



Annex for Bluetooth Low Energy

Test Report No.: CTL2412168031-WF02

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1. Duty Cycle

1.1 Test Result

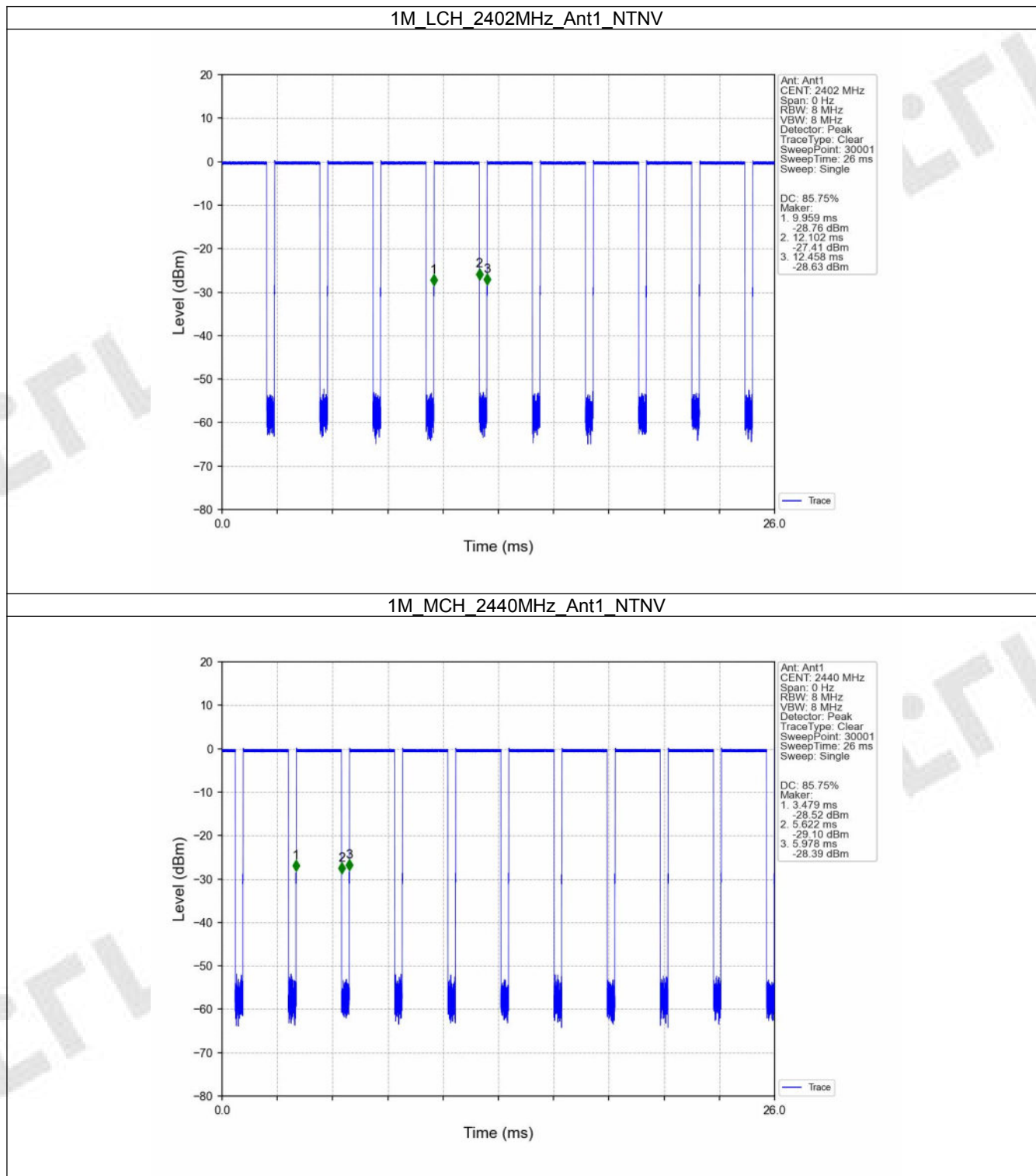
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.143	2.499	85.75	0.67	0.03
		2440	2.143	2.499	85.75	0.67	0.03
		2480	2.143	2.499	85.75	0.67	0.03
2M	SISO	2402	1.090	1.250	87.20	0.59	0.03
		2440	1.090	1.250	87.20	0.59	0.03
		2480	1.090	1.251	87.13	0.60	0.03

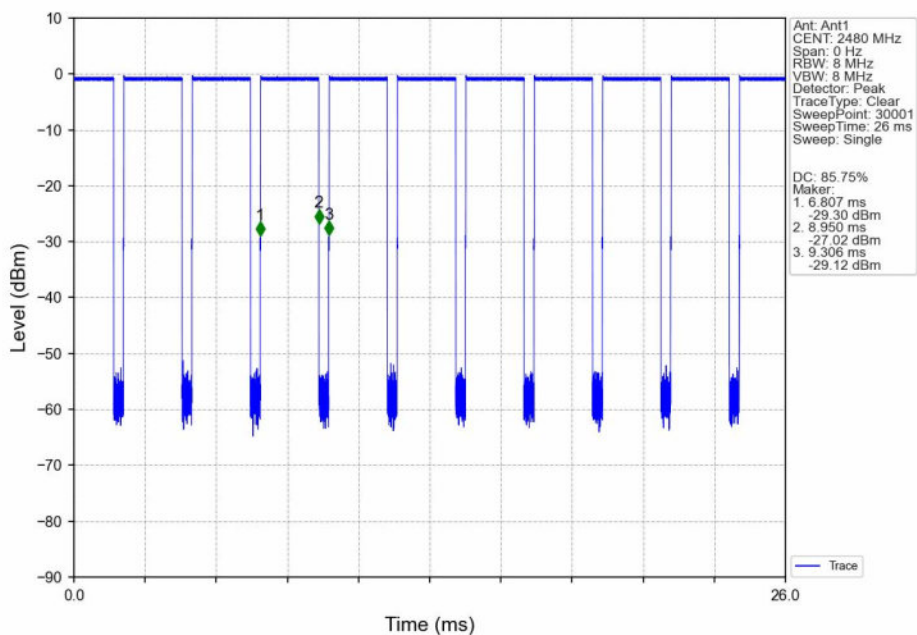
FCC ID: 2BNCJ-PLYR-P2

1.2 Test Graph

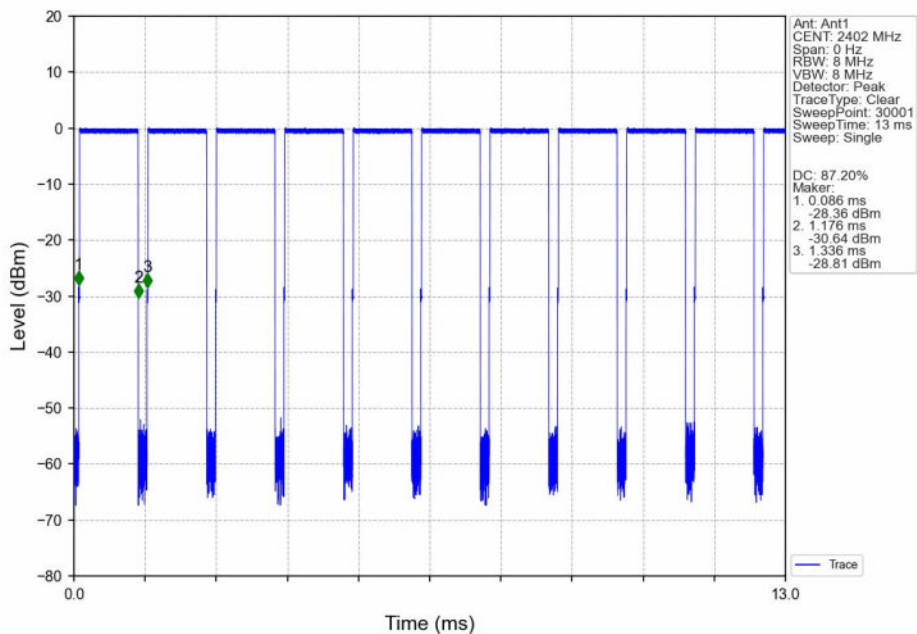
1.2.1 Ant1



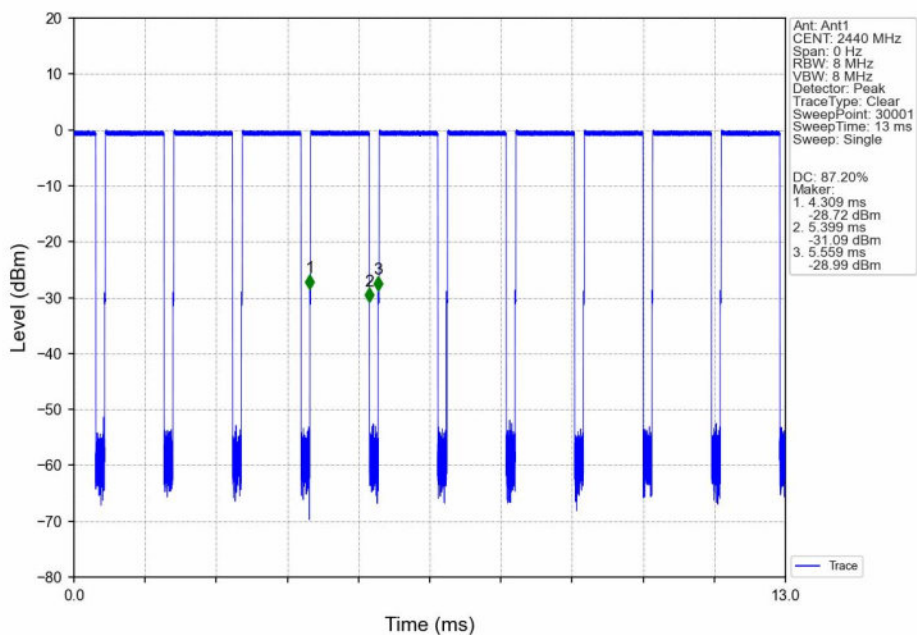
1M_HCH_2480MHz_Ant1_NTNV



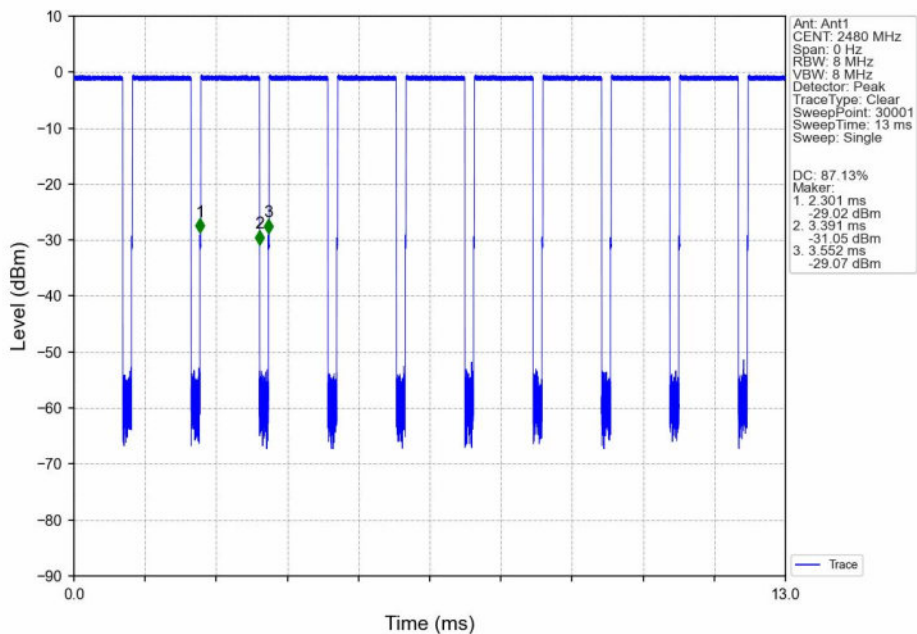
2M_LCH_2402MHz_Ant1_NTNV



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	1.060	/	Pass
		2440	1	1.059	/	Pass
		2480	1	1.062	/	Pass
2M	SISO	2402	1	2.059	/	Pass
		2440	1	2.059	/	Pass
		2480	1	2.057	/	Pass

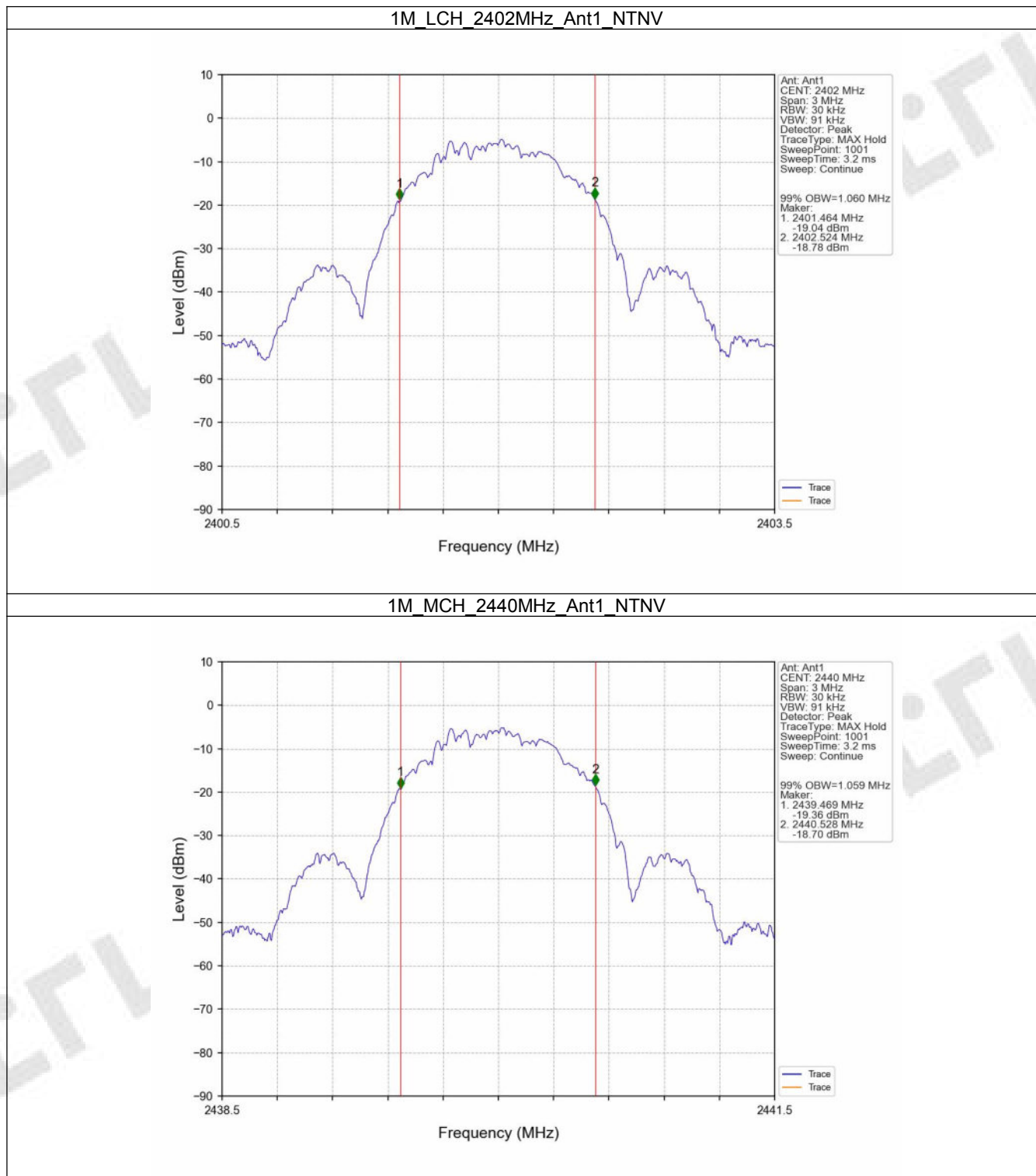
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.694	≥ 0.5	Pass
		2440	1	0.694	≥ 0.5	Pass
		2480	1	0.695	≥ 0.5	Pass
2M	SISO	2402	1	1.187	≥ 0.5	Pass
		2440	1	1.191	≥ 0.5	Pass
		2480	1	1.188	≥ 0.5	Pass

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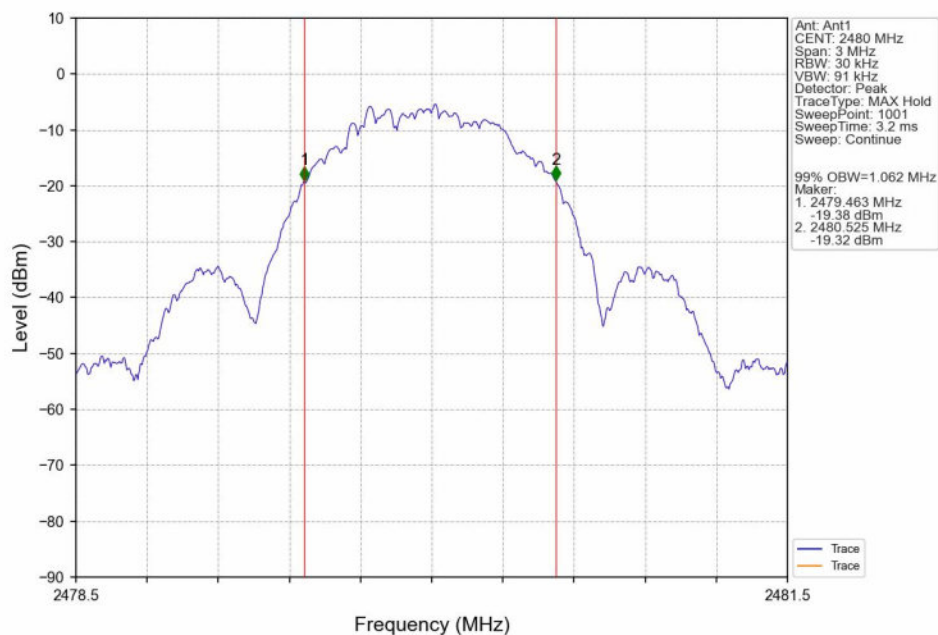
2.2 Test Graph

2.2.1 OBW

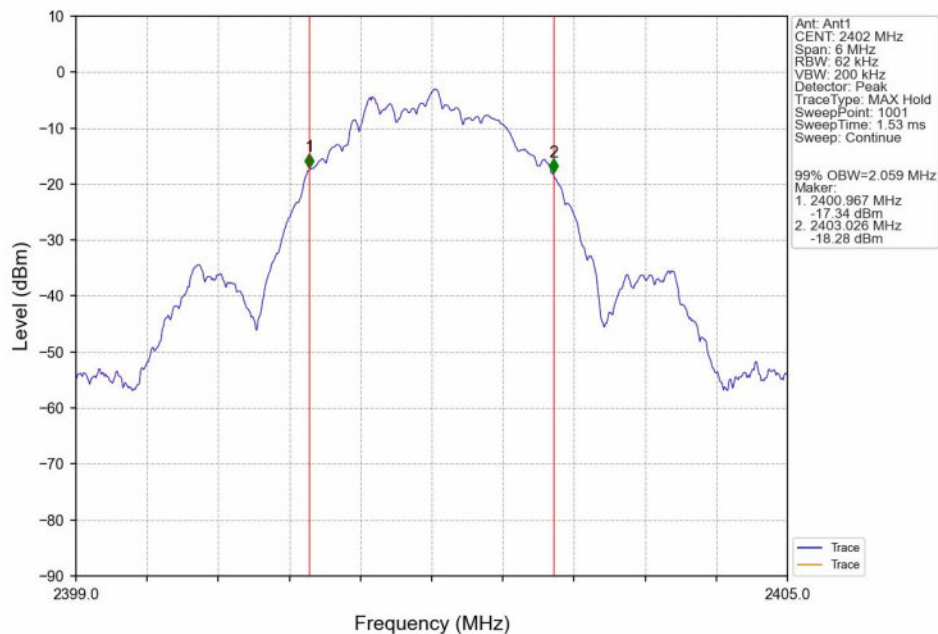


FCC ID: 2BNCJ-PLYR-P2

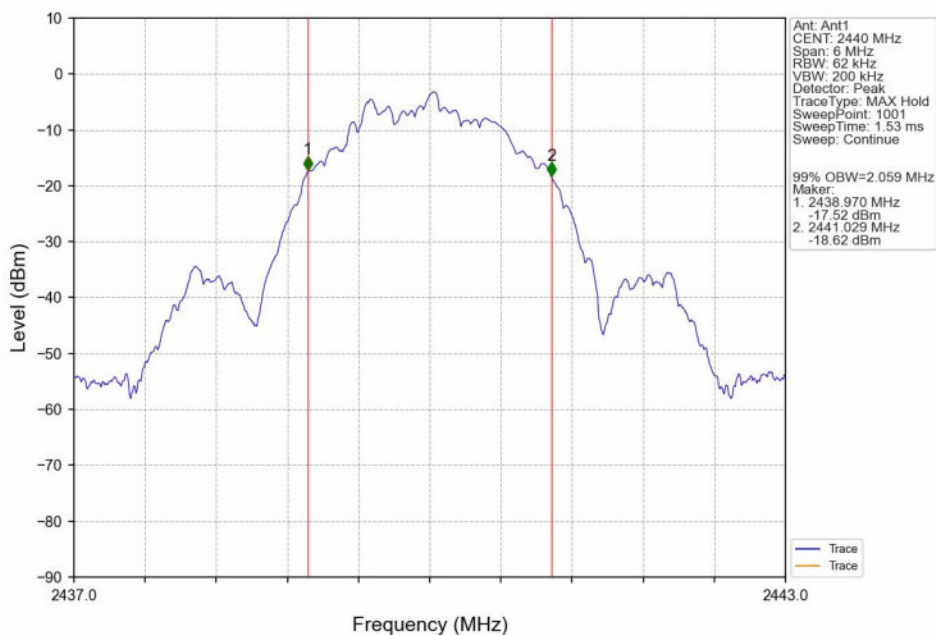
1M_HCH_2480MHz_Ant1_NTNV



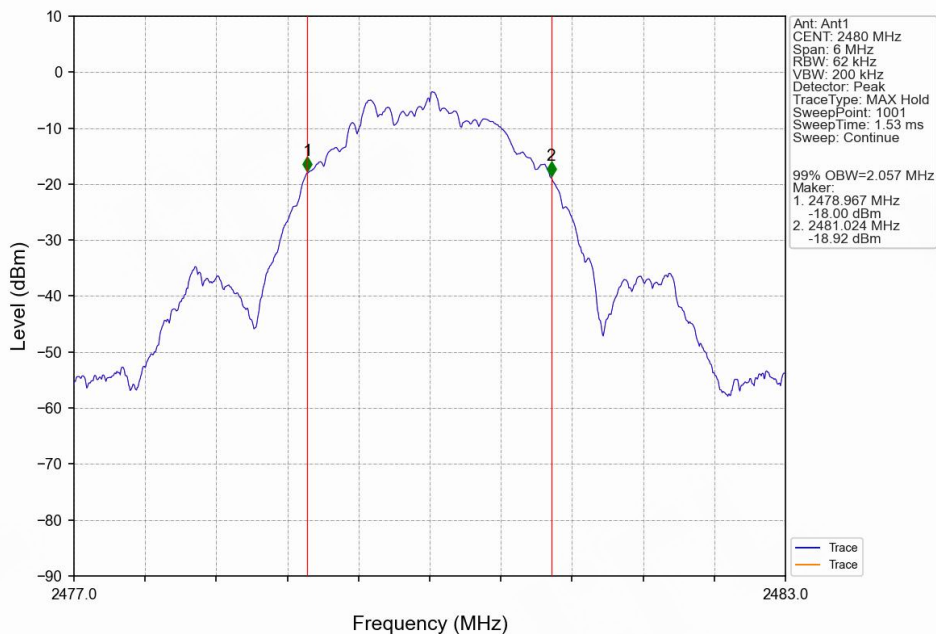
2M_LCH_2402MHz_Ant1_NTNV



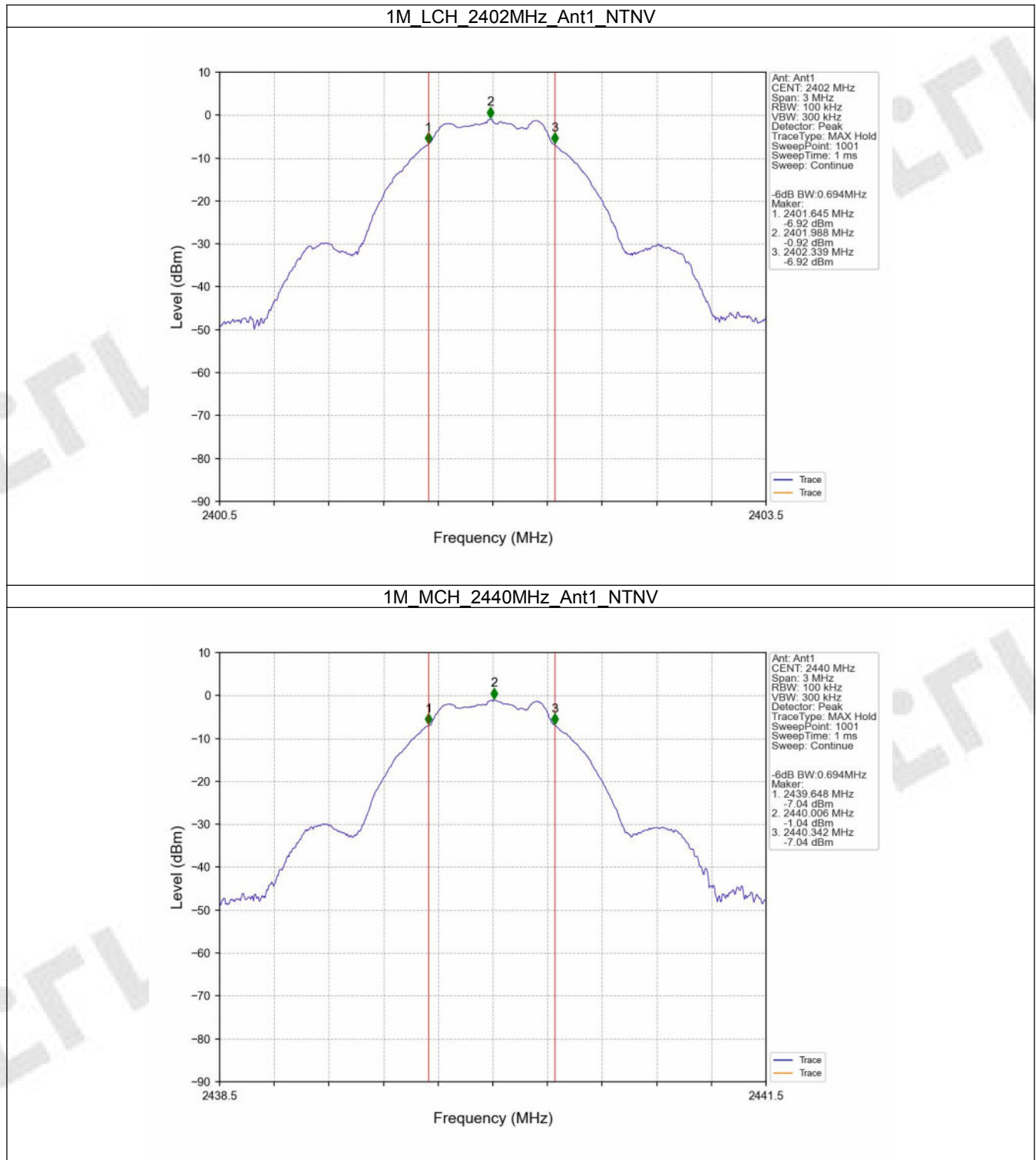
2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

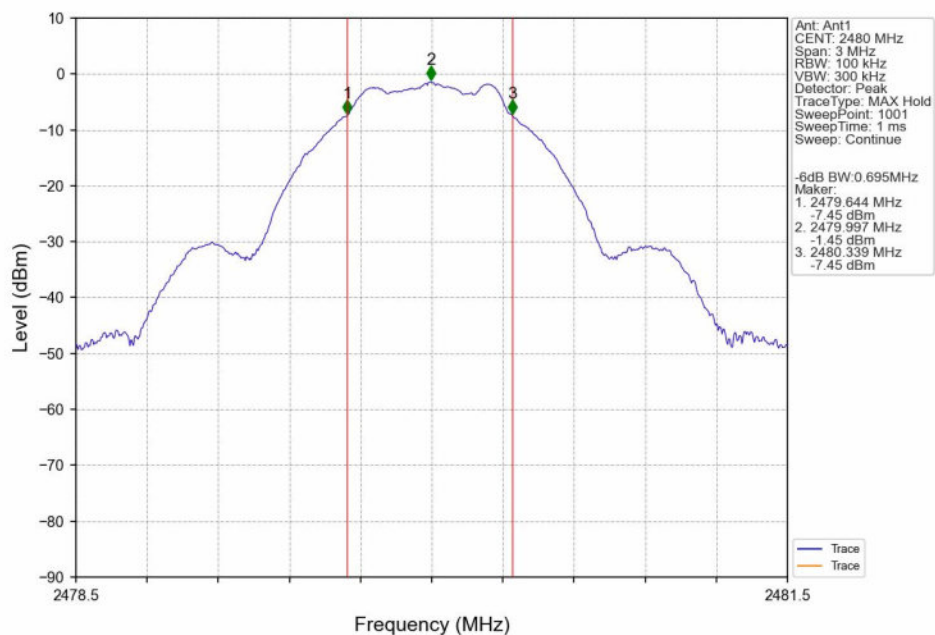


2.2.2 6dB BW

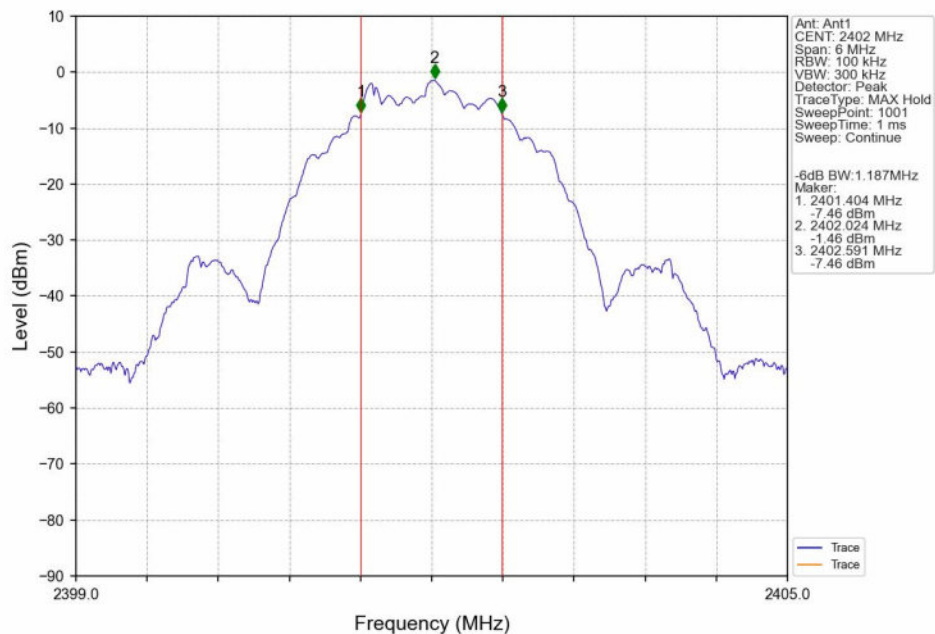


FCC ID: 2BNCJ-PLYR-P2

1M_HCH_2480MHz_Ant1_NTNV

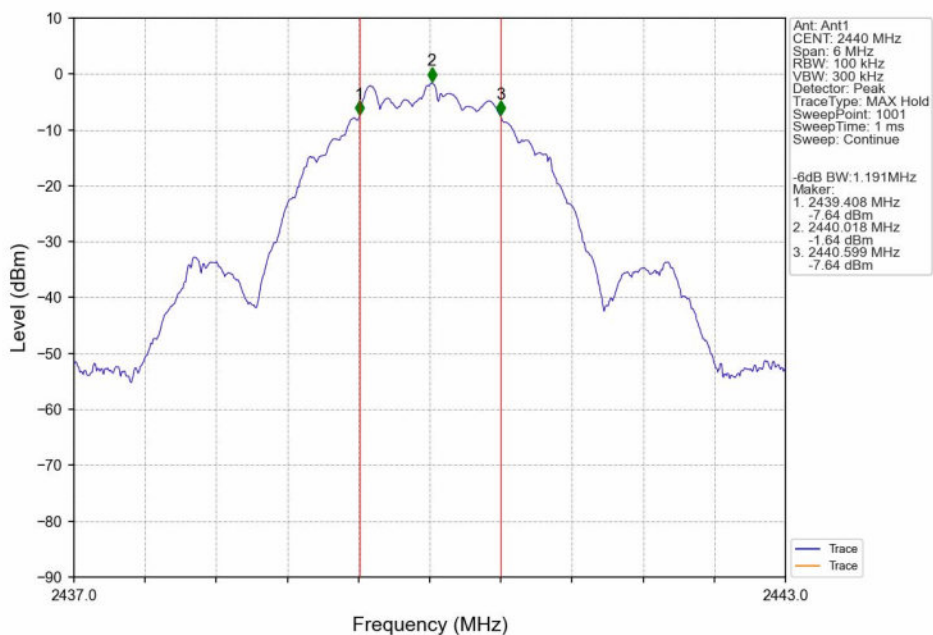


2M_LCH_2402MHz_Ant1_NTNV

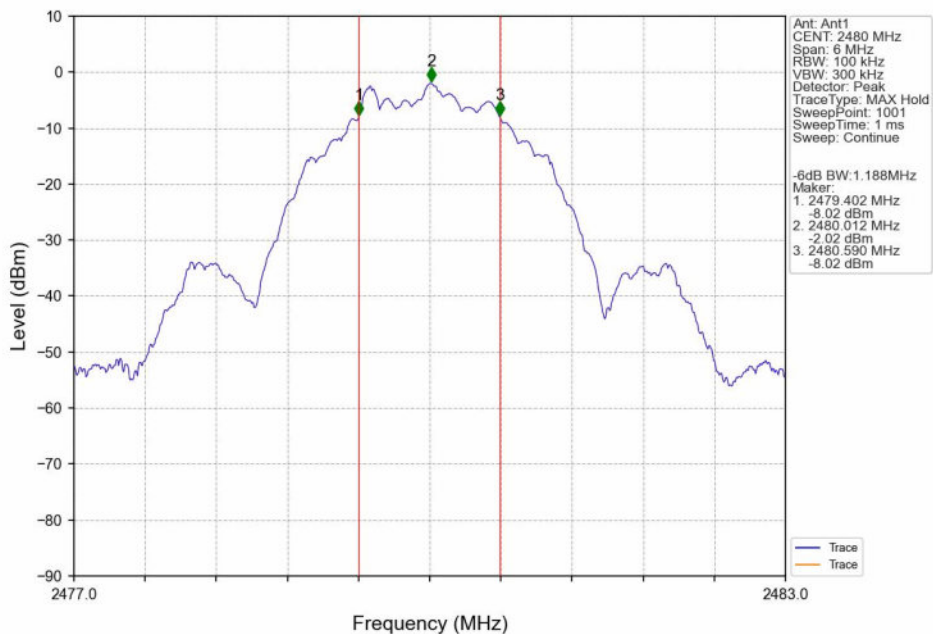


FCC ID: 2BNCJ-PLYR-P2

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

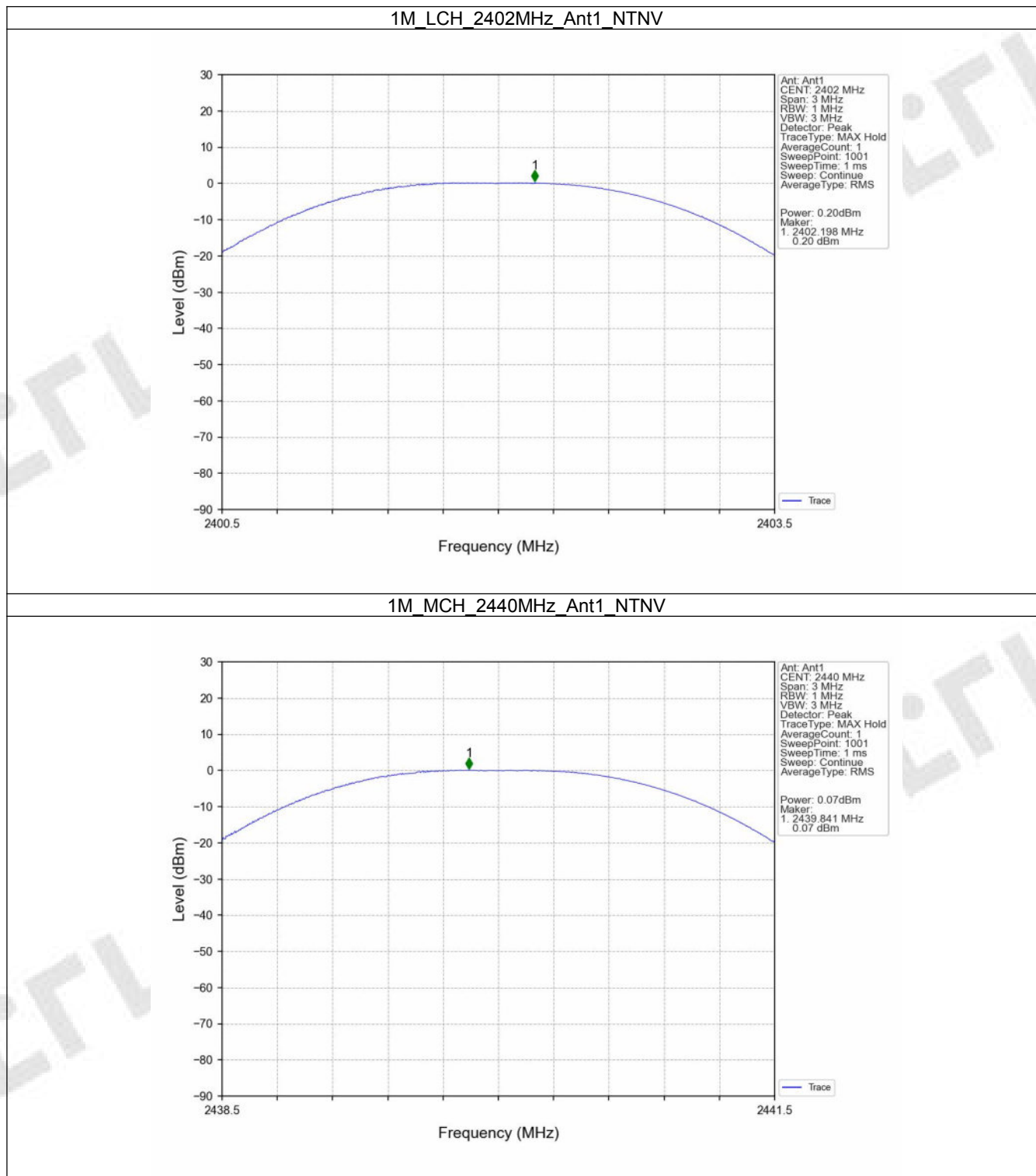
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	0.20	<=30	Pass
		2440	0.07	<=30	Pass
		2480	-0.39	<=30	Pass
2M	SISO	2402	-0.02	<=30	Pass
		2440	-0.06	<=30	Pass
		2480	-0.49	<=30	Pass

Note1: Antenna Gain: Ant1: 2.39dBi;

FCC ID: 2BNCJ-PLYR-P2

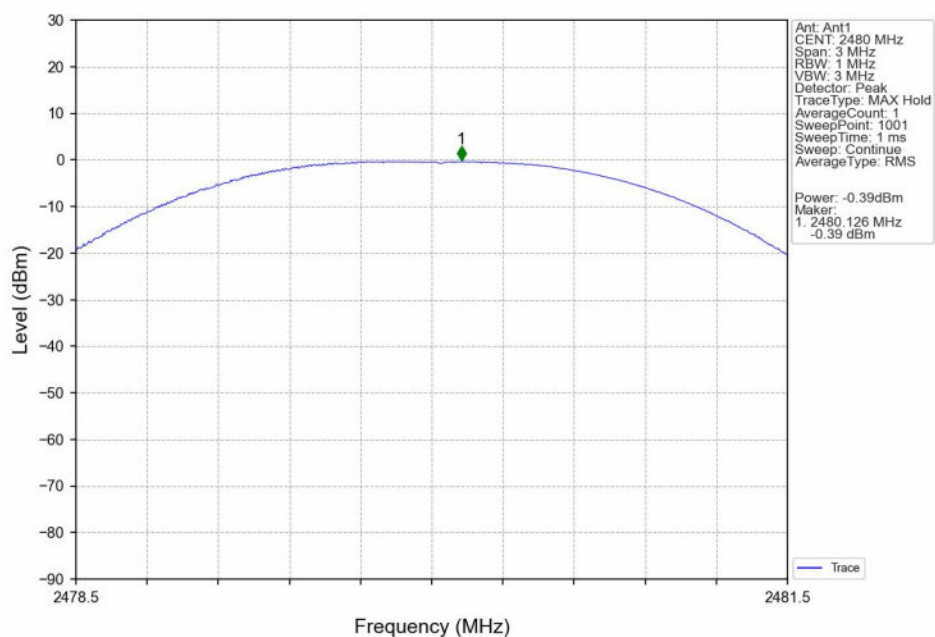
3.2 Test Graph

3.2.1 Power

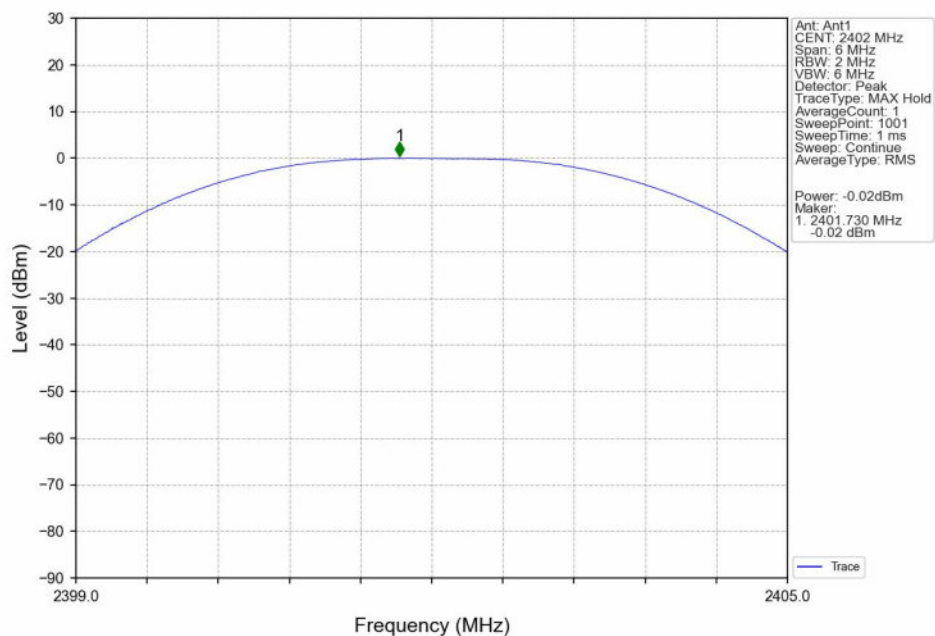


FCC ID: 2BNCJ-PLYR-P2

1M_HCH_2480MHz_Ant1_NTNV

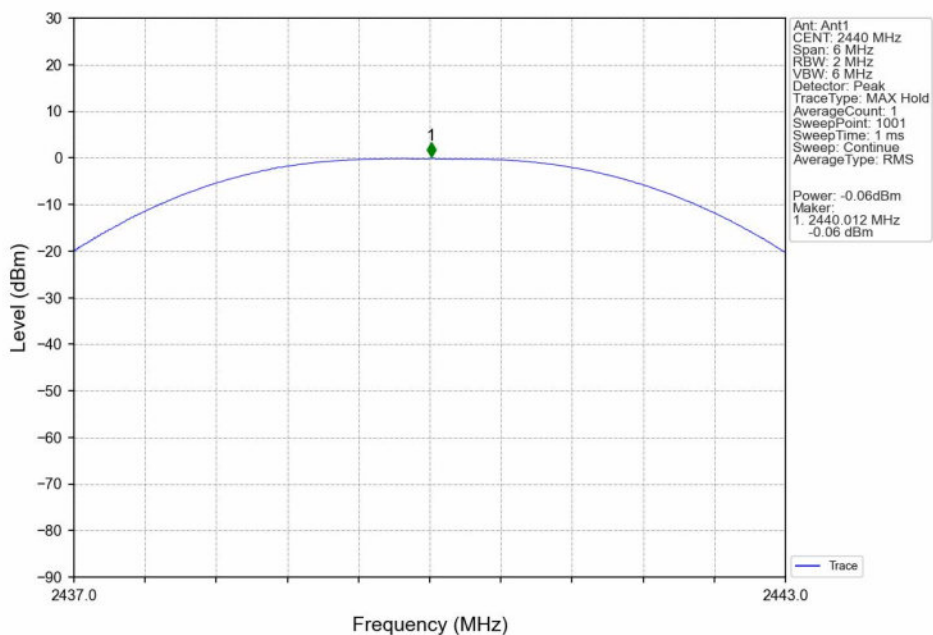


2M_LCH_2402MHz_Ant1_NTNV

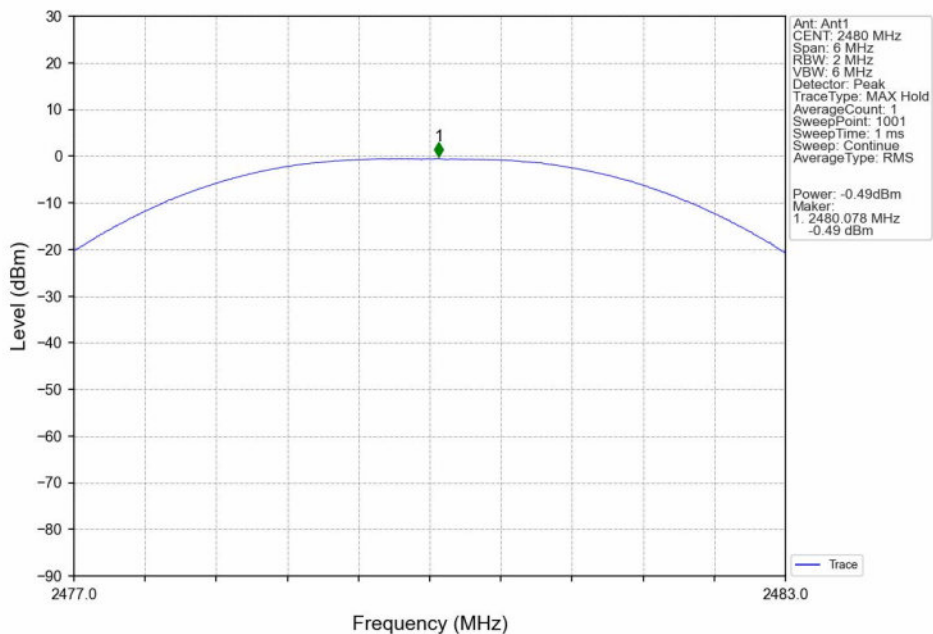


FCC ID: 2BNCJ-PLYR-P2

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

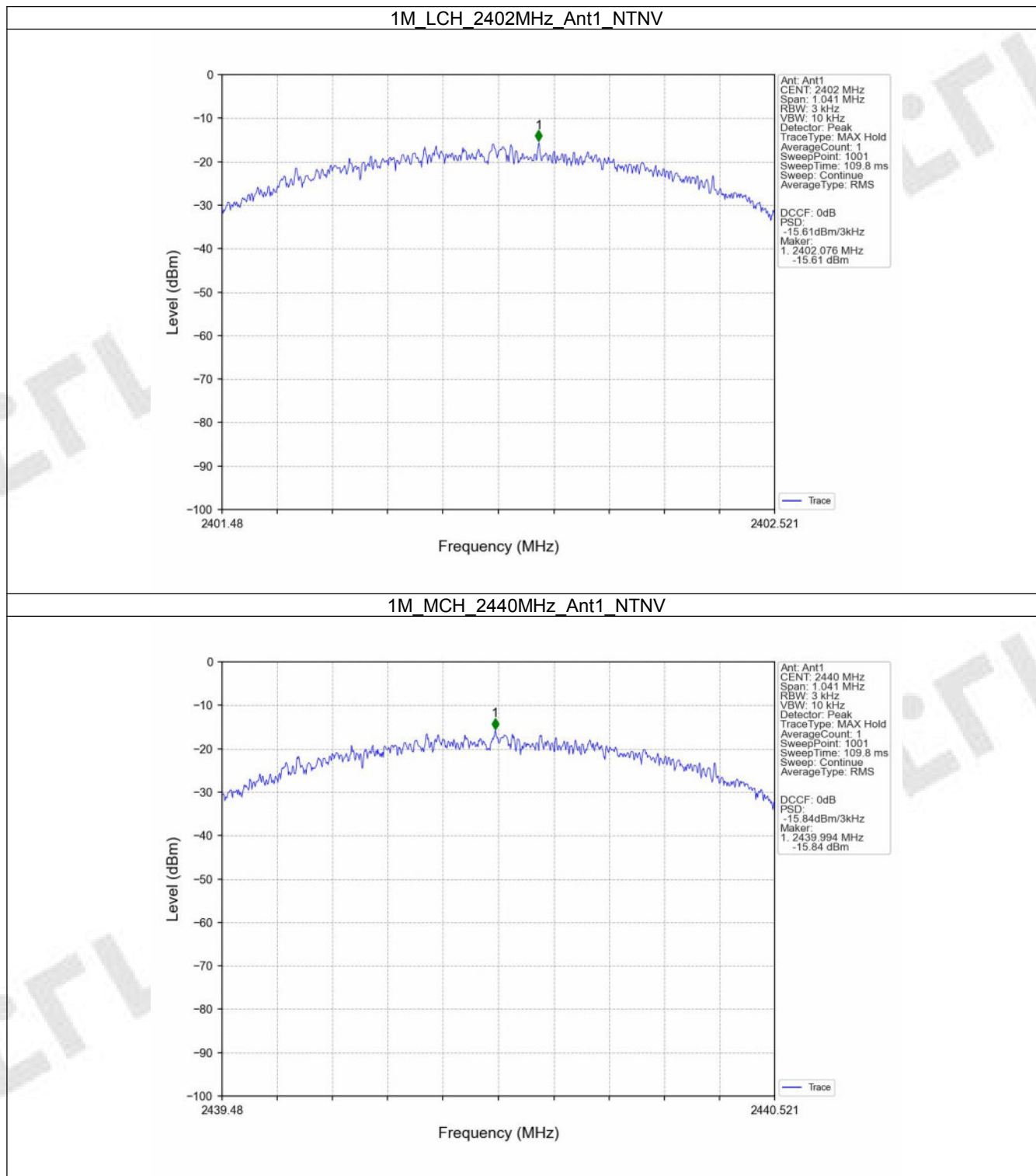
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-15.61	<=8	Pass
		2440	-15.84	<=8	Pass
		2480	-16.40	<=8	Pass
2M	SISO	2402	-19.35	<=8	Pass
		2440	-19.44	<=8	Pass
		2480	-19.71	<=8	Pass

Note1: Antenna Gain: Ant1: 2.39dBi;

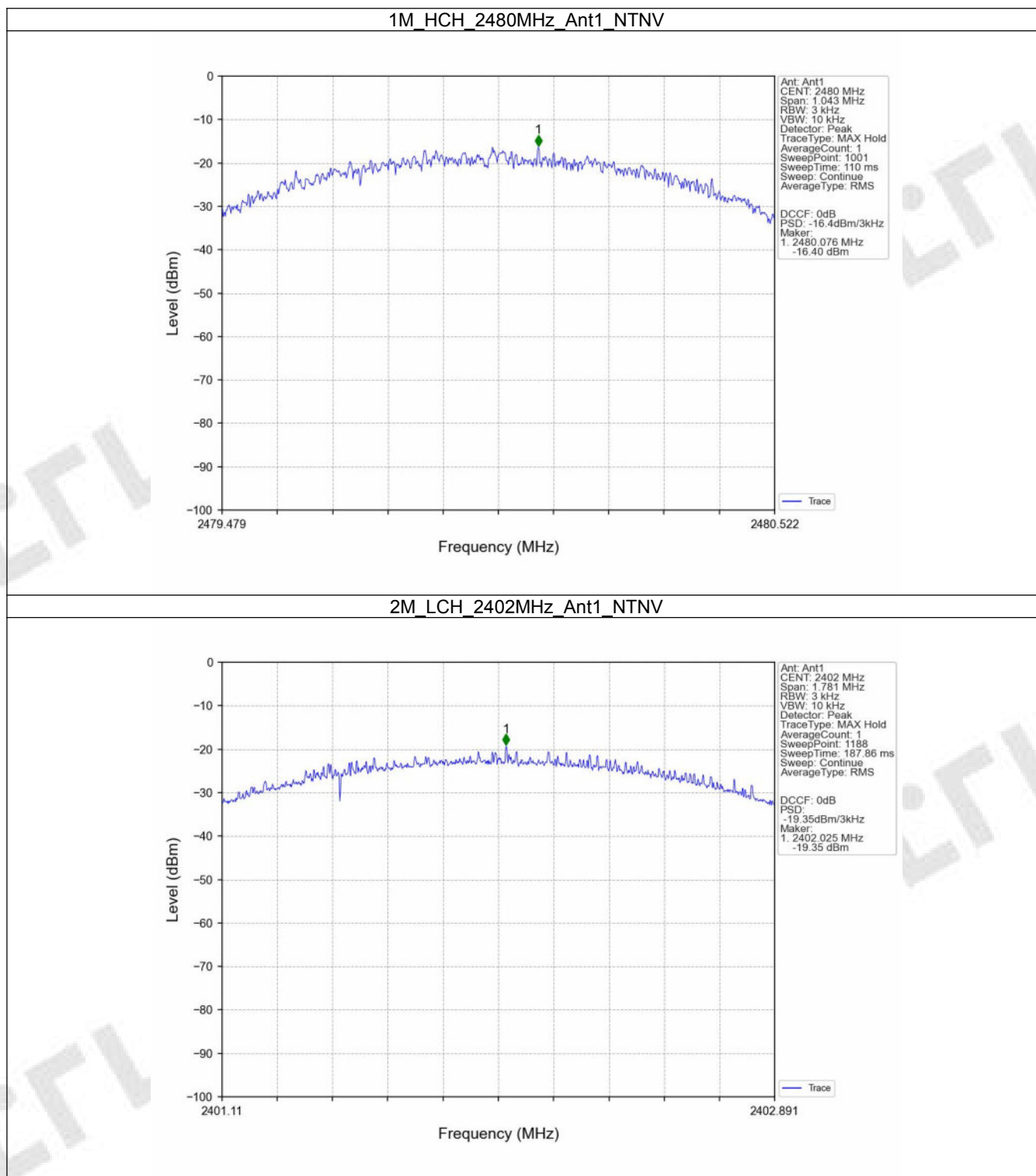
FCC ID: 2BNCJ-PLYR-P2

4.2 Test Graph

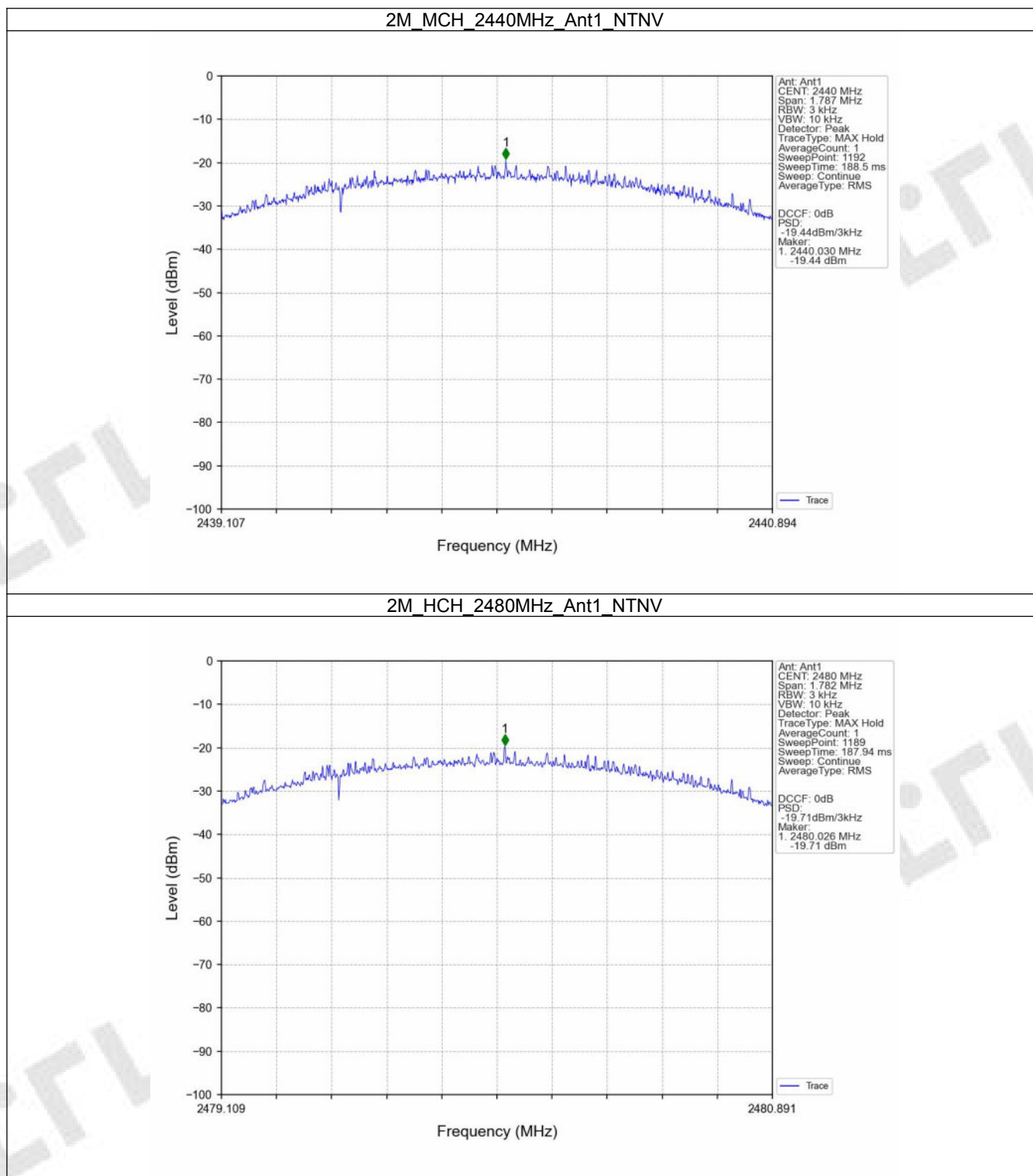
4.2.1 PSD



FCC ID: 2BNCJ-PLYR-P2



FCC ID: 2BNCJ-PLYR-P2



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	-1.02
		2440	1	-1.11
		2480	1	-1.62
2M	SISO	2402	1	-1.75
		2440	1	-1.93
		2480	1	-2.32

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

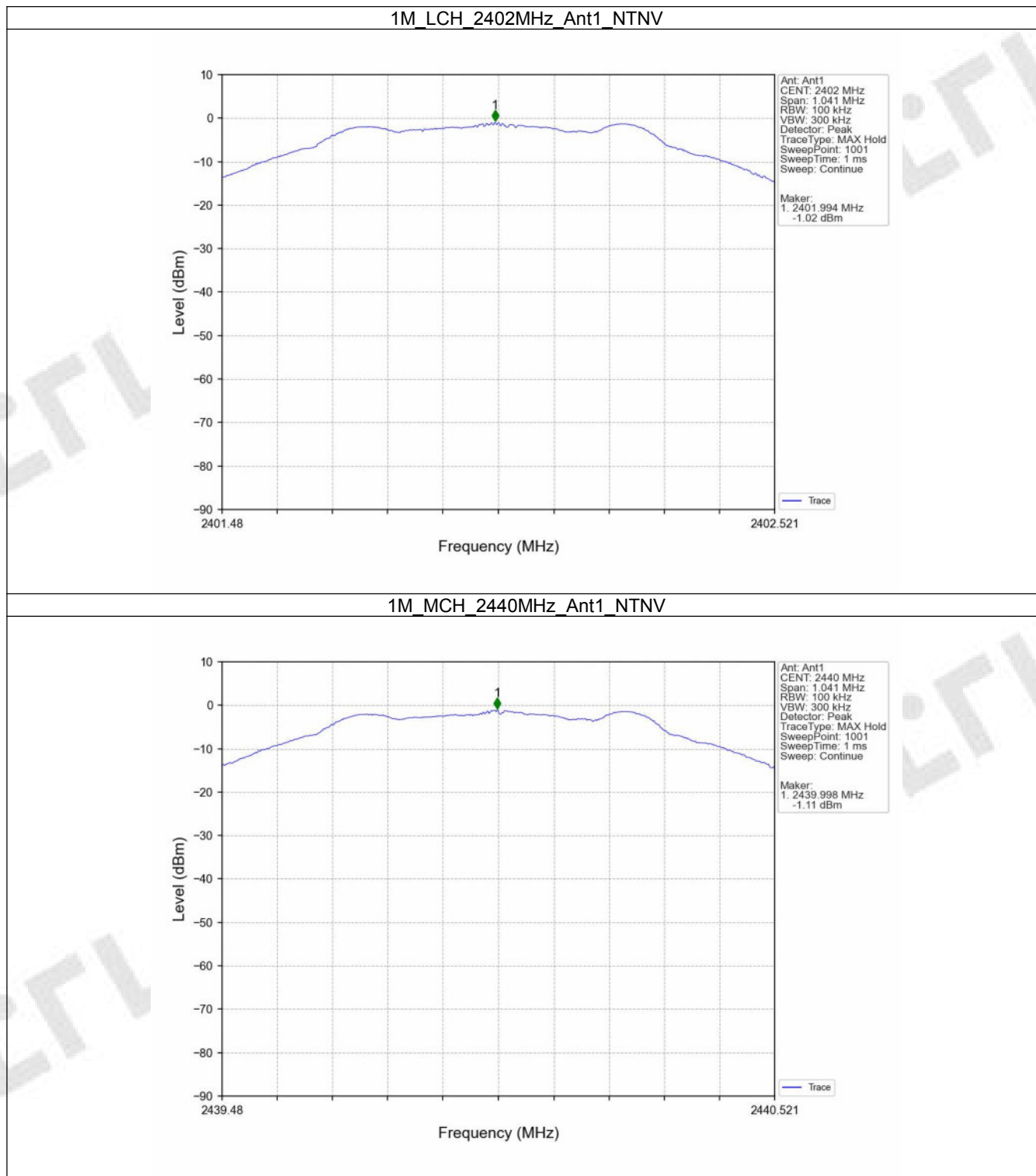
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-1.02	-21.02	Pass
		2440	1	-1.02	-21.02	Pass
		2480	1	-1.02	-21.02	Pass
2M	SISO	2402	1	-1.75	-21.75	Pass
		2440	1	-1.75	-21.75	Pass
		2480	1	-1.75	-21.75	Pass

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.

FCC ID: 2BNCJ-PLYR-P2

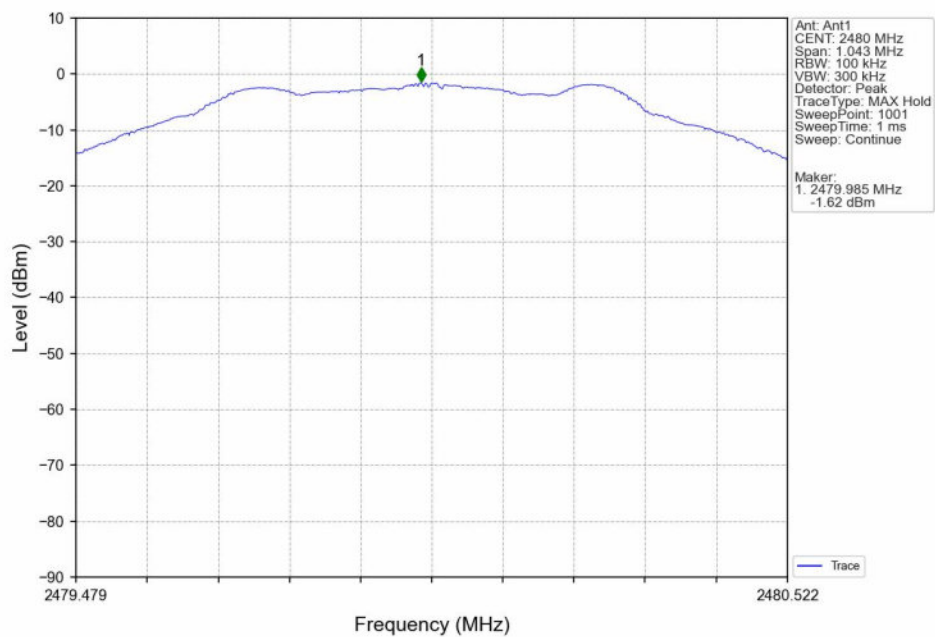
5.2 Test Graph

5.2.1 Ref

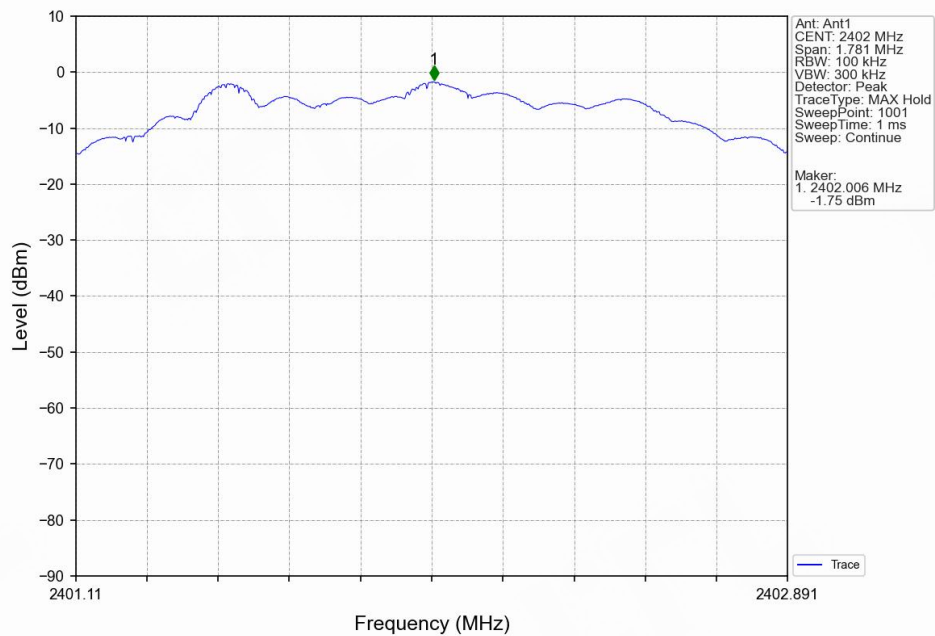


FCC ID: 2BNCJ-PLYR-P2

1M_HCH_2480MHz_Ant1_NTNV

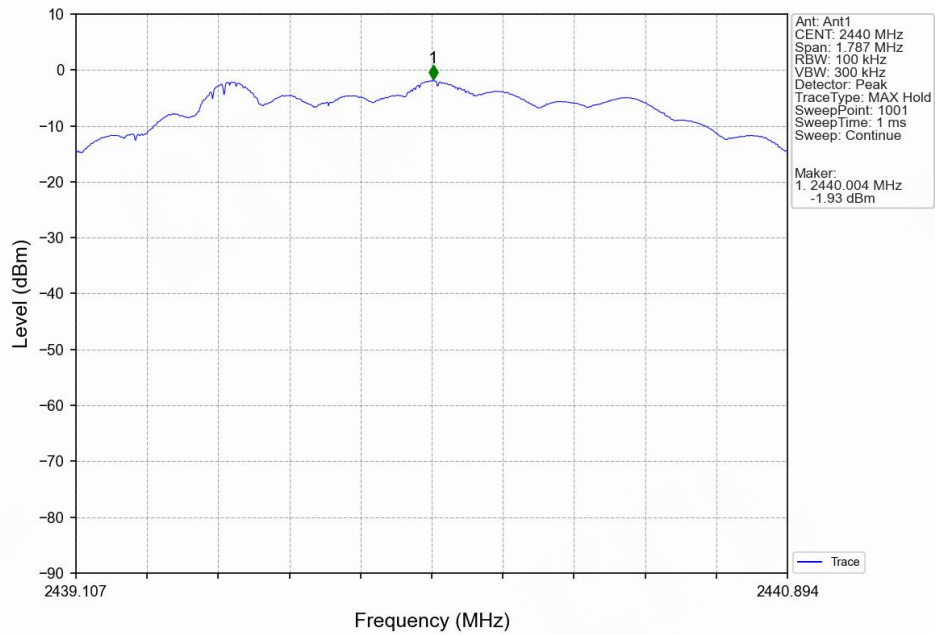


2M_LCH_2402MHz_Ant1_NTNV

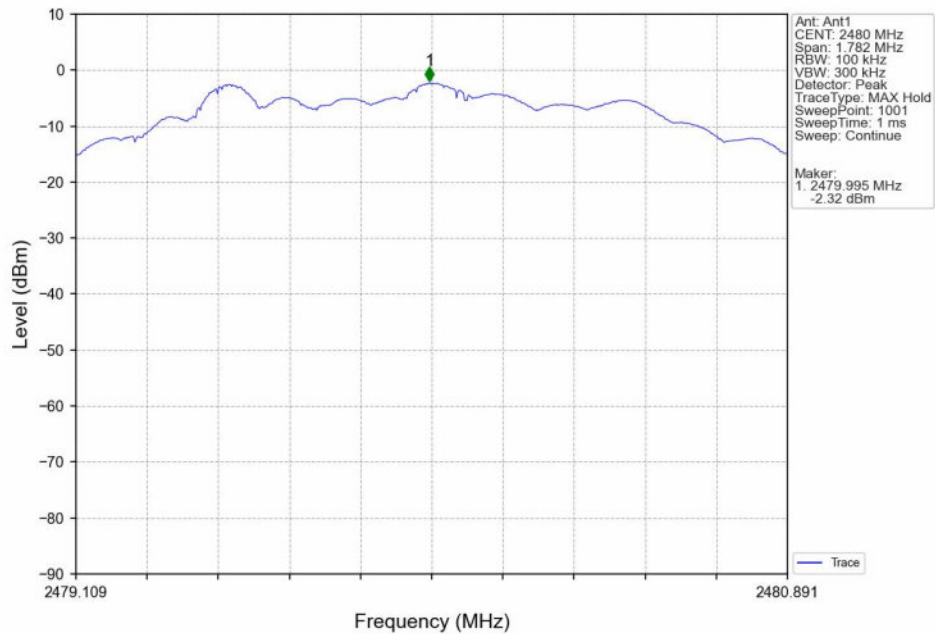


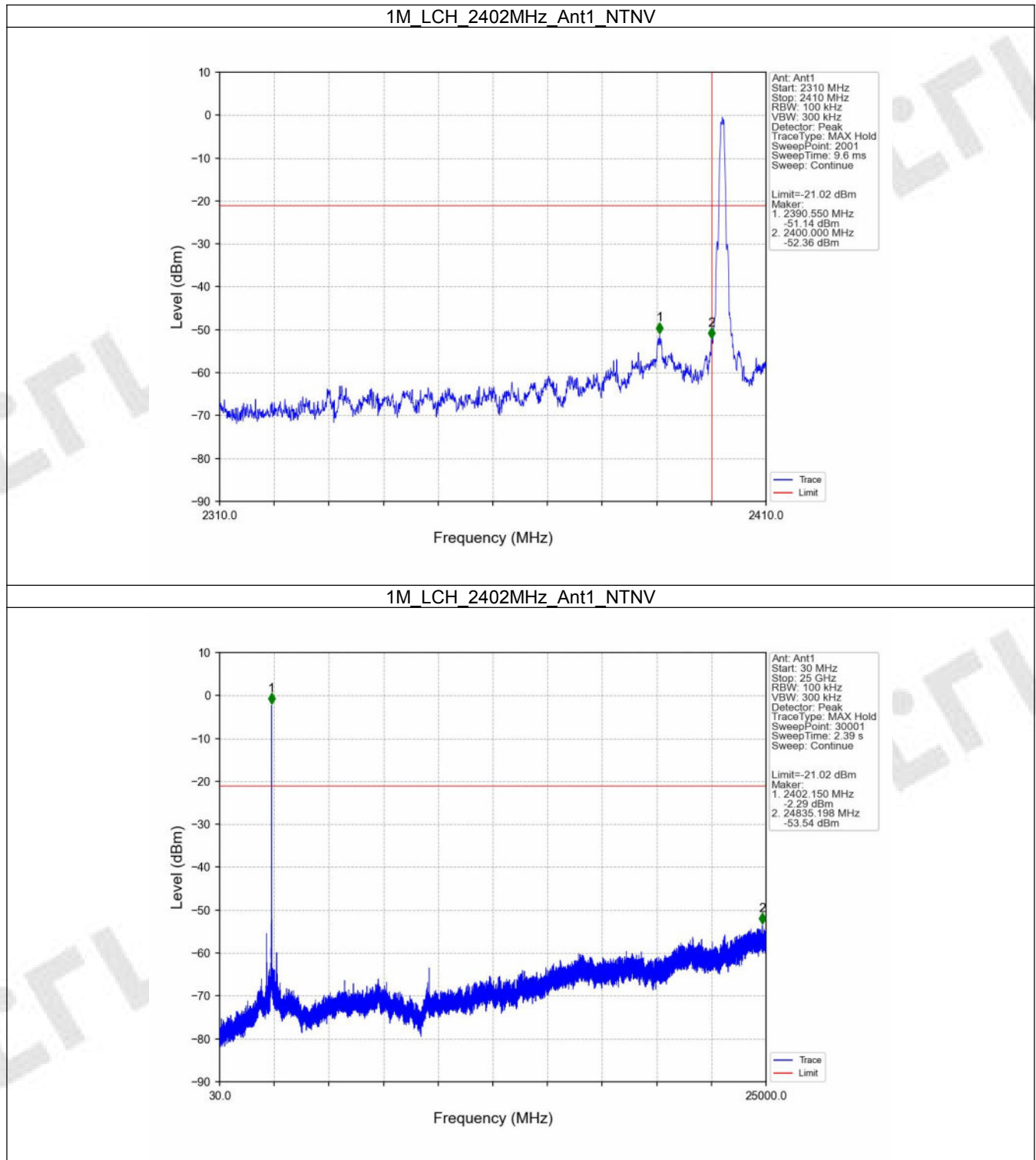
FCC ID: 2BNCJ-PLYR-P2

2M_MCH_2440MHz_Ant1_NTNV



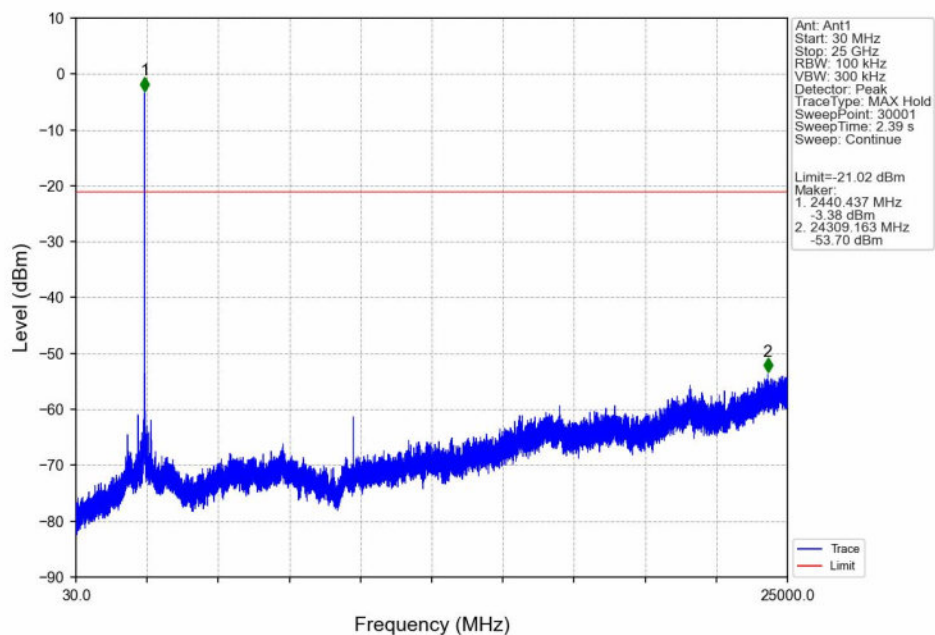
2M_HCH_2480MHz_Ant1_NTNV



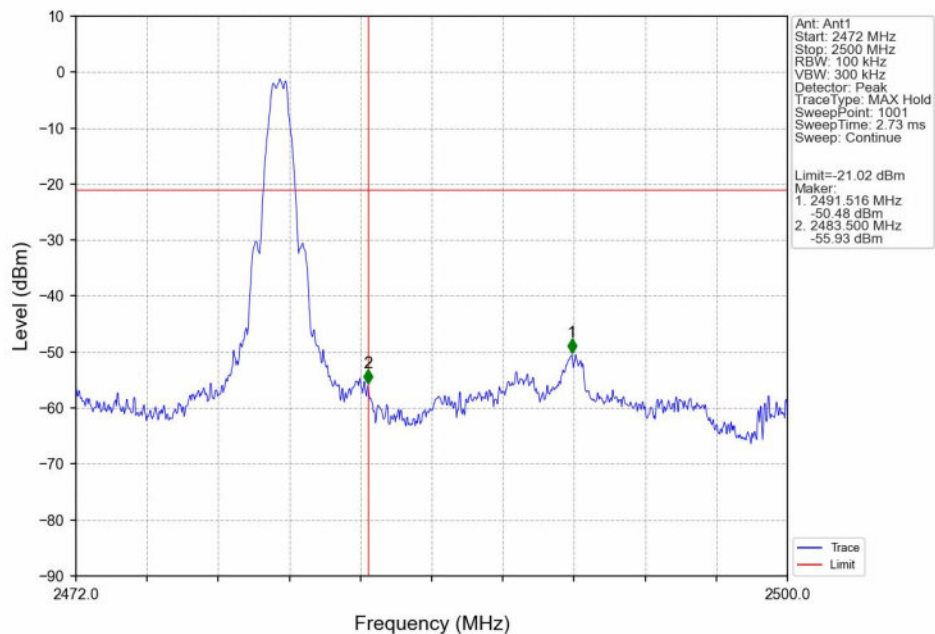
5.2.2 CSE

FCC ID: 2BNCJ-PLYR-P2

1M_MCH_2440MHz_Ant1_NTNV

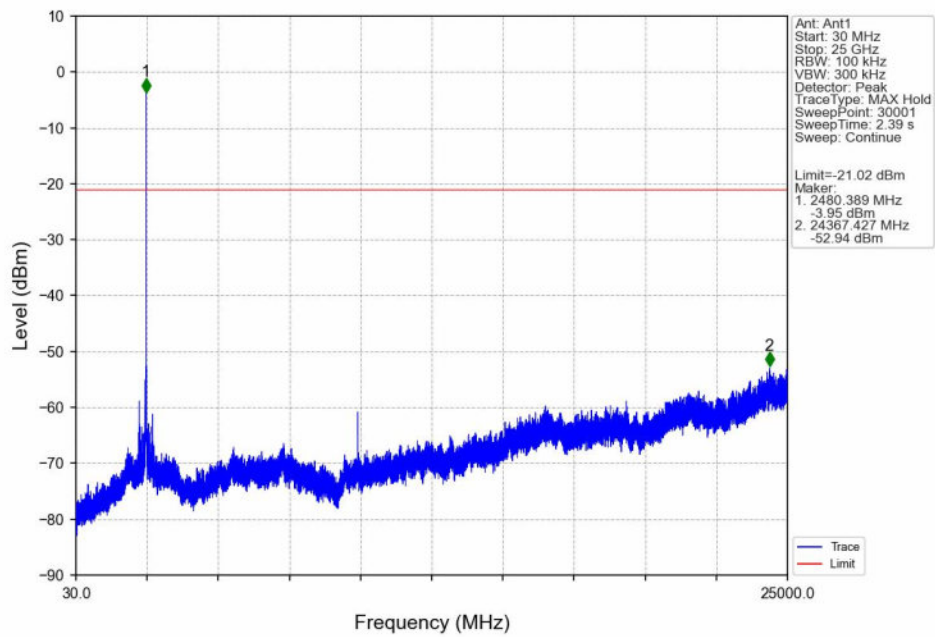


1M_HCH_2480MHz_Ant1_NTNV

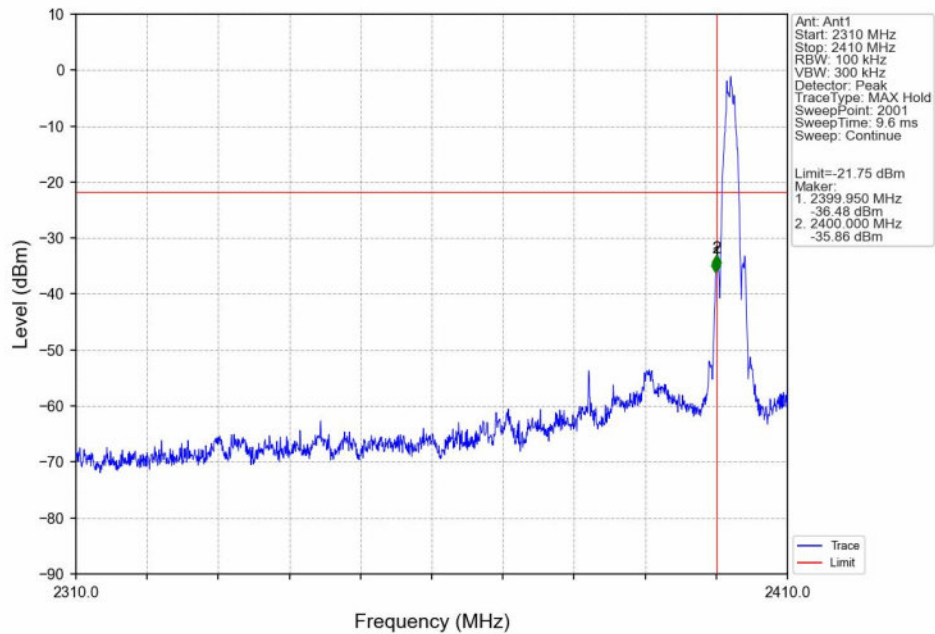


FCC ID: 2BNCJ-PLYR-P2

1M_HCH_2480MHz_Ant1_NTNV

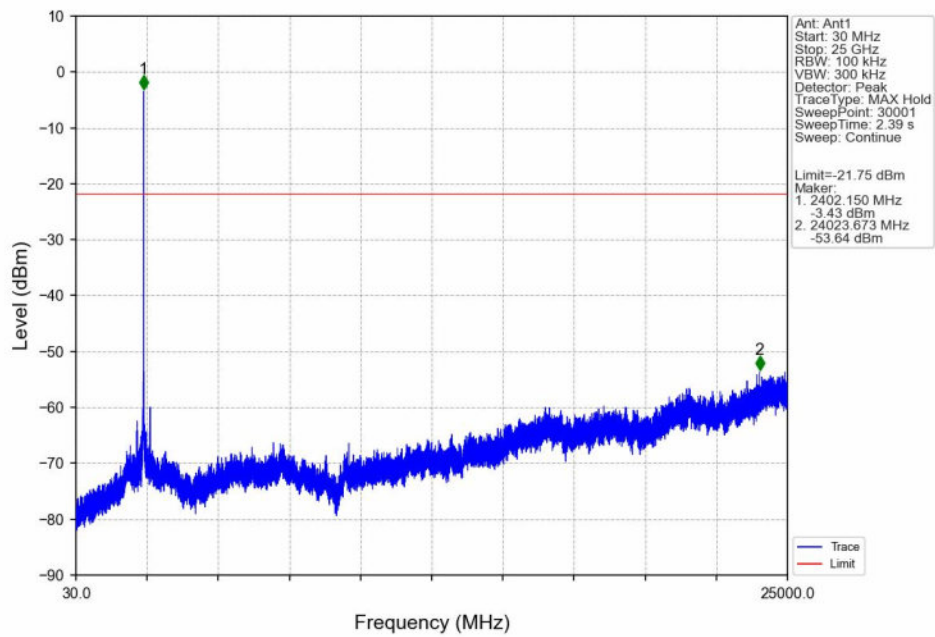


2M_LCH_2402MHz_Ant1_NTNV

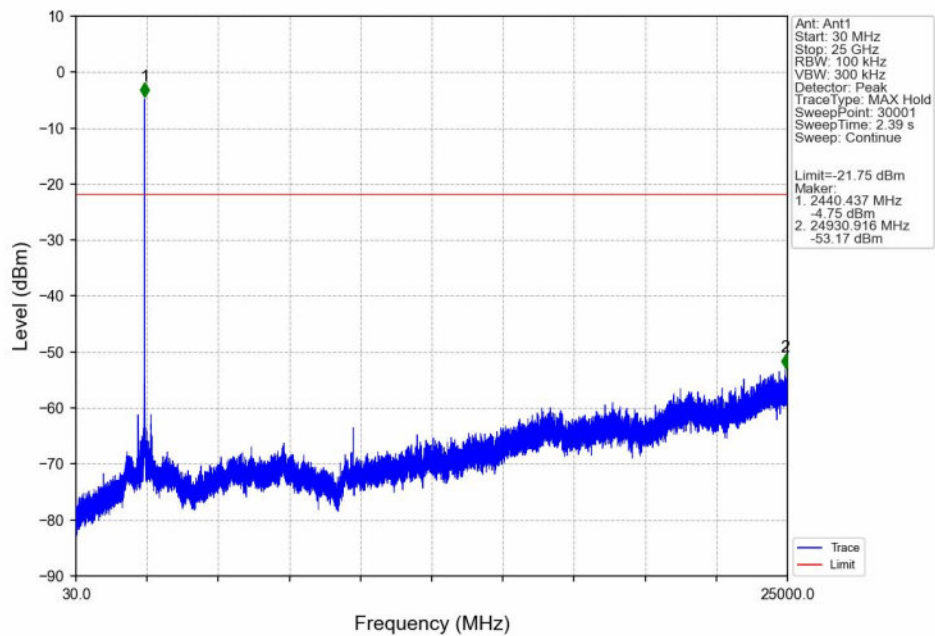


FCC ID: 2BNCJ-PLYR-P2

2M_LCH_2402MHz_Ant1_NTNV

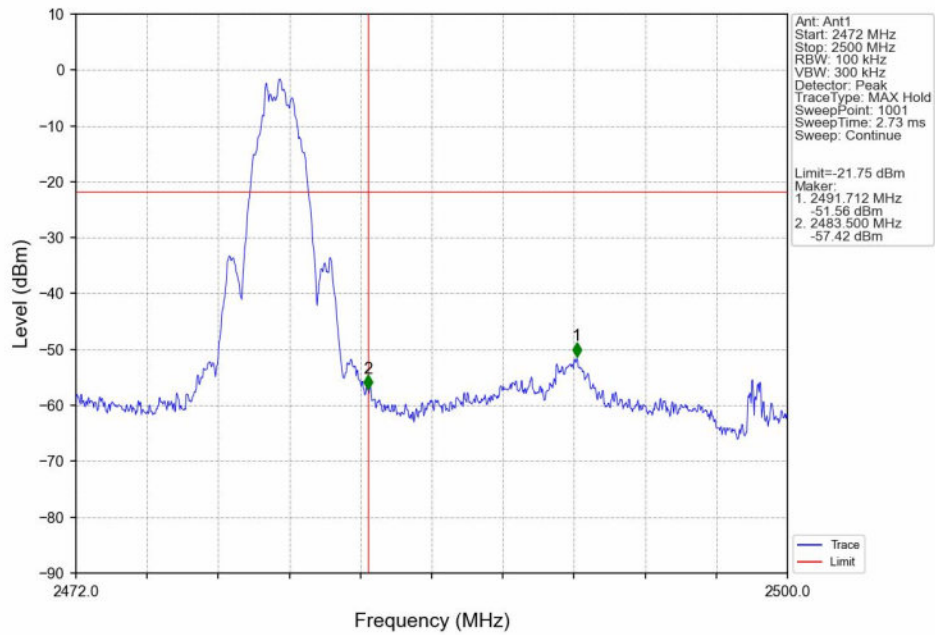


2M_MCH_2440MHz_Ant1_NTNV



FCC ID: 2BNCJ-PLYR-P2

2M_HCH_2480MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

