

ANNEX D TEST DATA

For

Project No.:	8233EU012909W
Client:	SANWA LIMITED
Product Description:	Dual-Mode Ergonomic Silent Click Trackball Mouse
Model No.:	GMAWBTTB190BK
FCC ID:	2AMSUGMAWBTTB190BK
Technology:	Bluetooth BLE
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2024-10-12

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

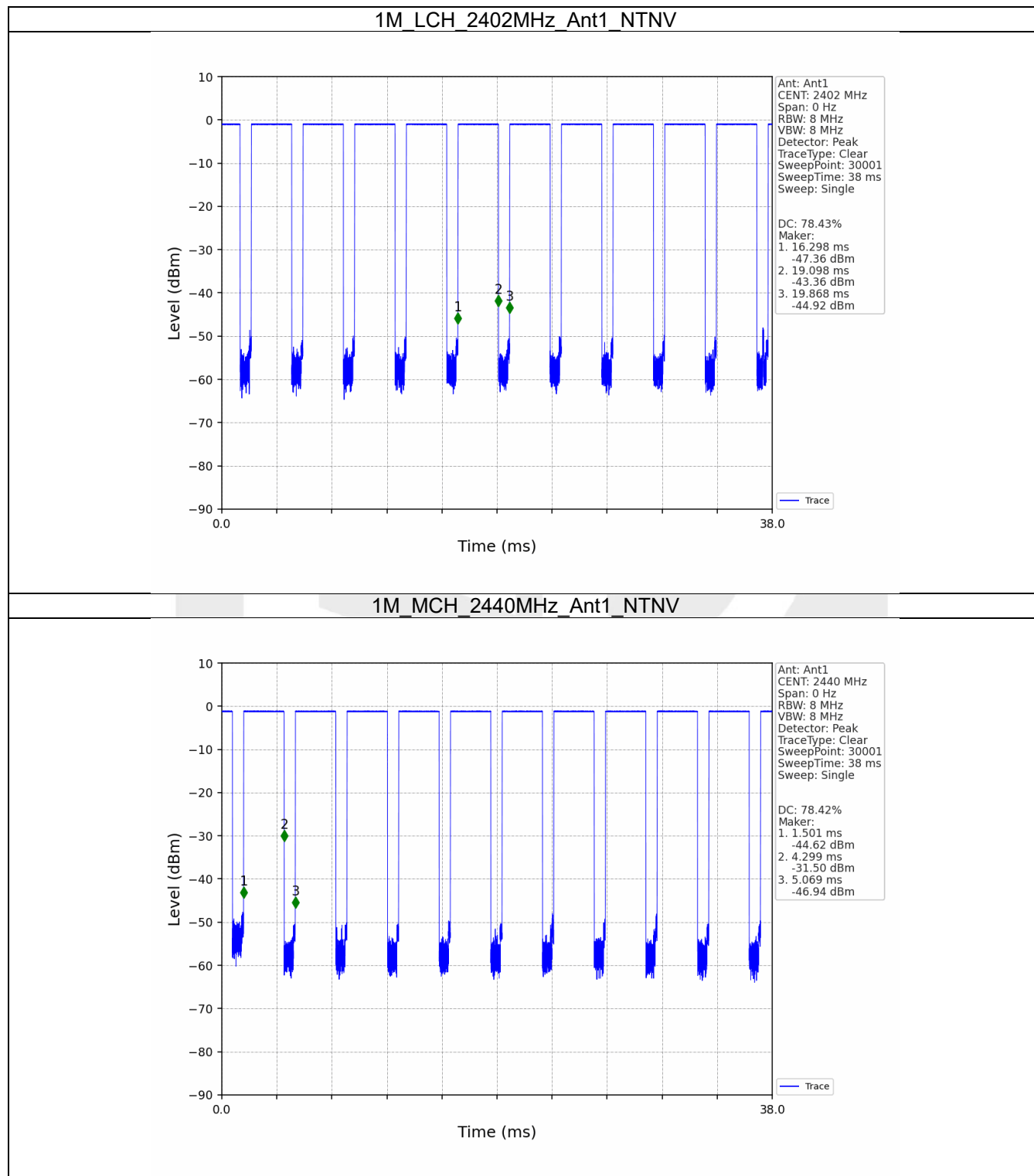
1.1 Test Result

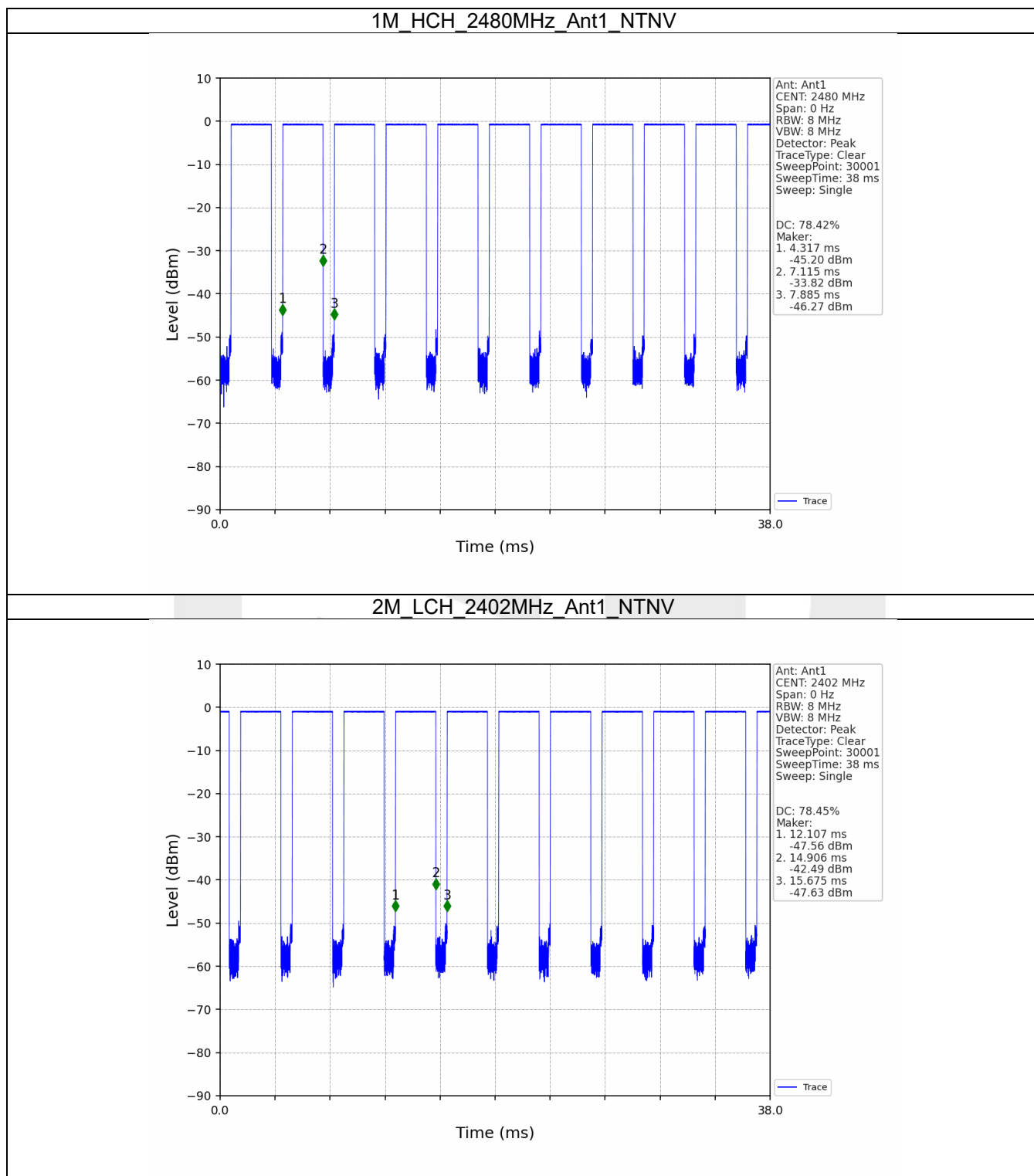
1.1.1 Ant1

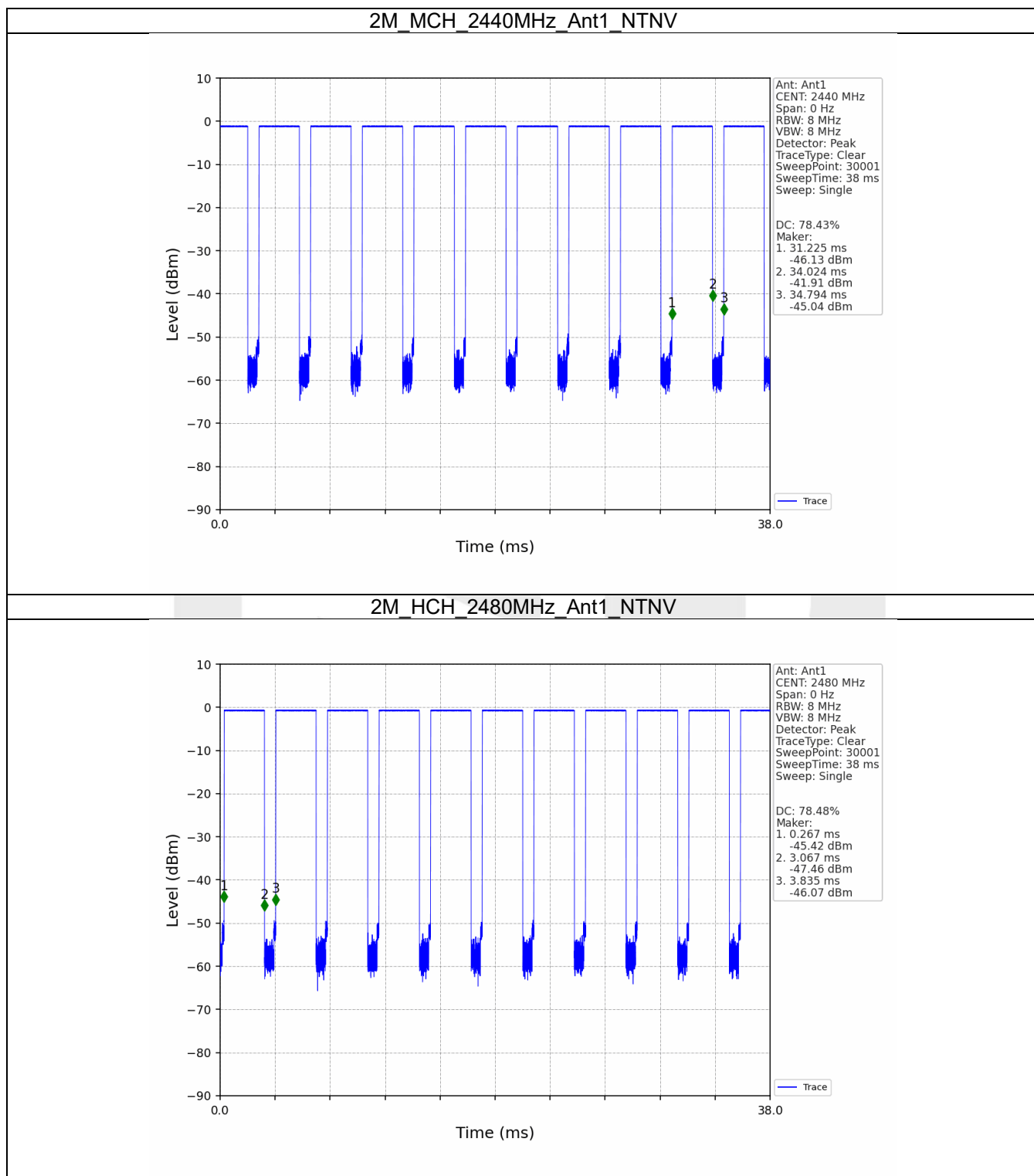
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.800	3.570	78.43	1.06	0.03
		2440	2.798	3.568	78.42	1.06	0.04
		2480	2.798	3.568	78.42	1.06	0.04
2M	SISO	2402	2.799	3.568	78.45	1.05	0.04
		2440	2.799	3.569	78.43	1.06	0.03
		2480	2.800	3.568	78.48	1.05	0.04

1.2 Test Graph

1.2.1 Ant1







2. Bandwidth

2.1 Test Result

2.1.1 OBW

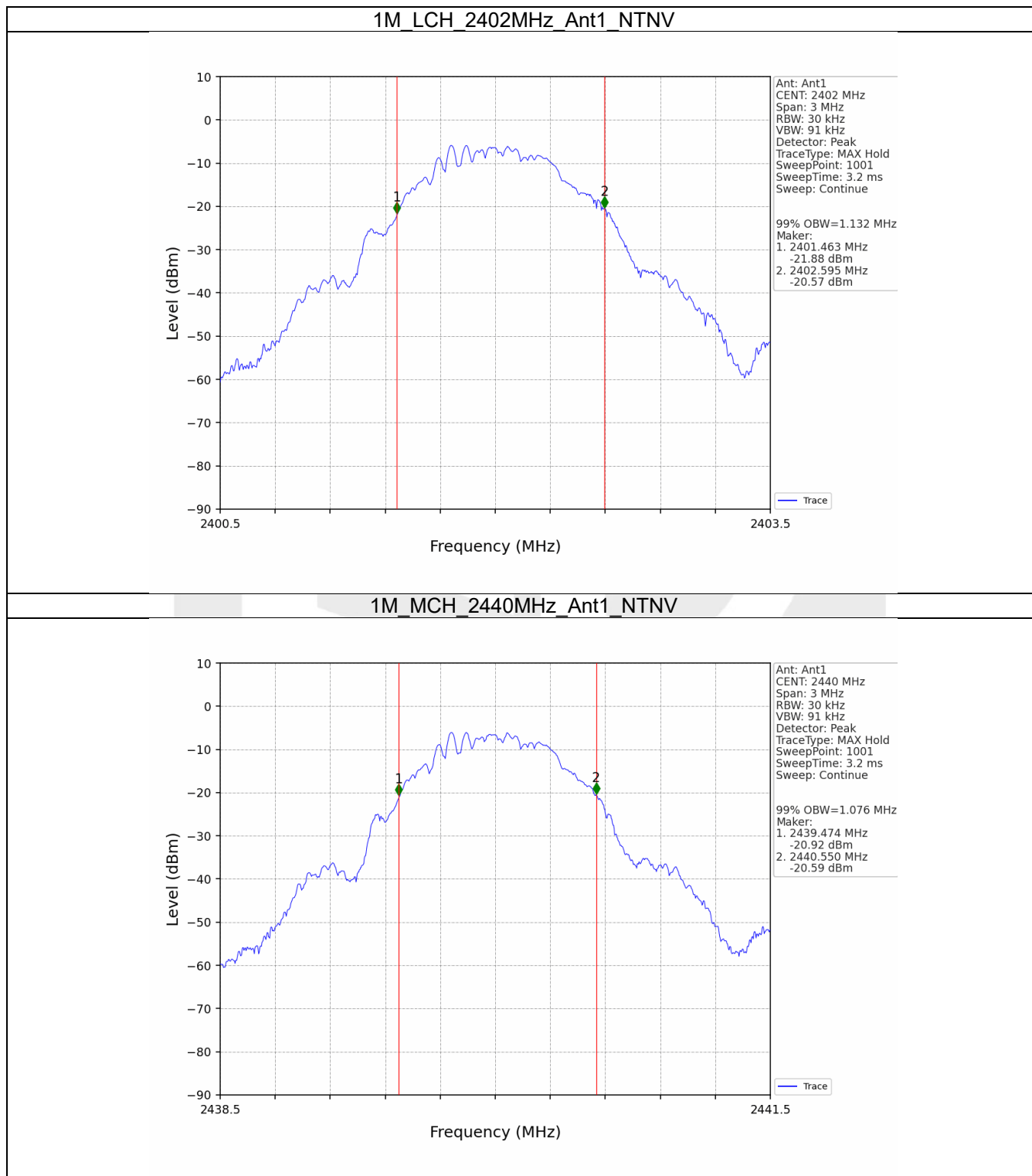
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.132	/	Pass
		2440	1	1.076	/	Pass
		2480	1	1.056	/	Pass
2M	SISO	2402	1	1.228	/	Pass
		2440	1	1.146	/	Pass
		2480	1	1.091	/	Pass

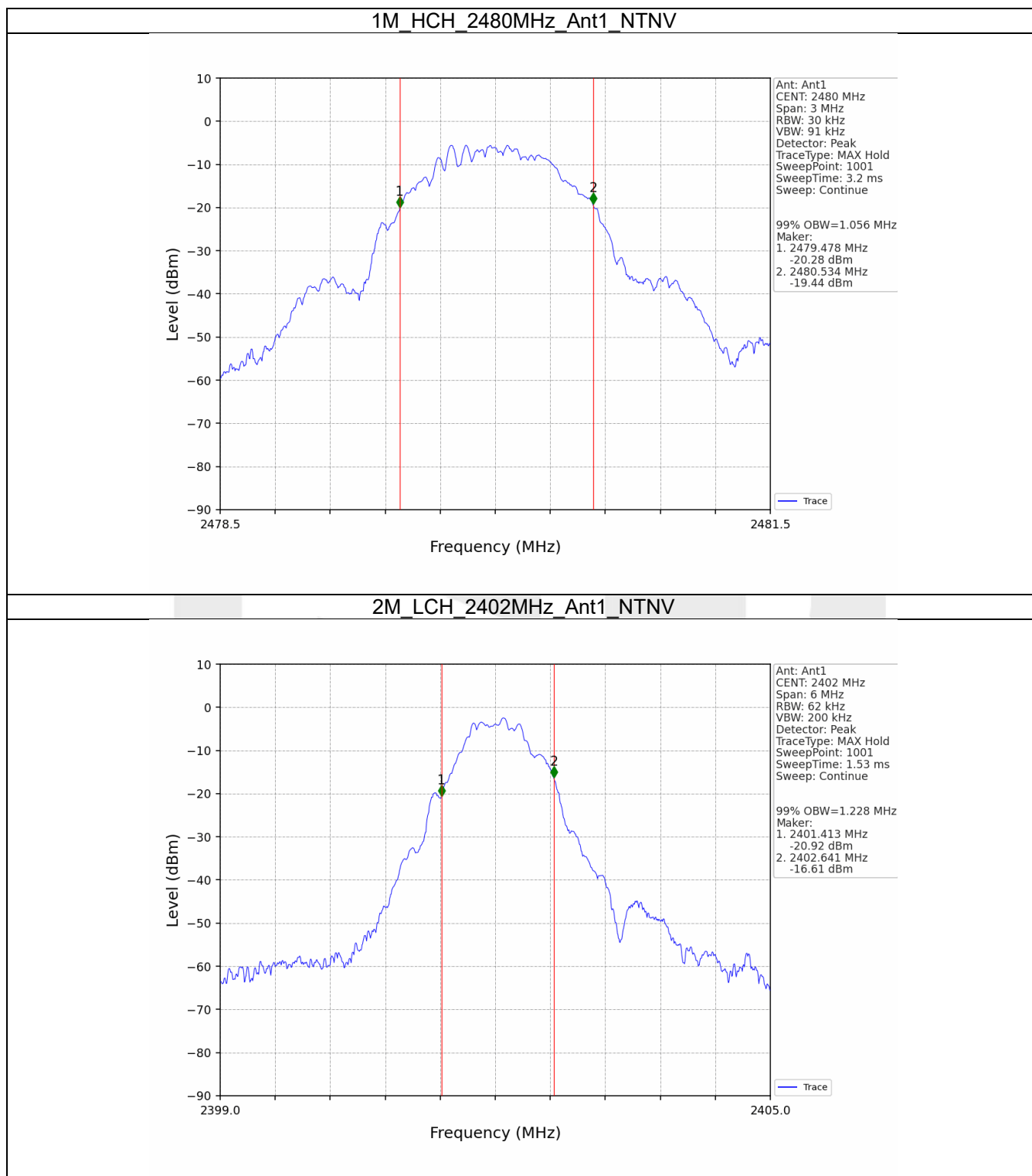
2.1.2 6dB BW

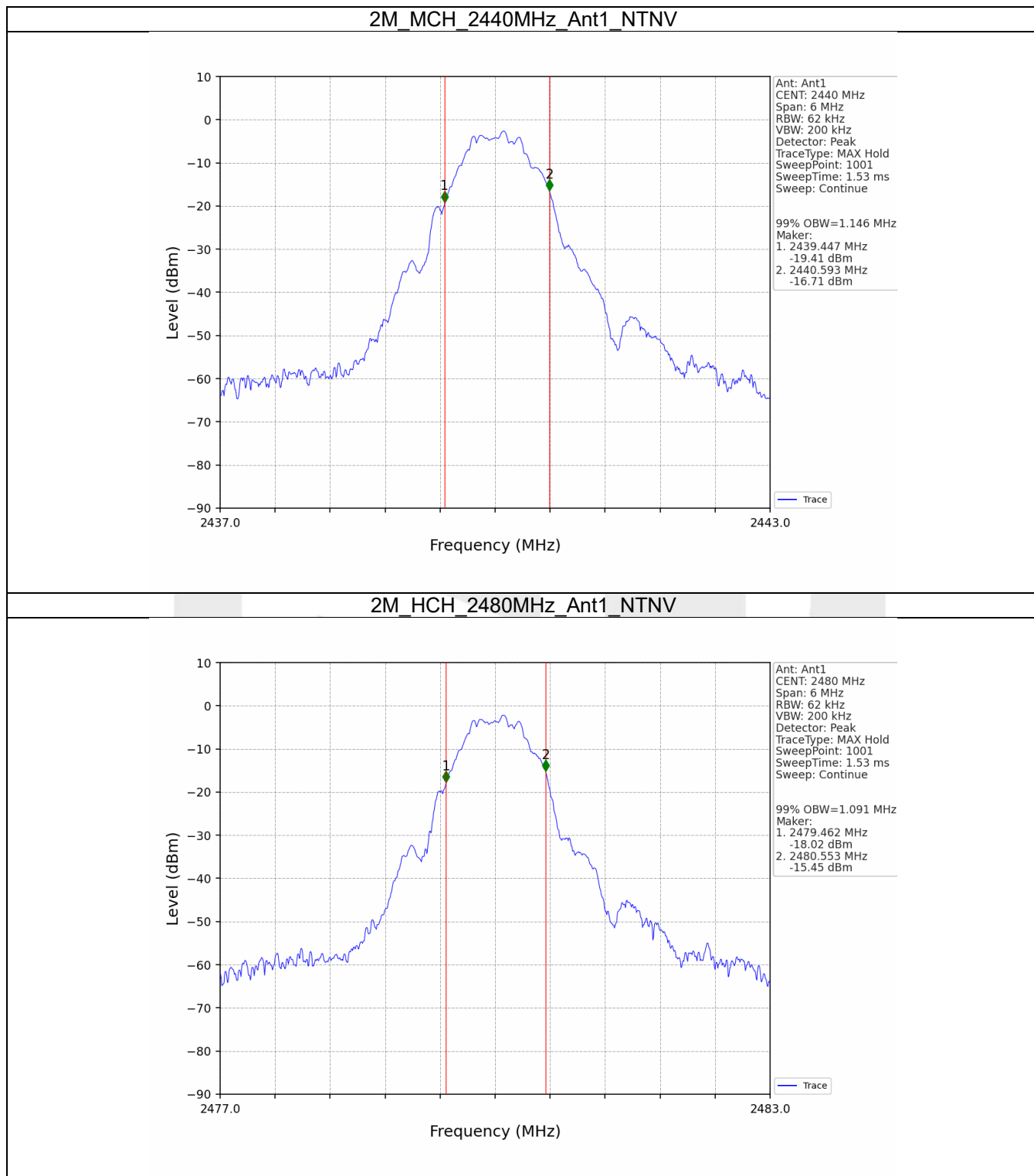
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.860	≥ 0.5	Pass
		2440	1	0.821	≥ 0.5	Pass
		2480	1	0.775	≥ 0.5	Pass
2M	SISO	2402	1	0.874	≥ 0.5	Pass
		2440	1	0.834	≥ 0.5	Pass
		2480	1	0.790	≥ 0.5	Pass

2.2 Test Graph

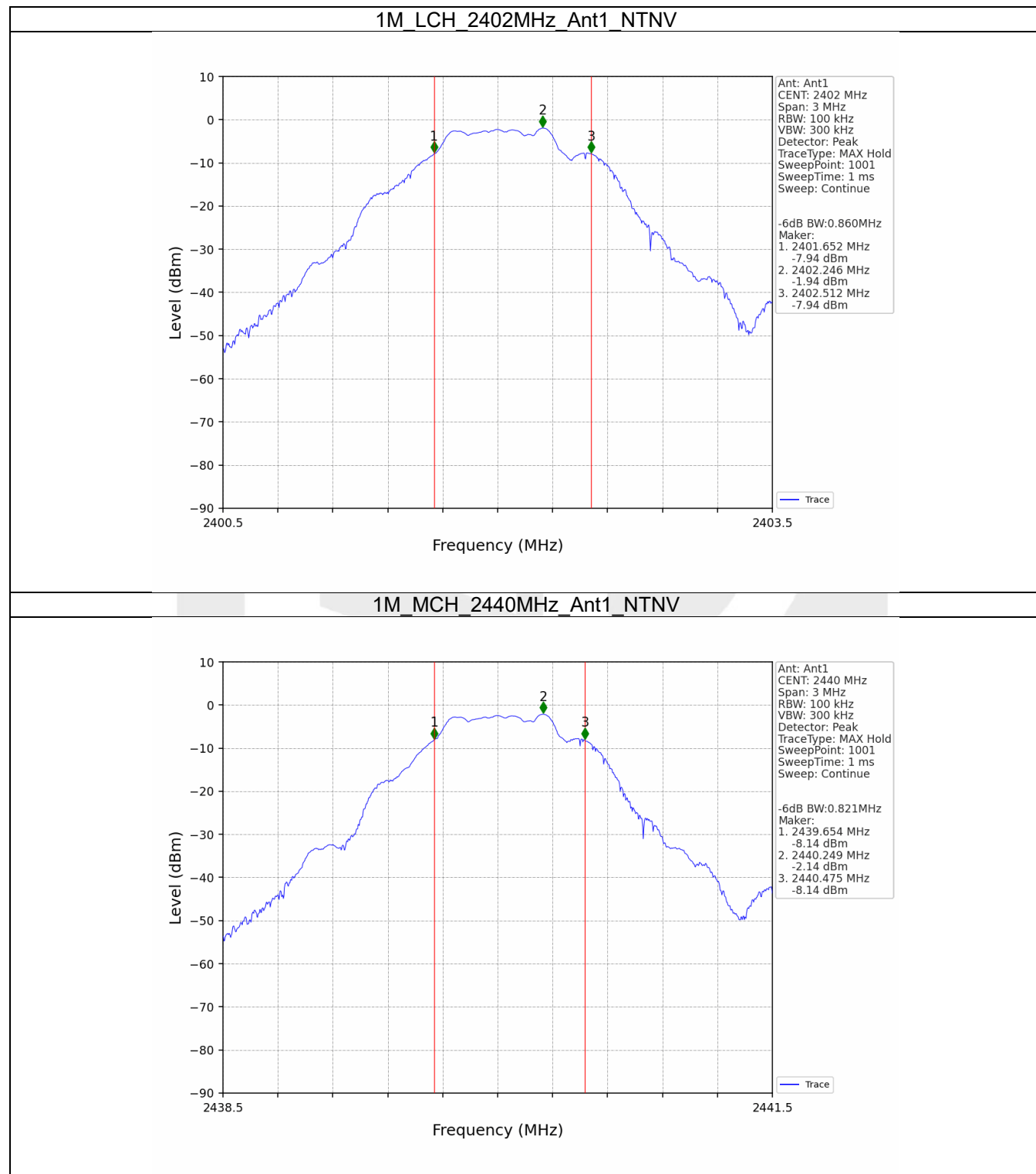
2.2.1 OBW

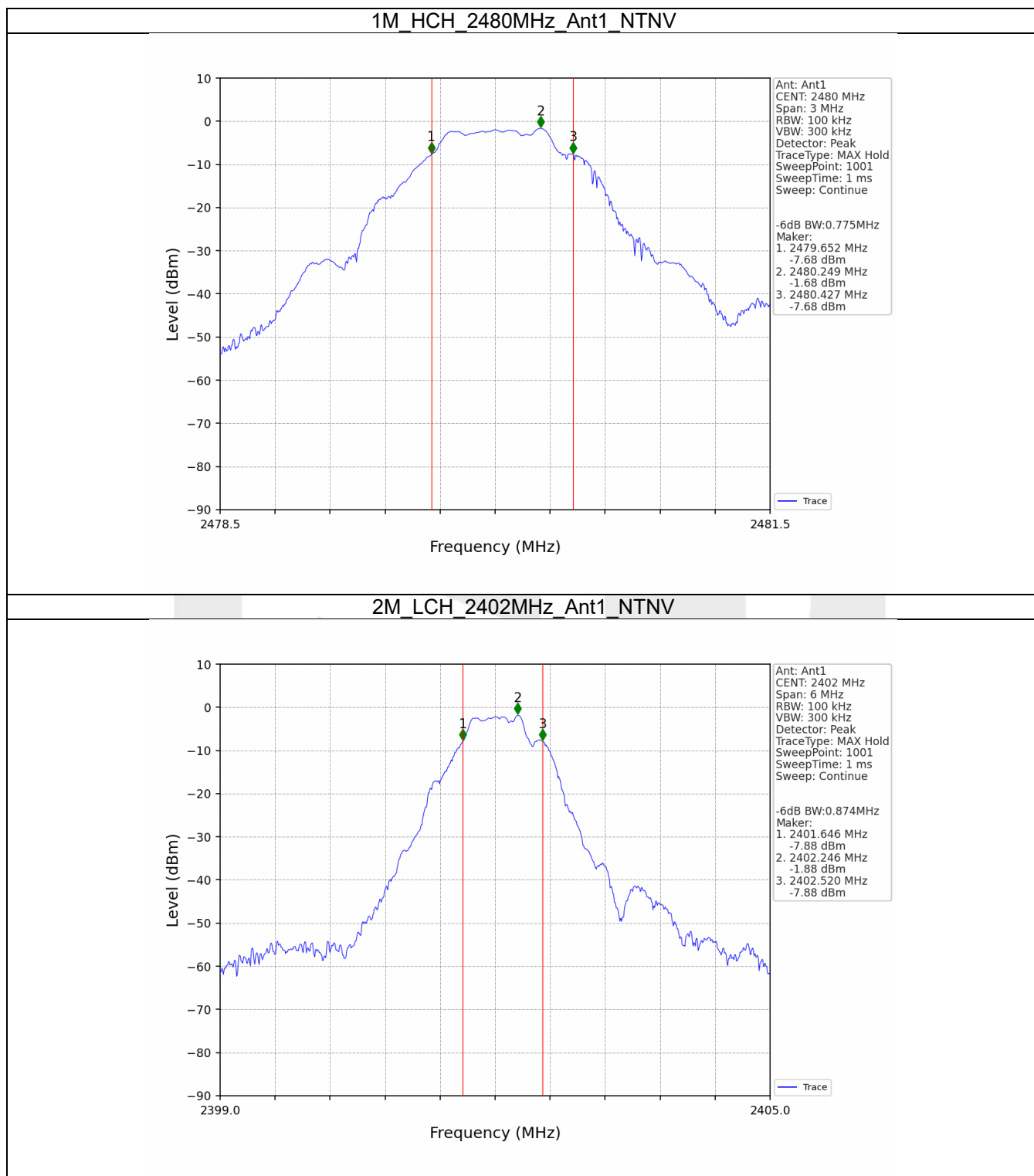


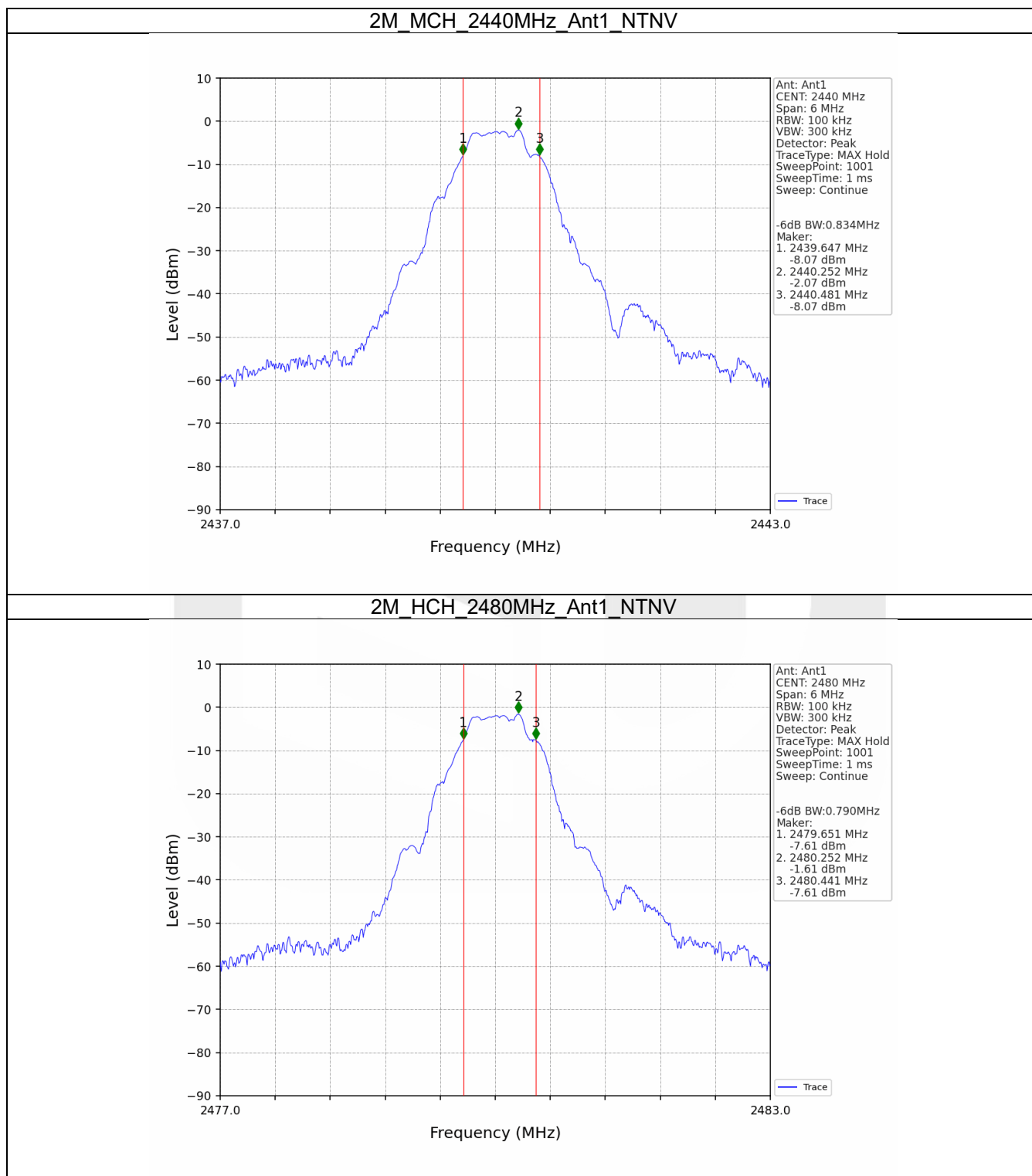




2.2.2 6dB BW







3. Maximum Conducted Output Power

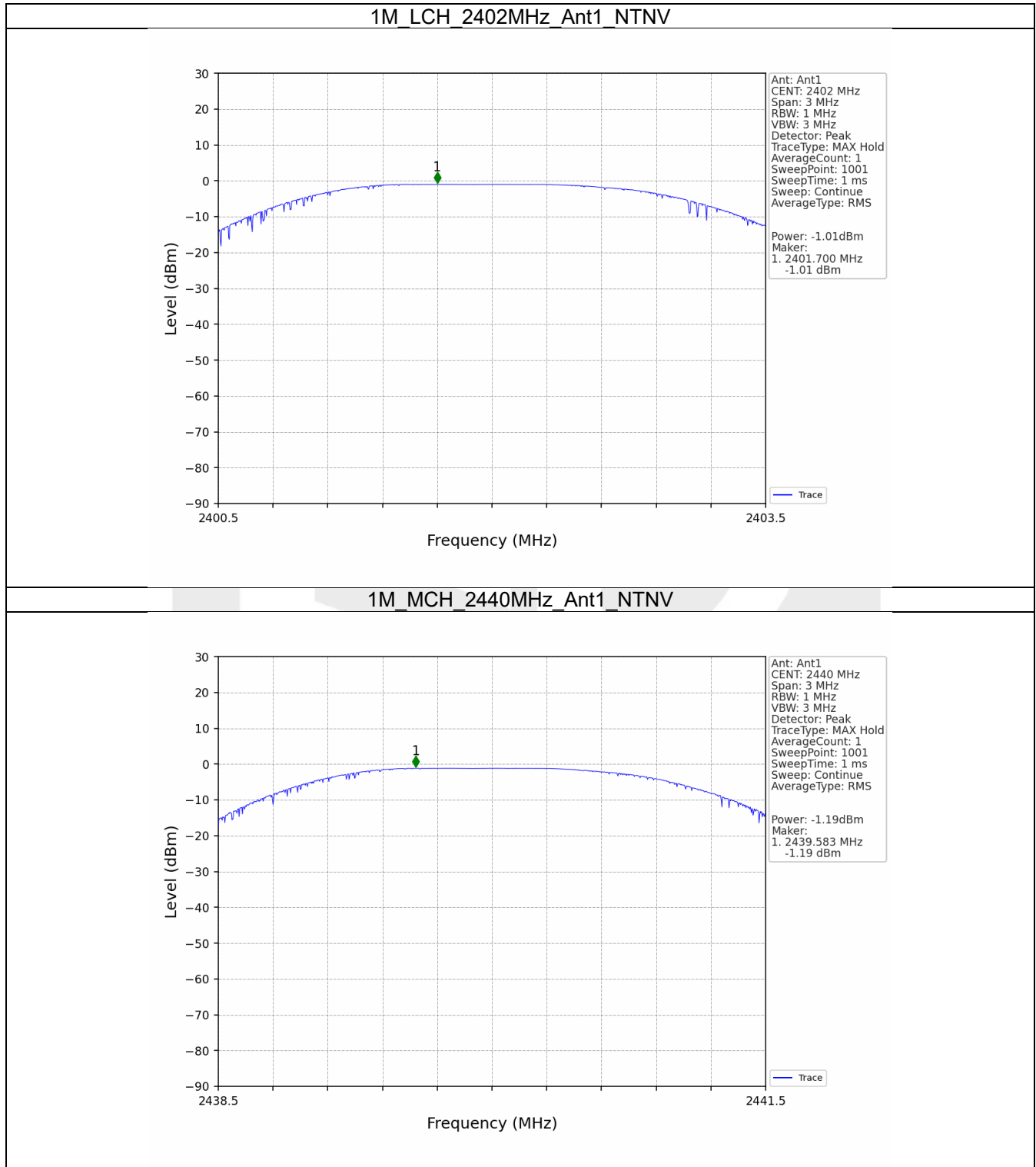
3.1 Test Result

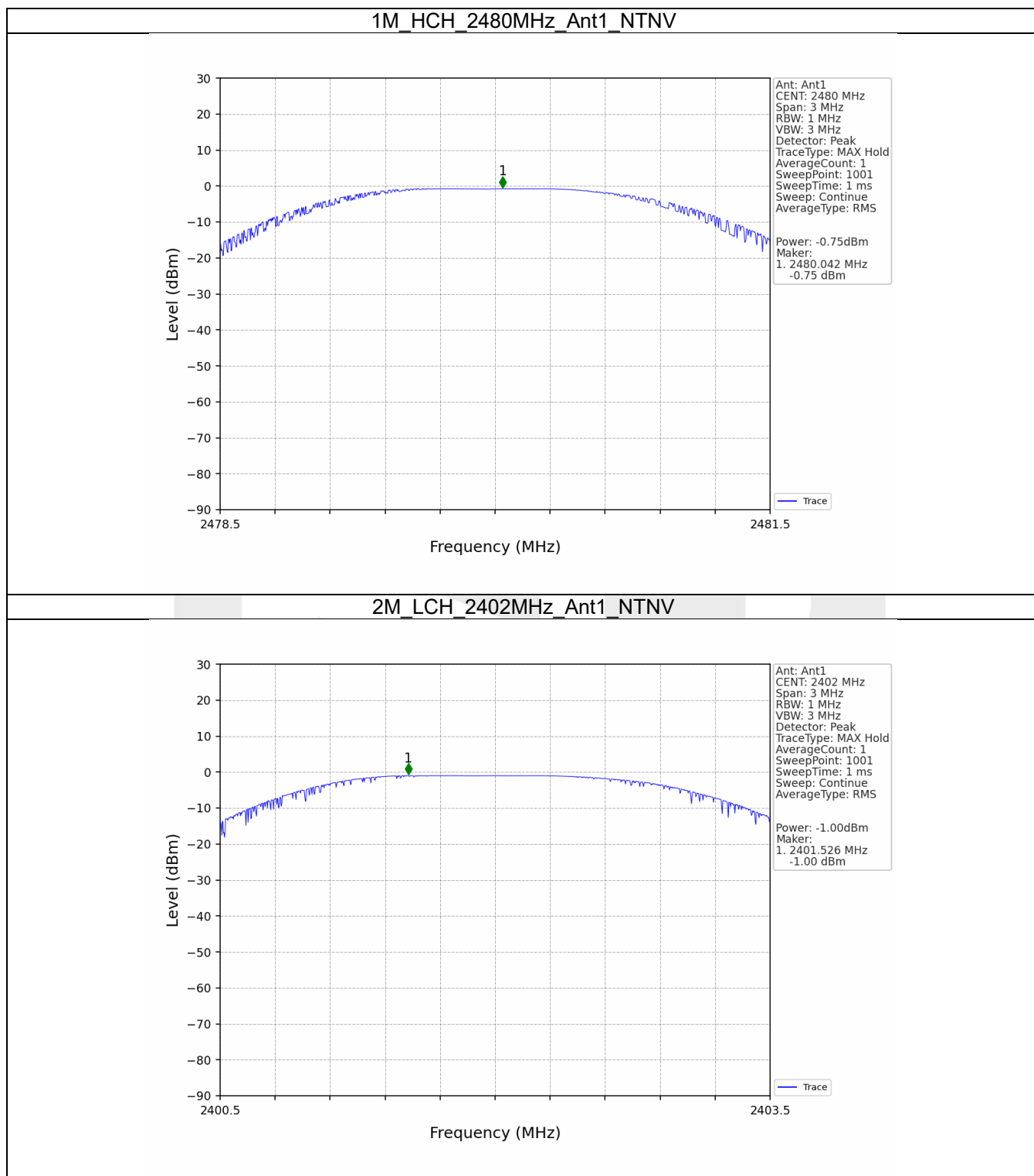
3.1.1 Power

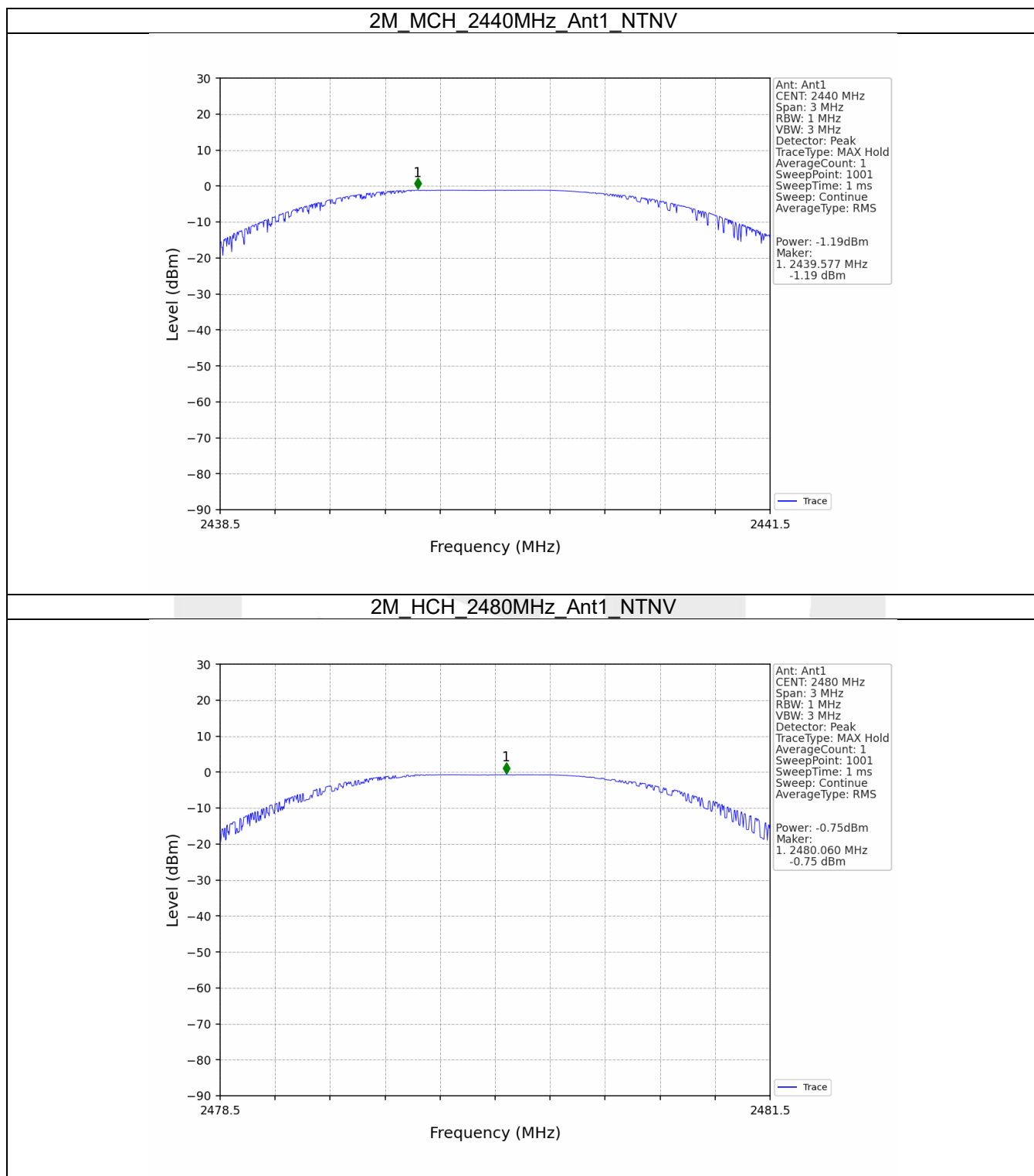
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-1.01	<=30	Pass
		2440	-1.19	<=30	Pass
		2480	-0.75	<=30	Pass
2M	SISO	2402	-1.00	<=30	Pass
		2440	-1.19	<=30	Pass
		2480	-0.75	<=30	Pass

3.2 Test Graph

3.2.1 Power







4. Maximum Power Spectral Density

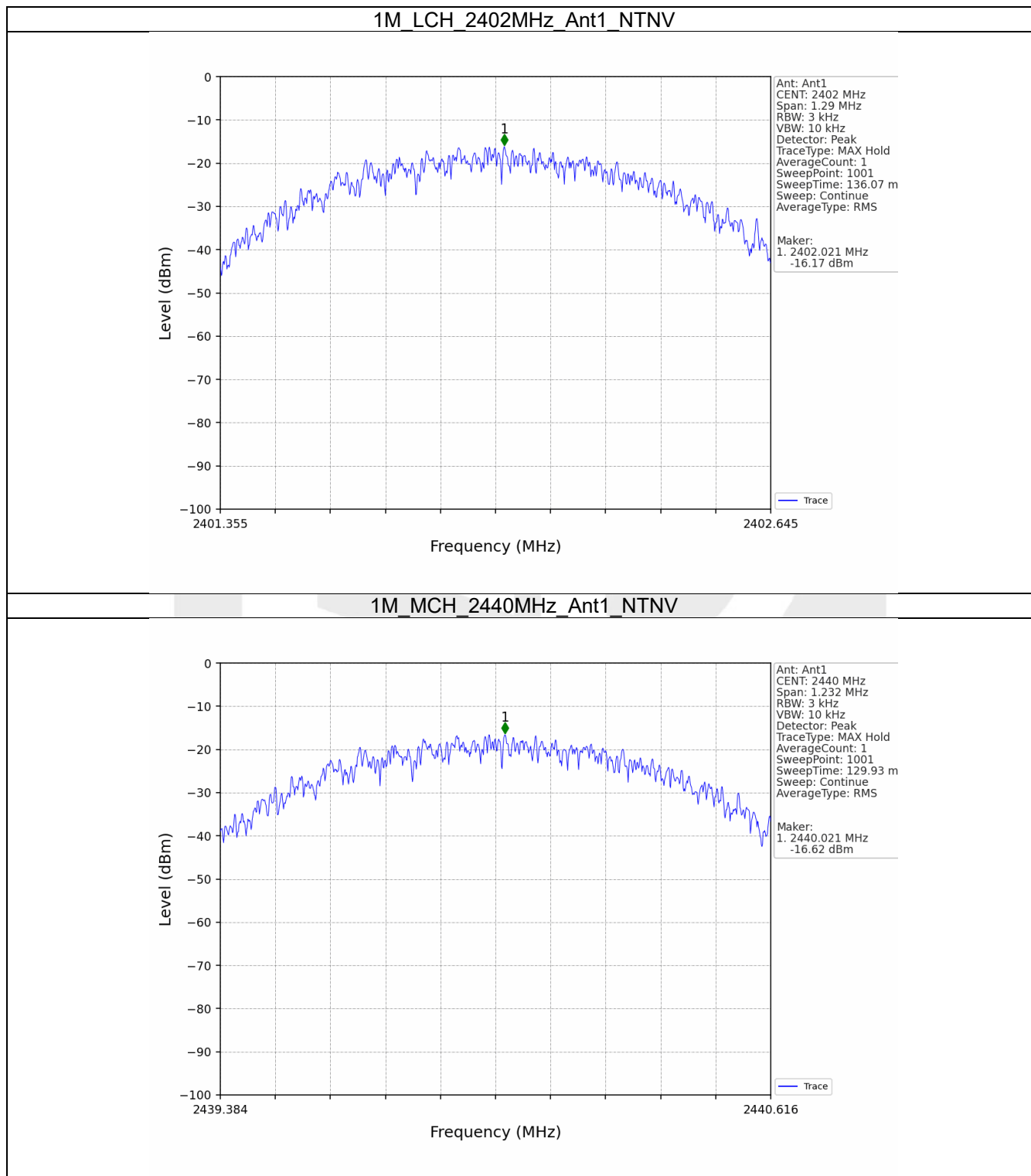
4.1 Test Result

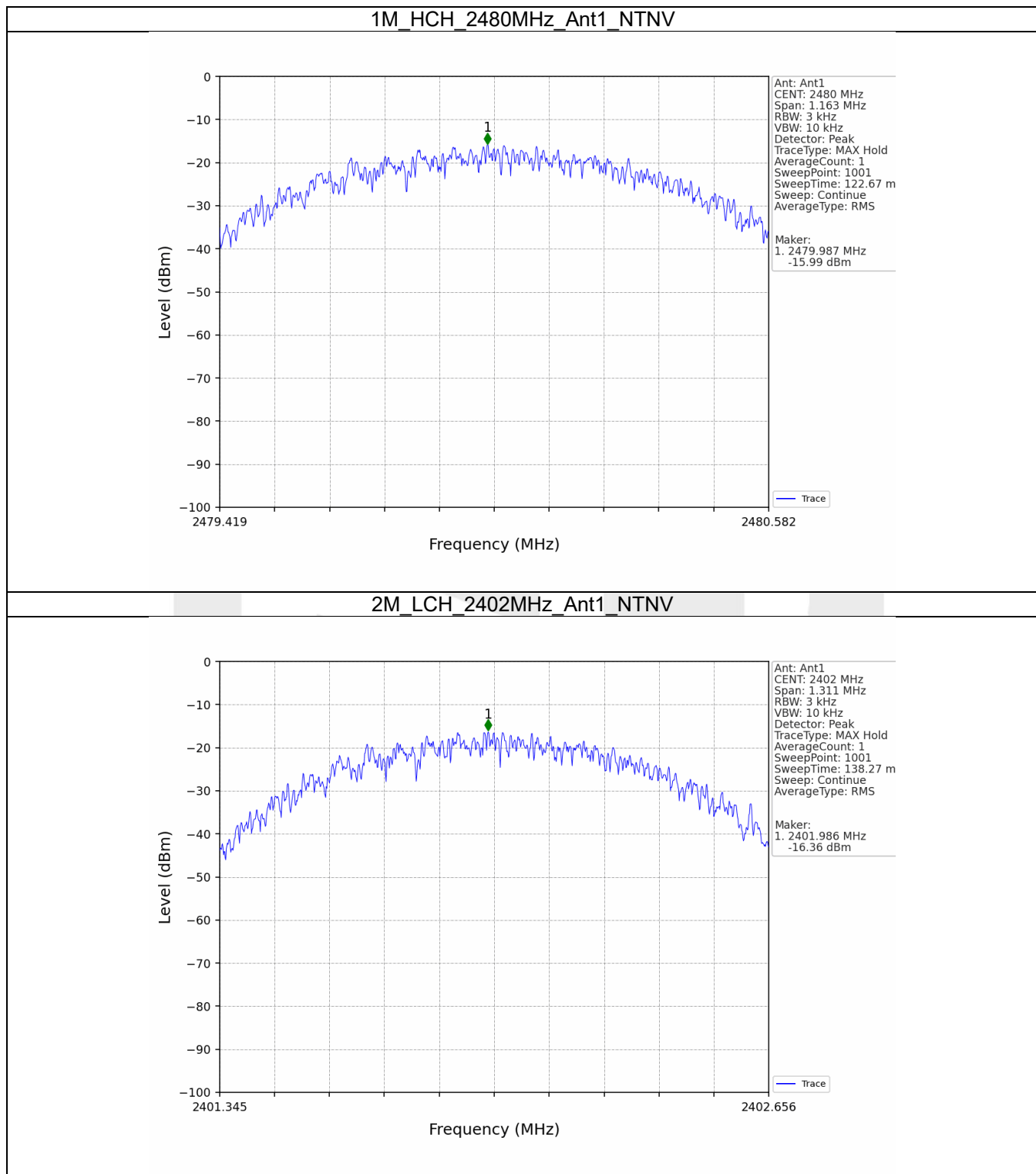
4.1.1 PSD

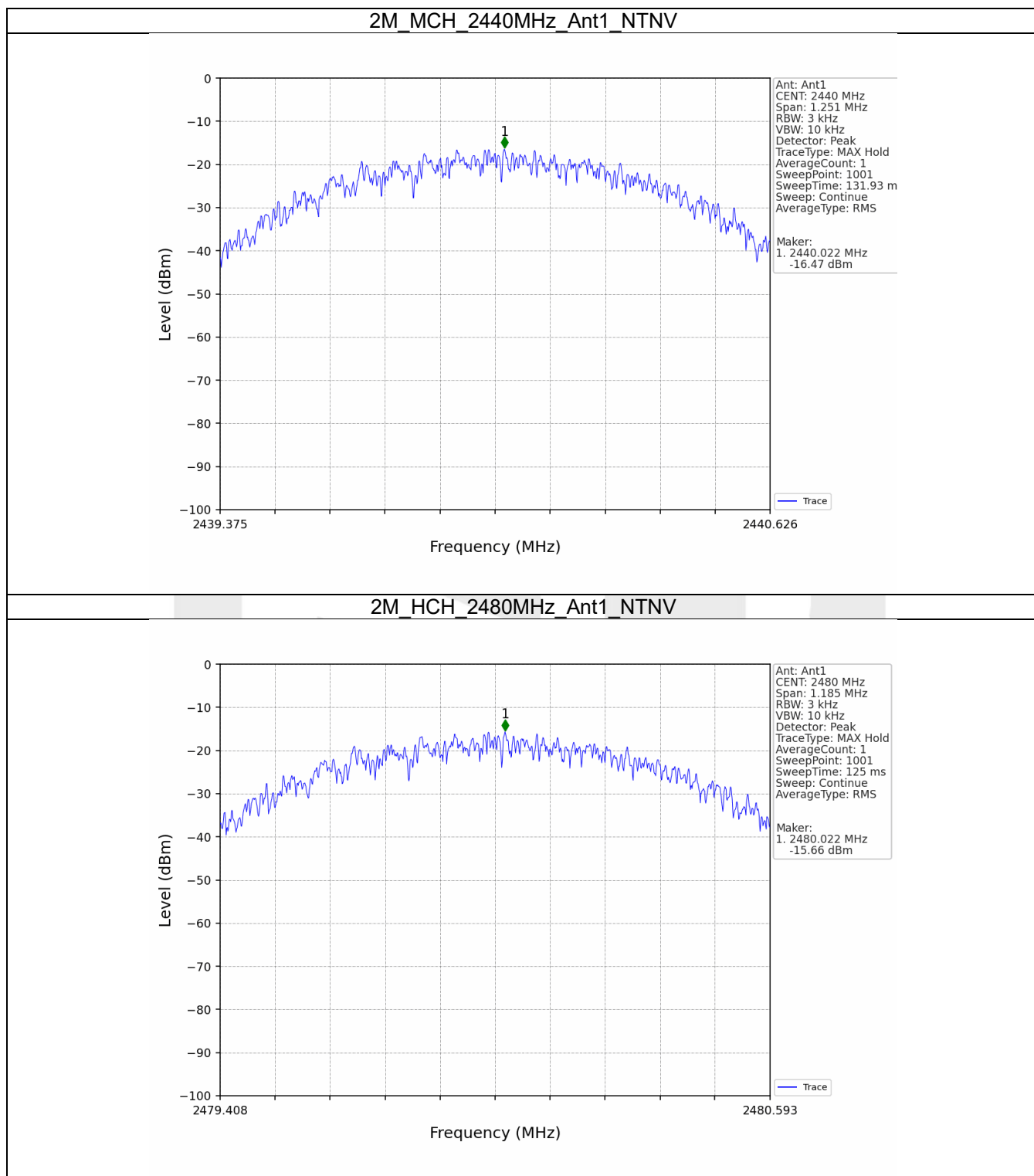
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-16.17	<=8	Pass
		2440	-16.62	<=8	Pass
		2480	-15.99	<=8	Pass
2M	SISO	2402	-16.36	<=8	Pass
		2440	-16.47	<=8	Pass
		2480	-15.66	<=8	Pass

4.2 Test Graph

4.2.1 PSD







5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

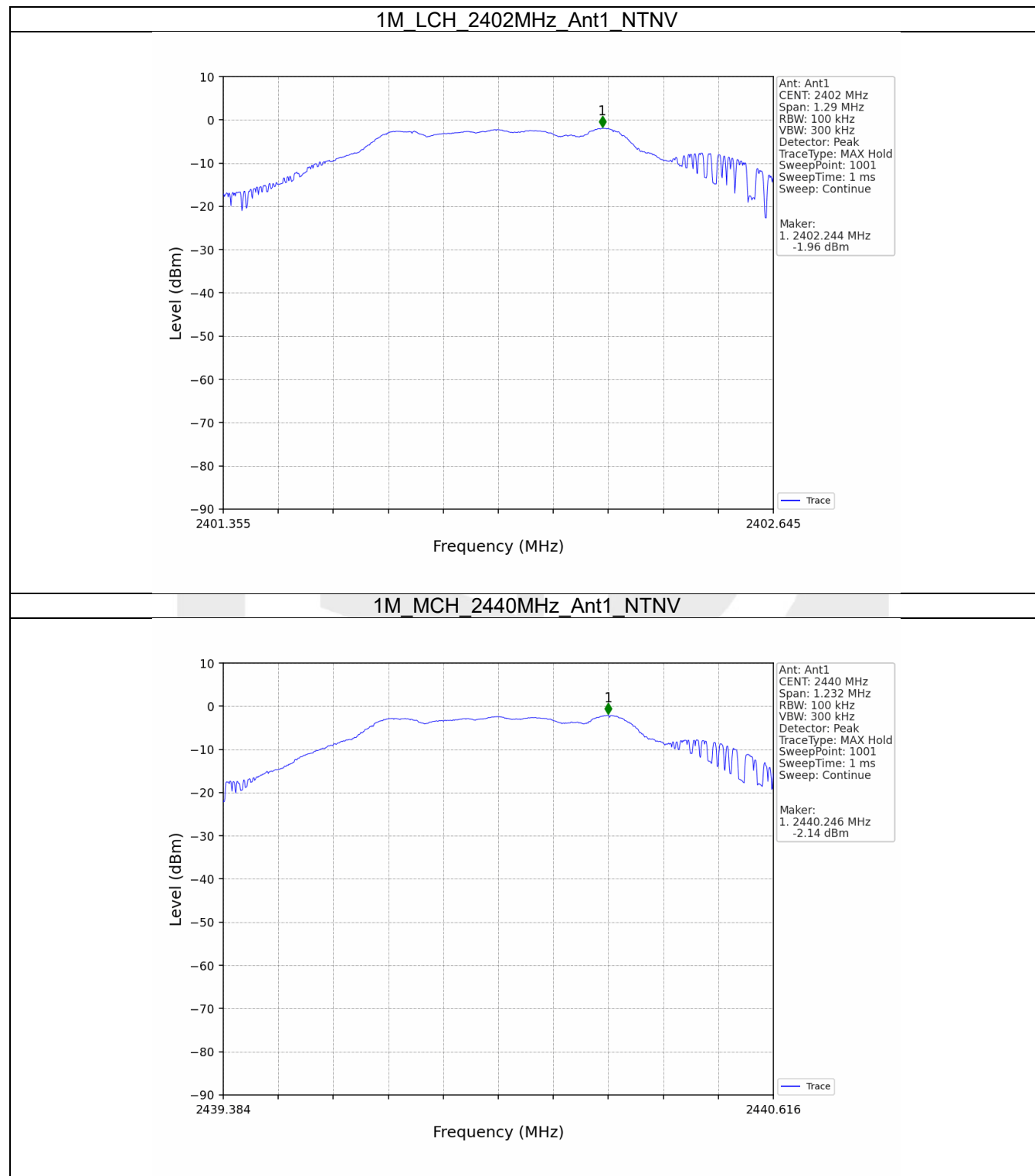
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-1.96
		2440	1	-2.14
		2480	1	-1.71
2M	SISO	2402	1	-1.95
		2440	1	-2.15
		2480	1	-1.68
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.				

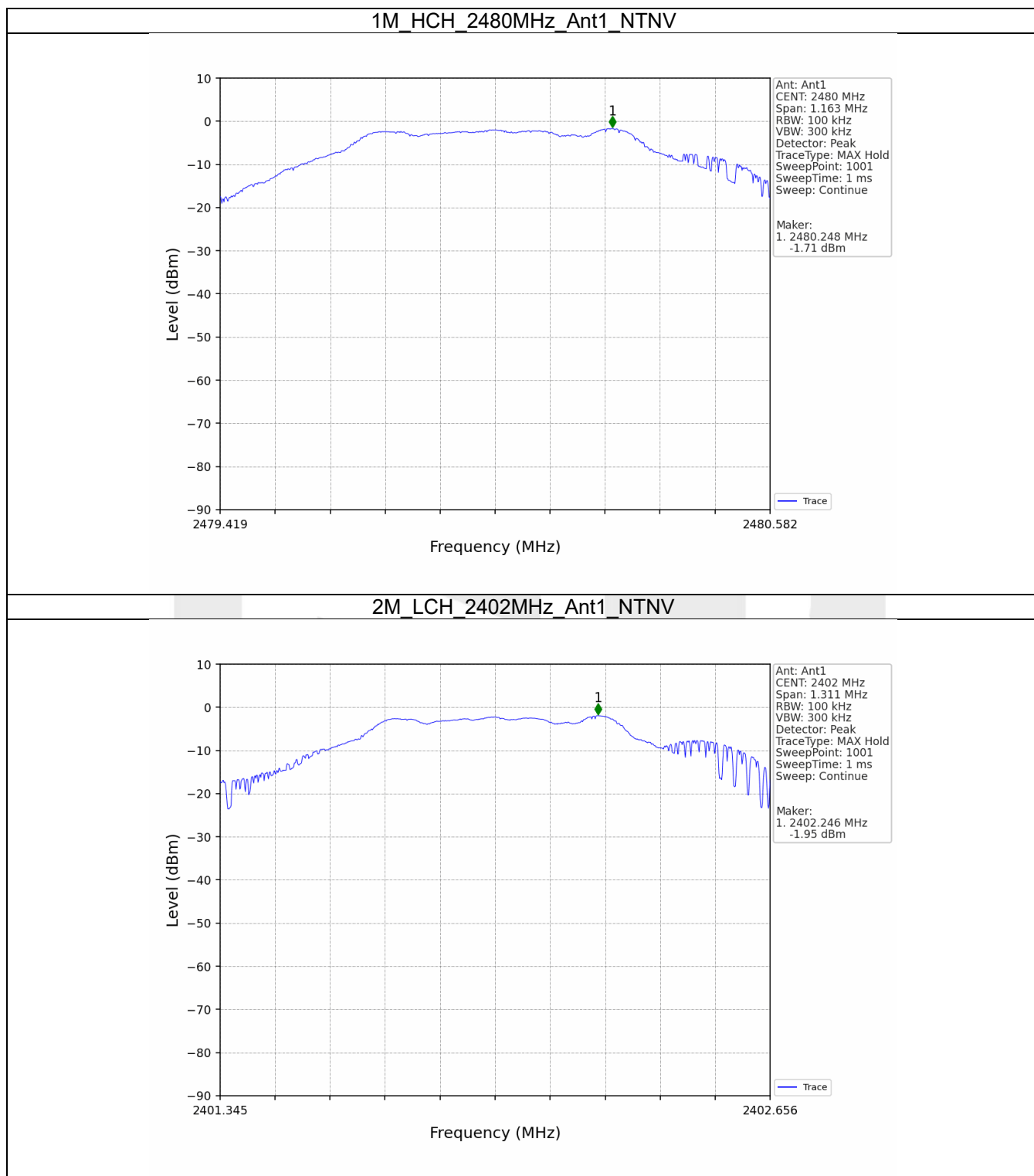
5.1.2 CSE

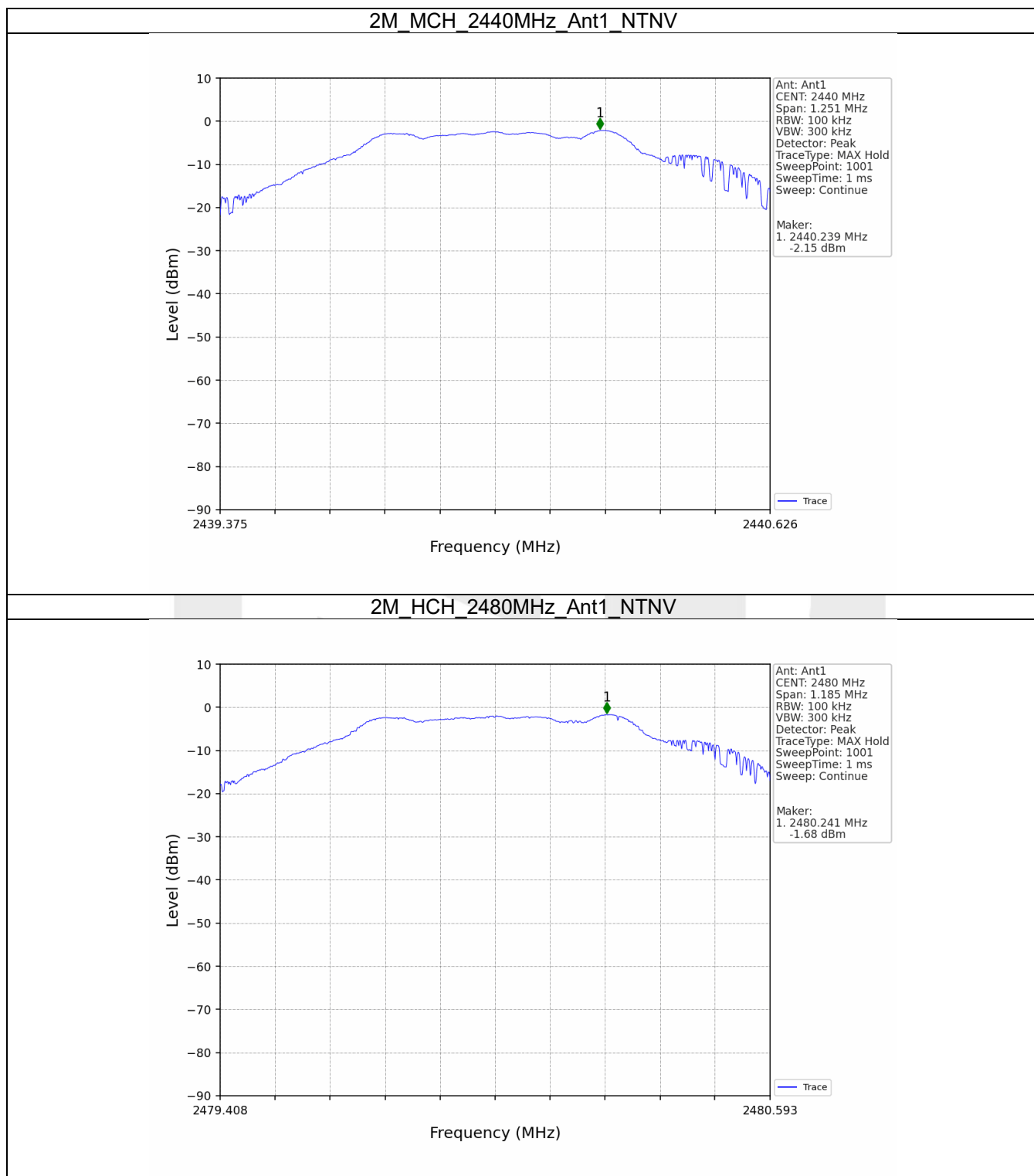
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-1.96	-21.96	Pass
		2440	1	-2.14	-22.14	Pass
		2480	1	-1.71	-21.71	Pass
2M	SISO	2402	1	-1.95	-21.95	Pass
		2440	1	-2.15	-22.15	Pass
		2480	1	-1.68	-21.68	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.						

5.2 Test Graph

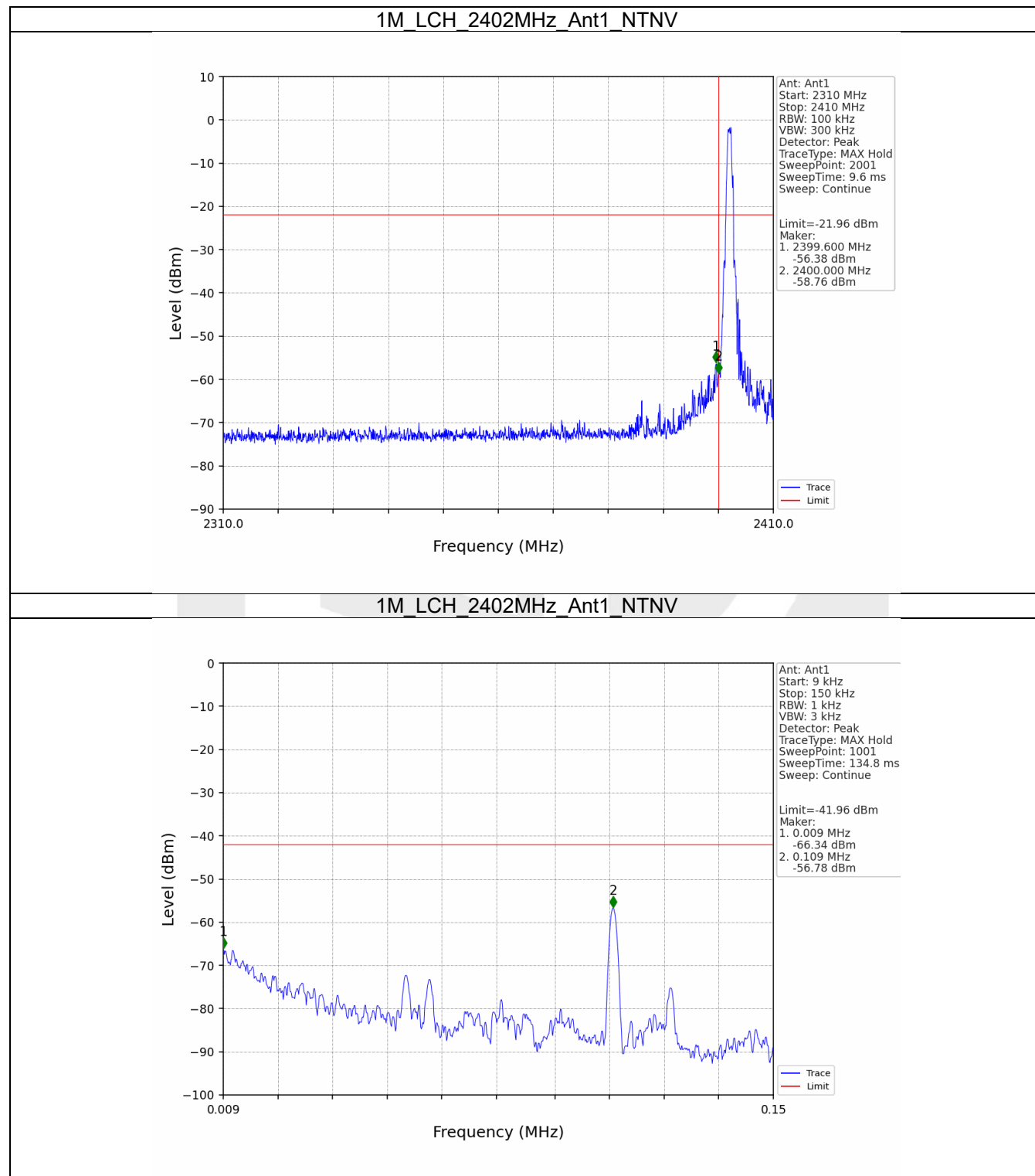
5.2.1 Ref

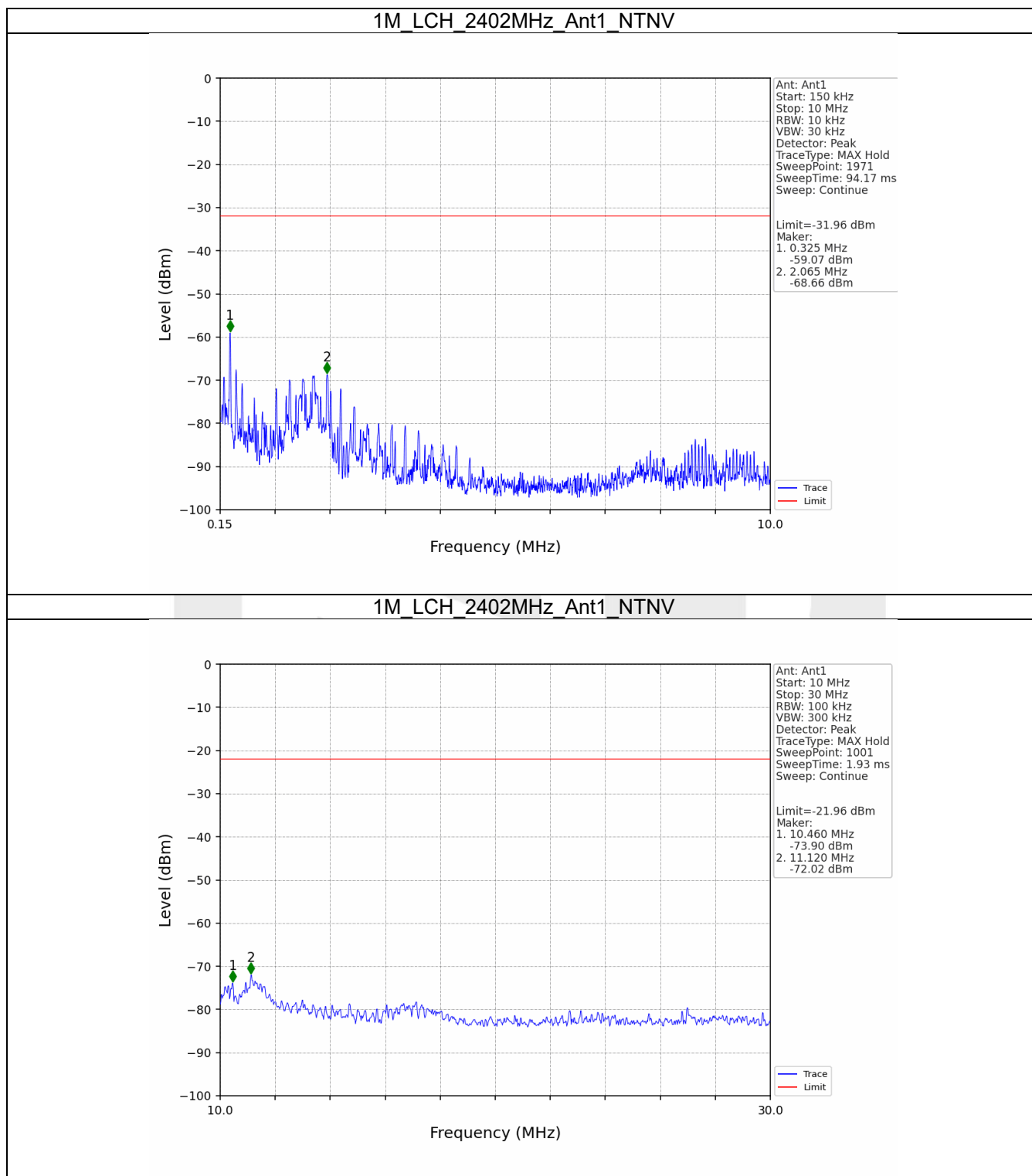


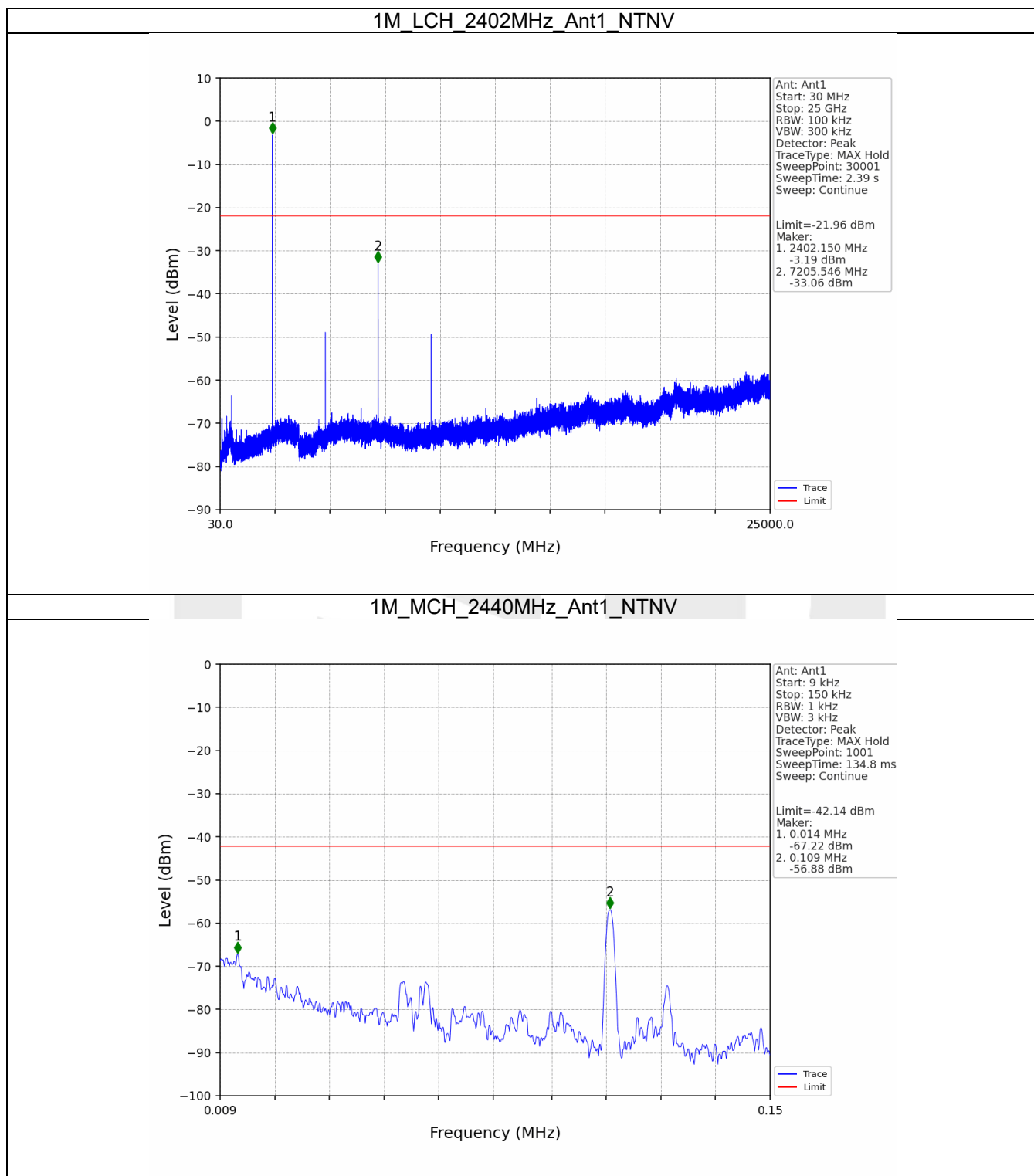


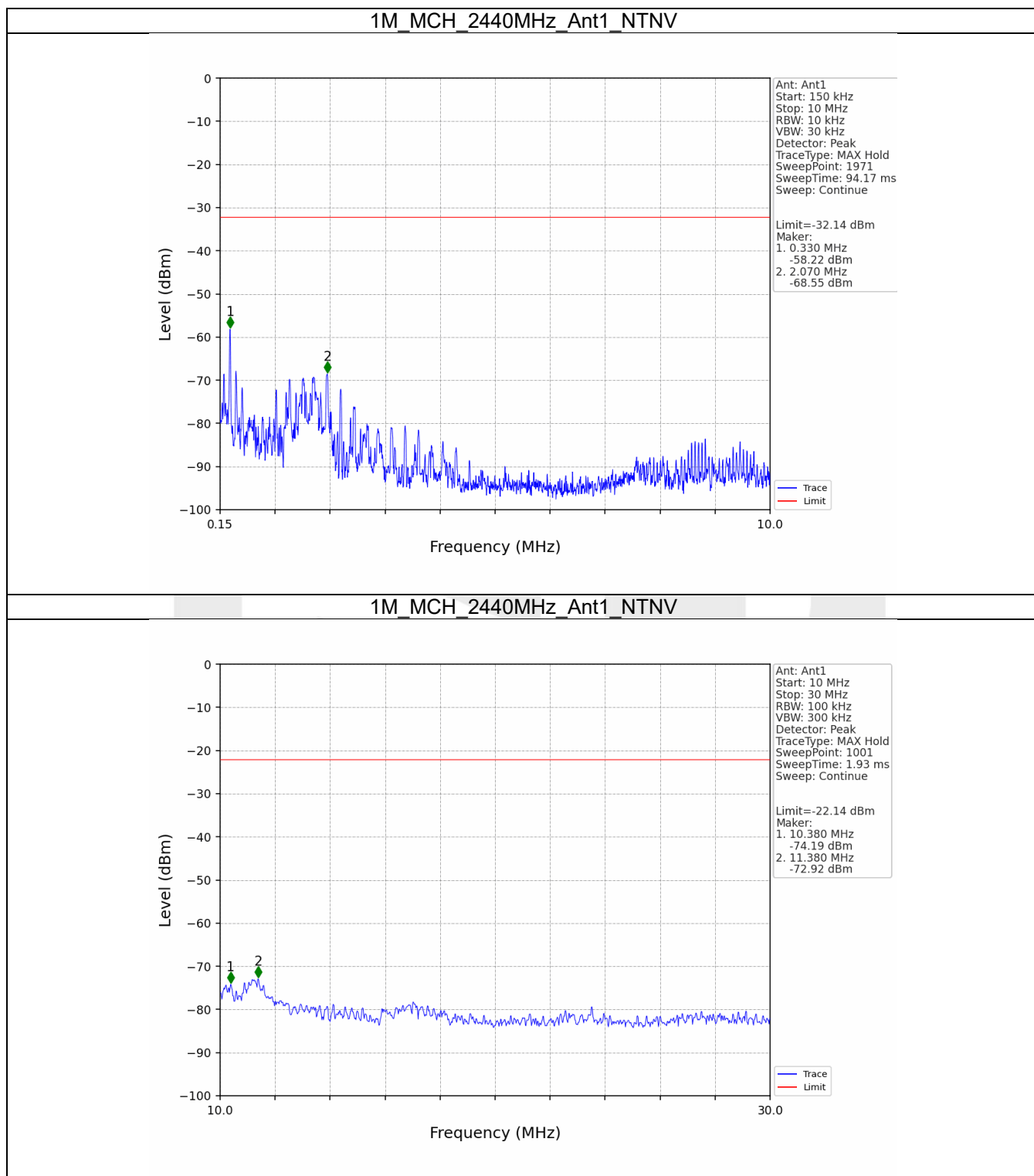


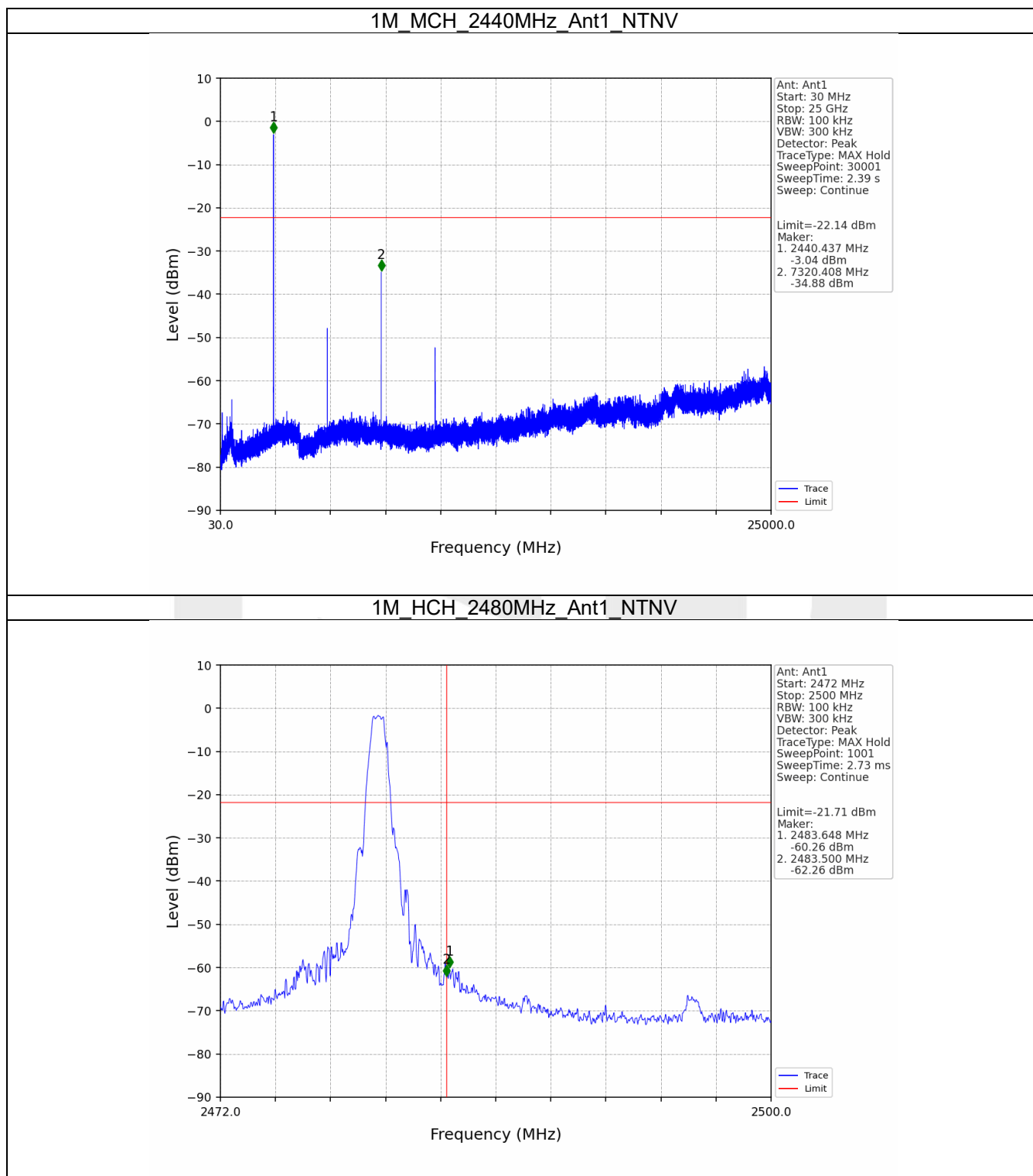
5.2.2 CSE

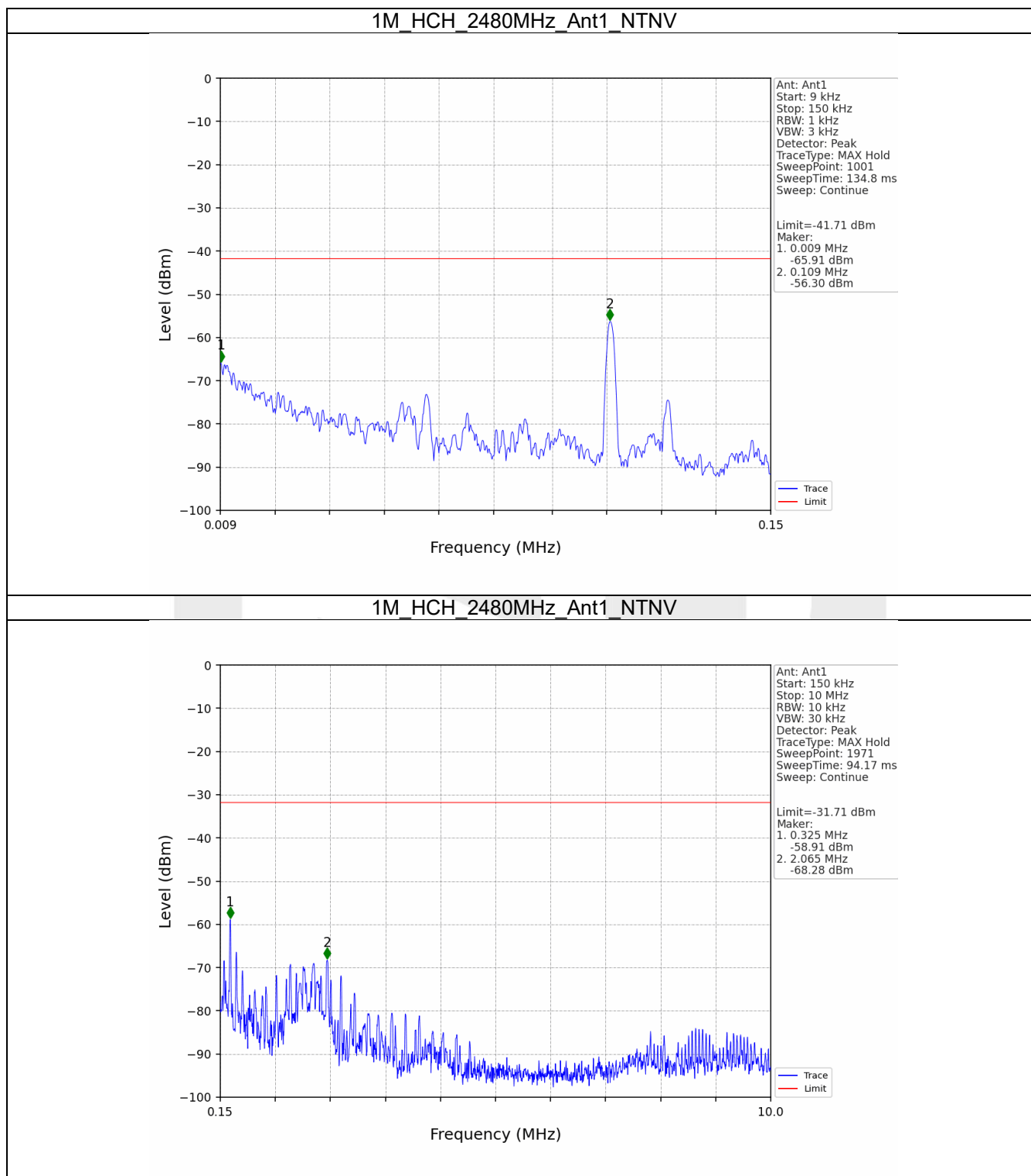


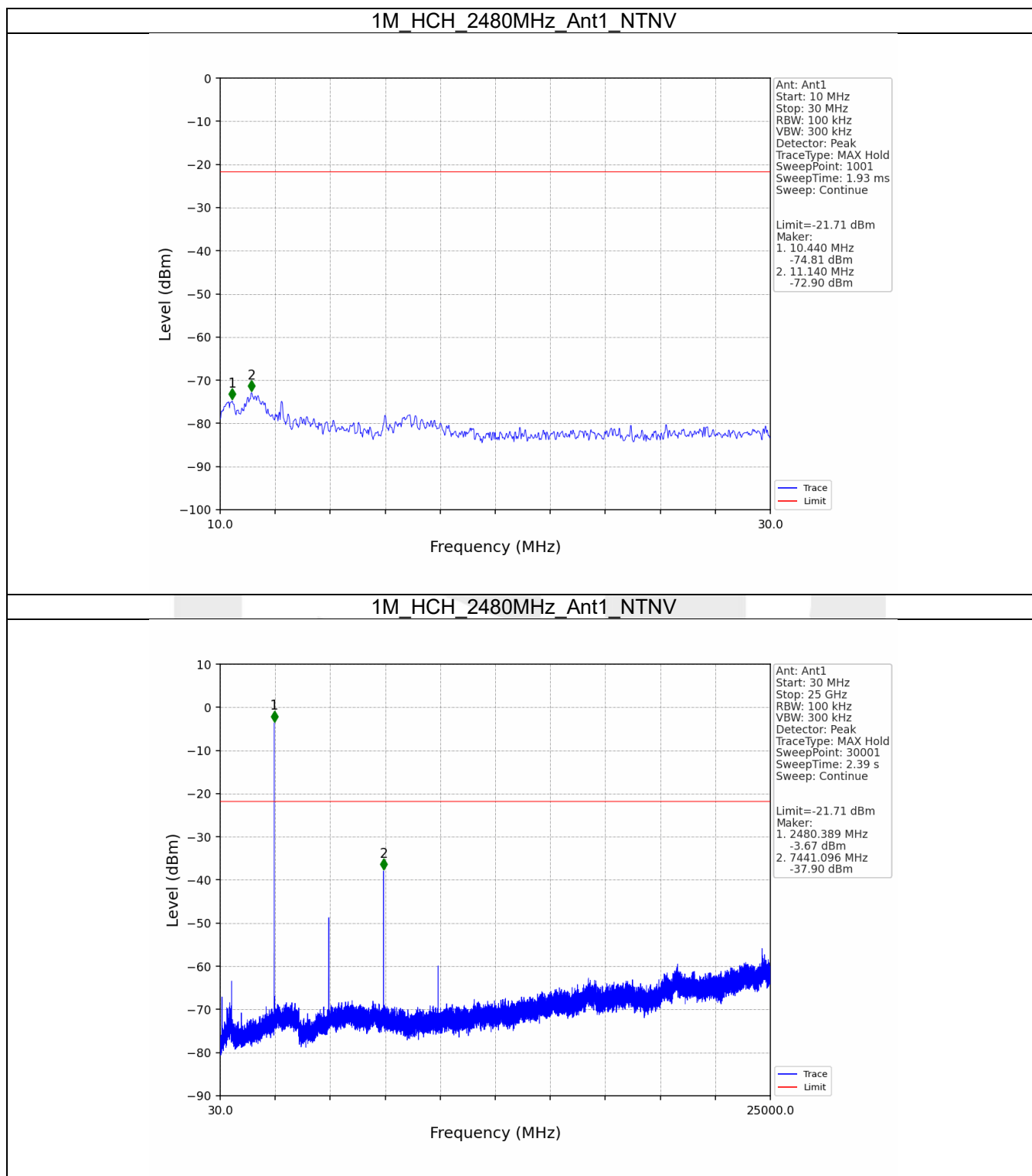


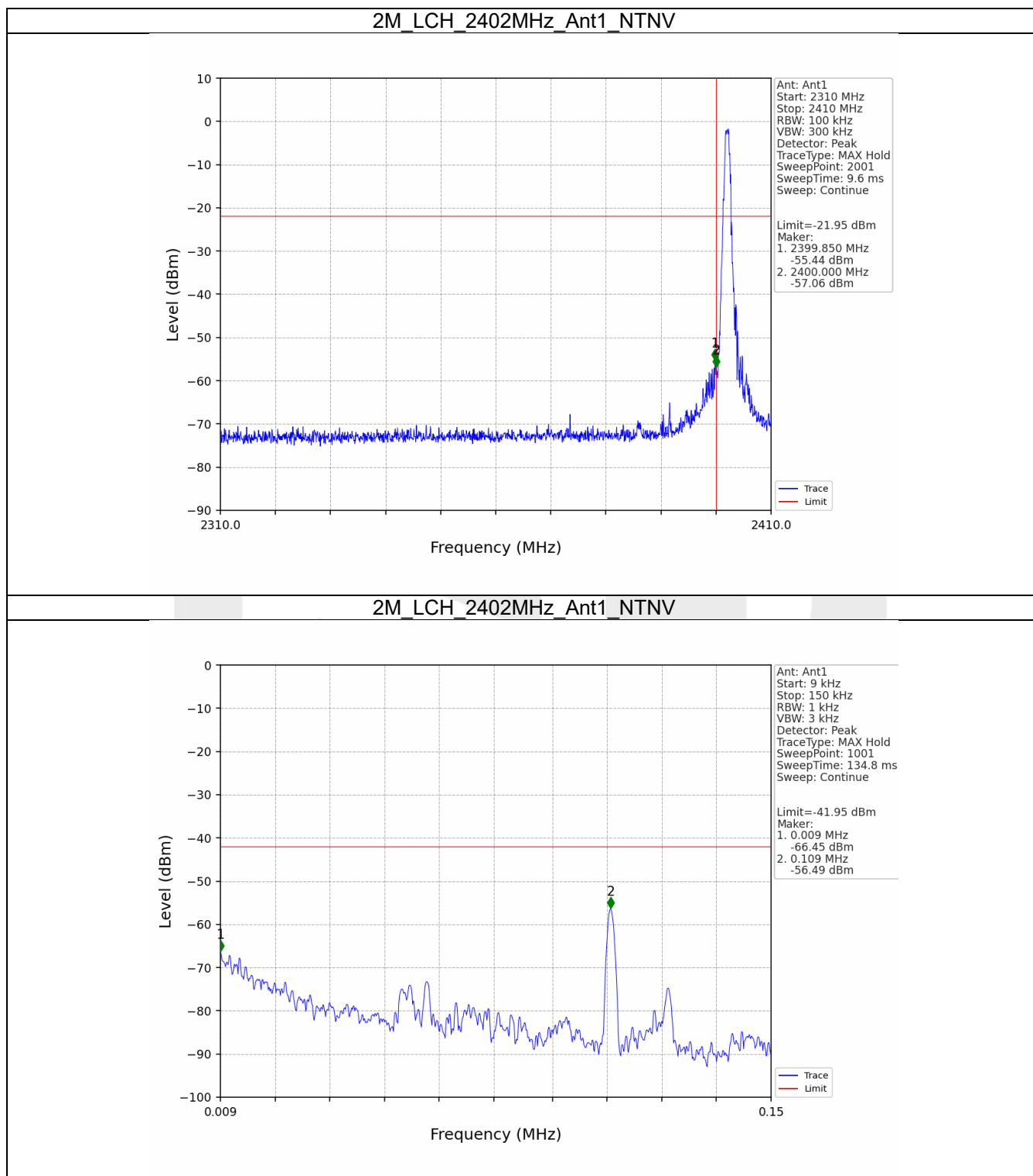


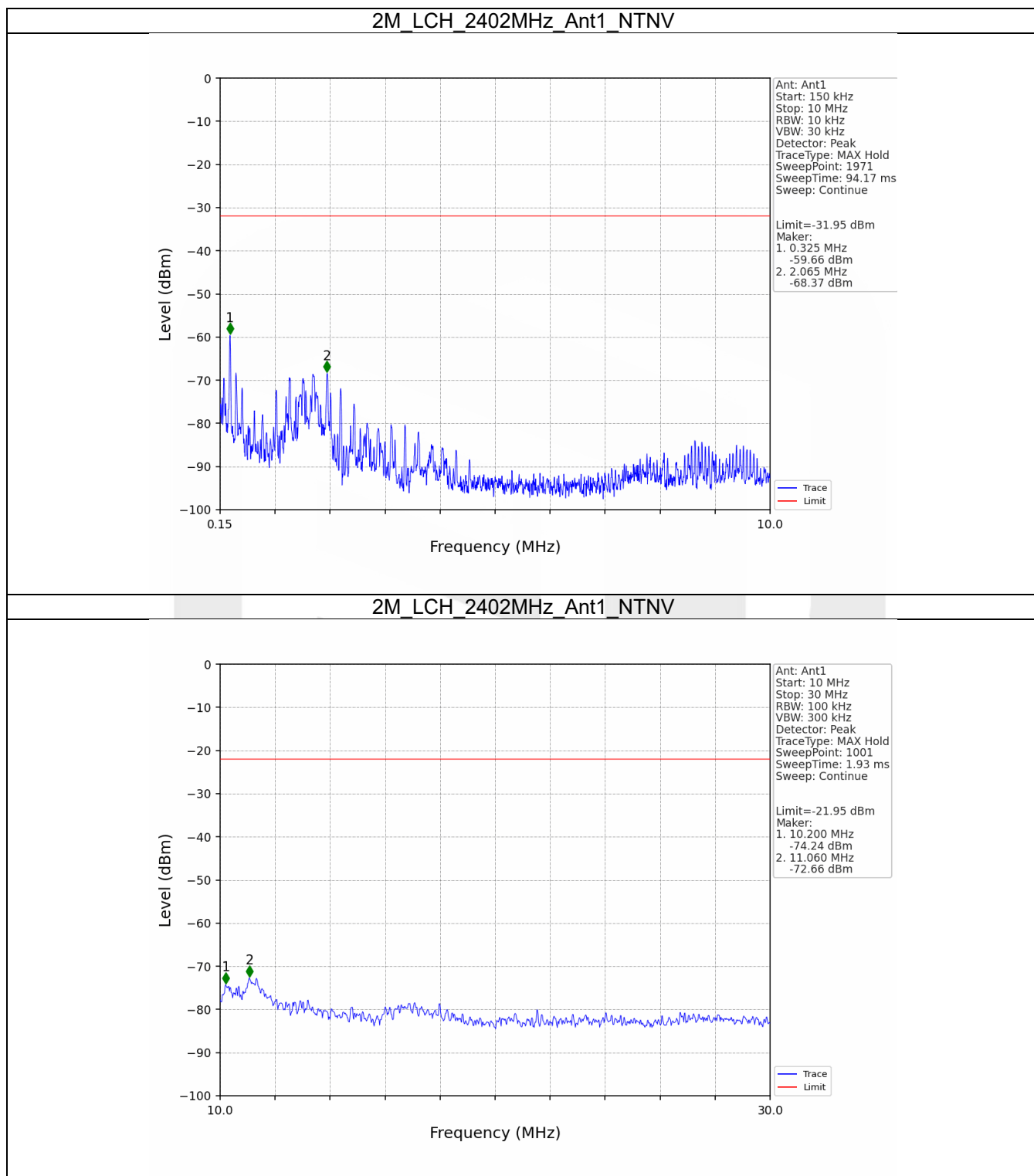


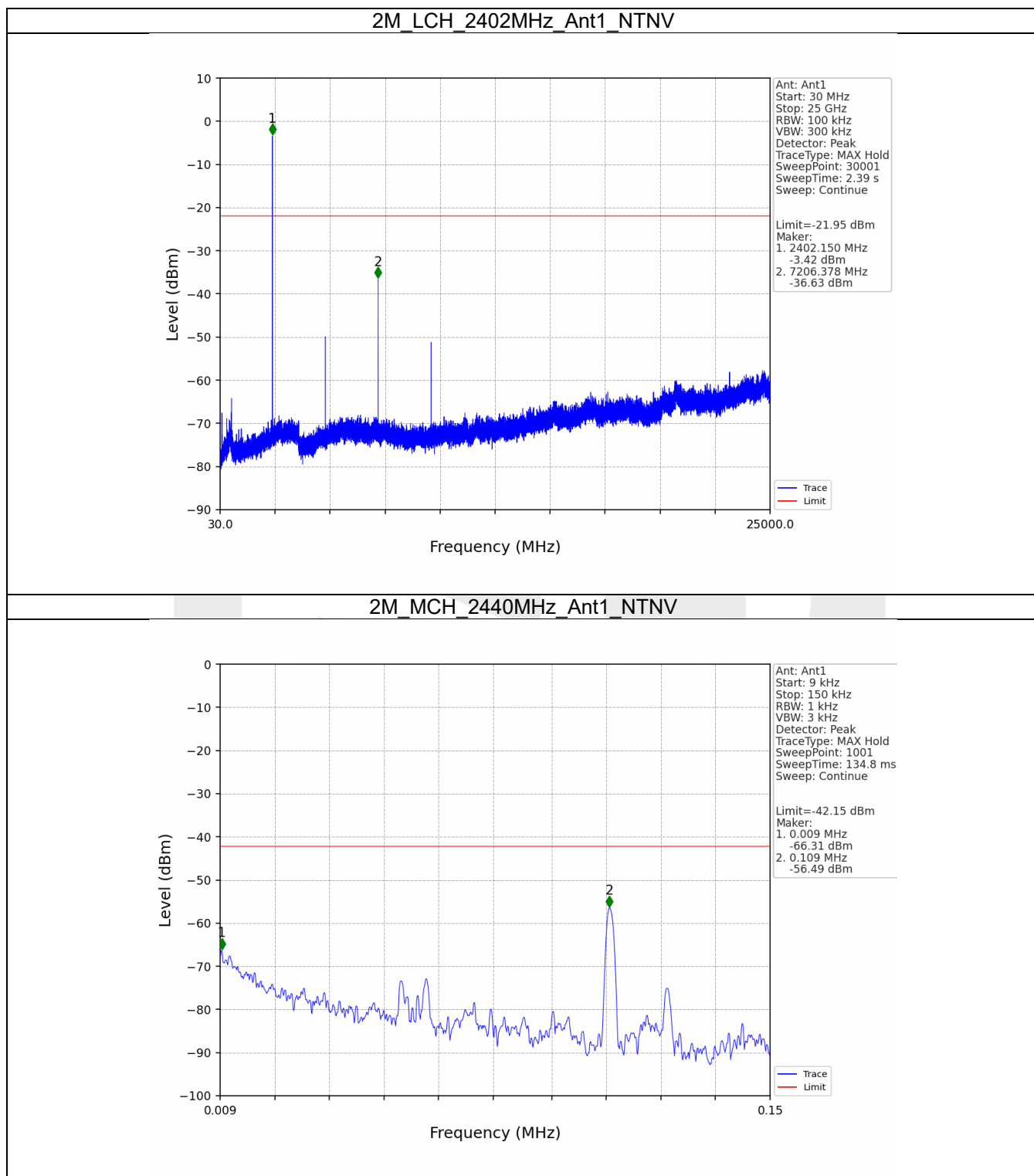


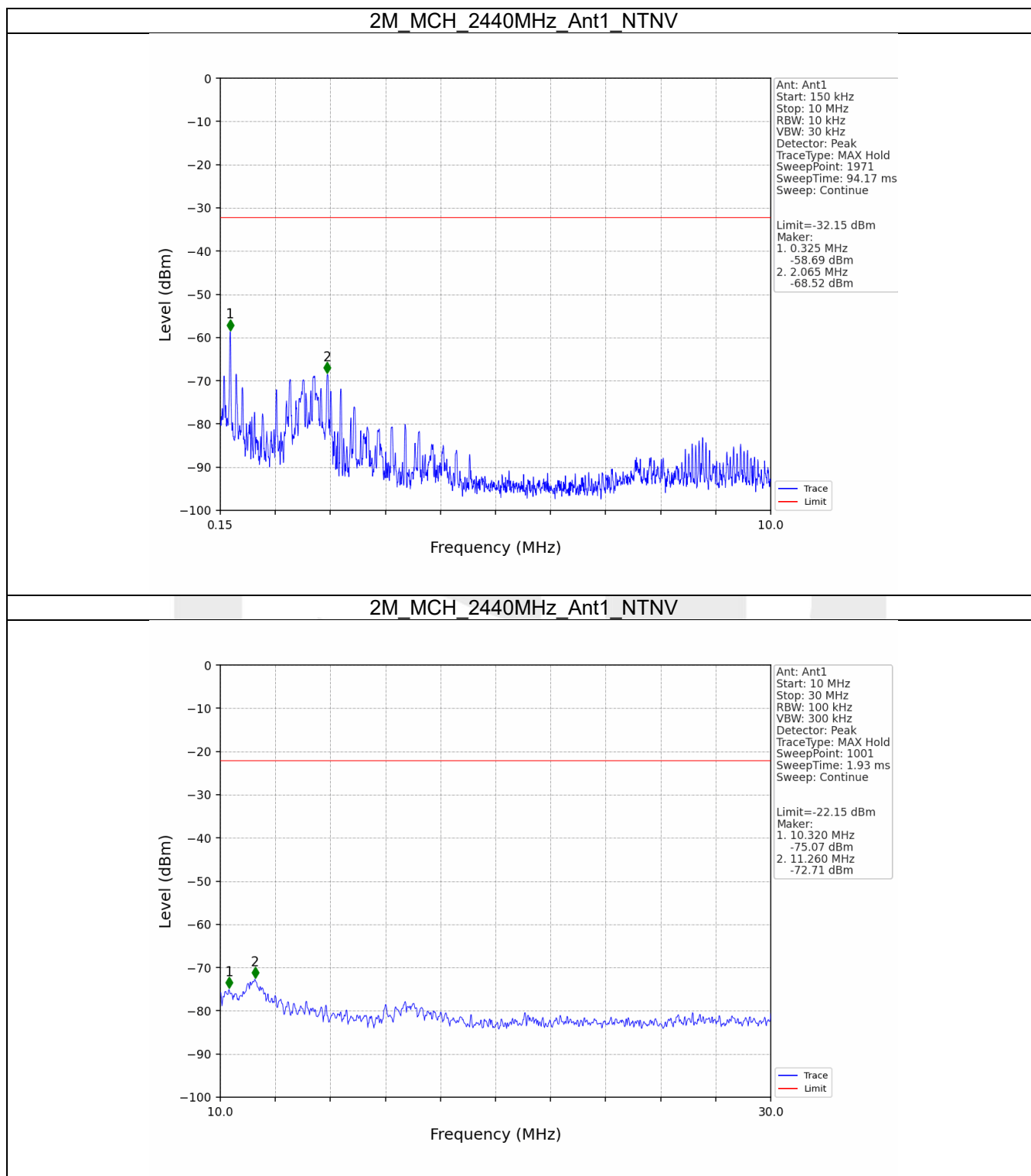


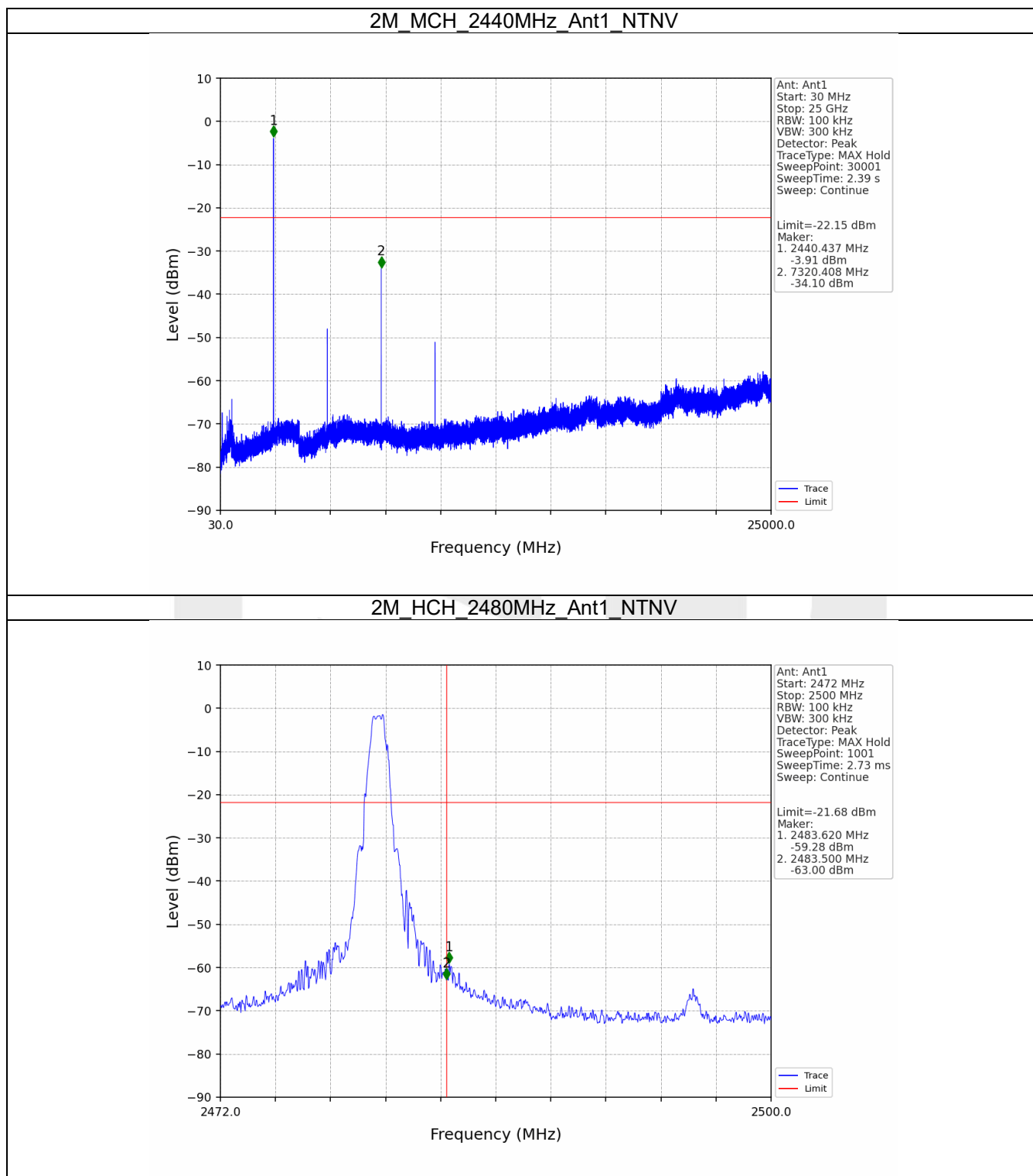


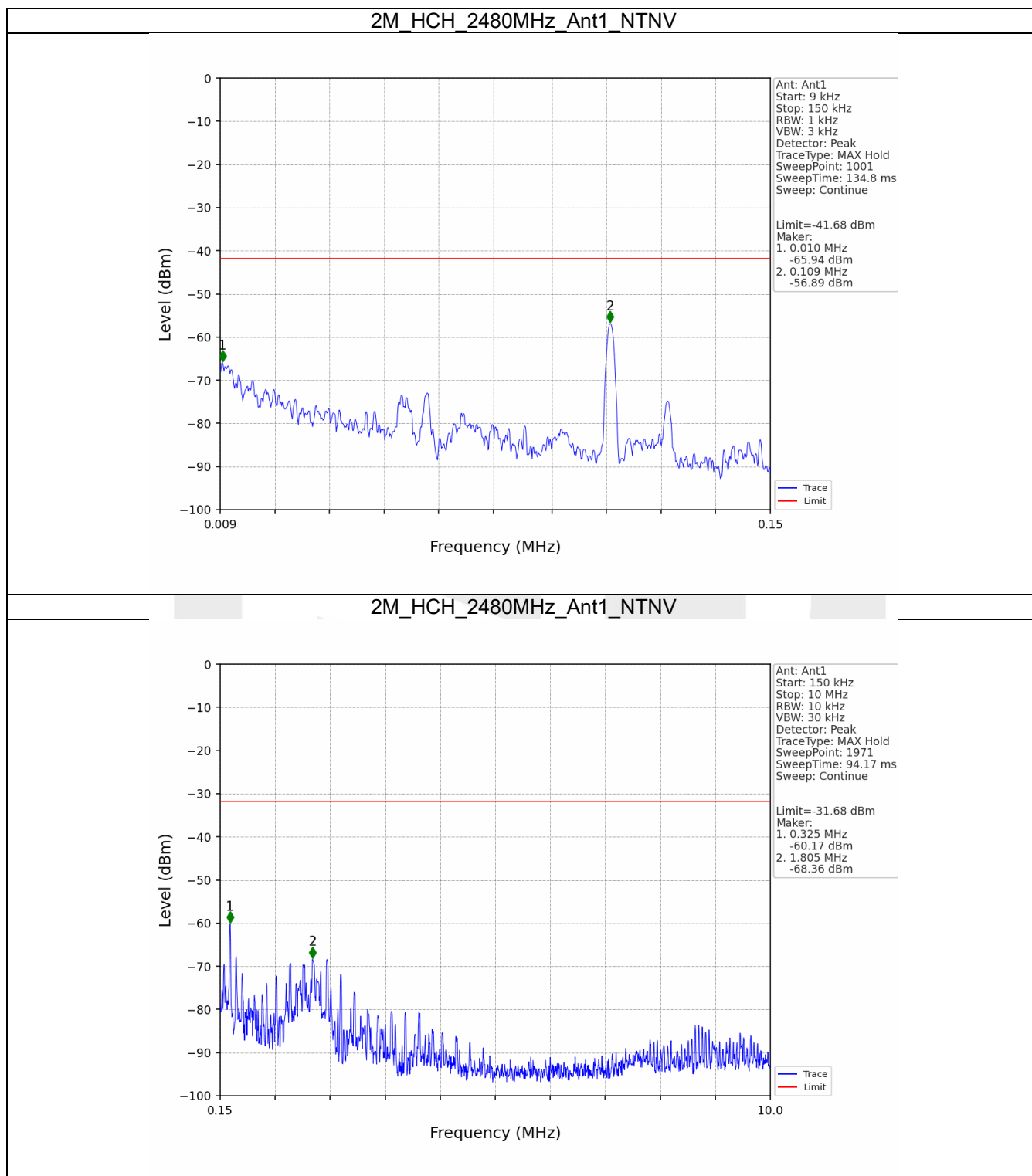


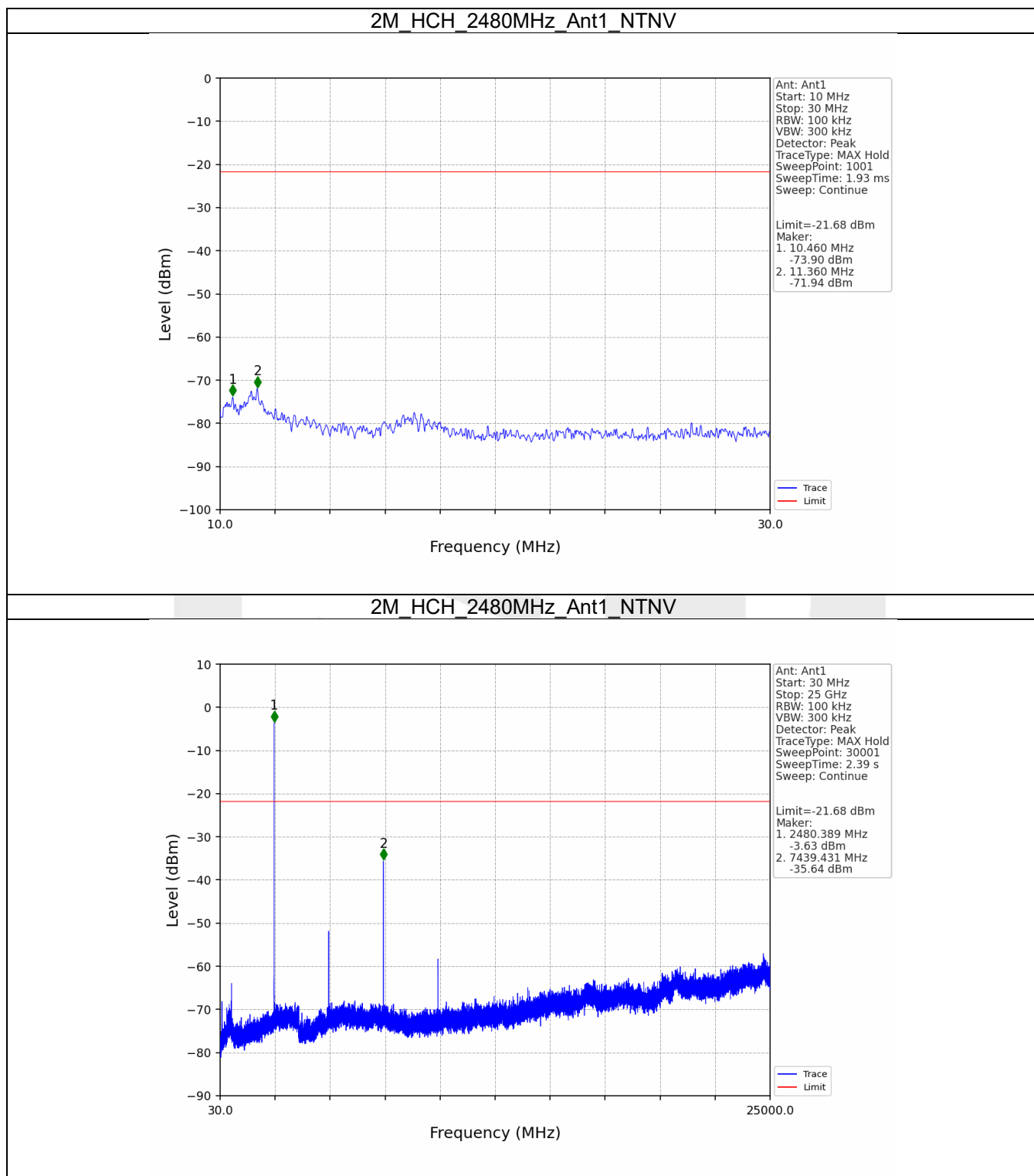












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