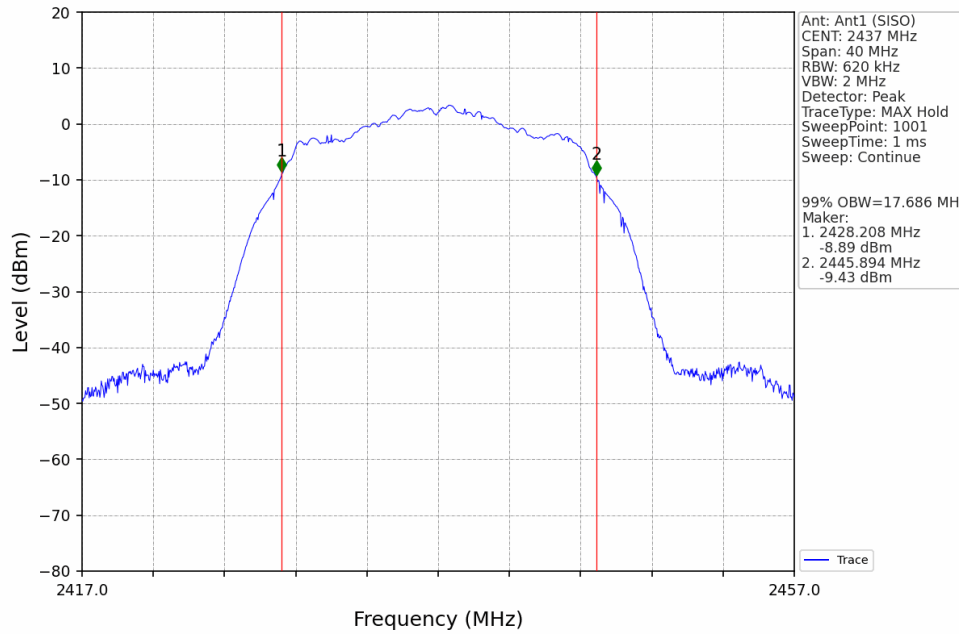
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



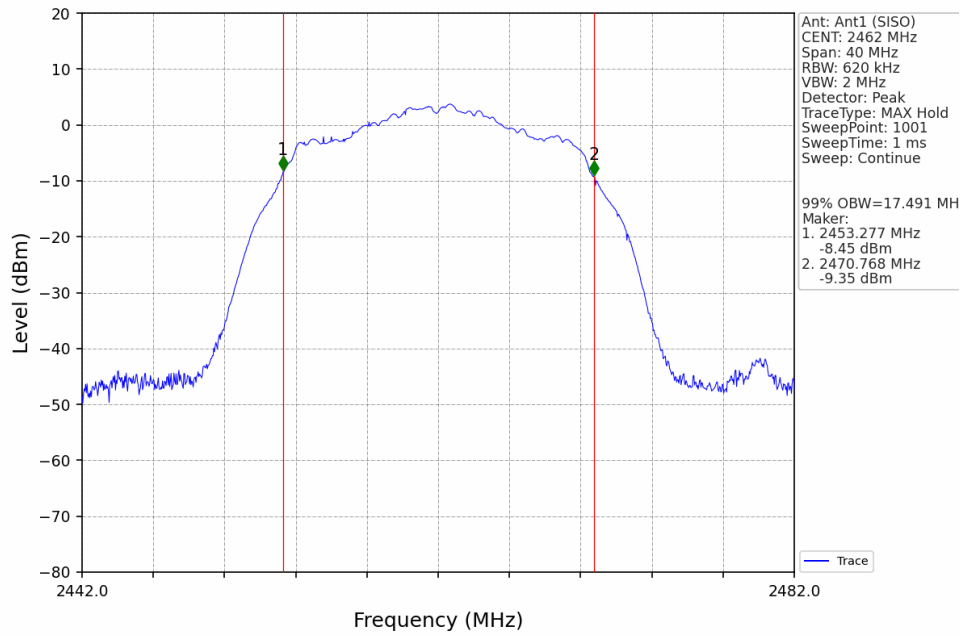
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



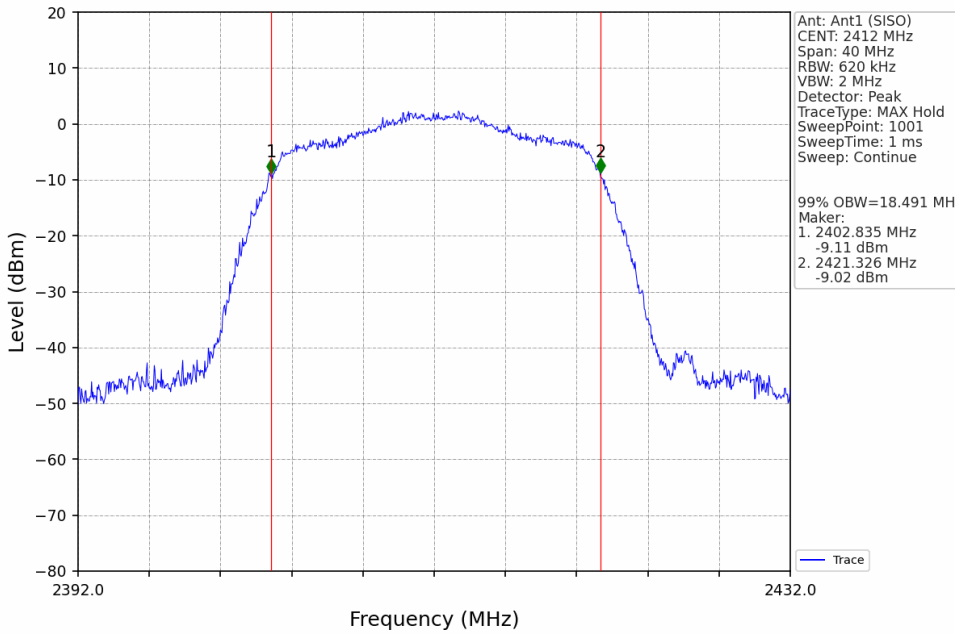
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



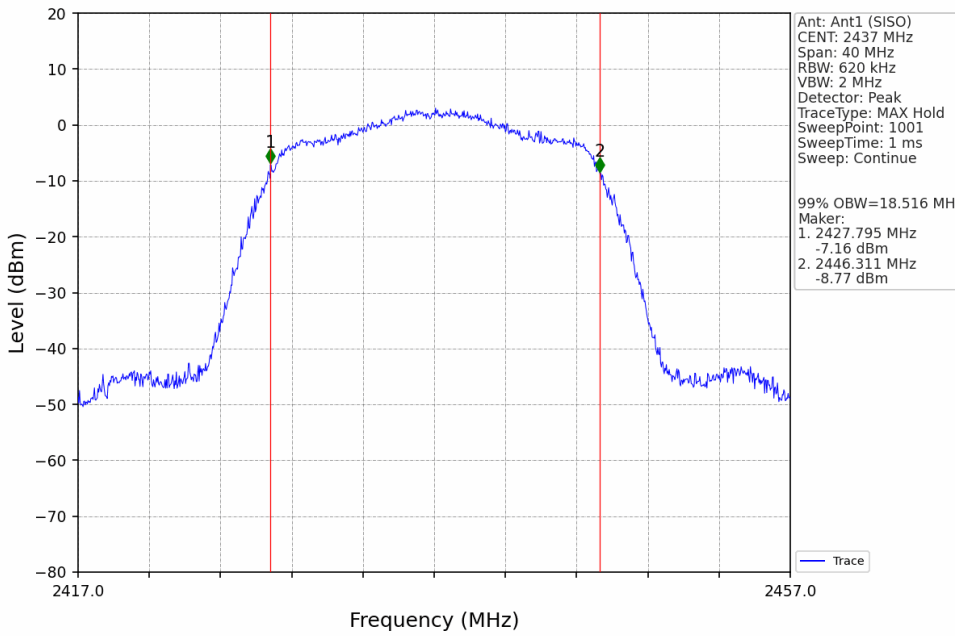
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



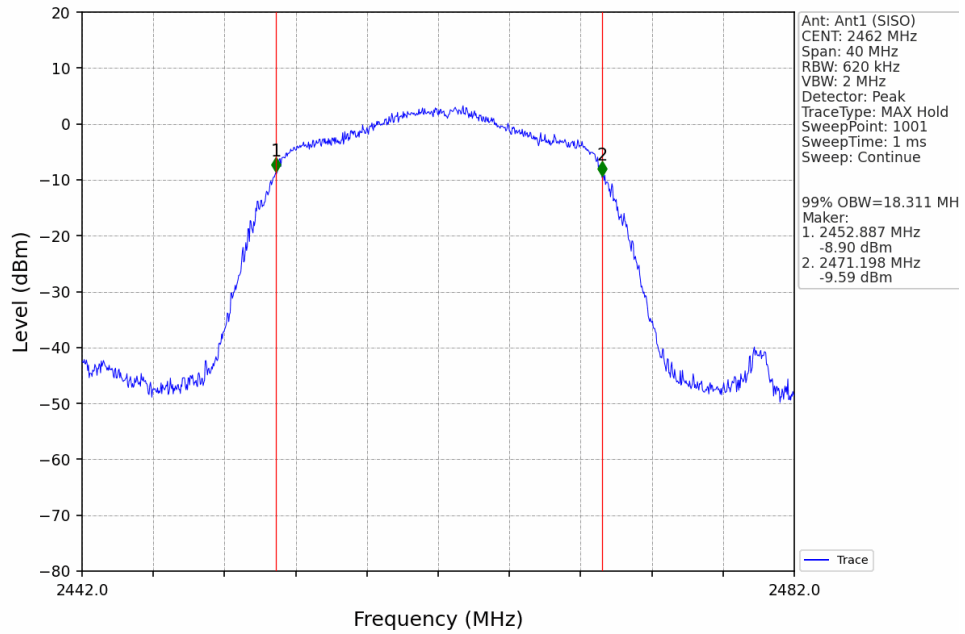
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

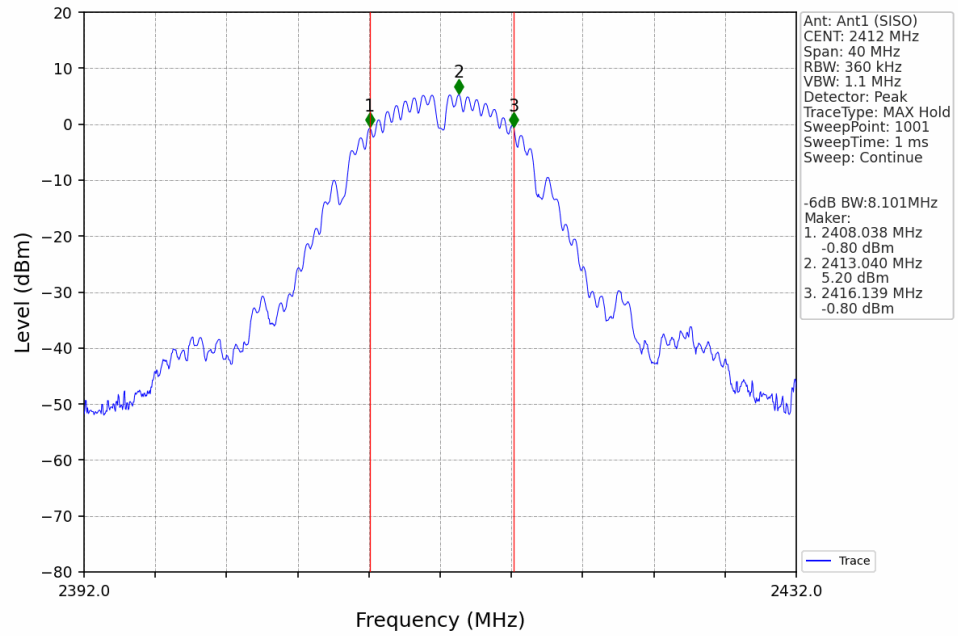


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

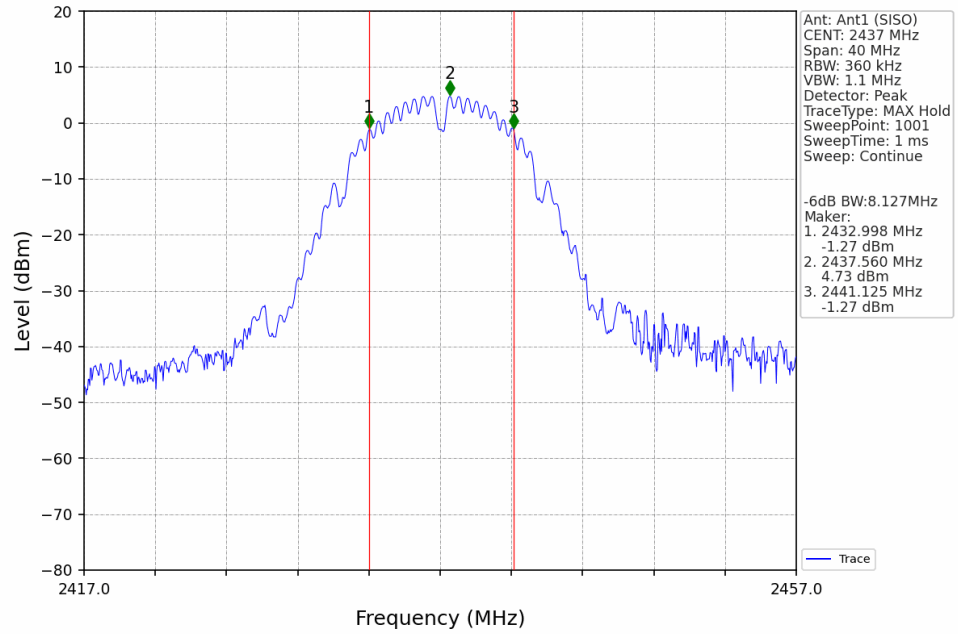


2.2.2 6dB BW

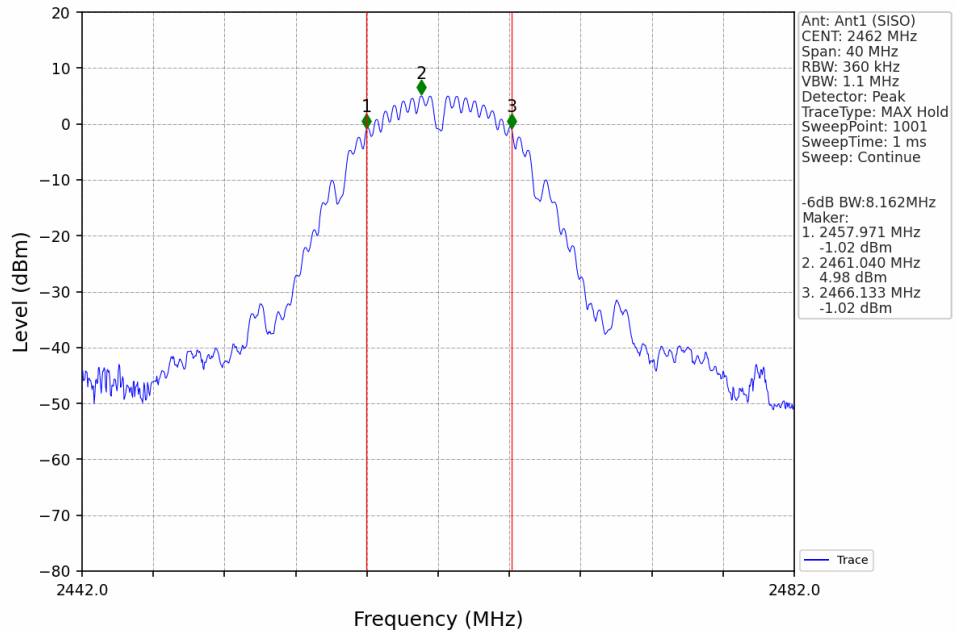
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



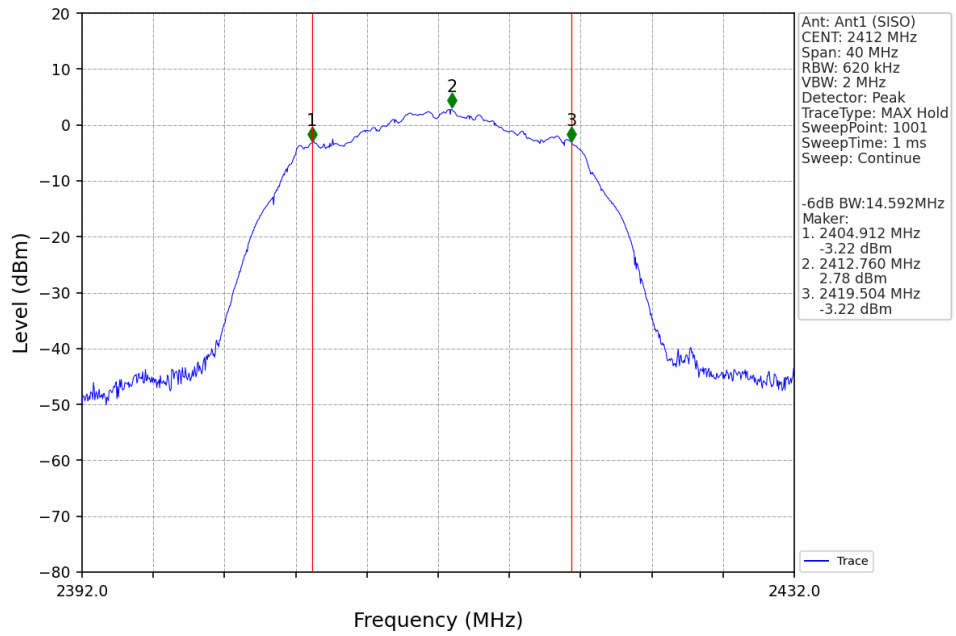
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



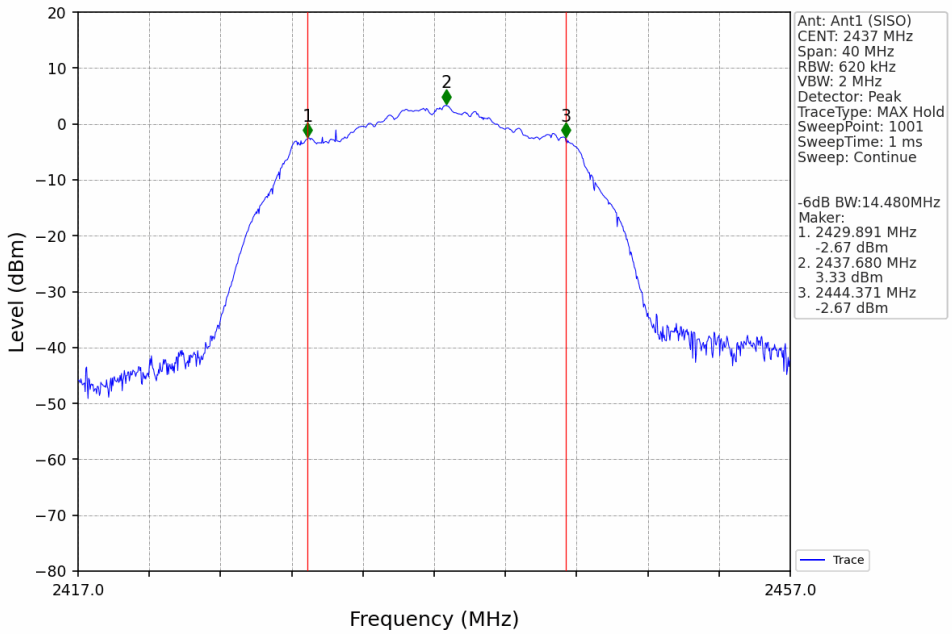
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



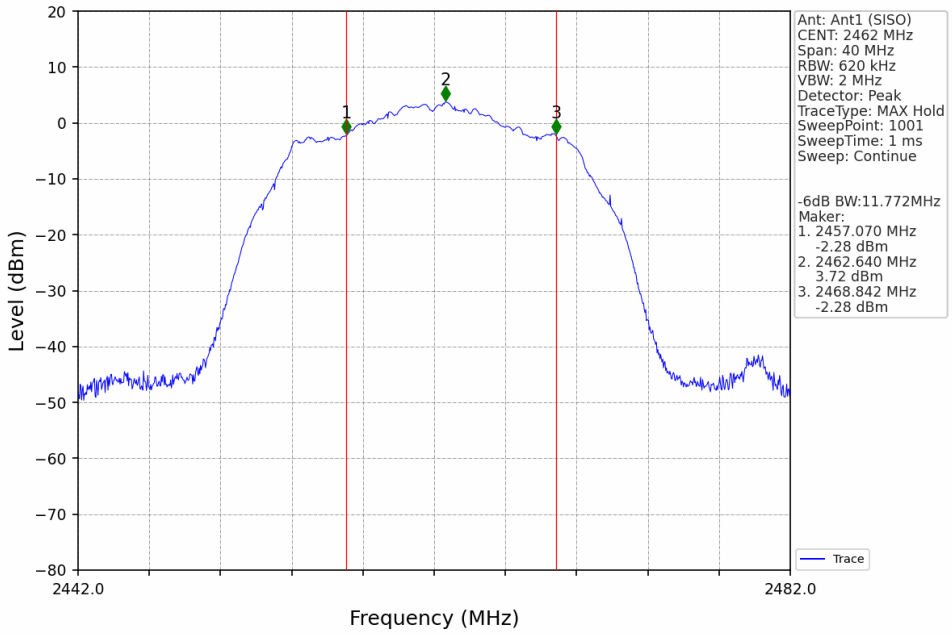
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



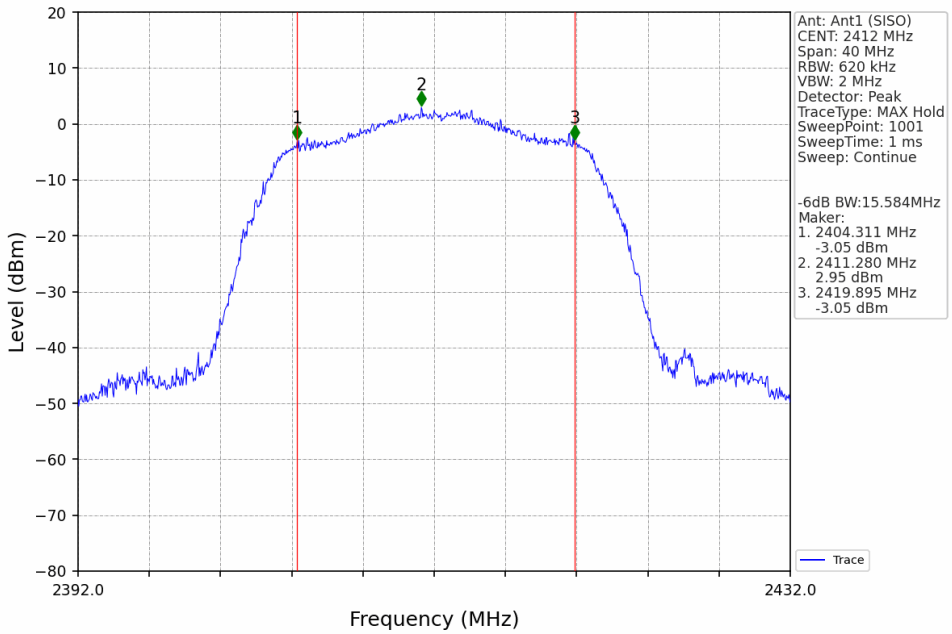
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



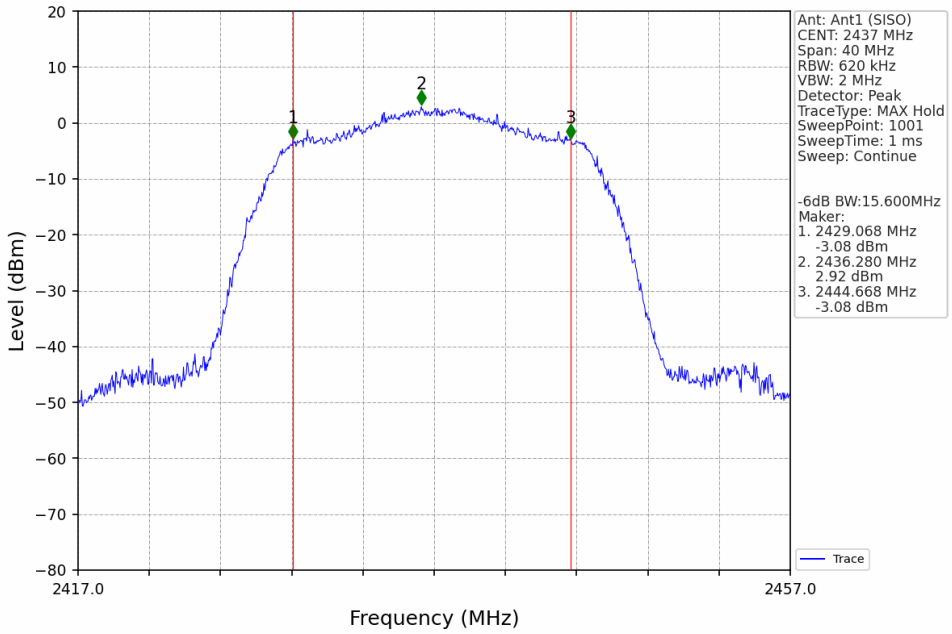
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



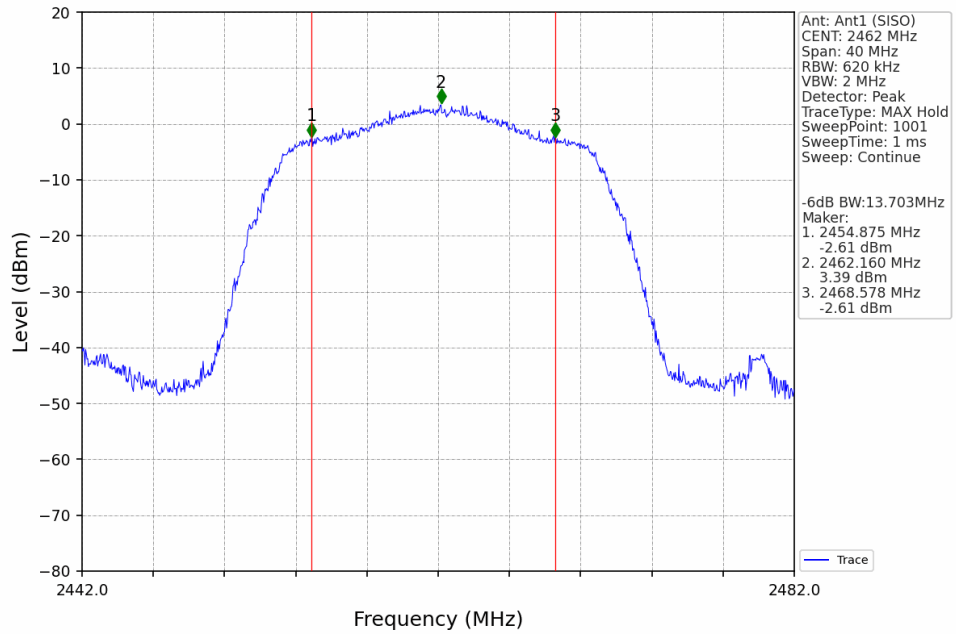
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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	15.34	<=30	Pass
		2437	14.87	<=30	Pass
		2462	15.16	<=30	Pass
802.11g	SISO	2412	14.02	<=30	Pass
		2437	14.49	<=30	Pass
		2462	14.36	<=30	Pass
802.11n (HT20)	SISO	2412	13.43	<=30	Pass
		2437	13.85	<=30	Pass
		2462	13.77	<=30	Pass

4. Maximum Power Spectral Density

4.1 Test Result

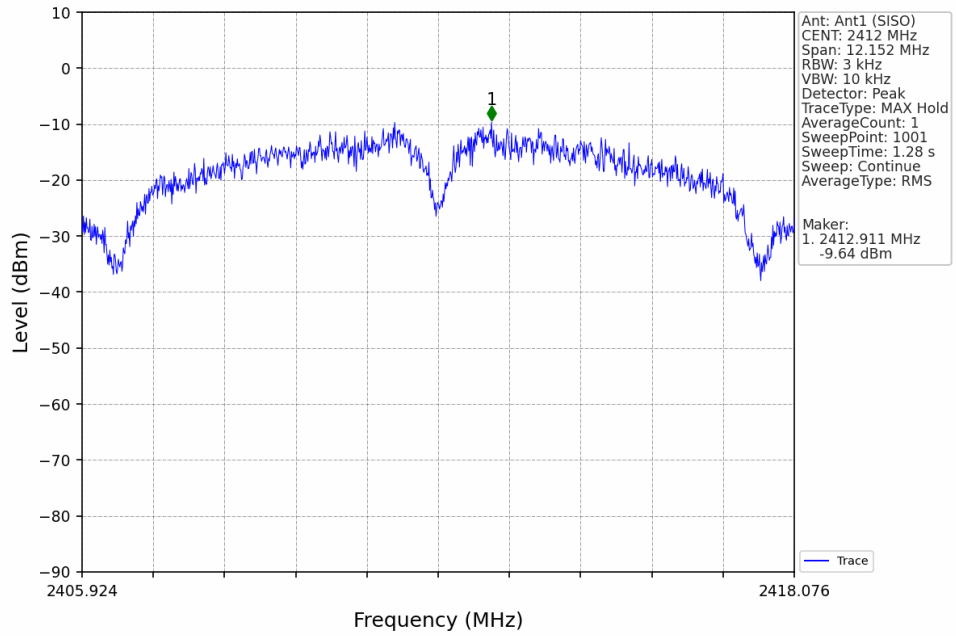
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-9.64	<=8	Pass
		2437	-9.46	<=8	Pass
		2462	-9.98	<=8	Pass
802.11g	SISO	2412	-16.41	<=8	Pass
		2437	-15.63	<=8	Pass
		2462	-16.86	<=8	Pass
802.11n (HT20)	SISO	2412	-17.05	<=8	Pass
		2437	-17.13	<=8	Pass
		2462	-16.81	<=8	Pass

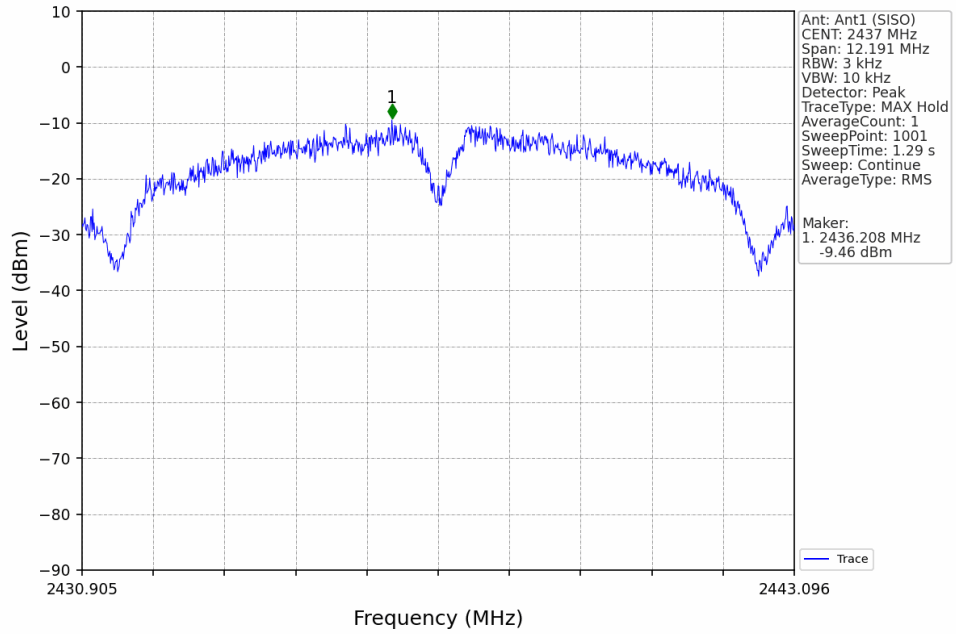
4.2 Test Graph

4.2.1 PSD

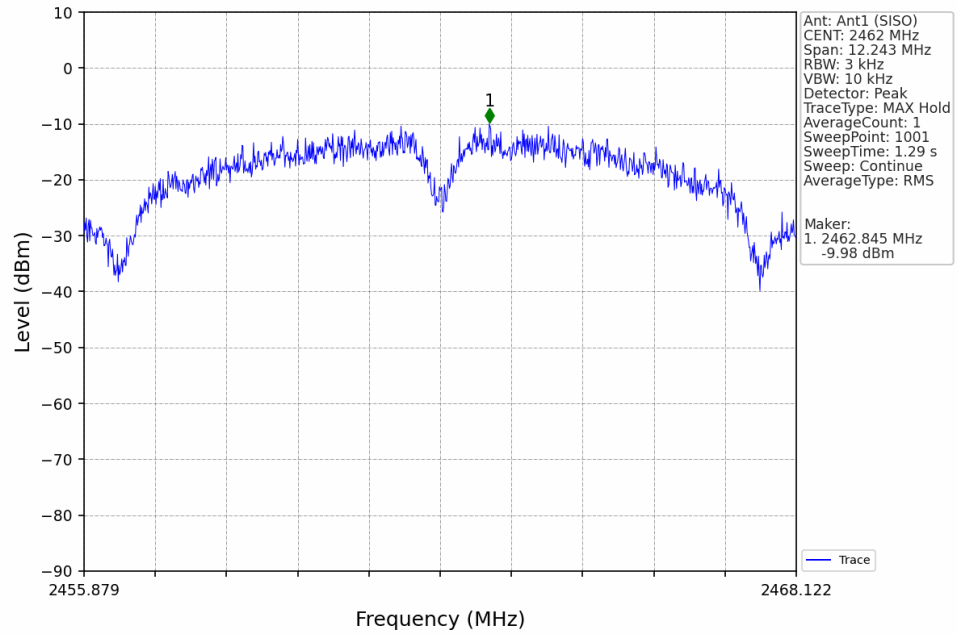
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



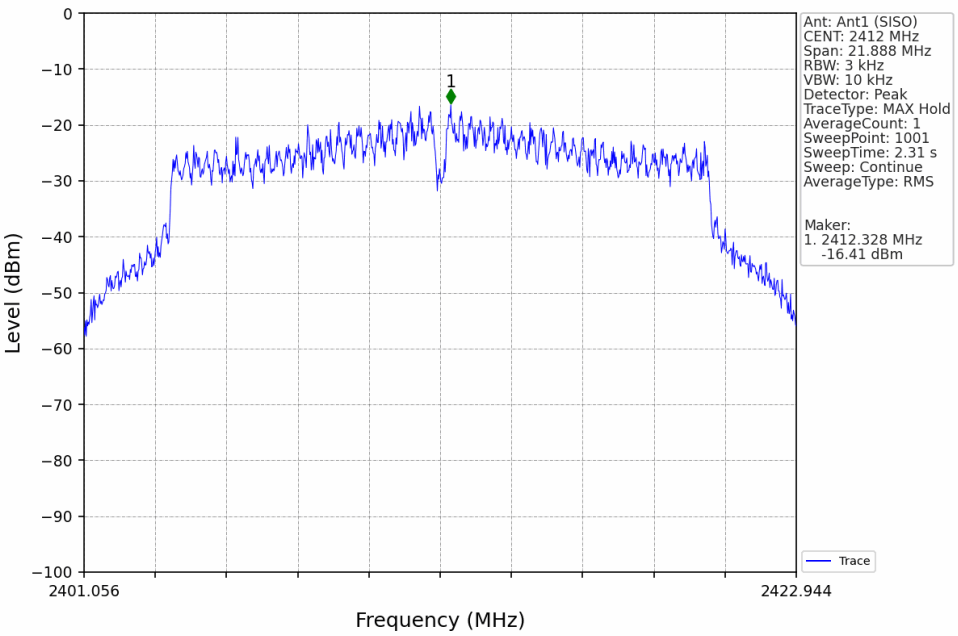
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



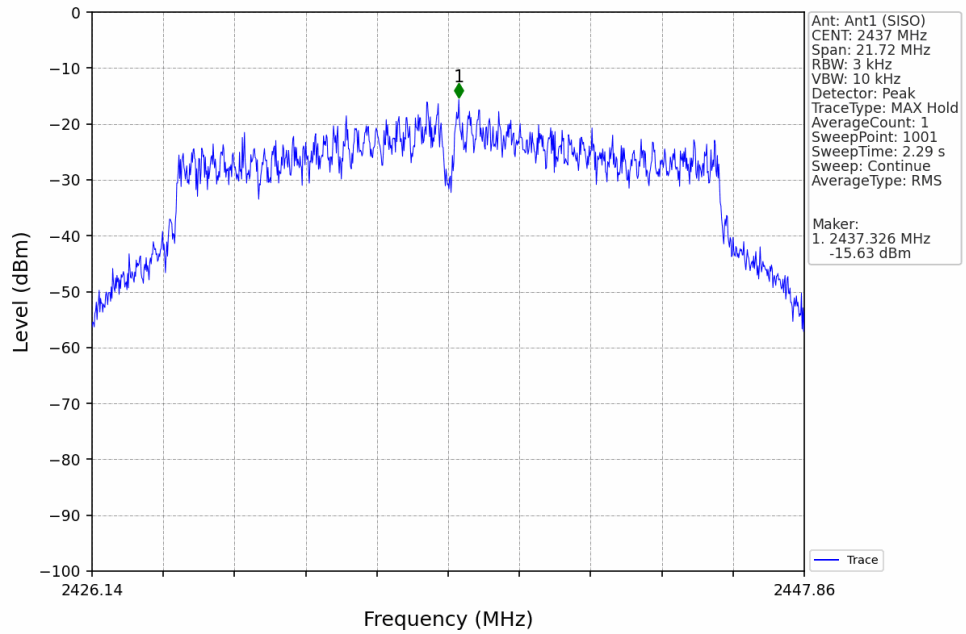
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



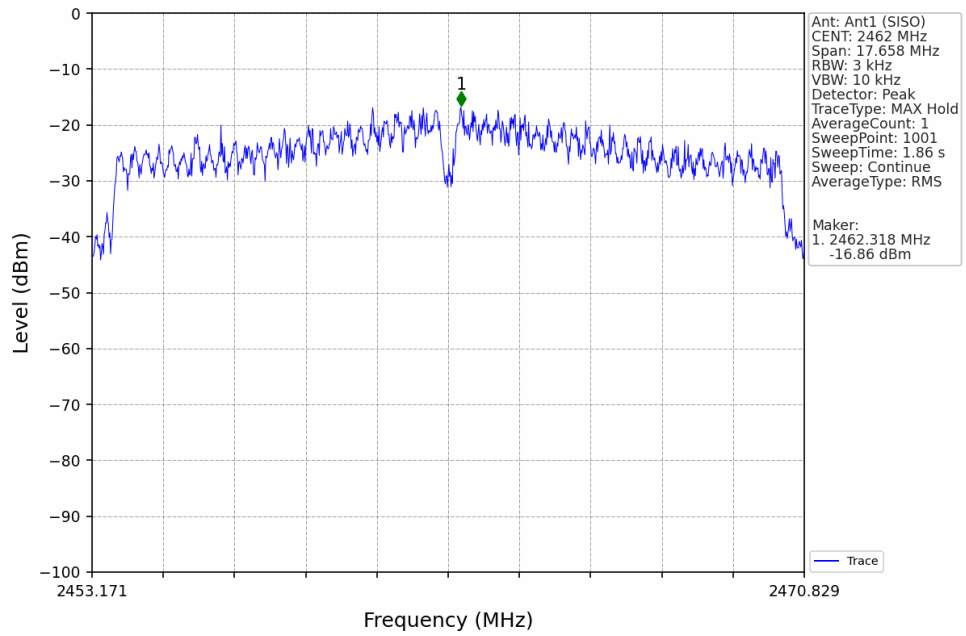
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



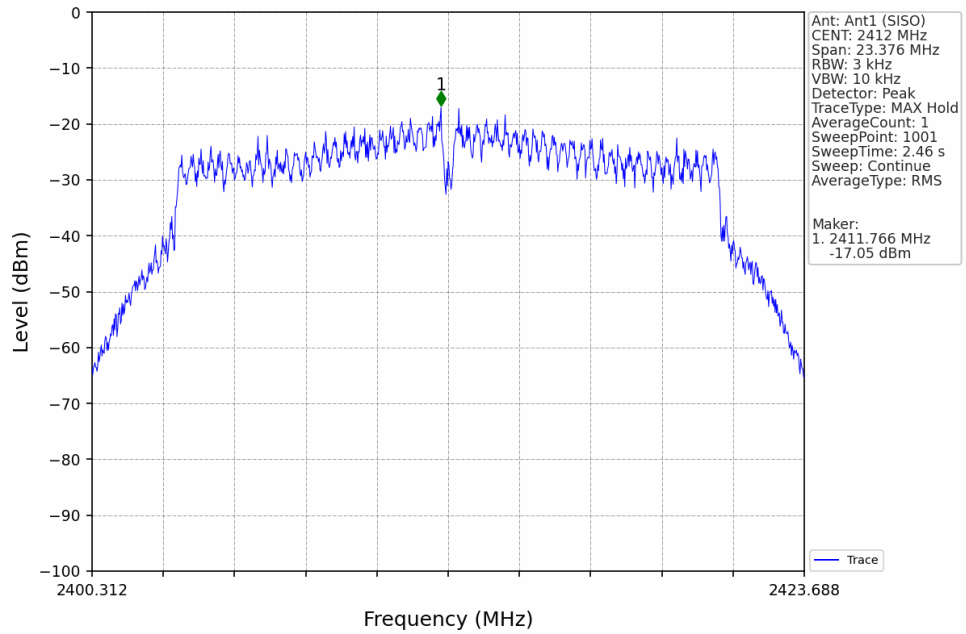
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



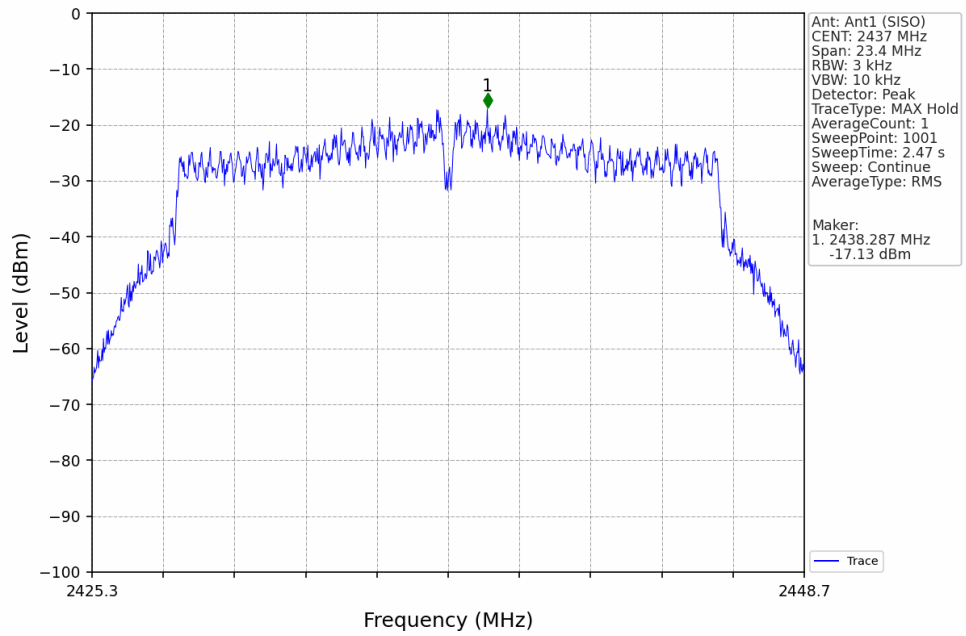
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



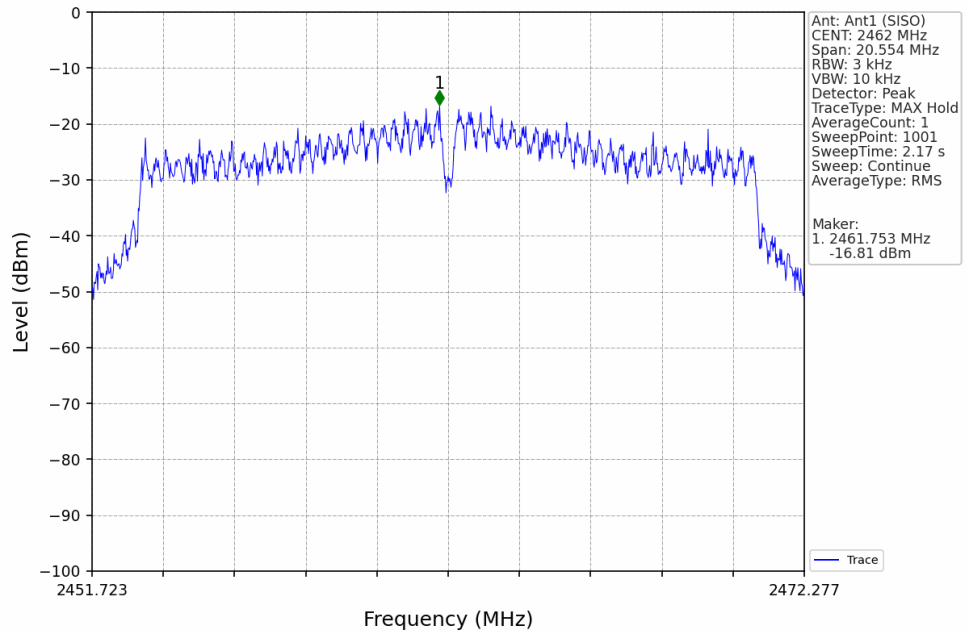
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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	4.95
		2437	1	4.64
		2462	1	4.53
802.11g	SISO	2412	1	-4.91
		2437	1	-4.59
		2462	1	-4.11
802.11n (HT20)	SISO	2412	1	-4.97
		2437	1	-4.71
		2462	1	-4.54
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.				

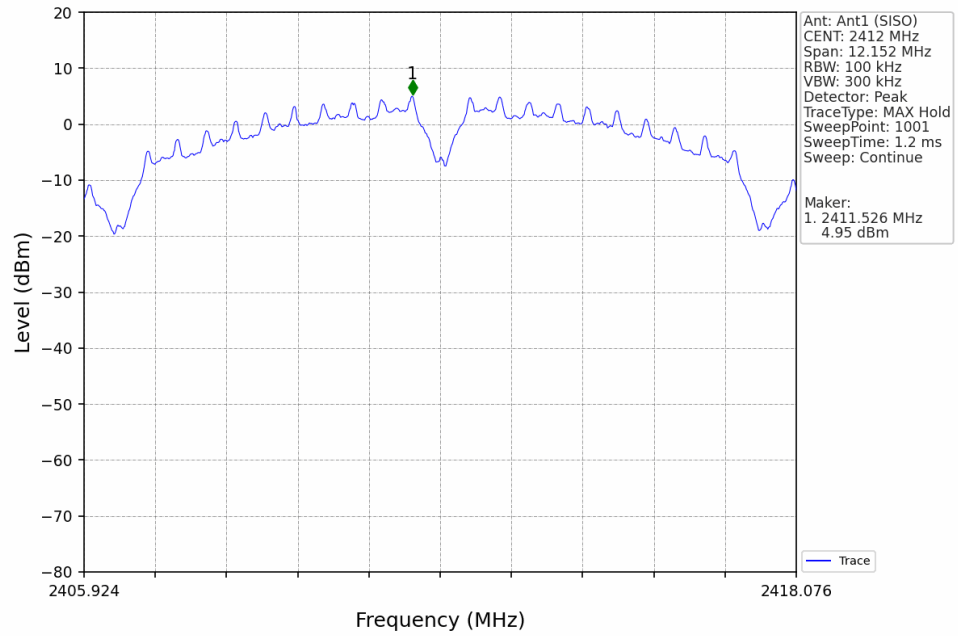
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.95	-15.05	Pass
		2437	1	4.64	-15.36	Pass
		2462	1	4.53	-15.47	Pass
802.11g	SISO	2412	1	-4.91	-24.91	Pass
		2437	1	-4.59	-24.59	Pass
		2462	1	-4.11	-24.11	Pass
802.11n (HT20)	SISO	2412	1	-4.97	-24.97	Pass
		2437	1	-4.71	-24.71	Pass
		2462	1	-4.54	-24.54	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.						

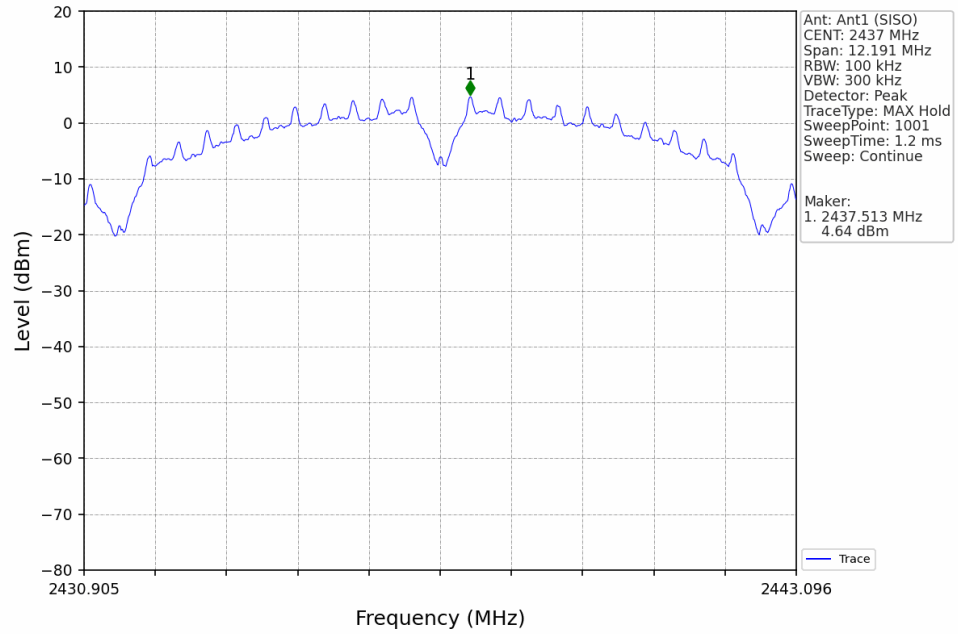
5.2 Test Graph

5.2.1 Ref

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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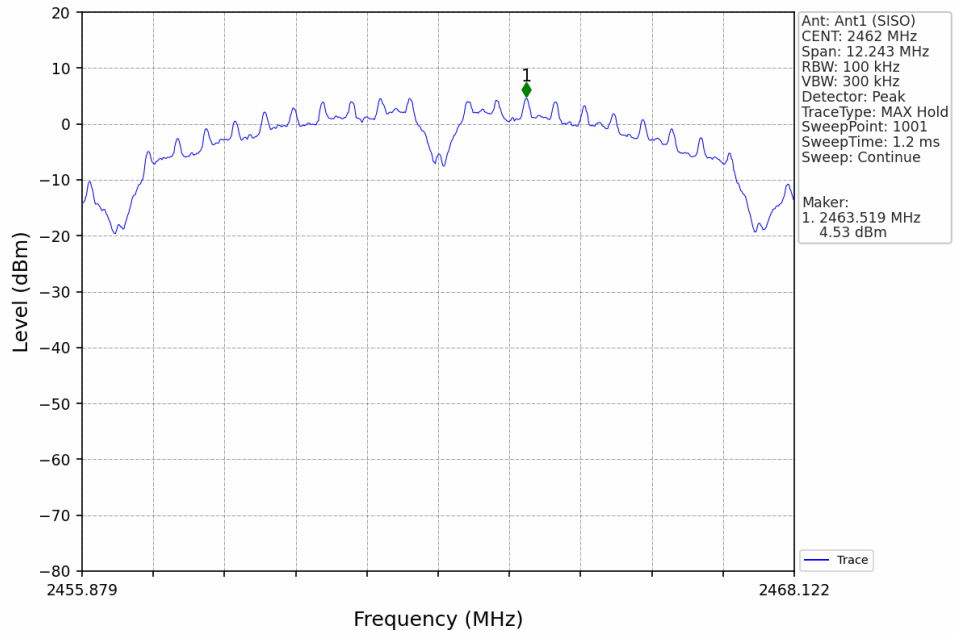

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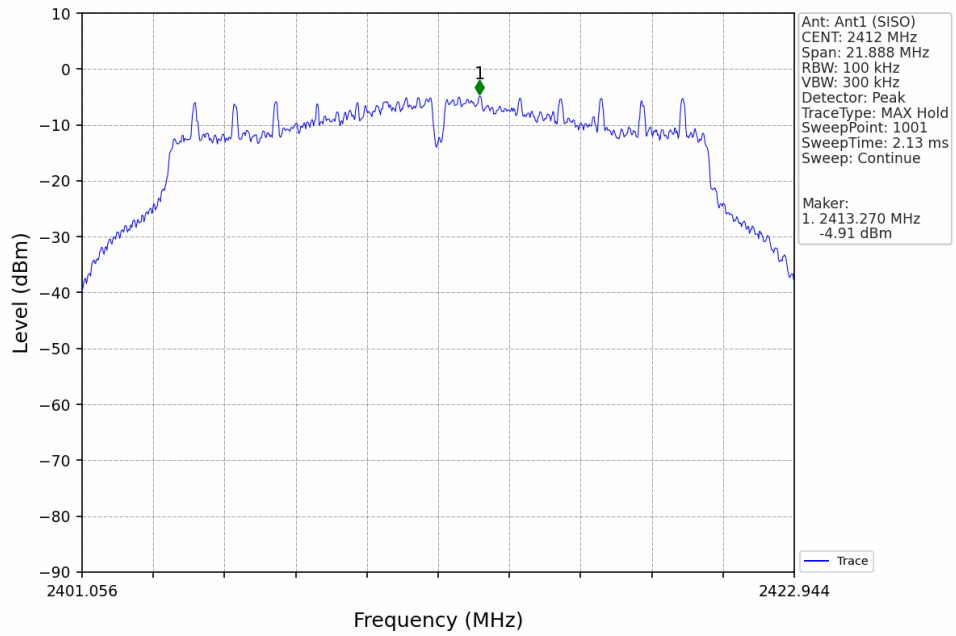

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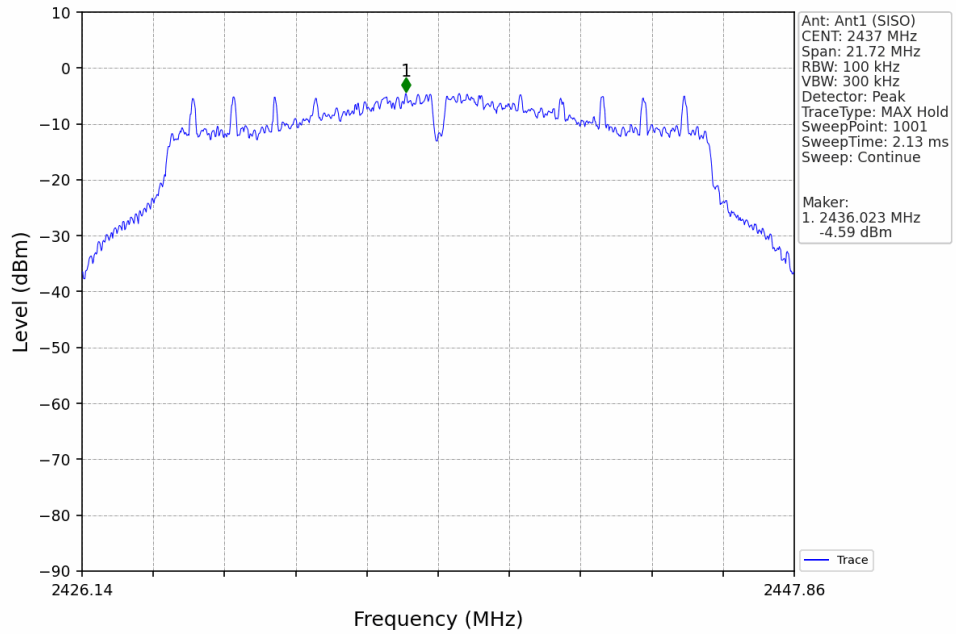

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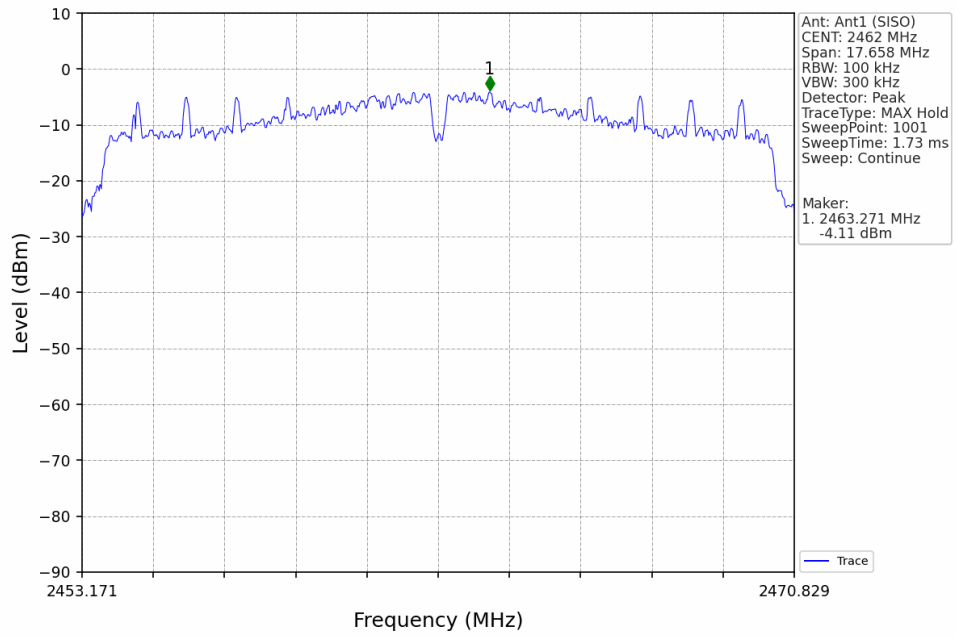
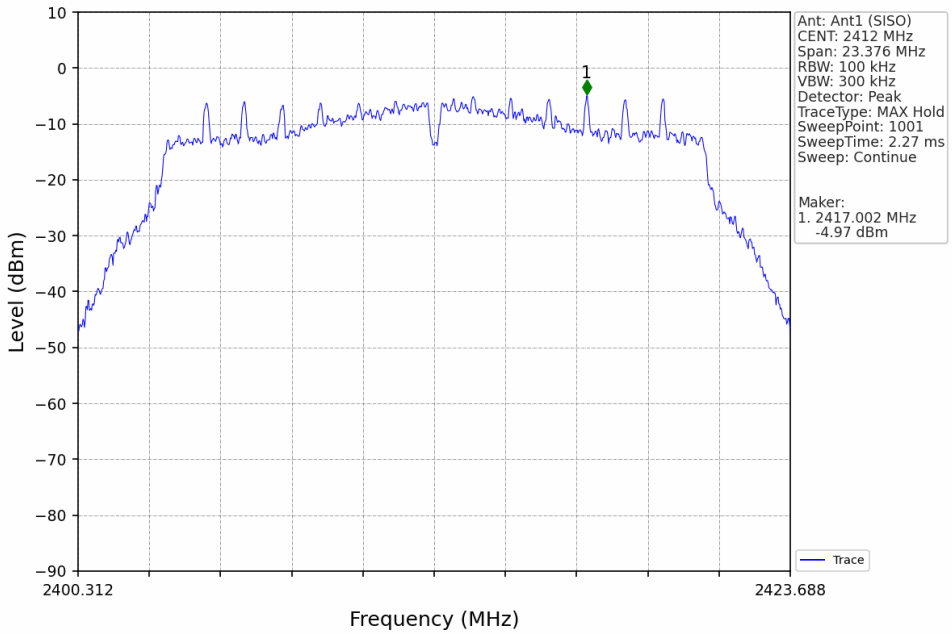


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



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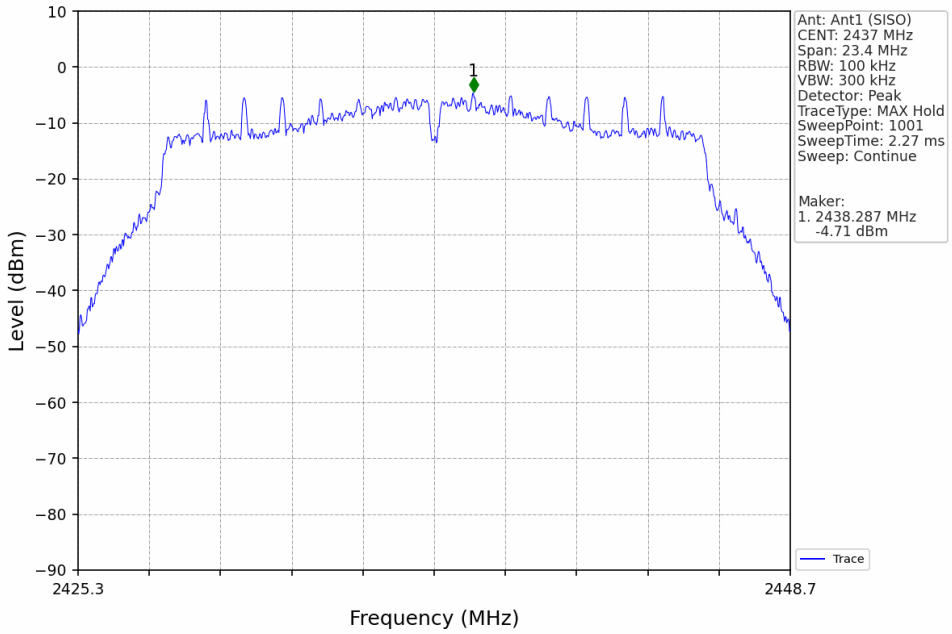
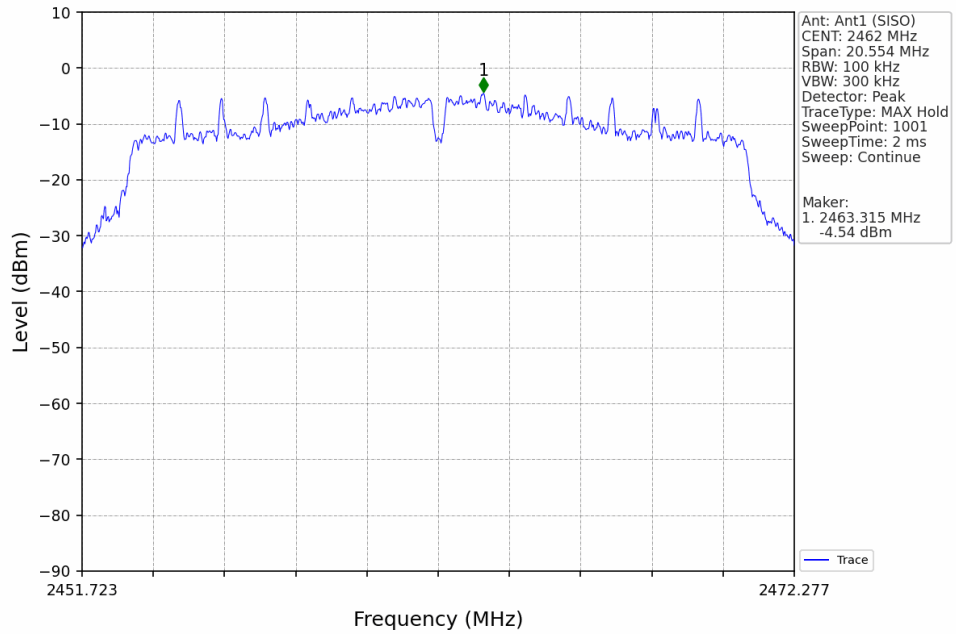
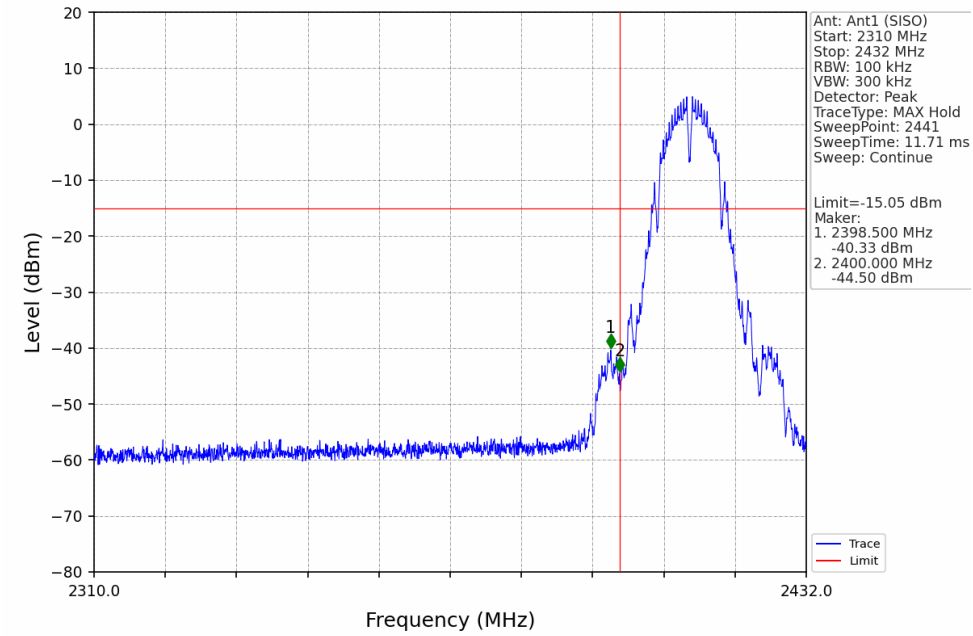


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

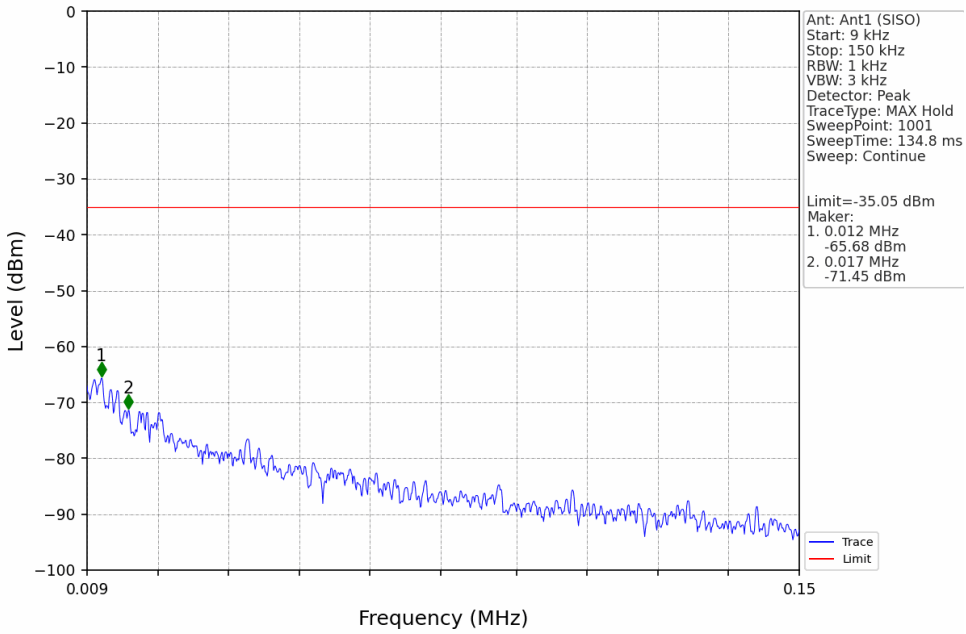


5.2.2 CSE

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



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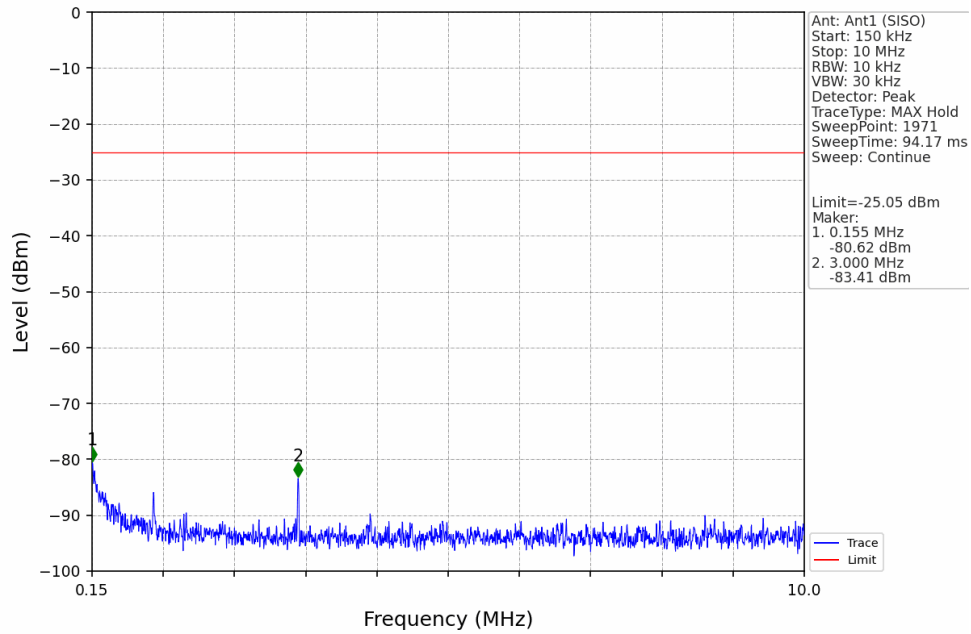

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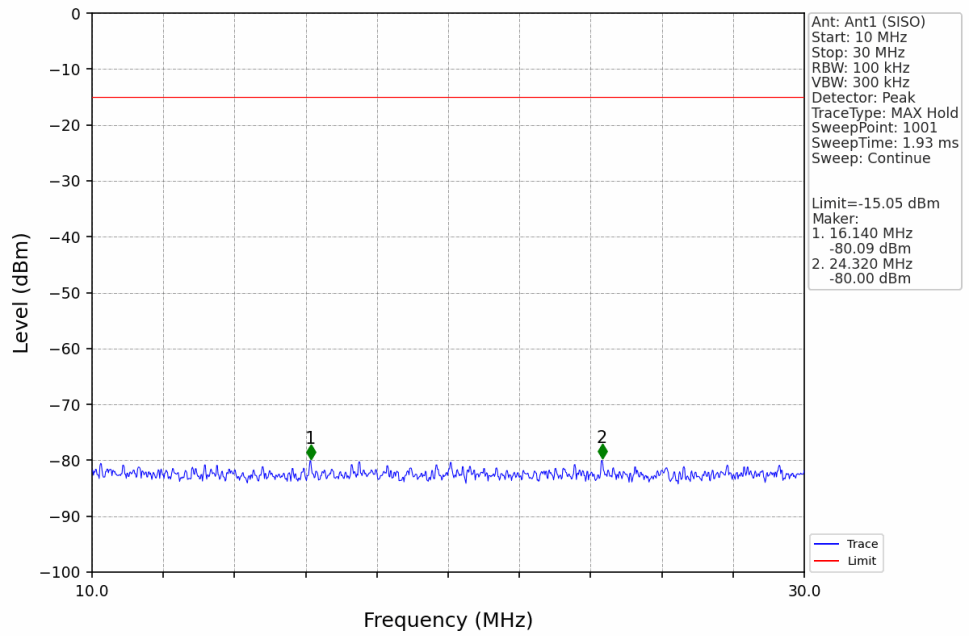

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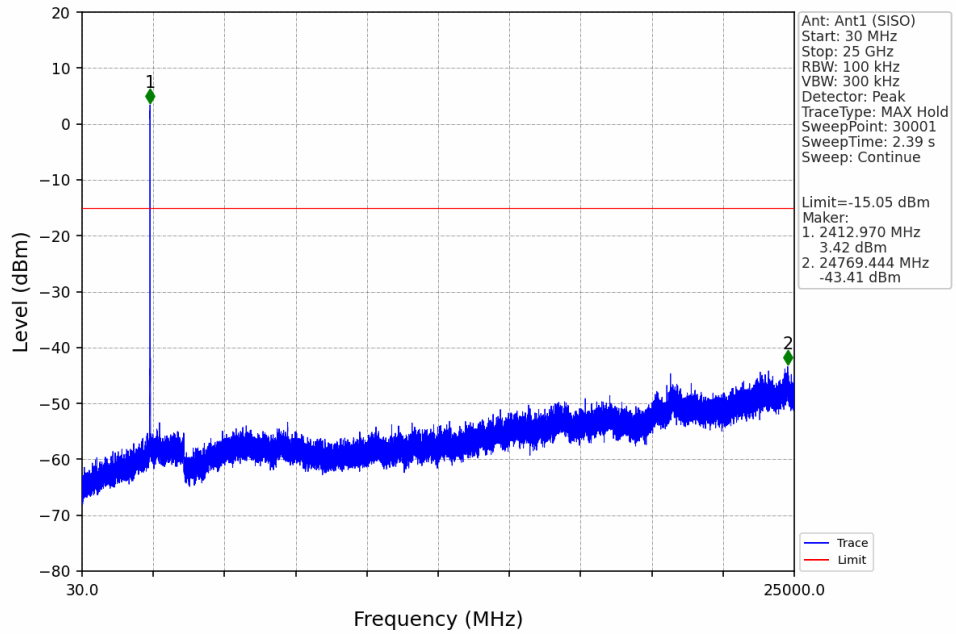

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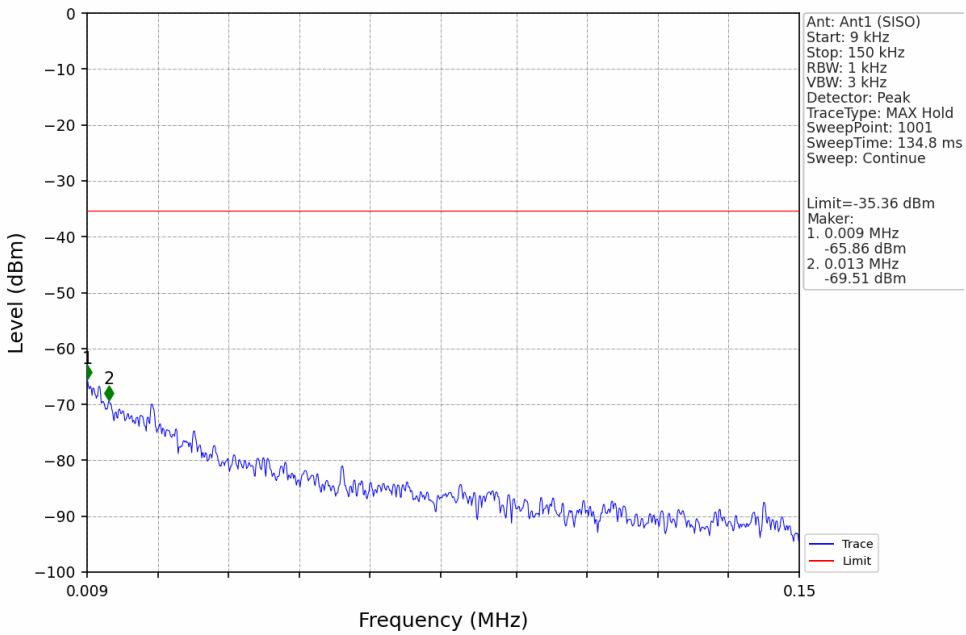

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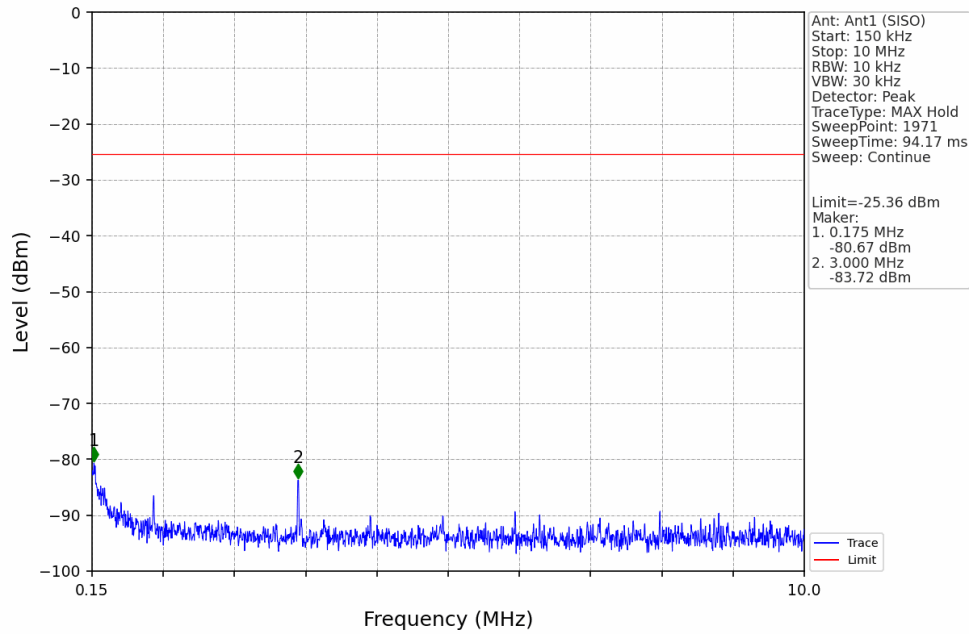

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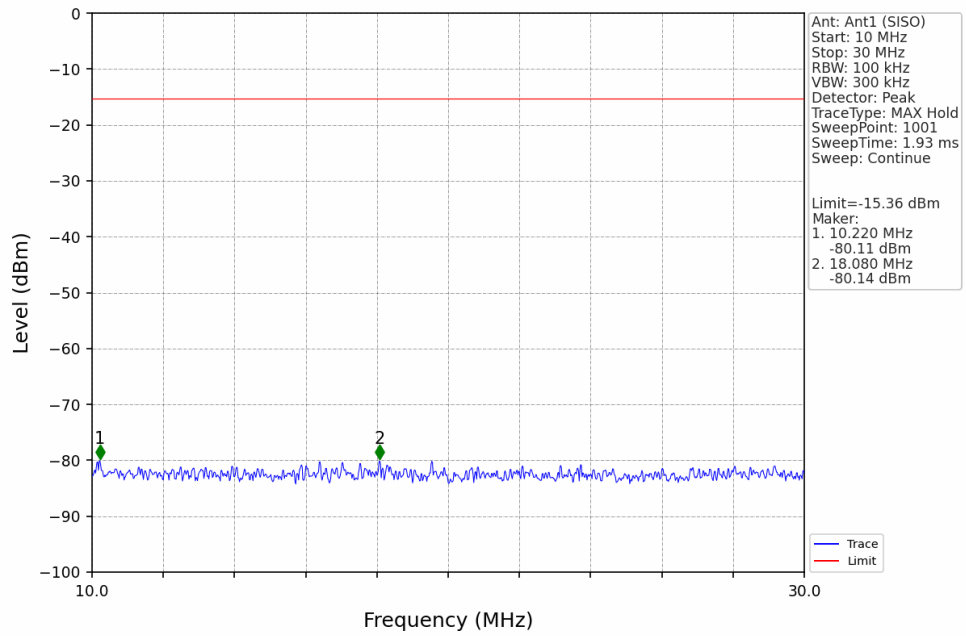

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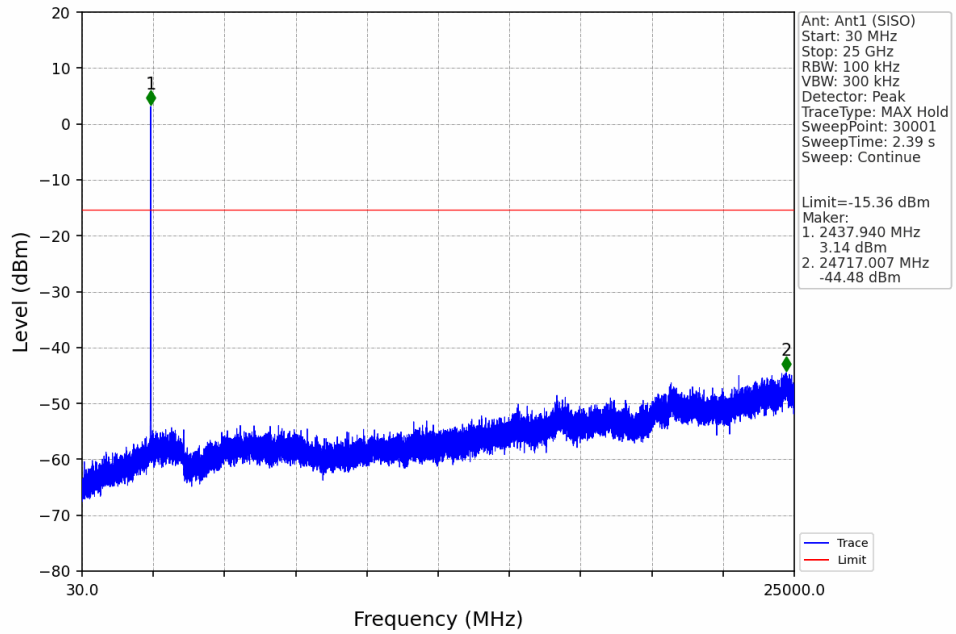
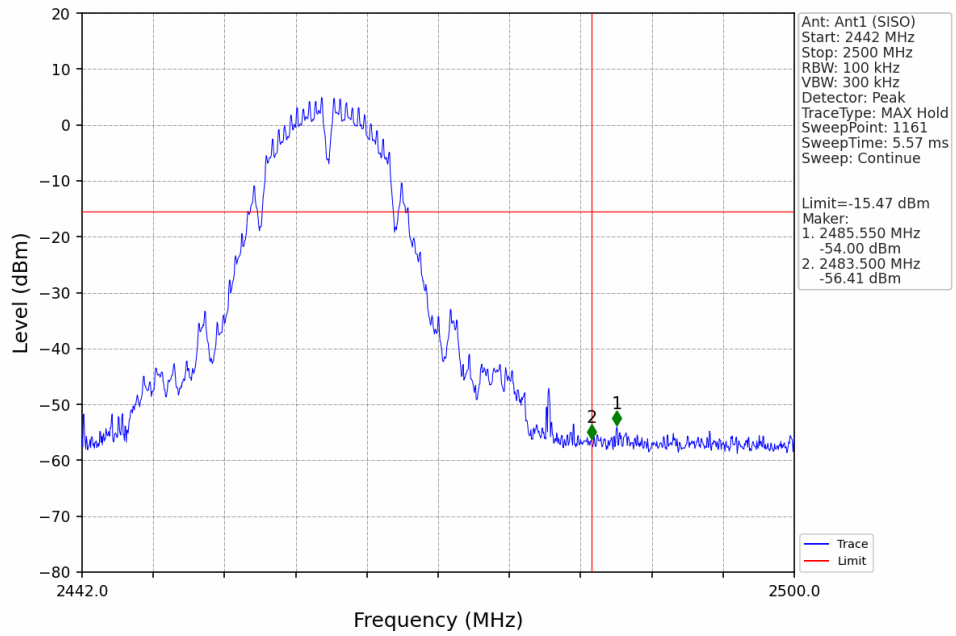


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



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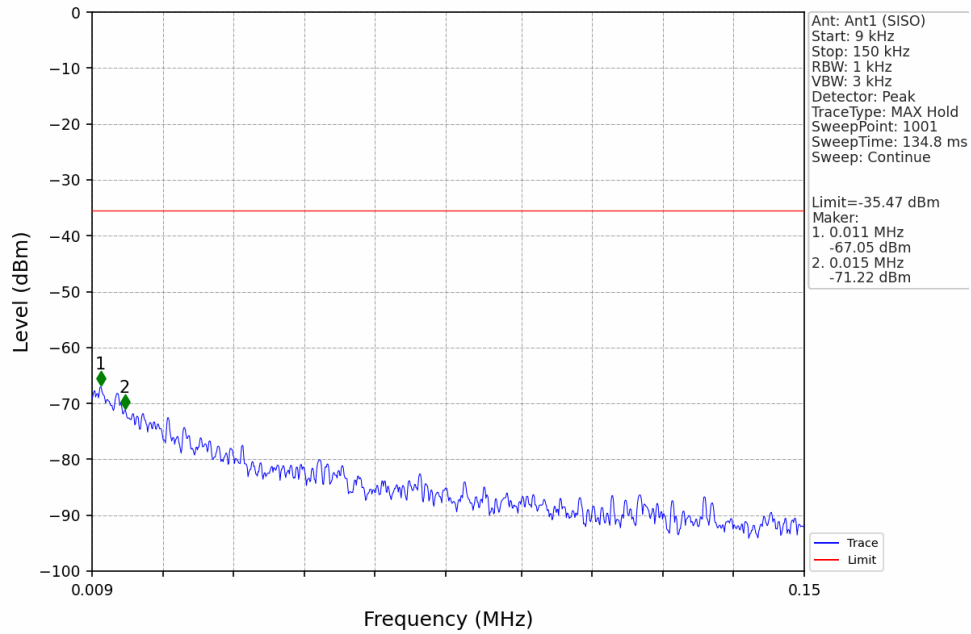

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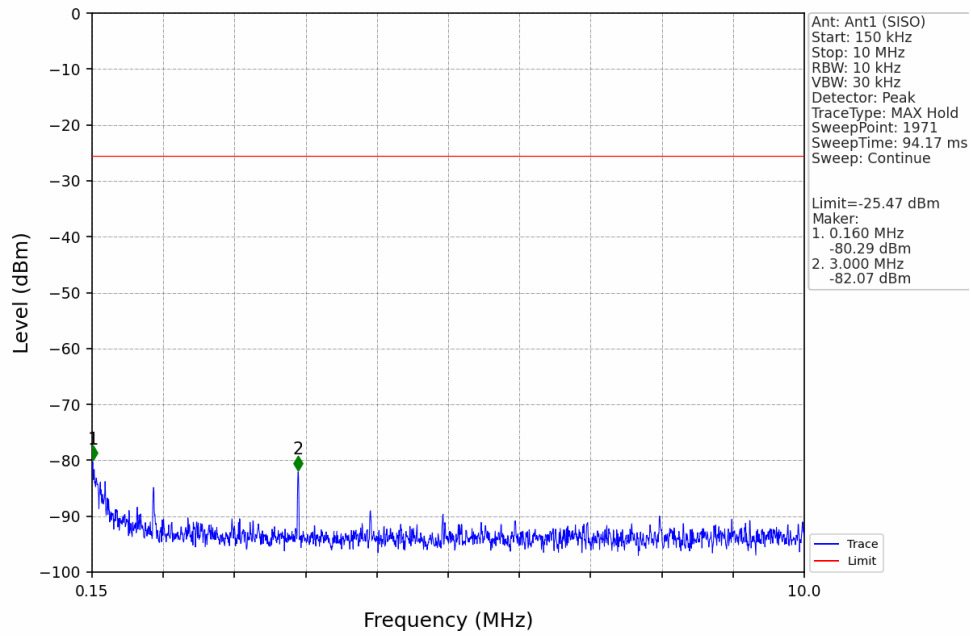

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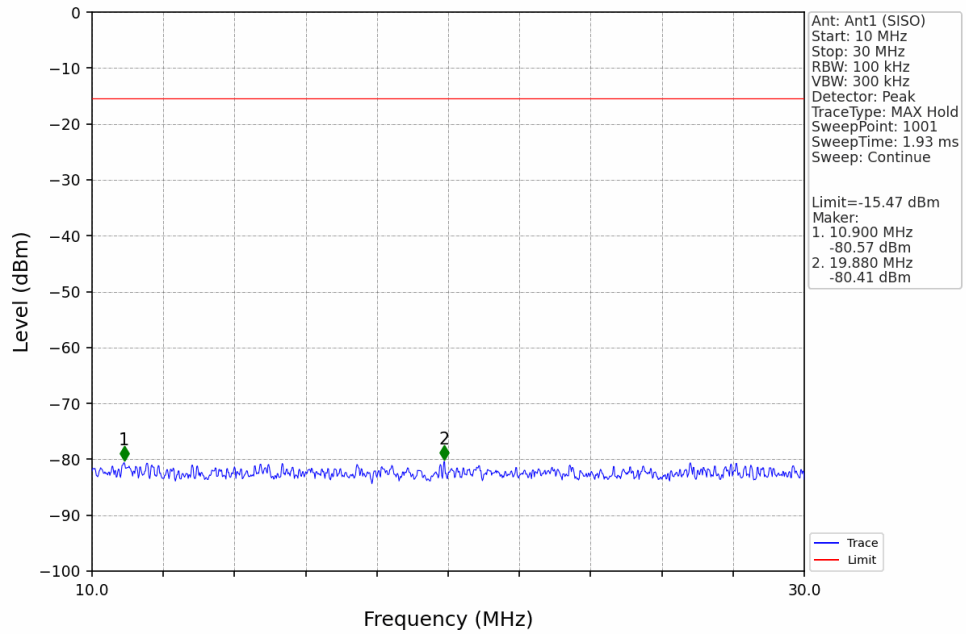

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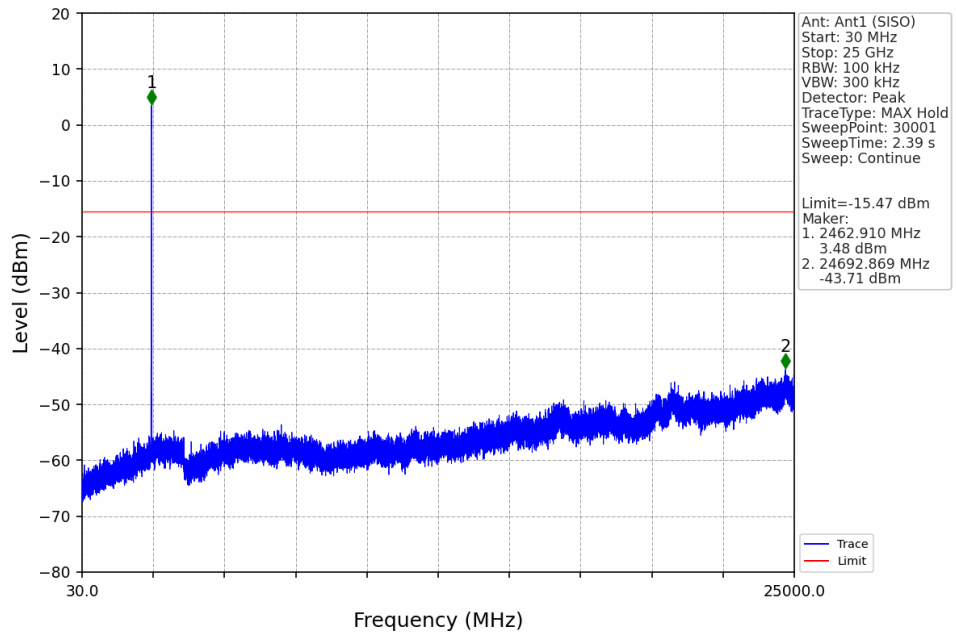

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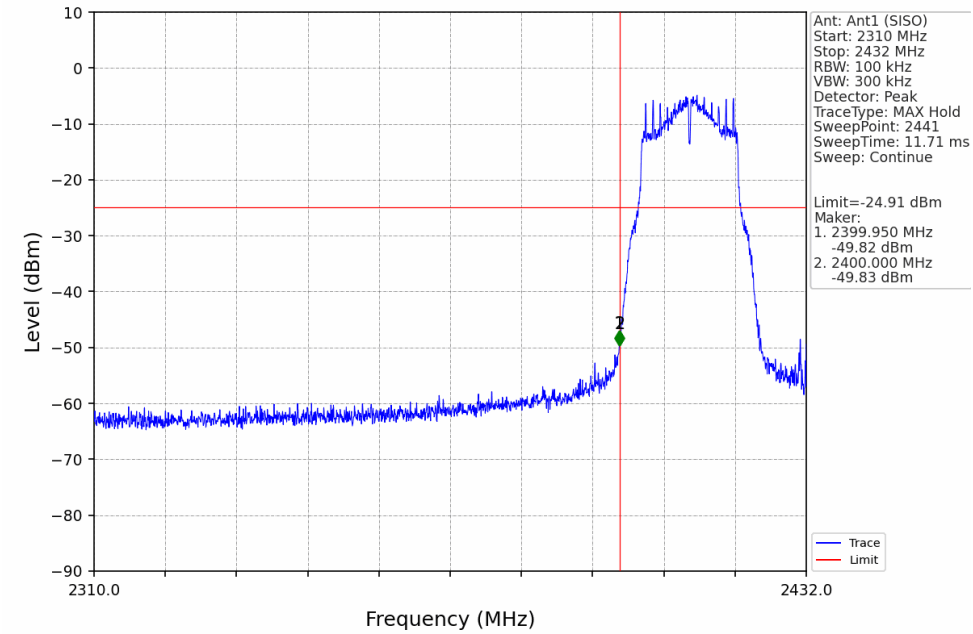

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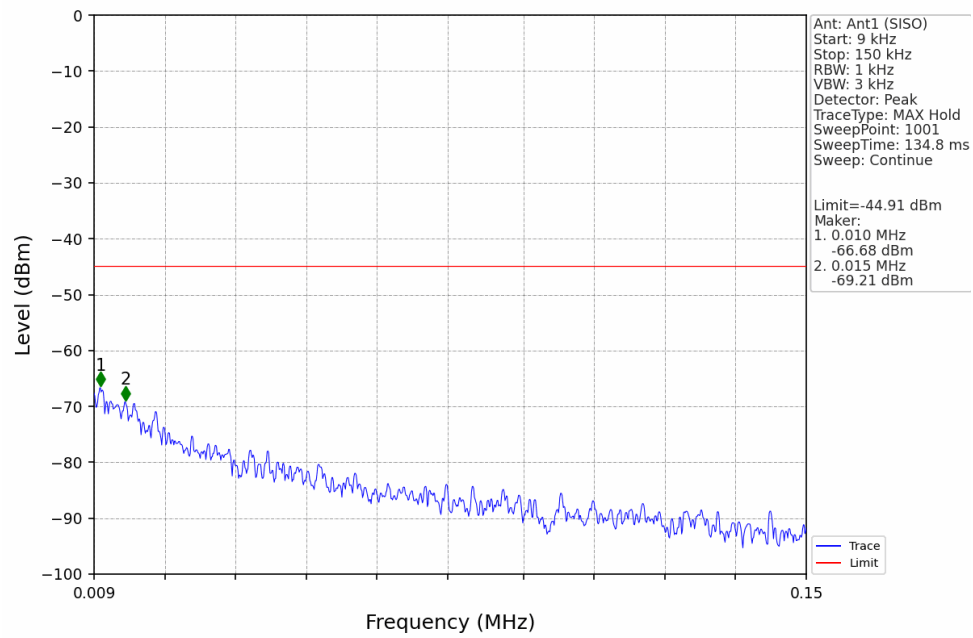

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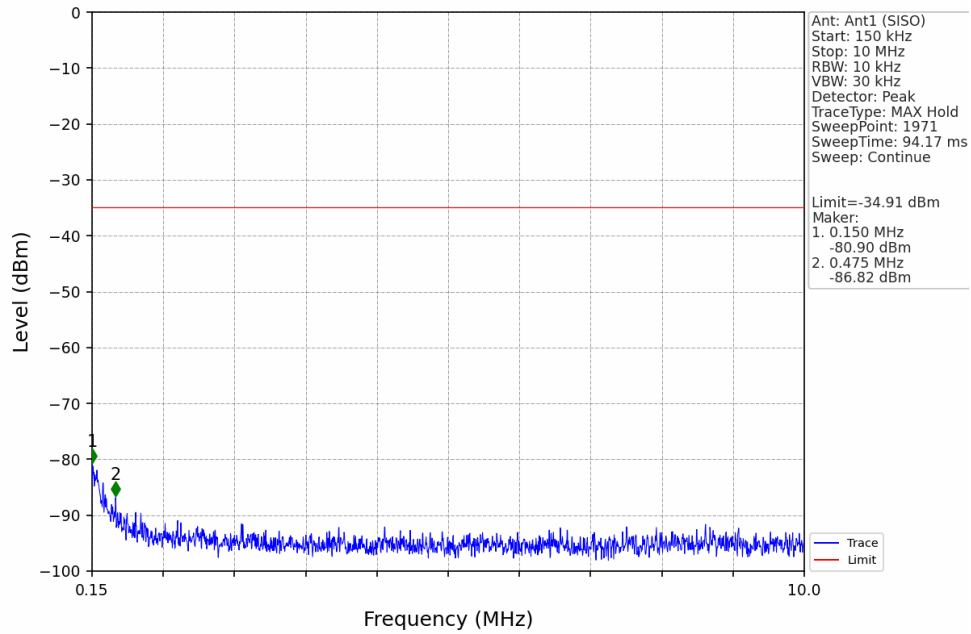

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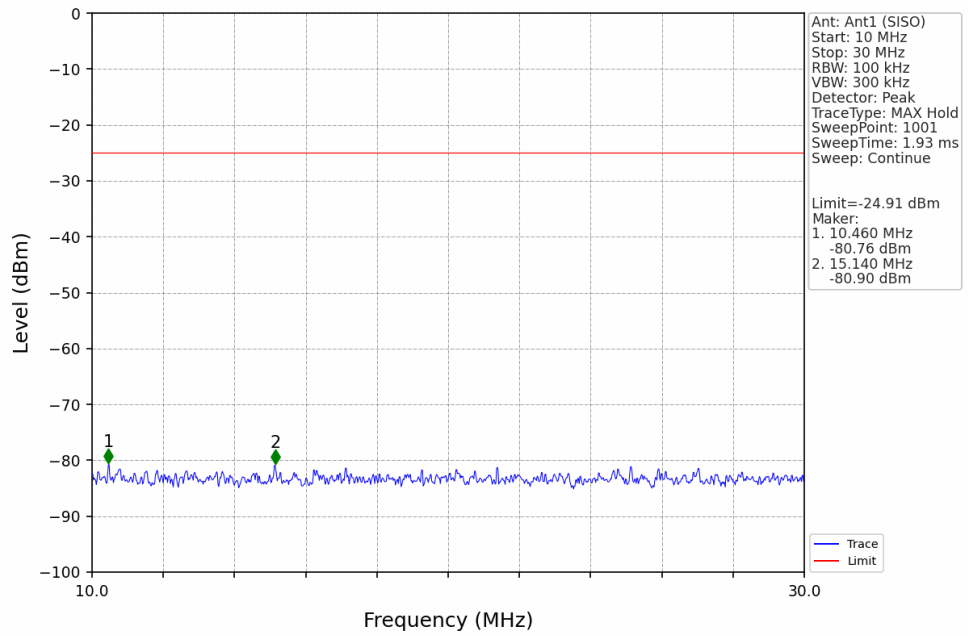

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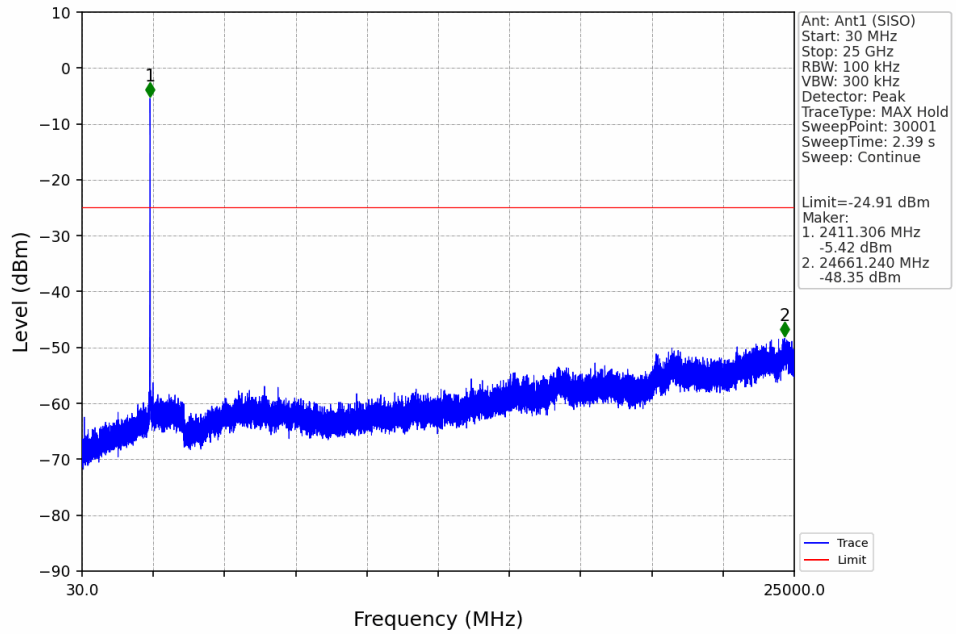
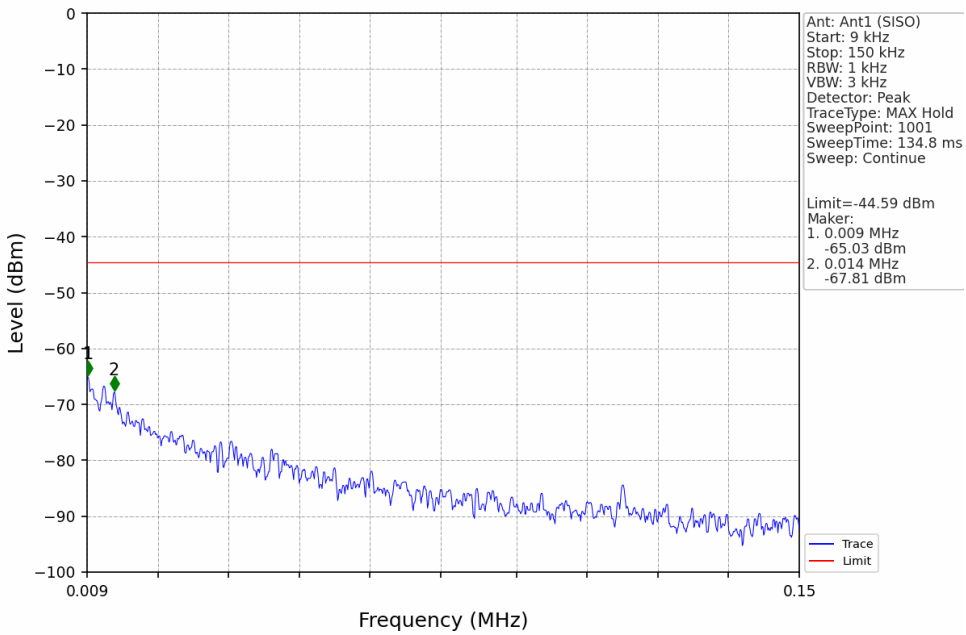


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



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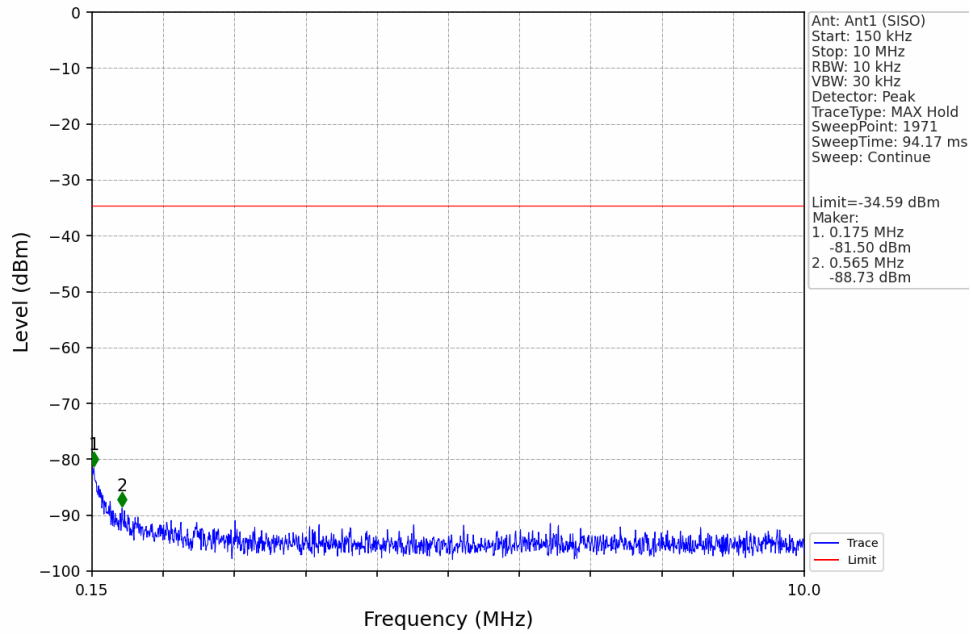

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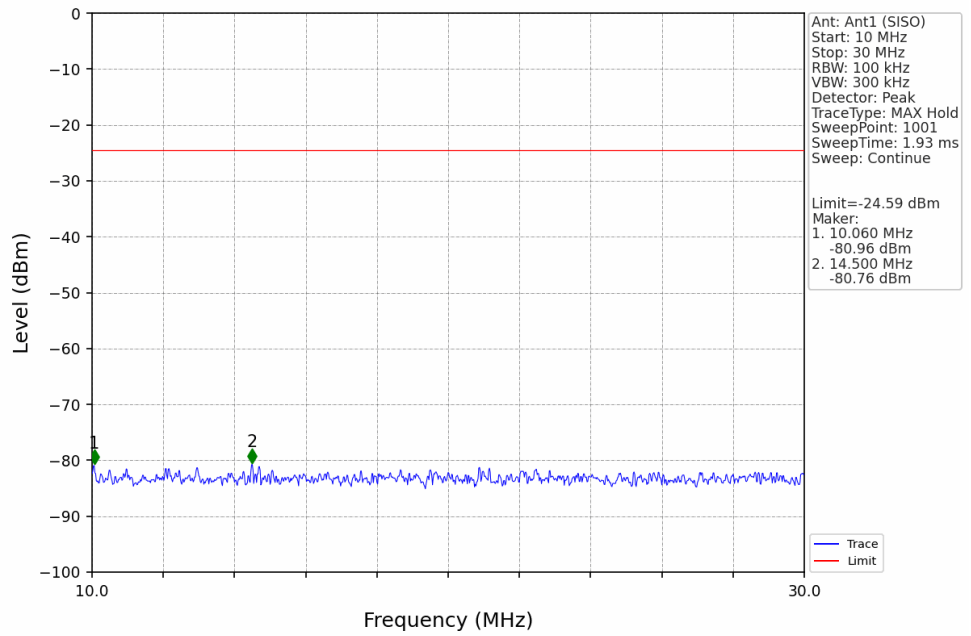

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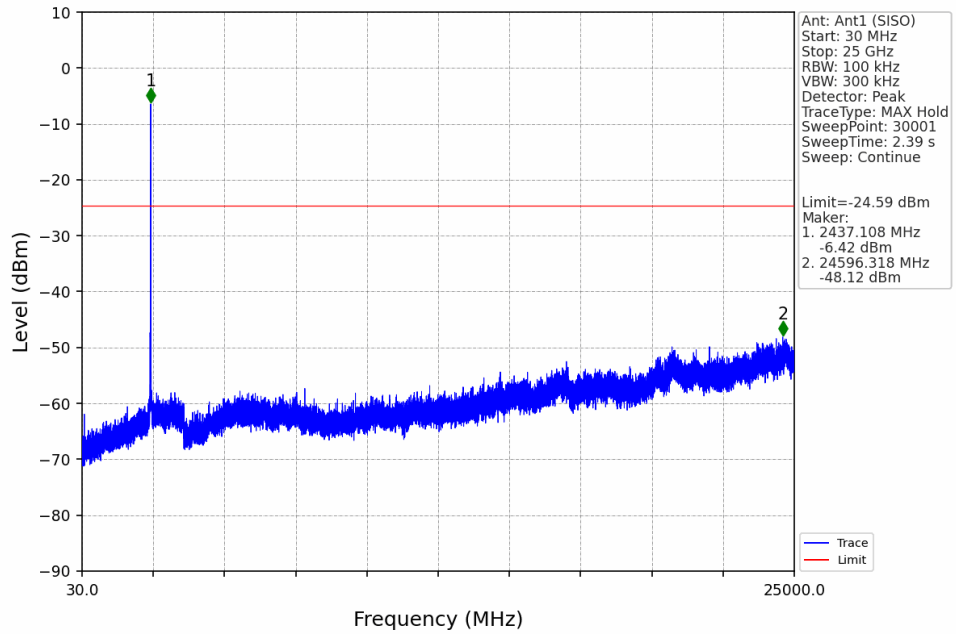

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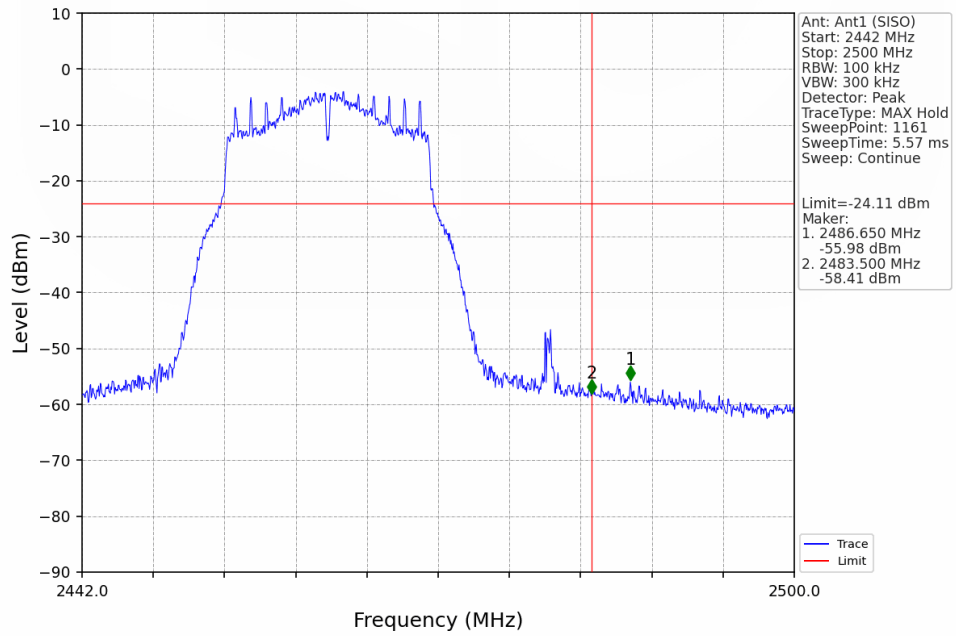

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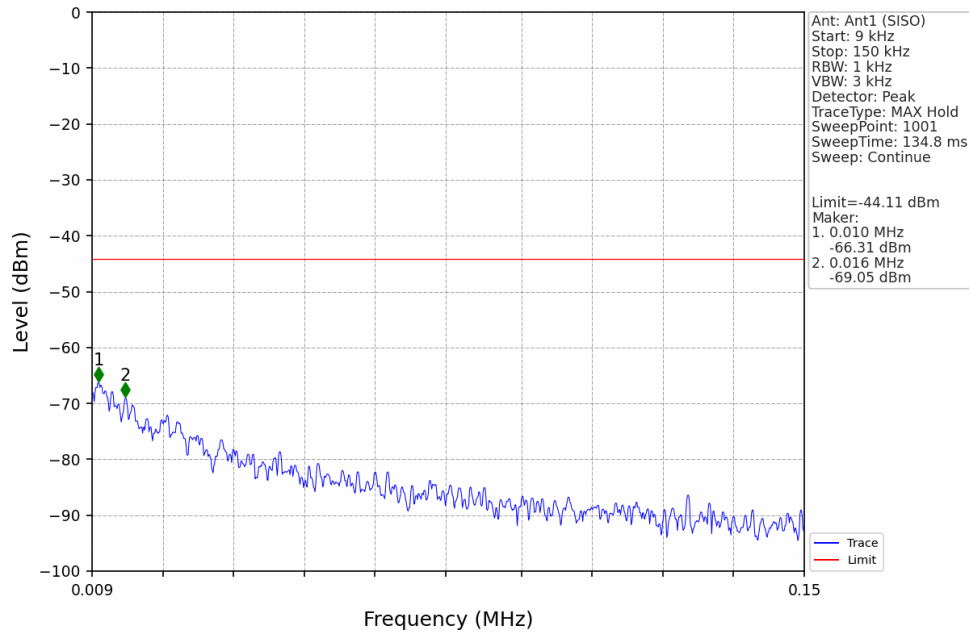

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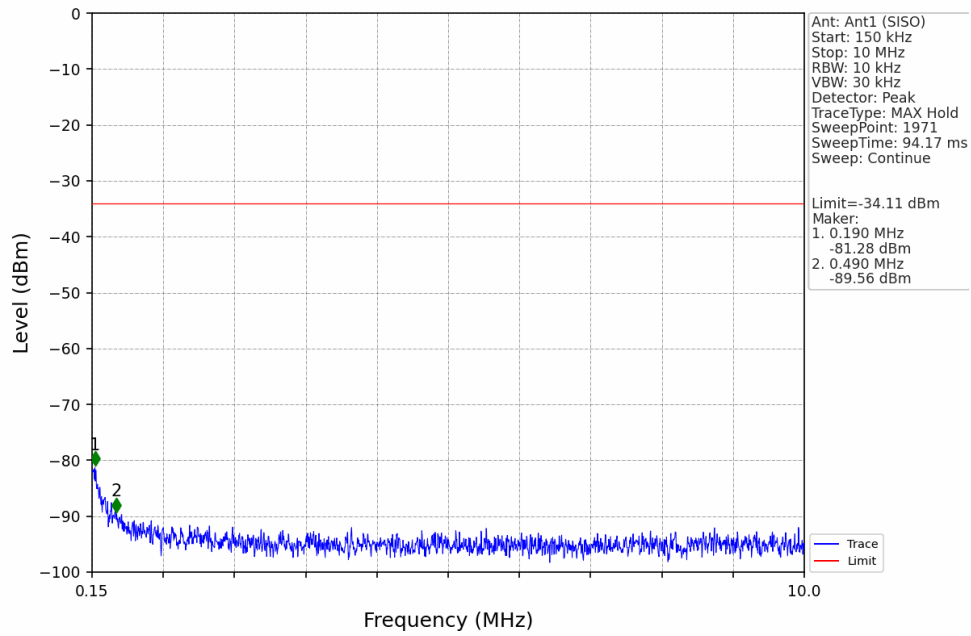

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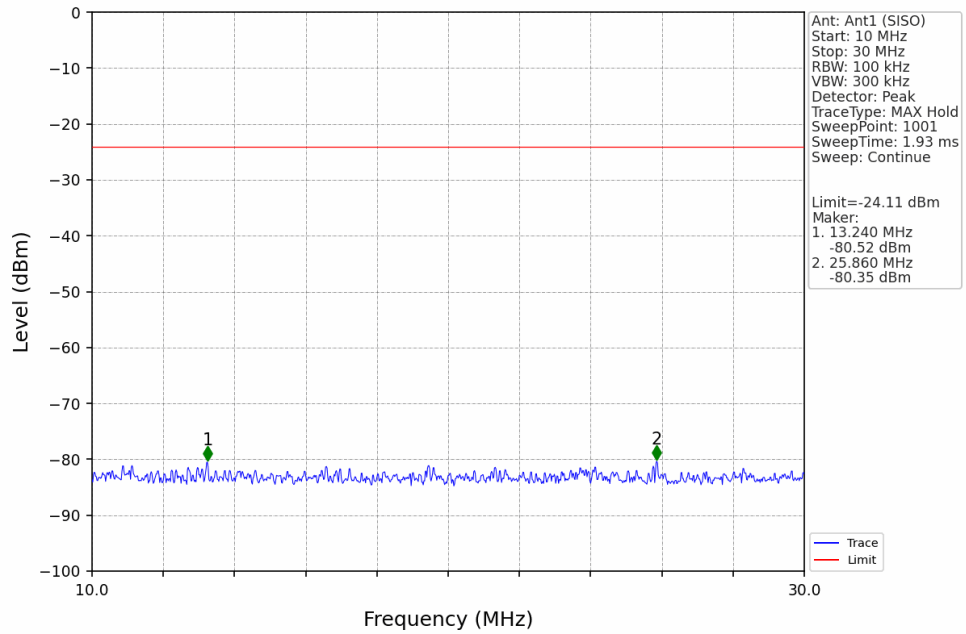

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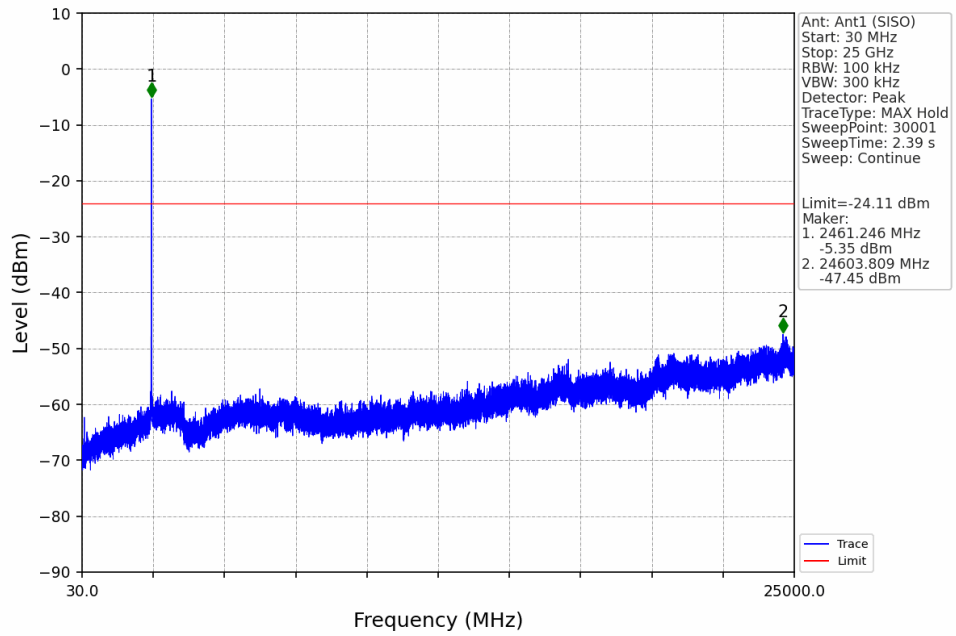
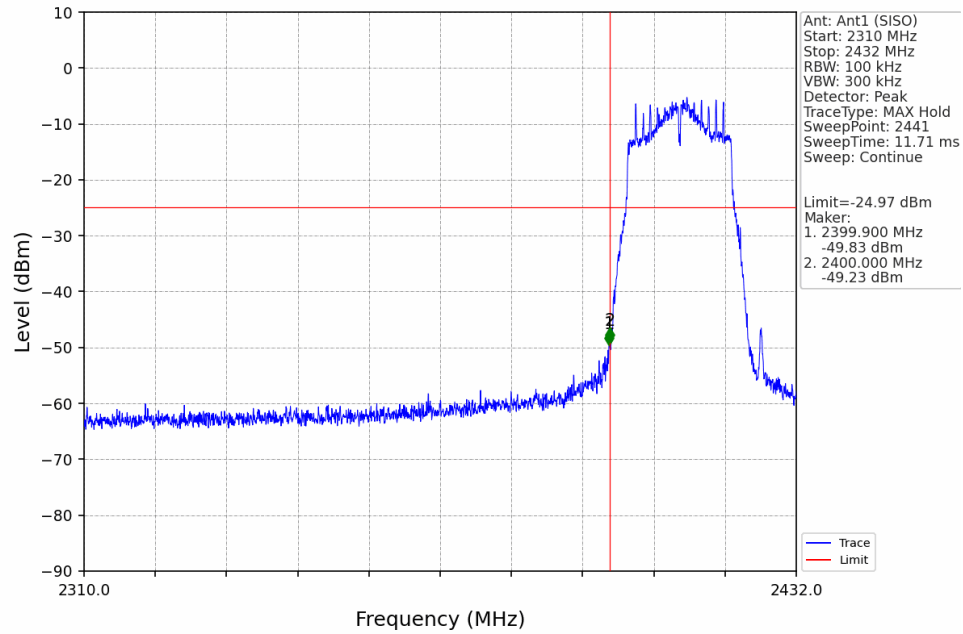
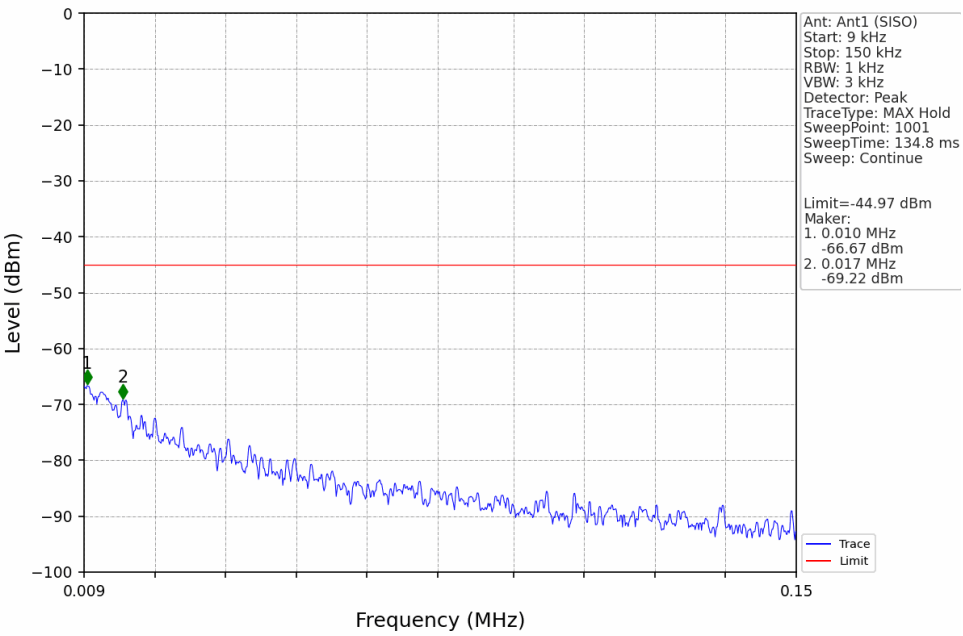


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



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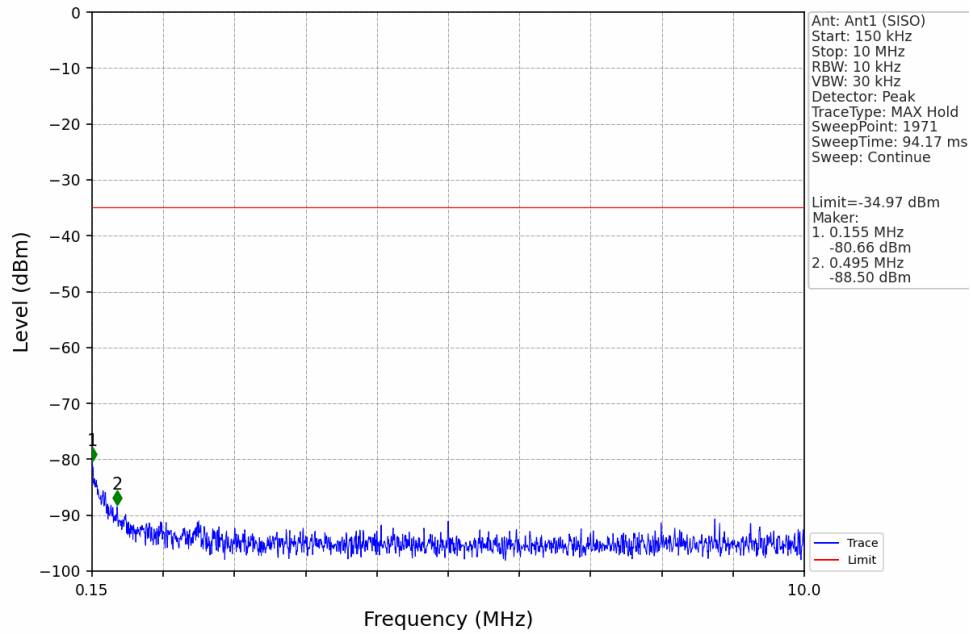

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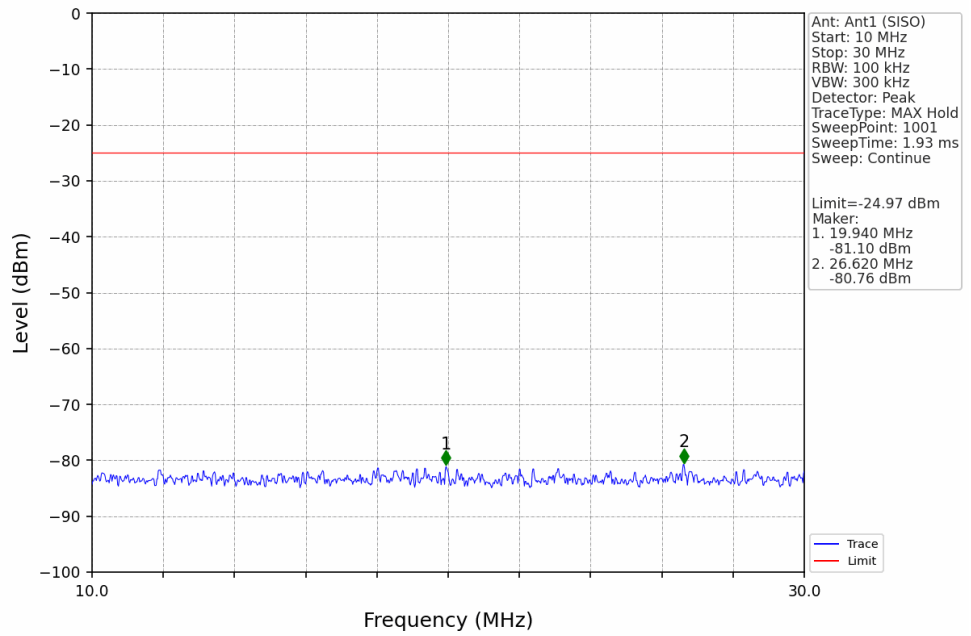
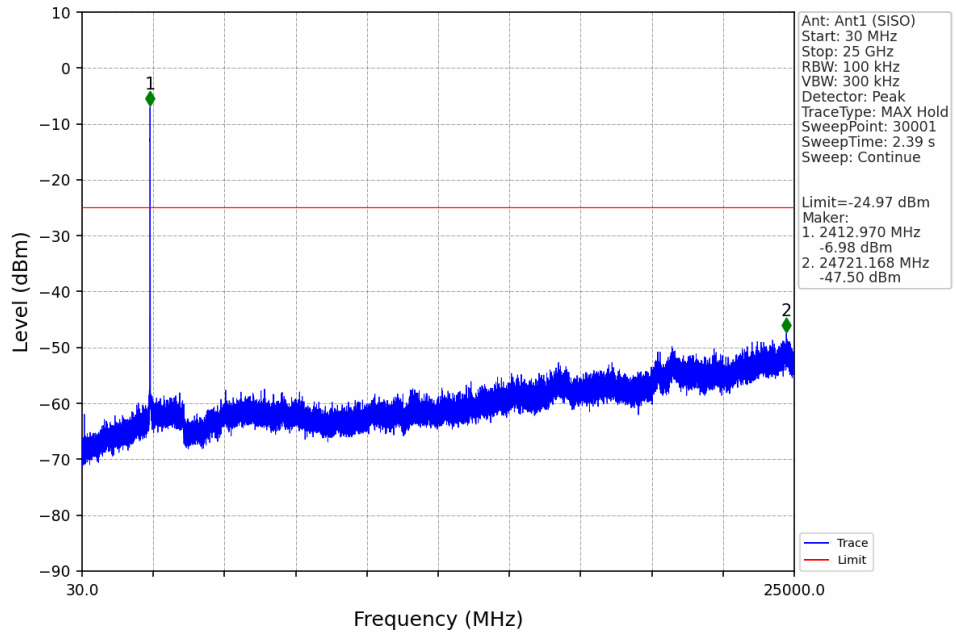
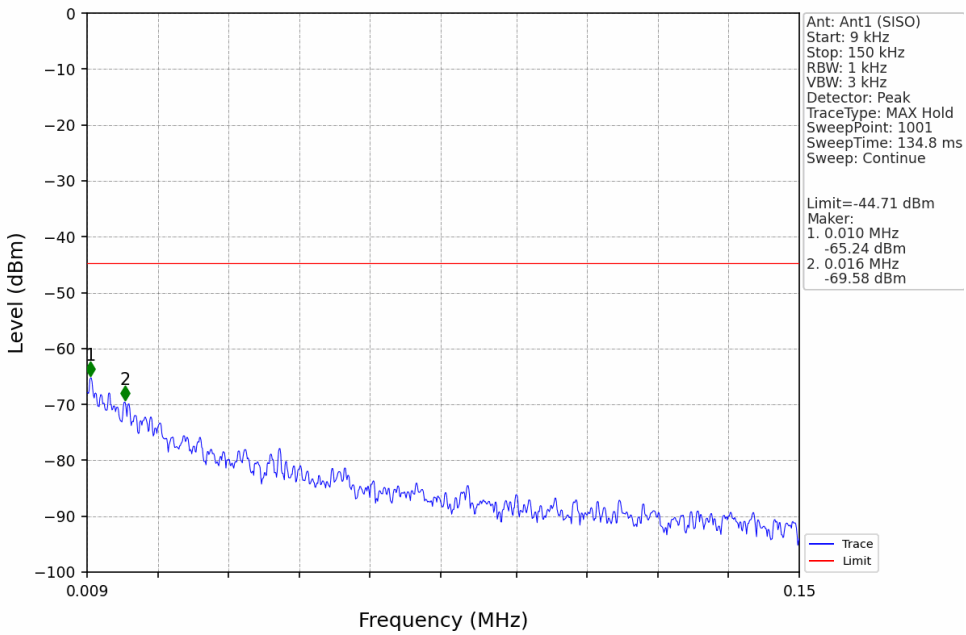


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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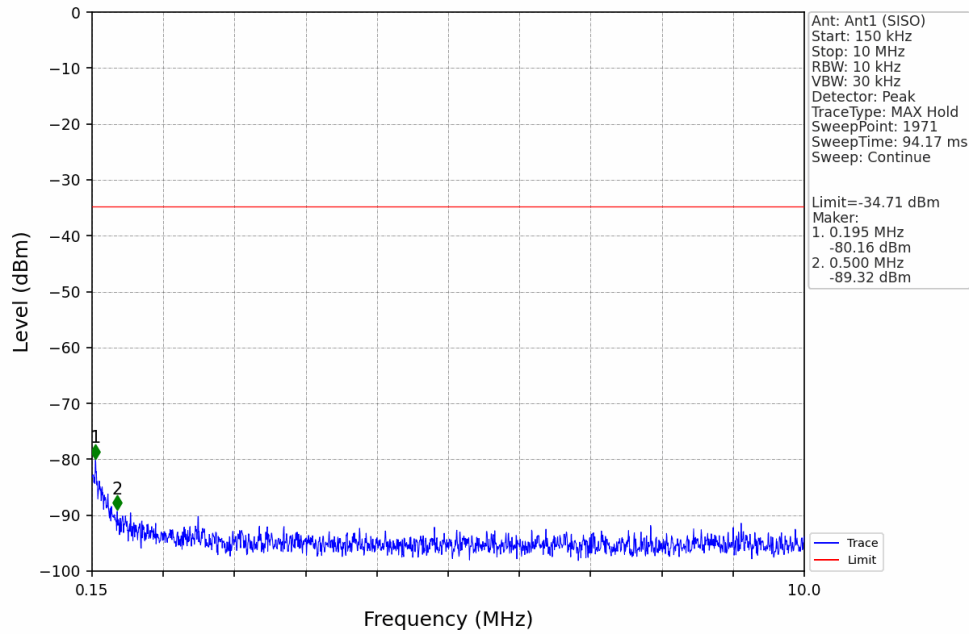

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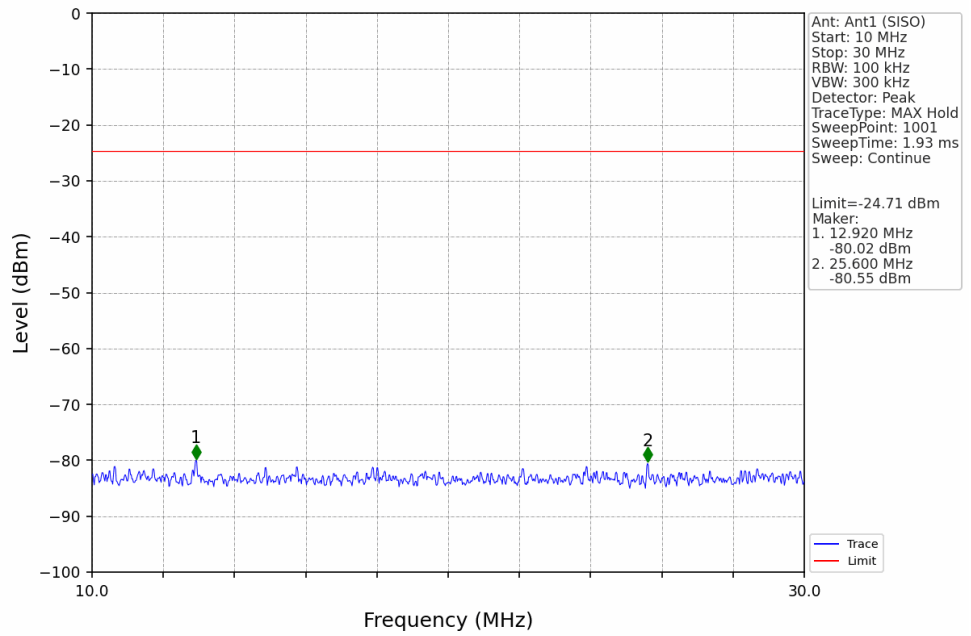

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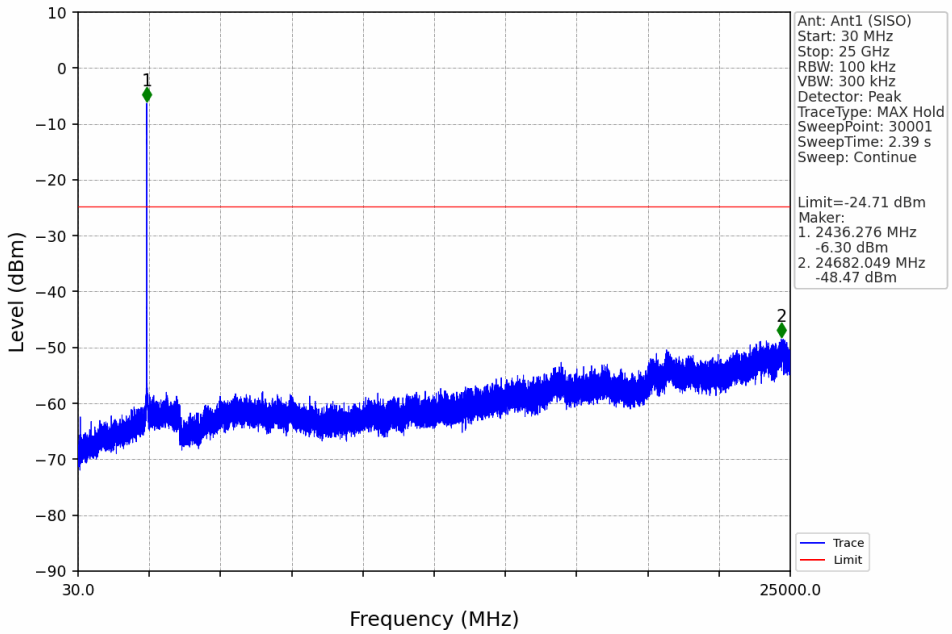
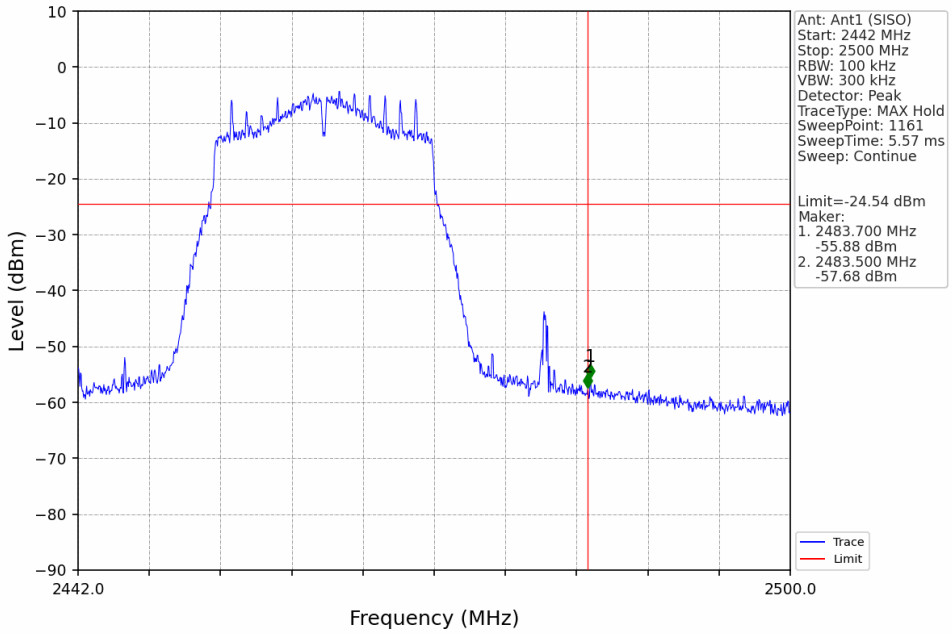


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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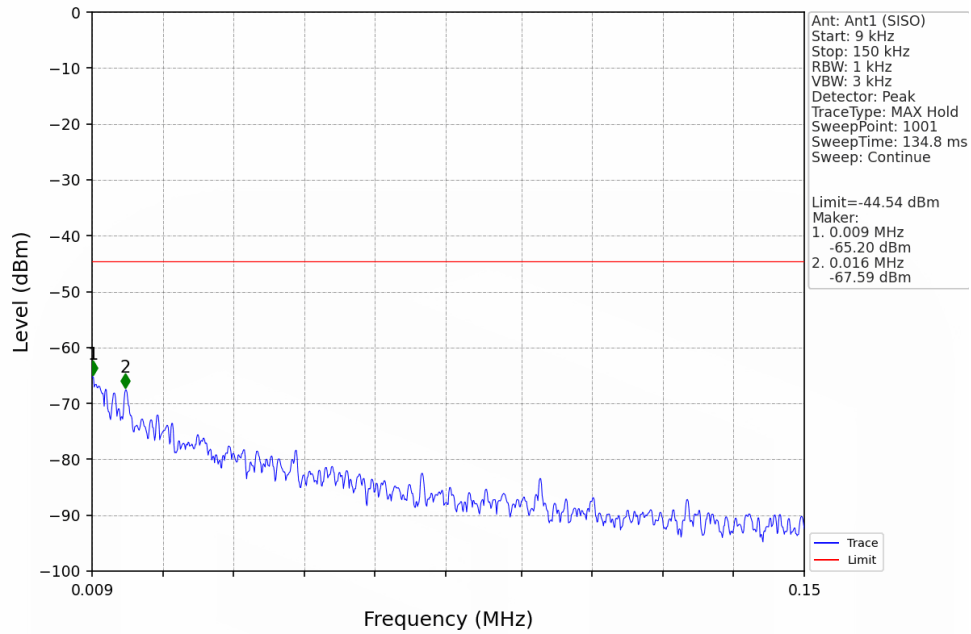

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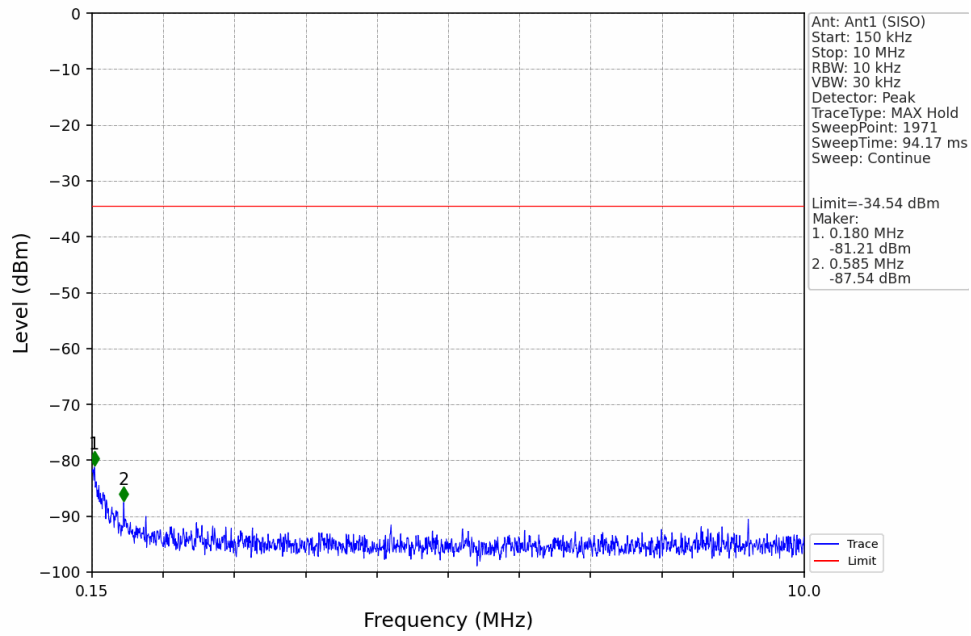
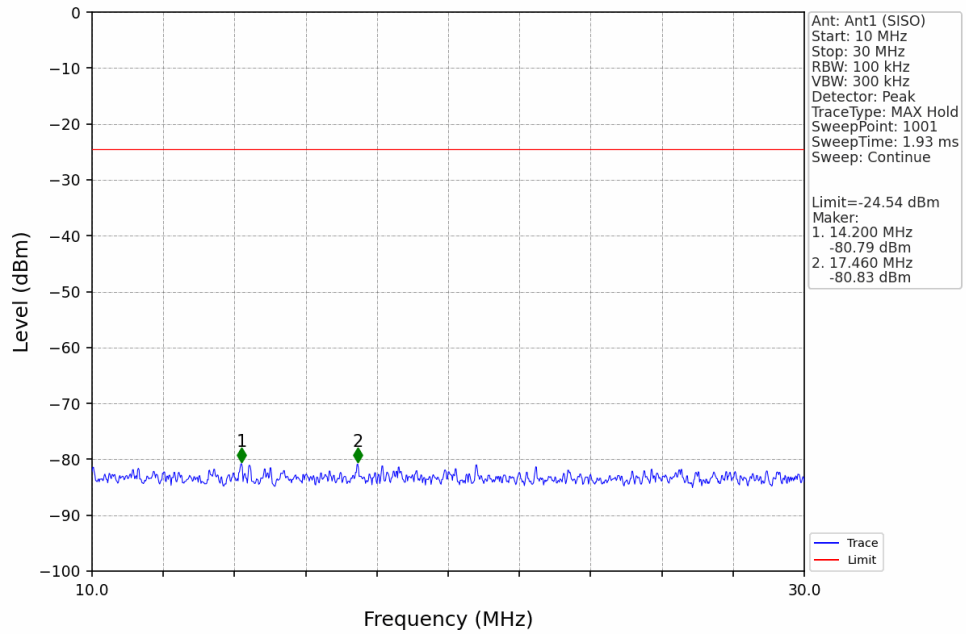
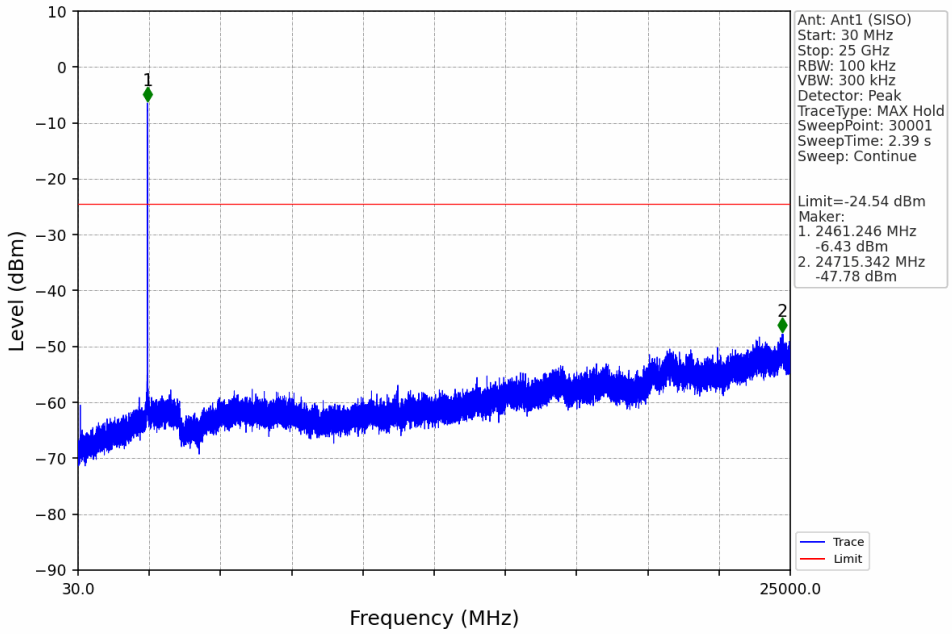


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



--------- End of Report -------