



RF Test Report

For

Project No.:	ZKT-241113L15319E-1
Client:	Shanghai olymmons technology co.,ltd
Manufacturer:	Shanghai olymmons technology co.,ltd
Product Description:	Projector
Model No.:	G4
Test Engineer:	Jim Liu
Test Date:	2024-10-30

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
Frequency Error	Pass
Form731	Pass



1. Duty Cycle

1.1 Test Result

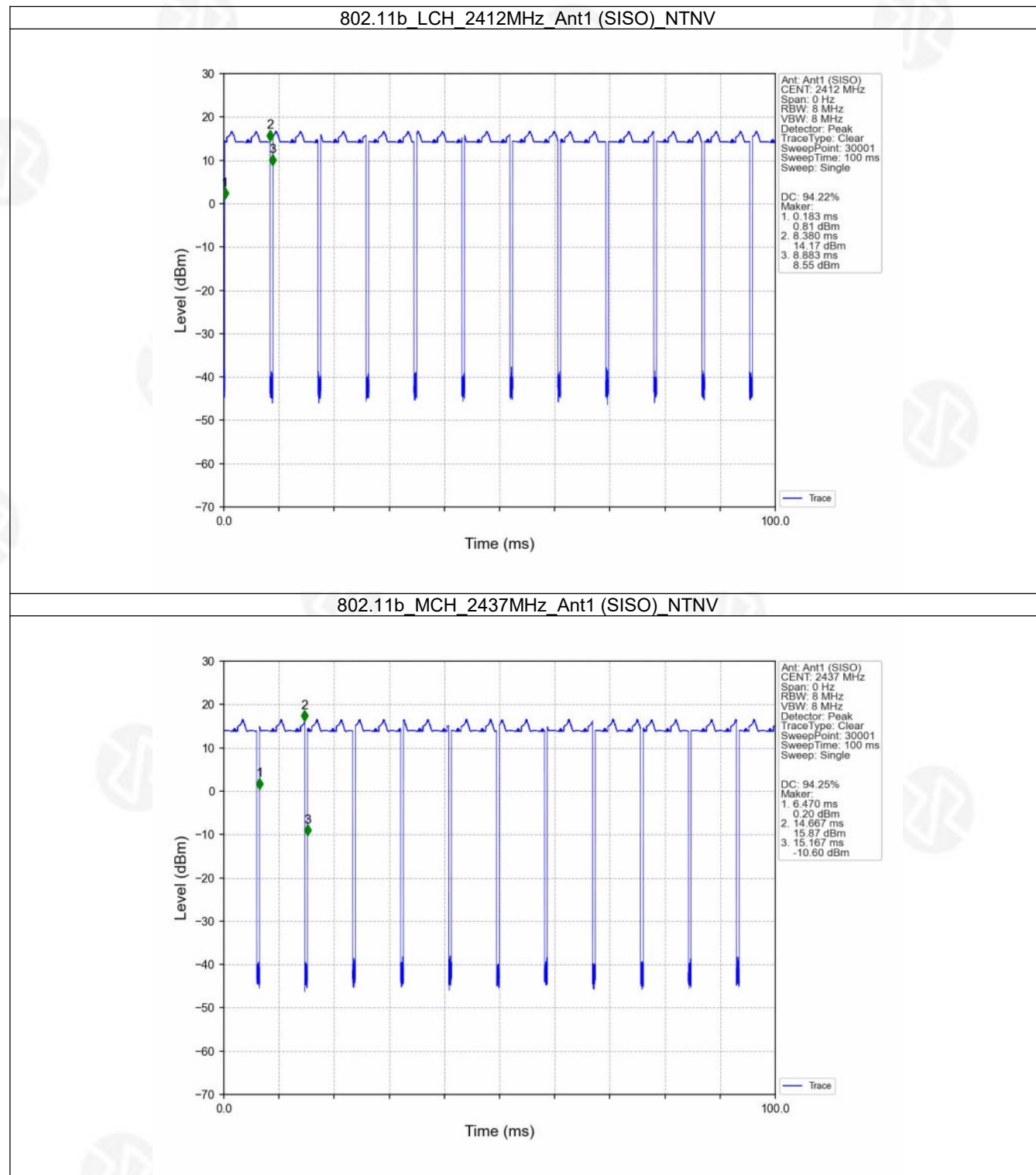
1.1.1 Ant1

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	8.197	8.700	94.22	0.26	0.04
		2437	8.197	8.697	94.25	0.26	0.00
		2462	8.197	8.697	94.25	0.26	0.00
802.11g	SISO	2412	1.361	1.862	73.09	1.36	0.03
		2437	1.362	1.863	73.11	1.36	0.03
		2462	1.362	1.863	73.11	1.36	0.03
802.11n (HT20)	SISO	2412	1.273	1.774	71.76	1.44	0.02
		2437	1.274	1.775	71.77	1.44	0.02
		2462	1.274	1.775	71.77	1.44	0.02
802.11n (HT40)	SISO	2422	0.634	1.134	55.91	2.53	0.01
		2437	0.633	1.134	55.82	2.53	0.03
		2452	0.634	1.135	55.86	2.53	0.03



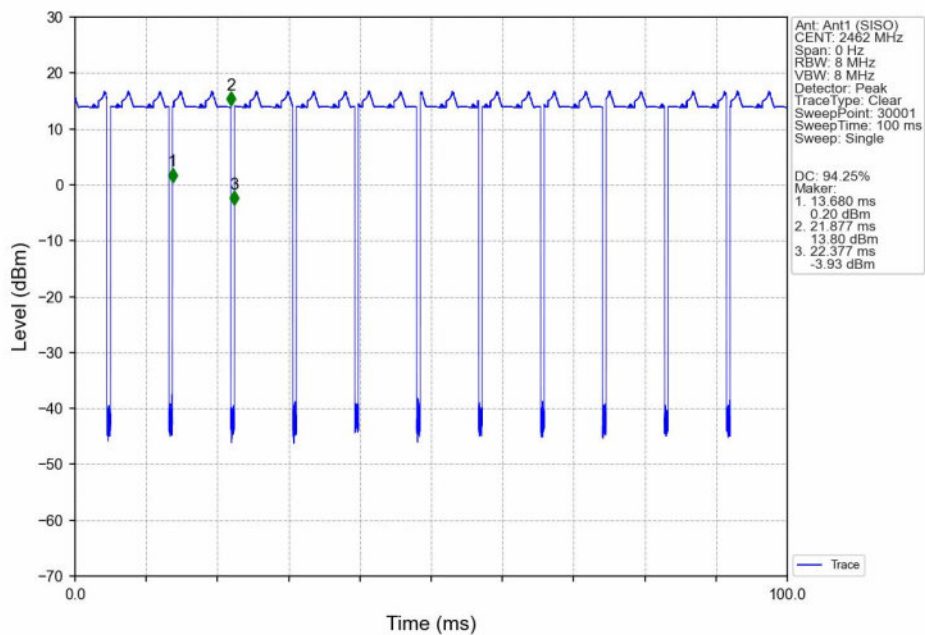
1.2 Test Graph

1.2.1 Ant1

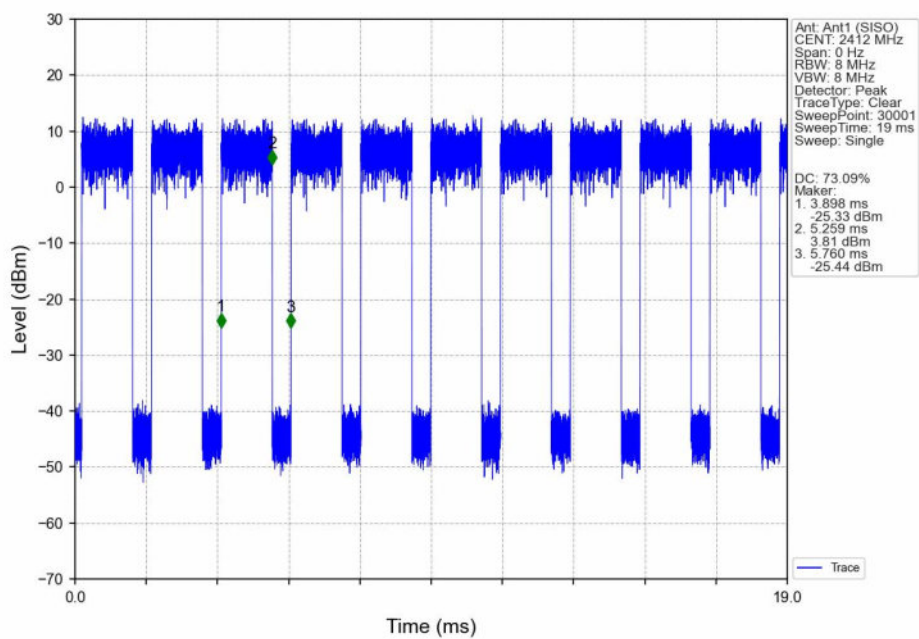




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

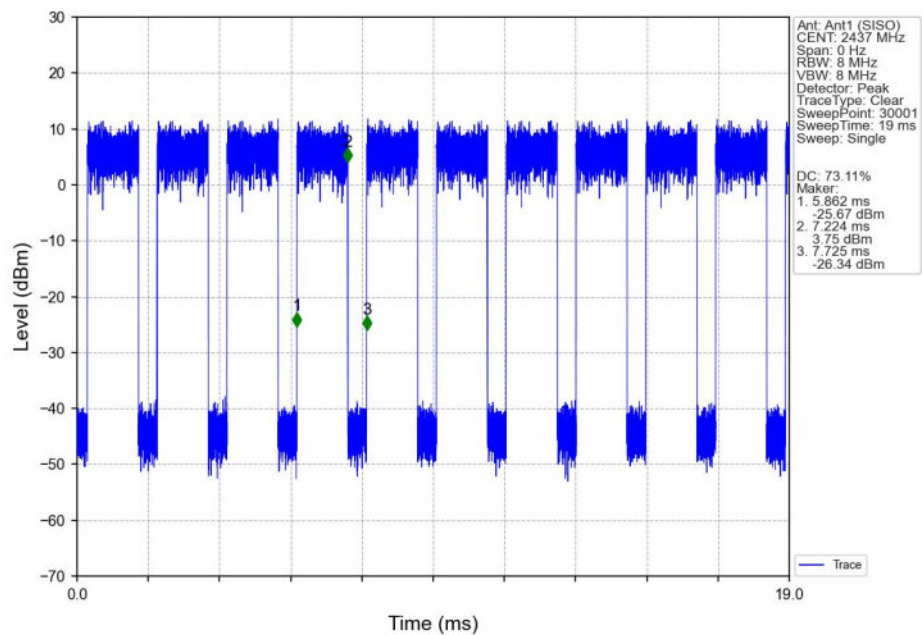


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

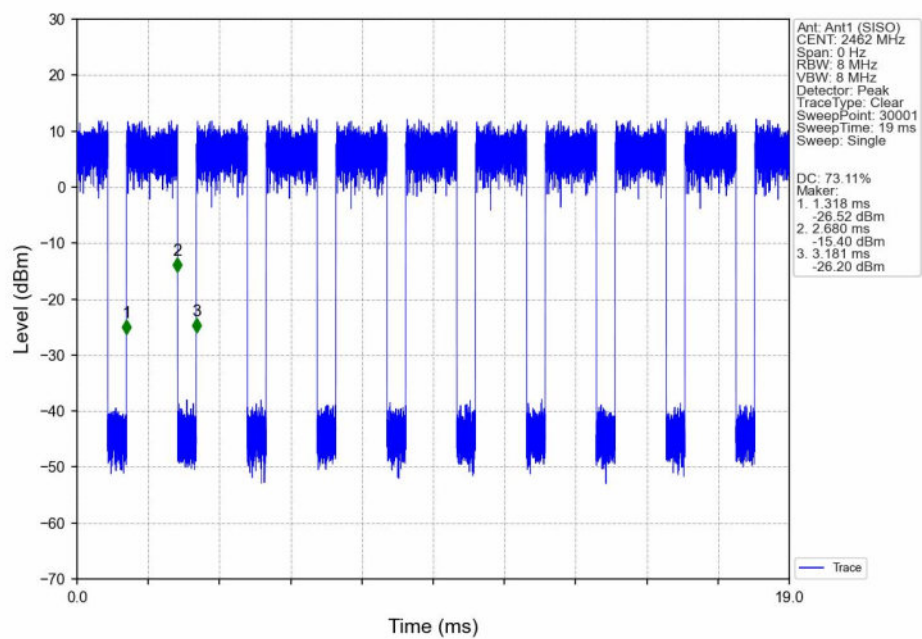




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

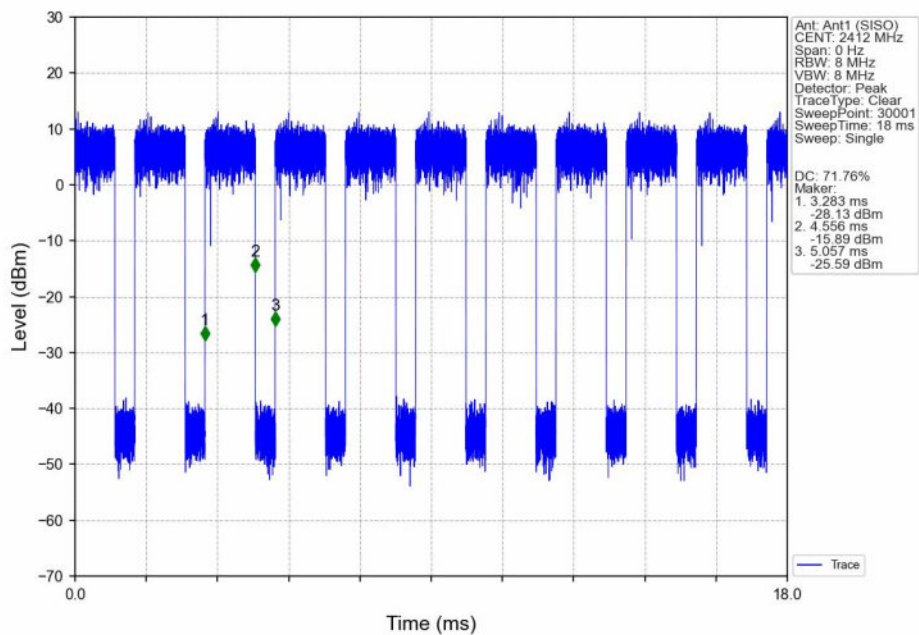


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

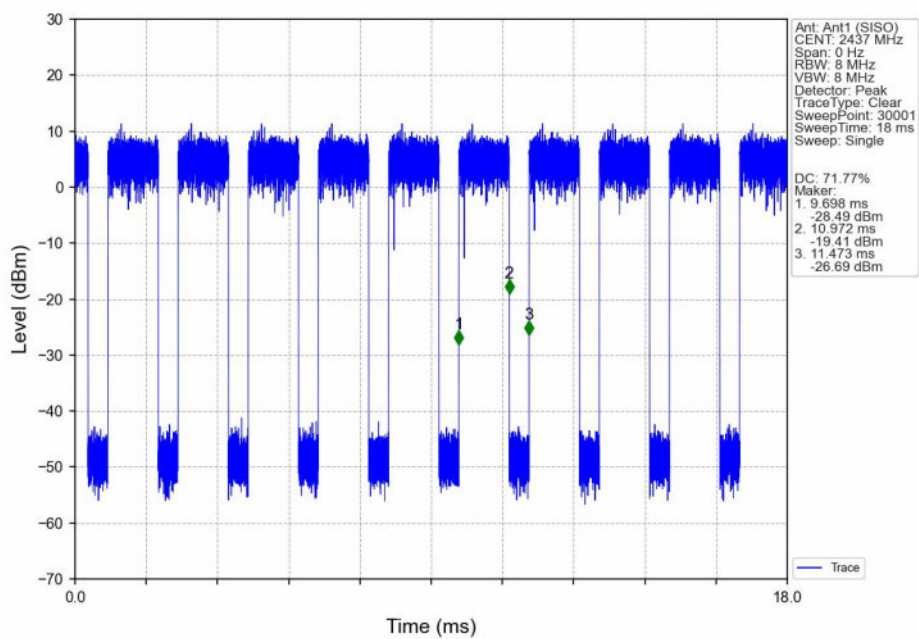




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

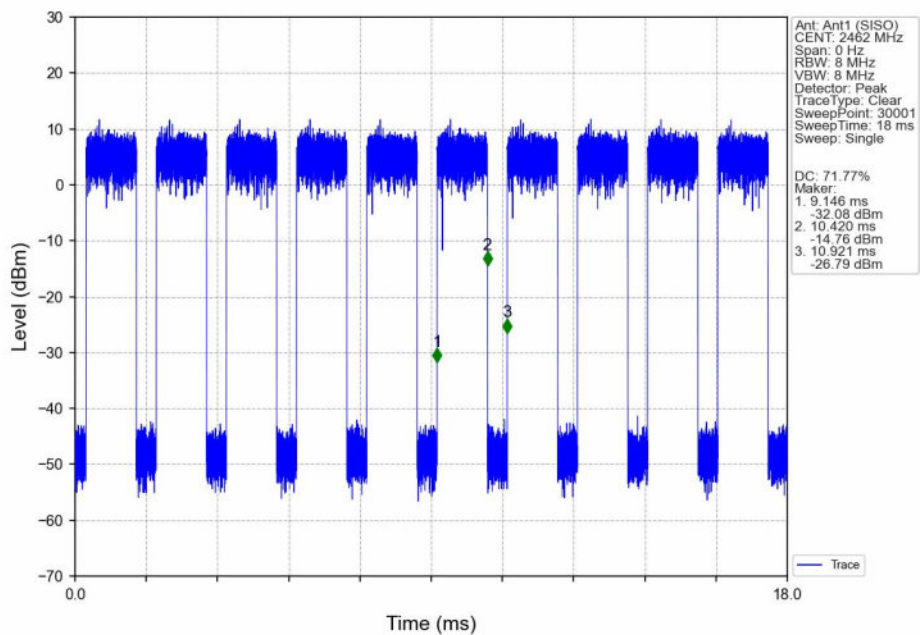


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

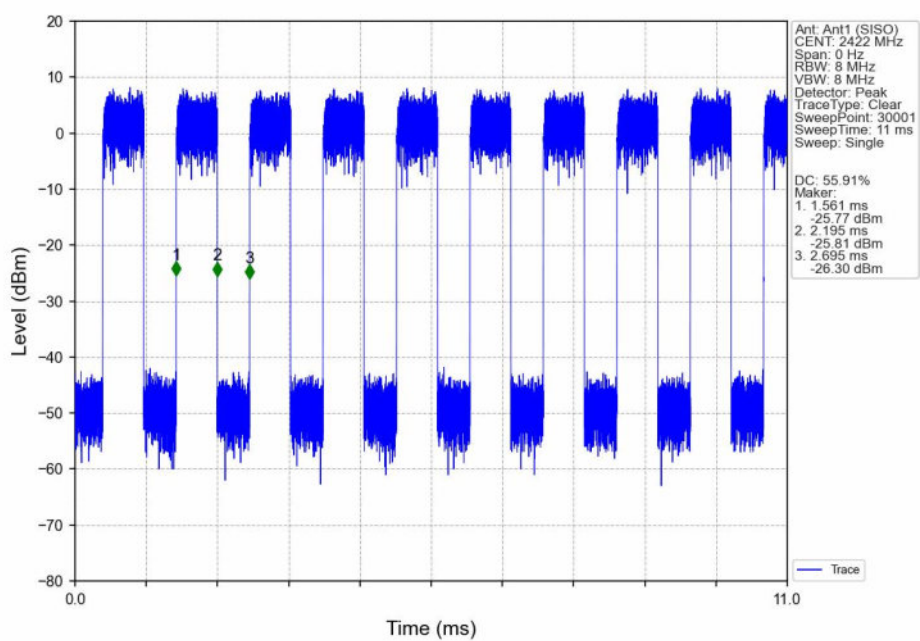




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

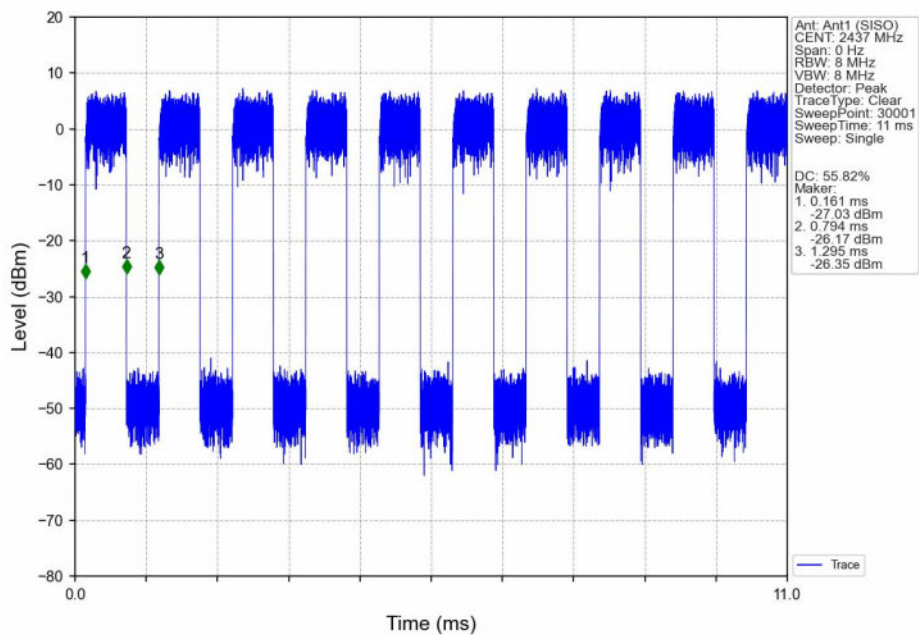


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

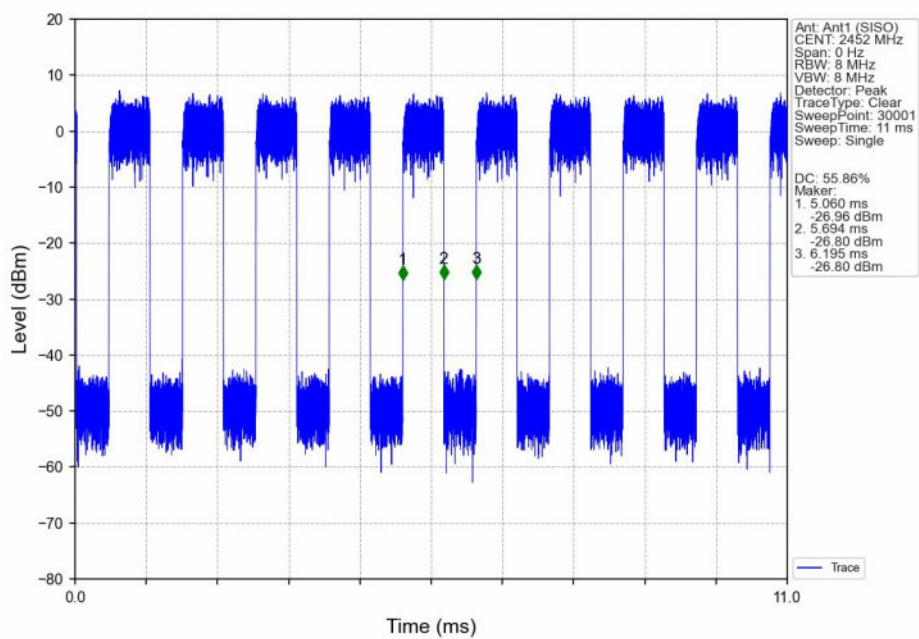




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



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	14.781	/	Pass
		2437	1	14.787	/	Pass
		2462	1	14.811	/	Pass
802.11g	SISO	2412	1	17.208	/	Pass
		2437	1	17.216	/	Pass
		2462	1	17.220	/	Pass
802.11n (HT20)	SISO	2412	1	18.355	/	Pass
		2437	1	18.380	/	Pass
		2462	1	18.383	/	Pass
802.11n (HT40)	SISO	2422	1	36.552	/	Pass
		2437	1	36.584	/	Pass
		2452	1	36.621	/	Pass

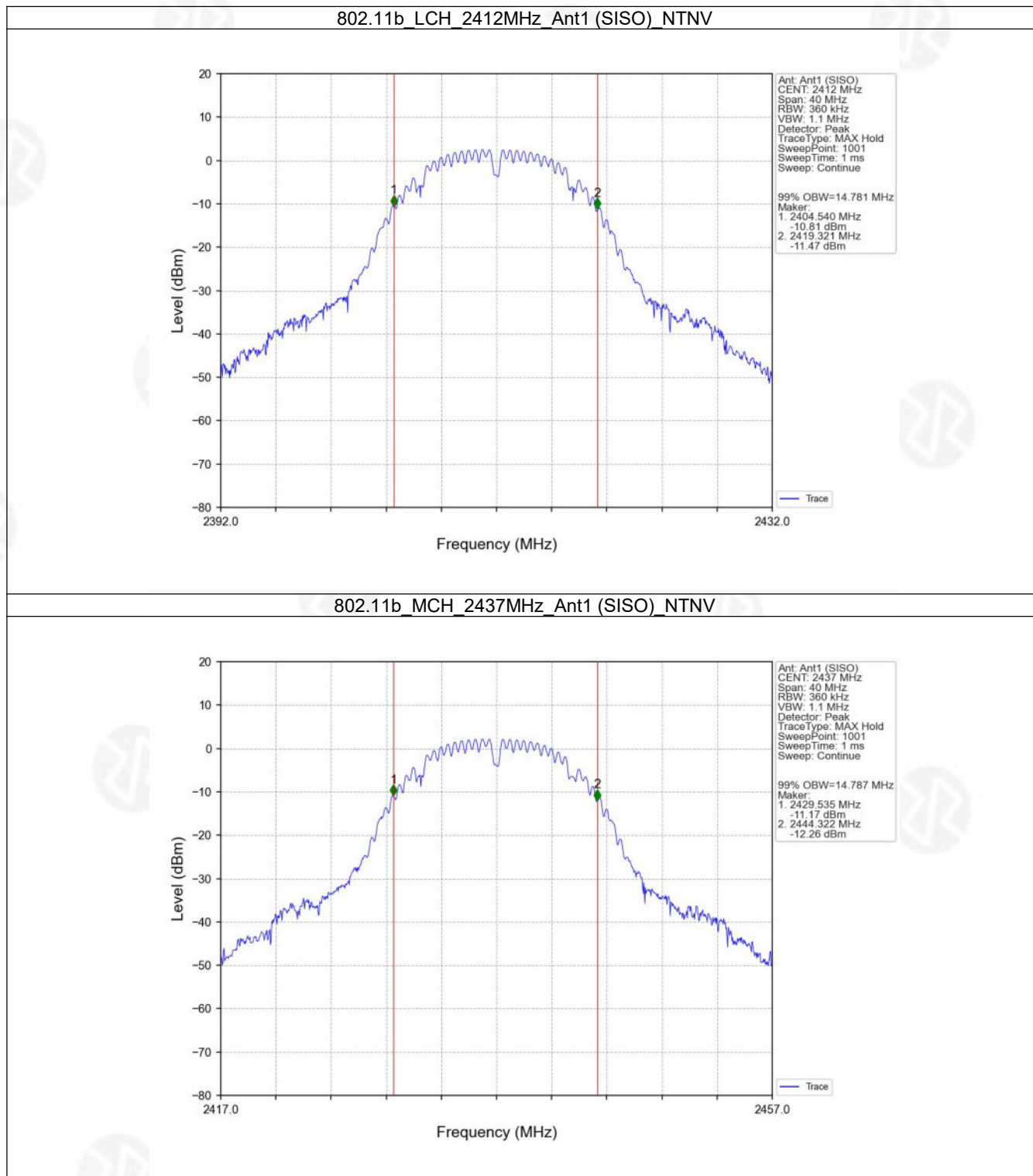
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.144	≥ 0.5	Pass
		2437	1	10.147	≥ 0.5	Pass
		2462	1	10.148	≥ 0.5	Pass
802.11g	SISO	2412	1	15.502	≥ 0.5	Pass
		2437	1	15.502	≥ 0.5	Pass
		2462	1	15.582	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	15.697	≥ 0.5	Pass
		2437	1	16.333	≥ 0.5	Pass
		2462	1	16.313	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.509	≥ 0.5	Pass
		2437	1	35.501	≥ 0.5	Pass
		2452	1	35.513	≥ 0.5	Pass



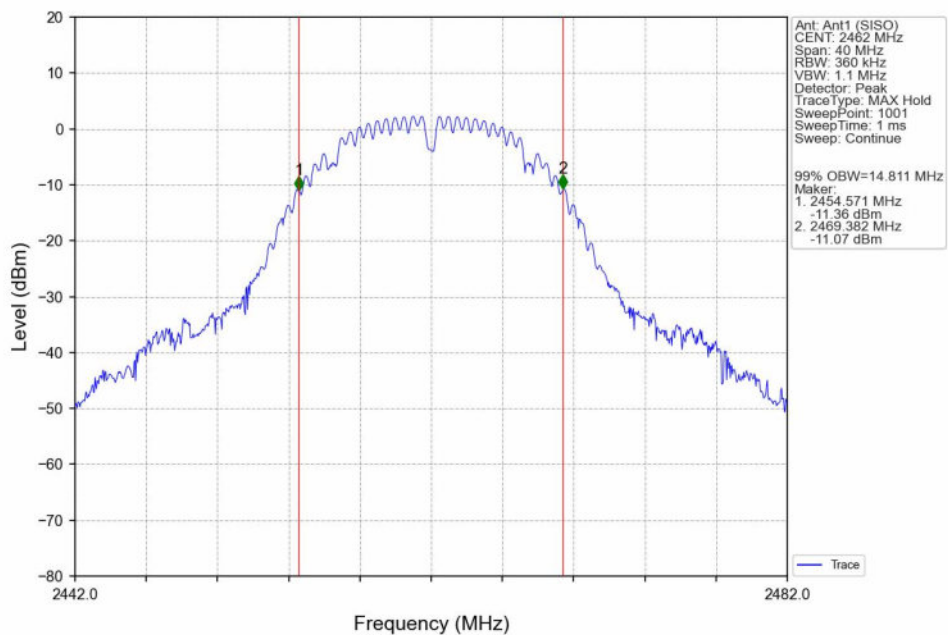
2.2 Test Graph

2.2.1 OBW

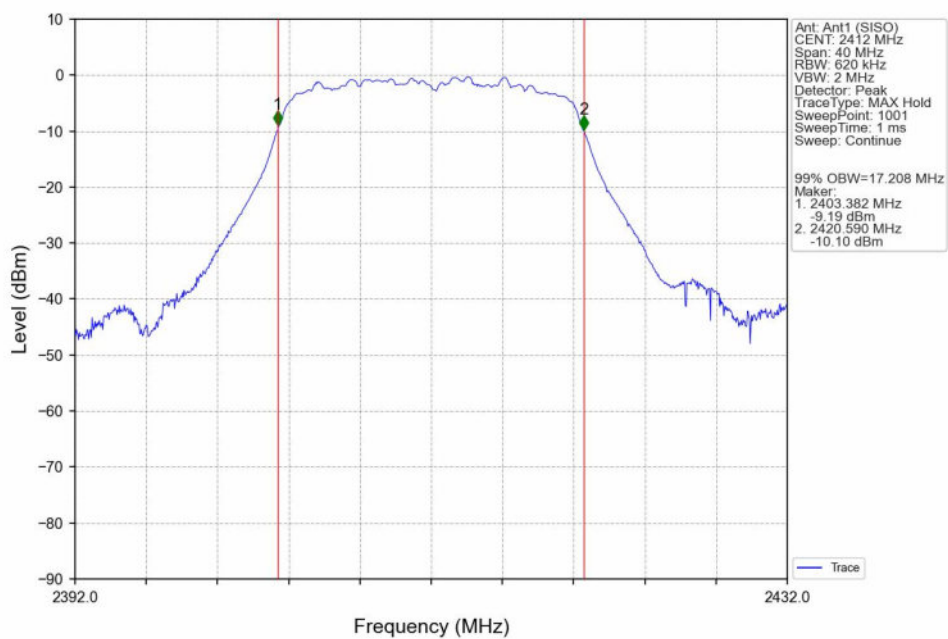




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

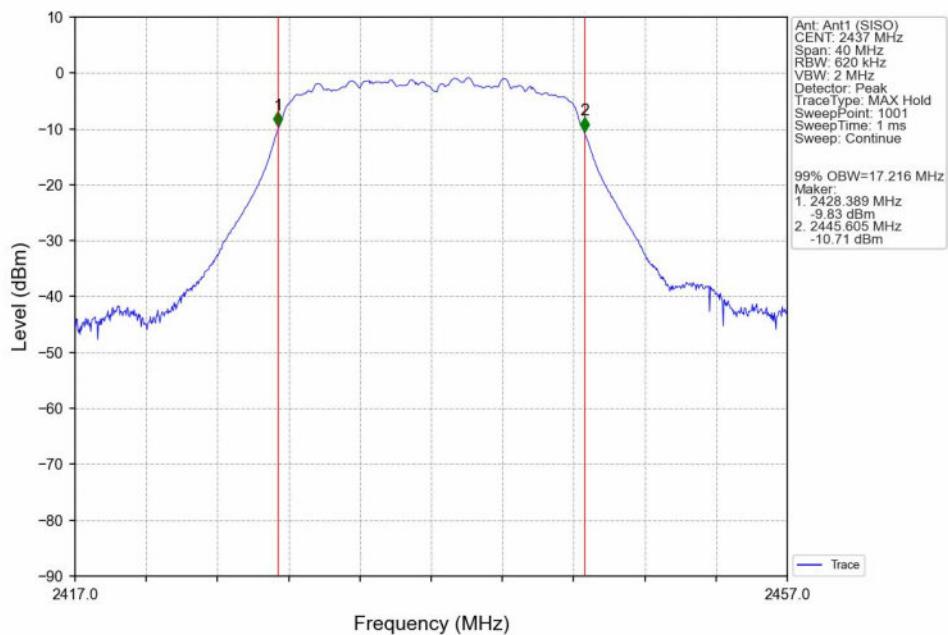


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

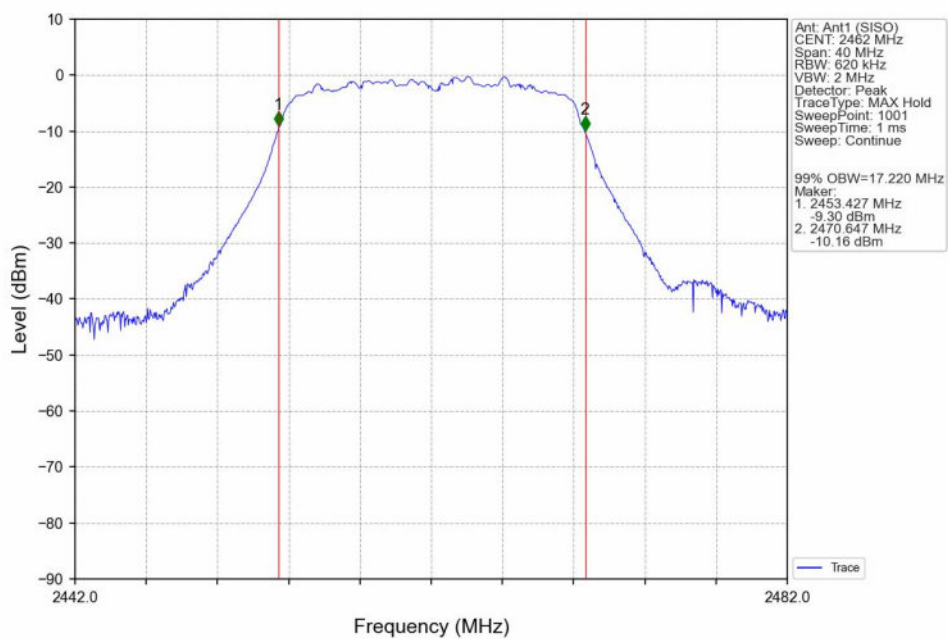




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

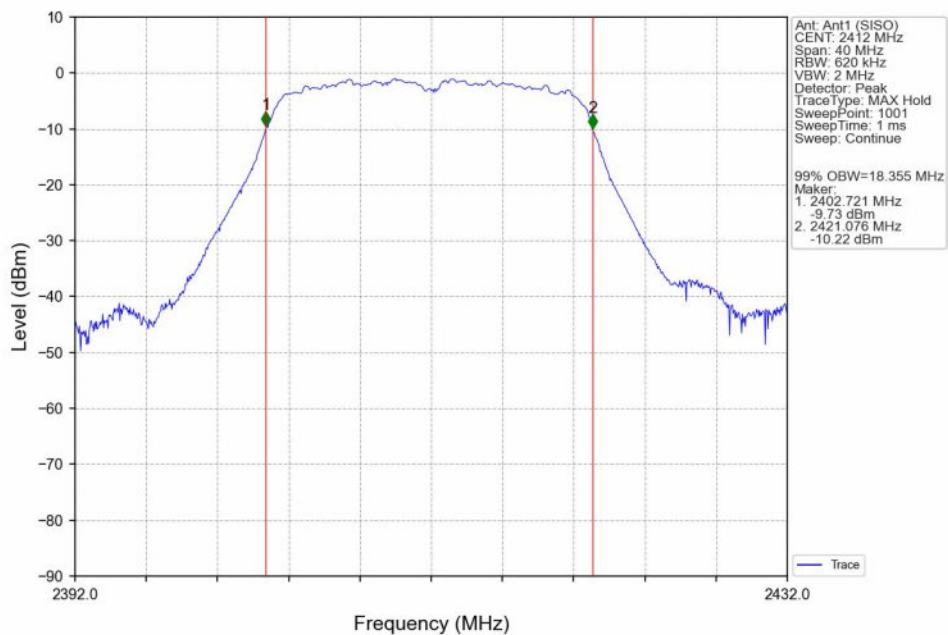


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

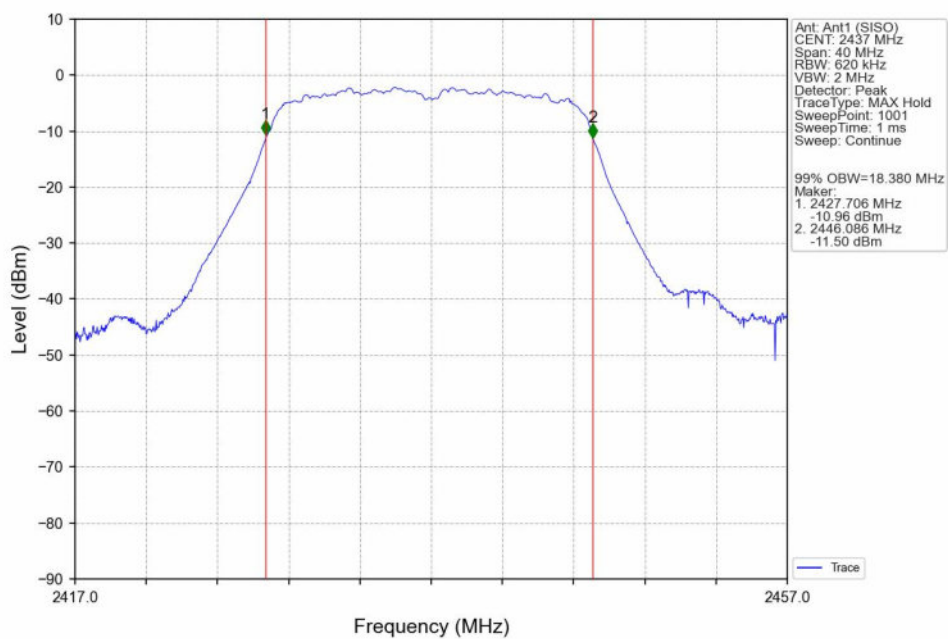




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

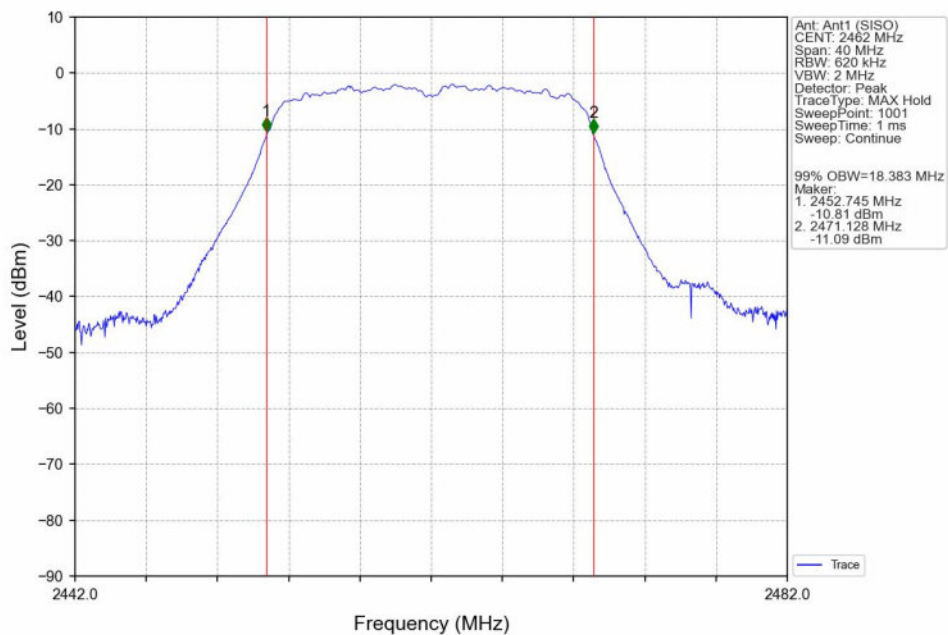


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

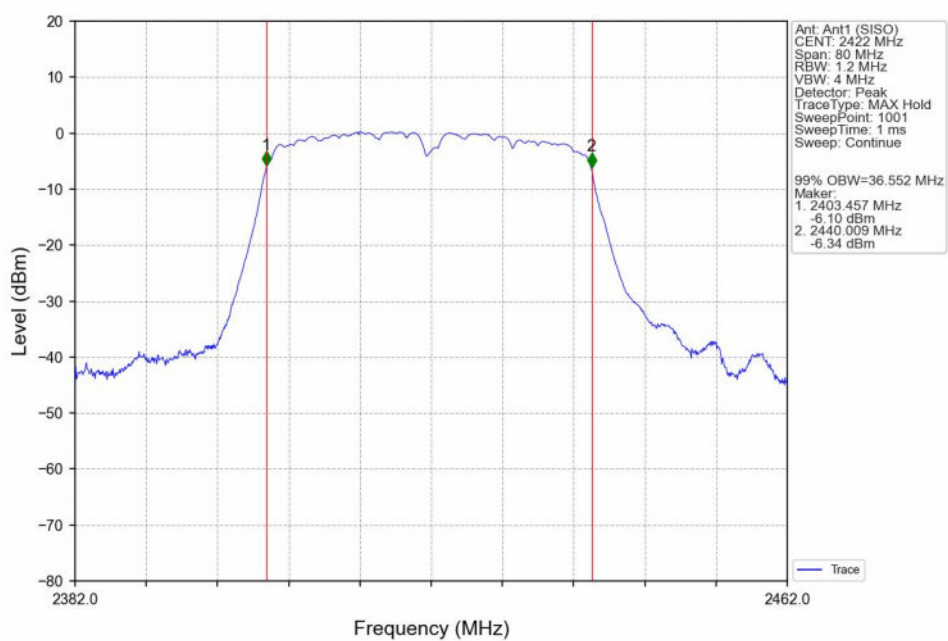




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

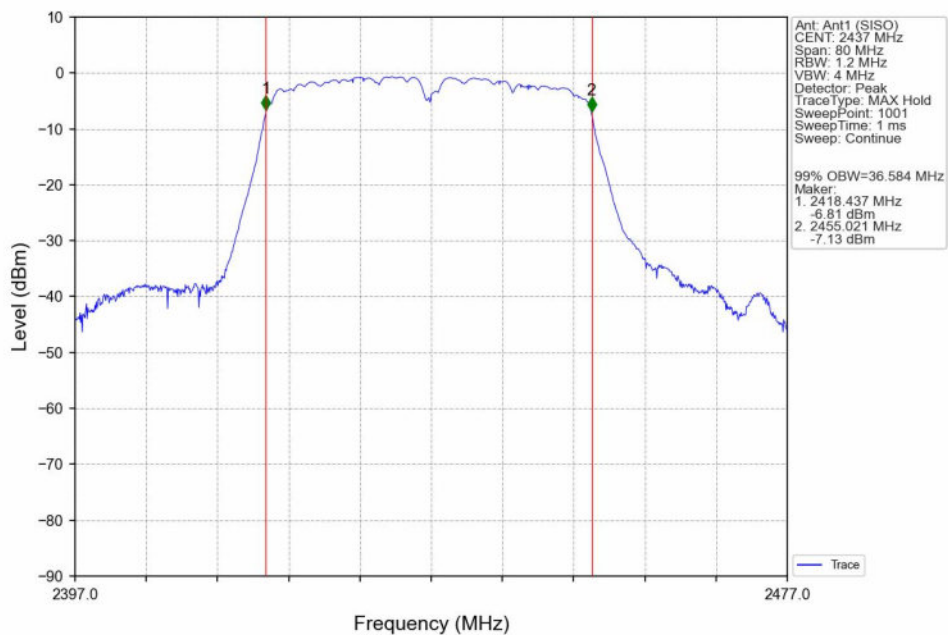


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

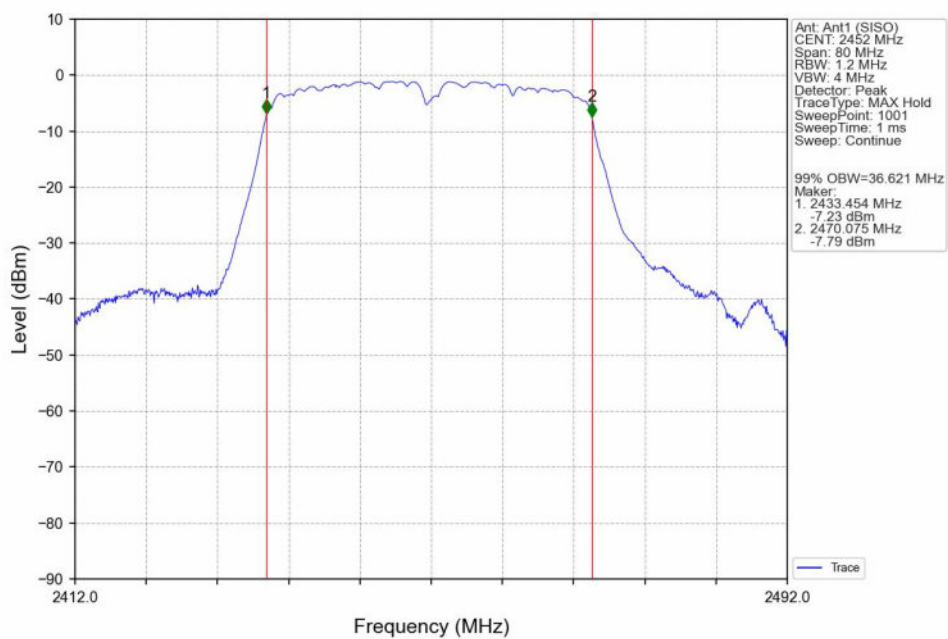




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



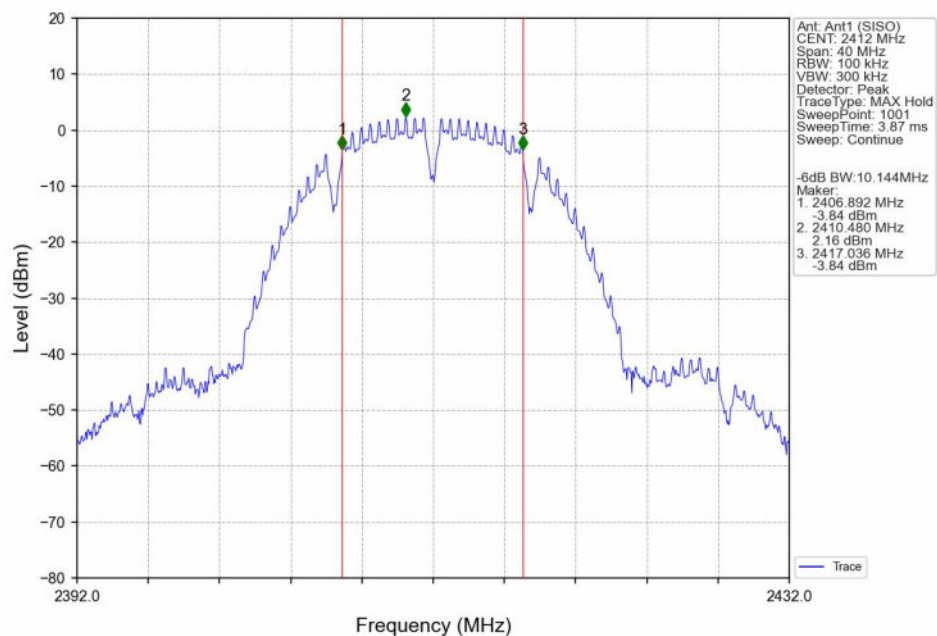
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



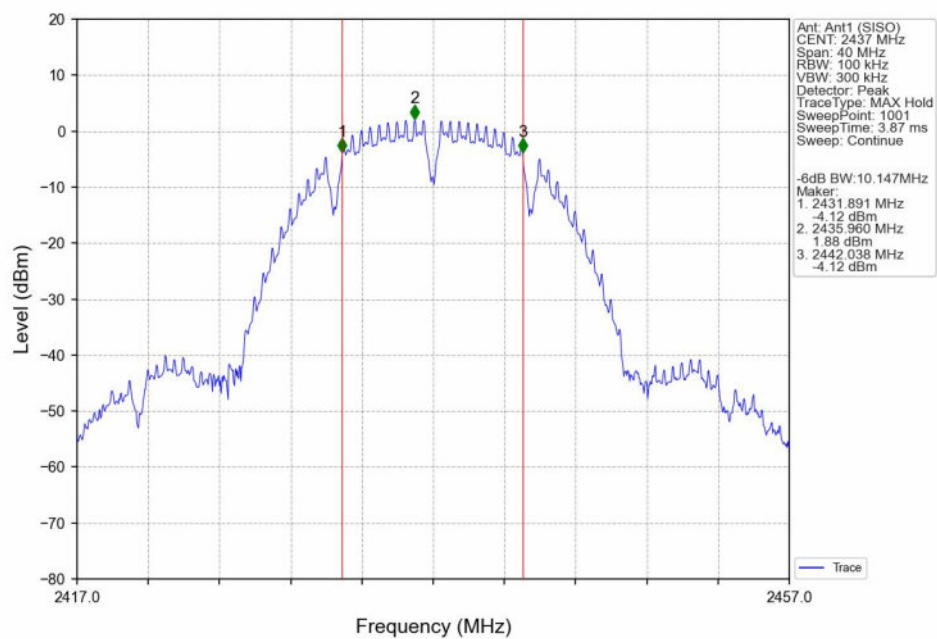


2.2.2 6dB BW

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV

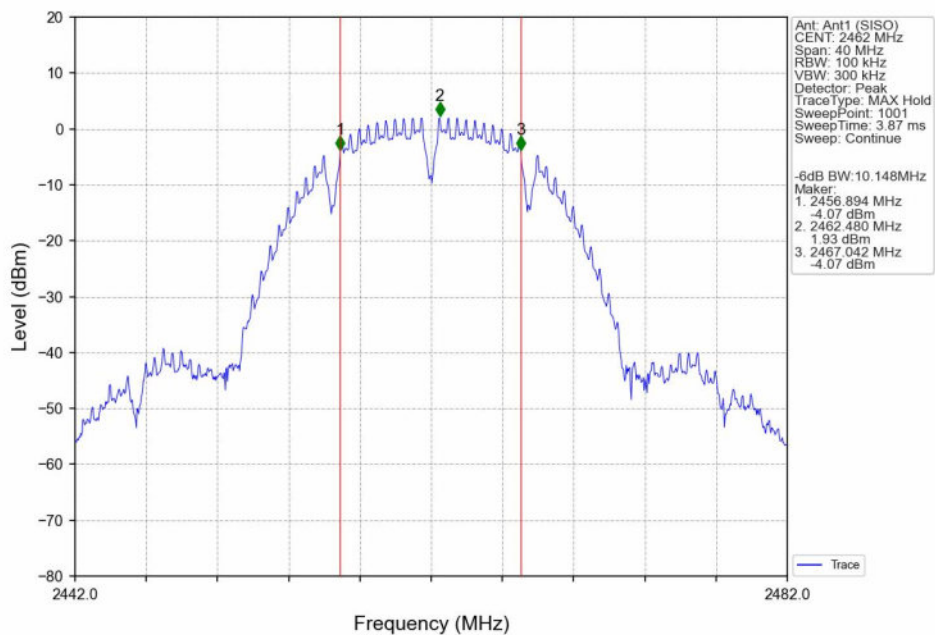


802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV

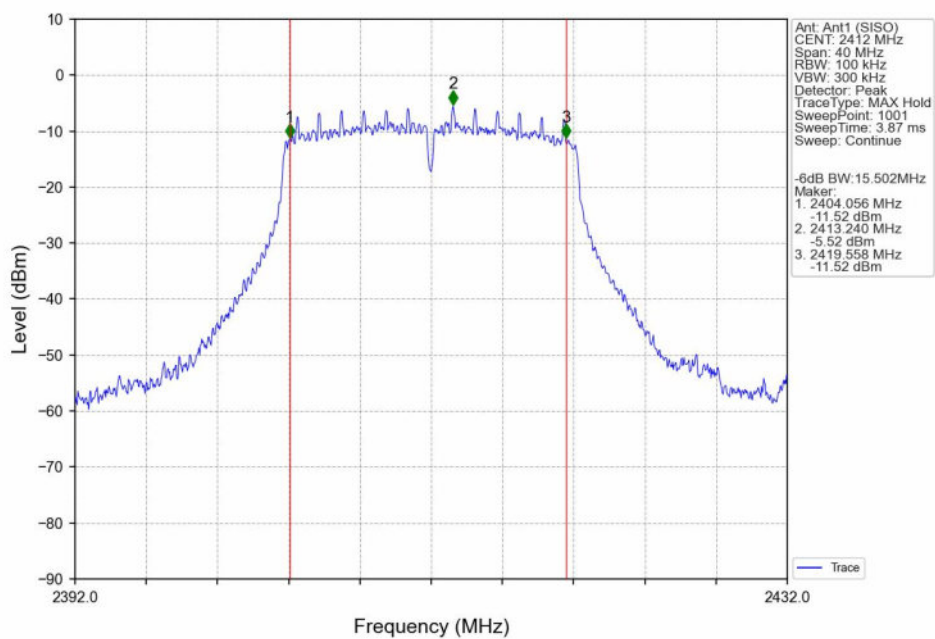




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

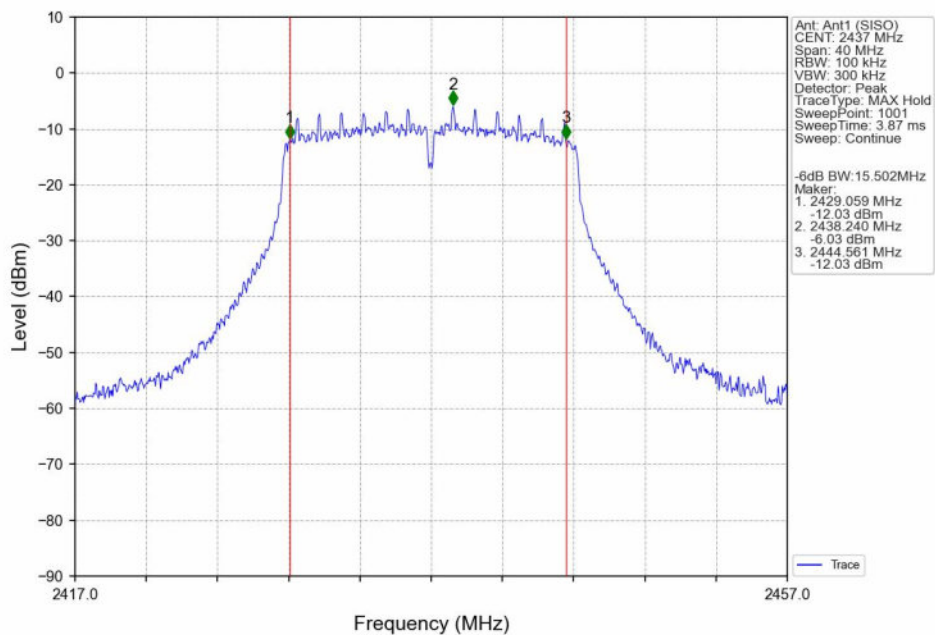


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

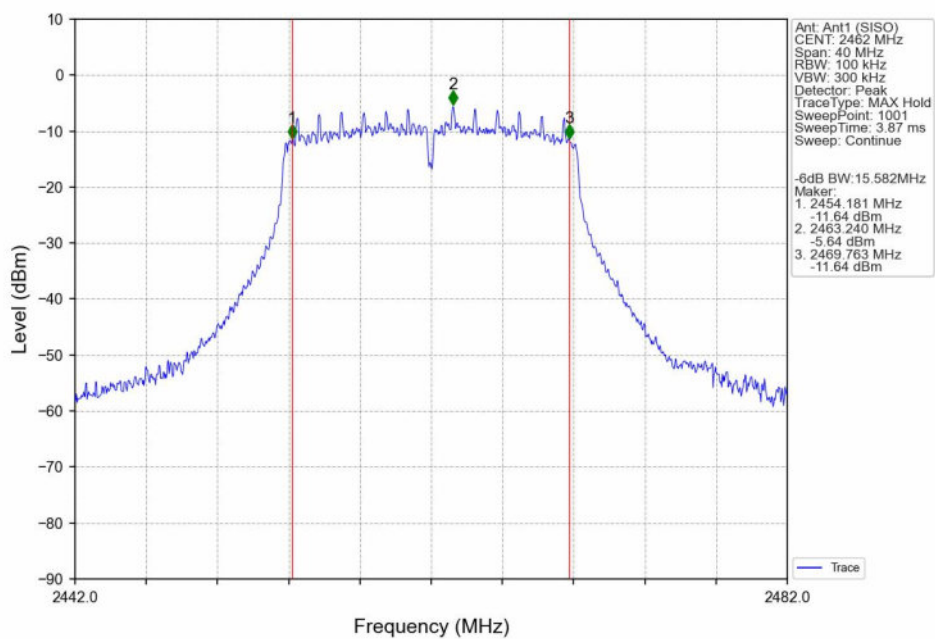




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

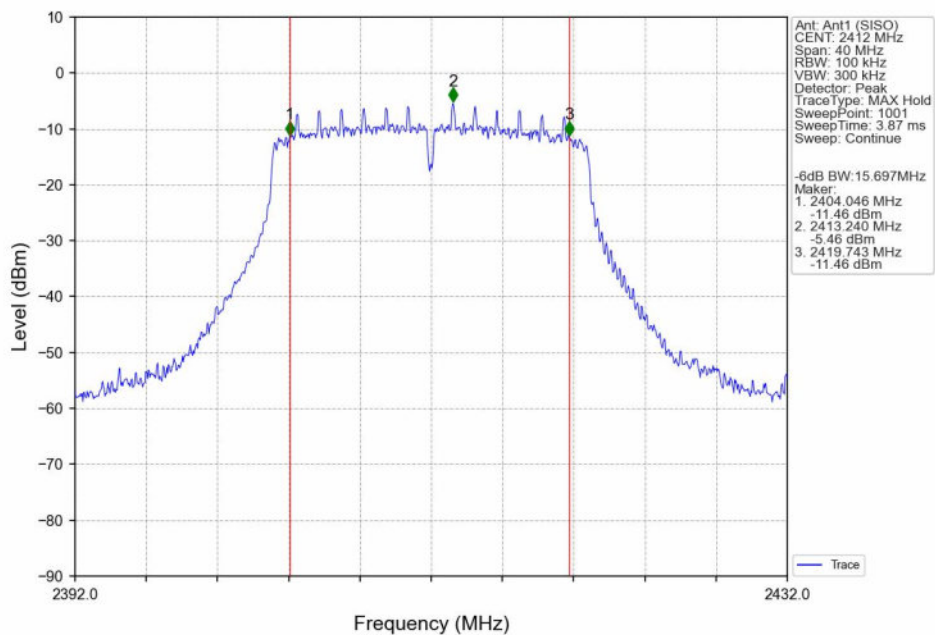


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

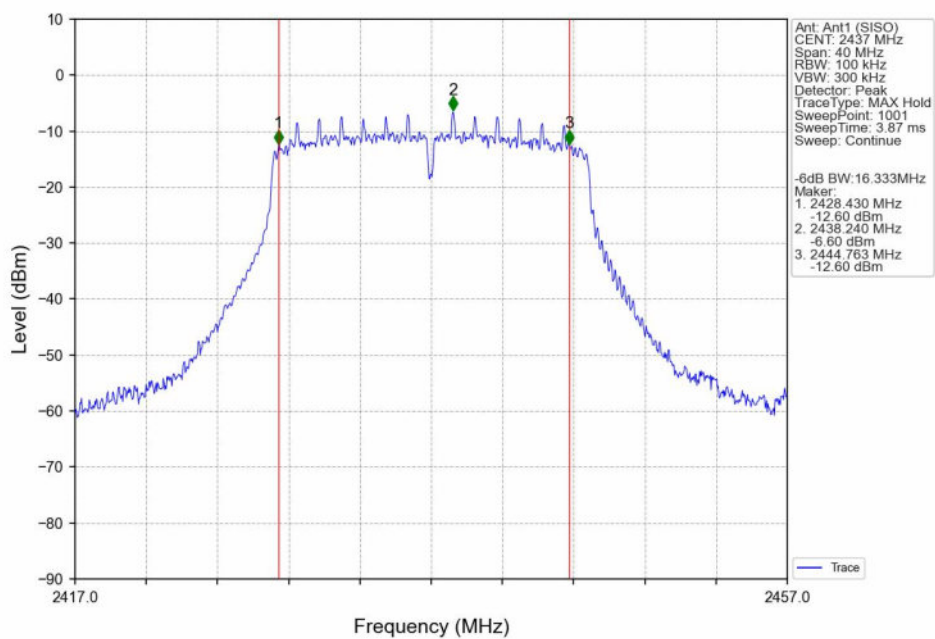




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

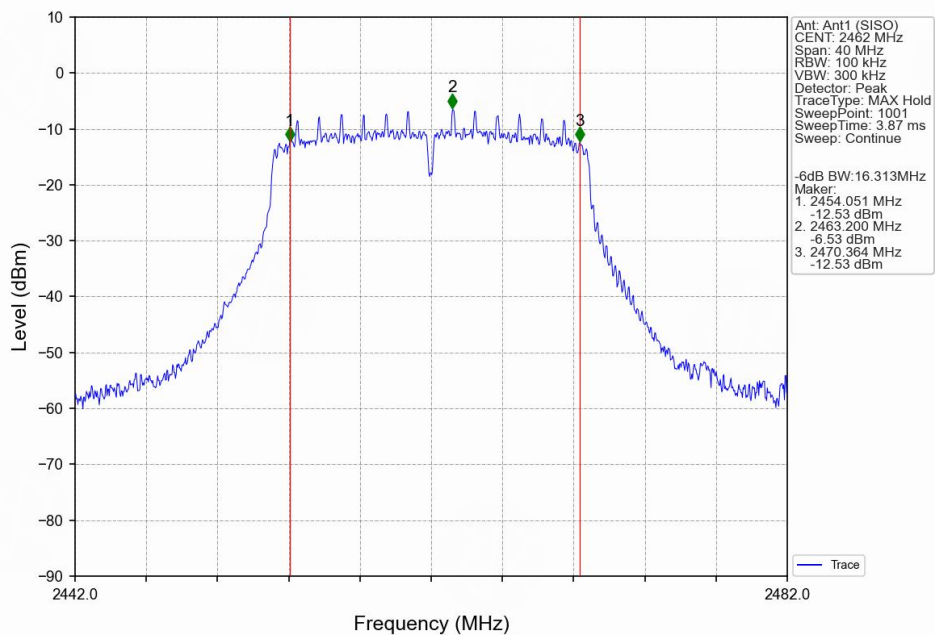


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

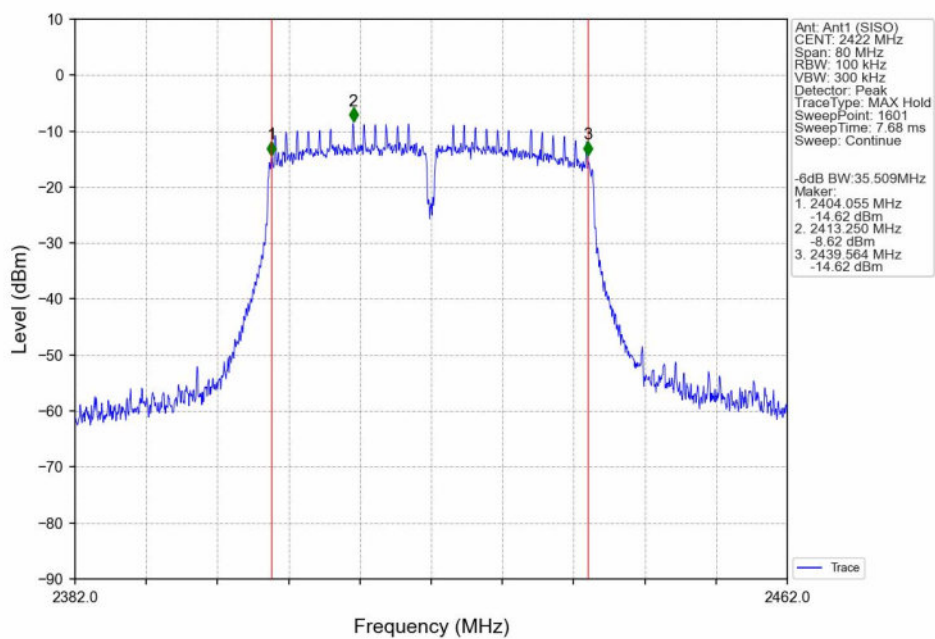




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

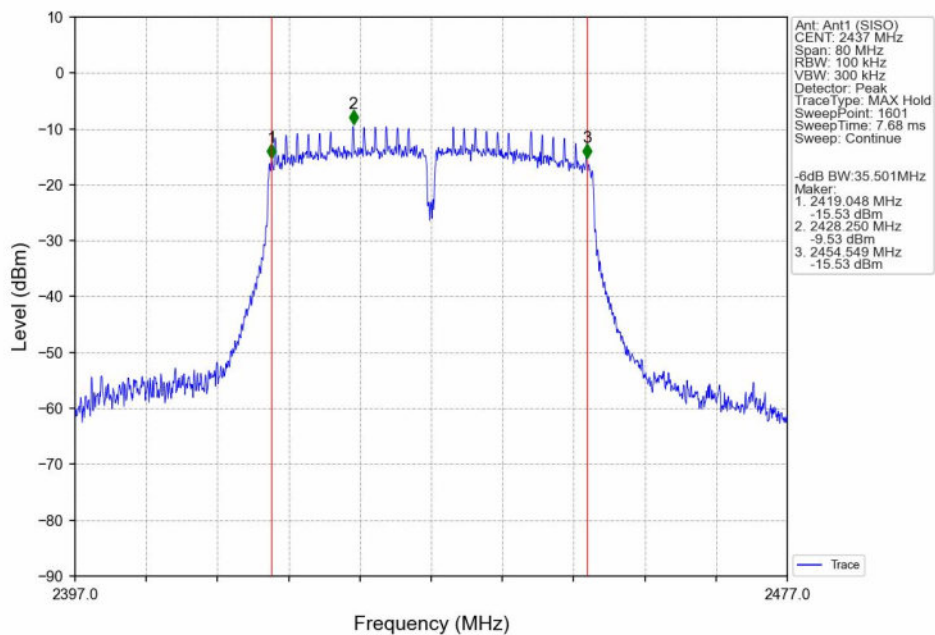


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

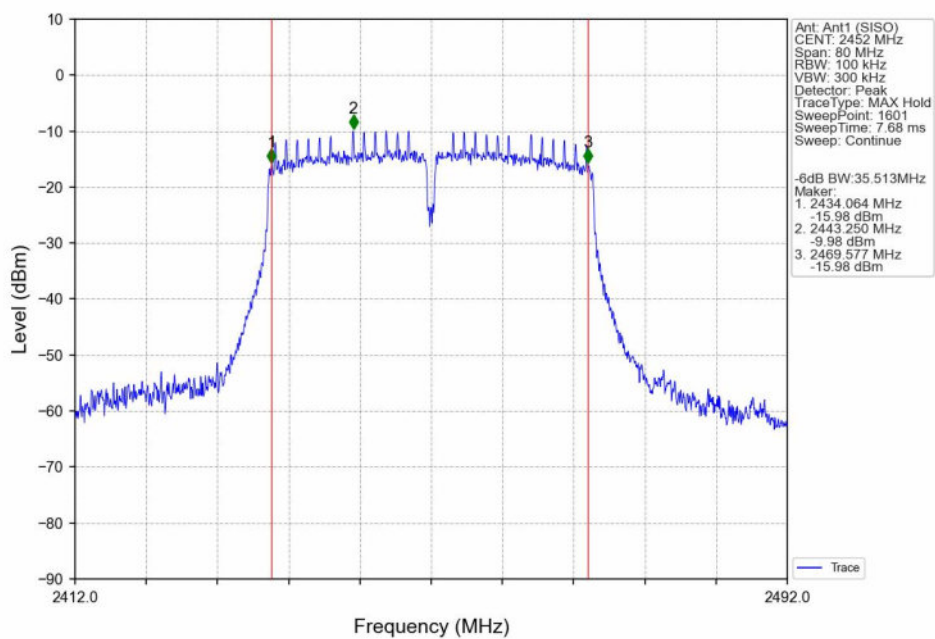




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



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 Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	14.02	<=30	Pass
		2437	13.69	<=30	Pass
		2462	13.78	<=30	Pass
802.11g	SISO	2412	12.78	<=30	Pass
		2437	12.14	<=30	Pass
		2462	12.63	<=30	Pass
802.11n (HT20)	SISO	2412	12.50	<=30	Pass
		2437	11.39	<=30	Pass
		2462	11.58	<=30	Pass
802.11n (HT40)	SISO	2422	12.82	<=30	Pass
		2437	11.95	<=30	Pass
		2452	11.65	<=30	Pass

Note1: Antenna Gain: Ant1: 2.55dBi;

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

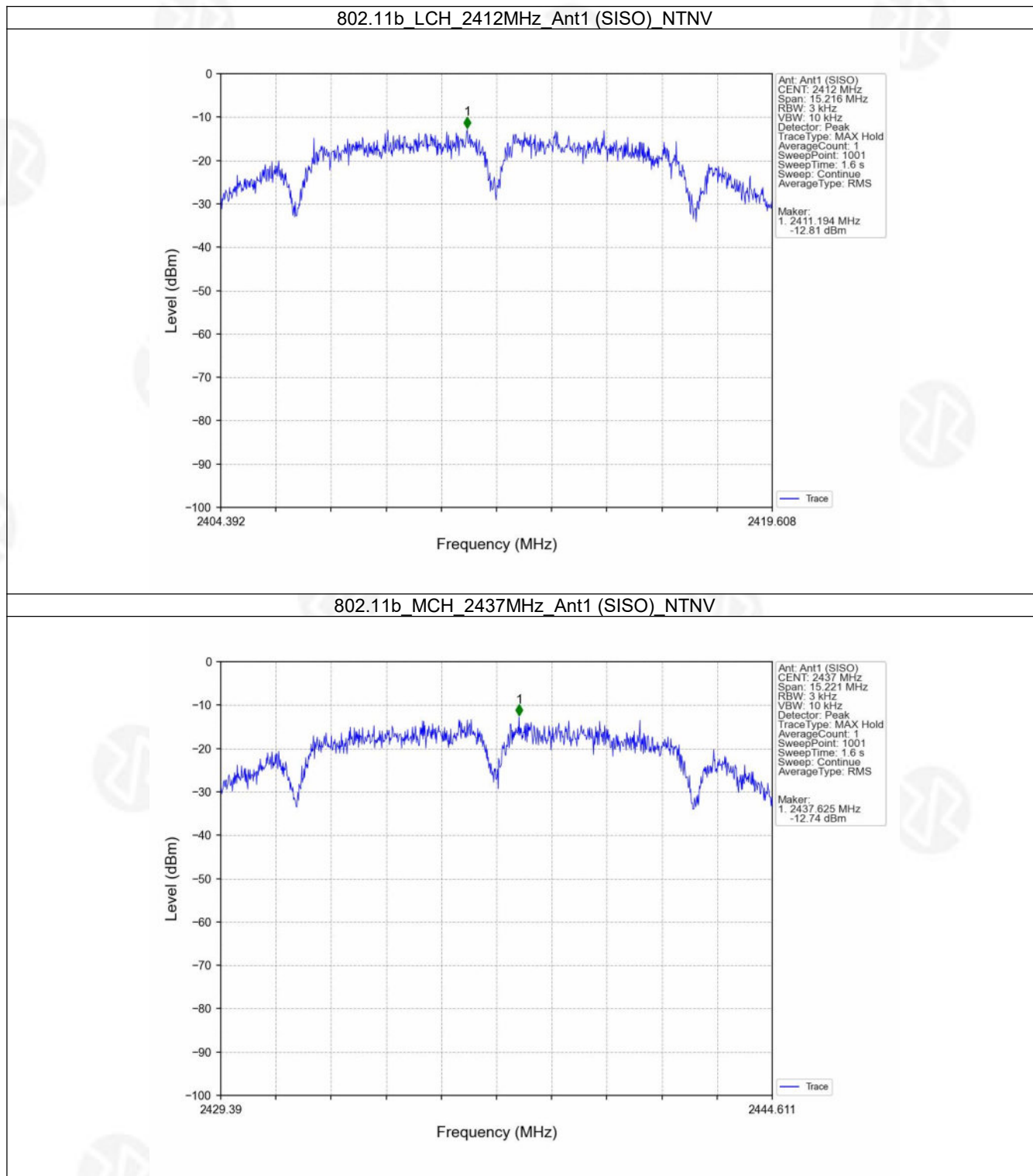
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-12.41	<=8	Pass
		2437	-12.34	<=8	Pass
		2462	-12.98	<=8	Pass
802.11g	SISO	2412	-20.03	<=8	Pass
		2437	-20.72	<=8	Pass
		2462	-20.08	<=8	Pass
802.11n (HT20)	SISO	2412	-20.70	<=8	Pass
		2437	-21.26	<=8	Pass
		2462	-21.34	<=8	Pass
802.11n (HT40)	SISO	2422	-21.76	<=8	Pass
		2437	-23.69	<=8	Pass
		2452	-24.60	<=8	Pass

Note1: Antenna Gain: Ant1: 2.55dBi;



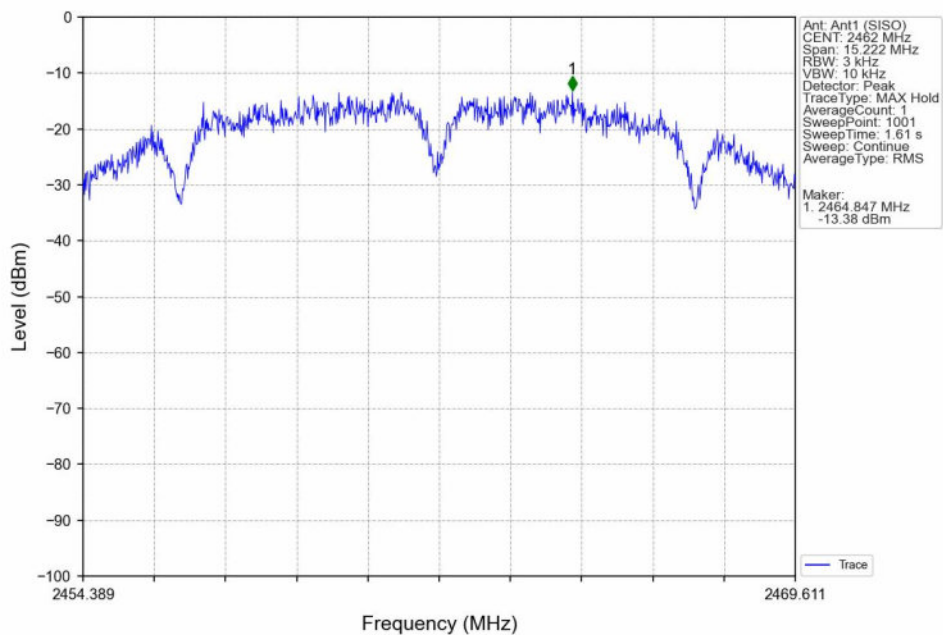
4.2 Test Graph

4.2.1 PSD

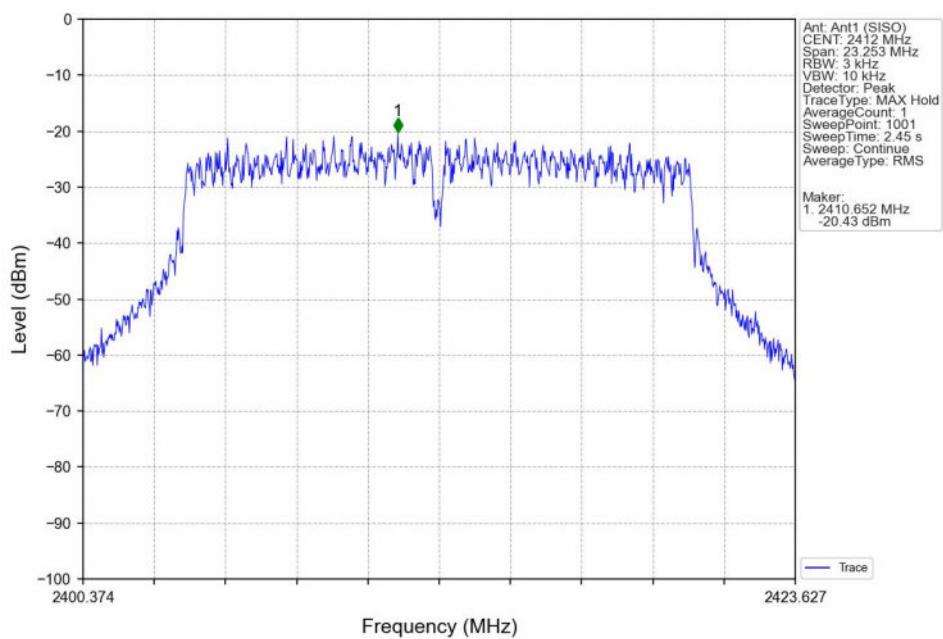




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

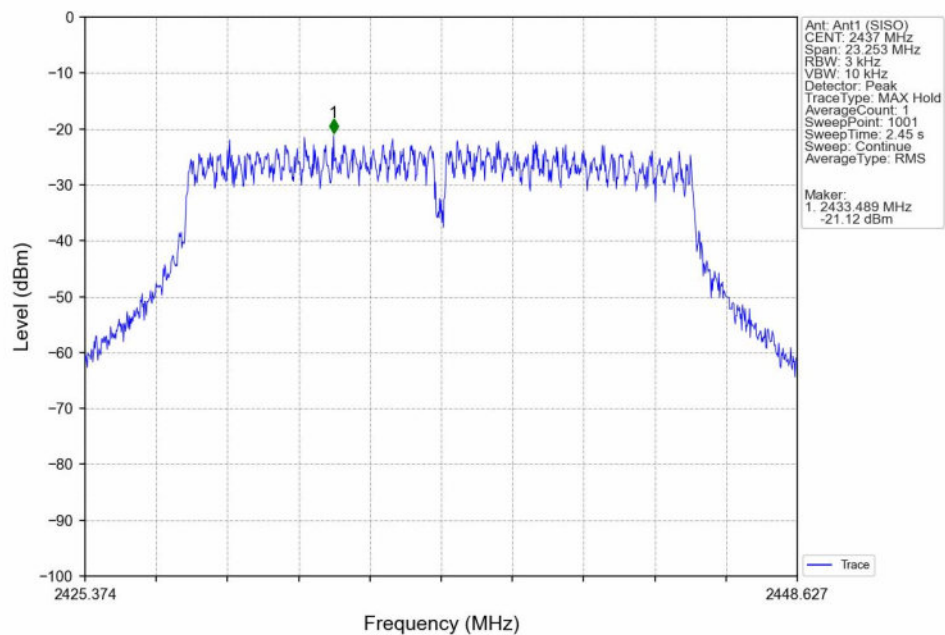


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

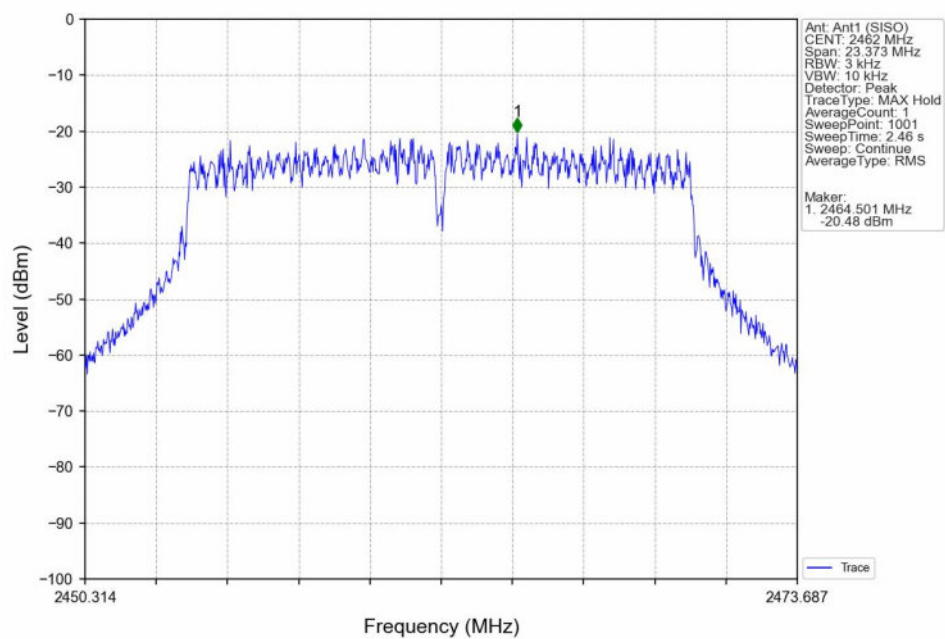




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

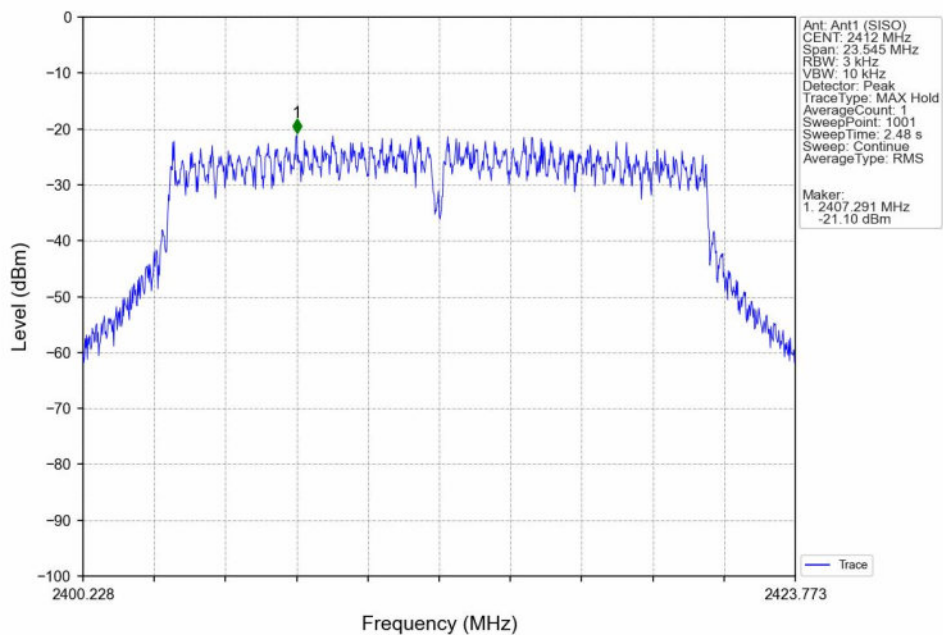


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

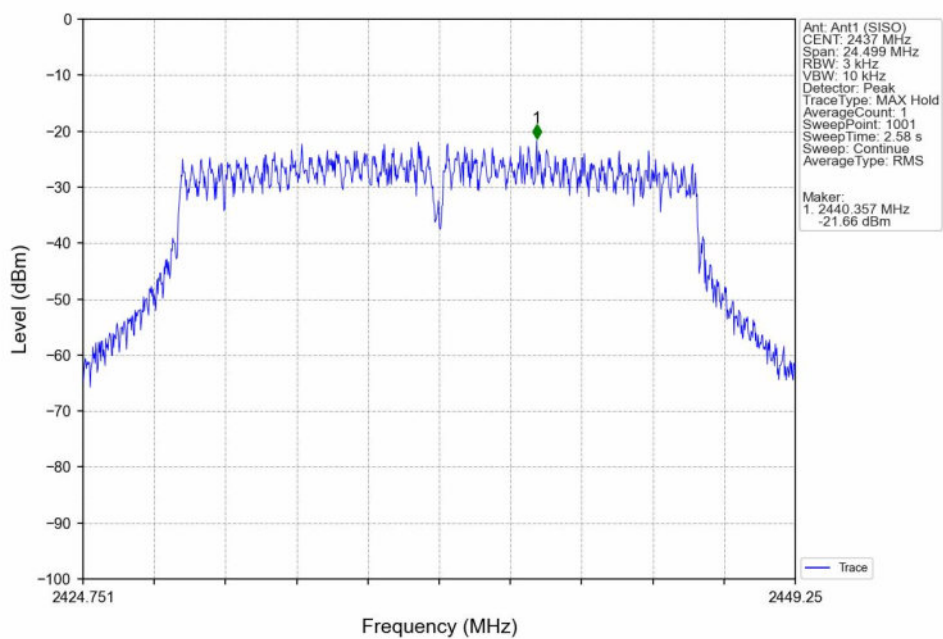




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

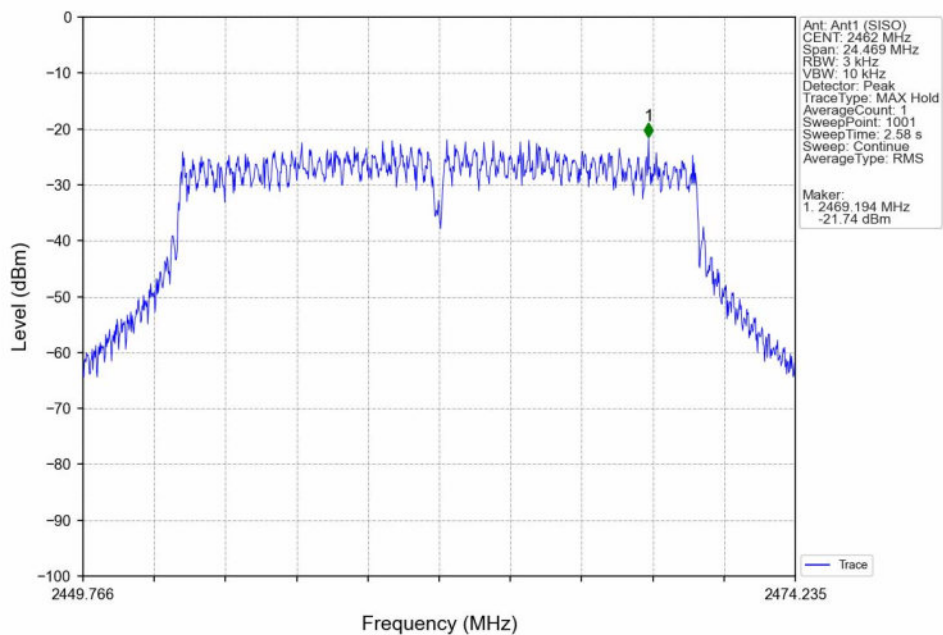


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

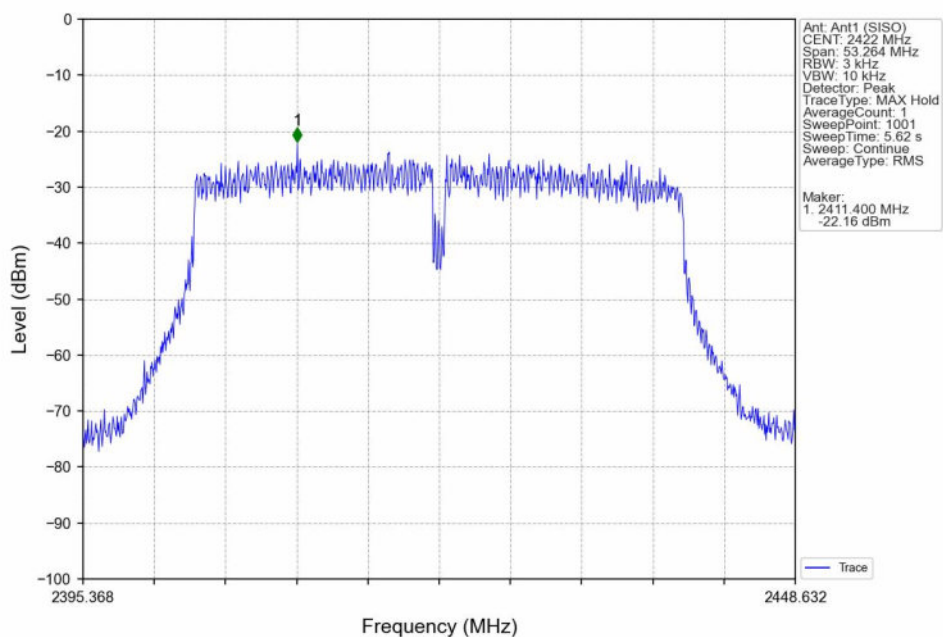




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

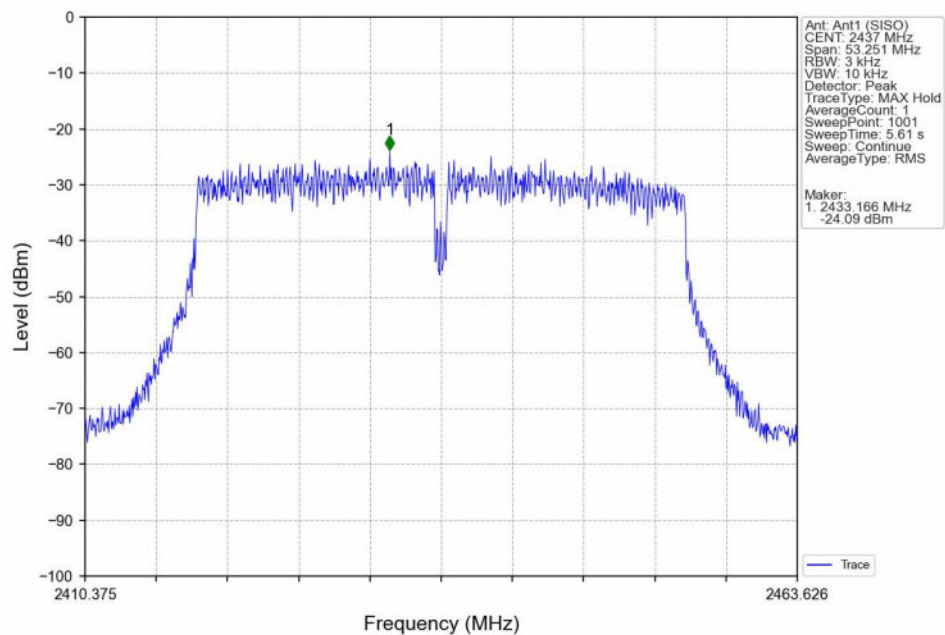


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

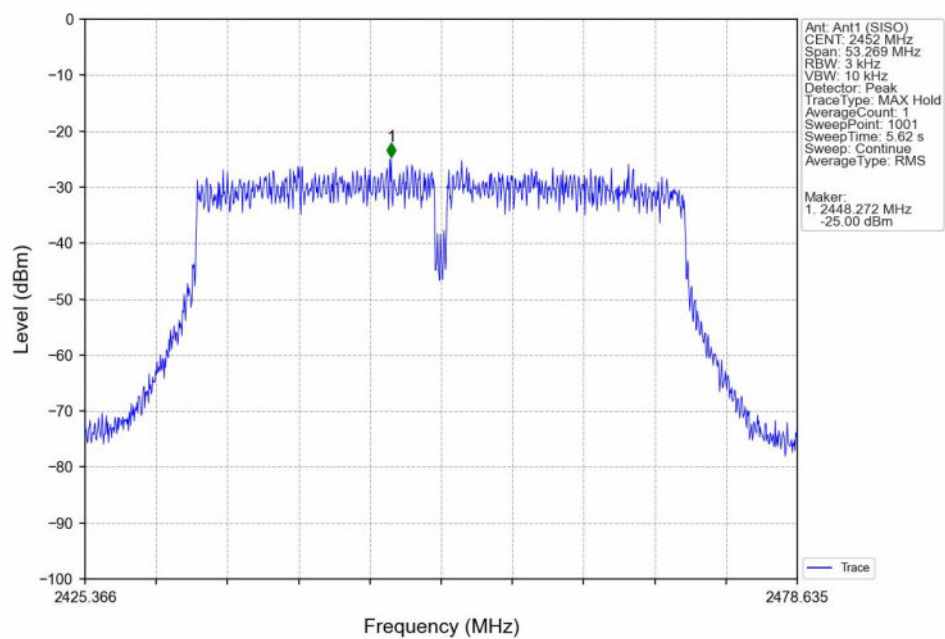




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



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	2.23
		2437	1	1.83
		2462	1	1.84
802.11g	SISO	2412	1	-6.04
		2437	1	-6.55
		2462	1	-5.54
802.11n (HT20)	SISO	2412	1	-5.54
		2437	1	-6.80
		2462	1	-6.38
802.11n (HT40)	SISO	2422	1	-8.69
		2437	1	-9.57
		2452	1	-10.04

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

5.1.2 CSE

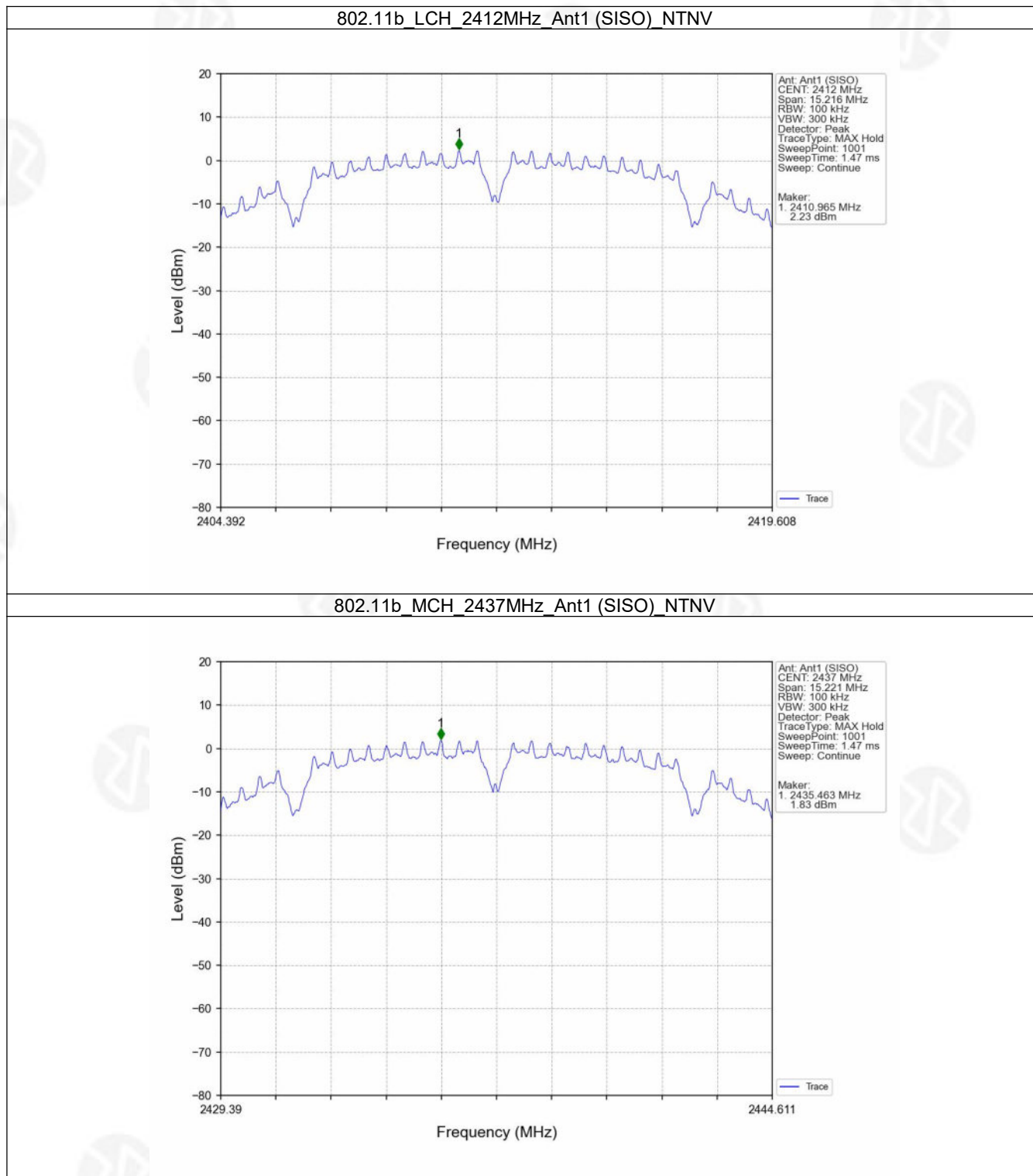
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	2.23	-17.77	Pass
		2437	1	1.83	-18.17	Pass
		2462	1	1.84	-18.16	Pass
802.11g	SISO	2412	1	-6.04	-26.04	Pass
		2437	1	-6.55	-26.55	Pass
		2462	1	-5.54	-25.54	Pass
802.11n (HT20)	SISO	2412	1	-5.54	-25.54	Pass
		2437	1	-6.80	-26.80	Pass
		2462	1	-6.38	-26.38	Pass
802.11n (HT40)	SISO	2422	1	-8.69	-28.69	Pass
		2437	1	-9.57	-29.57	Pass
		2452	1	-10.04	-30.04	Pass

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



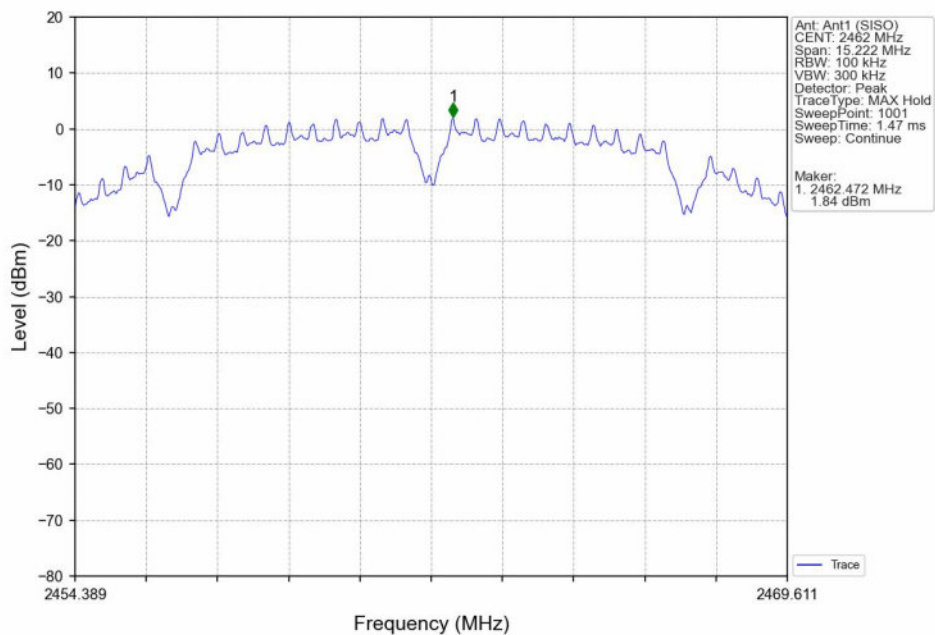
5.2 Test Graph

5.2.1 Ref

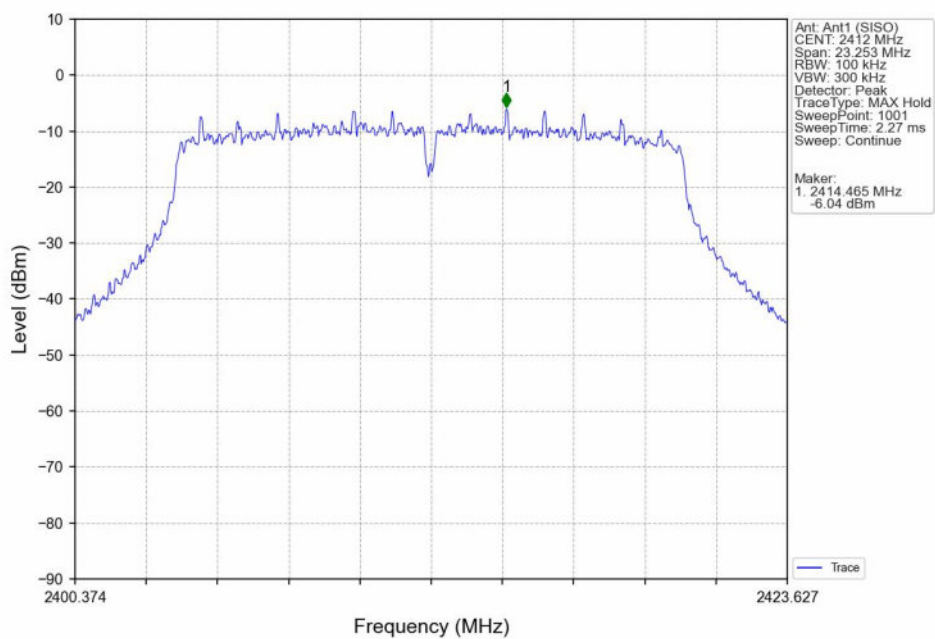




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

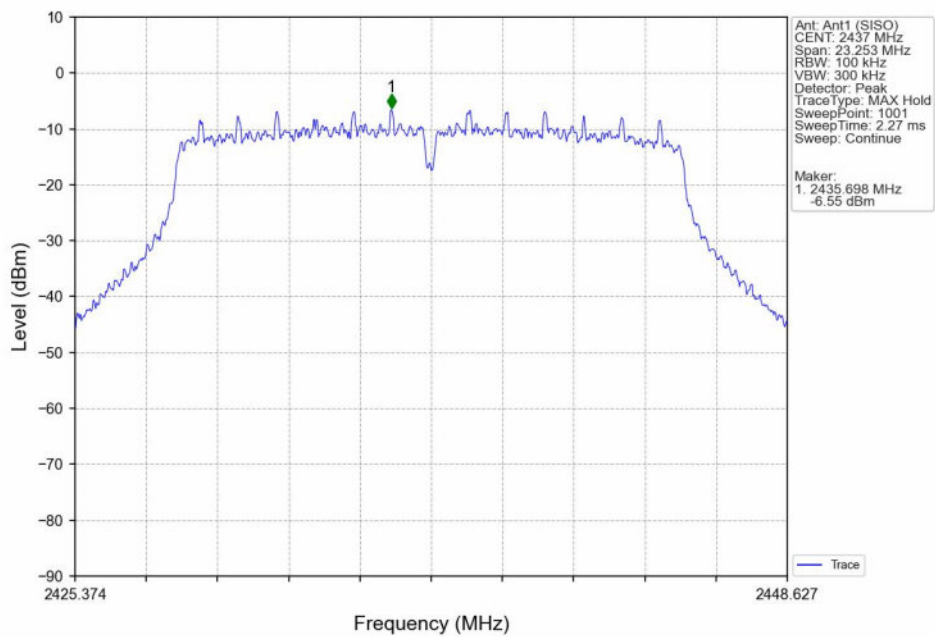


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

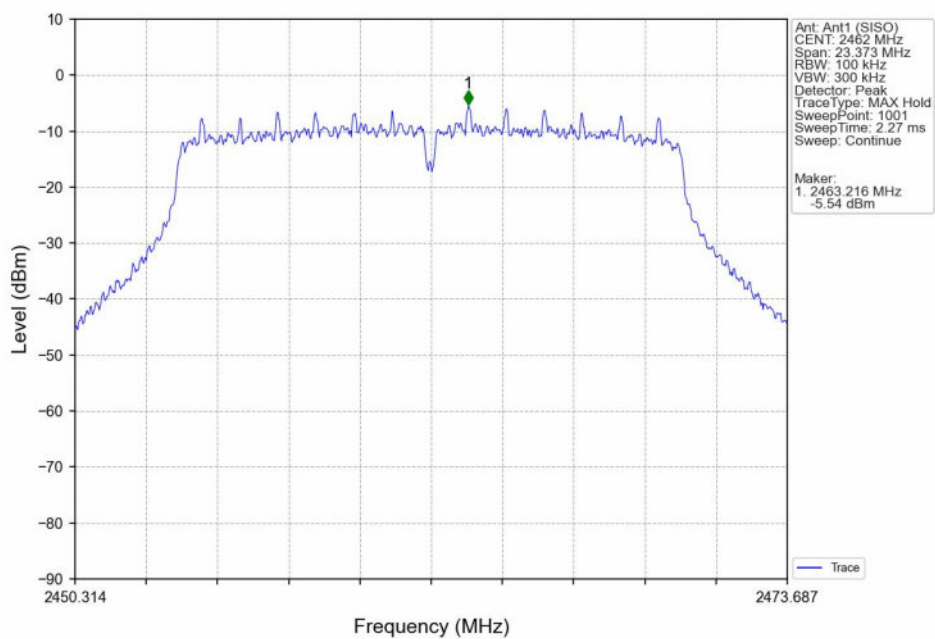




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

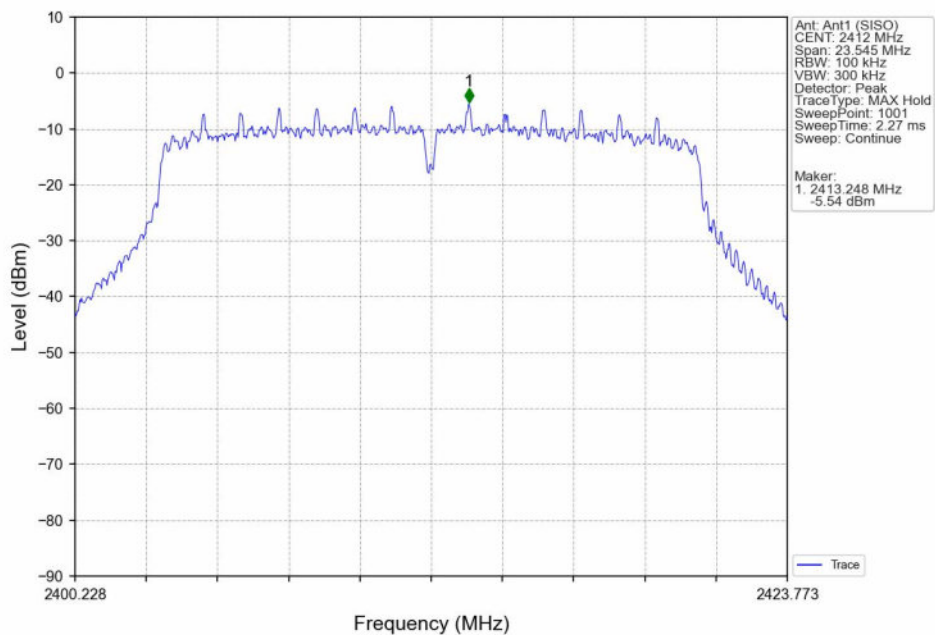


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

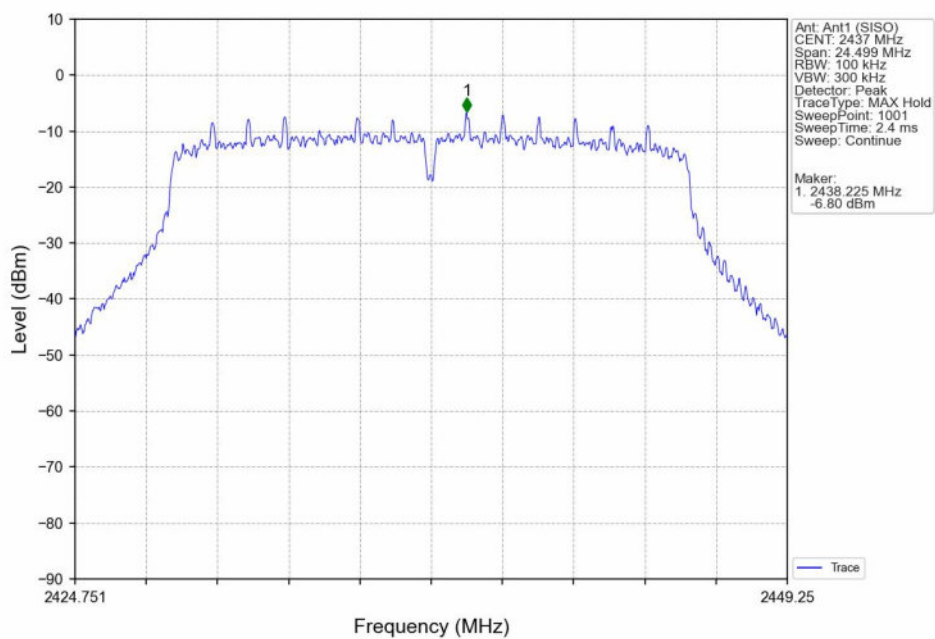




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

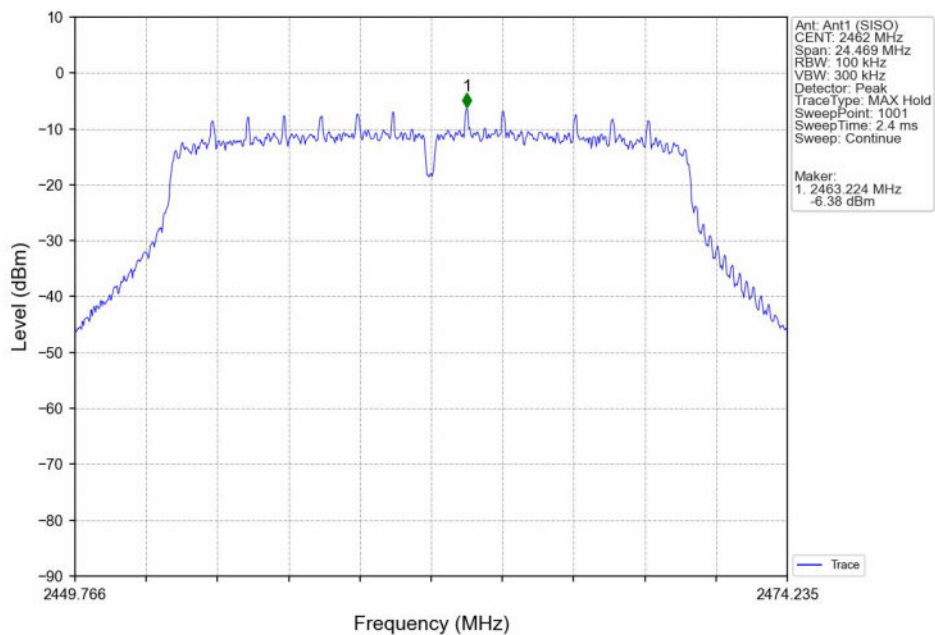


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

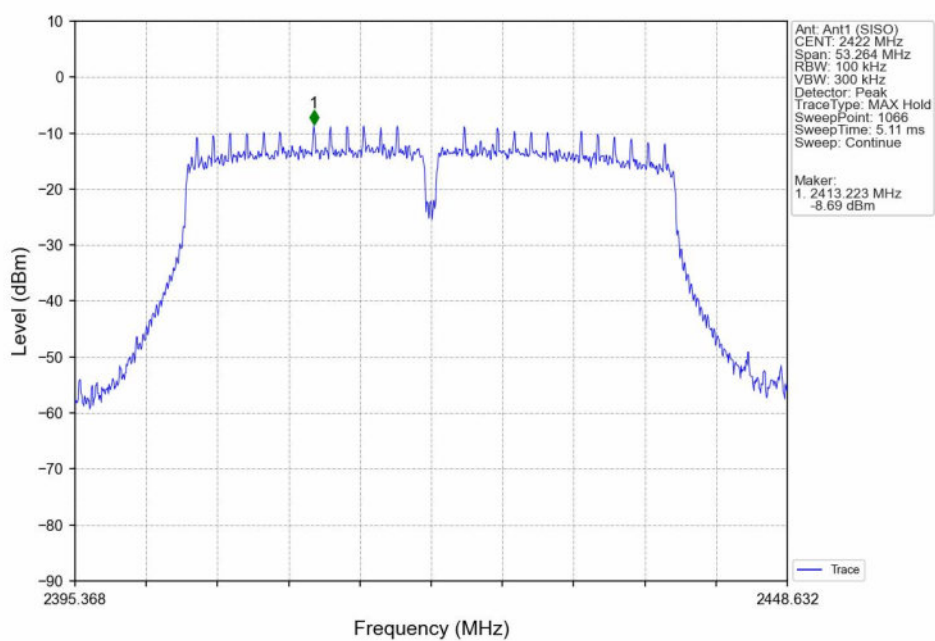




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

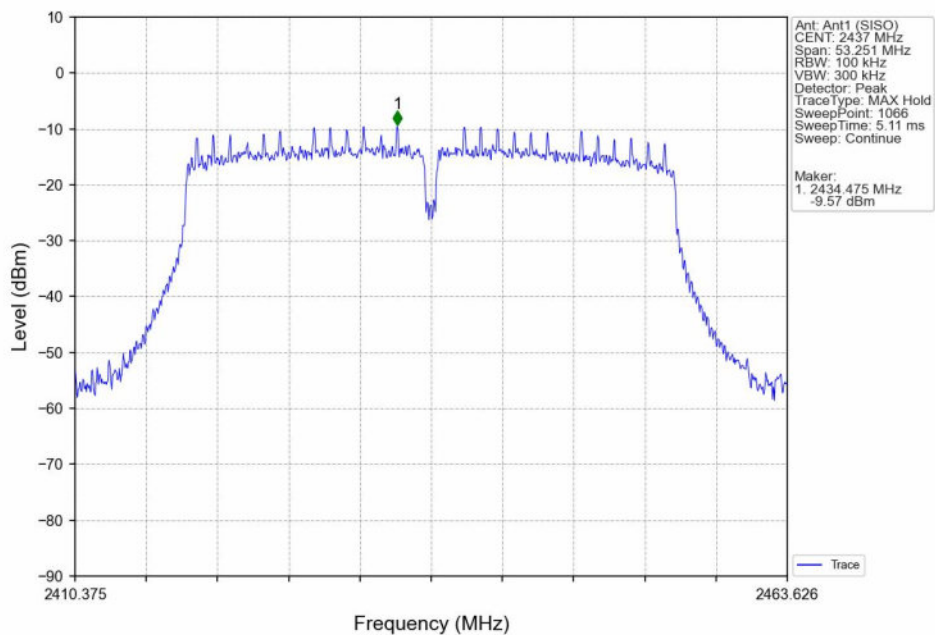


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

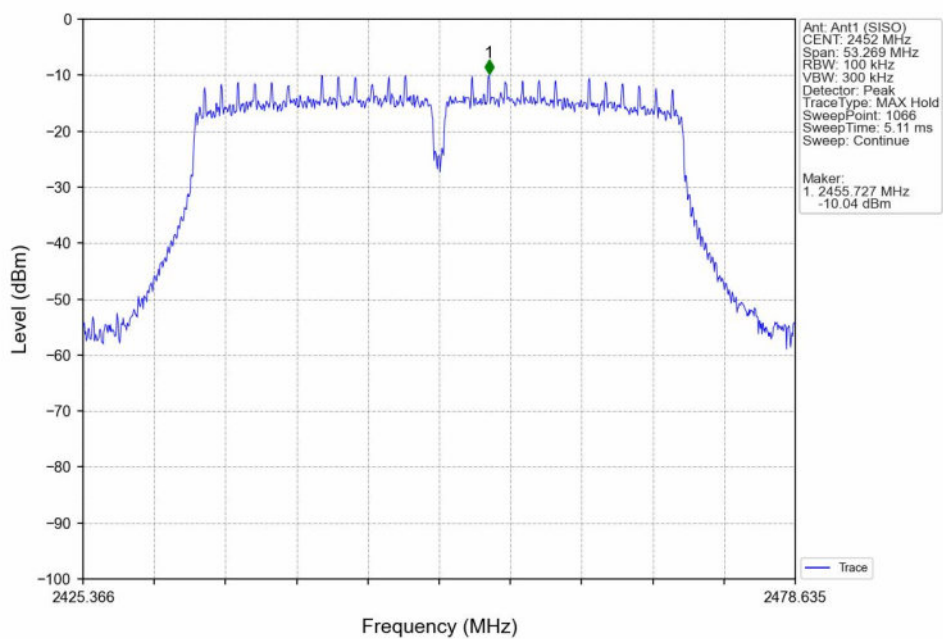




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



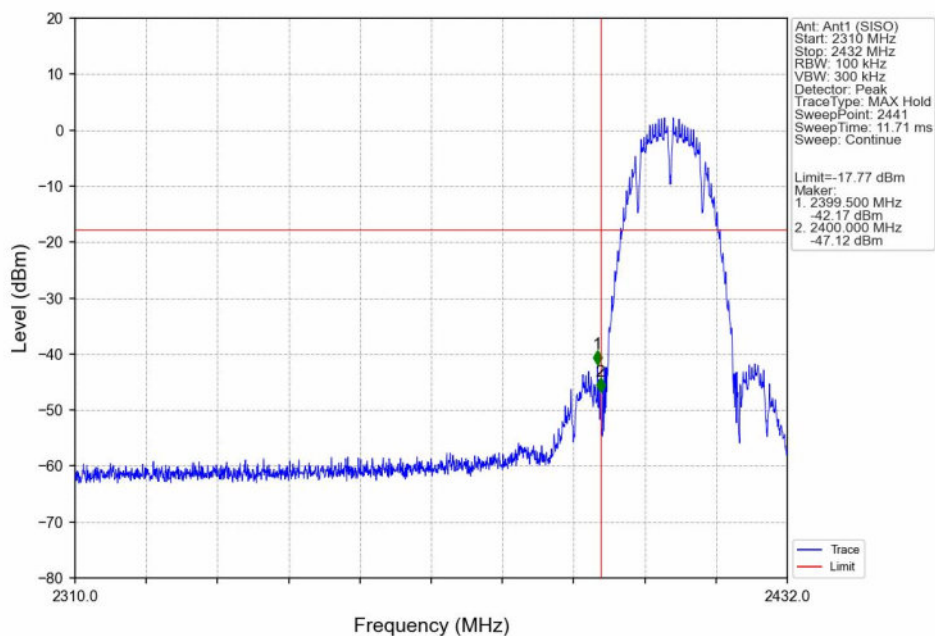
802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



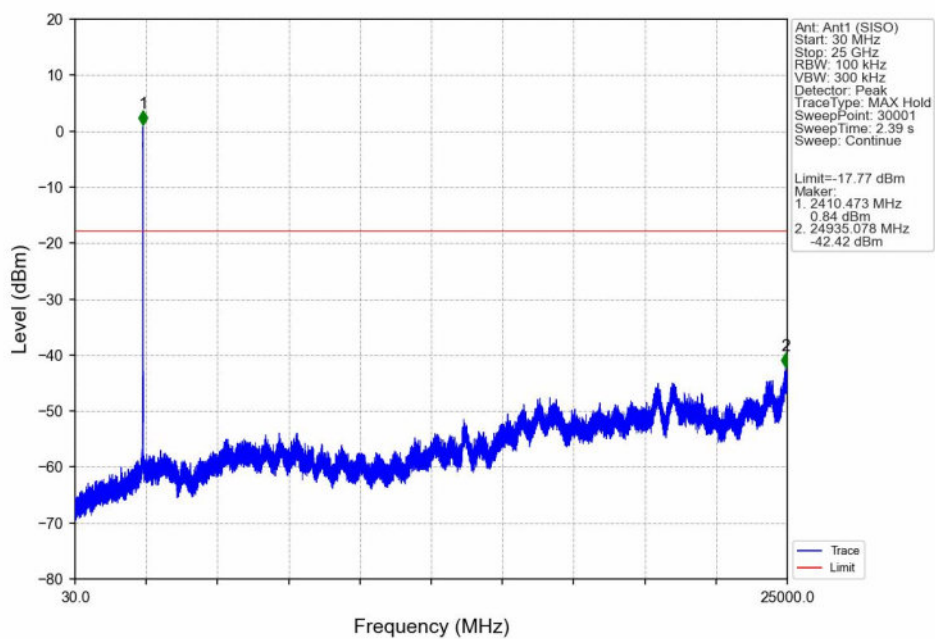


5.2.2 CSE

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV

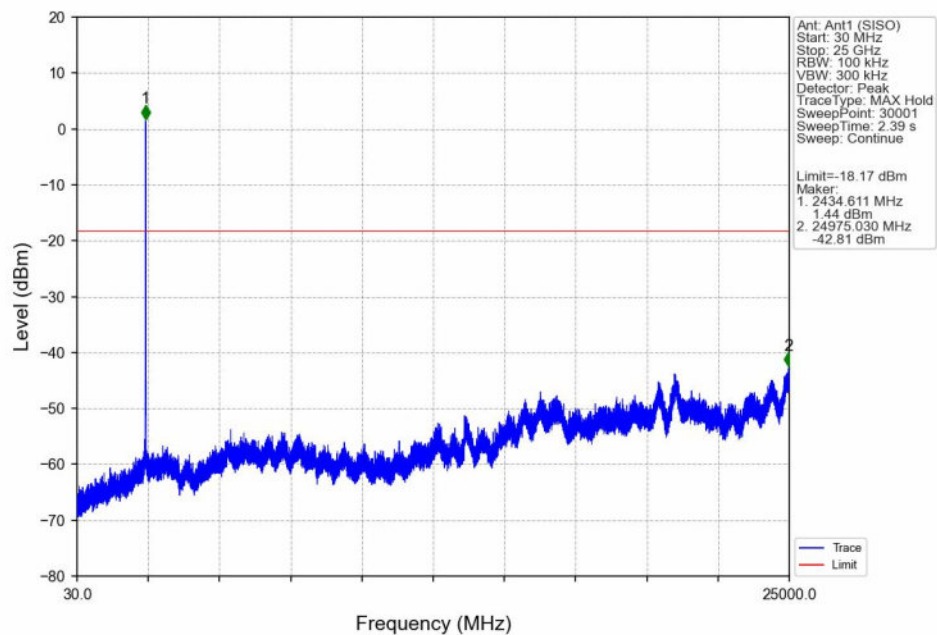


802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV

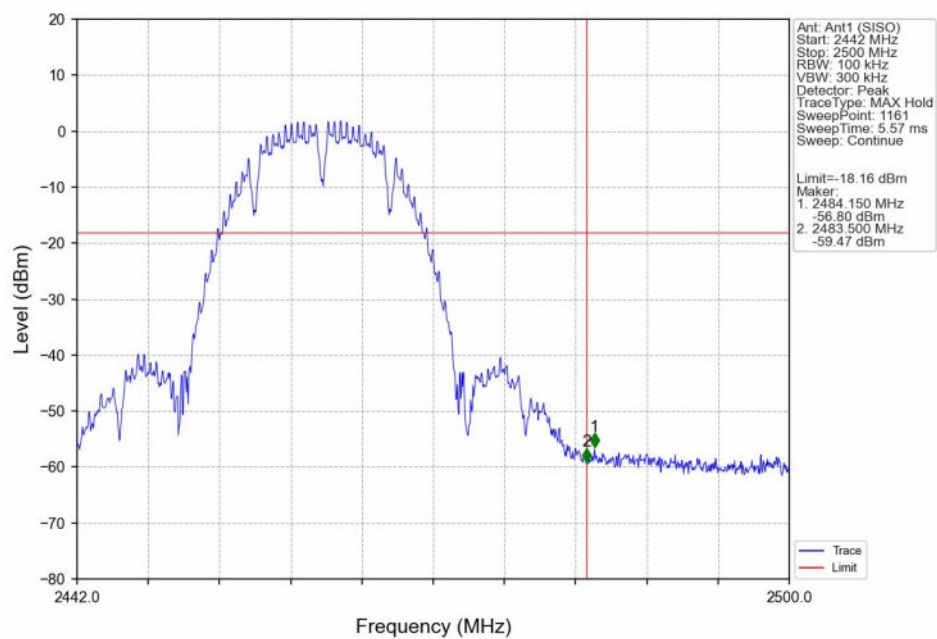




802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV

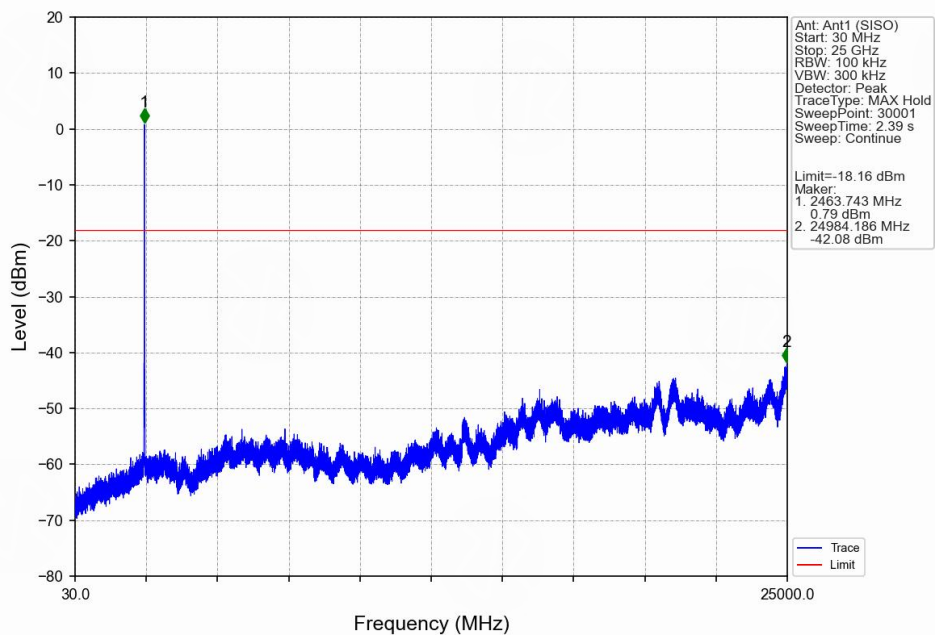


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

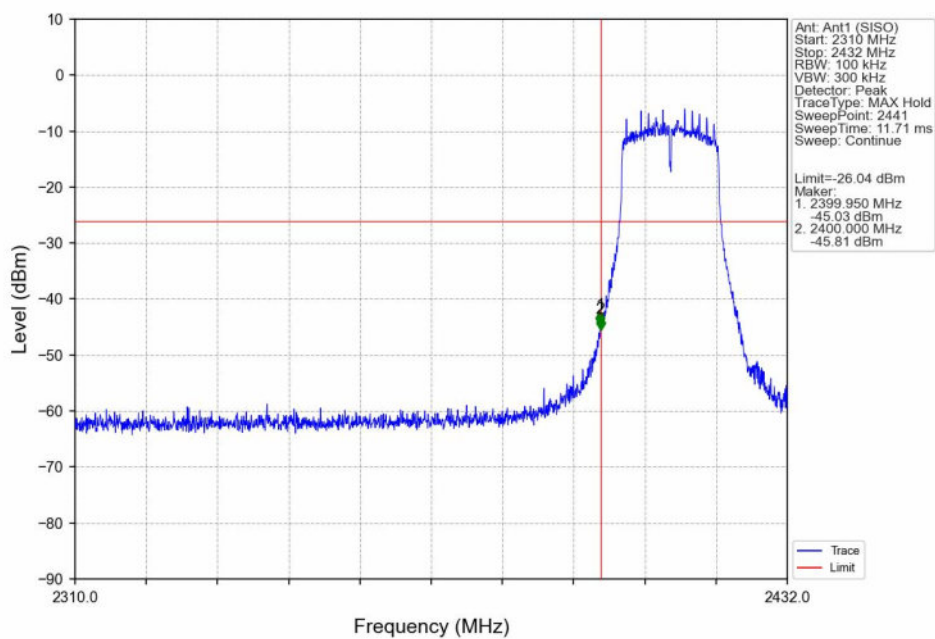




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

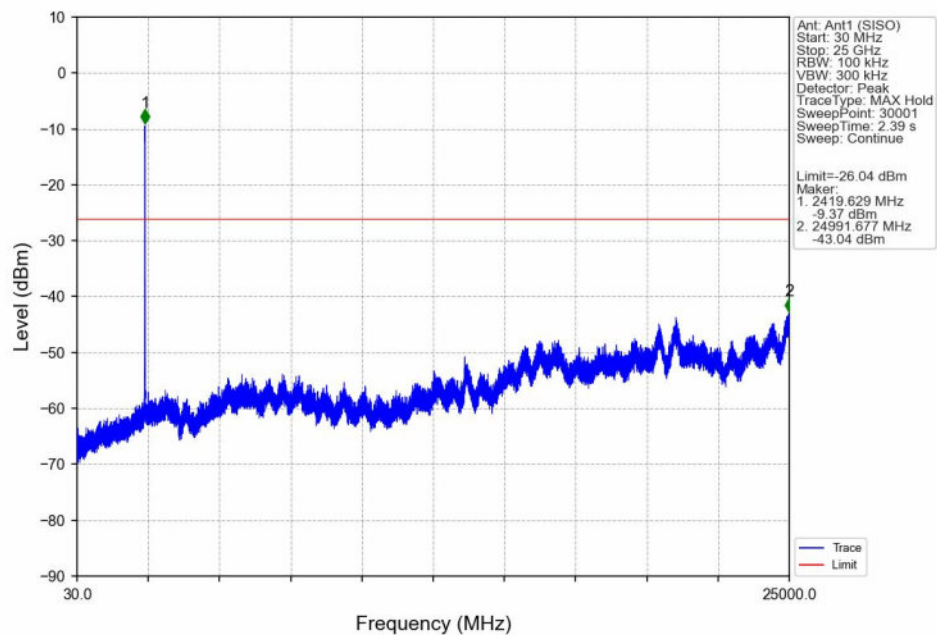


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

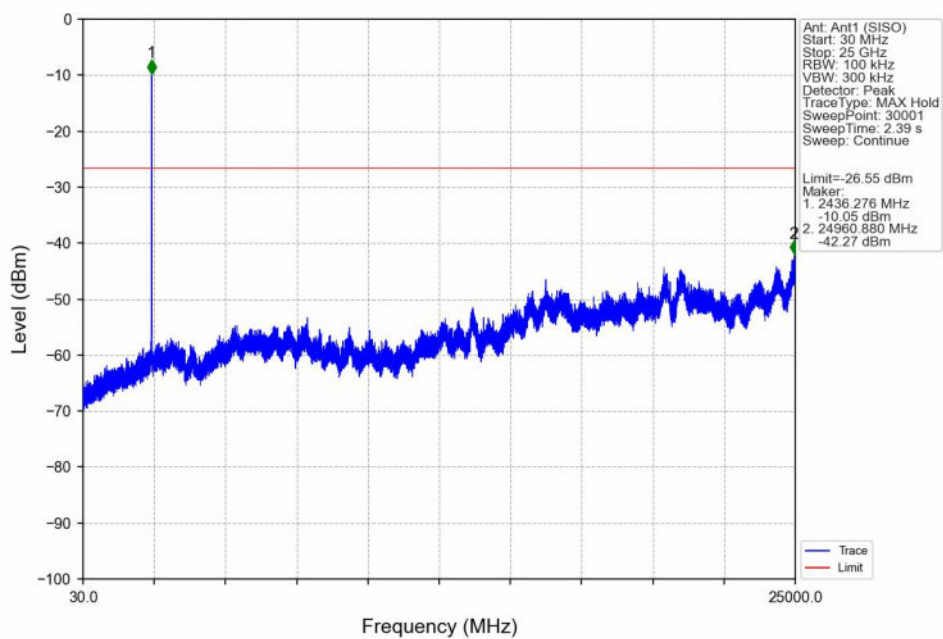




802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

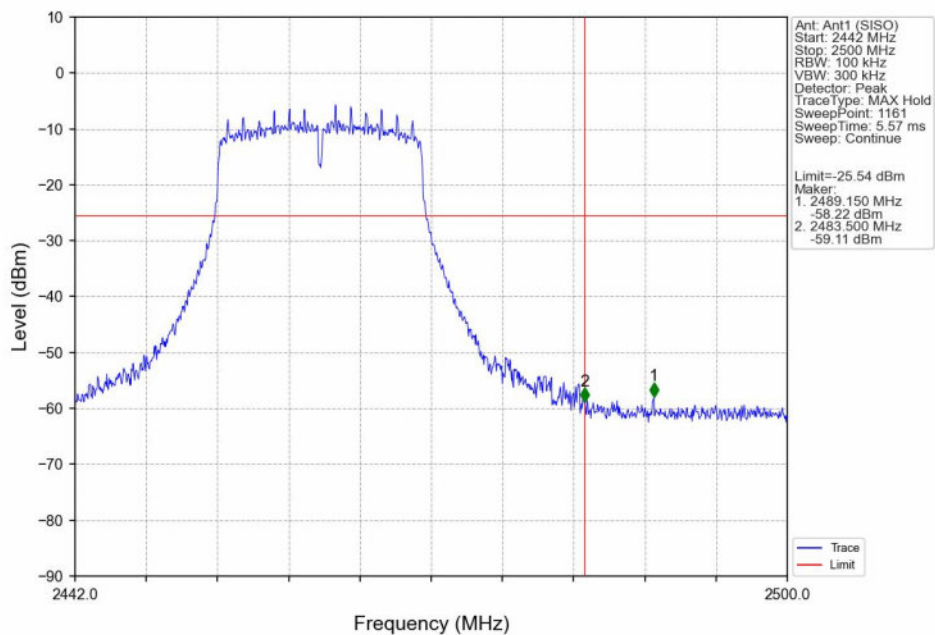


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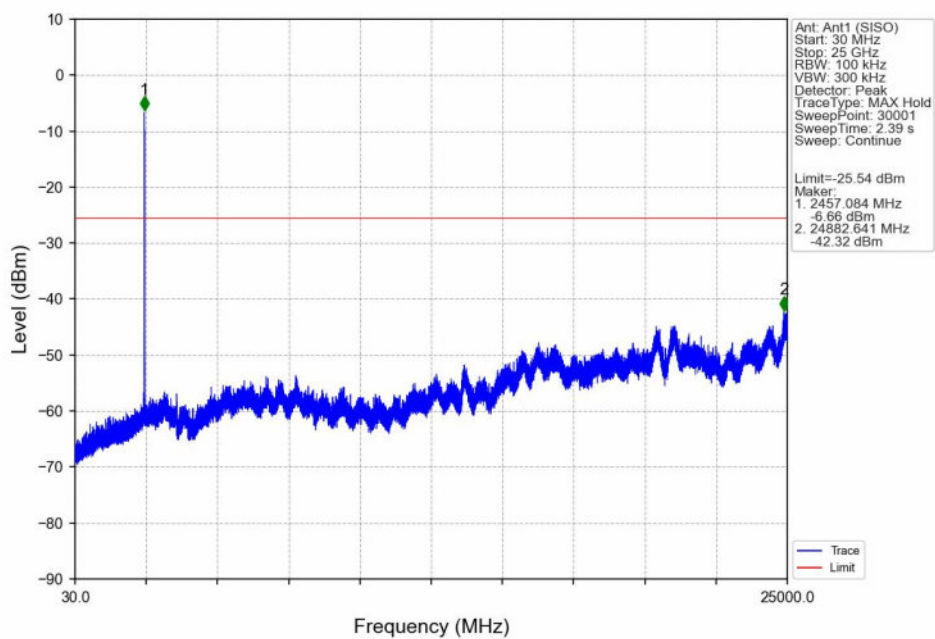




802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

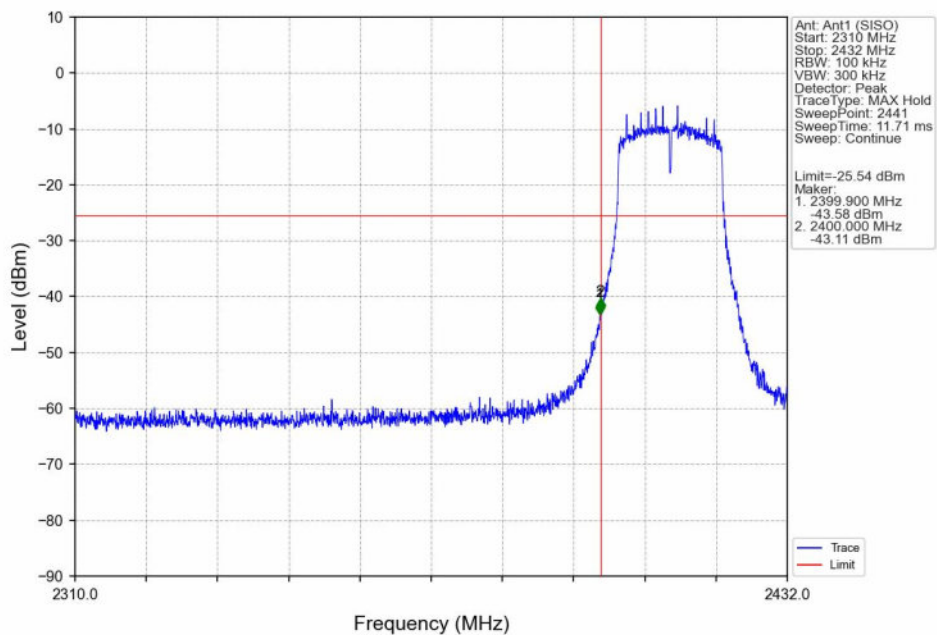


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

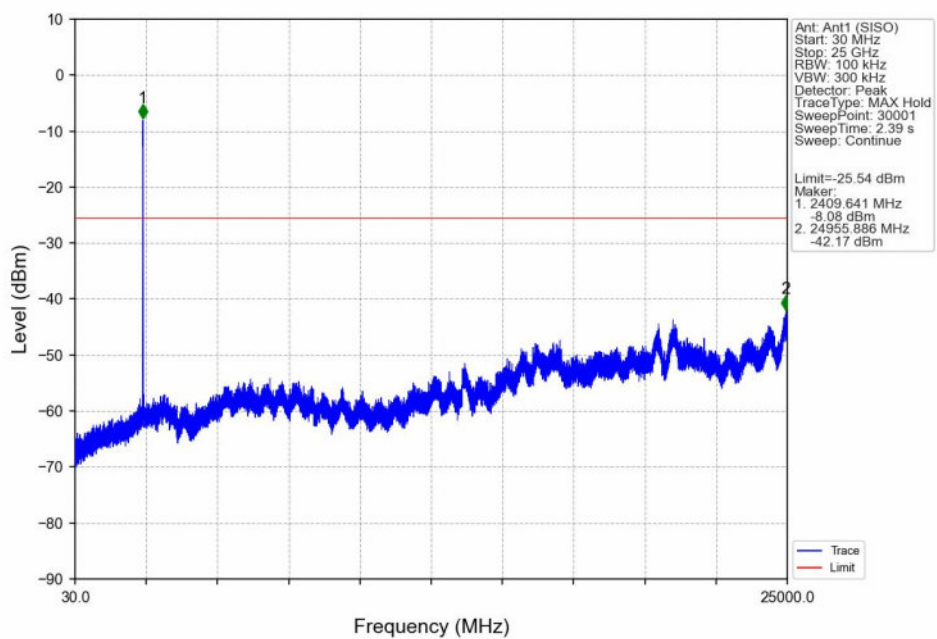




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

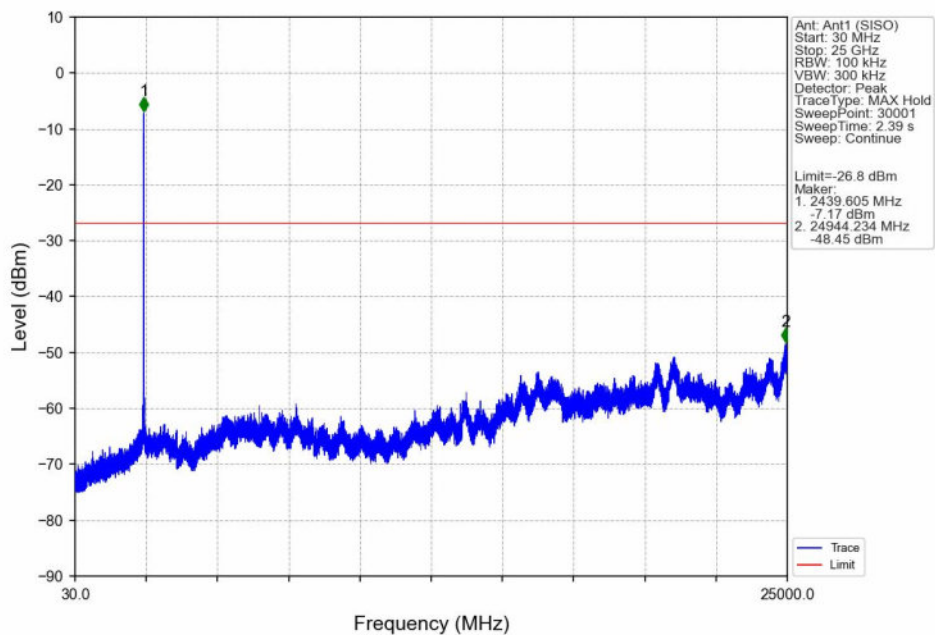


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

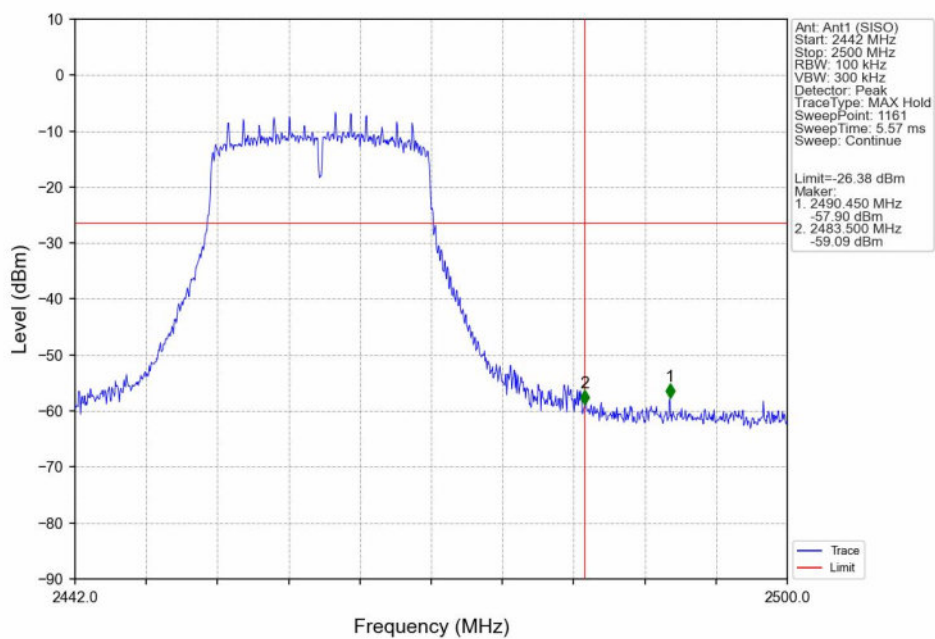




802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

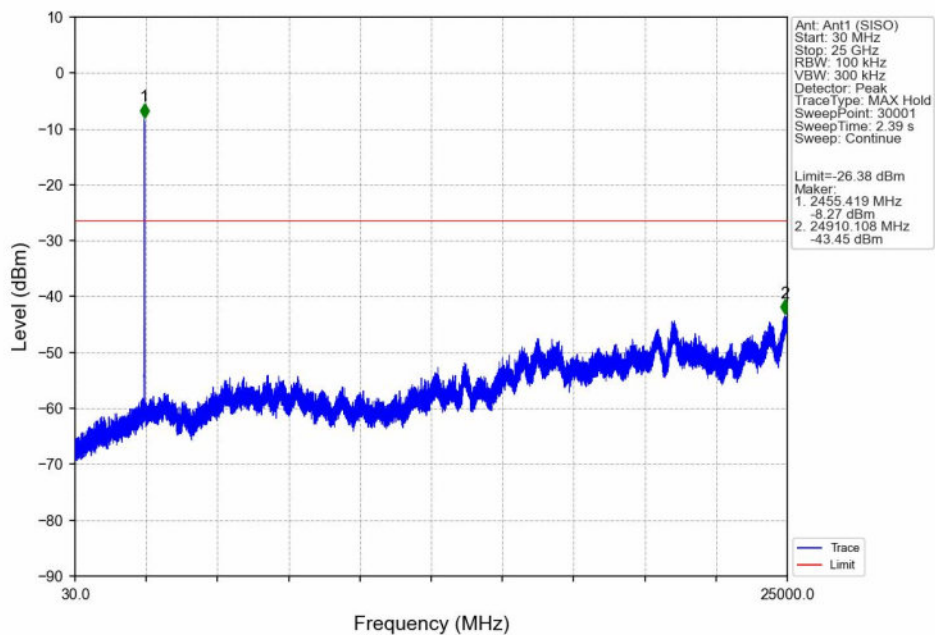


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

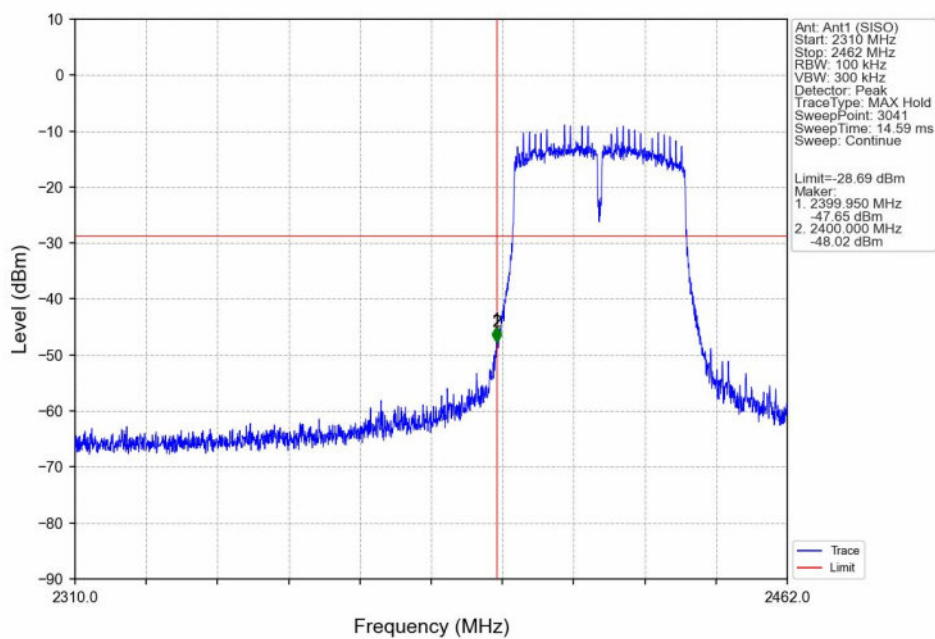




802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

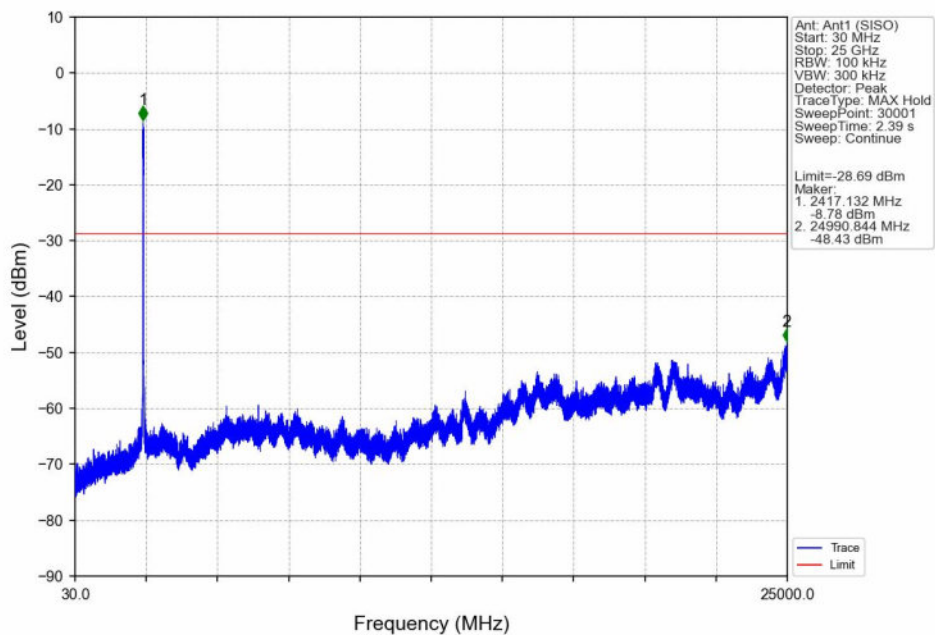


802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

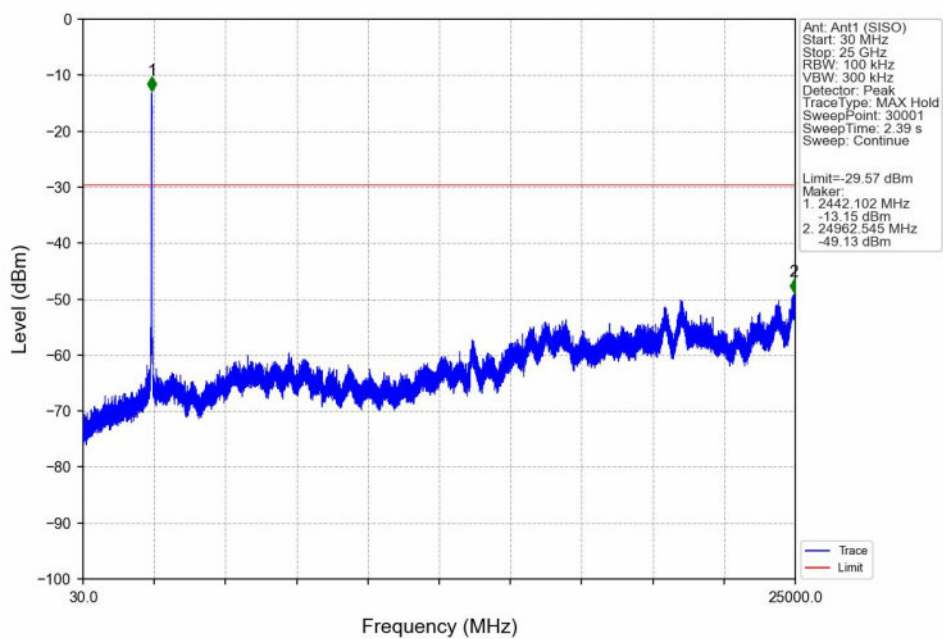




802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV

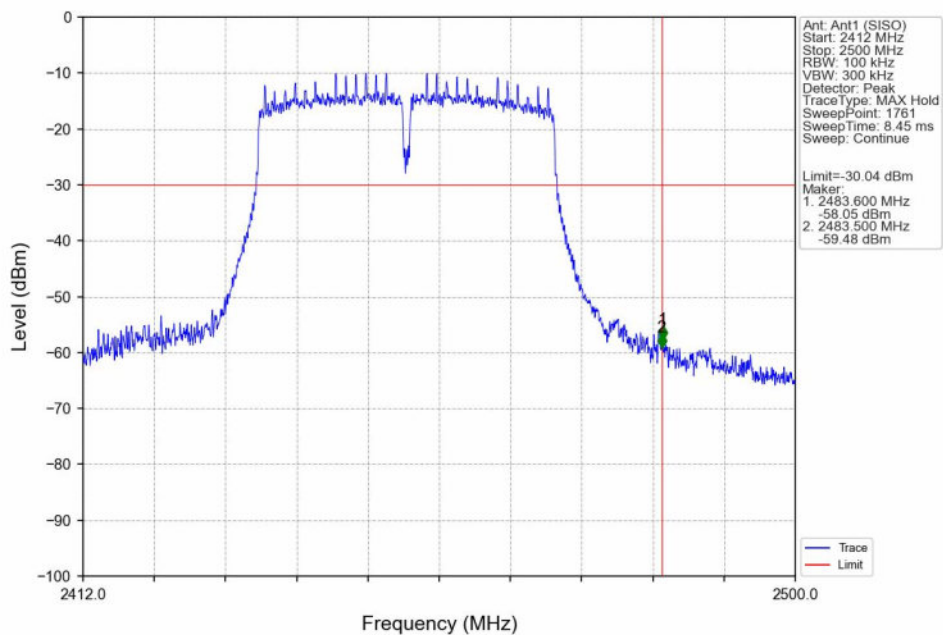


802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV

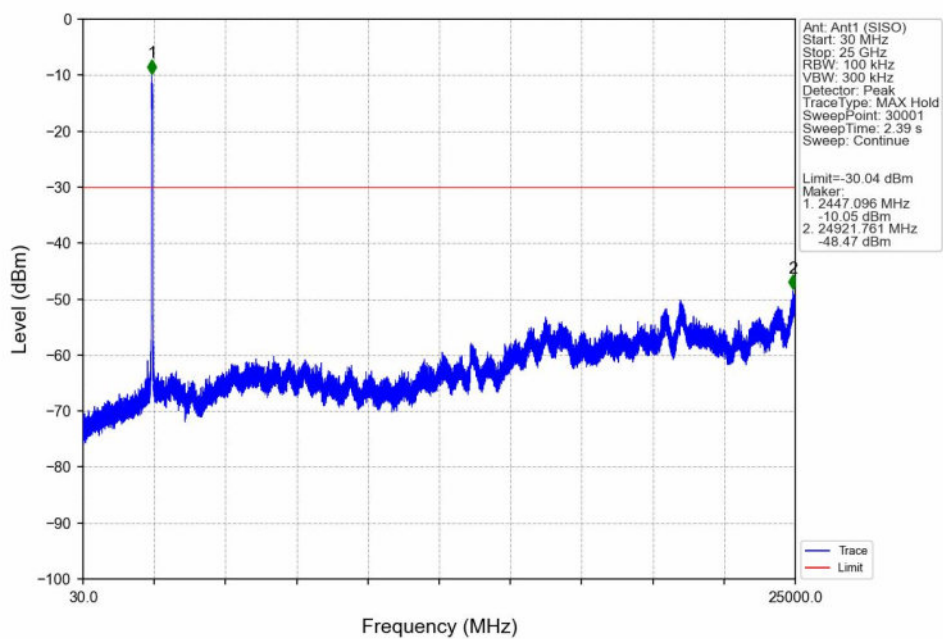




802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



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	0.0252	14.02
2422	2452	0.0191	12.82