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Annex for Bluetooth Low Energy

Test Report No.: CTL2508212021-WF02

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1. Bandwidth**1.1 Test Result****1.1.1 OBW**

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.040	/	Pass
		2440	1	1.042	/	Pass
		2480	1	1.040	/	Pass
2M	SISO	2404	1	2.079	/	Pass
		2440	1	2.081	/	Pass
		2478	1	2.080	/	Pass

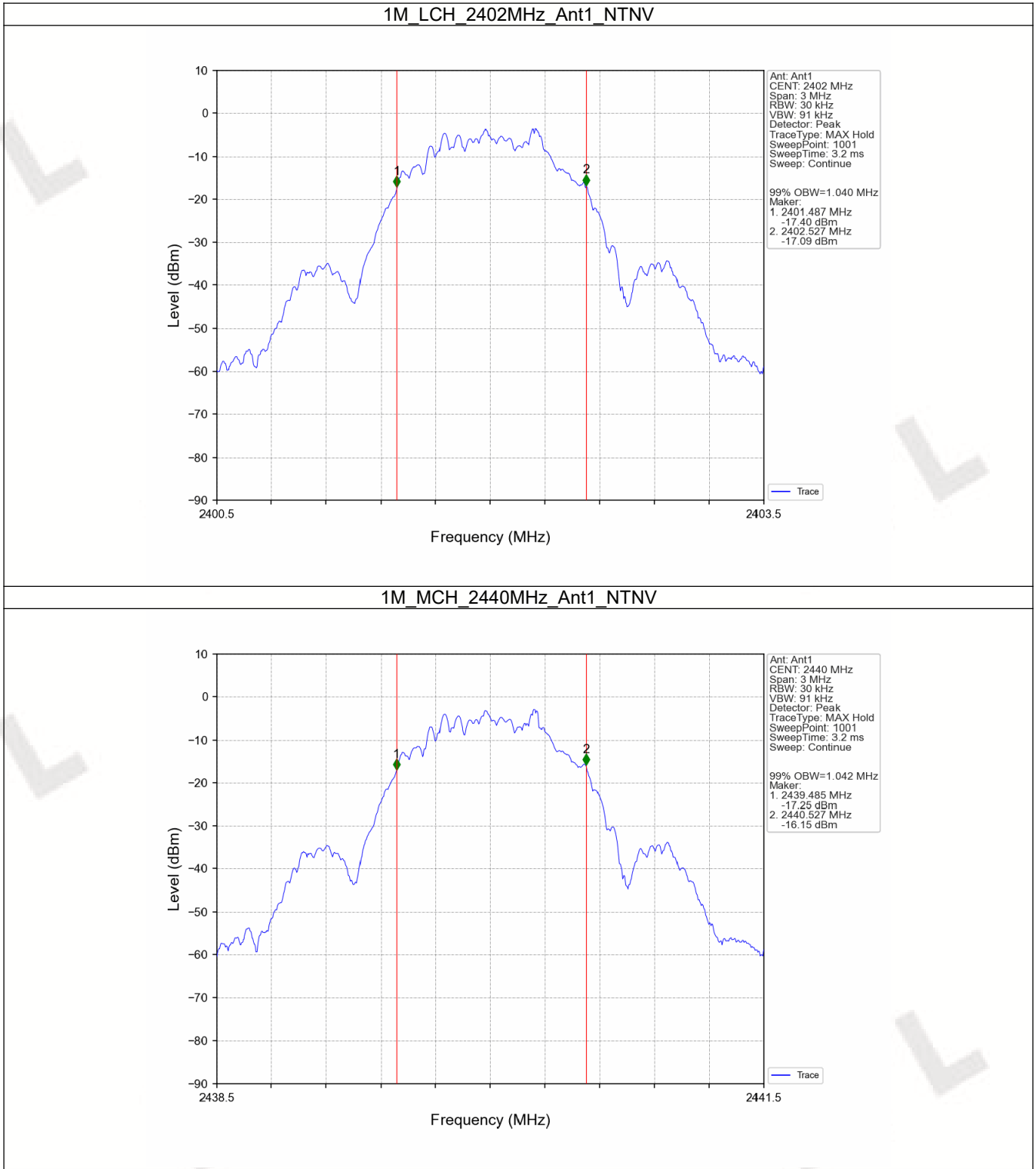
1.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.664	≥ 0.5	Pass
		2440	1	0.668	≥ 0.5	Pass
		2480	1	0.668	≥ 0.5	Pass
2M	SISO	2404	1	1.181	≥ 0.5	Pass
		2440	1	1.183	≥ 0.5	Pass
		2478	1	1.176	≥ 0.5	Pass

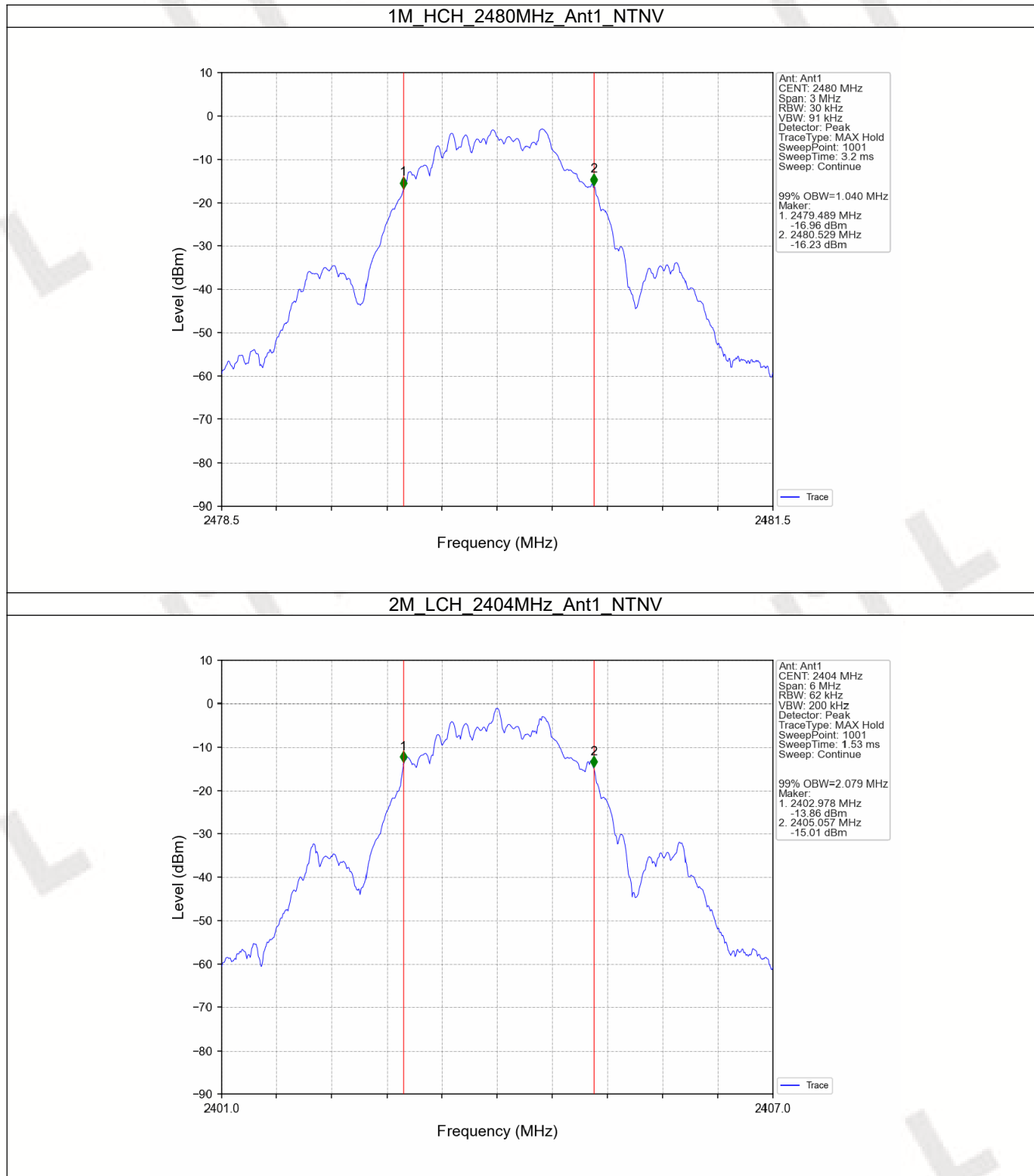
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1.2 Test Graph

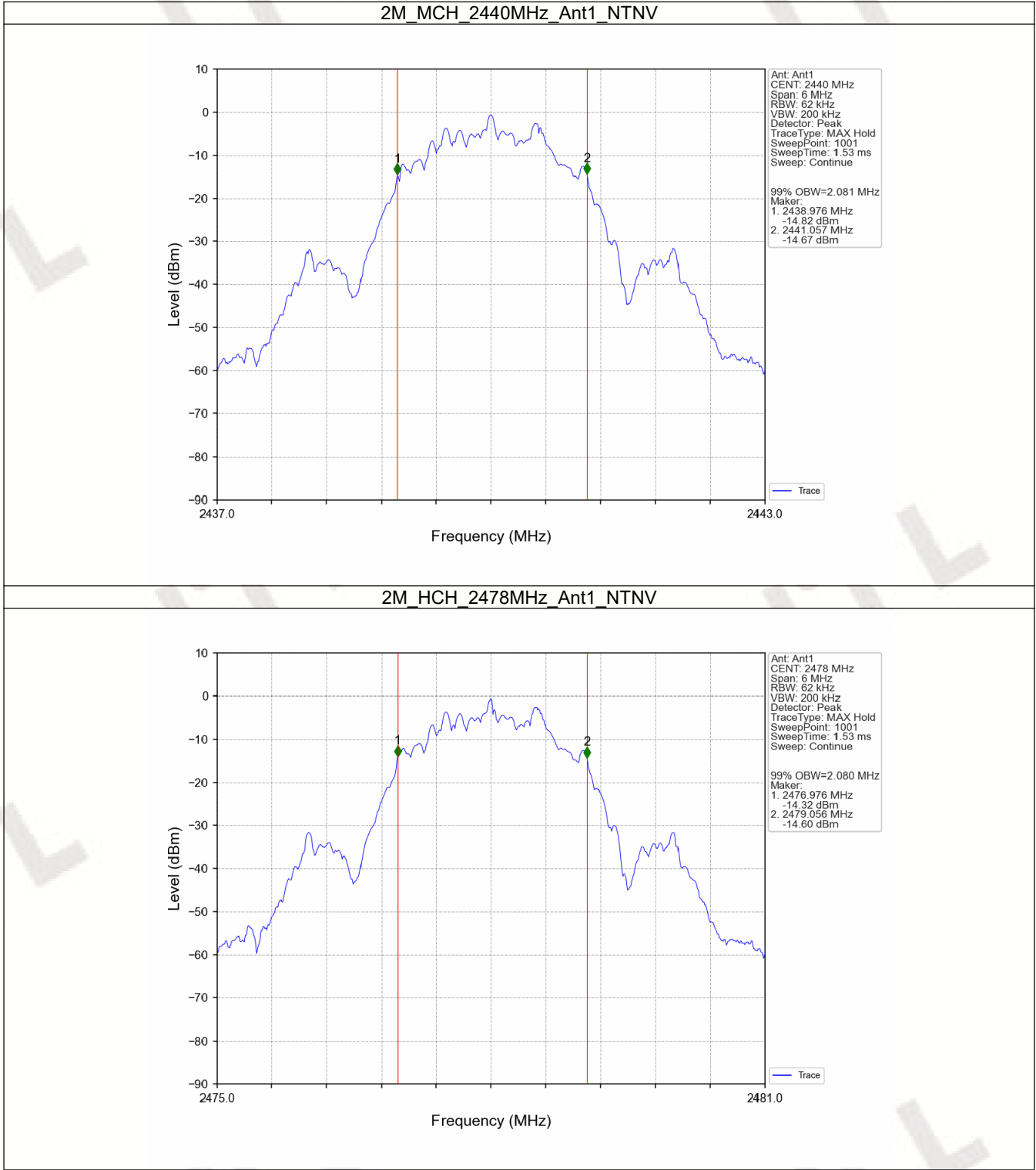
1.2.1 OBW



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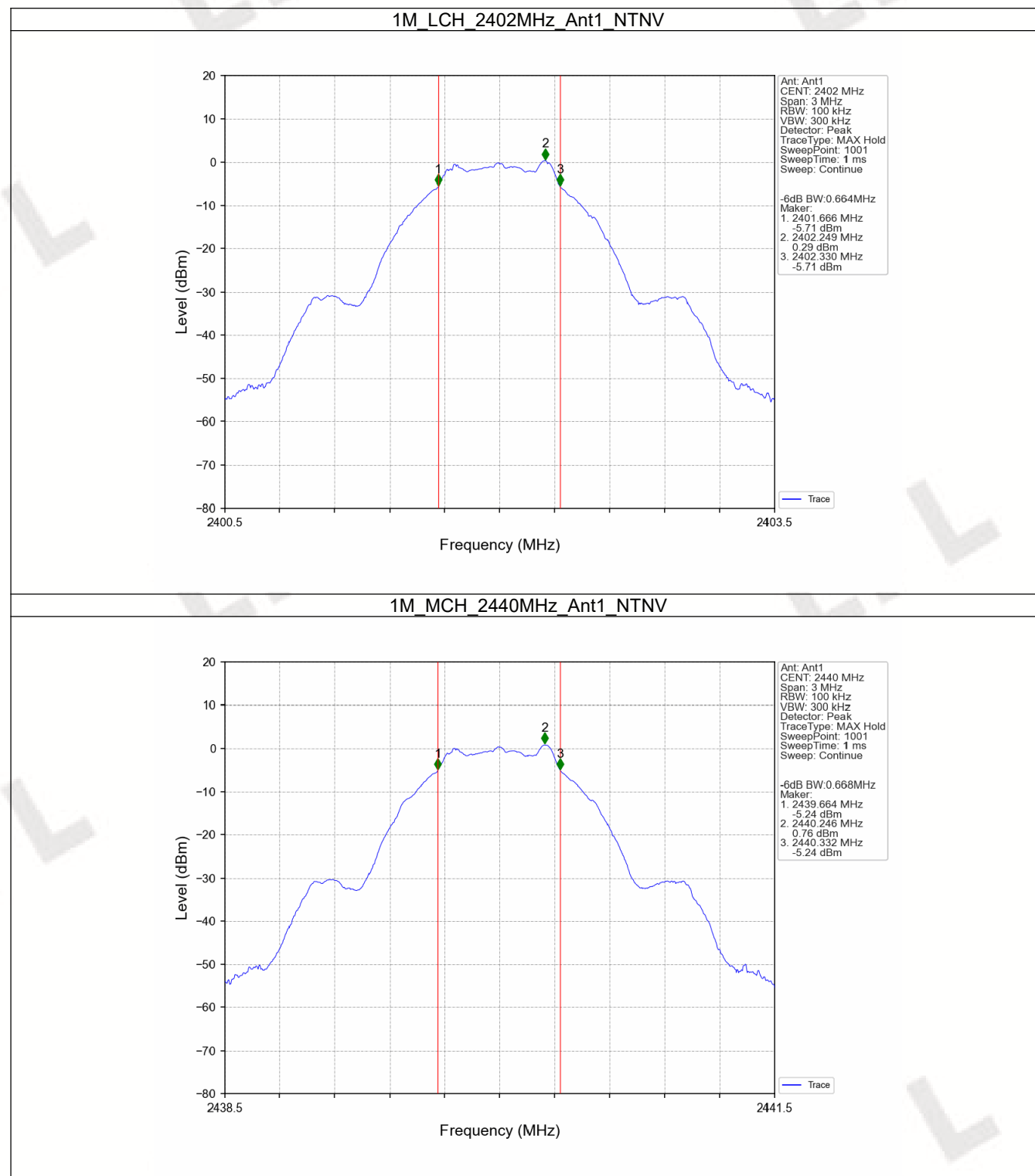


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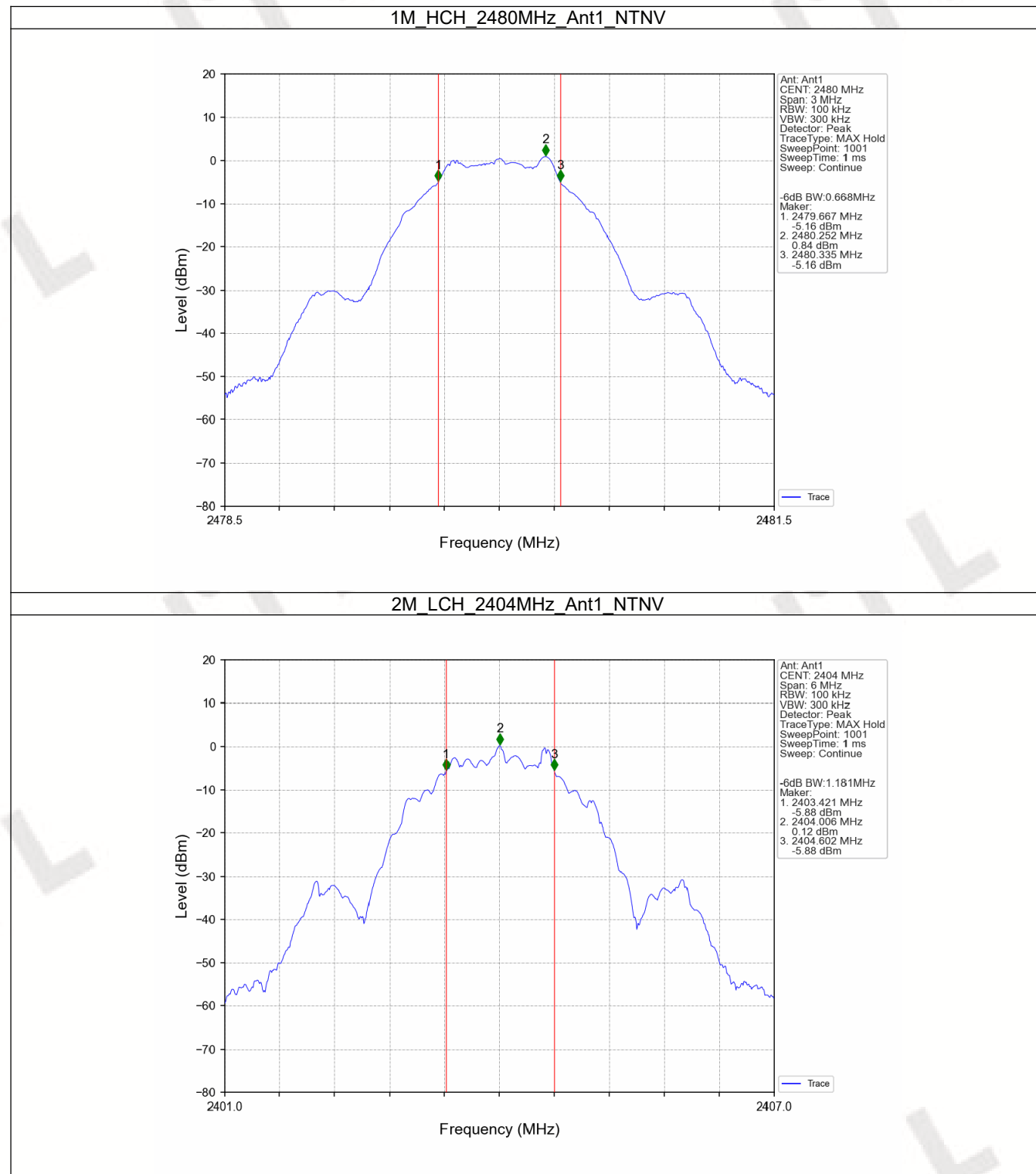


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1.2.2 6dB BW

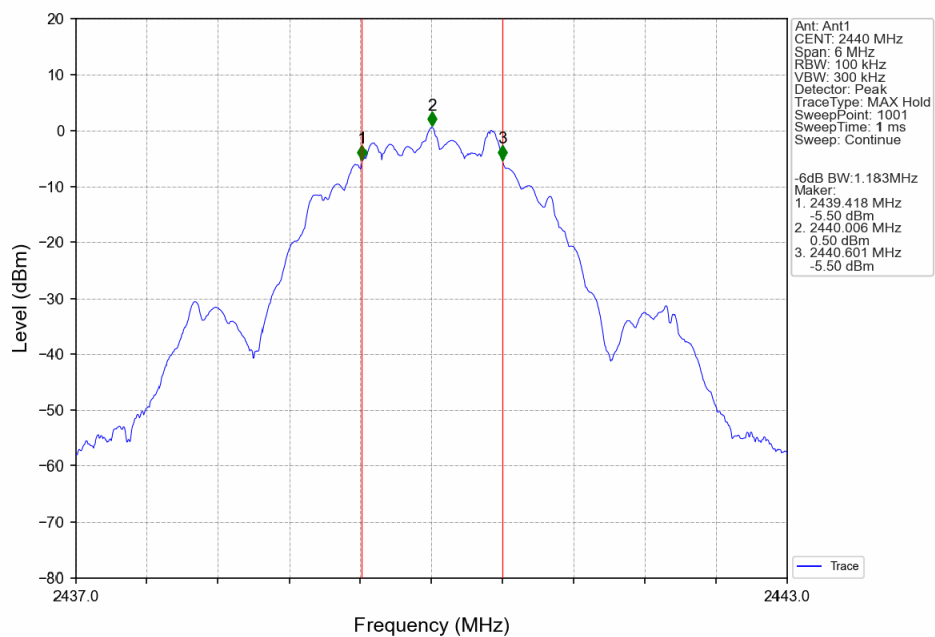


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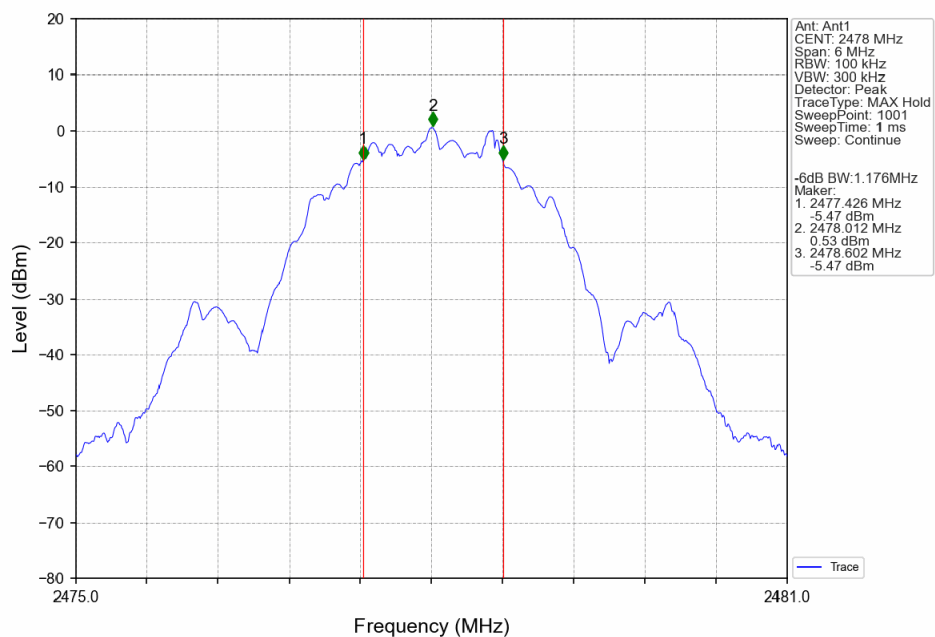


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2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2478MHz_Ant1_NTNV



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2. Maximum Conducted Output Power**2.1 Test Result****2.1.1 Power**

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	0.39	<=30	Pass
		2440	0.90	<=30	Pass
		2480	0.96	<=30	Pass
2M	SISO	2404	0.78	<=30	Pass
		2440	1.15	<=30	Pass
		2478	1.23	<=30	Pass

Note1: Antenna Gain: Ant1: 0.54dBi;

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3. Maximum Power Spectral Density

3.1 Test Result

3.1.1 PSD

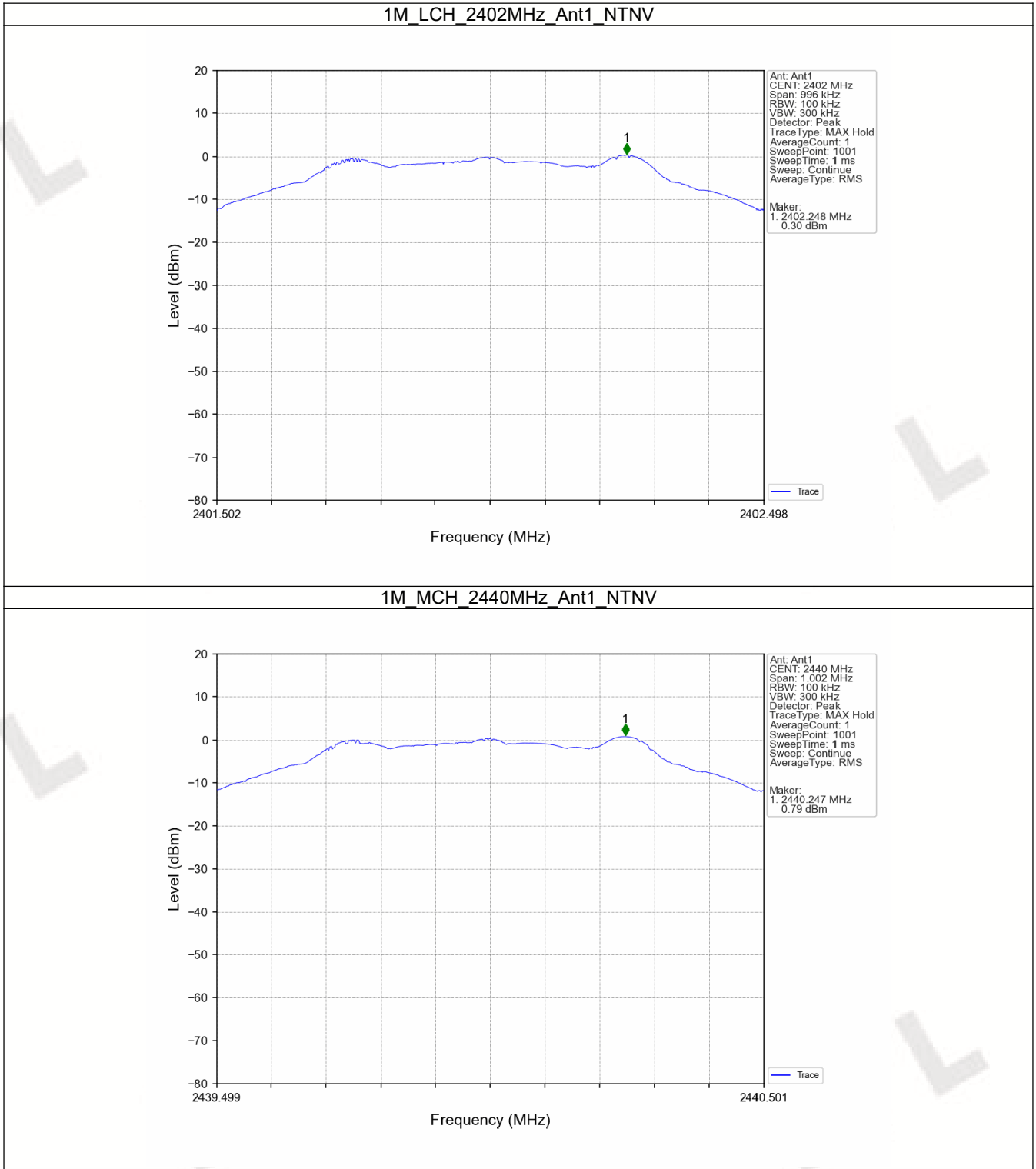
Mode	TX Type	Frequency (MHz)	Maximum PSD		Verdict
			ANT1	Limit	
1M	SISO	2402	0.30dBm/100KHz	<=8dBm/3KHz	Pass
		2440	0.79dBm/100KHz	<=8dBm/3KHz	Pass
		2480	0.85dBm/100KHz	<=8dBm/3KHz	Pass
2M	SISO	2404	0.08dBm/100KHz	<=8dBm/3KHz	Pass
		2440	0.46dBm/100KHz	<=8dBm/3KHz	Pass
		2478	0.53dBm/100KHz	<=8dBm/3KHz	Pass

Note1: Antenna Gain: Ant1: 0.54dBi;

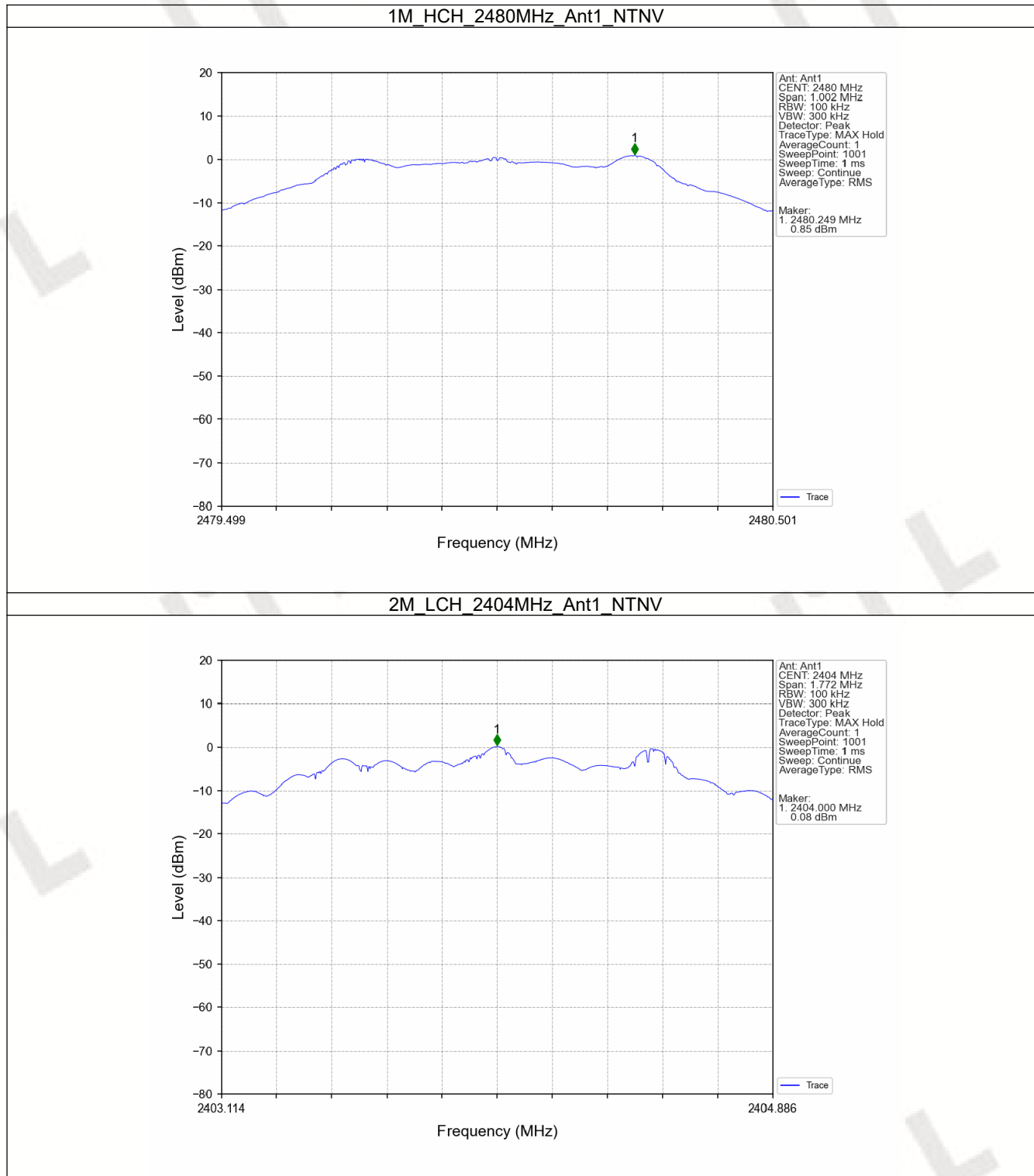
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3.2 Test Graph

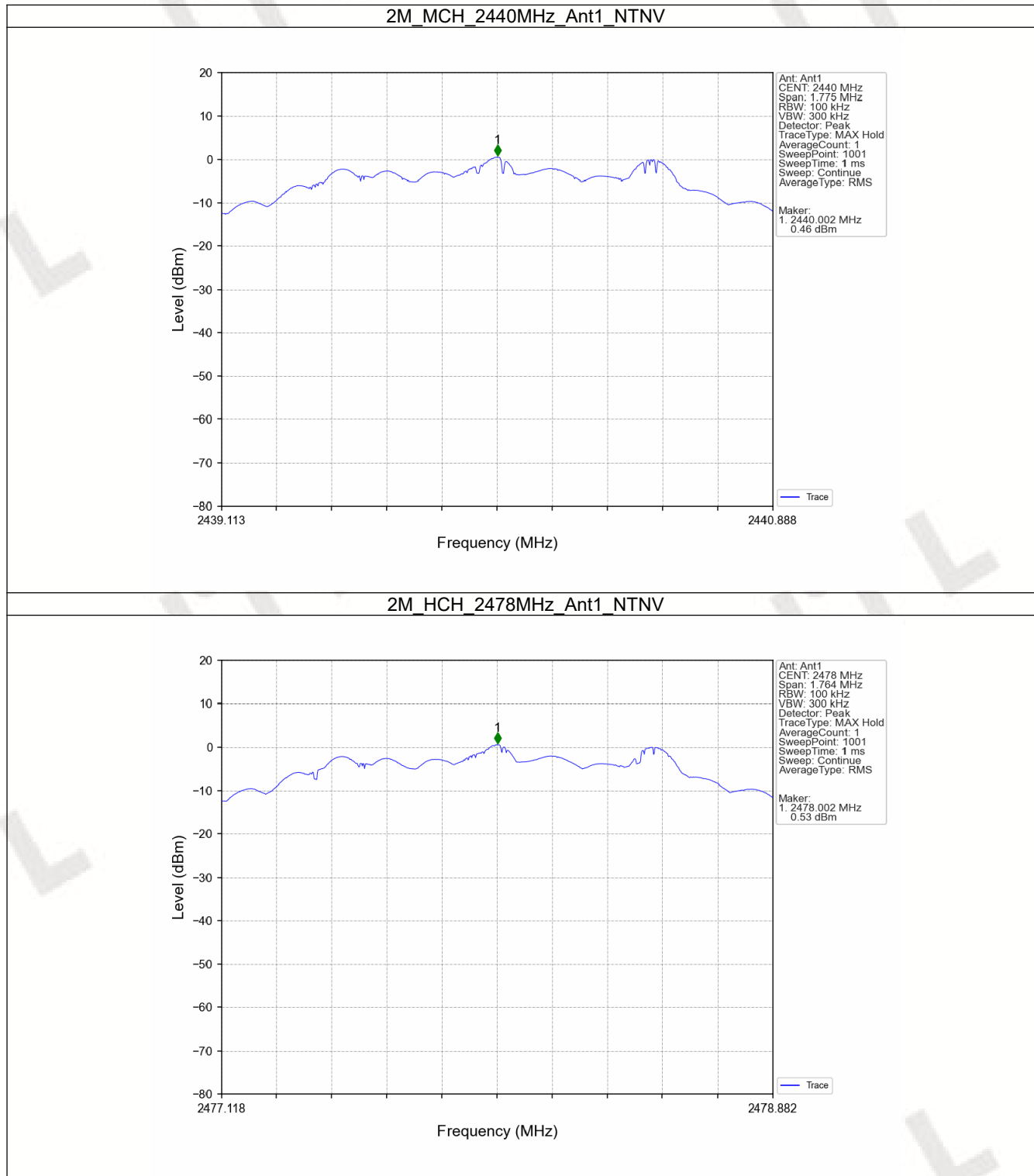
3.2.1 PSD



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4. Unwanted Emissions In Non-restricted Frequency Bands**4.1 Test Result****4.1.1 Ref**

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	0.31
		2440	1	0.81
		2480	1	0.86
2M	SISO	2404	1	0.08
		2440	1	0.47
		2478	1	0.54

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.

4.1.2 CSE

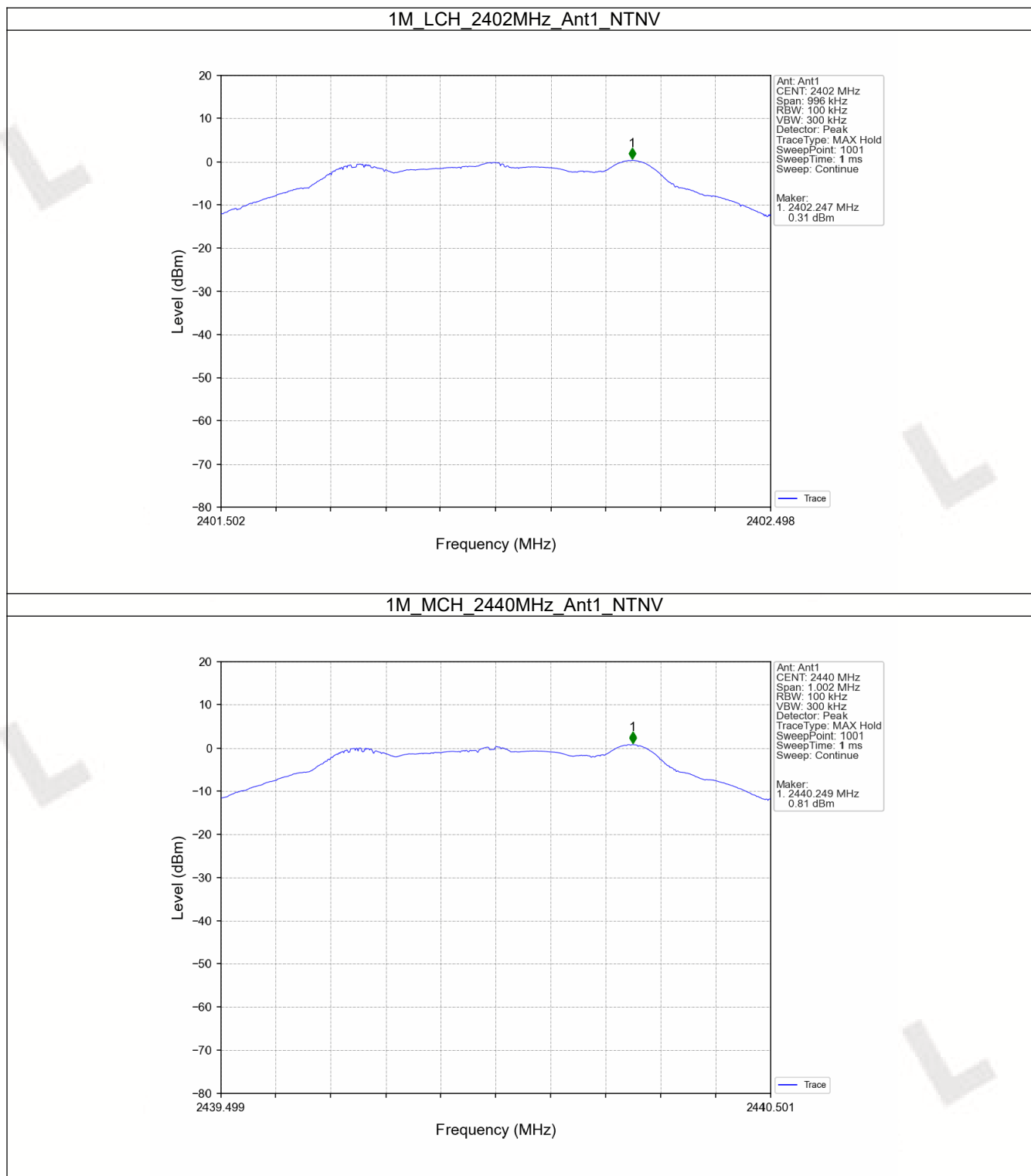
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	0.86	-19.14	Pass
		2440	1	0.86	-19.14	Pass
		2480	1	0.86	-19.14	Pass
2M	SISO	2404	1	0.54	-19.46	Pass
		2440	1	0.54	-19.46	Pass
		2478	1	0.54	-19.46	Pass

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.

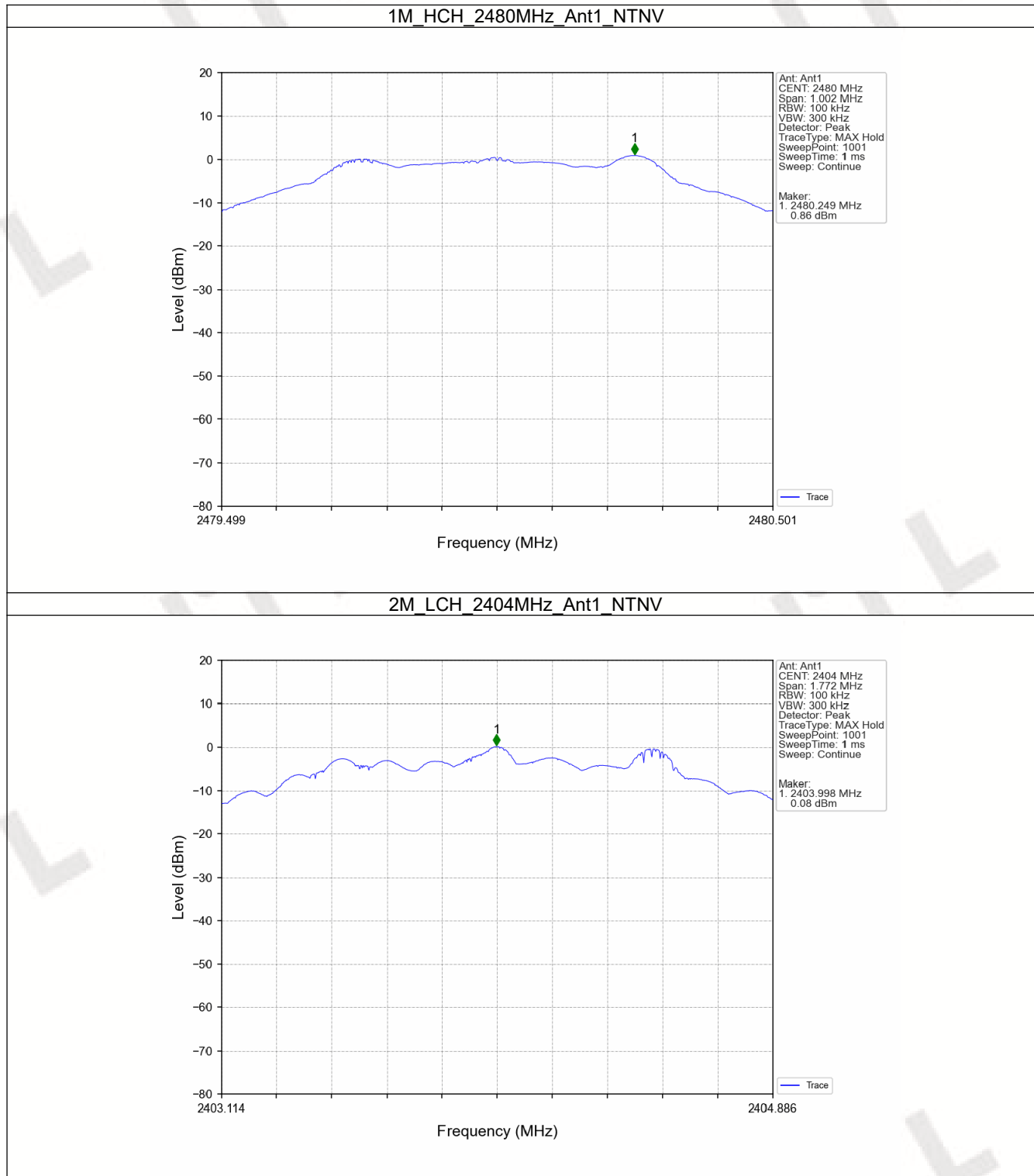
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4.2 Test Graph

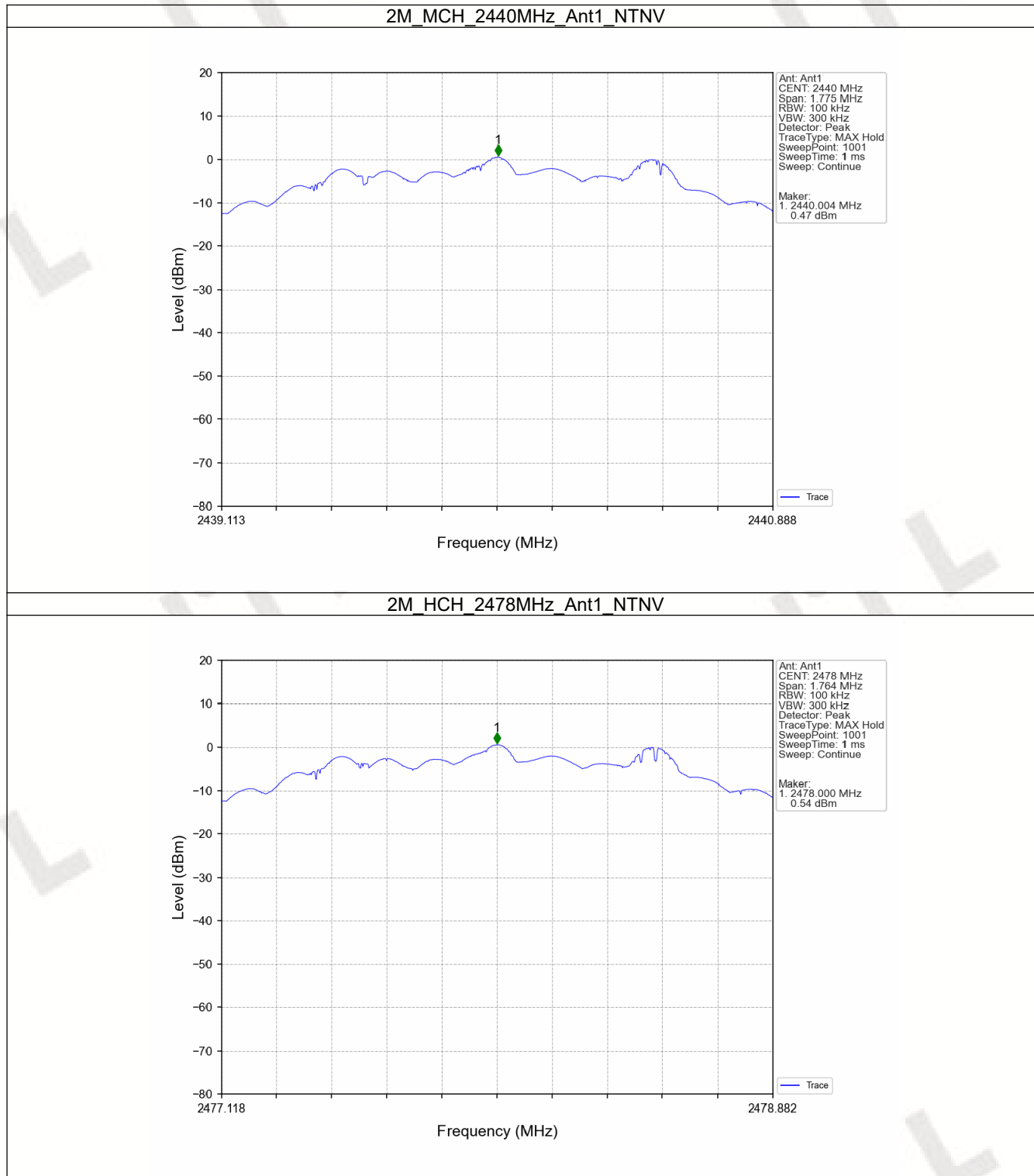
4.2.1 Ref



FCC ID: 2BDI3-RUGGEDULTRA

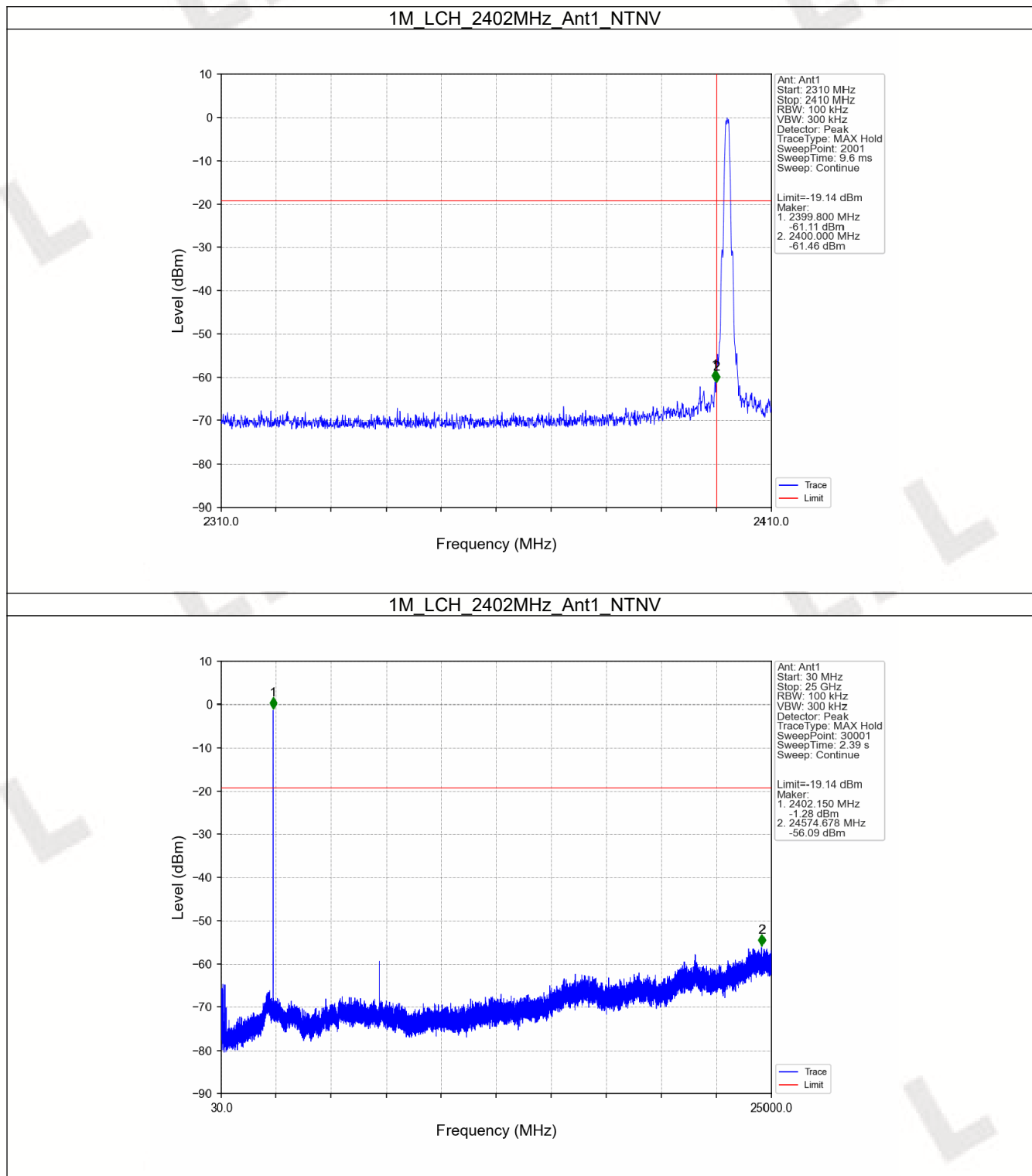


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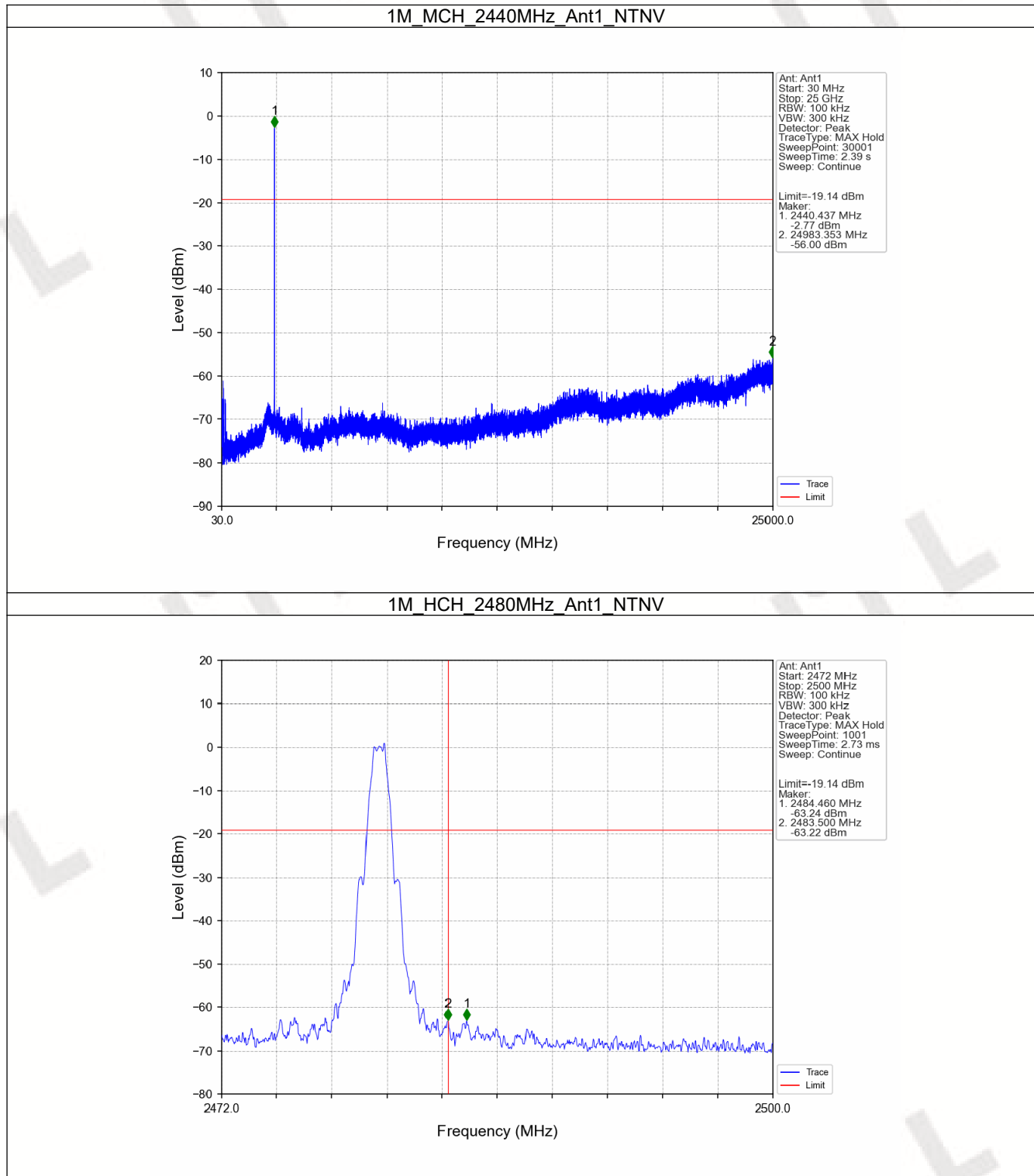


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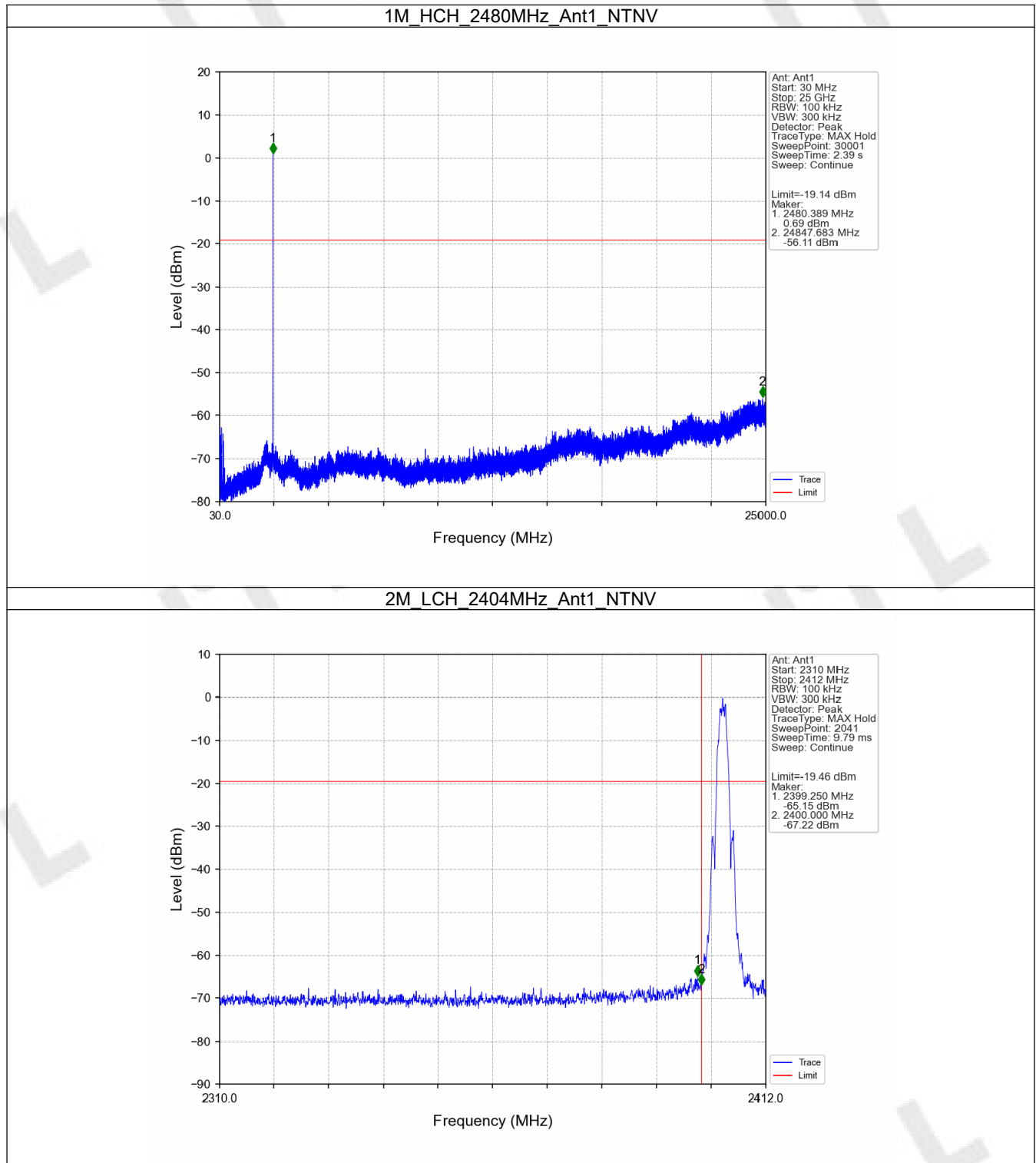
4.2.2 CSE



FCC ID: 2BDI3-RUGGEDULTRA

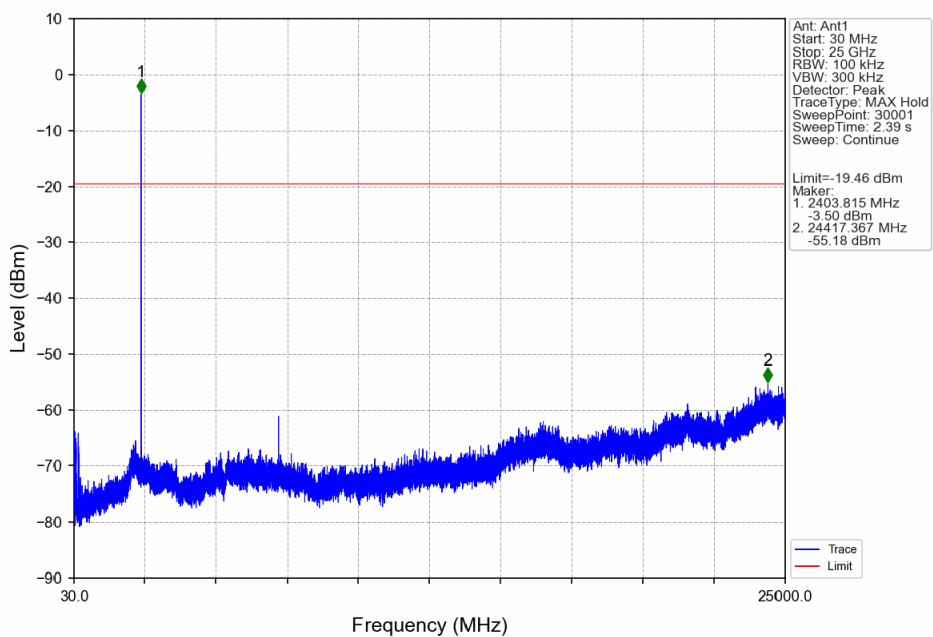


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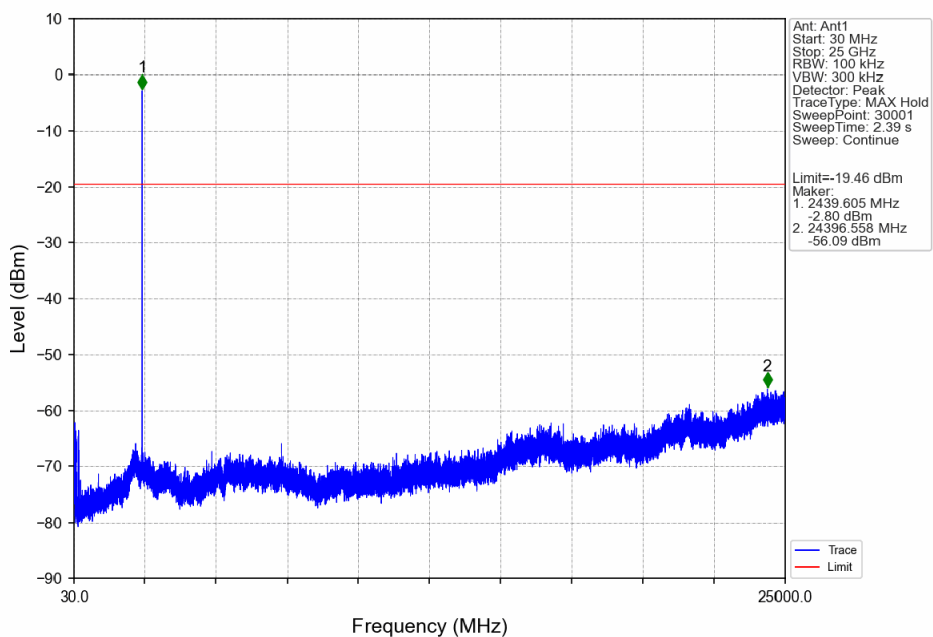


FCC ID: 2BDI3-RUGGEDULTRA

2M_LCH_2404MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



FCC ID: 2BDI3-RUGGEDULTRA

