

Appendix - 2.4G WIFI

1. Duty Cycle

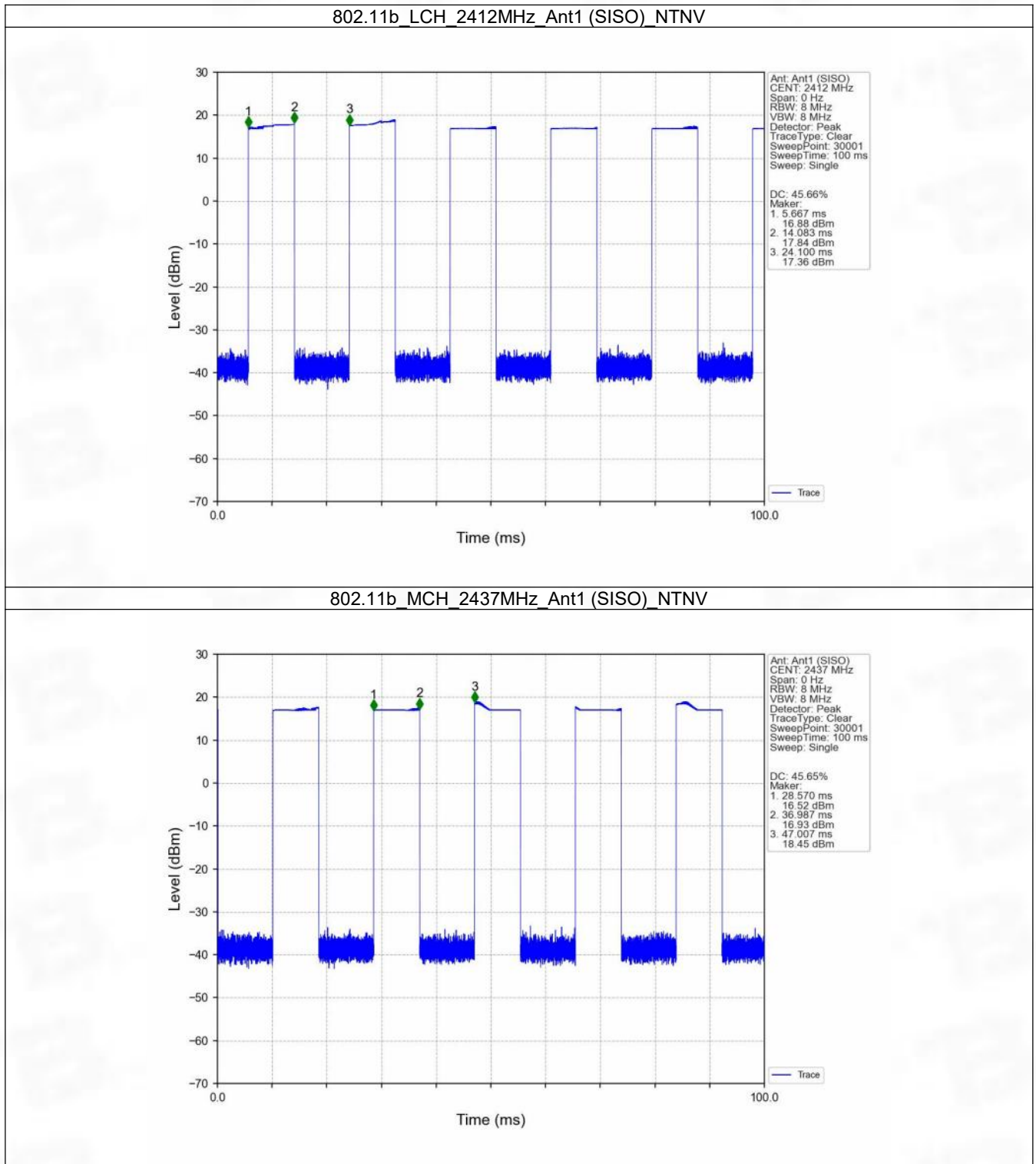
1.1 Test Result

1.1.1 Ant1

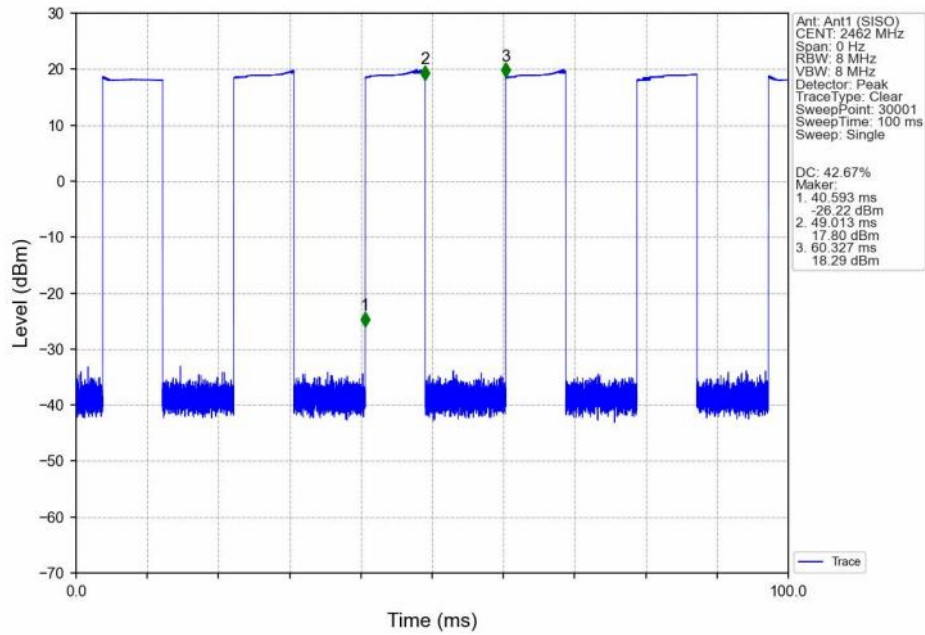
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	8.416	18.433	45.66	3.40	0.02
		2437	8.417	18.437	45.65	3.41	0.02
		2462	8.420	19.734	42.67	3.70	3.00
802.11g	SISO	2412	1.397	11.427	12.23	9.13	0.03
		2437	1.397	11.427	12.23	9.13	0.03
		2462	1.396	11.420	12.22	9.13	0.03
802.11n (HT20)	SISO	2412	1.307	11.384	11.48	9.40	0.05
		2437	1.306	11.496	11.36	9.45	0.17
		2462	1.304	11.334	11.51	9.39	0.04
802.11n (HT40)	SISO	2422	0.647	10.673	6.06	12.17	0.03
		2437	0.647	10.677	6.06	12.18	0.03
		2452	0.647	10.673	6.06	12.17	0.00

1.2 Test Graph

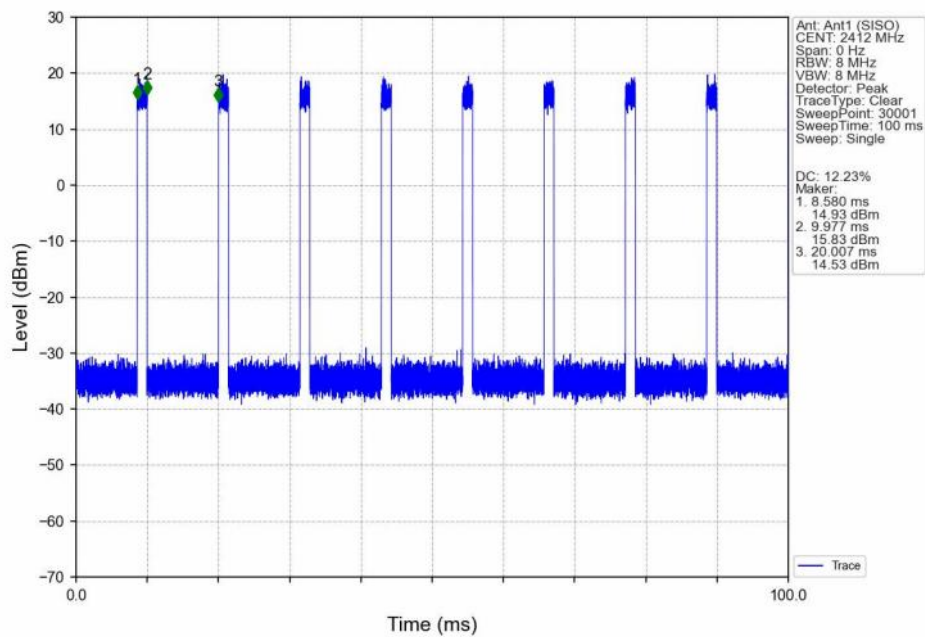
1.2.1 Ant1



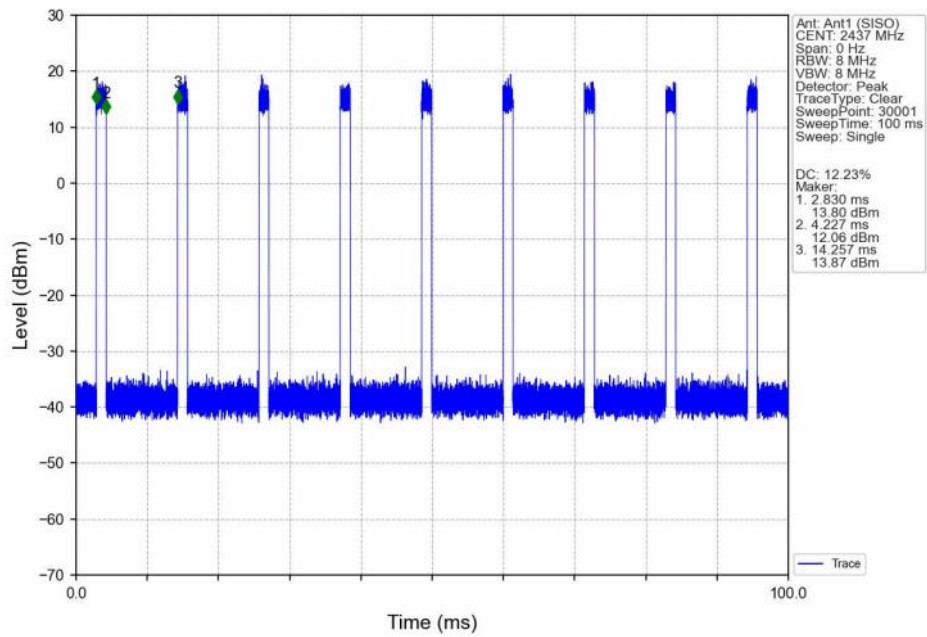
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



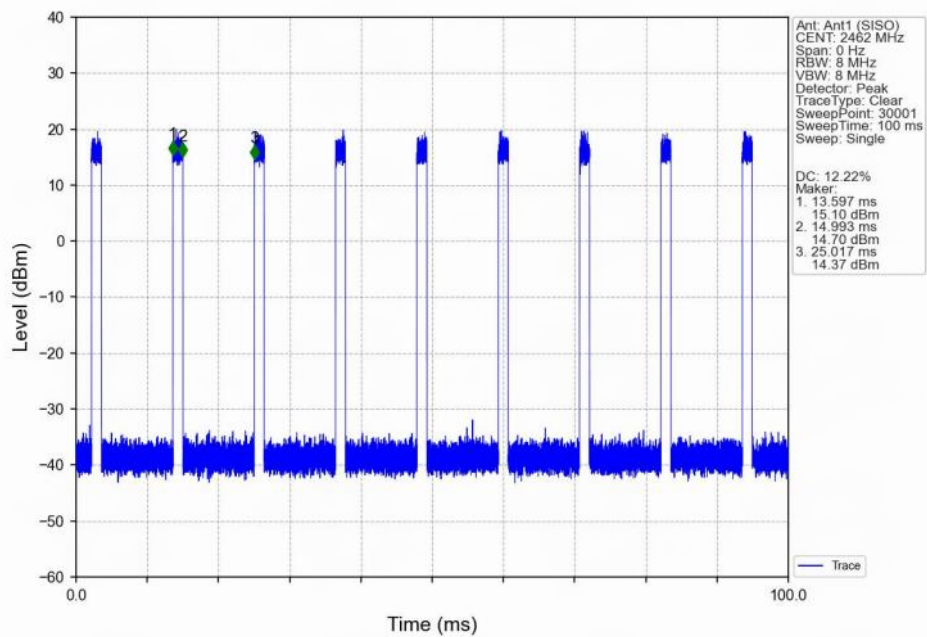
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



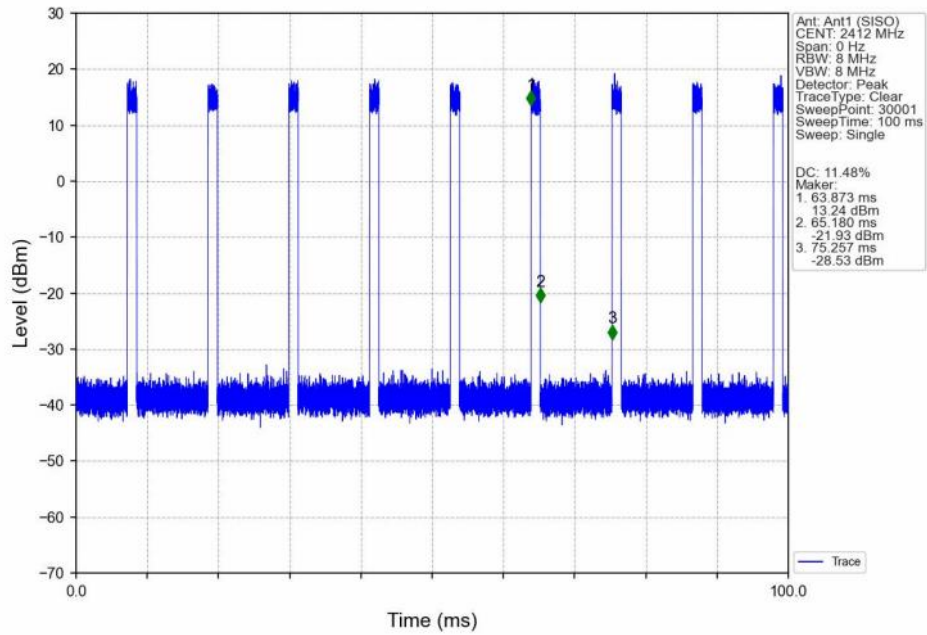
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



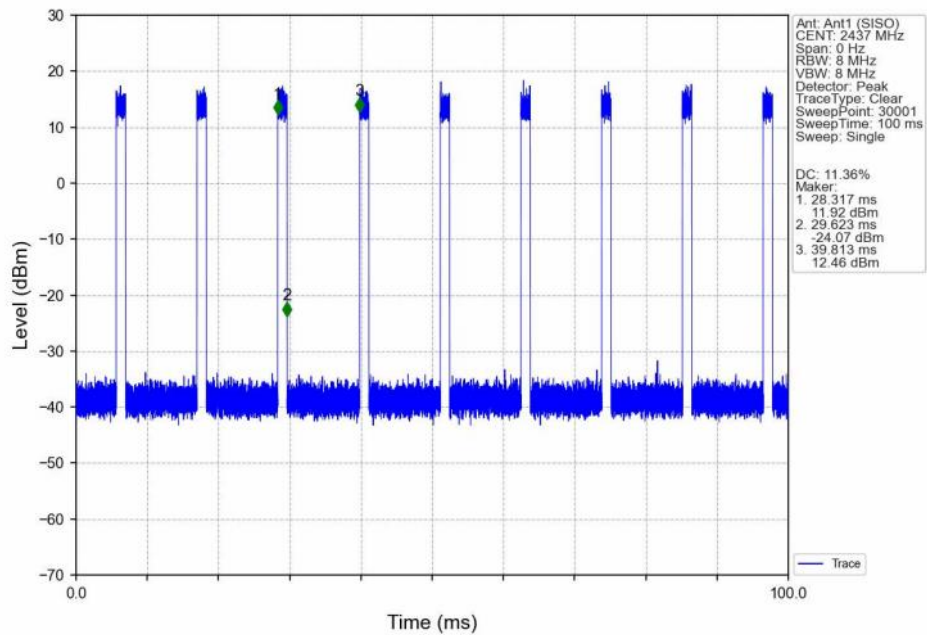
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



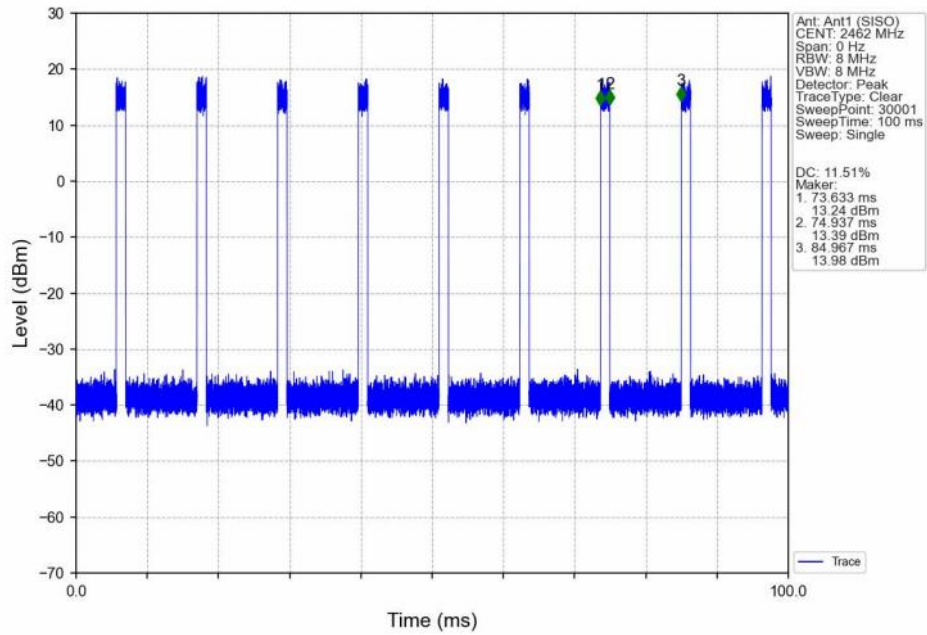
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



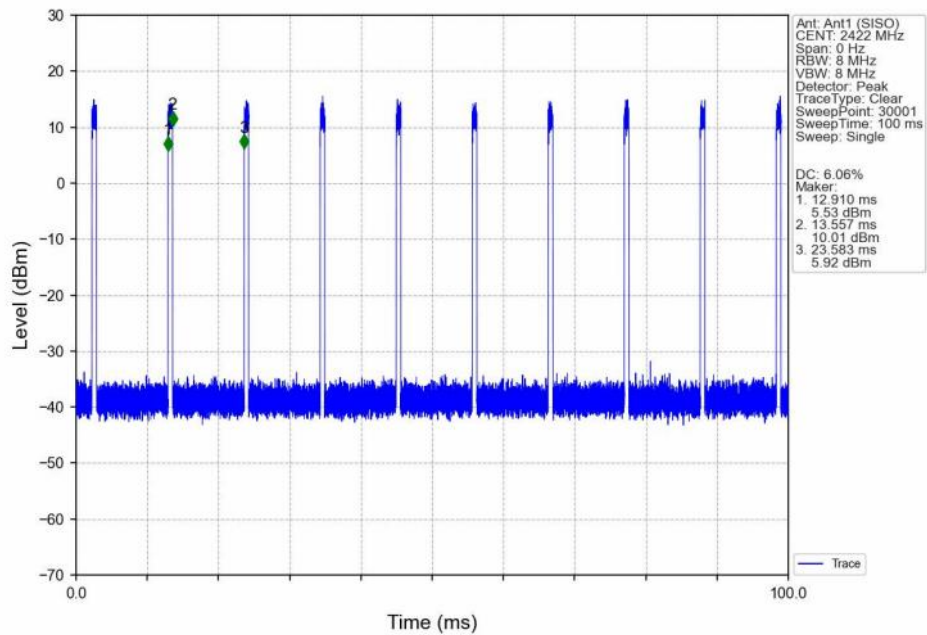
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



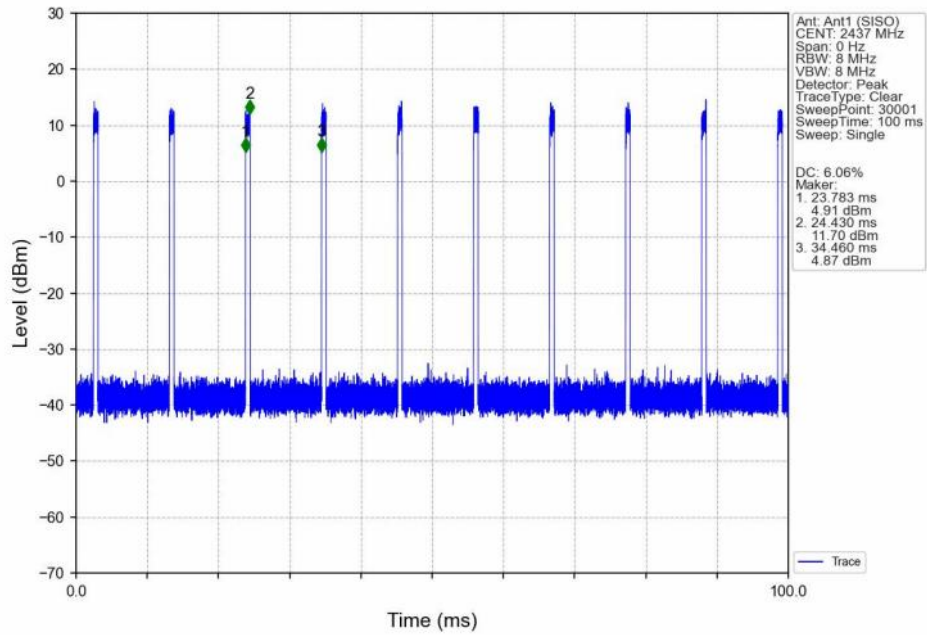
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



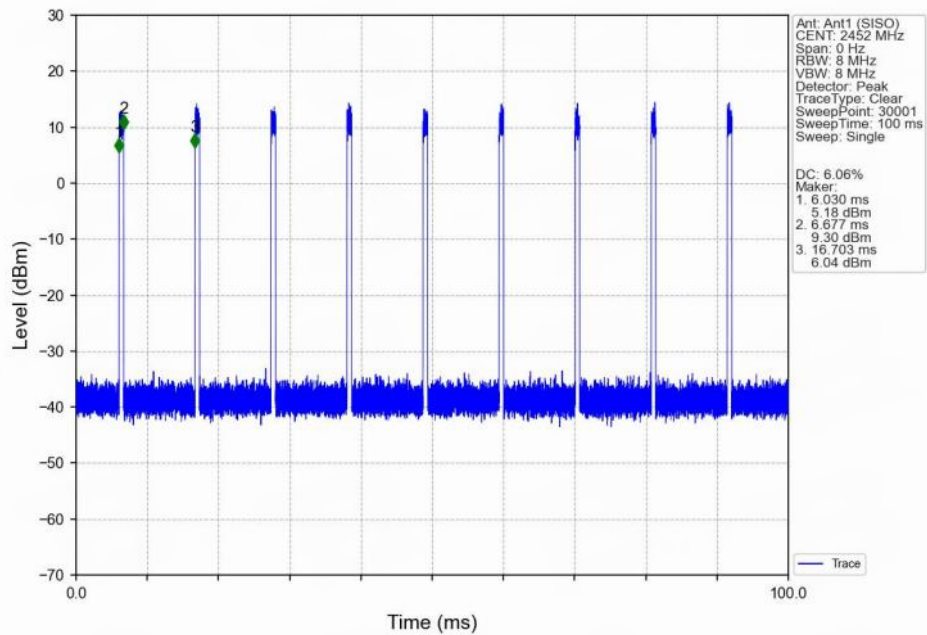
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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

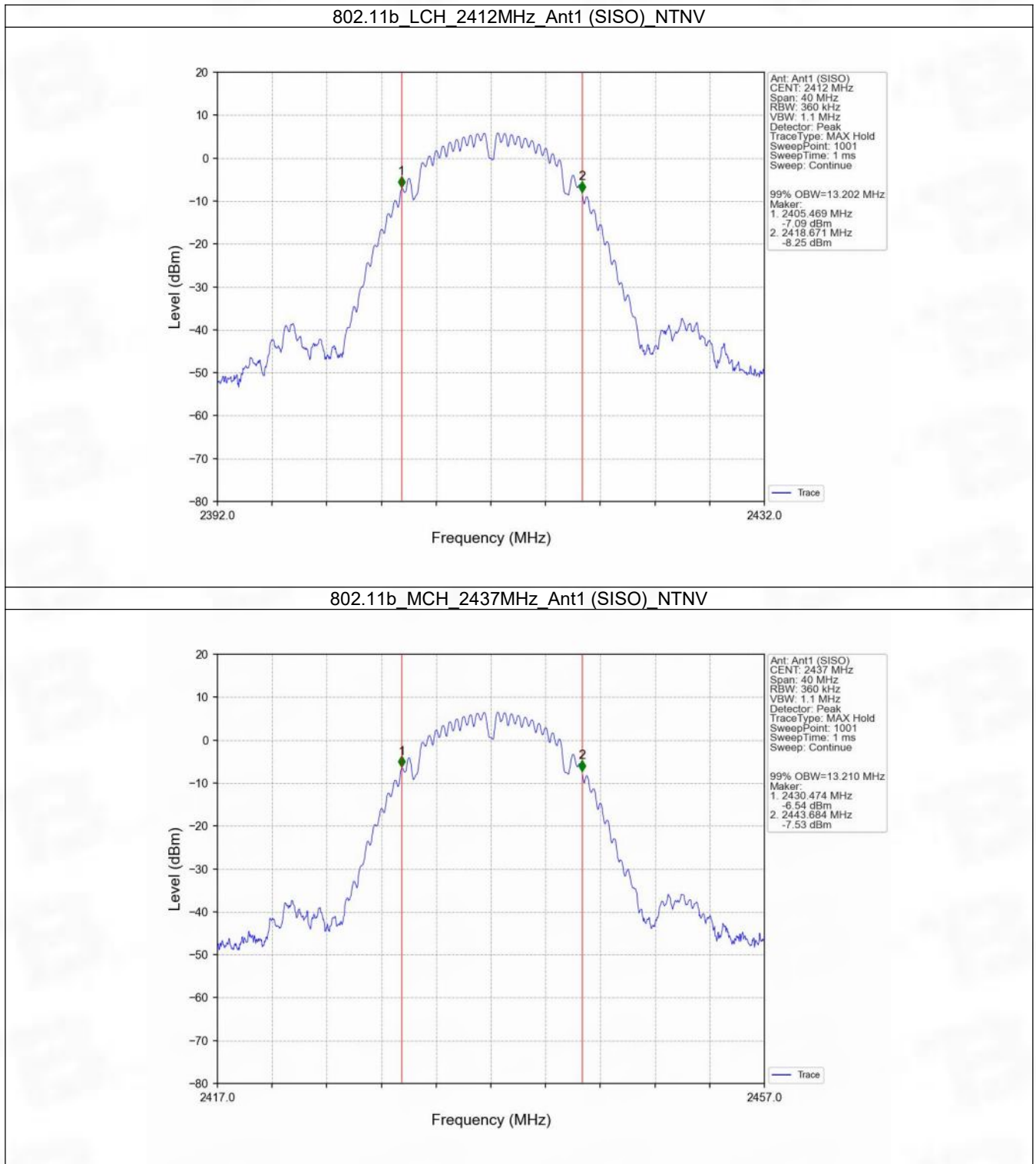
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.202	/	Pass
		2437	1	13.210	/	Pass
		2462	1	13.323	/	Pass
802.11g	SISO	2412	1	17.955	/	Pass
		2437	1	18.097	/	Pass
		2462	1	18.131	/	Pass
802.11n (HT20)	SISO	2412	1	19.064	/	Pass
		2437	1	19.032	/	Pass
		2462	1	19.121	/	Pass
802.11n (HT40)	SISO	2422	1	37.161	/	Pass
		2437	1	37.123	/	Pass
		2452	1	37.030	/	Pass

2.1.2 6dB BW

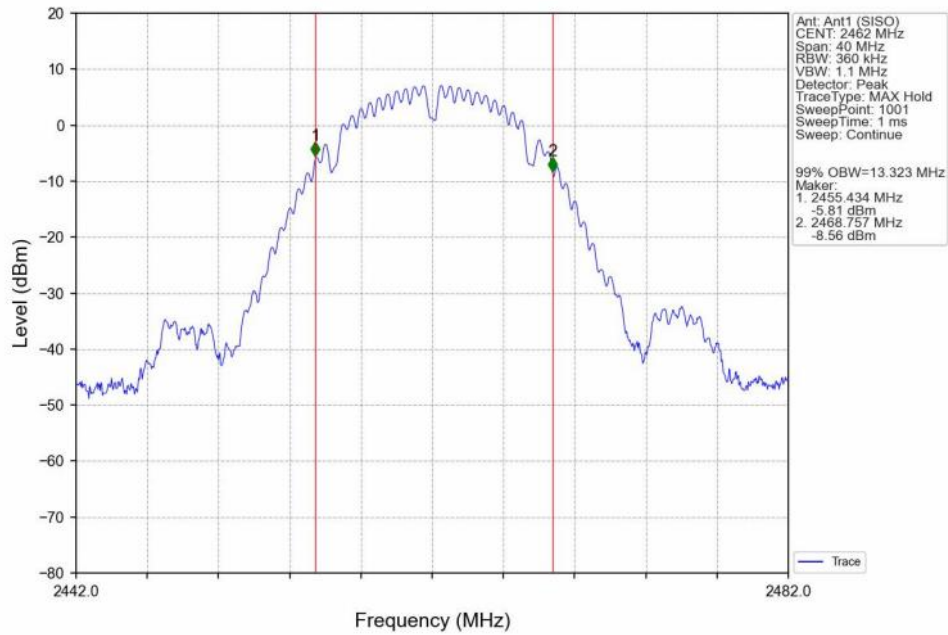
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	9.255	≥ 0.5	Pass
		2437	1	9.253	≥ 0.5	Pass
		2462	1	9.263	≥ 0.5	Pass
802.11g	SISO	2412	1	16.676	≥ 0.5	Pass
		2437	1	16.318	≥ 0.5	Pass
		2462	1	16.424	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	17.440	≥ 0.5	Pass
		2437	1	17.965	≥ 0.5	Pass
		2462	1	17.796	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	36.004	≥ 0.5	Pass
		2437	1	36.026	≥ 0.5	Pass
		2452	1	35.964	≥ 0.5	Pass

2.2 Test Graph

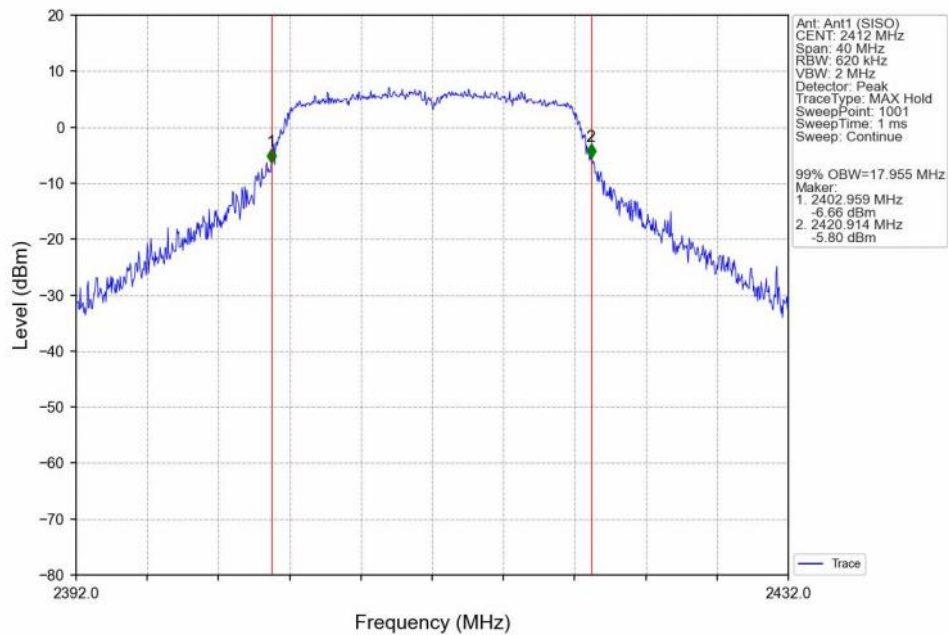
2.2.1 OBW



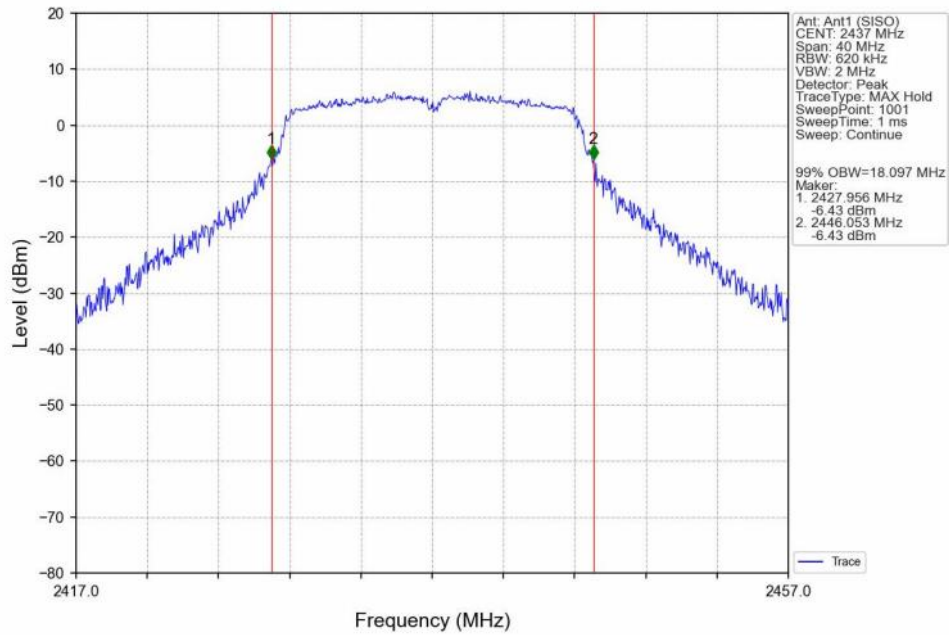
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



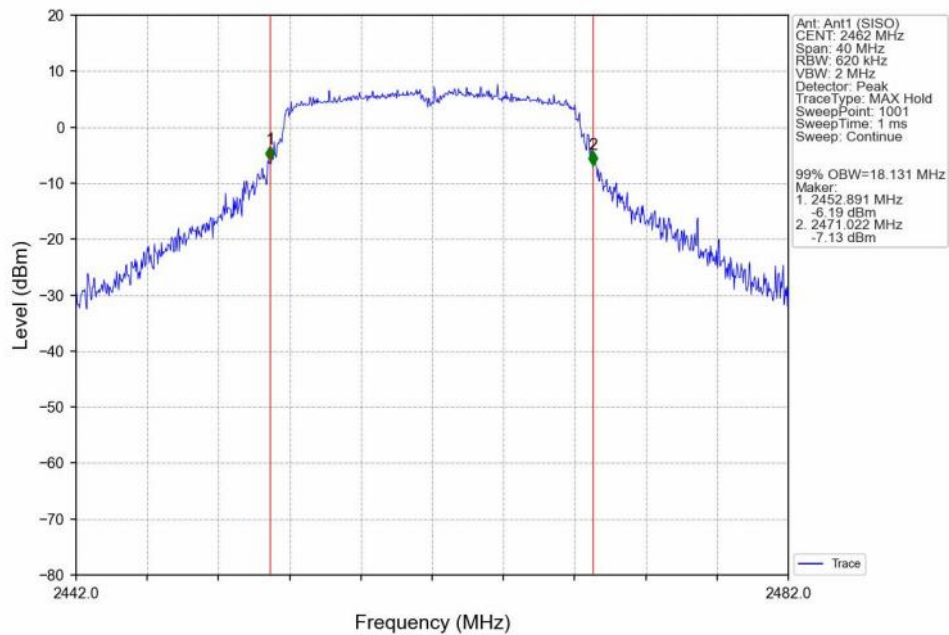
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



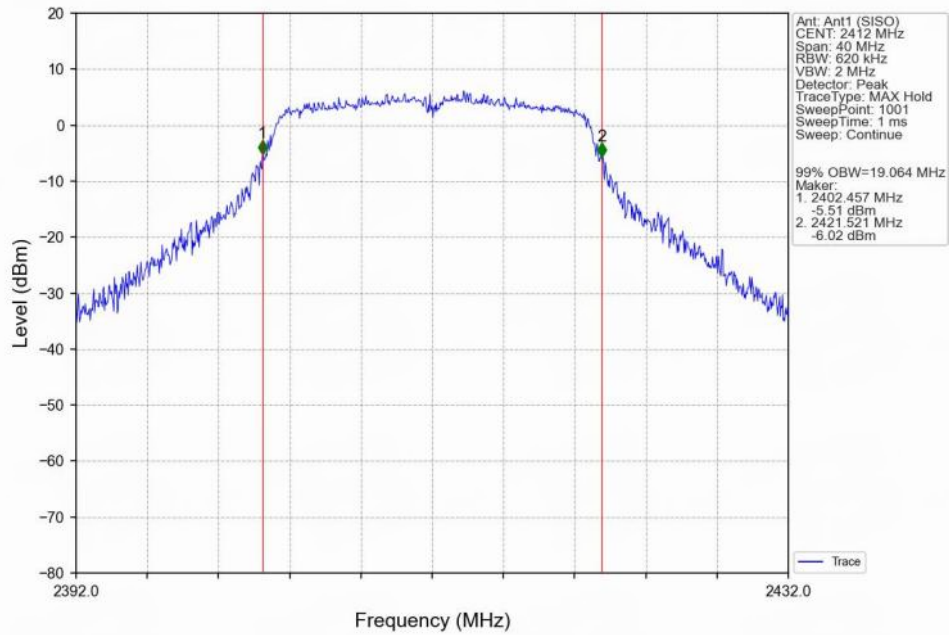
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



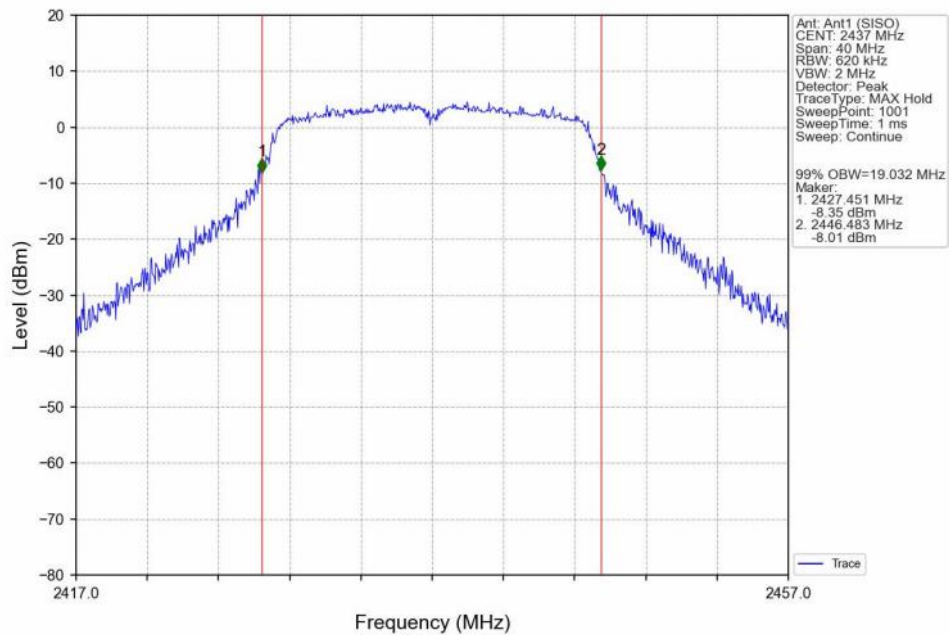
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



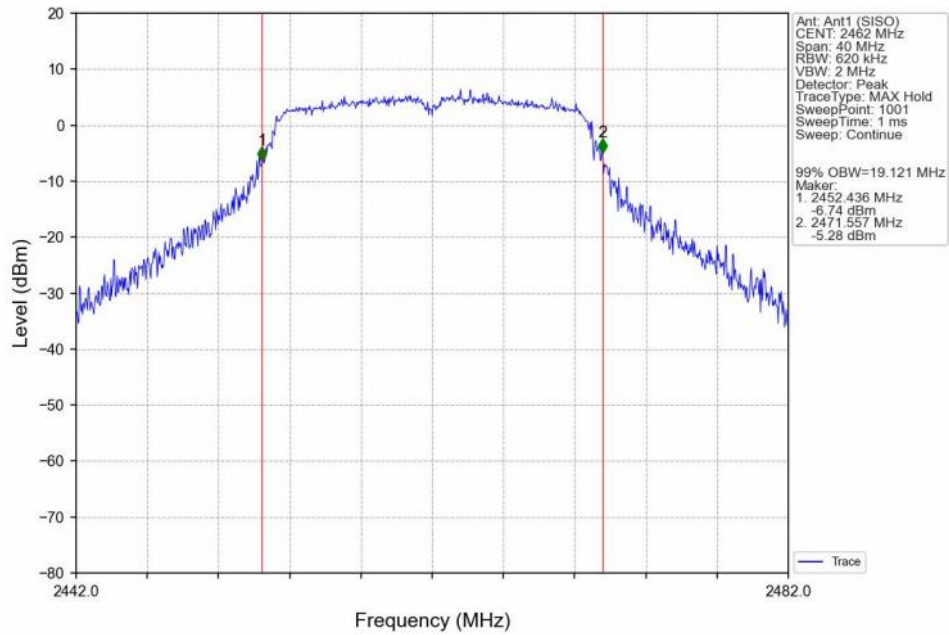
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



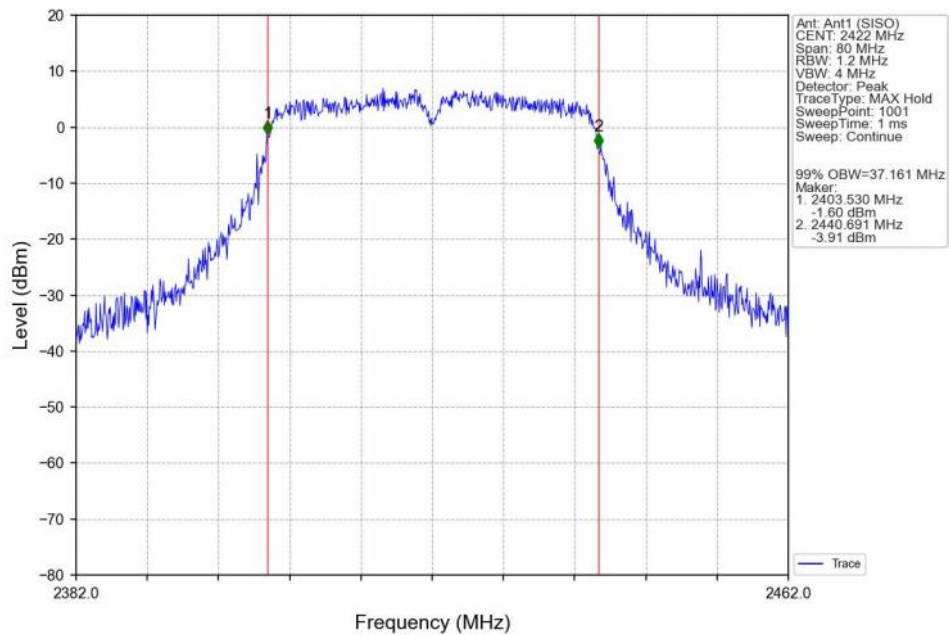
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



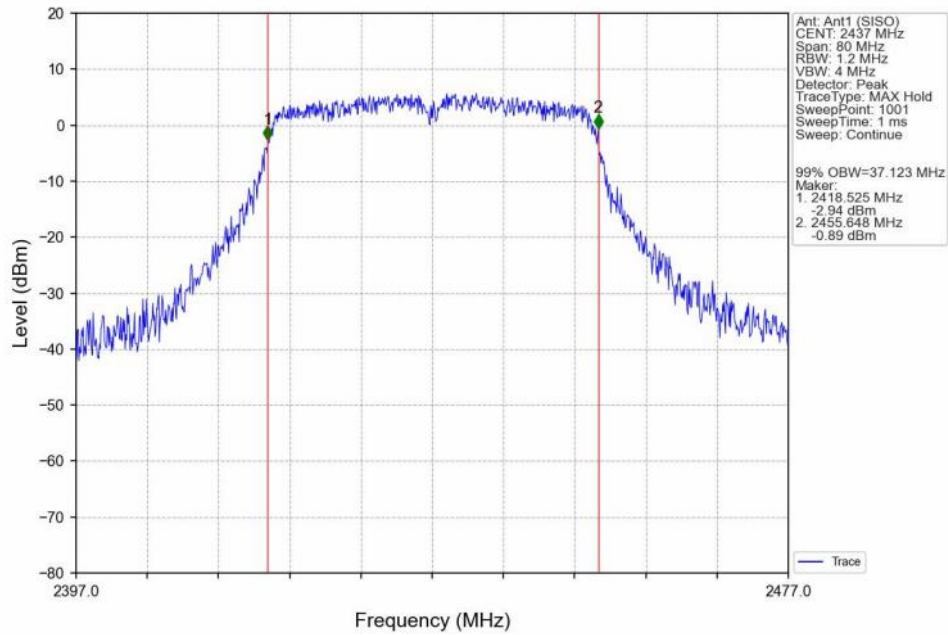
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



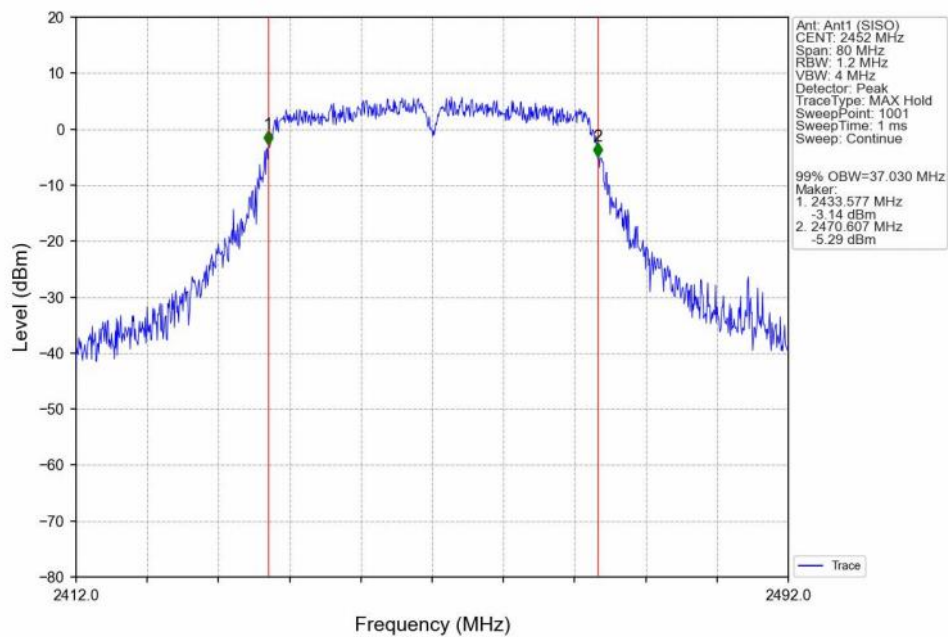
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



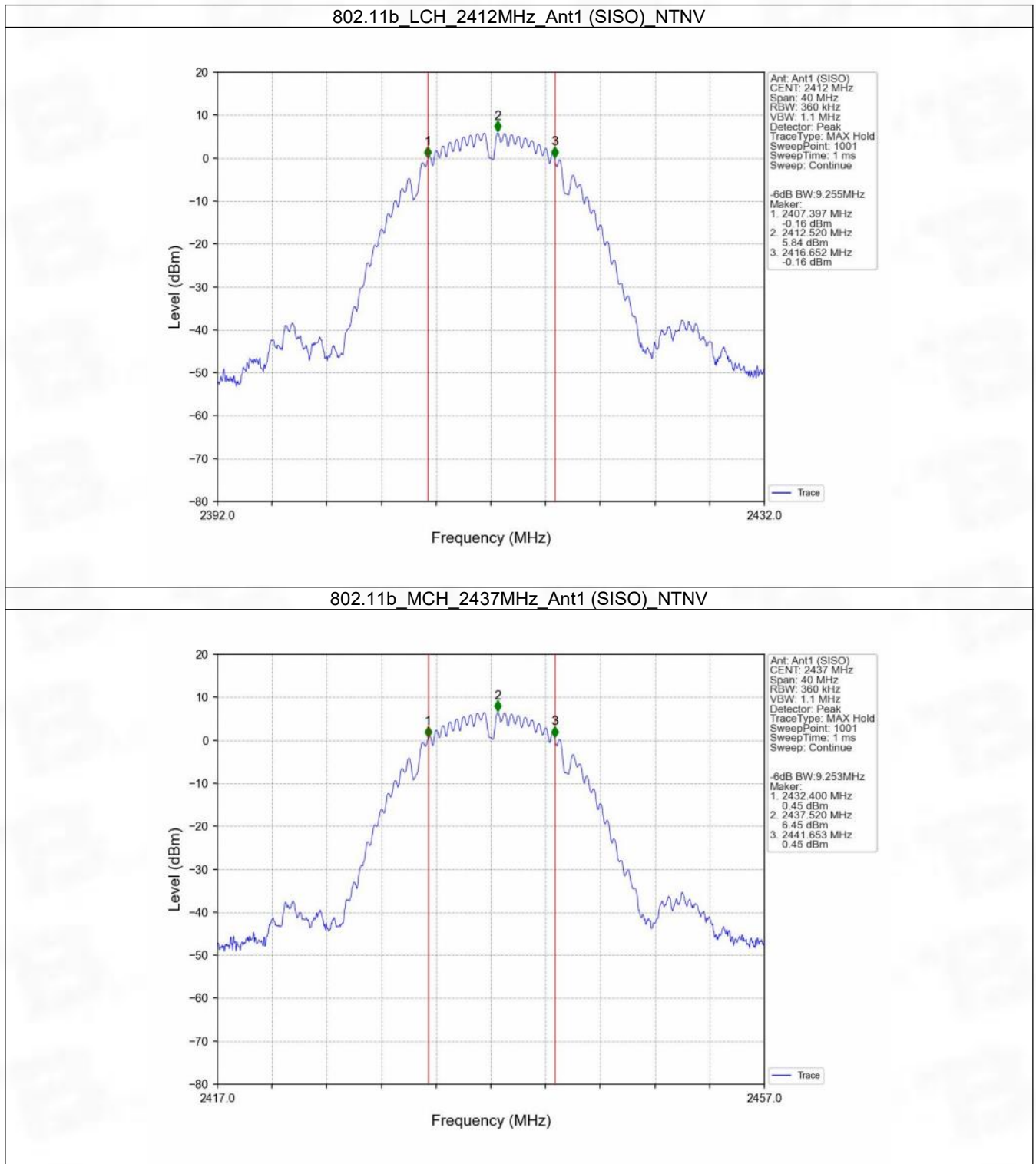
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



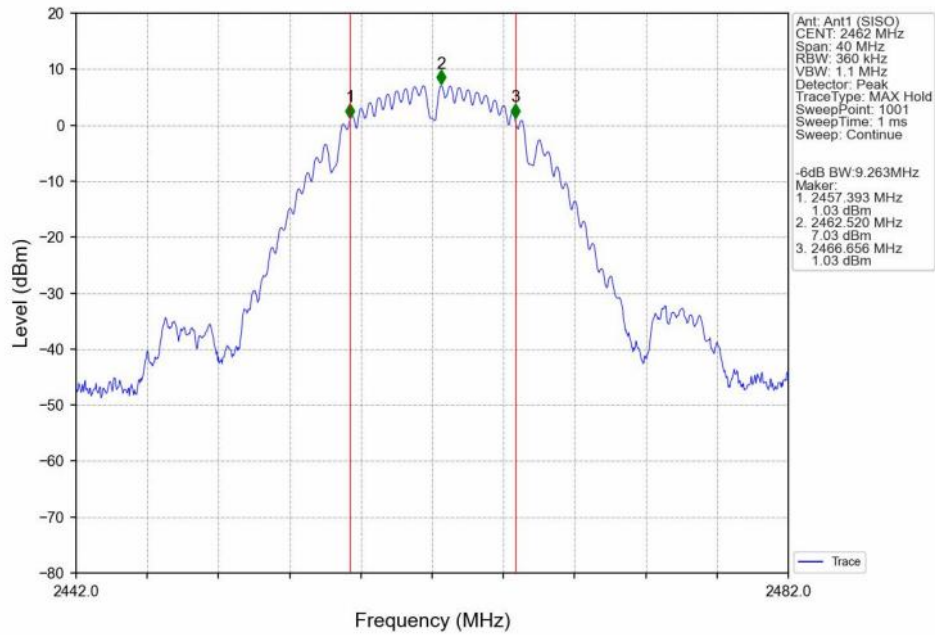
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



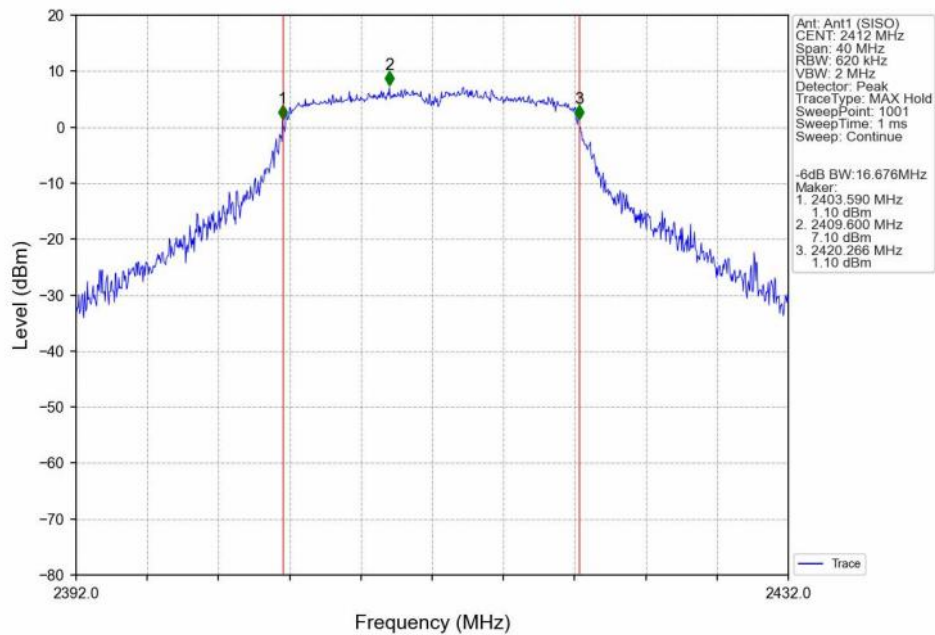
2.2.2 6dB BW



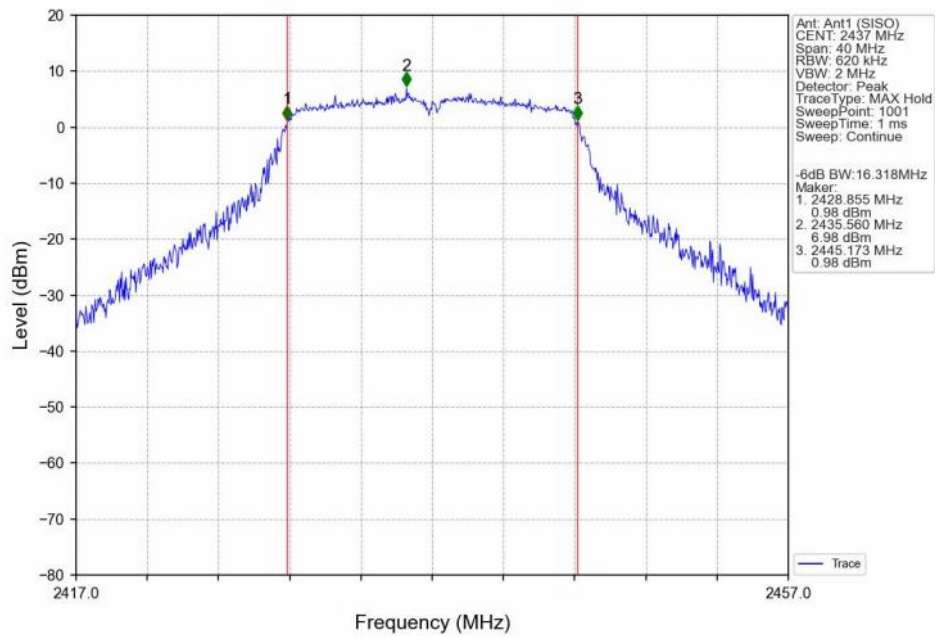
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



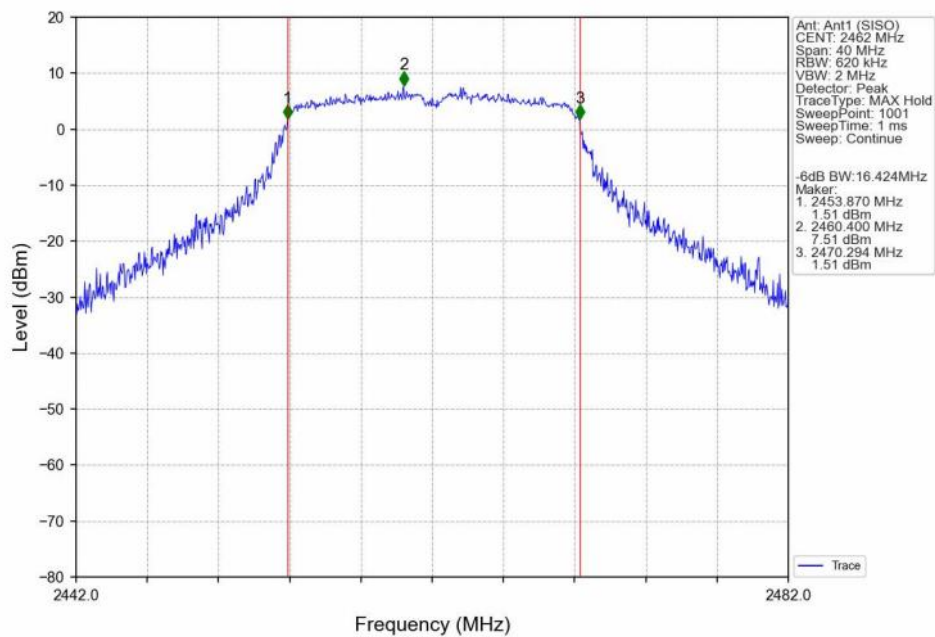
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



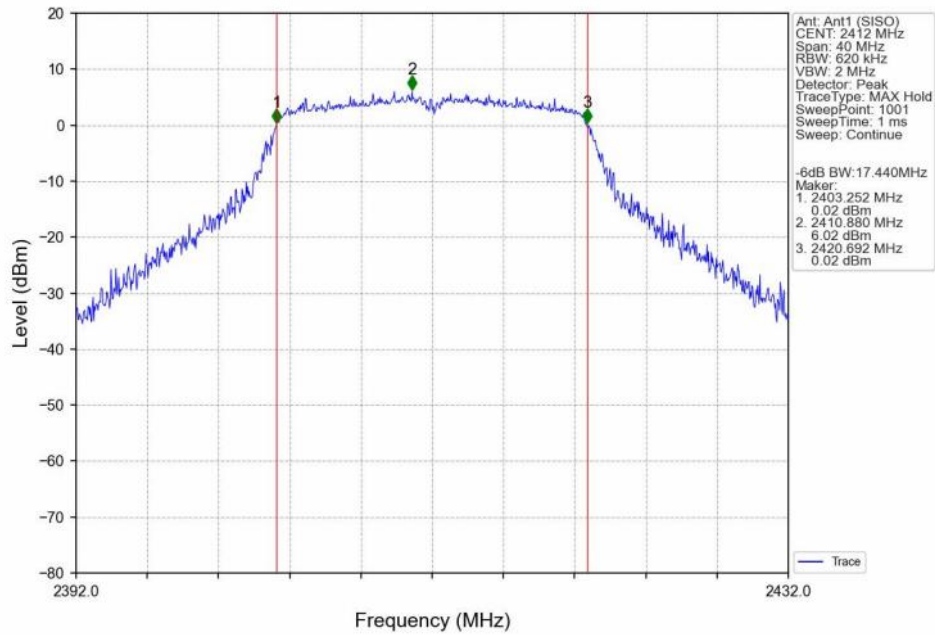
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



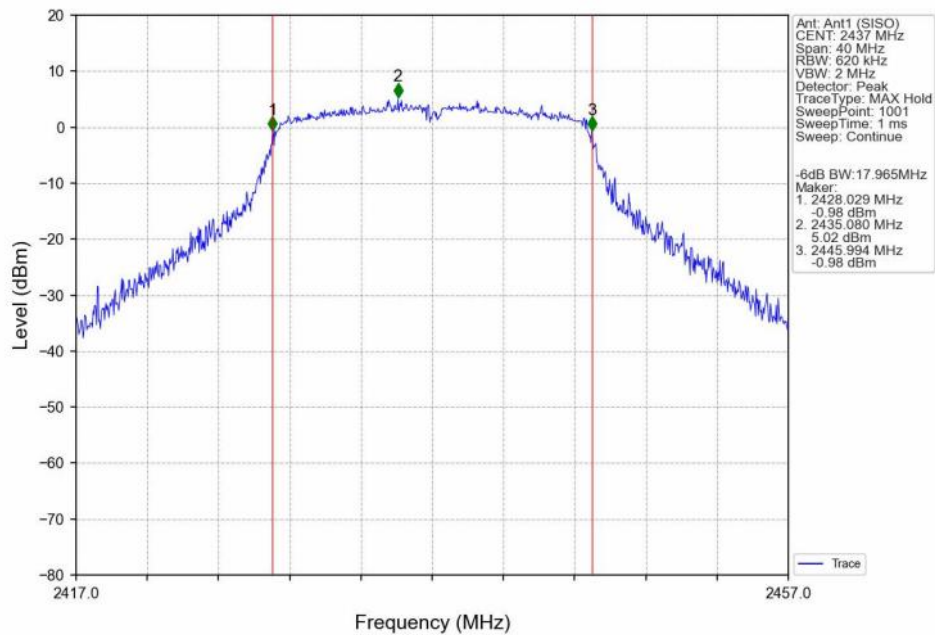
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



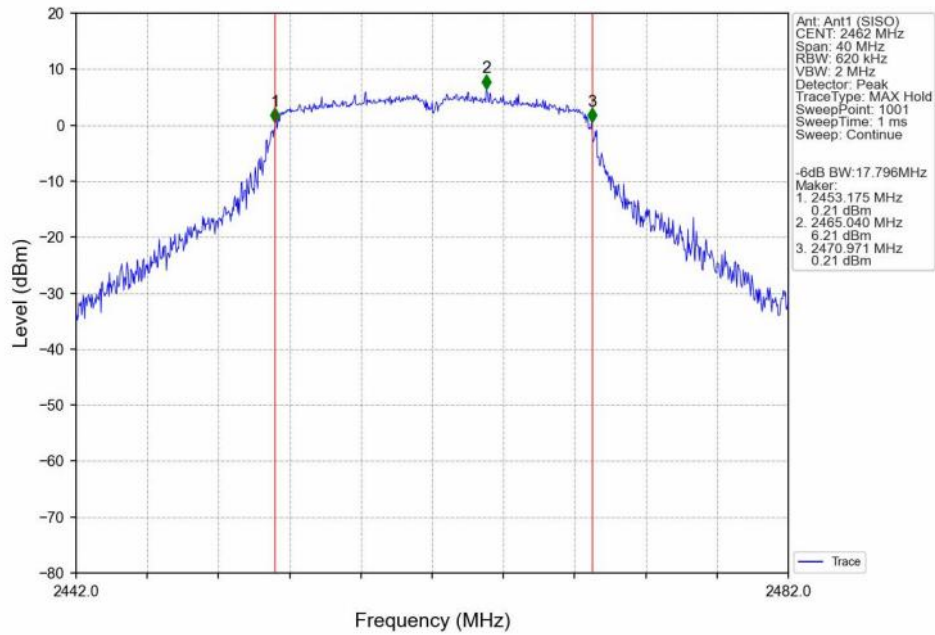
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



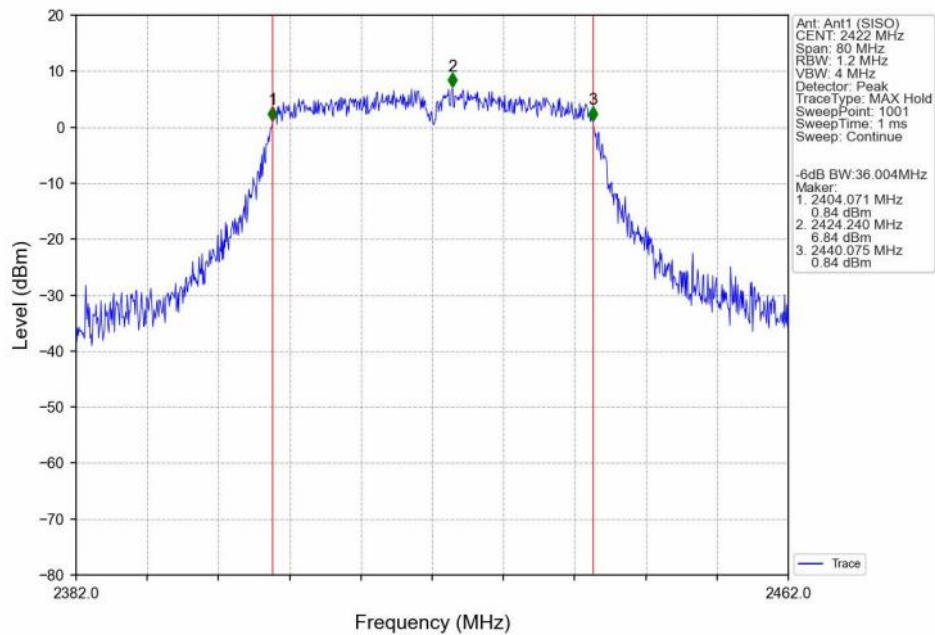
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



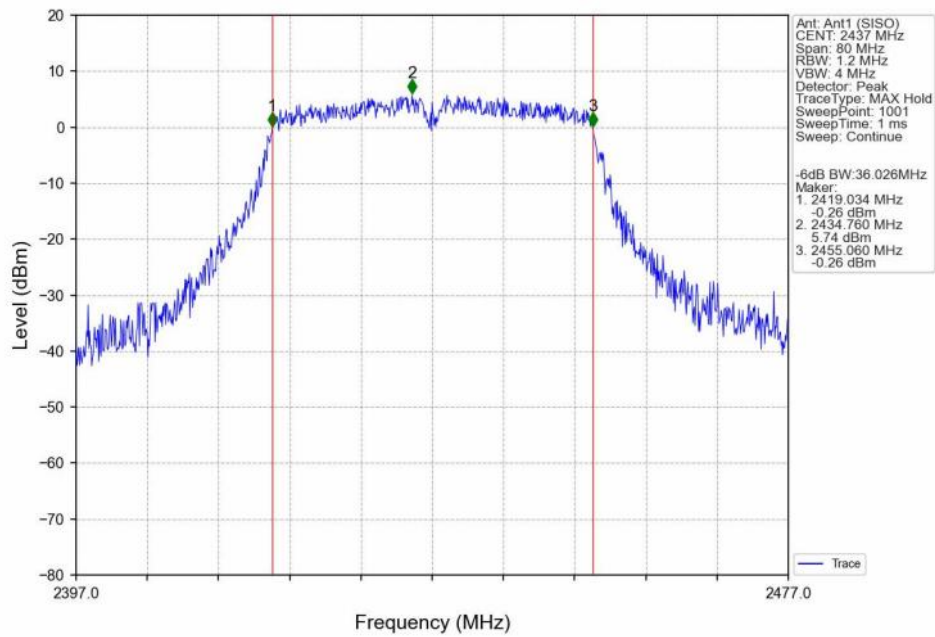
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



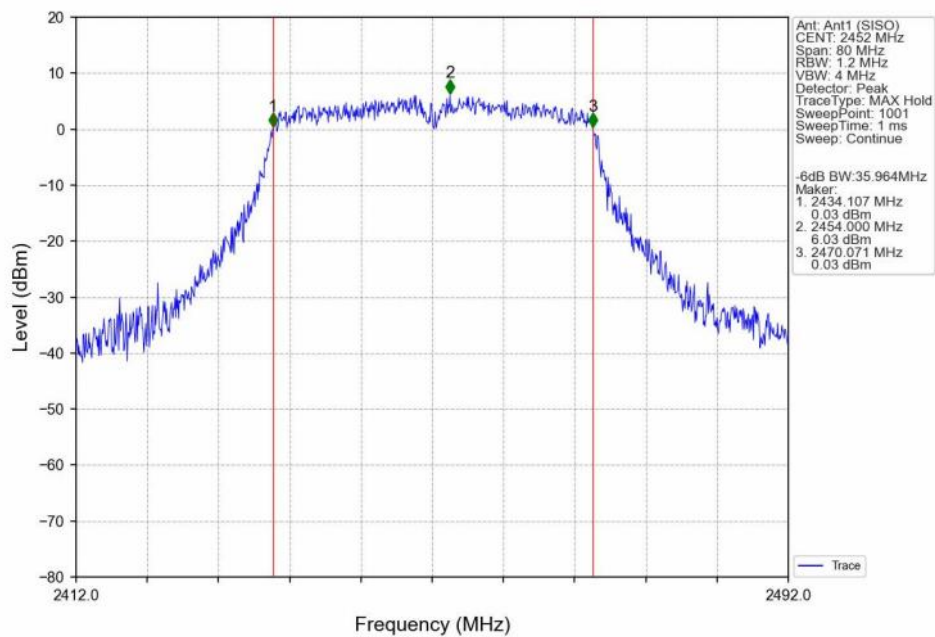
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	14.09	<=30	Pass
		2437	14.58	<=30	Pass
		2462	14.67	<=30	Pass
802.11g	SISO	2412	12.78	<=30	Pass
		2437	11.33	<=30	Pass
		2462	12.84	<=30	Pass
802.11n (HT20)	SISO	2412	11.45	<=30	Pass
		2437	10.13	<=30	Pass
		2462	11.47	<=30	Pass
802.11n (HT40)	SISO	2422	10.72	<=30	Pass
		2437	10.30	<=30	Pass
		2452	11.29	<=30	Pass

Note1: Antenna Gain: Ant1: 3.08dBi;

4. Maximum Power Spectral Density

4.1 Test Result

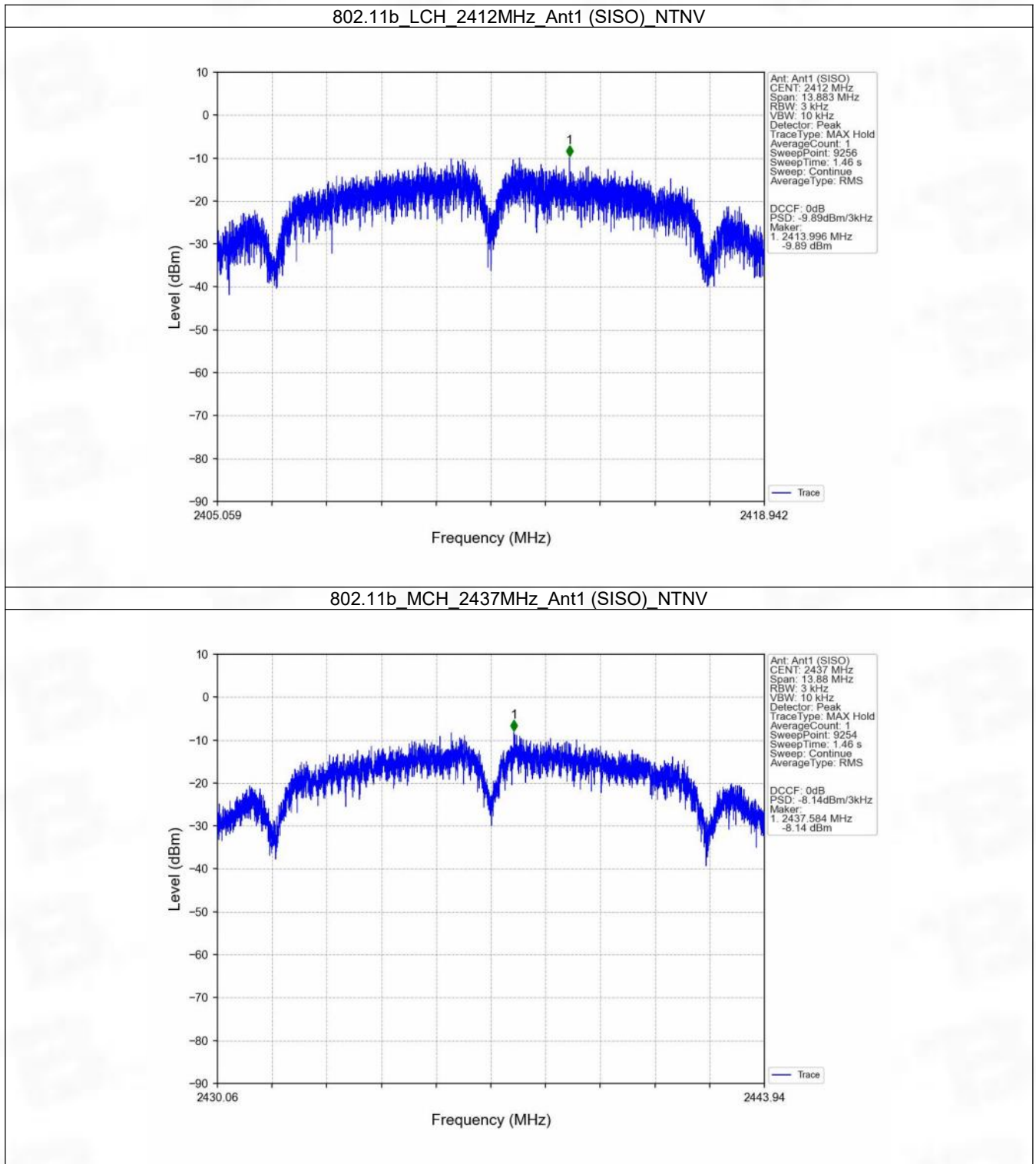
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-9.89	<=8	Pass
		2437	-8.14	<=8	Pass
		2462	-7.71	<=8	Pass
802.11g	SISO	2412	-12.76	<=8	Pass
		2437	-12.73	<=8	Pass
		2462	-12.85	<=8	Pass
802.11n (HT20)	SISO	2412	-13.85	<=8	Pass
		2437	-13.75	<=8	Pass
		2462	-14.12	<=8	Pass
802.11n (HT40)	SISO	2422	-16.37	<=8	Pass
		2437	-17.15	<=8	Pass
		2452	-18.25	<=8	Pass

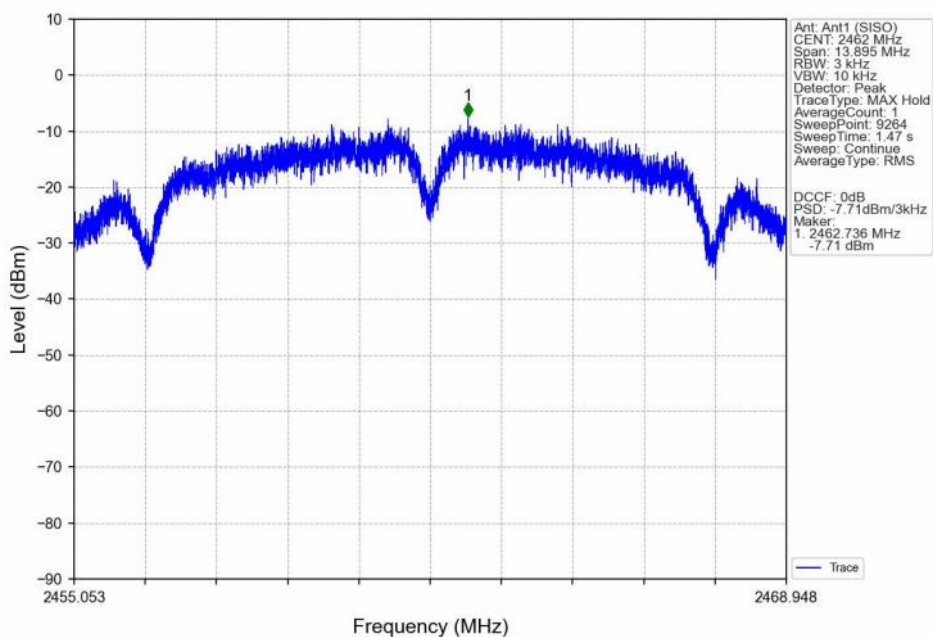
Note1: Antenna Gain: Ant1: 3.08dBi;

4.2 Test Graph

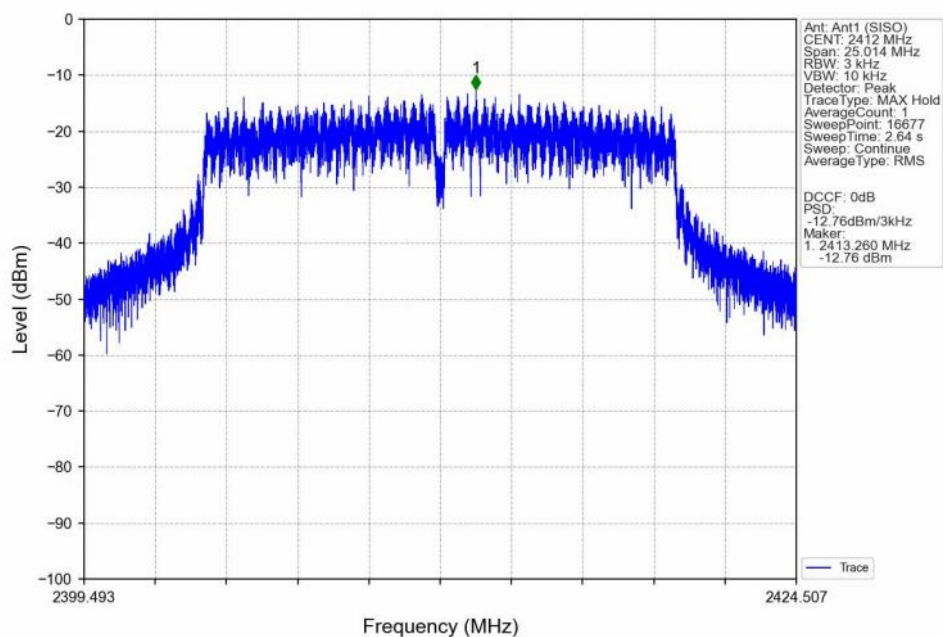
4.2.1 PSD



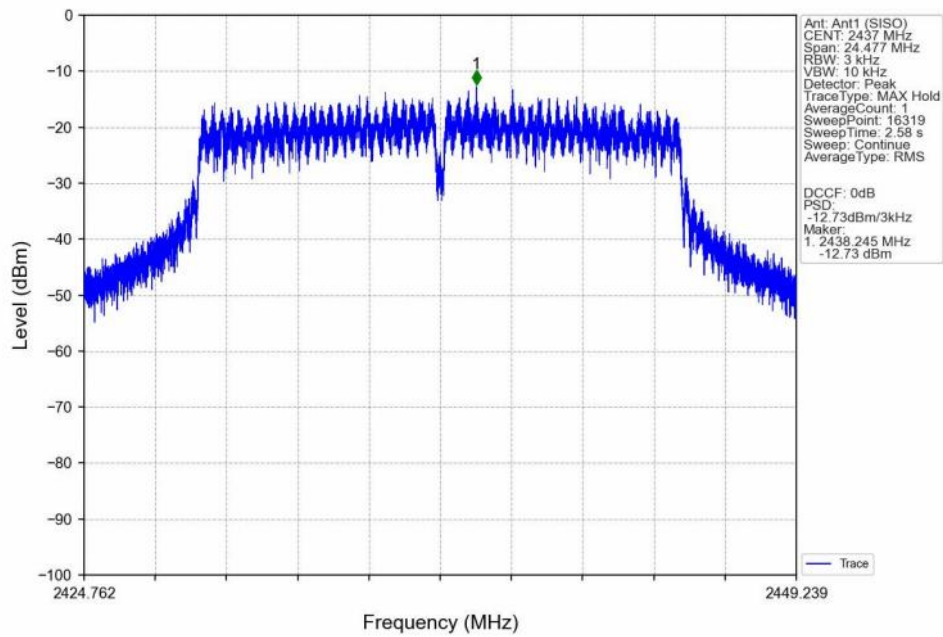
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



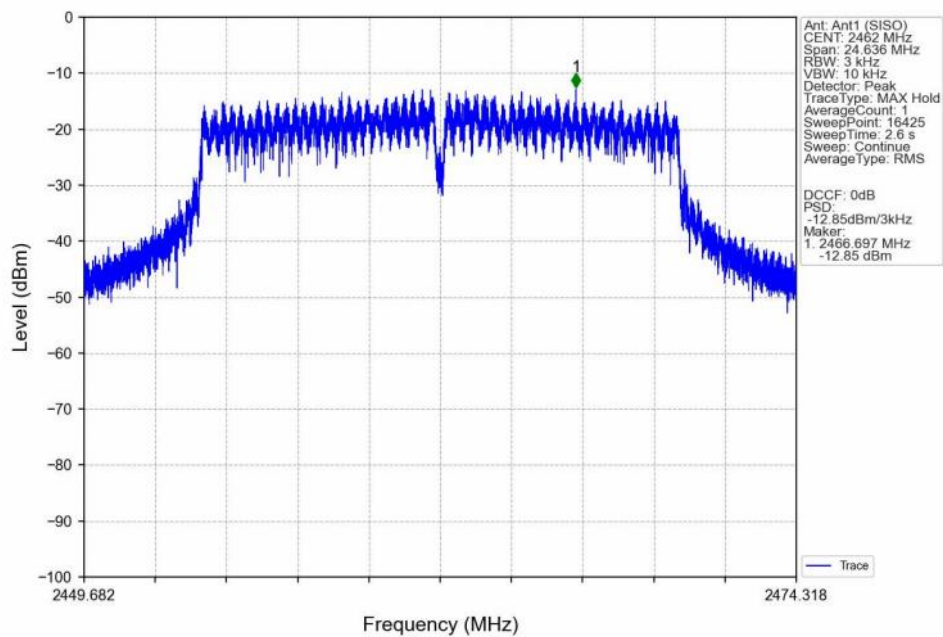
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



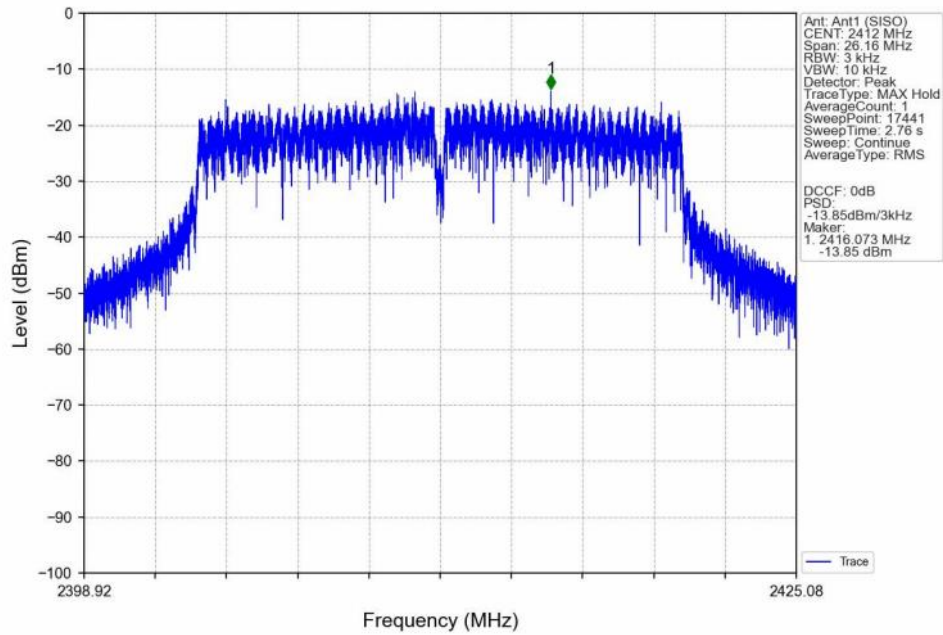
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



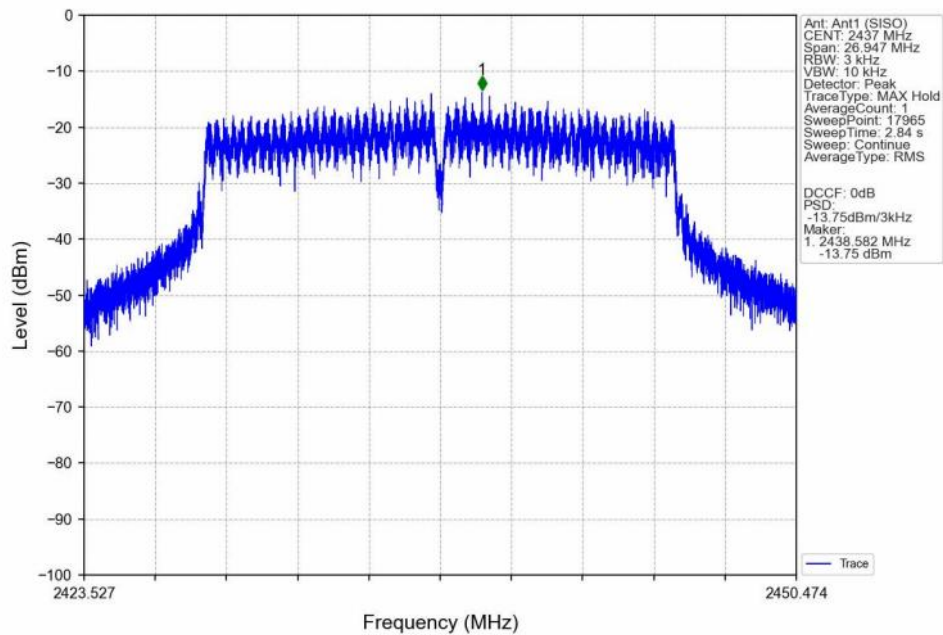
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



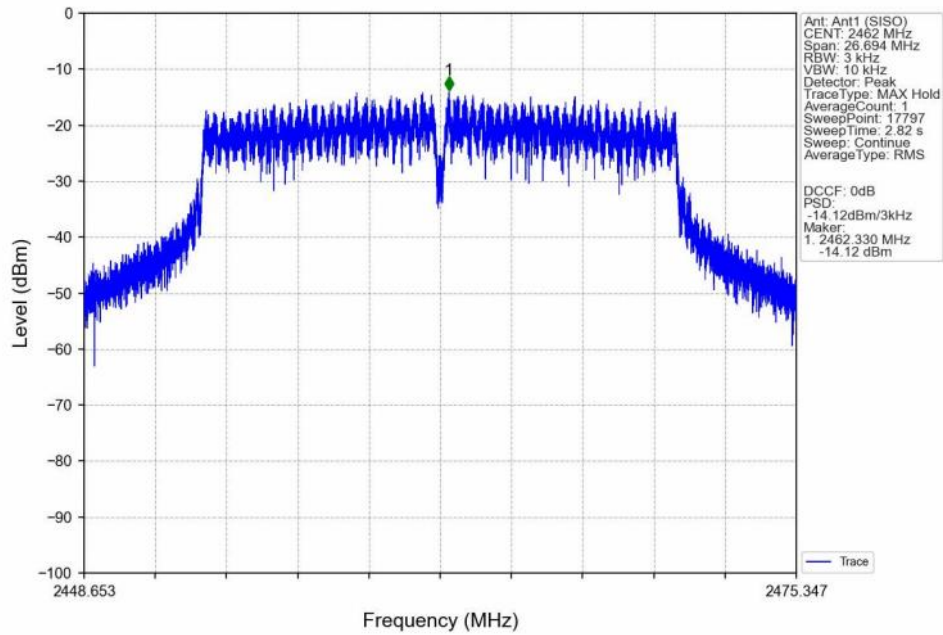
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



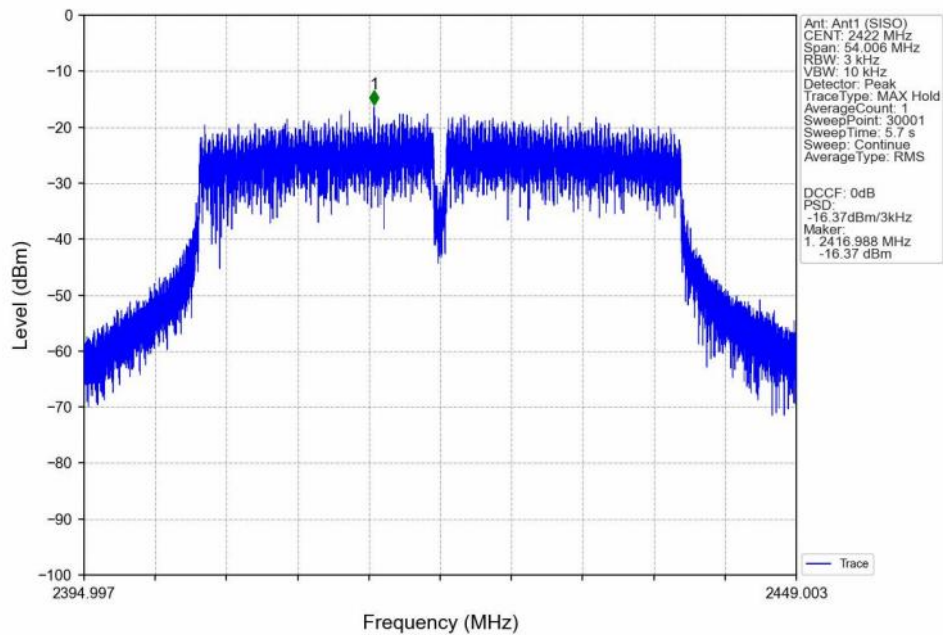
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



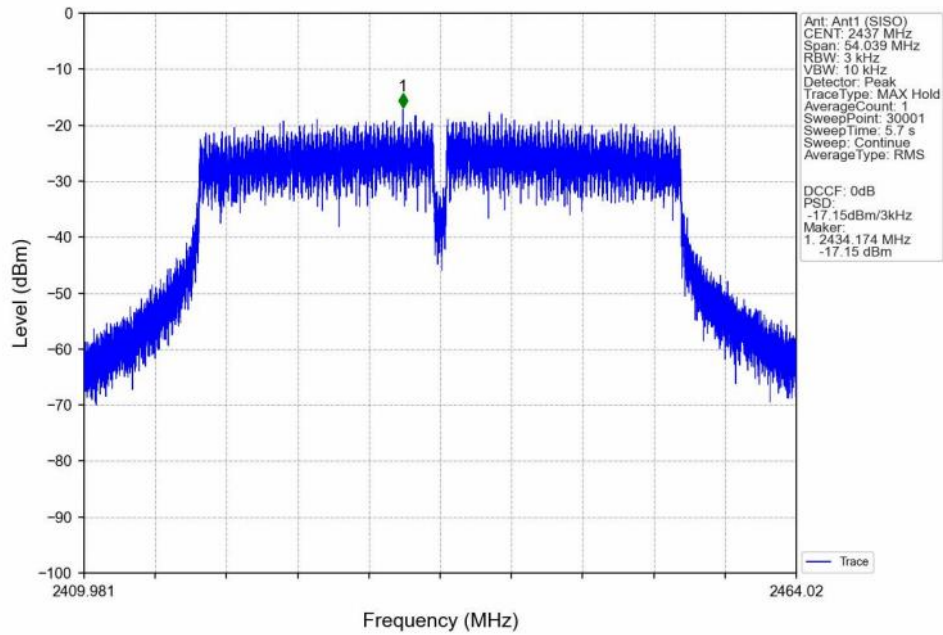
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



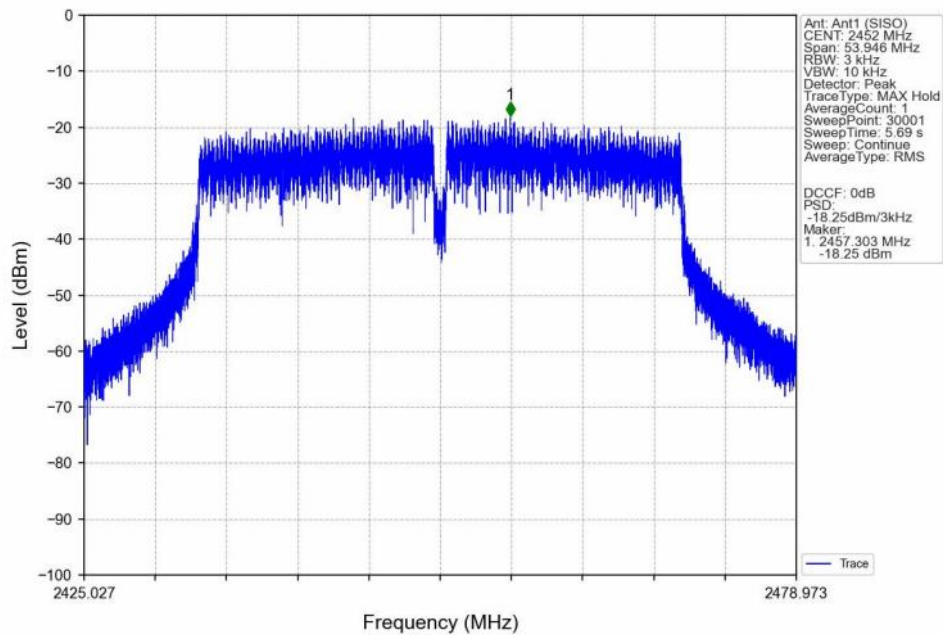
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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	5.71
		2437	1	6.33
		2462	1	6.81
802.11g	SISO	2412	1	1.61
		2437	1	0.58
		2462	1	1.78
802.11n (HT20)	SISO	2412	1	0.12
		2437	1	-1.84
		2462	1	0.87
802.11n (HT40)	SISO	2422	1	-2.12
		2437	1	-3.55
		2452	1	-3.00

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.

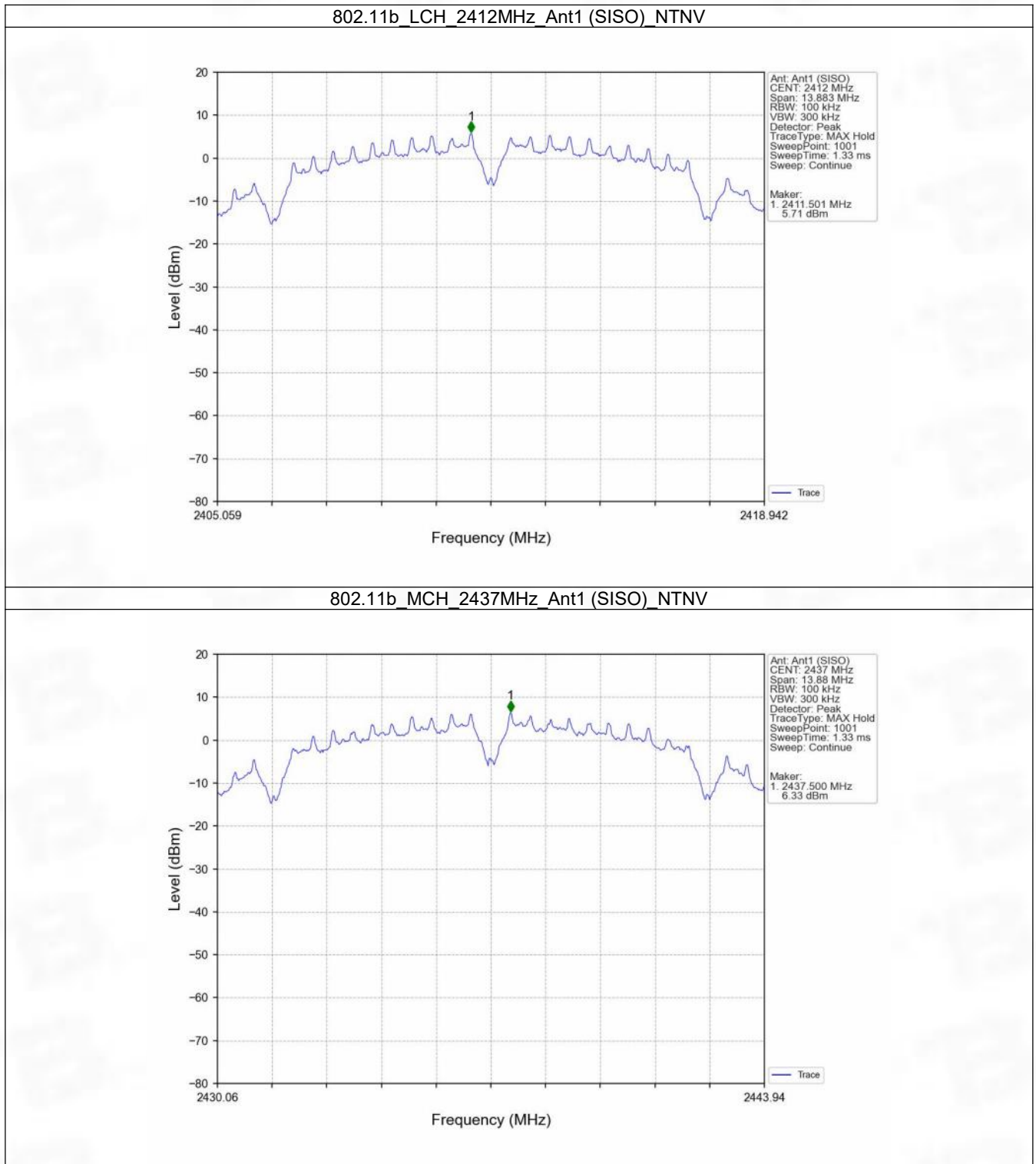
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	6.81	-23.19	Pass
		2437	1	6.81	-23.19	Pass
		2462	1	6.81	-23.19	Pass
802.11g	SISO	2412	1	1.78	-28.22	Pass
		2437	1	1.78	-28.22	Pass
		2462	1	1.78	-28.22	Pass
802.11n (HT20)	SISO	2412	1	0.87	-29.13	Pass
		2437	1	0.87	-29.13	Pass
		2462	1	0.87	-29.13	Pass
802.11n (HT40)	SISO	2422	1	-2.12	-32.12	Pass
		2437	1	-2.12	-32.12	Pass
		2452	1	-2.12	-32.12	Pass

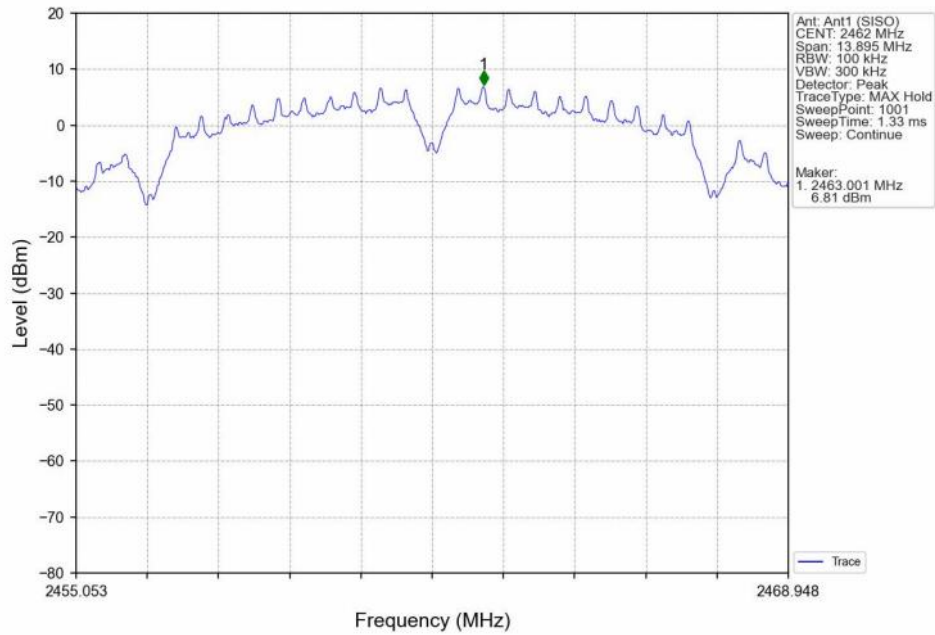
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

5.2 Test Graph

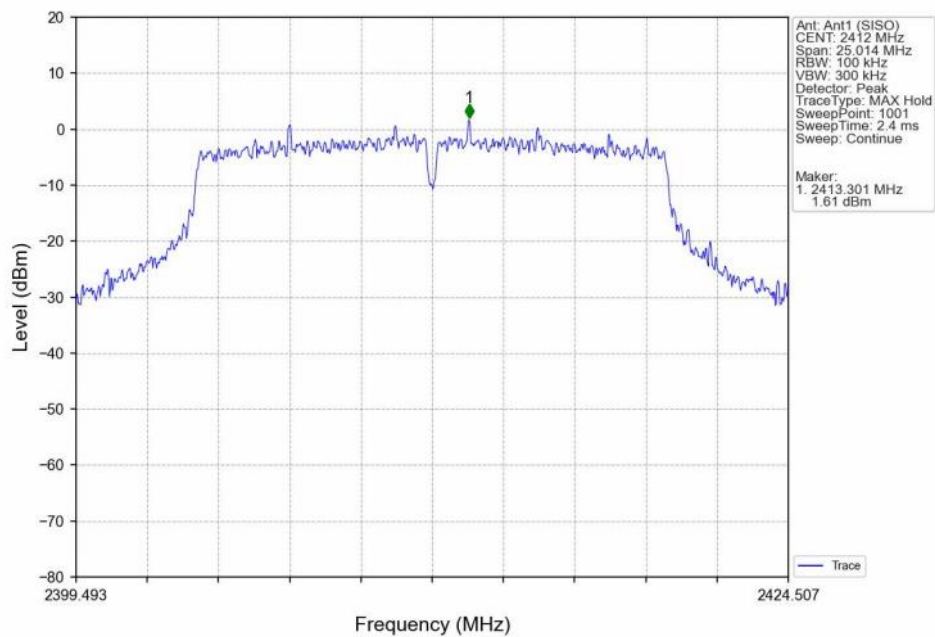
5.2.1 Ref



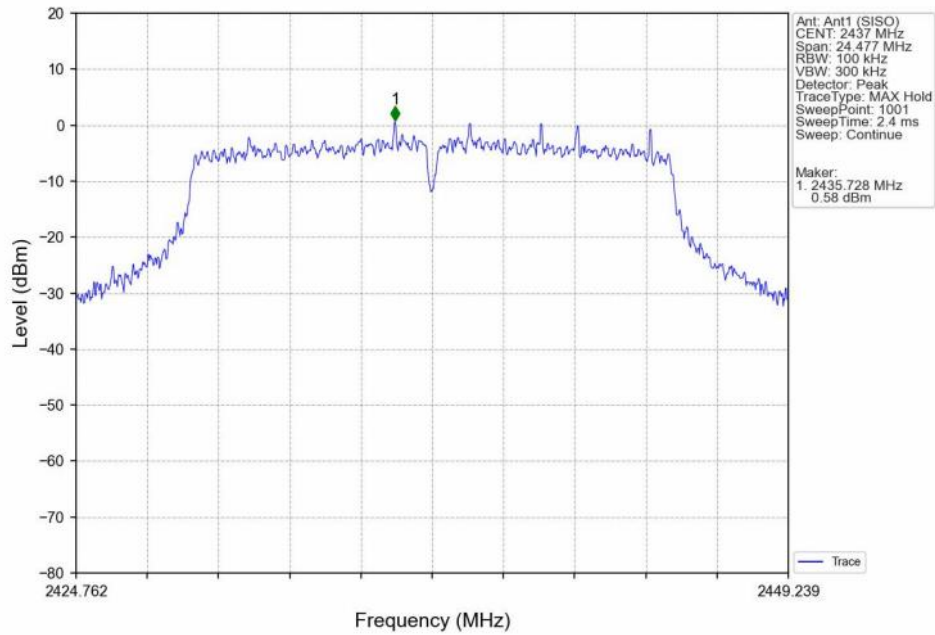
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



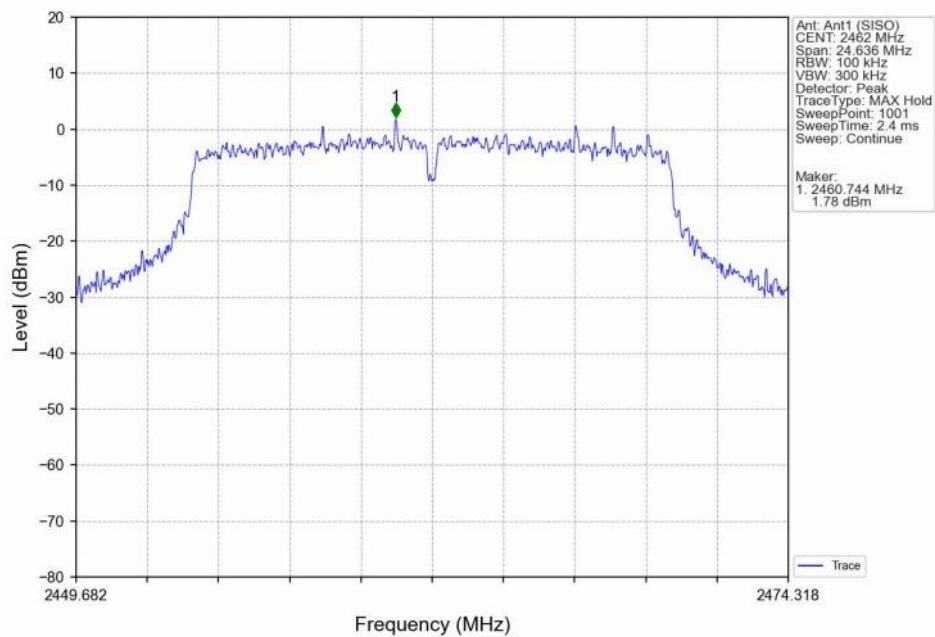
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



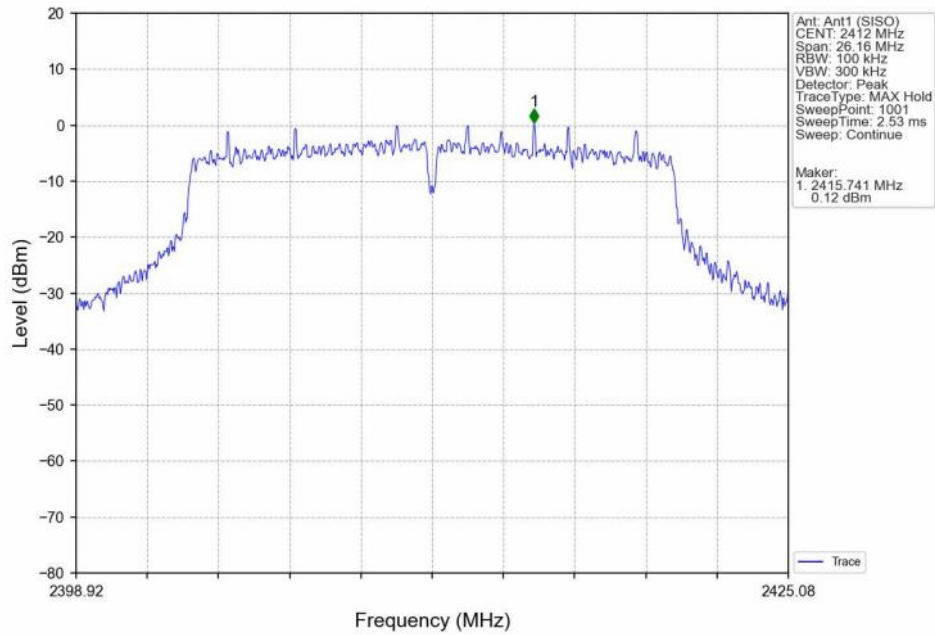
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



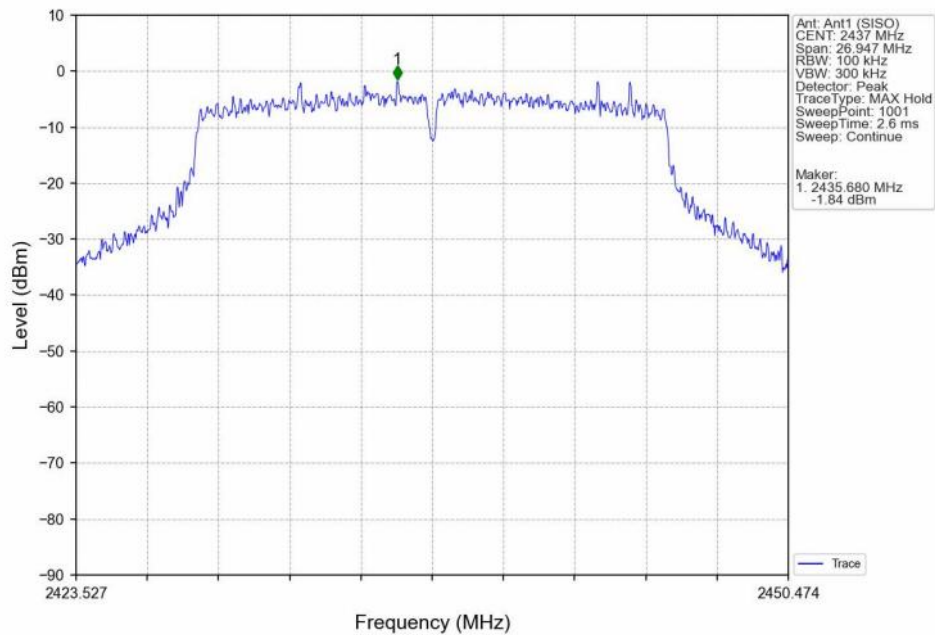
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



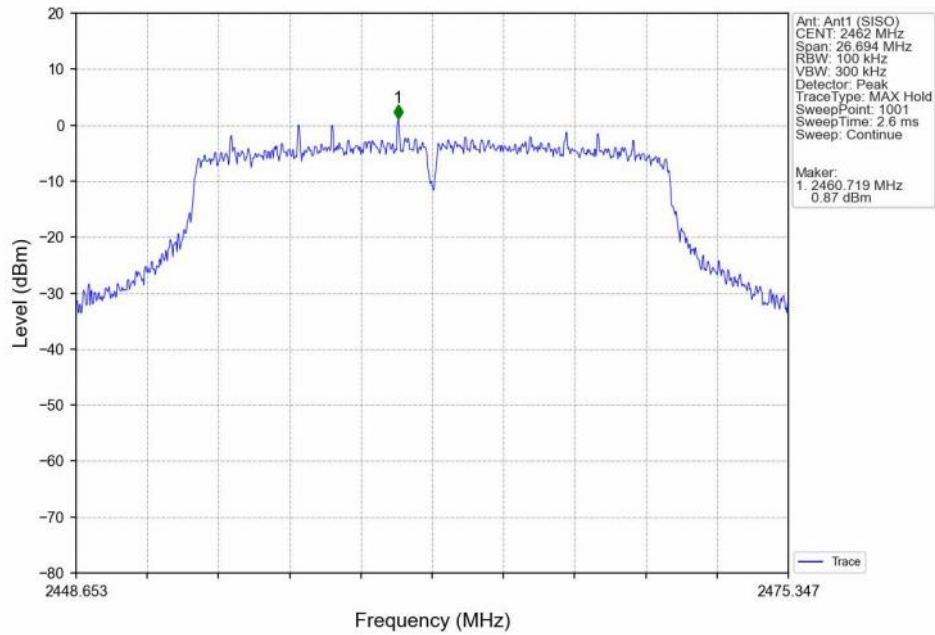
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



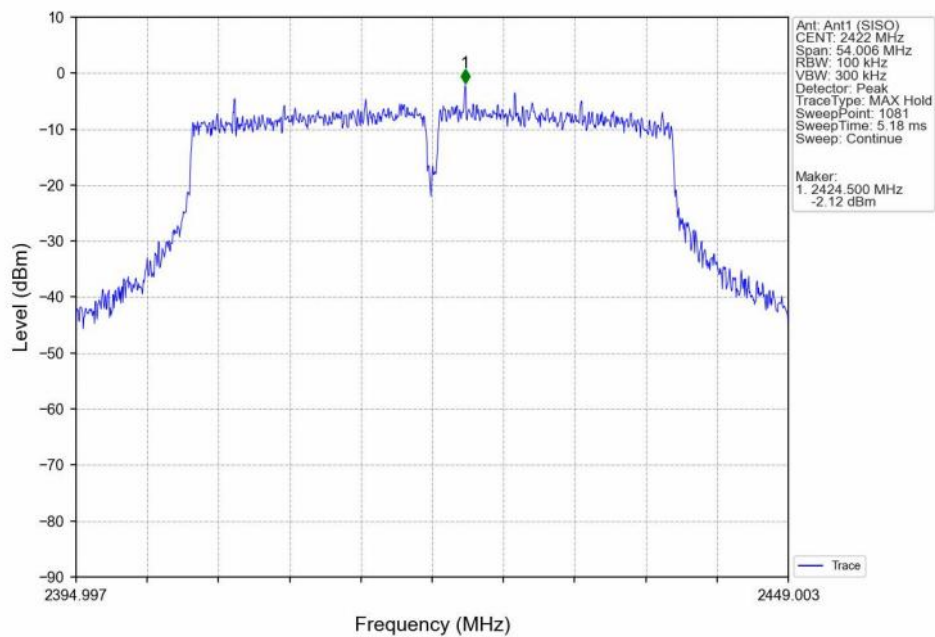
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



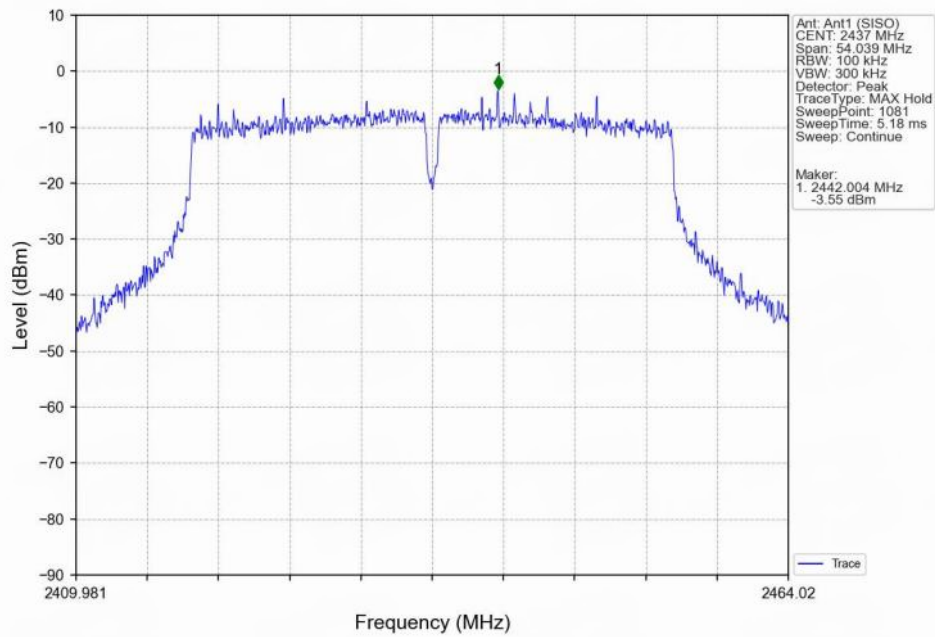
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



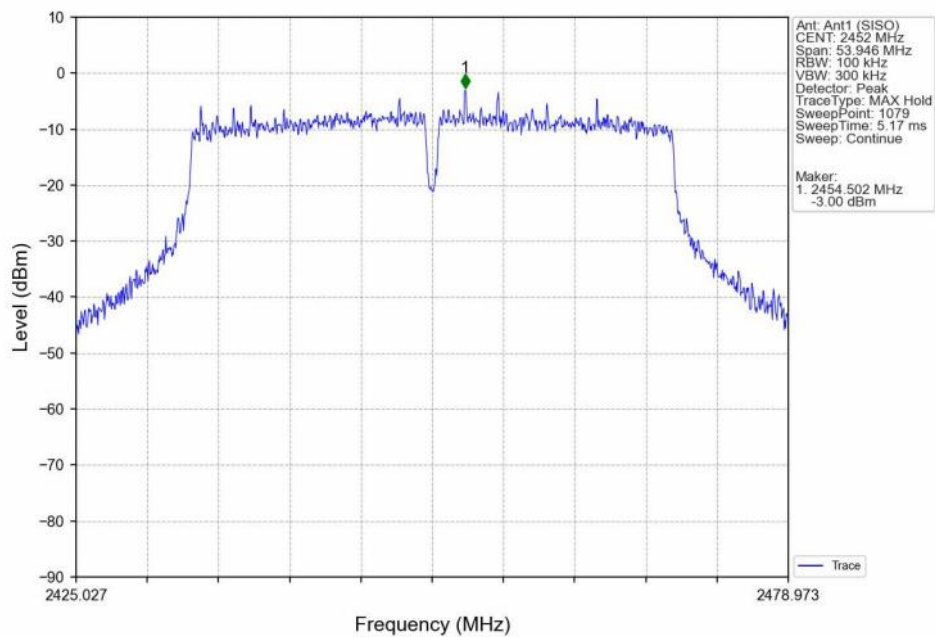
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



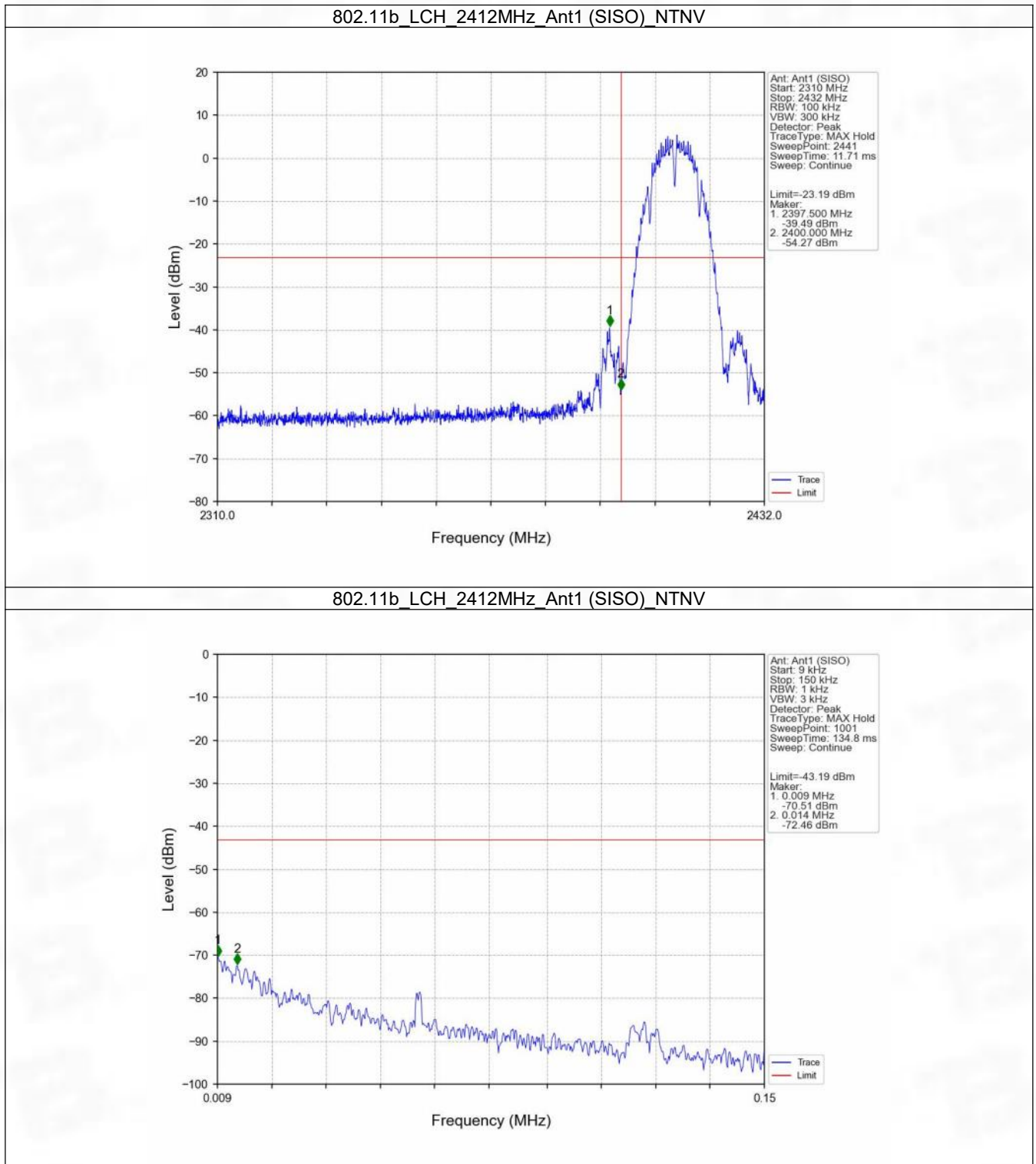
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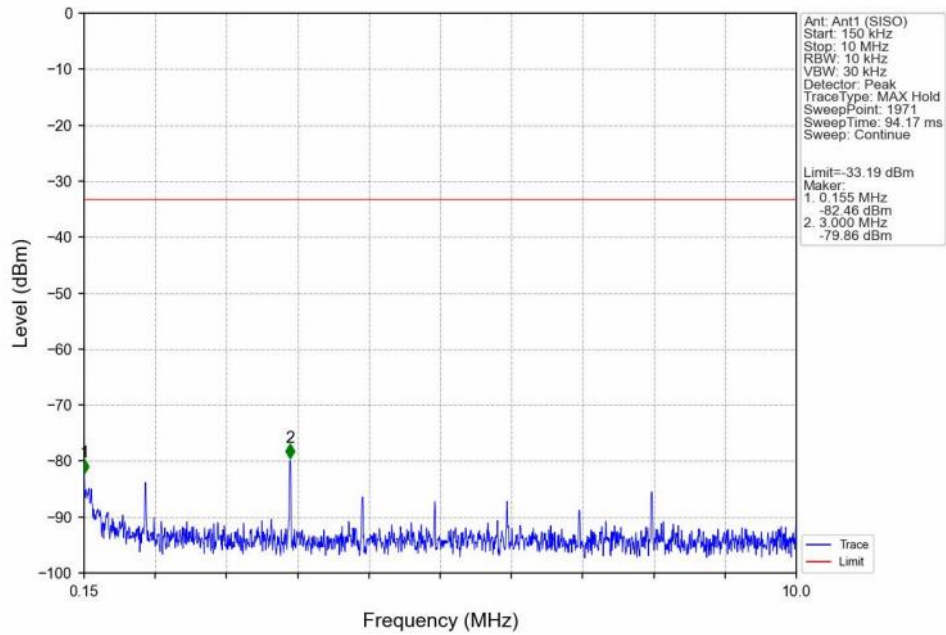
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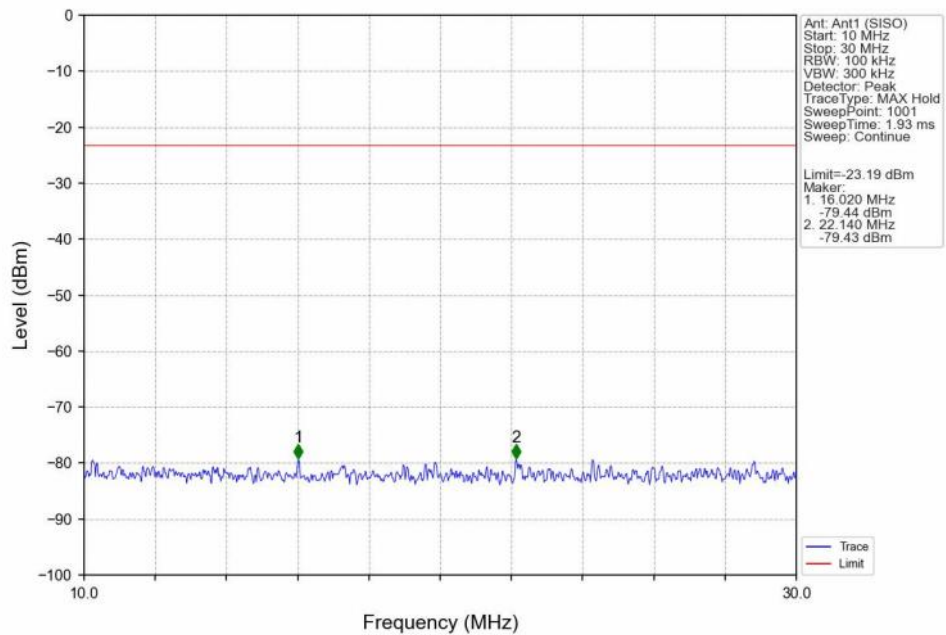
5.2.2 CSE



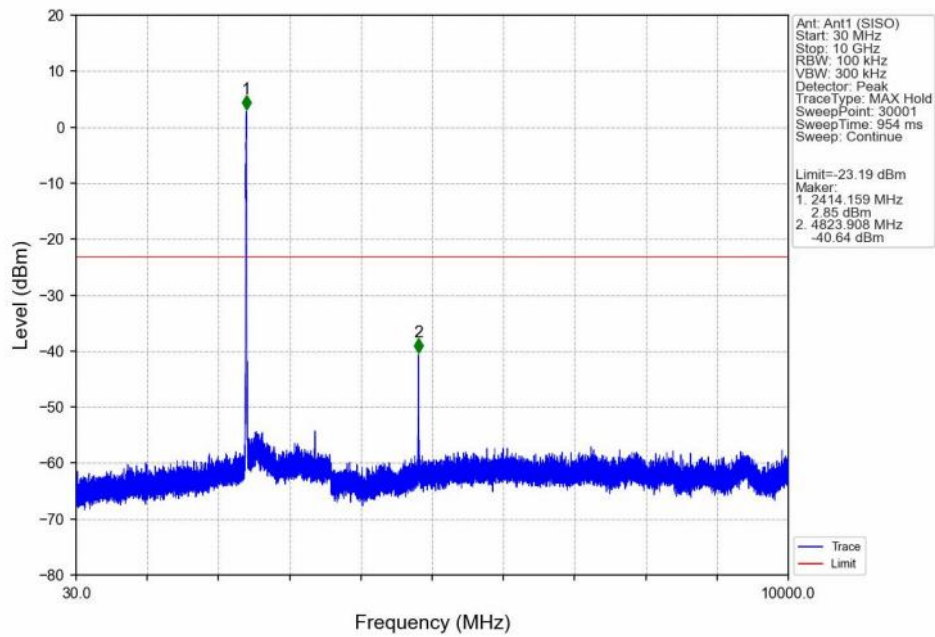
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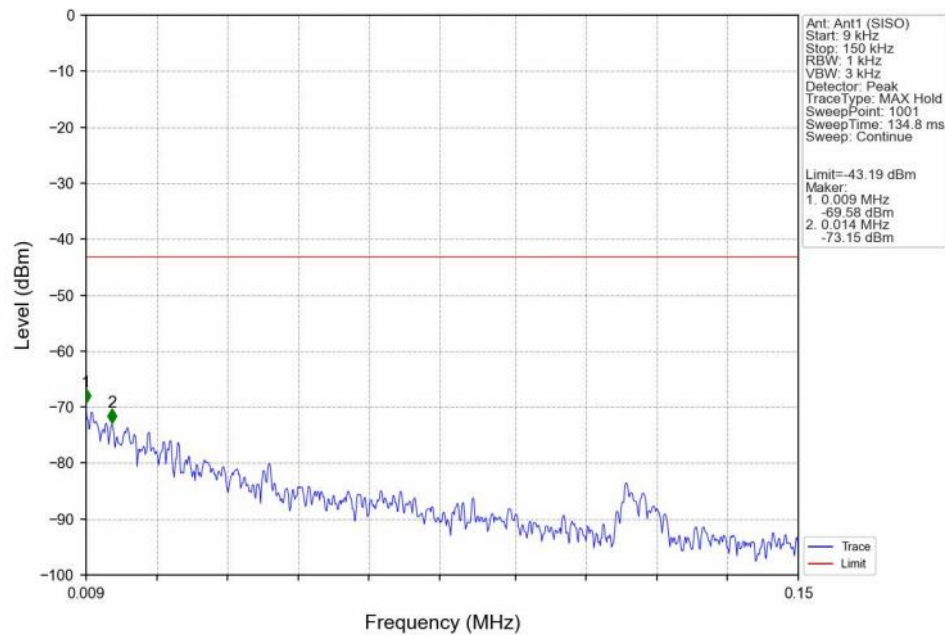
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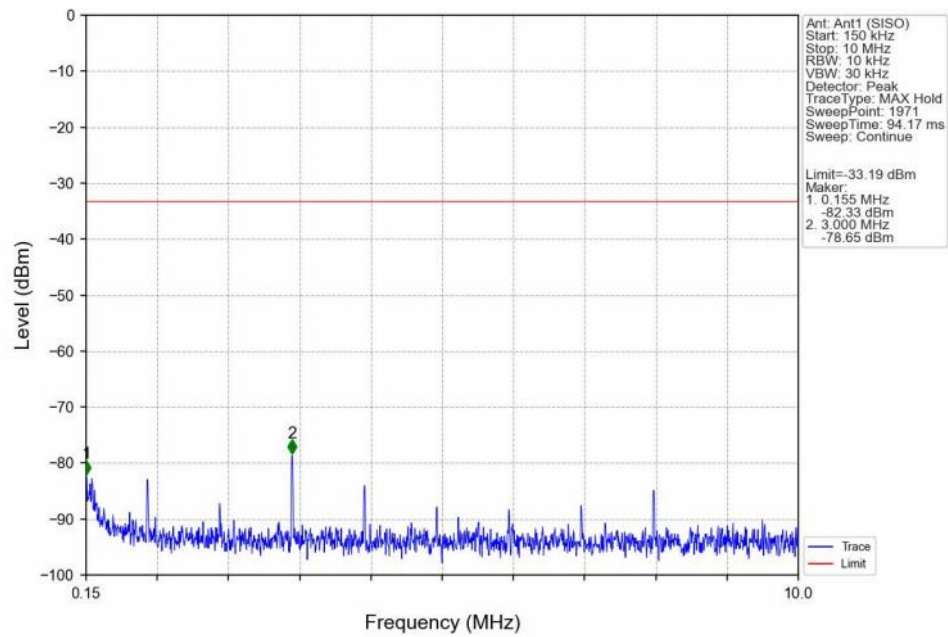
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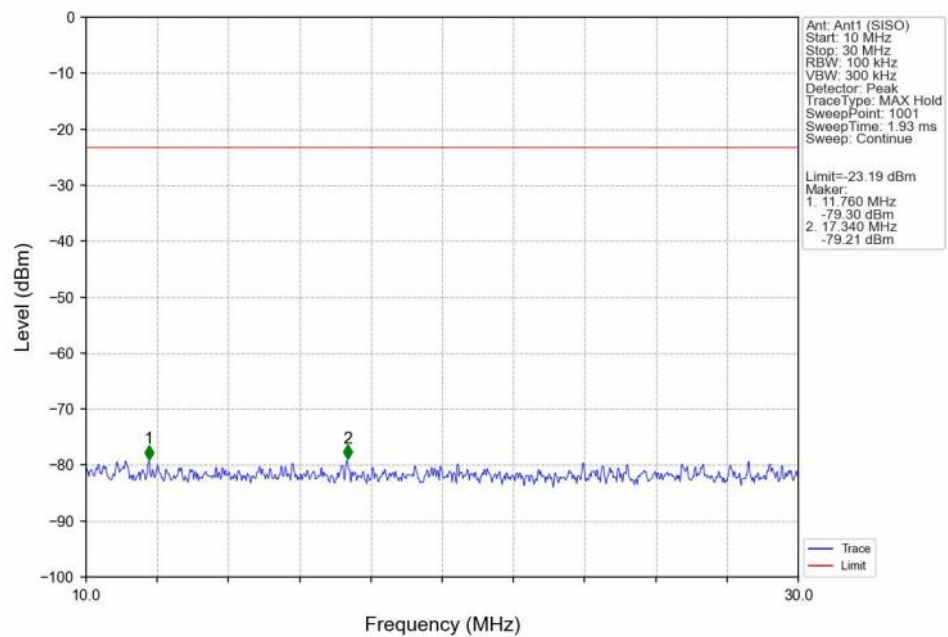
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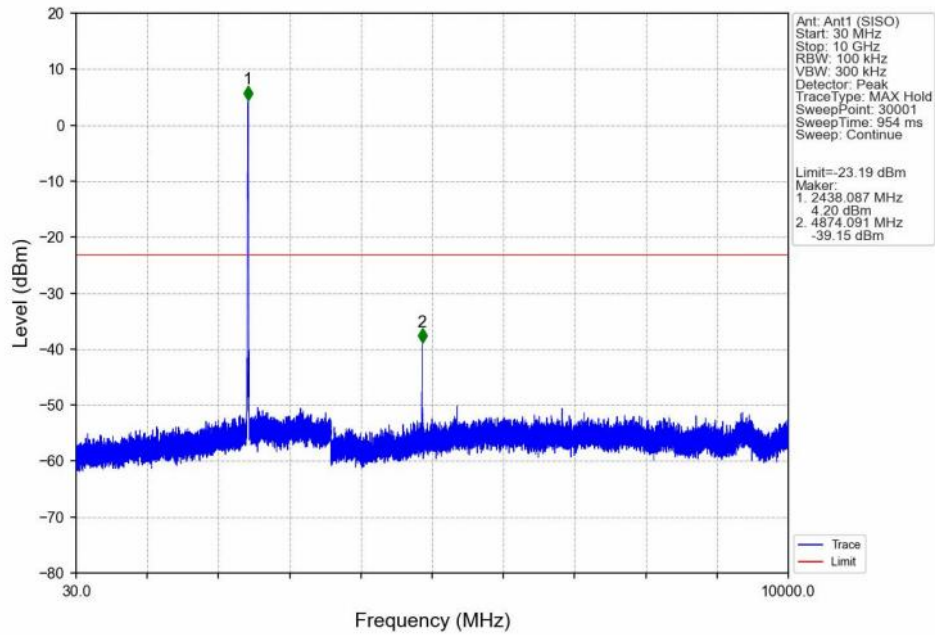
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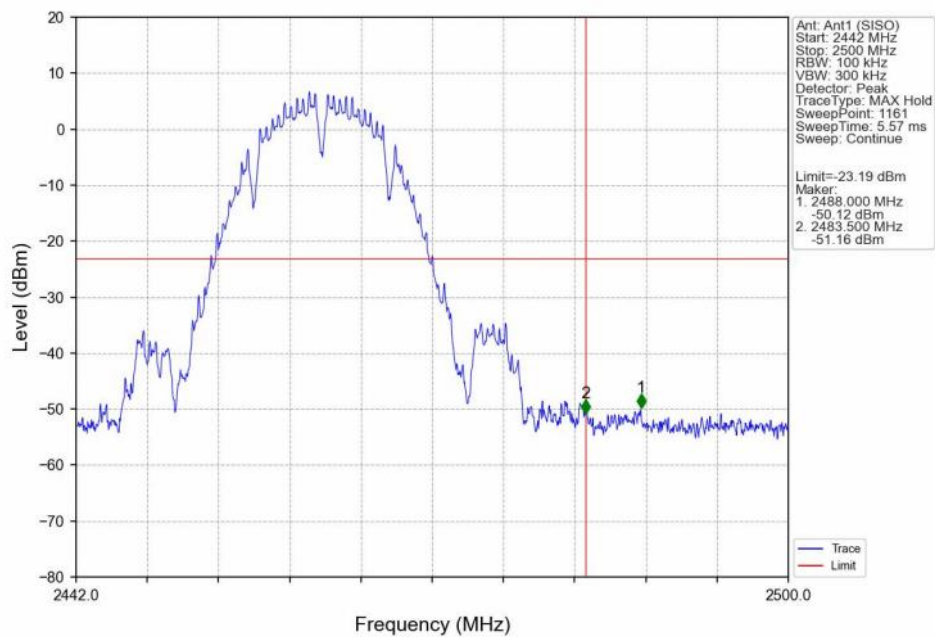
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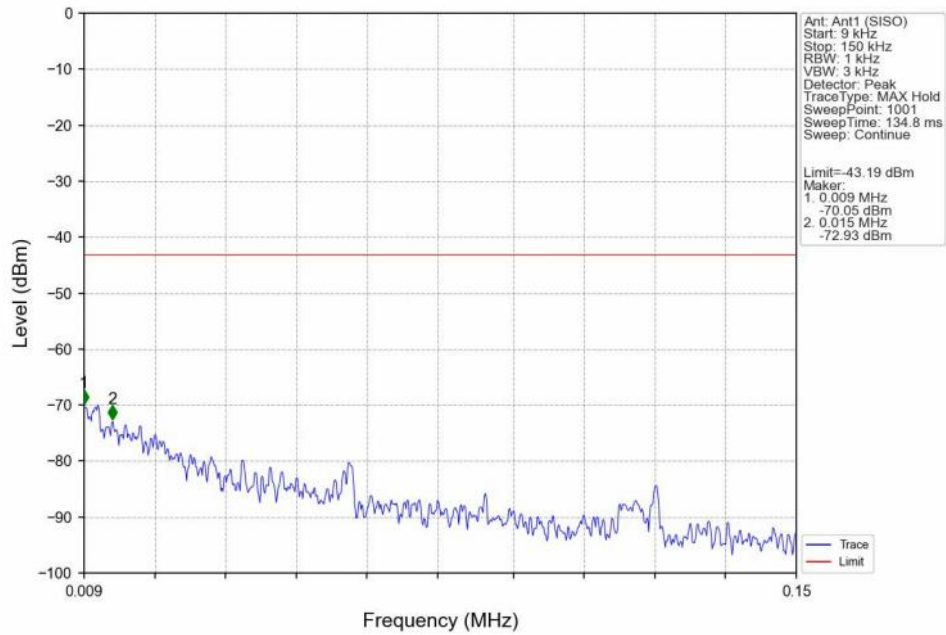
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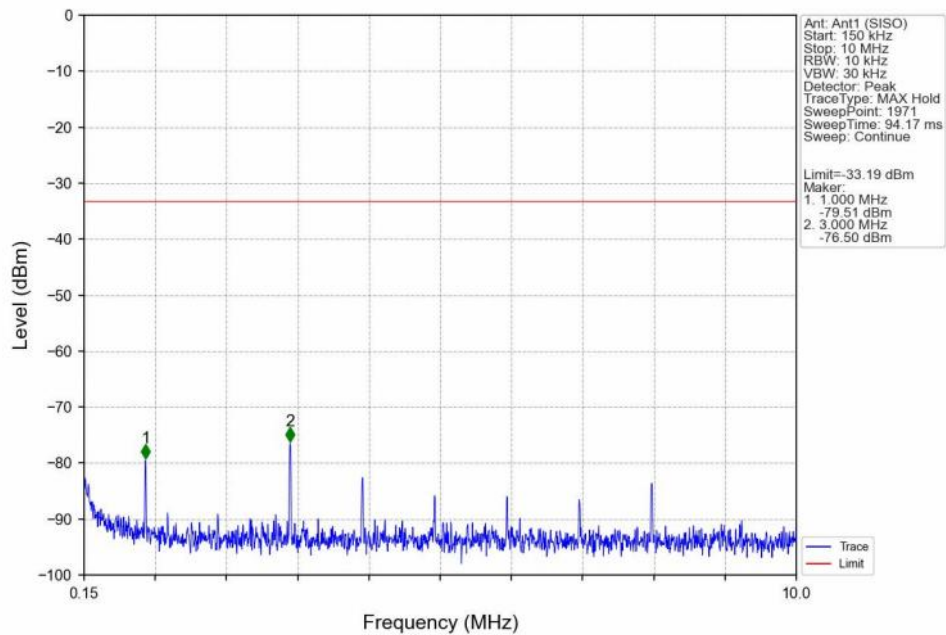
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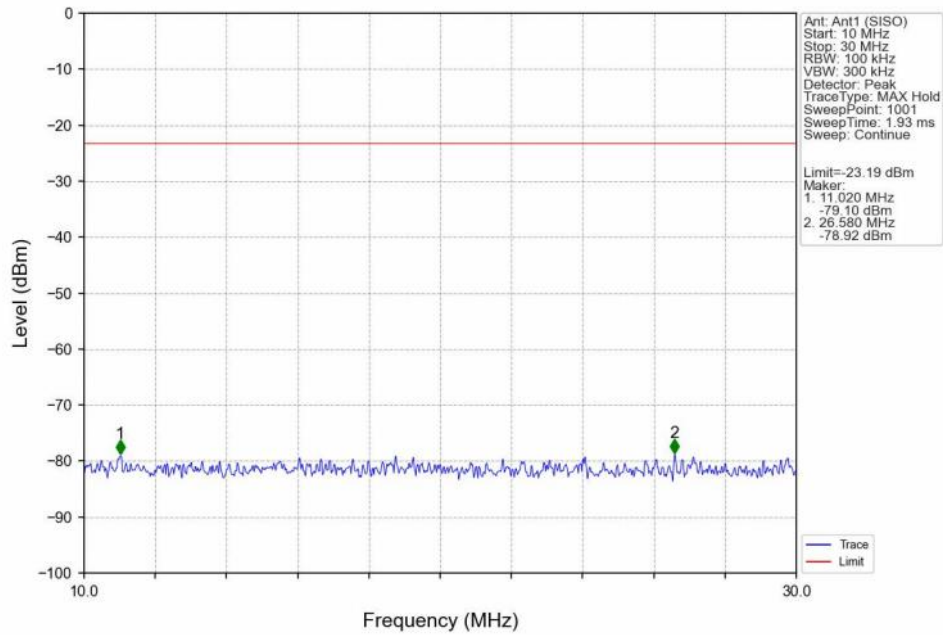
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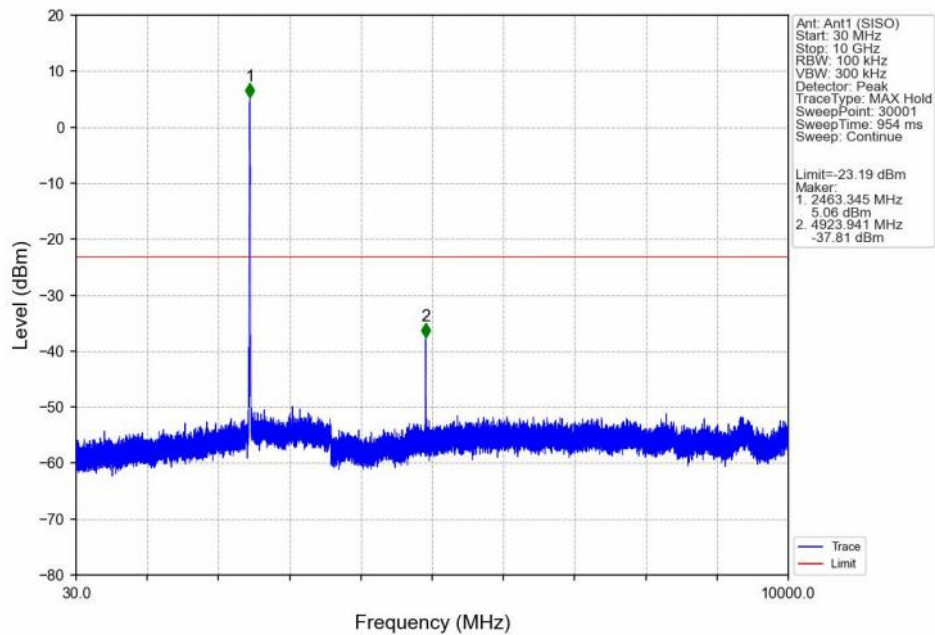
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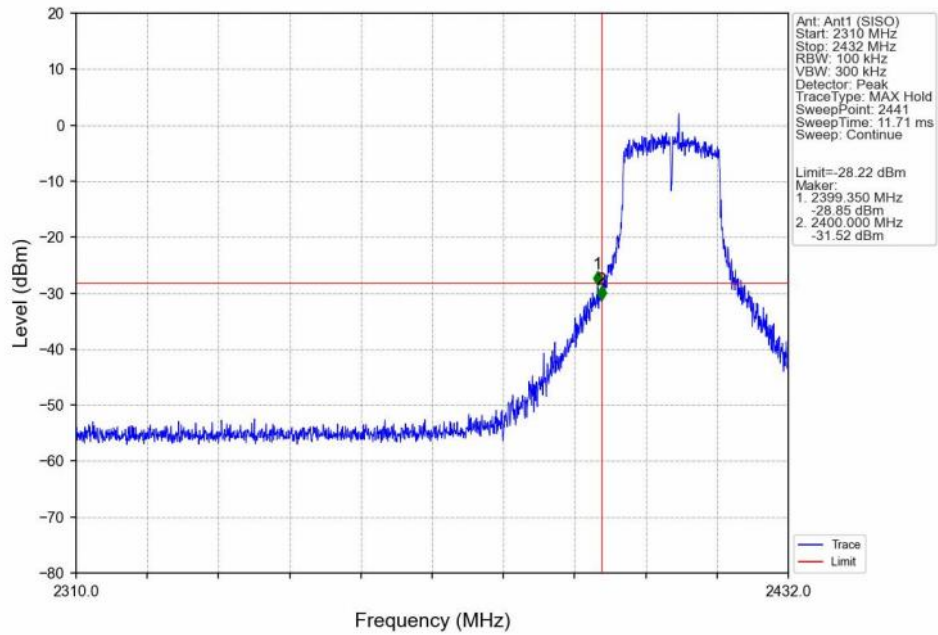
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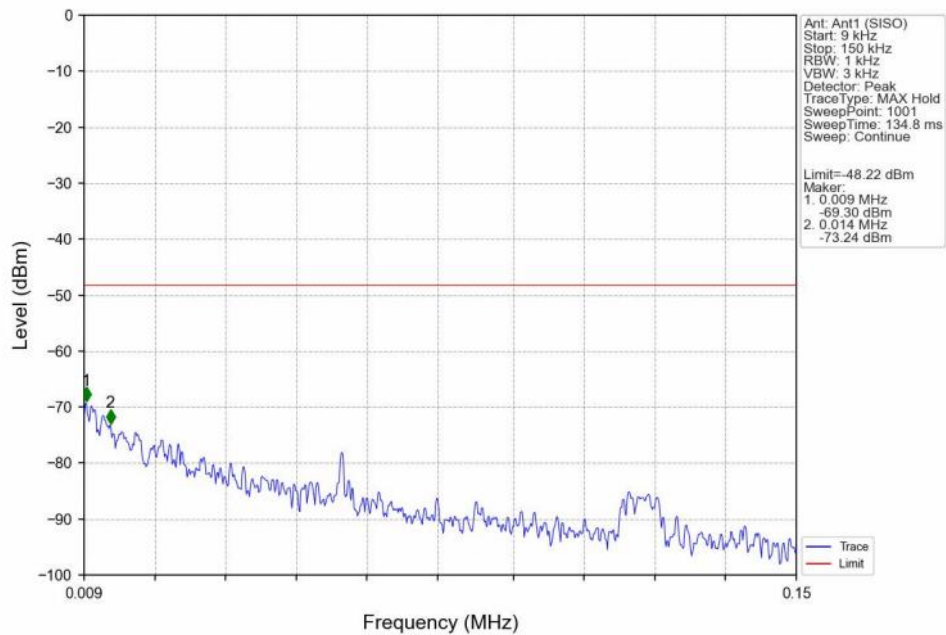
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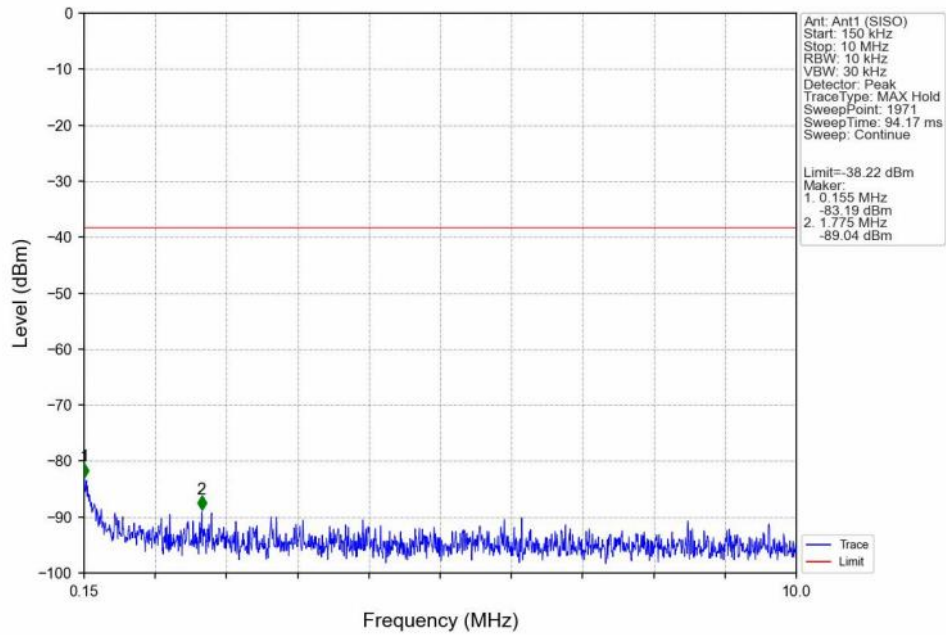
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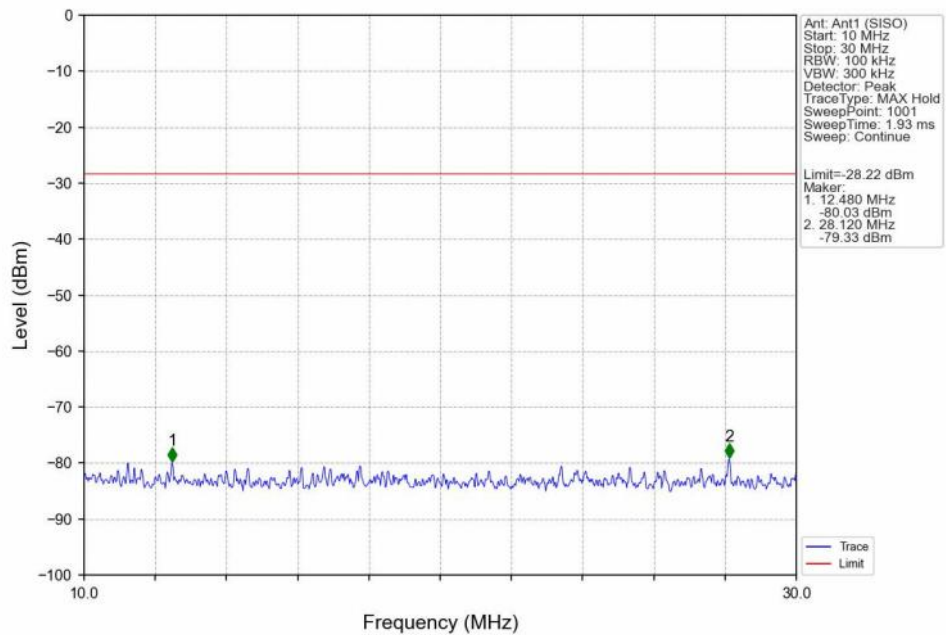
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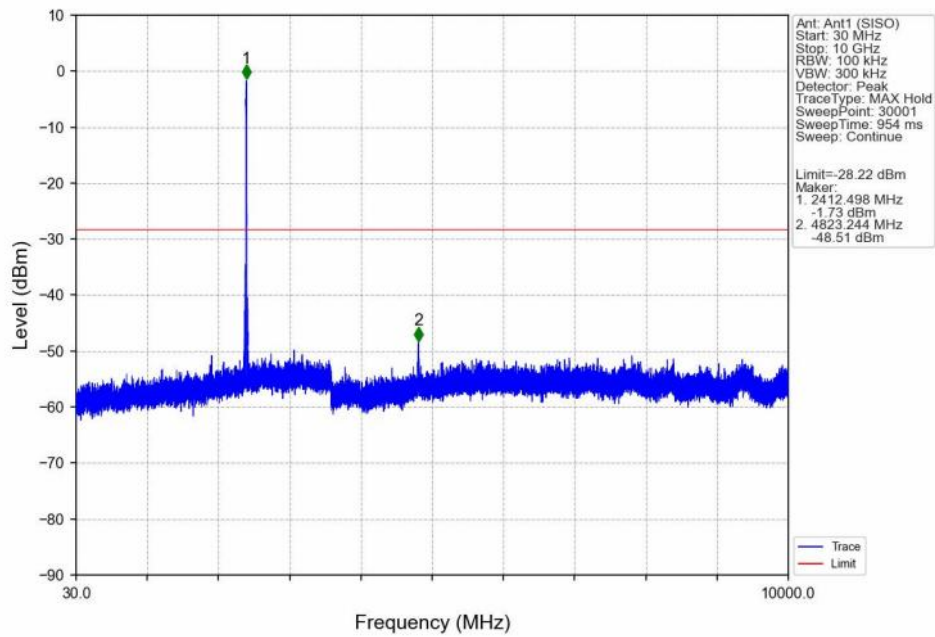
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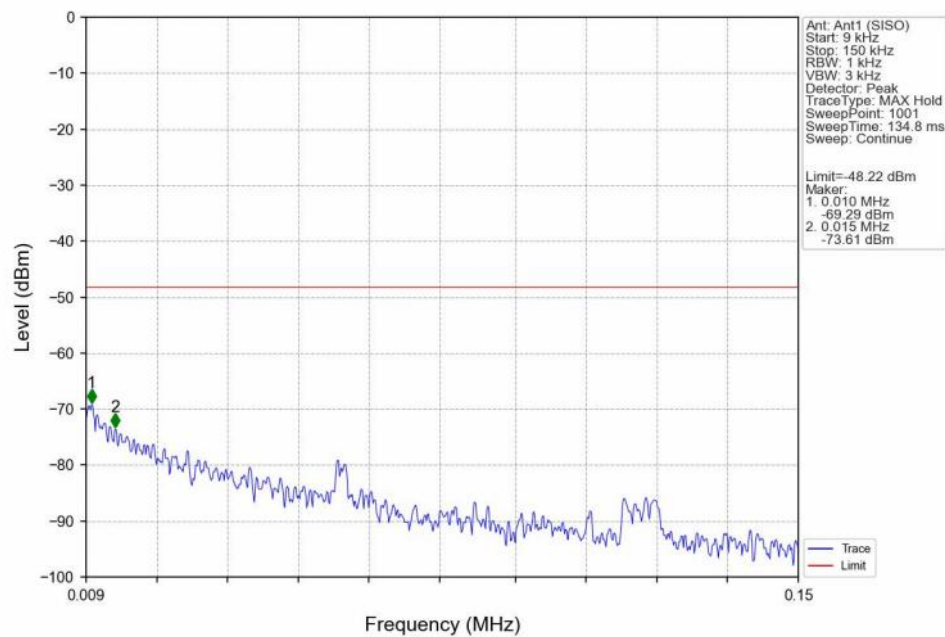
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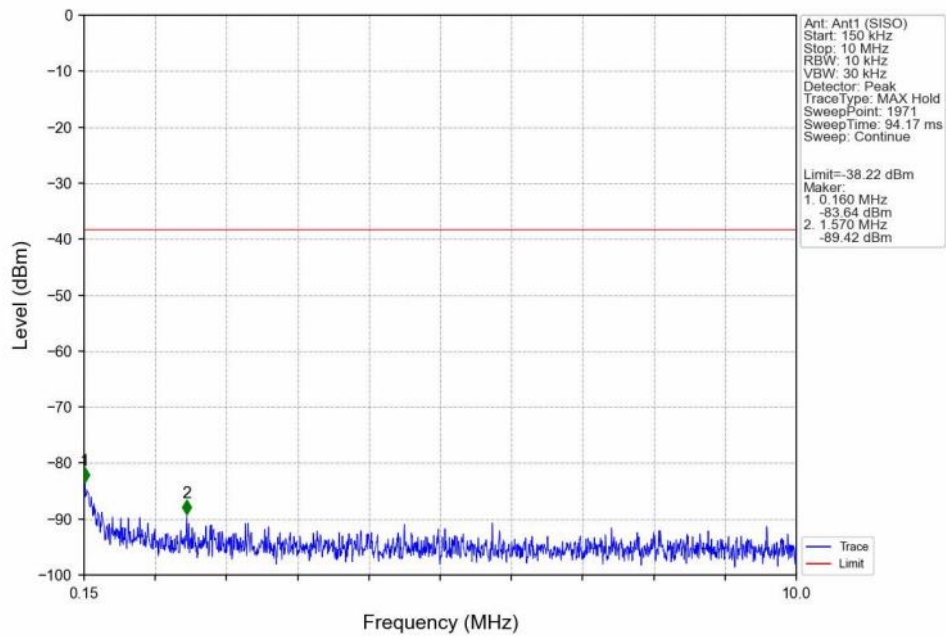
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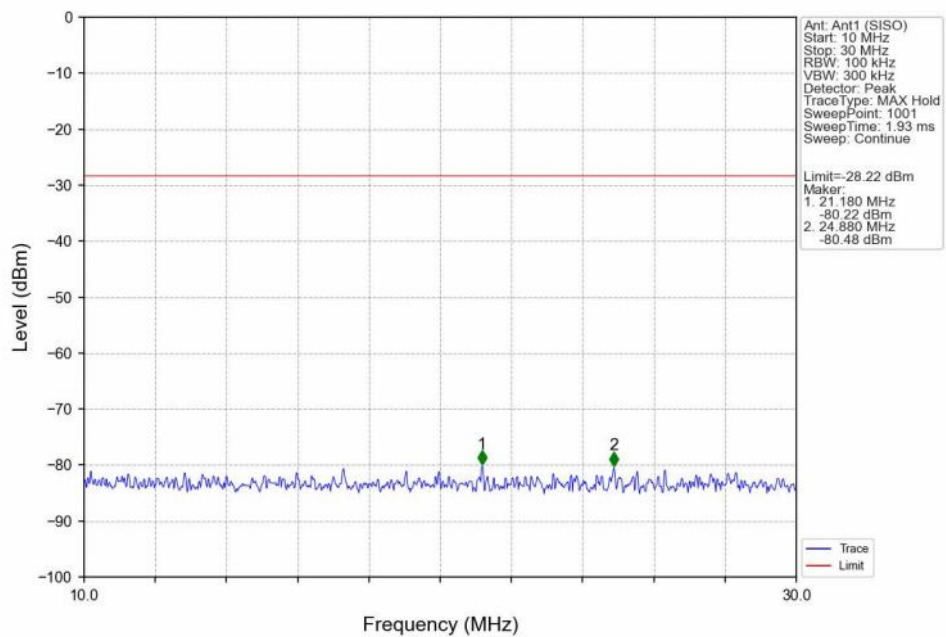
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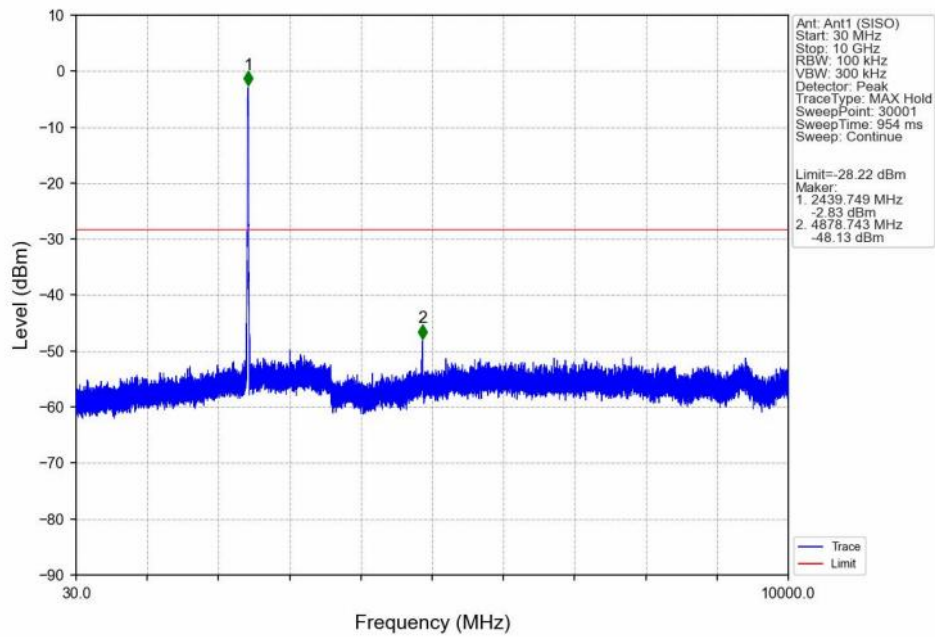
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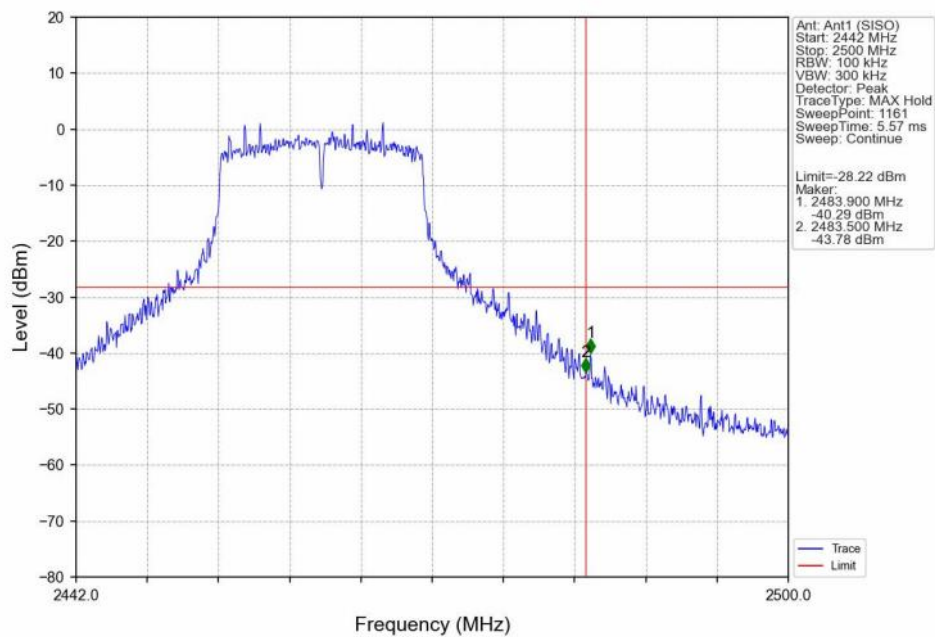
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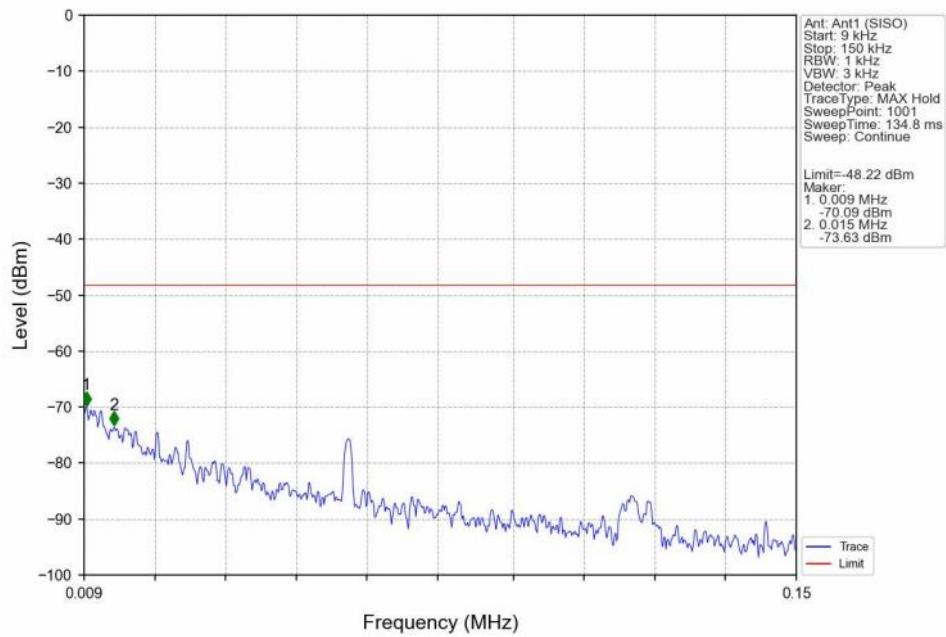
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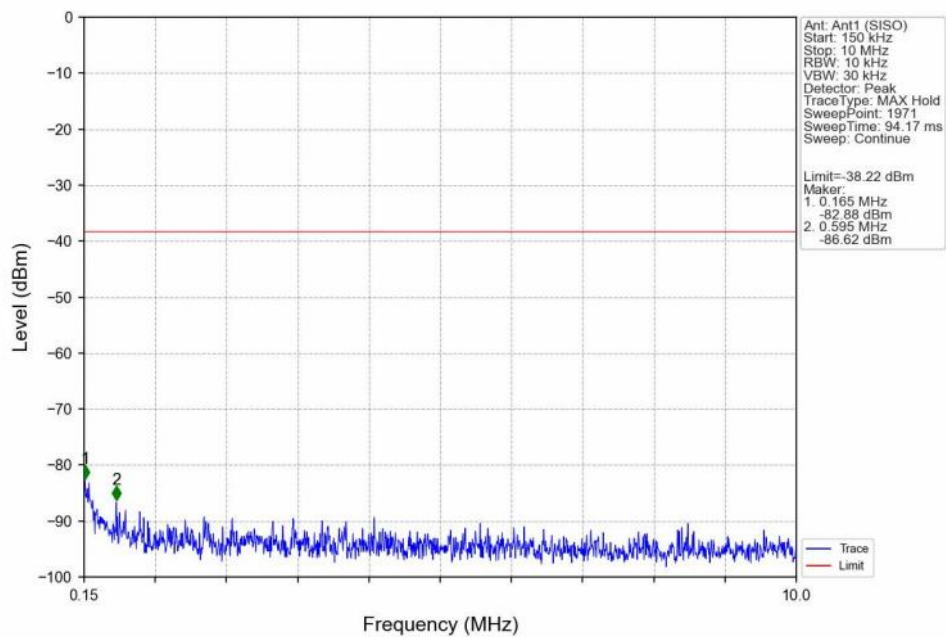
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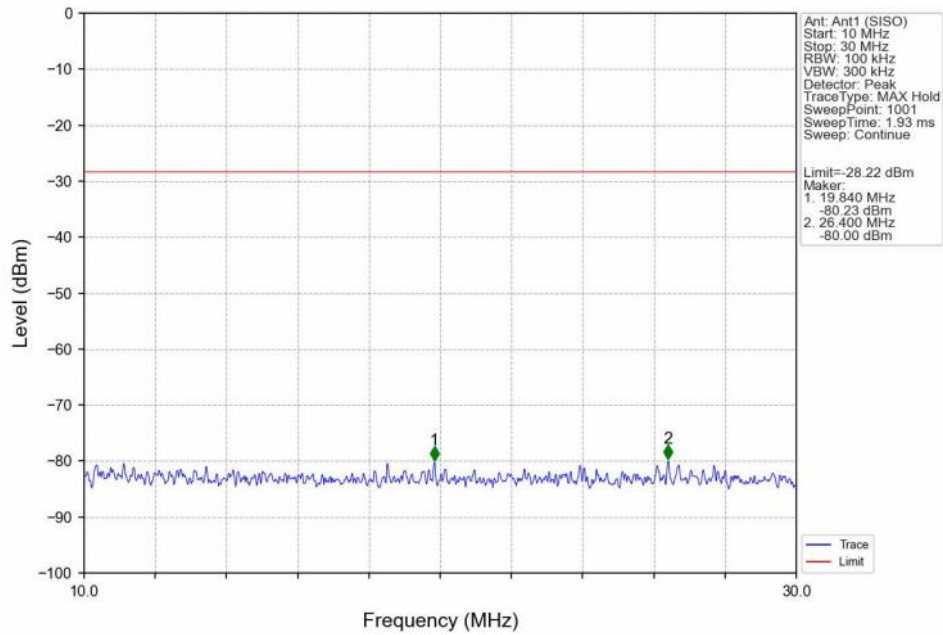
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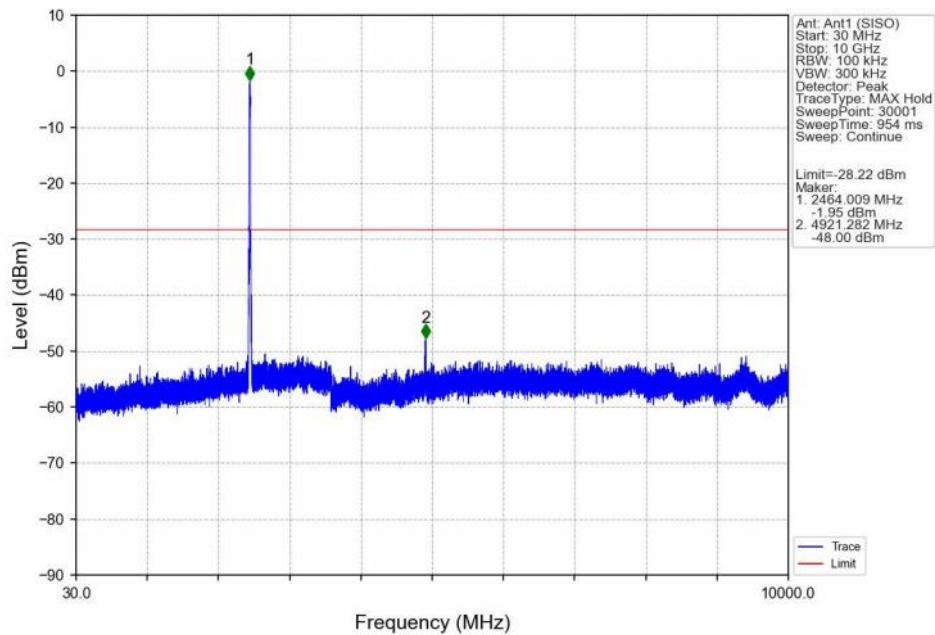
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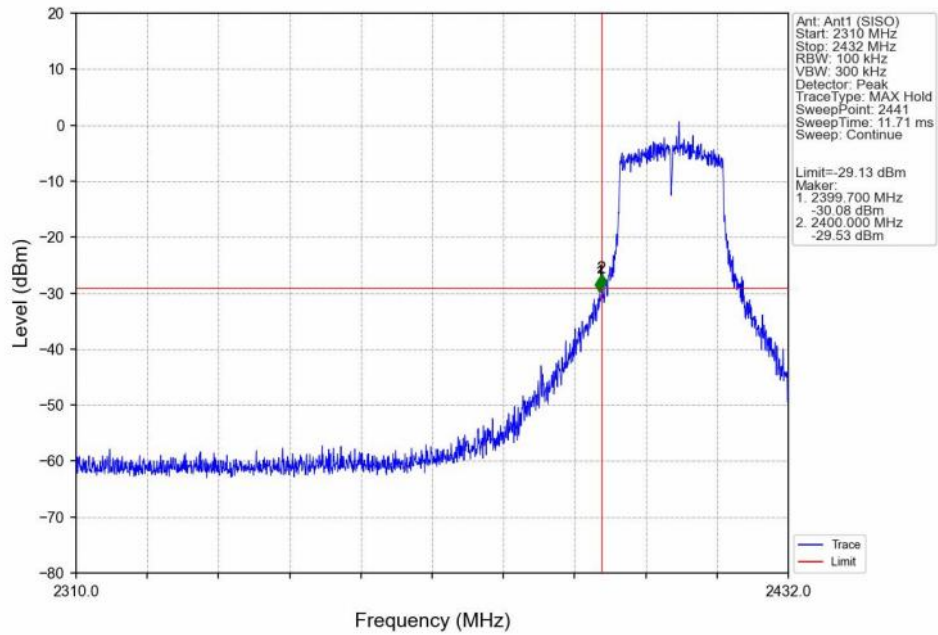
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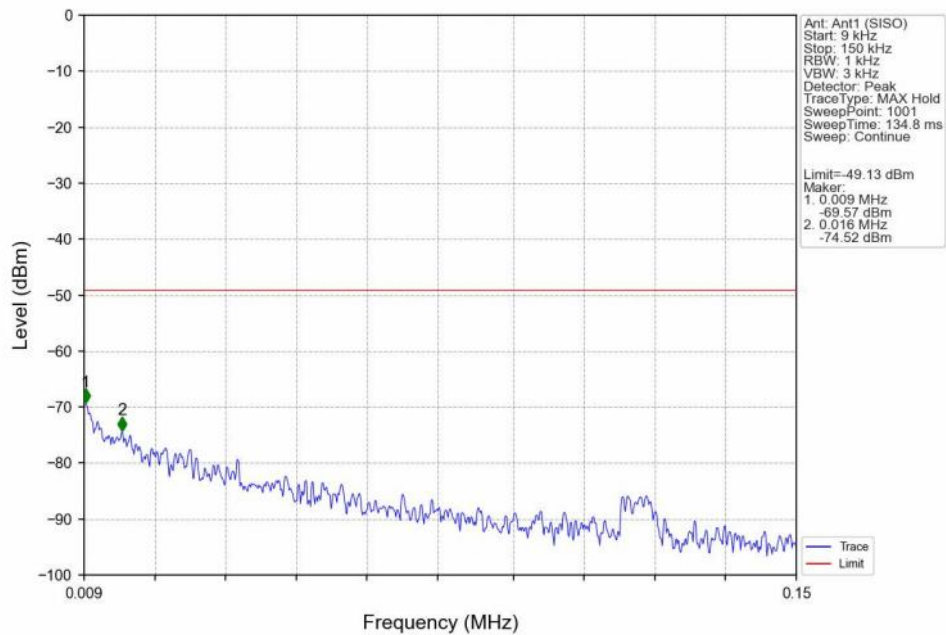
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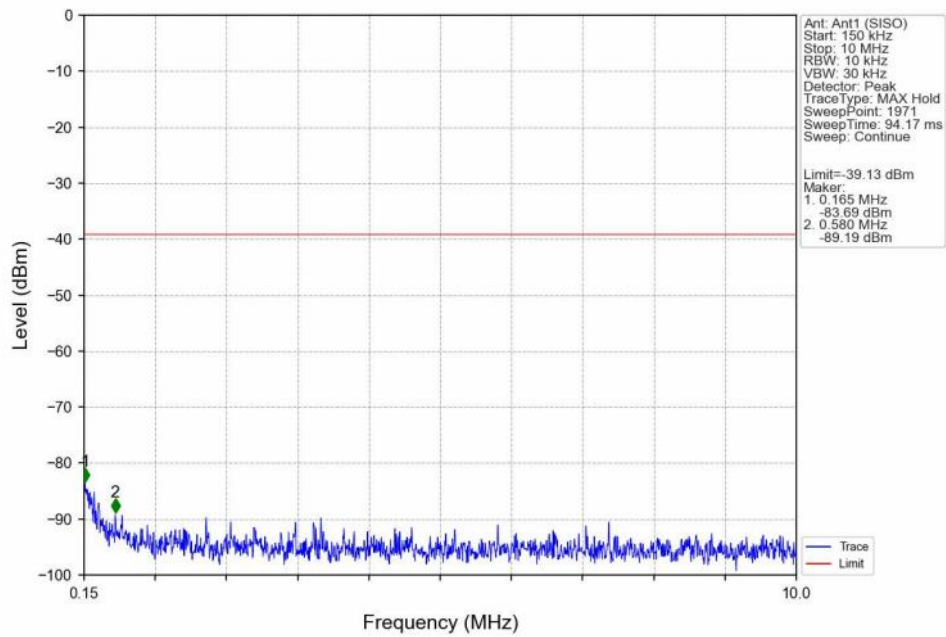
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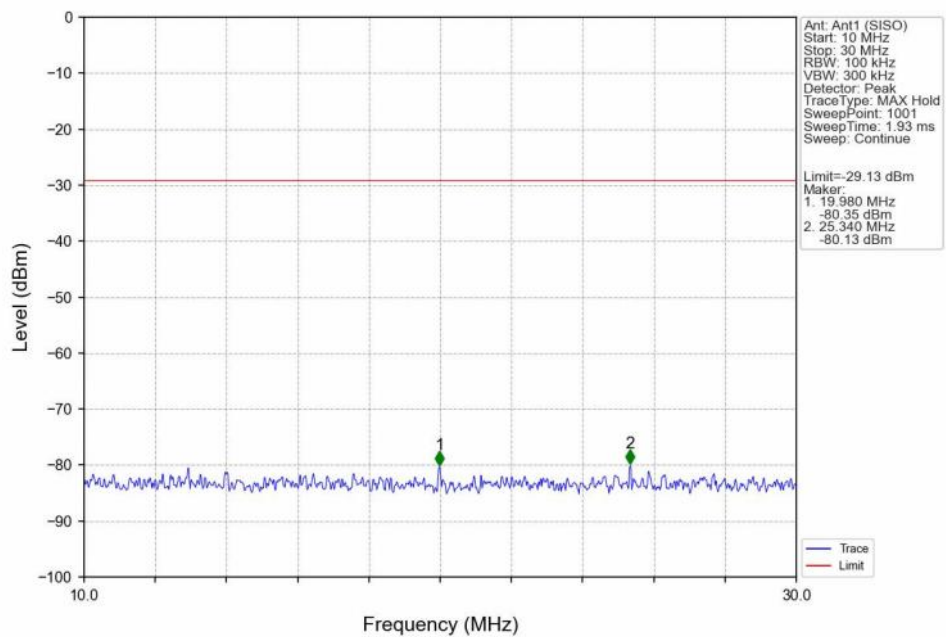
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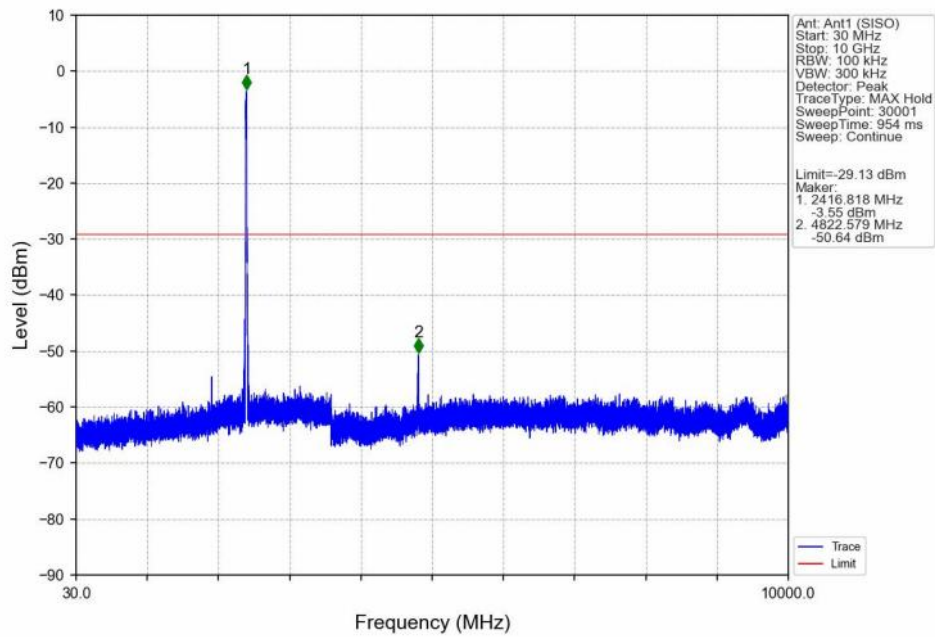
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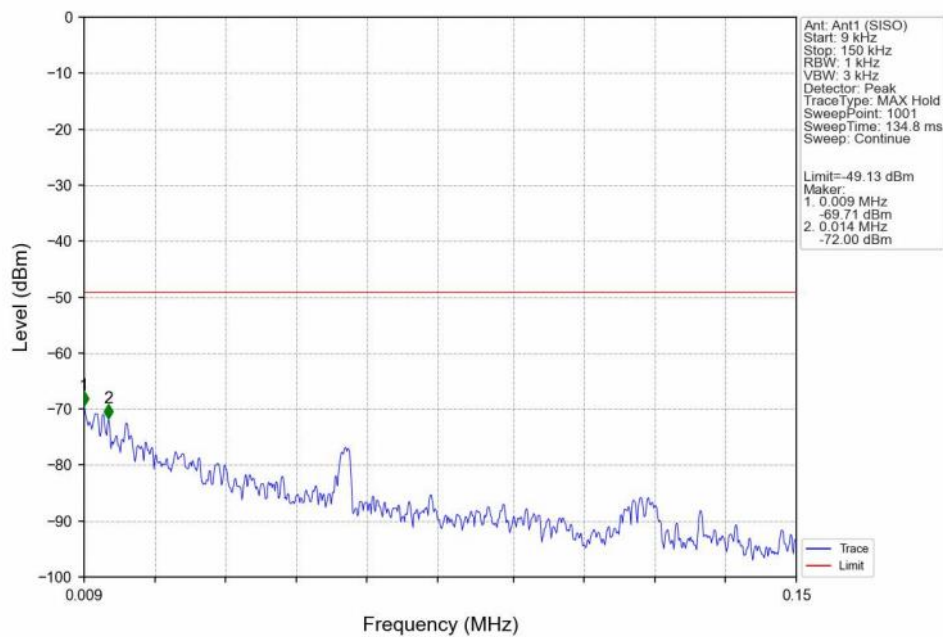
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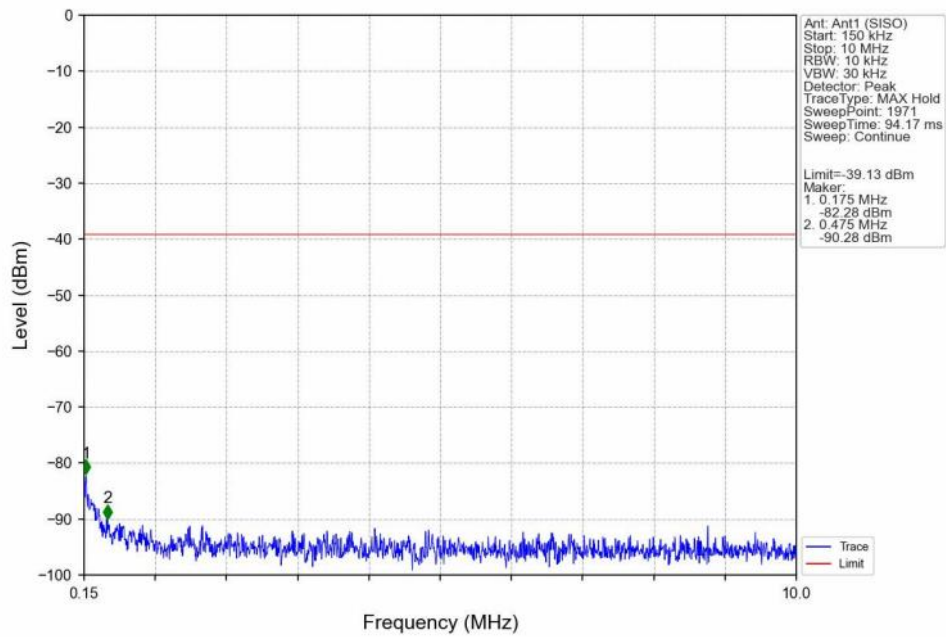
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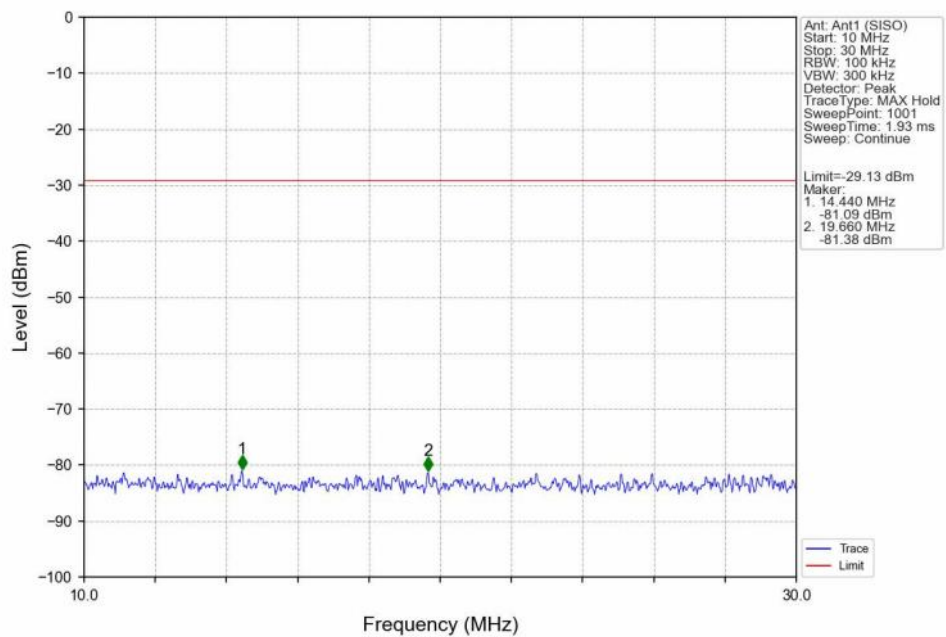
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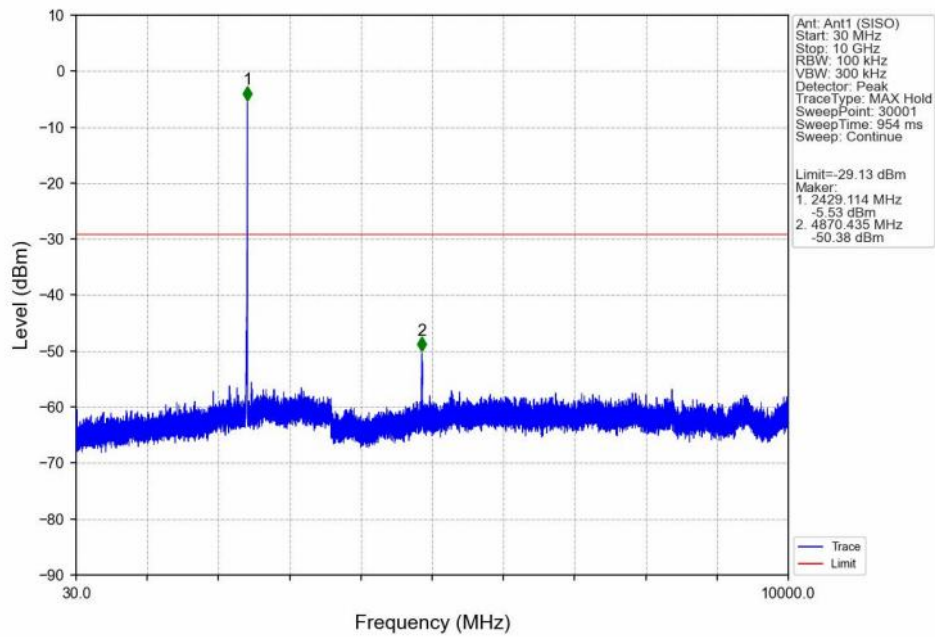
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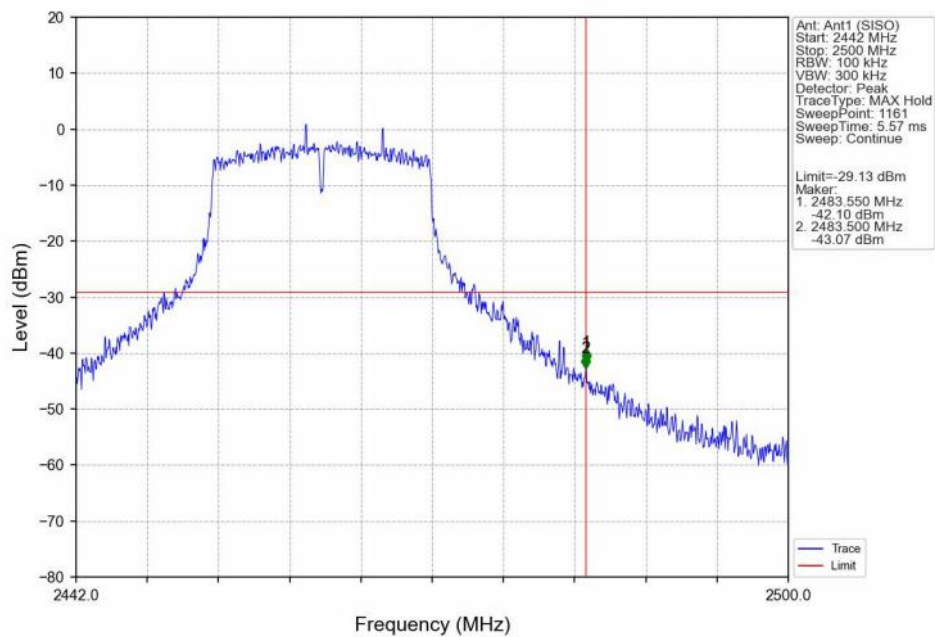
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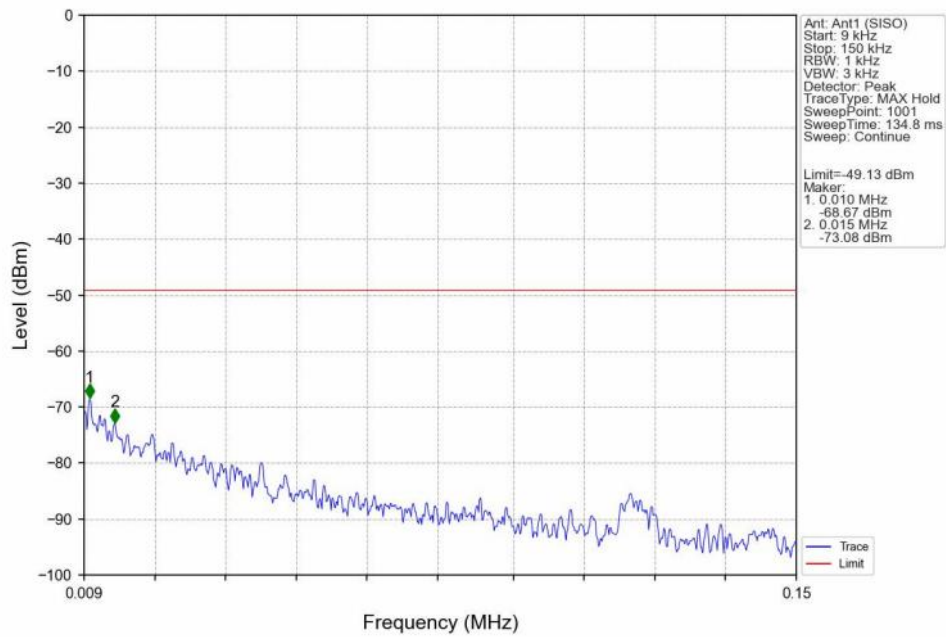
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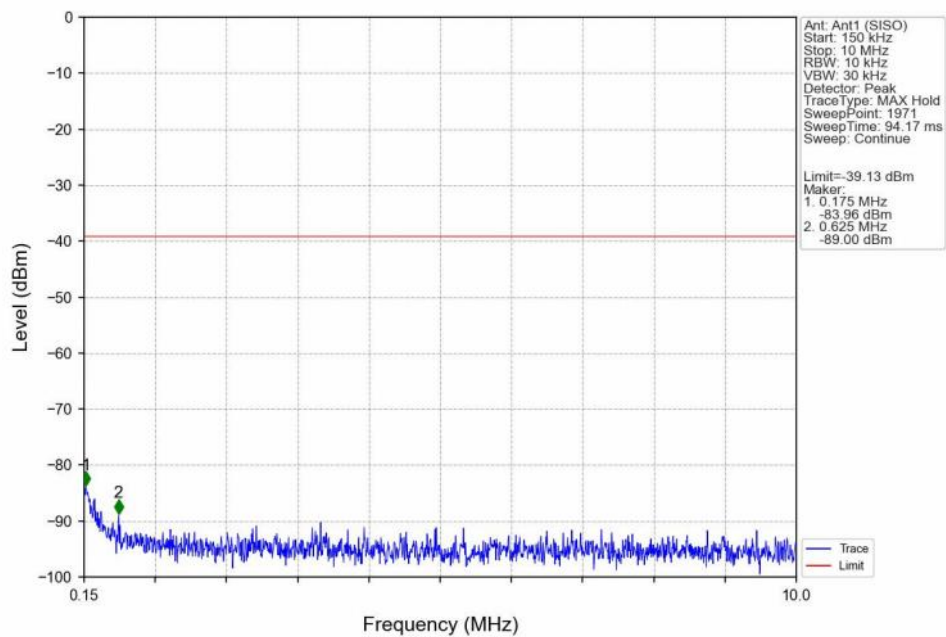
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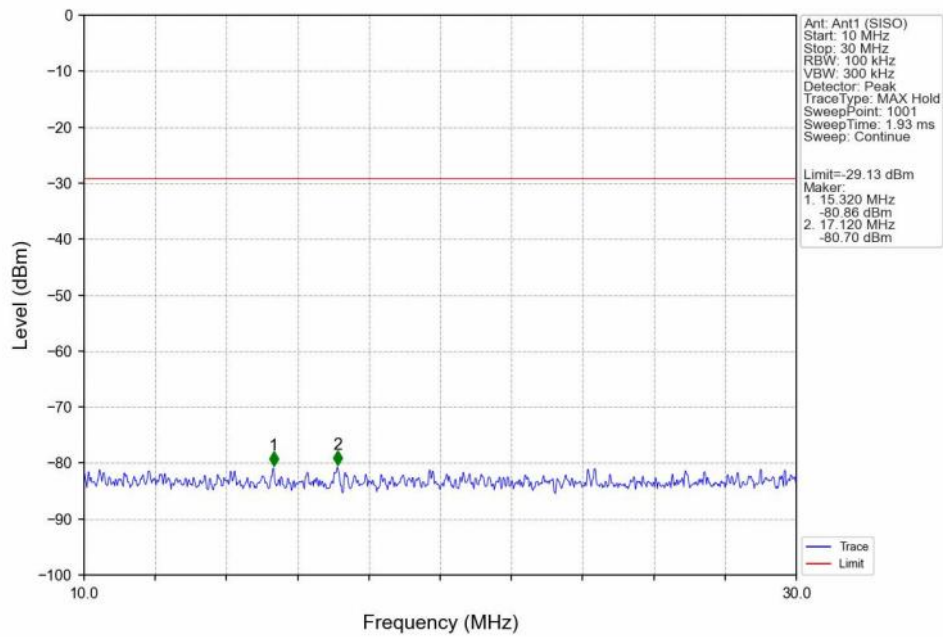
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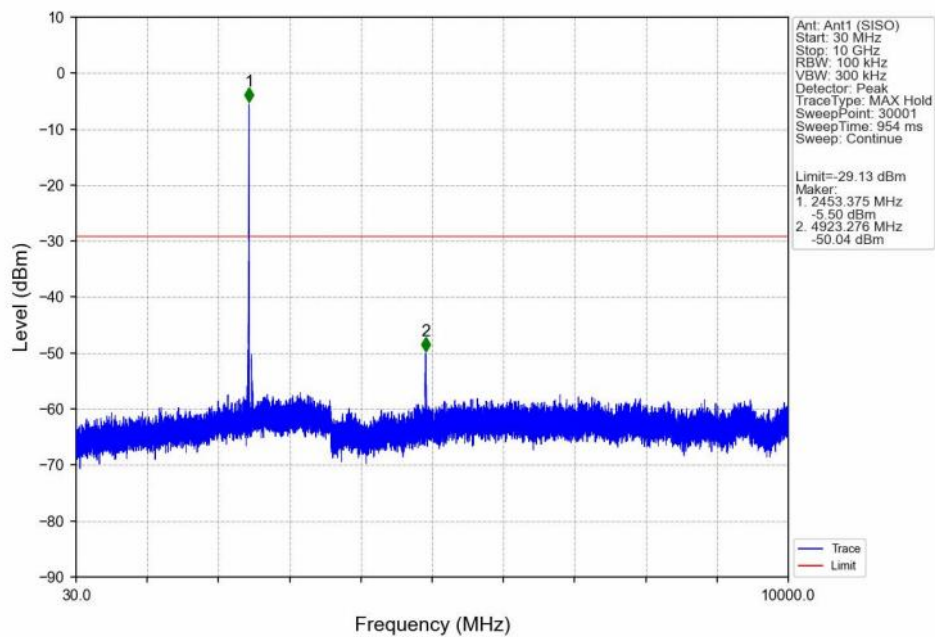
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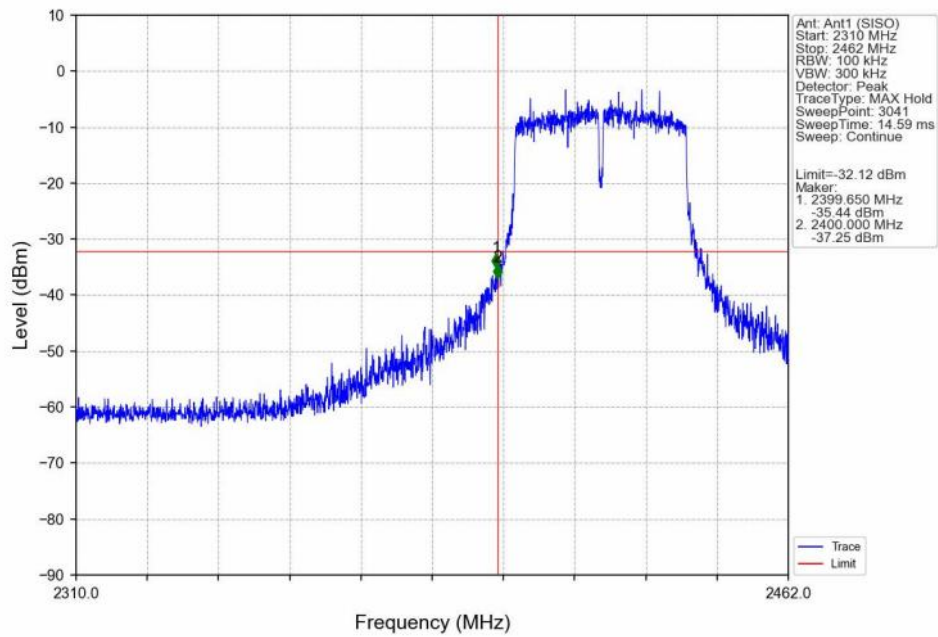
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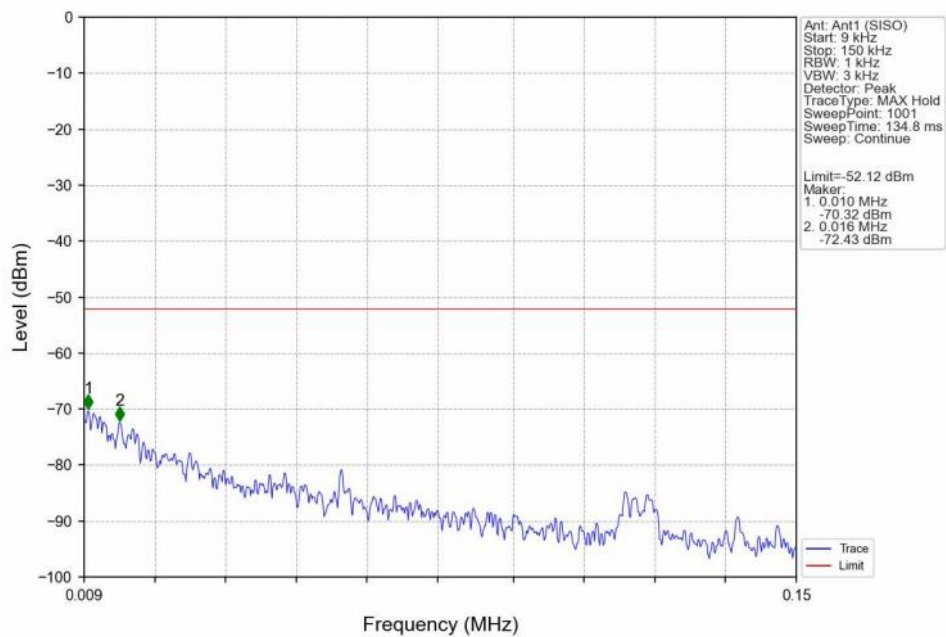
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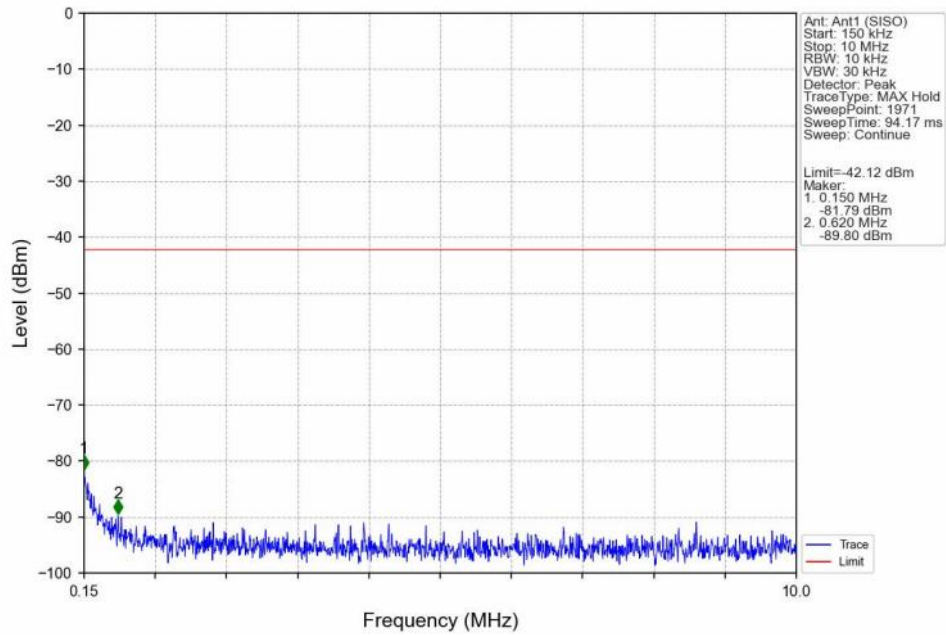
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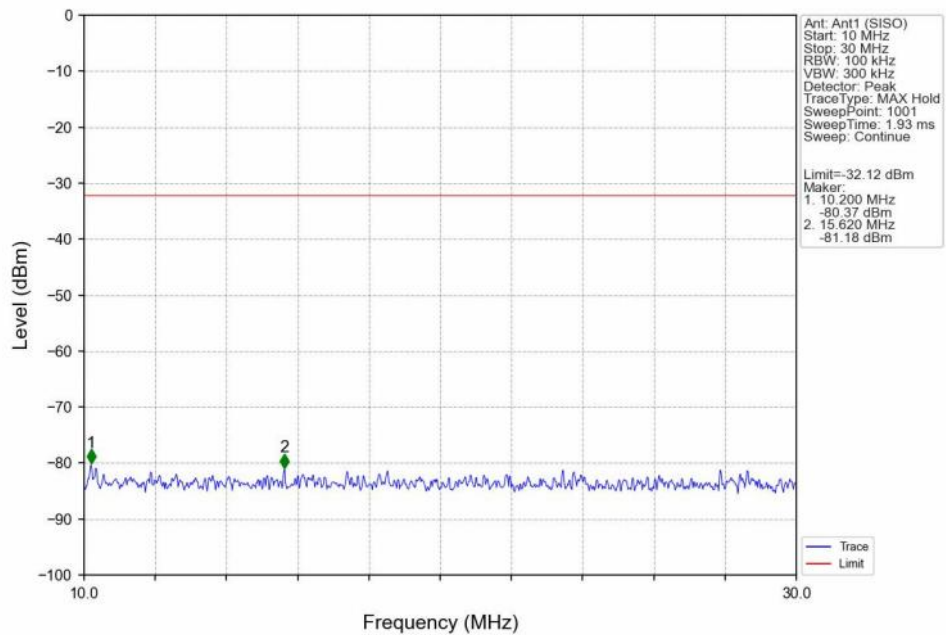
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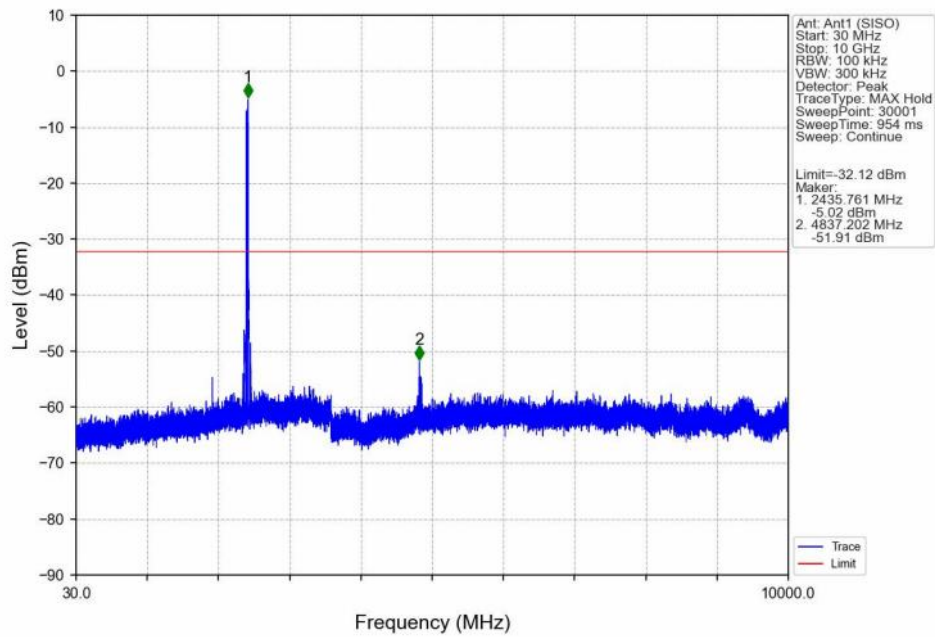
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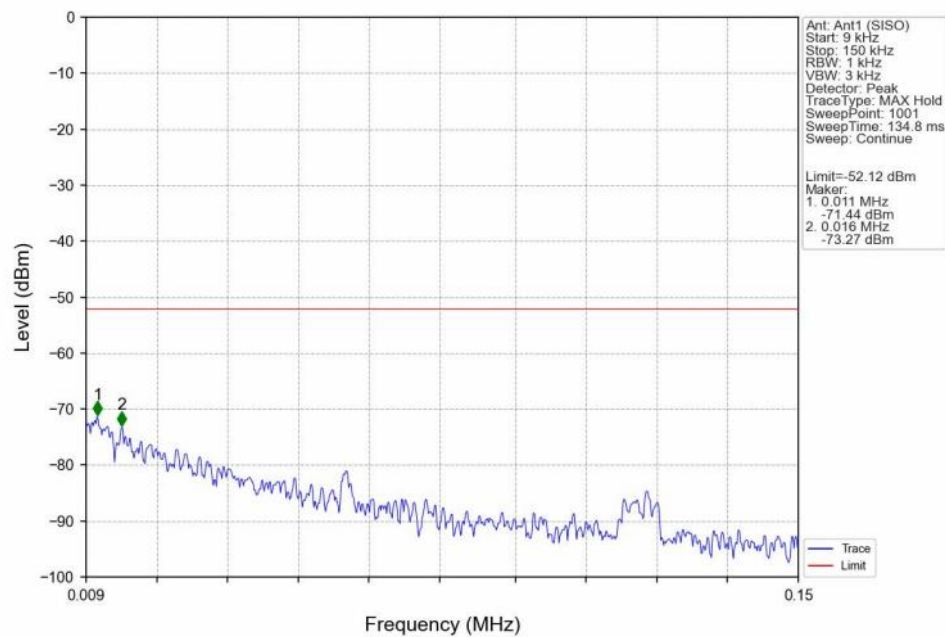
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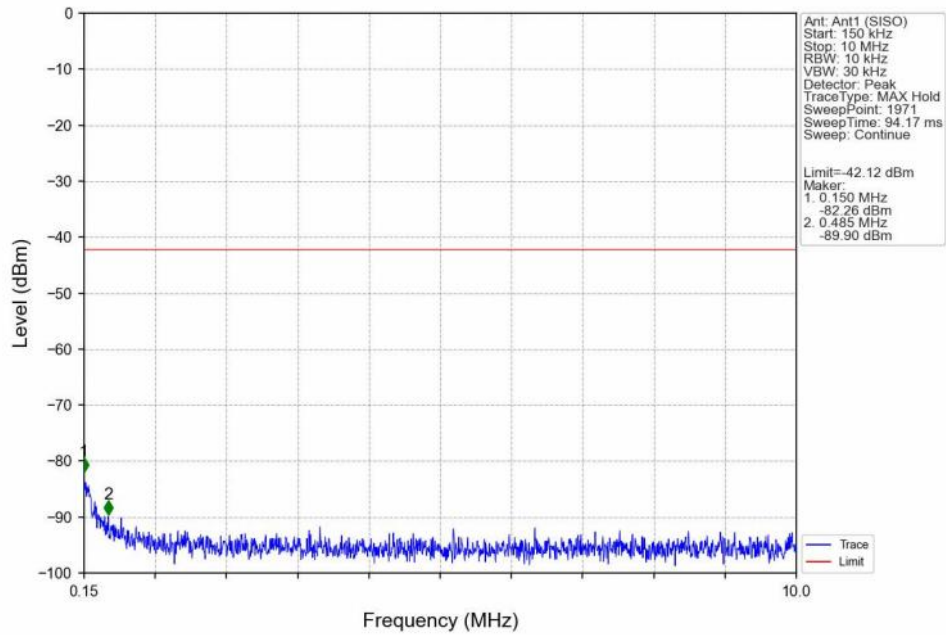
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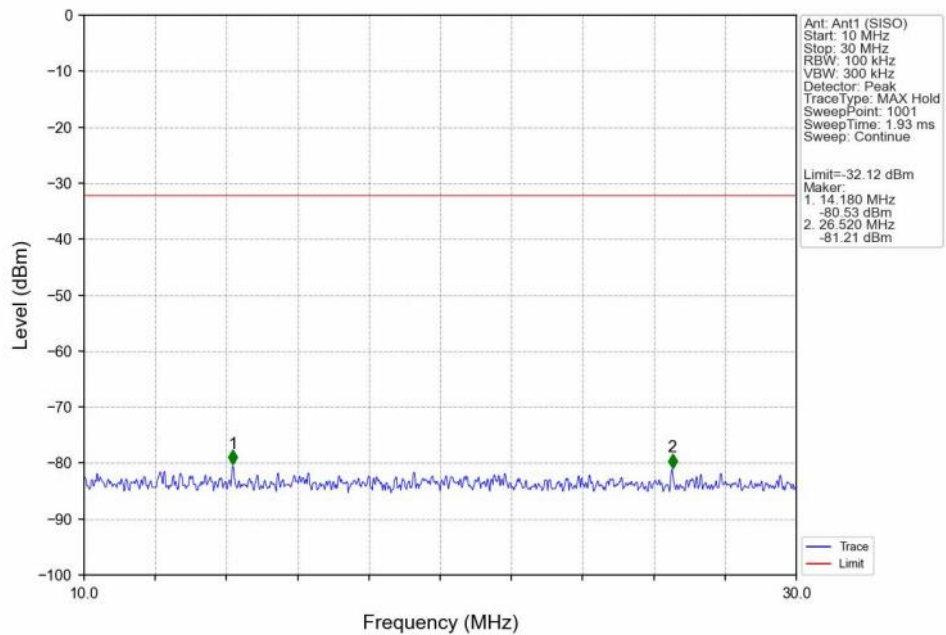
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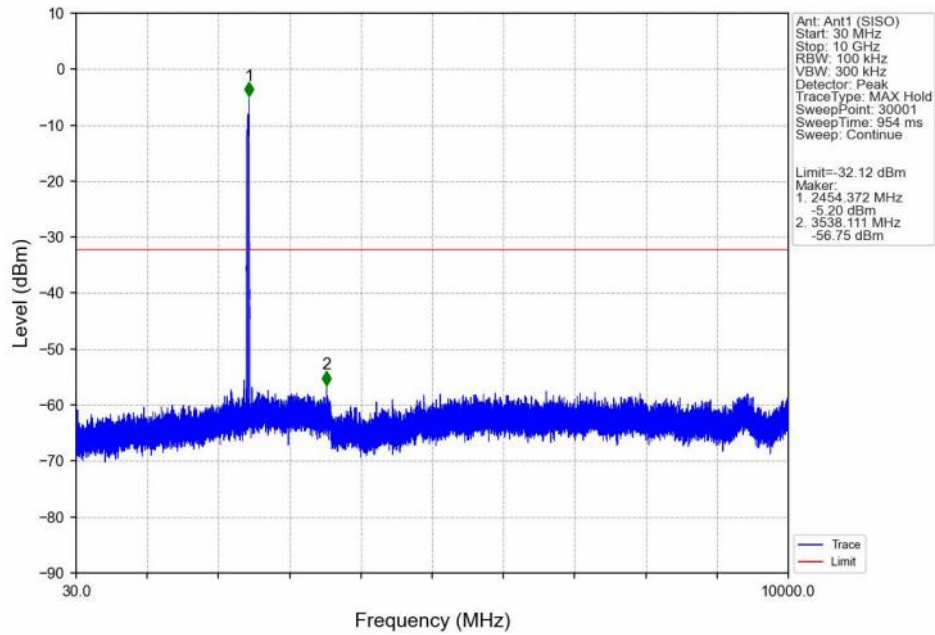
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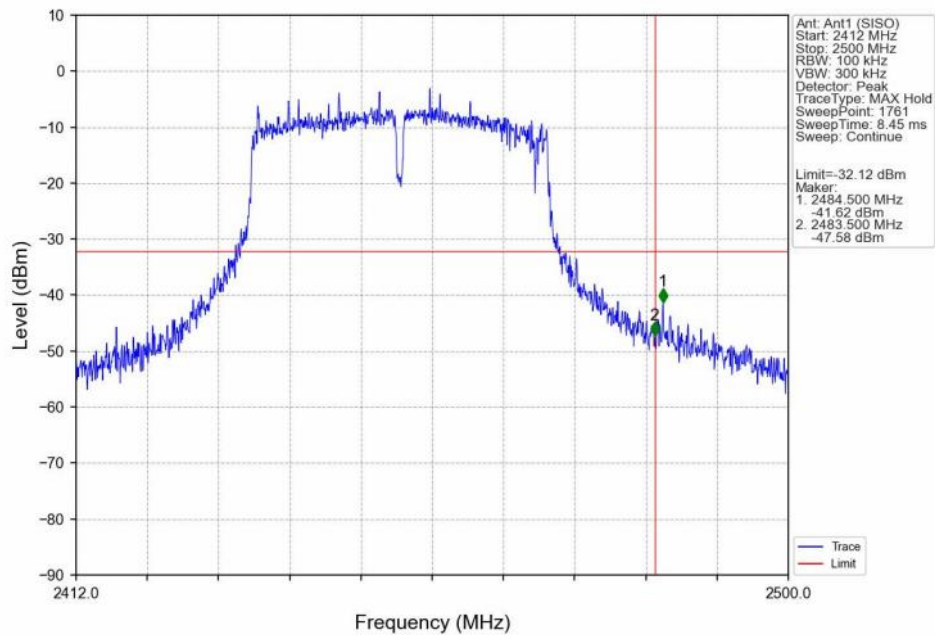
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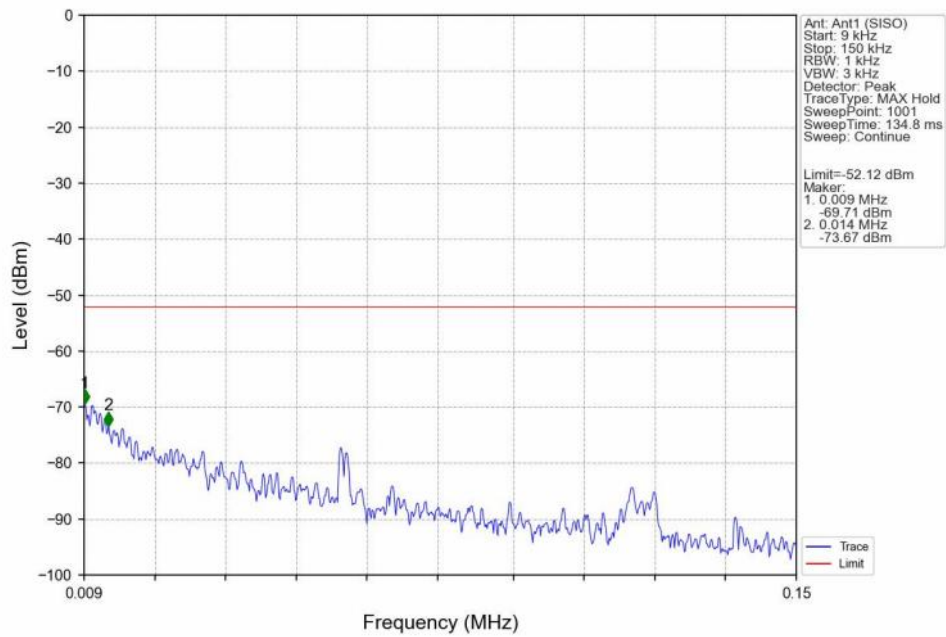
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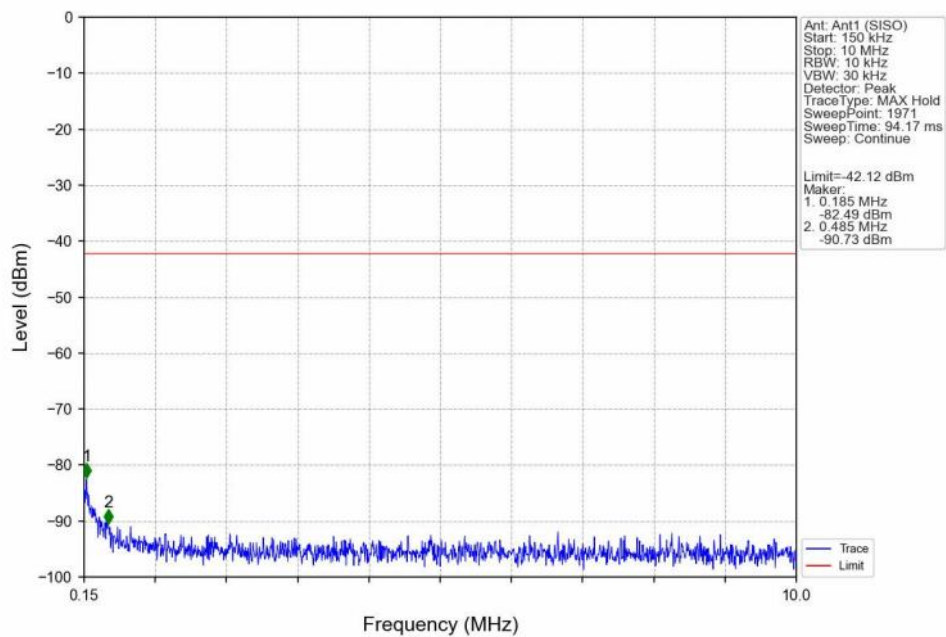
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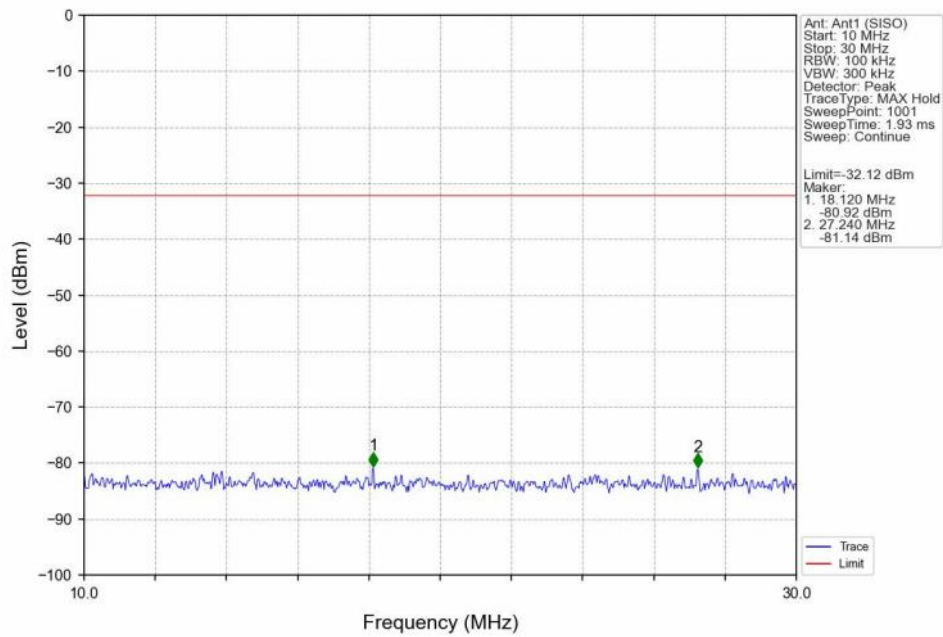
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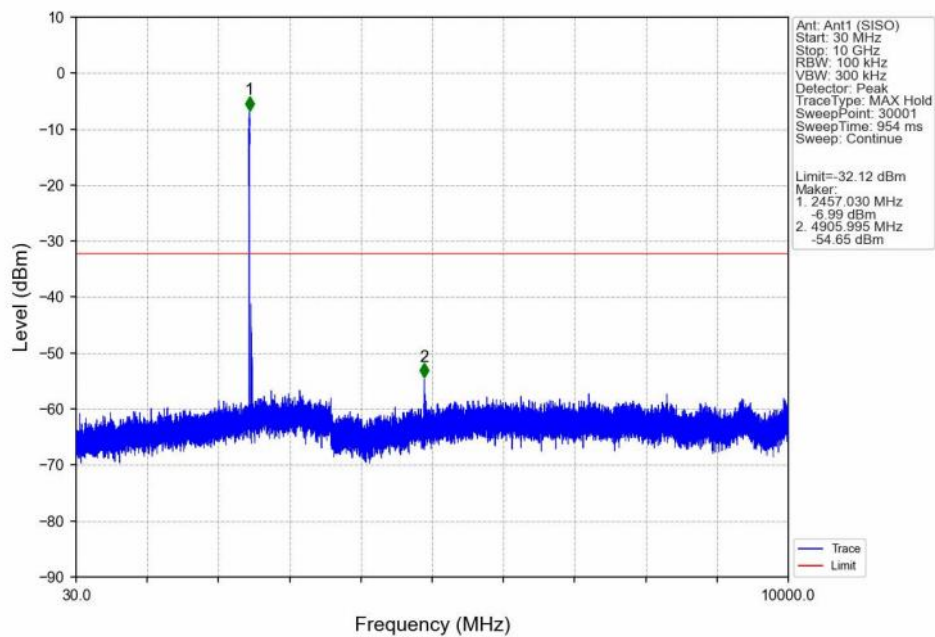
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



6. Form731

6.1 Test Result

6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2412	2462	0.0293	14.67
2422	2452	0.0135	11.29