



Annex for BLE

Test Report No.: CTL2410312051-WF02

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FCCID: 2A8SL-T13R

1. Duty Cycle

1.1 Test Result

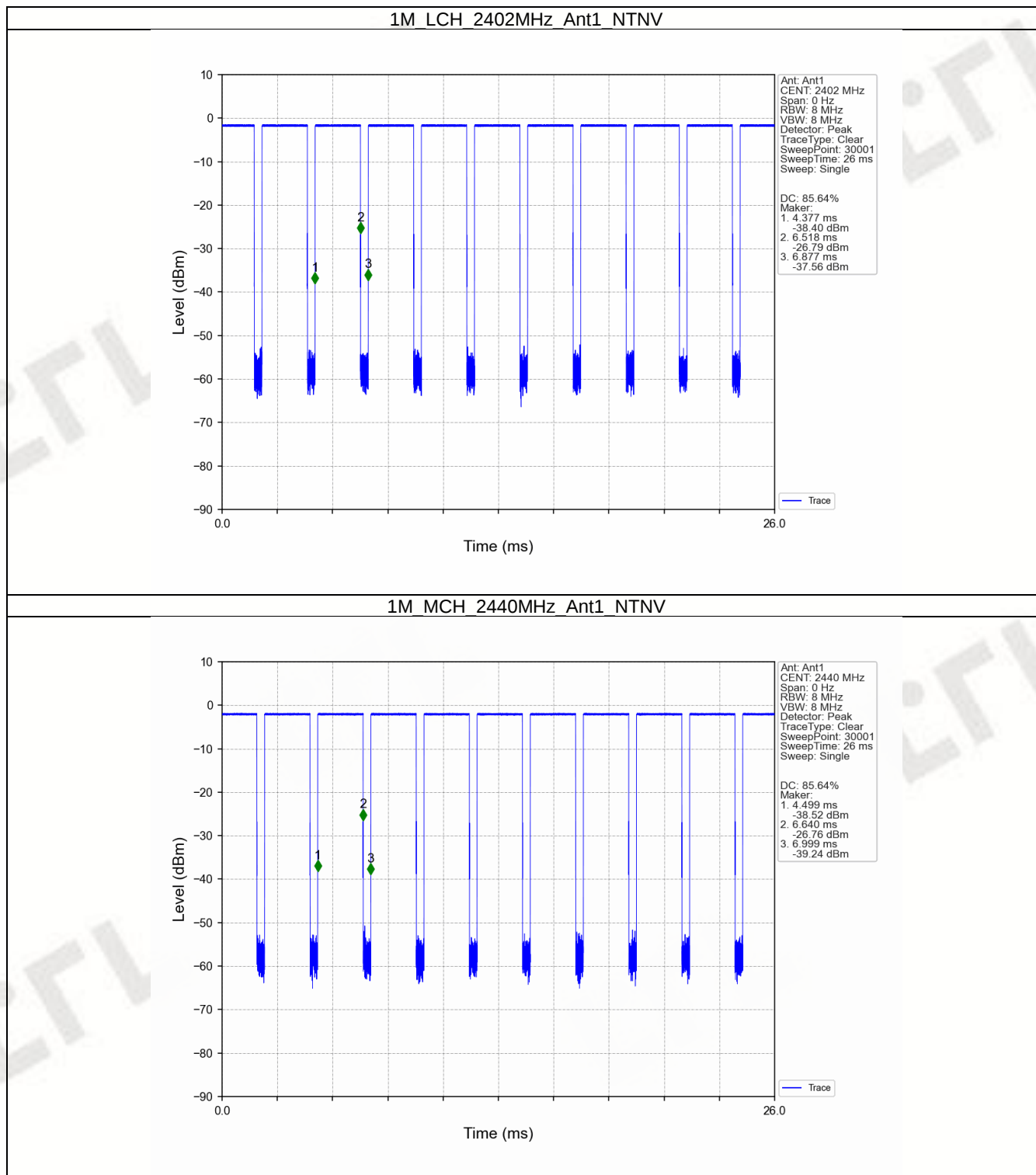
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.141	2.500	85.64	0.67	0.03
		2440	2.141	2.500	85.64	0.67	0.03
		2480	2.142	2.501	85.65	0.67	0.03
2M	SISO	2402	1.090	2.501	43.58	3.61	0.03
		2440	1.089	2.500	43.56	3.61	0.03
		2480	1.089	2.500	43.56	3.61	0.03

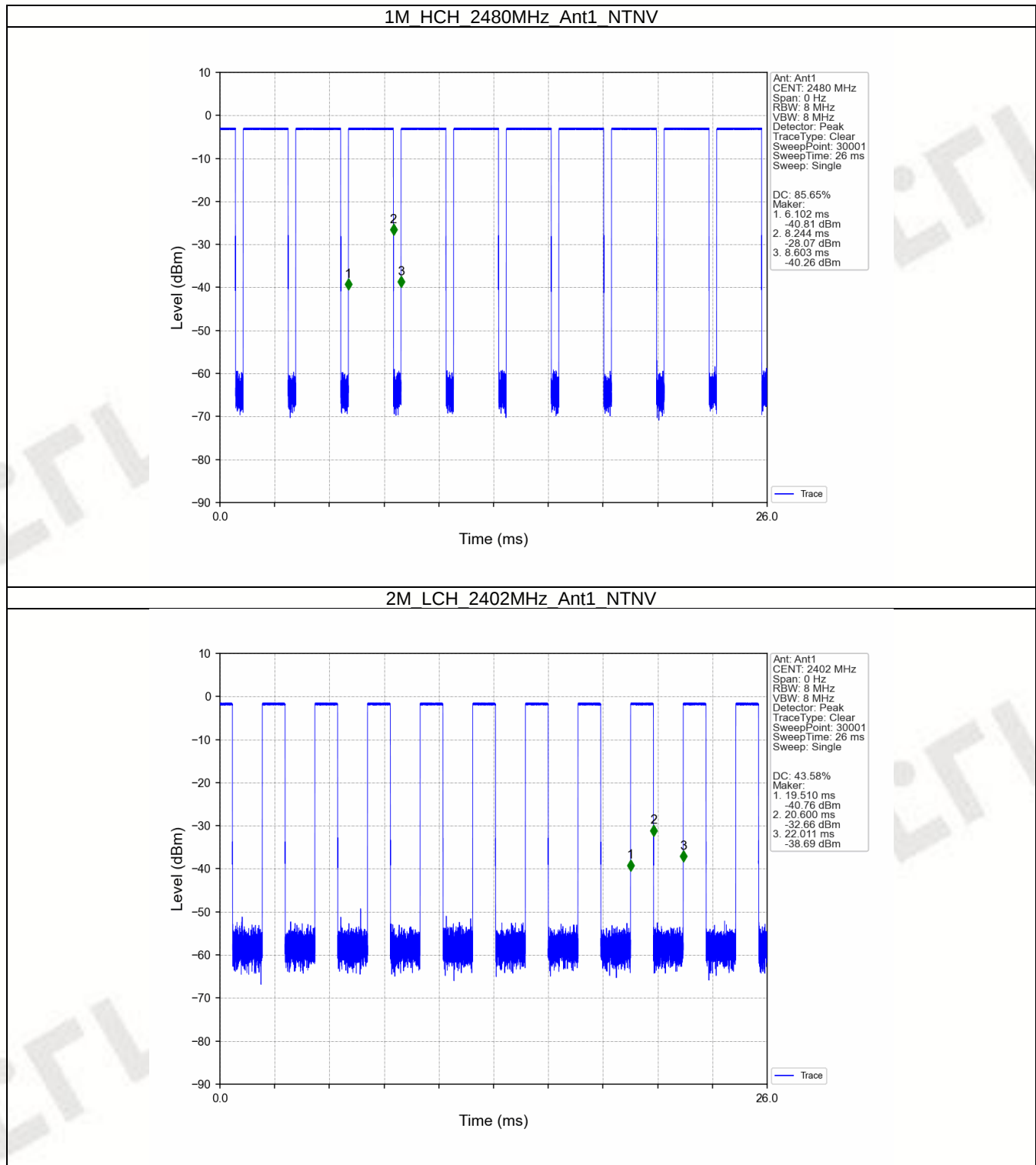
FCCID: 2A8SL-T13R

1.2 Test Graph

1.2.1 Ant1

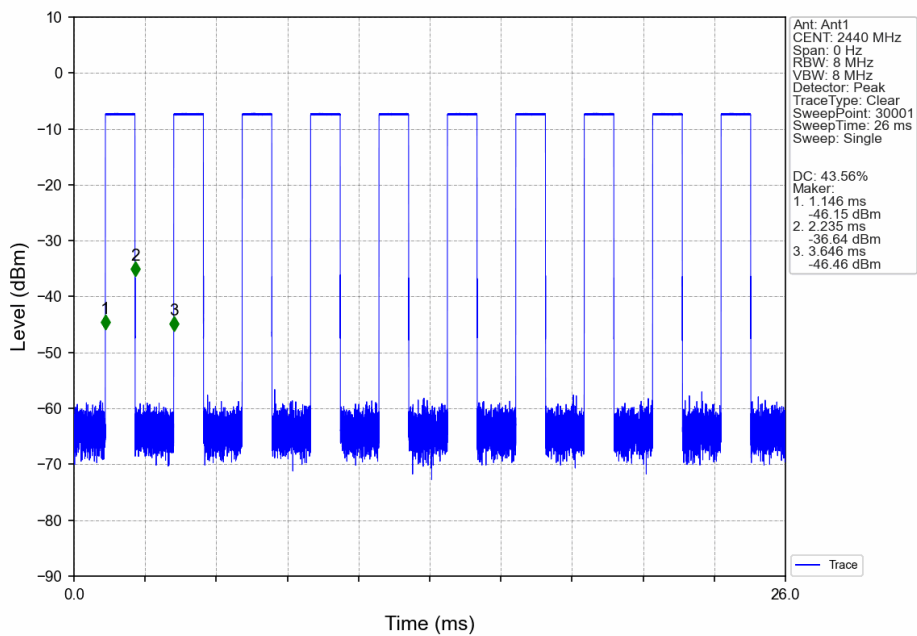


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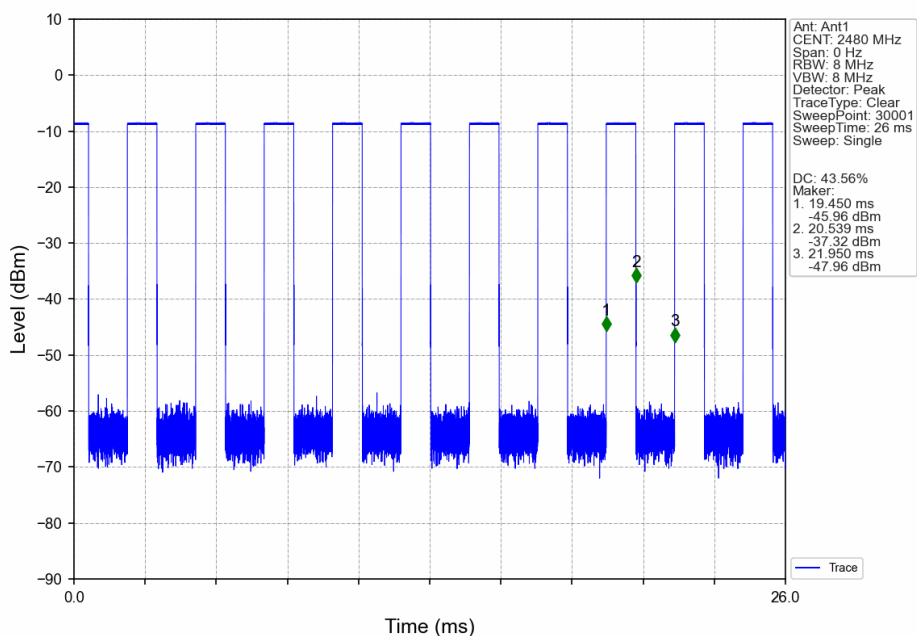


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2M MCH 2440MHz Ant1 NTNV



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	1.047	/	Pass
		2440	1	1.043	/	Pass
		2480	1	1.045	/	Pass
2M	SISO	2402	1	2.046	/	Pass
		2440	1	2.043	/	Pass
		2480	1	2.045	/	Pass

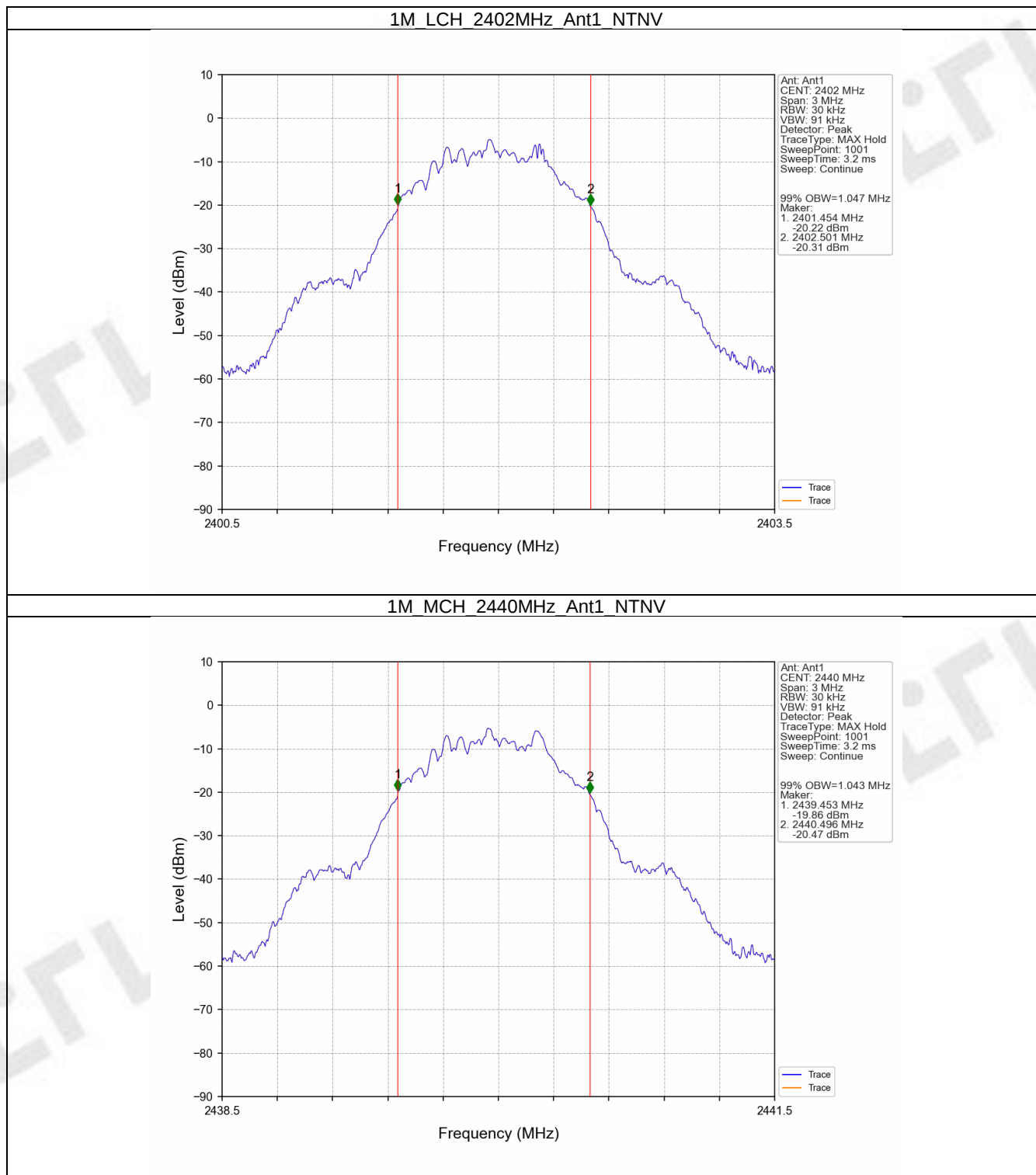
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.681	≥ 0.5	Pass
		2440	1	0.686	≥ 0.5	Pass
		2480	1	0.676	≥ 0.5	Pass
2M	SISO	2402	1	1.168	≥ 0.5	Pass
		2440	1	1.165	≥ 0.5	Pass
		2480	1	1.161	≥ 0.5	Pass

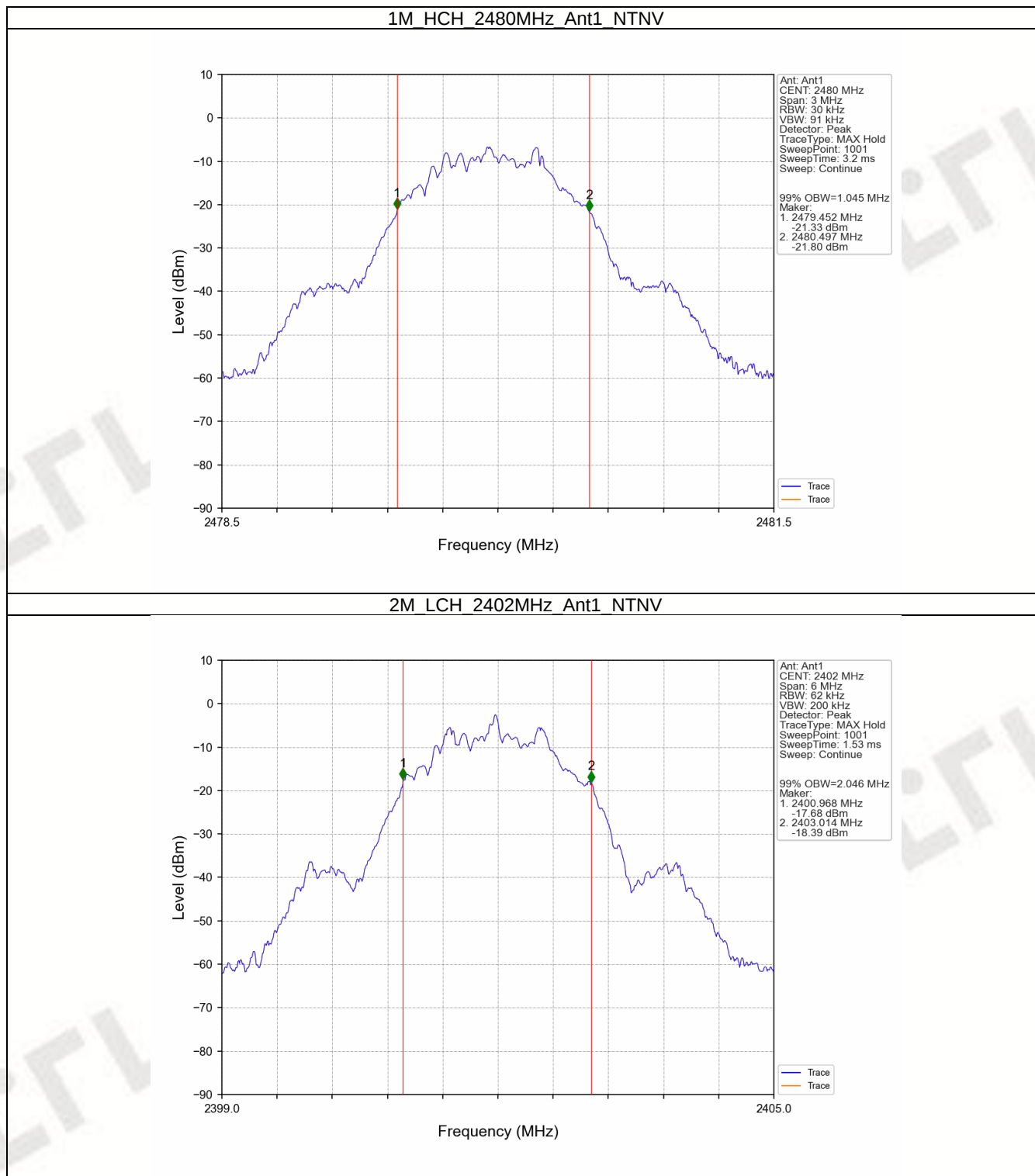
FCCID: 2A8SL-T13R

2.2 Test Graph

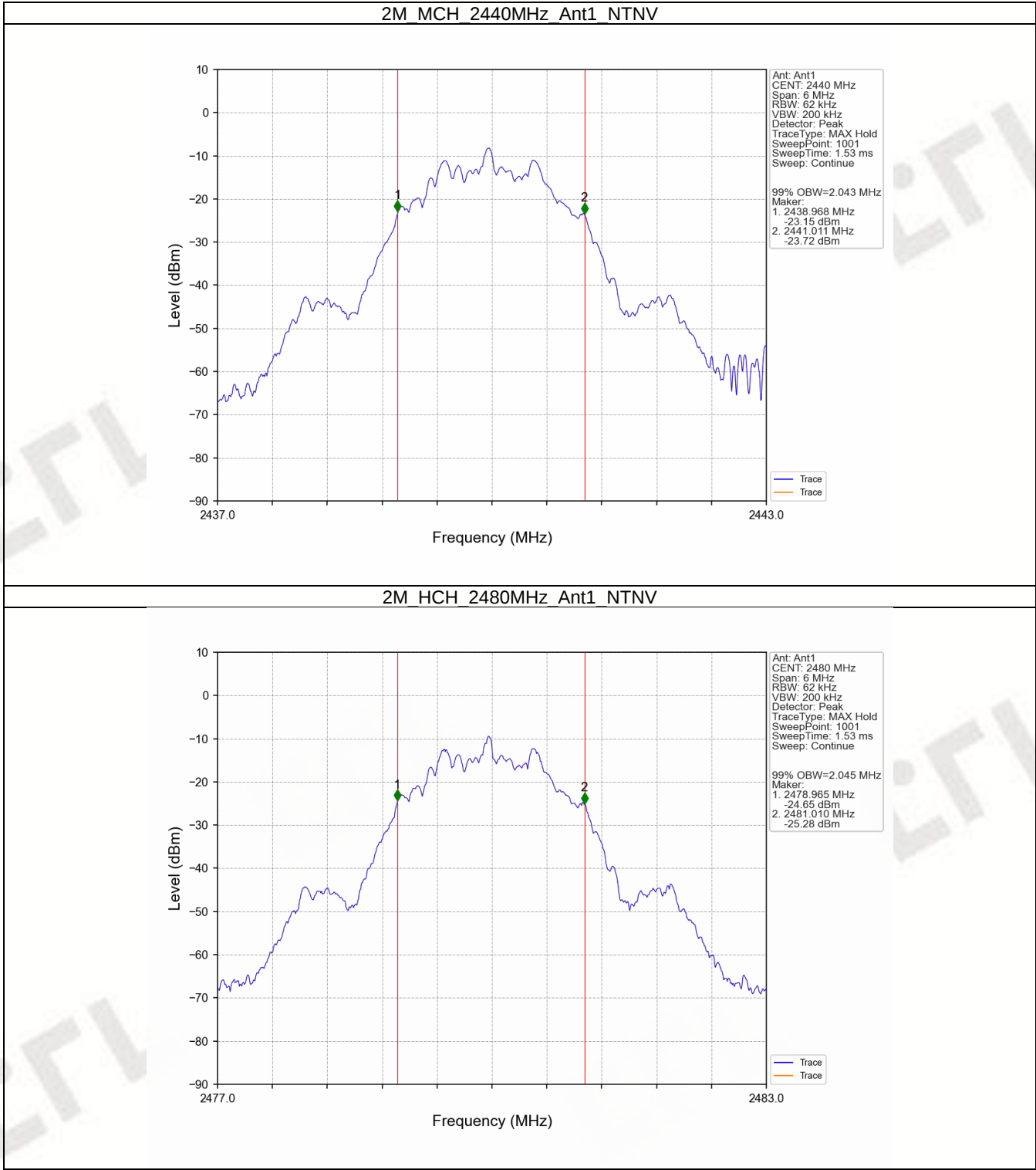
2.2.1 OBW



FCCID: 2A8SL-T13R

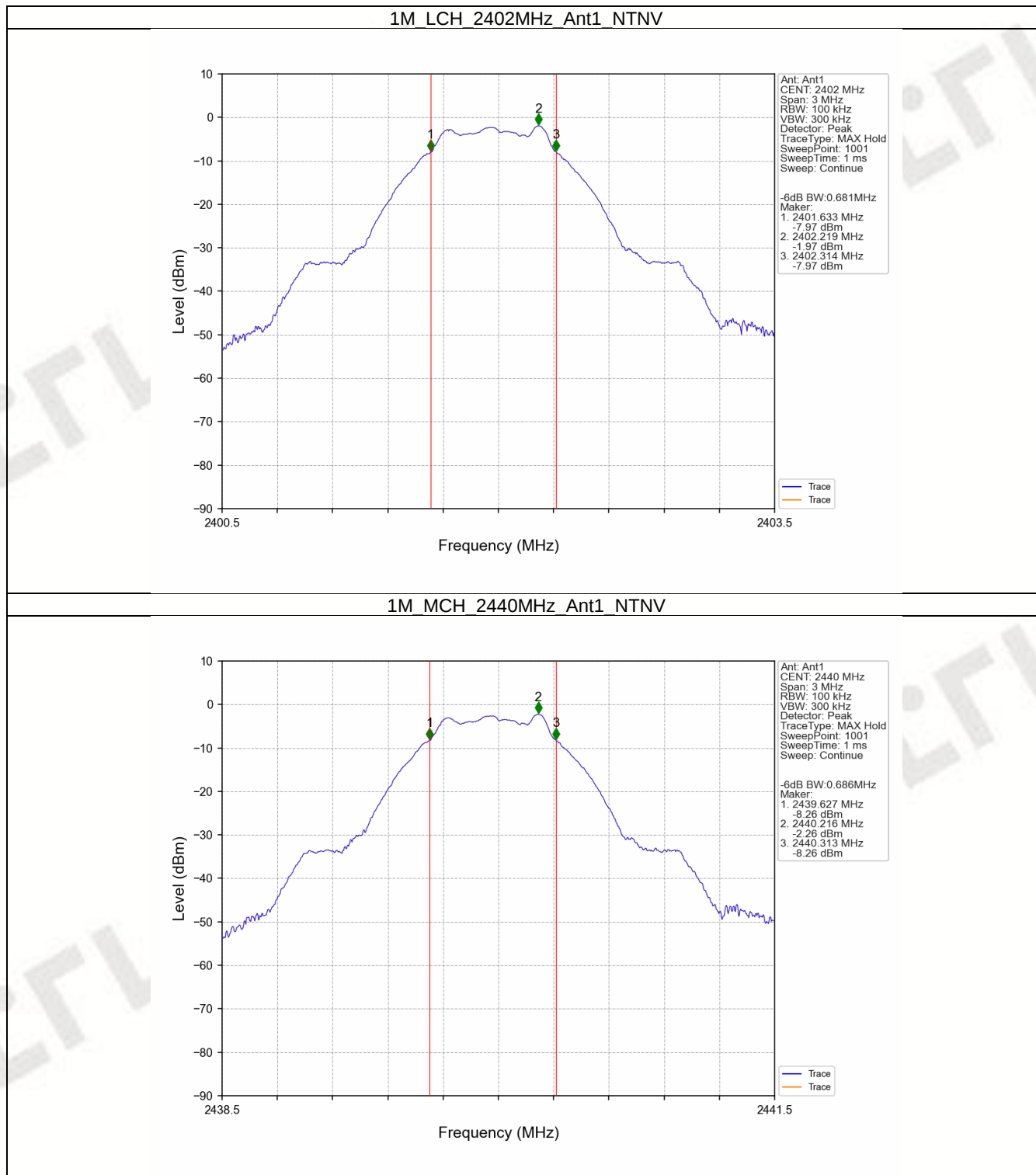


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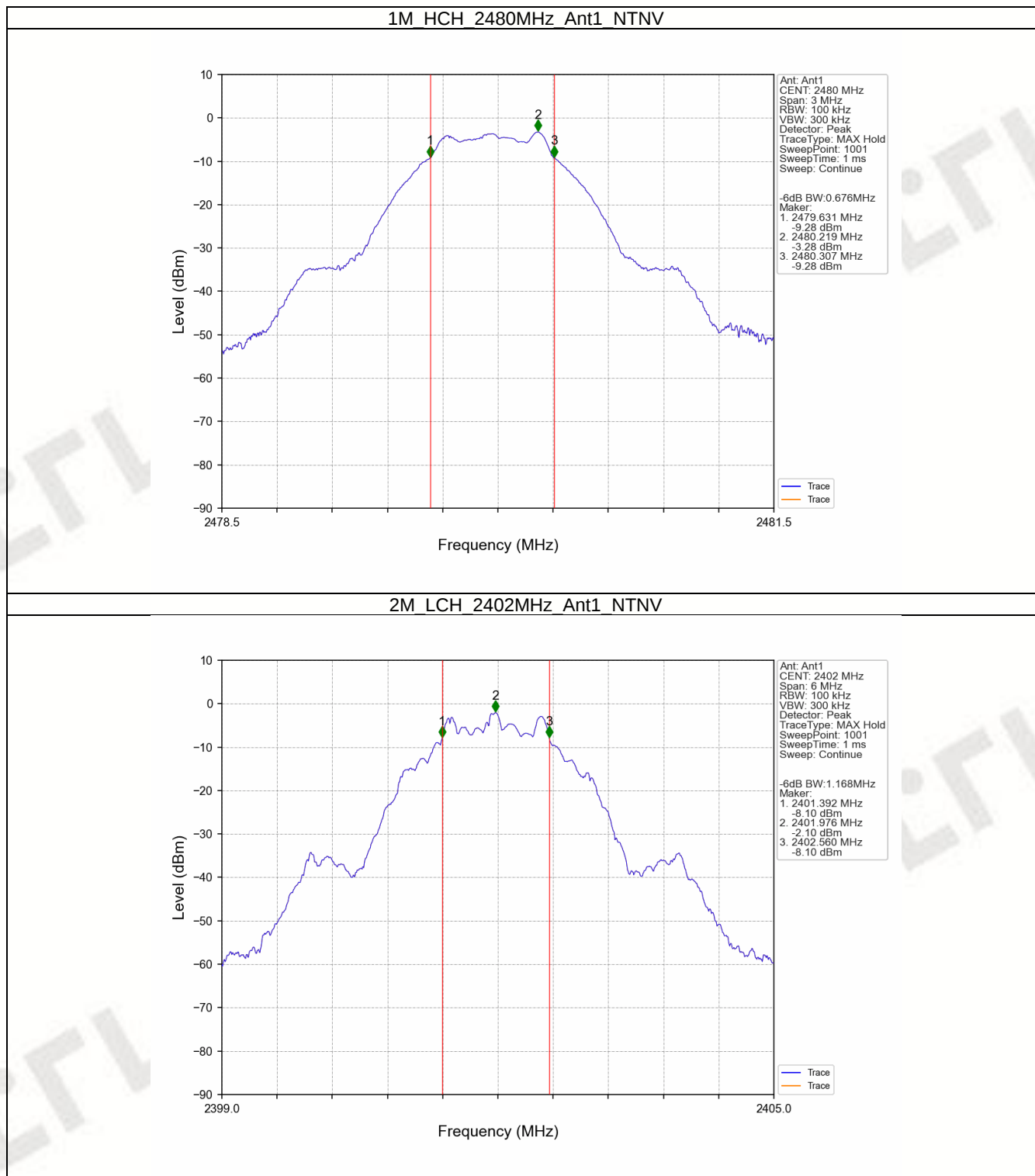


FCCID: 2A8SL-T13R

2.2.2 6dB BW

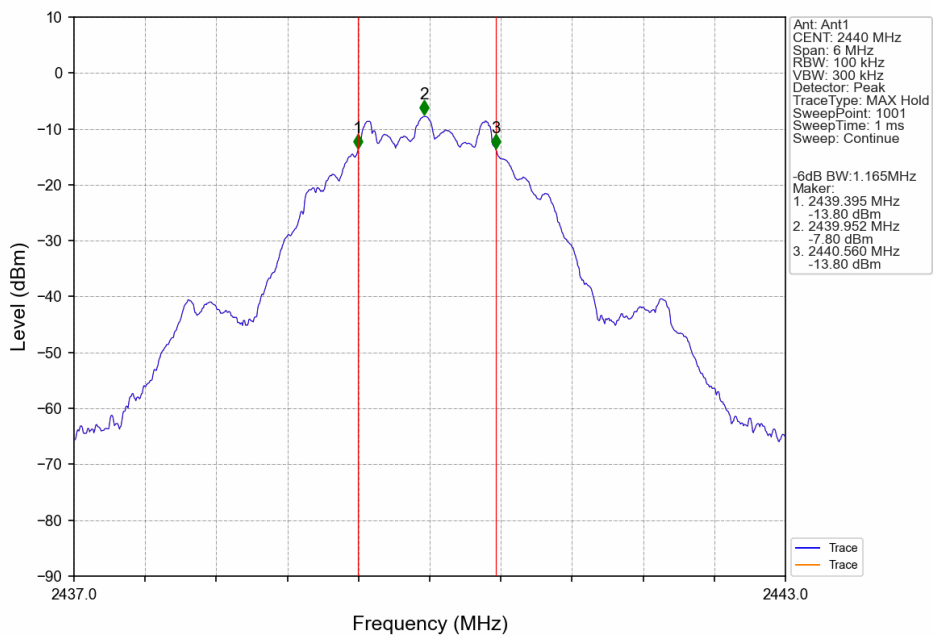


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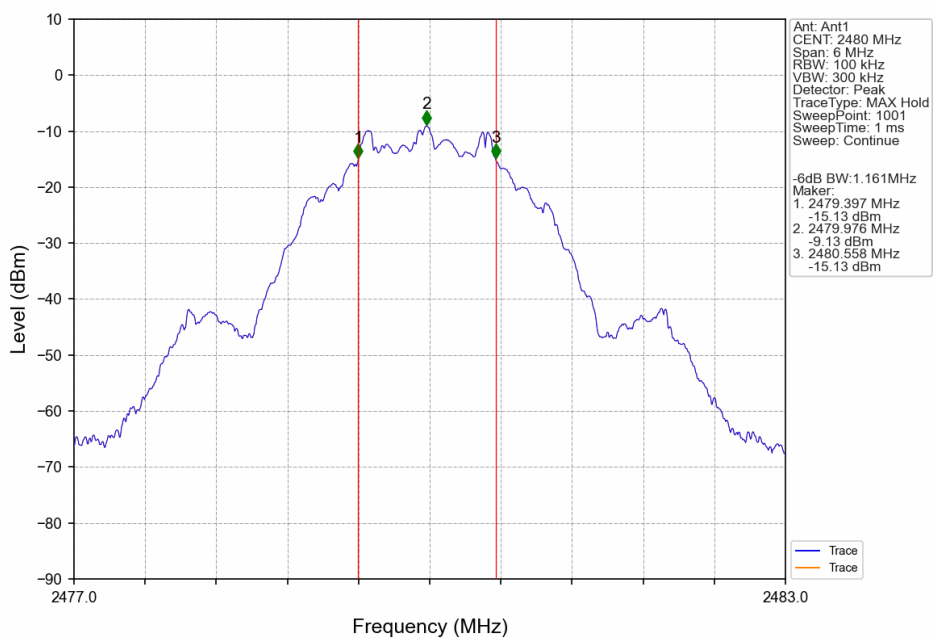


FCCID: 2A8SL-T13R

2M MCH 2440MHz Ant1 NTN



2M HCH 2480MHz Ant1 NTN



3. Maximum Conducted Output Power

3.1 Test Result

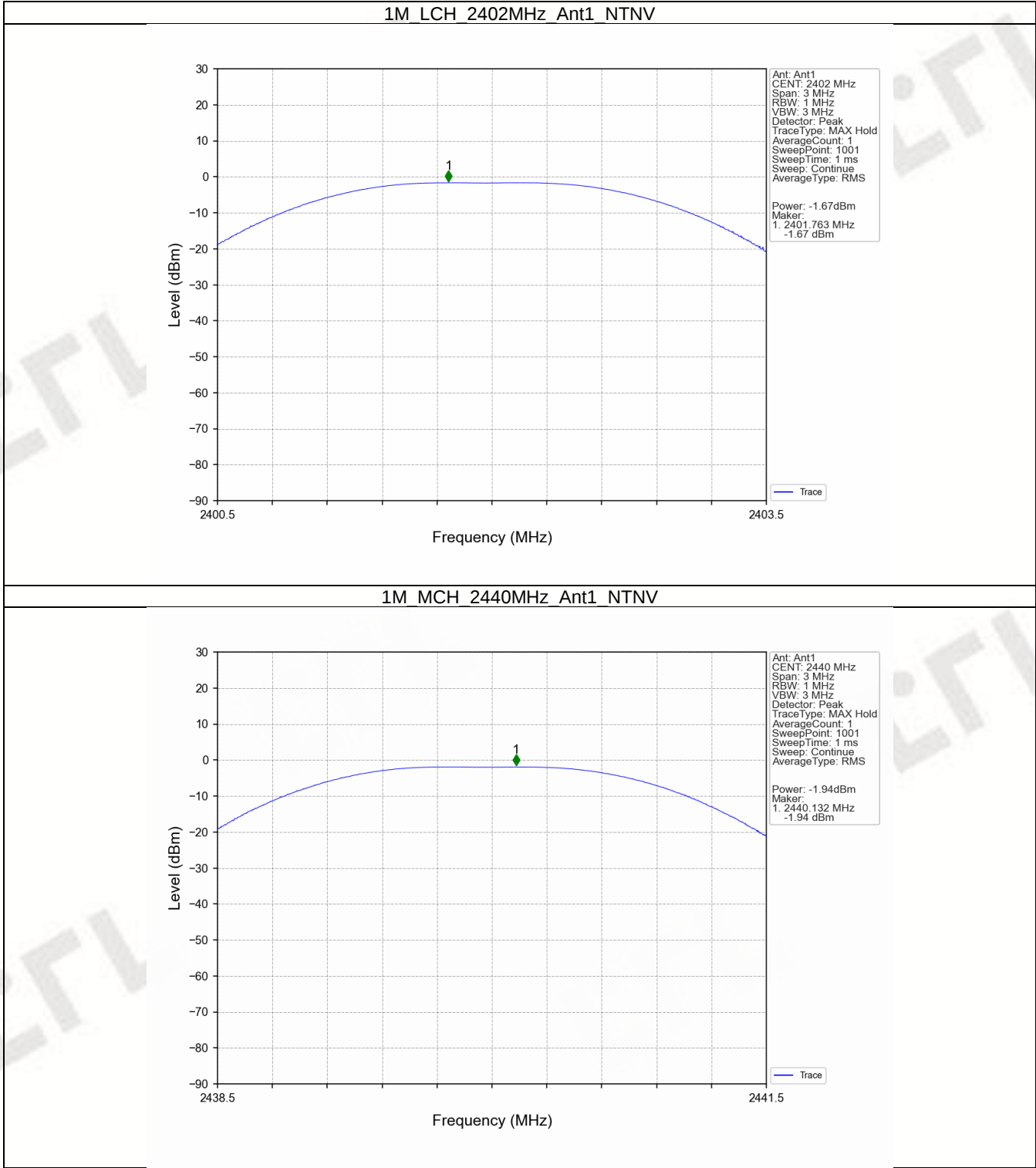
3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-1.67	<=30	Pass
		2440	-1.94	<=30	Pass
		2480	-2.96	<=30	Pass
2M	SISO	2402	-1.57	<=30	Pass
		2440	-7.30	<=30	Pass
		2480	-8.58	<=30	Pass
Note1: Antenna Gain: Ant1: 2.78dBi;					

FCCID: 2A8SL-T13R

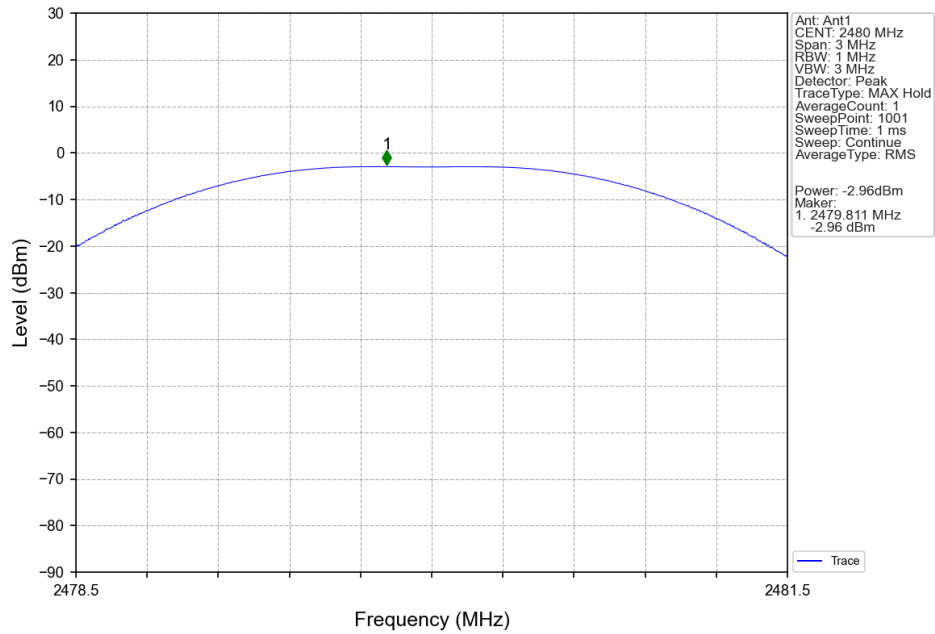
3.2 Test Graph

3.2.1 Power

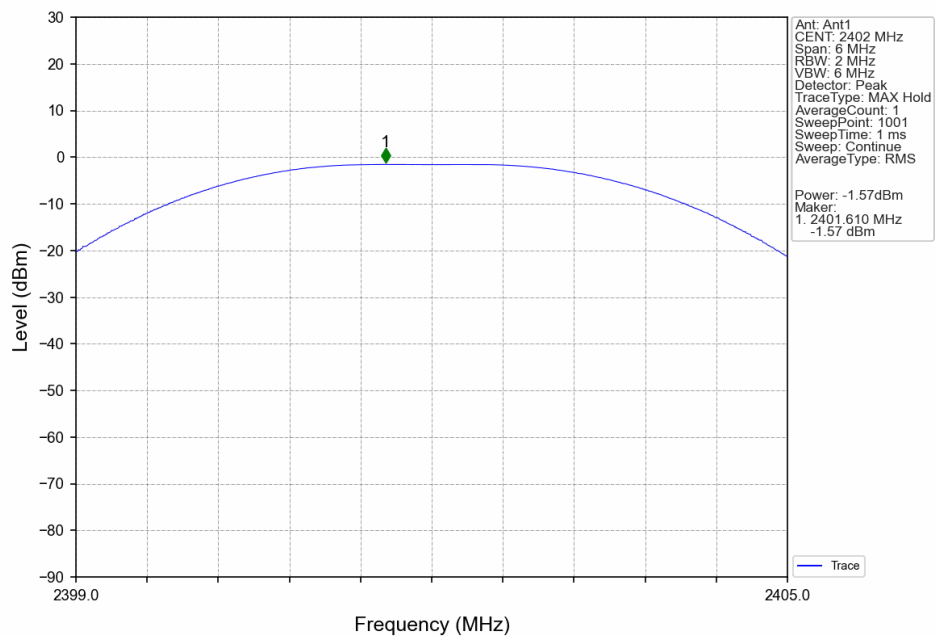


FCCID: 2A8SL-T13R

1M HCH 2480MHz Ant1 NTV

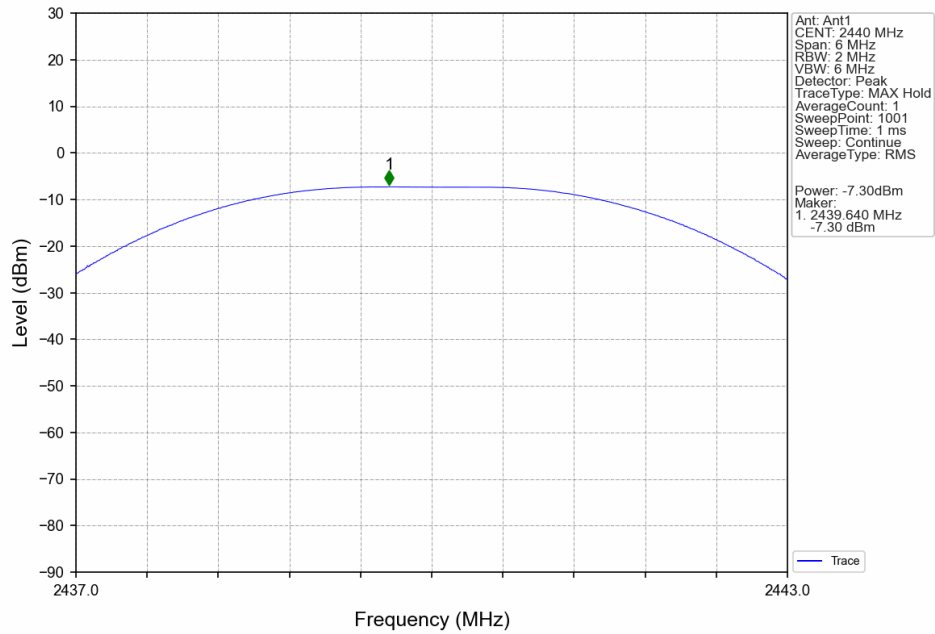


2M LCH 2402MHz Ant1 NTV

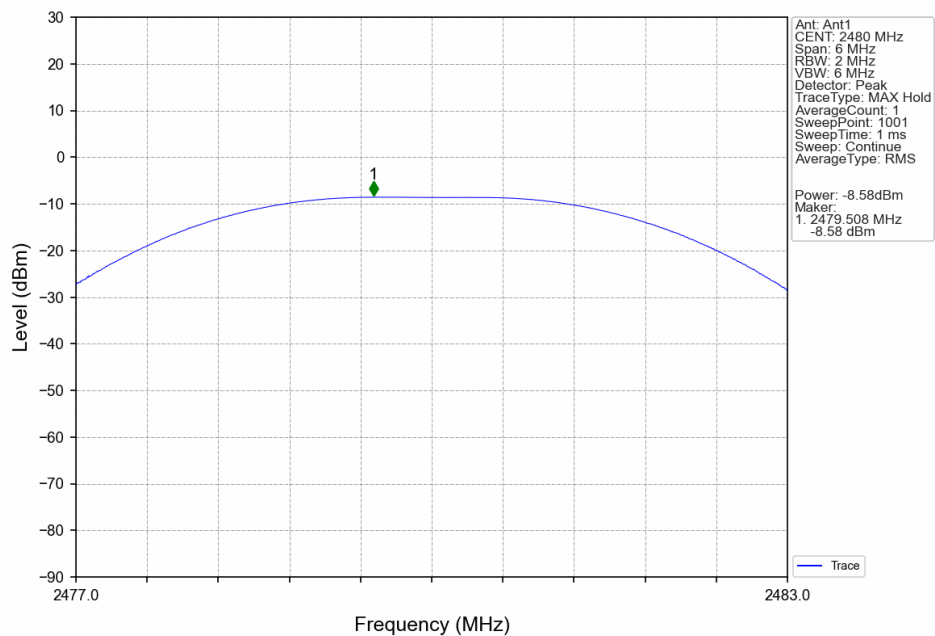


FCCID: 2A8SL-T13R

2M MCH 2440MHz Ant1 NTNV



2M HCH 2480MHz Ant1 NTNV



FCCID: 2A8SL-T13R

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

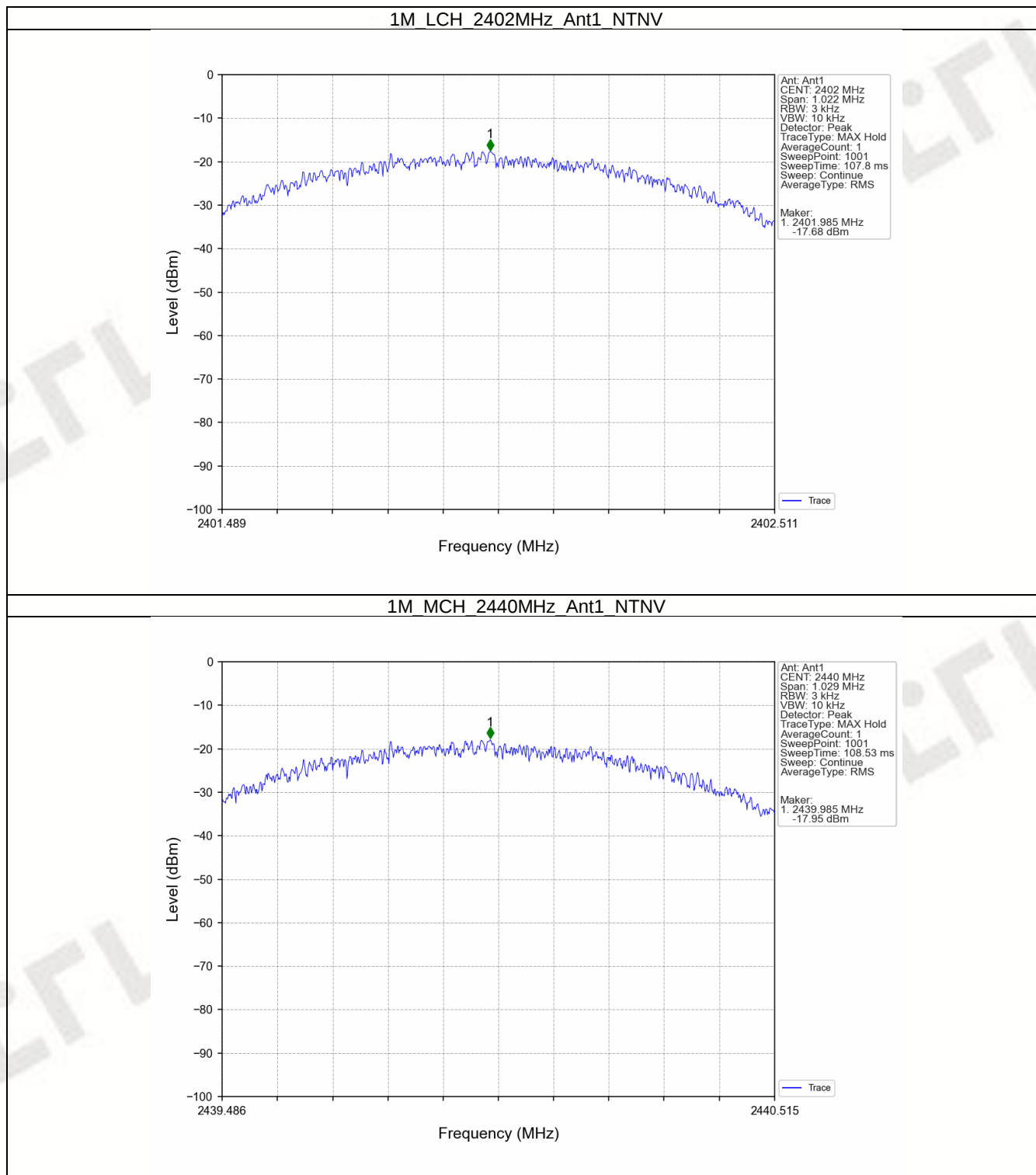
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-17.68	<=8	Pass
		2440	-17.95	<=8	Pass
		2480	-18.78	<=8	Pass
2M	SISO	2402	-19.55	<=8	Pass
		2440	-25.30	<=8	Pass
		2480	-26.65	<=8	Pass

Note1: Antenna Gain: Ant1: 2.78dBi;

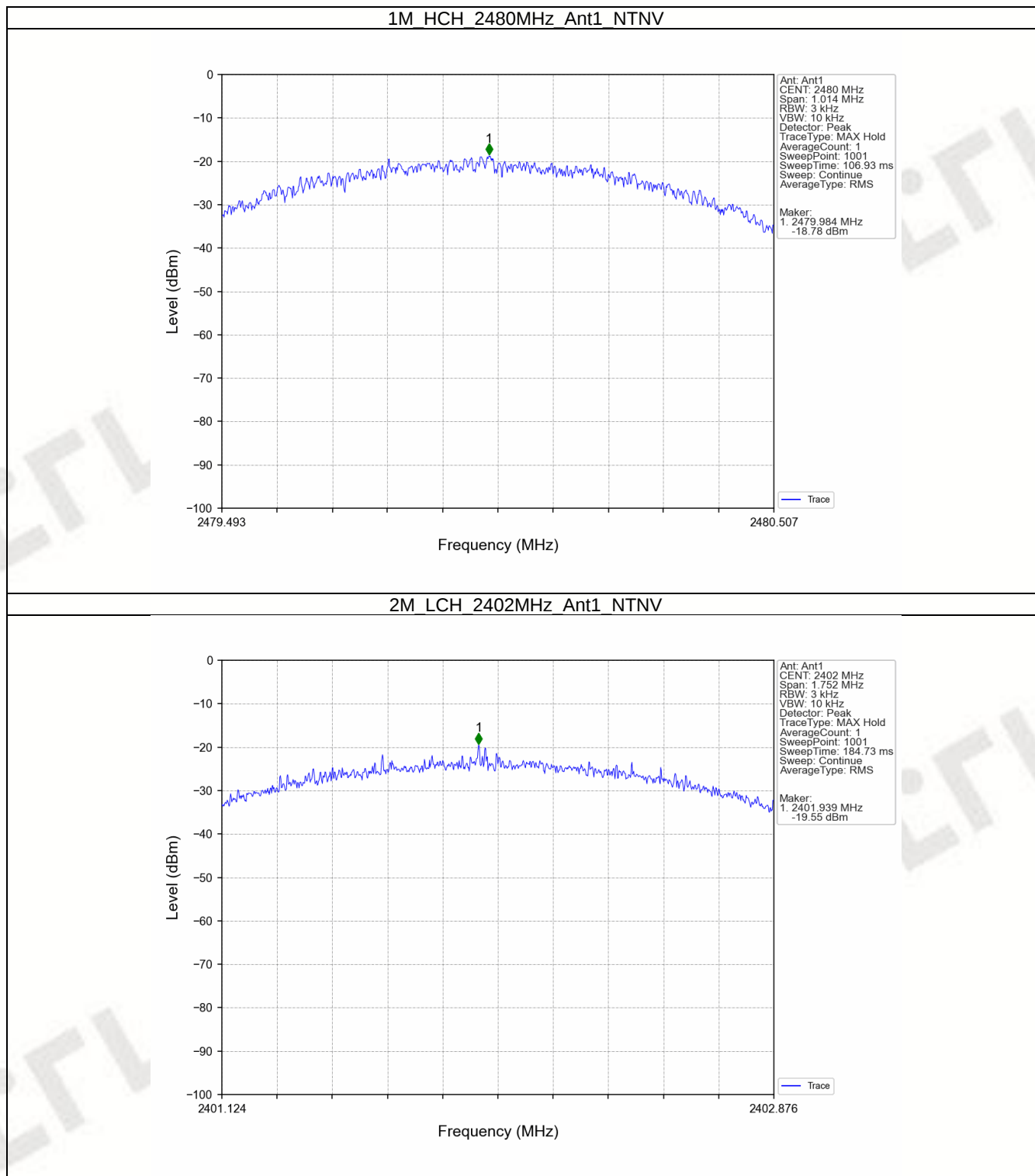
FCCID: 2A8SL-T13R

4.2 Test Graph

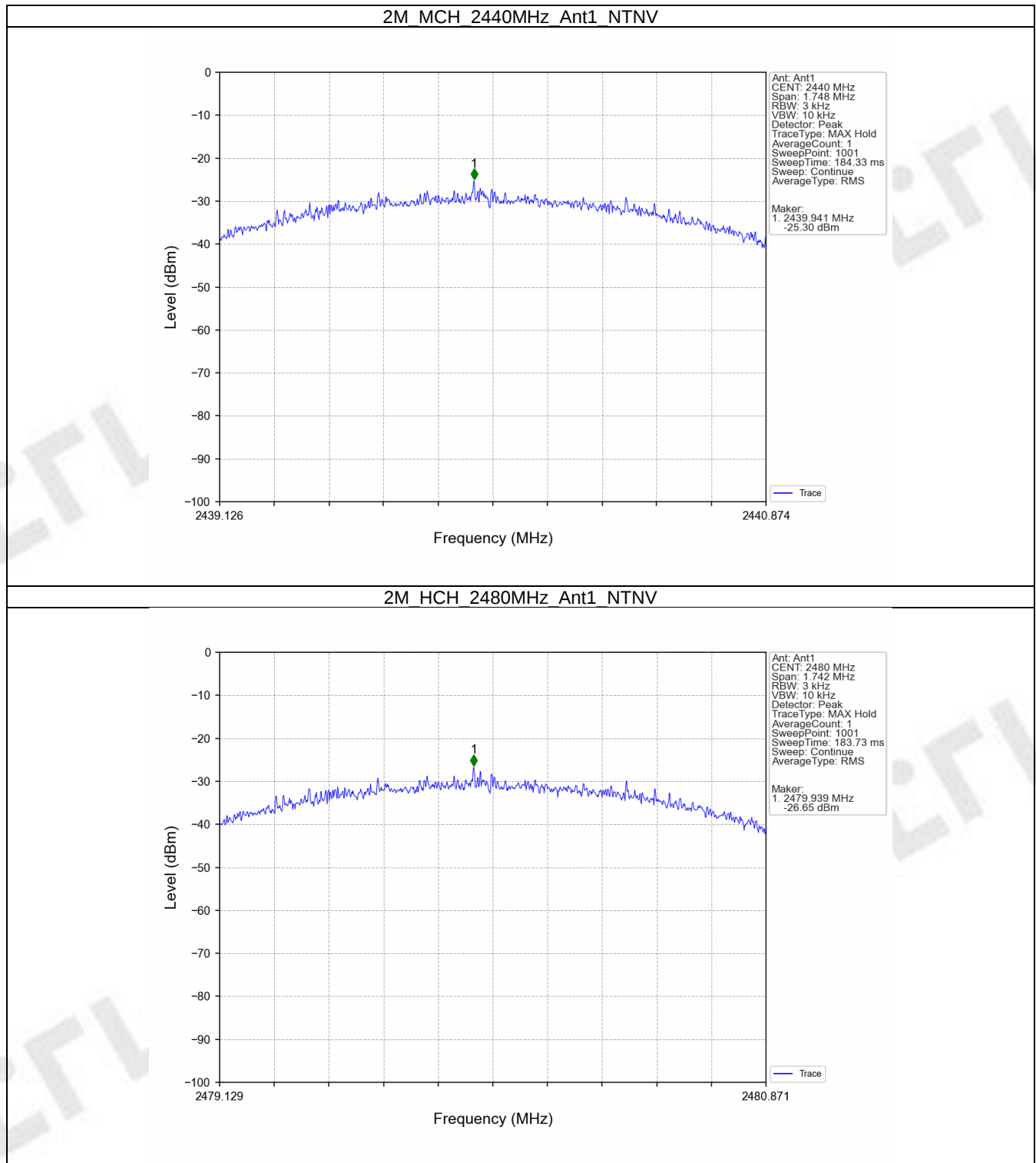
4.2.1 PSD



FCCID: 2A8SL-T13R



FCCID: 2A8SL-T13R



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	-2.02
		2440	1	-2.24
		2480	1	-3.27
2M	SISO	2402	1	-2.13
		2440	1	-7.99
		2480	1	-9.30

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 CSE

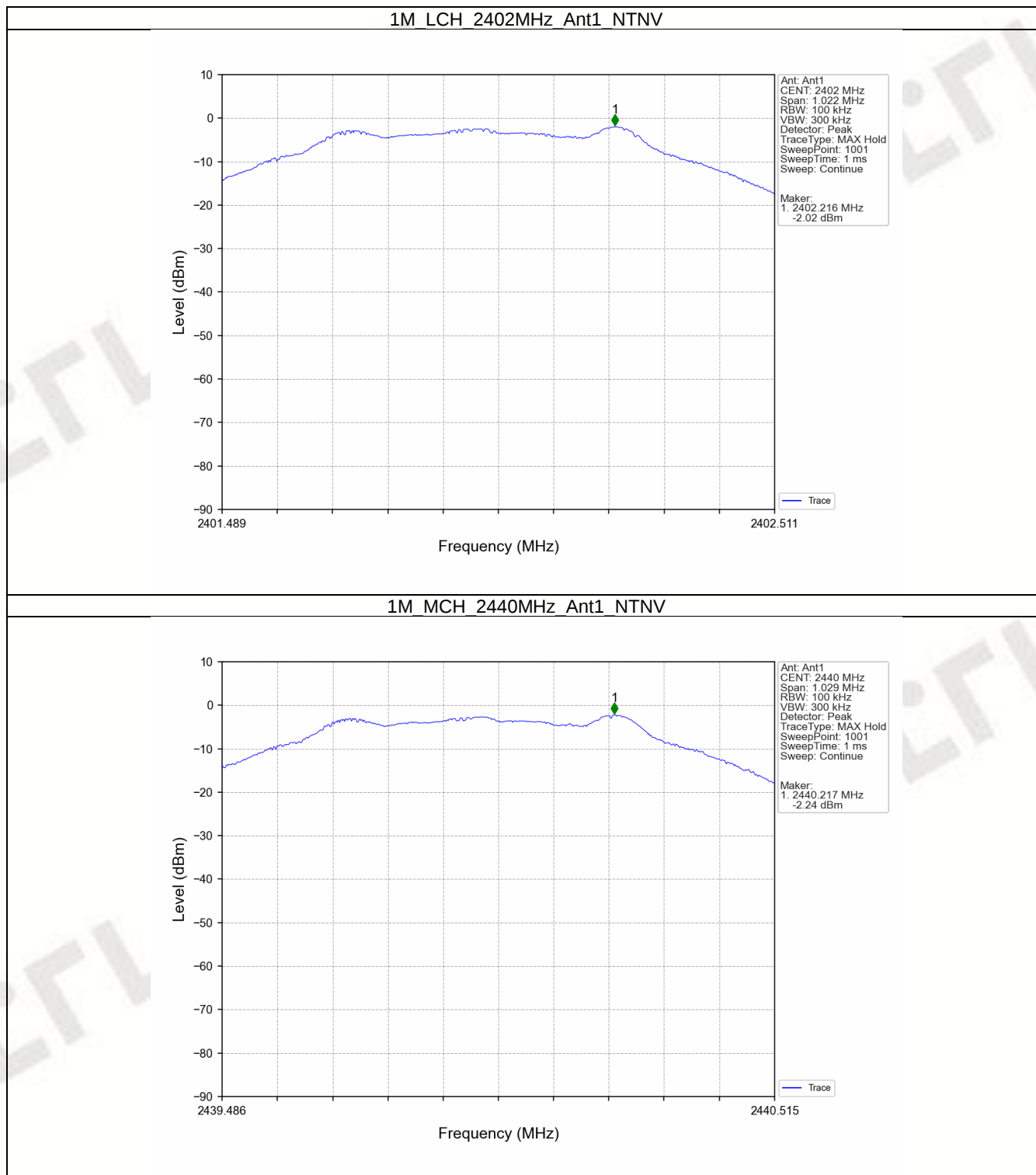
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-2.02	-22.02	Pass
		2440	1	-2.02	-22.02	Pass
		2480	1	-2.02	-22.02	Pass
2M	SISO	2402	1	-2.13	-22.13	Pass
		2440	1	-2.13	-22.13	Pass
		2480	1	-2.13	-22.13	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

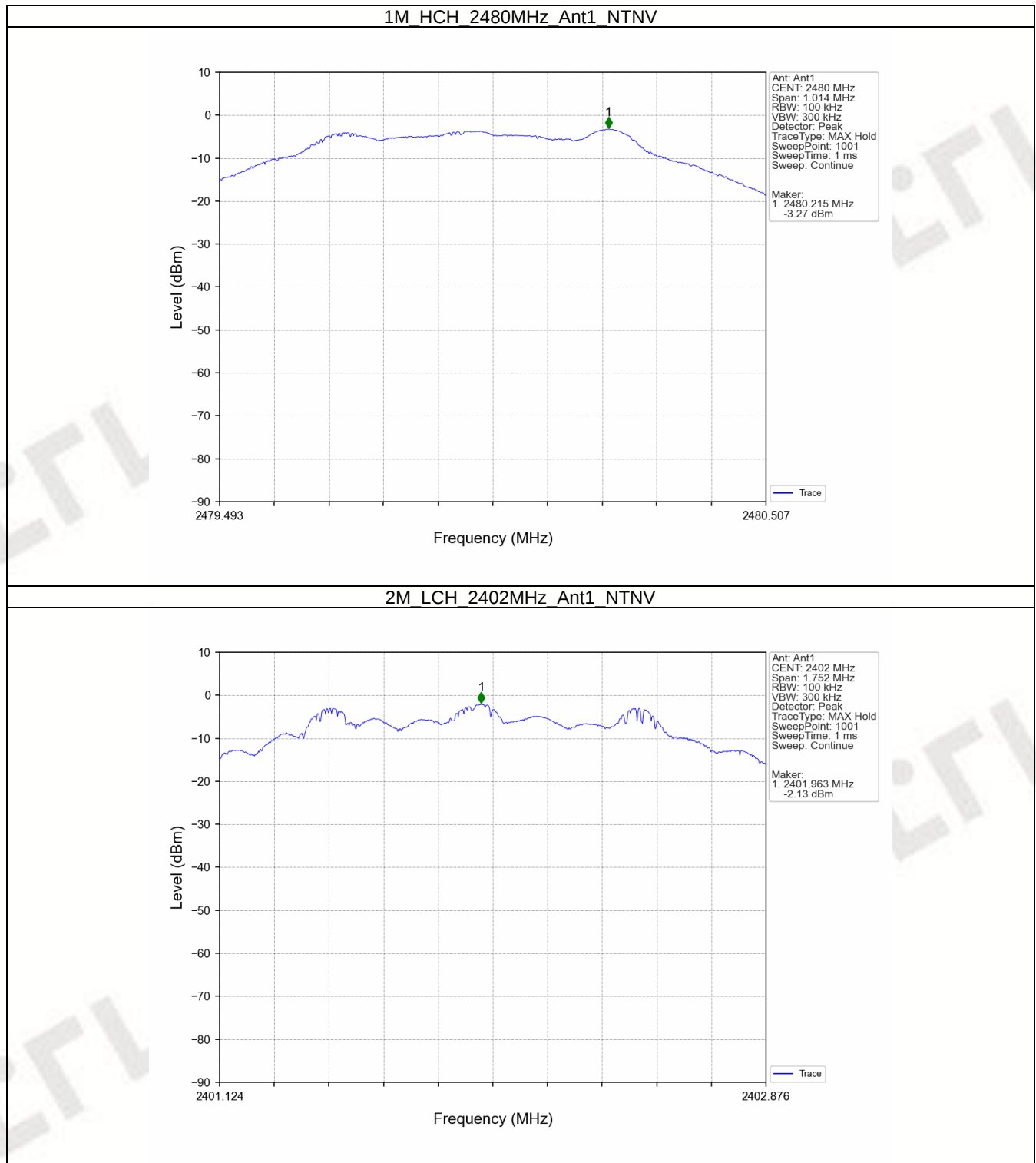
FCCID: 2A8SL-T13R

5.2 Test Graph

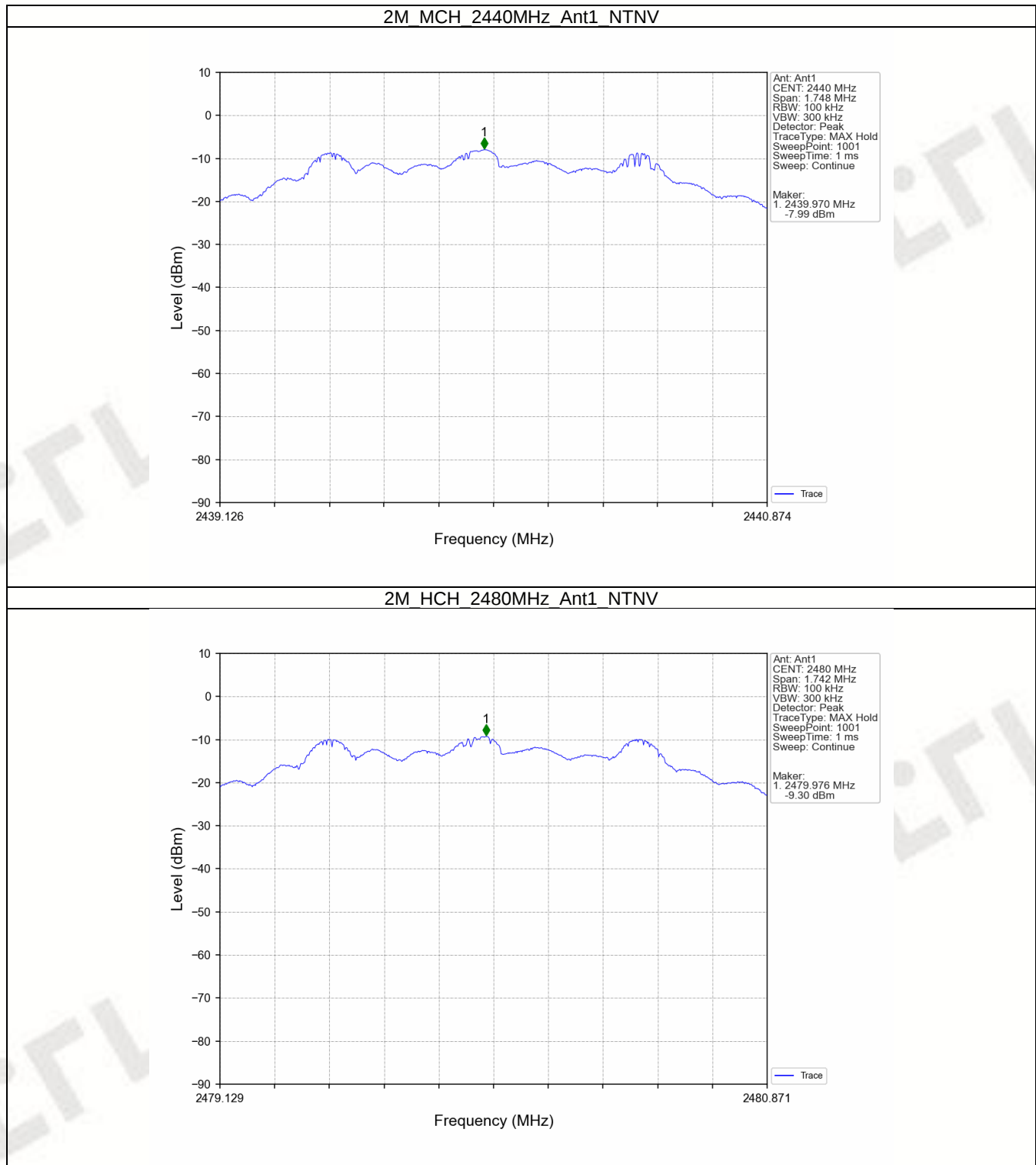
5.2.1 Ref



FCCID: 2A8SL-T13R

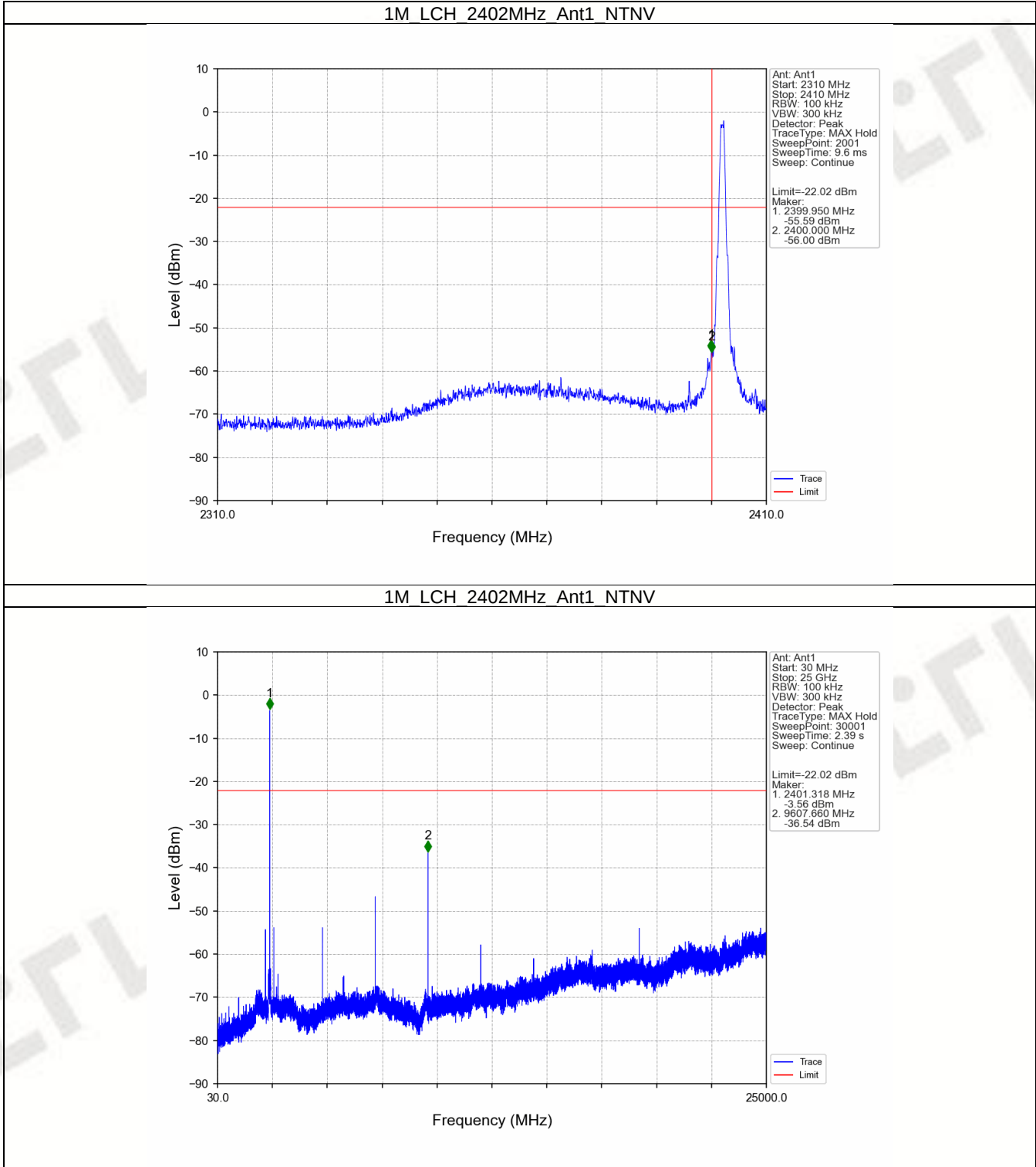


FCCID: 2A8SL-T13R



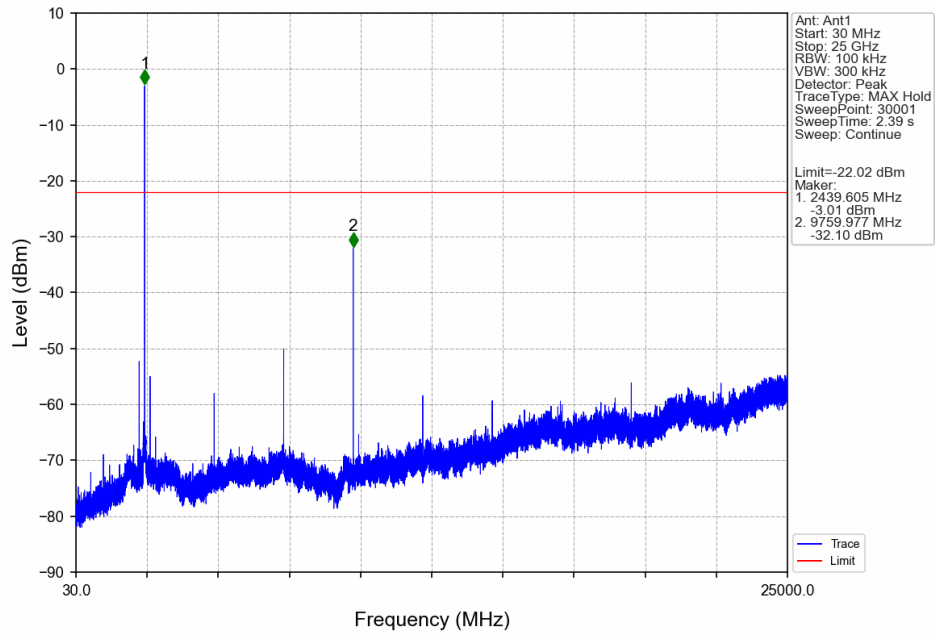
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5.2.2 CSE

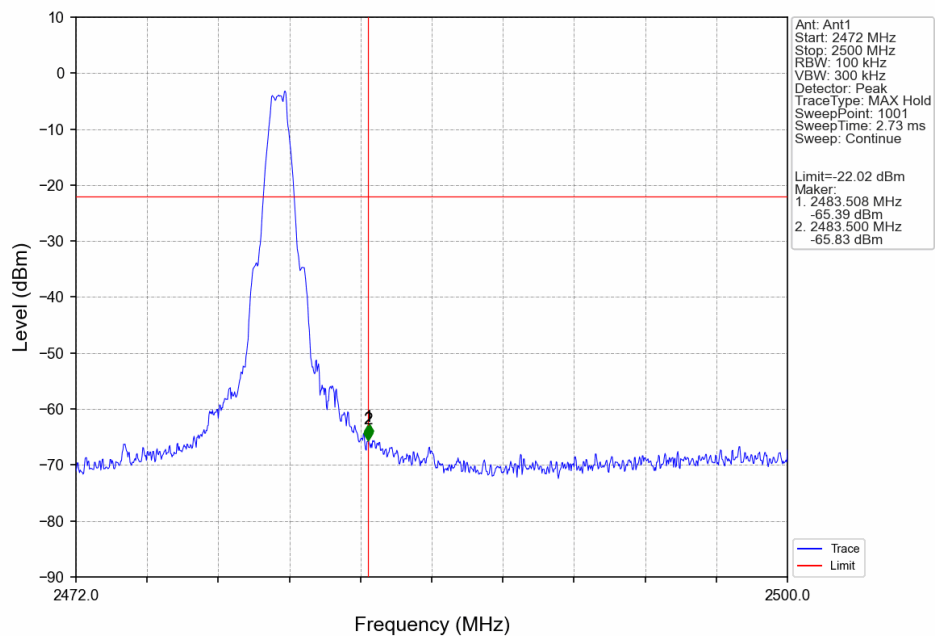


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1M MCH 2440MHz Ant1 NTNV

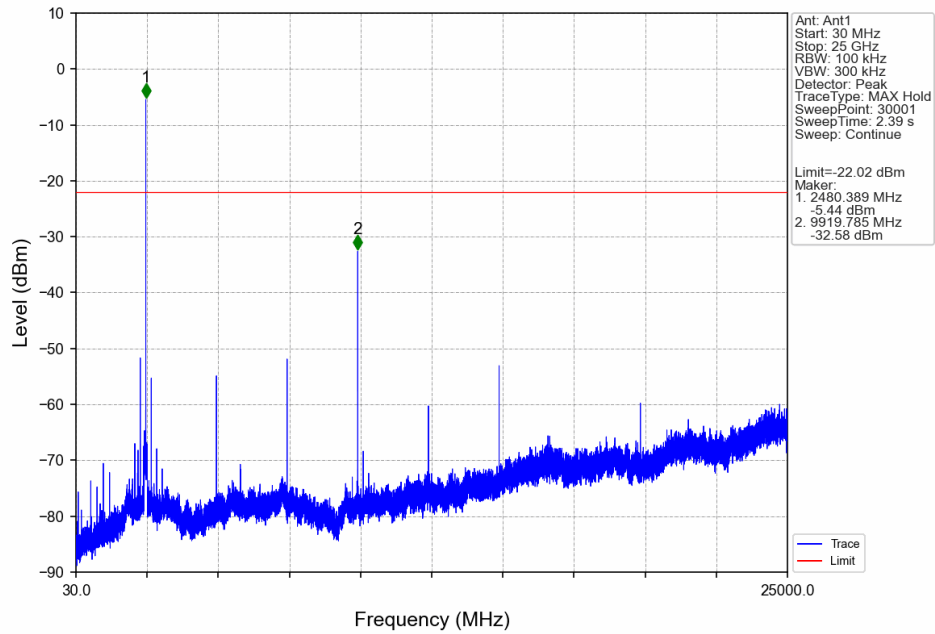


1M HCH 2480MHz Ant1 NTNV

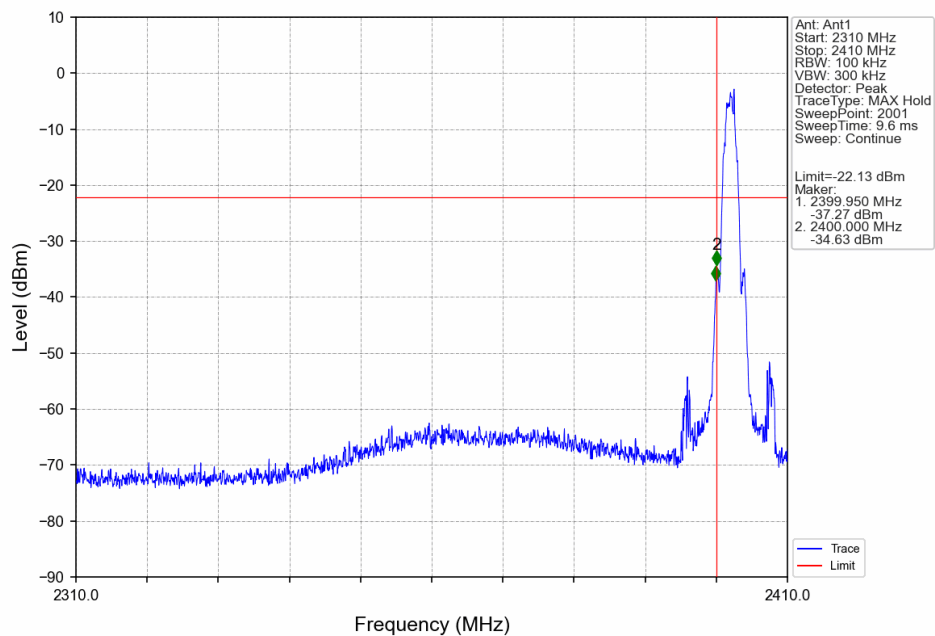


FCCID: 2A8SL-T13R

1M HCH 2480MHz Ant1 NTN

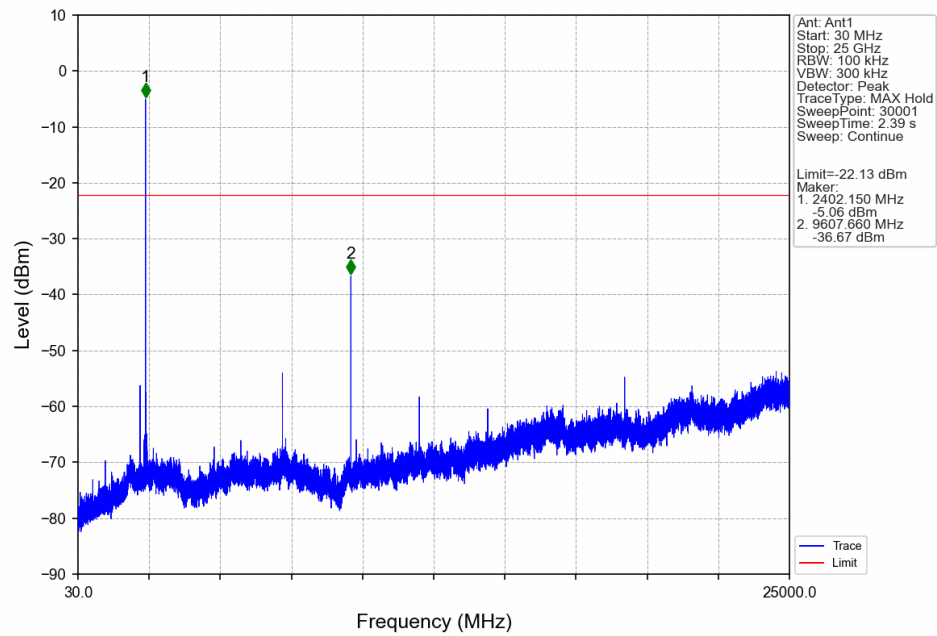


2M LCH 2402MHz Ant1 NTN

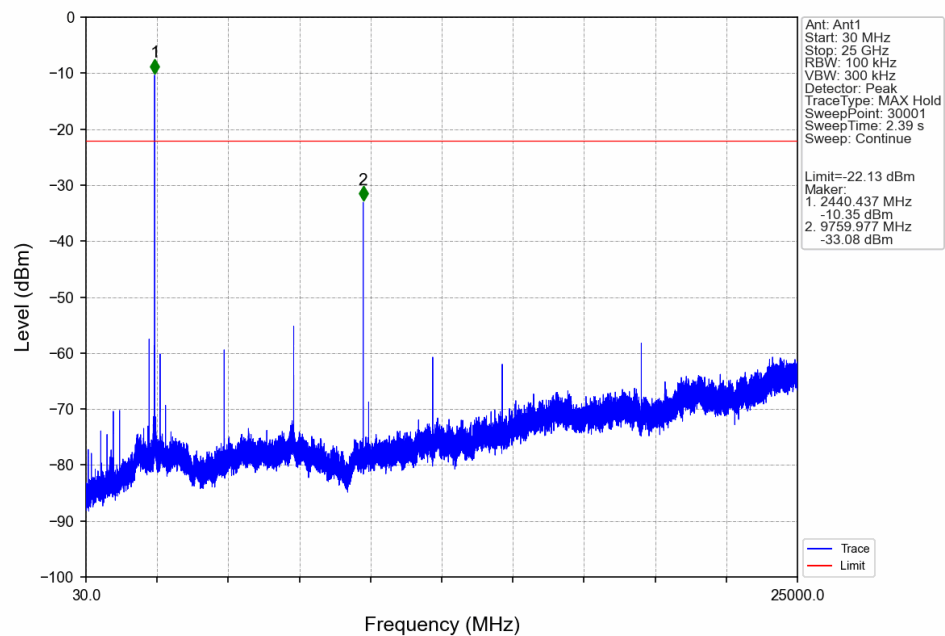


FCCID: 2A8SL-T13R

2M LCH 2402MHz Ant1 NTV



2M MCH 2440MHz Ant1 NTV



FCCID: 2A8SL-T13R

