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Annex for Bluetooth Low Energy

Test Report No.: CTL2604018061-WF

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1. Duty Cycle

1.1 Test Result

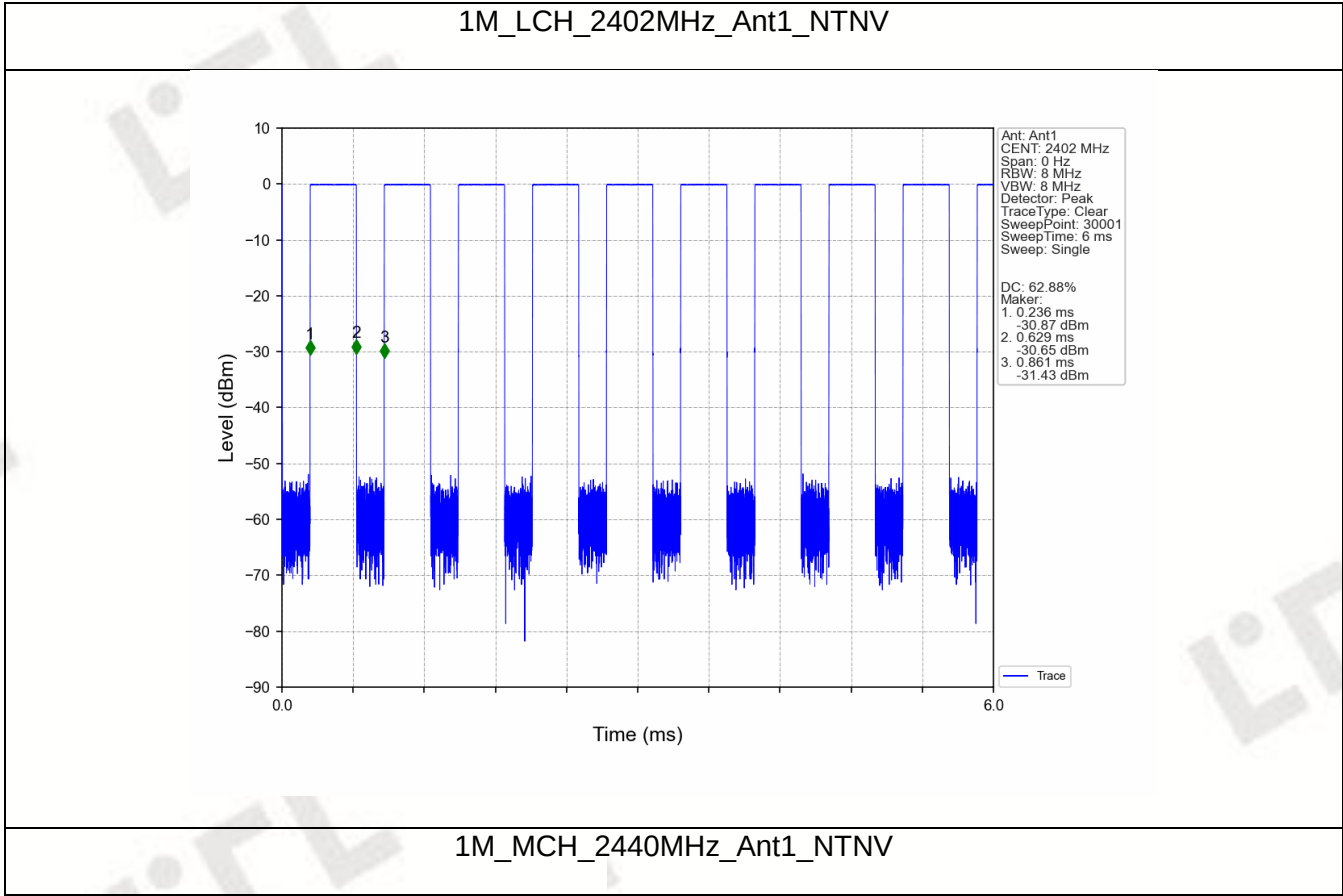
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.393	0.625	62.88	2.01	0.00
		2440	0.393	0.625	62.88	2.01	0.00
		2480	0.392	0.625	62.72	2.03	0.00
2M	SISO	2402	0.207	0.625	33.12	4.80	0.00
		2440	0.206	0.625	32.96	4.82	0.03
		2480	0.206	0.625	32.96	4.82	0.03

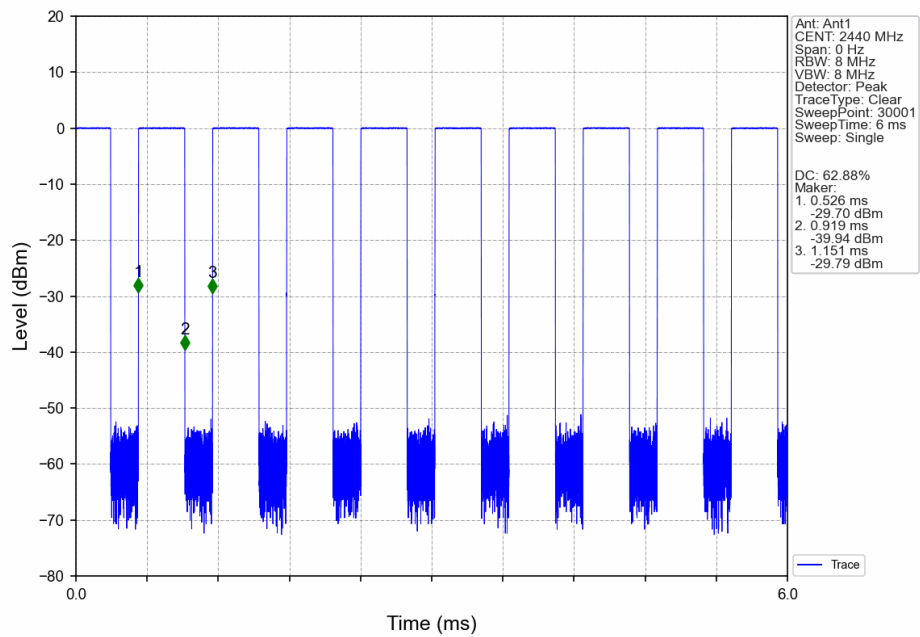
FCC ID: 2BADZSYNCPKT2025

1.2 Test Graph

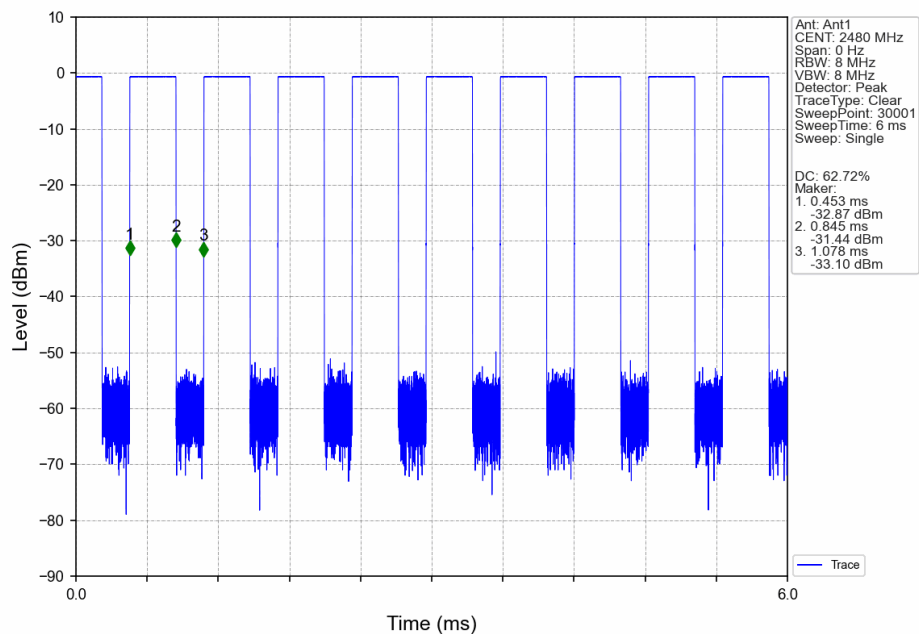
1.2.1 Ant1



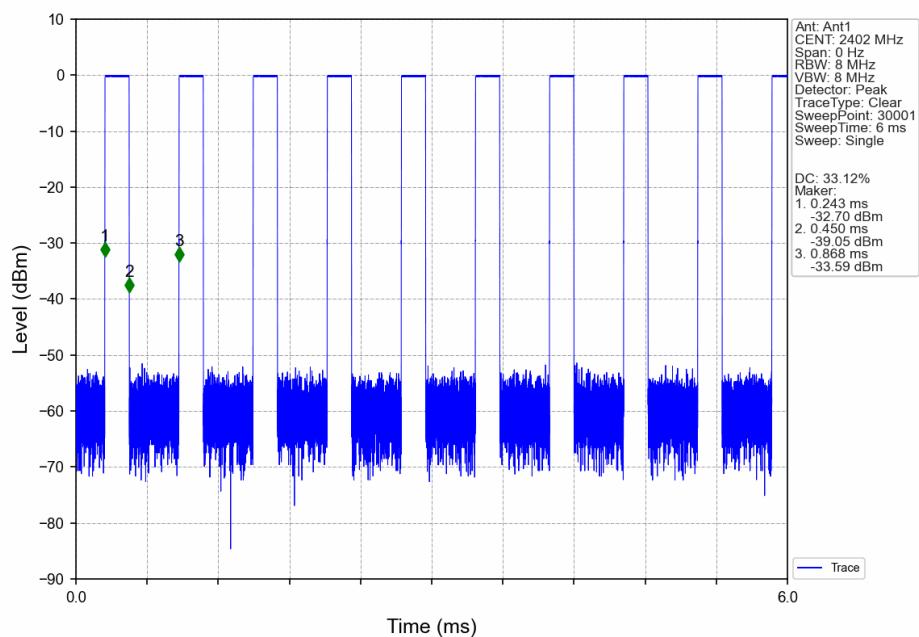
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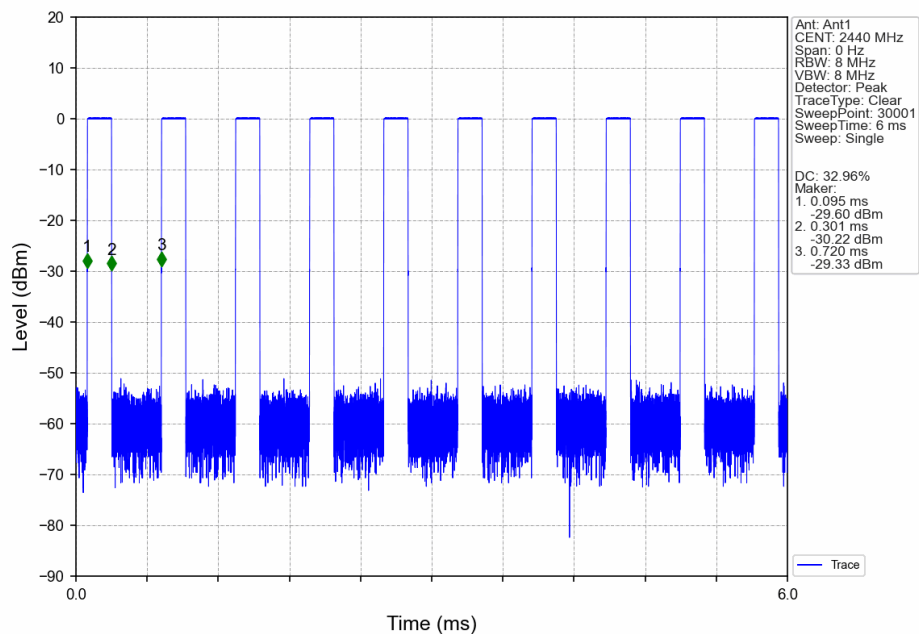
1M_HCH_2480MHz_Ant1_NTNV



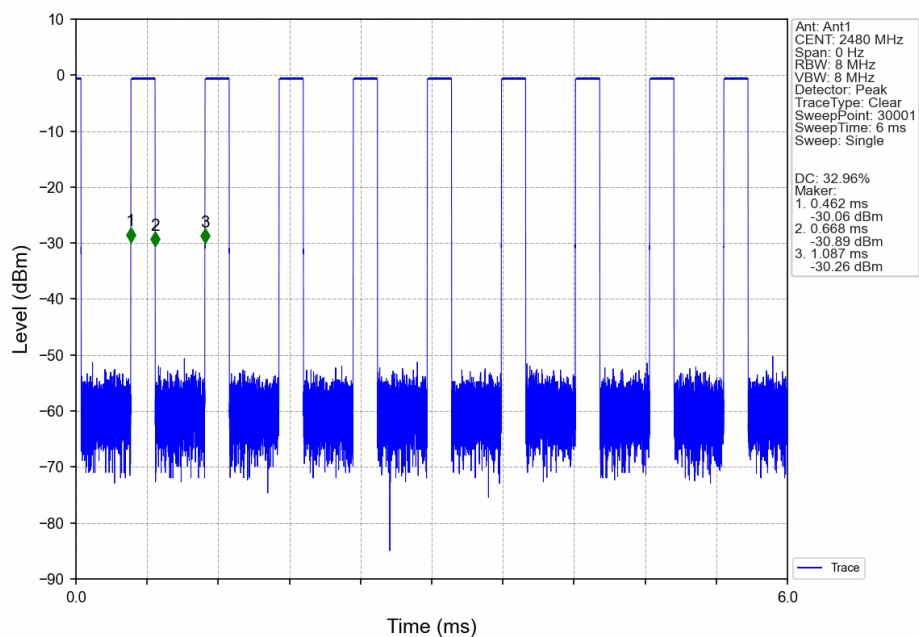
2M_LCH_2402MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.052	/	Pass
		2440	1	1.053	/	Pass
		2480	1	1.053	/	Pass
2M	SISO	2402	1	2.078	/	Pass
		2440	1	2.078	/	Pass
		2480	1	2.080	/	Pass

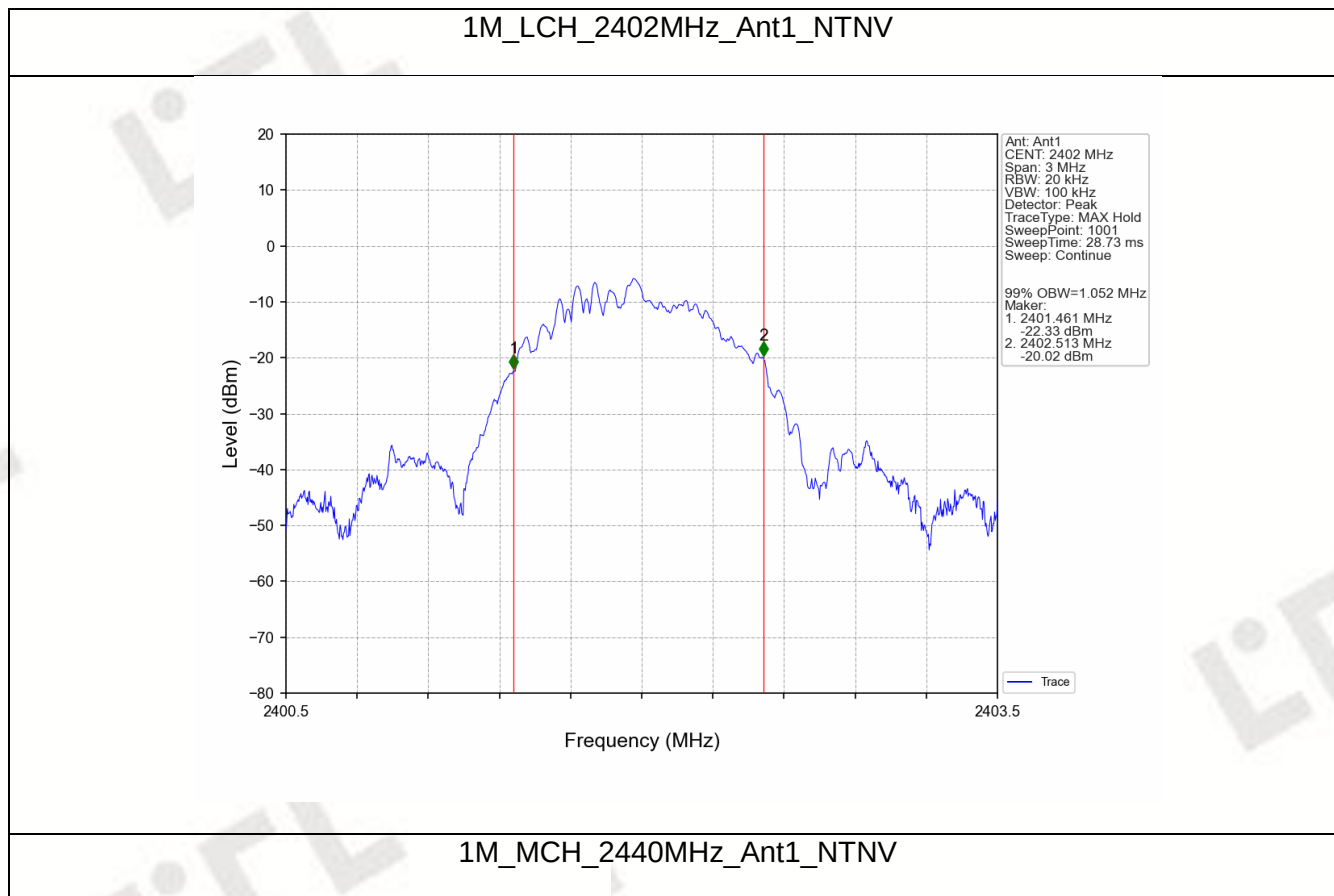
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.675	≥ 0.5	Pass
		2440	1	0.675	≥ 0.5	Pass
		2480	1	0.674	≥ 0.5	Pass
2M	SISO	2402	1	1.158	≥ 0.5	Pass
		2440	1	1.153	≥ 0.5	Pass
		2480	1	1.141	≥ 0.5	Pass

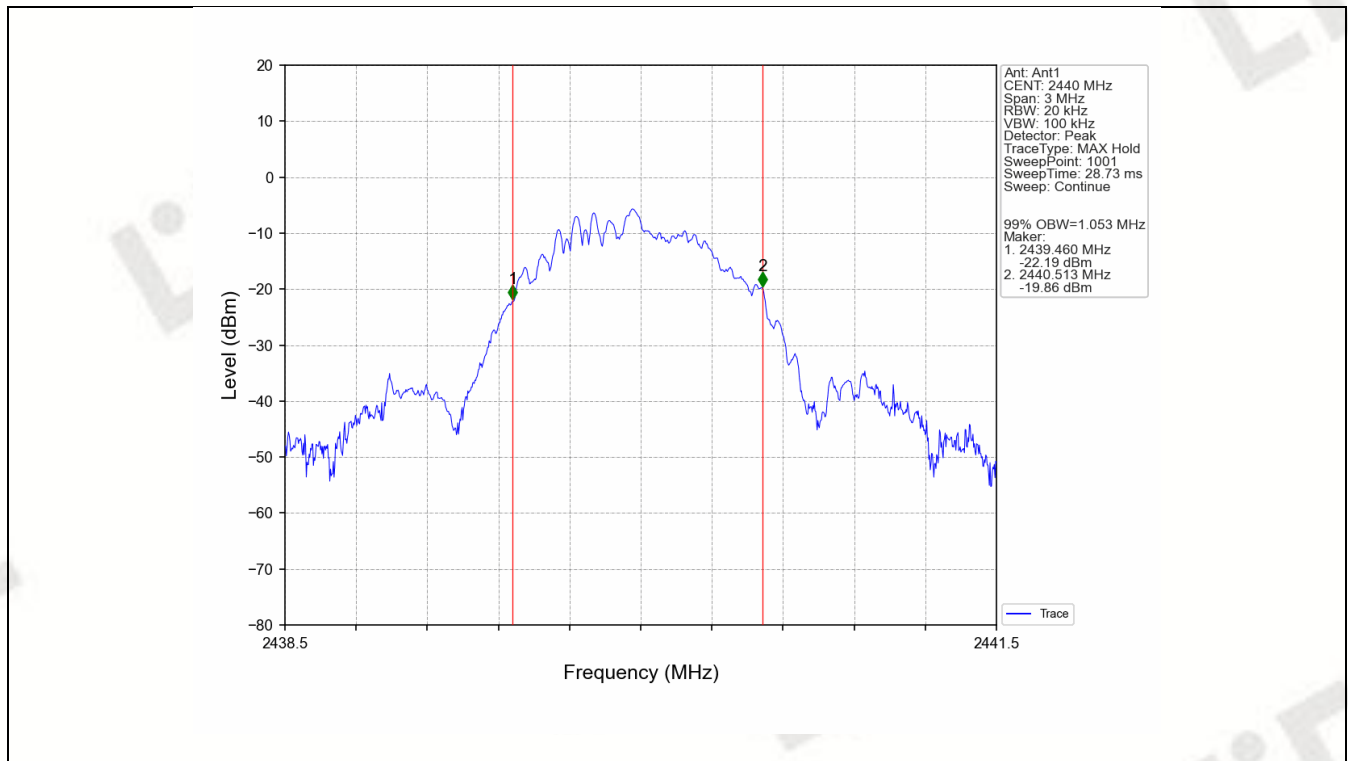
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2.2 Test Graph

2.2.1 OBW

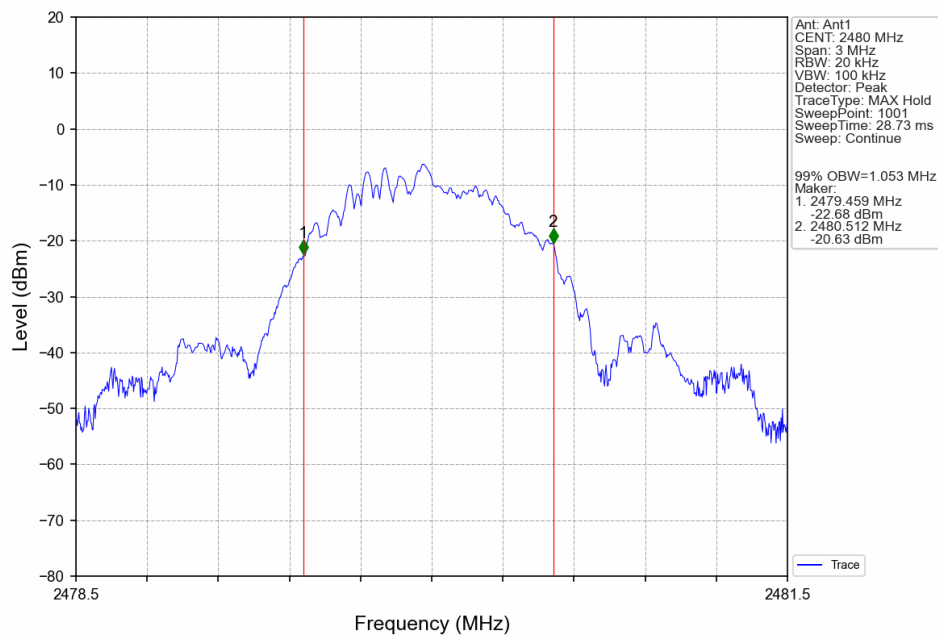


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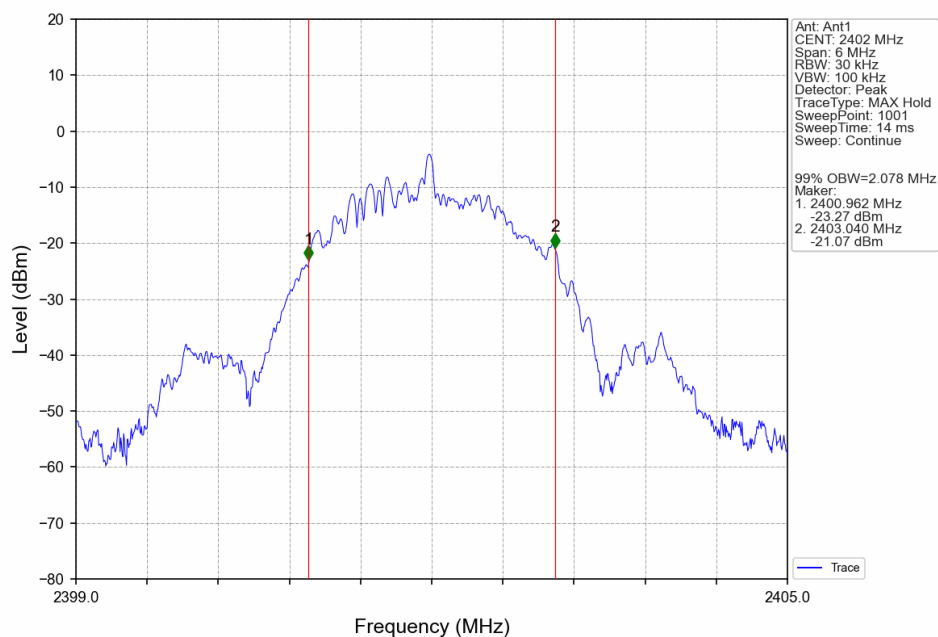


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1M_HCH_2480MHz_Ant1_NTNV

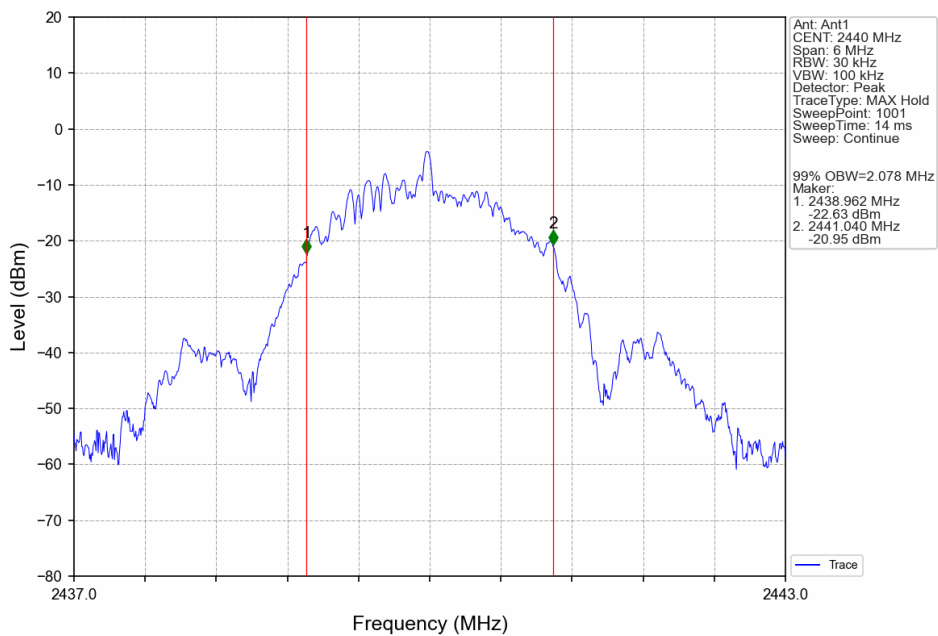


2M_LCH_2402MHz_Ant1_NTNV

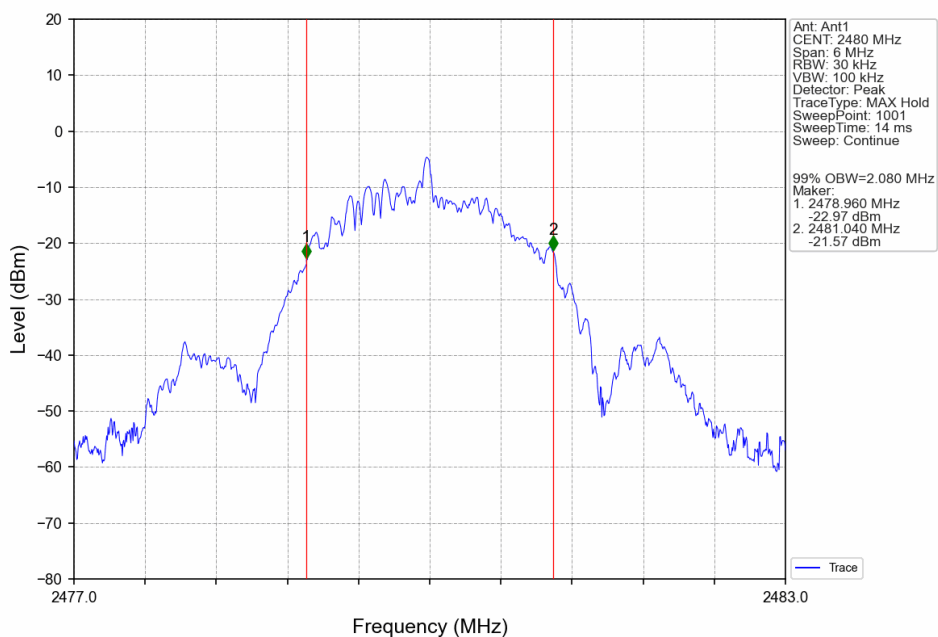


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2M_MCH_2440MHz_Ant1_NTNV

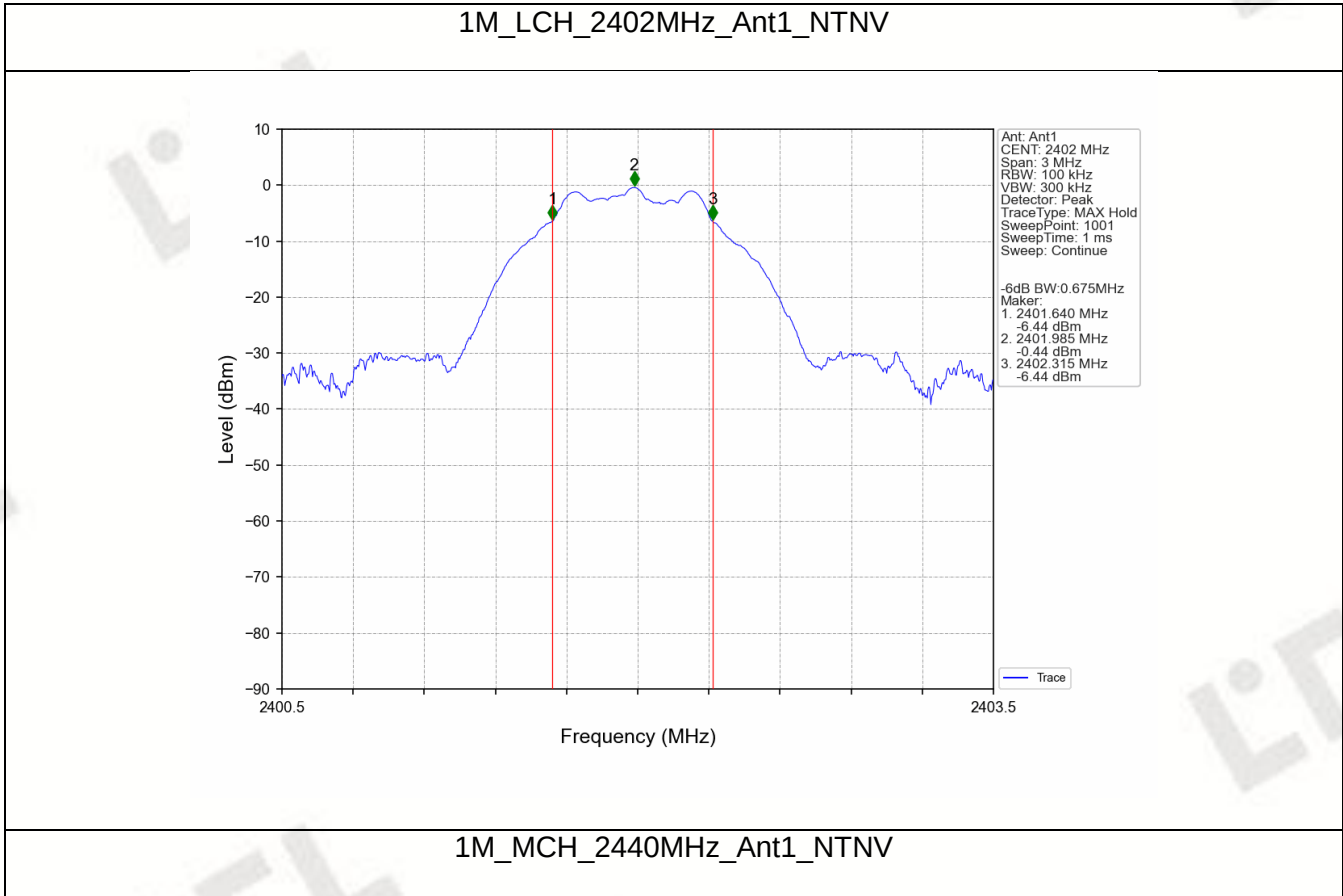


2M_HCH_2480MHz_Ant1_NTNV

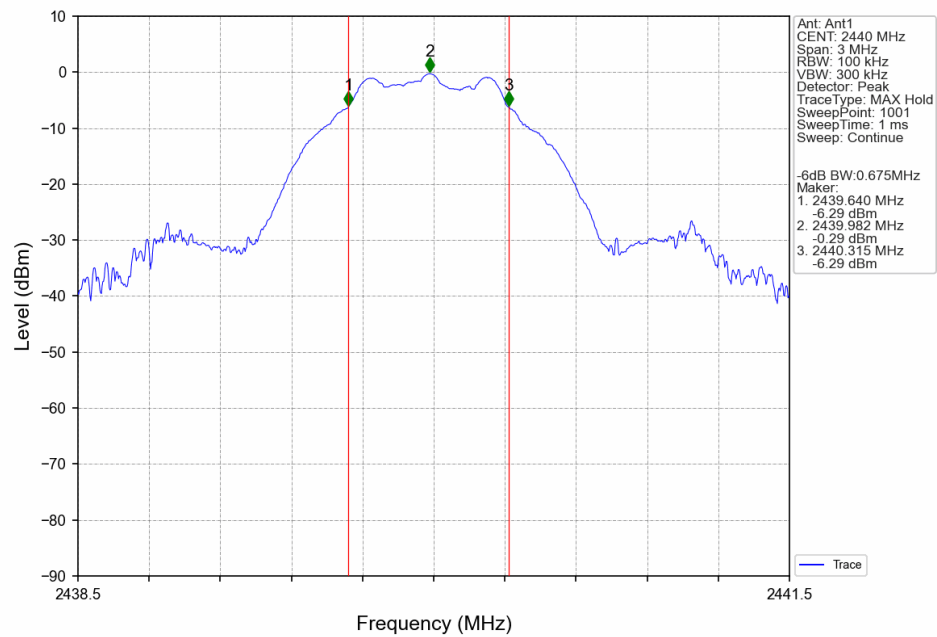


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2.2.2 6dB BW

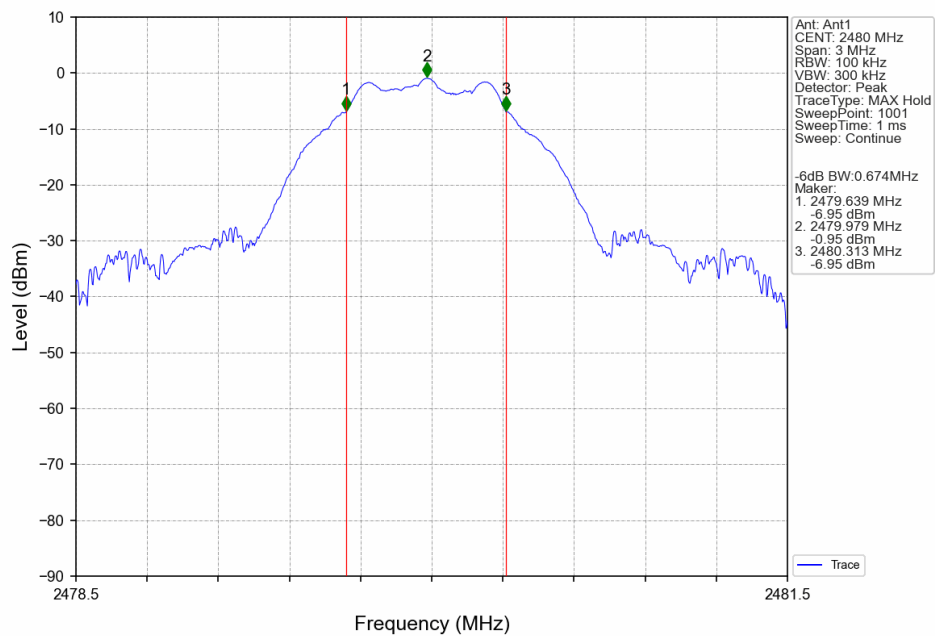


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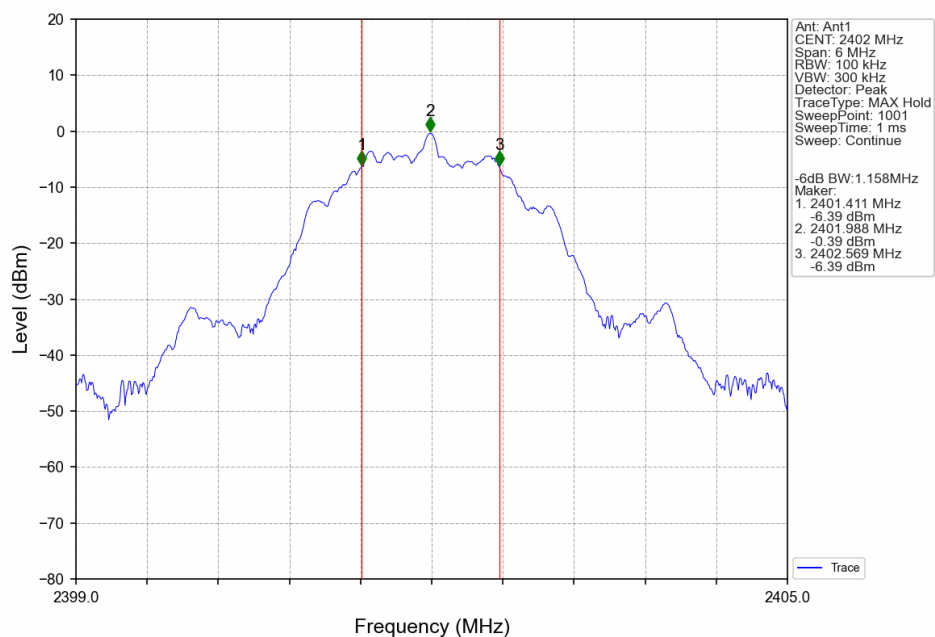


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1M_HCH_2480MHz_Ant1_NTNV

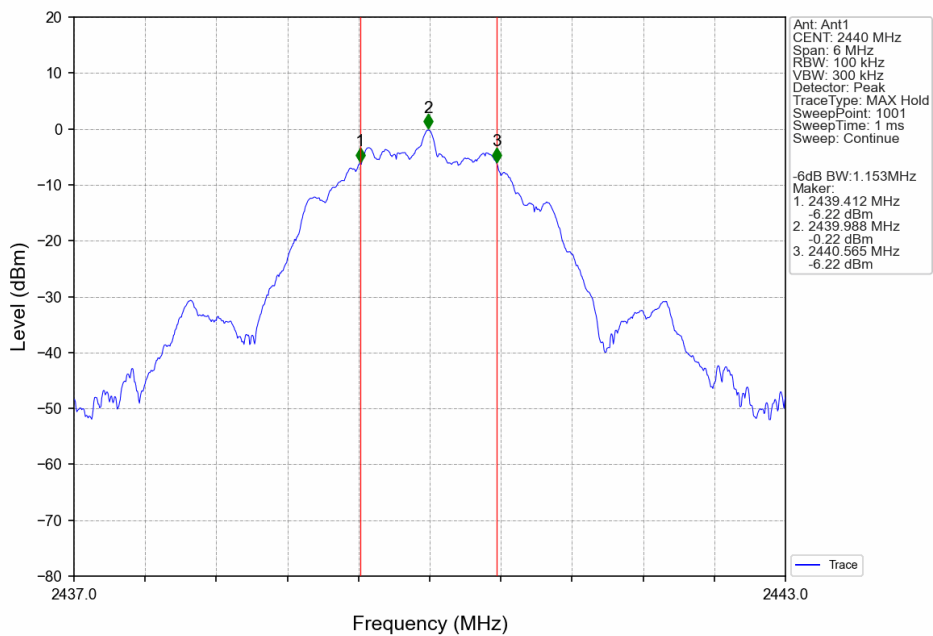


2M_LCH_2402MHz_Ant1_NTNV

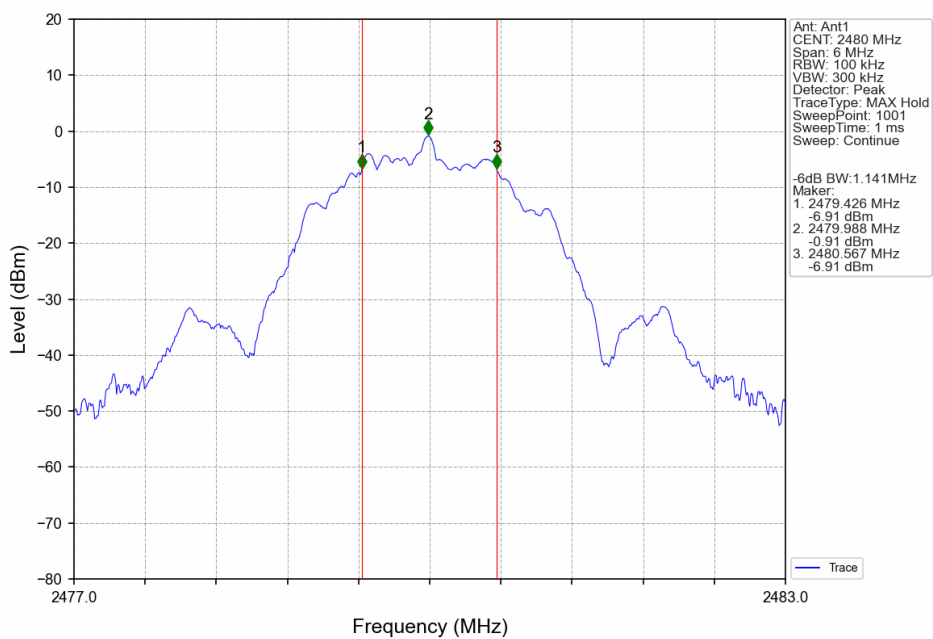


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2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_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	
1M	SISO	2402	-0.10	<=30	Pass
		2440	0.05	<=30	Pass
		2480	-0.61	<=30	Pass
2M	SISO	2402	-0.08	<=30	Pass
		2440	0.08	<=30	Pass
		2480	-0.58	<=30	Pass

Note1: Antenna Gain: Ant1: 1.23dBi;

Note2: RF Cable loss=0.5dB

Note3: The test results include RF Cable loss.

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-0.44	<=8	Pass
		2440	-0.32	<=8	Pass
		2480	-0.98	<=8	Pass
2M	SISO	2402	-0.45	<=8	Pass
		2440	-0.28	<=8	Pass
		2480	-0.95	<=8	Pass

Note1: Antenna Gain: Ant1: 1.23dBi;

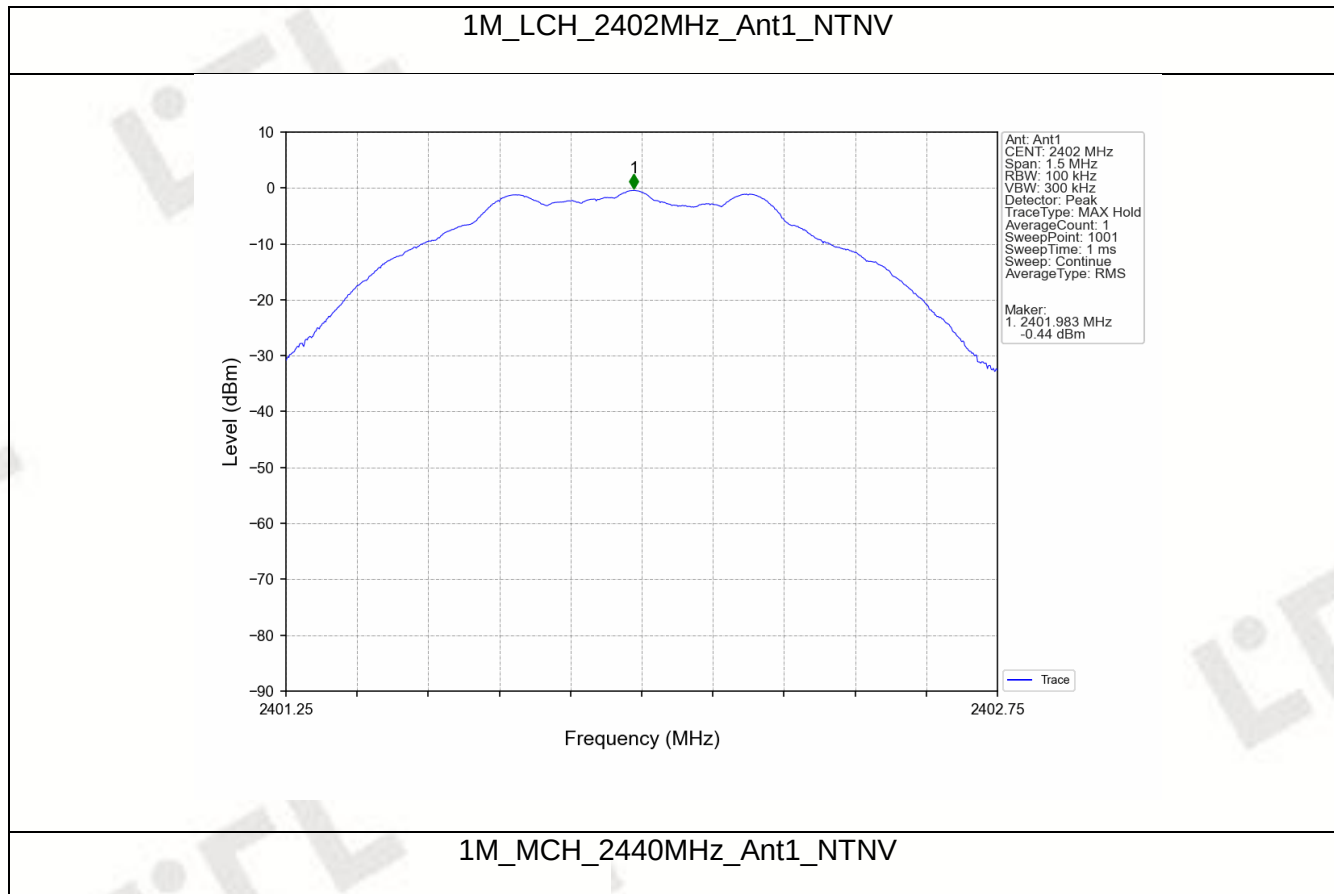
Note2: RF Cable loss=0.5dB

Note3: The test results include RF Cable loss.

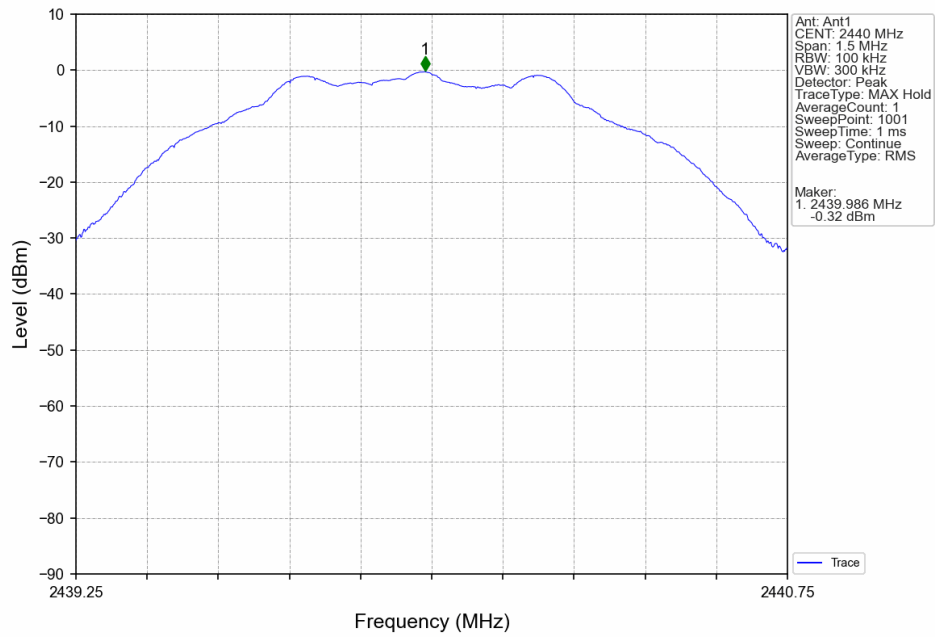
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4.2 Test Graph

4.2.1 PSD

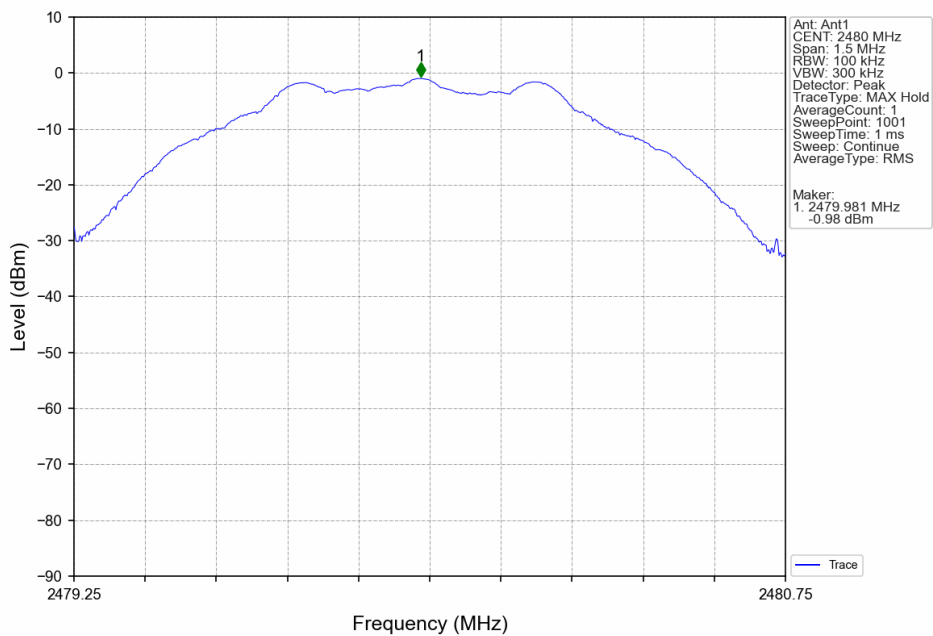


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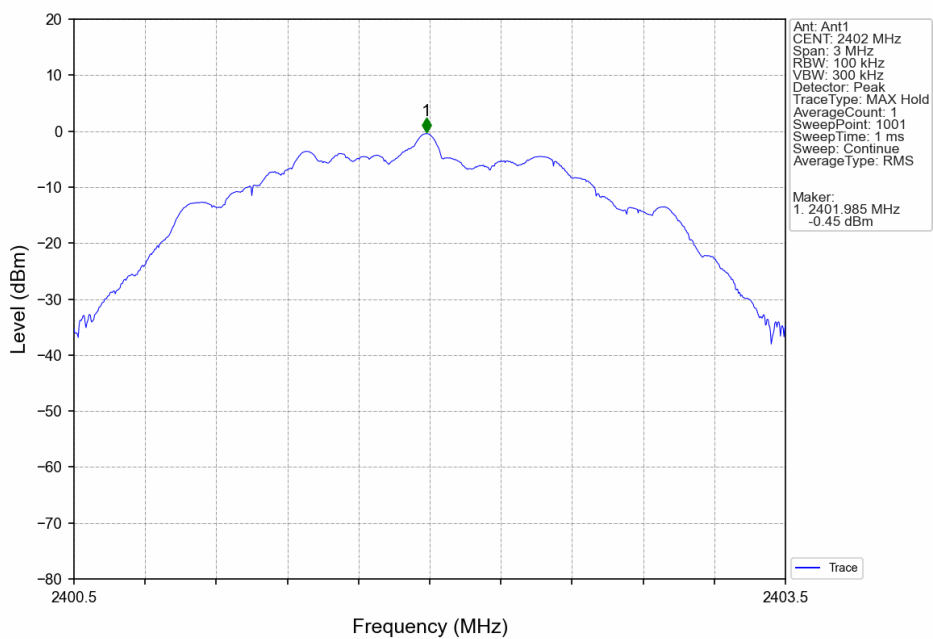


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1M_HCH_2480MHz_Ant1_NTNV

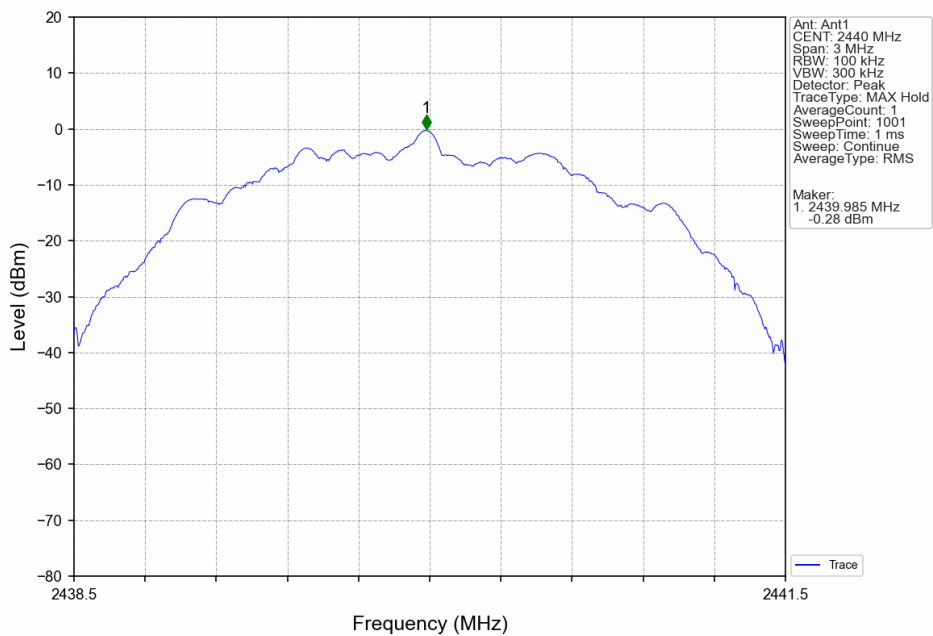


2M_LCH_2402MHz_Ant1_NTNV

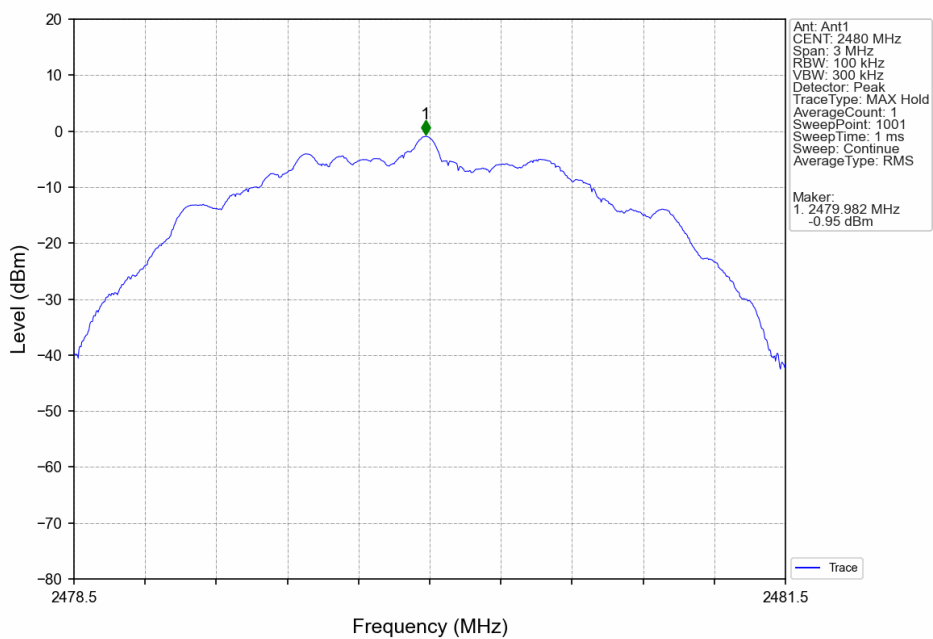


FCC ID: 2BADZSYNCPKT2025

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_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)
1M	SISO	2402	1	-0.45
		2440	1	-0.32
		2480	1	-1.00
2M	SISO	2402	1	-0.47
		2440	1	-0.29
		2480	1	-1.00

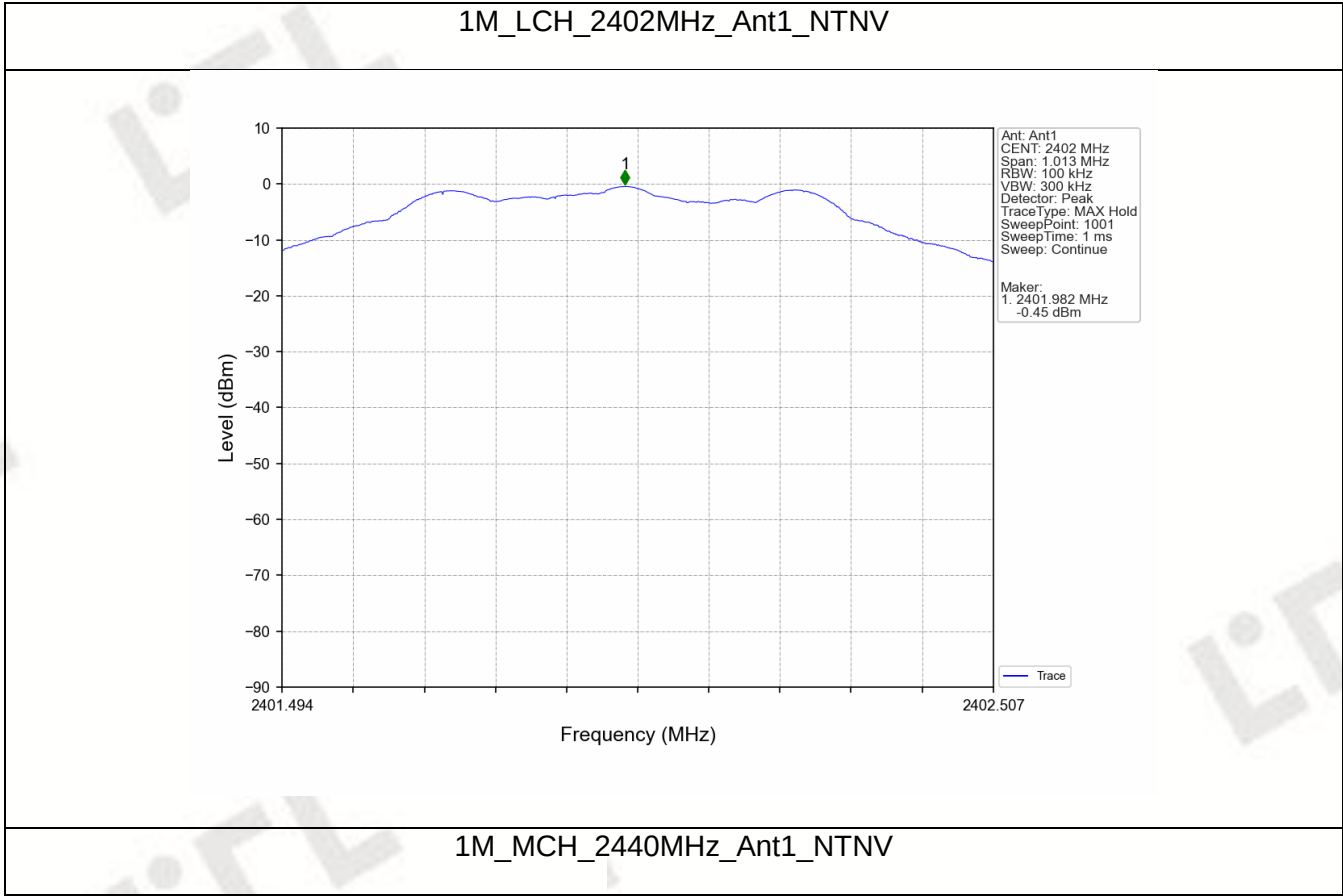
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-0.32	-20.32	Pass
		2440	1	-0.32	-20.32	Pass
		2480	1	-0.32	-20.32	Pass
2M	SISO	2402	1	-0.29	-20.29	Pass
		2440	1	-0.29	-20.29	Pass
		2480	1	-0.29	-20.29	Pass

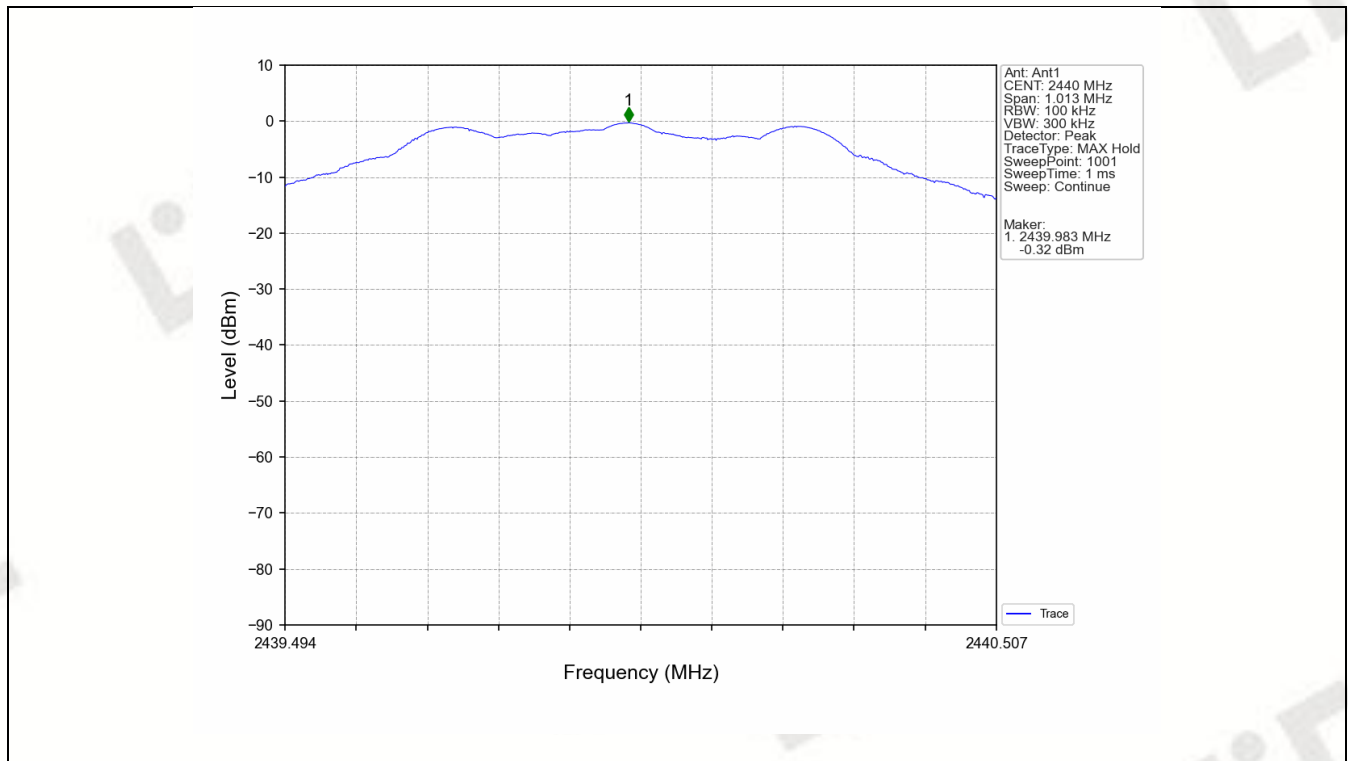
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5.2 Test Graph

5.2.1 Ref

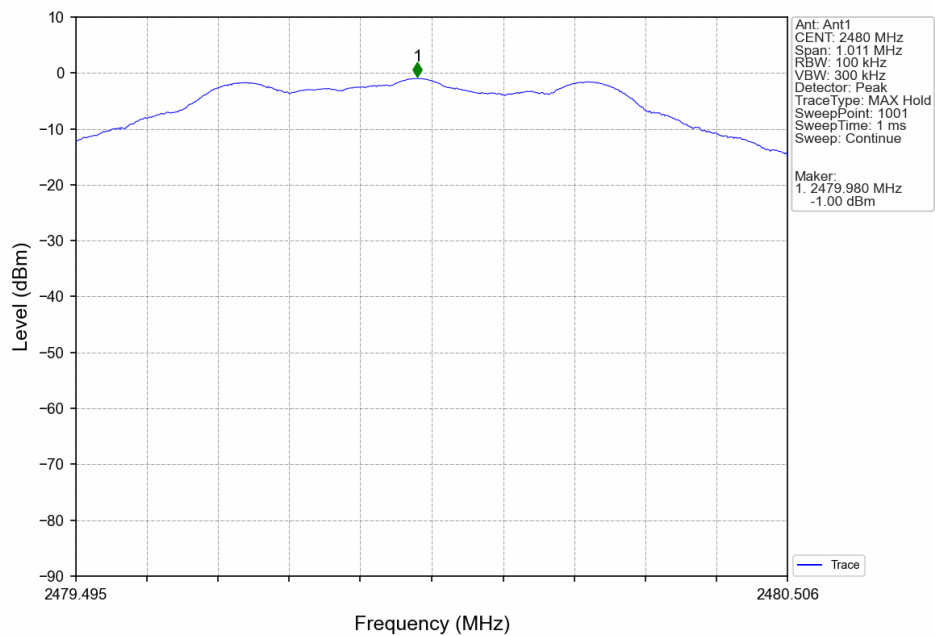


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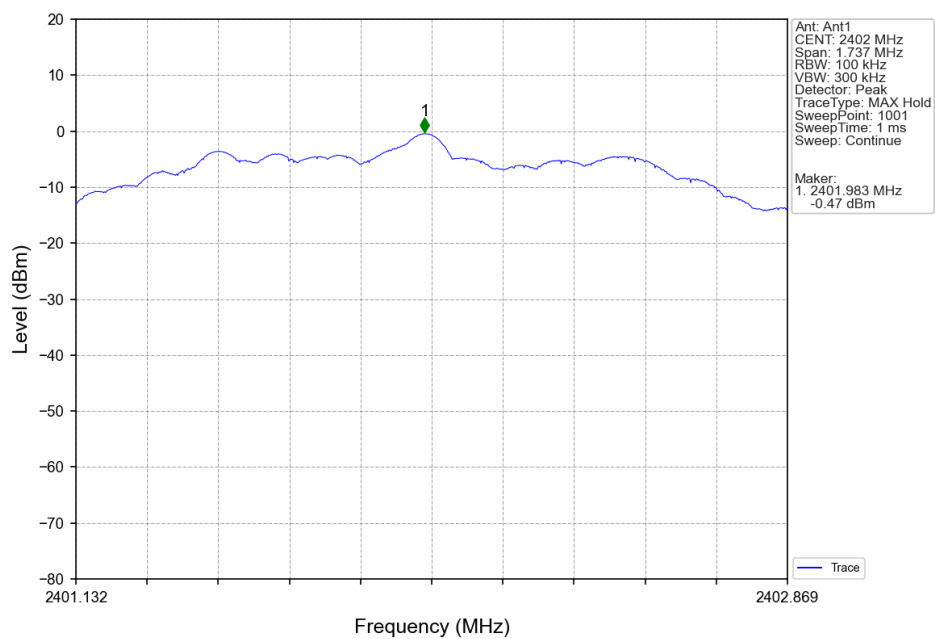


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1M_HCH_2480MHz_Ant1_NTNV

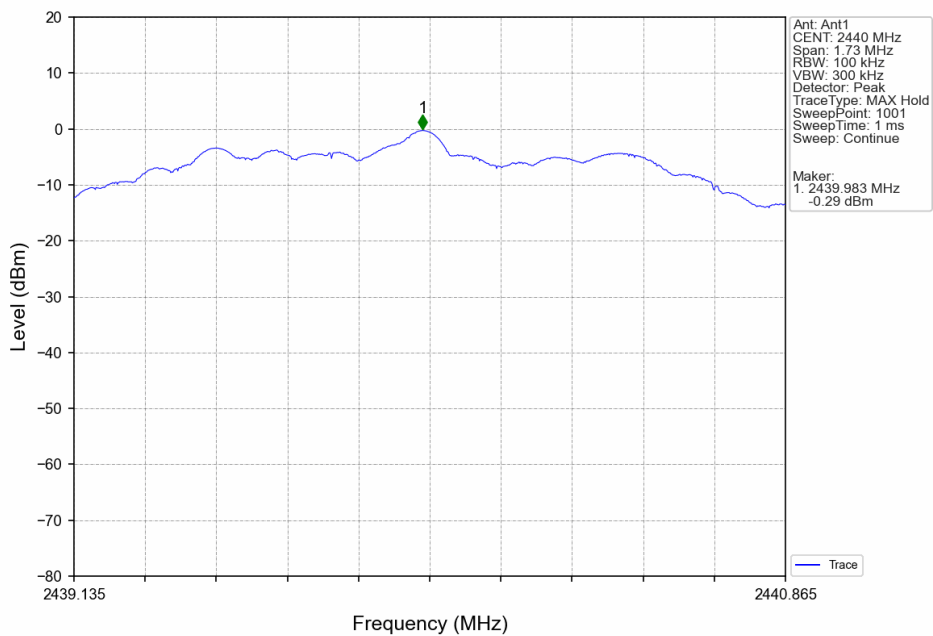


2M_LCH_2402MHz_Ant1_NTNV

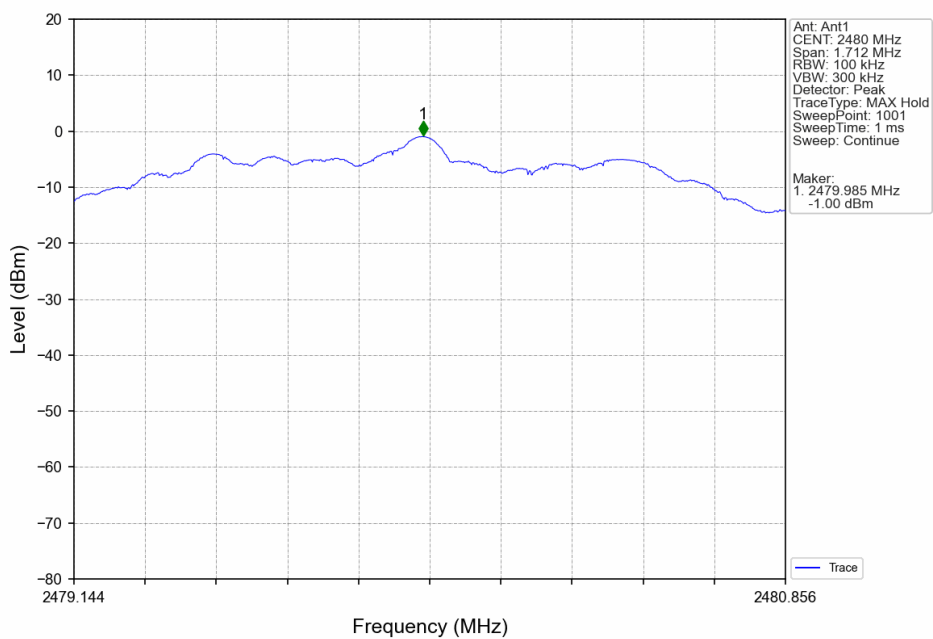


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2M_MCH_2440MHz_Ant1_NTNV

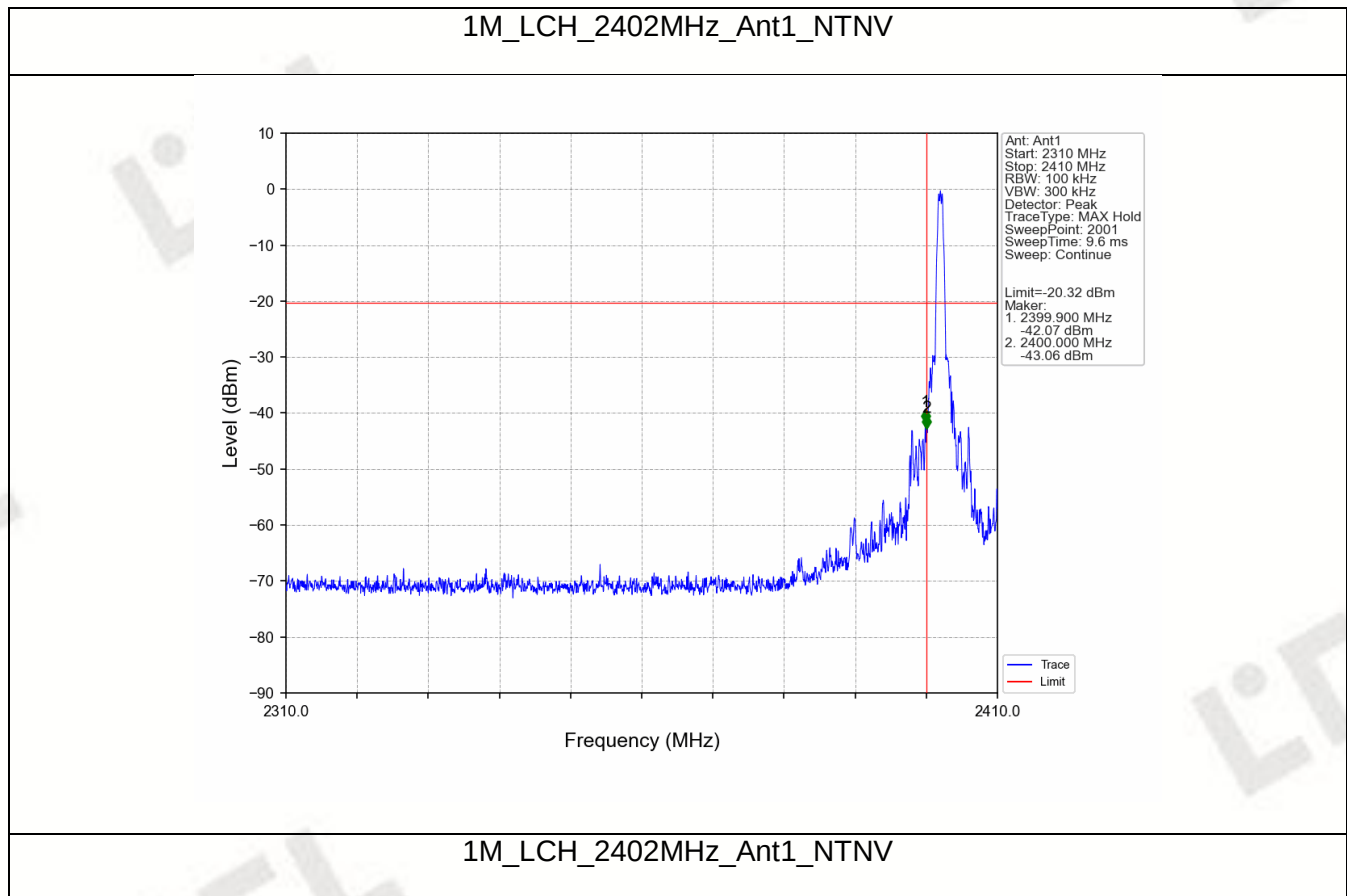


2M_HCH_2480MHz_Ant1_NTNV

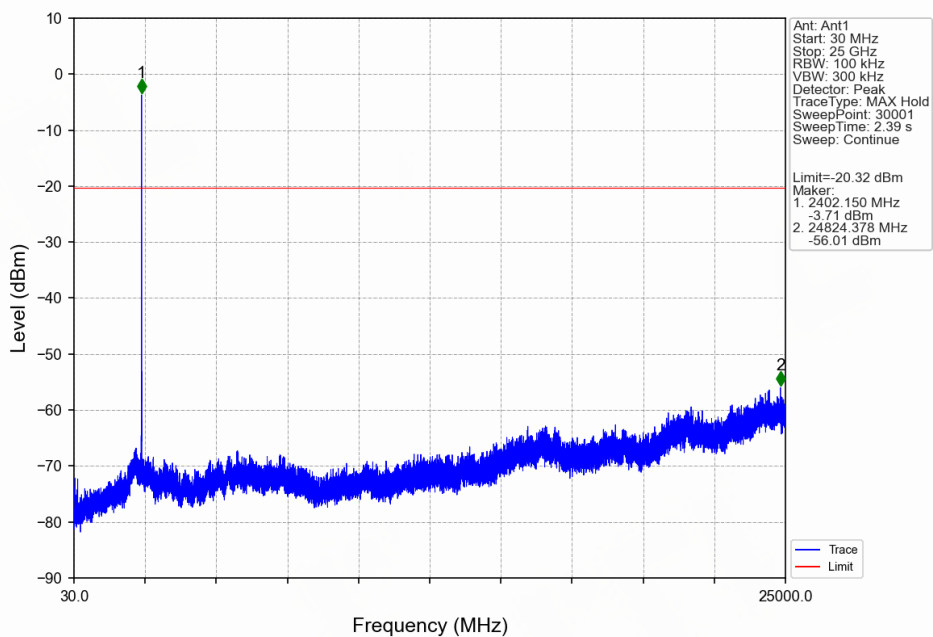


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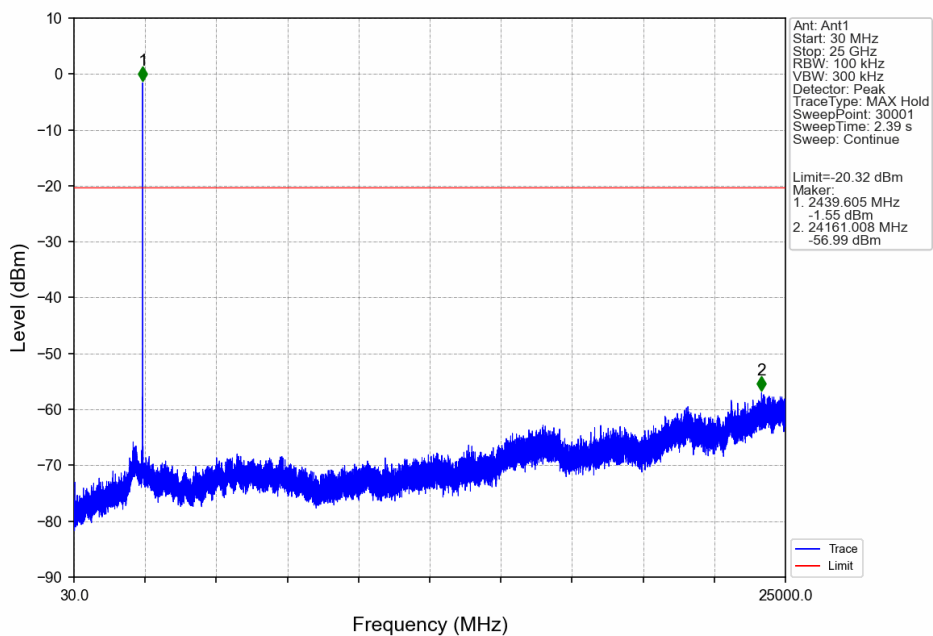
5.2.2 CSE



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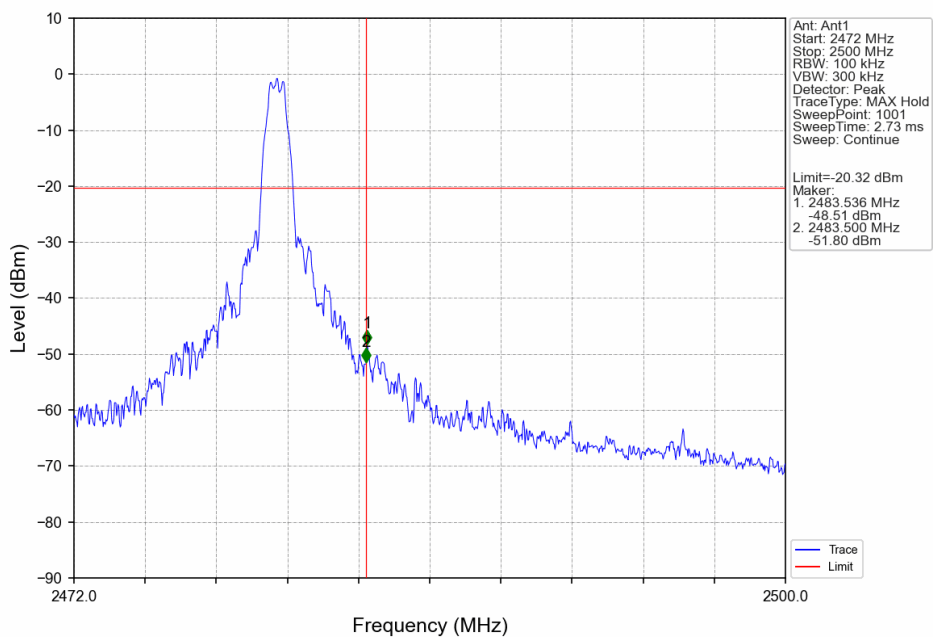


1M_MCH_2440MHz_Ant1_NTNV

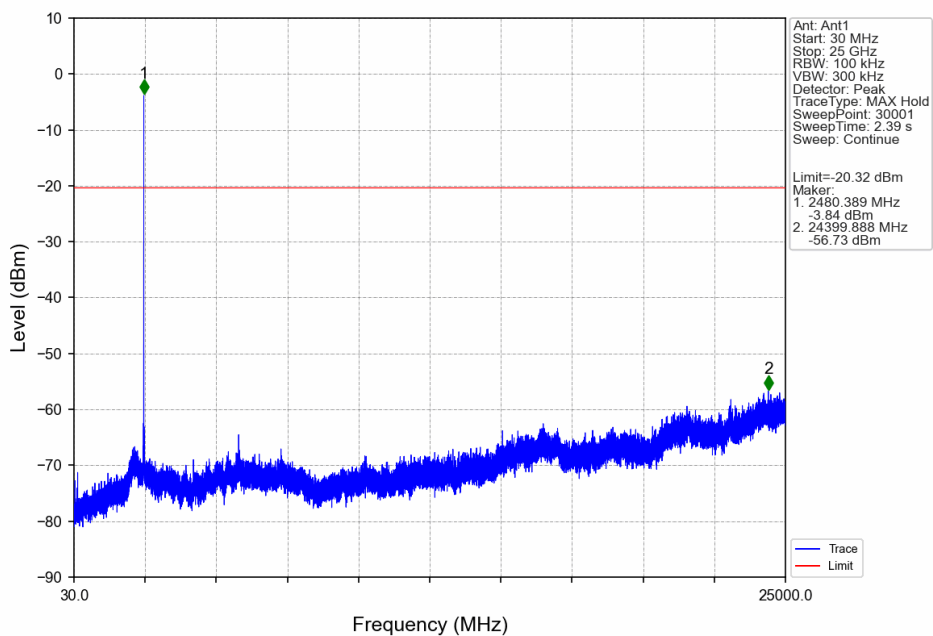


1M_HCH_2480MHz_Ant1_NTNV

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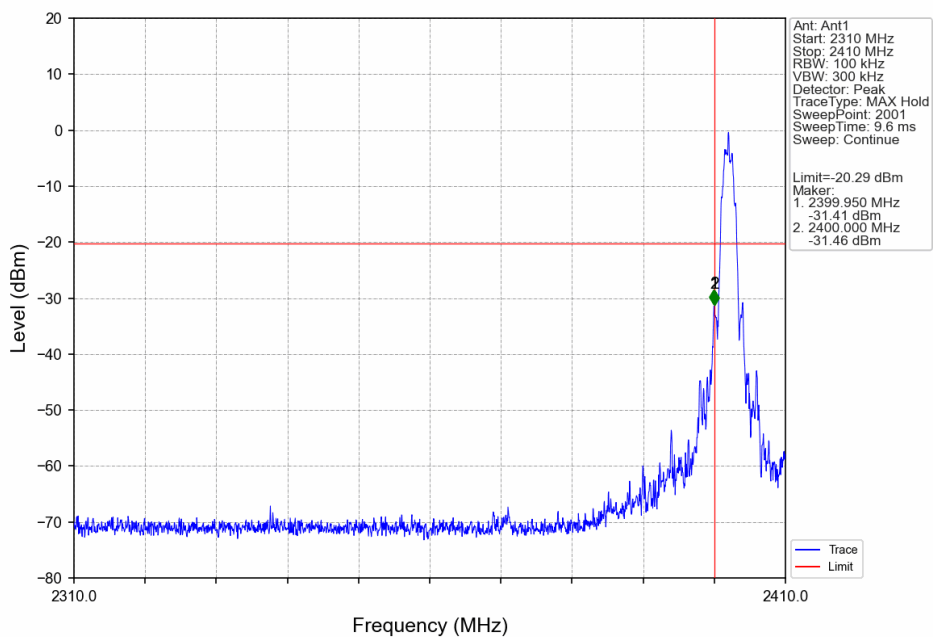


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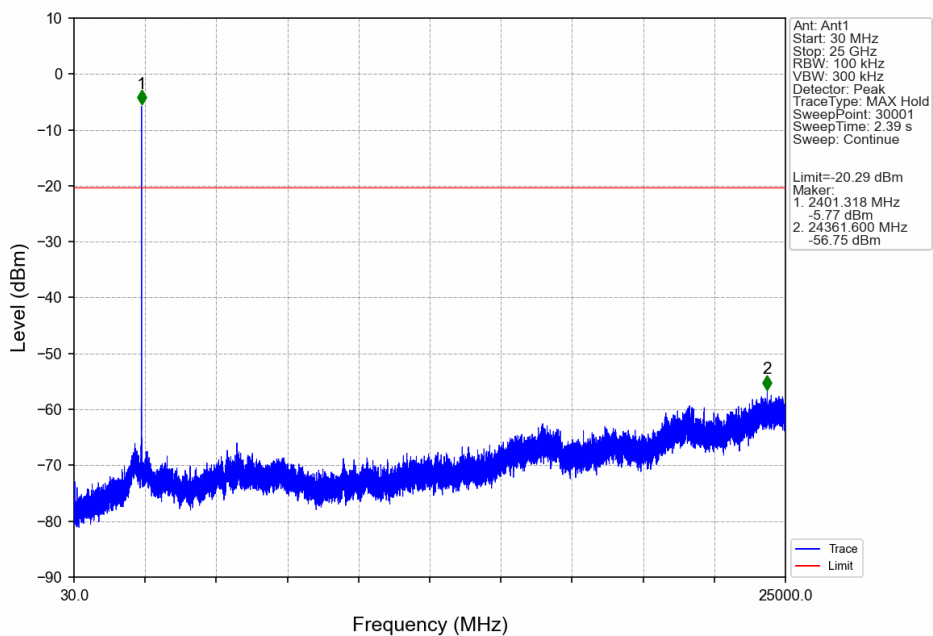


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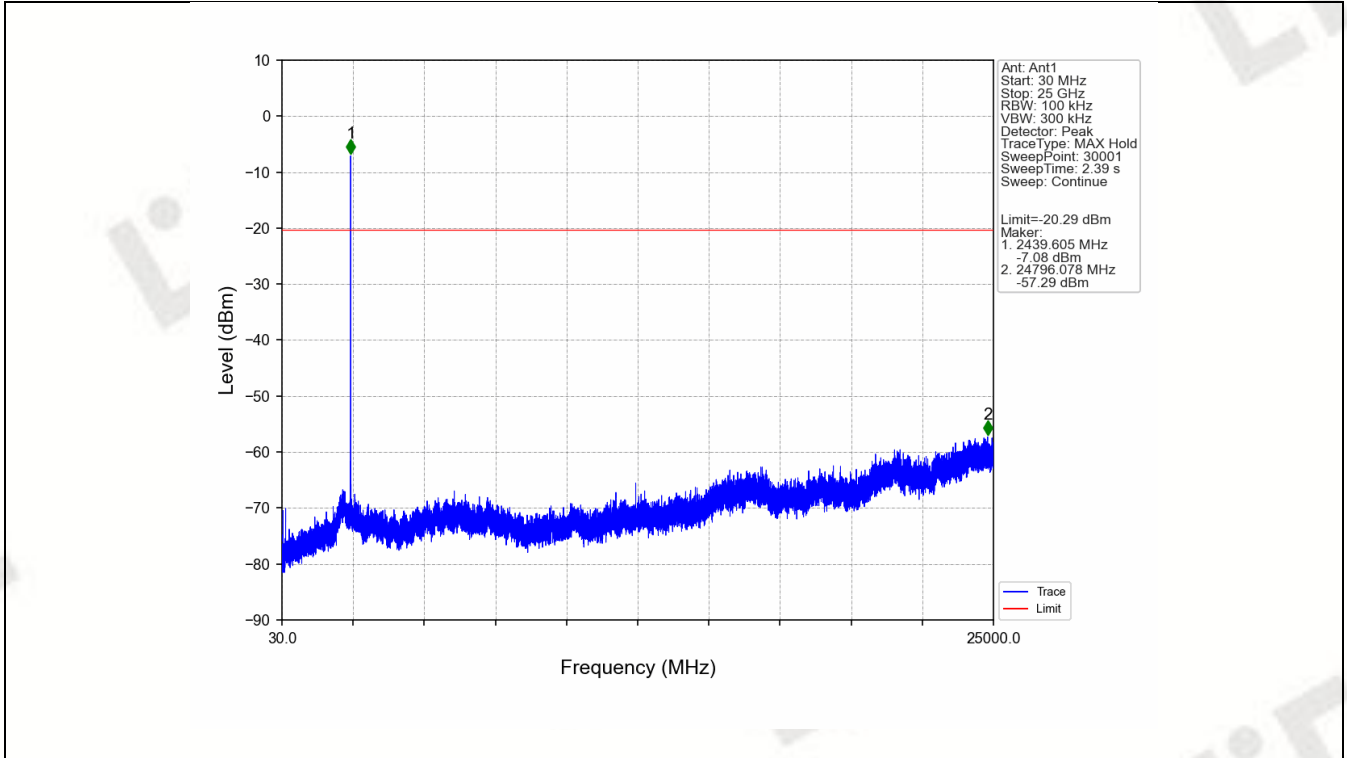


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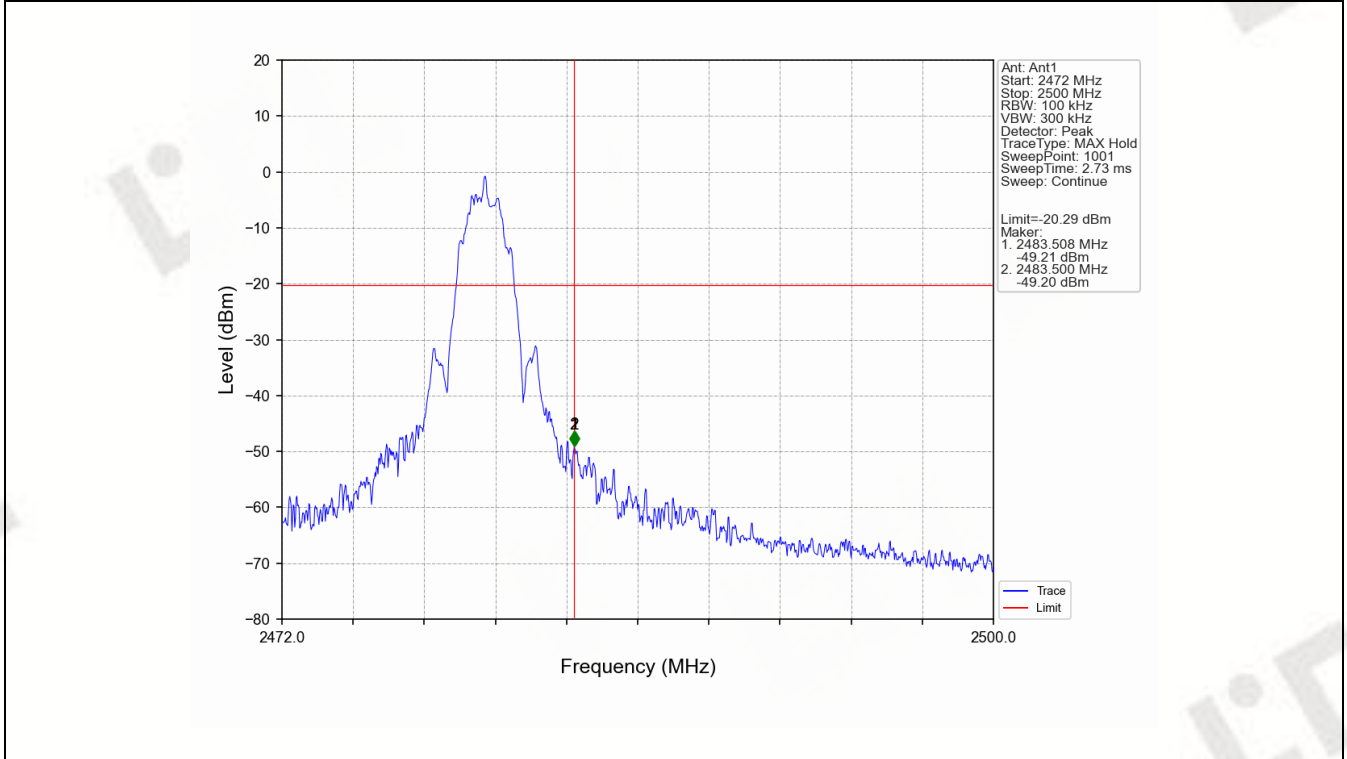


2M_MCH_2440MHz_Ant1_NTNV

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2M_HCH_2480MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

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