



RF Test Data

For

Project No.:	DLE-251013054R
Client:	SHENZHEN FCAR TECHNOLOGY CO.,LTD
Manufacturer:	SHENZHEN FCAR TECHNOLOGY CO.,LTD
Product Description:	VCI
Model Number:	FV400
Test Engineer:	Alisa Song

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



1. Duty Cycle

1.1 Test Result

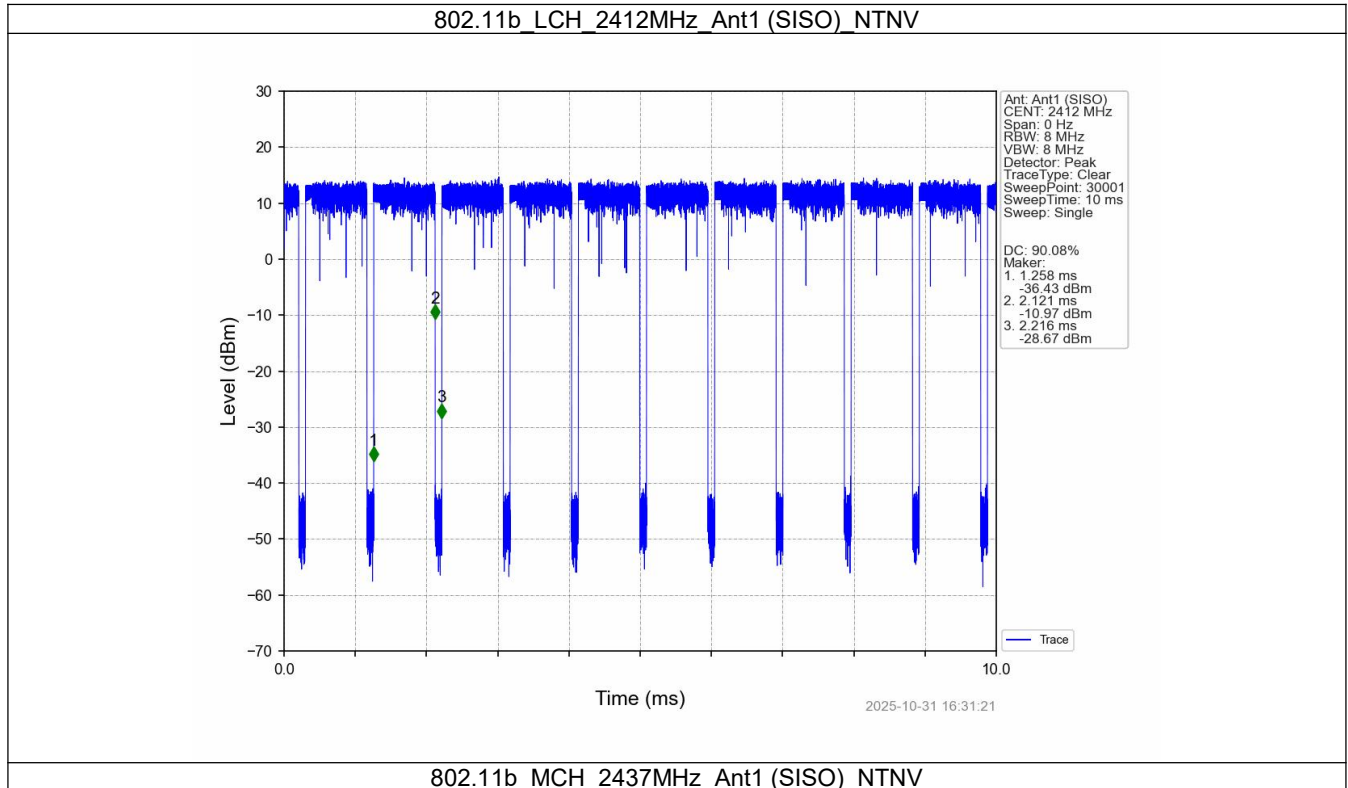
1.1.1 Ant1

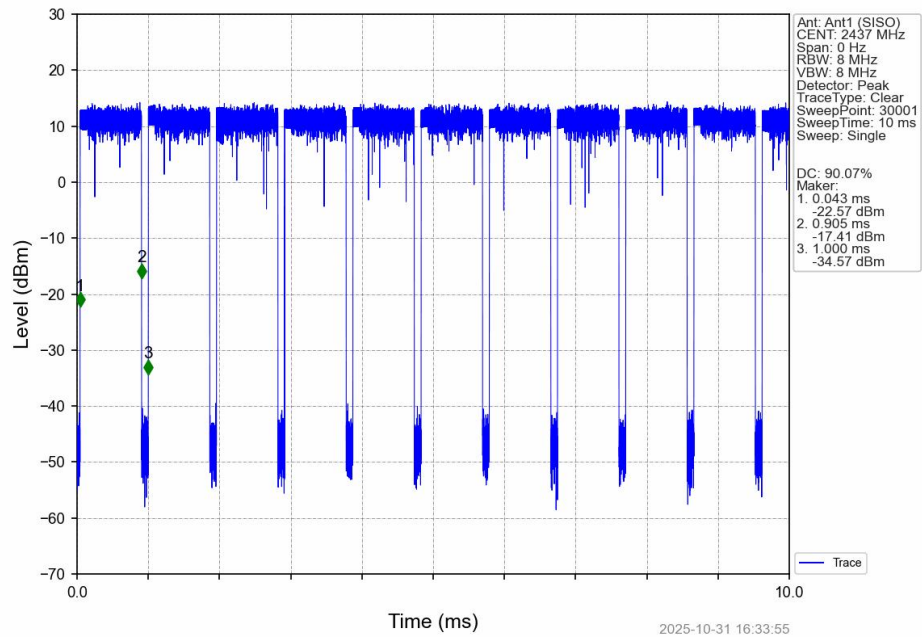
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	0.863	0.958	90.08	0.45	0.03
		2437	0.862	0.957	90.07	0.45	0.03
		2462	0.863	0.958	90.08	0.45	0.03
802.11g	SISO	2412	0.181	0.283	63.96	1.94	0.13
		2437	0.182	0.284	64.08	1.93	0.05
		2462	0.181	0.283	63.96	1.94	0.07
802.11n (HT20)	SISO	2412	0.172	0.271	63.47	1.97	0.12
		2437	0.173	0.272	63.60	1.97	0.13
		2462	0.173	0.272	63.60	1.97	0.12



1.2 Test Graph

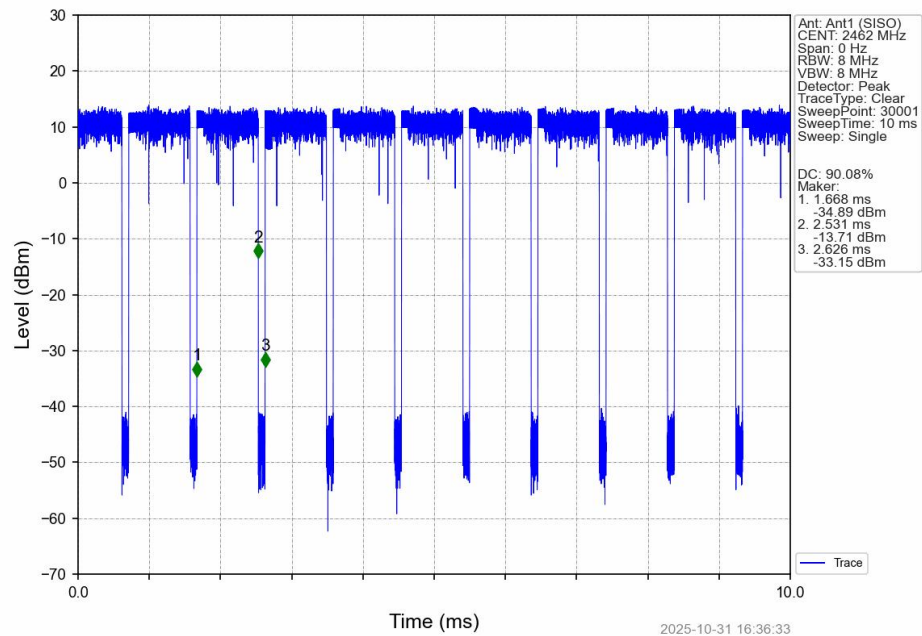
1.2.1 Ant1



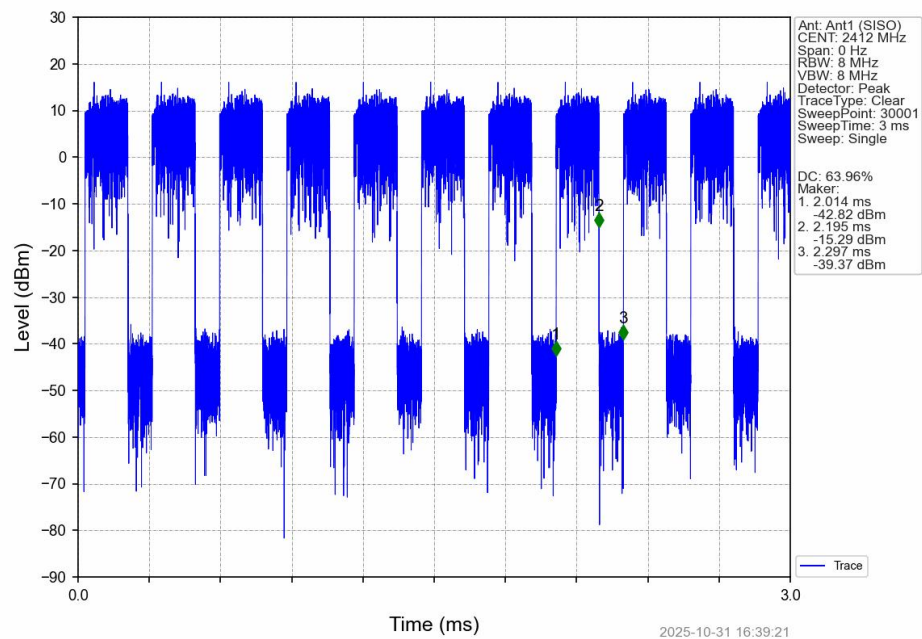




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

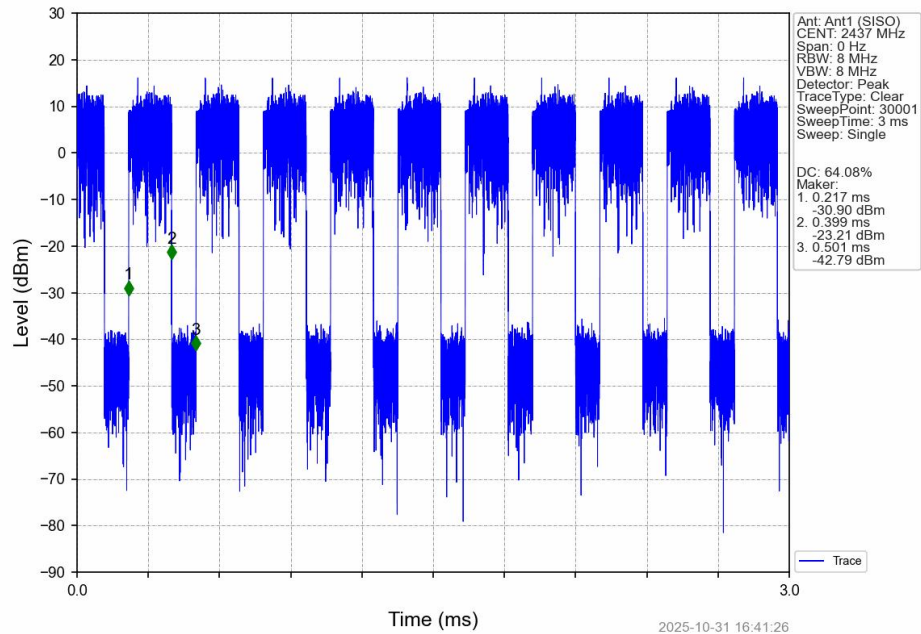


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

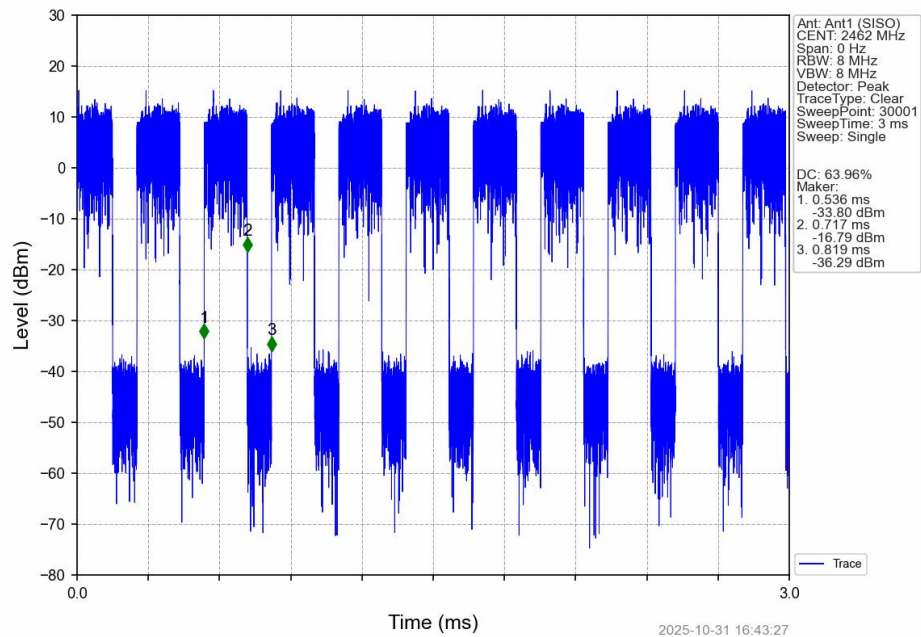




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

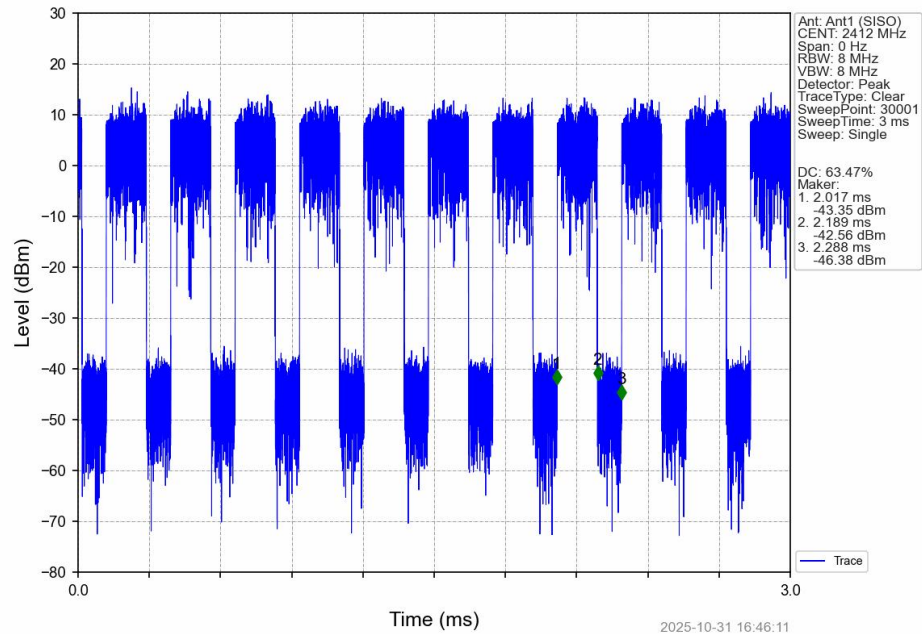


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

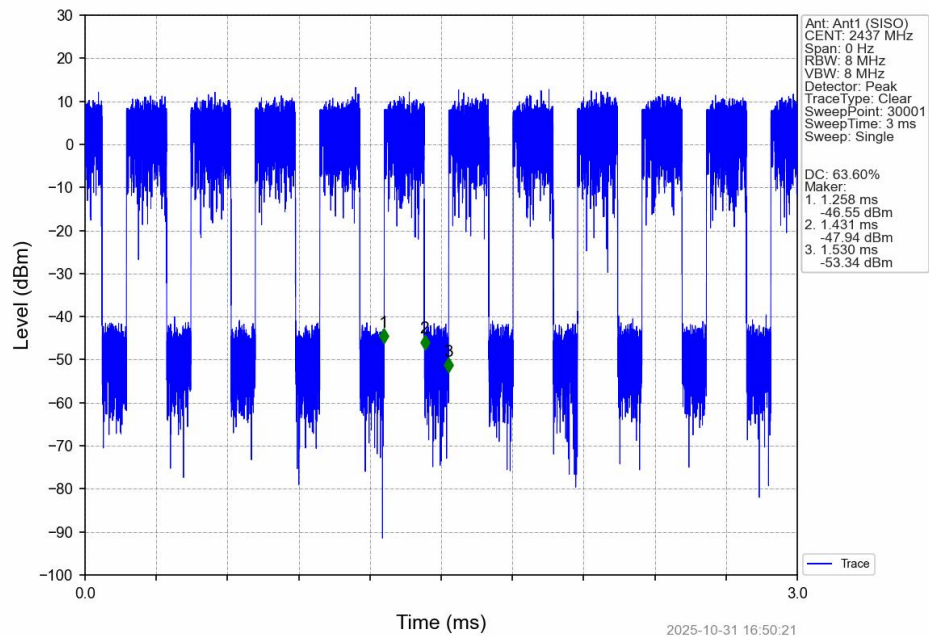




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

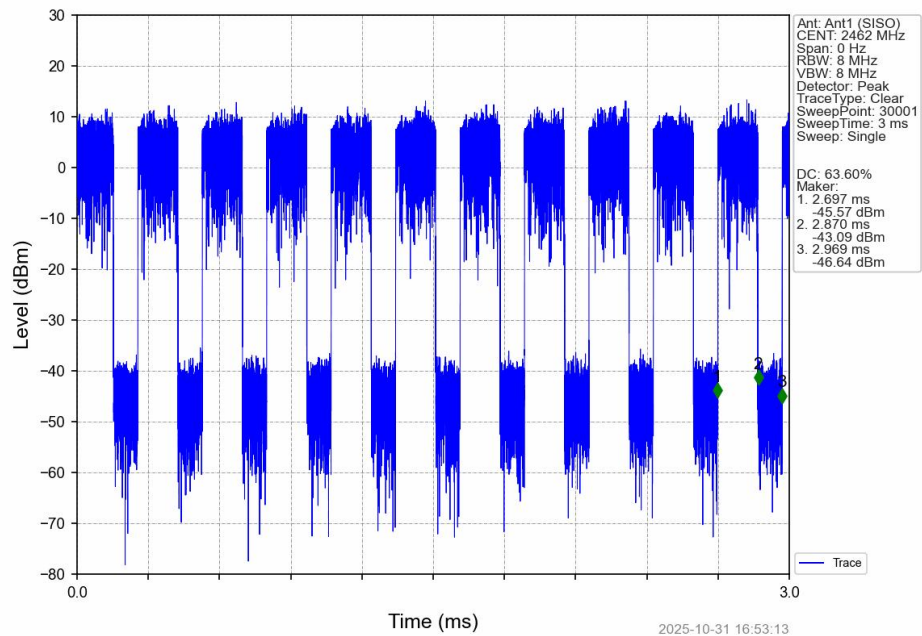


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV





802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	11.632	/	Pass
		2437	1	11.618	/	Pass
		2462	1	11.747	/	Pass
802.11g	SISO	2412	1	16.724	/	Pass
		2437	1	17.161	/	Pass
		2462	1	16.738	/	Pass
802.11n (HT20)	SISO	2412	1	18.144	/	Pass
		2437	1	18.333	/	Pass
		2462	1	18.111	/	Pass

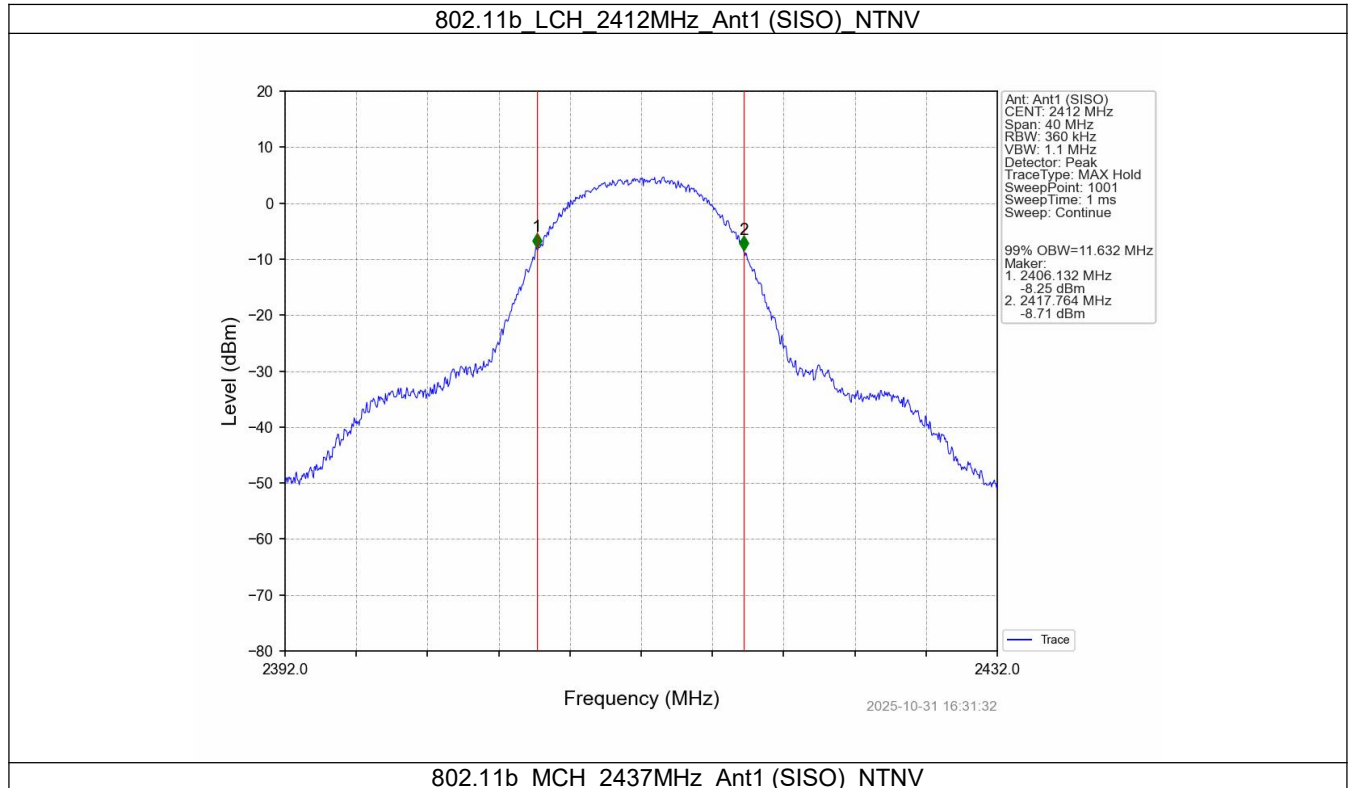
2.1.2 6dB BW

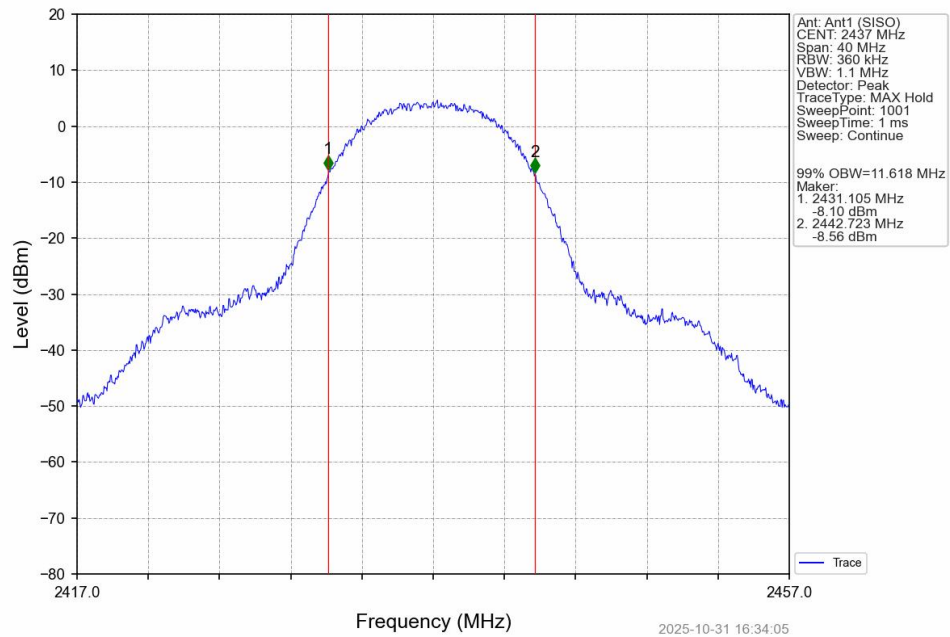
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.453	≥ 0.5	Pass
		2437	1	8.736	≥ 0.5	Pass
		2462	1	8.678	≥ 0.5	Pass
802.11g	SISO	2412	1	14.565	≥ 0.5	Pass
		2437	1	16.157	≥ 0.5	Pass
		2462	1	15.337	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	14.896	≥ 0.5	Pass
		2437	1	17.260	≥ 0.5	Pass
		2462	1	16.408	≥ 0.5	Pass



2.2 Test Graph

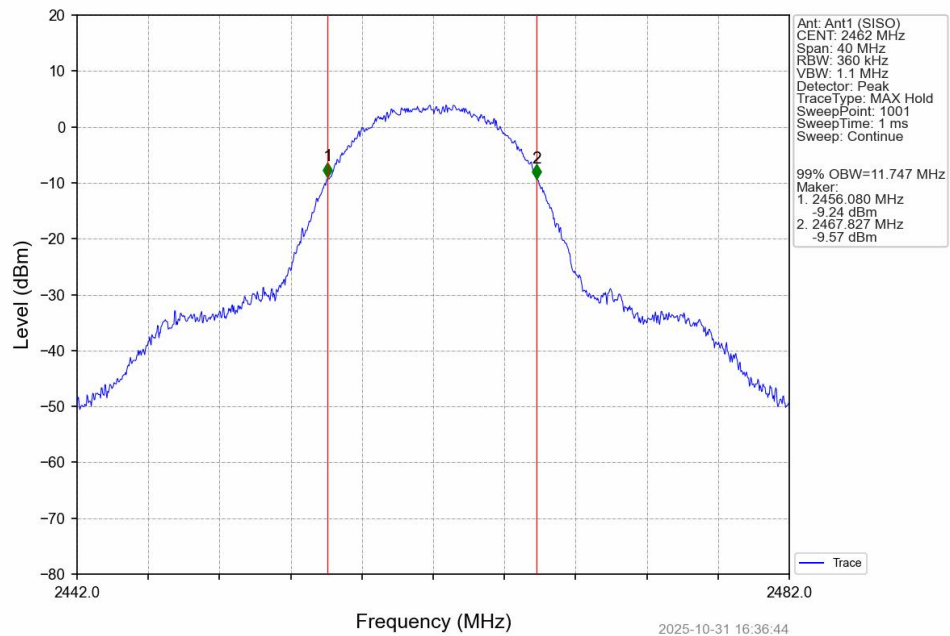
2.2.1 OBW



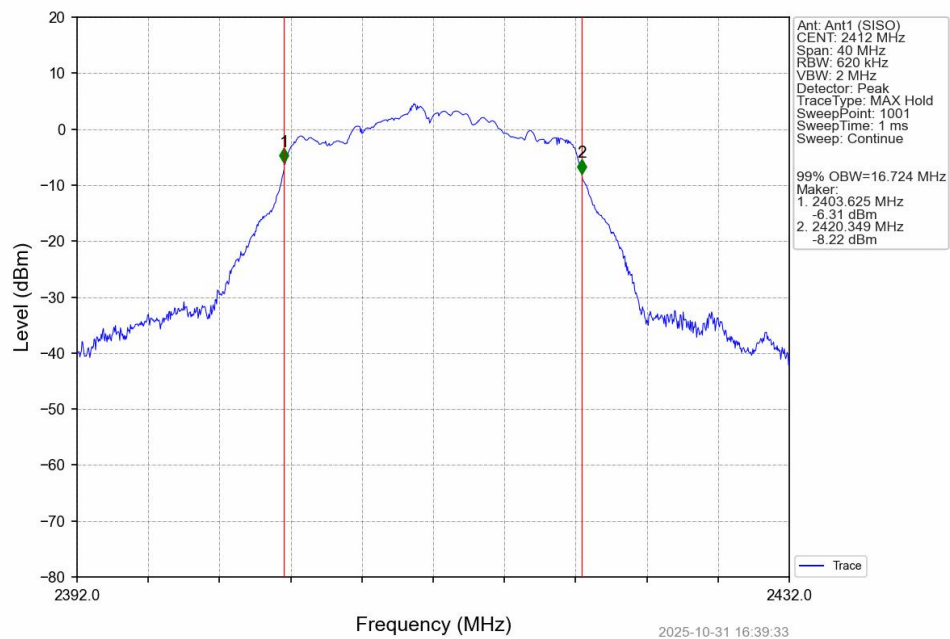




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

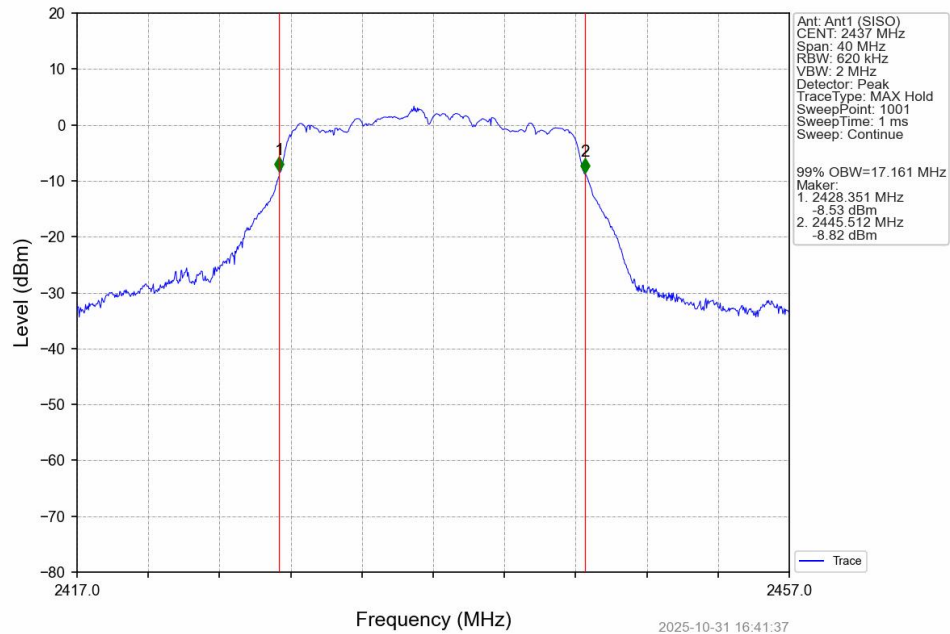


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

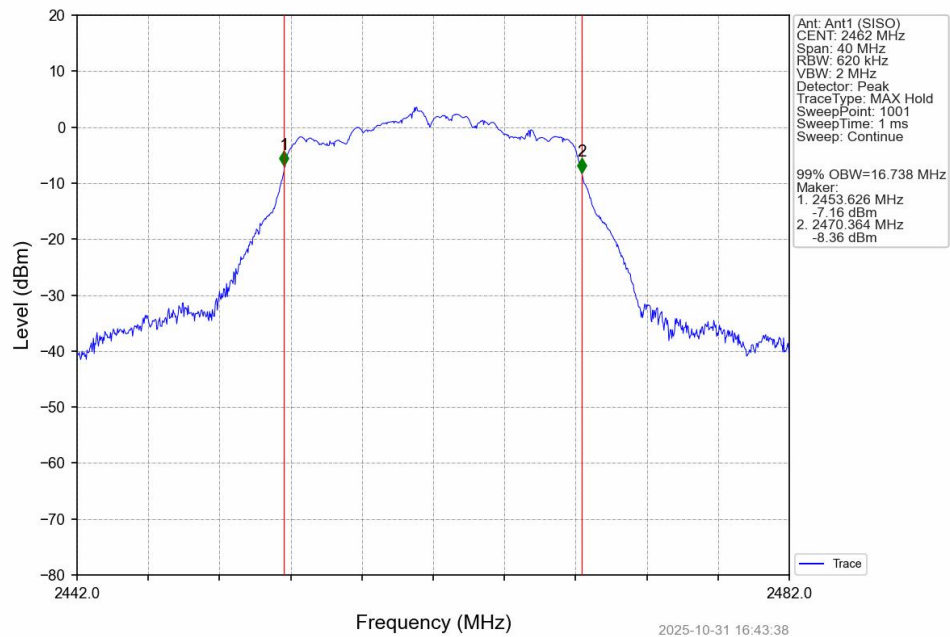




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

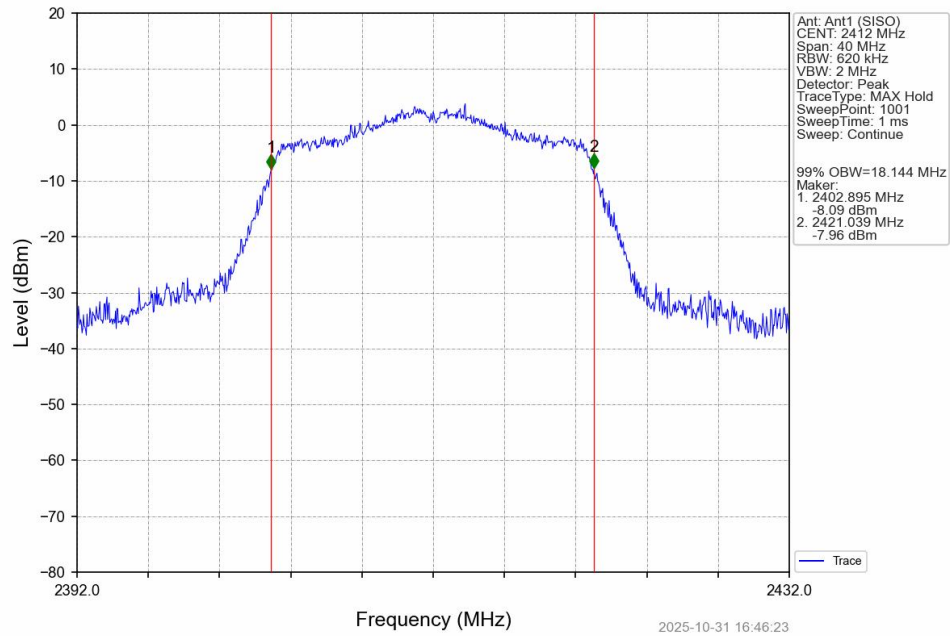


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

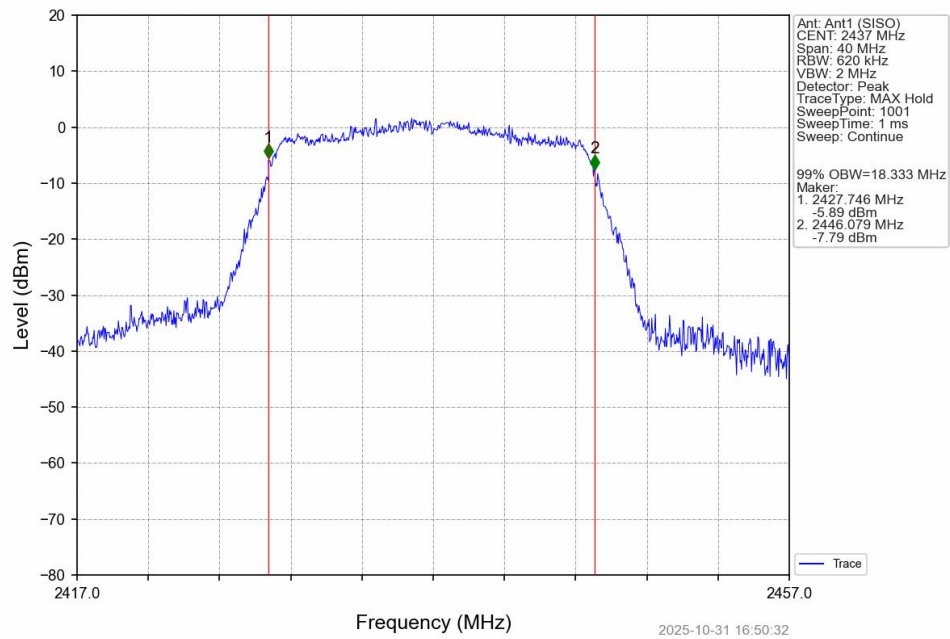




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

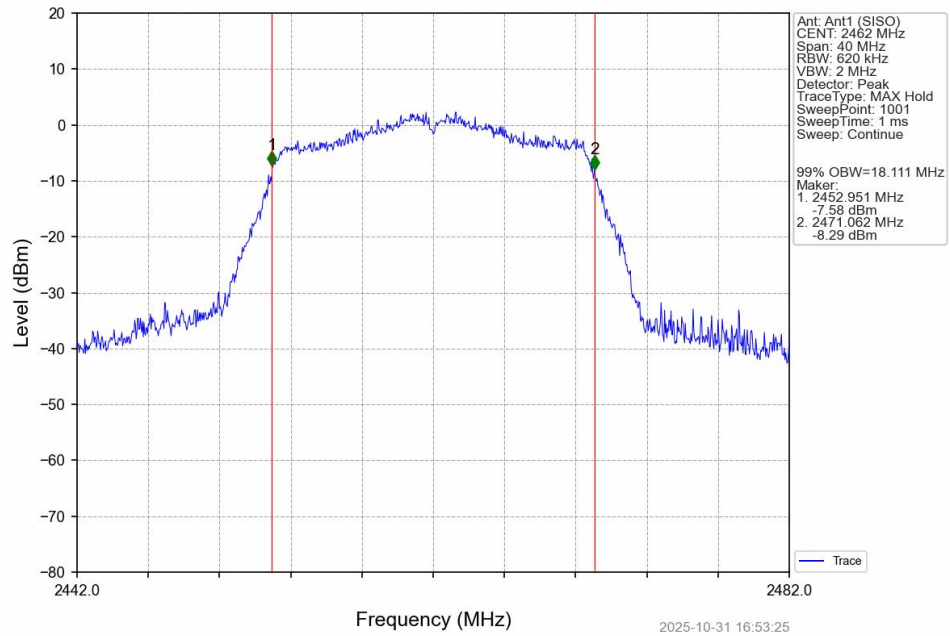


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



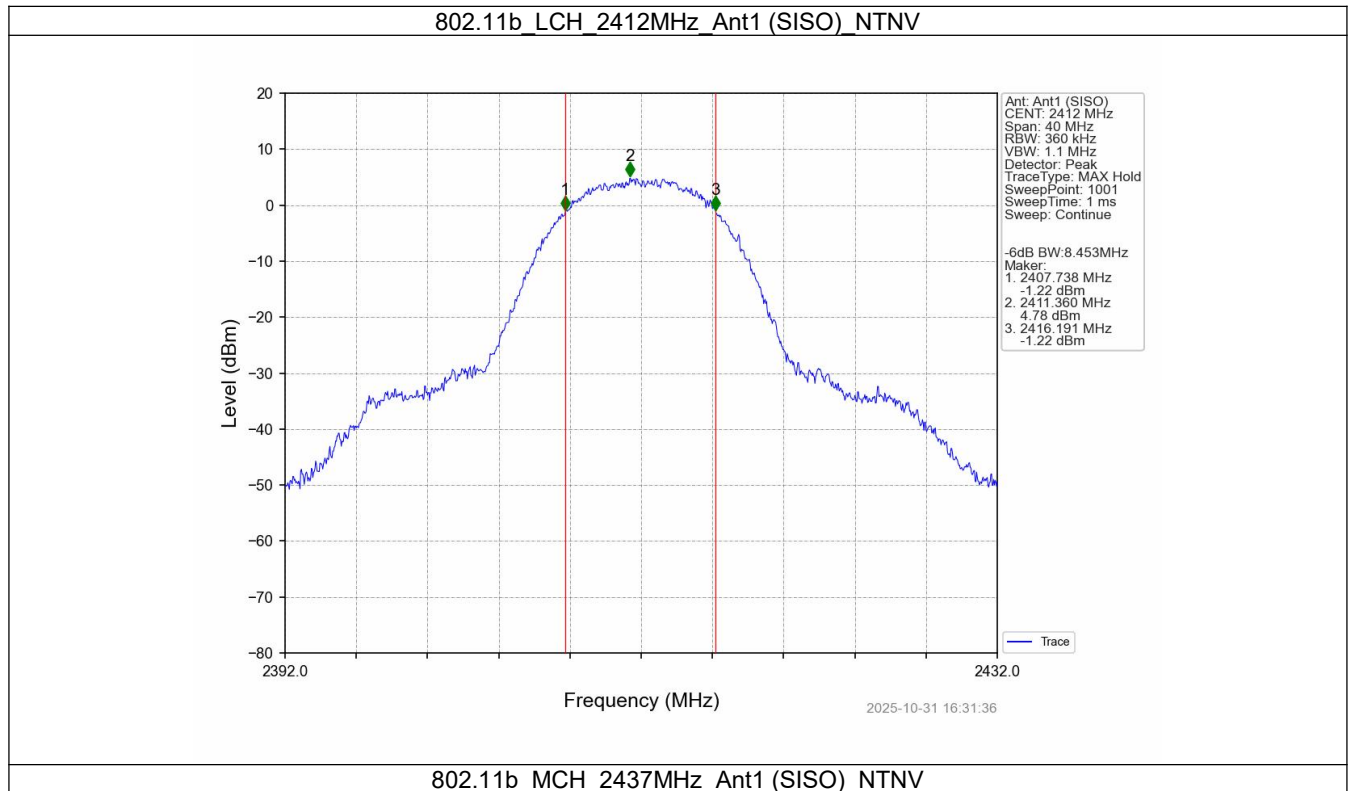


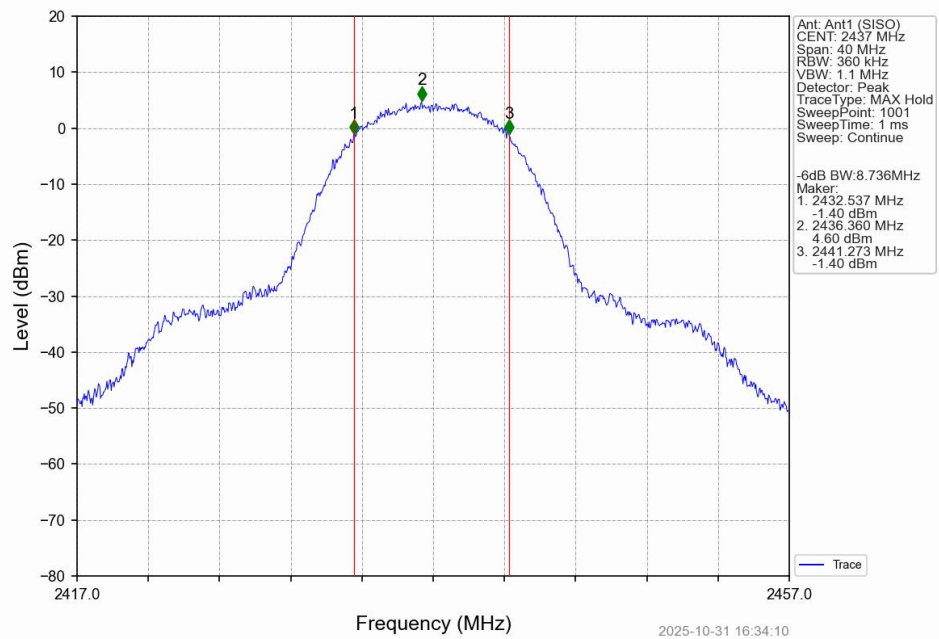
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





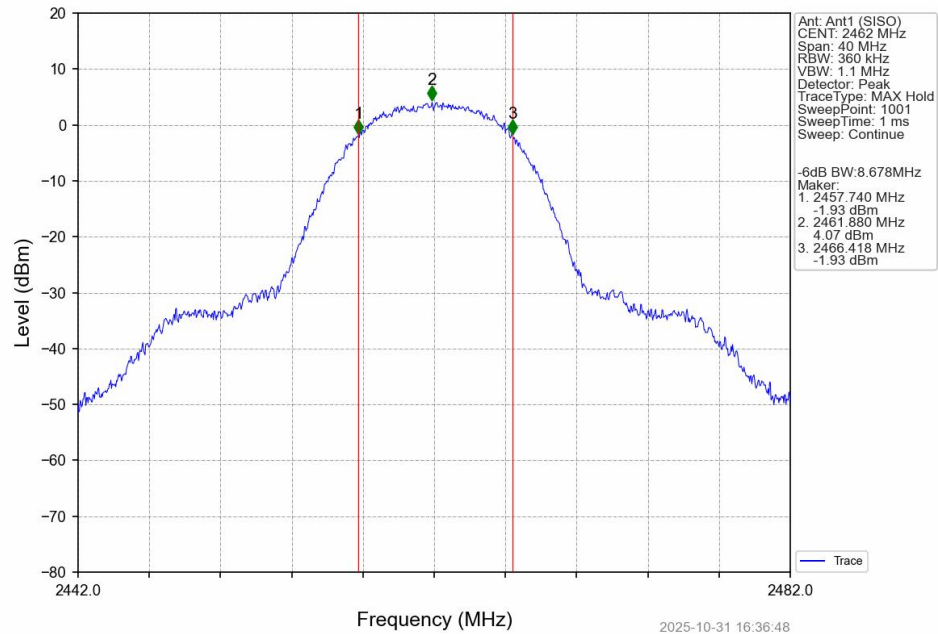
2.2.2 6dB BW



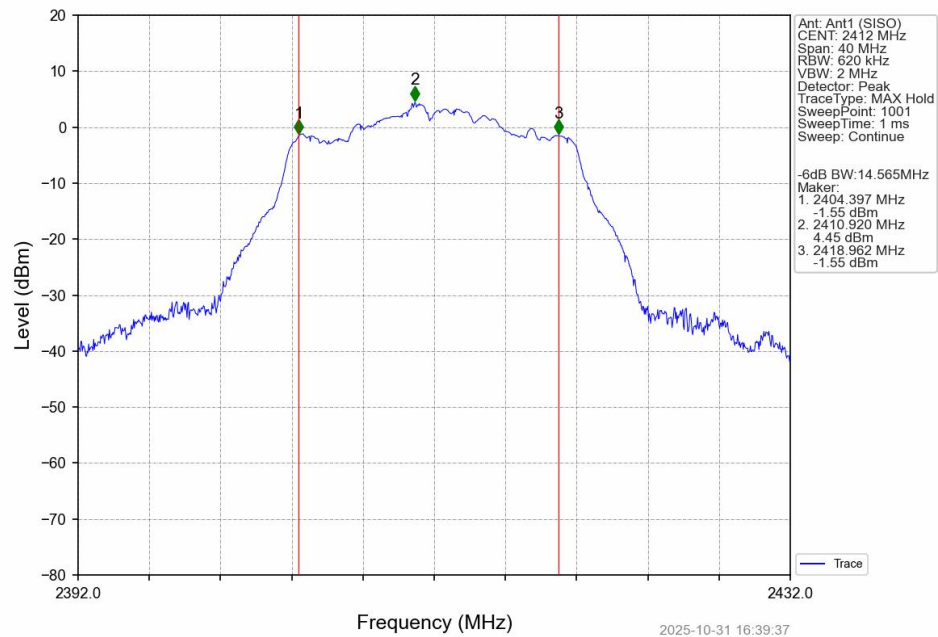




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

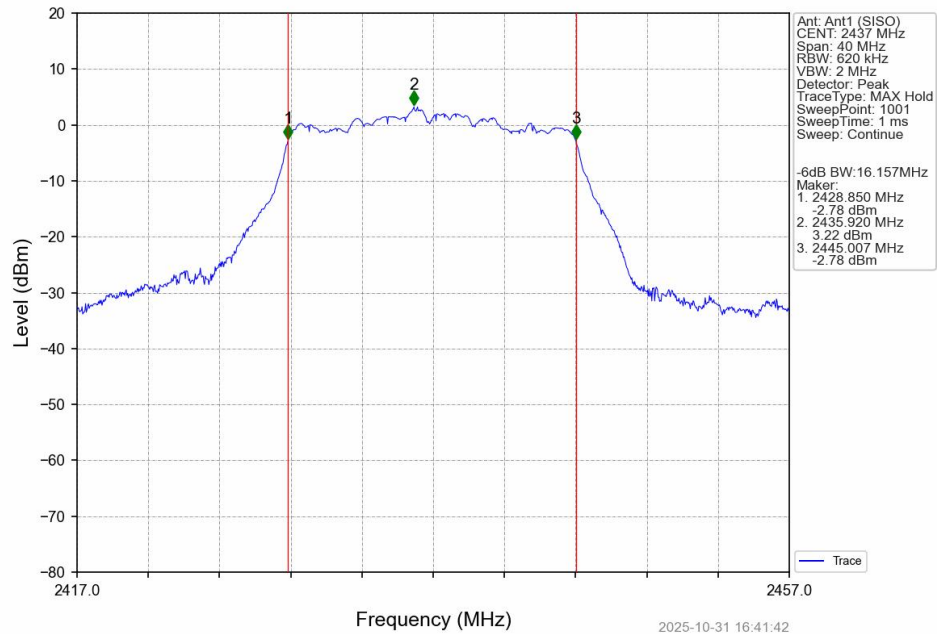


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

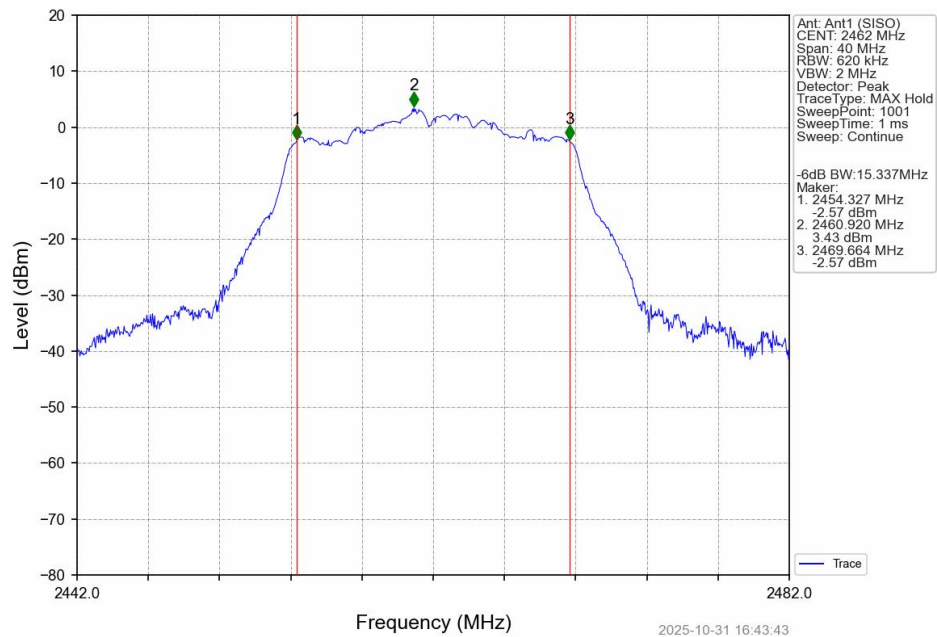




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

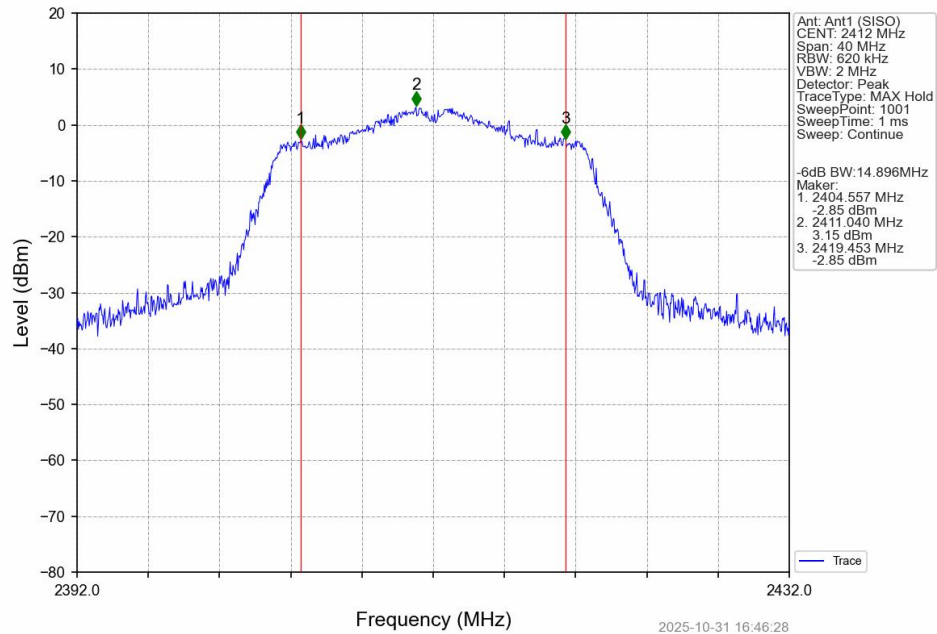


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

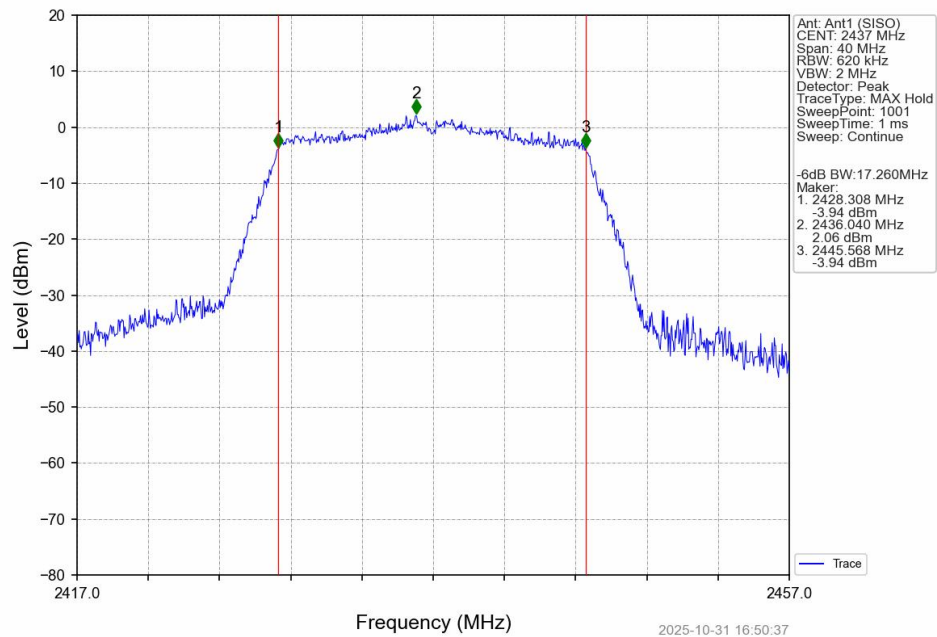




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

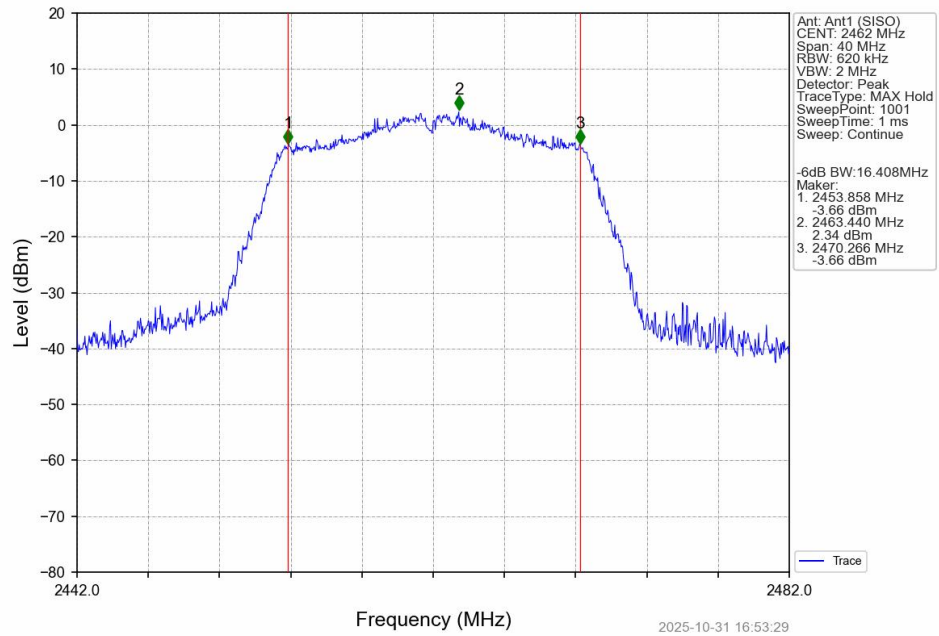


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV





802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Duty Cycle Correction Factor (dB)	Conducted Measurement Output Power (dBm)	Maximum Average Conducted Output Power (dBm)	Limit	Verdict
802.11b	SISO	2412	0.45	6.09	6.54	<=30	Pass
		2437	0.45	5.79	6.24	<=30	Pass
		2462	0.45	5.26	5.71	<=30	Pass
802.11g	SISO	2412	1.94	4.45	6.39	<=30	Pass
		2437	1.93	3.84	5.77	<=30	Pass
		2462	1.94	3.55	5.49	<=30	Pass
802.11n (HT20)	SISO	2412	1.97	3.87	5.84	<=30	Pass
		2437	1.97	3.57	5.54	<=30	Pass
		2462	1.97	3.06	5.03	<=30	Pass
Note1: Antenna Gain: Ant1: 2.18dBi;							

Maximum Output Power (dBm)=Duty Cycle Correction Factor +Measurement Output Power



4. Maximum Power Spectral Density

4.1 Test Result

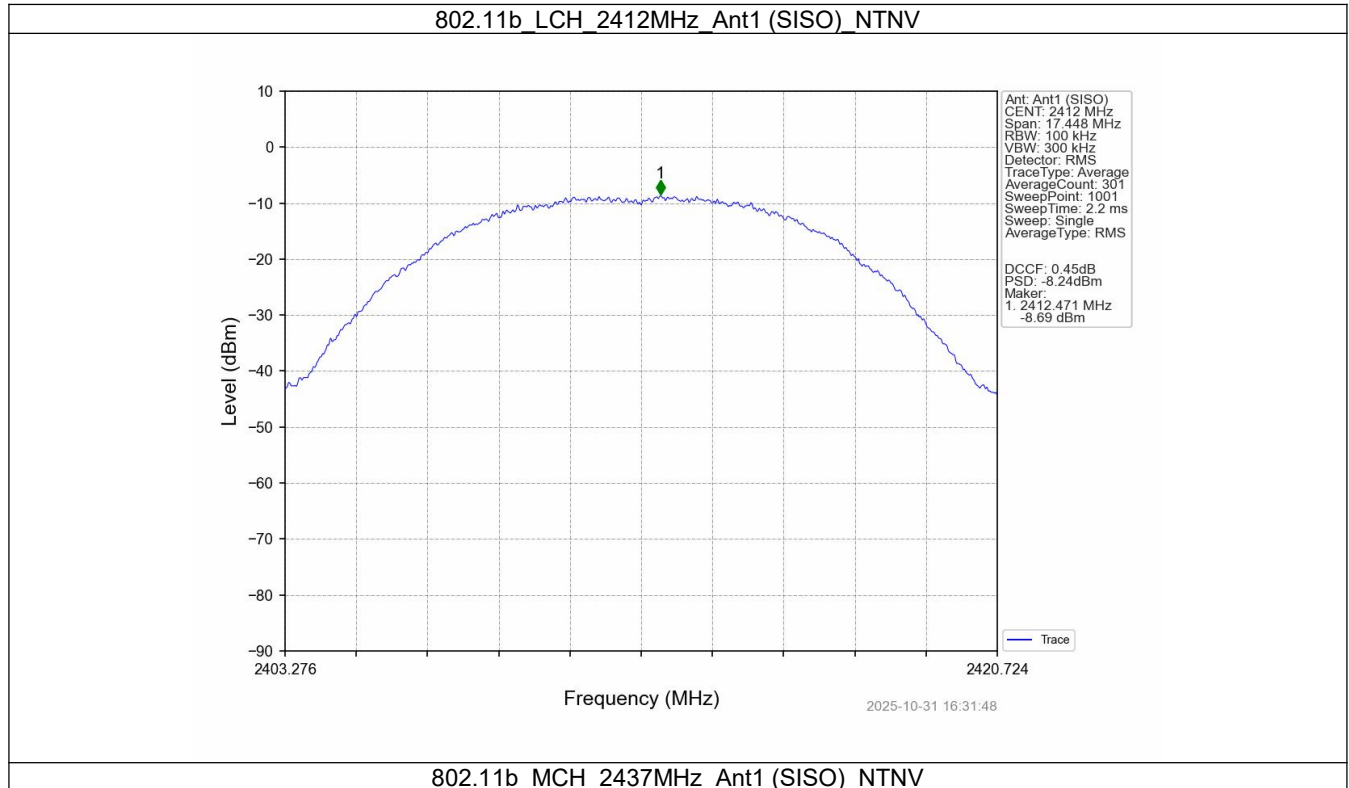
4.1.1 PSD

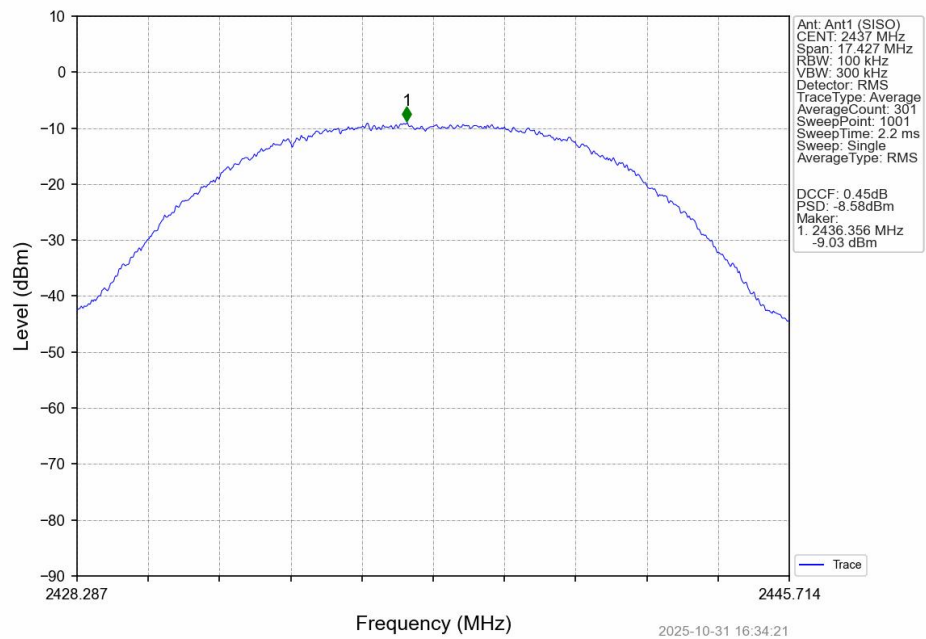
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-8.24	<=8	Pass
		2437	-8.58	<=8	Pass
		2462	-9.09	<=8	Pass
802.11g	SISO	2412	-9.35	<=8	Pass
		2437	-10.11	<=8	Pass
		2462	-10.80	<=8	Pass
802.11n (HT20)	SISO	2412	-11.66	<=8	Pass
		2437	-12.64	<=8	Pass
		2462	-12.73	<=8	Pass
Note1: Antenna Gain: Ant1: 2.18dBi;					



4.2 Test Graph

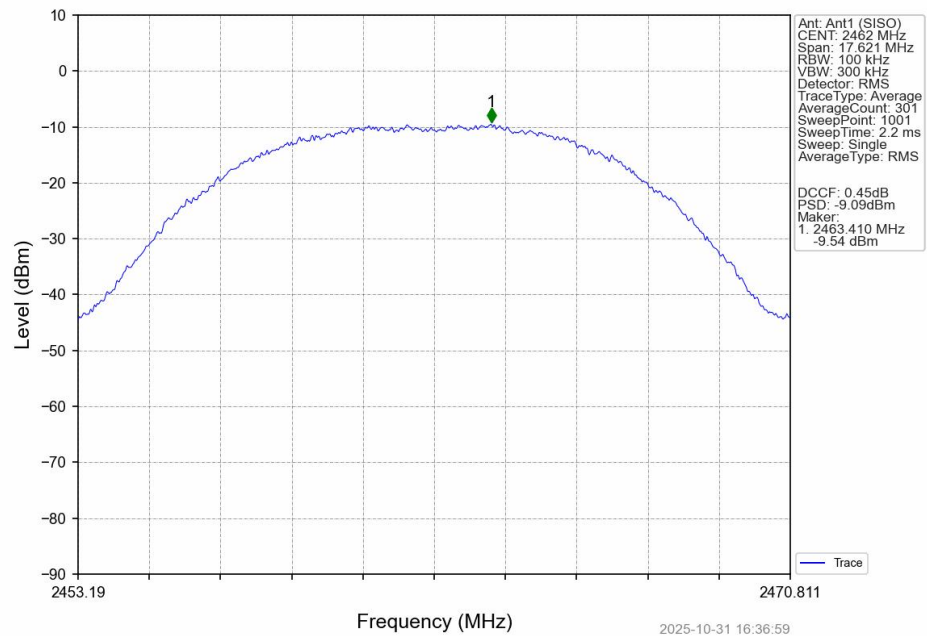
4.2.1 PSD



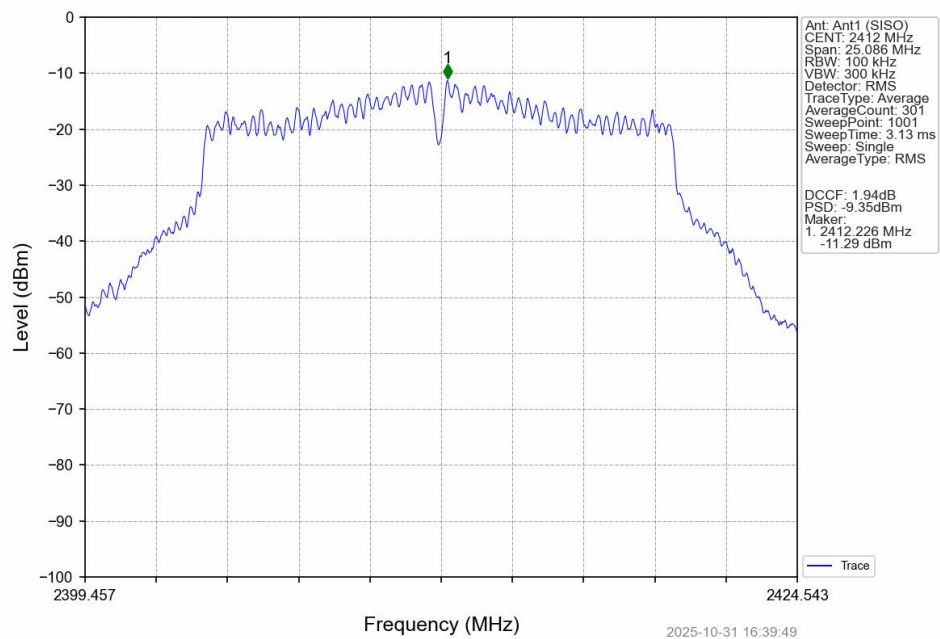




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

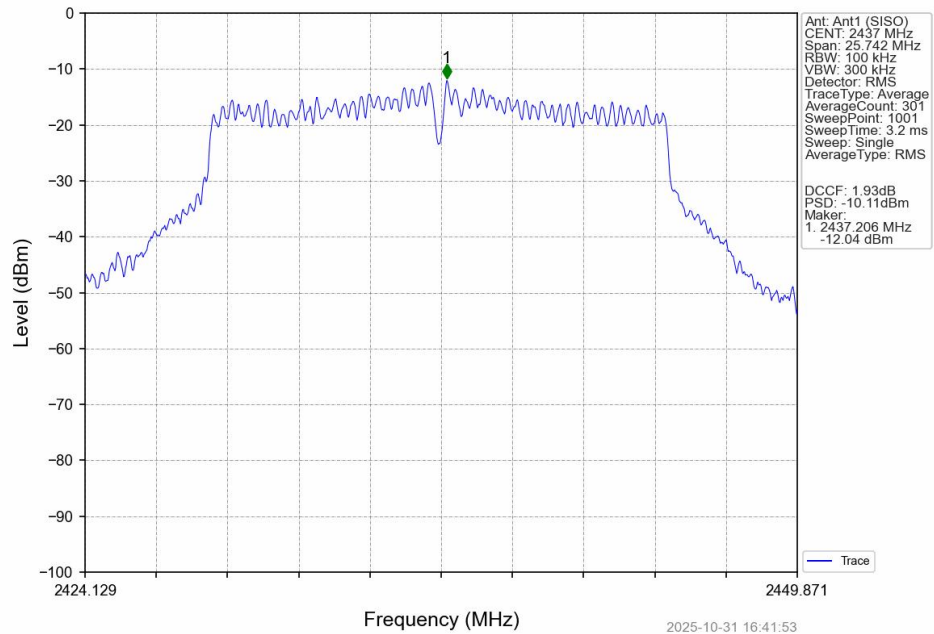


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

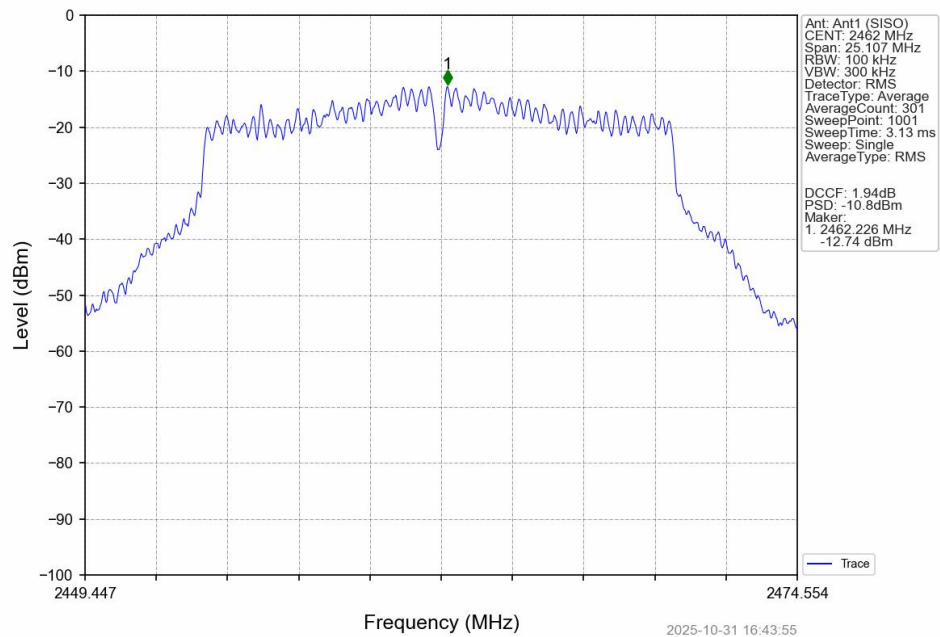




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

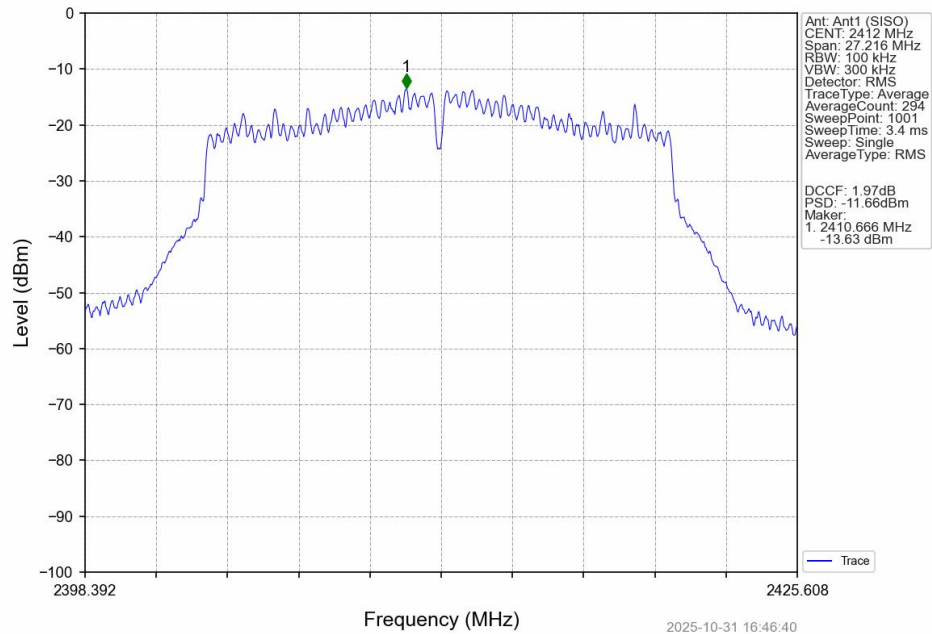


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

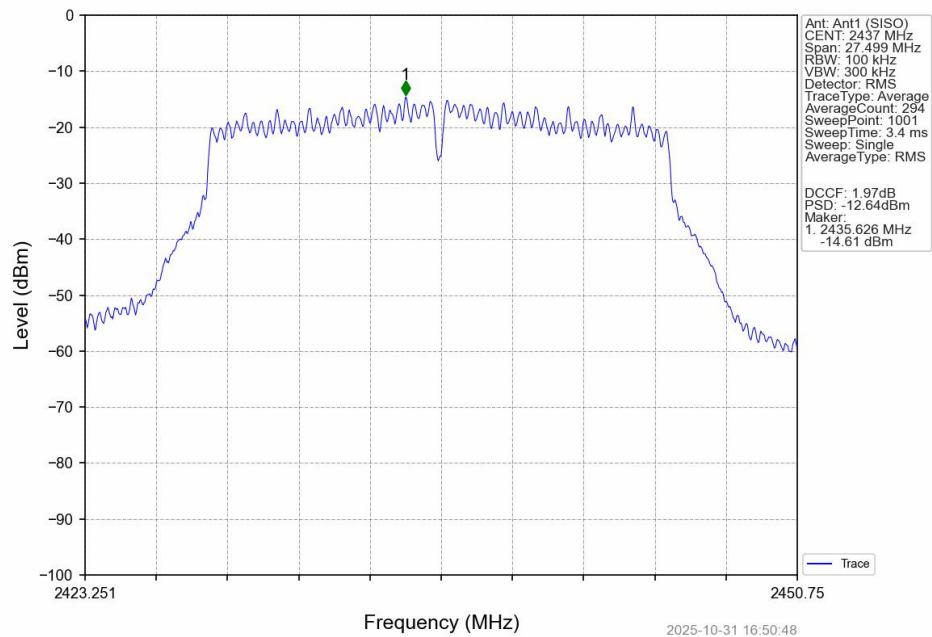




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

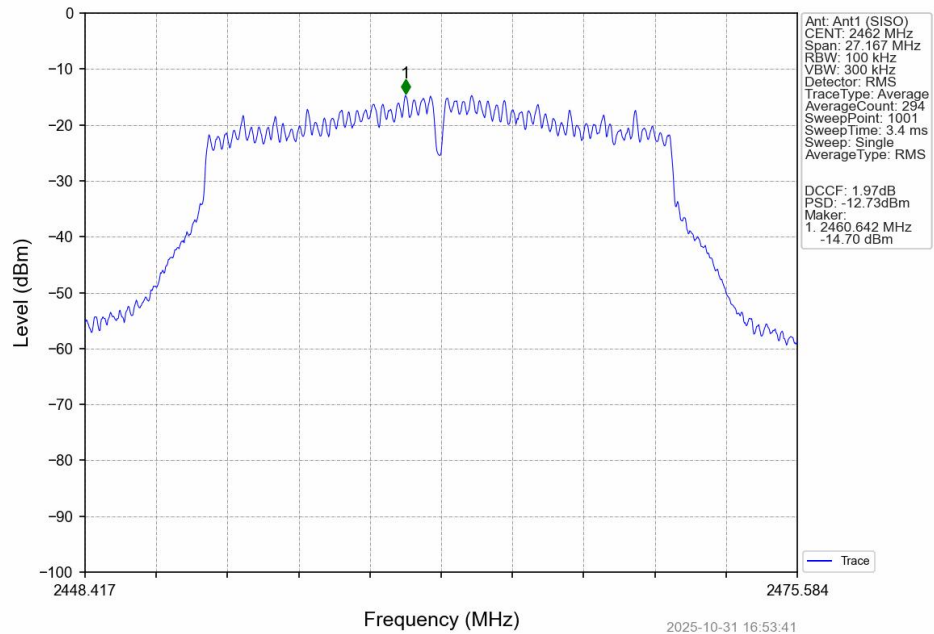


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV





802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





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	1.55
		2437	1	0.58
		2462	1	0.00
802.11g	SISO	2412	1	-2.71
		2437	1	-3.75
		2462	1	-3.77
802.11n (HT20)	SISO	2412	1	-4.51
		2437	1	-5.51
		2462	1	-5.00

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

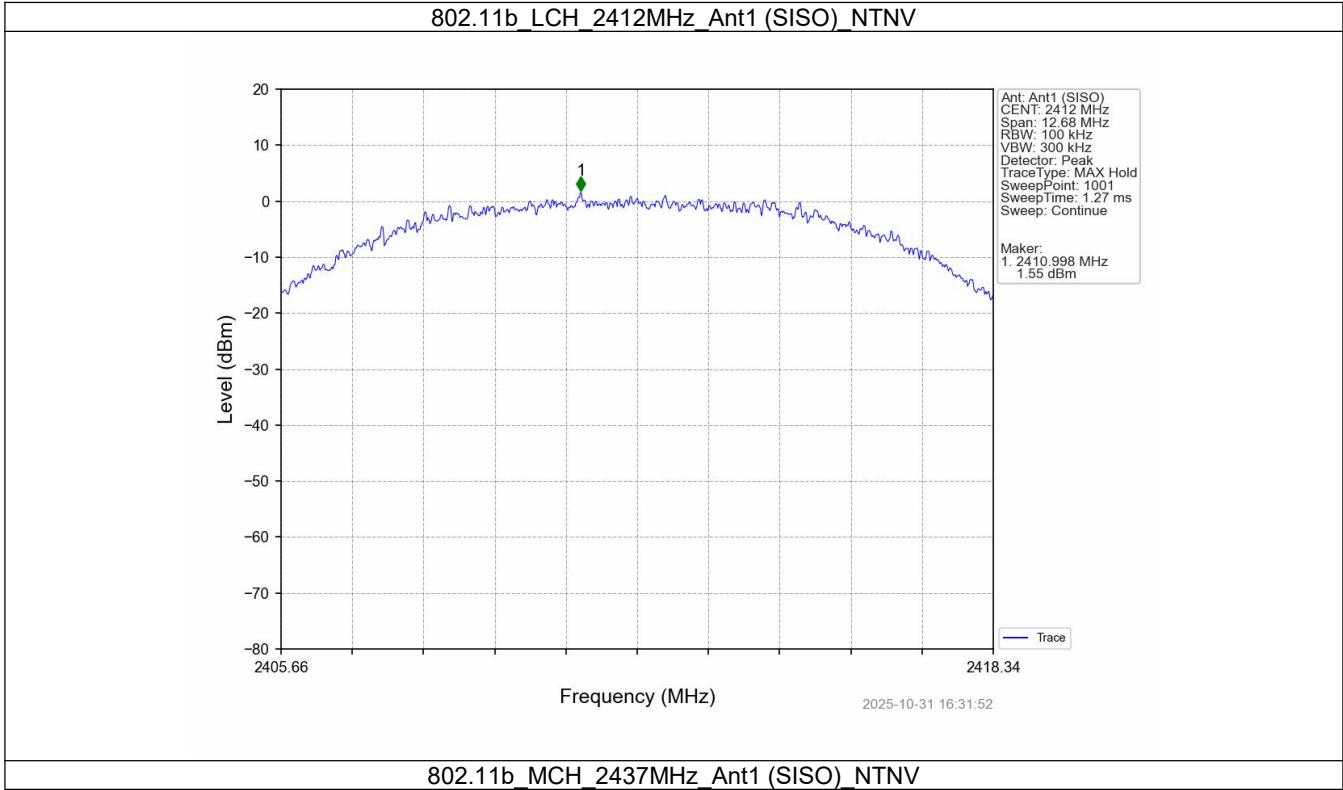
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	1.55	-28.45	Pass
		2437	1	1.55	-28.45	Pass
		2462	1	1.55	-28.45	Pass
802.11g	SISO	2412	1	-2.71	-32.71	Pass
		2437	1	-2.71	-32.71	Pass
		2462	1	-2.71	-32.71	Pass
802.11n (HT20)	SISO	2412	1	-4.51	-34.51	Pass
		2437	1	-4.51	-34.51	Pass
		2462	1	-4.51	-34.51	Pass

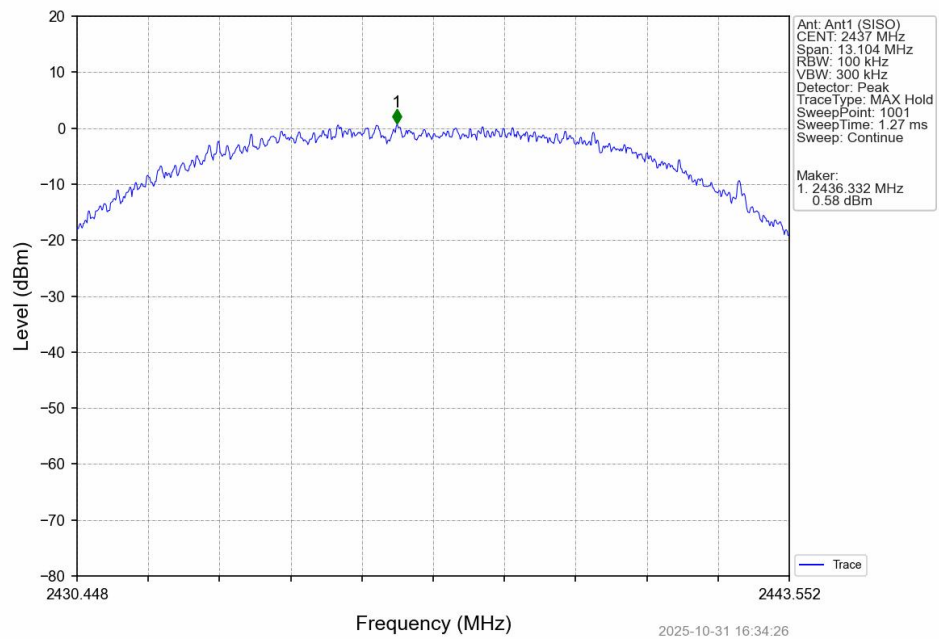
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.



5.2 Test Graph

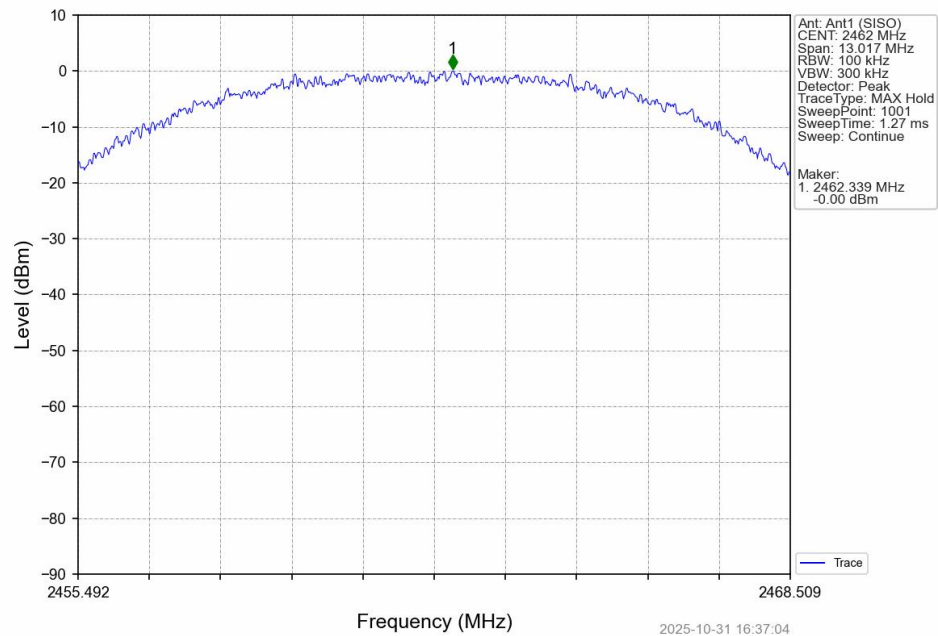
5.2.1 Ref



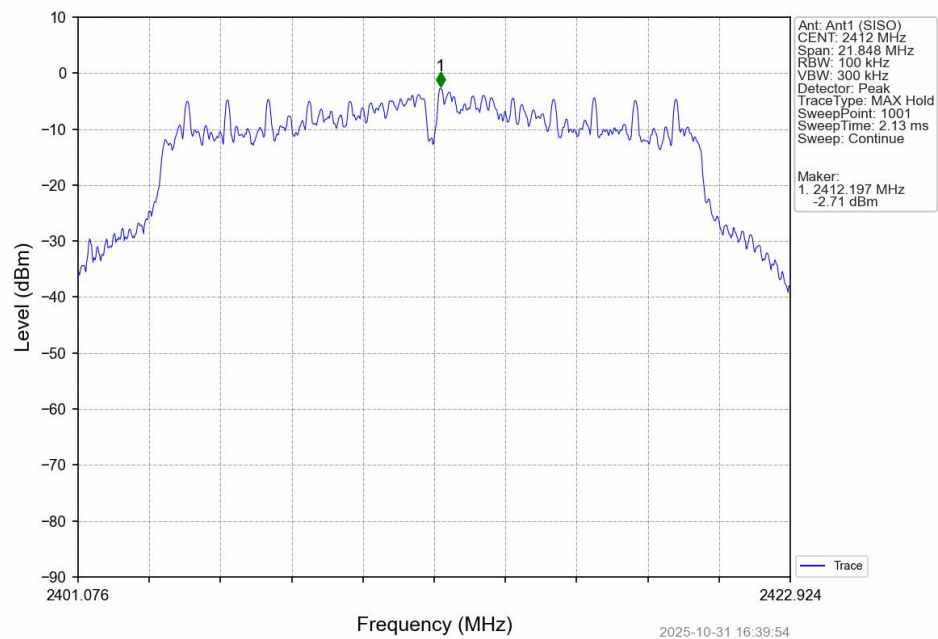




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

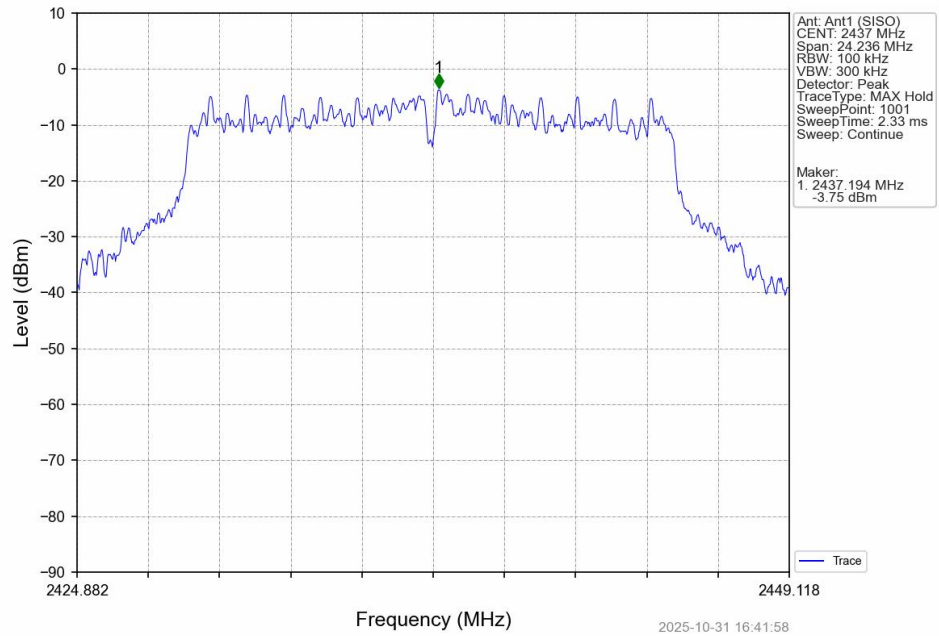


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

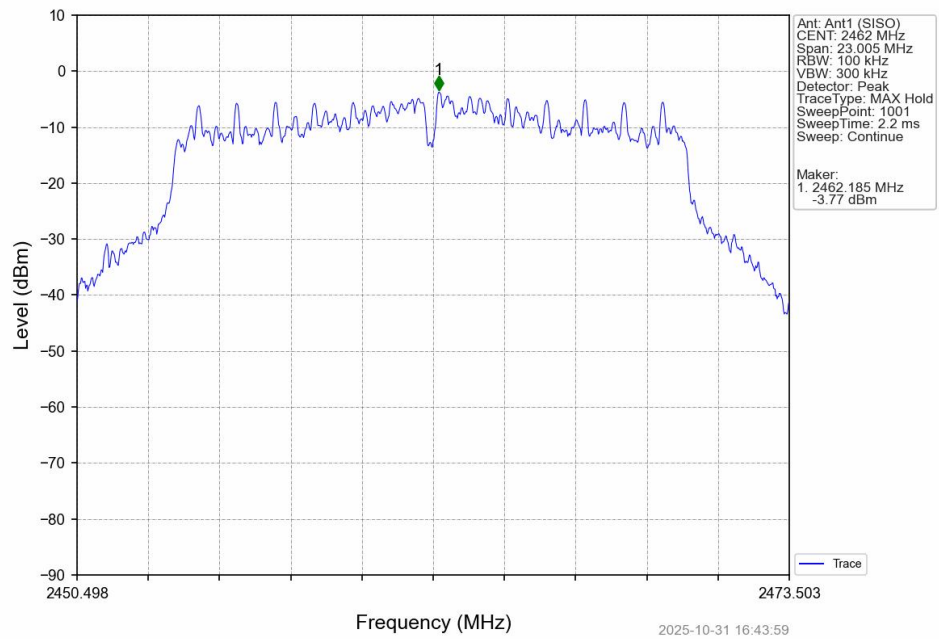




802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

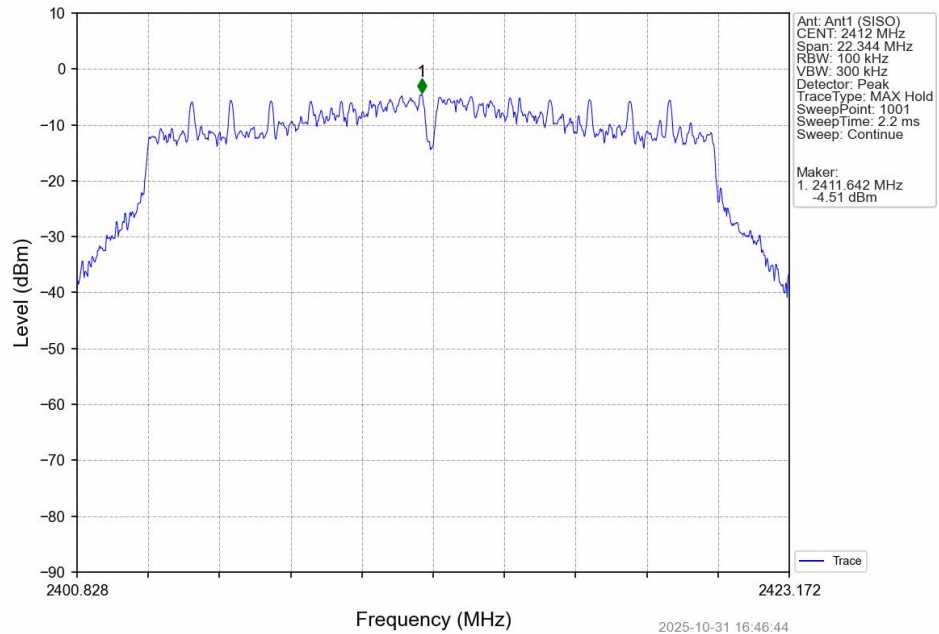


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

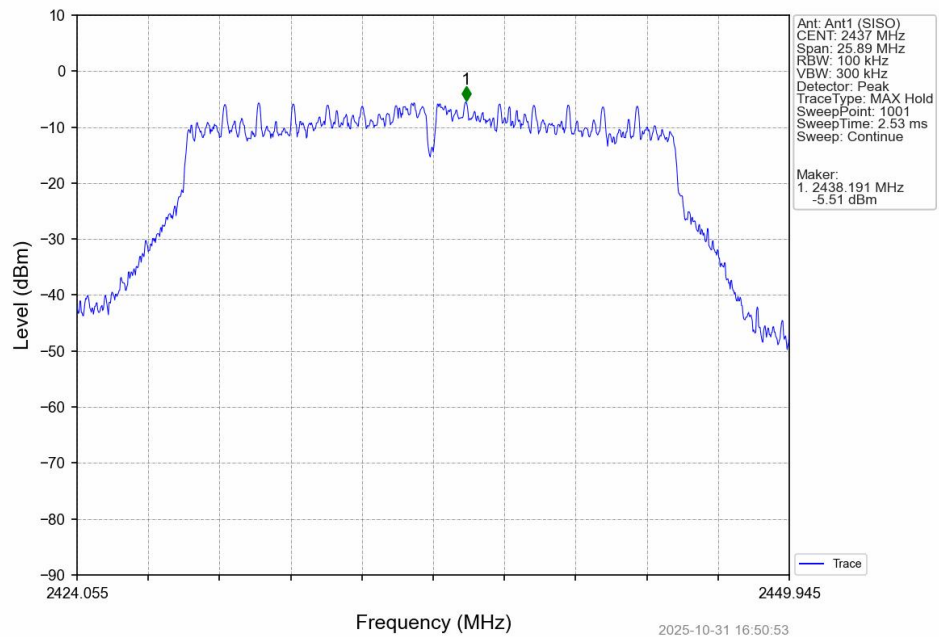




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

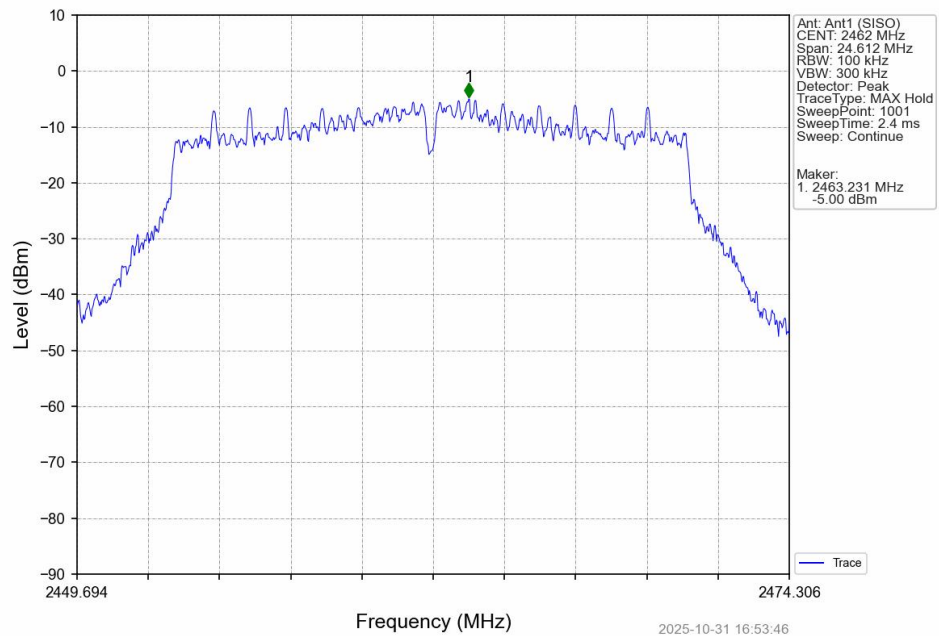


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



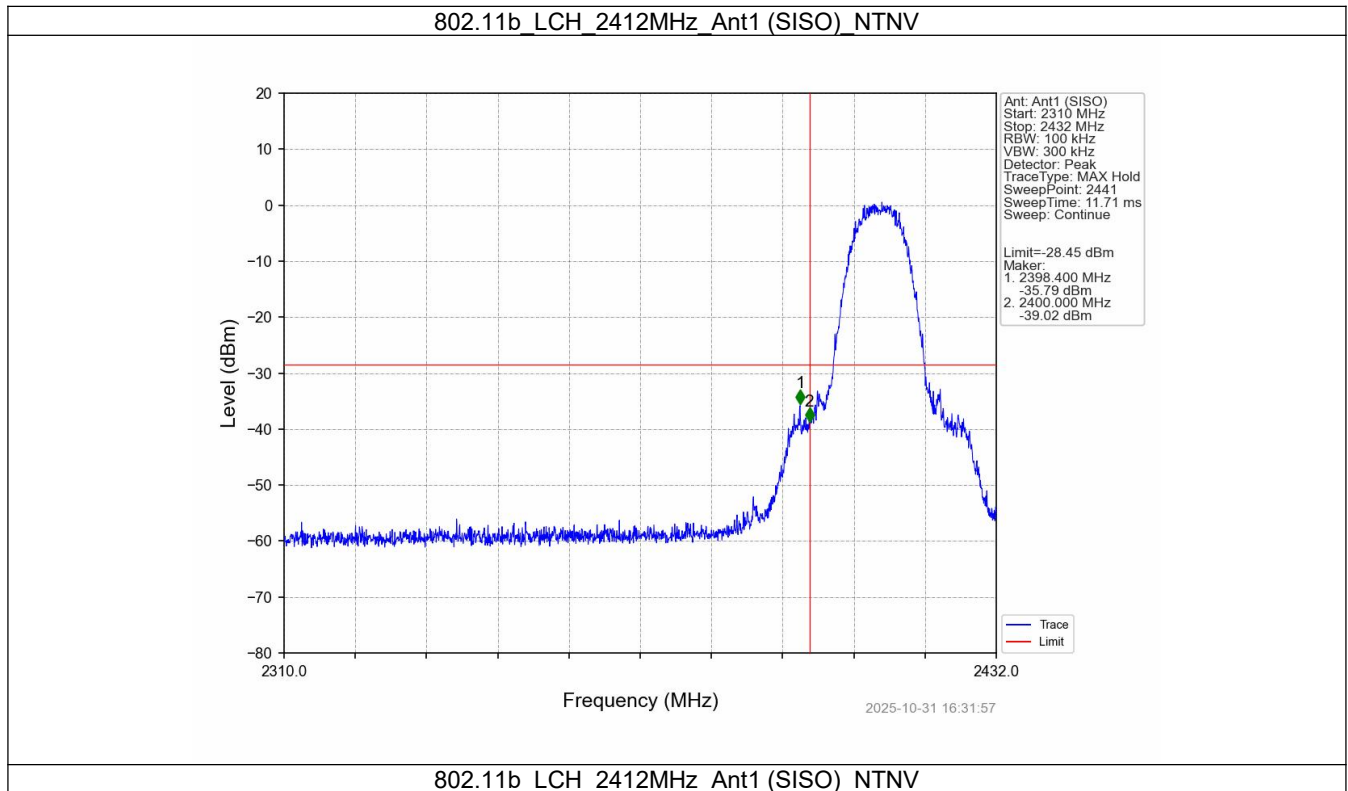


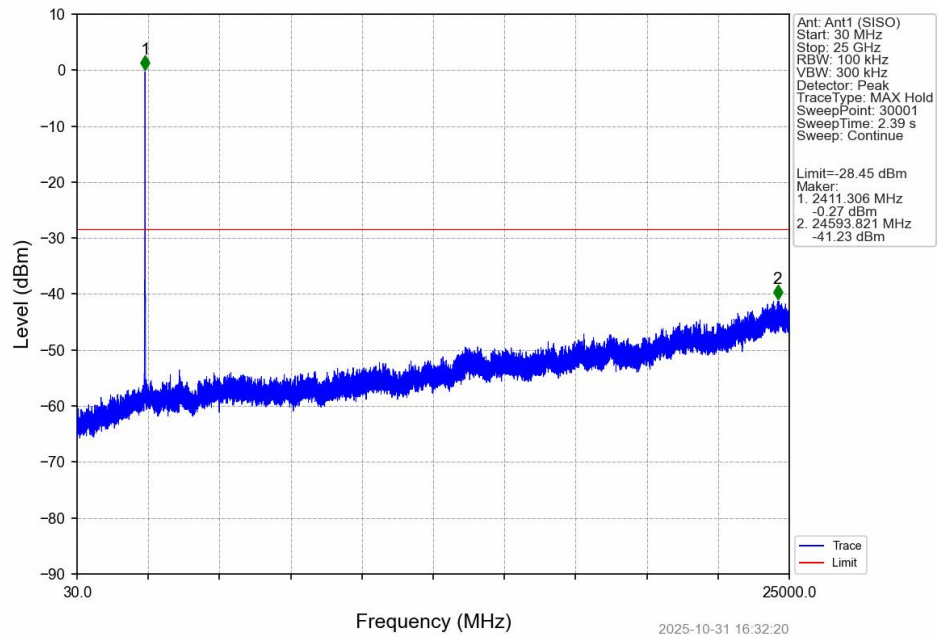
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





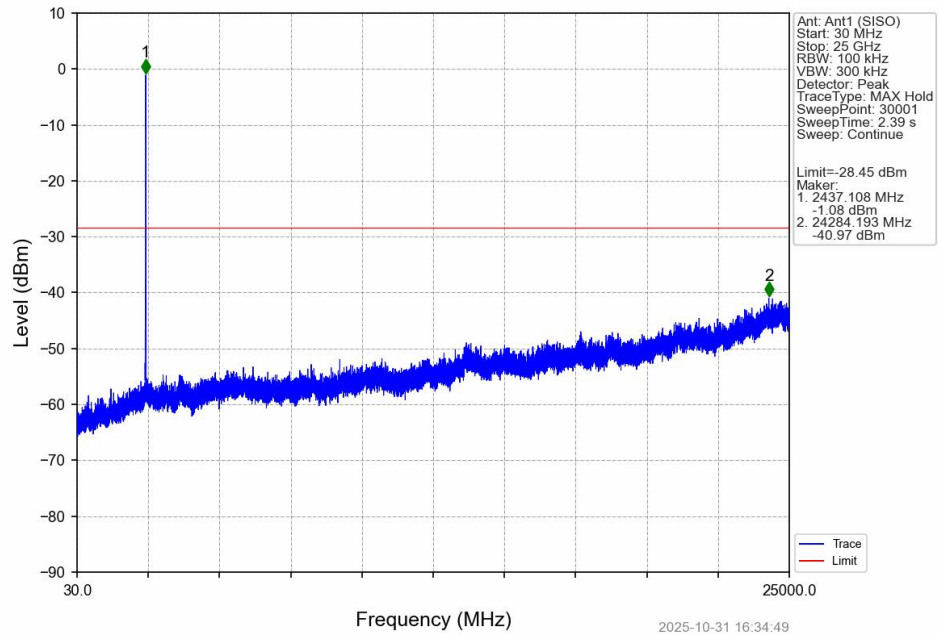
5.2.2 CSE



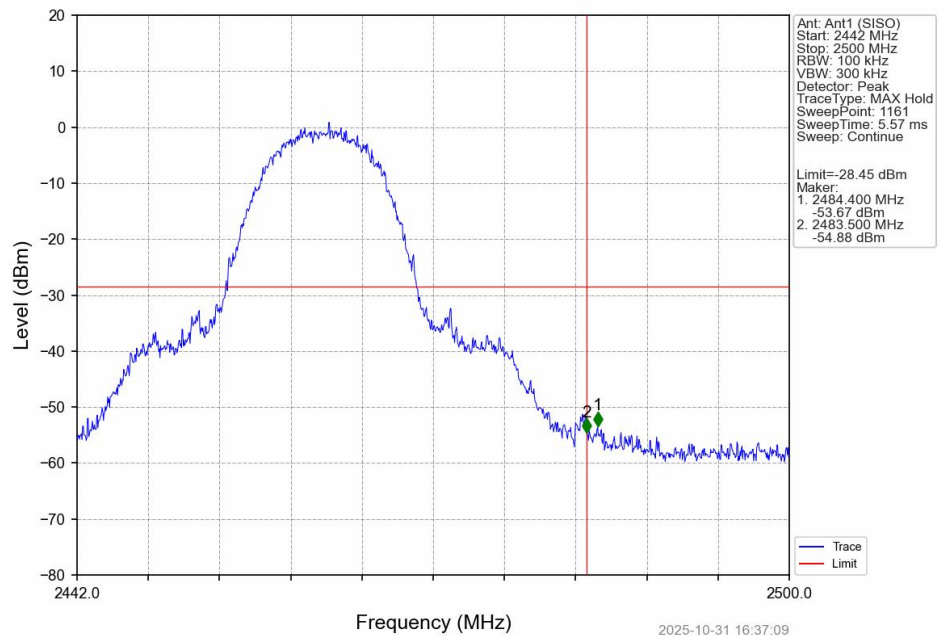




802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV

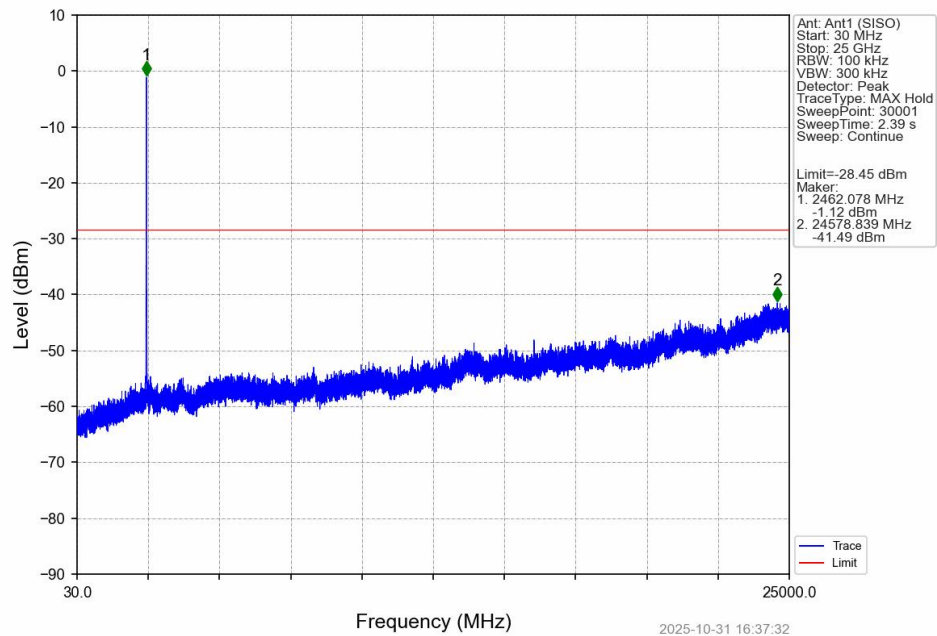


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

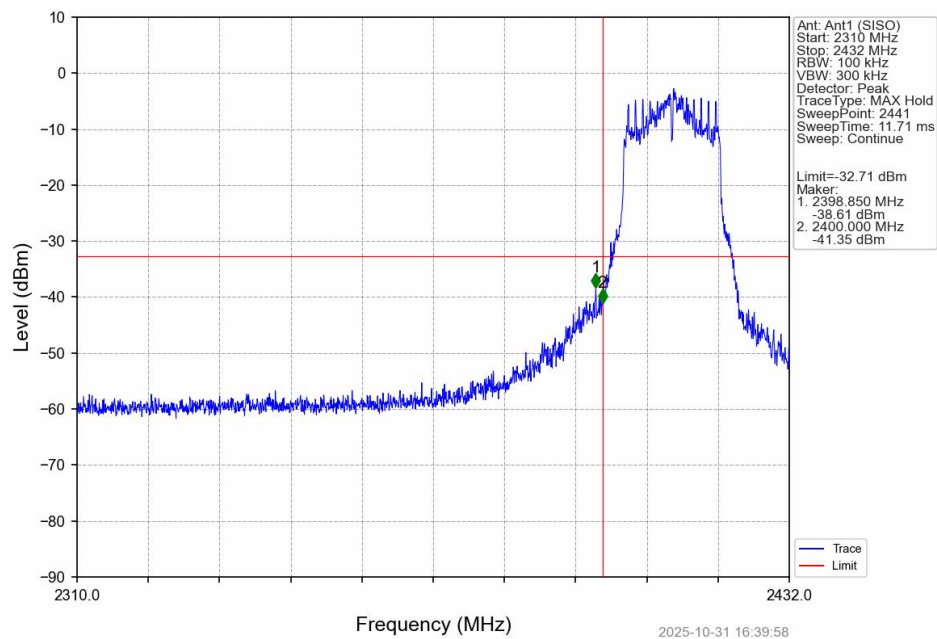




802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

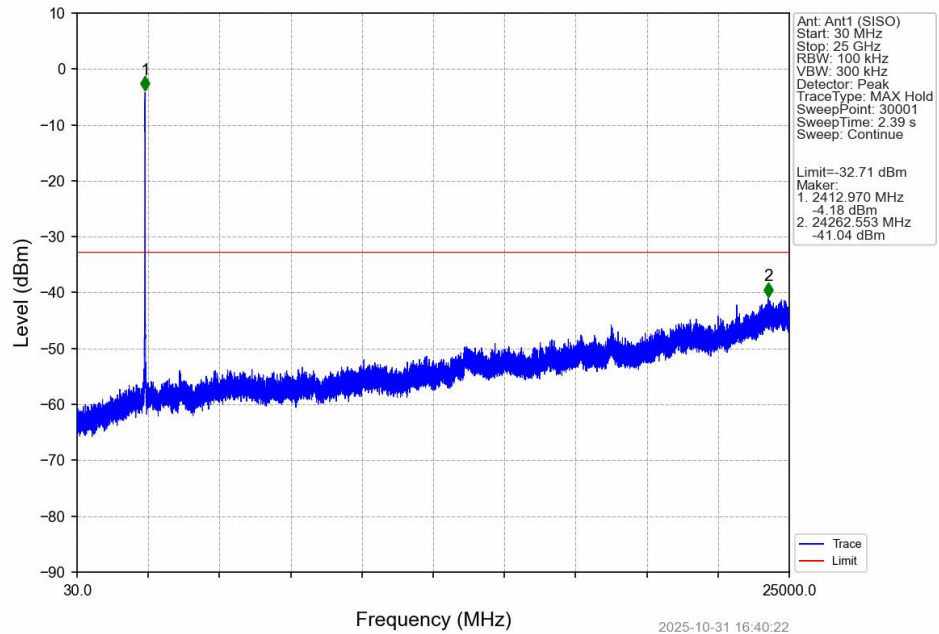


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

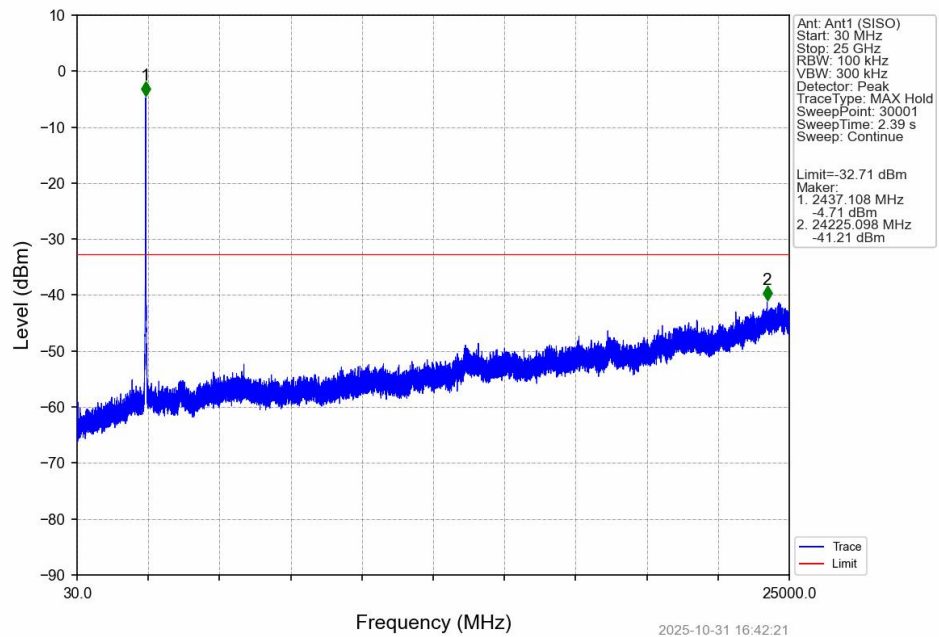




802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

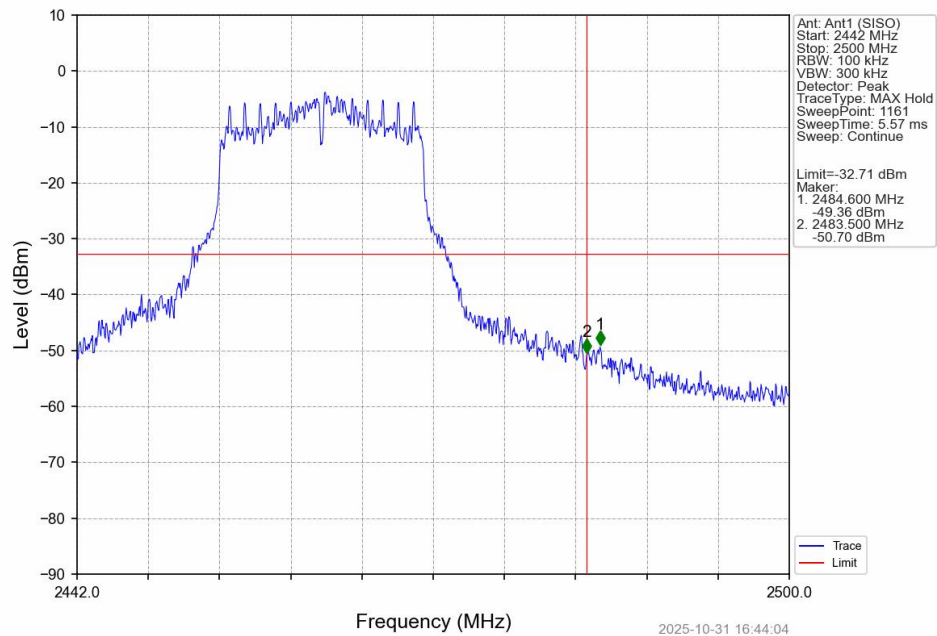


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

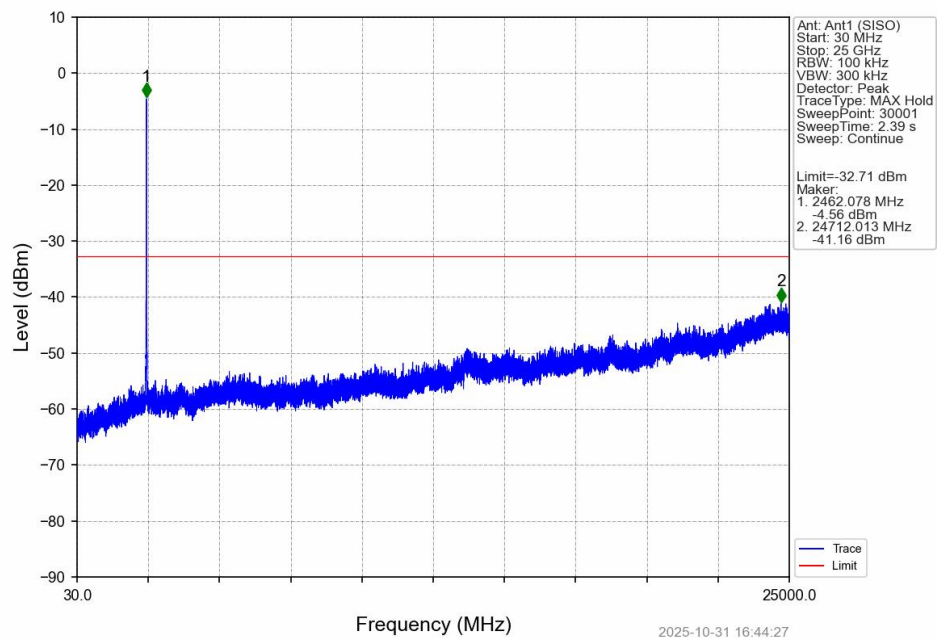




802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

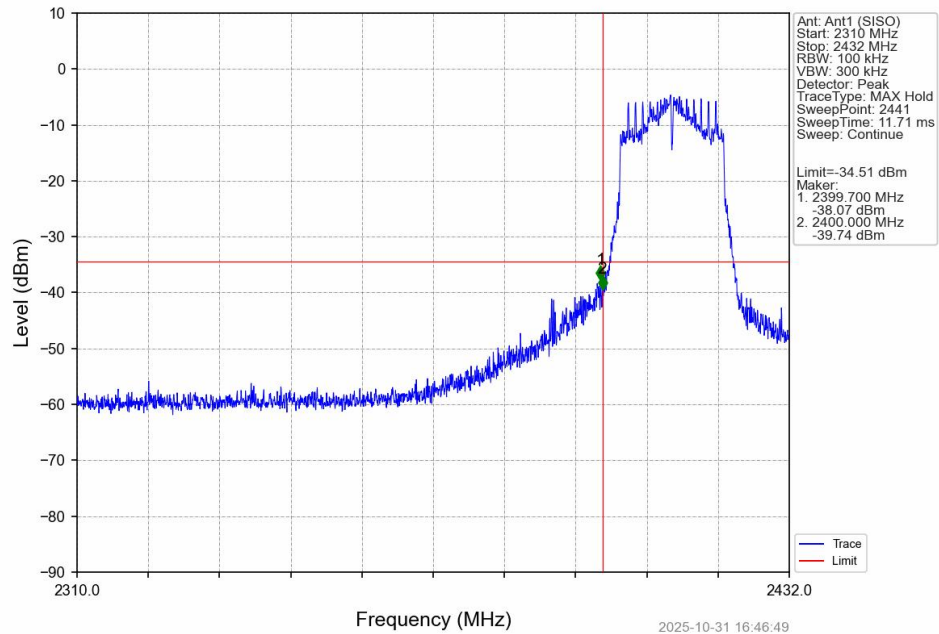


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

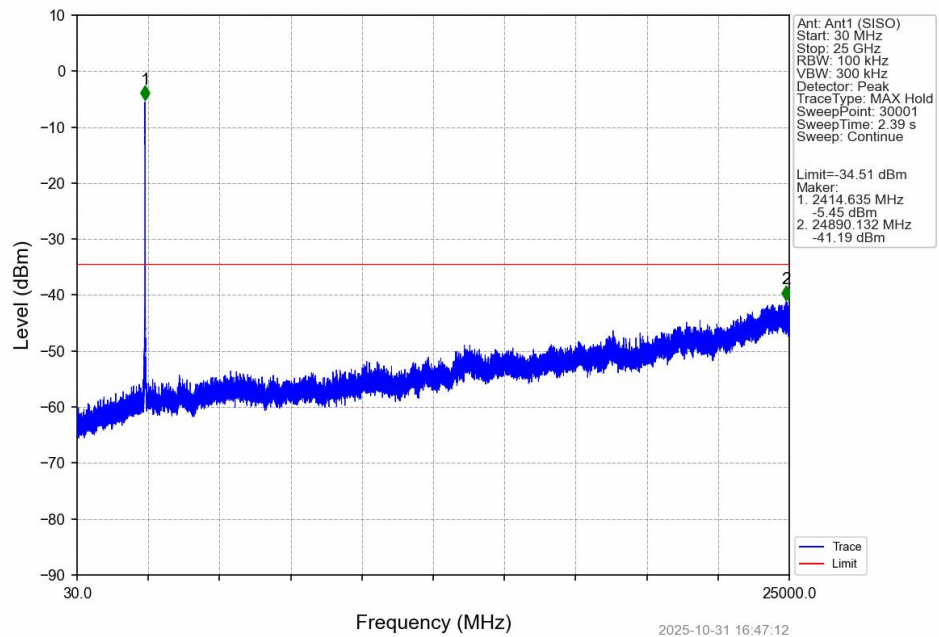




802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

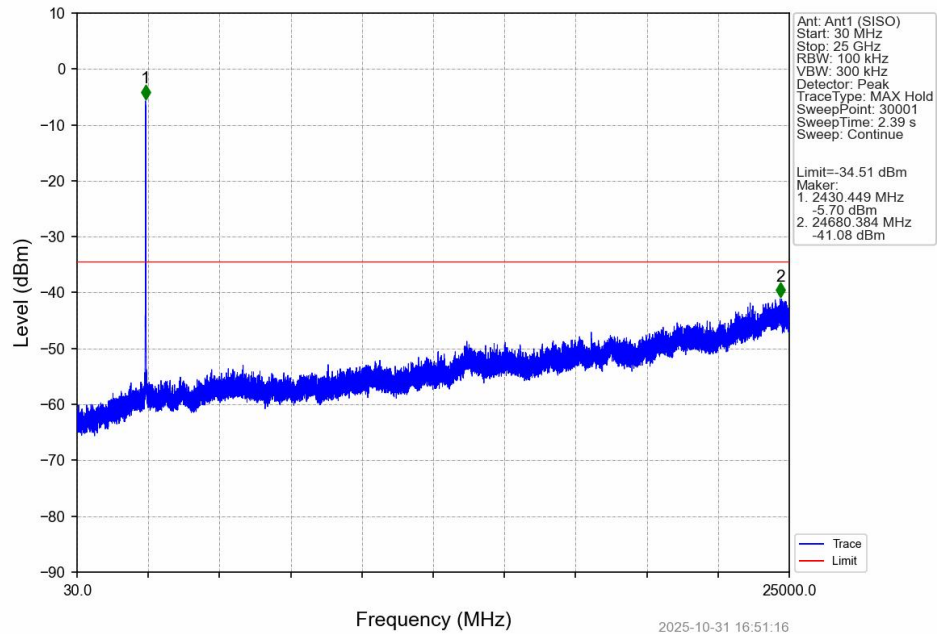


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

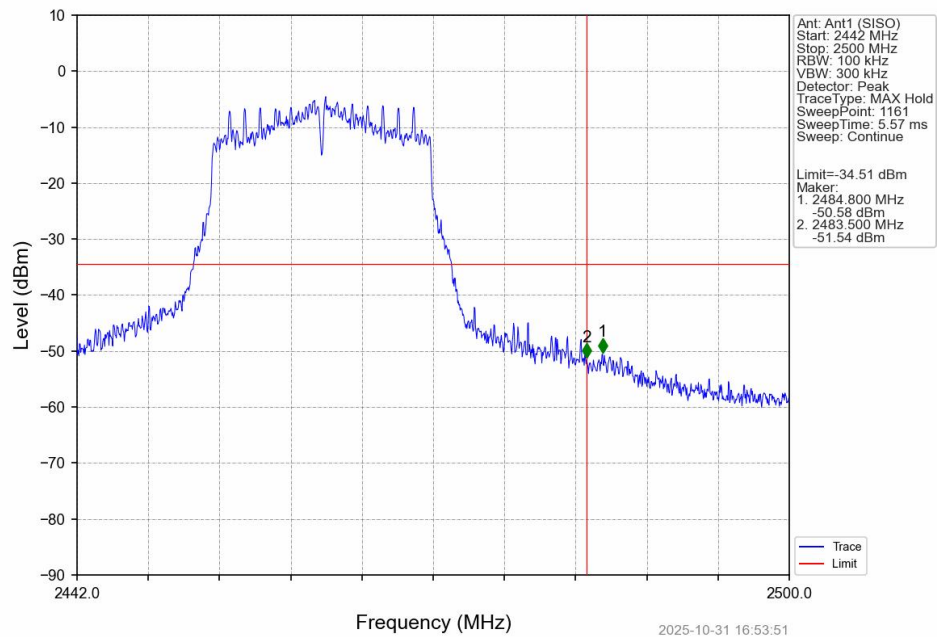




802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV





802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV

