

Appendix Test Data for WLAN(2.4G) (Conducted Measurement)

Product Name: Wi-Fi Smart Wall Socket

Trade Mark: N/A

Test Model:M04

FCC ID: 2AHRE-M04

Environmental Conditions

Temperature:	23.2℃
Relative Humidity:	52%
ATM Pressure:	100.0 kPa
Test Engineer:	Tony luo
Supervised by:	Max zhang
NOTE	N/A

1. Duty Cycle

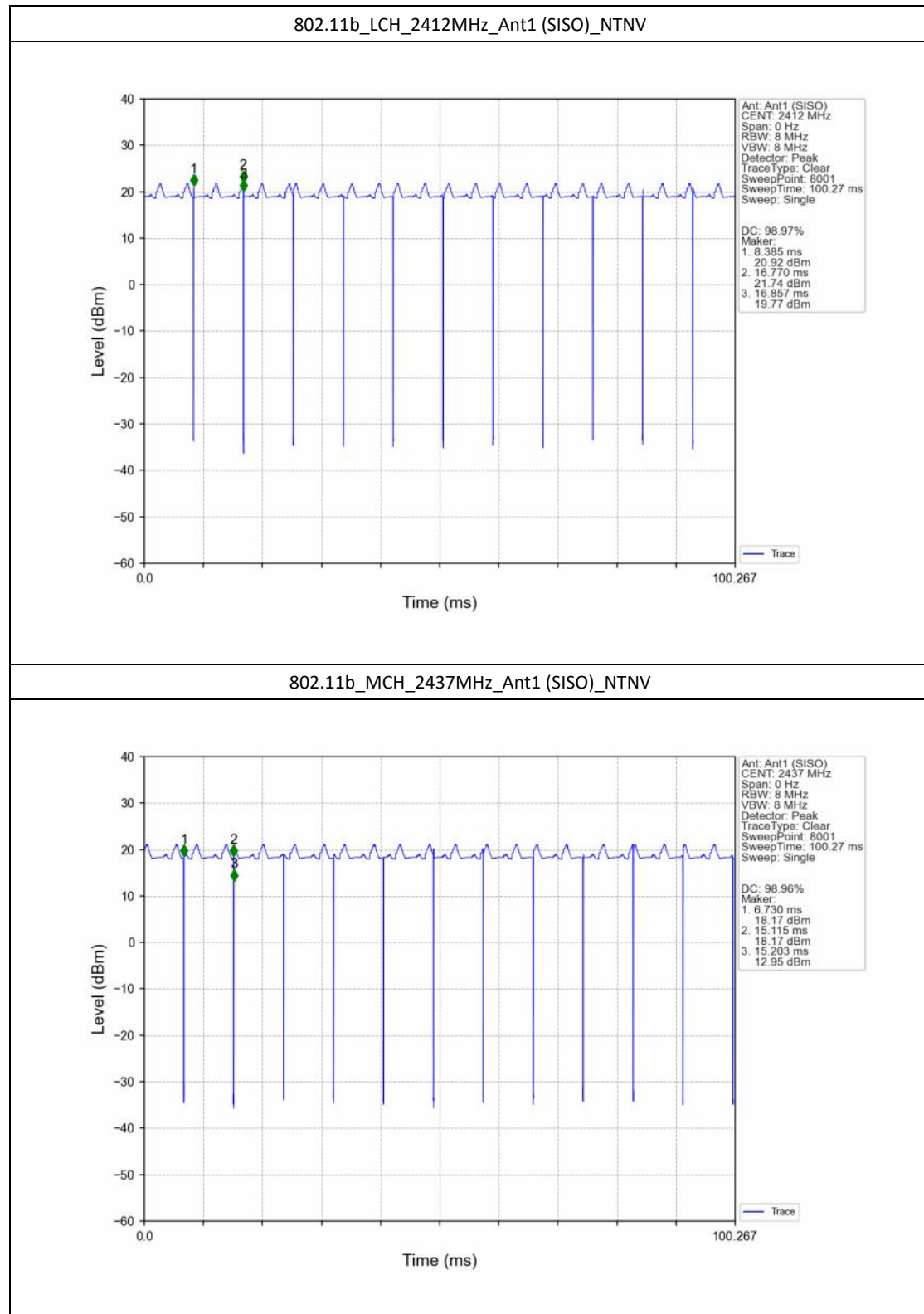
1.1 Test Result

1.1.1 Ant1

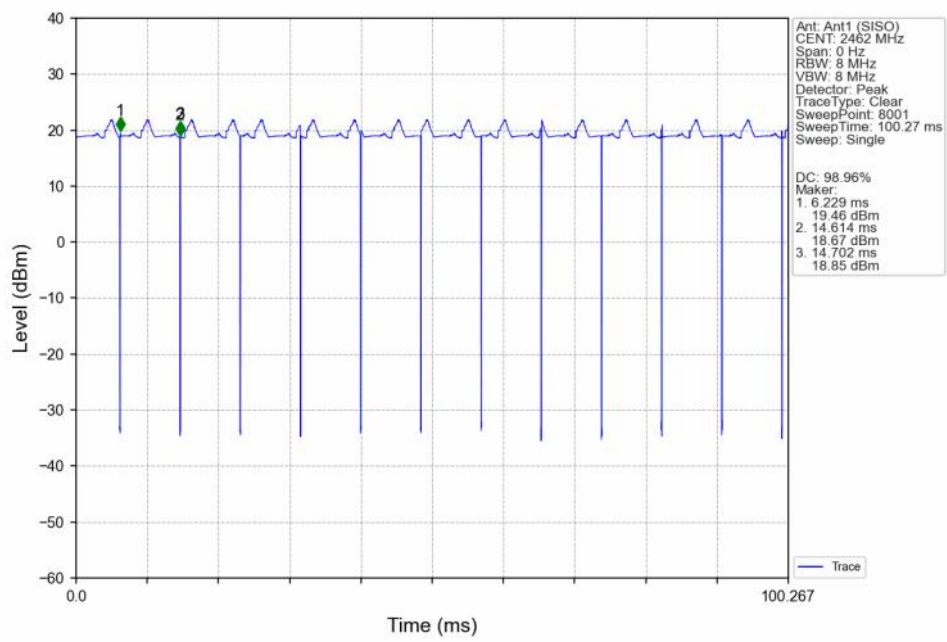
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	8.385	8.472	98.97	0.04	0.00
		2437	8.385	8.473	98.96	0.05	0.15
		2462	8.385	8.473	98.96	0.05	0.15
802.11g	SISO	2412	1.394	1.411	98.80	0.05	0.21
		2437	1.393	1.409	98.86	0.05	0.13
		2462	1.395	1.412	98.80	0.05	0.20
802.11n (HT20)	SISO	2412	1.291	1.316	98.10	0.08	0.89
		2437	1.302	1.317	98.86	0.05	0.22
		2462	1.303	1.317	98.94	0.05	0.22
802.11n (HT40)	SISO	2422	100.267	100.267	100.00	0.00	0.00
		2437	100.267	100.267	100.00	0.00	0.00
		2452	100.267	100.267	100.00	0.00	0.00

1.2 Test Graph

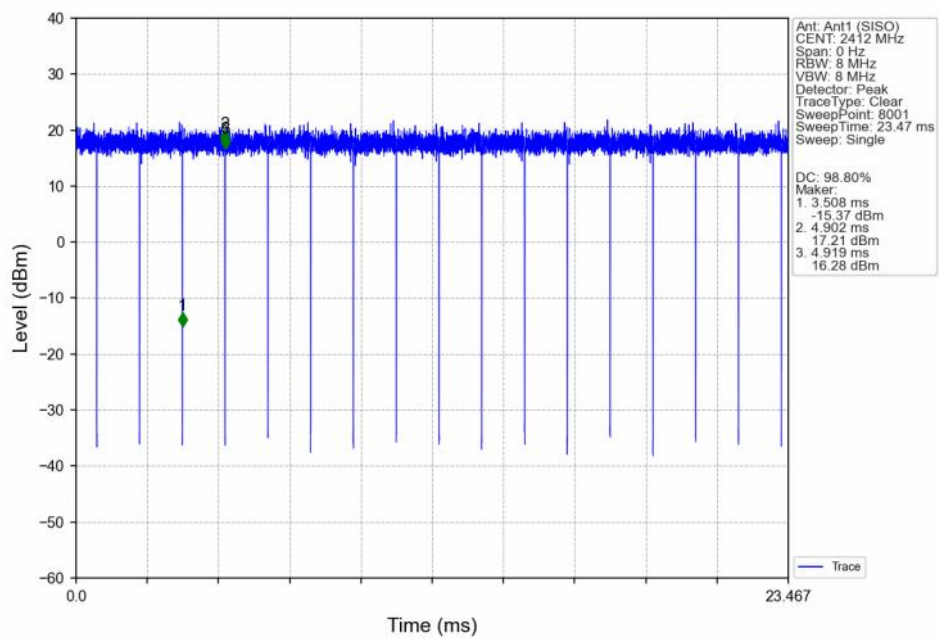
1.2.1 Ant1

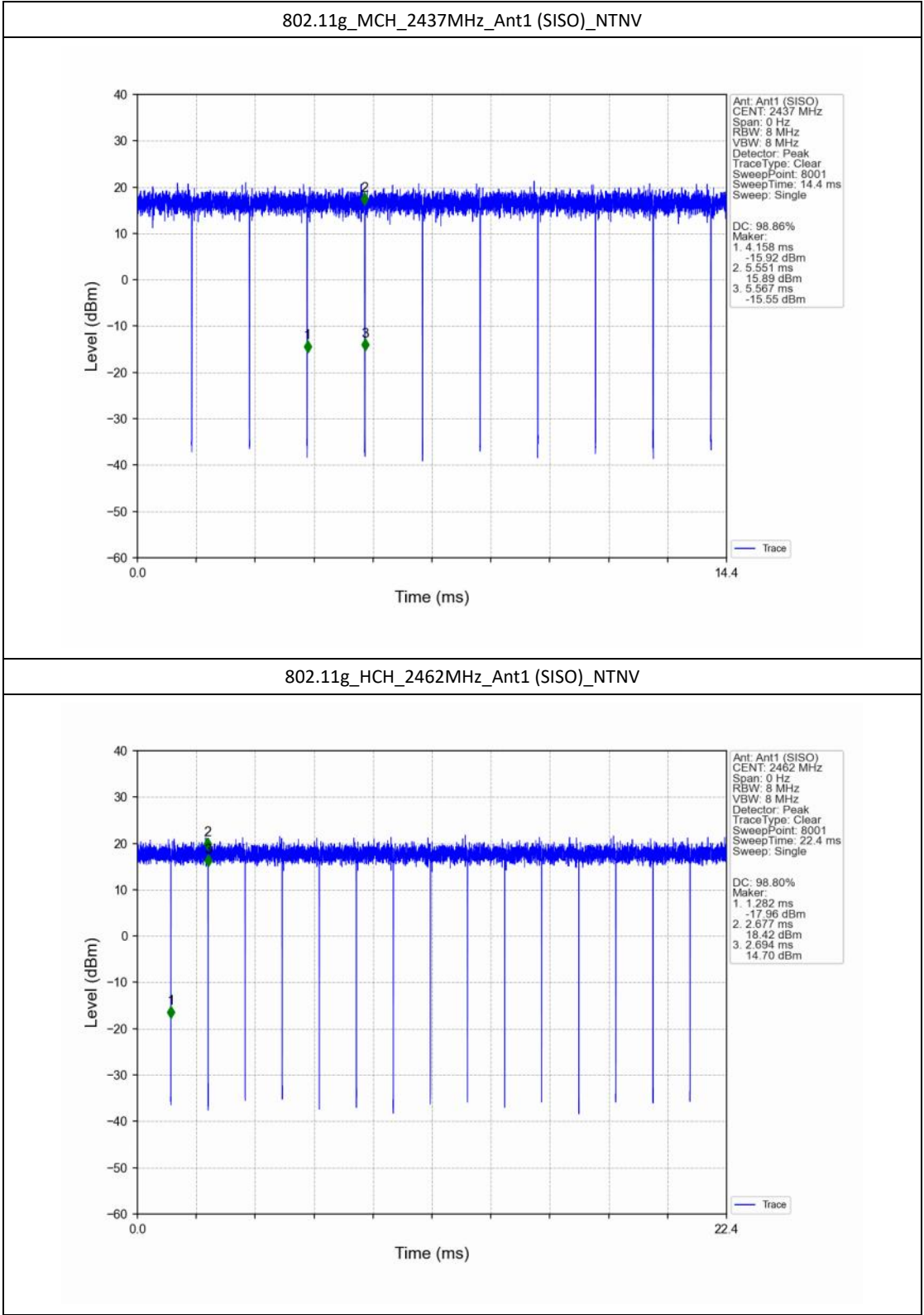


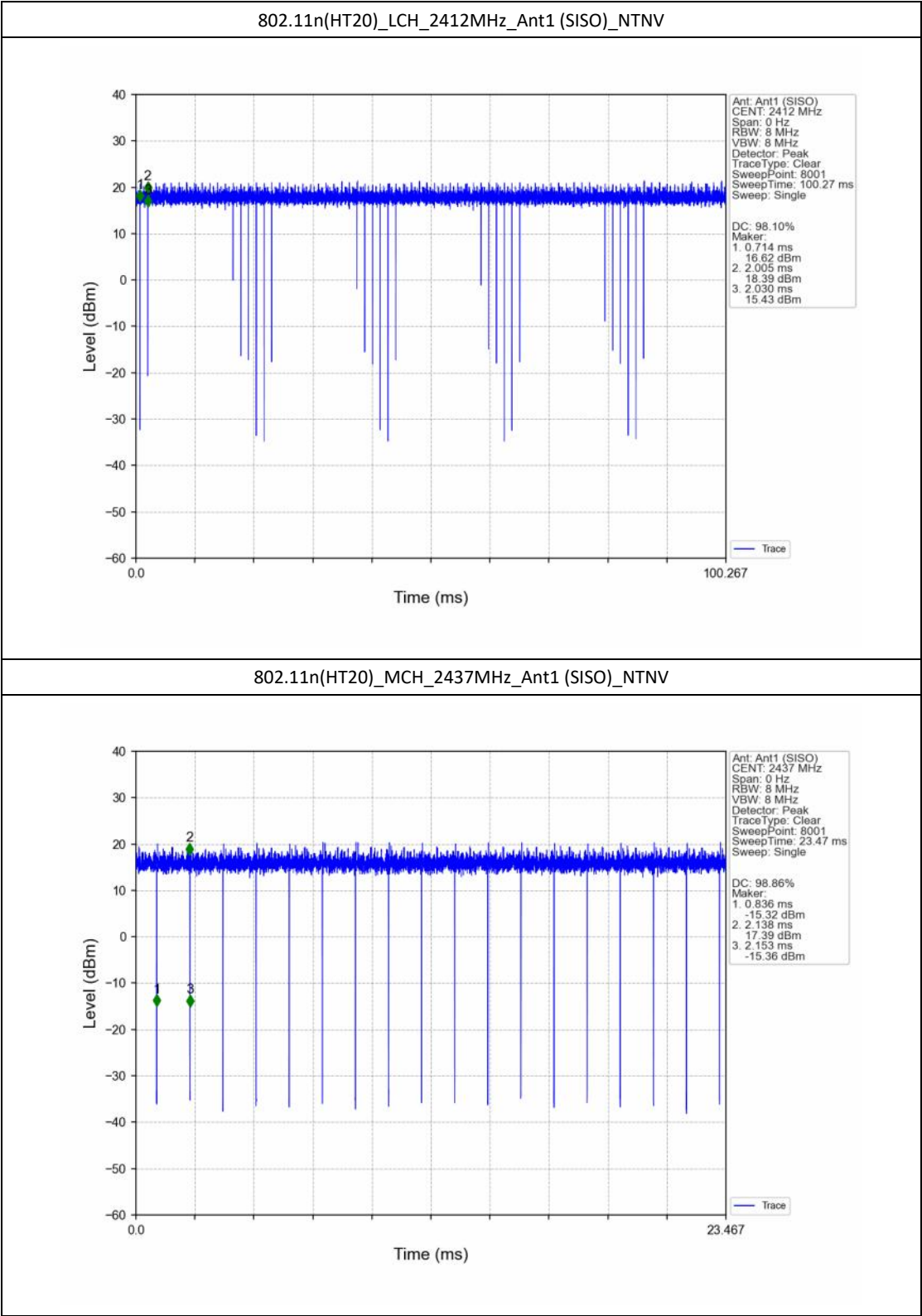
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



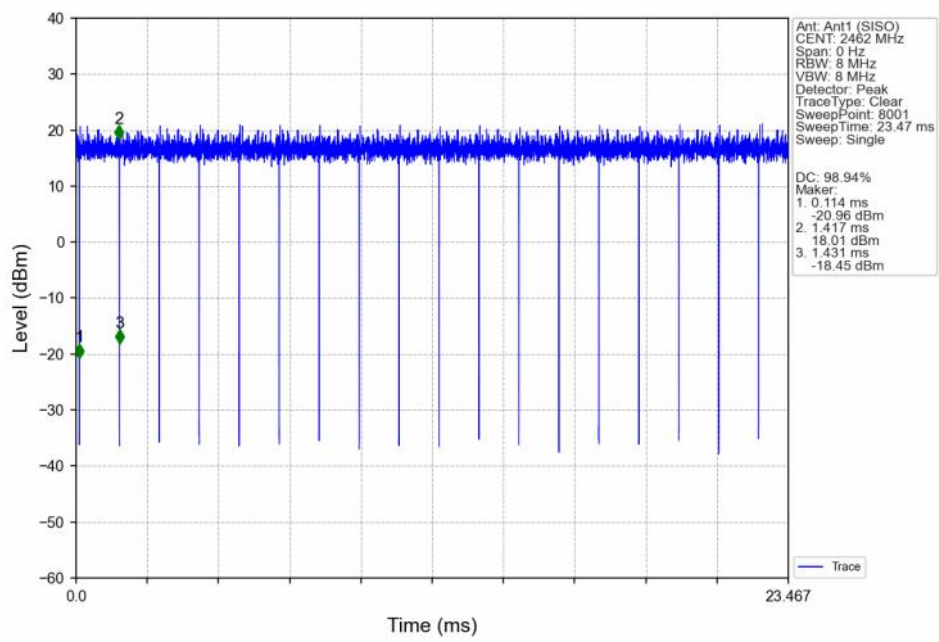
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



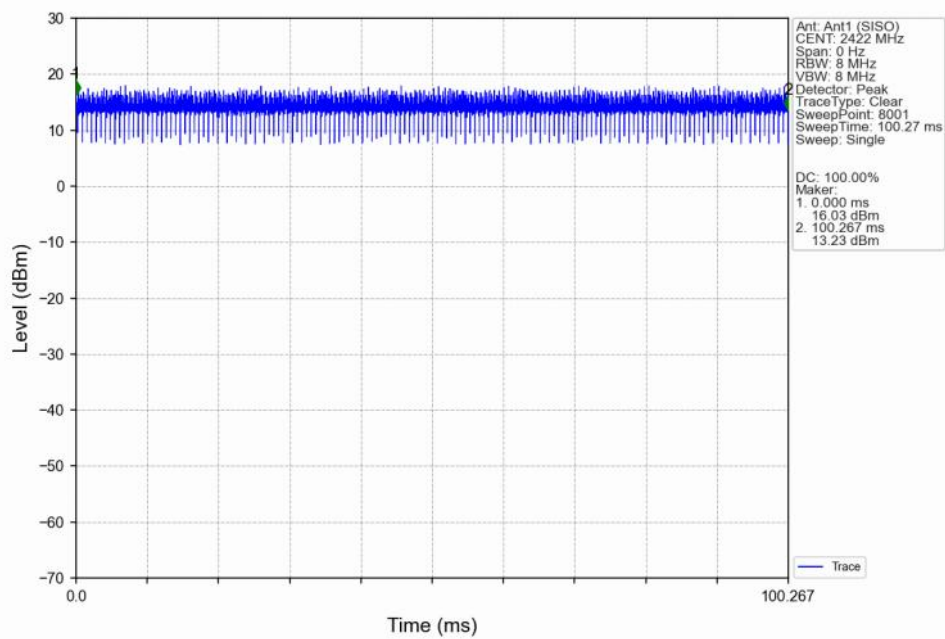




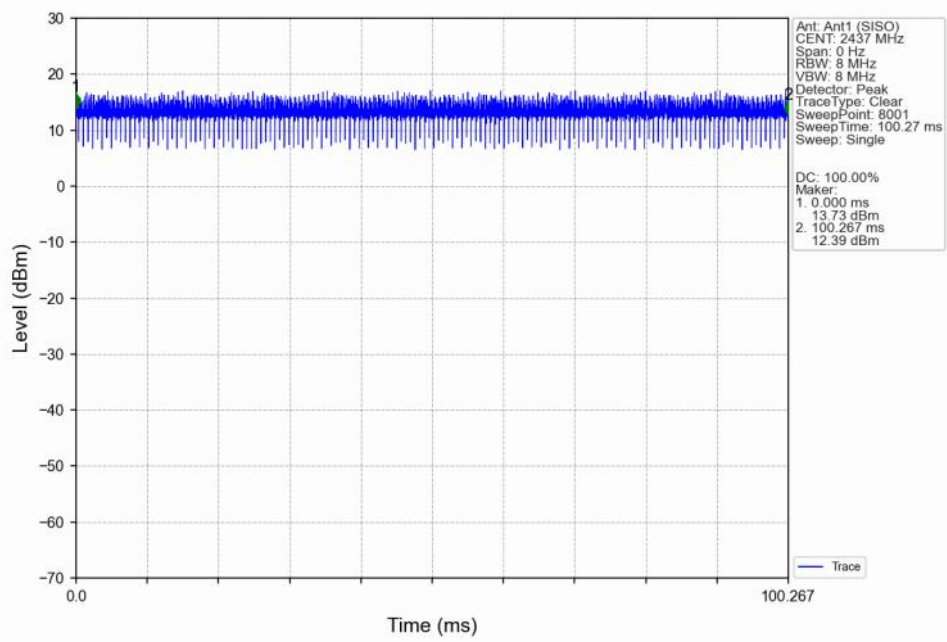
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



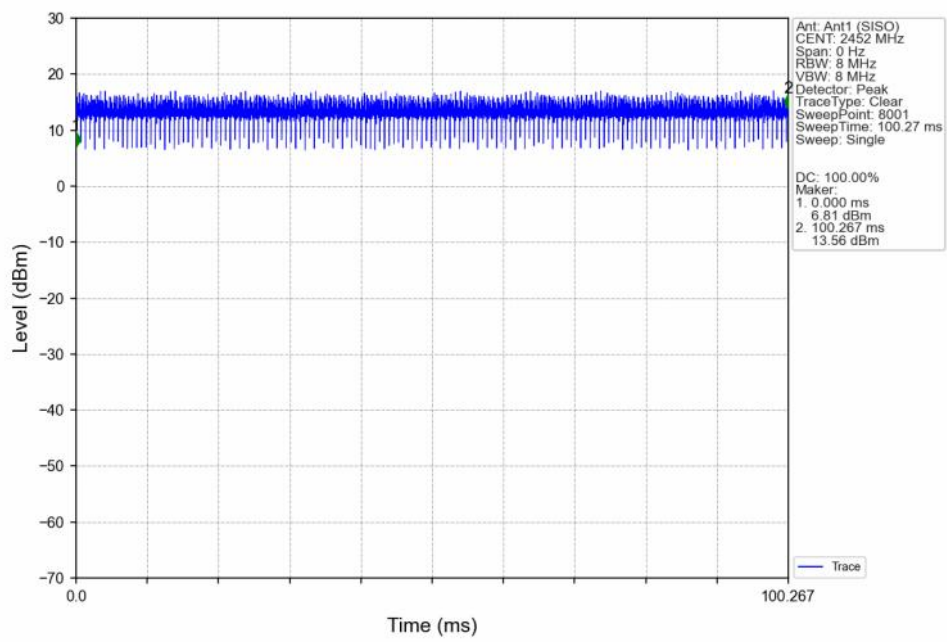
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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

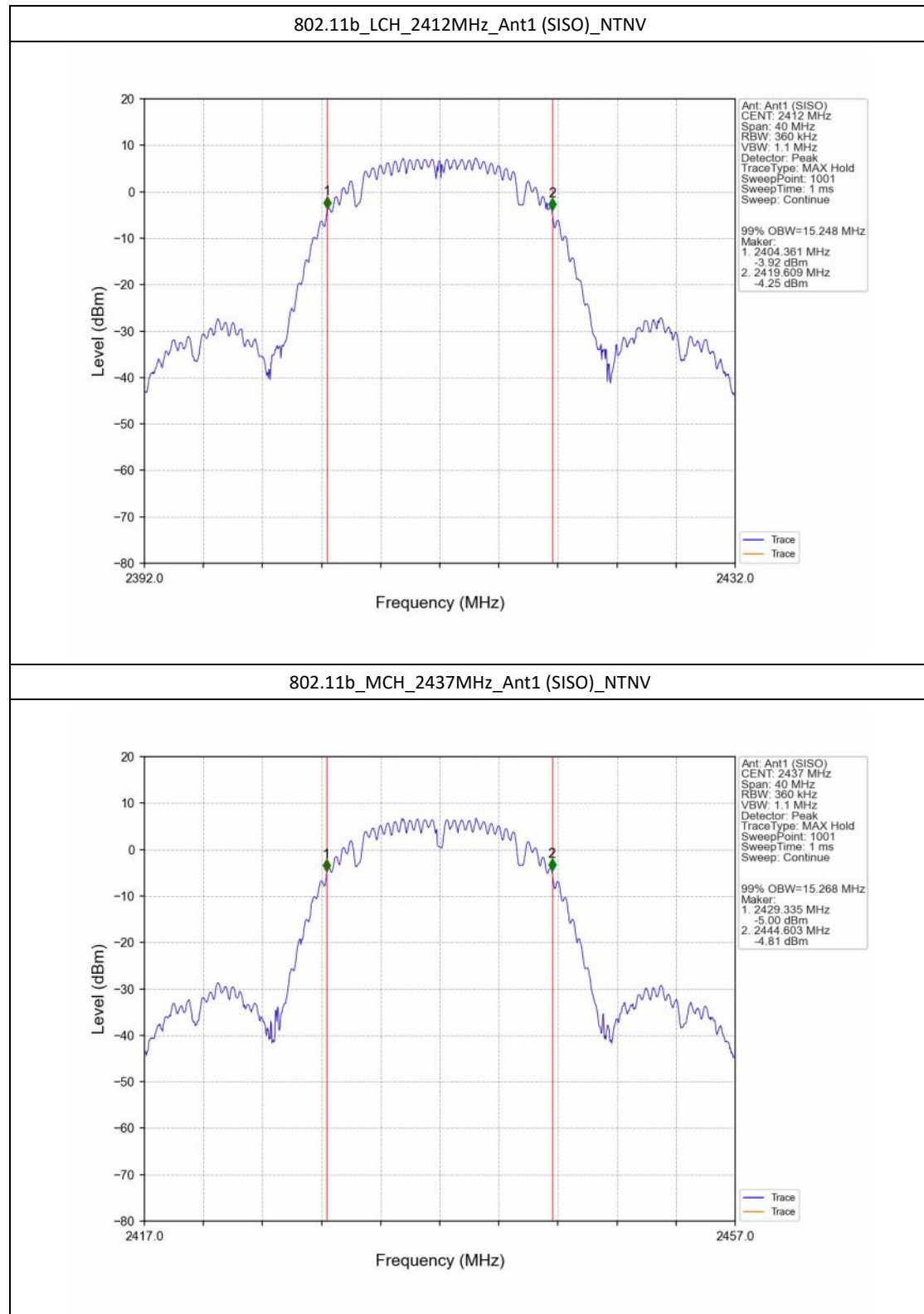
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	15.248	/	Pass
		2437	1	15.268	/	Pass
		2462	1	15.281	/	Pass
802.11g	SISO	2412	1	17.629	/	Pass
		2437	1	17.624	/	Pass
		2462	1	17.649	/	Pass
802.11n (HT20)	SISO	2412	1	18.488	/	Pass
		2437	1	18.482	/	Pass
		2462	1	18.499	/	Pass
802.11n (HT40)	SISO	2422	1	36.042	/	Pass
		2437	1	35.986	/	Pass
		2452	1	36.019	/	Pass

2.1.2 6dB BW

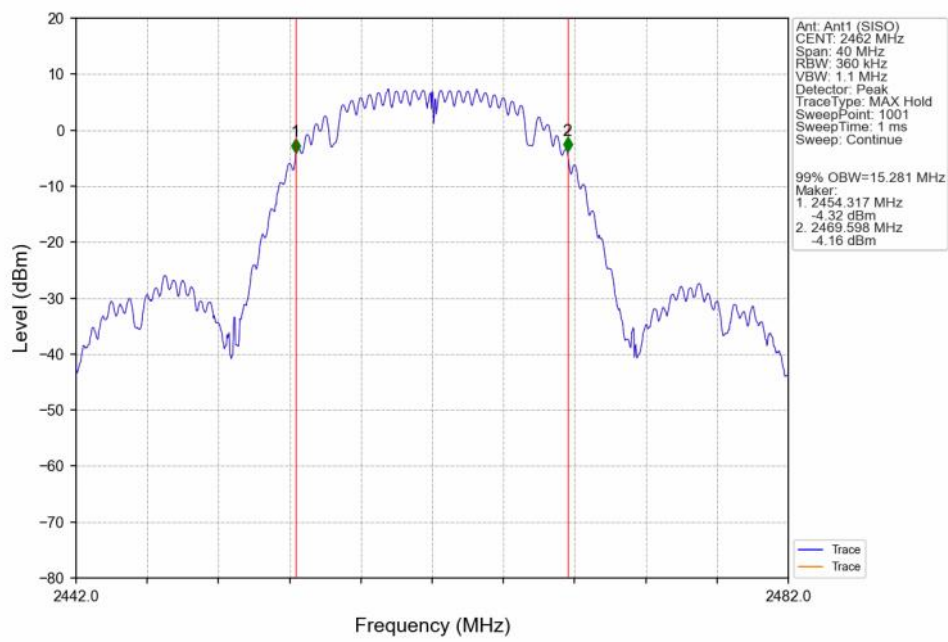
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	12.259	≥ 0.5	Pass
		2437	1	12.276	≥ 0.5	Pass
		2462	1	12.267	≥ 0.5	Pass
802.11g	SISO	2412	1	17.512	≥ 0.5	Pass
		2437	1	17.517	≥ 0.5	Pass
		2462	1	17.528	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	11.495	≥ 0.5	Pass
		2437	1	11.488	≥ 0.5	Pass
		2462	1	11.512	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.071	≥ 0.5	Pass
		2437	1	35.058	≥ 0.5	Pass
		2452	1	35.079	≥ 0.5	Pass

2.2 Test Graph

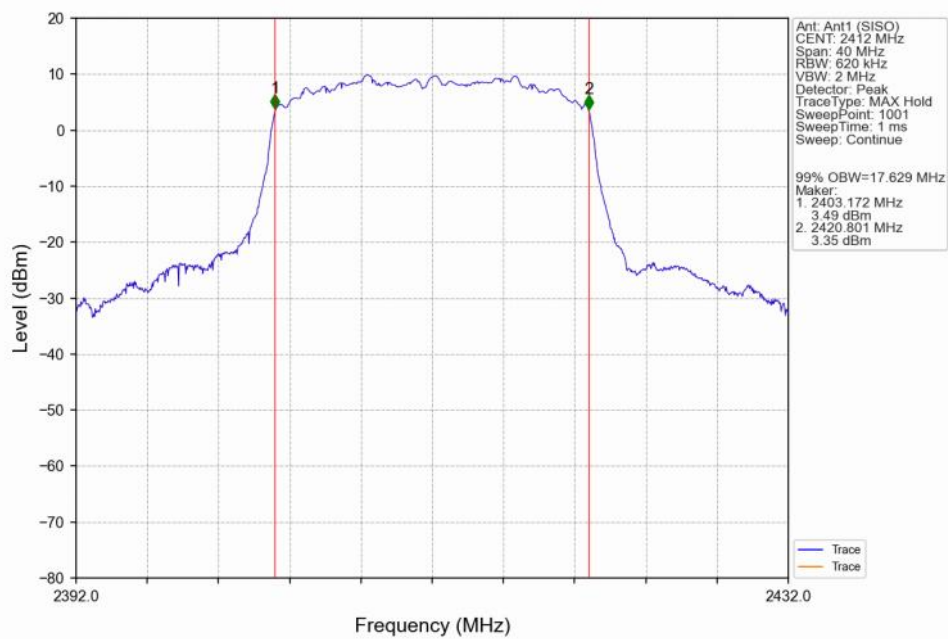
2.2.1 OBW



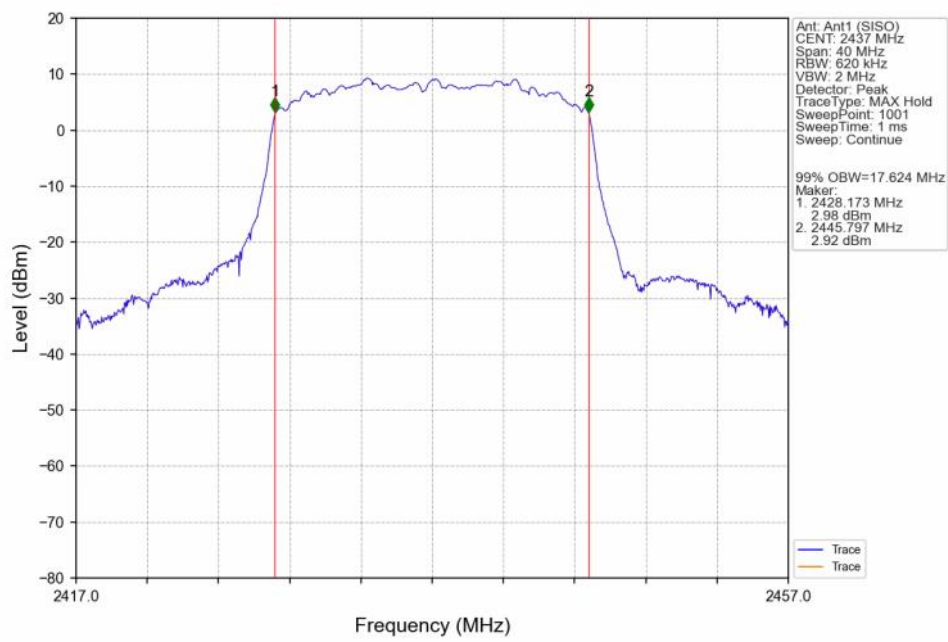
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



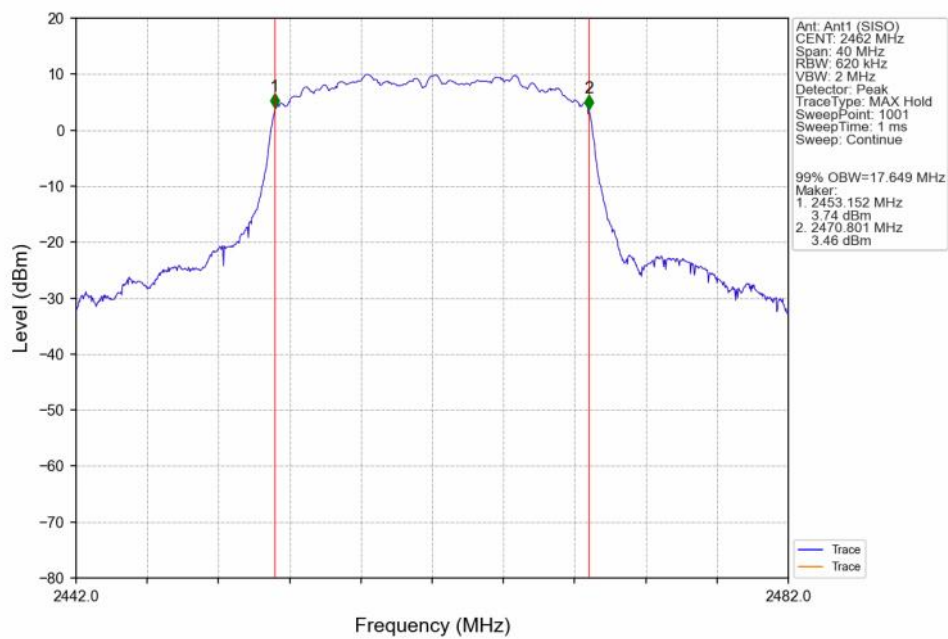
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



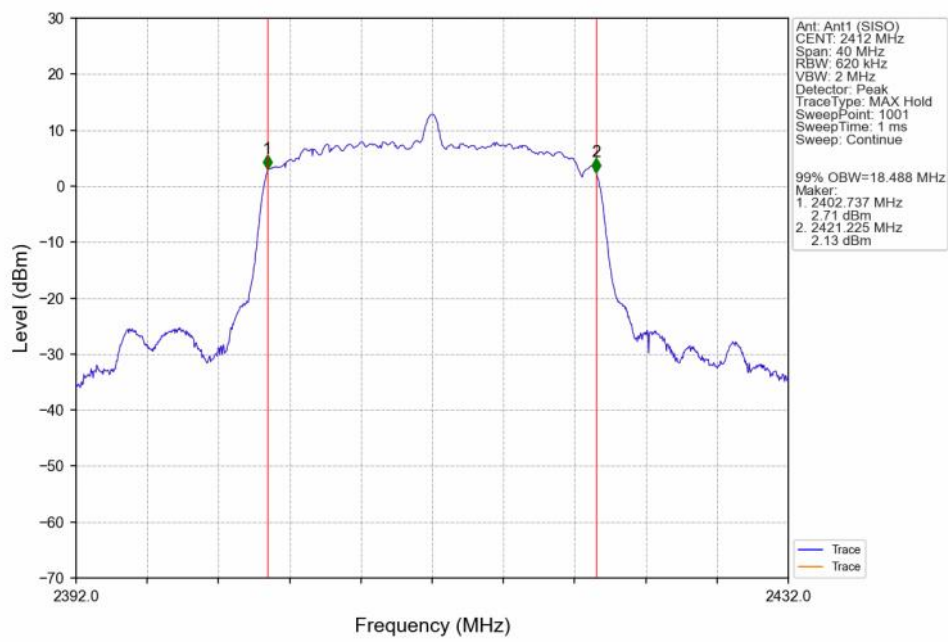
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



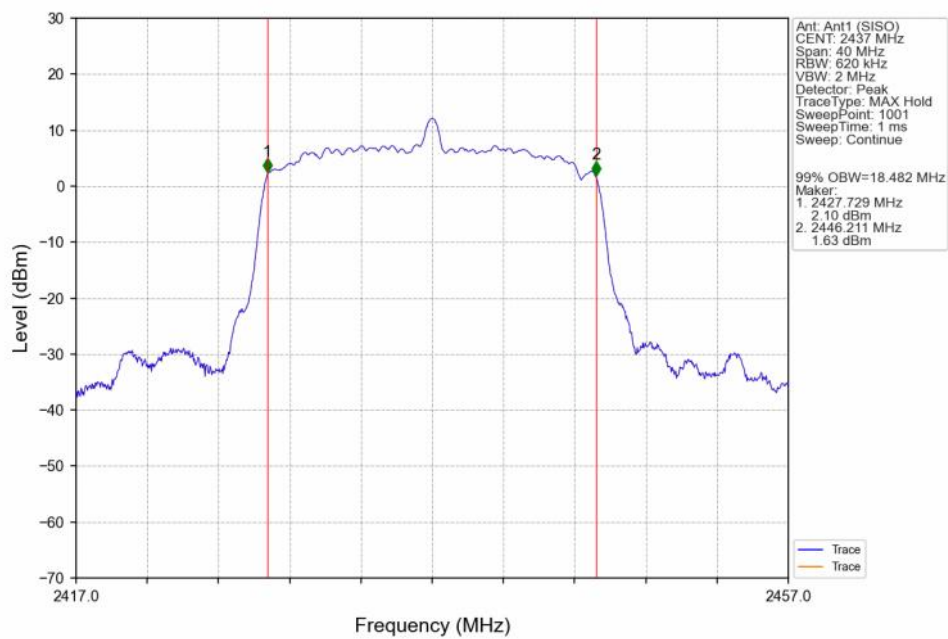
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



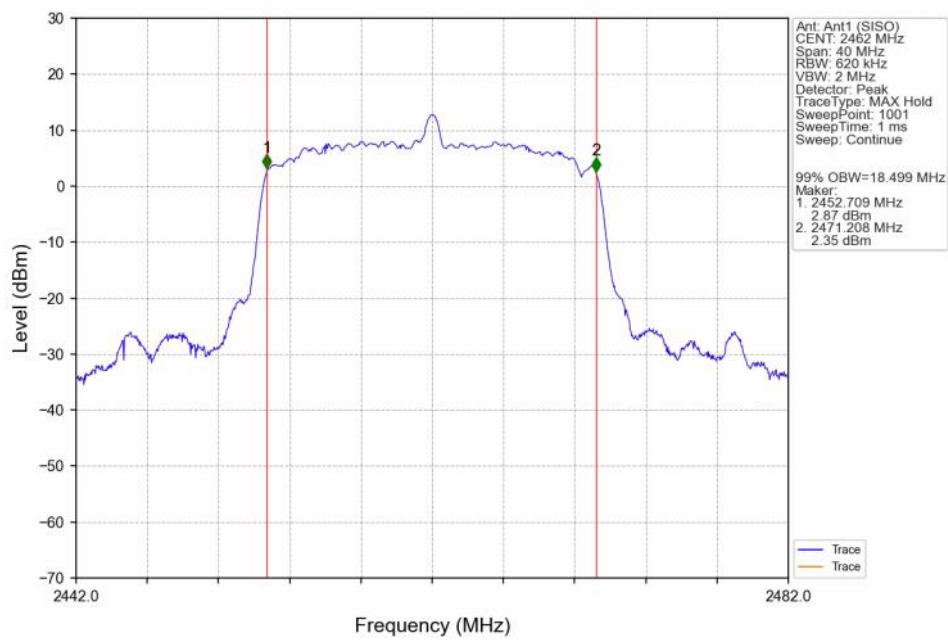
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



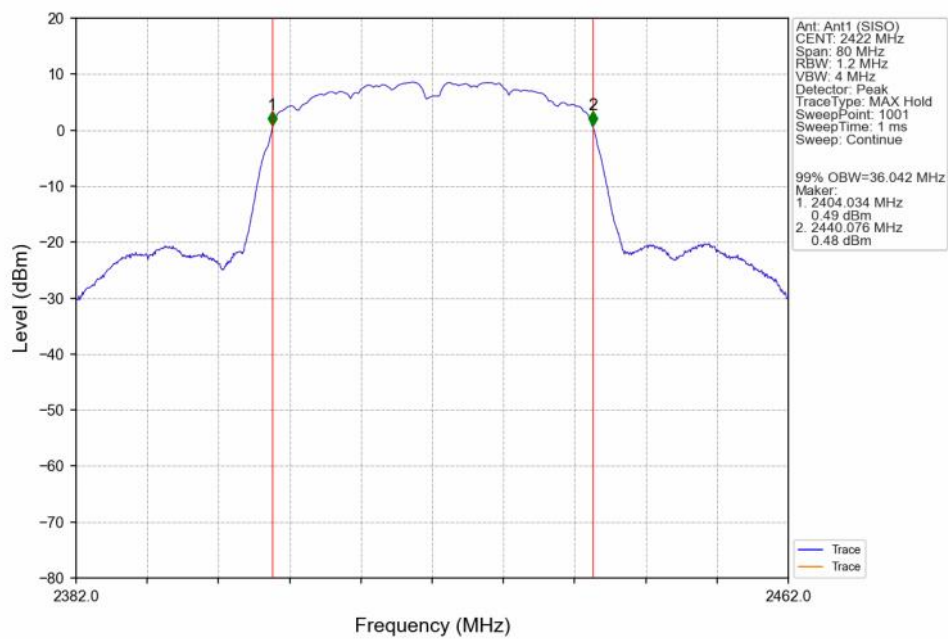
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



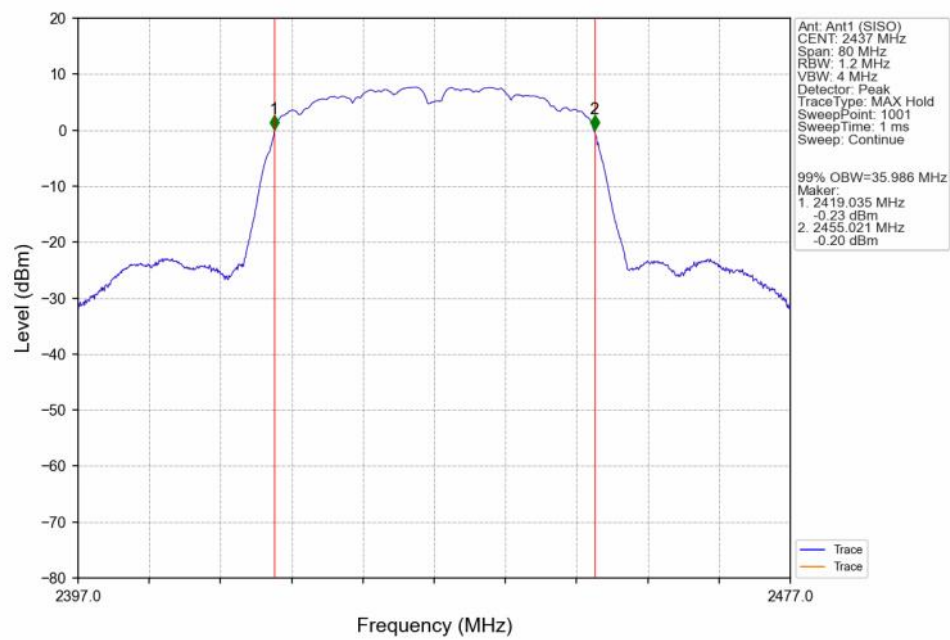
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



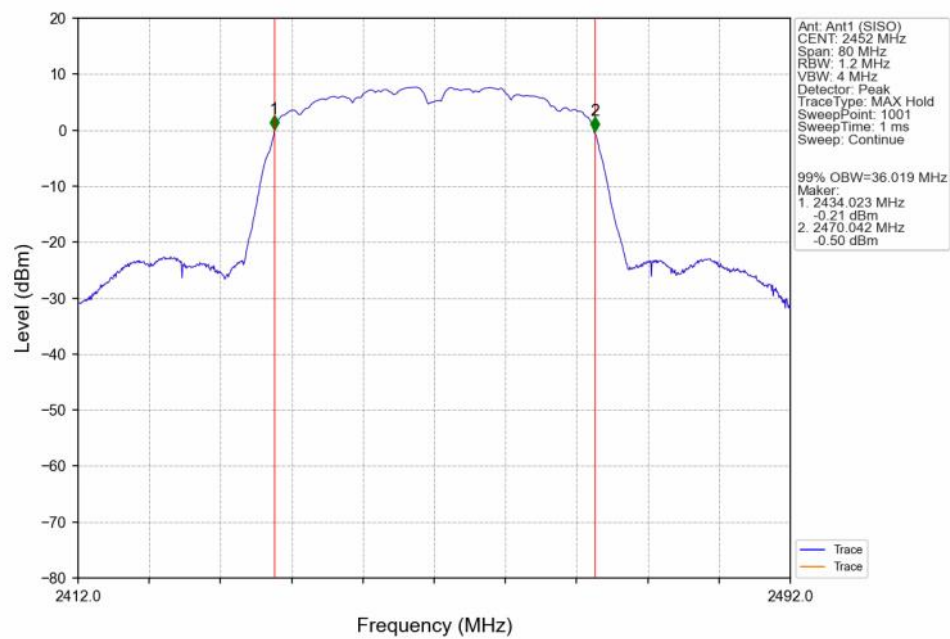
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



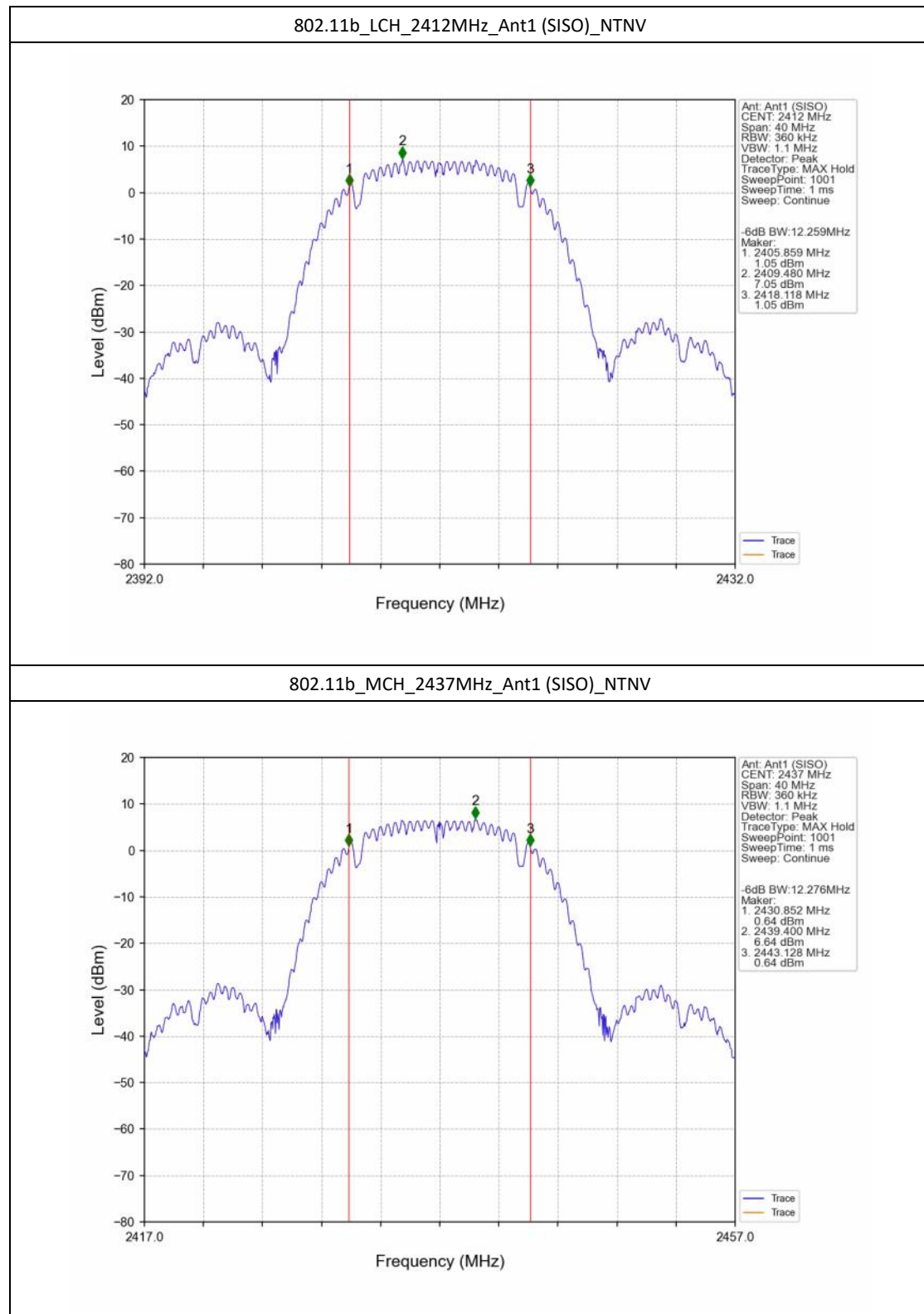
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



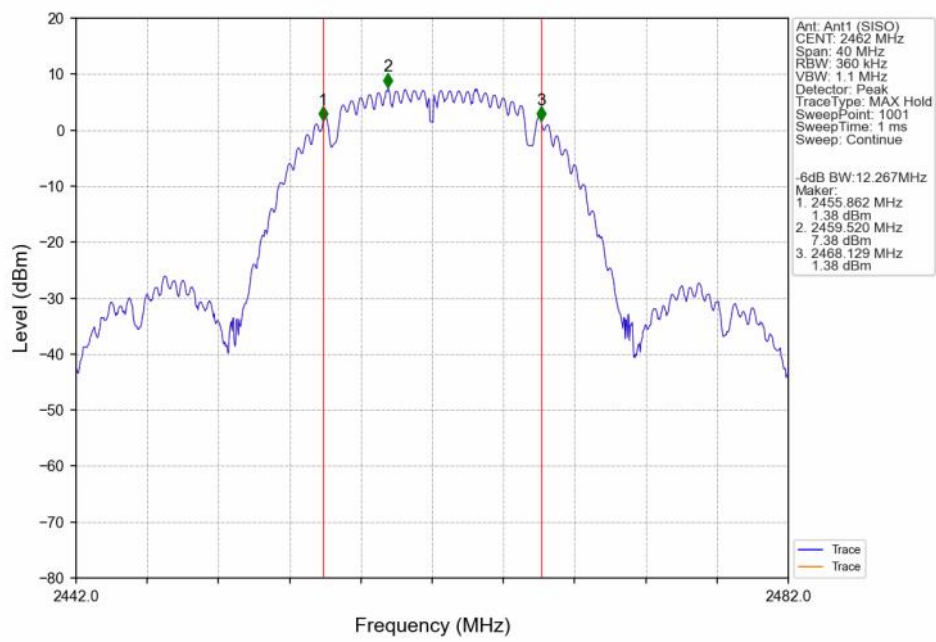
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



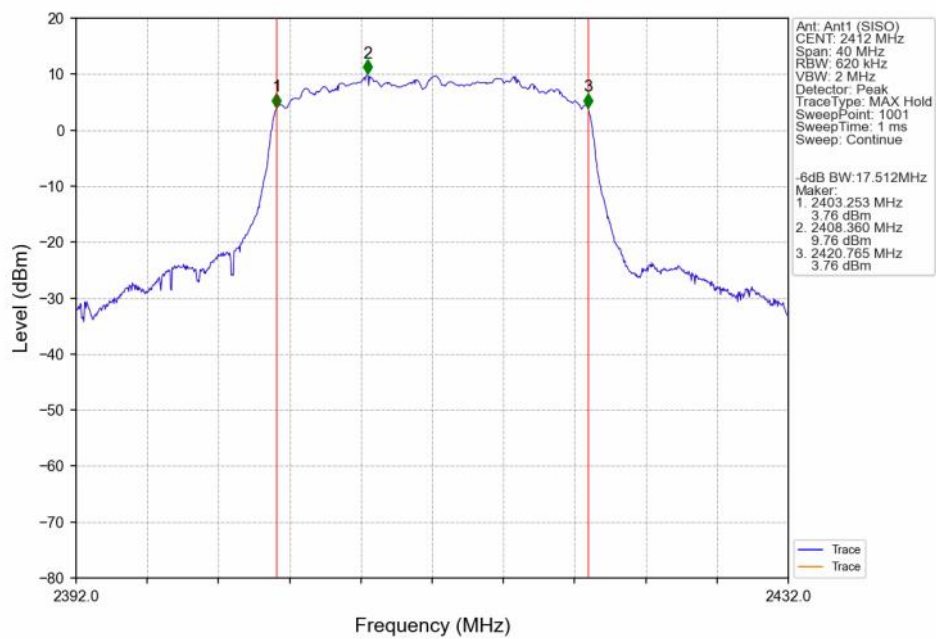
2.2.2 6dB BW



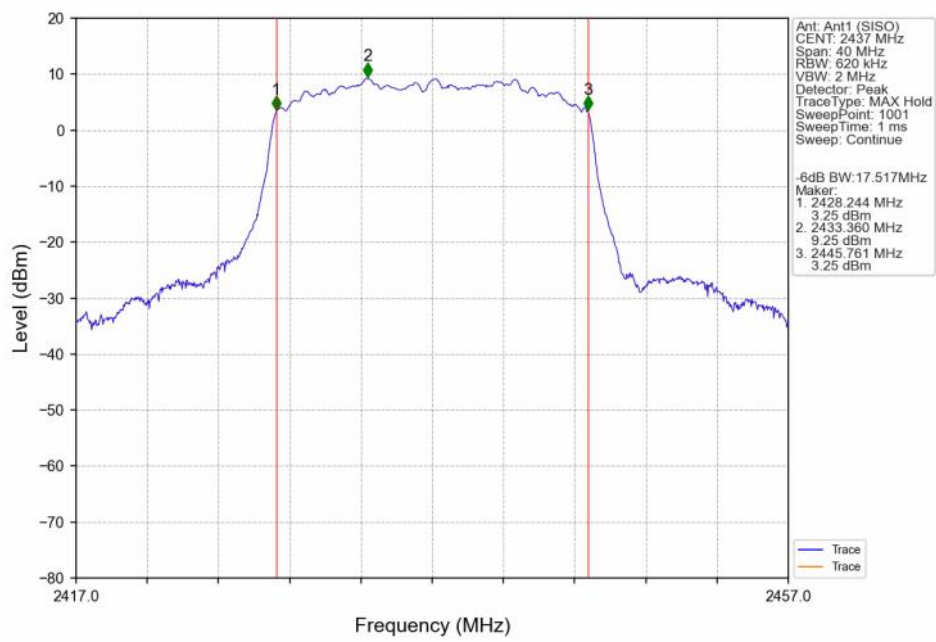
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



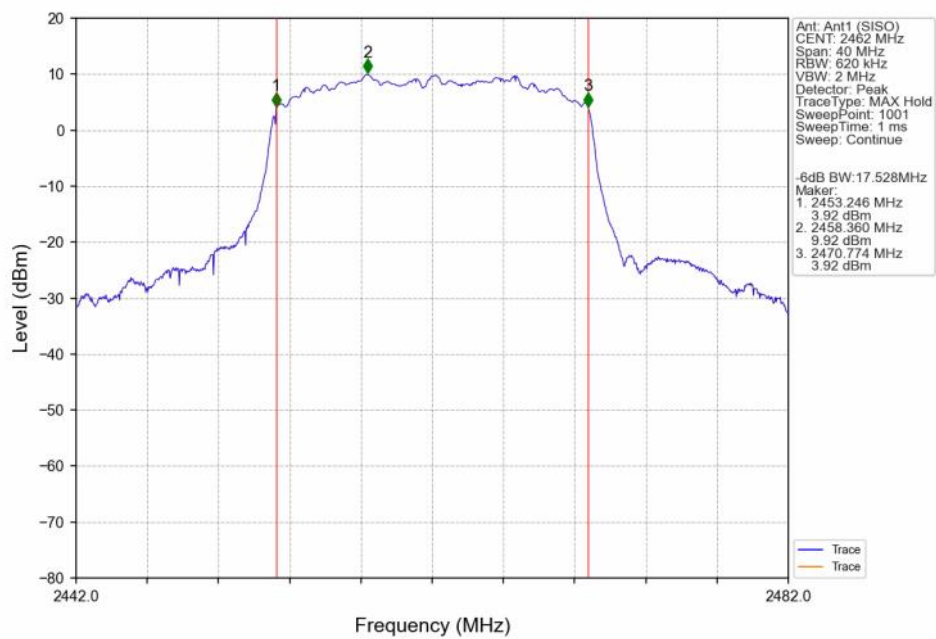
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



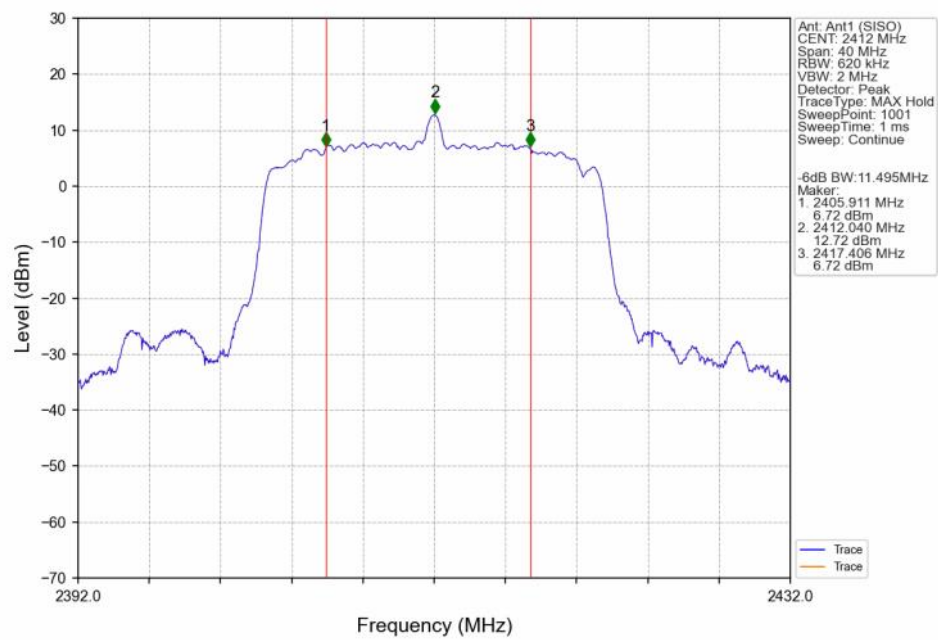
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



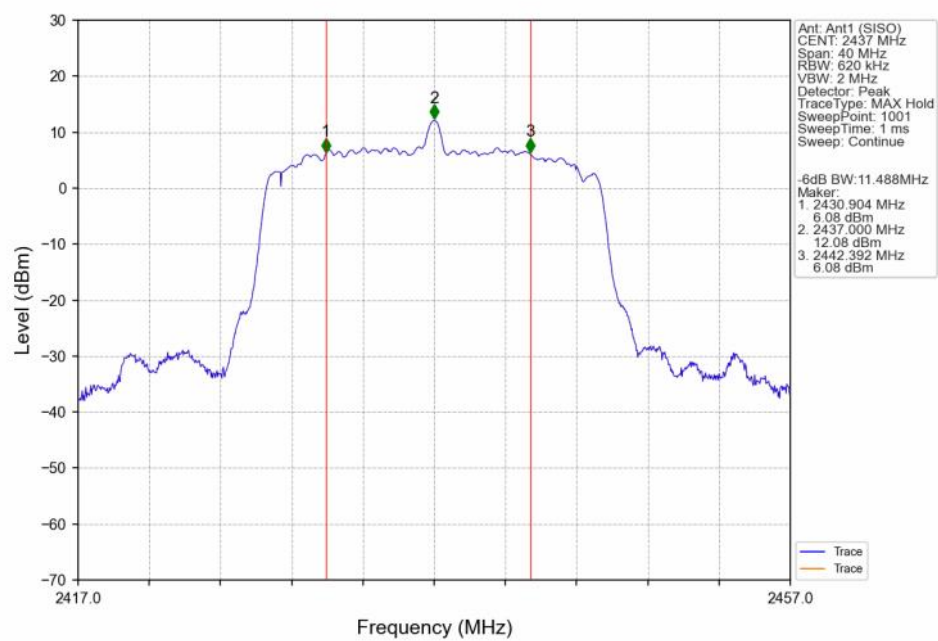
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



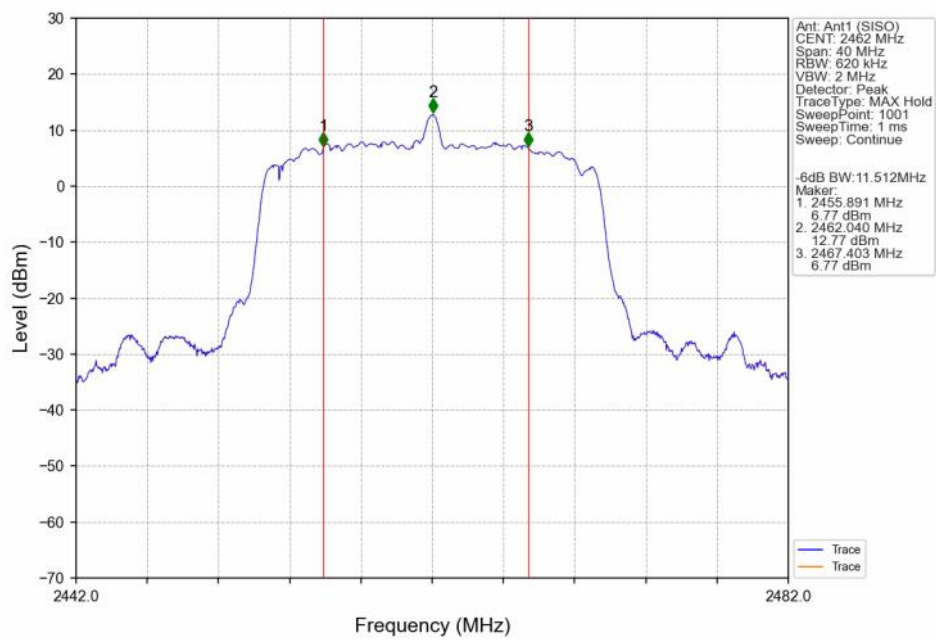
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



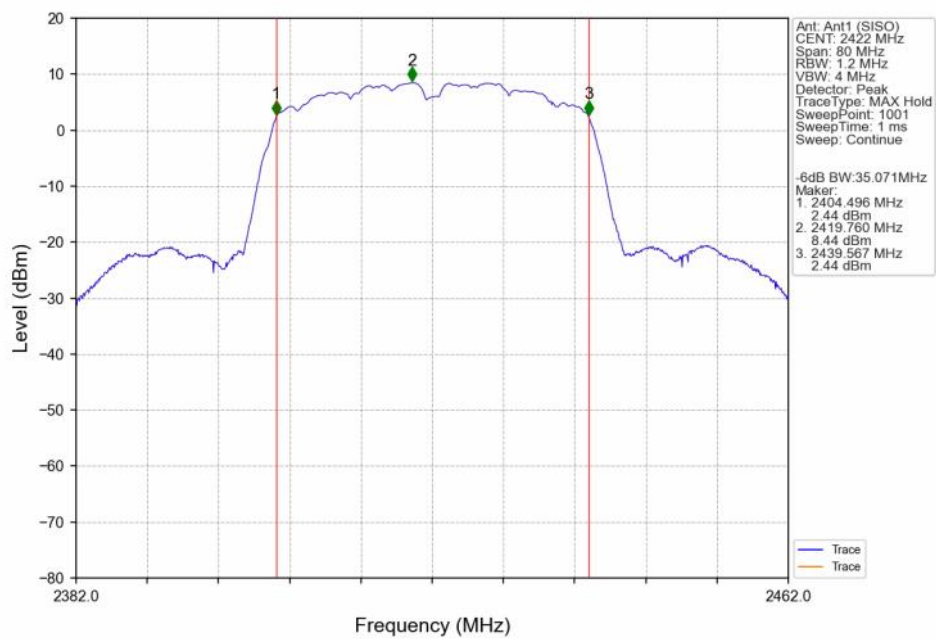
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



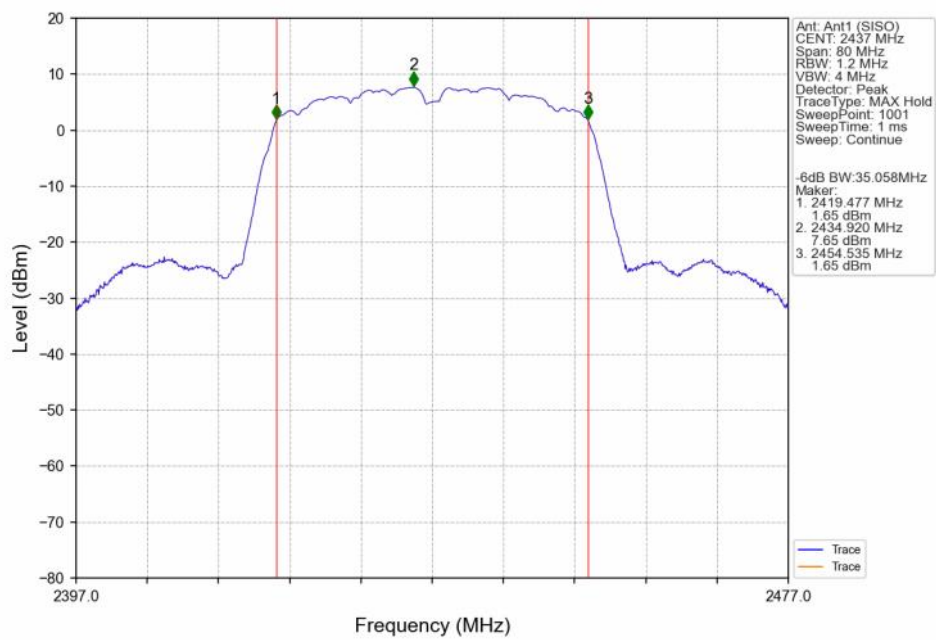
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



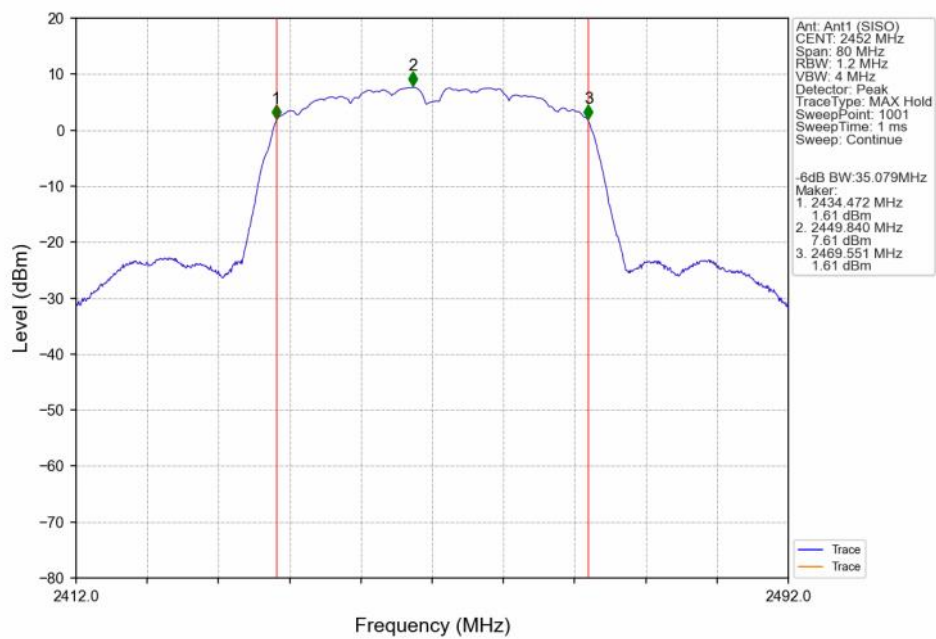
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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	16.13	<=30	Pass
		2437	15.90	<=30	Pass
		2462	16.57	<=30	Pass
802.11g	SISO	2412	14.52	<=30	Pass
		2437	14.02	<=30	Pass
		2462	14.68	<=30	Pass
802.11n (HT20)	SISO	2412	13.49	<=30	Pass
		2437	12.88	<=30	Pass
		2462	13.61	<=30	Pass
802.11n (HT40)	SISO	2422	12.55	<=30	Pass
		2437	11.73	<=30	Pass
		2452	11.77	<=30	Pass
Note1: Antenna Gain: Ant1: 0.04dBi;					

4. Maximum Power Spectral Density

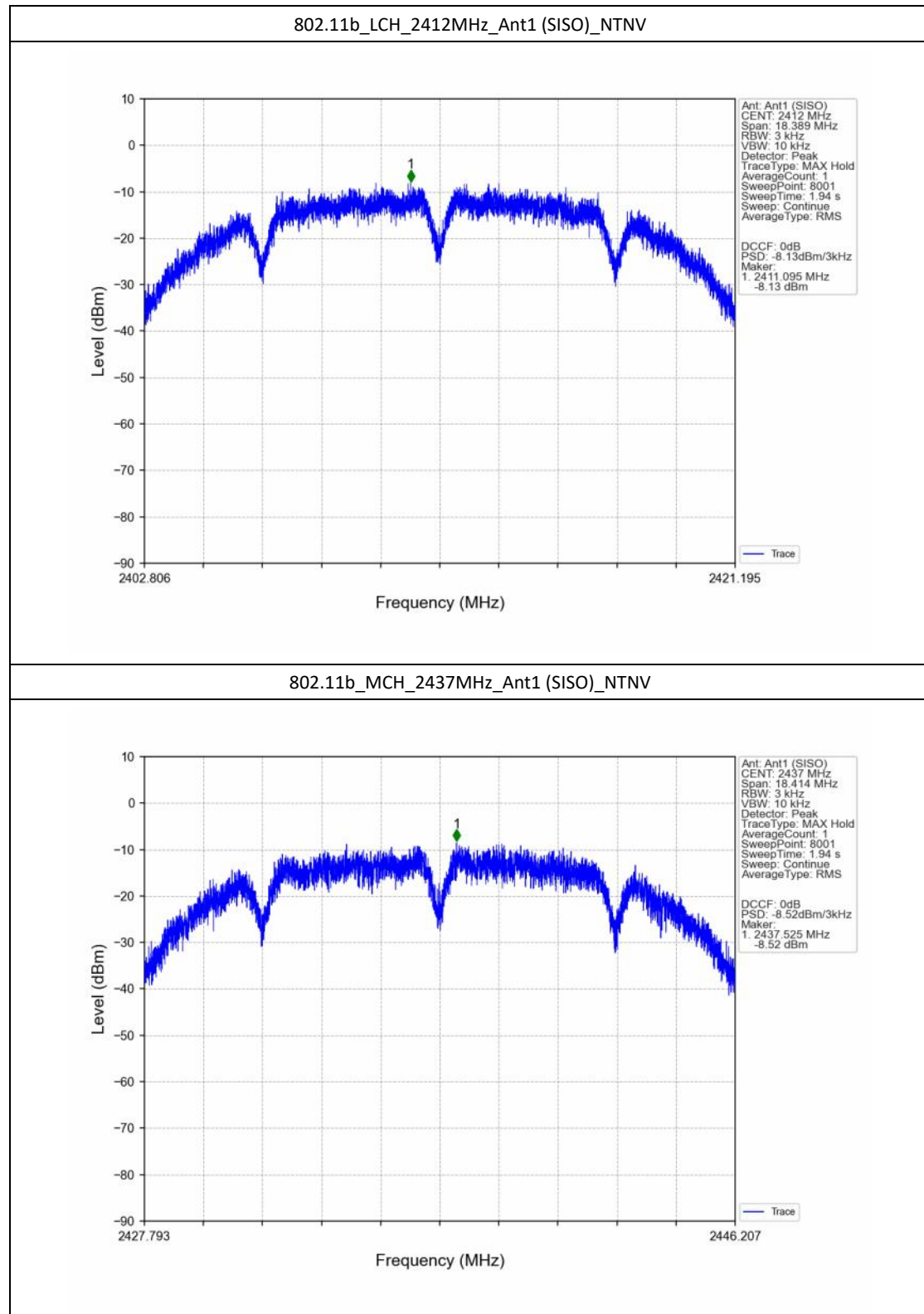
4.1 Test Result

4.1.1 PSD

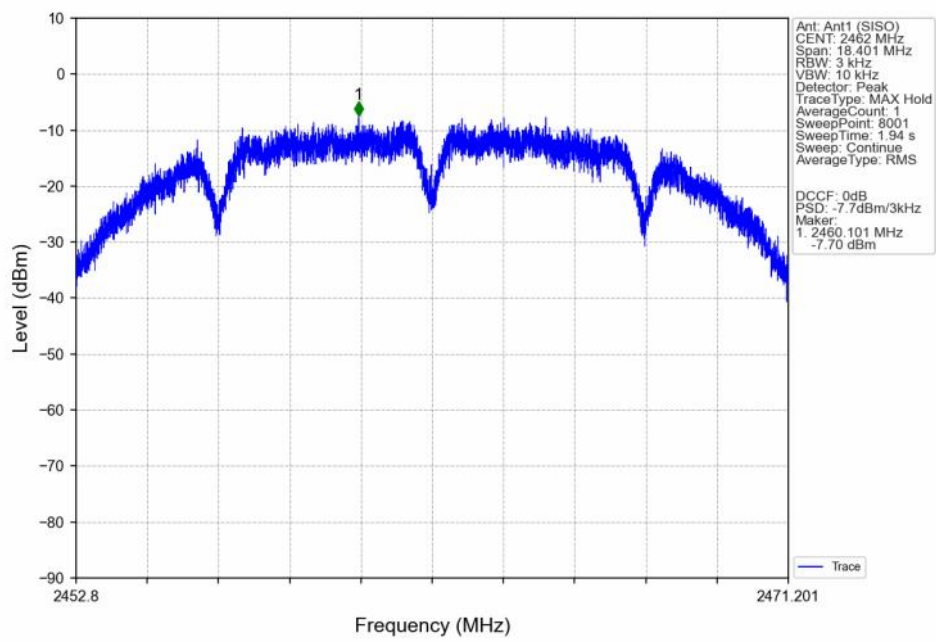
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-8.13	<=8	Pass
		2437	-8.52	<=8	Pass
		2462	-7.70	<=8	Pass
802.11g	SISO	2412	-9.69	<=8	Pass
		2437	-10.69	<=8	Pass
		2462	-10.74	<=8	Pass
802.11n (HT20)	SISO	2412	-10.41	<=8	Pass
		2437	-11.58	<=8	Pass
		2462	-10.53	<=8	Pass
802.11n (HT40)	SISO	2422	-14.78	<=8	Pass
		2437	-16.47	<=8	Pass
		2452	-15.47	<=8	Pass
Note1: Antenna Gain: Ant1: 0.04dBi;					

4.2 Test Graph

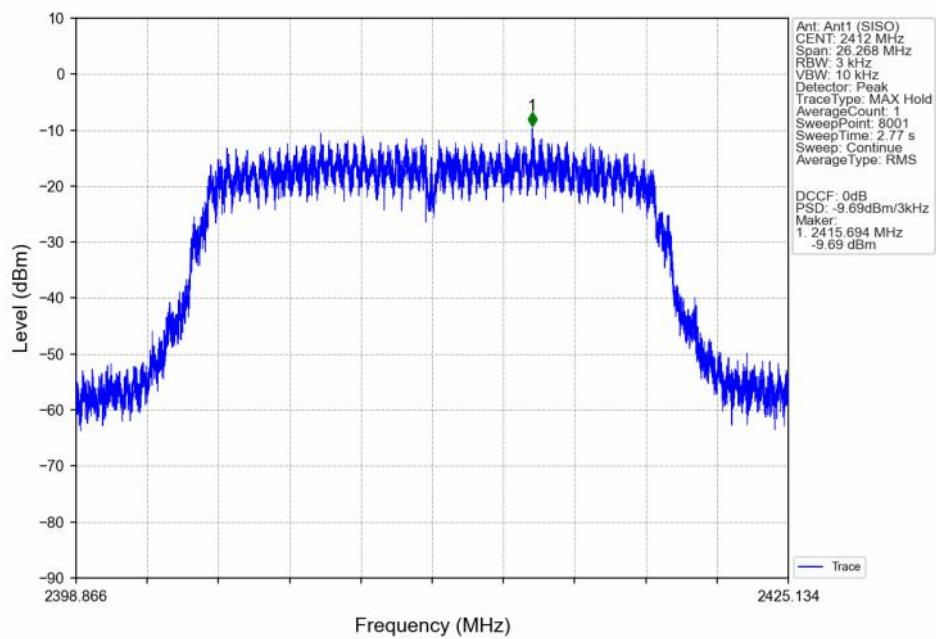
4.2.1 PSD



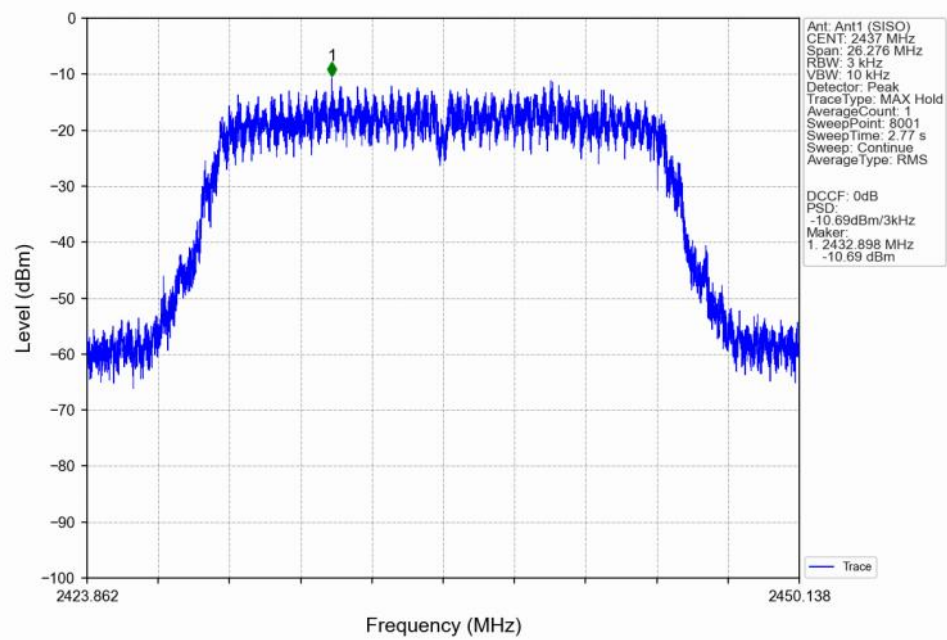
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



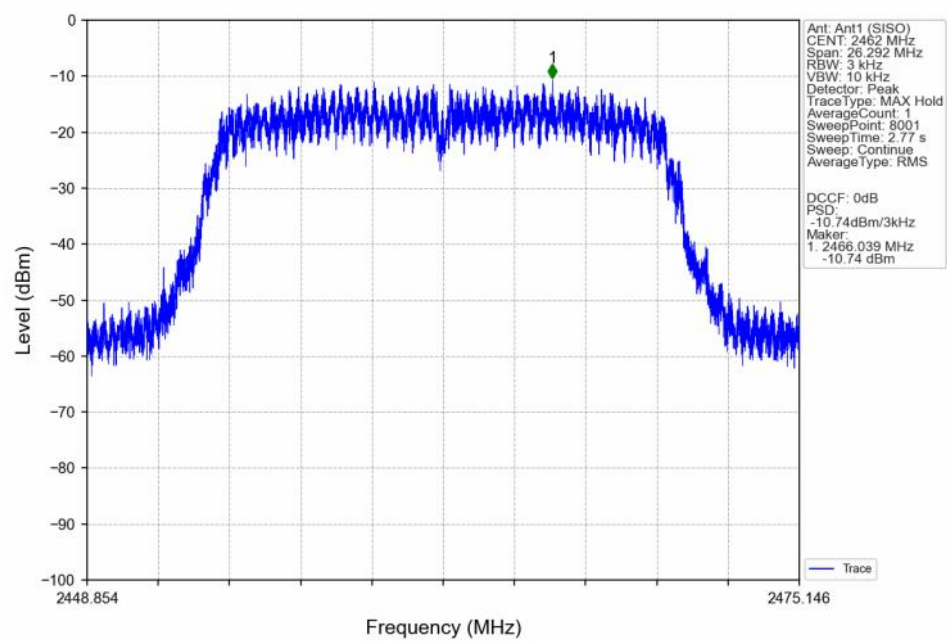
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



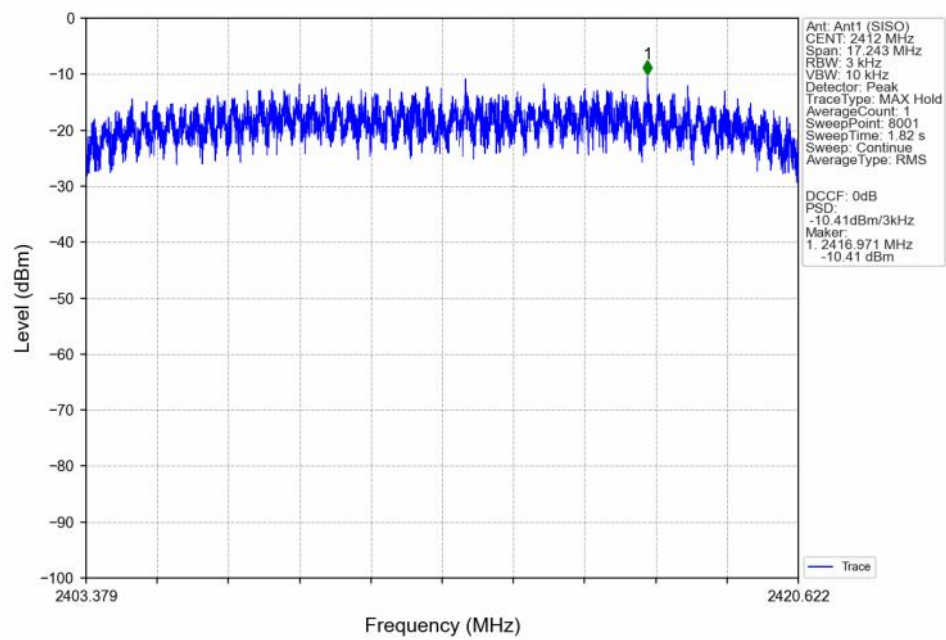
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



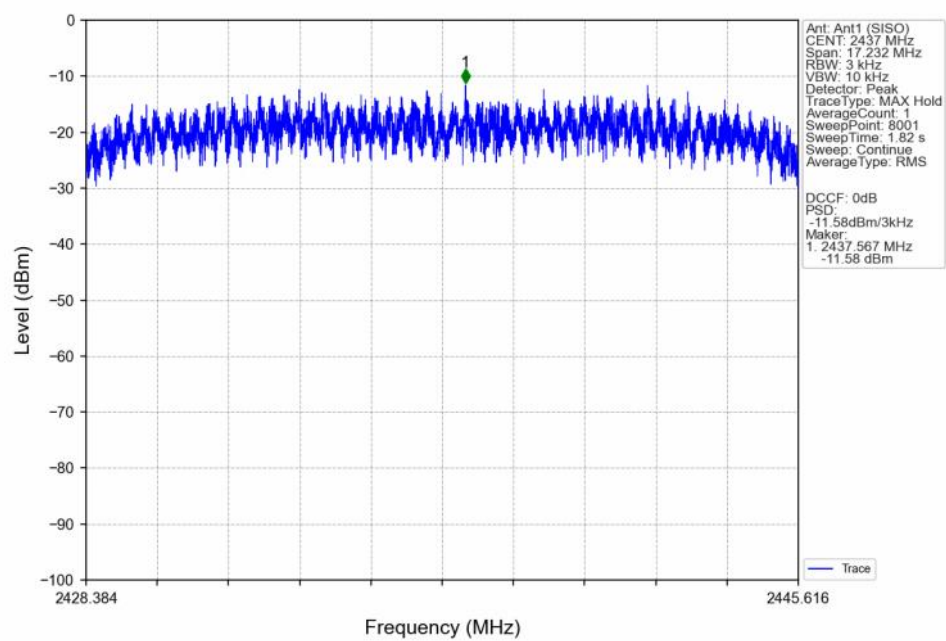
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



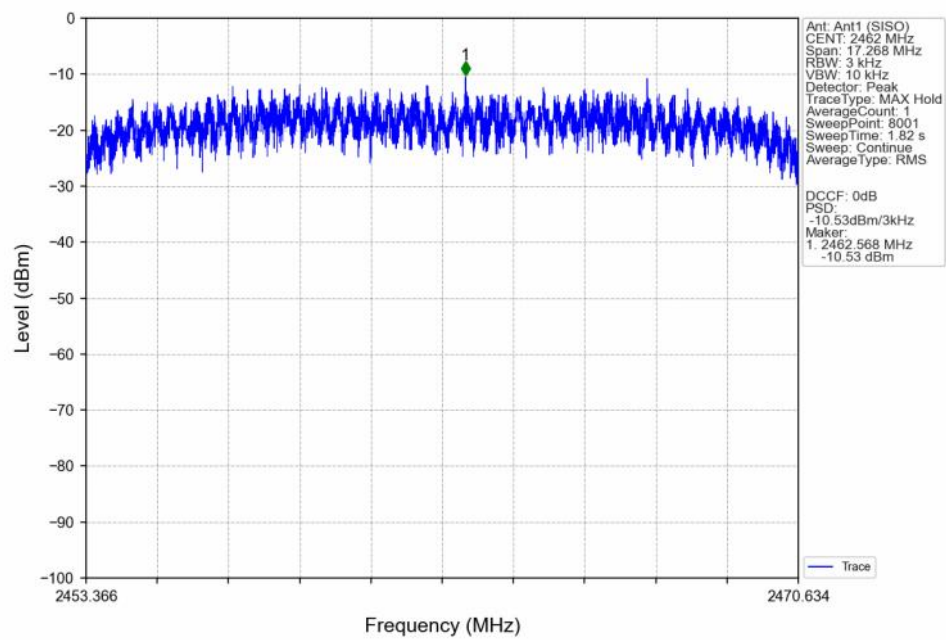
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



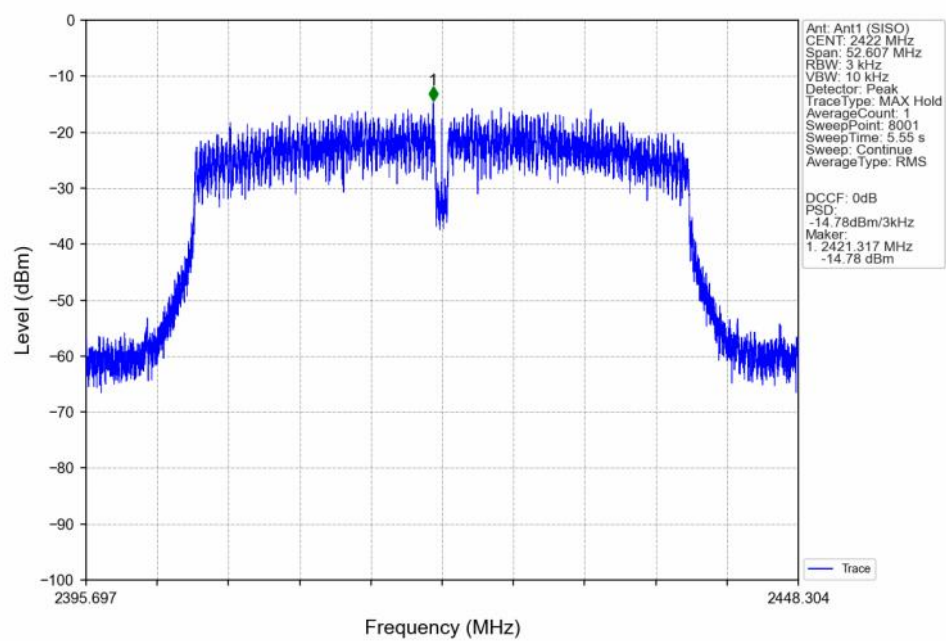
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



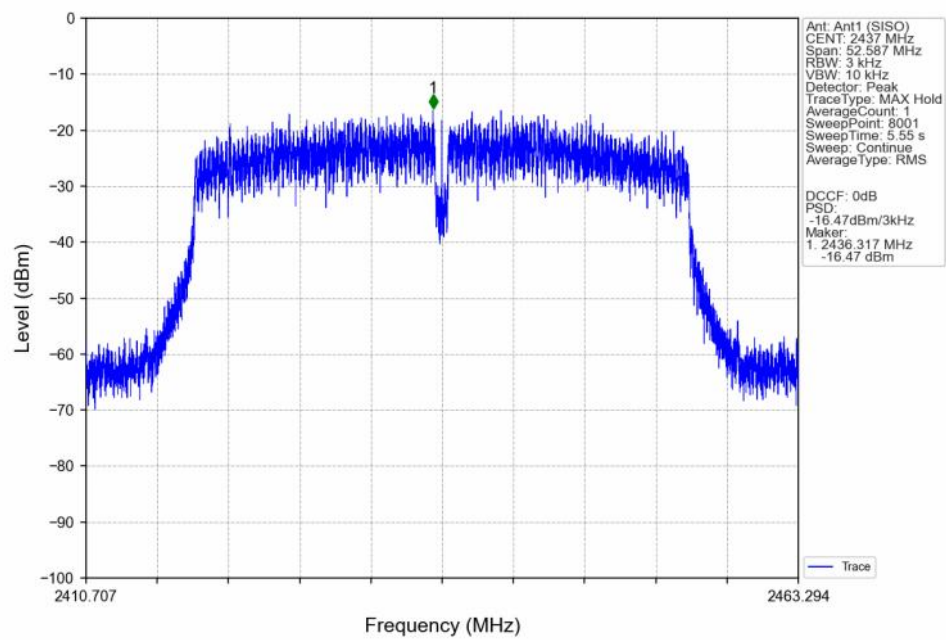
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



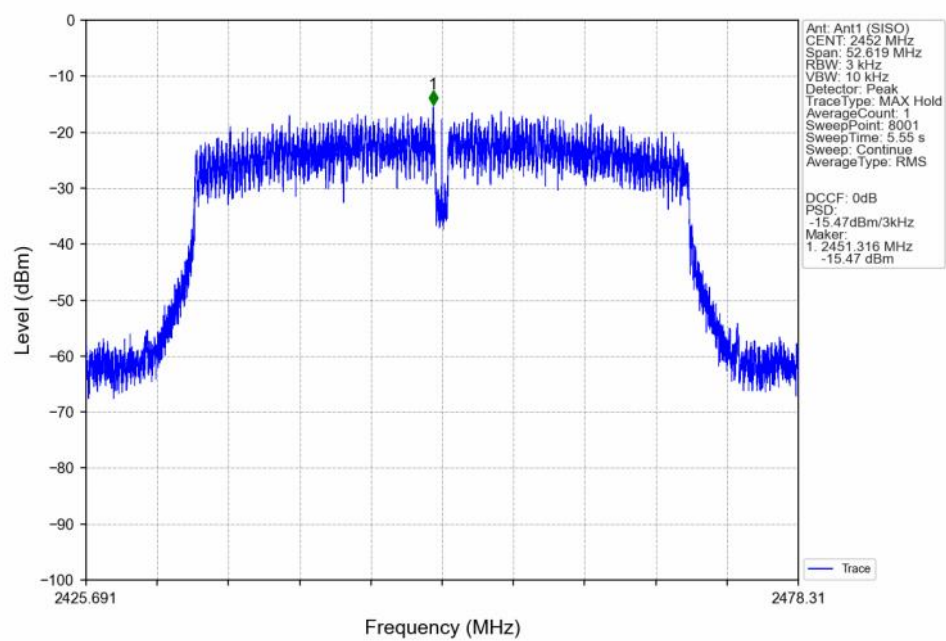
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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

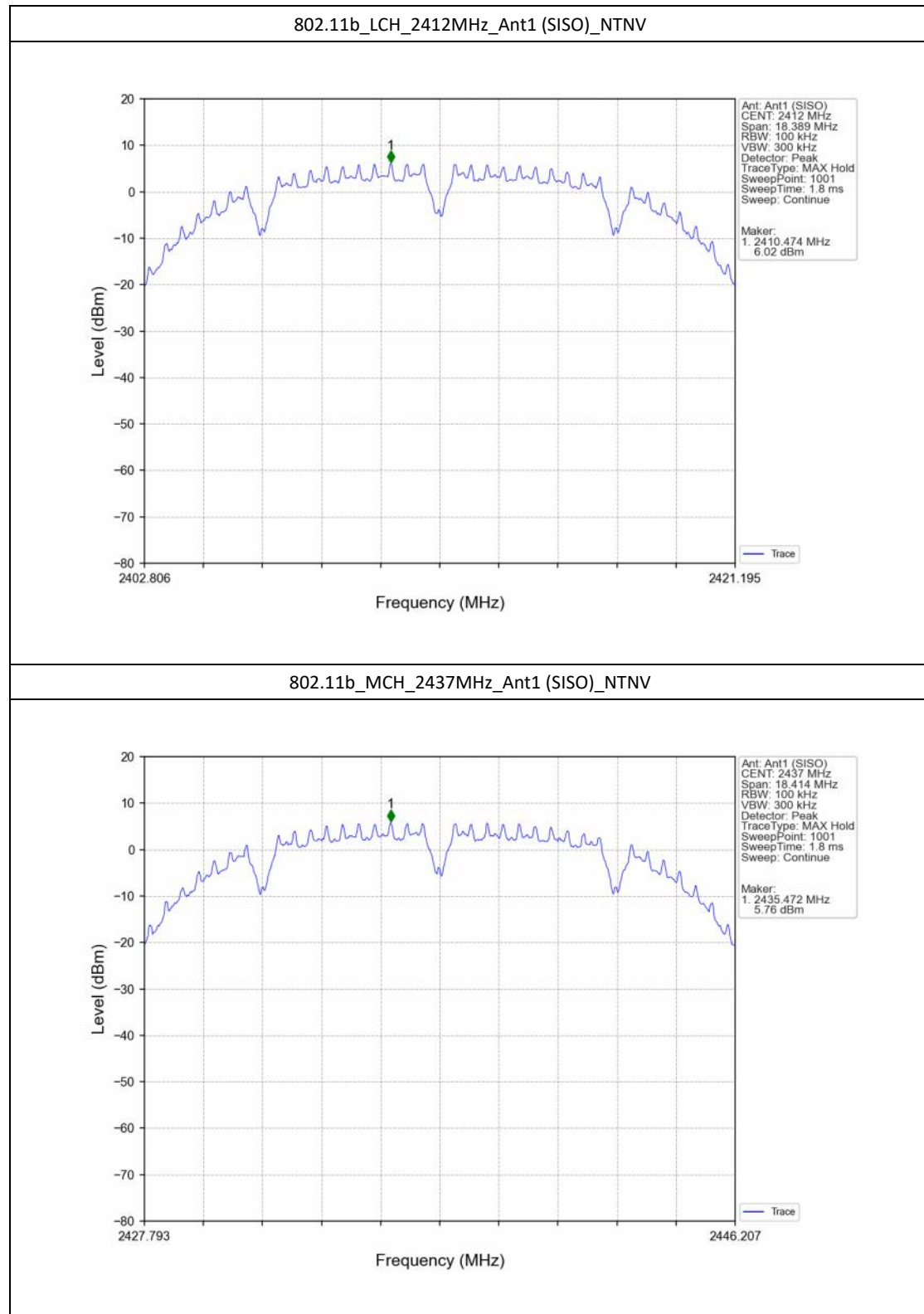
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	6.02
		2437	1	5.76
		2462	1	6.48
802.11g	SISO	2412	1	3.62
		2437	1	3.05
		2462	1	3.69
802.11n (HT20)	SISO	2412	1	6.51
		2437	1	5.92
		2462	1	6.53
802.11n (HT40)	SISO	2422	1	-1.07
		2437	1	-1.69
		2452	1	-1.71
Note1: Refer to 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

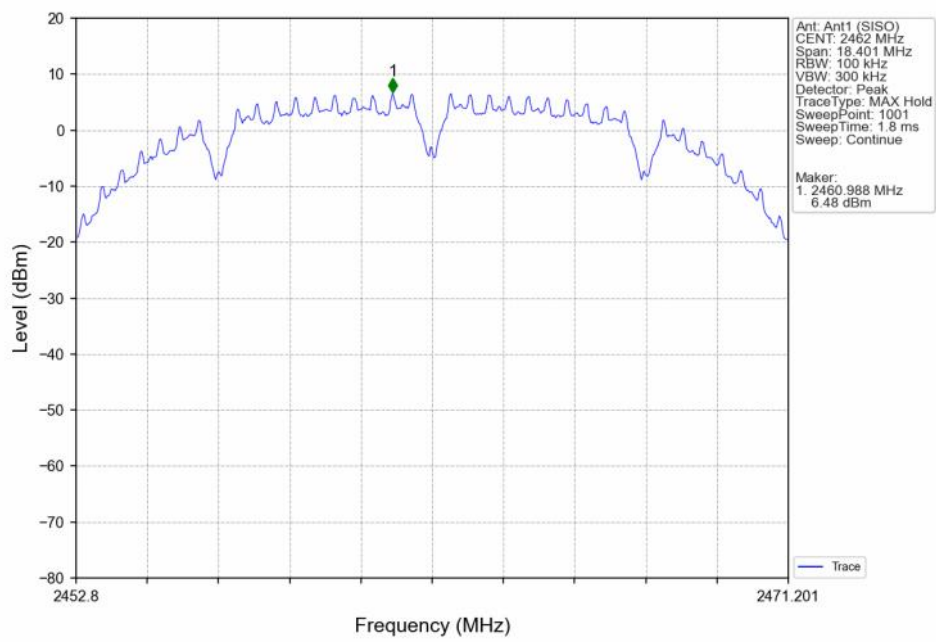
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	6.48	-23.52	Pass
		2437	1	6.48	-23.52	Pass
		2462	1	6.48	-23.52	Pass
802.11g	SISO	2412	1	3.69	-26.31	Pass
		2437	1	3.69	-26.31	Pass
		2462	1	3.69	-26.31	Pass
802.11n (HT20)	SISO	2412	1	6.53	-23.47	Pass
		2437	1	6.53	-23.47	Pass
		2462	1	6.53	-23.47	Pass
802.11n (HT40)	SISO	2422	1	-1.07	-31.07	Pass
		2437	1	-1.07	-31.07	Pass
		2452	1	-1.07	-31.07	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

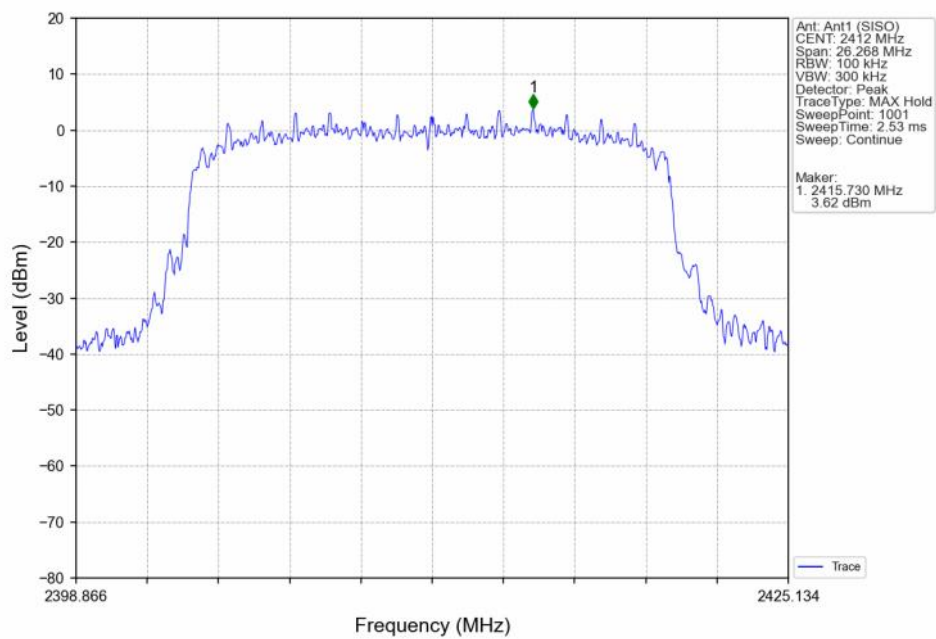
5.2.1 Ref



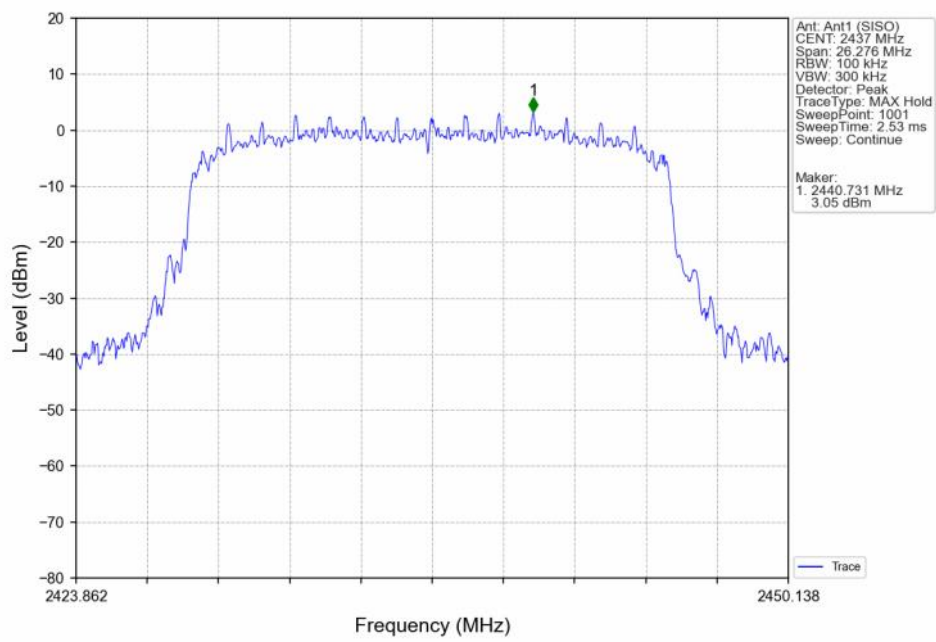
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



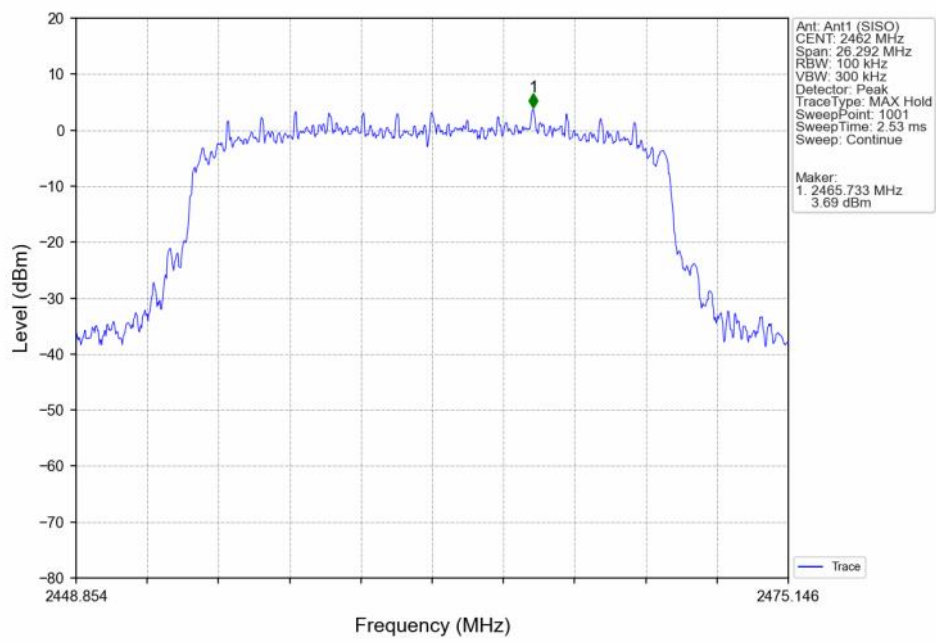
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



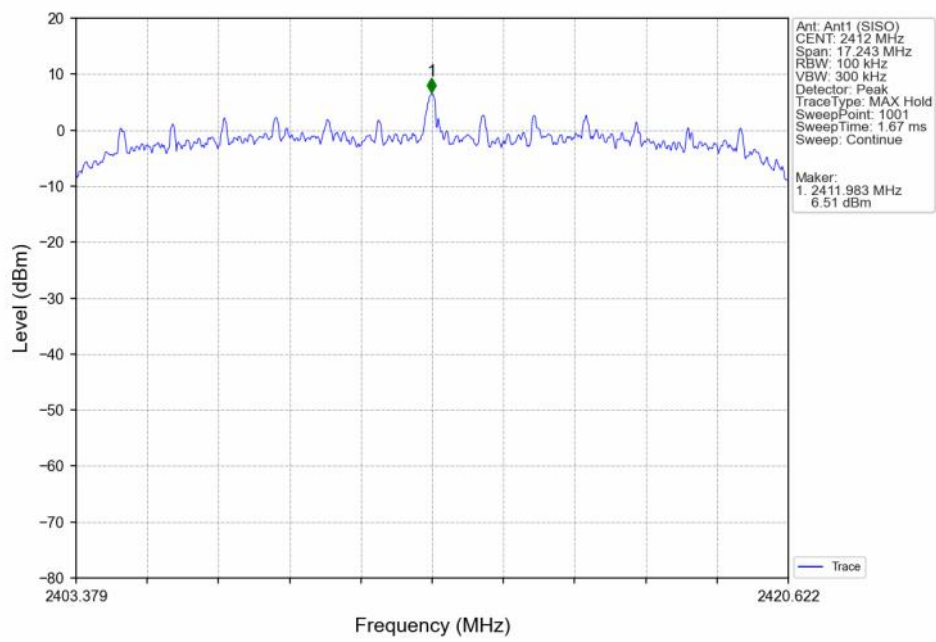
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



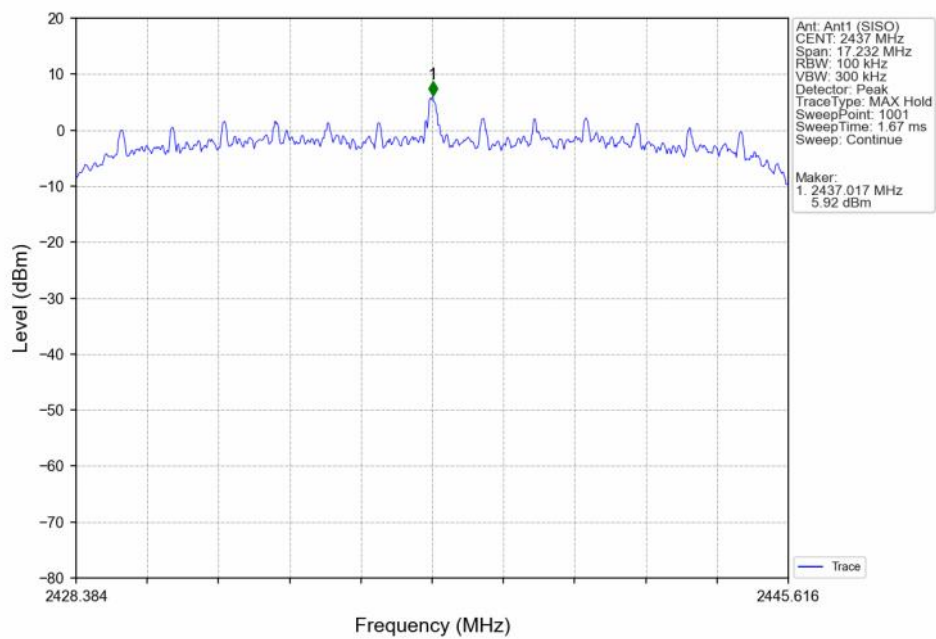
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



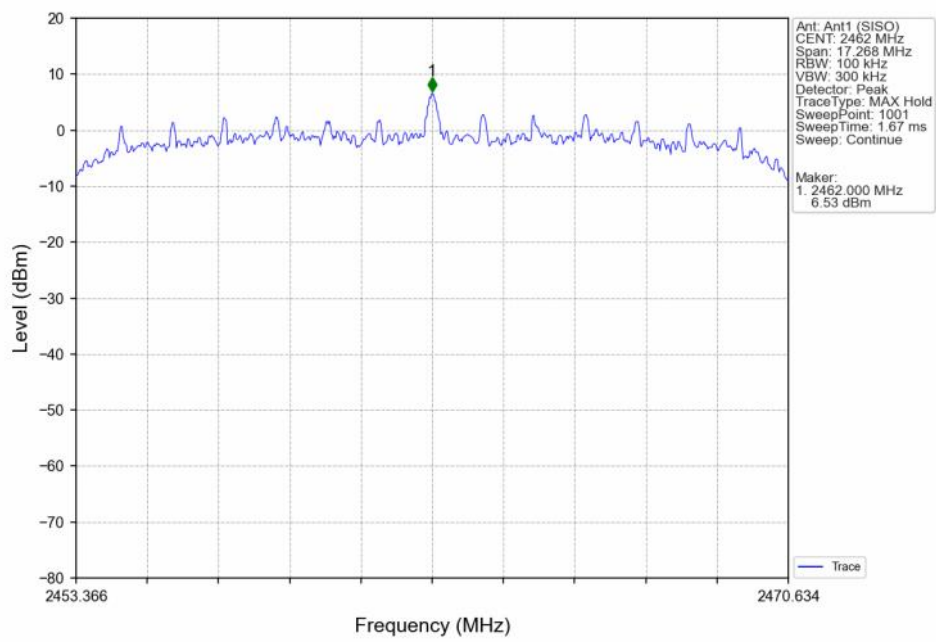
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



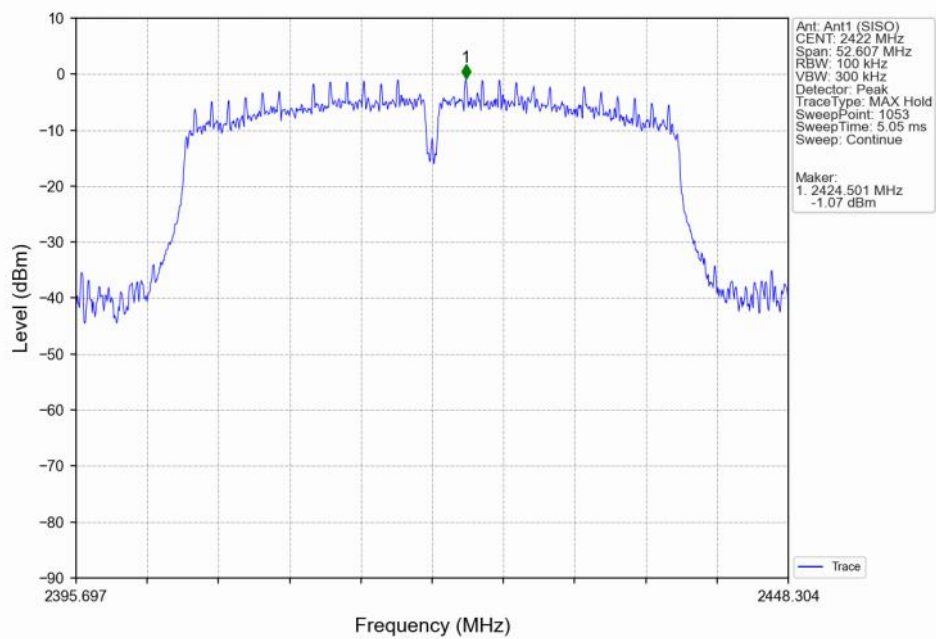
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



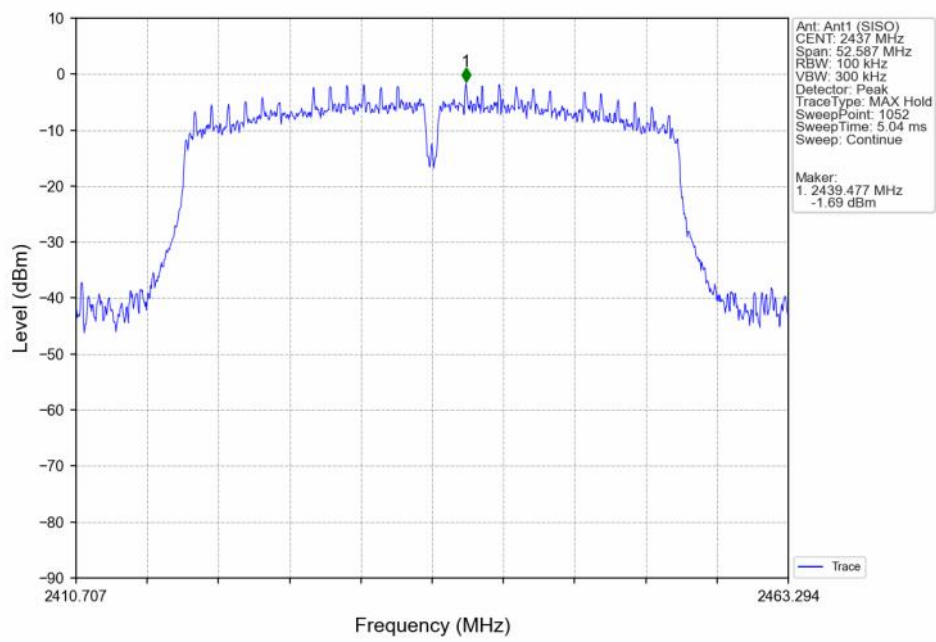
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



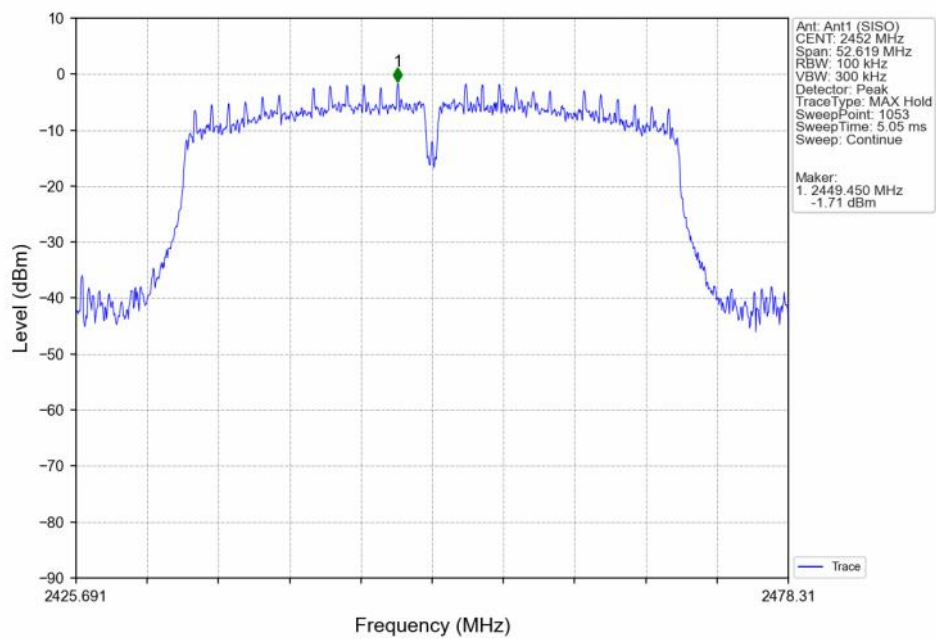
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



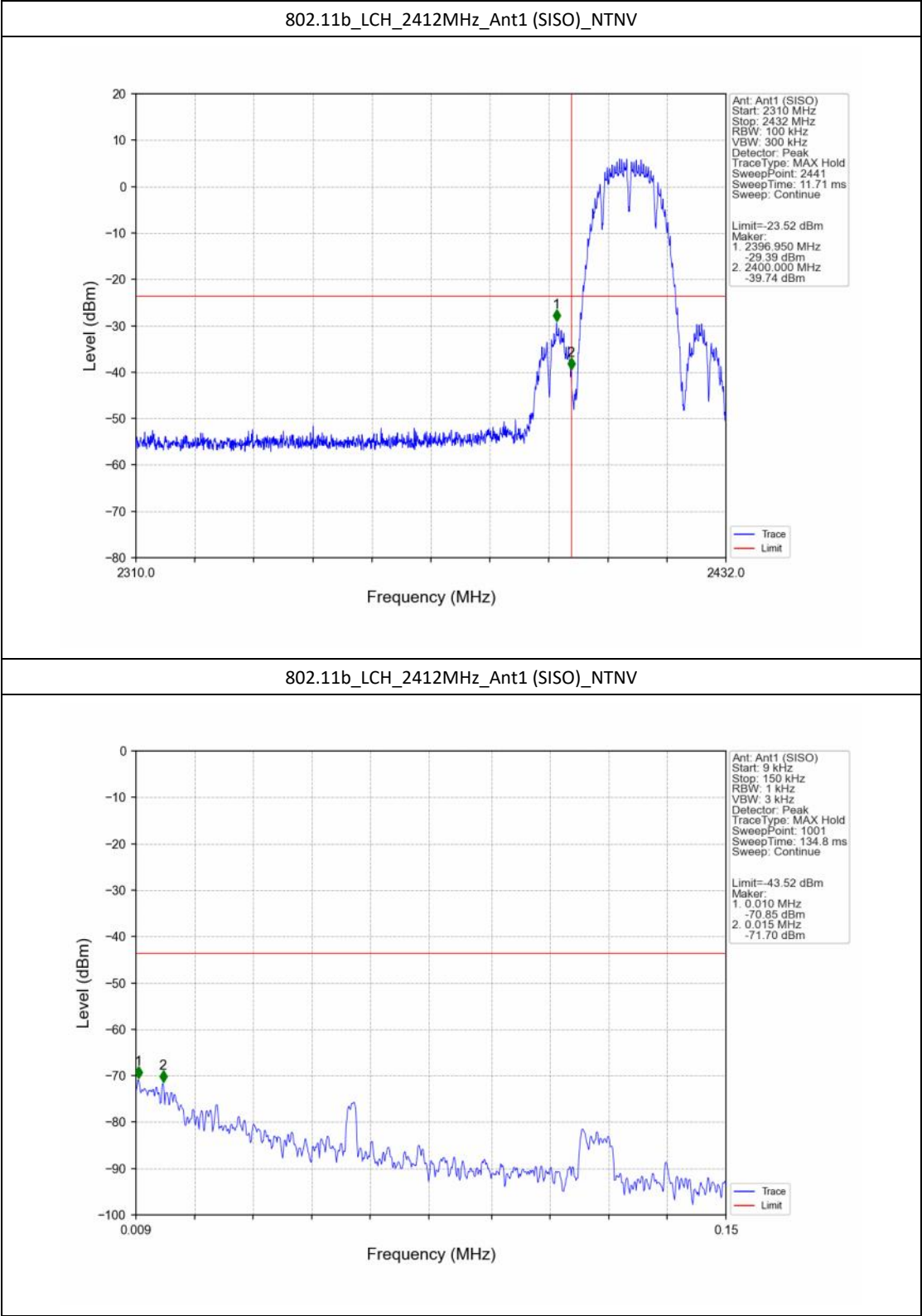
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



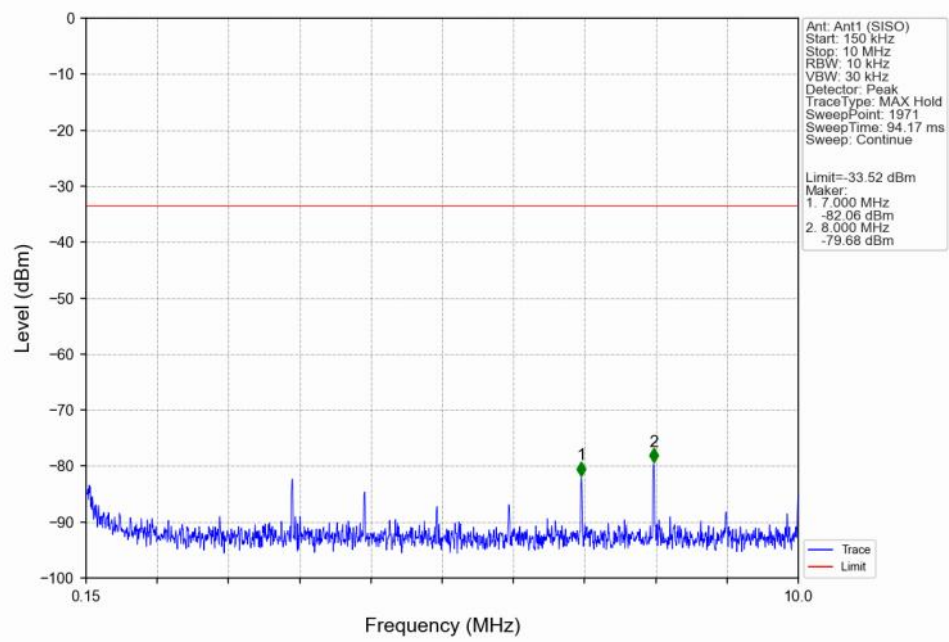
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



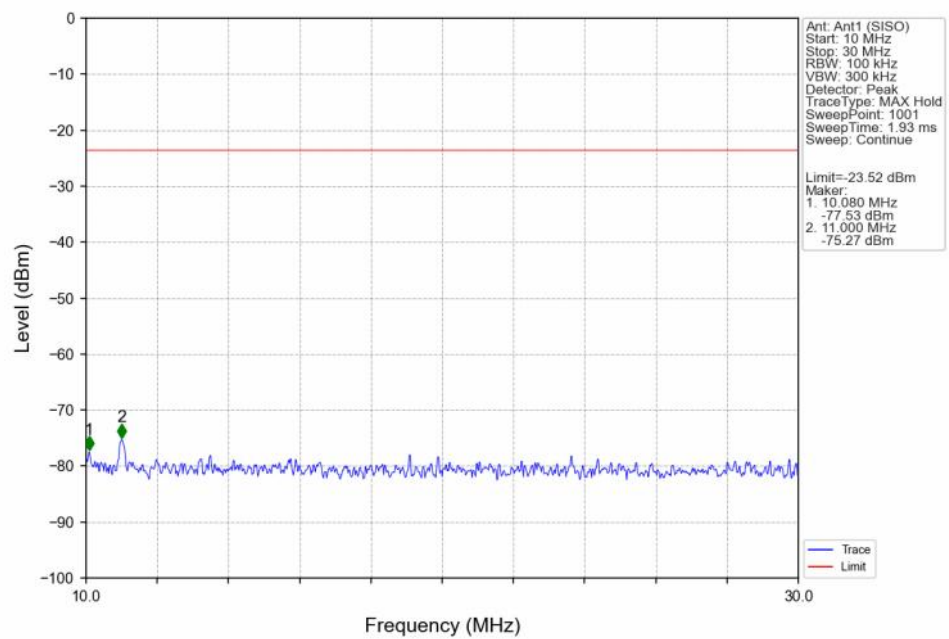
5.2.2 CSE



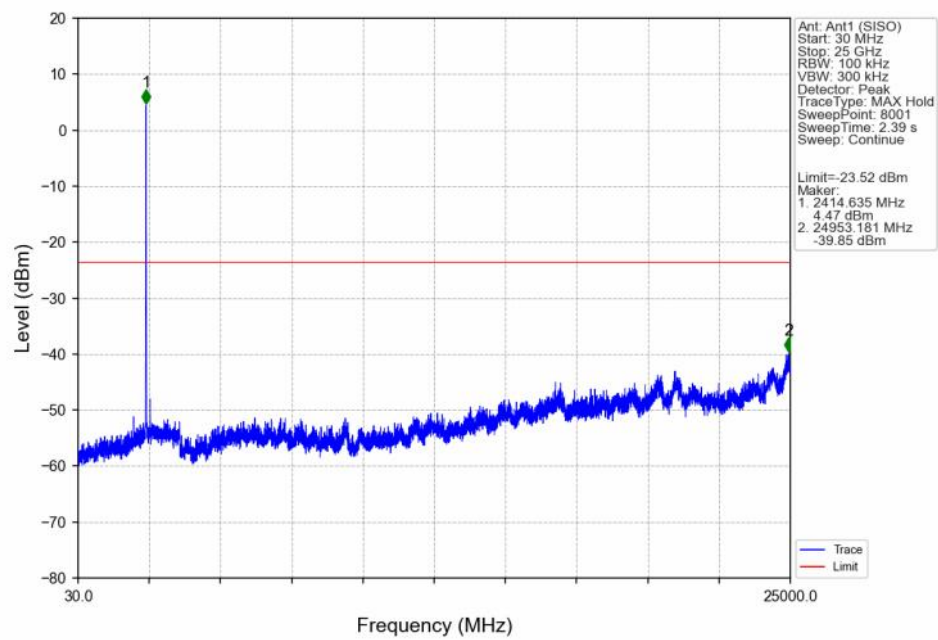
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



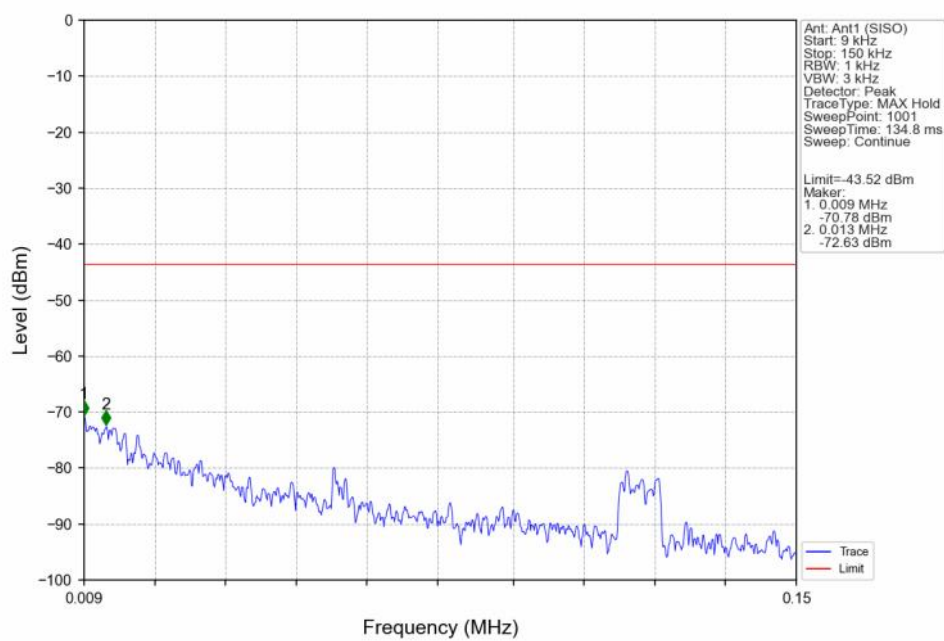
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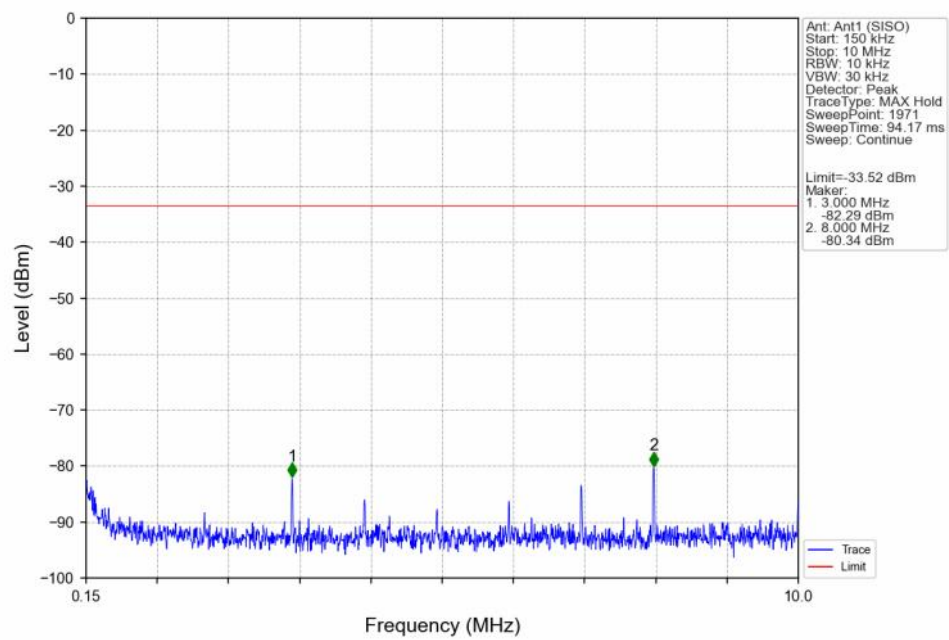
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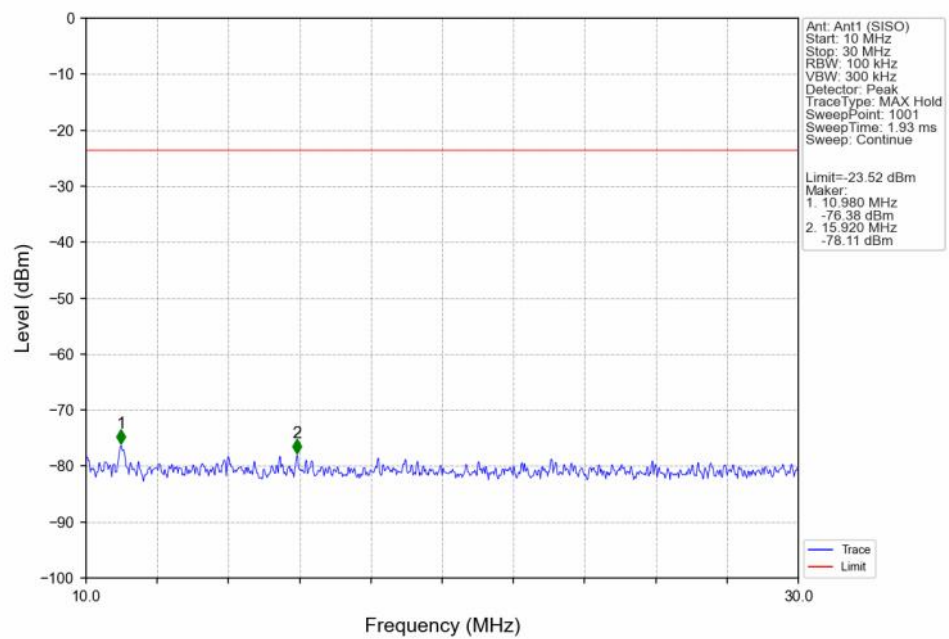
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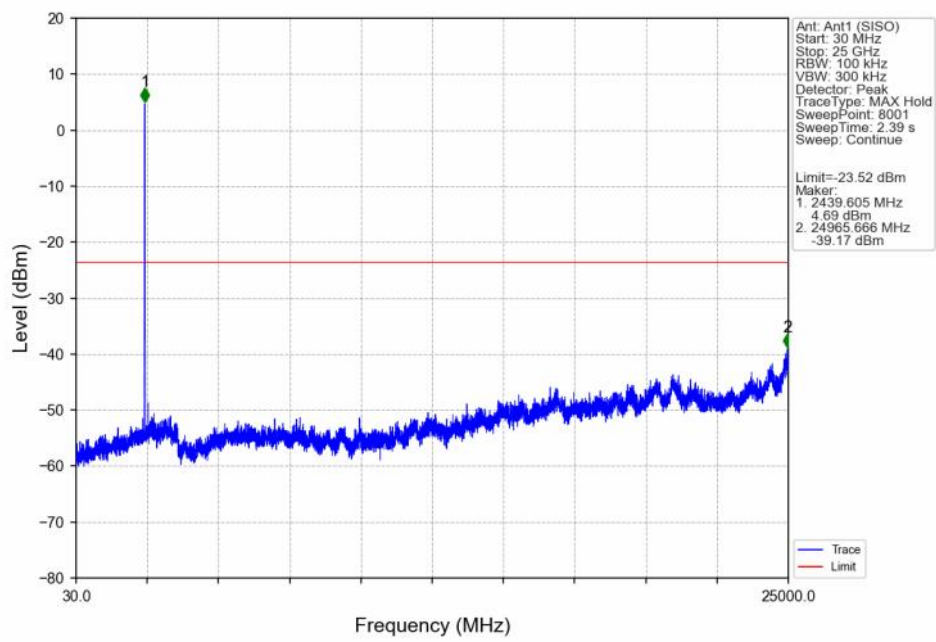
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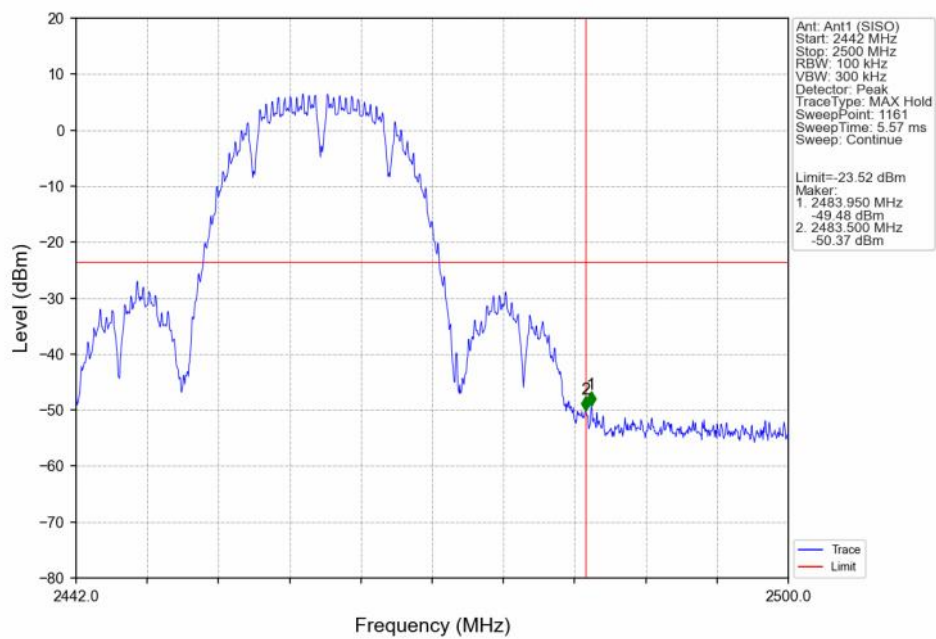
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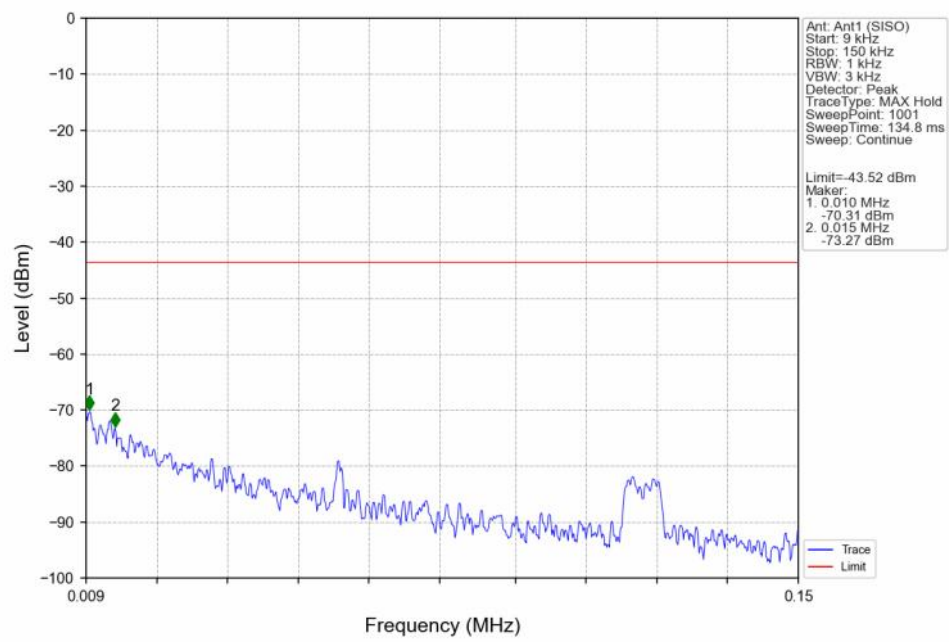
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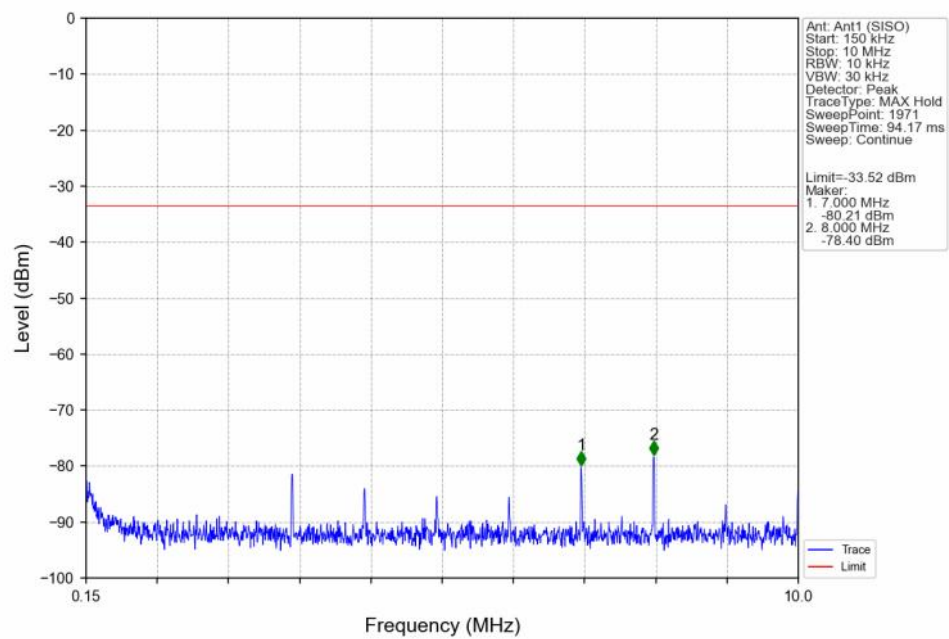
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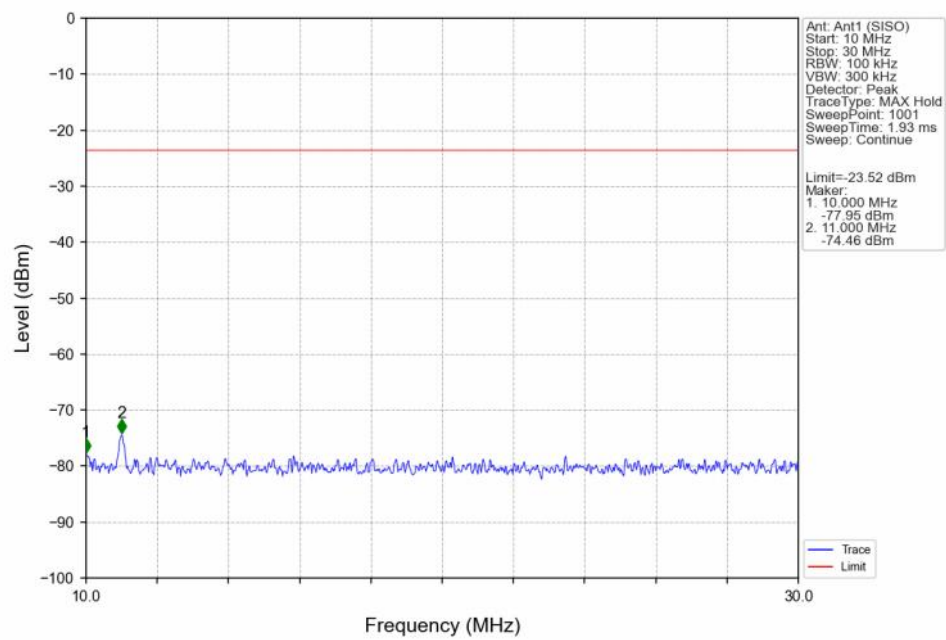
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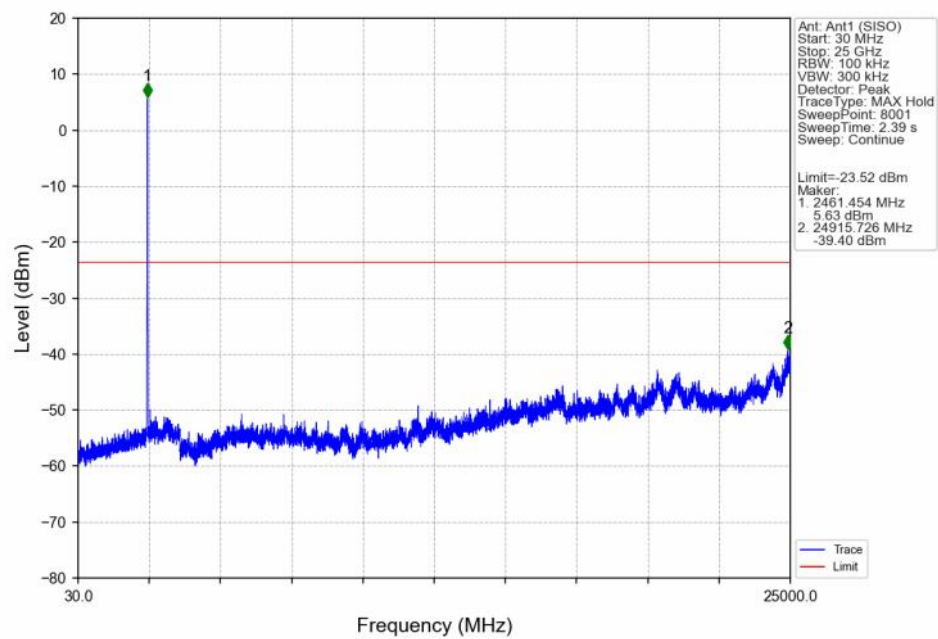
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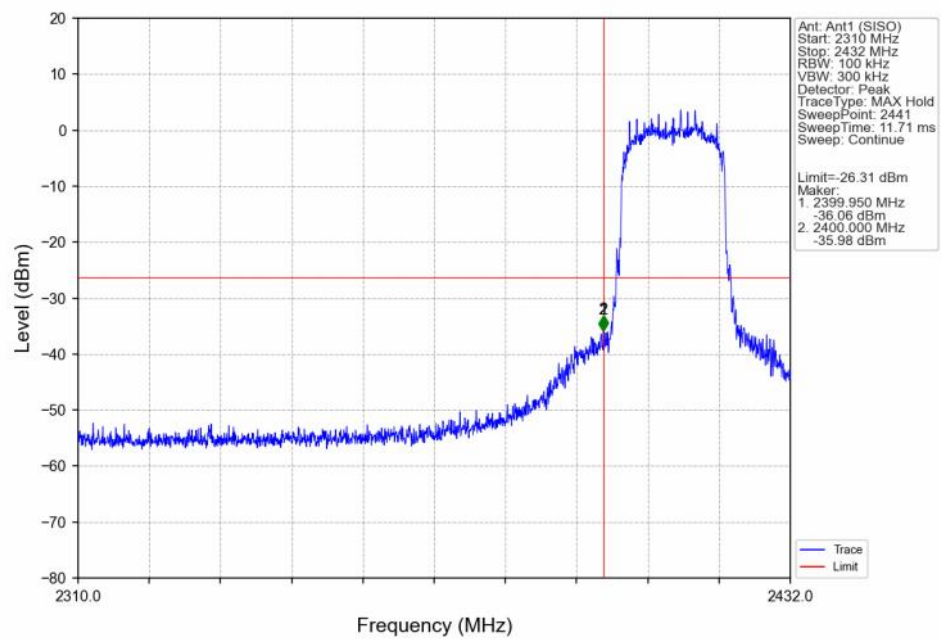
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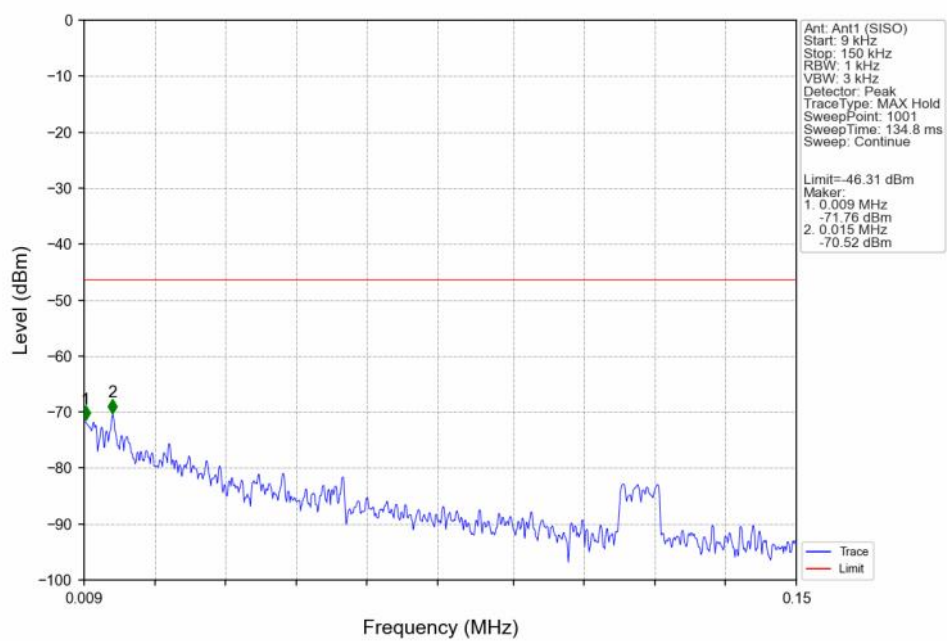
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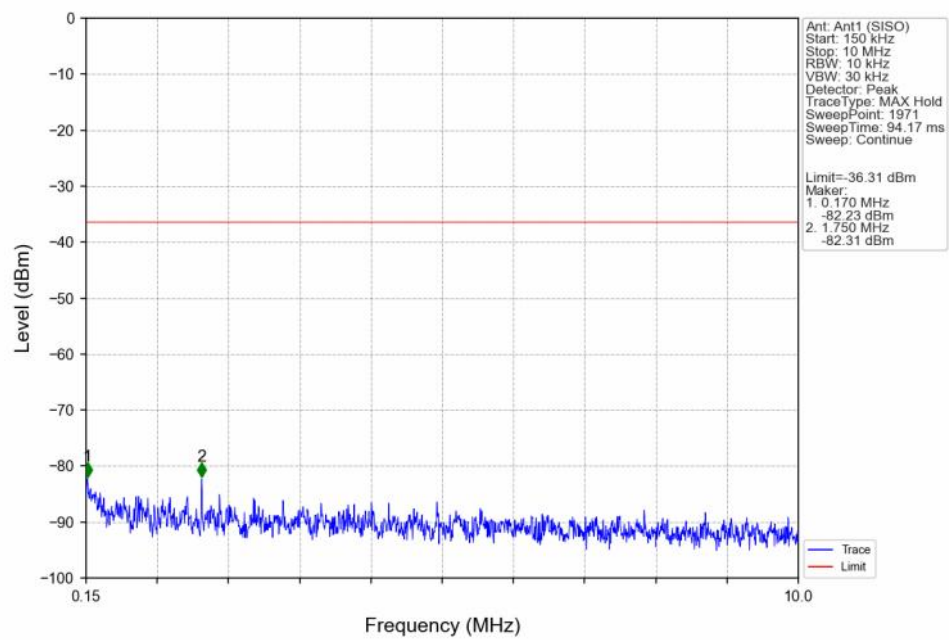
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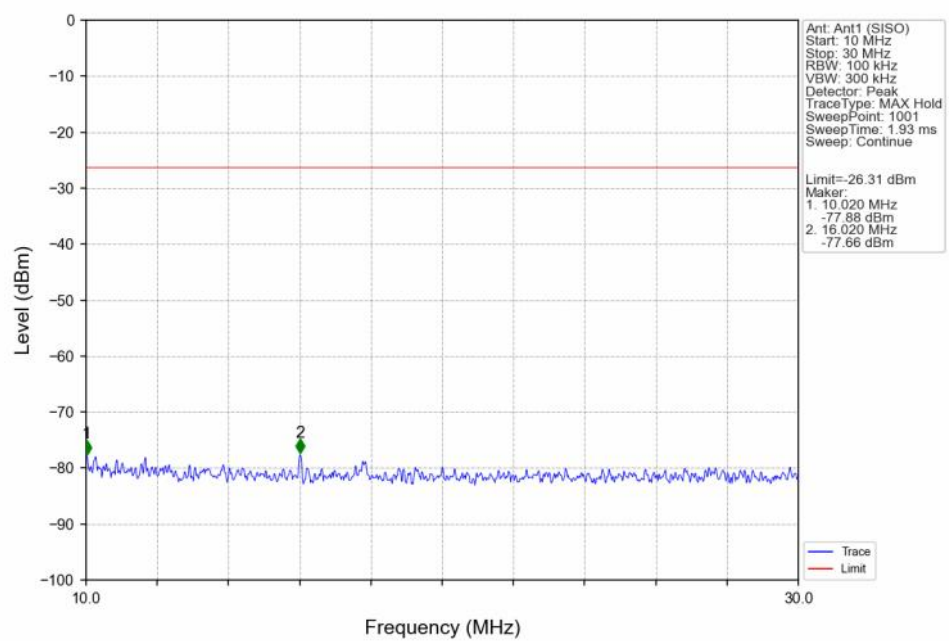
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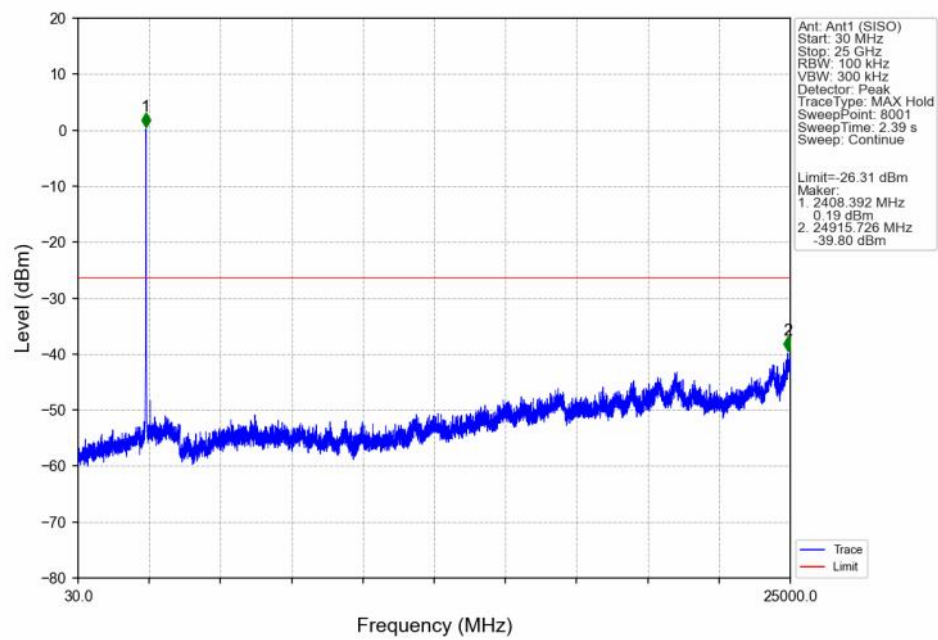
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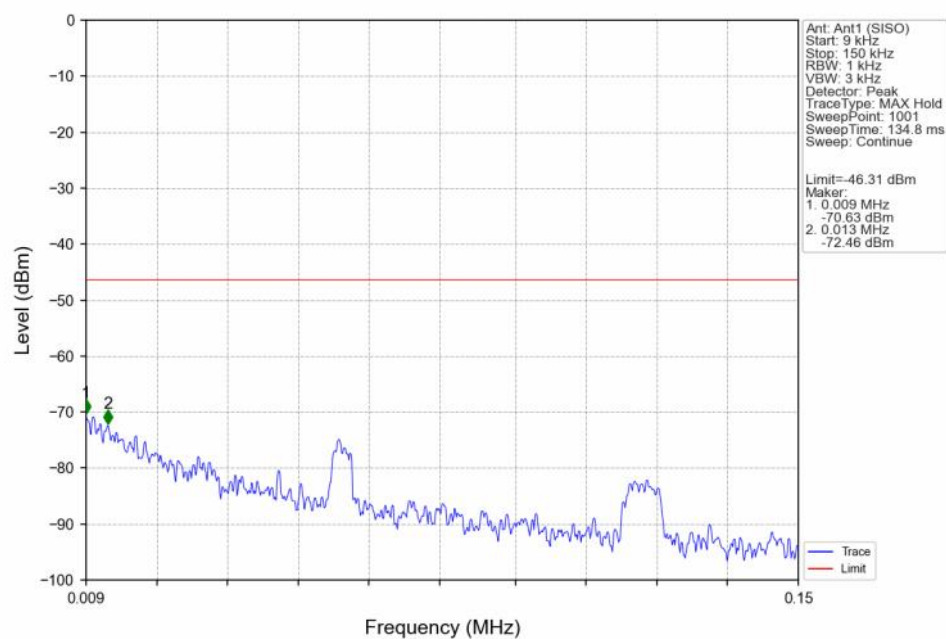
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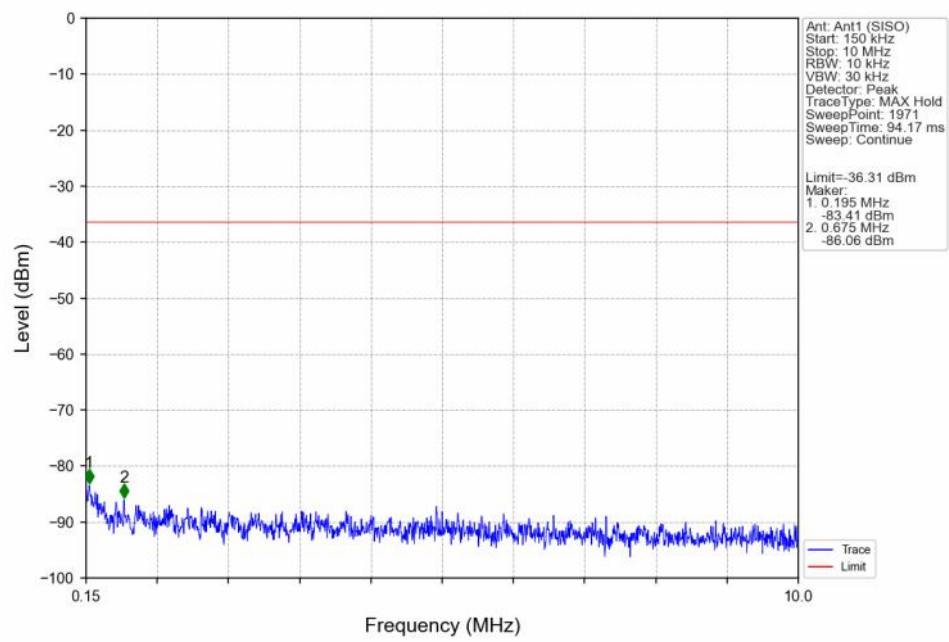
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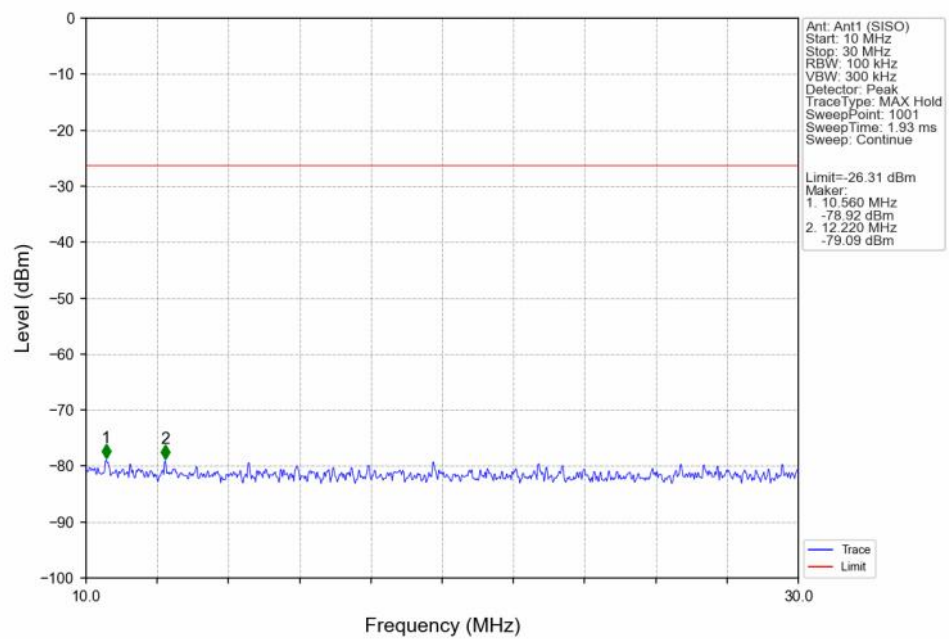
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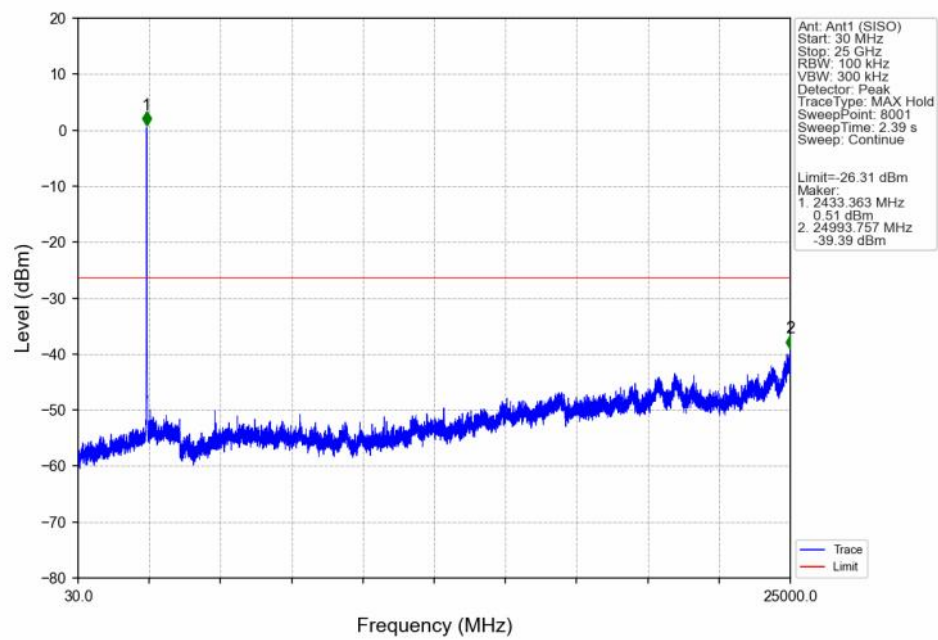
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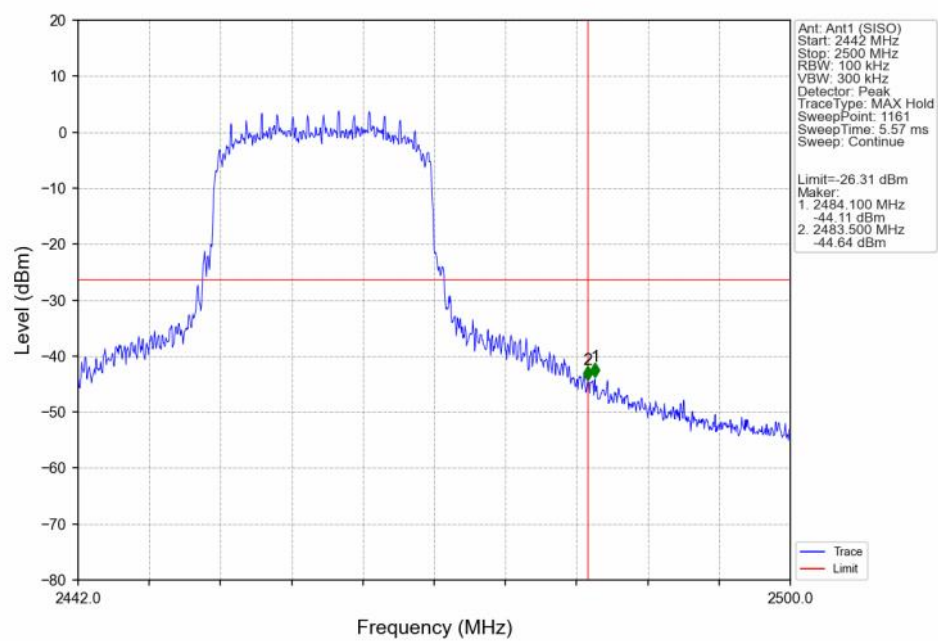
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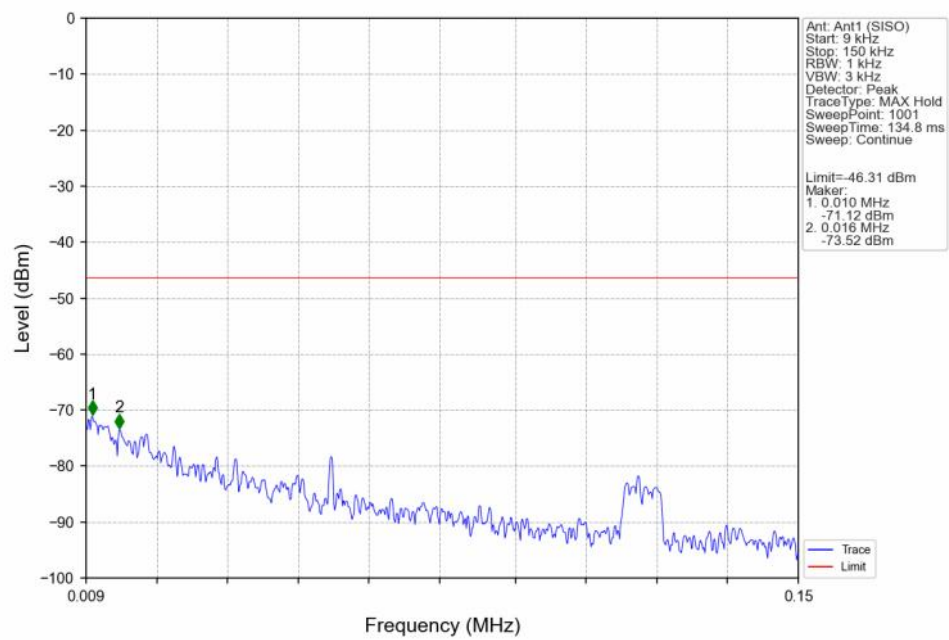
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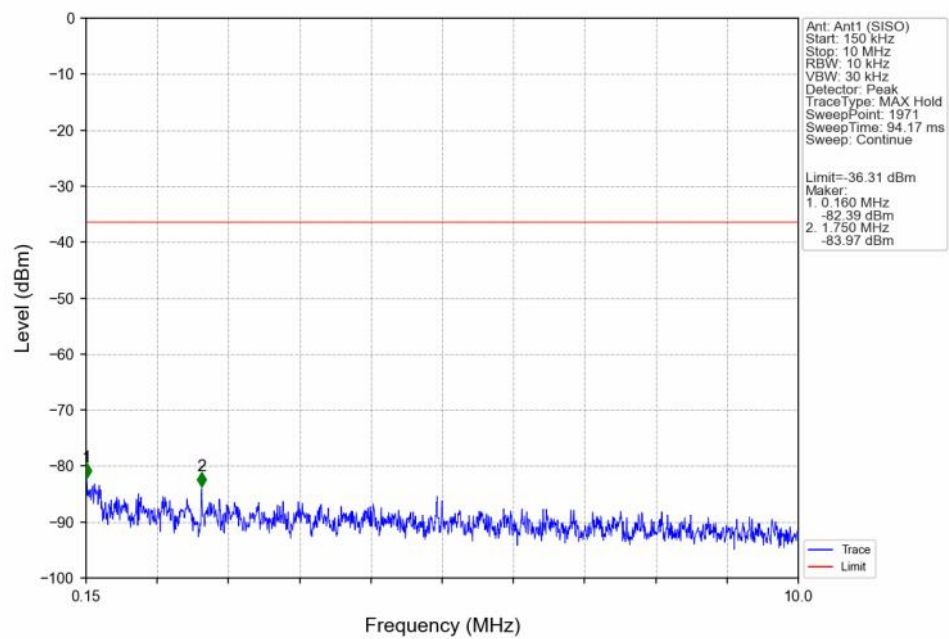
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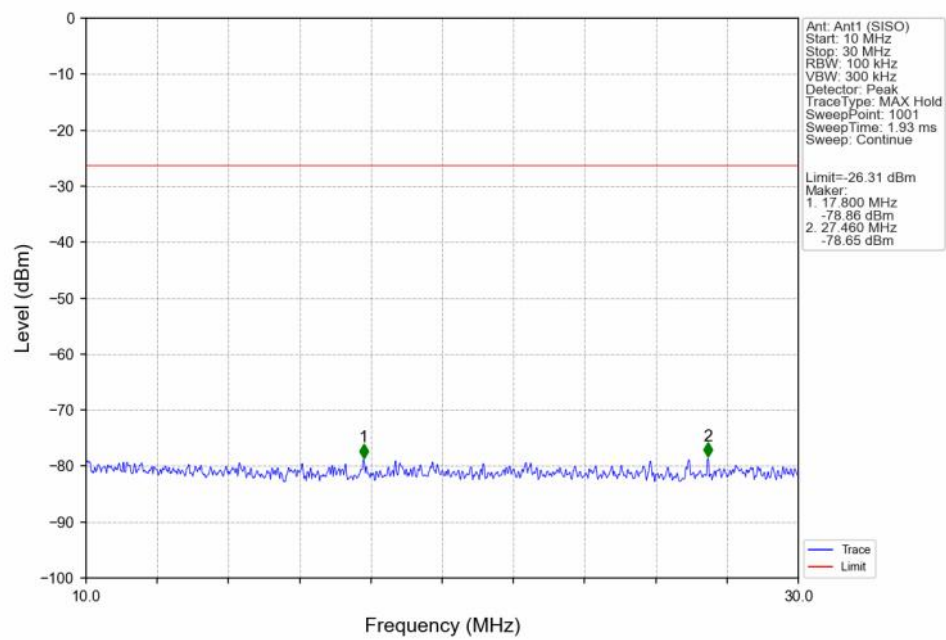
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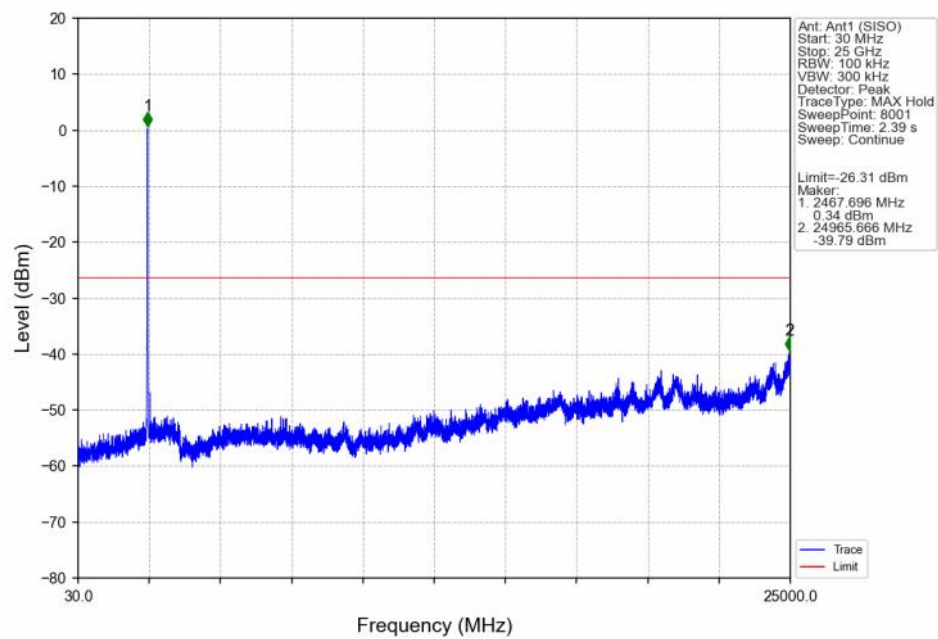
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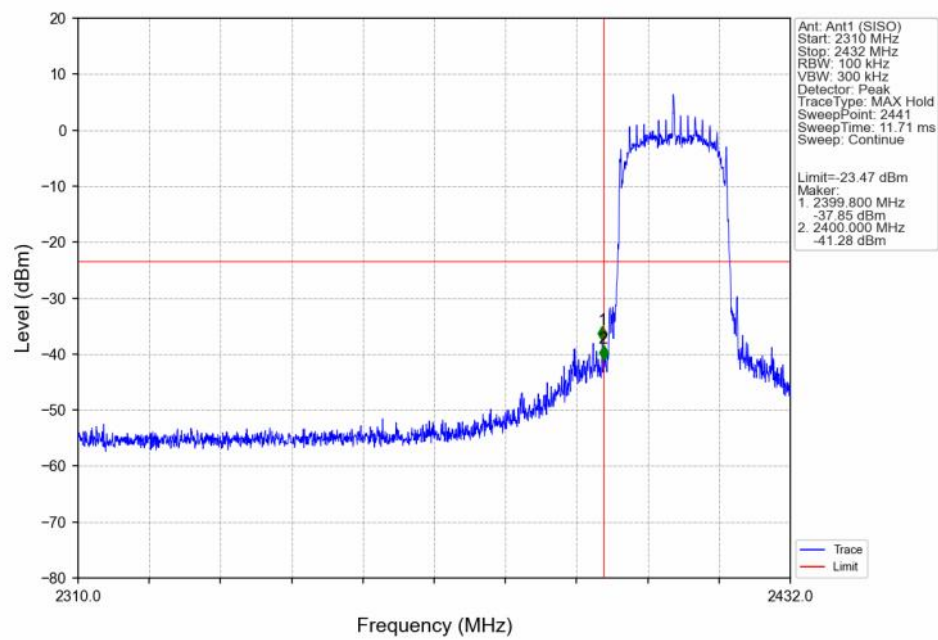
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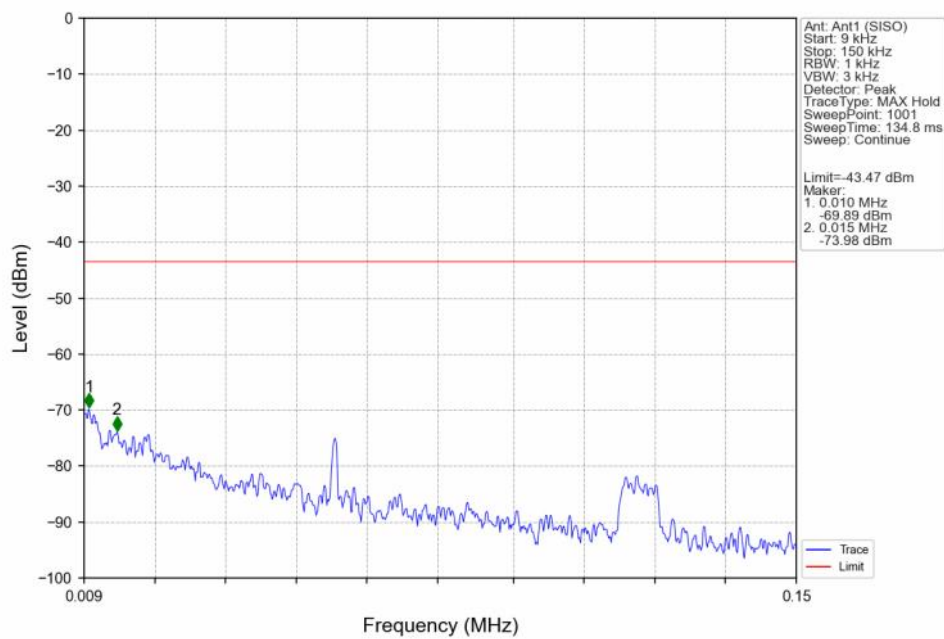
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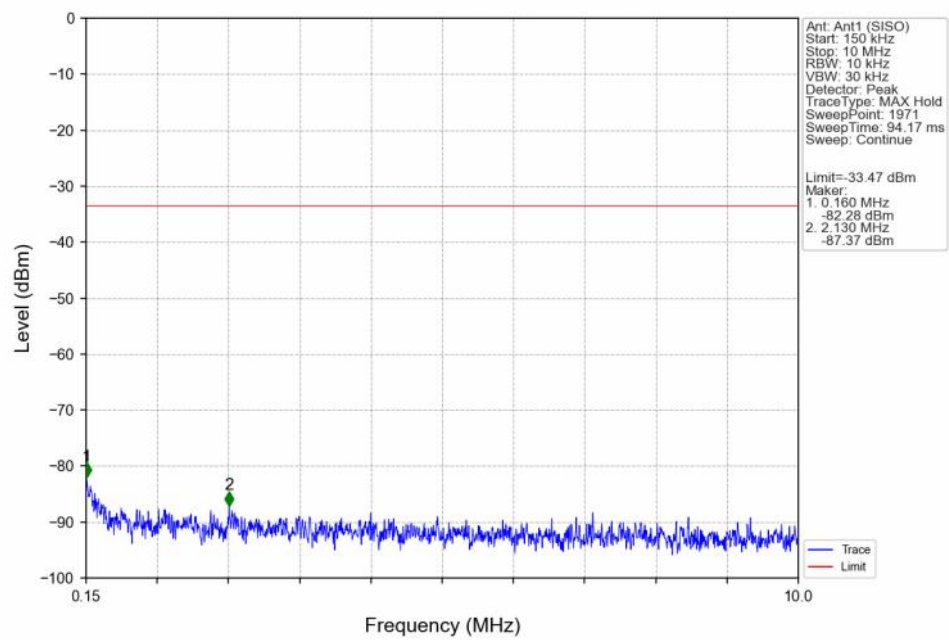
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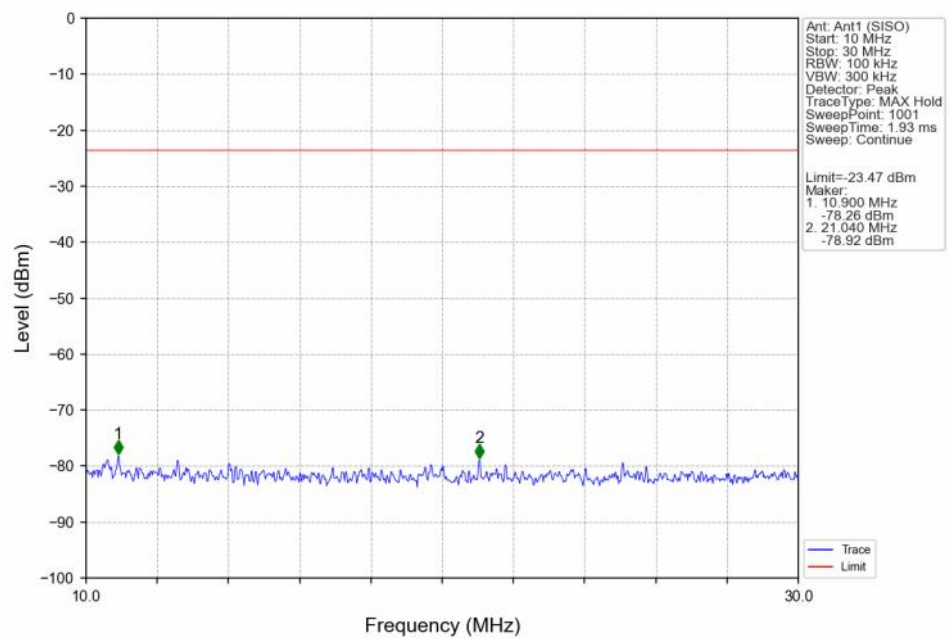
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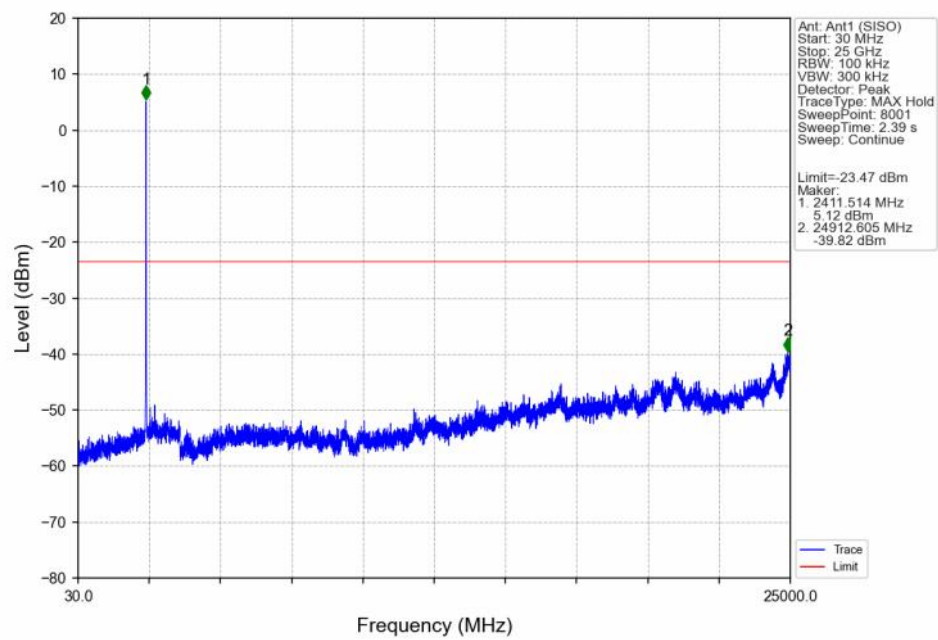
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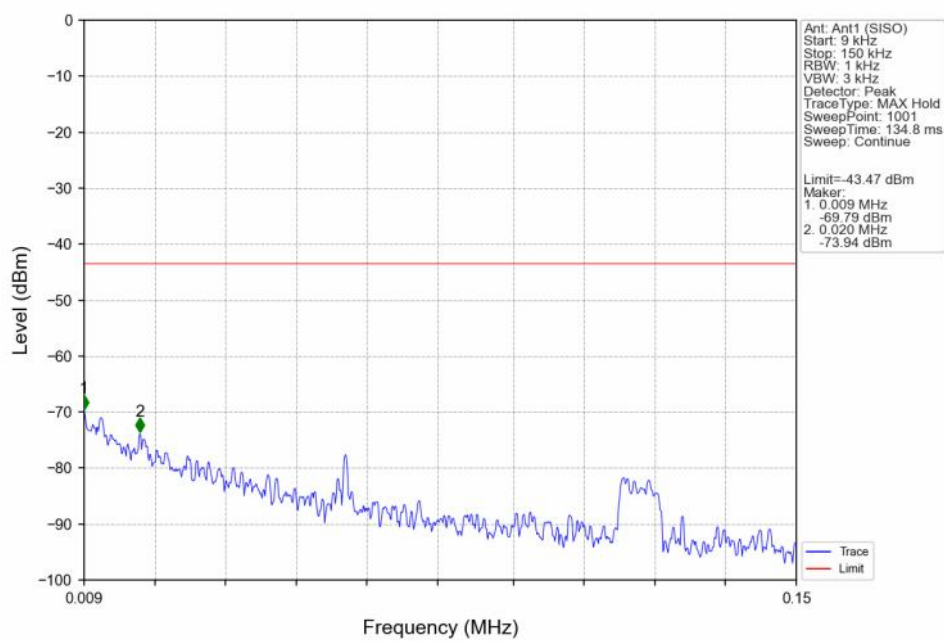
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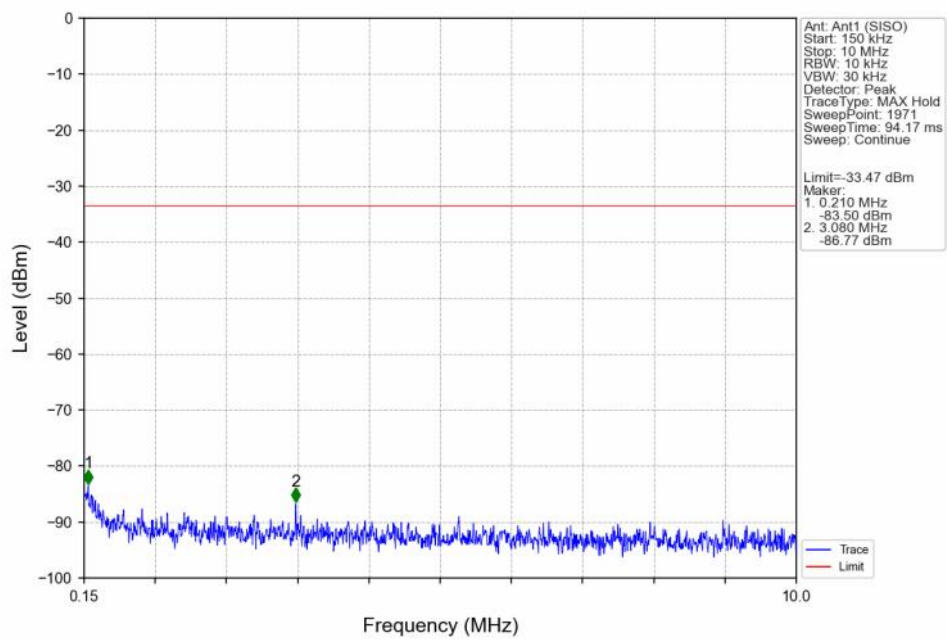
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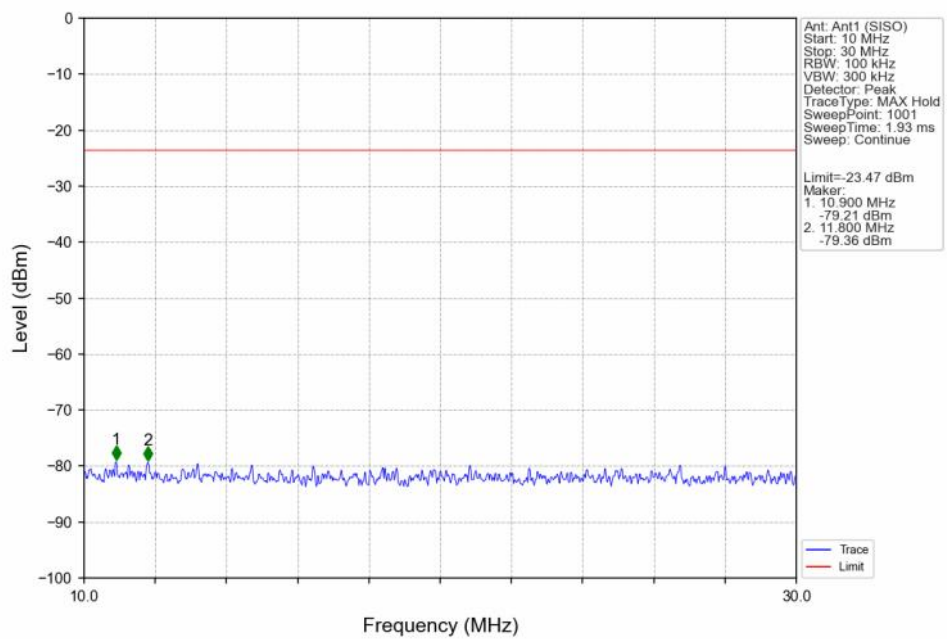
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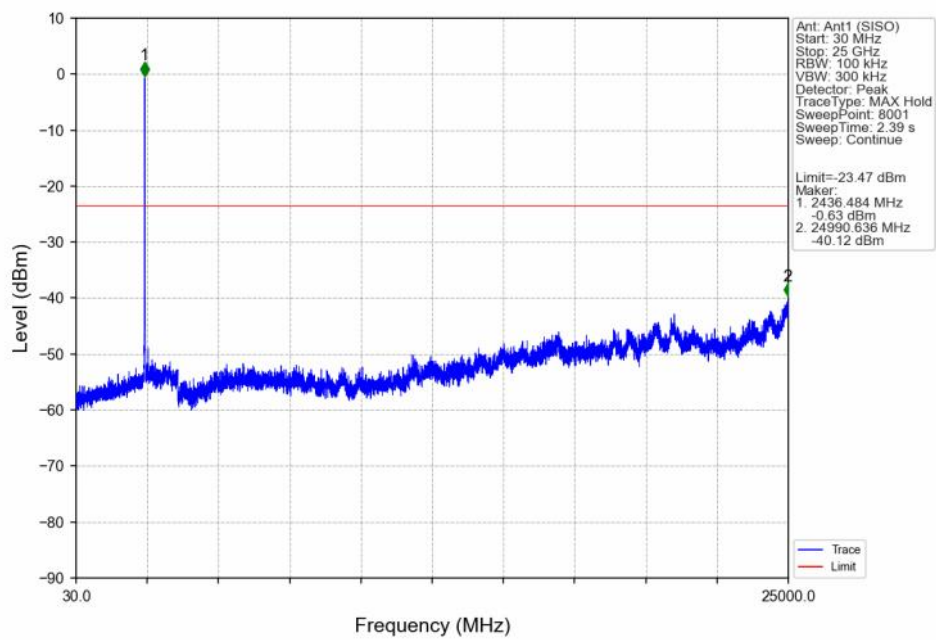
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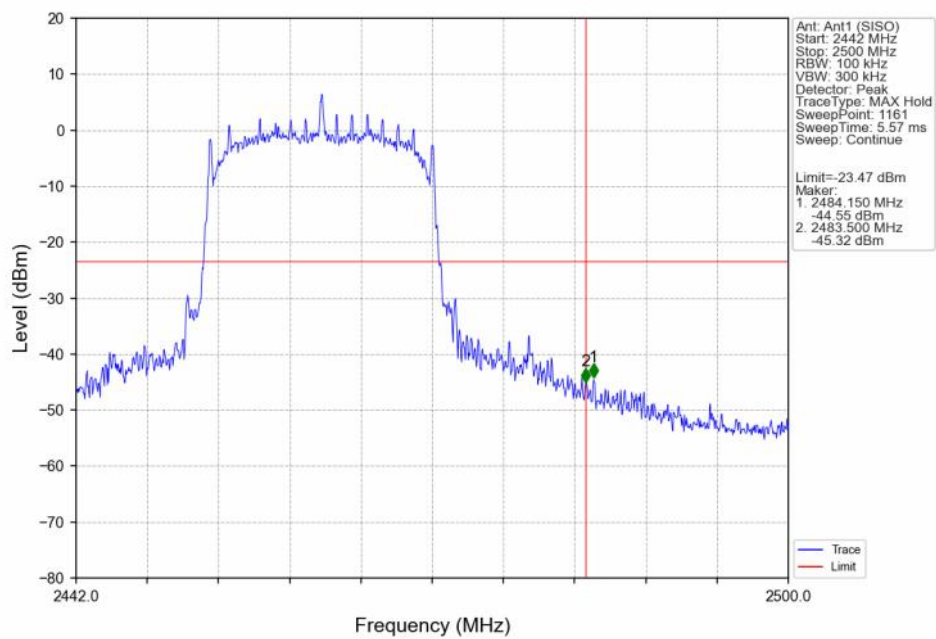
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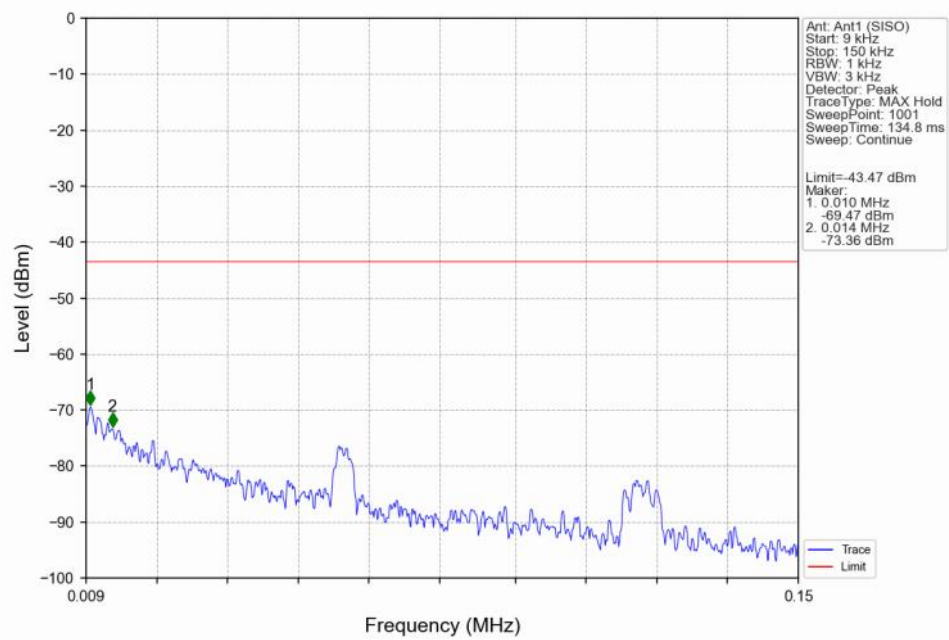
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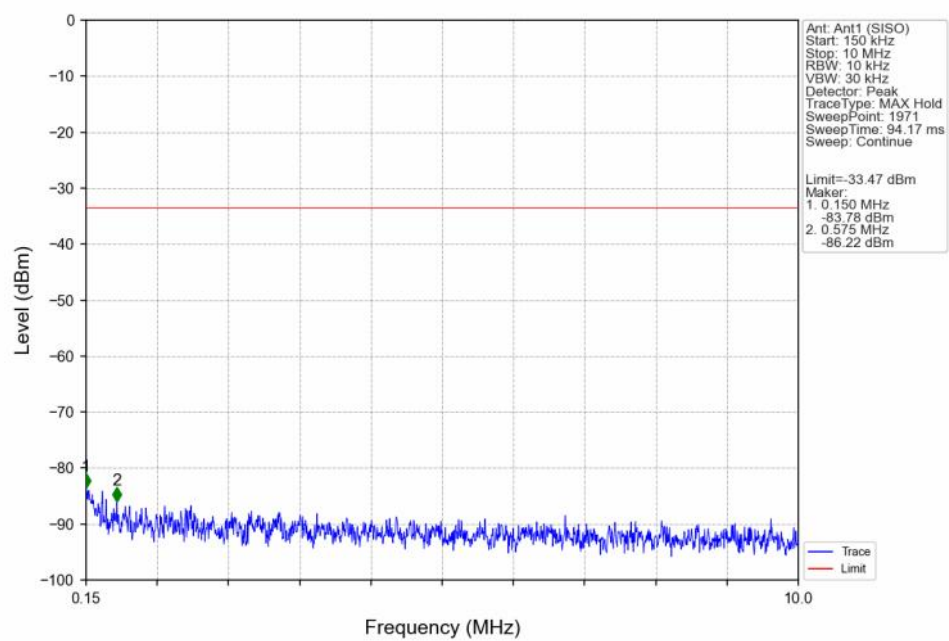
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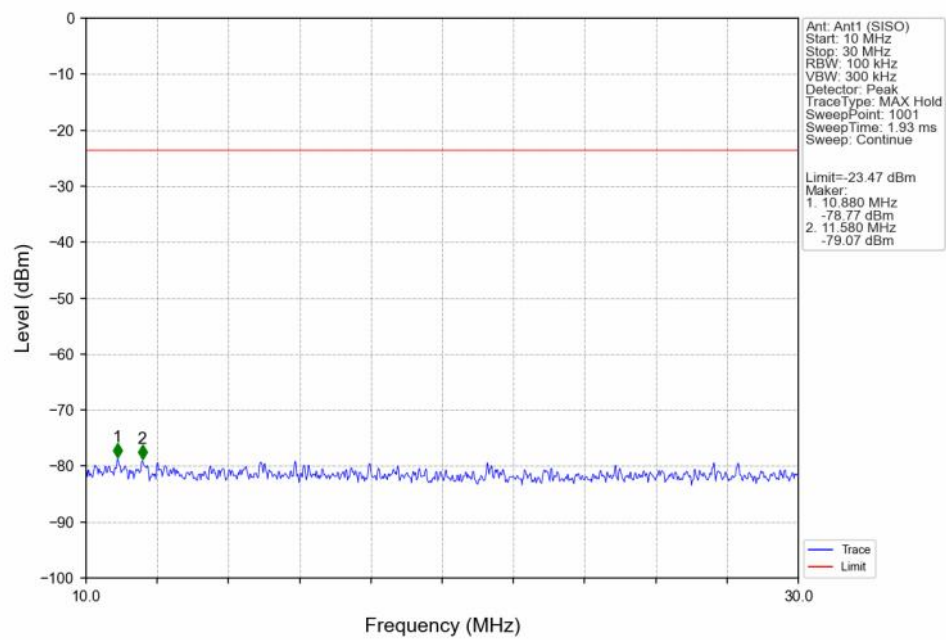
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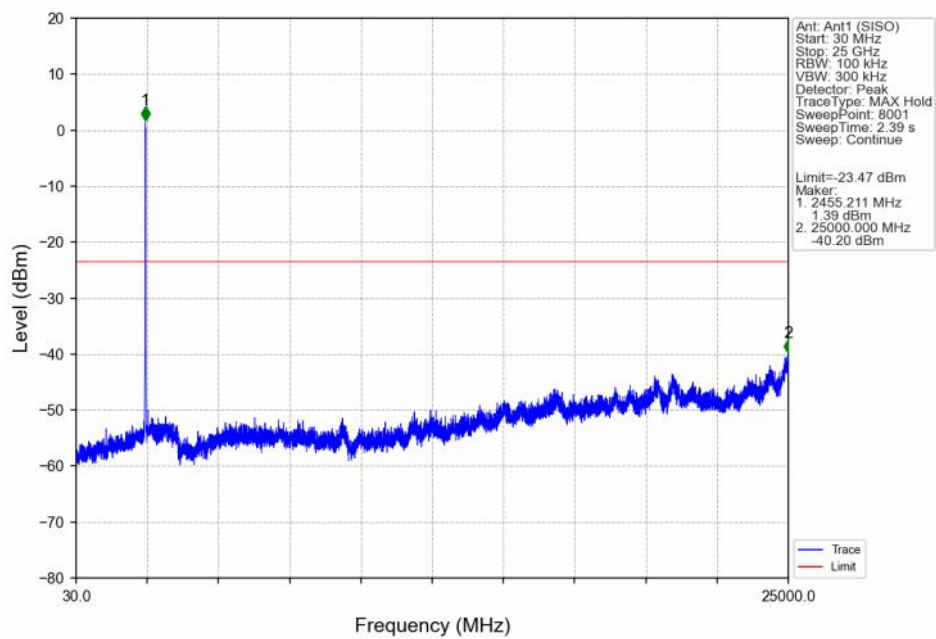
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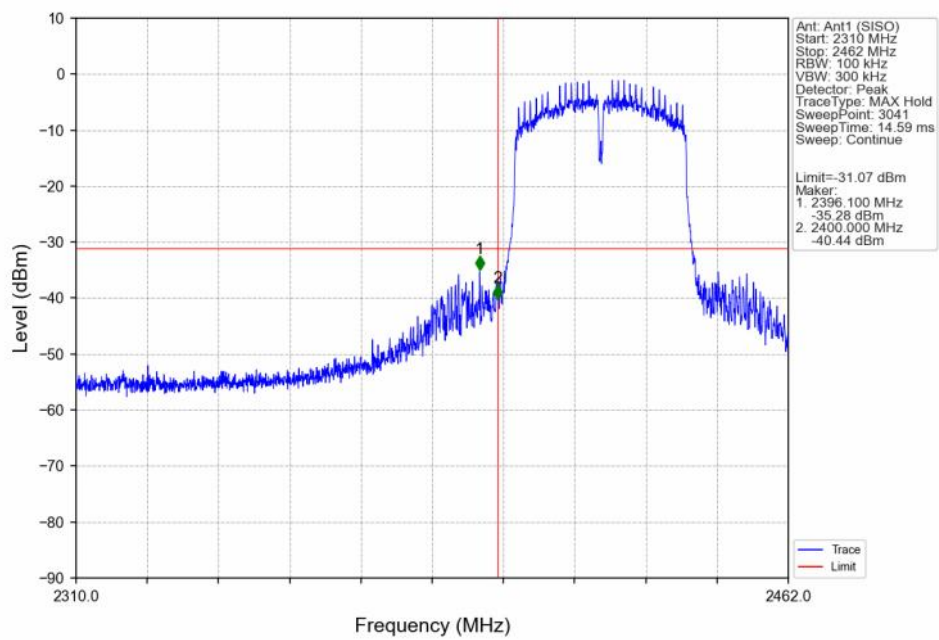
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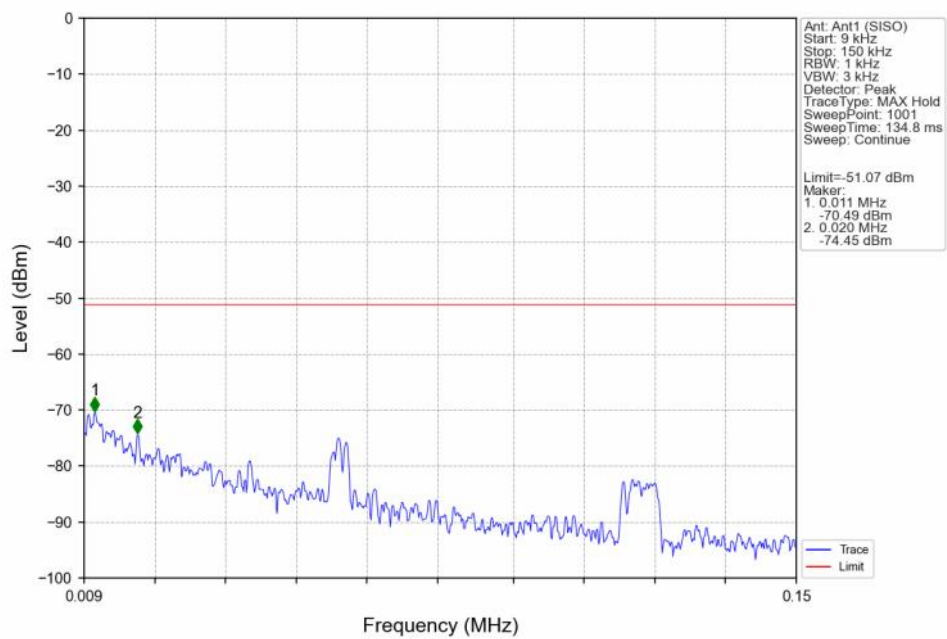
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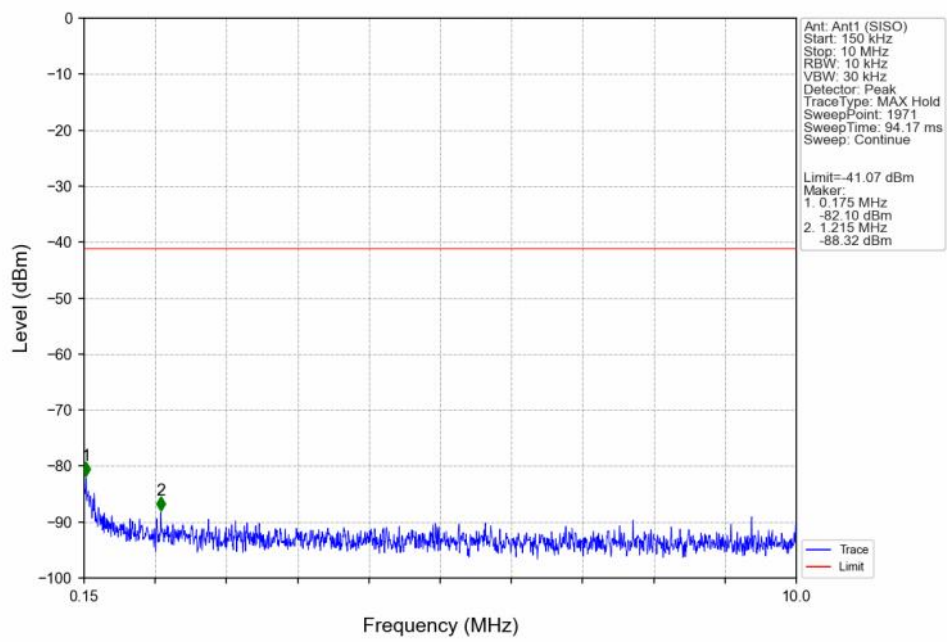
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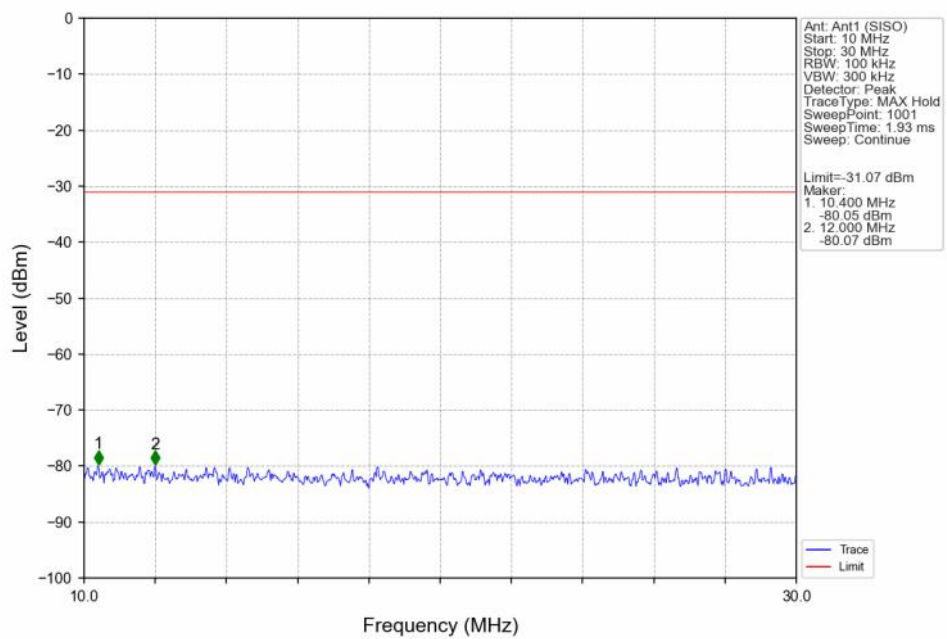
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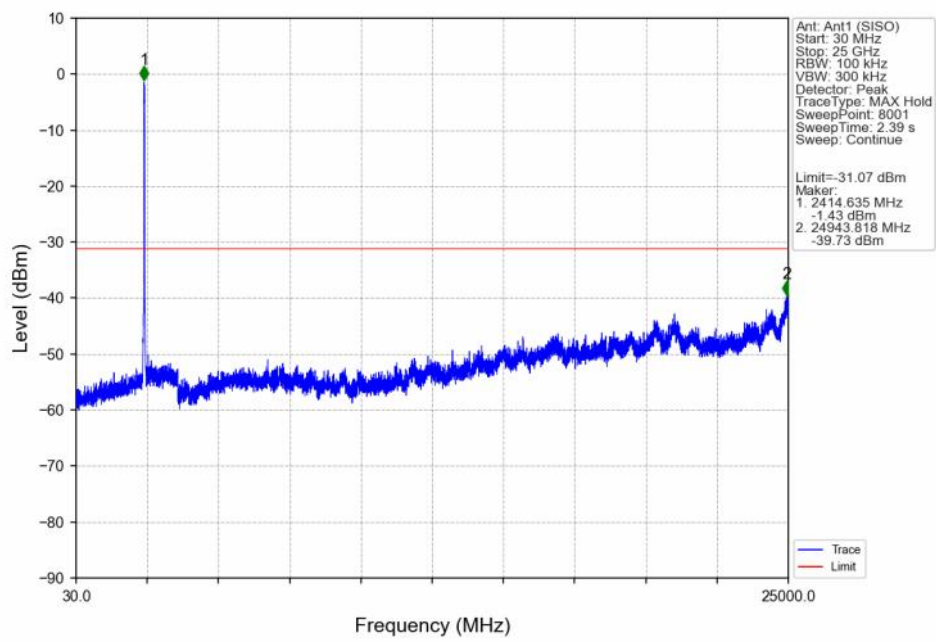
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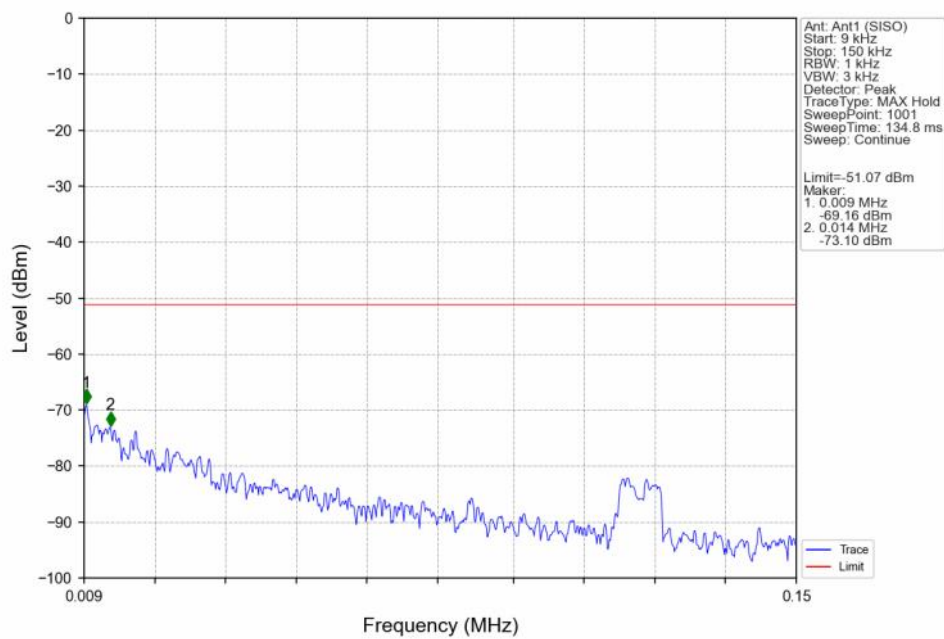
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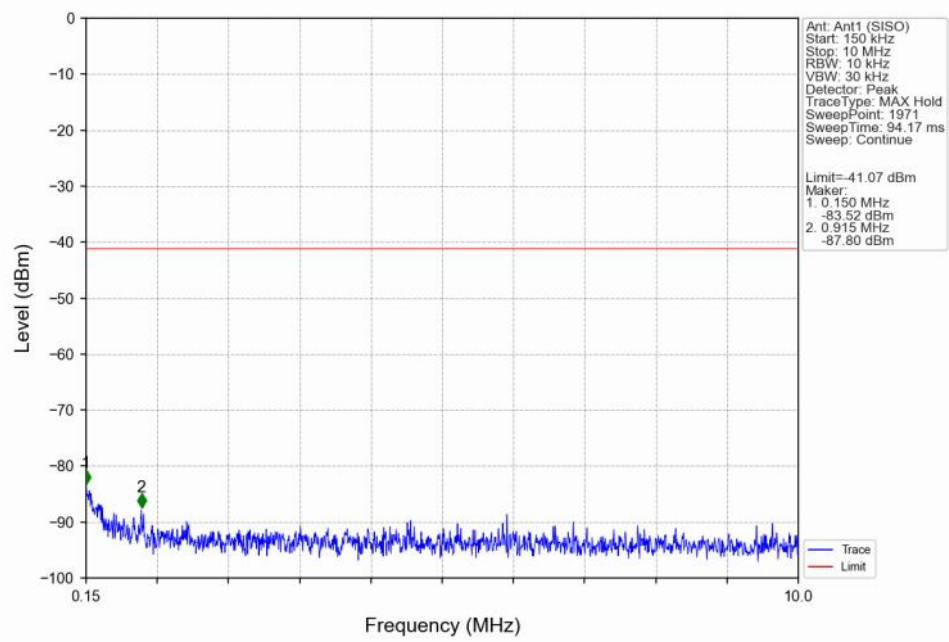
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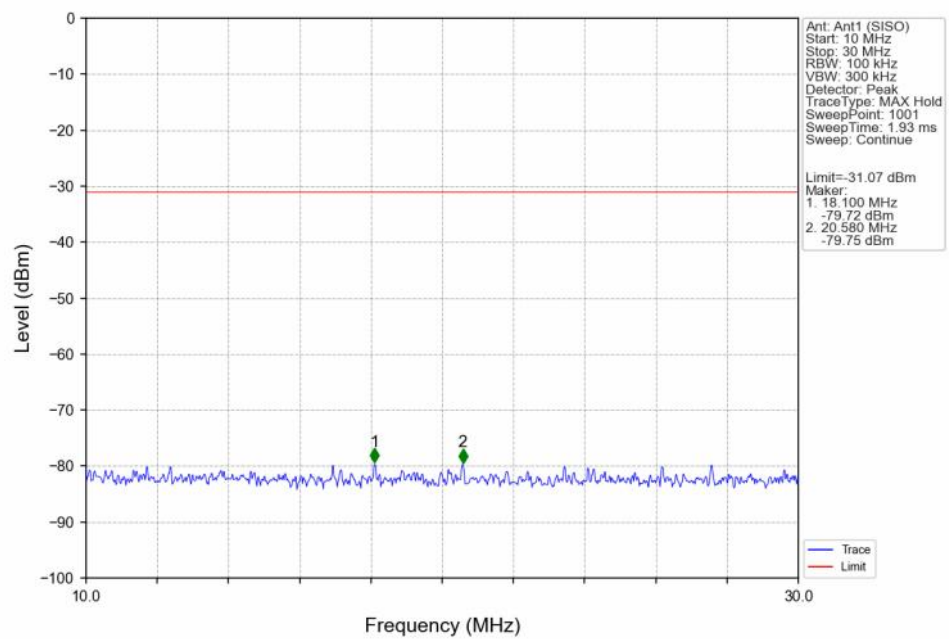
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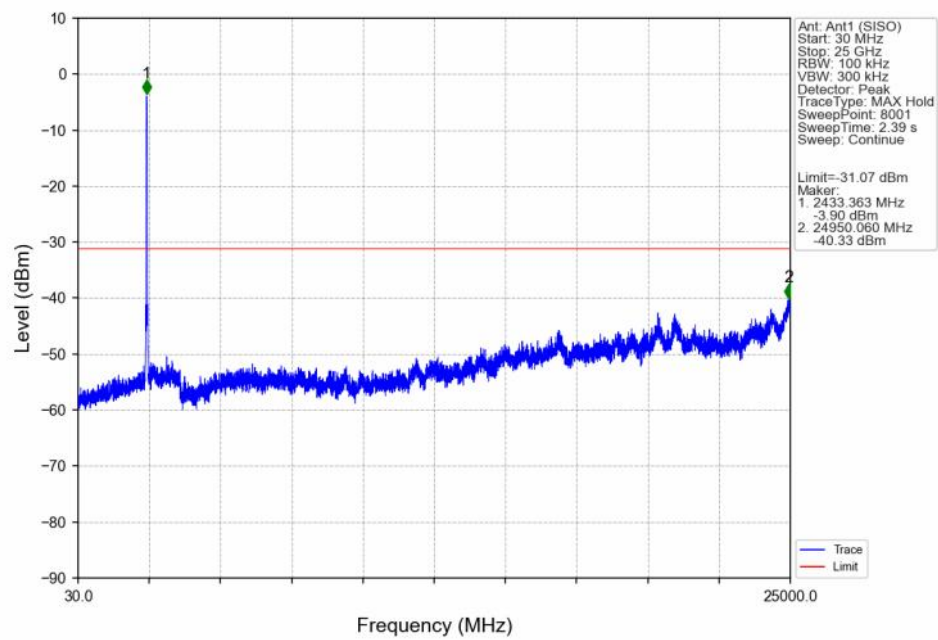
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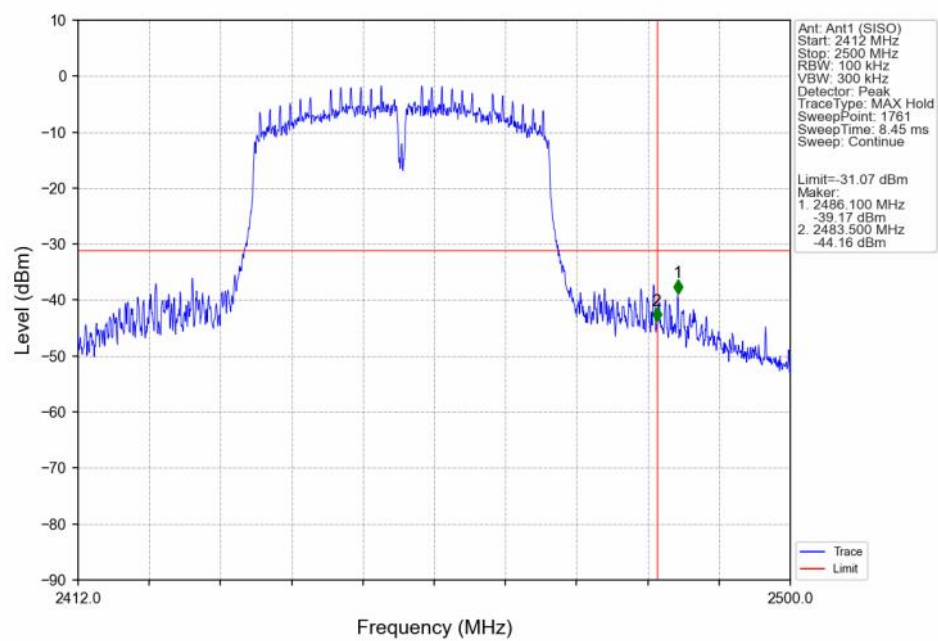
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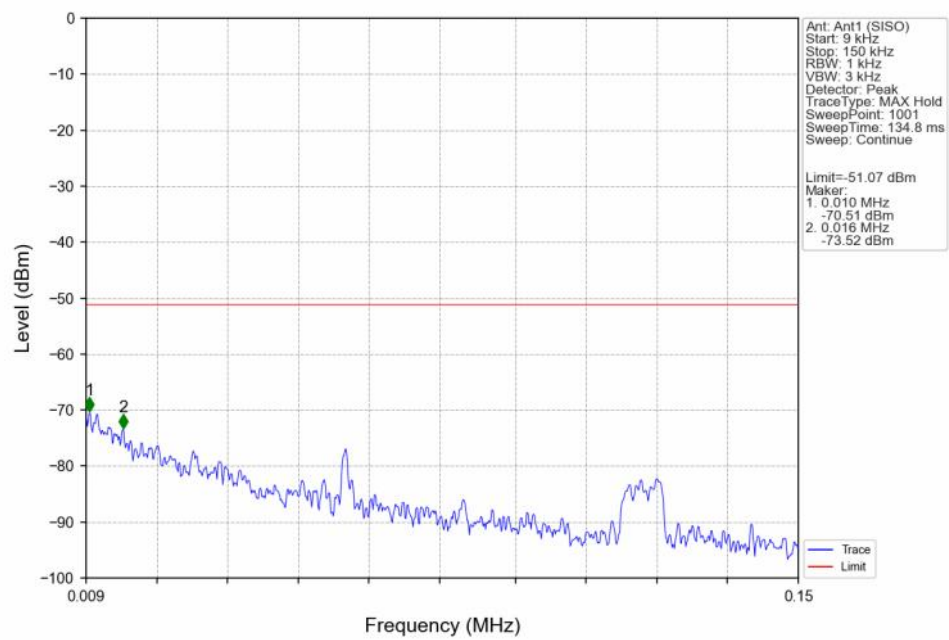
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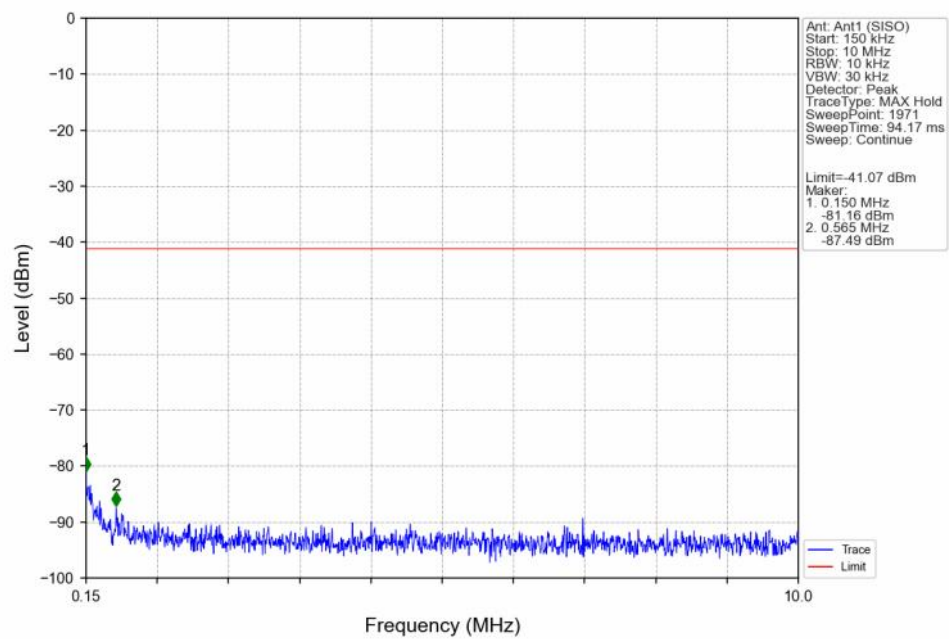
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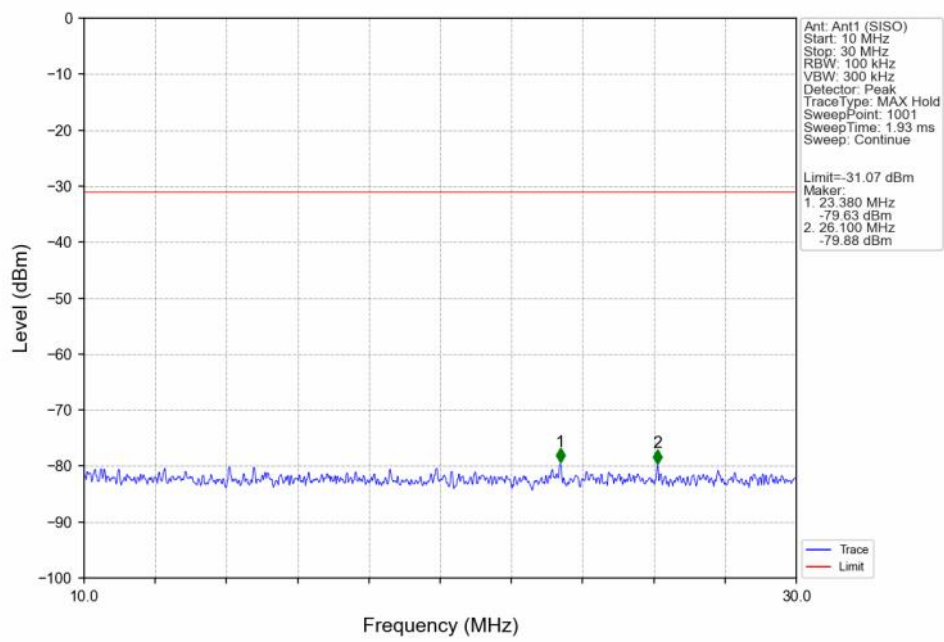
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV

