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Annex for Bluetooth Low Energy

Test Report No.: CTL2510203022-WF

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FCC ID: 2BUT3-TSIS

1. Duty Cycle

1.1 Test Result

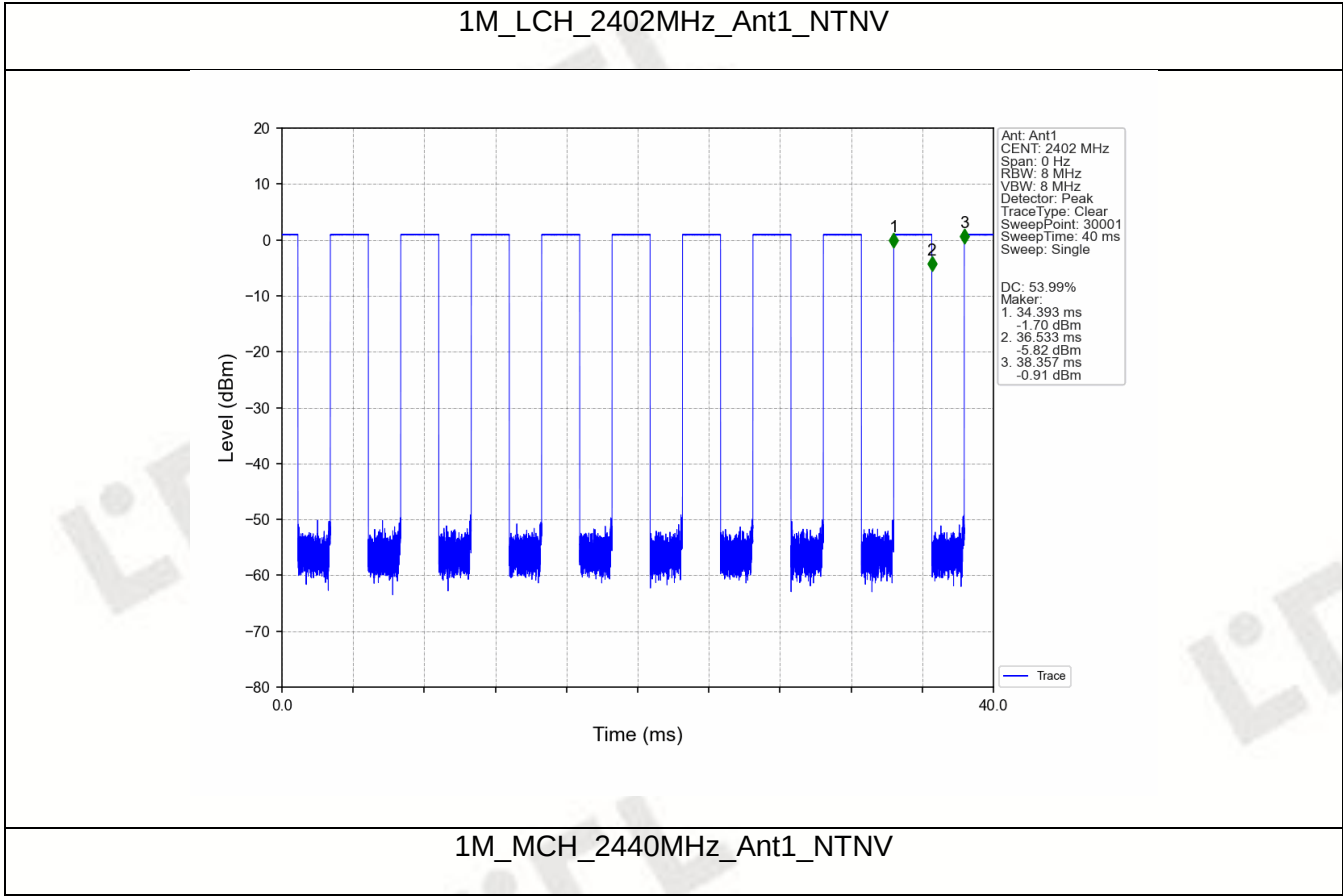
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.140	3.964	53.99	2.68	0.09
		2440	2.140	3.968	53.93	2.68	0.14
		2480	2.140	3.964	53.99	2.68	0.09

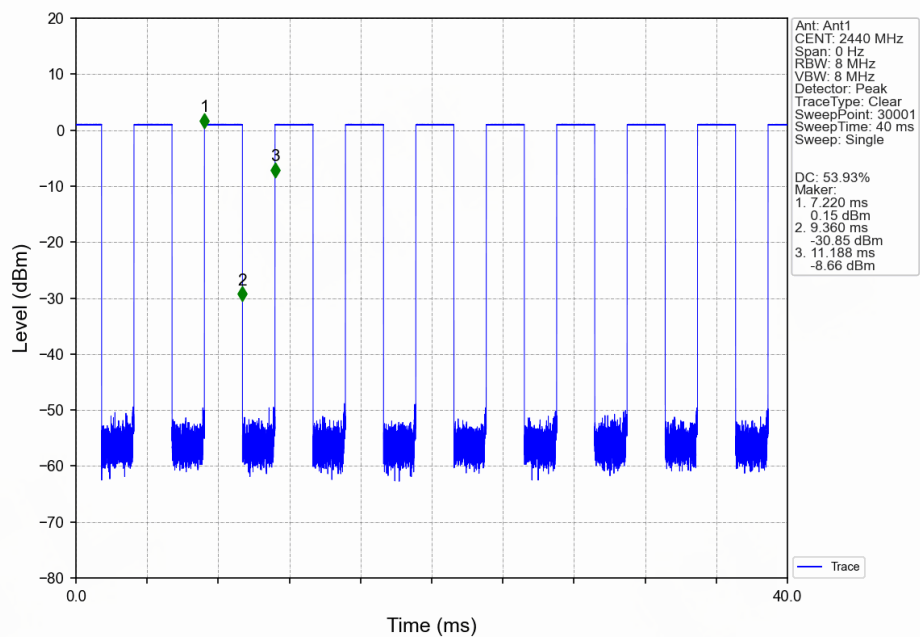
FCC ID: 2BUT3-TSIS

1.2 Test Graph

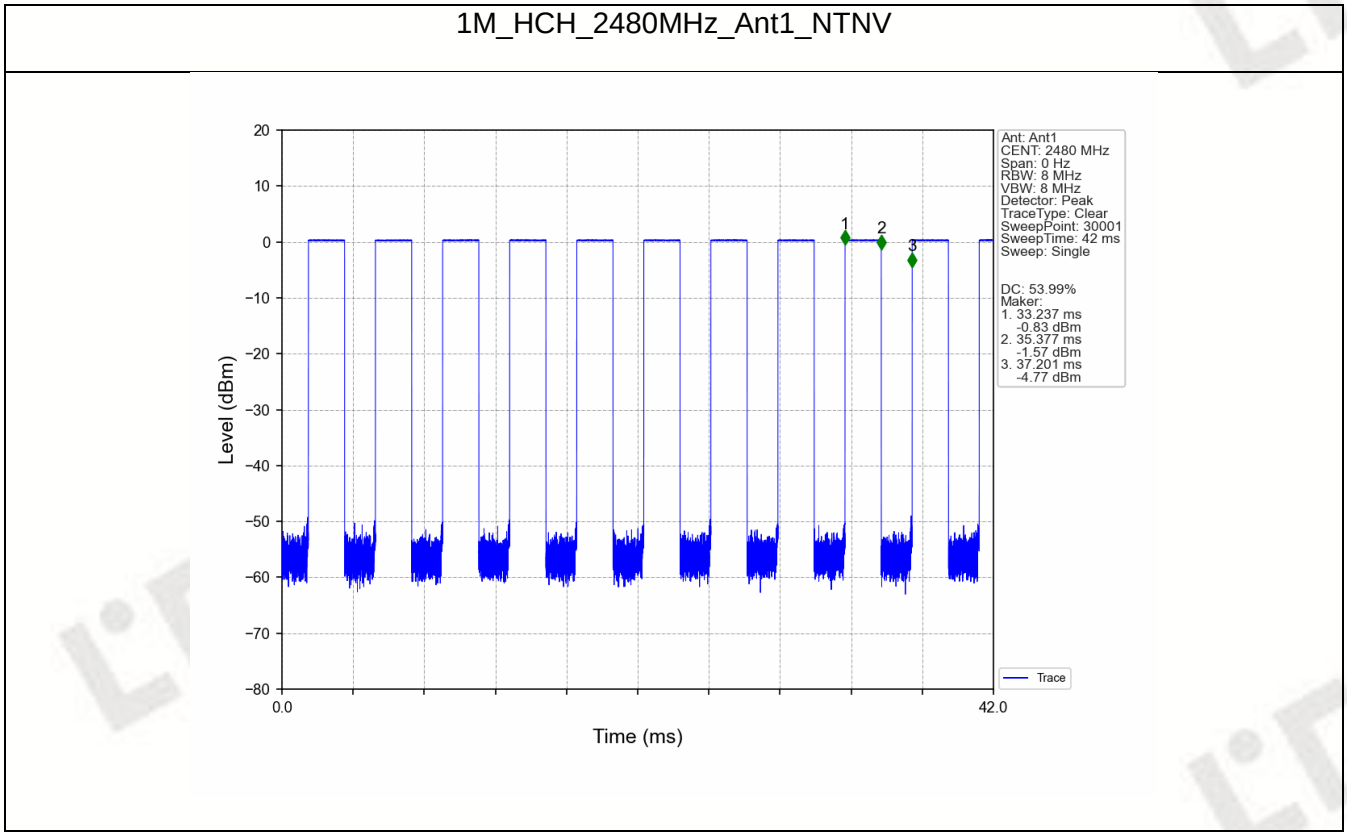
1.2.1 Ant1



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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	1.053	/	Pass
		2440	1	1.060	/	Pass
		2480	1	1.062	/	Pass

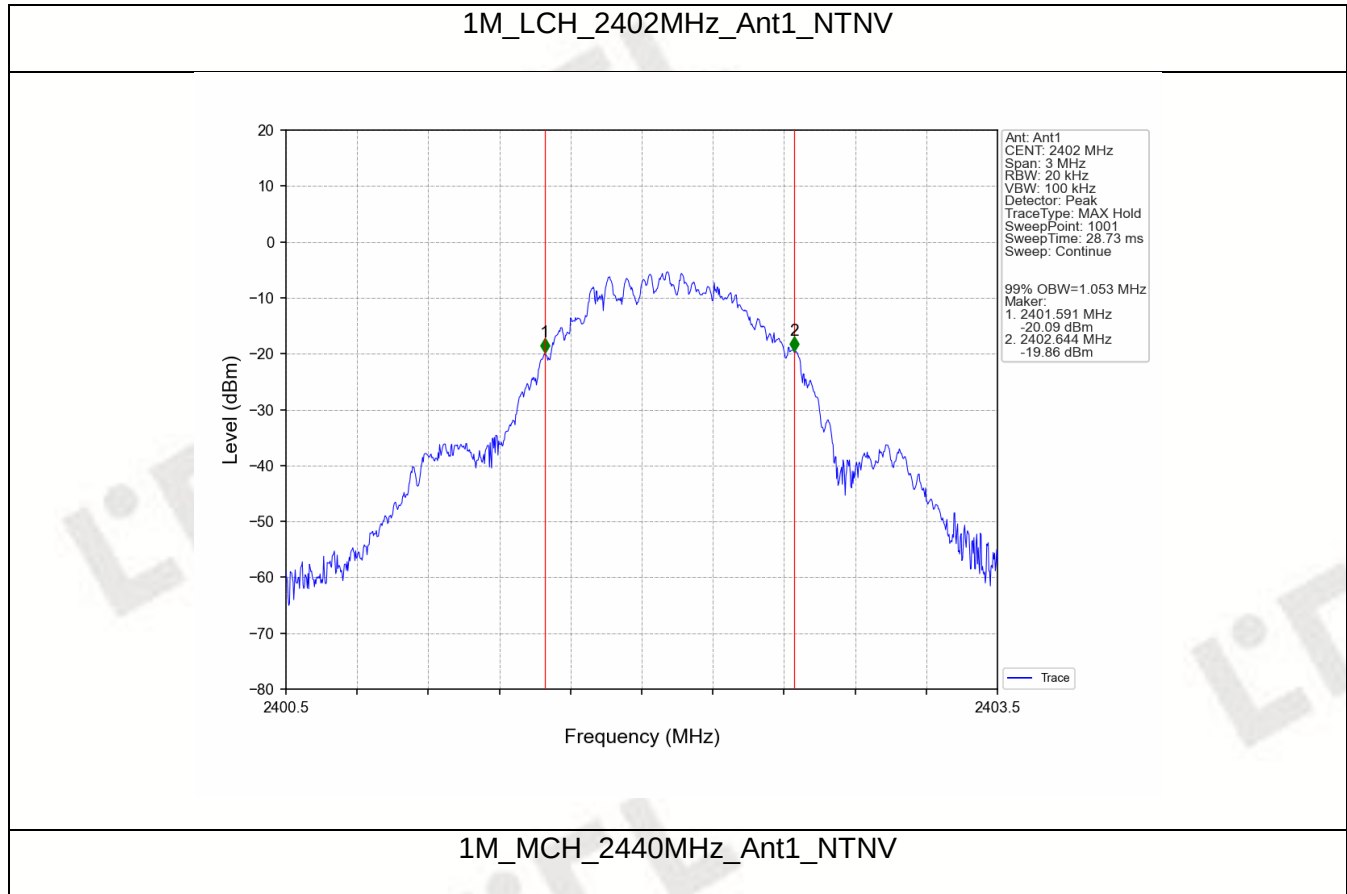
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.712	≥ 0.5	Pass
		2440	1	0.700	≥ 0.5	Pass
		2480	1	0.700	≥ 0.5	Pass

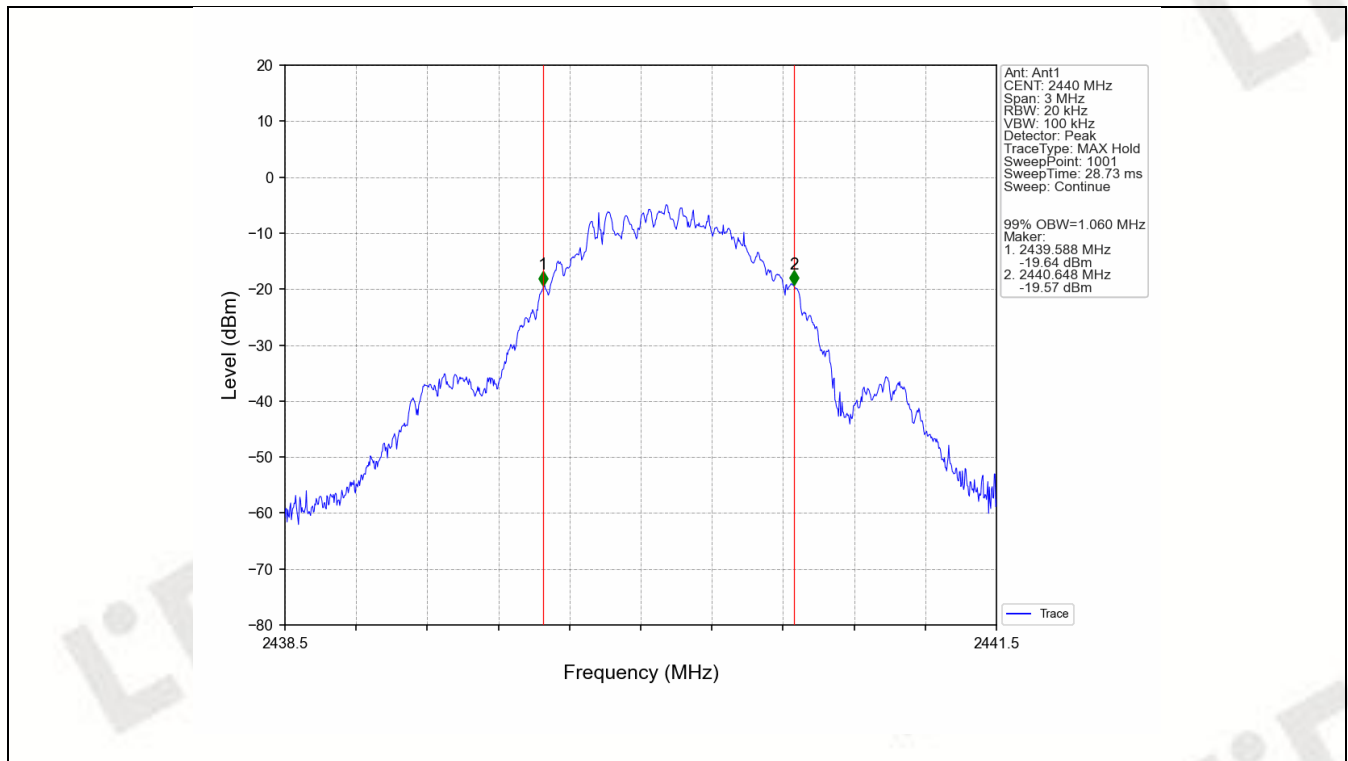
FCC ID: 2BUT3-TSIS

2.2 Test Graph

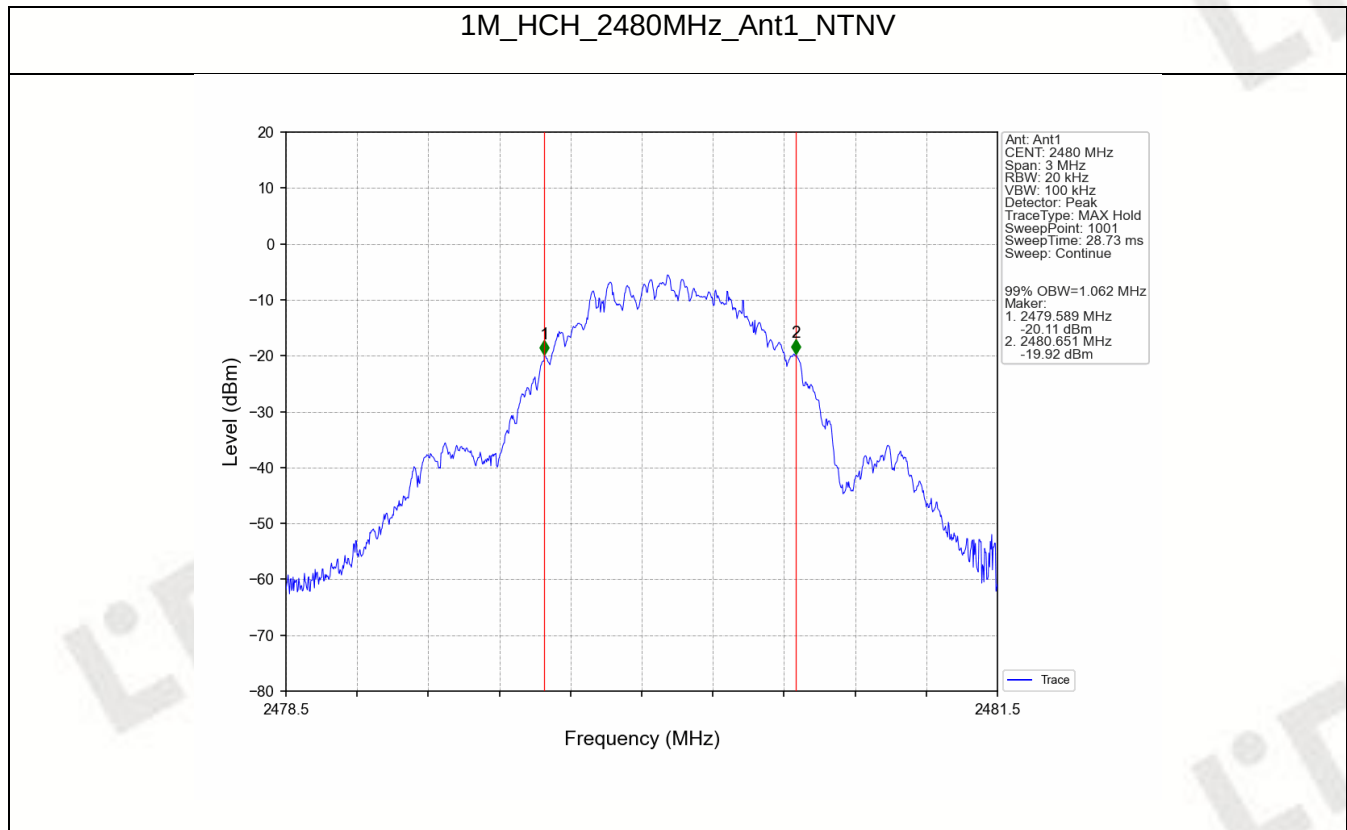
2.2.1 OBW



FCC ID: 2BUT3-TSIS

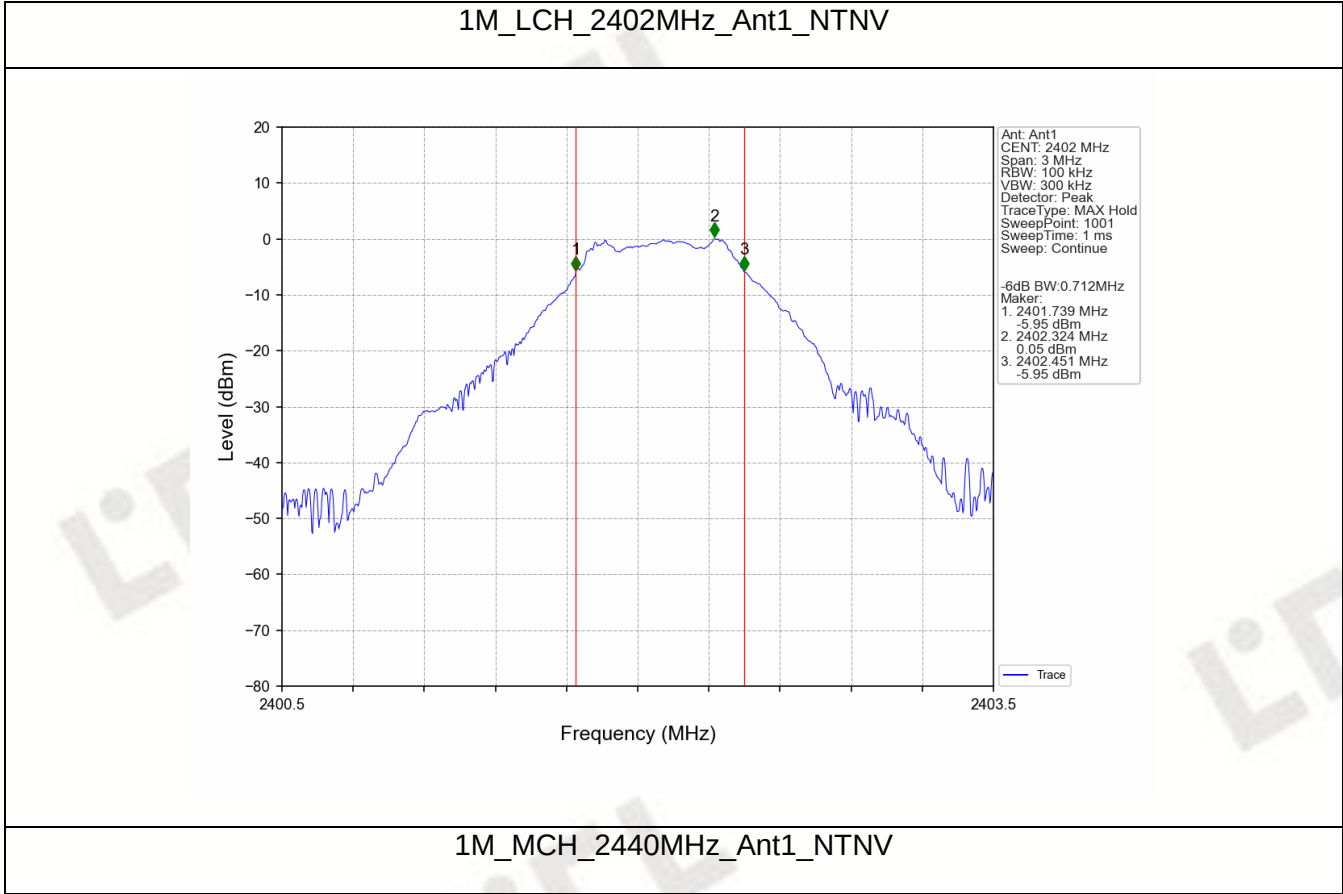


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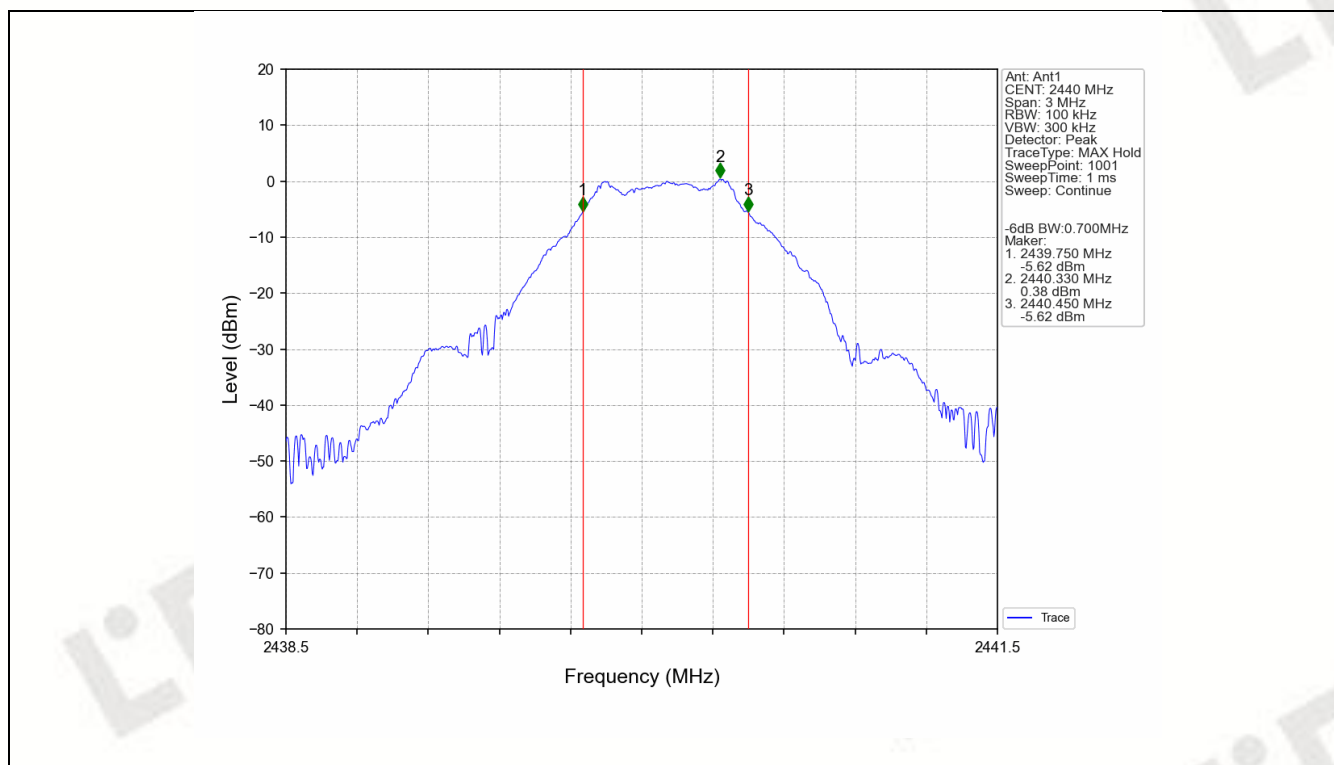


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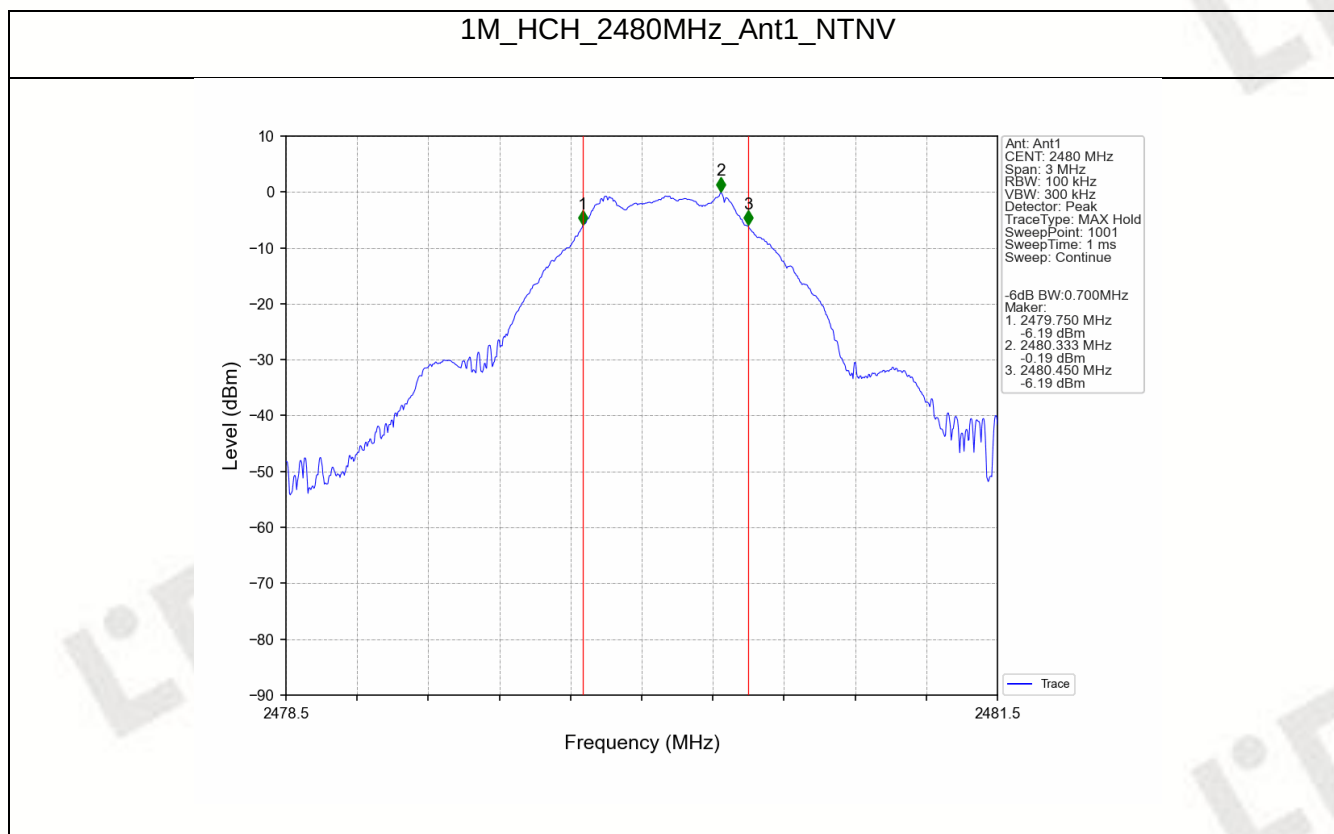
2.2.2 6dB BW



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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	0.92	<=30	Pass
		2440	0.99	<=30	Pass
		2480	0.29	<=30	Pass
Note1: Antenna Gain: Ant1: 1.11dBi;					
Note2: RF Cable loss=0.5dB					
Note3: The test results include RF Cable loss.					

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4. Maximum Power Spectral Density

4.1 Test Result

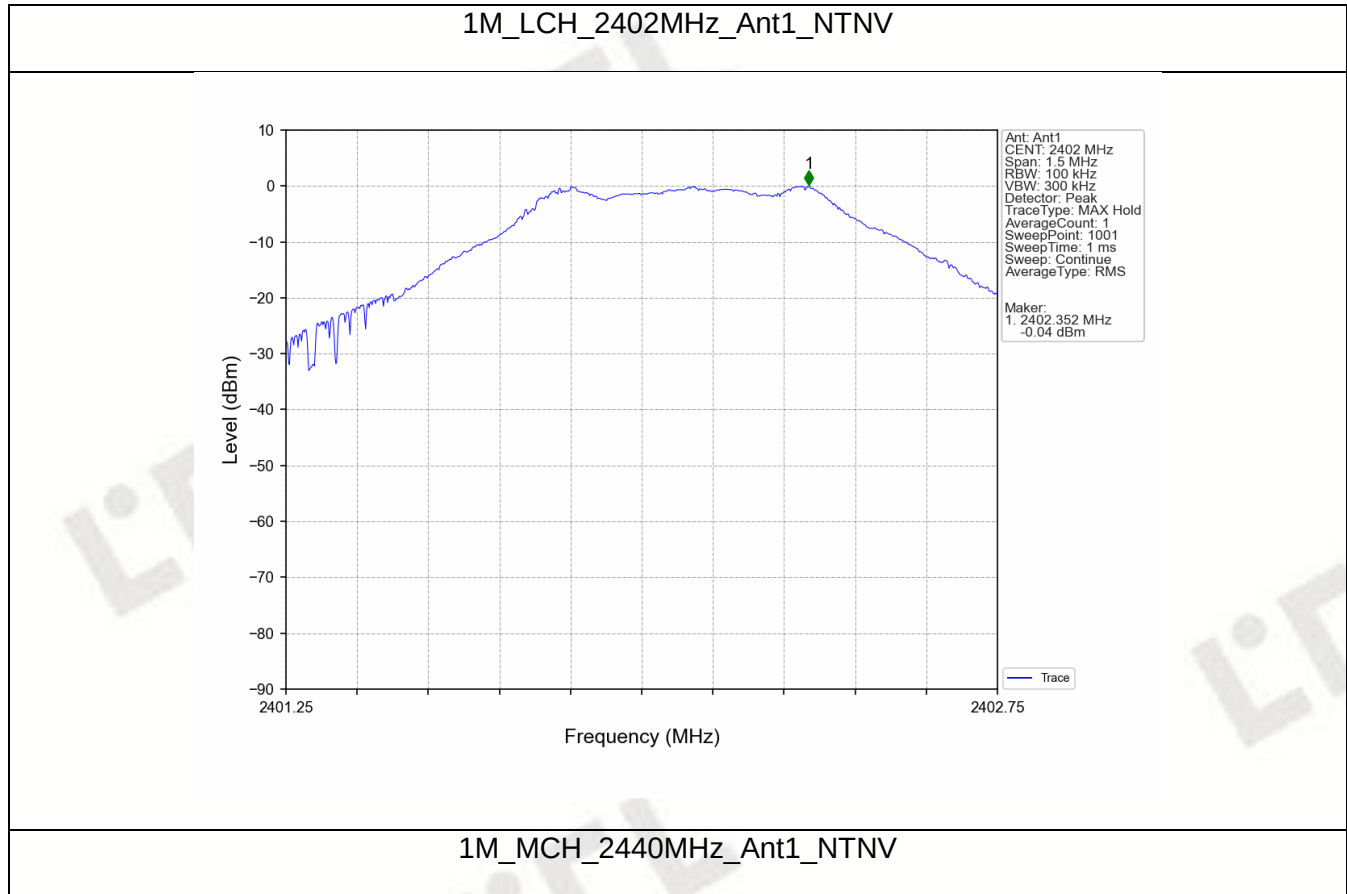
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD		Verdict
			ANT1(dBm/100kHz)	Limit(dBm/3kHz)	
1M	SISO	2402	-0.04	<=8	Pass
		2440	0.55	<=8	Pass
		2480	-0.11	<=8	Pass
Note1: Antenna Gain: Ant1: 1.11dBi;					
Note2: RF Cable loss=0.5dB					
Note3: The test results include RF Cable loss.					

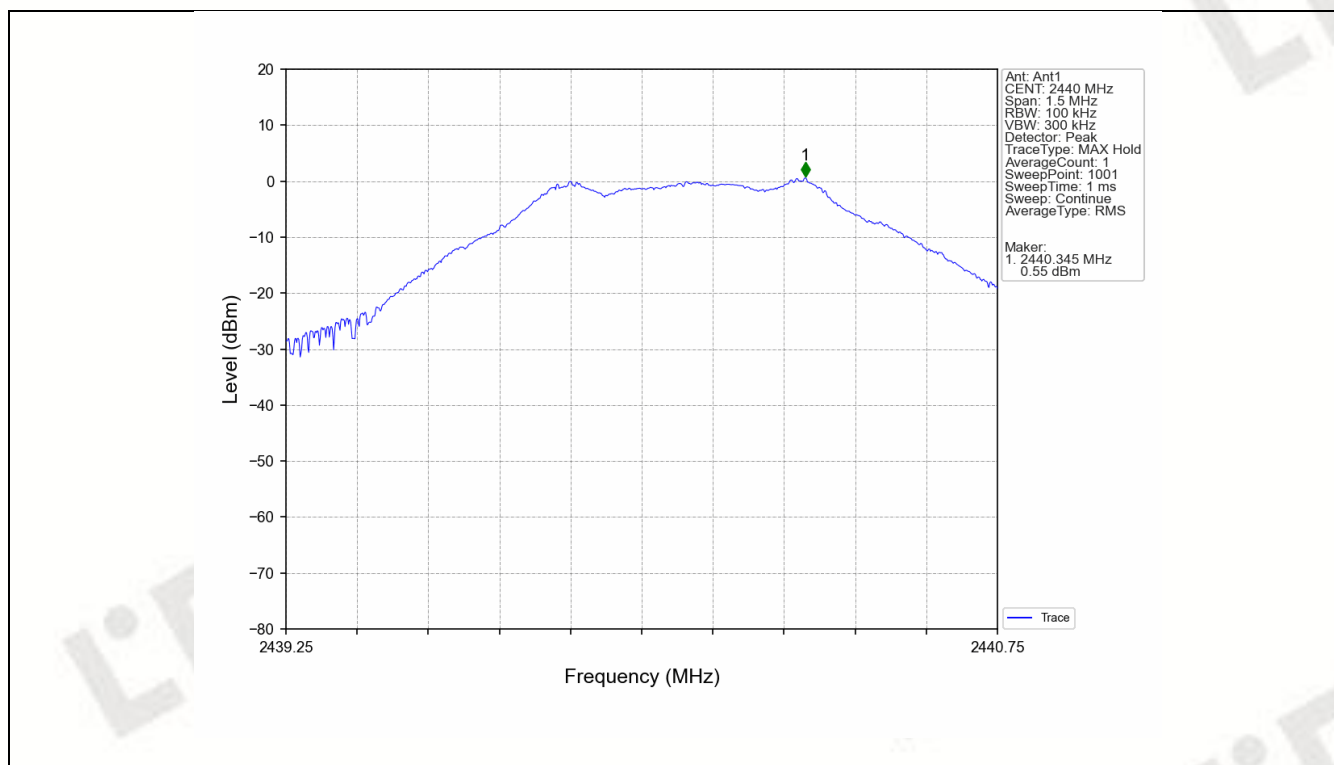
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4.2 Test Graph

4.2.1 PSD

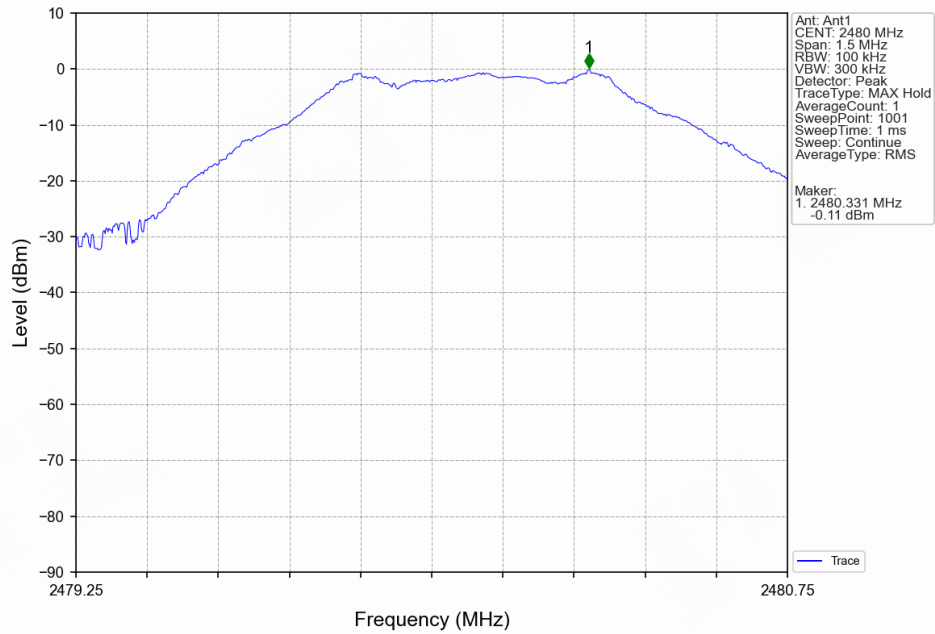


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1M_HCH_2480MHz_Ant1_NTNV



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	0.43
		2440	1	0.14
		2480	1	-0.58

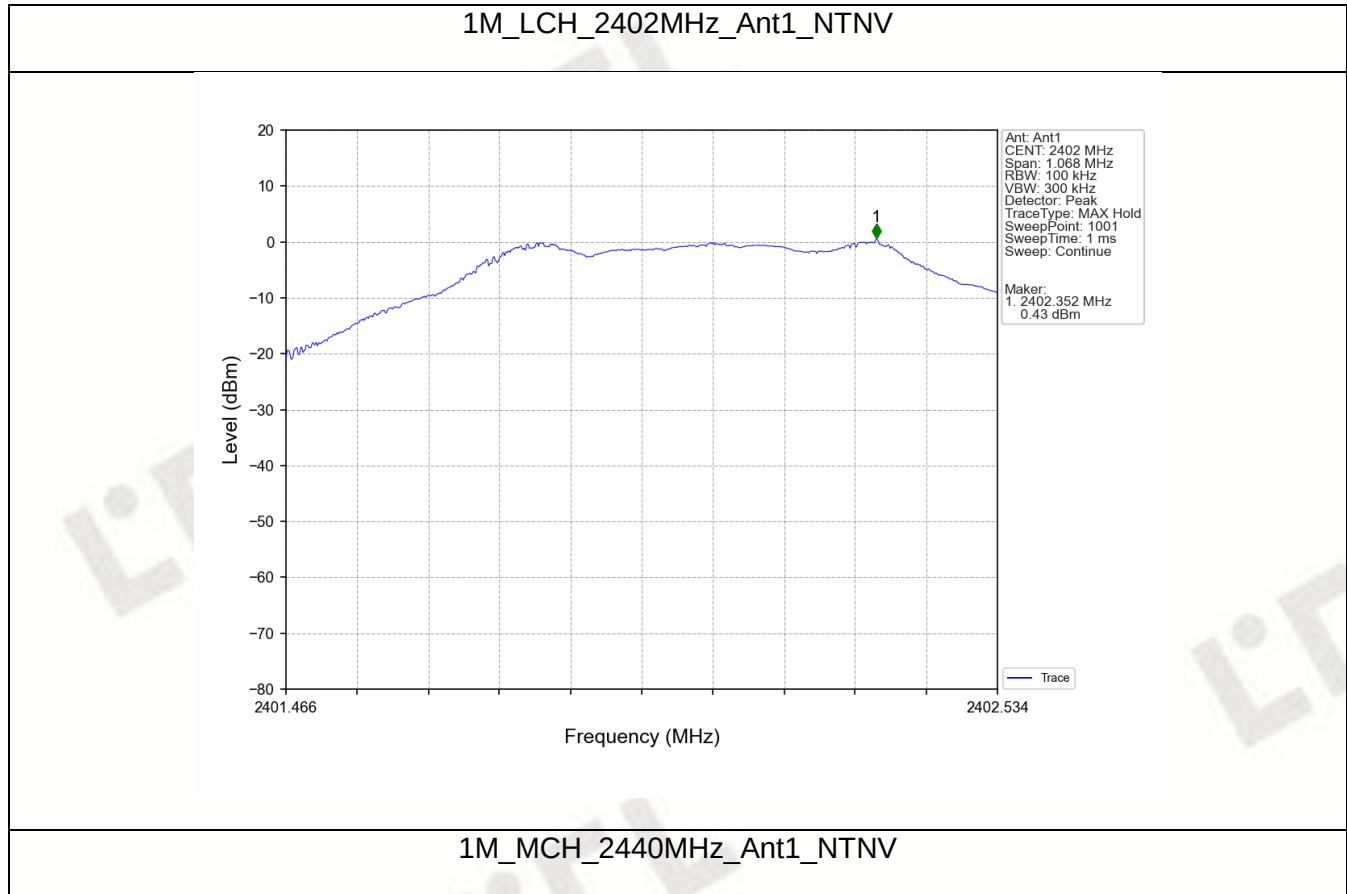
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	0.43	-19.57	Pass
		2440	1	0.43	-19.57	Pass
		2480	1	0.43	-19.57	Pass

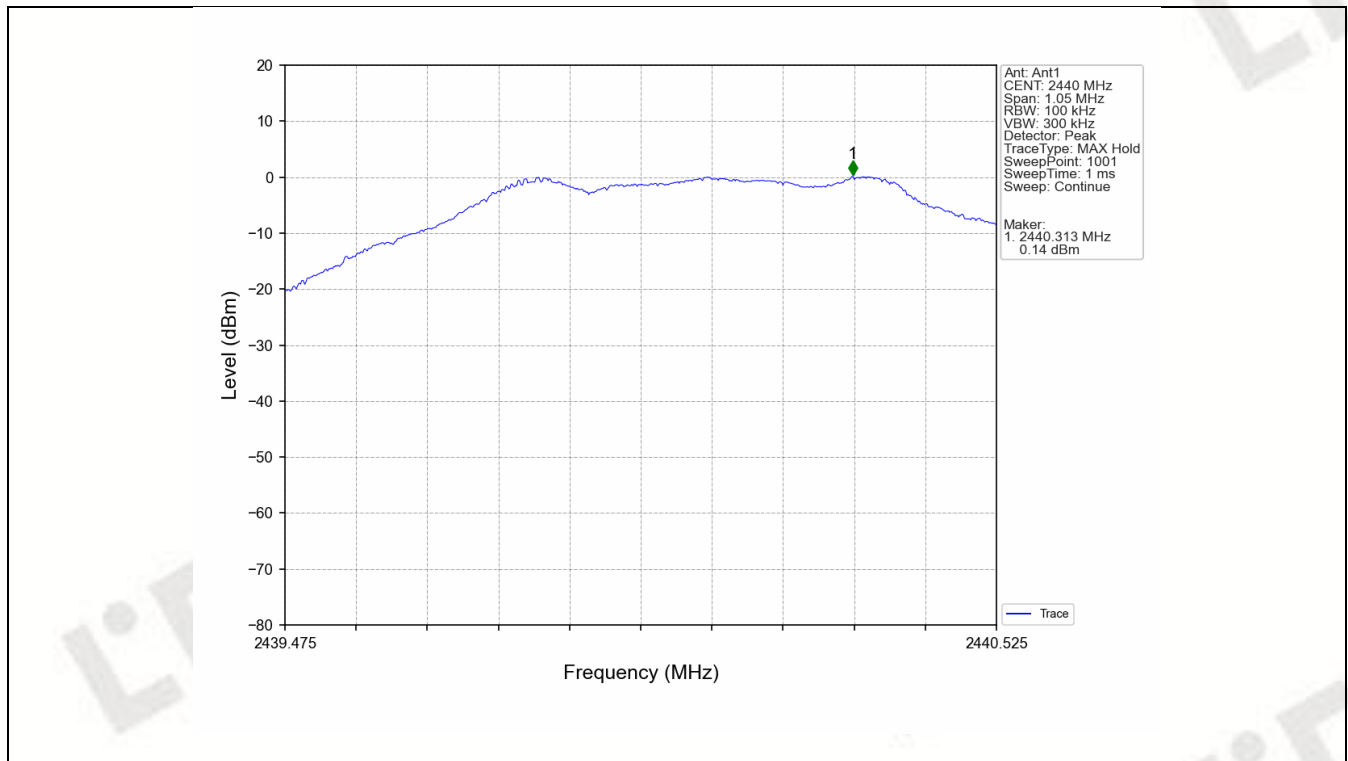
FCC ID: 2BUT3-TSIS

5.2 Test Graph

5.2.1 Ref

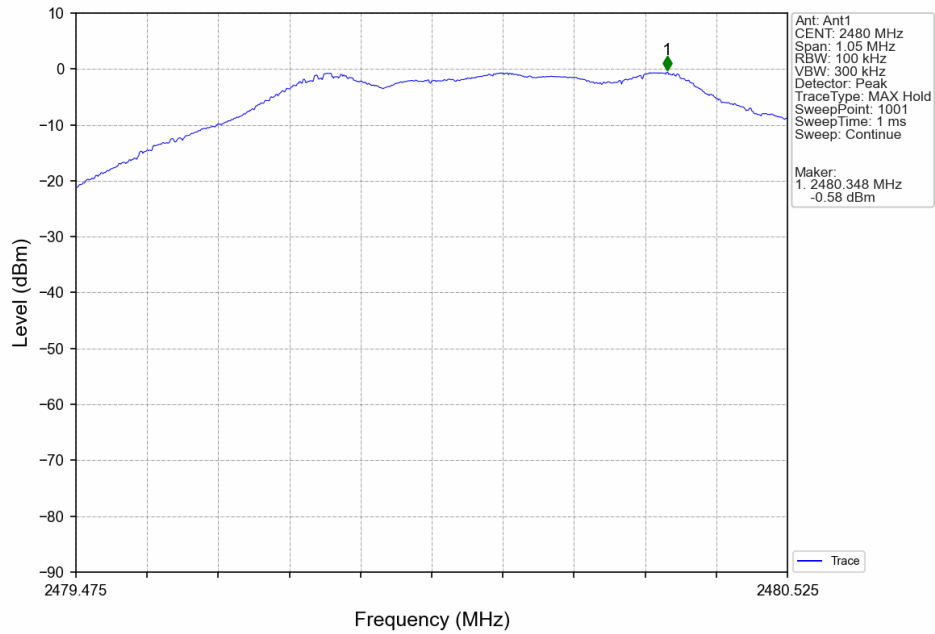


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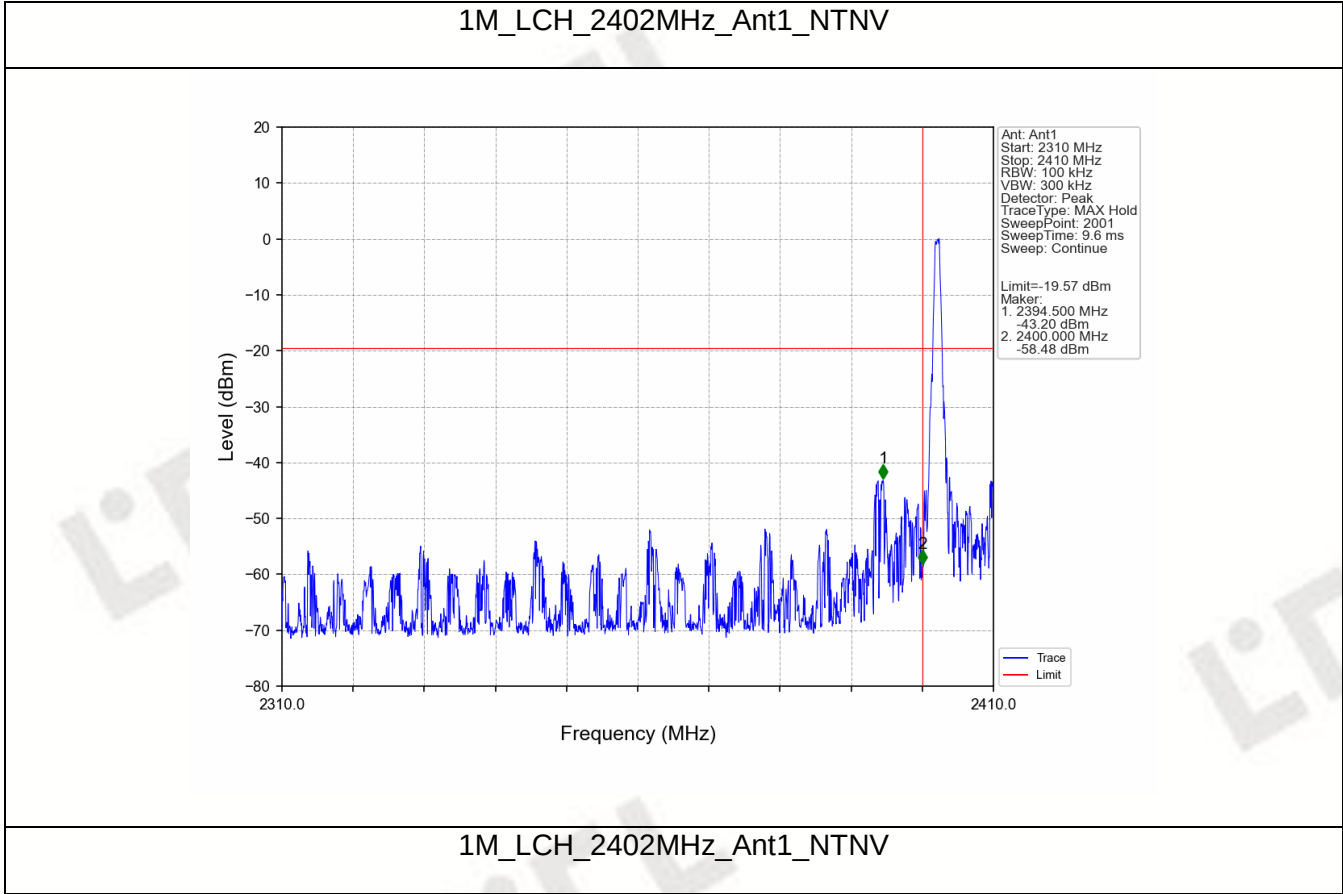
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1M_HCH_2480MHz_Ant1_NTNV

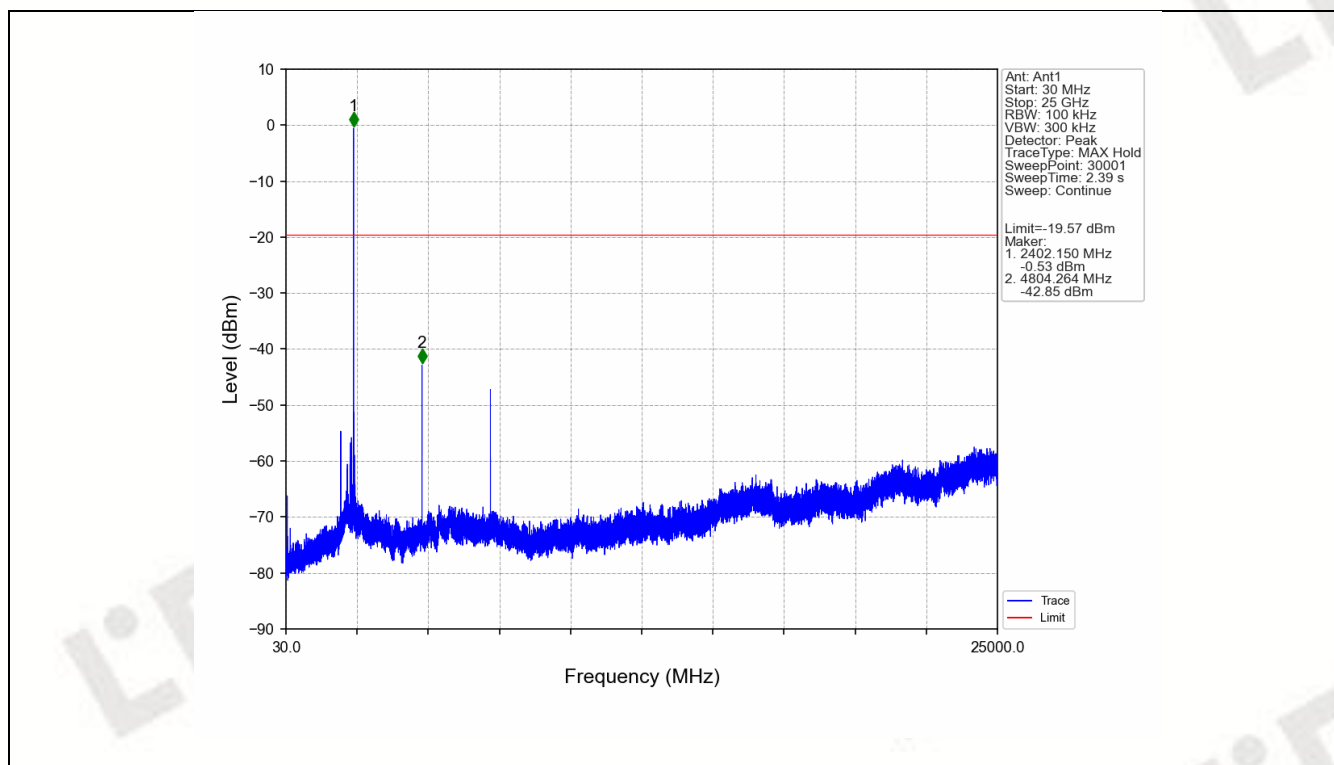


FCC ID: 2BUT3-TSIS

5.2.2 CSE

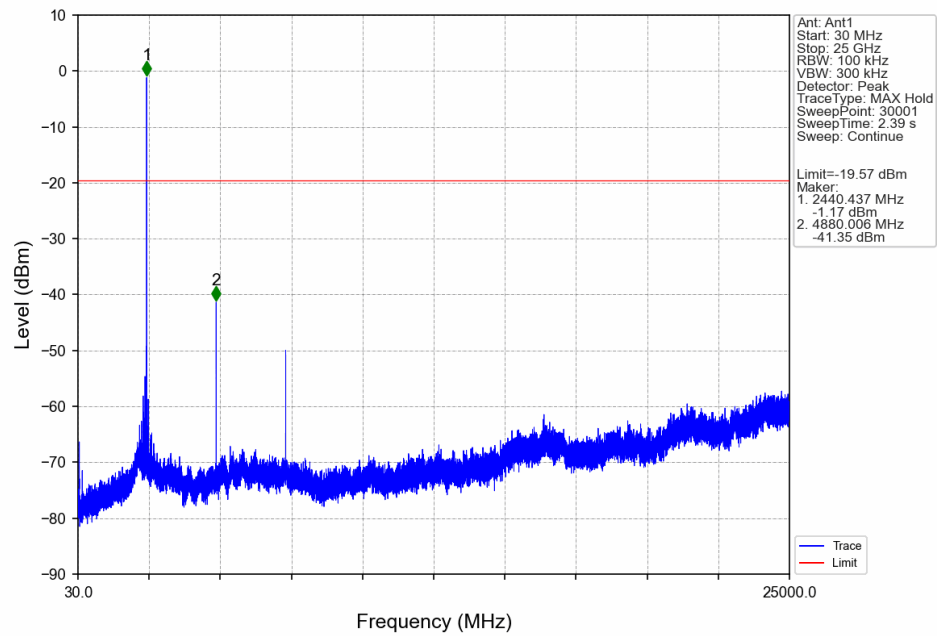


FCC ID: 2BUT3-TSIS

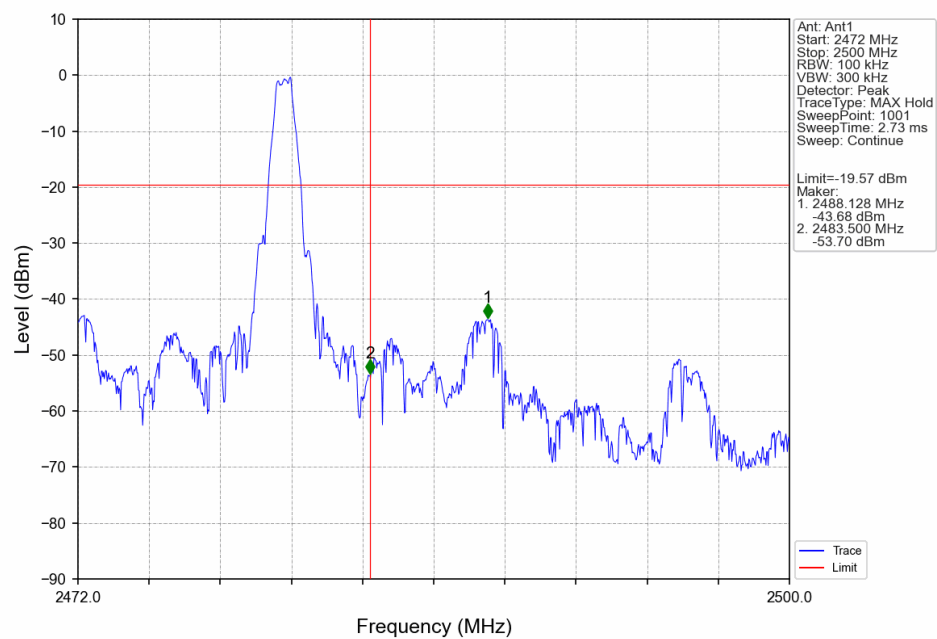


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1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BUT3-TSIS

