

ANNEX D TEST DATA

For

Project No.:	8232EU010806W
Client:	Guangzhou Boju Information Technology Co.,Ltd
Product Description:	PWM Solar Charge Controller
Model No.:	P2430N
FCC ID:	2BBH5-P2430N
Technology:	Bluetooth BLE
Test Engineer:	<i>Mikoy zhu</i>
Test Date:	2024-08-12

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
Unwanted Emissions In Restricted Frequency Bands	Pass

1. Duty Cycle

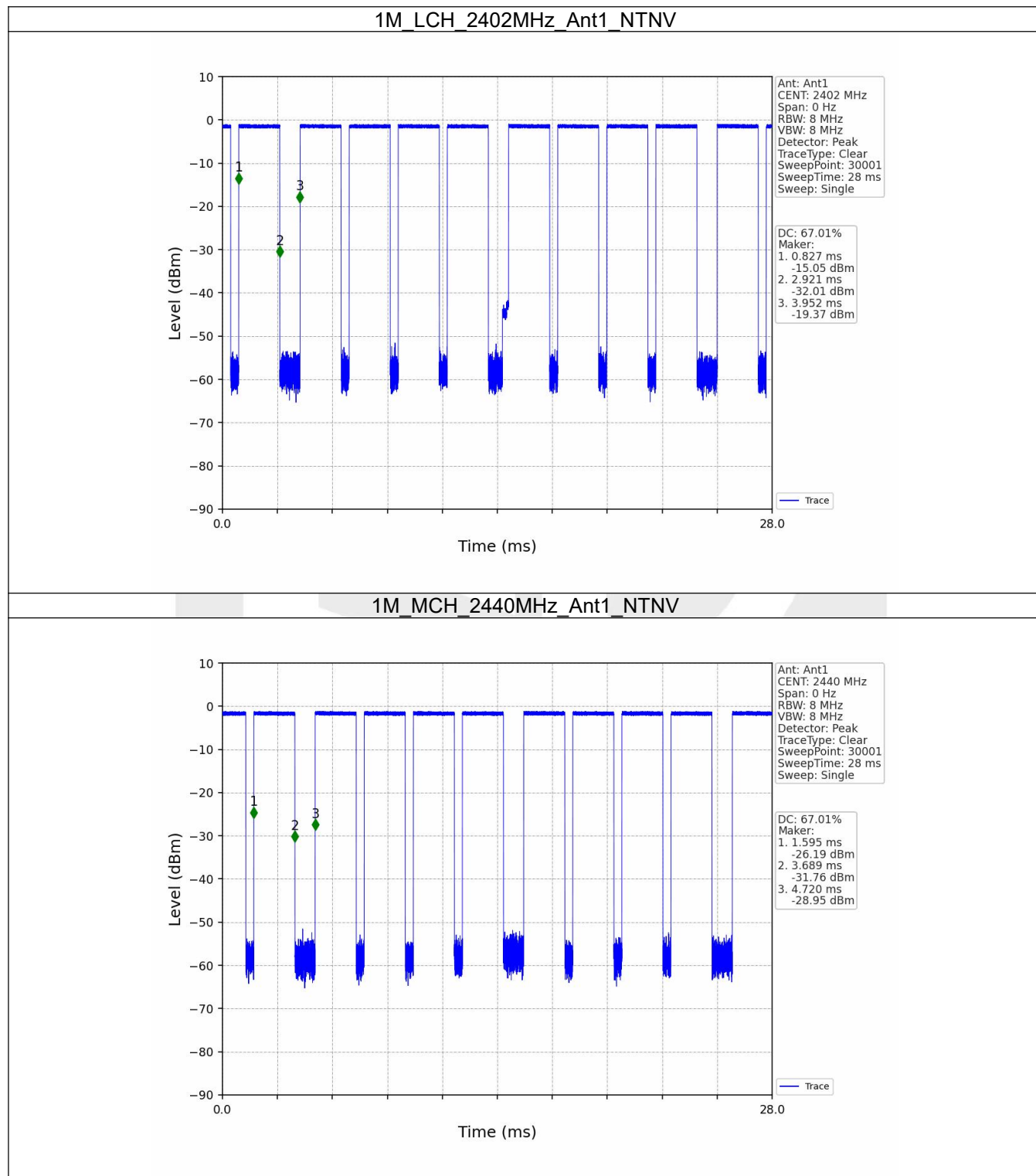
1.1 Test Result

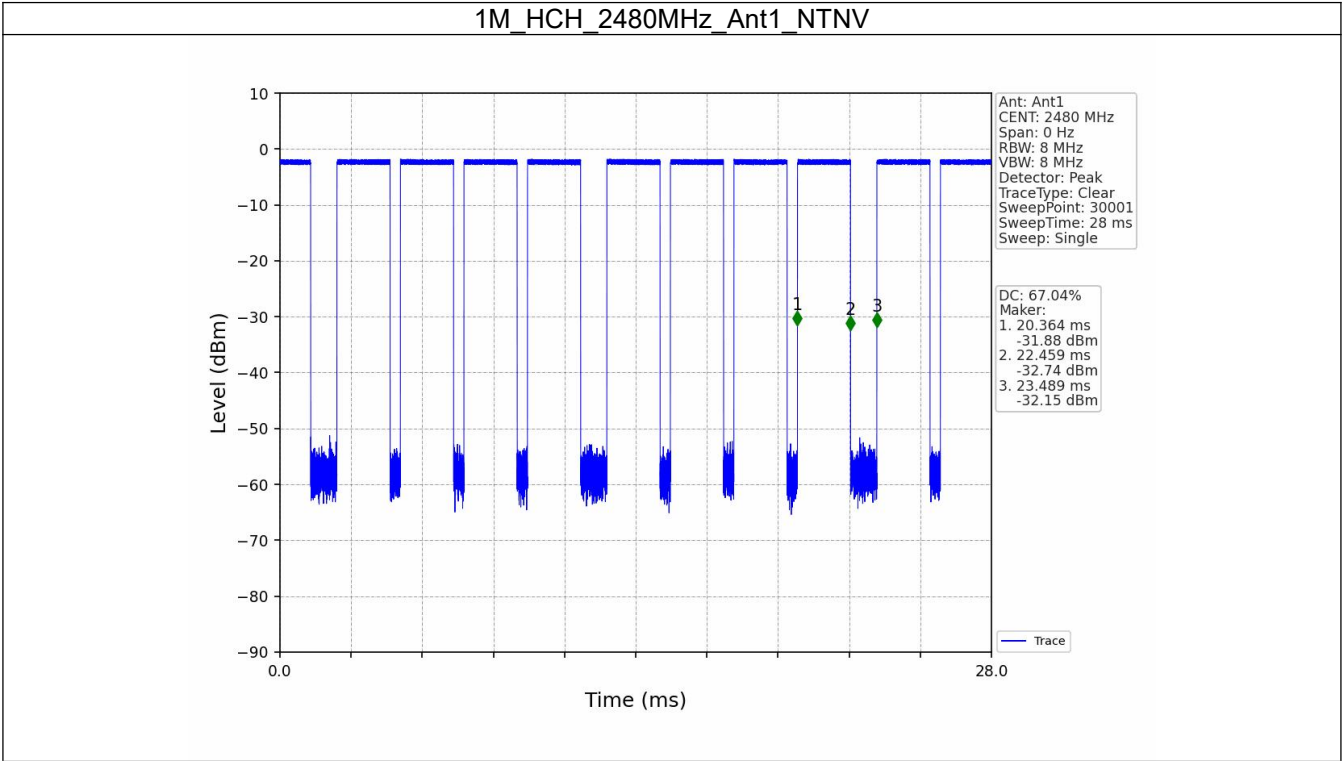
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.094	3.125	67.01	1.74	18.57
		2440	2.094	3.125	67.01	1.74	16.78
		2480	2.095	3.125	67.04	1.74	16.78

1.2 Test Graph

1.2.1 Ant1





2. Bandwidth

2.1 Test Result

2.1.1 OBW

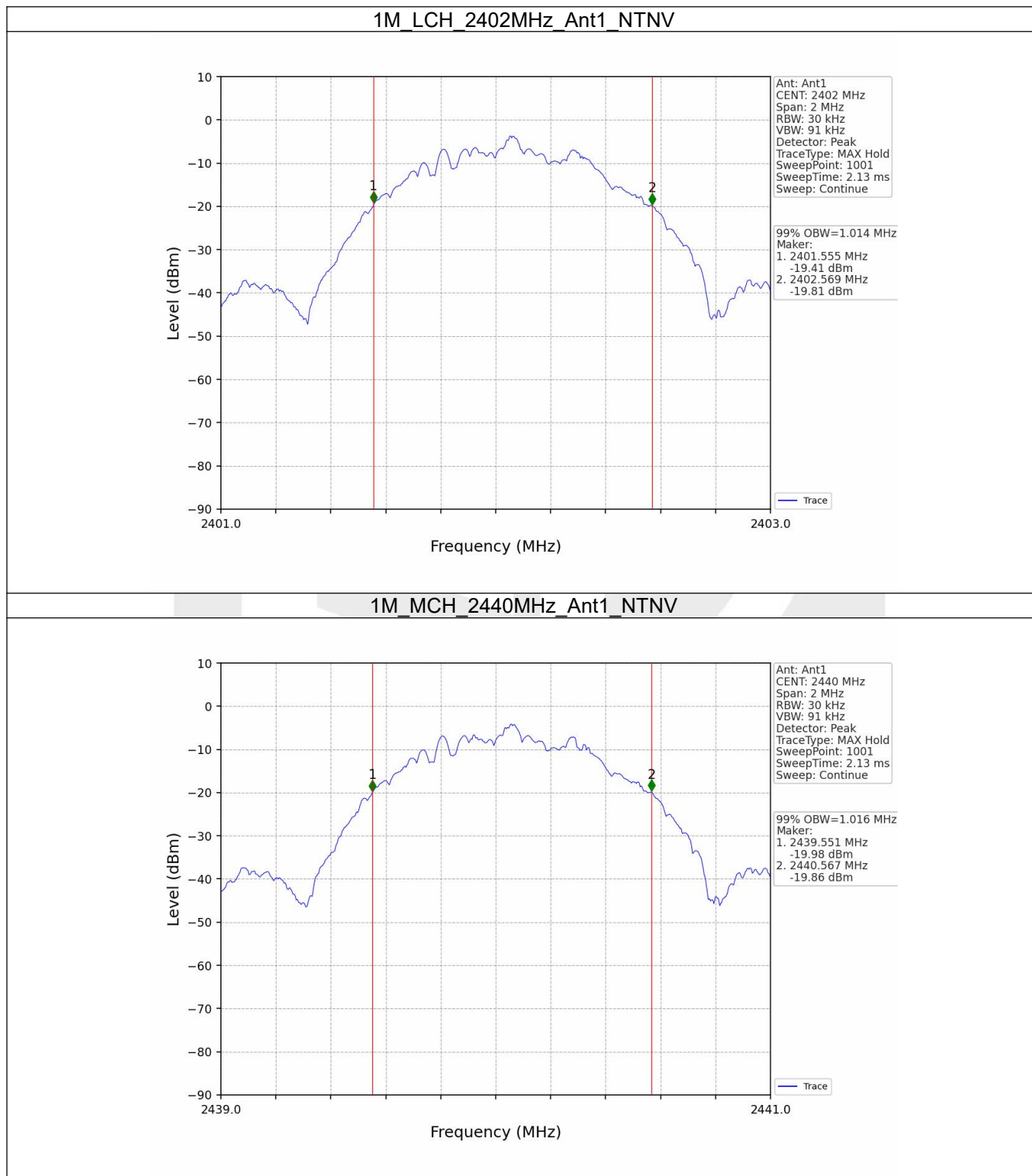
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.014	/	Pass
		2440	1	1.016	/	Pass
		2480	1	1.016	/	Pass

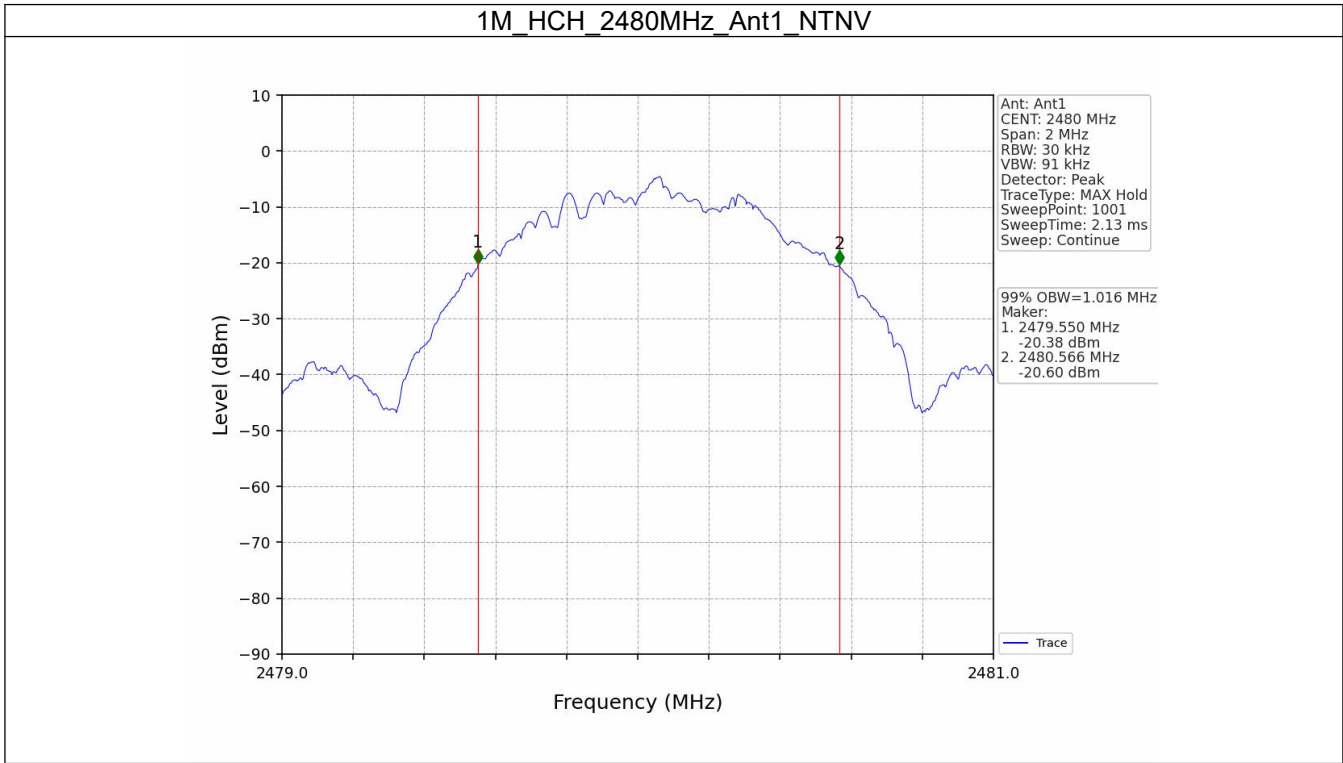
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.643	≥ 0.5	Pass
		2440	1	0.639	≥ 0.5	Pass
		2480	1	0.637	≥ 0.5	Pass

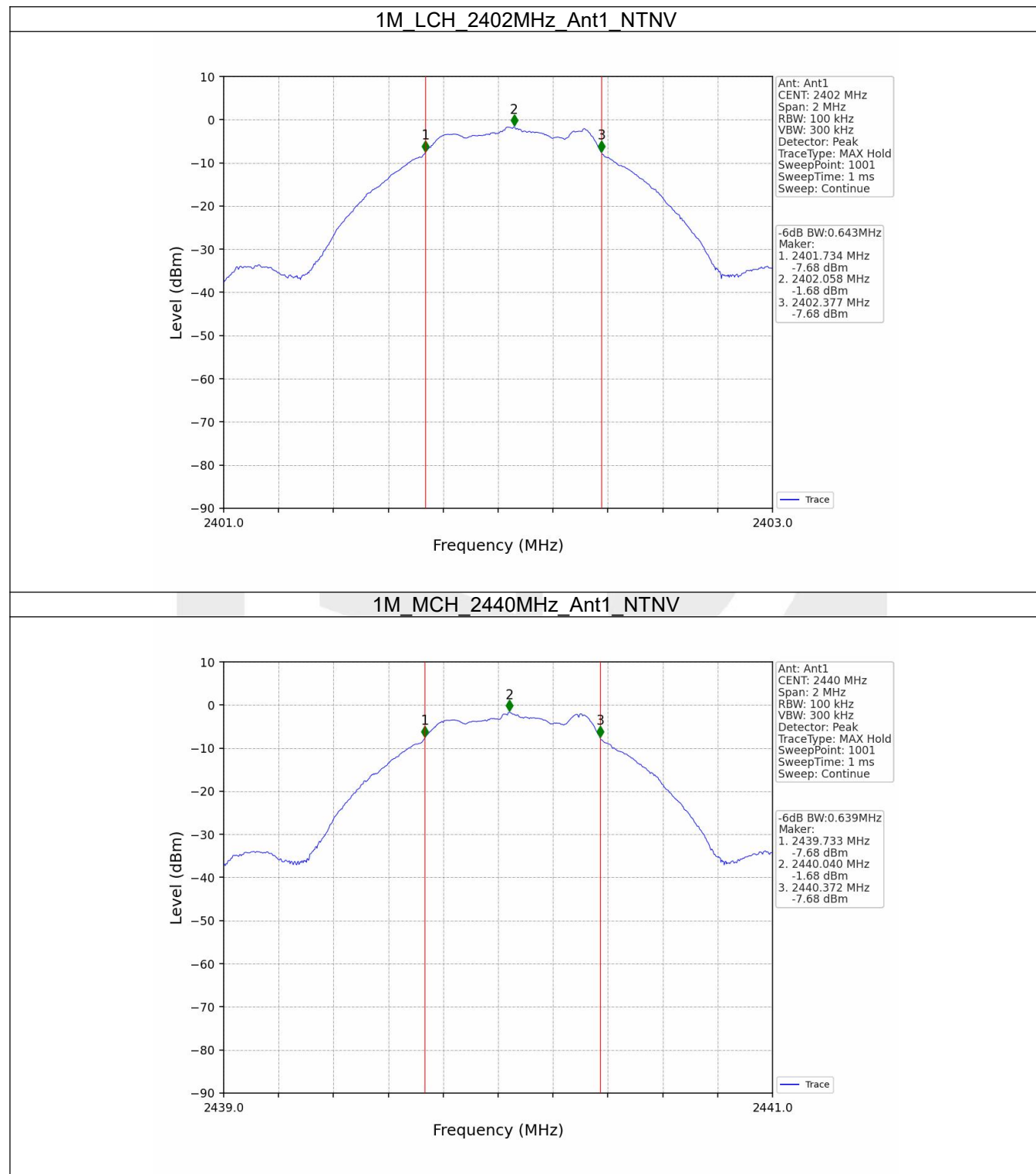
2.2 Test Graph

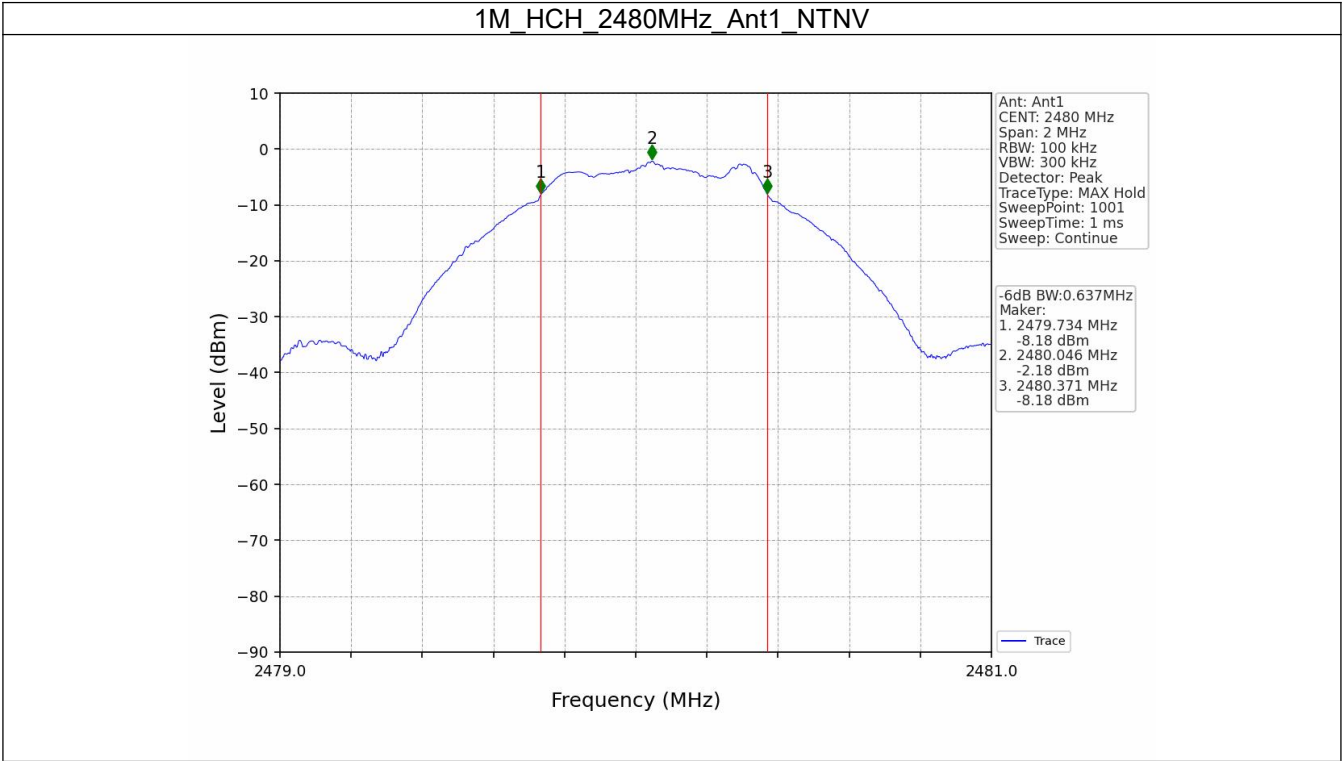
2.2.1 OBW





2.2.2 6dB BW





3. Maximum Conducted Output Power

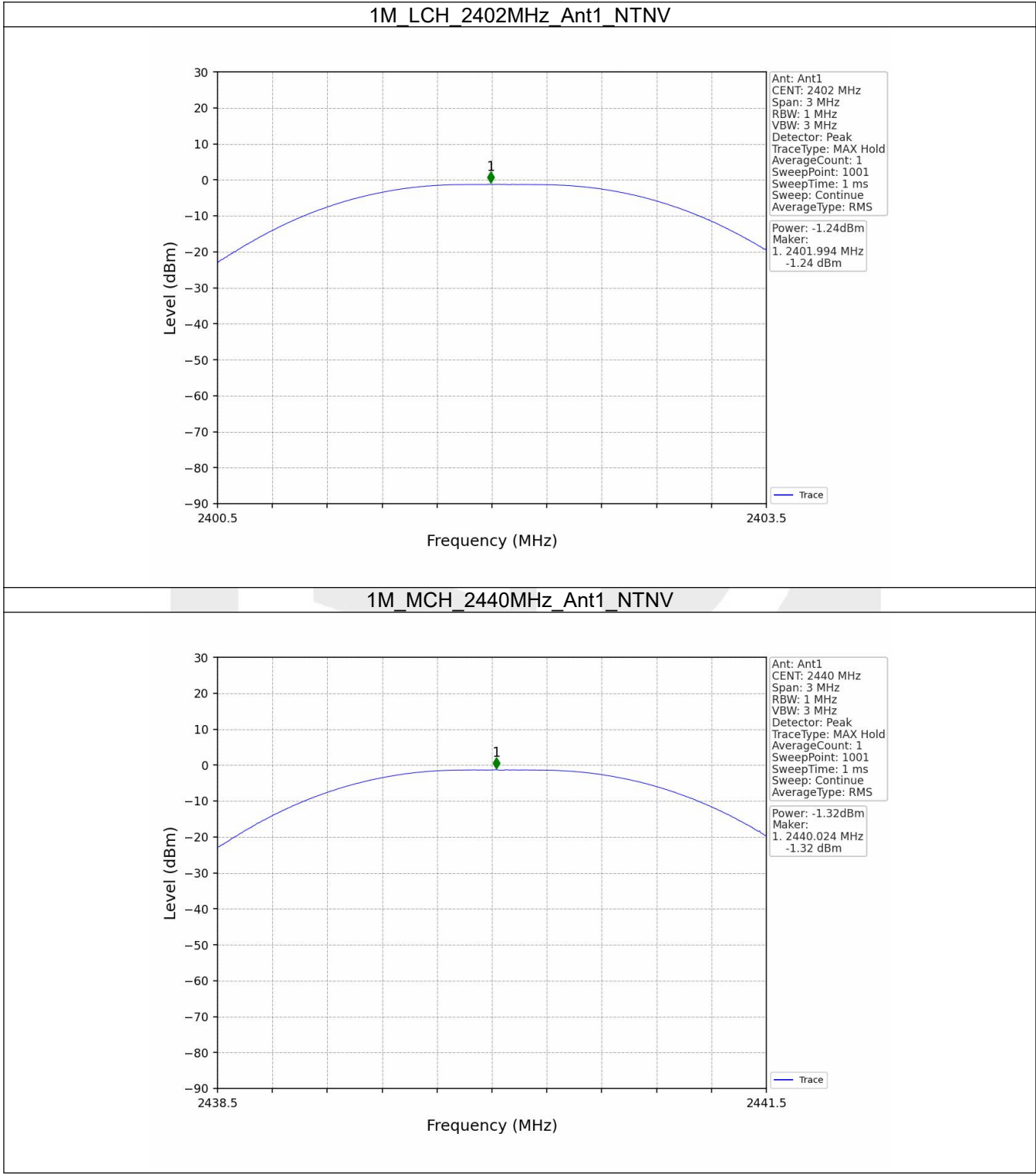
3.1 Test Result

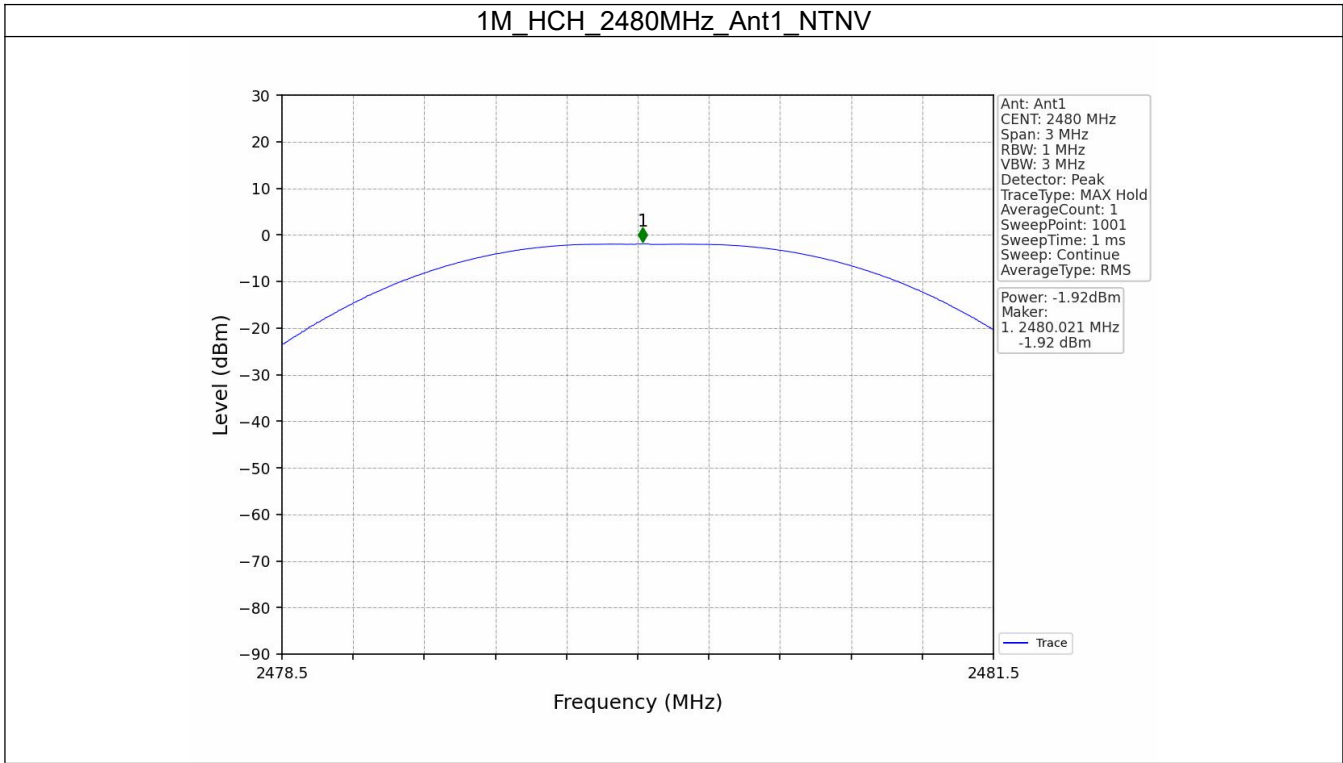
3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-1.24	≤ 30	Pass
		2440	-1.32	≤ 30	Pass
		2480	-1.92	≤ 30	Pass

3.2 Test Graph

3.2.1 Power



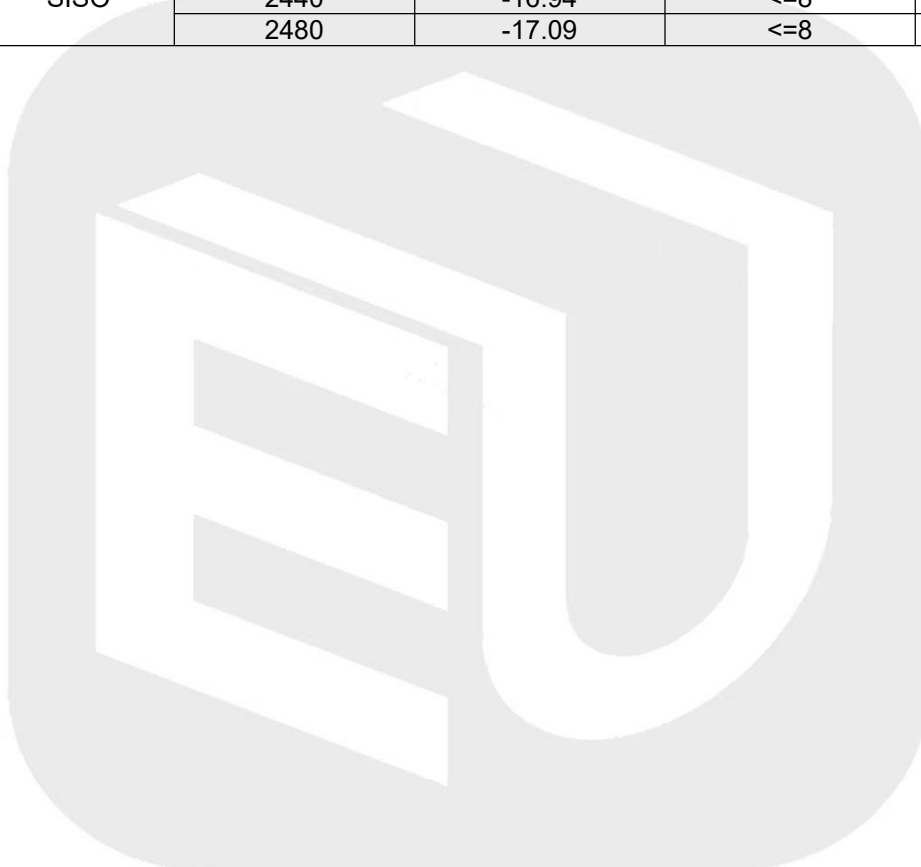


4. Maximum Power Spectral Density

4.1 Test Result

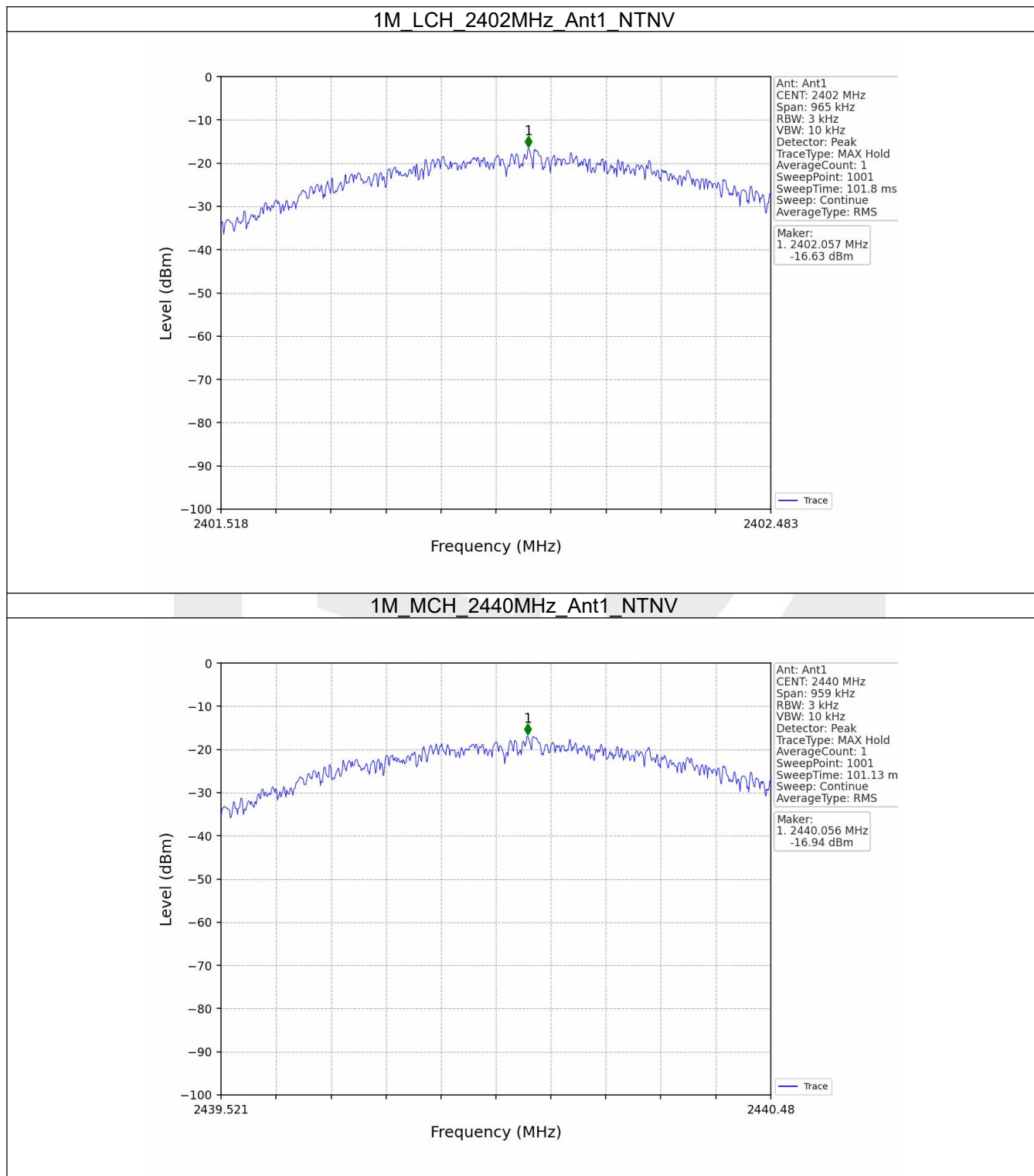
4.1.1 PSD

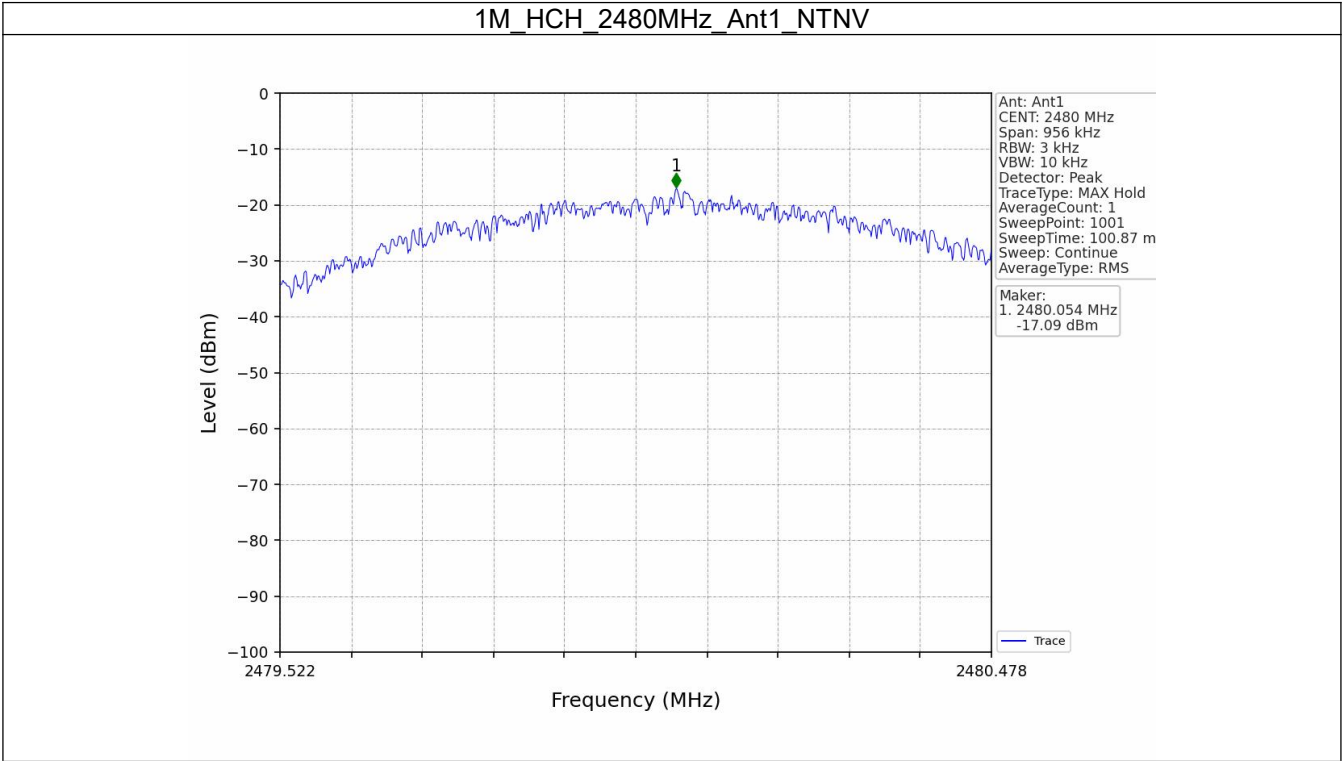
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-16.63	<=8	Pass
		2440	-16.94	<=8	Pass
		2480	-17.09	<=8	Pass



4.2 Test Graph

4.2.1 PSD





5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

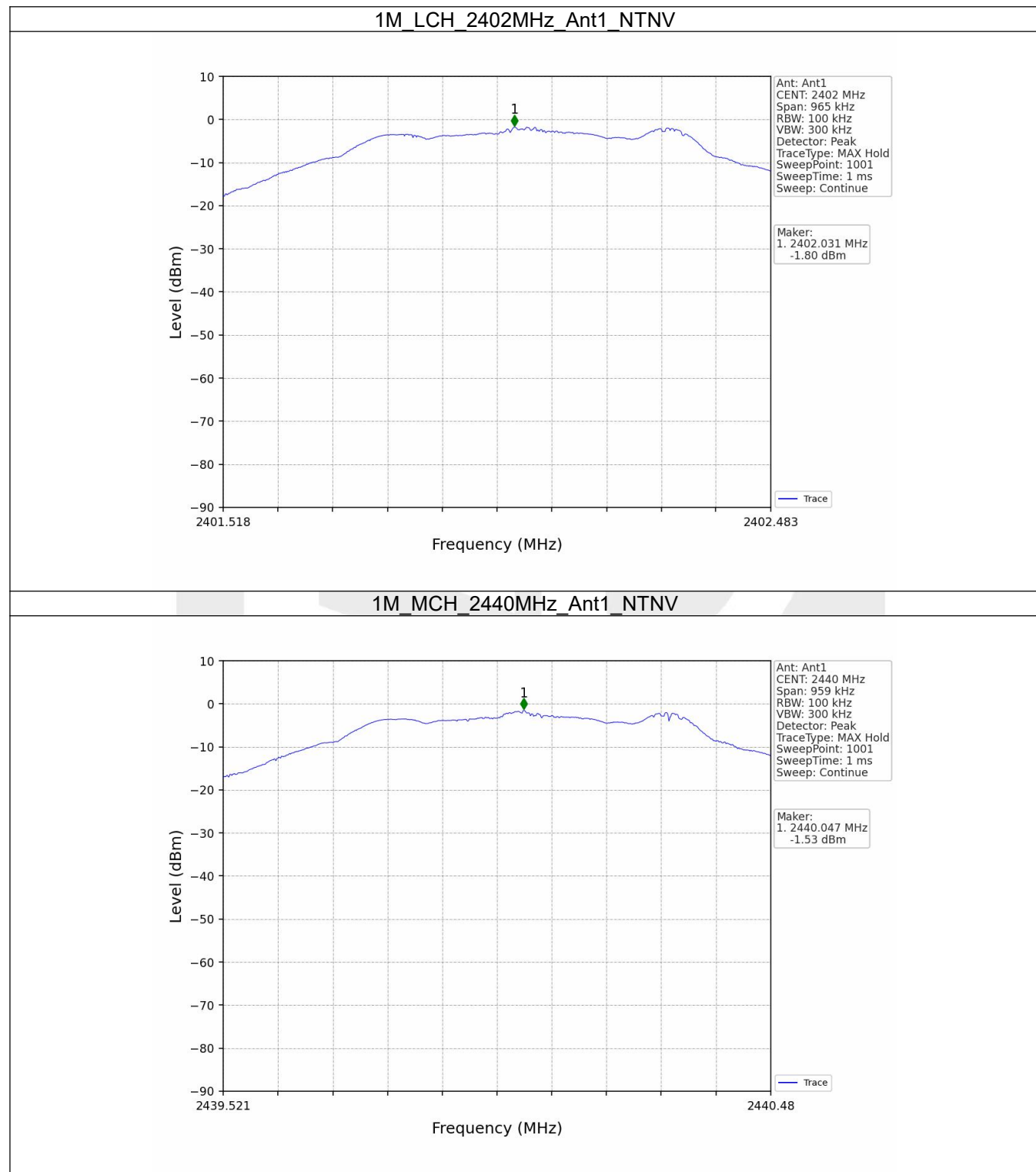
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-1.80
		2440	1	-1.53
		2480	1	-2.21
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.				

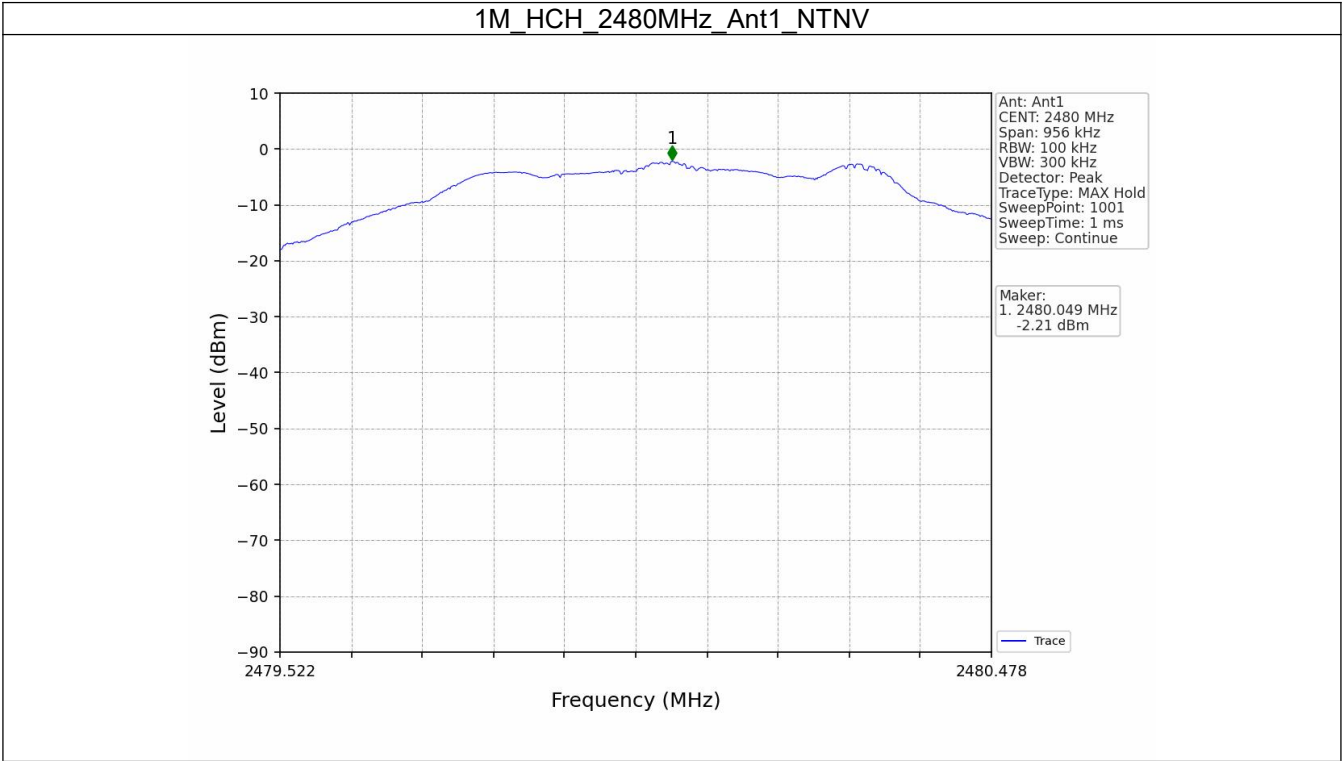
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-1.80	-21.80	Pass
		2440	1	-1.53	-21.53	Pass
		2480	1	-2.21	-22.21	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.						

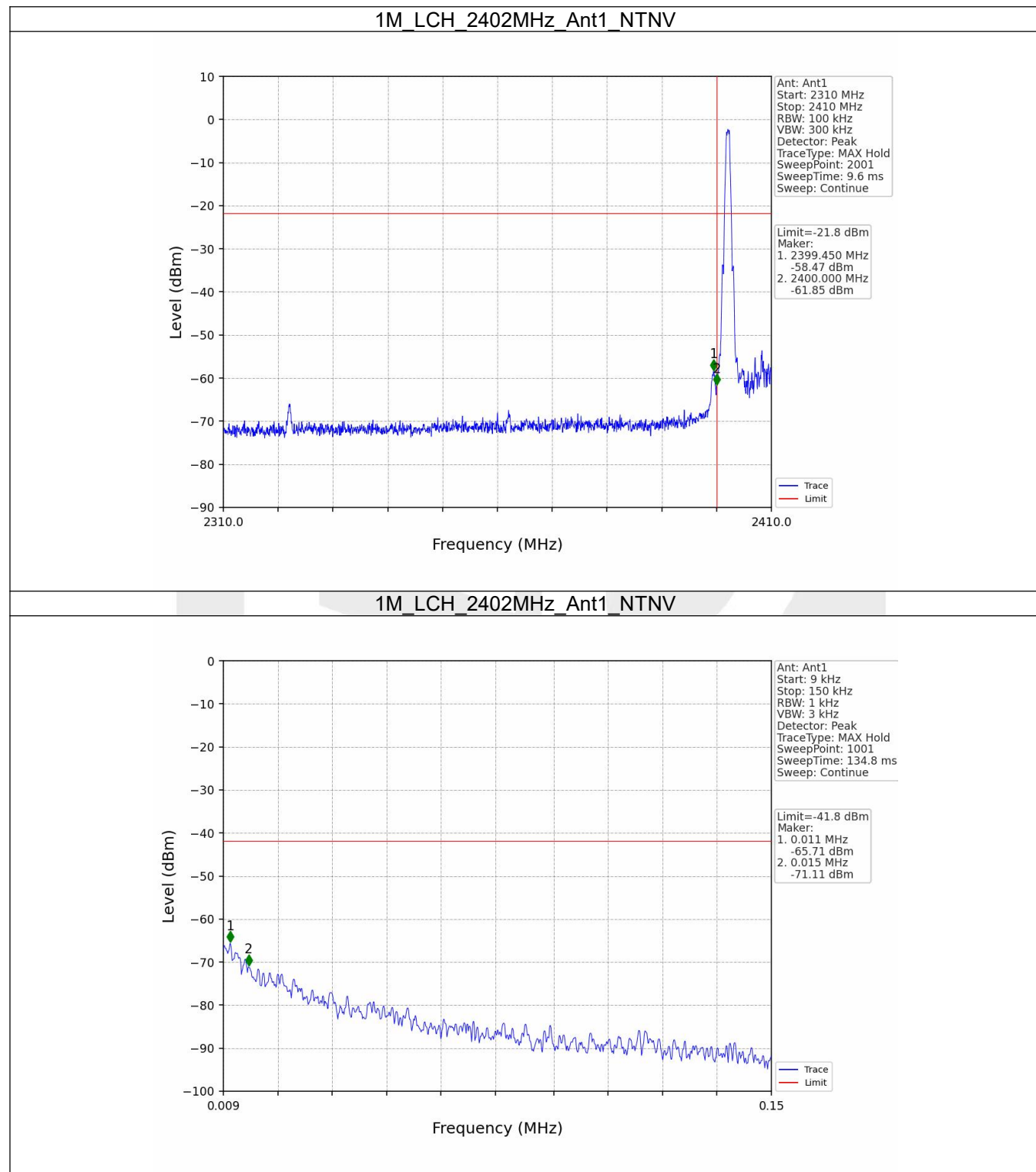
5.2 Test Graph

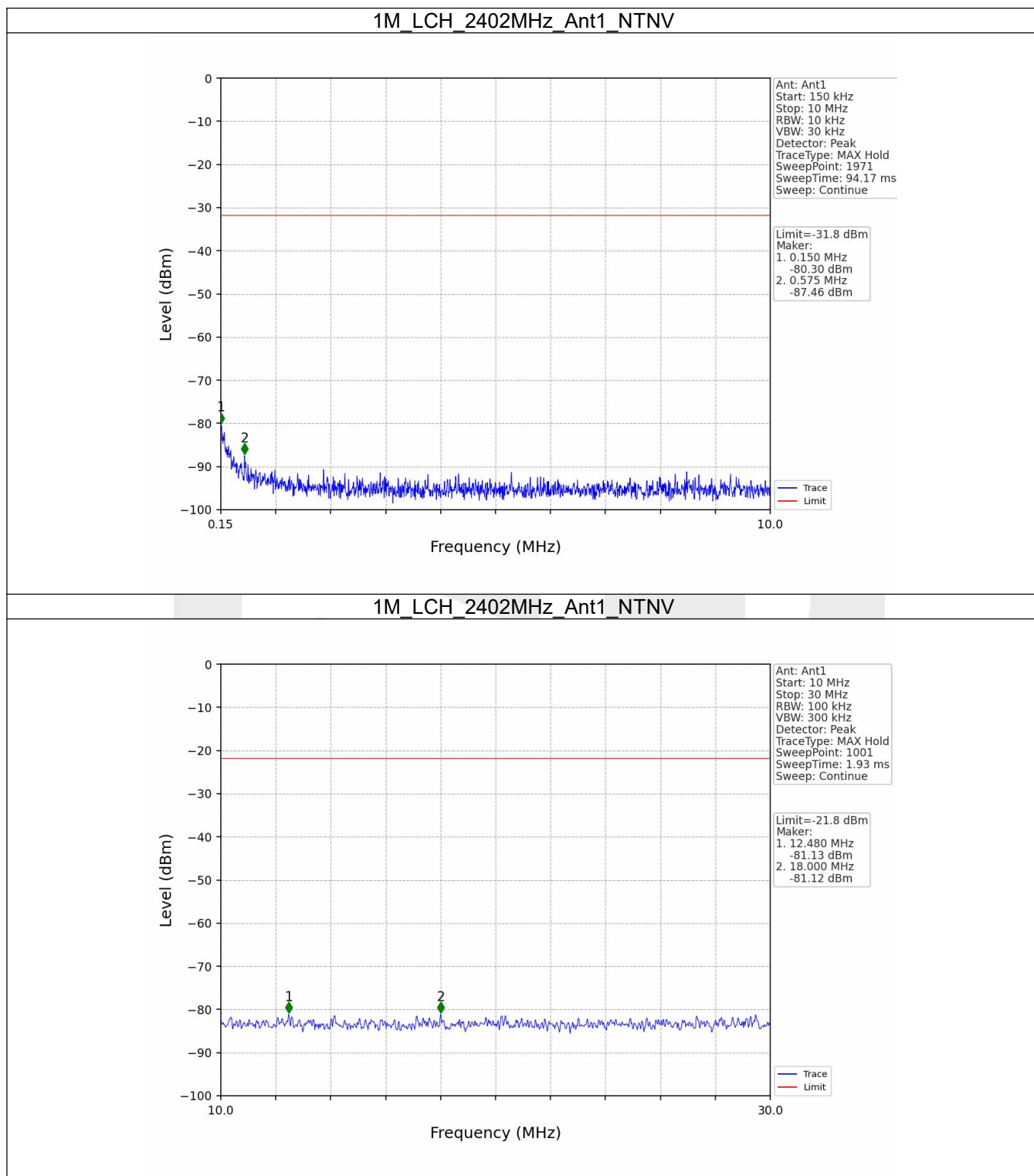
5.2.1 Ref

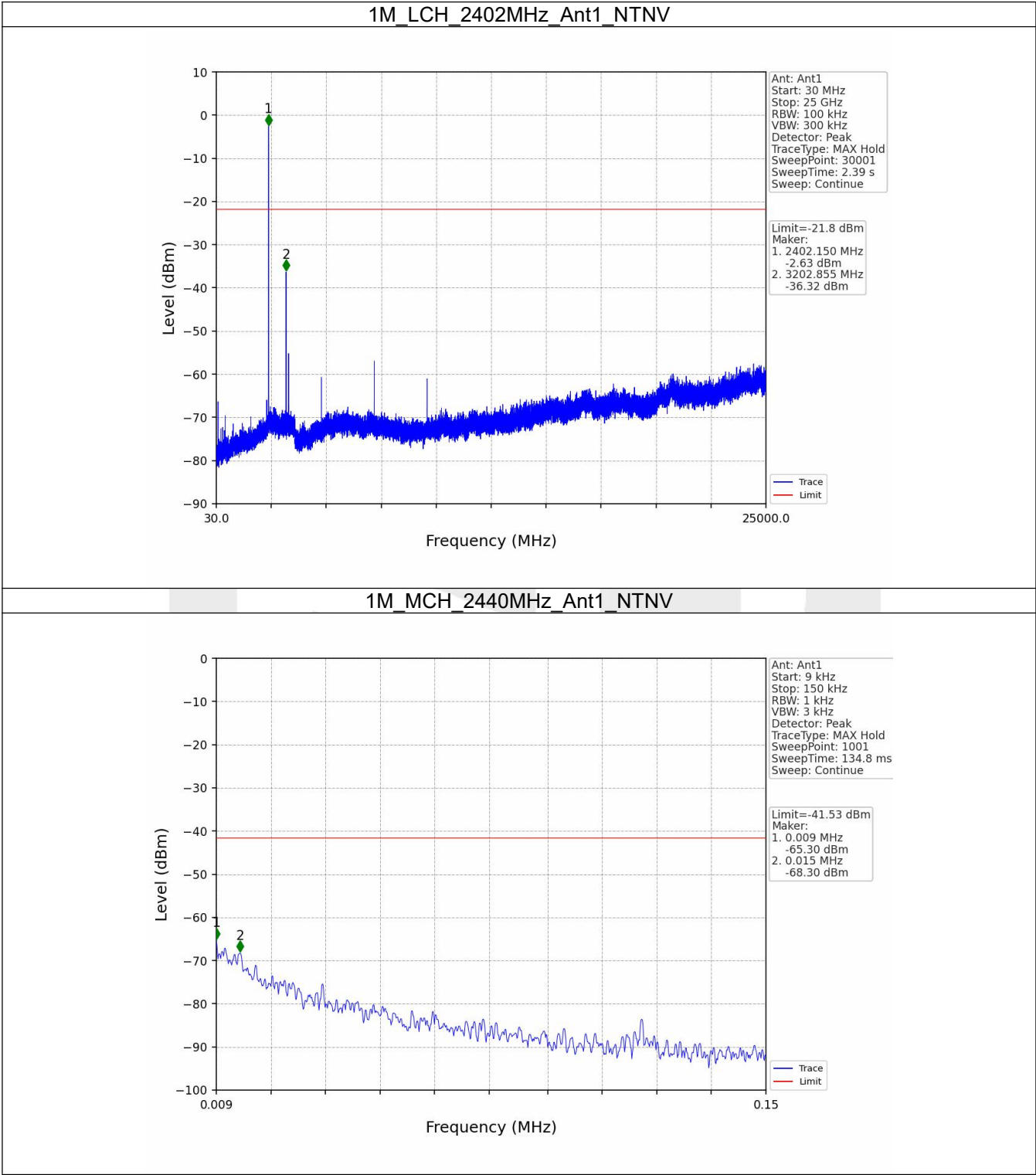


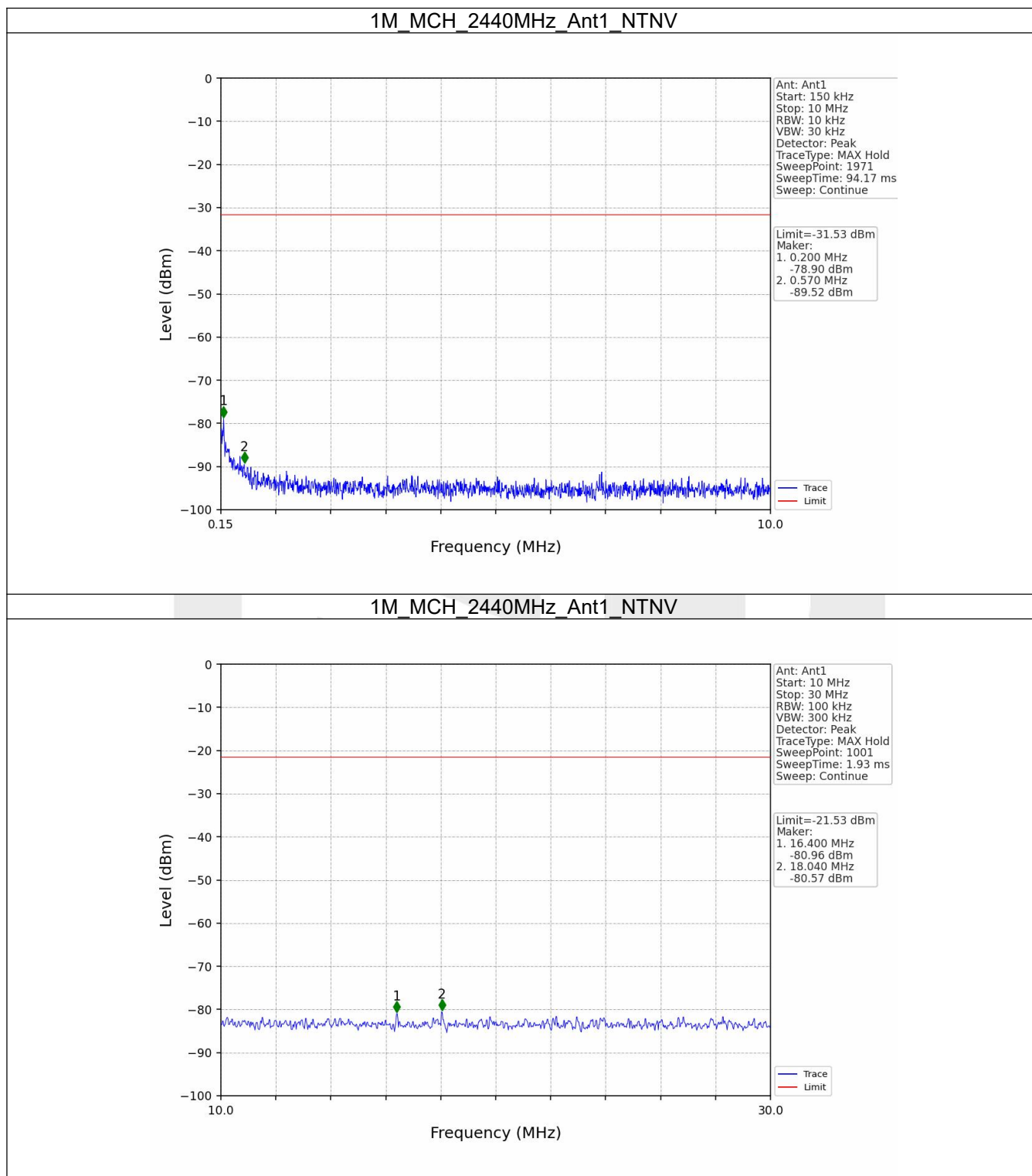


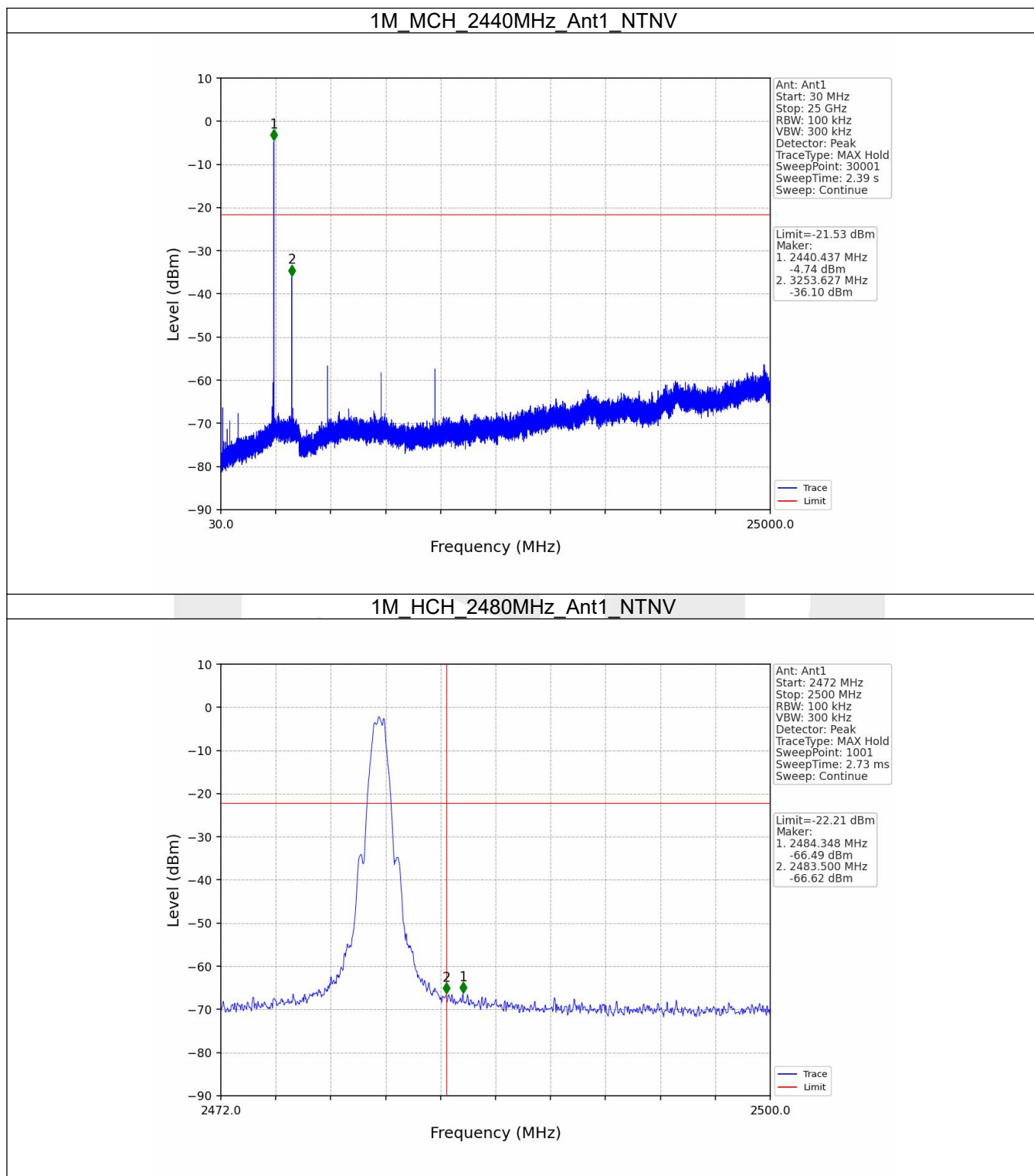
5.2.2 CSE

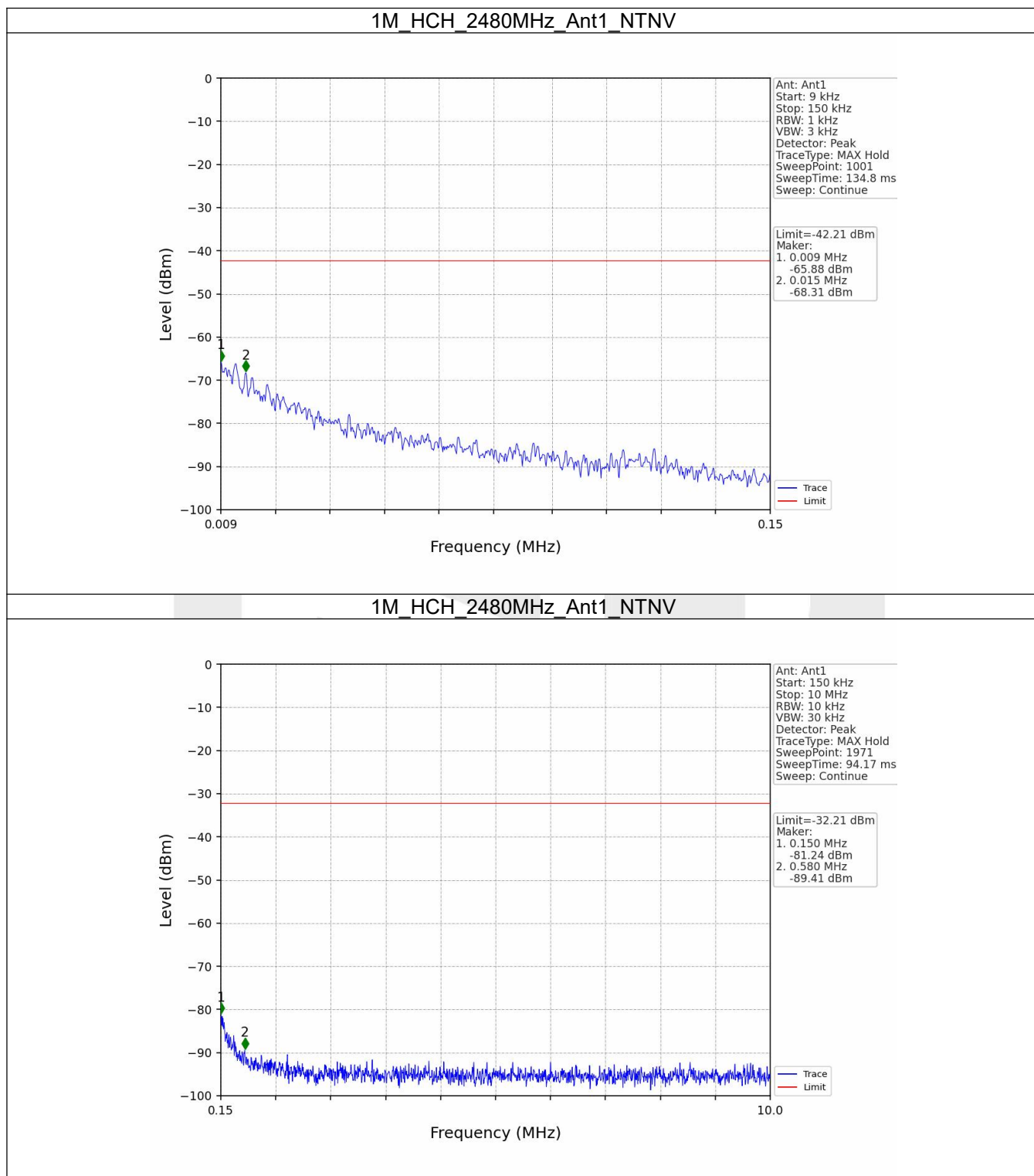


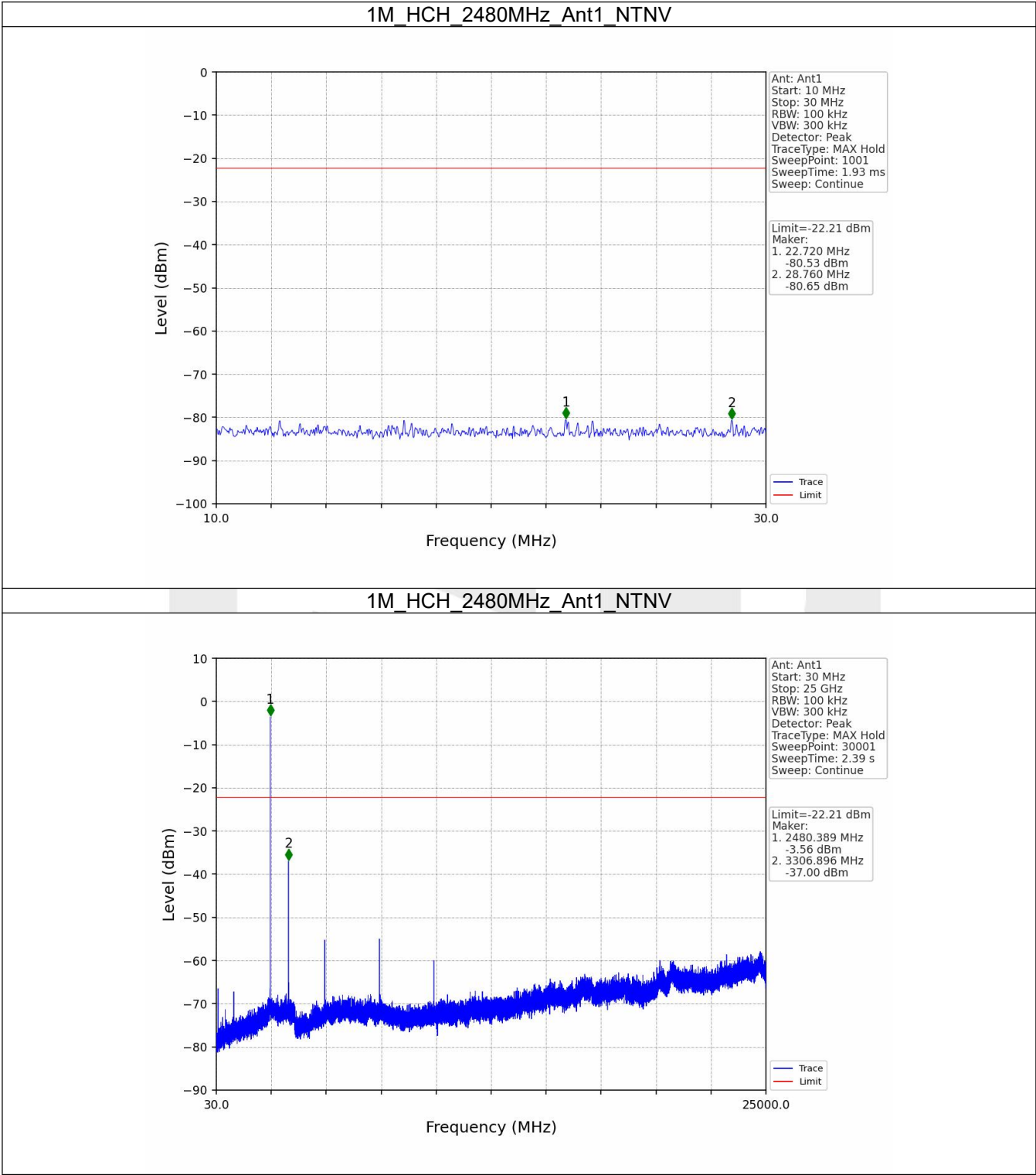












6. Unwanted Emissions In Restricted Frequency Bands

6.1 Test Result

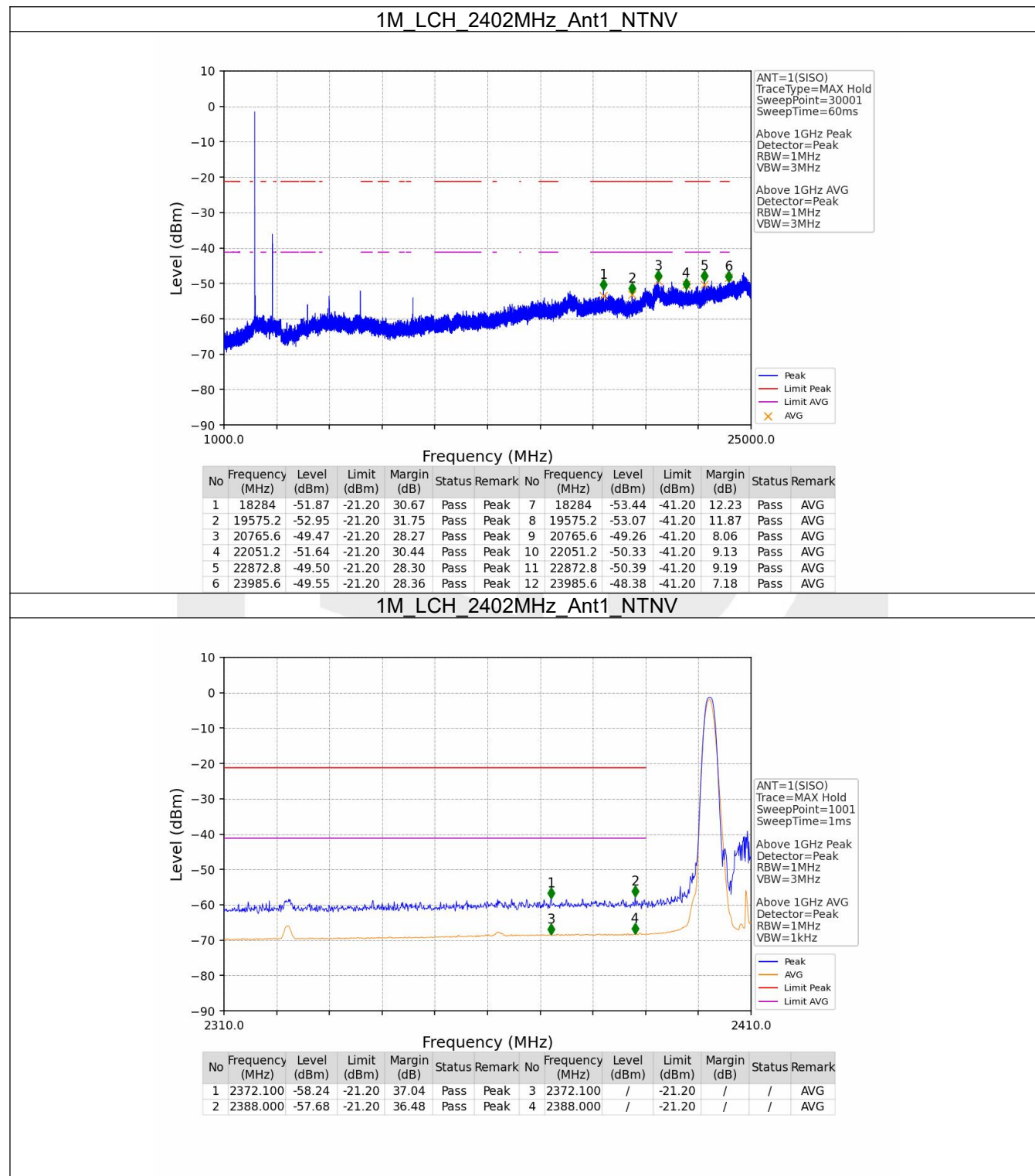
6.1.1 RSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Unwanted Emissions (dBm)		Verdict
				Result	Limit	
1M	SISO	2402	1	Refer To Test Graph		Pass
		2440	1	Refer To Test Graph		Pass
		2480	1	Refer To Test Graph		Pass

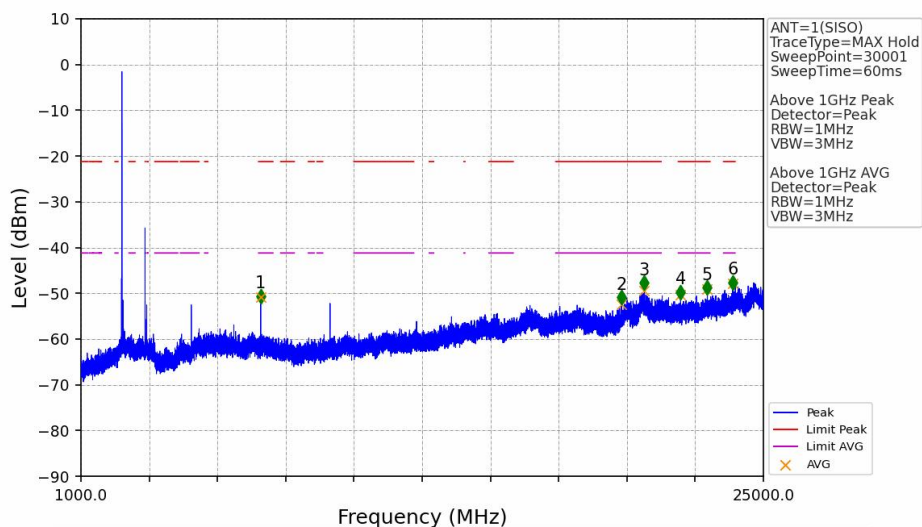


6.2 Test Graph

6.2.1 RSE

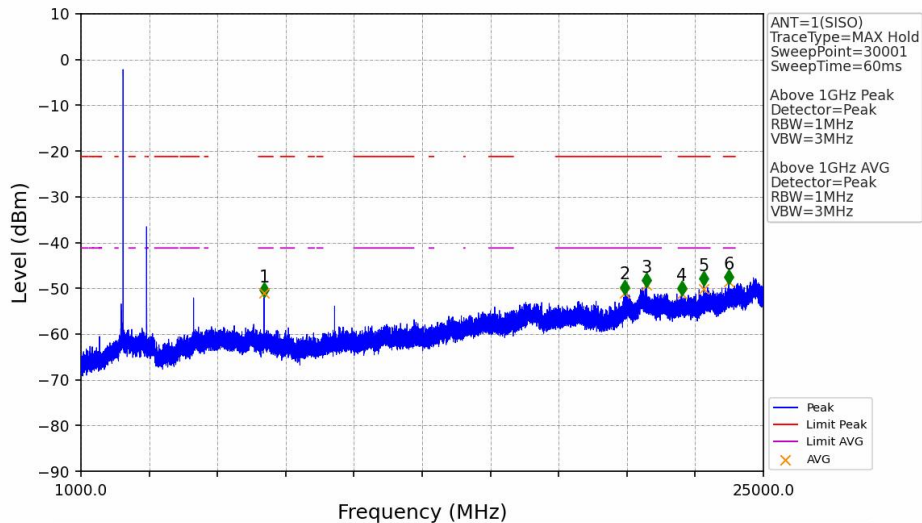


1M_MCH_2440MHz_Ant1_NTNV

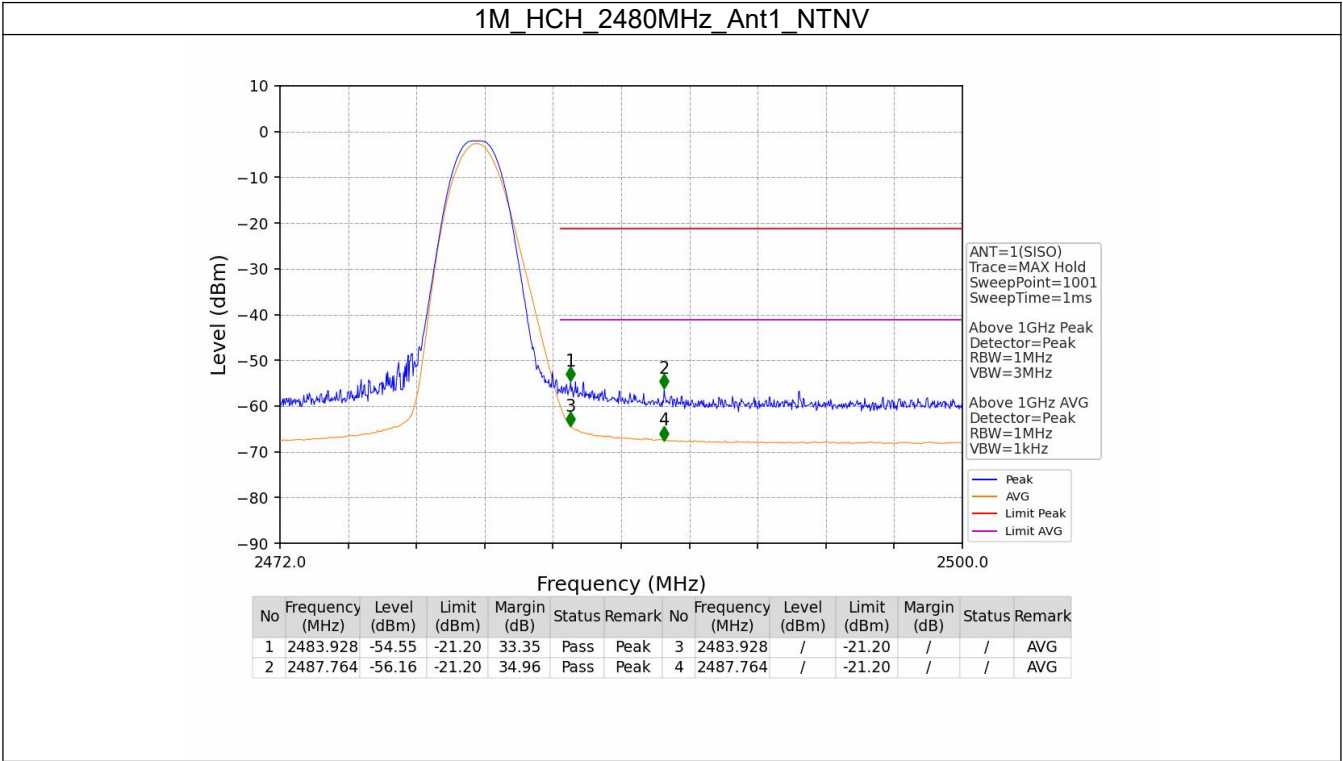


No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	7320.8	-52.18	-21.20	30.98	Pass	Peak	7	7320.8	-50.81	-41.20	9.61	Pass	AVG
2	20006.4	-52.50	-21.20	31.30	Pass	Peak	8	20006.4	-52.52	-41.20	11.32	Pass	AVG
3	20812	-49.29	-21.20	28.09	Pass	Peak	9	20812	-49.47	-41.20	8.27	Pass	AVG
4	22088.8	-51.31	-21.20	30.11	Pass	Peak	10	22088.8	-50.29	-41.20	9.09	Pass	AVG
5	23027.2	-50.38	-21.20	29.18	Pass	Peak	11	23027.2	-49.16	-41.20	7.96	Pass	AVG
6	23924.8	-49.19	-21.20	27.98	Pass	Peak	12	23924.8	-47.92	-41.20	6.72	Pass	AVG

1M_HCH_2480MHz_Ant1_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	7440	-51.96	-21.20	30.76	Pass	Peak	7	7440	-50.99	-41.20	9.79	Pass	AVG
2	20133.6	-51.29	-21.20	30.09	Pass	Peak	8	20133.6	-51.03	-41.20	9.83	Pass	AVG
3	20884	-49.73	-21.20	28.54	Pass	Peak	9	20884	-49.21	-41.20	8.01	Pass	AVG
4	22127.2	-51.59	-21.20	30.39	Pass	Peak	10	22127.2	-51.25	-41.20	10.05	Pass	AVG
5	22904	-49.42	-21.20	28.22	Pass	Peak	11	22904	-50.16	-41.20	8.96	Pass	AVG
6	23782.4	-49.11	-21.20	27.91	Pass	Peak	12	23782.4	-48.50	-41.20	7.30	Pass	AVG



----- End of Report -----