ANNEX D TEST DATA

For

Project No.:	8227EU121502W
Client:	Beijing Tongyong Technology Co., LTD
Product Name:	Wireless Mechanical Keyboard
Model No.:	ZN84
FCC ID:	2BDK7-ZN84
Technology:	2.4G ISM Band (GFSK modulation)
Test Engineer:	Mikey zhu
Test Date:	2024-03-21

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

1. Duty Cycle

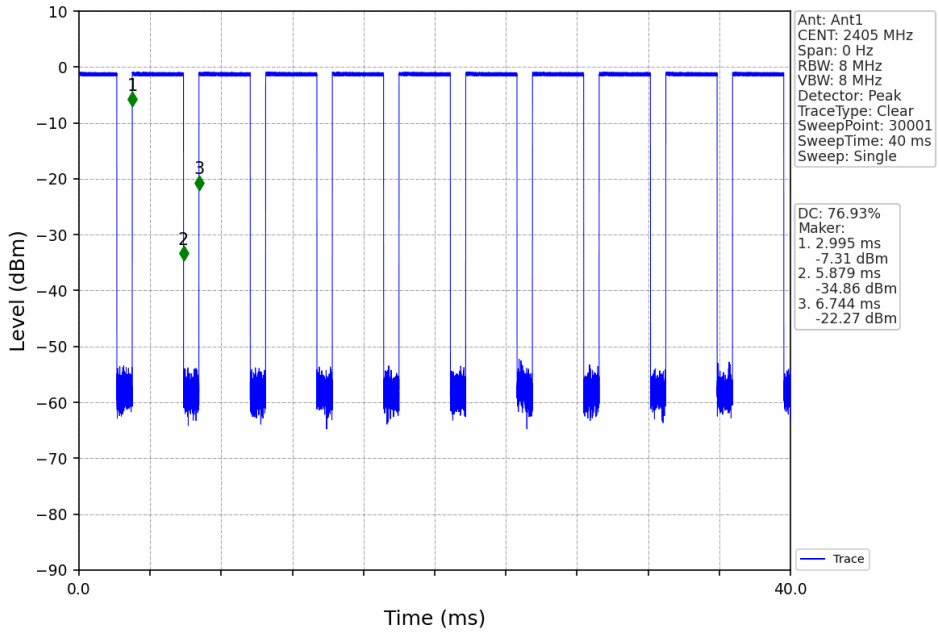
1.1 Ant1

1.1.1 Test Result

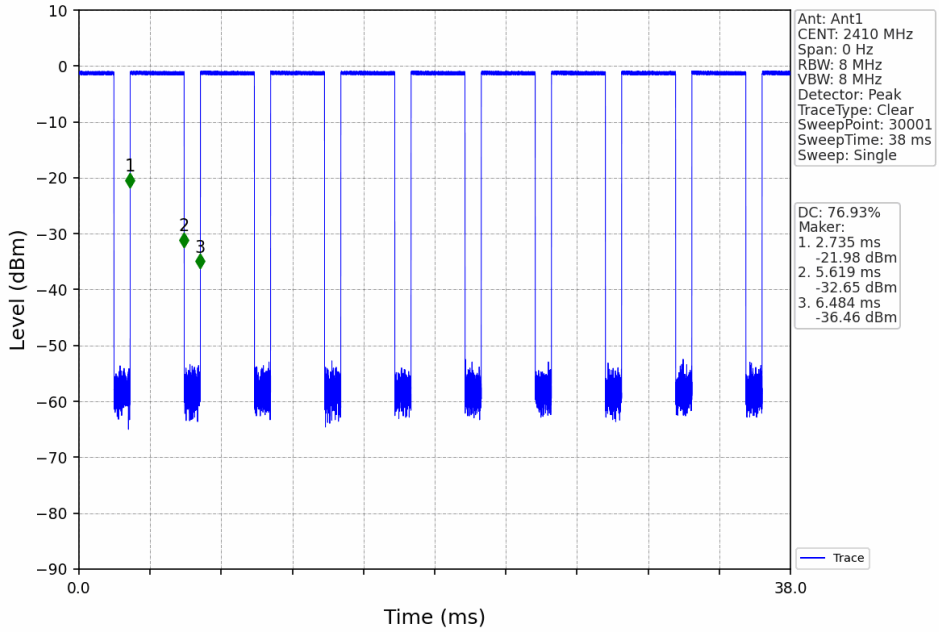
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
2.4G	SISO	2405	2.884	3.749	76.93	1.14	0.04
		2410	2.884	3.749	76.93	1.14	0.01
		2475	2.894	3.750	77.17	1.13	0.04

1.1.2 Test Graph

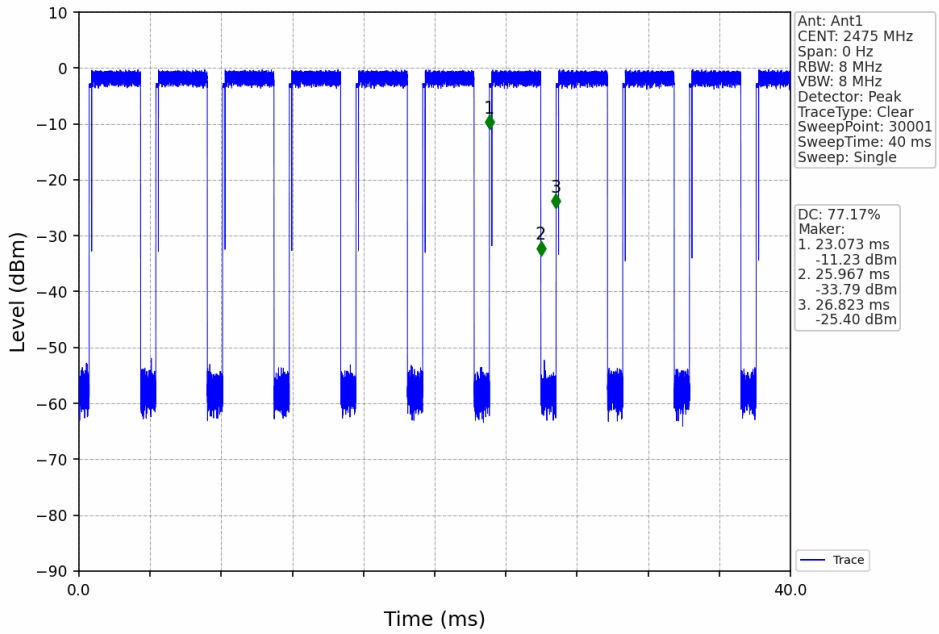
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



2. Bandwidth

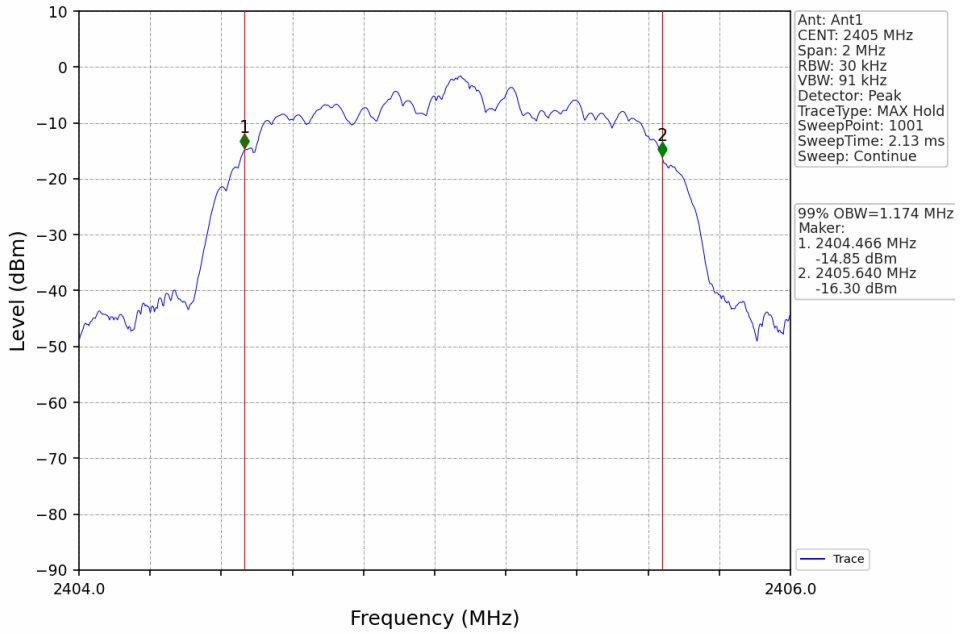
2.1 OBW

2.1.1 Test Result

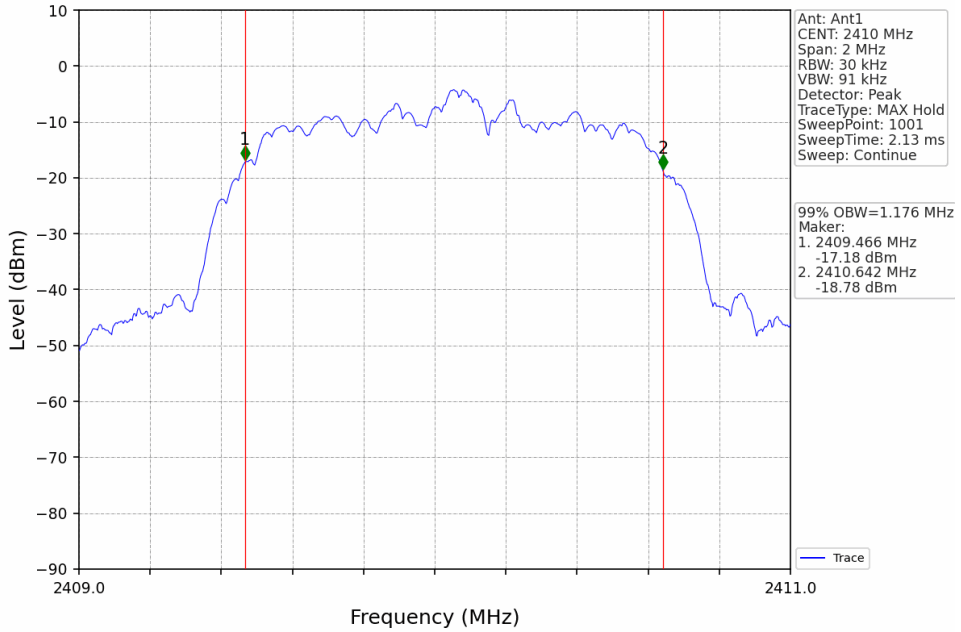
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz) Result	Verdict
2.4G	SISO	2405	1	1.174	Pass
		2410	1	1.176	Pass
		2475	1	1.175	Pass

2.1.2 Test Graph

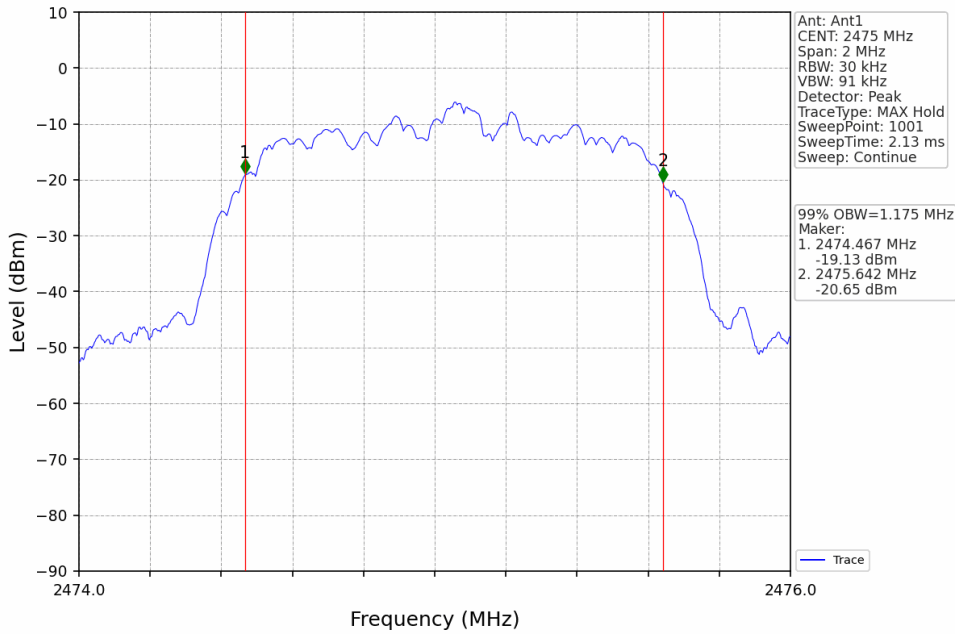
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



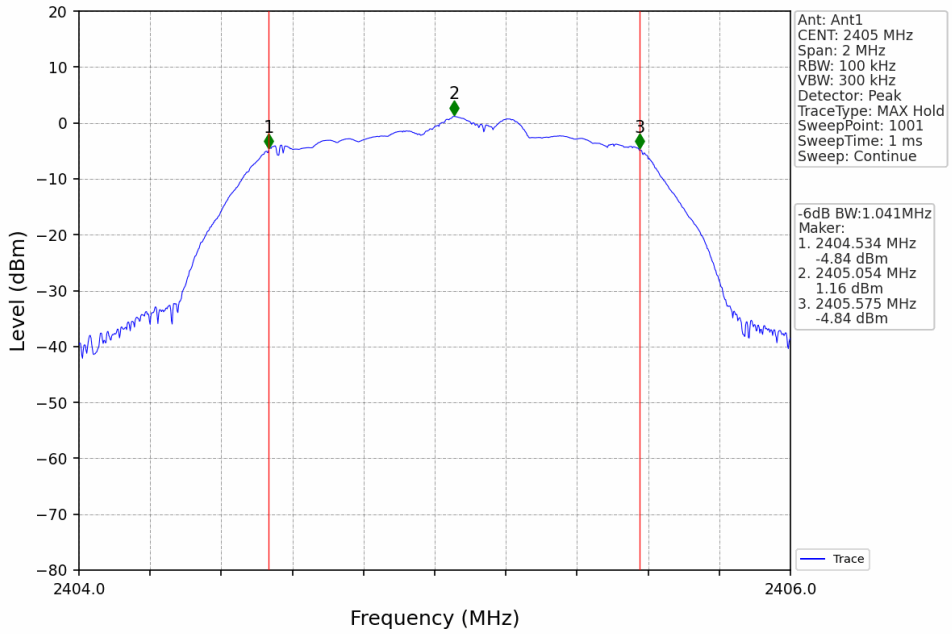
2.2 6dB BW

2.2.1 Test Result

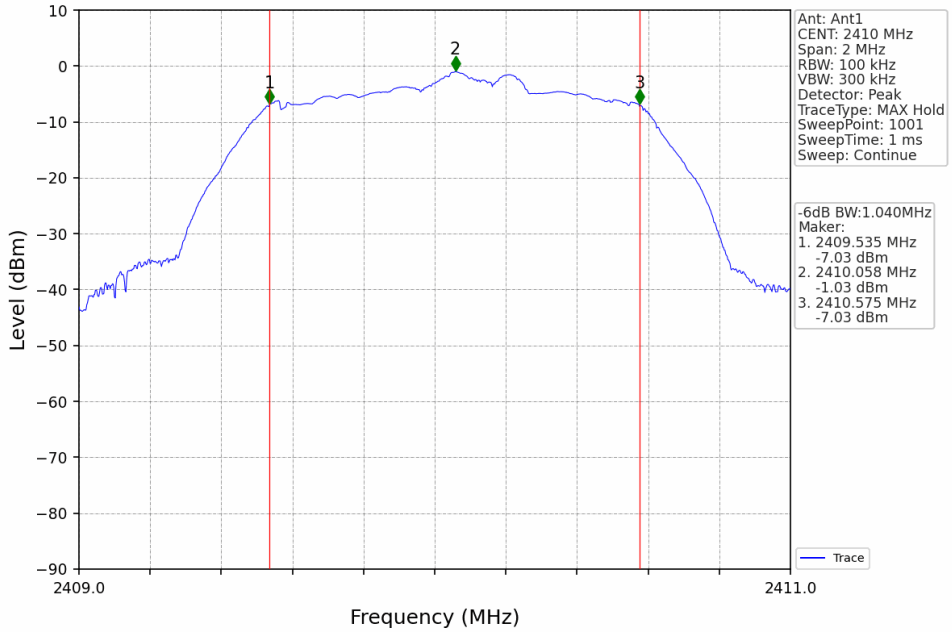
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
2.4G	SISO	2405	1	1.041	>=0.5	Pass
		2410	1	1.040	>=0.5	Pass
		2475	1	1.049	>=0.5	Pass

2.2.2 Test Graph

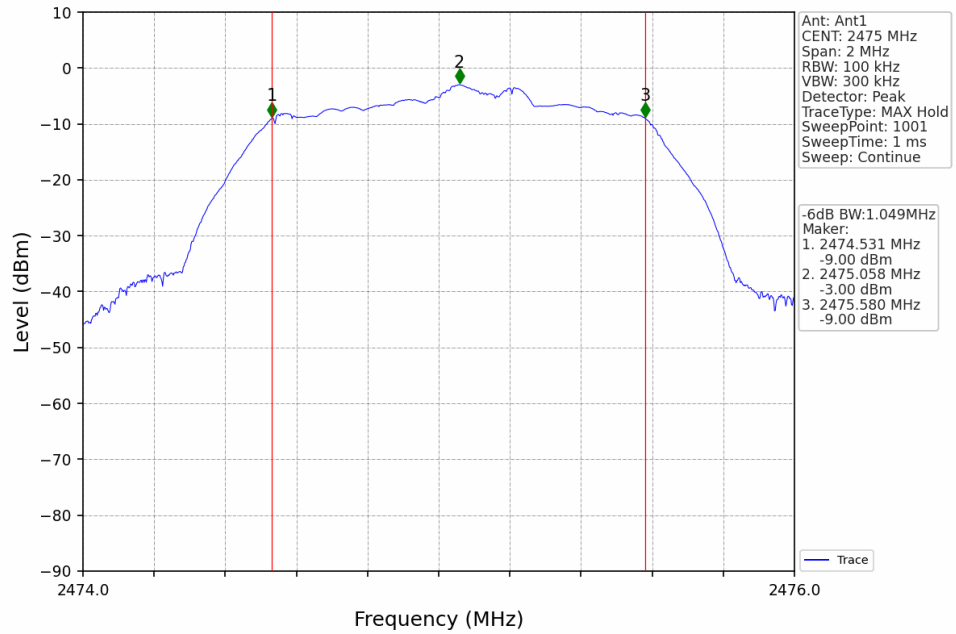
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



3. Maximum Conducted Output Power

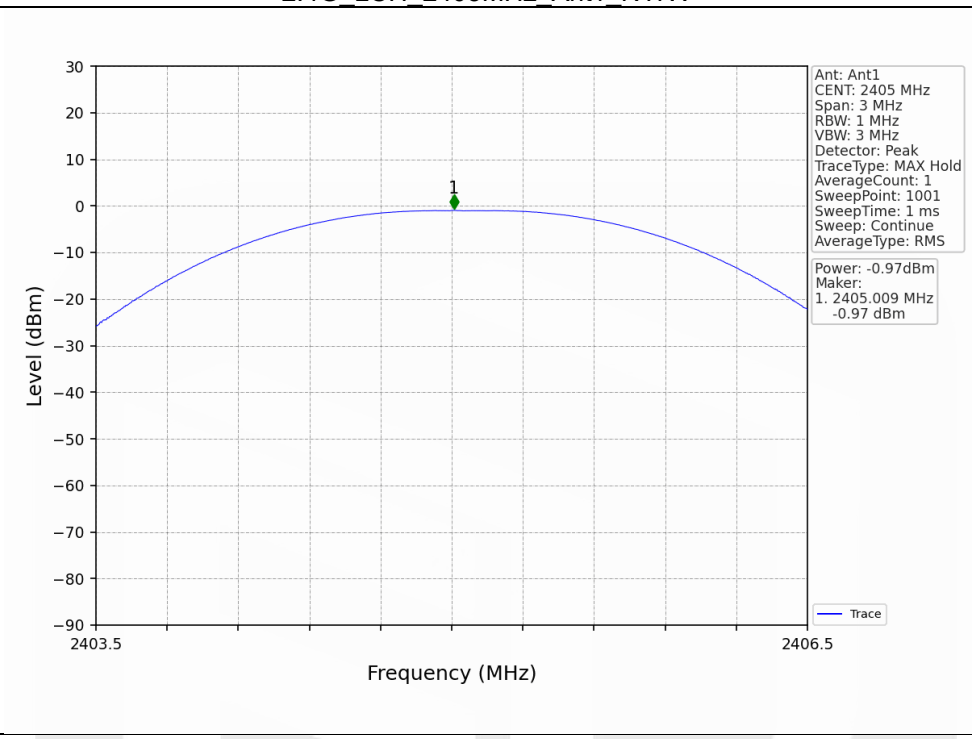
3.1 Power

3.1.1 Test Result

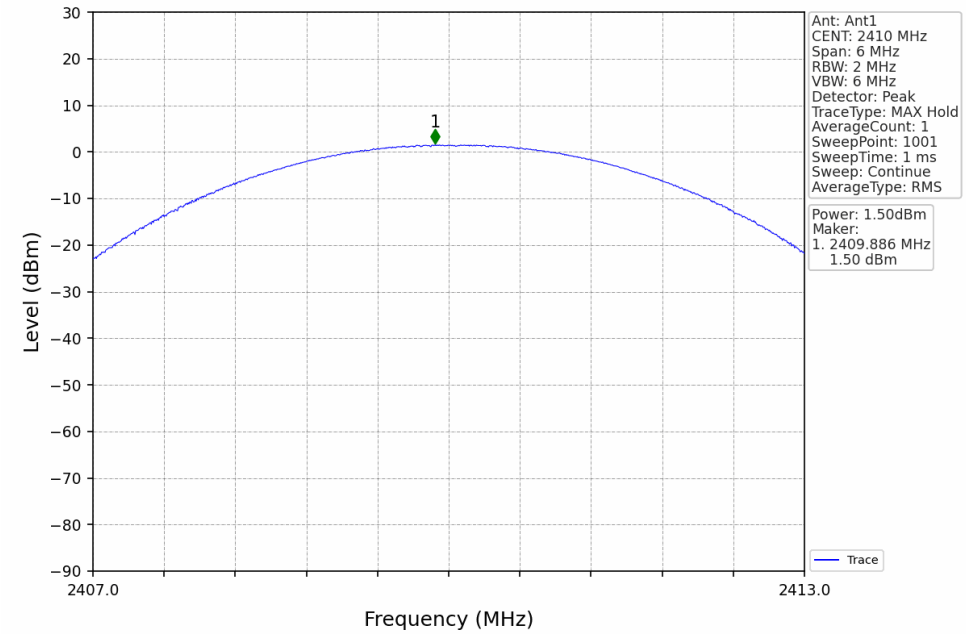
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
2.4G	SISO	2405	-0.97	<=30	Pass
		2410	1.50	<=30	Pass
		2475	-0.42	<=30	Pass

3.1.2 Test Graph

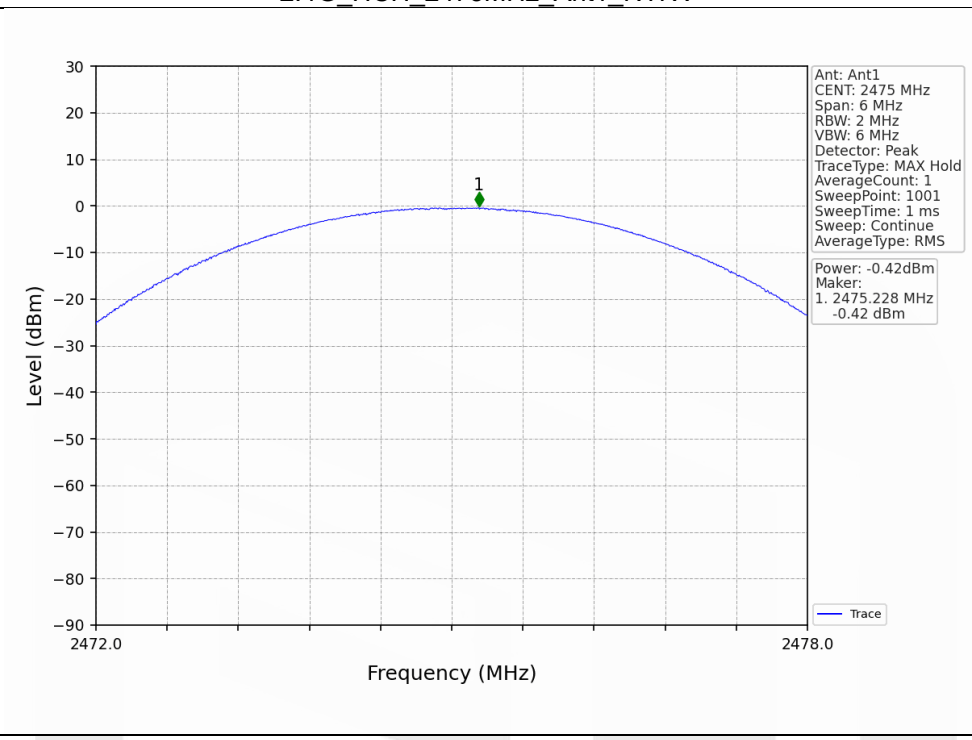
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



4. Maximum Power Spectral Density

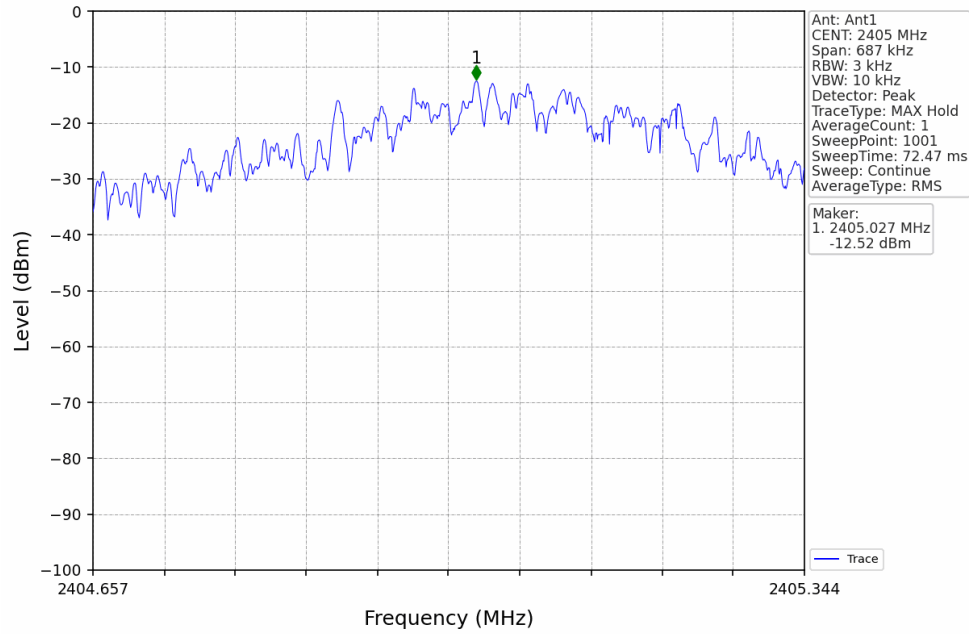
4.1 PSD

4.1.1 Test Result

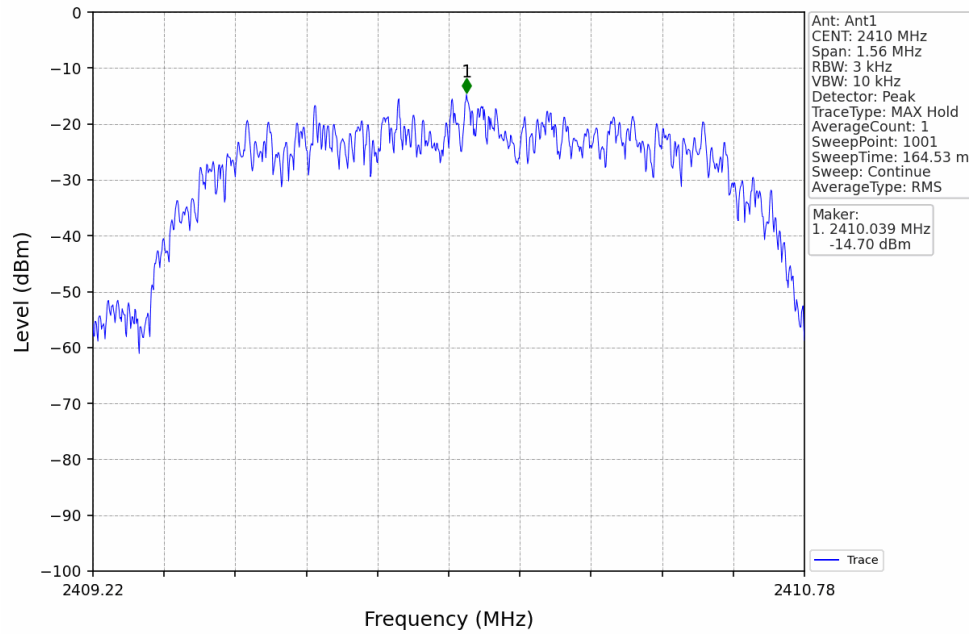
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
2.4G	SISO	2405	-12.52	<=8	Pass
		2410	-14.70	<=8	Pass
		2475	-16.57	<=8	Pass

4.1.2 Test Graph

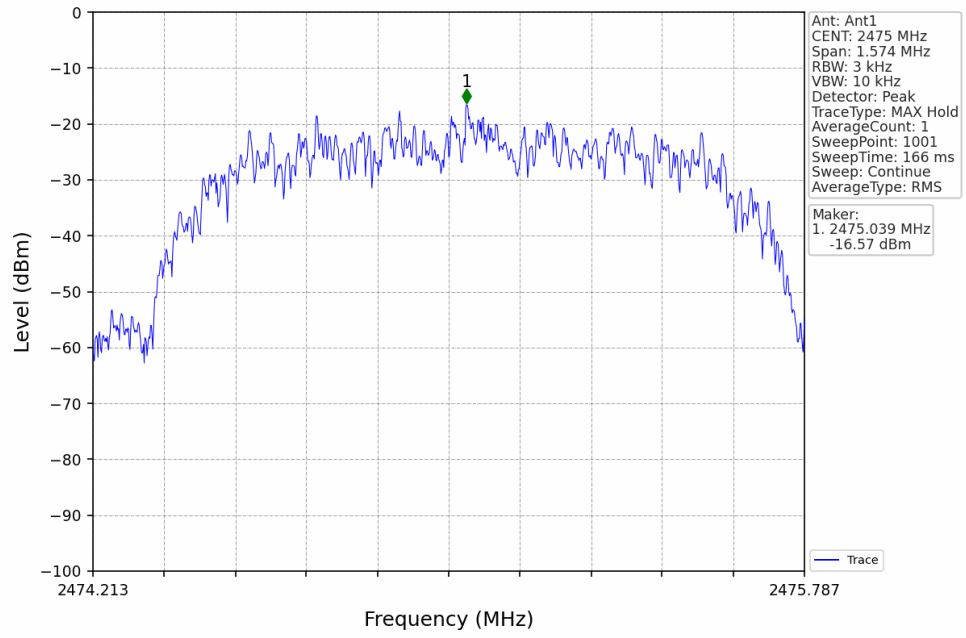
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

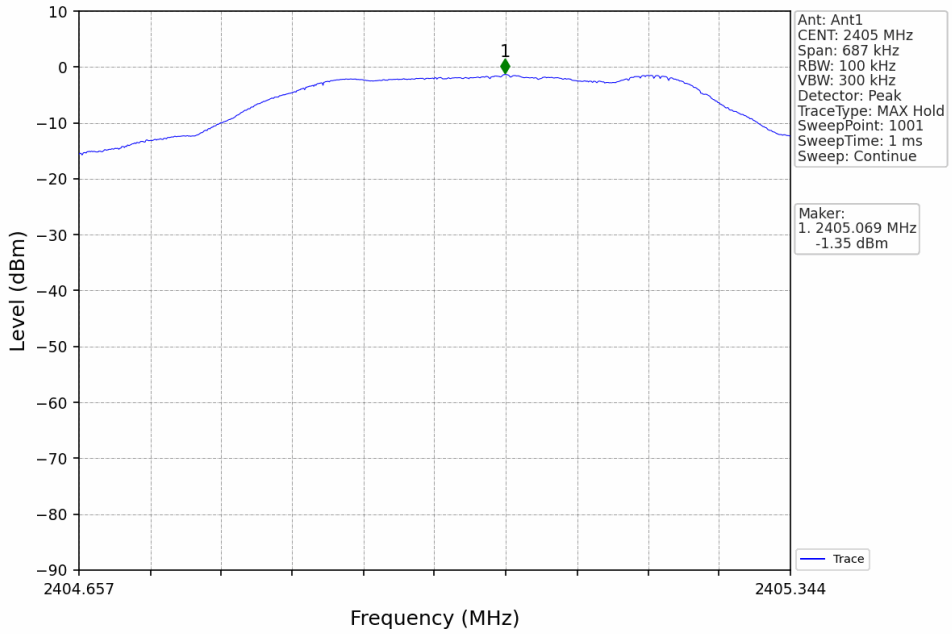
5.1 Ref

5.1.1 Test Result

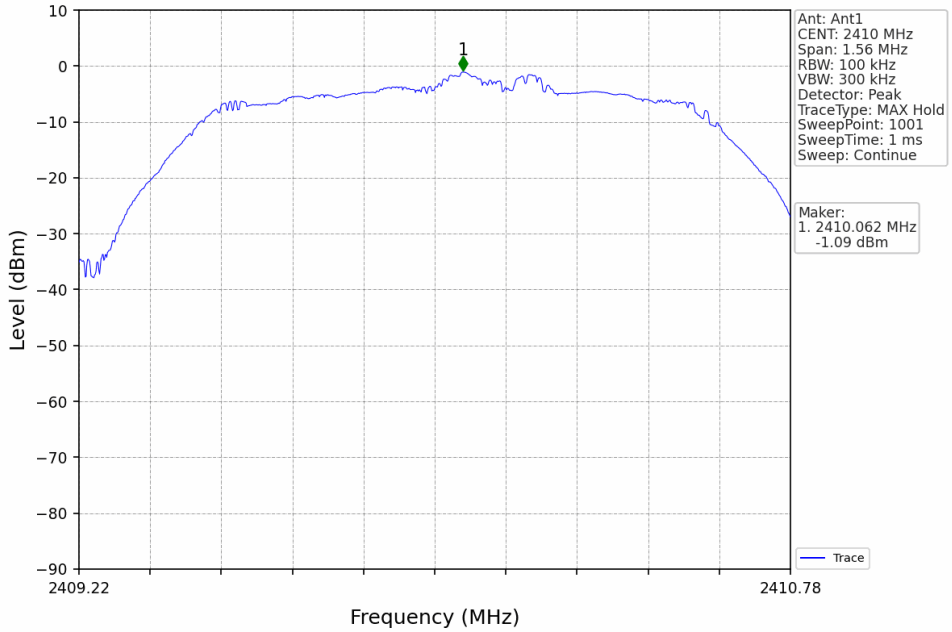
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
2.4G	SISO	2405	1	-1.35
		2410	1	-1.09
		2475	1	-3.14
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.				

5.1.2 Test Graph

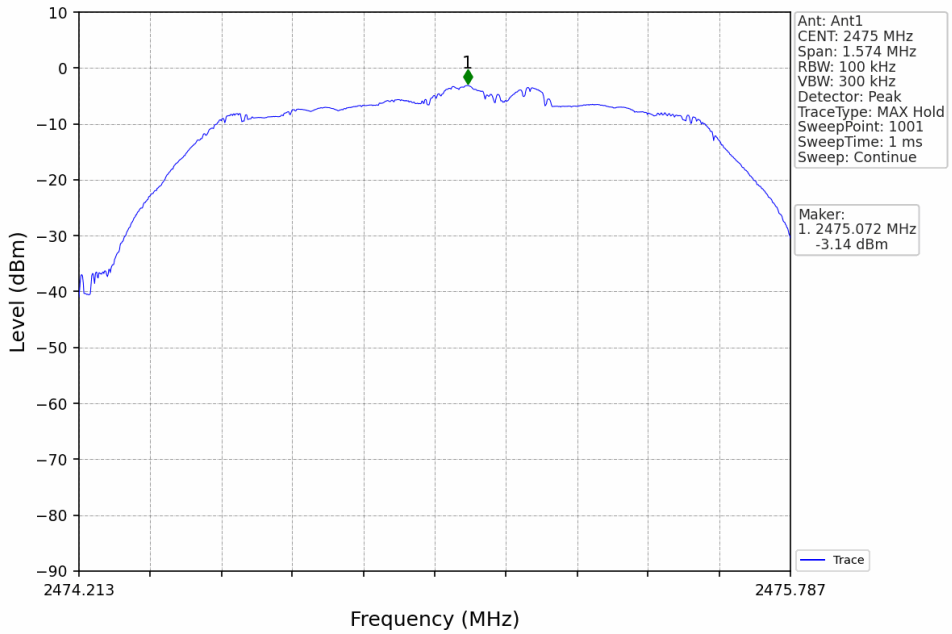
2.4G_LCH_2405MHz_Ant1_NTNV



2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



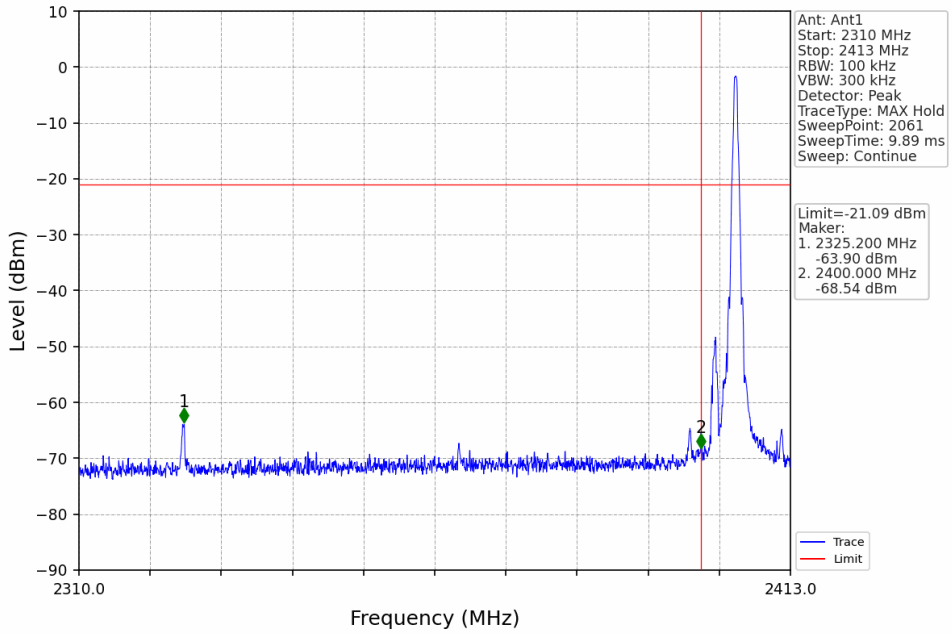
5.2 CSE

5.2.1 Test Result

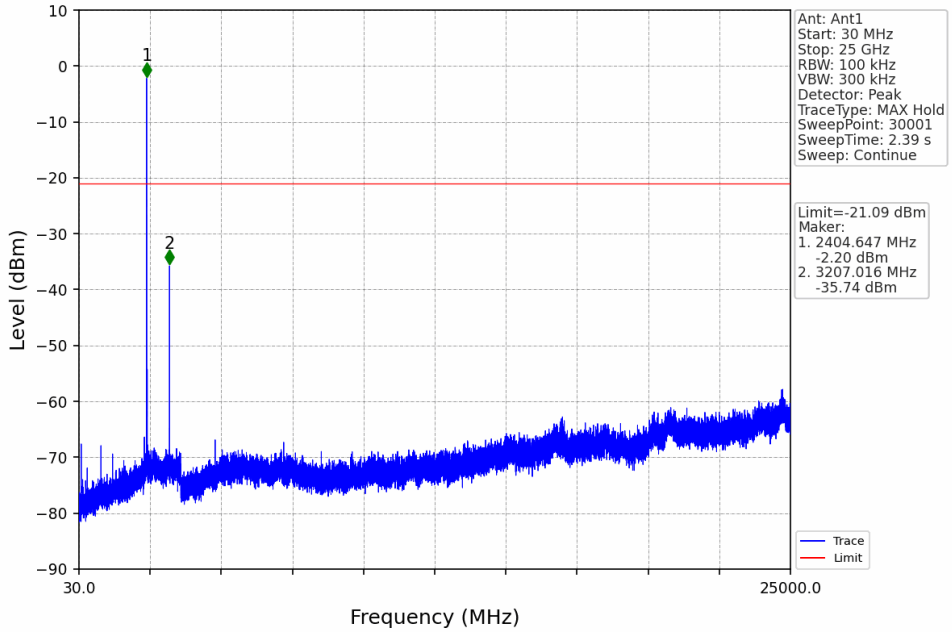
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
2.4G	SISO	2405	1	-1.09	-21.09	Pass
		2410	1	-1.09	-21.09	Pass
		2475	1	-1.09	-21.09	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.						

5.2.2 Test Graph

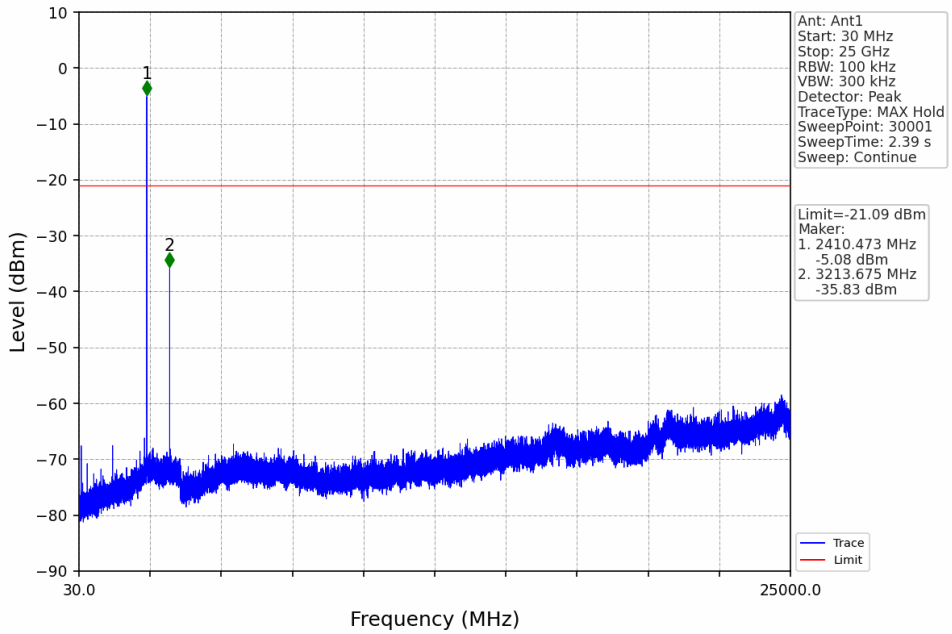
2.4G_LCH_2405MHz_Ant1_NTNV



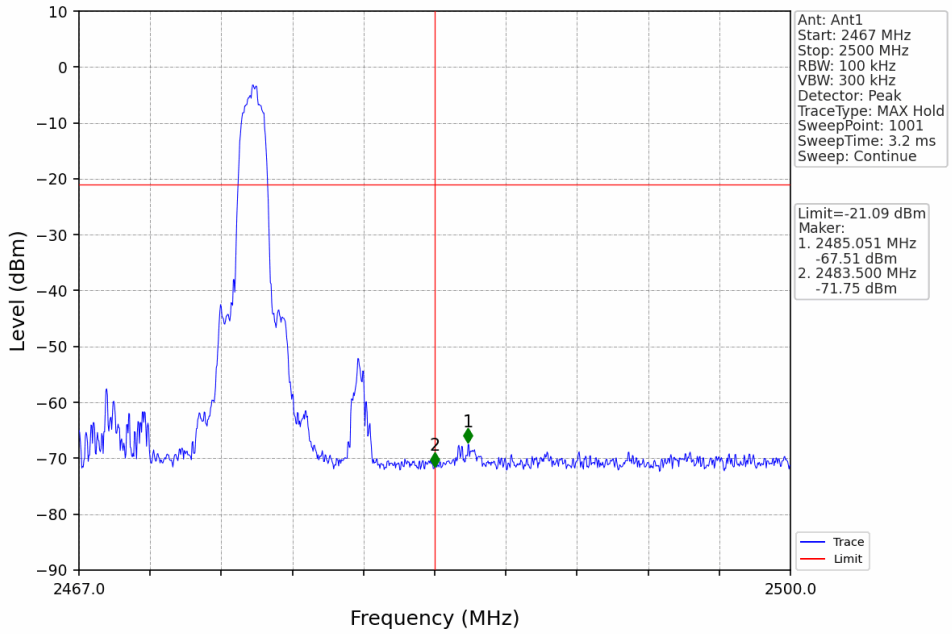
2.4G_LCH_2405MHz_Ant1_NTNV



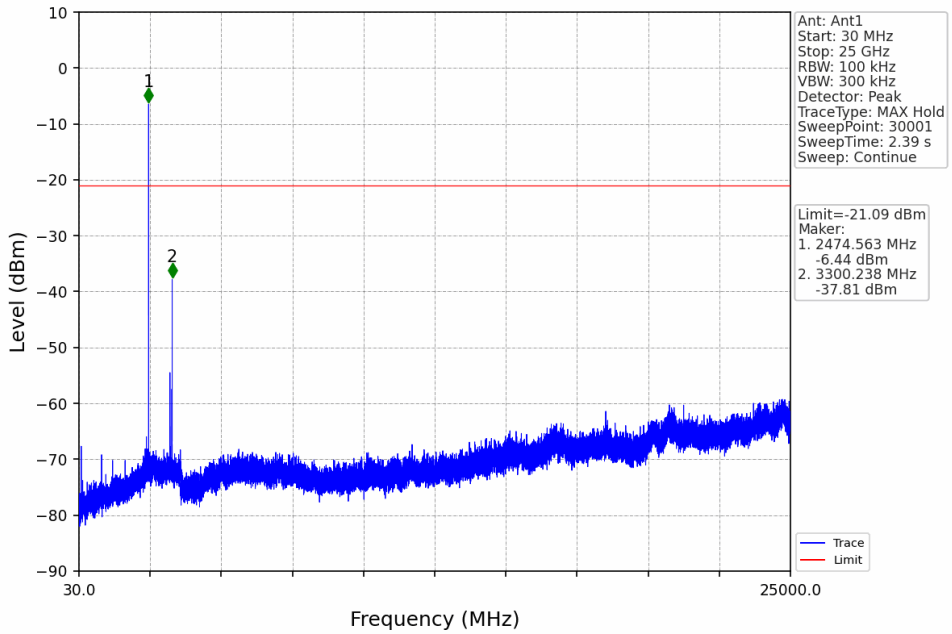
2.4G_MCH_2410MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



2.4G_HCH_2475MHz_Ant1_NTNV



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