

Appendix A for SHCR220100010101

1. Duty Cycle

1.1 Ant1

1.1.1 Test Result

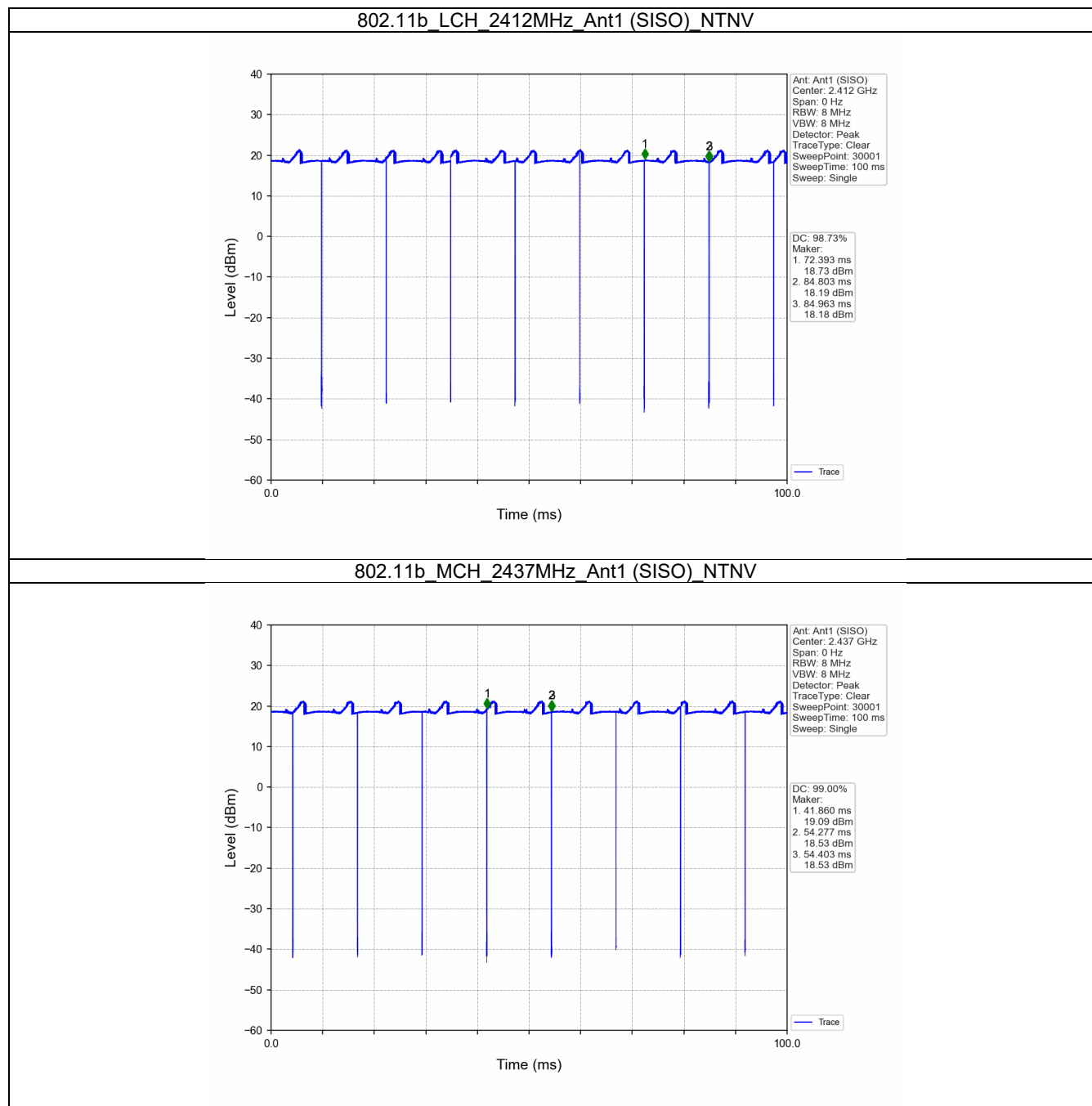
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	12.410	12.570	98.73	0.06	0.95
		2437	12.417	12.543	99.00	0.04	0.66
		2462	12.417	12.580	98.70	0.06	0.87
802.11g	SISO	2412	2.064	2.226	92.72	0.33	3.09
		2437	2.060	2.217	92.92	0.32	5.16
		2462	2.064	2.217	93.10	0.31	4.39
802.11n (HT20)	SISO	2412	1.920	2.091	91.82	0.37	5.46
		2437	1.919	2.091	91.77	0.37	5.49
		2462	1.920	2.073	92.62	0.33	4.65
802.11n (HT40)	SISO	2422	0.945	1.115	84.75	0.72	8.22
		2437	0.944	1.115	84.66	0.72	10.80
		2452	0.944	1.115	84.66	0.72	8.25



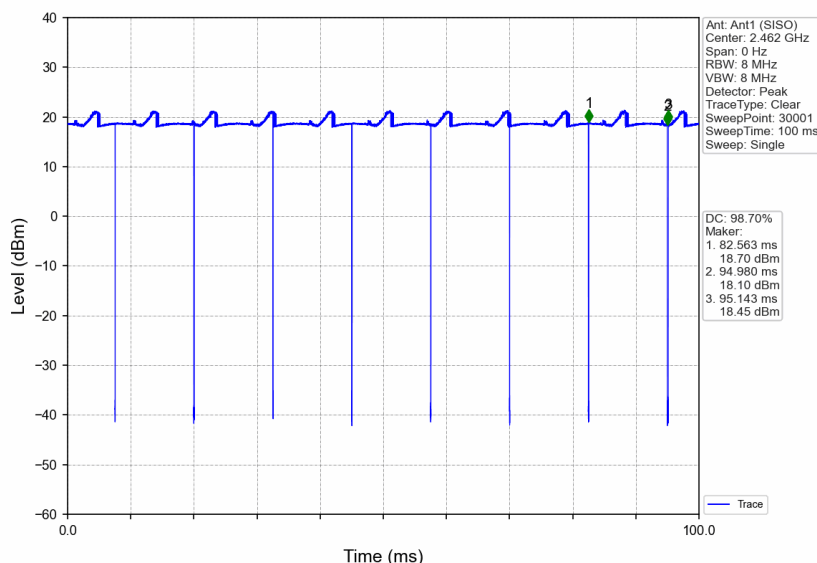
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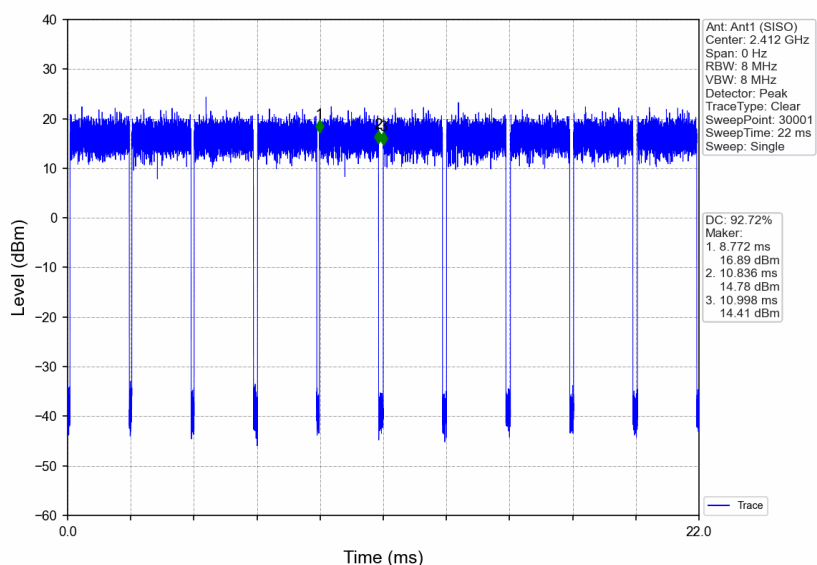
1.1.2 Test Graph



802.11b HCH 2462MHz Ant1 (SISO) NTN



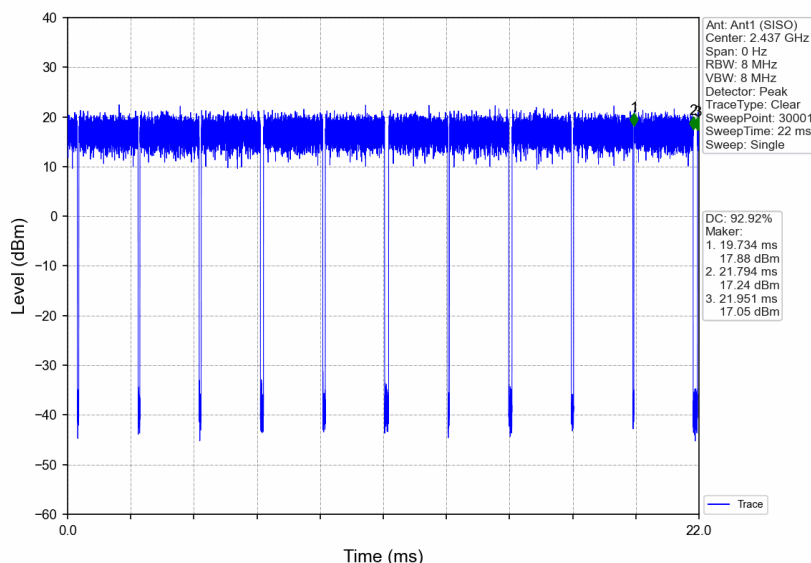
802.11g LCH 2412MHz Ant1 (SISO) NTN



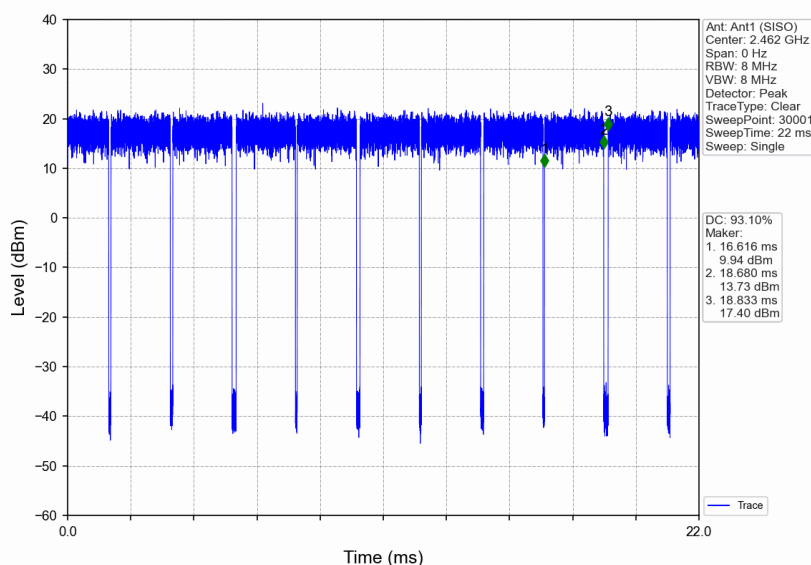
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802.11g MCH 2437MHz Ant1 (SISO) NTN



802.11g HCH 2462MHz Ant1 (SISO) NTN



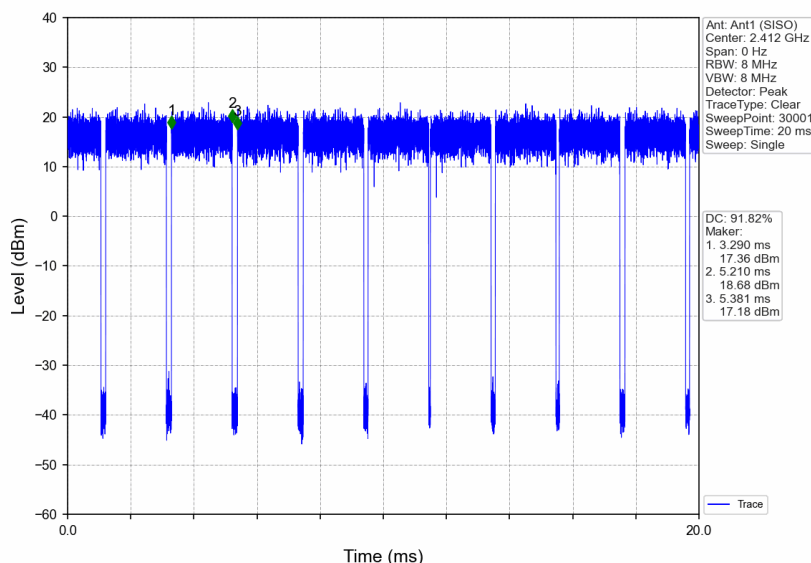
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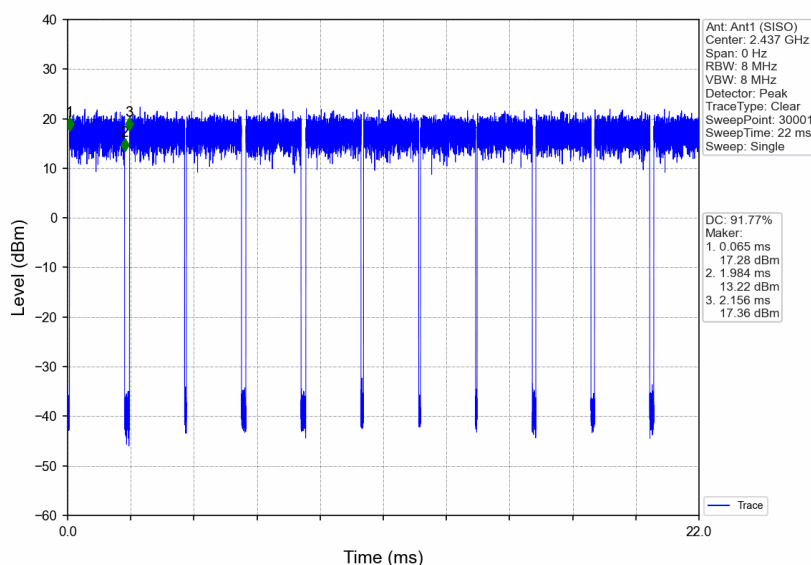
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802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



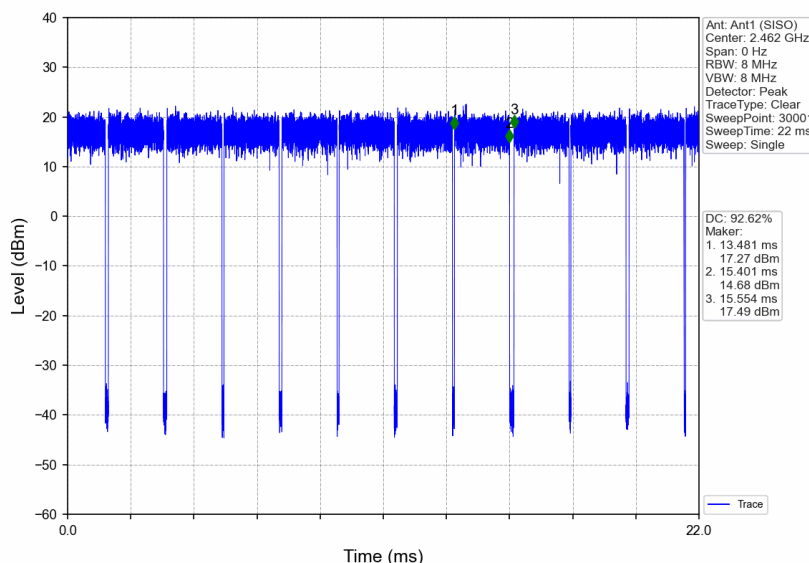
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



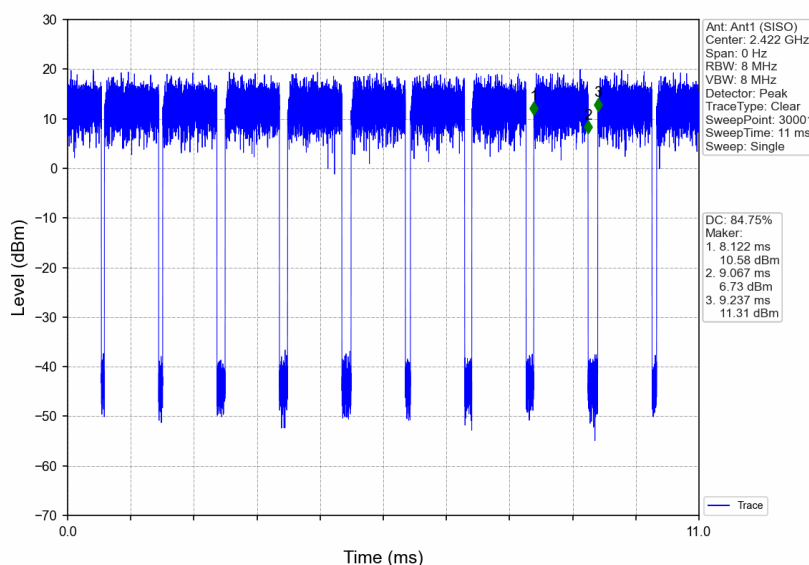
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802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



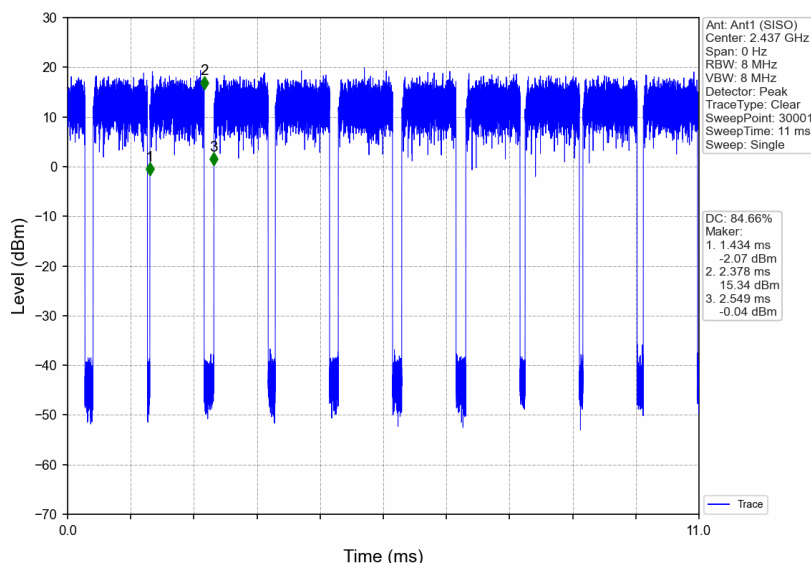
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



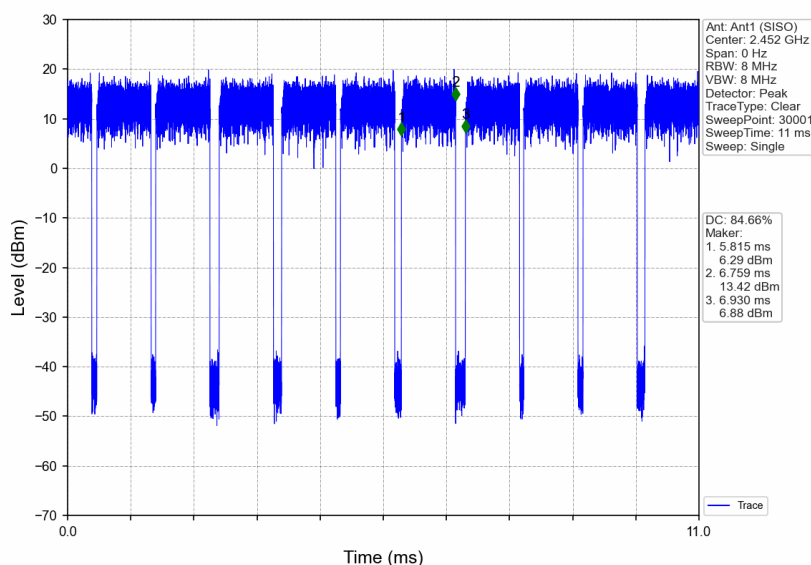
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802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



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2. Bandwidth

2.1 OBW

2.1.1 Test Result

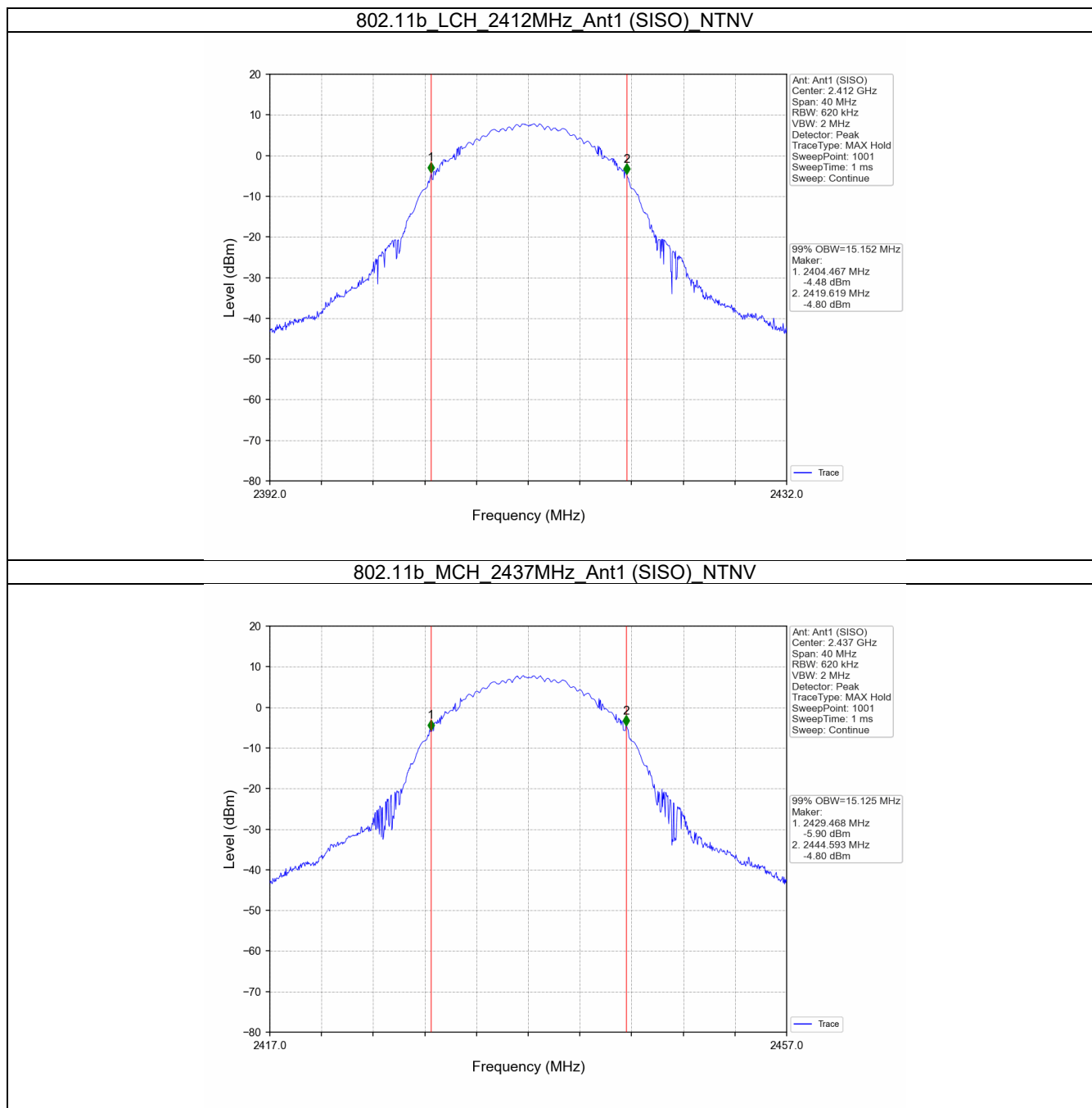
Mode	TX Type	Frequency (MHz)	Ant	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	15.152	Pass
		2437	1	15.125	Pass
		2462	1	15.194	Pass
802.11g	SISO	2412	1	18.189	Pass
		2437	1	18.619	Pass
		2462	1	19.628	Pass
802.11n (HT20)	SISO	2412	1	18.771	Pass
		2437	1	20.690	Pass
		2462	1	19.556	Pass
802.11n (HT40)	SISO	2422	1	36.542	Pass
		2437	1	36.552	Pass
		2452	1	36.952	Pass



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2.1.2 Test Graph



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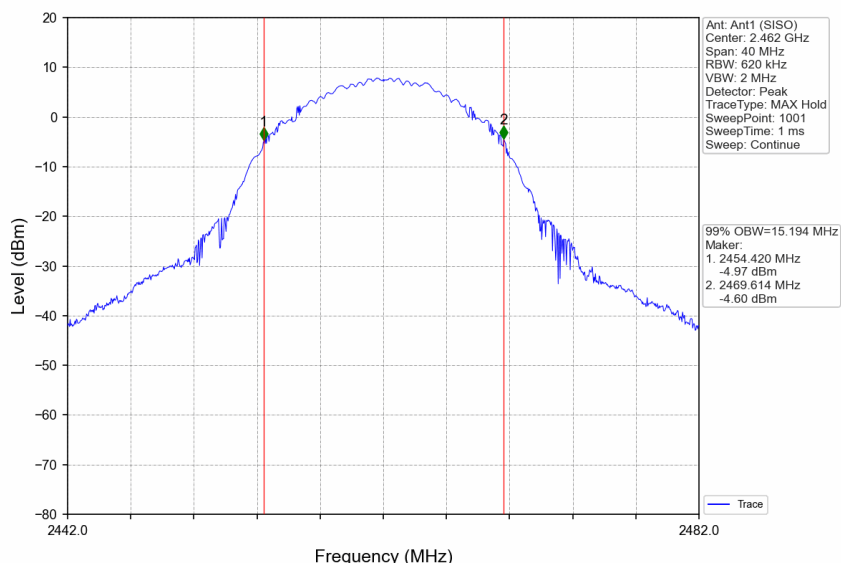
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Testing Center EMC Lab

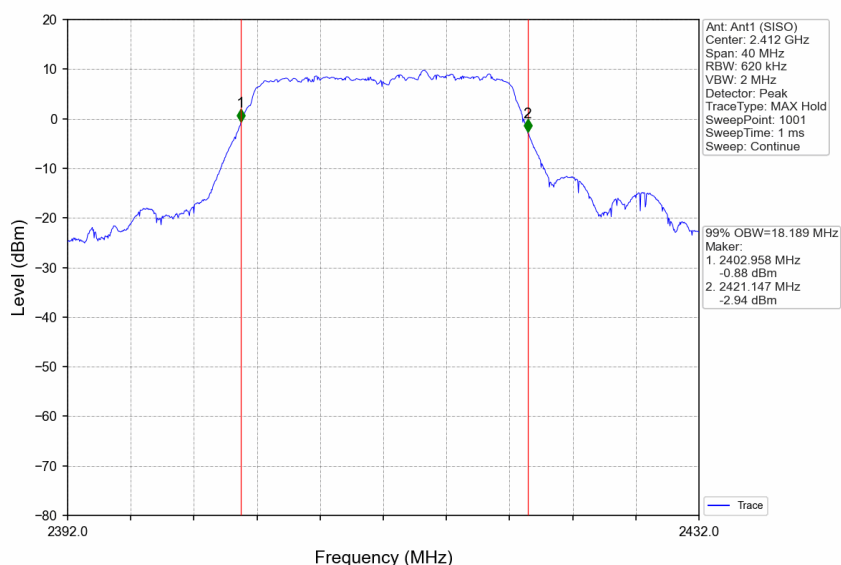
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802.11b HCH 2462MHz Ant1 (SISO) NTN



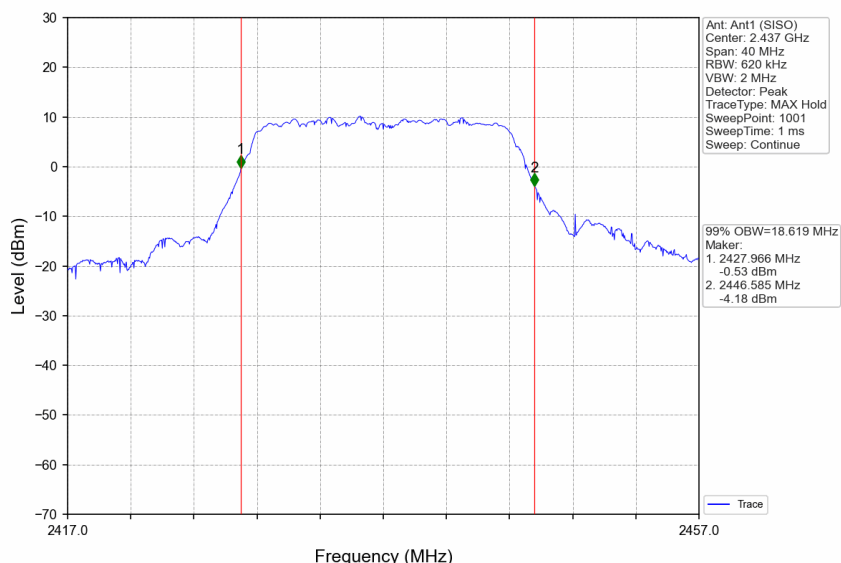
802.11g LCH 2412MHz Ant1 (SISO) NTN



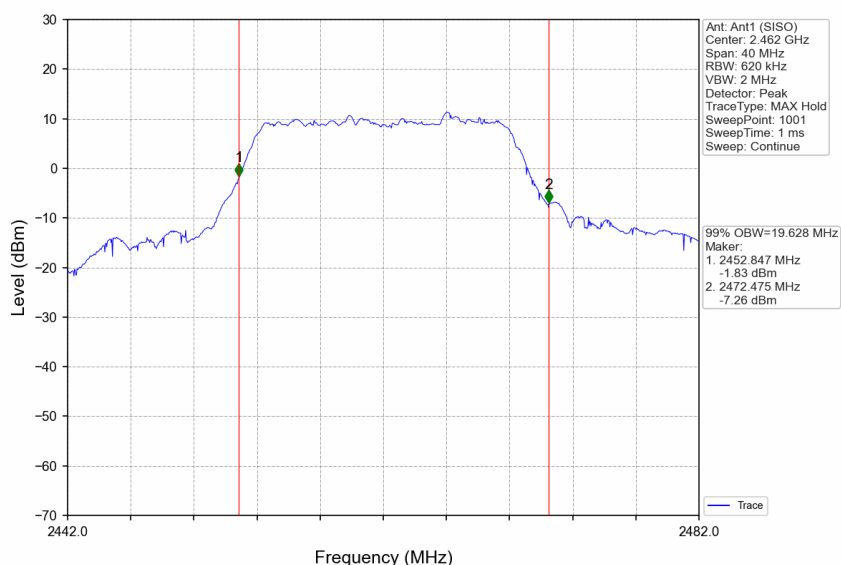
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802.11g MCH 2437MHz Ant1 (SISO) NTN



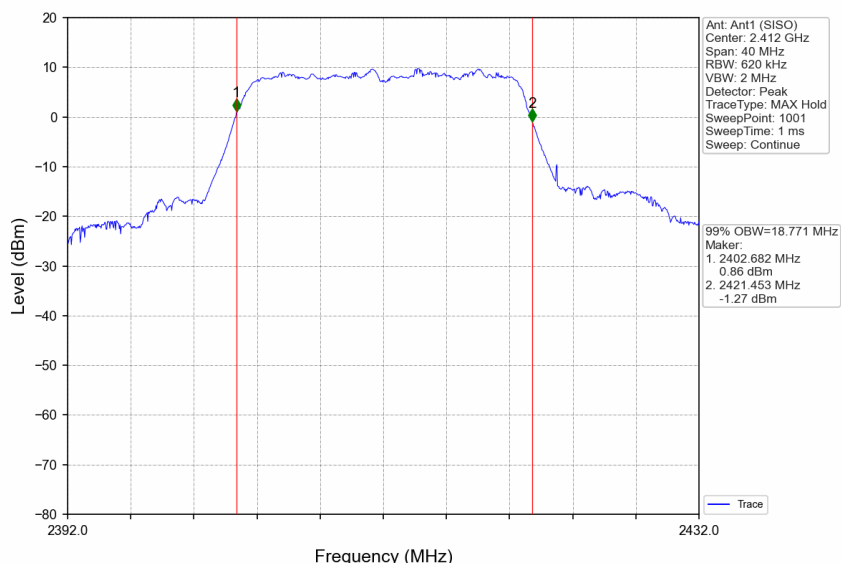
802.11g HCH 2462MHz Ant1 (SISO) NTN



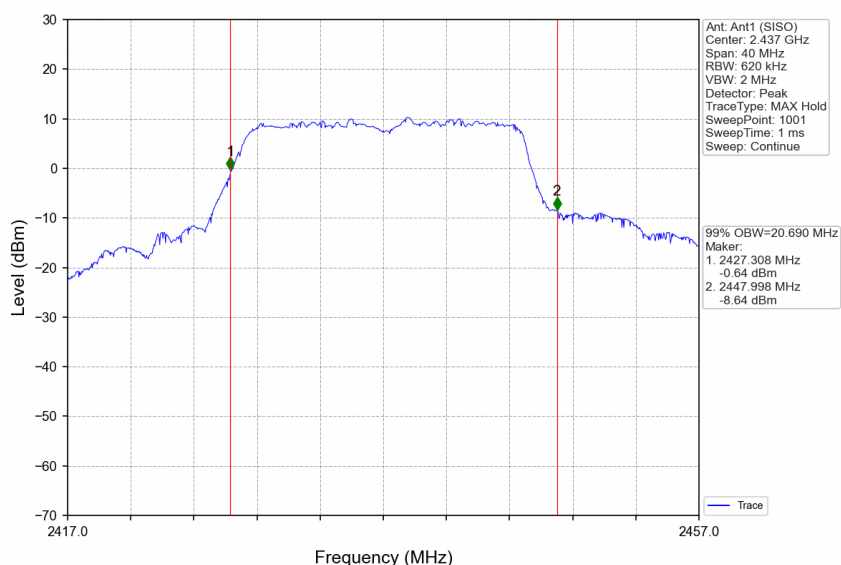
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802.11n(HT20)_LCH_2412MHz Ant1 (SISO)_NTNV



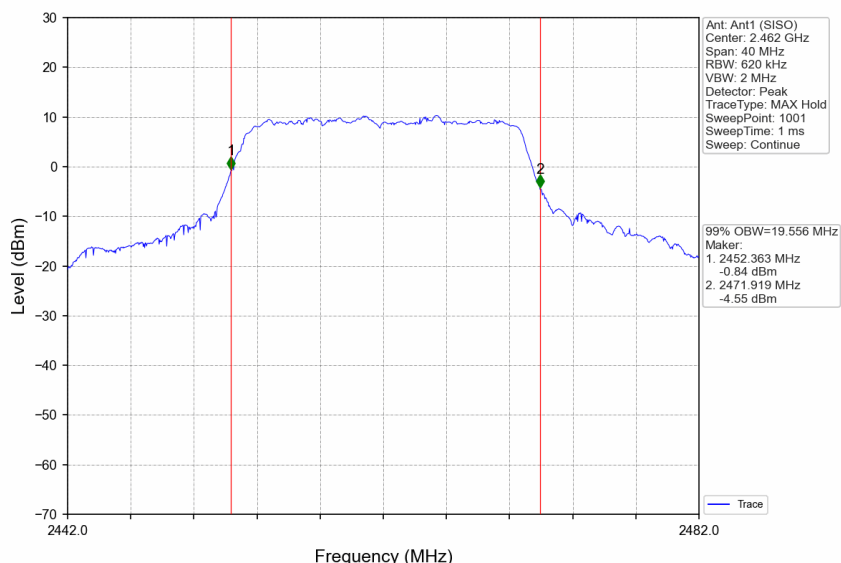
802.11n(HT20)_MCH_2437MHz Ant1 (SISO)_NTNV



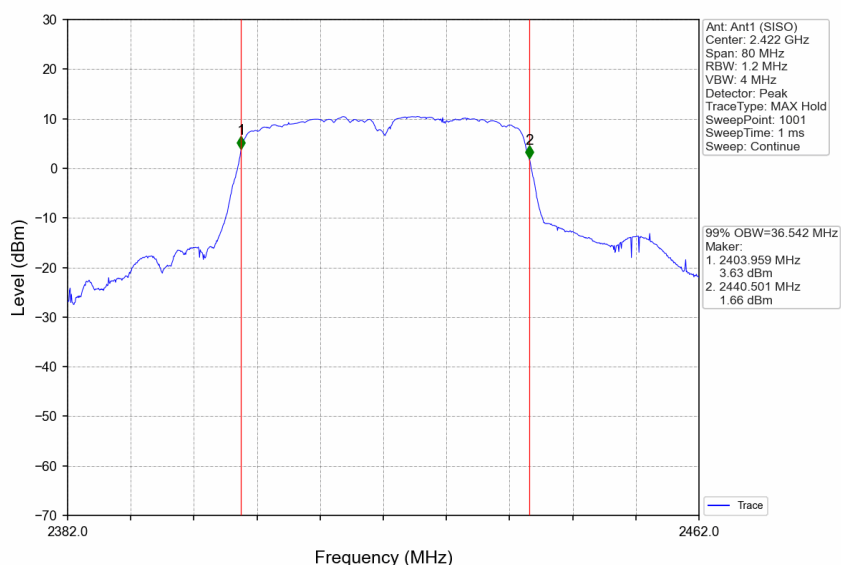
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802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



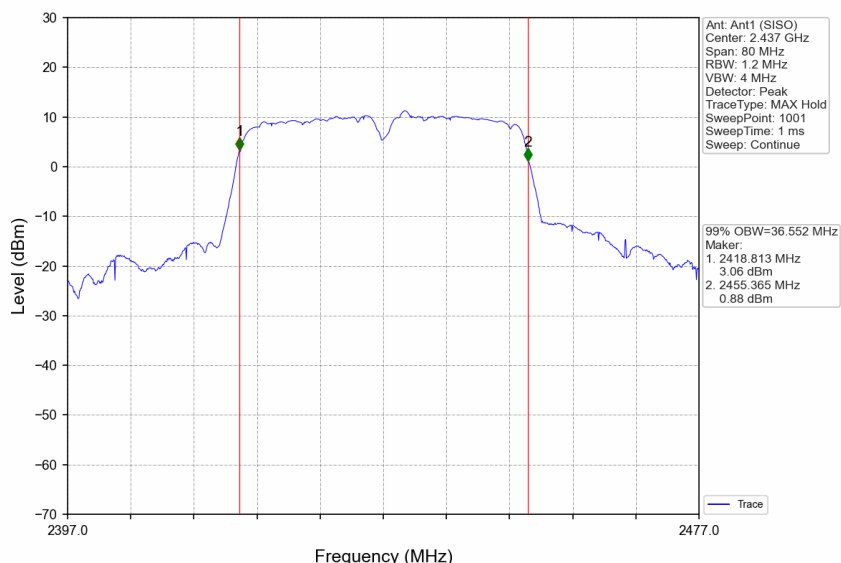
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



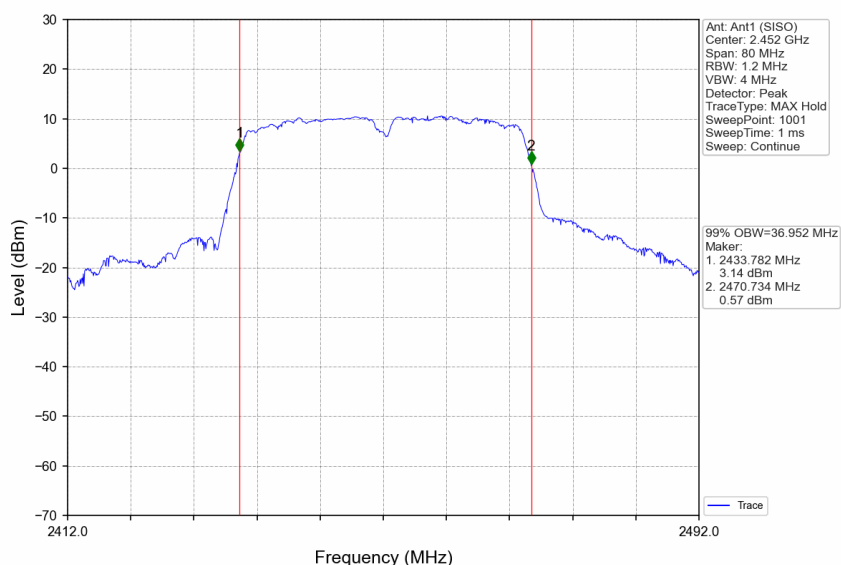
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802.11n(HT40) MCH_2437MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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2.2 6dB BW

2.2.1 Test Result

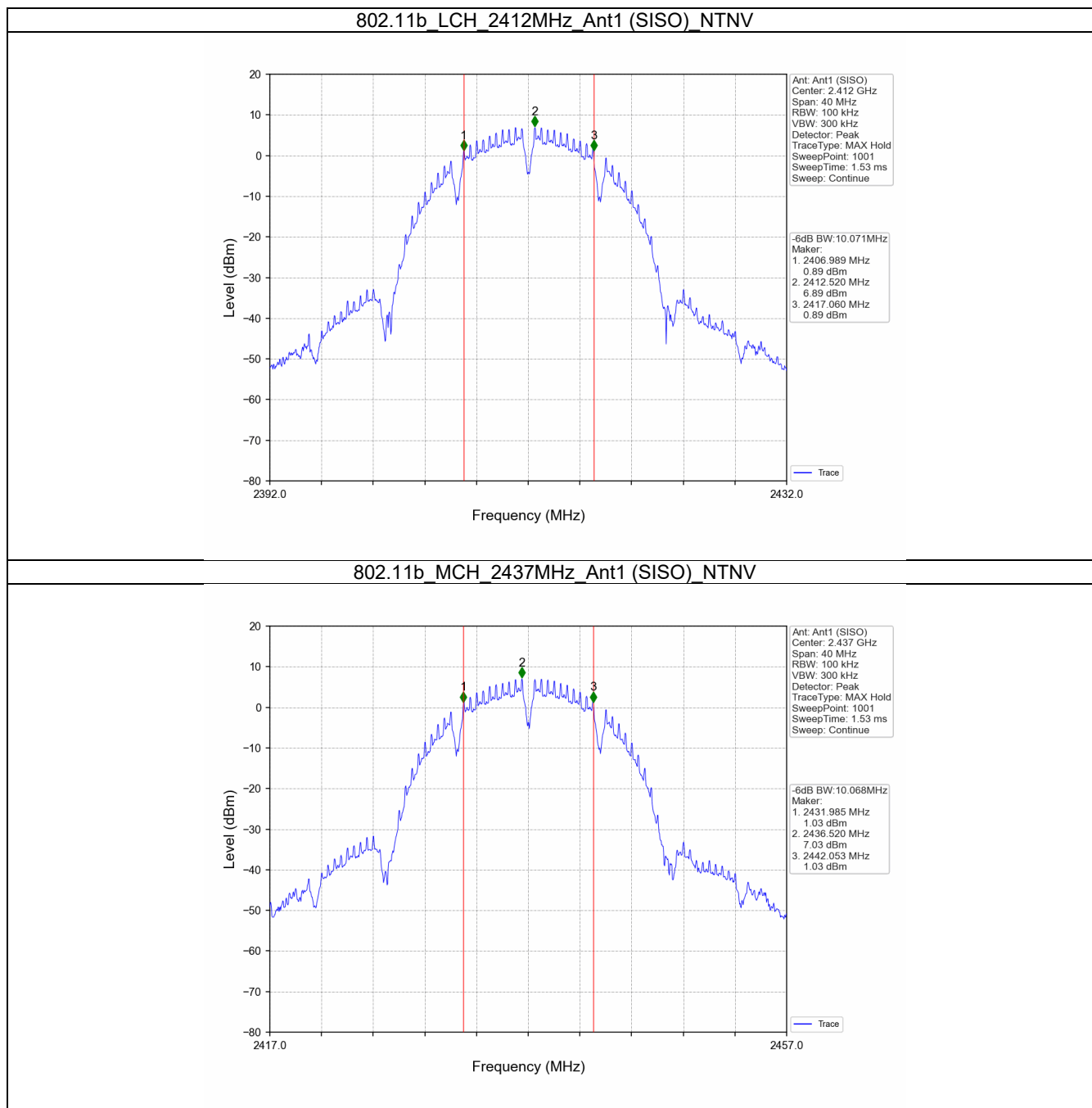
Mode	TX Type	Frequency (MHz)	Ant	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.071	≥ 0.5	Pass
		2437	1	10.068	≥ 0.5	Pass
		2462	1	10.066	≥ 0.5	Pass
802.11g	SISO	2412	1	16.387	≥ 0.5	Pass
		2437	1	16.386	≥ 0.5	Pass
		2462	1	16.377	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	17.575	≥ 0.5	Pass
		2437	1	17.579	≥ 0.5	Pass
		2462	1	17.581	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.179	≥ 0.5	Pass
		2437	1	35.171	≥ 0.5	Pass
		2452	1	35.172	≥ 0.5	Pass



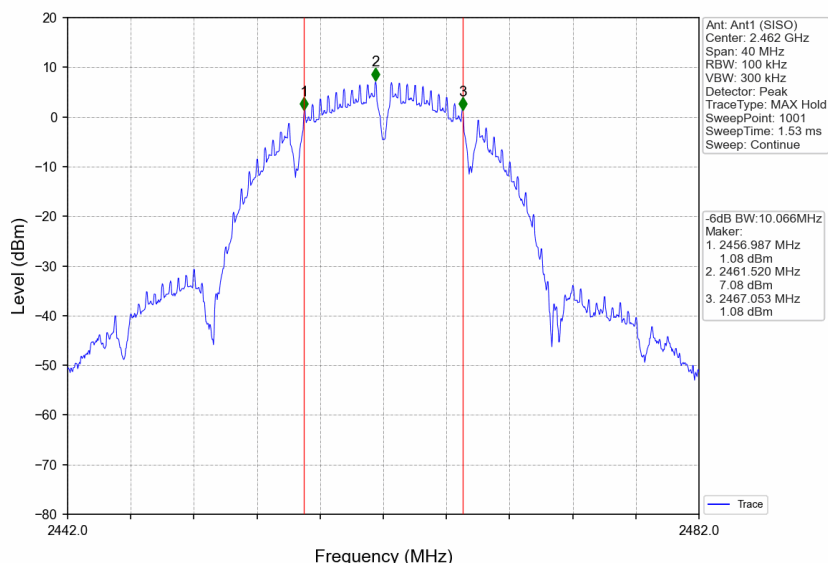
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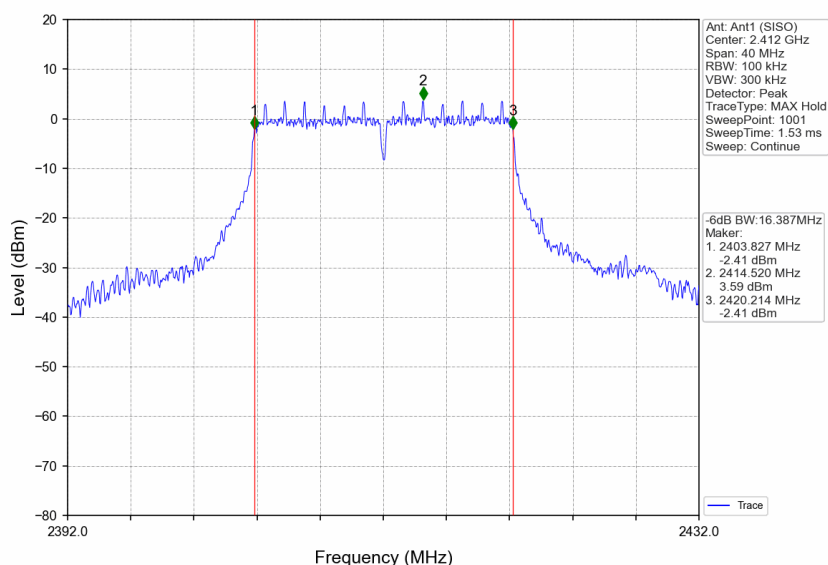
2.2.2 Test Graph



802.11b HCH 2462MHz Ant1 (SISO) NTNV



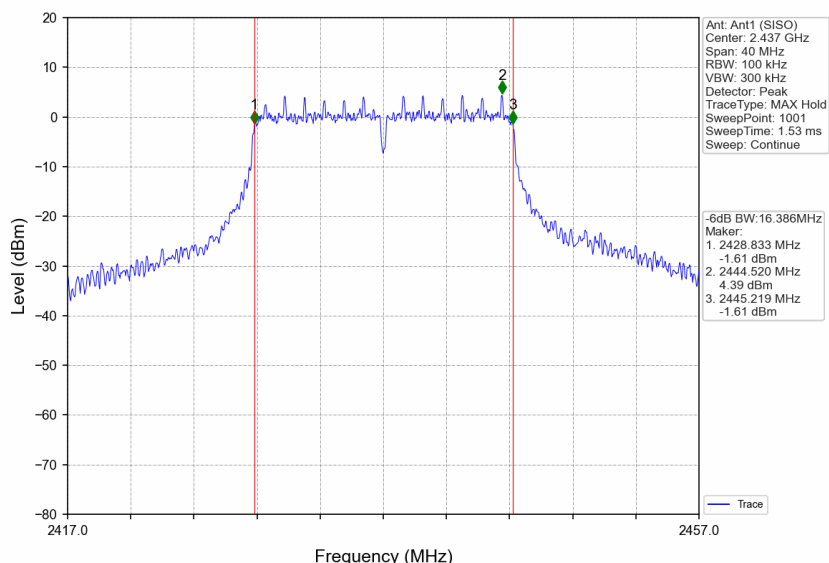
802.11g LCH 2412MHz Ant1 (SISO) NTNV



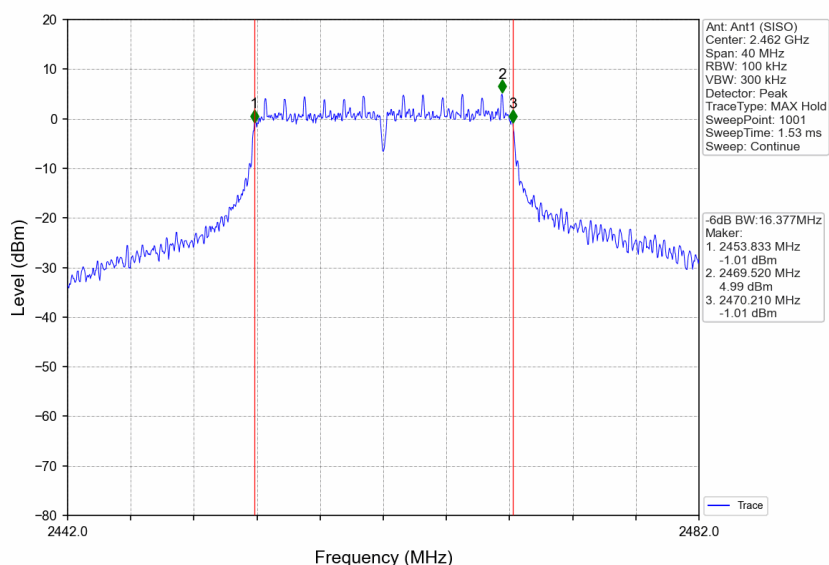
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802.11g MCH 2437MHz Ant1 (SISO) NTN



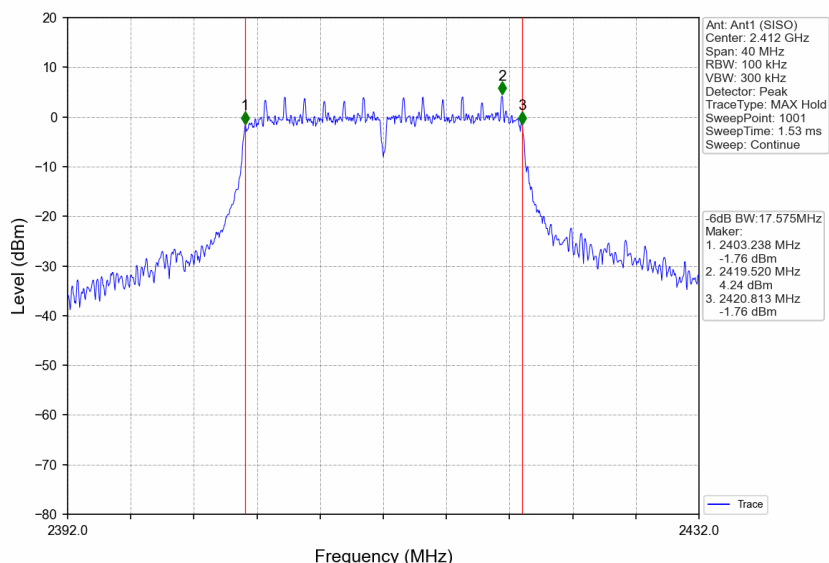
802.11g HCH 2462MHz Ant1 (SISO) NTN



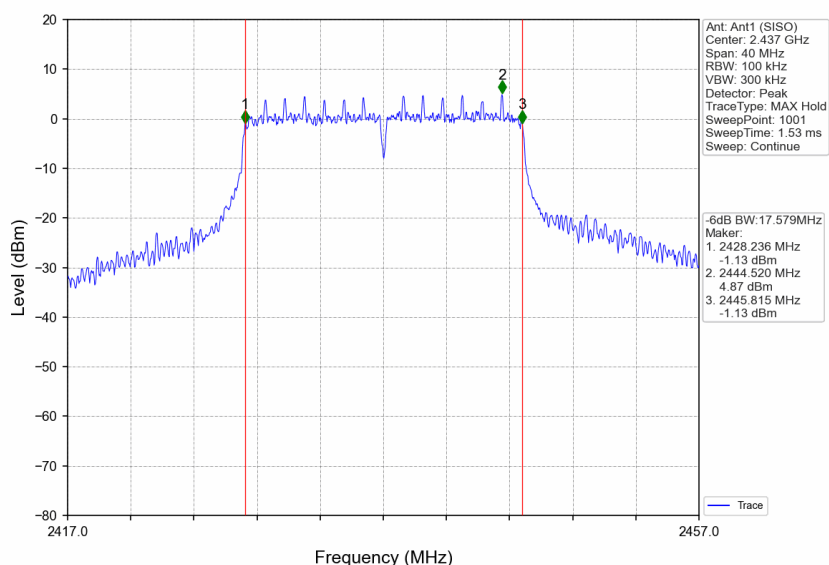
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802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



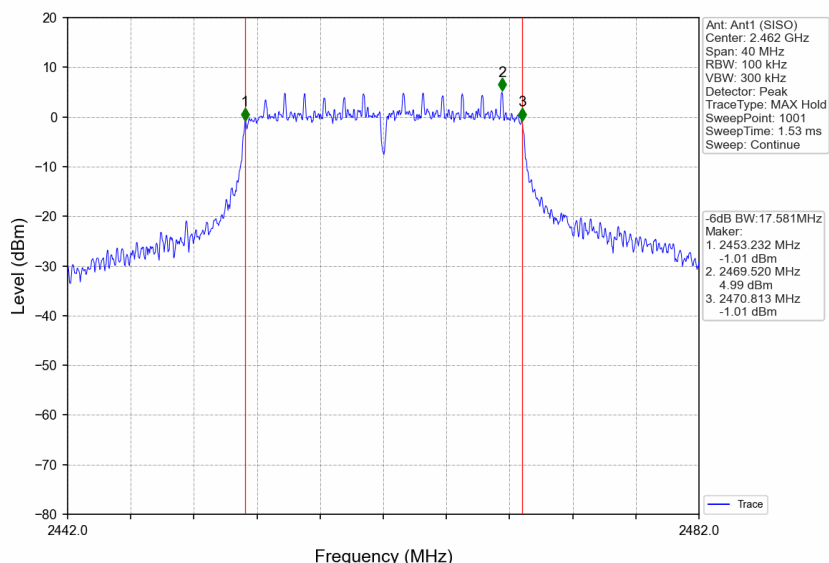
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



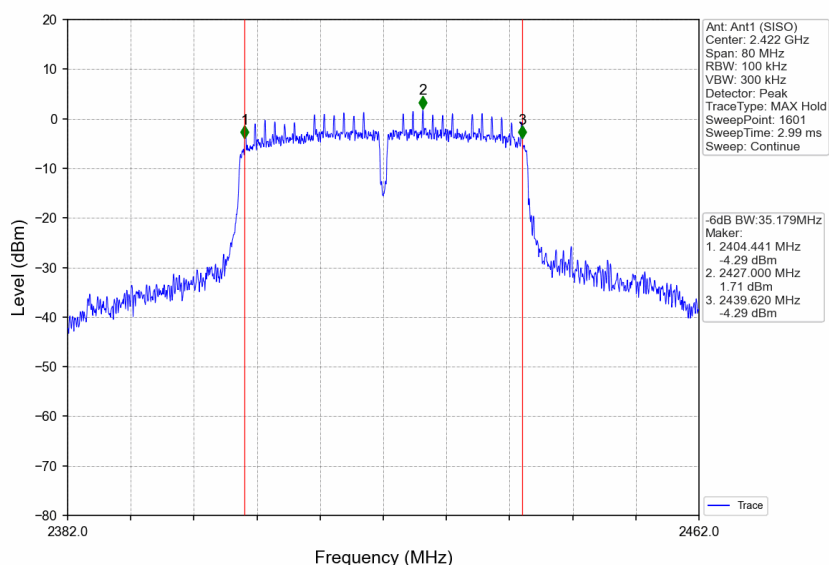
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802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTNV



802.11n(HT40) LCH_2422MHz_Ant1 (SISO) NTNV



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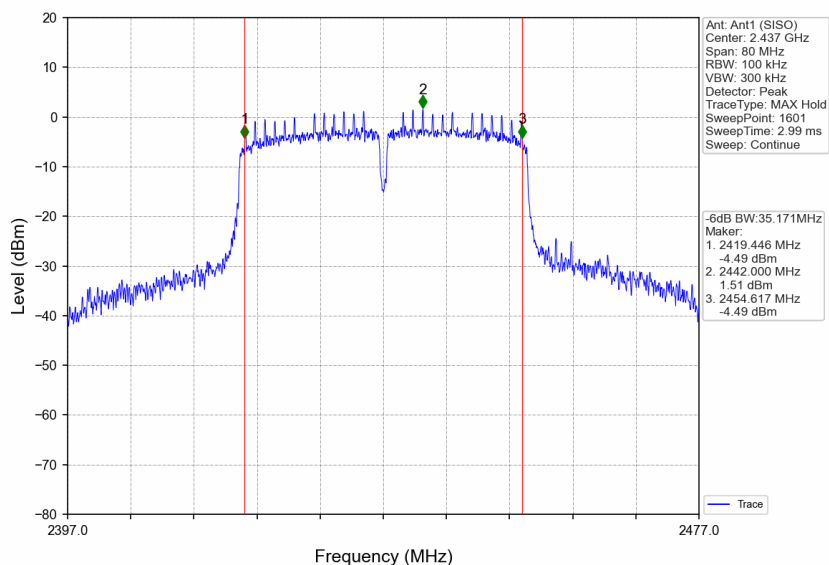
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Testing Center EMC Lab

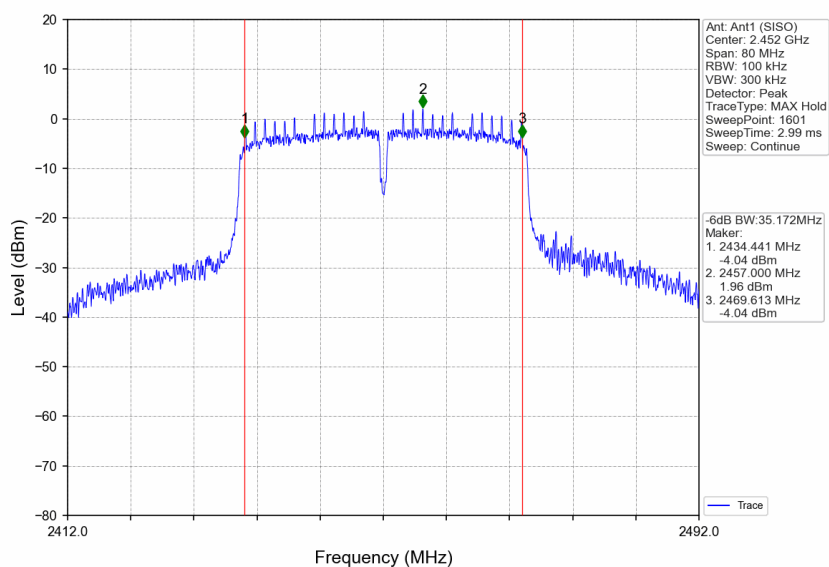
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802.11n(HT40) MCH_2437MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			Ant1	Limit	
802.11b	SISO	2412	15.68	<=30	Pass
		2437	15.65	<=30	Pass
		2462	15.73	<=30	Pass
802.11g	SISO	2412	14.97	<=30	Pass
		2437	15.53	<=30	Pass
		2462	16.03	<=30	Pass
802.11n (HT20)	SISO	2412	15.37	<=30	Pass
		2437	15.94	<=30	Pass
		2462	16.03	<=30	Pass
802.11n (HT40)	SISO	2422	15.27	<=30	Pass
		2437	15.12	<=30	Pass
		2452	15.43	<=30	Pass

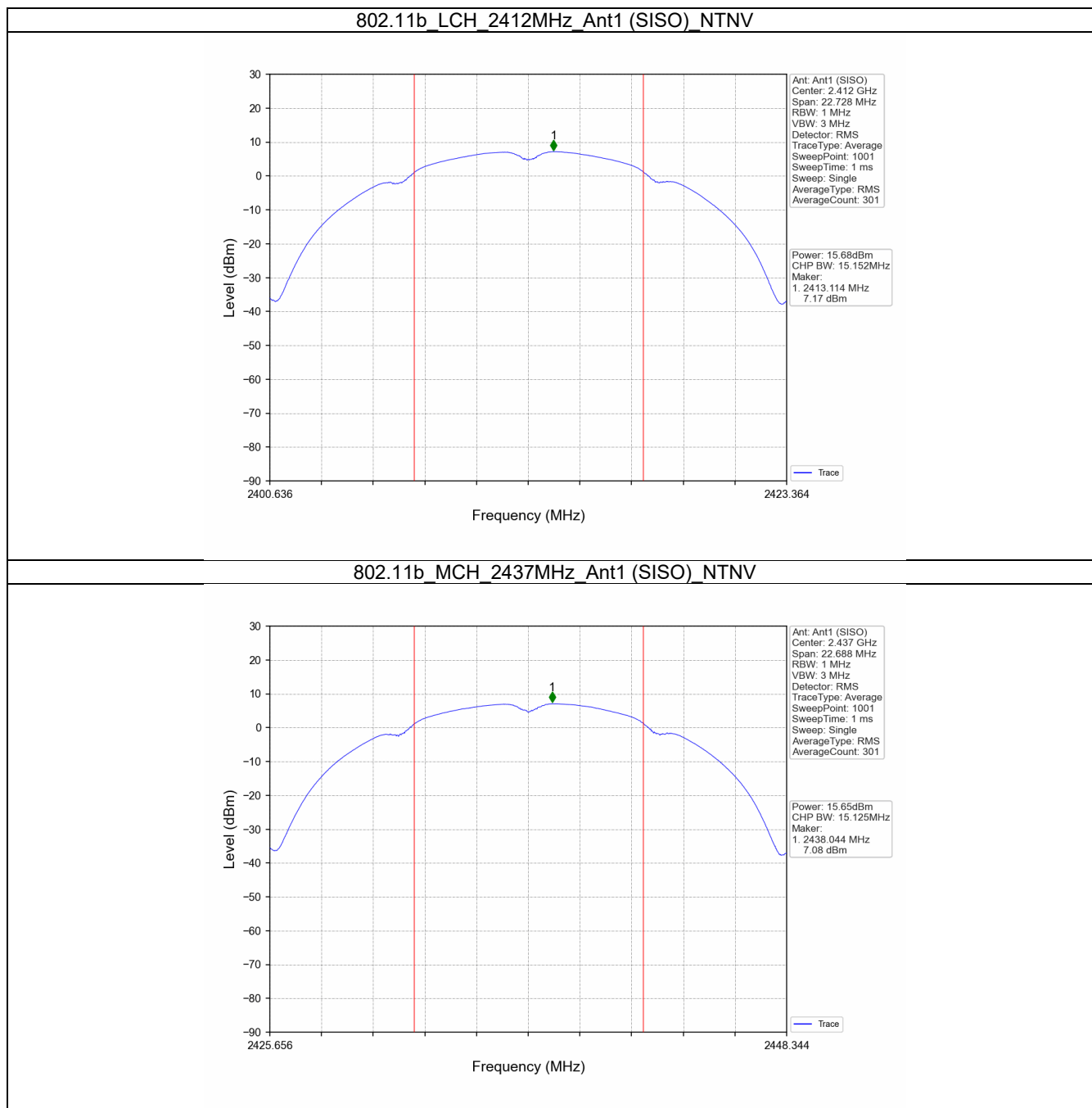
Note1: Antenna Gain: Ant1: 3.00dBi;



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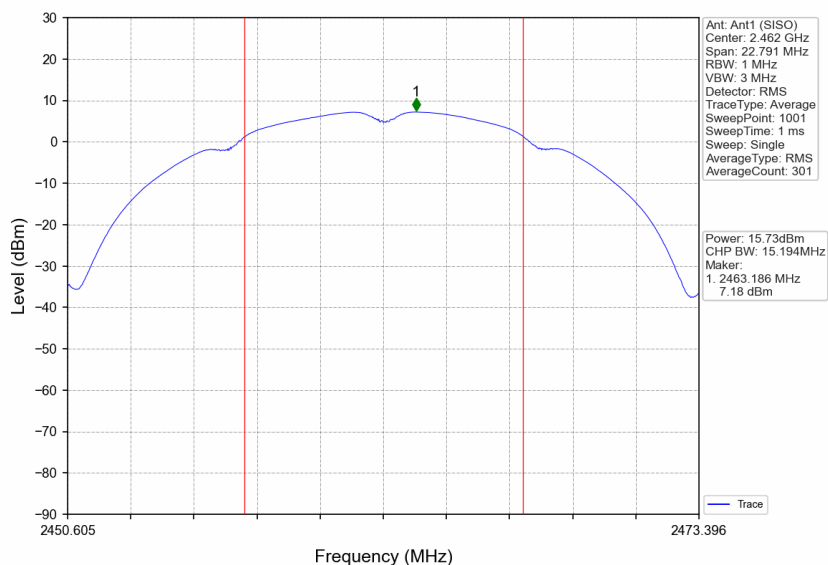
3.1.2 Test Graph



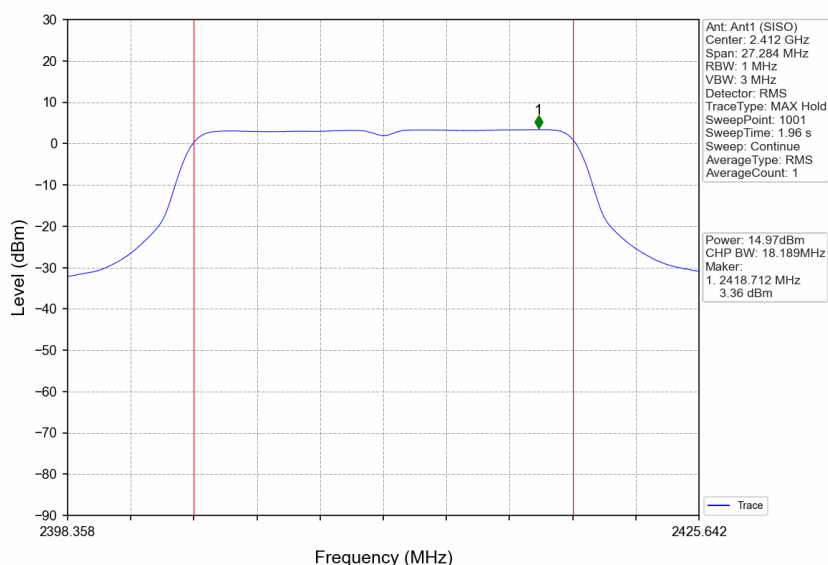
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802.11b HCH 2462MHz Ant1 (SISO) NTNV

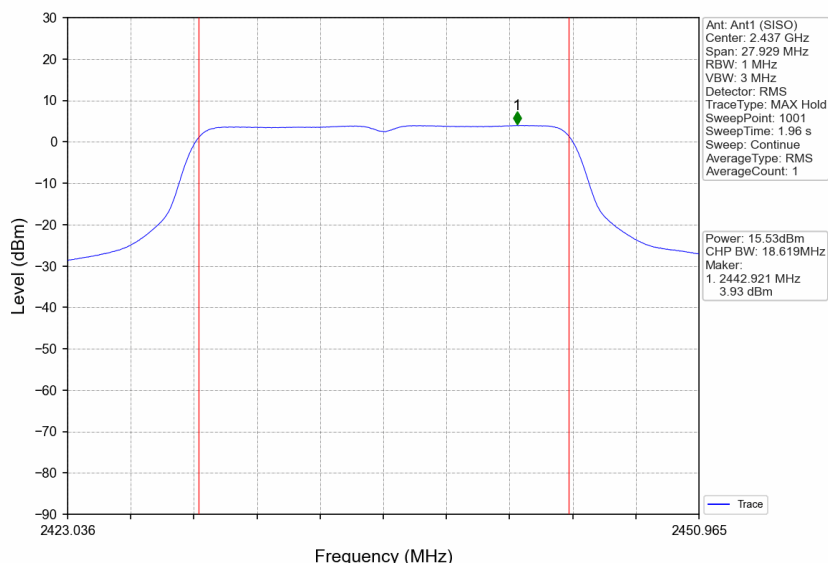
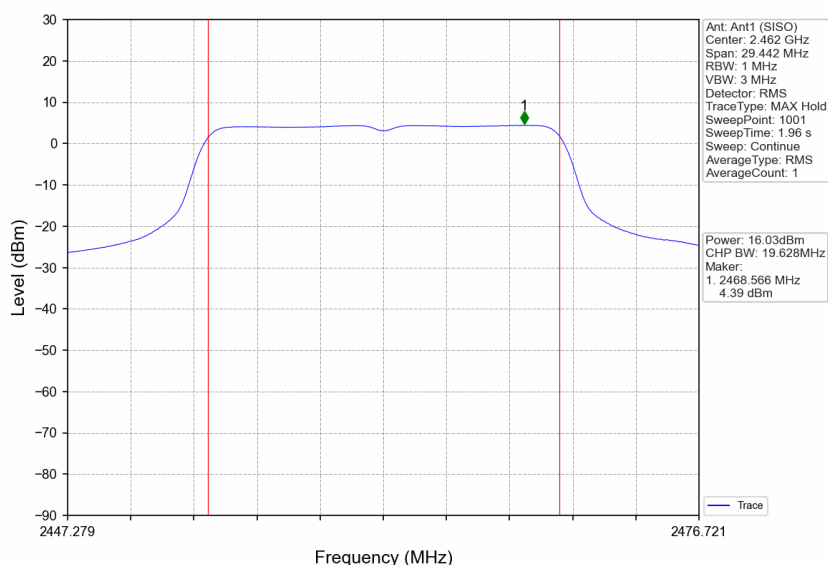


802.11g LCH 2412MHz Ant1 (SISO) NTNV



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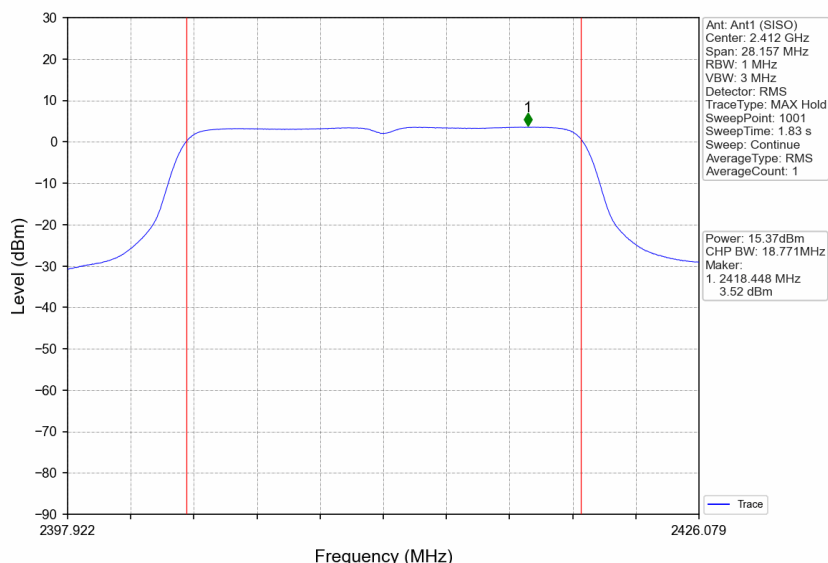
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802.11g MCH 2437MHz Ant1 (SISO) NTN

802.11g HCH 2462MHz Ant1 (SISO) NTN


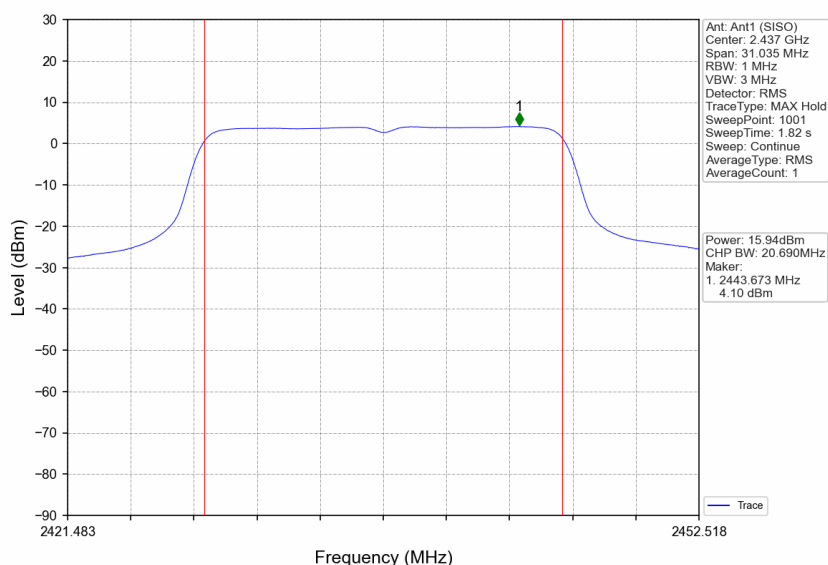
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802.11n(HT20) LCH 2412MHz Ant1 (SISO) NTNV



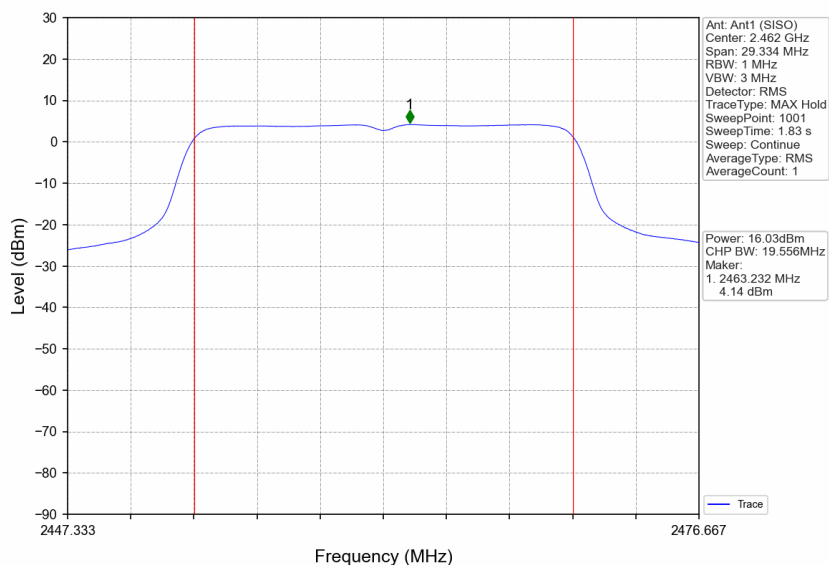
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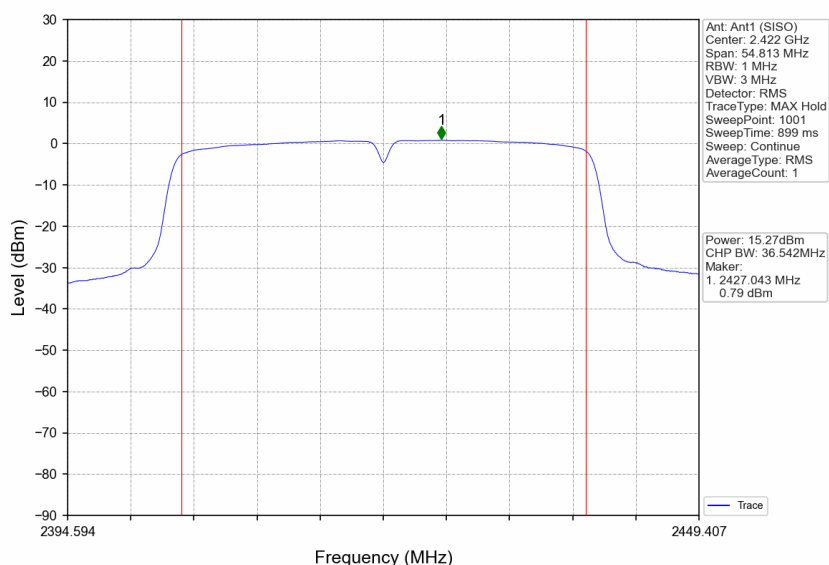
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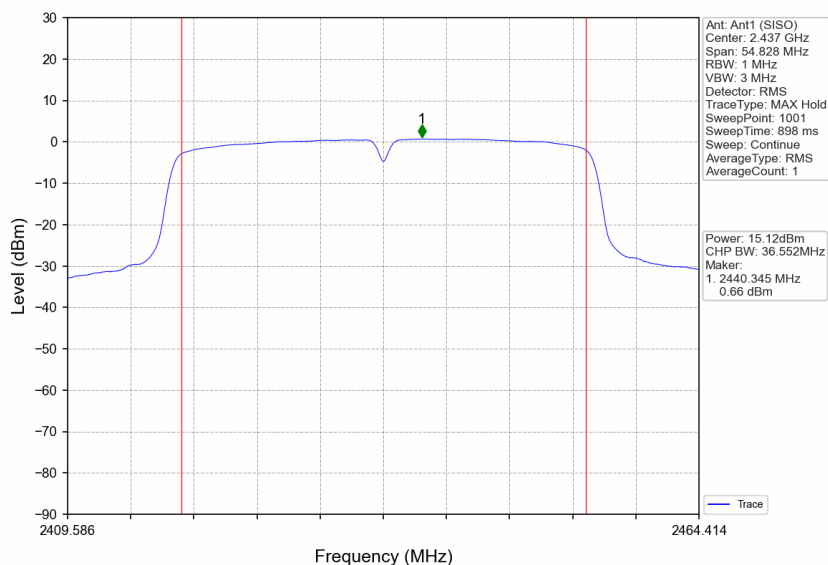
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



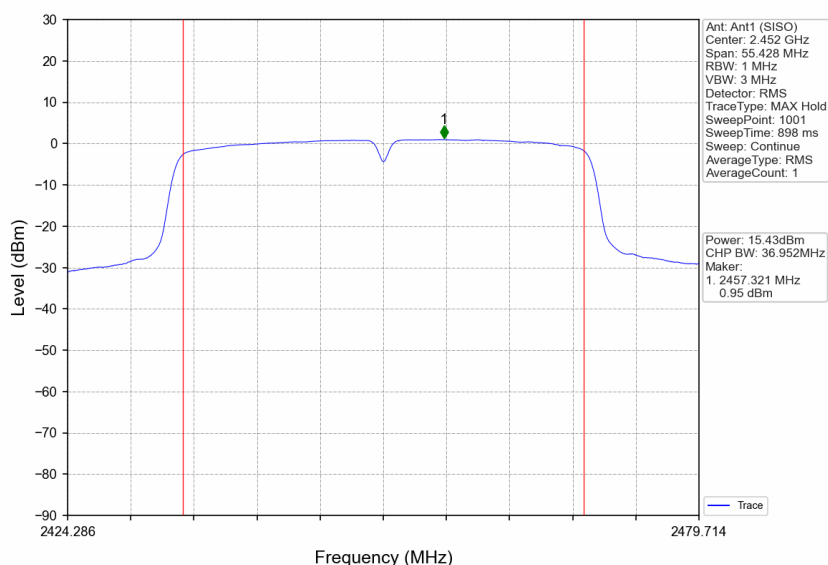
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802.11n(HT40) MCH_2437MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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4. Maximum Power Spectral Density

4.1 PSD

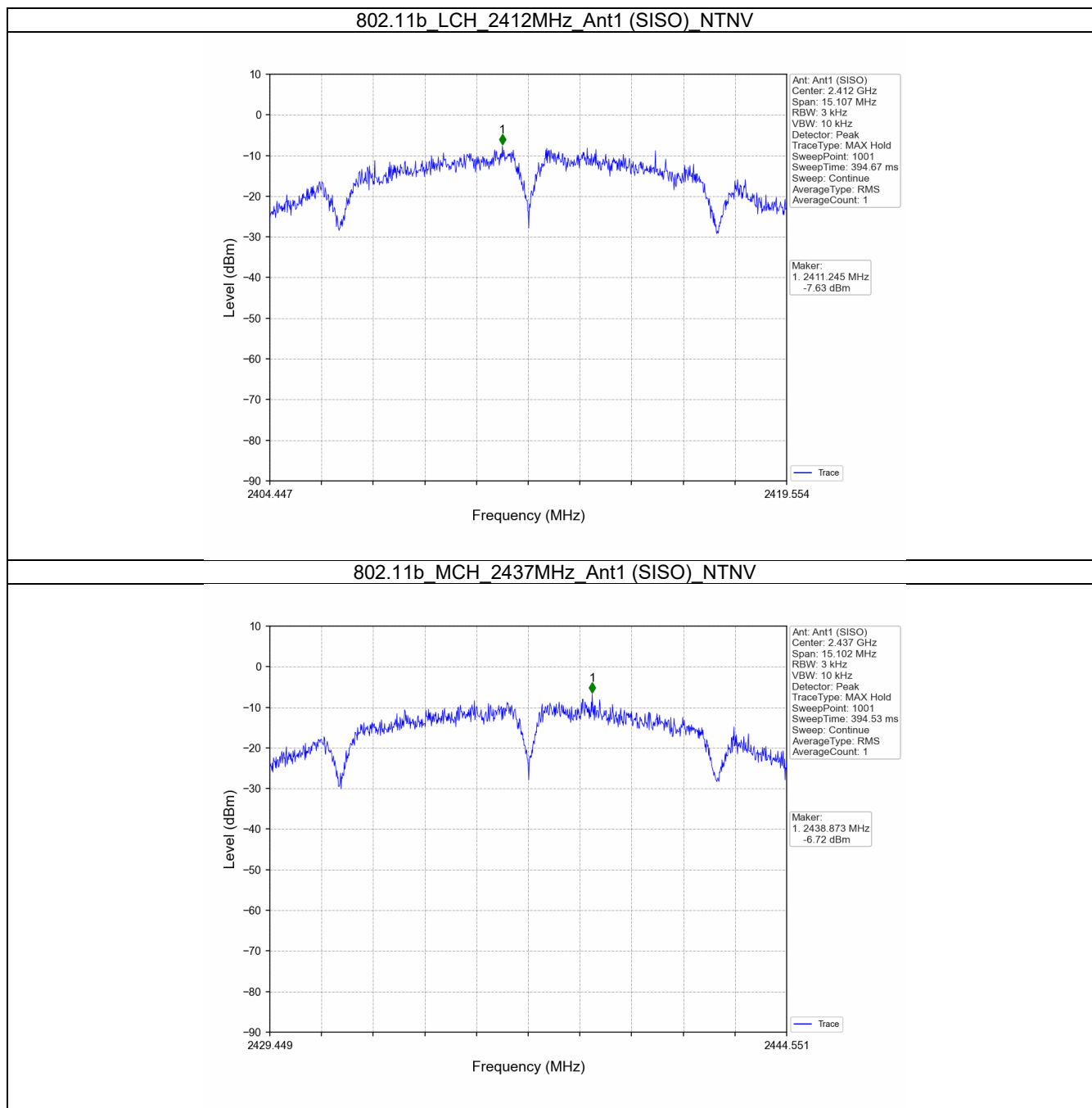
4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			Ant1	Limit	
802.11b	SISO	2412	-7.63	<=8	Pass
		2437	-6.72	<=8	Pass
		2462	-7.40	<=8	Pass
802.11g	SISO	2412	-10.59	<=8	Pass
		2437	-9.15	<=8	Pass
		2462	-8.79	<=8	Pass
802.11n (HT20)	SISO	2412	-10.74	<=8	Pass
		2437	-10.30	<=8	Pass
		2462	-8.80	<=8	Pass
802.11n (HT40)	SISO	2422	-13.32	<=8	Pass
		2437	-11.97	<=8	Pass
		2452	-11.40	<=8	Pass

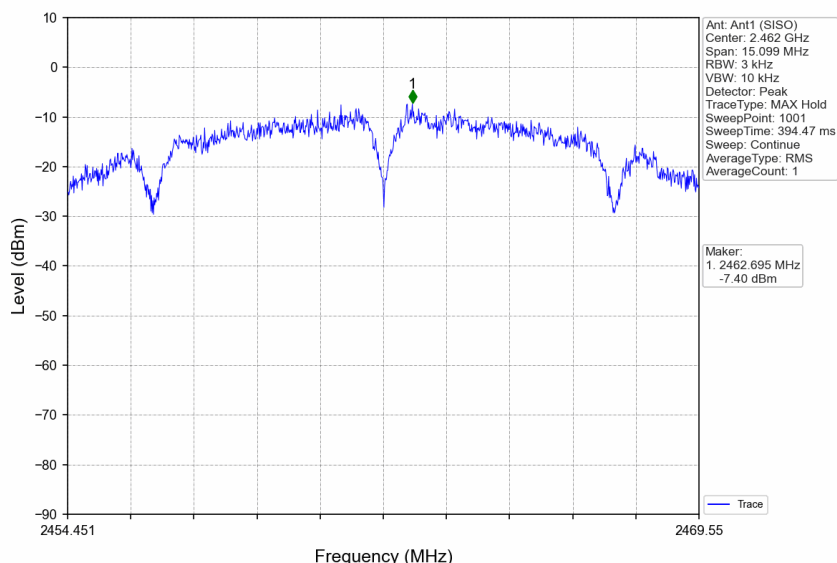
Note1: Antenna Gain: Ant1: 3.00dBi;



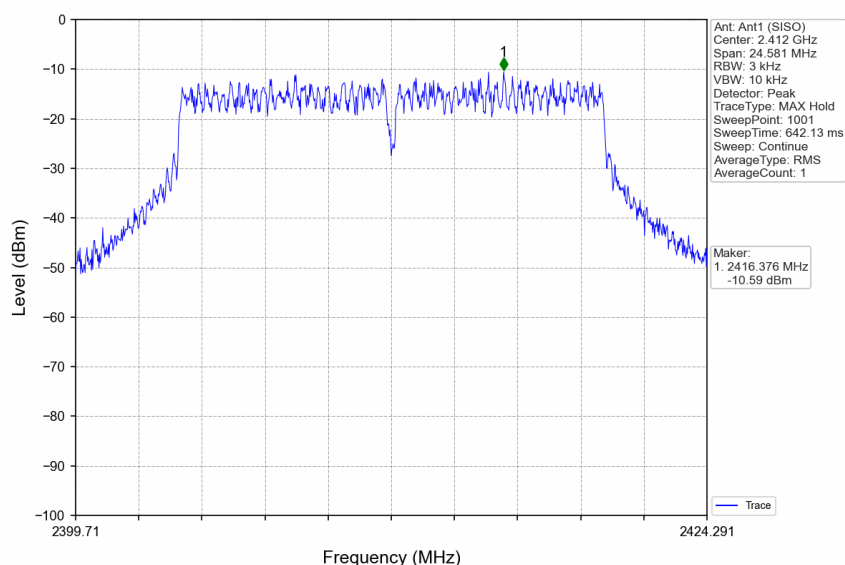
4.1.2 Test Graph



802.11b HCH 2462MHz Ant1 (SISO) NTN



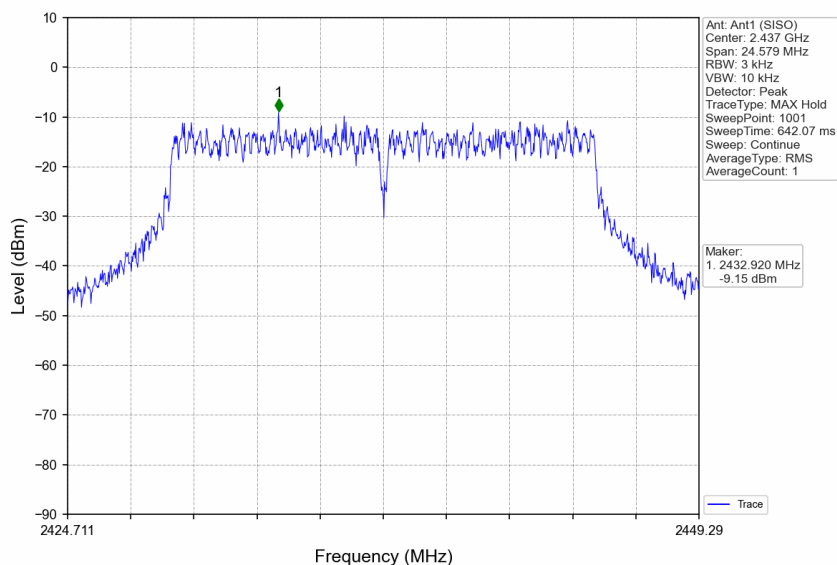
802.11g LCH 2412MHz Ant1 (SISO) NTN



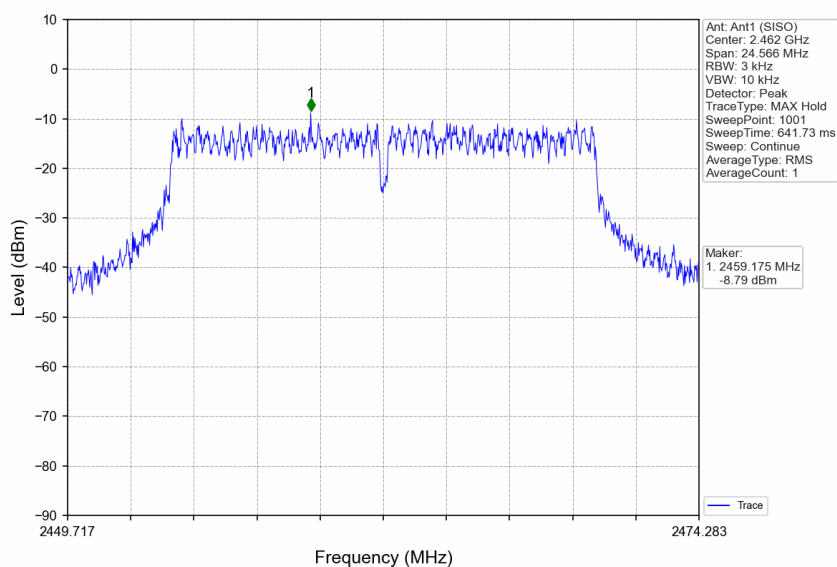
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802.11g HCH 2462MHz Ant1 (SISO) NTN



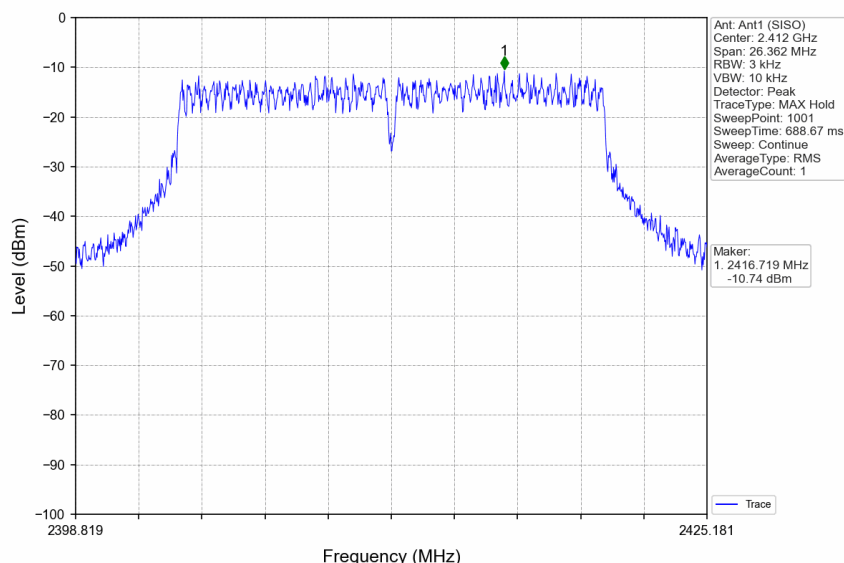
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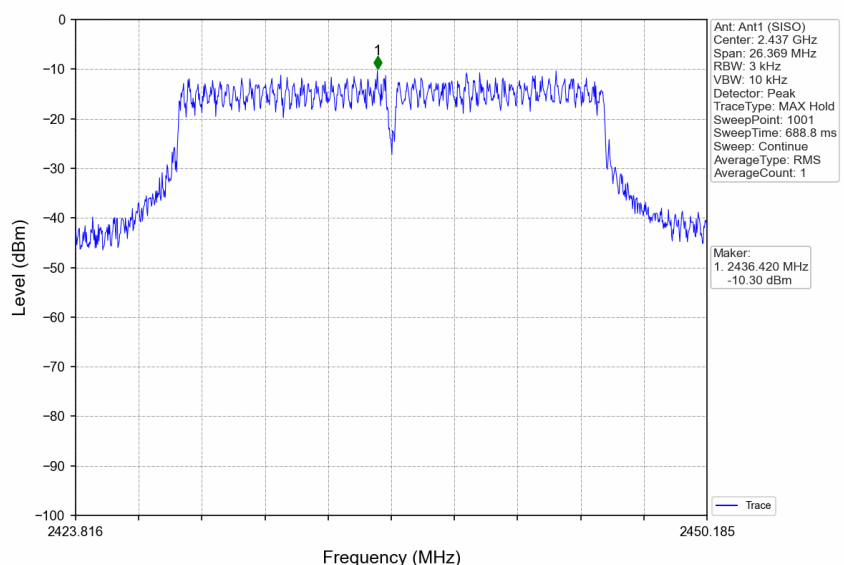
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802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



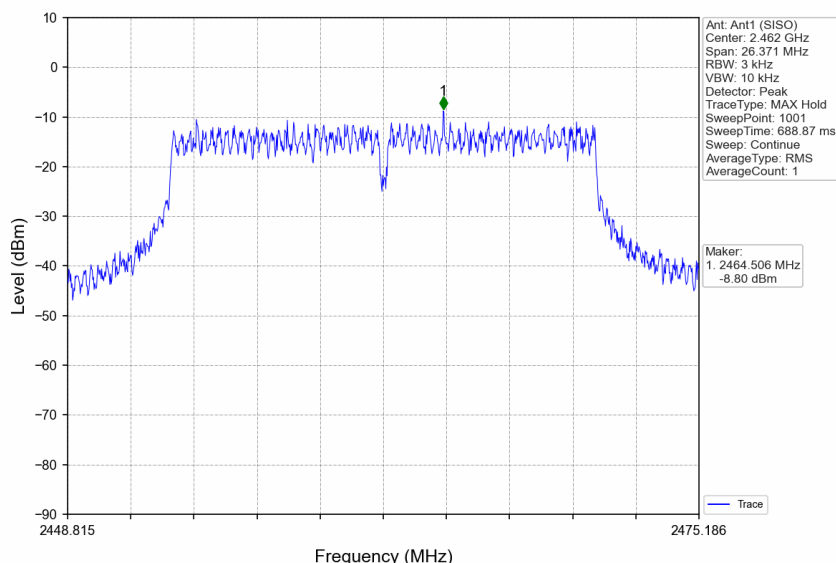
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



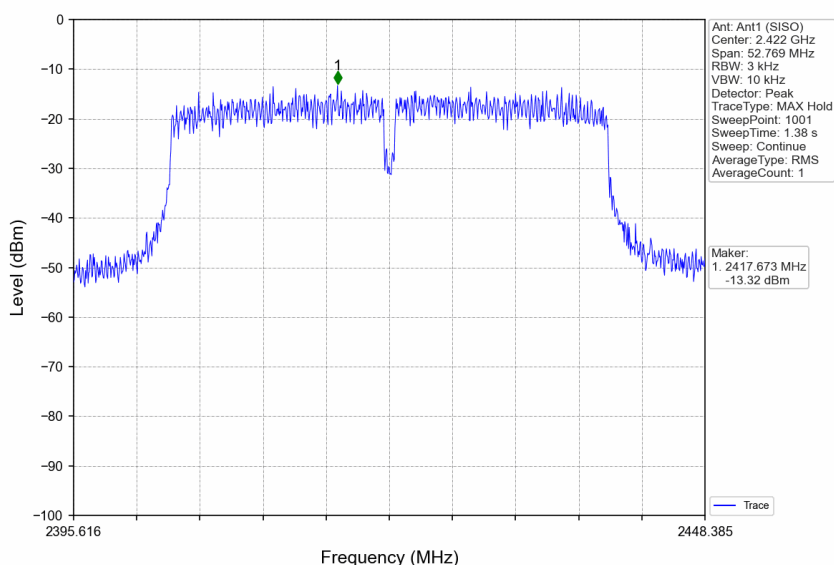
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802.11n(HT20) HCH_2462MHz_Ant1 (SISO) NTN



802.11n(HT40) LCH_2422MHz_Ant1 (SISO) NTN



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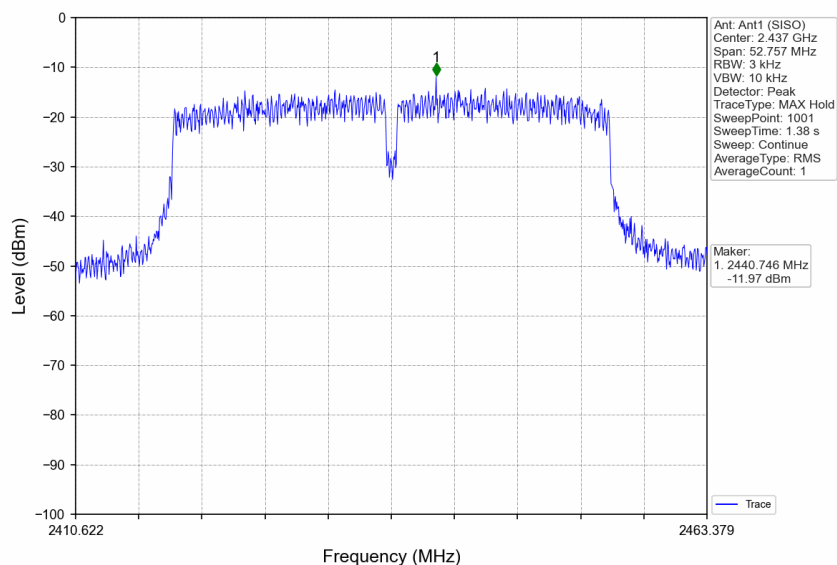
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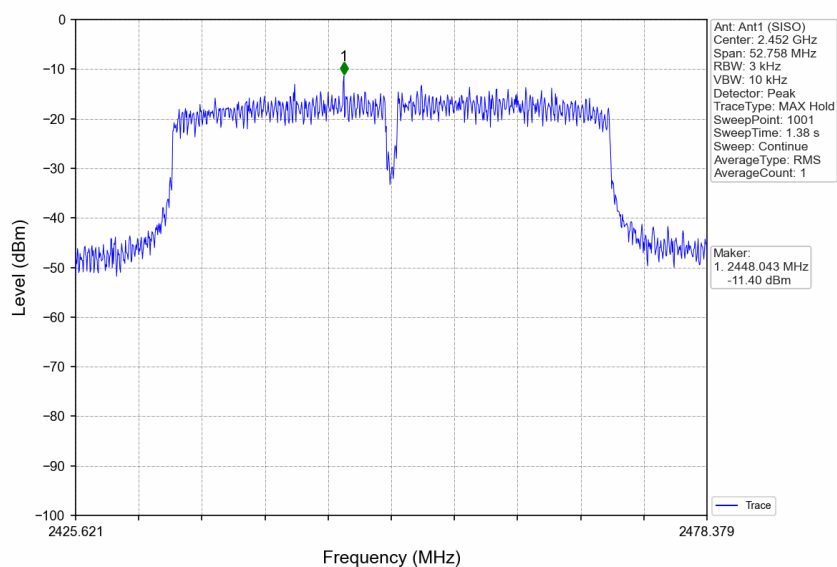
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802.11n(HT40) MCH_2437MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Ref

5.1.1 Test Result

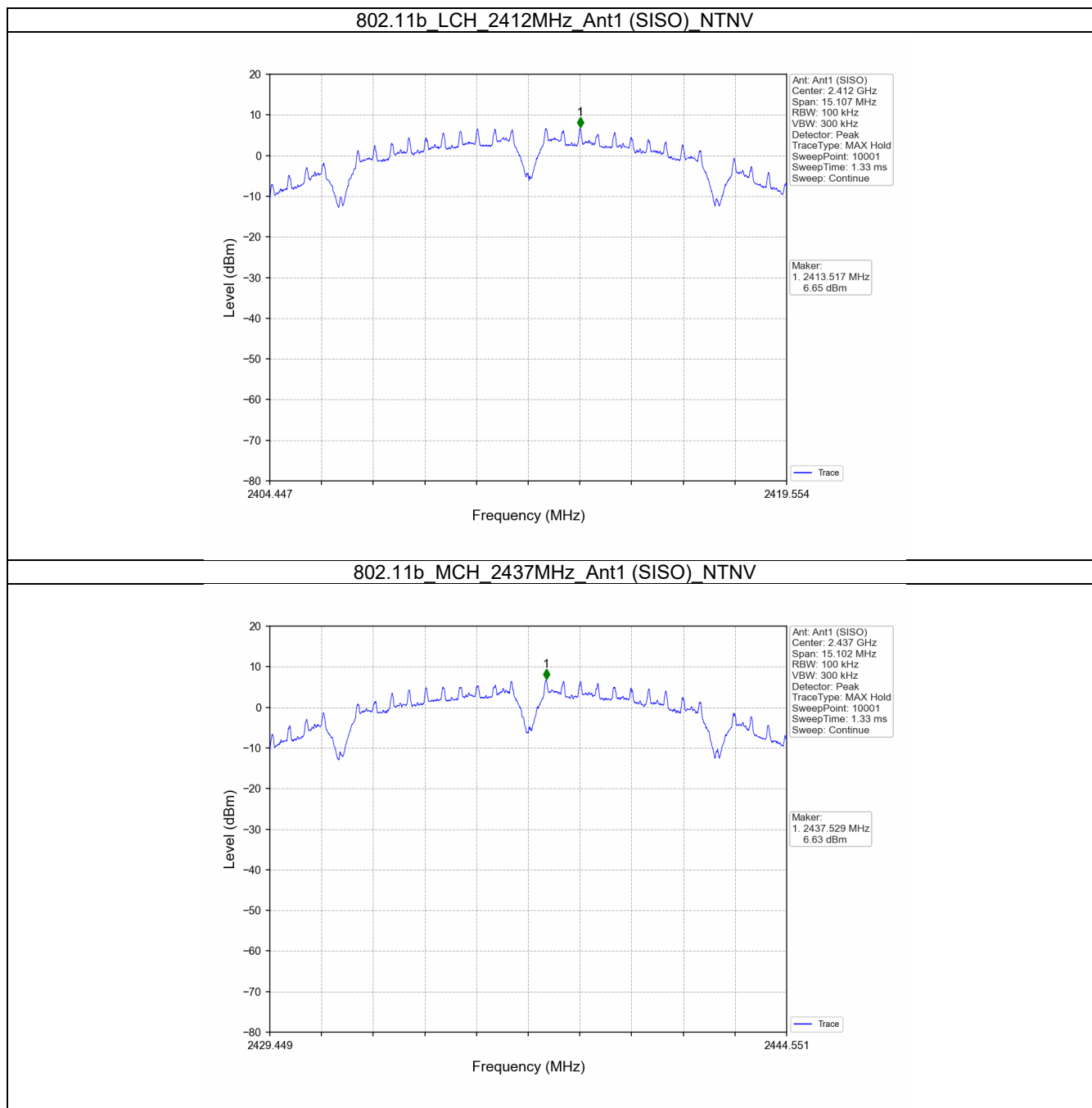
Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)
802.11b	SISO	2412	1	6.65
		2437	1	6.63
		2462	1	7.02
802.11g	SISO	2412	1	3.73
		2437	1	4.28
		2462	1	4.87
802.11n (HT20)	SISO	2412	1	4.21
		2437	1	4.79
		2462	1	4.74
802.11n (HT40)	SISO	2422	1	1.68
		2437	1	1.53
		2452	1	1.90

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

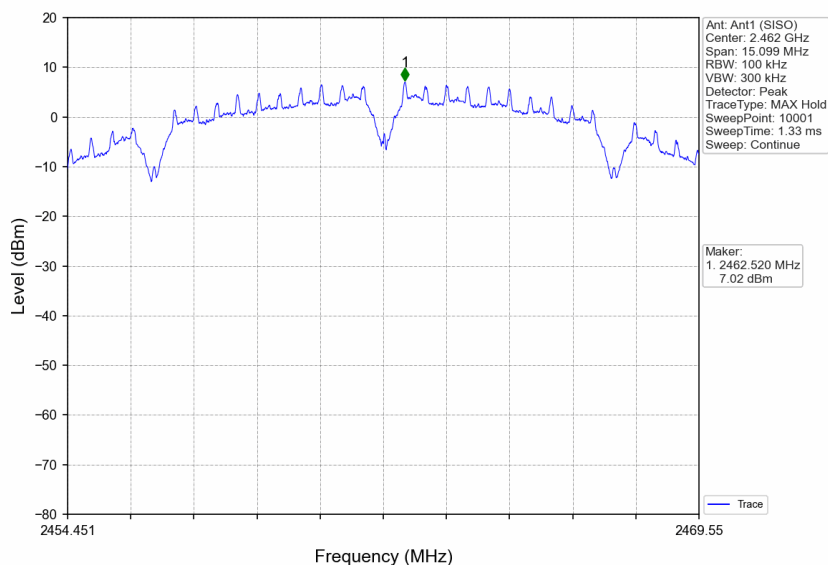
Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.



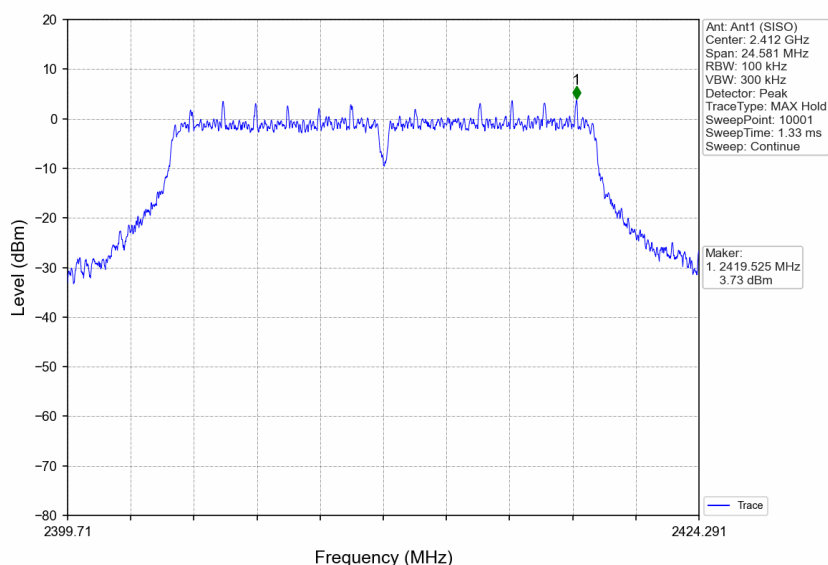
5.1.2 Test Graph



802.11b HCH 2462MHz Ant1 (SISO) NTN



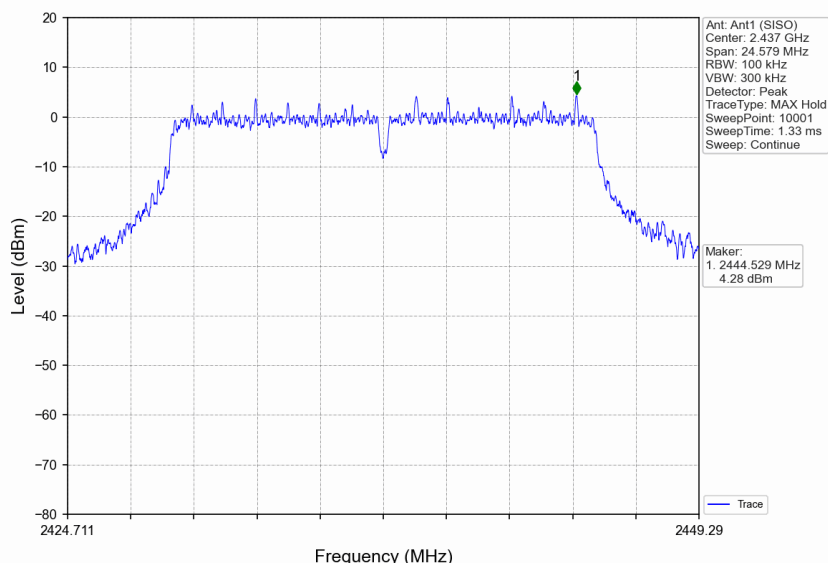
802.11g LCH 2412MHz Ant1 (SISO) NTN



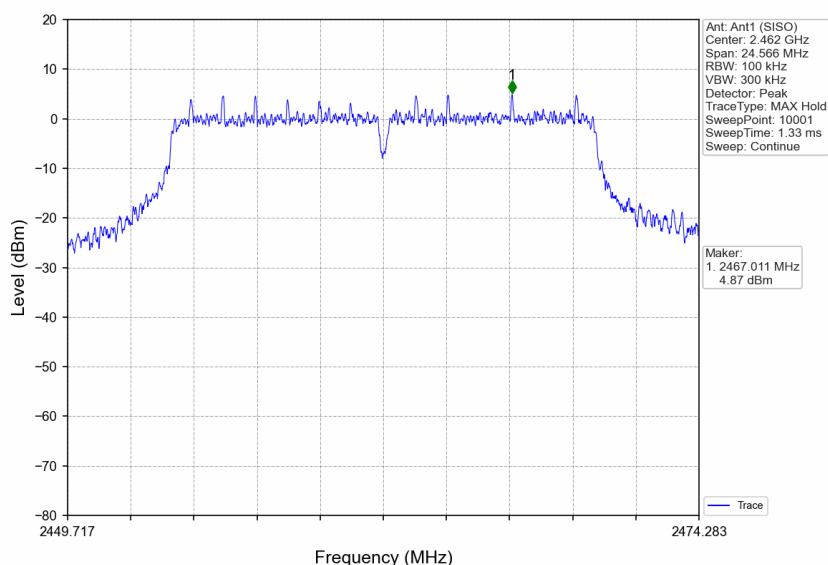
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802.11g MCH 2437MHz Ant1 (SISO) NTN



802.11g HCH 2462MHz Ant1 (SISO) NTN



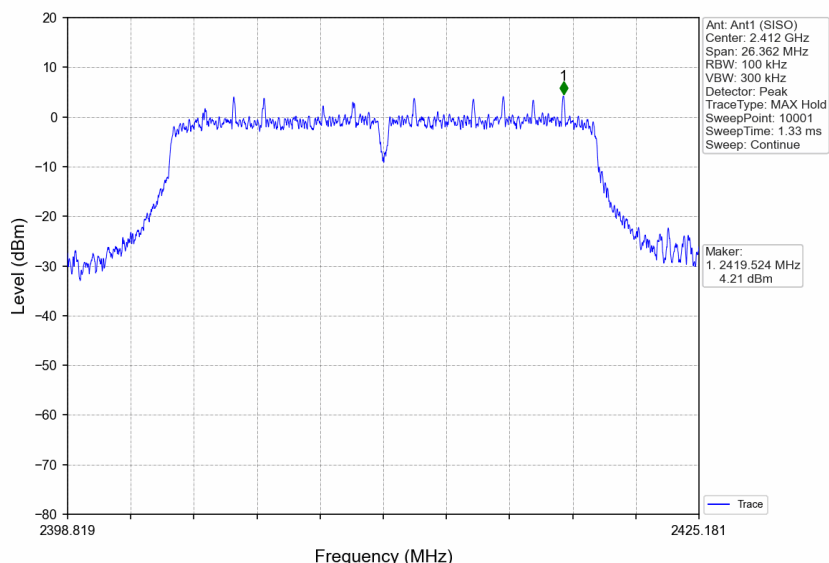
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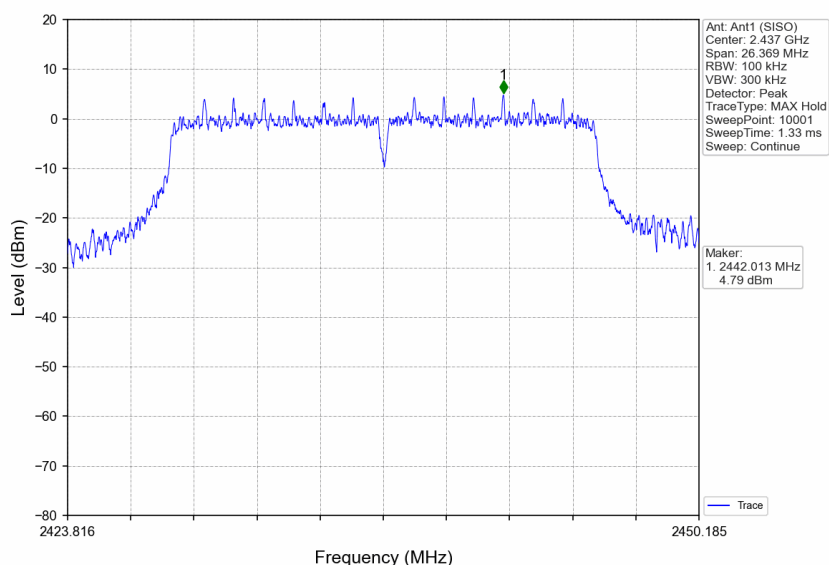
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802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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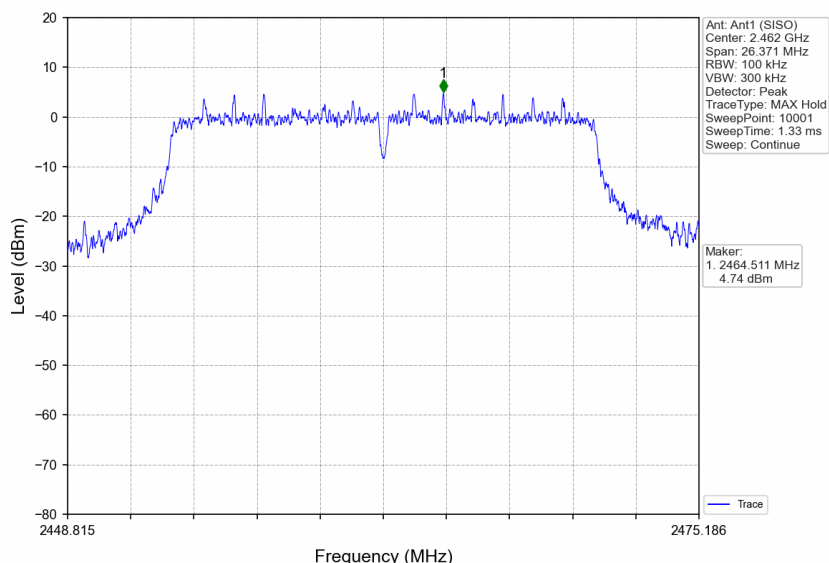
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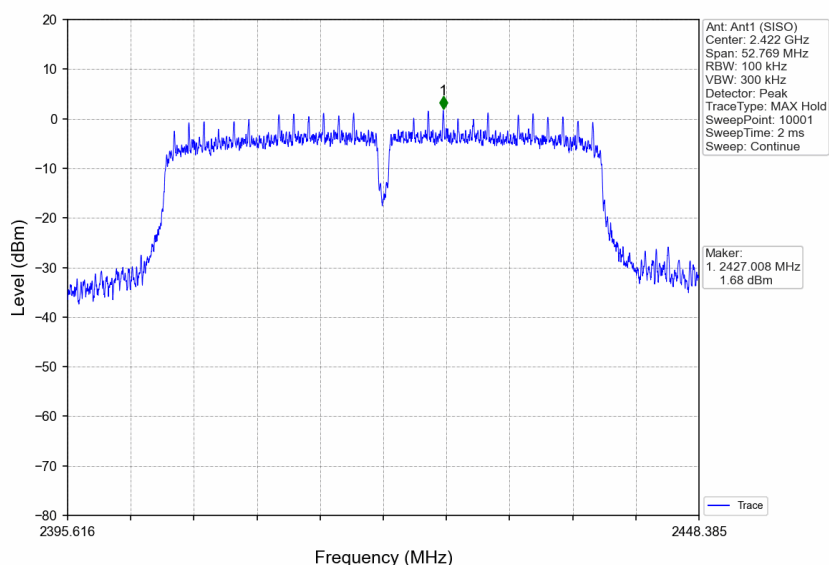
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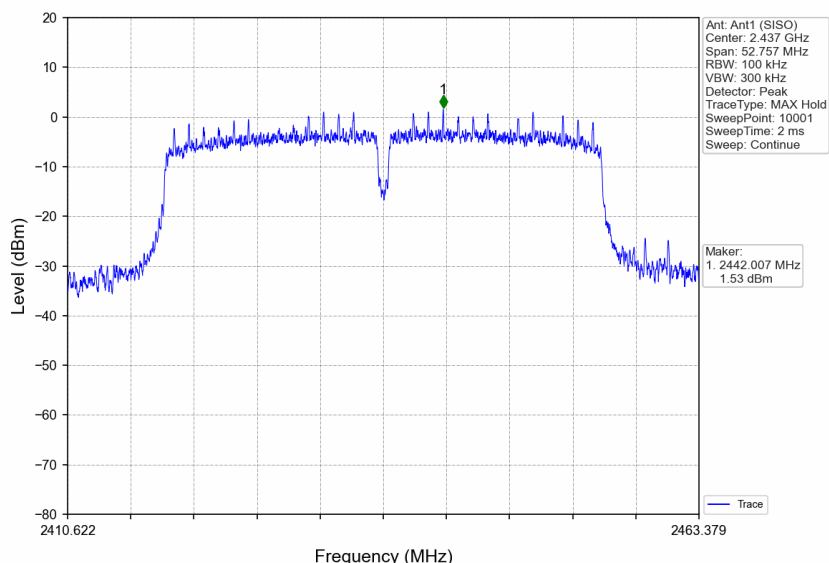
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



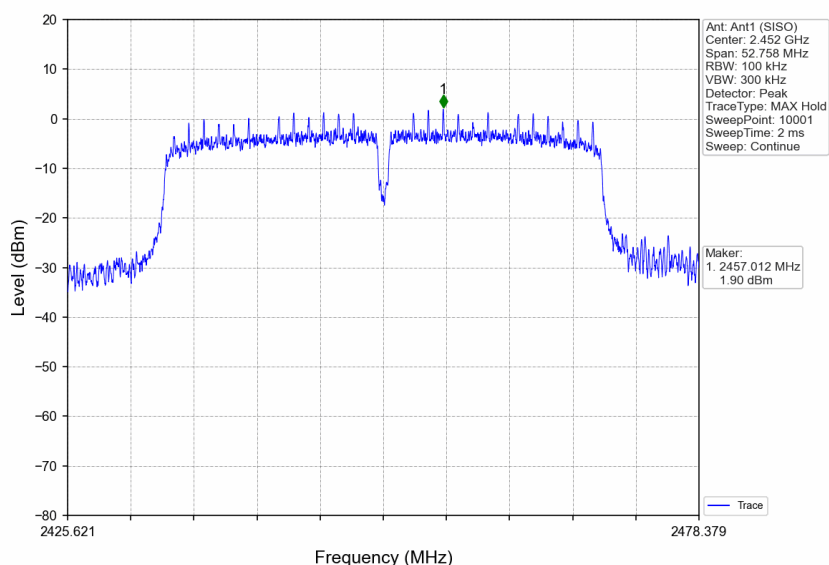
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802.11n(HT40) MCH_2437MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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5.2 CSE

5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	7.02	-22.98	Pass
		2437	1	7.02	-22.98	Pass
		2462	1	7.02	-22.98	Pass
802.11g	SISO	2412	1	4.87	-25.13	Pass
		2437	1	4.87	-25.13	Pass
		2462	1	4.87	-25.13	Pass
802.11n (HT20)	SISO	2412	1	4.79	-25.21	Pass
		2437	1	4.79	-25.21	Pass
		2462	1	4.79	-25.21	Pass
802.11n (HT40)	SISO	2422	1	1.90	-28.10	Pass
		2437	1	1.90	-28.10	Pass
		2452	1	1.90	-28.10	Pass

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

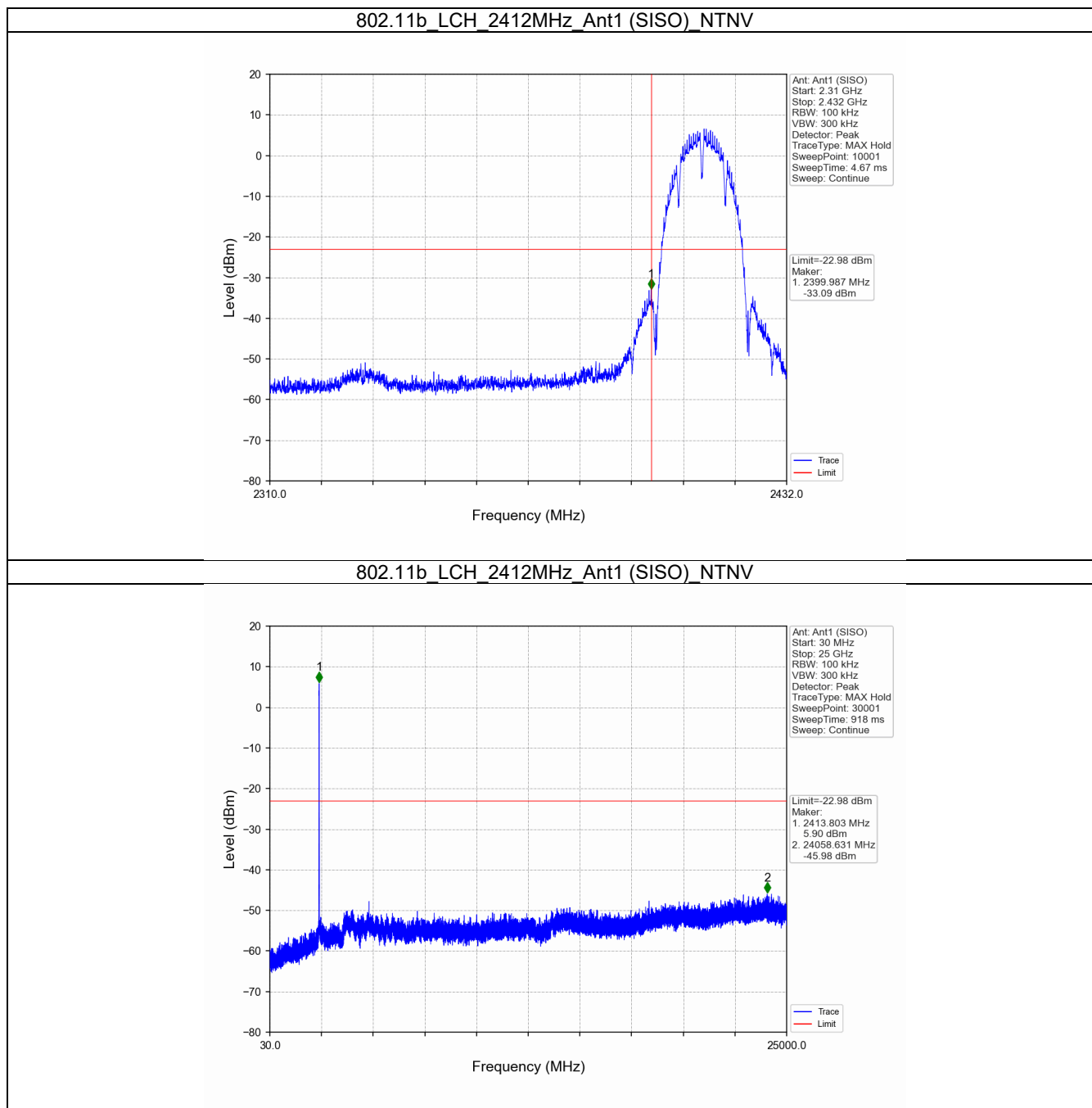
Note2: RBW = 1MHz was used during the pre-test. The final test will be performed at RBW=100kHz while the margin is less than 3dB.



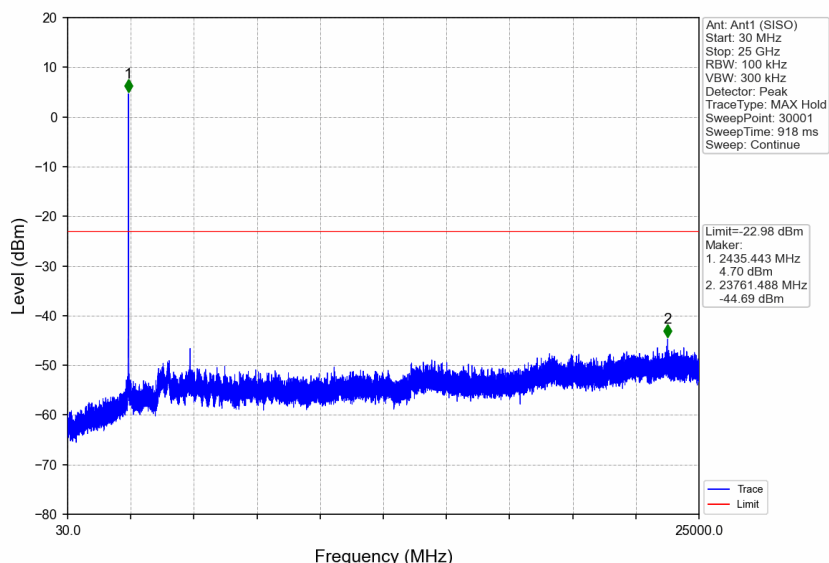
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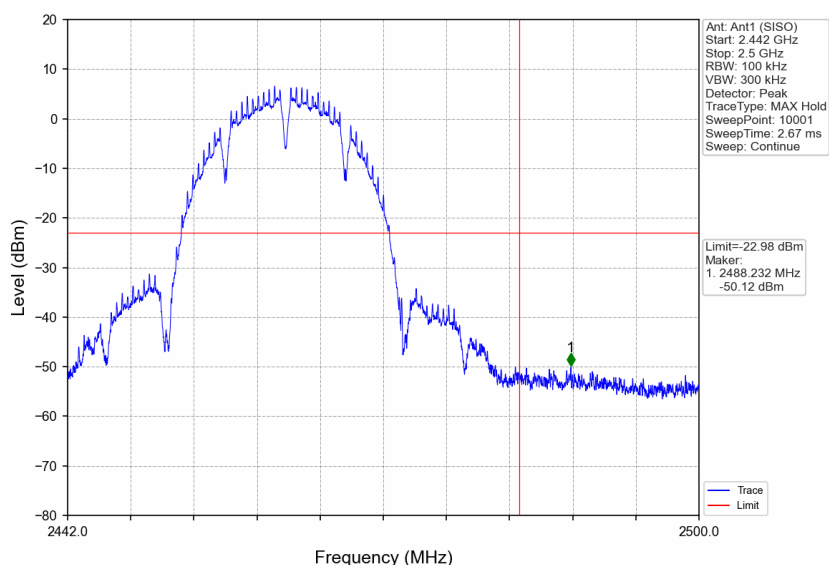
5.2.2 Test Graph



802.11b MCH 2437MHz Ant1 (SISO) NTN



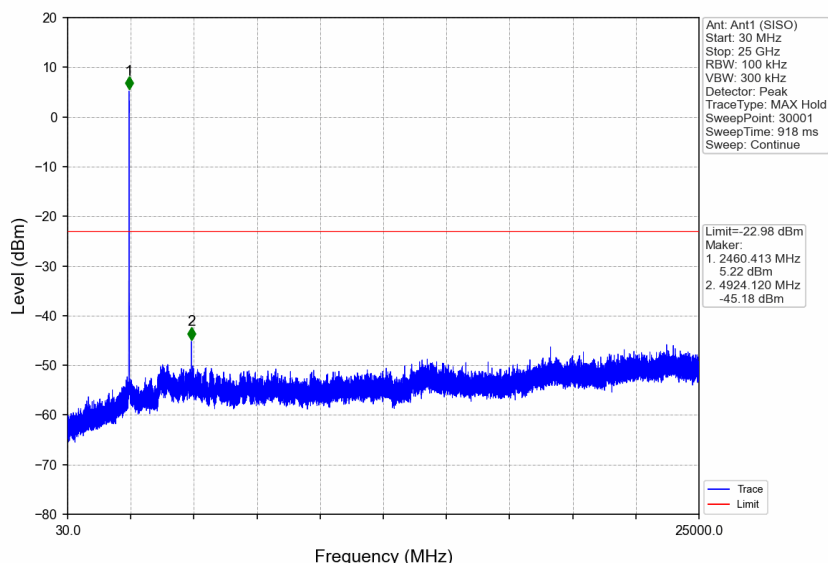
802.11b_HCH 2462MHz_Ant1 (SISO)_NTNV



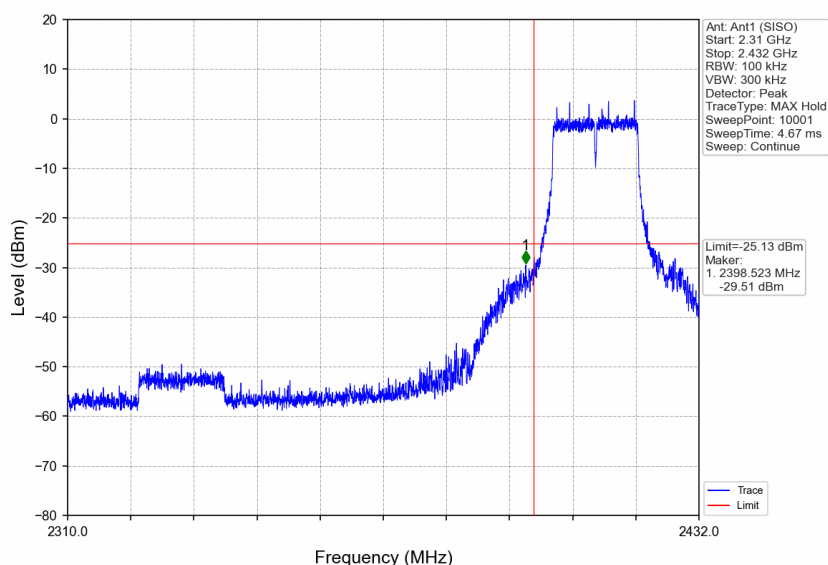
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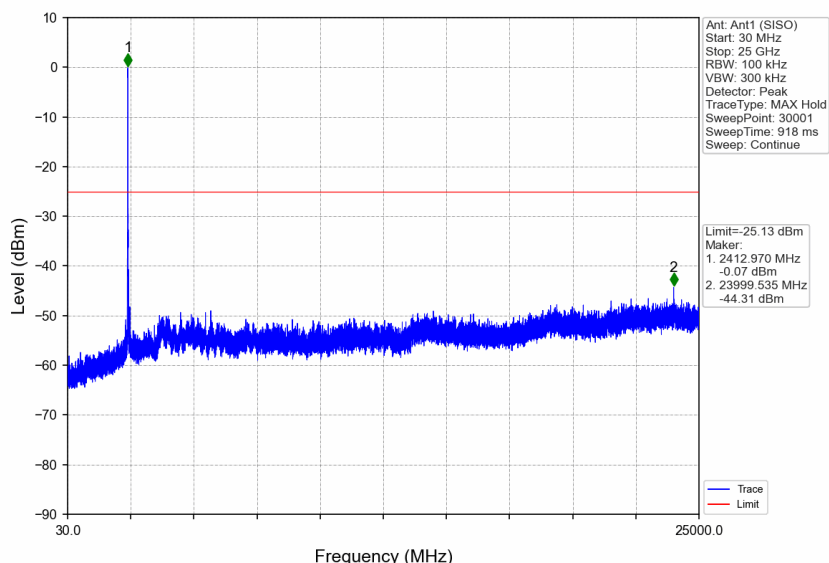
802.11g LCH 2412MHz Ant1 (SISO) NTN



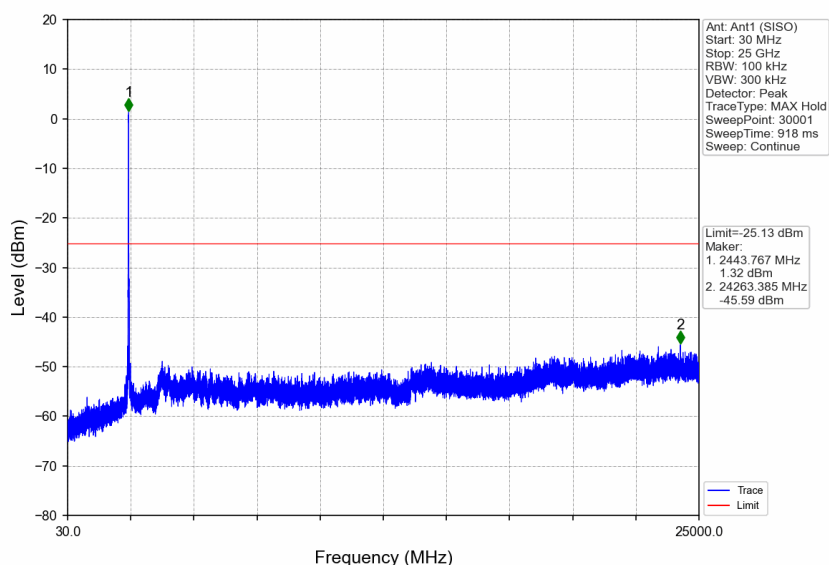
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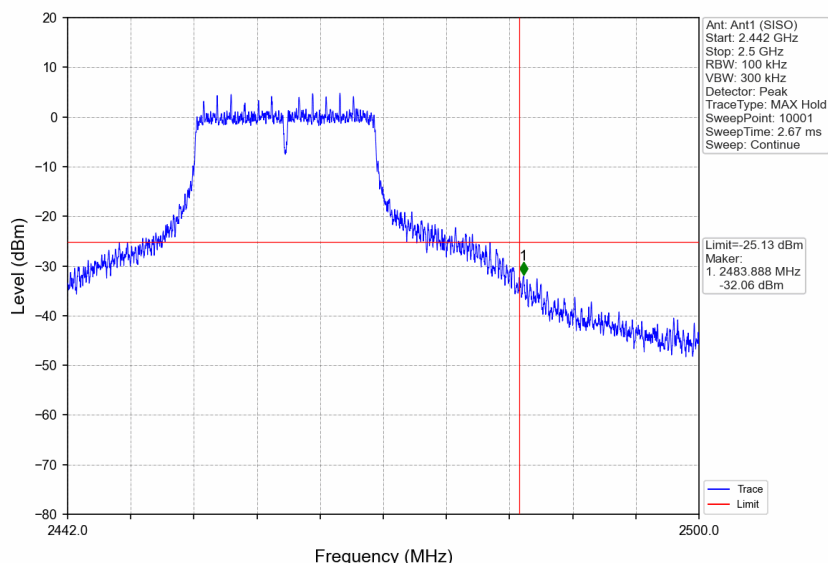
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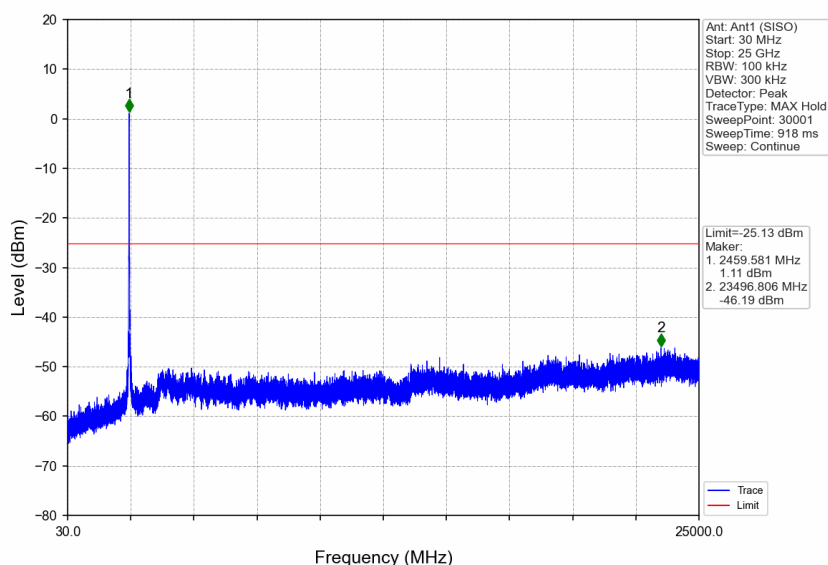
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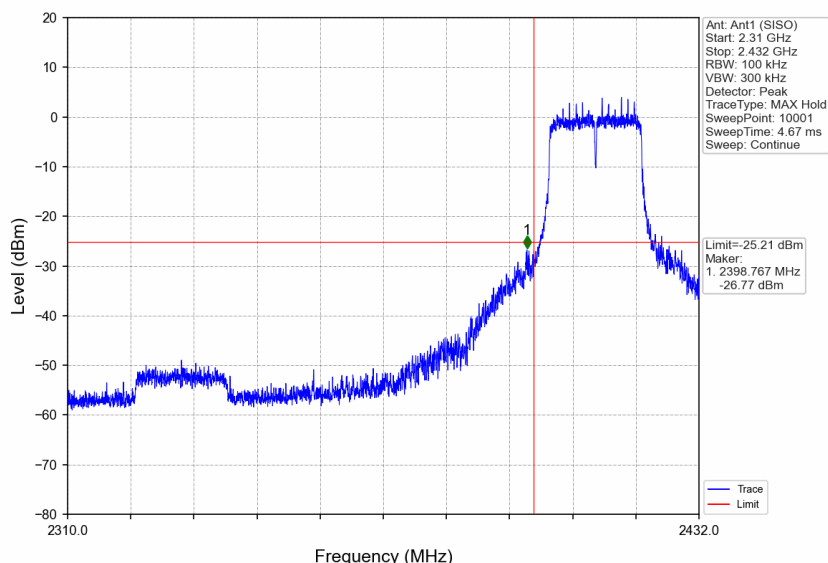
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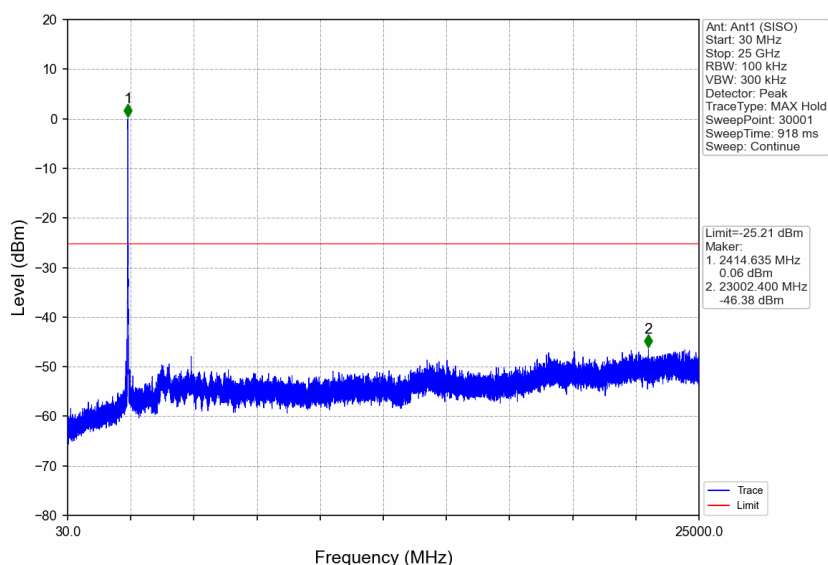
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802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



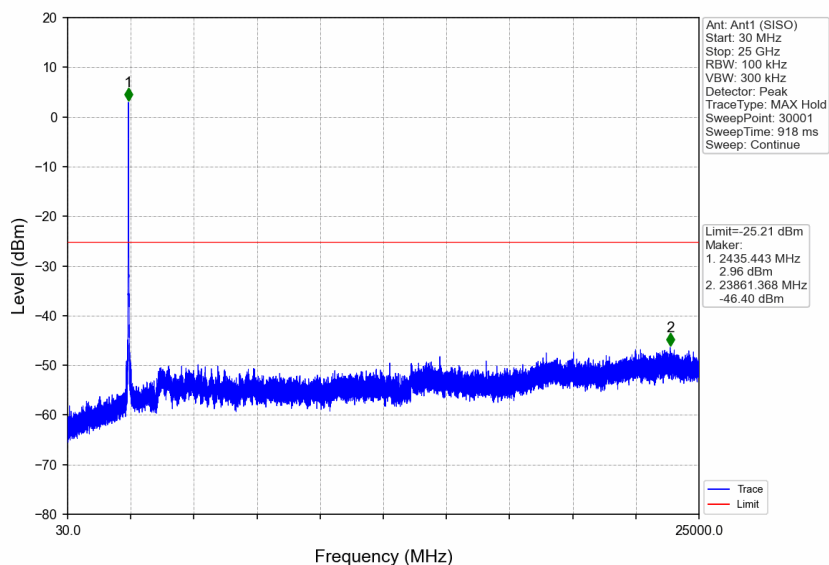
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



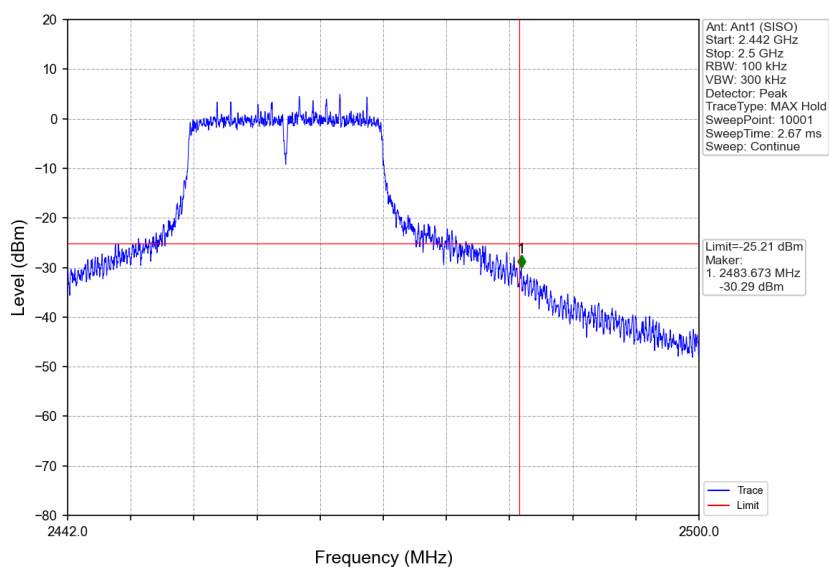
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802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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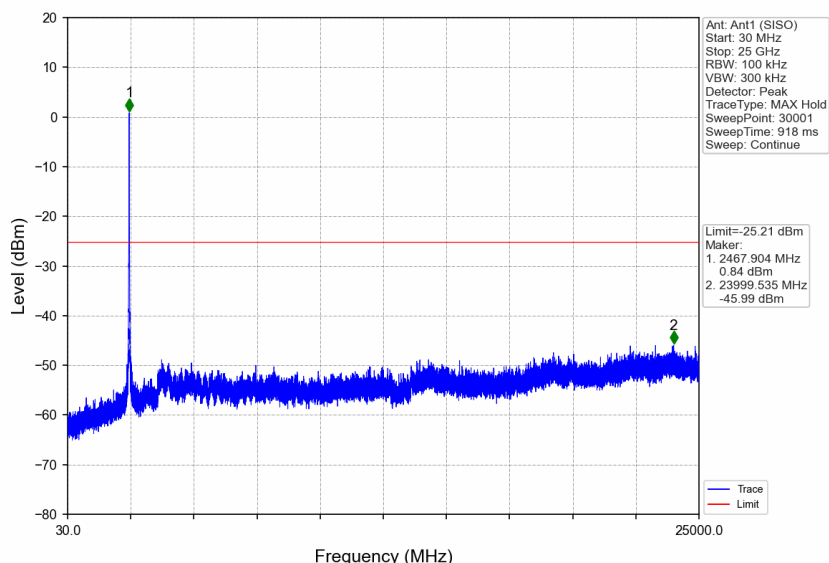
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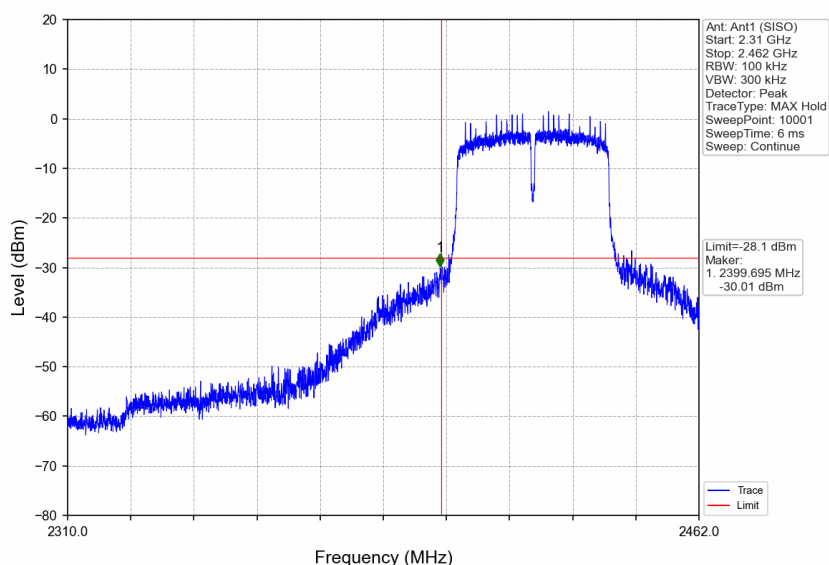
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802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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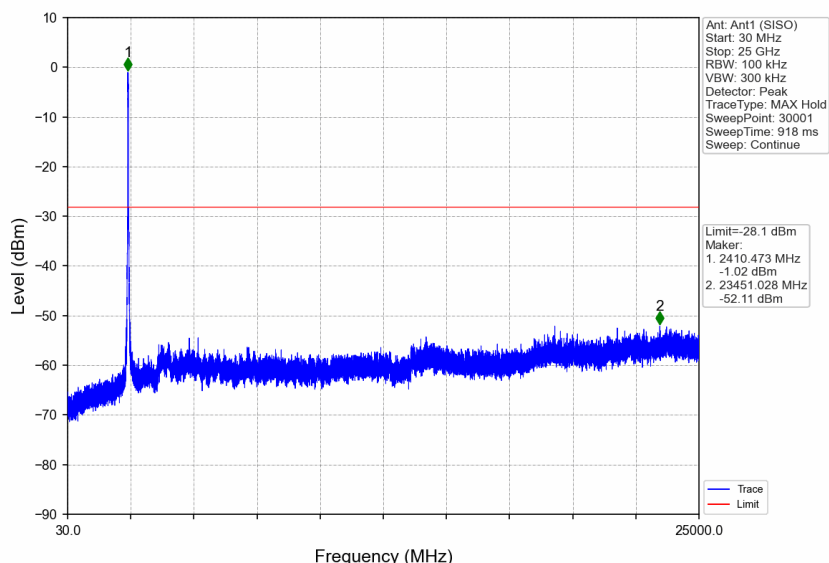
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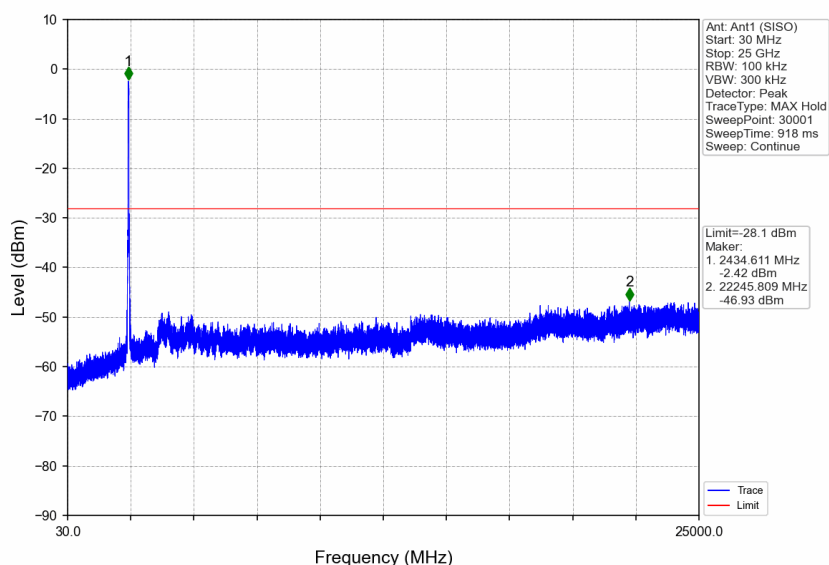
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802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



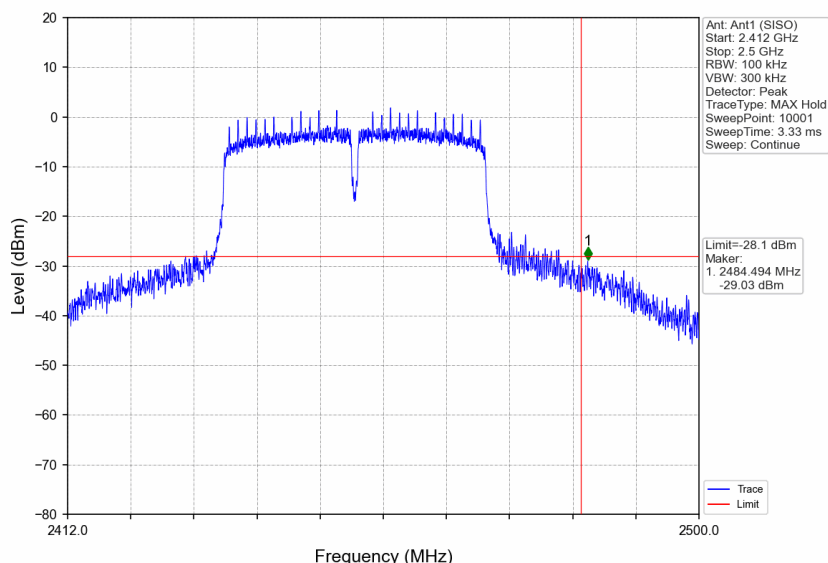
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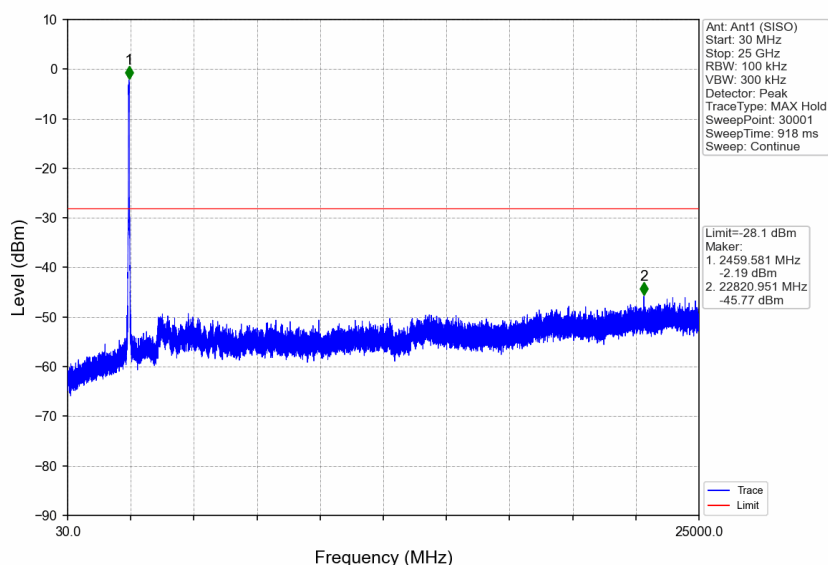
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802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



802.11n(HT40) HCH_2452MHz Ant1 (SISO) NTN



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