



Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Tel: +86-755-89486194 E-mail: ctl@ctl-lab.com

Annex for Bluetooth Low Energy

Test Report No.: CTL2511212017-WF

TABLE OF CONTENTS

1. Bandwidth	2
2. Maximum Conducted Output Power	9
3. Maximum Power Spectral Density	13
4. Unwanted Emissions In Non-restricted Frequency Bands	17

FCC ID: 2BFCV-TOUCH

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	1.253	/	Pass
		2440	1	1.417	/	Pass
		2480	1	1.327	/	Pass
2M	SISO	2402	1	2.327	/	Pass
		2440	1	2.448	/	Pass
		2480	1	2.341	/	Pass

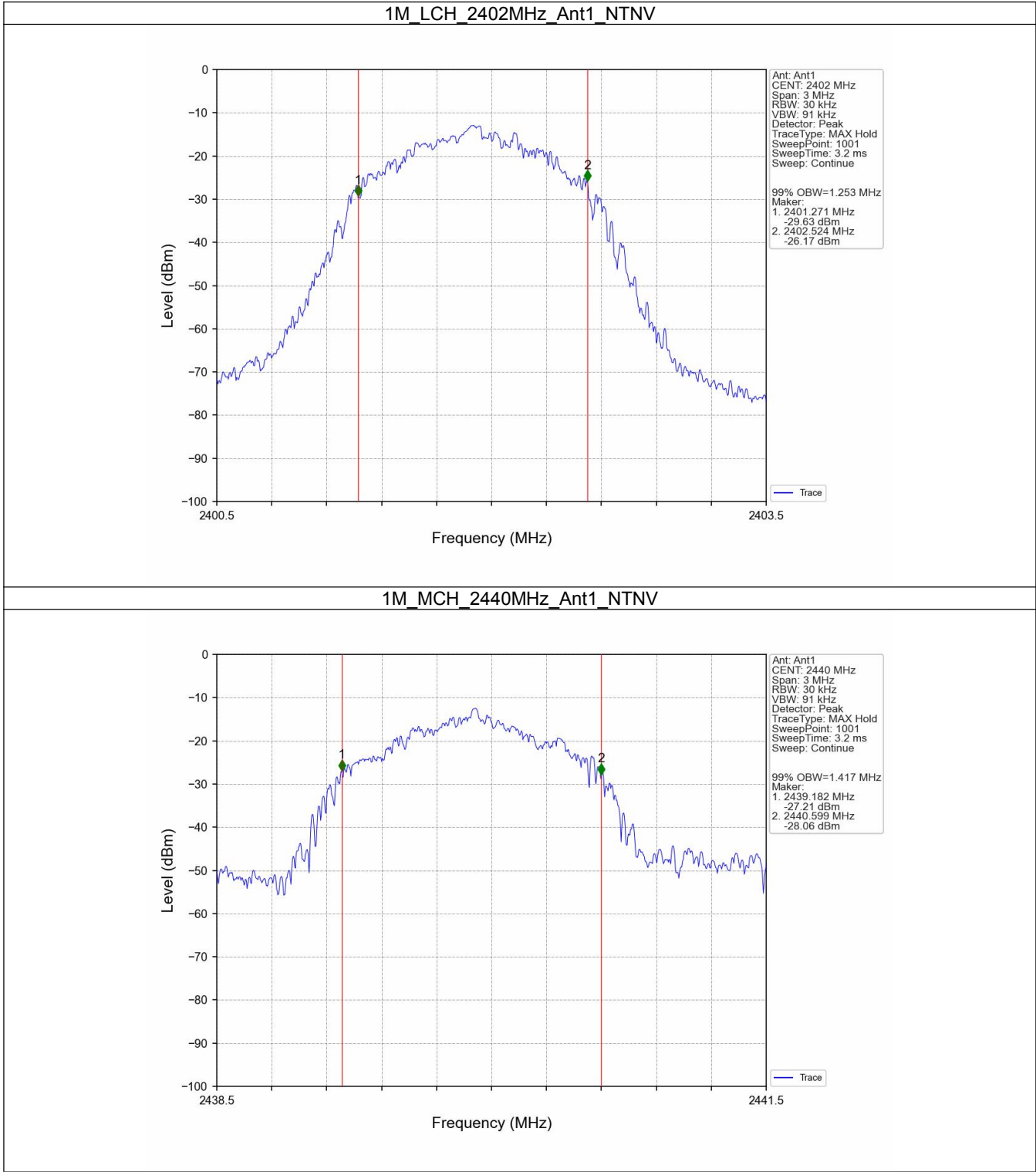
1.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.275	≥ 0.5	Pass
		2440	1	1.358	≥ 0.5	Pass
		2480	1	1.359	≥ 0.5	Pass
2M	SISO	2402	1	1.398	≥ 0.5	Pass
		2440	1	1.488	≥ 0.5	Pass
		2480	1	1.431	≥ 0.5	Pass

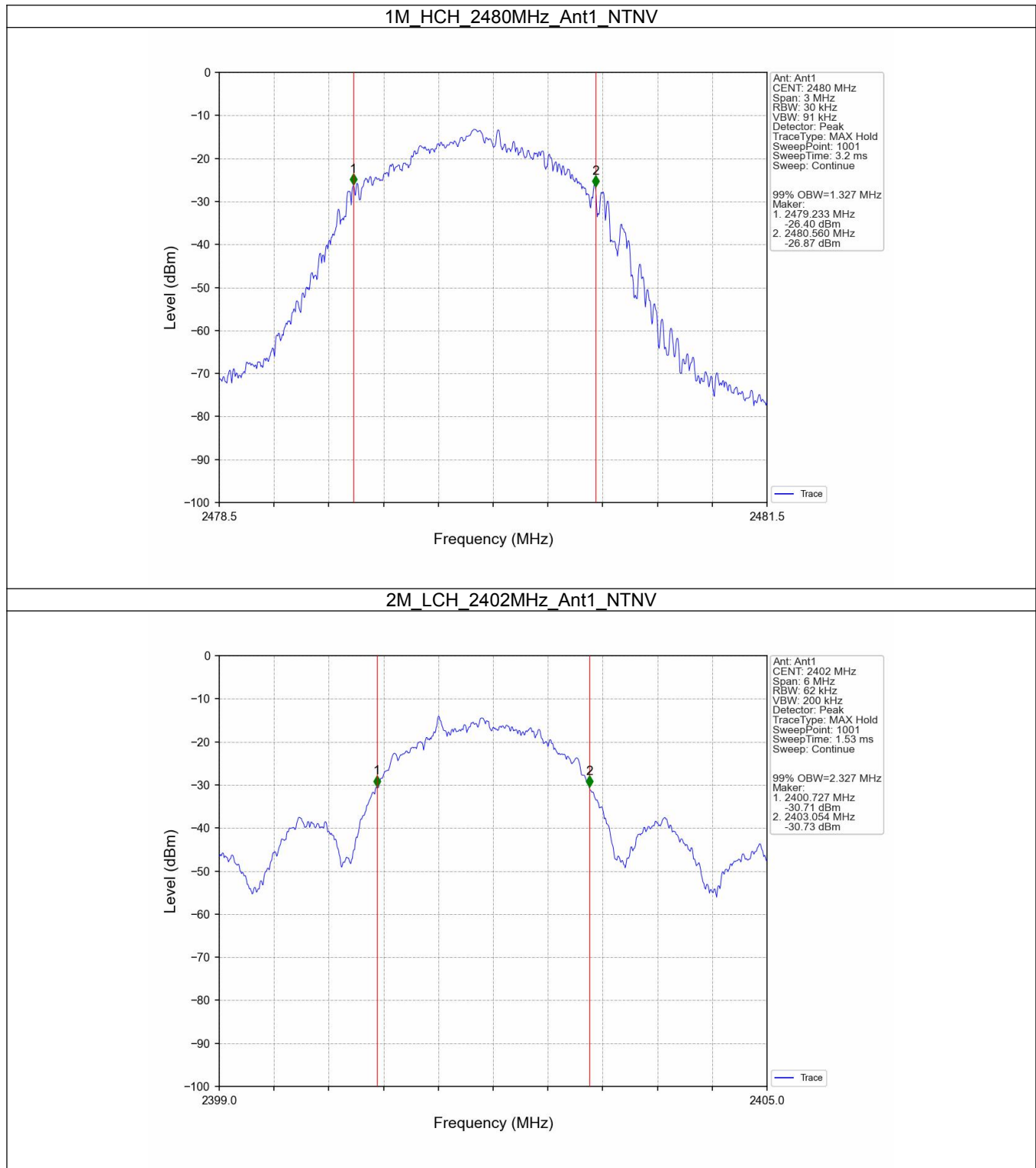
FCC ID: 2BFCV-TOUCH

1.2 Test Graph

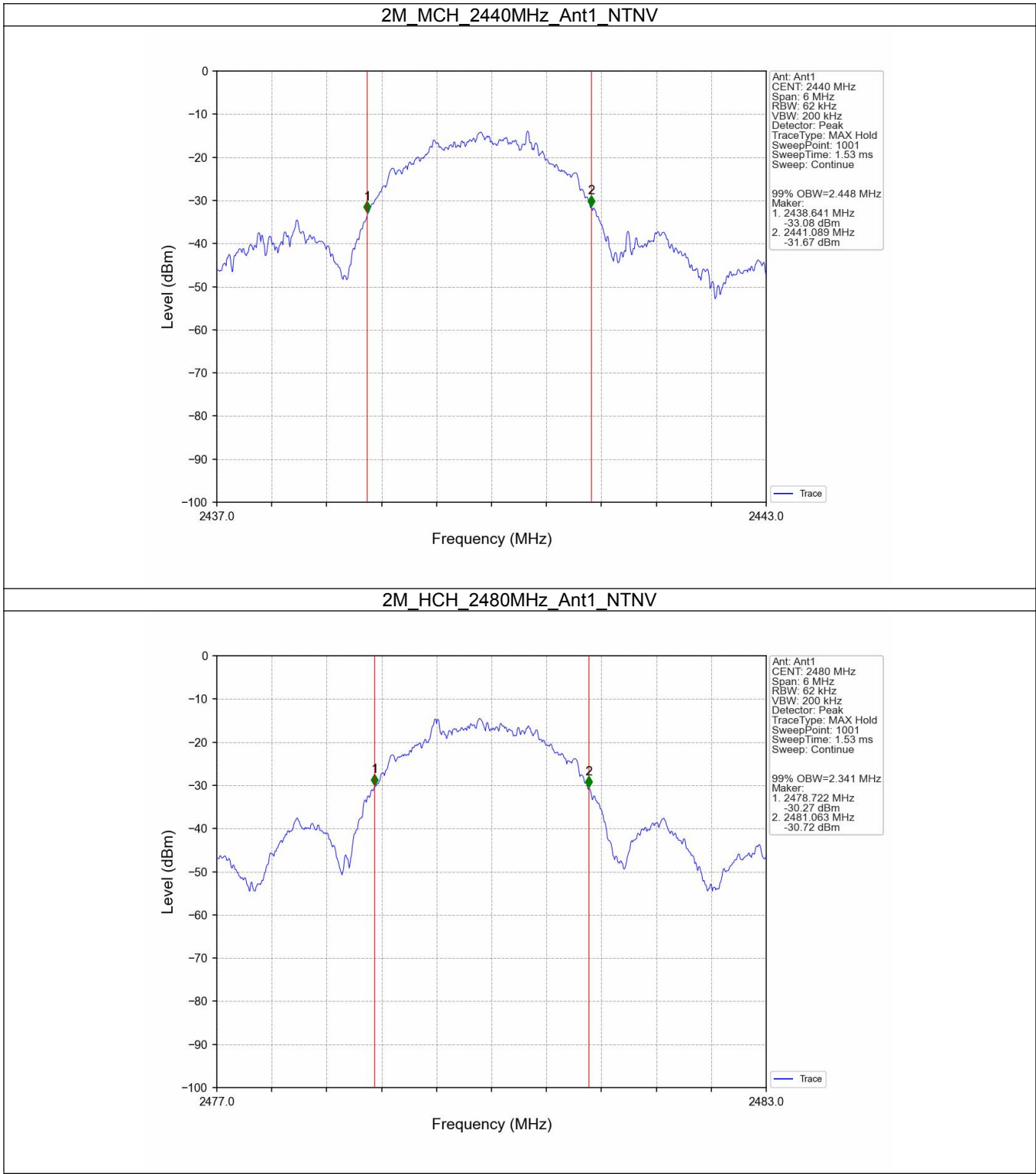
1.2.1 OBW



FCC ID: 2BFCV-TOUCH

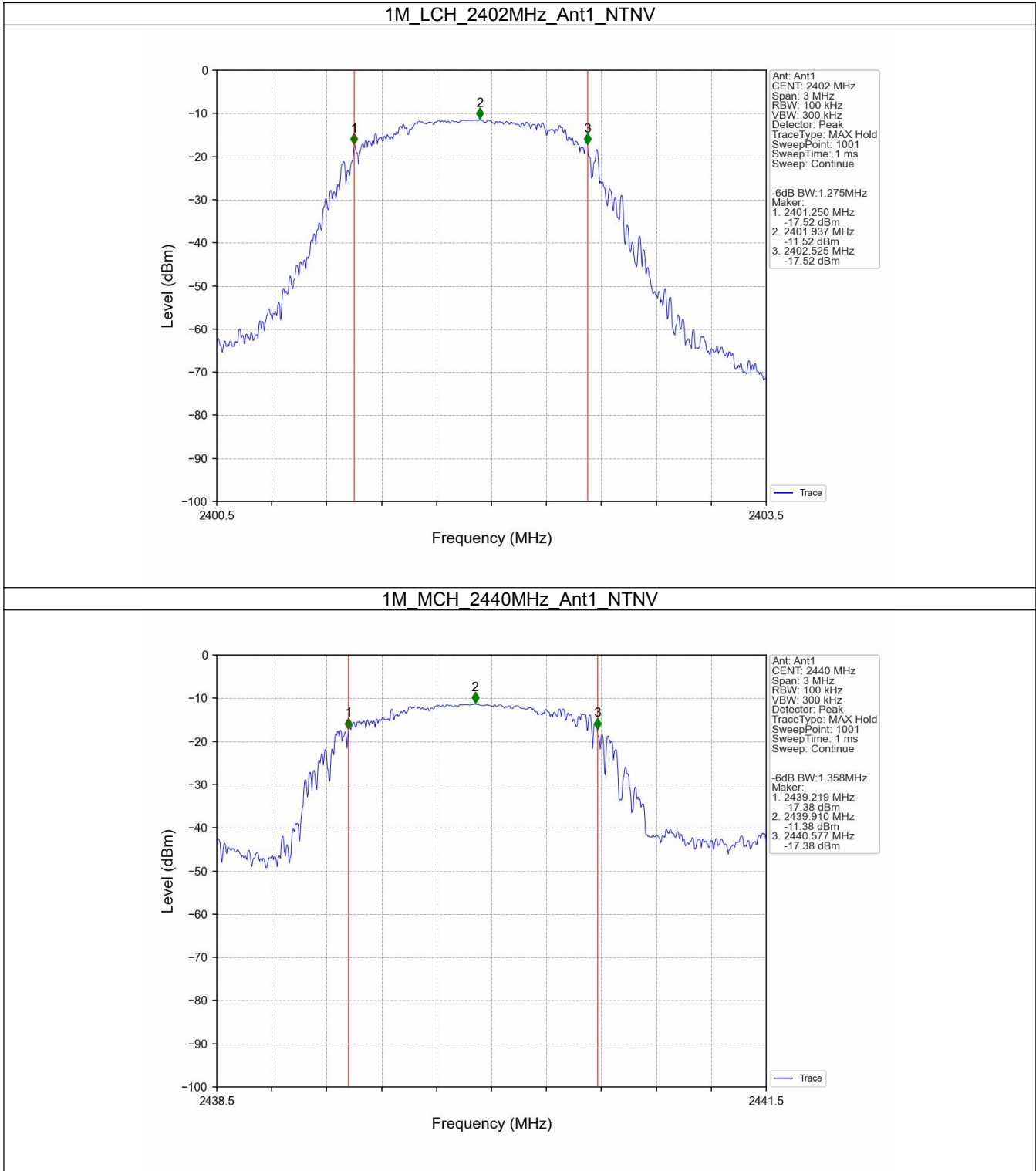


FCC ID: 2BFCV-TOUCH



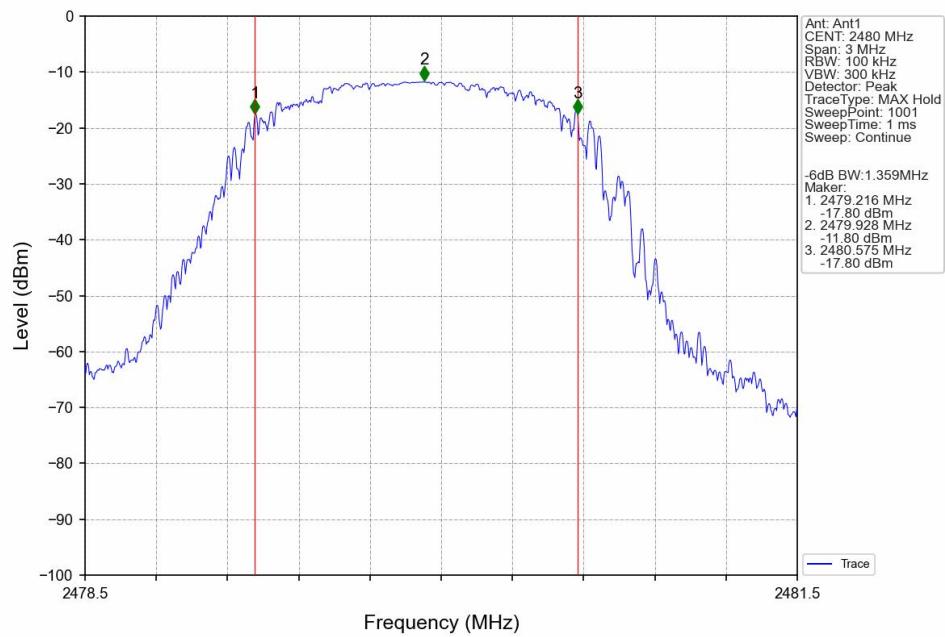
FCC ID: 2BFCV-TOUCH

1.2.2 6dB BW

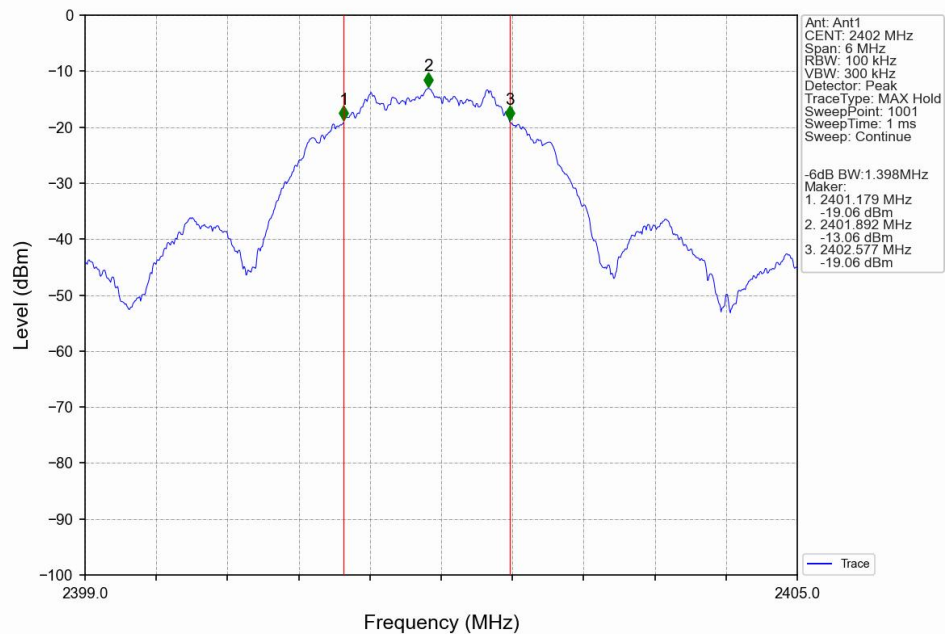


FCC ID: 2BFCV-TOUCH

1M_HCH_2480MHz_Ant1_NTNV

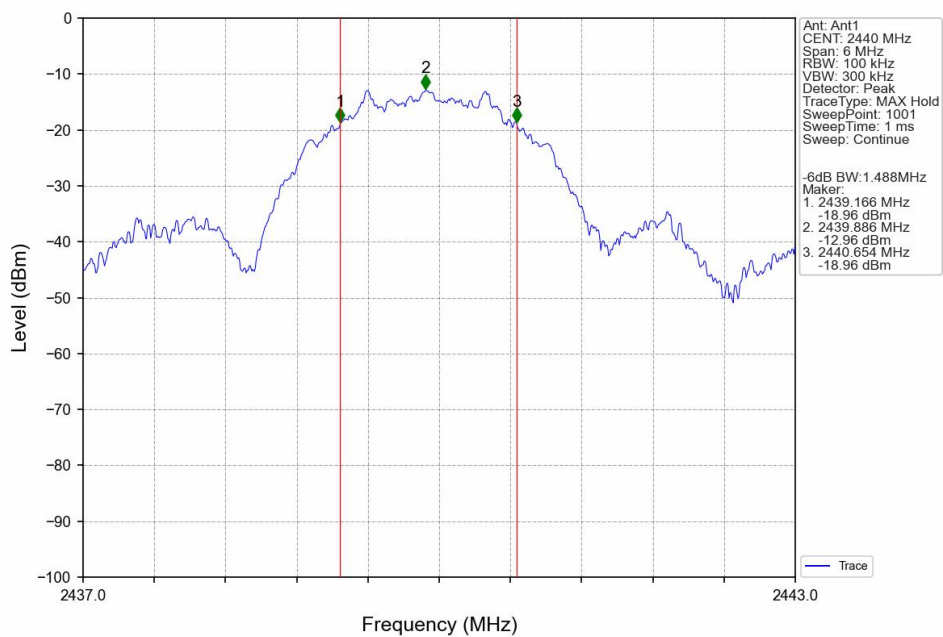


2M_LCH_2402MHz_Ant1_NTNV

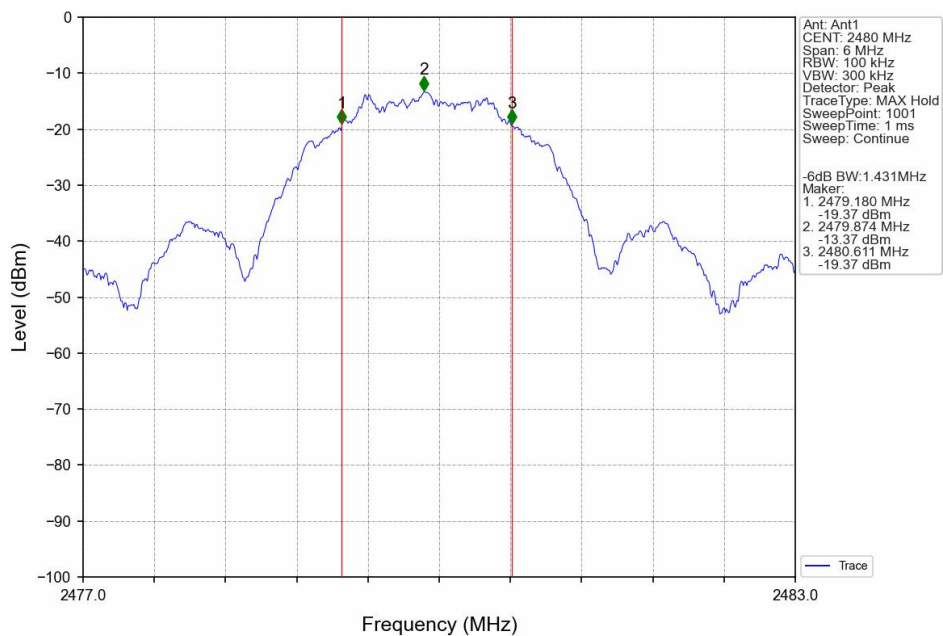


FCC ID: 2BFCV-TOUCH

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BFCV-TOUCH

2. Maximum Conducted Output Power

2.1 Test Result

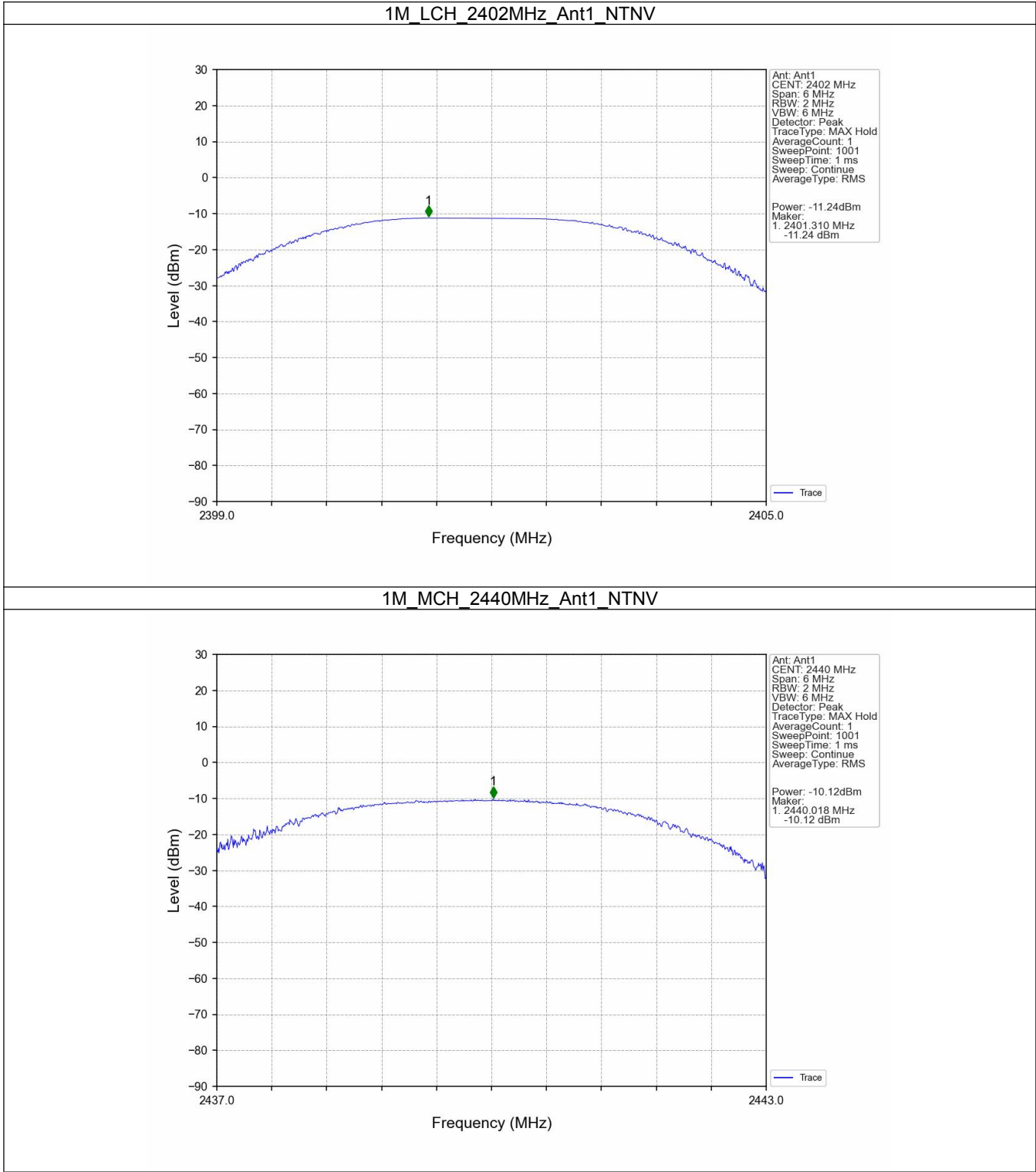
2.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-11.24	<=30	Pass
		2440	-10.12	<=30	Pass
		2480	-11.56	<=30	Pass
2M	SISO	2402	-11.29	<=30	Pass
		2440	-10.38	<=30	Pass
		2480	-11.54	<=30	Pass
Note1: Antenna Gain: Ant1: -0.51dBi;					

FCC ID: 2BFCV-TOUCH

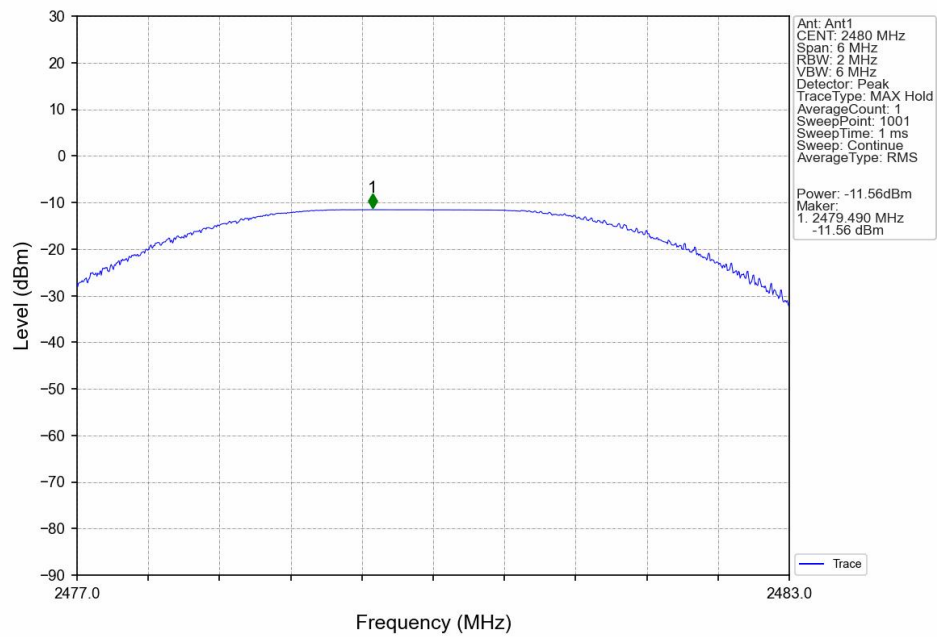
2.2 Test Graph

2.2.1 Power

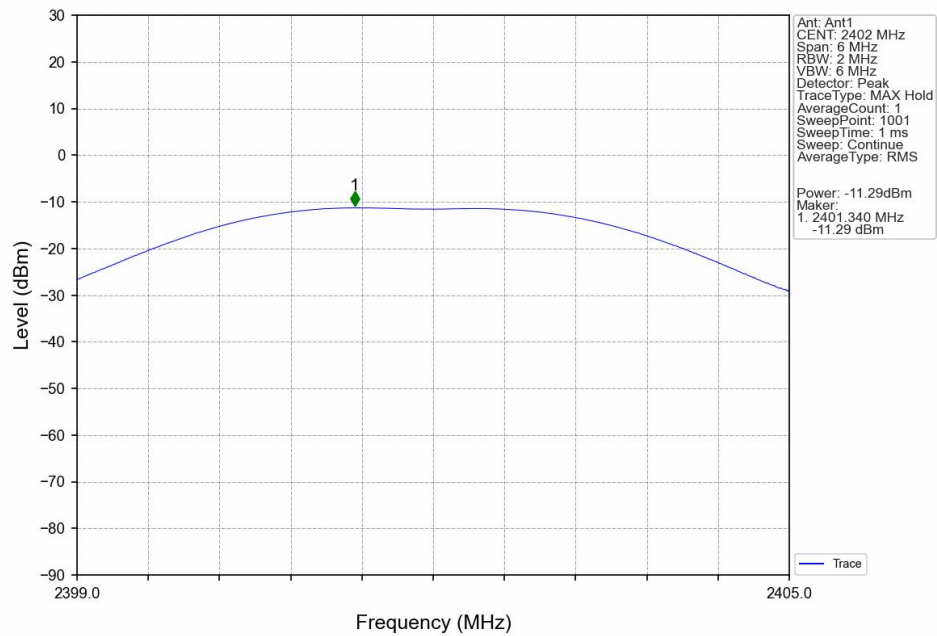


FCC ID: 2BFCV-TOUCH

1M_HCH_2480MHz_Ant1_NTNV

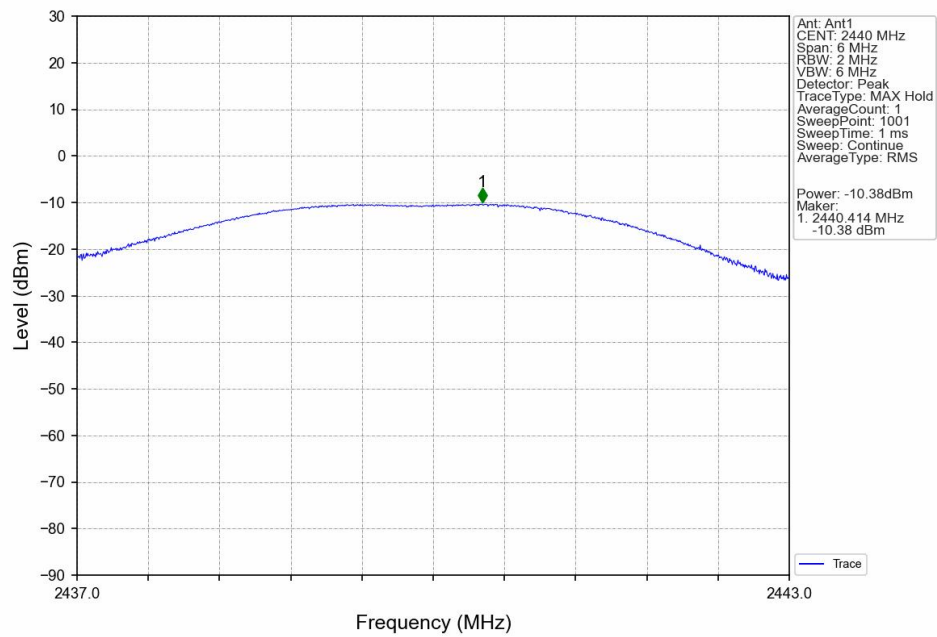


2M_LCH_2402MHz_Ant1_NTNV

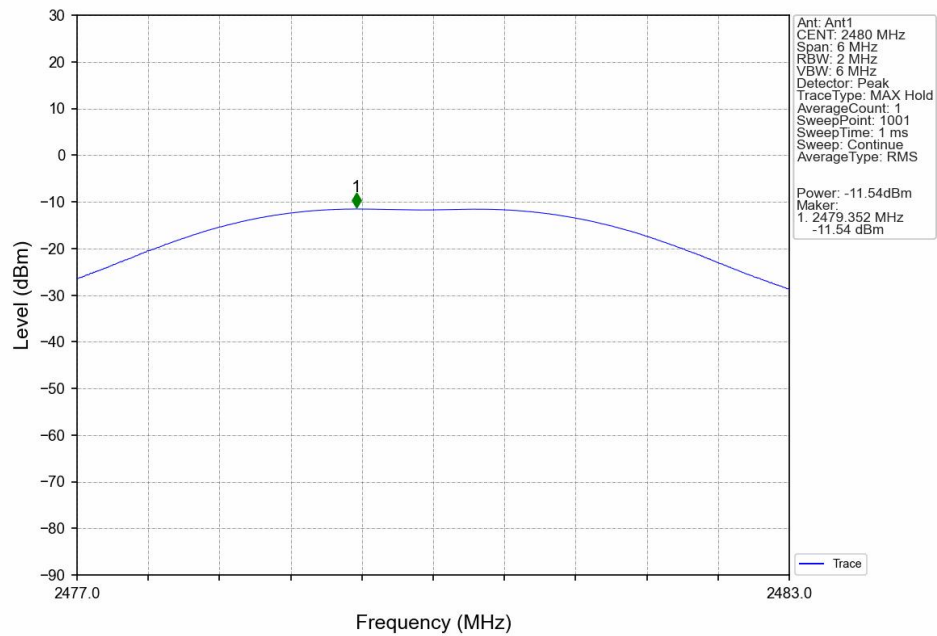


FCC ID: 2BFCV-TOUCH

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BFCV-TOUCH

3. Maximum Power Spectral Density

3.1 Test Result

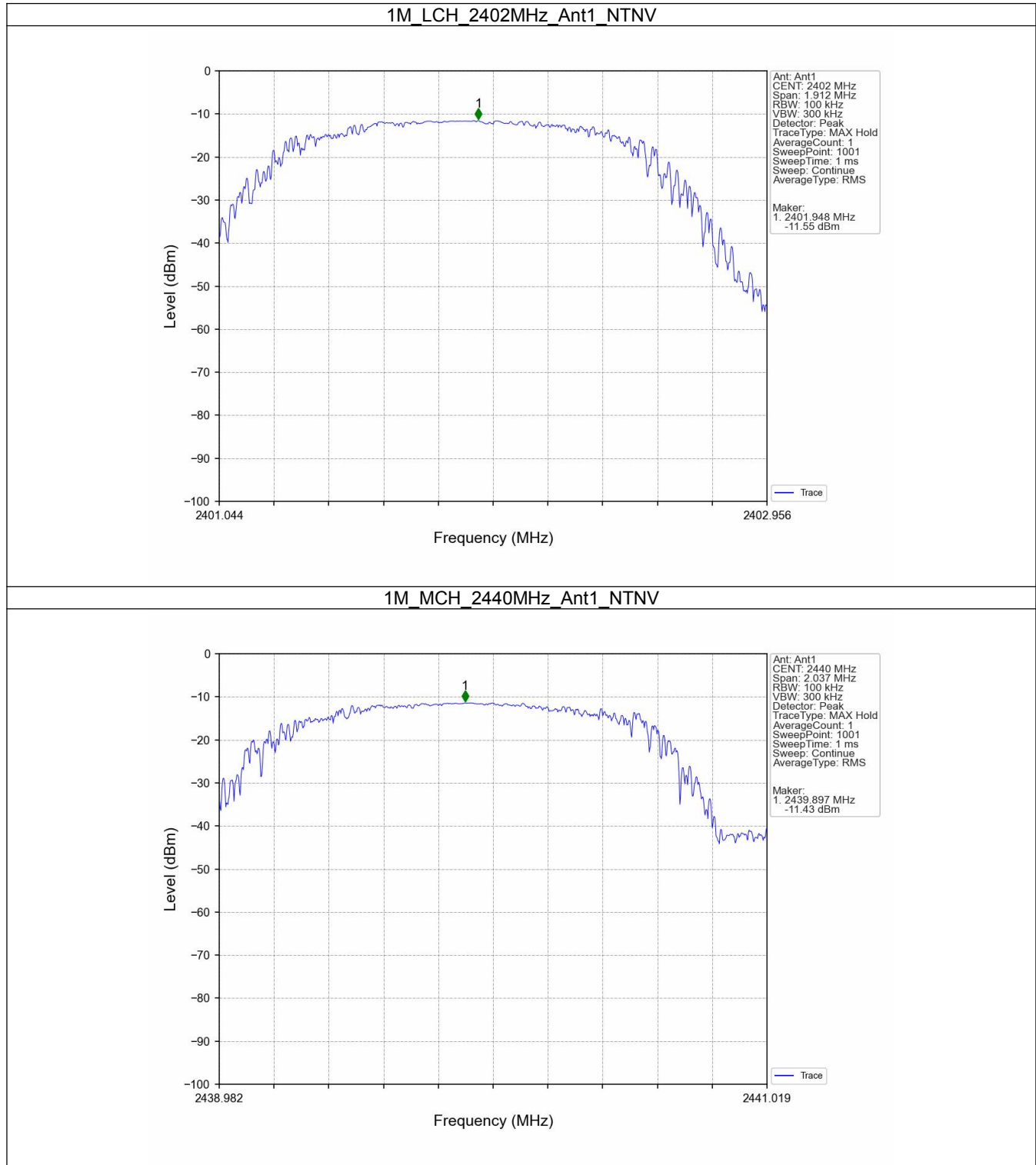
3.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-11.55	<=8	Pass
		2440	-11.43	<=8	Pass
		2480	-11.82	<=8	Pass
2M	SISO	2402	-13.06	<=8	Pass
		2440	-12.93	<=8	Pass
		2480	-13.22	<=8	Pass
Note1: Antenna Gain: Ant1: -0.51dBi;					

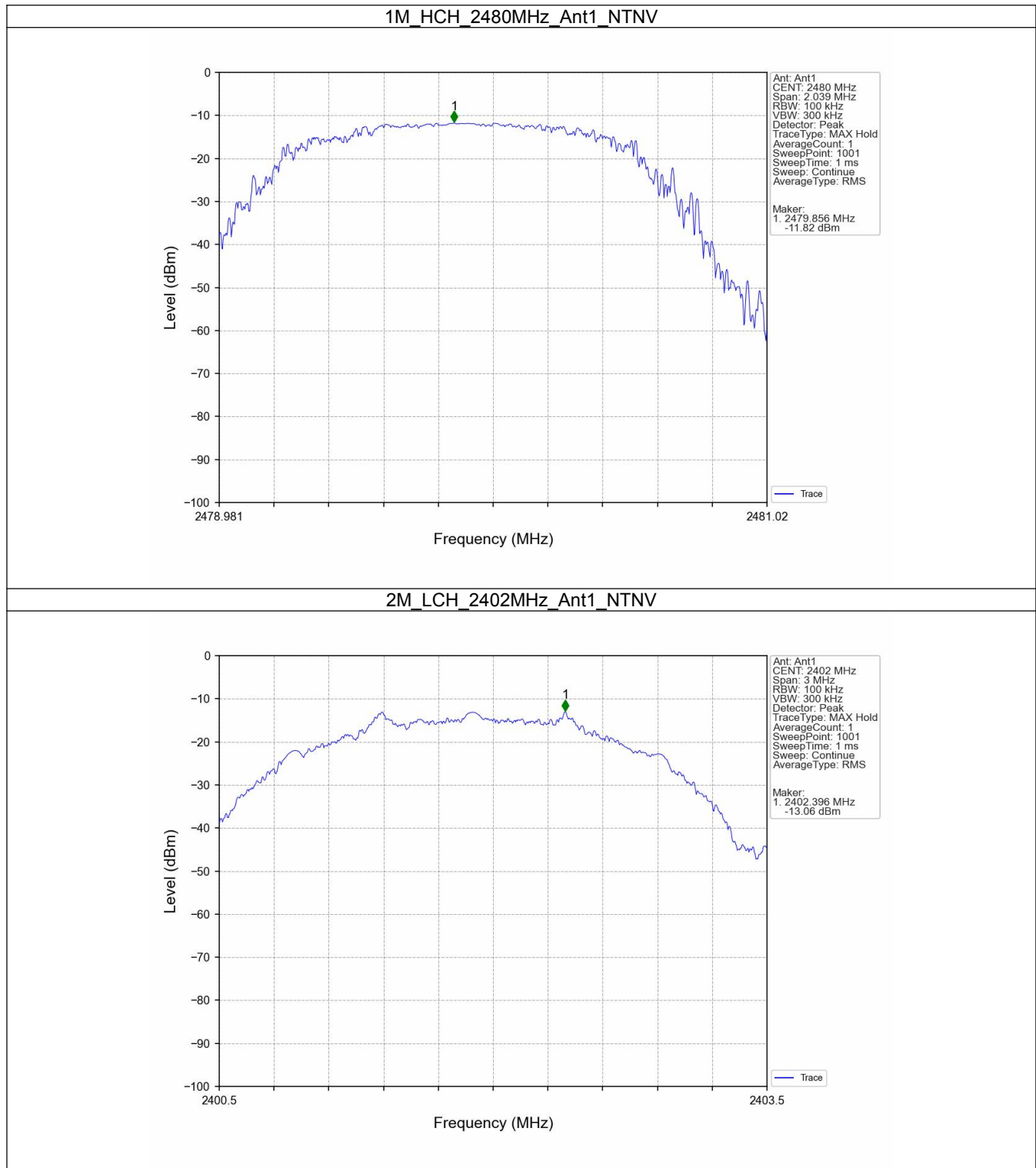
FCC ID: 2BFCV-TOUCH

3.2 Test Graph

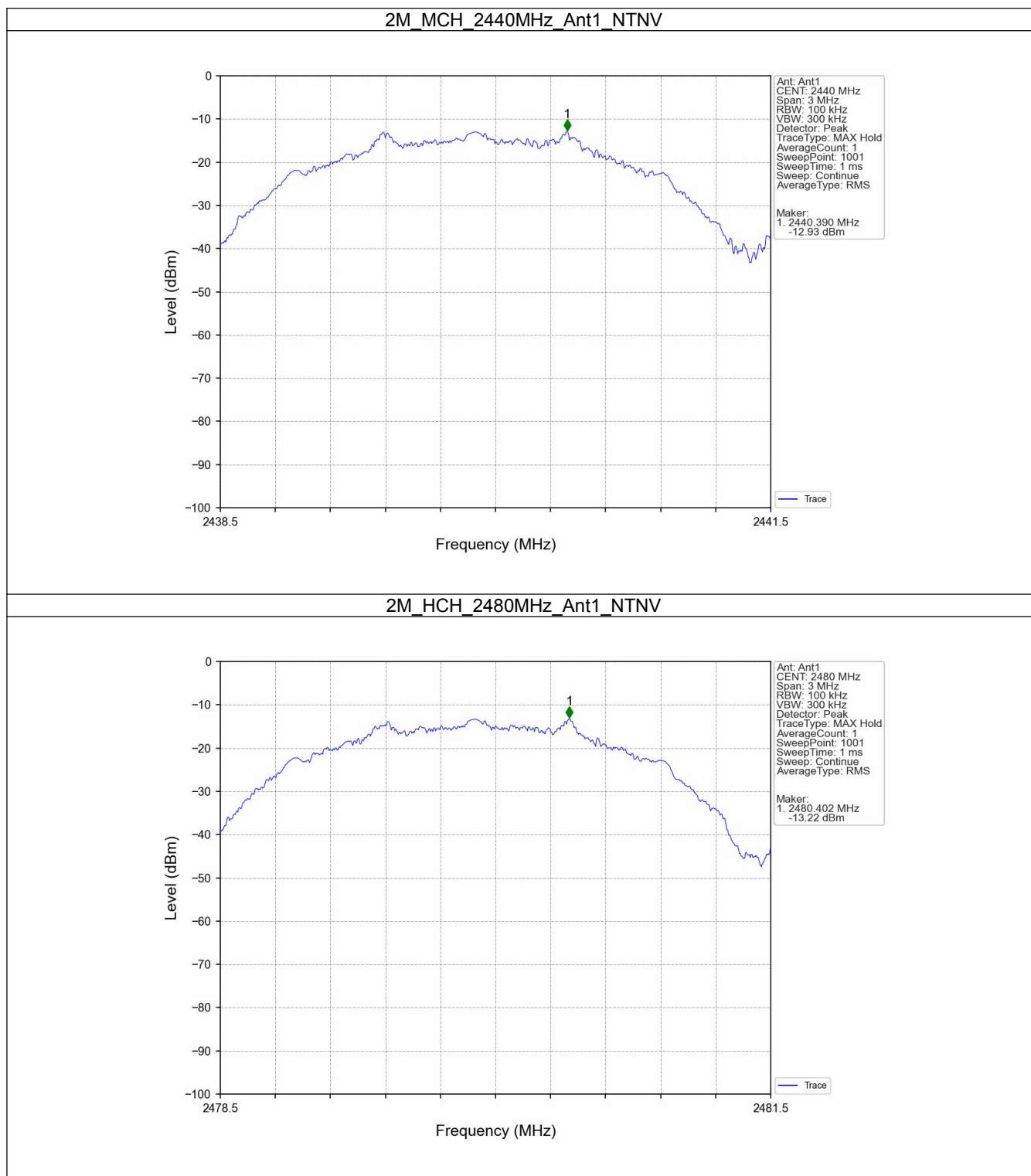
3.2.1 PSD



FCC ID: 2BFCV-TOUCH



FCC ID: 2BFCV-TOUCH



FCC ID: 2BFCV-TOUCH

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	-11.53
		2440	1	-11.40
		2480	1	-11.82
2M	SISO	2402	1	-13.12
		2440	1	-12.99
		2480	1	-13.35

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

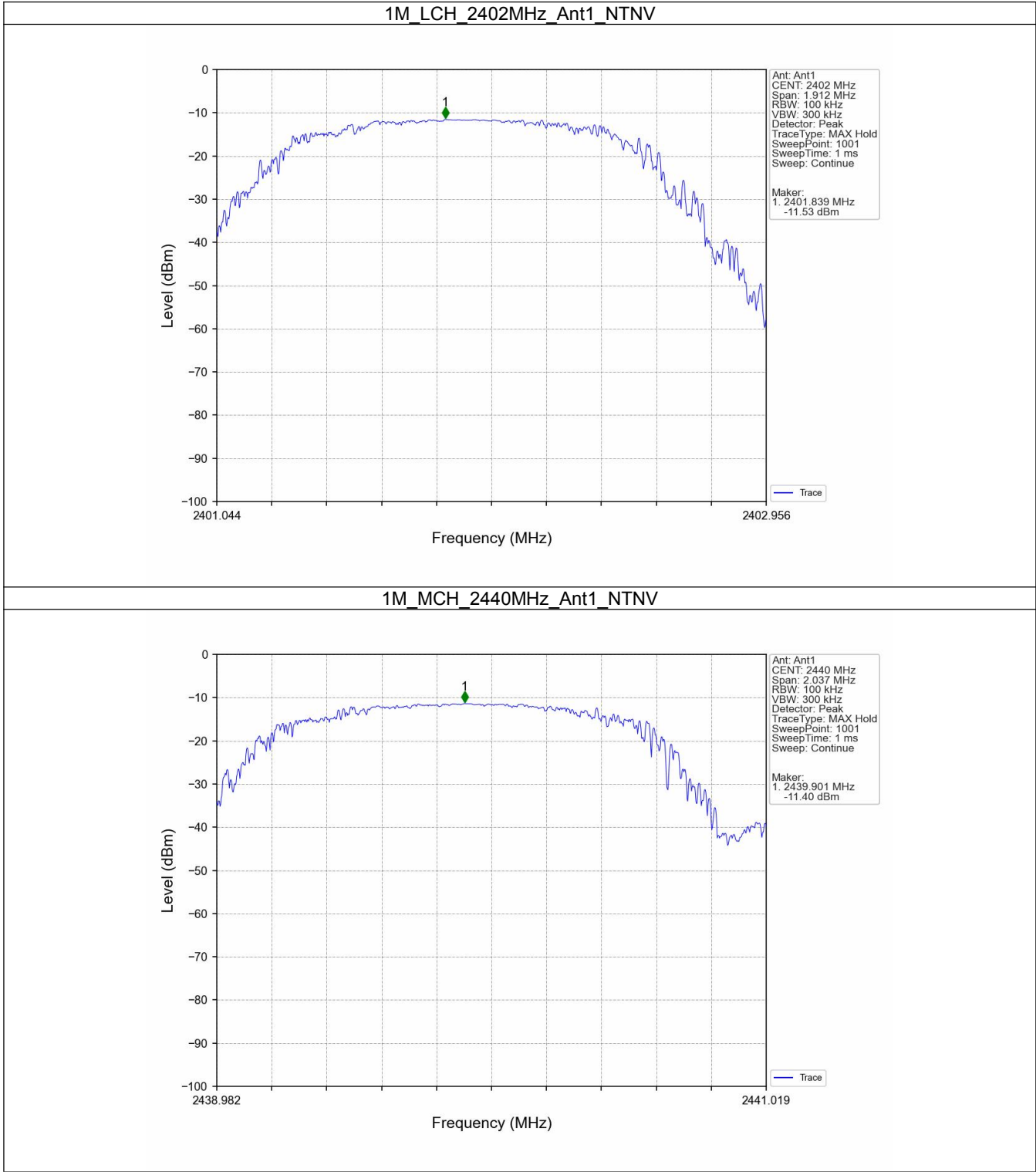
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-11.40	-31.40	Pass
		2440	1	-11.40	-31.40	Pass
		2480	1	-11.40	-31.40	Pass
2M	SISO	2402	1	-12.99	-32.99	Pass
		2440	1	-12.99	-32.99	Pass
		2480	1	-12.99	-32.99	Pass

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.

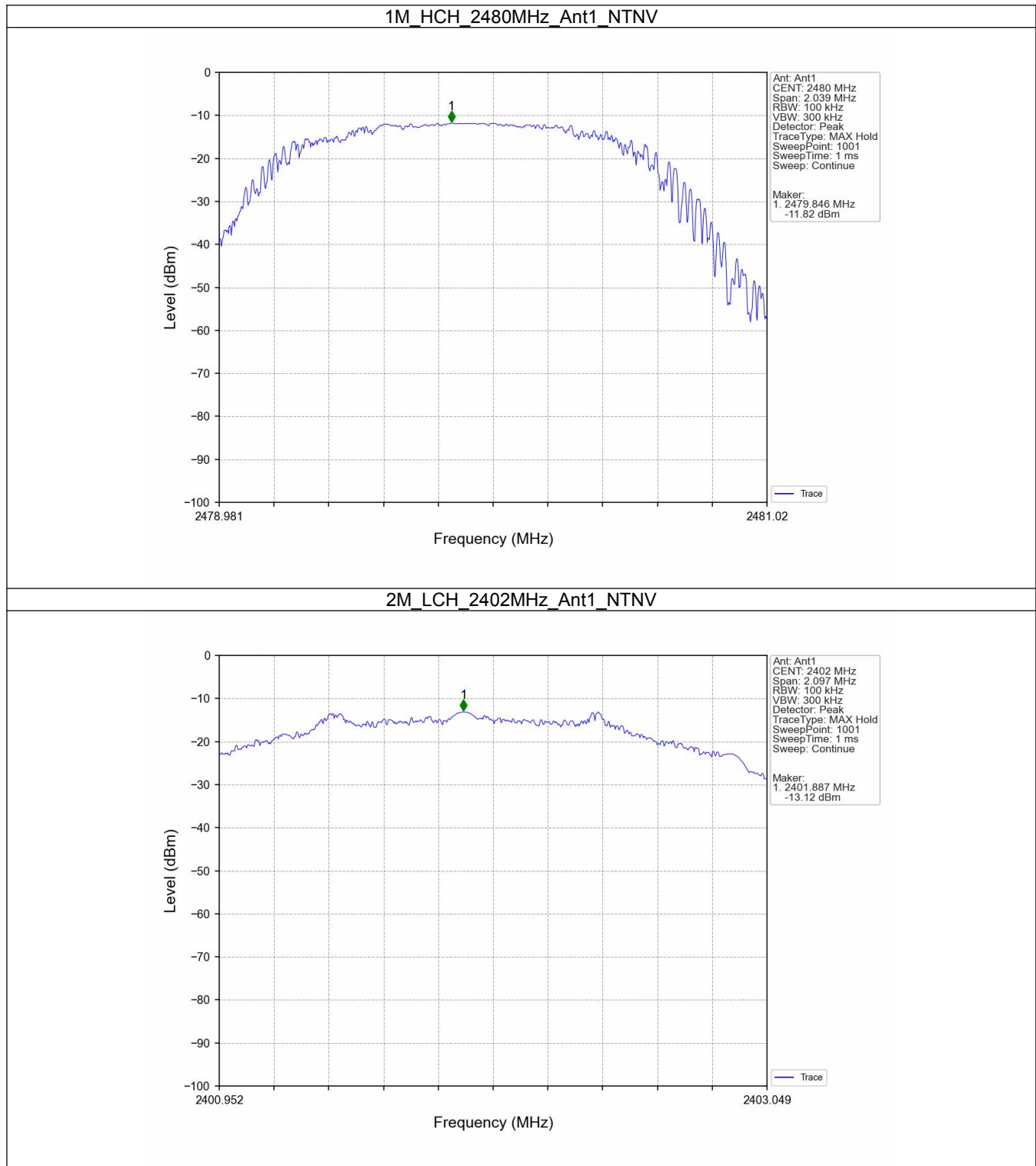
FCC ID: 2BFCV-TOUCH

4.2 Test Graph

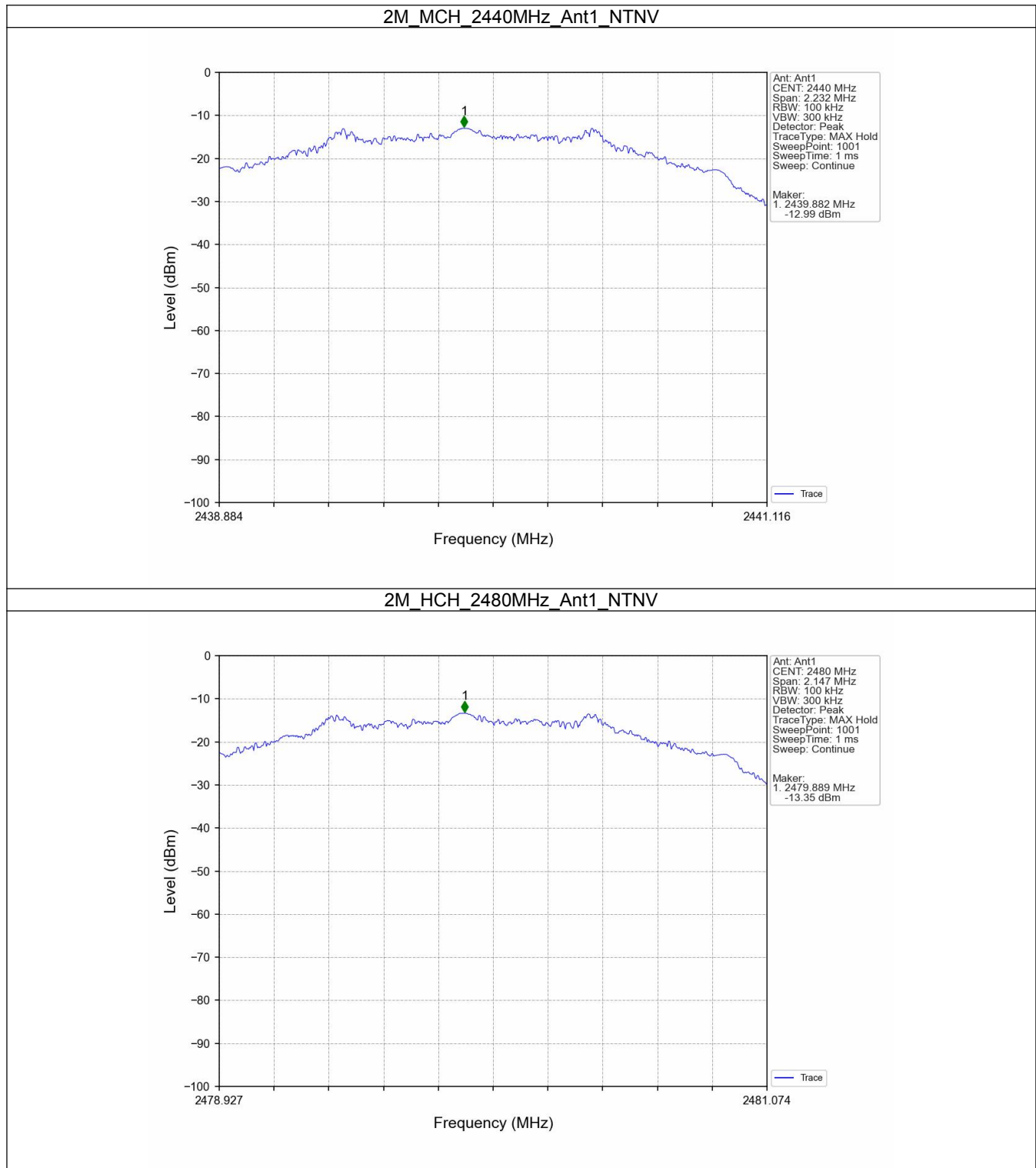
4.2.1 Ref



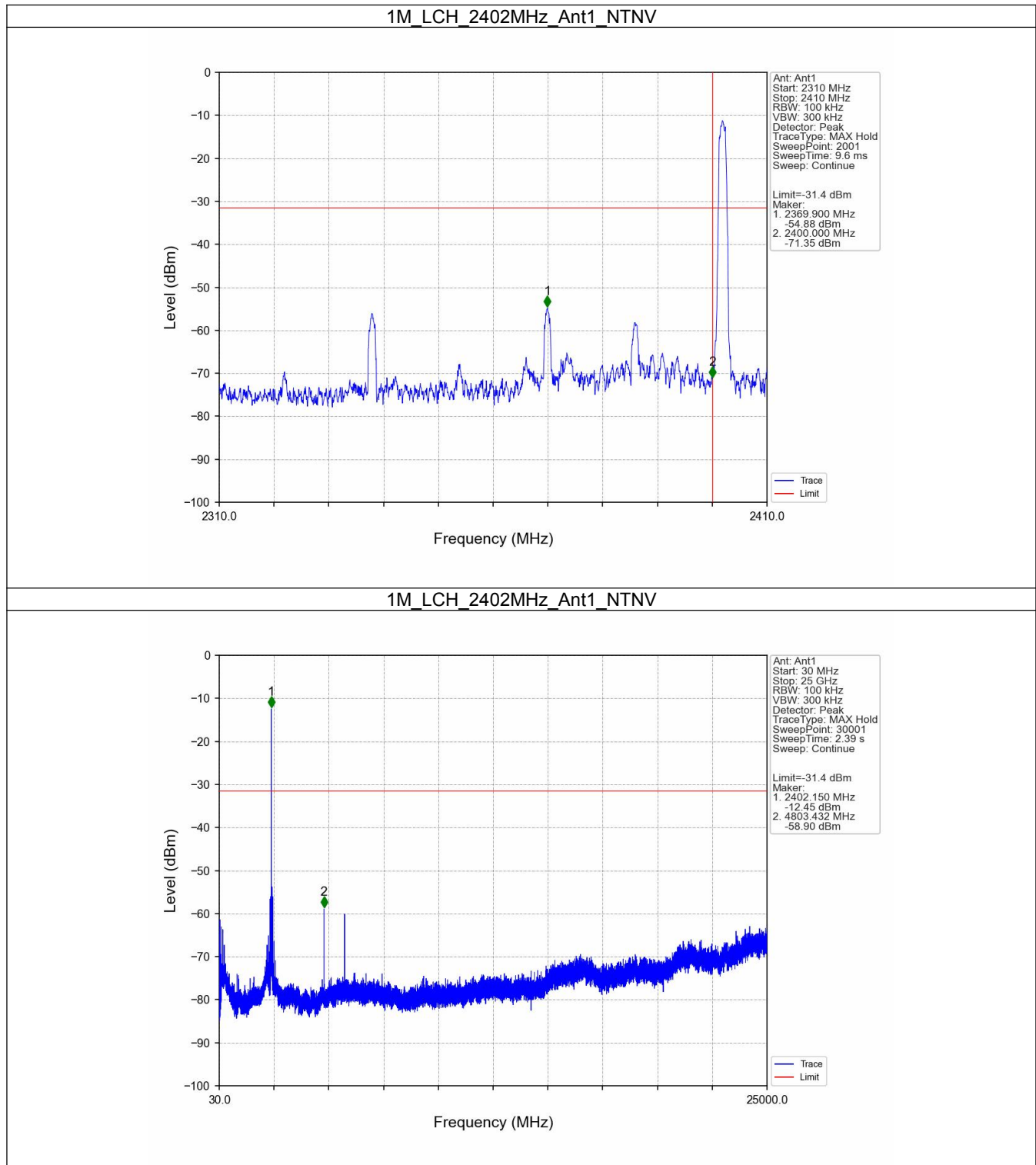
FCC ID: 2BFCV-TOUCH



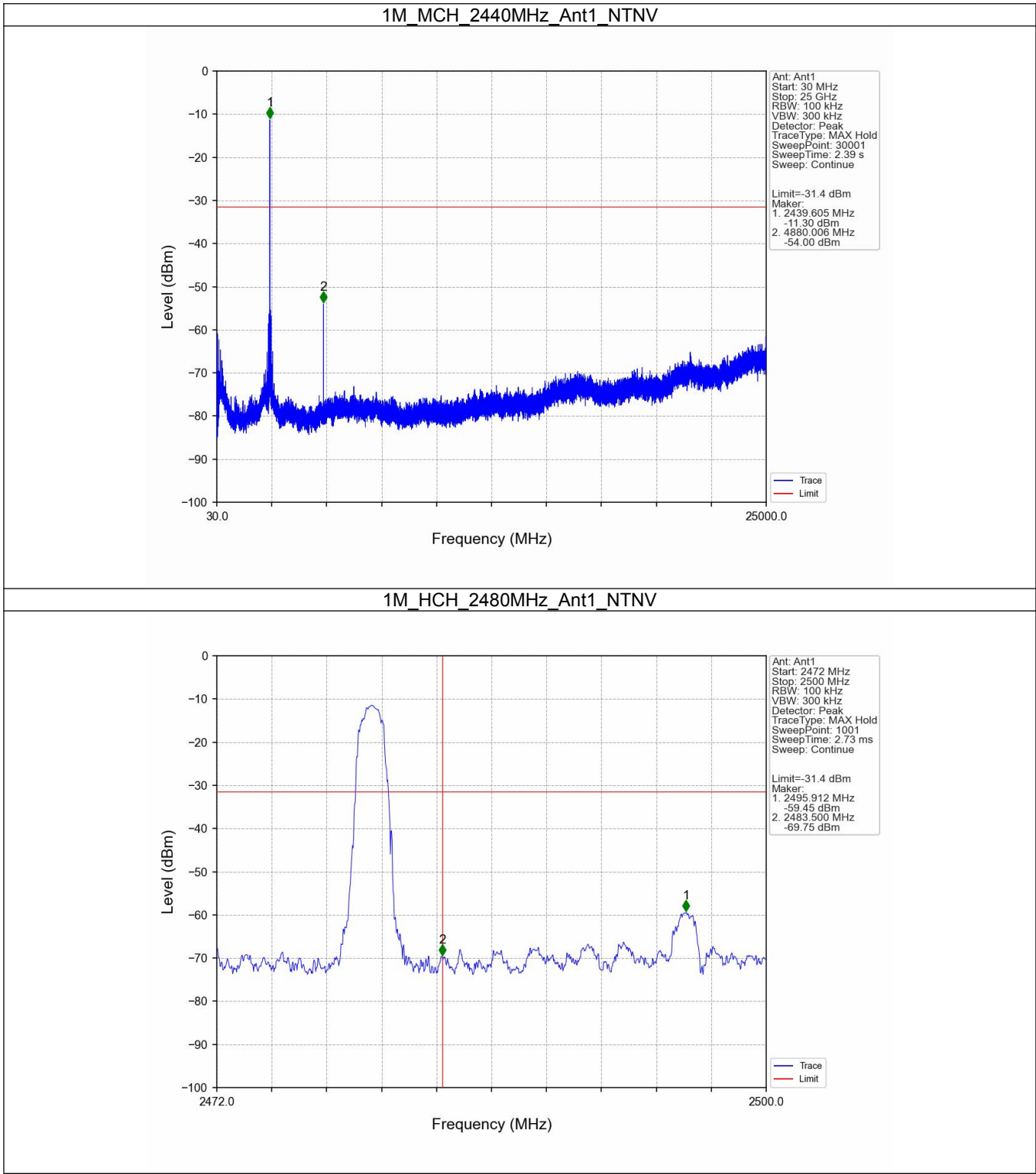
FCC ID: 2BFCV-TOUCH



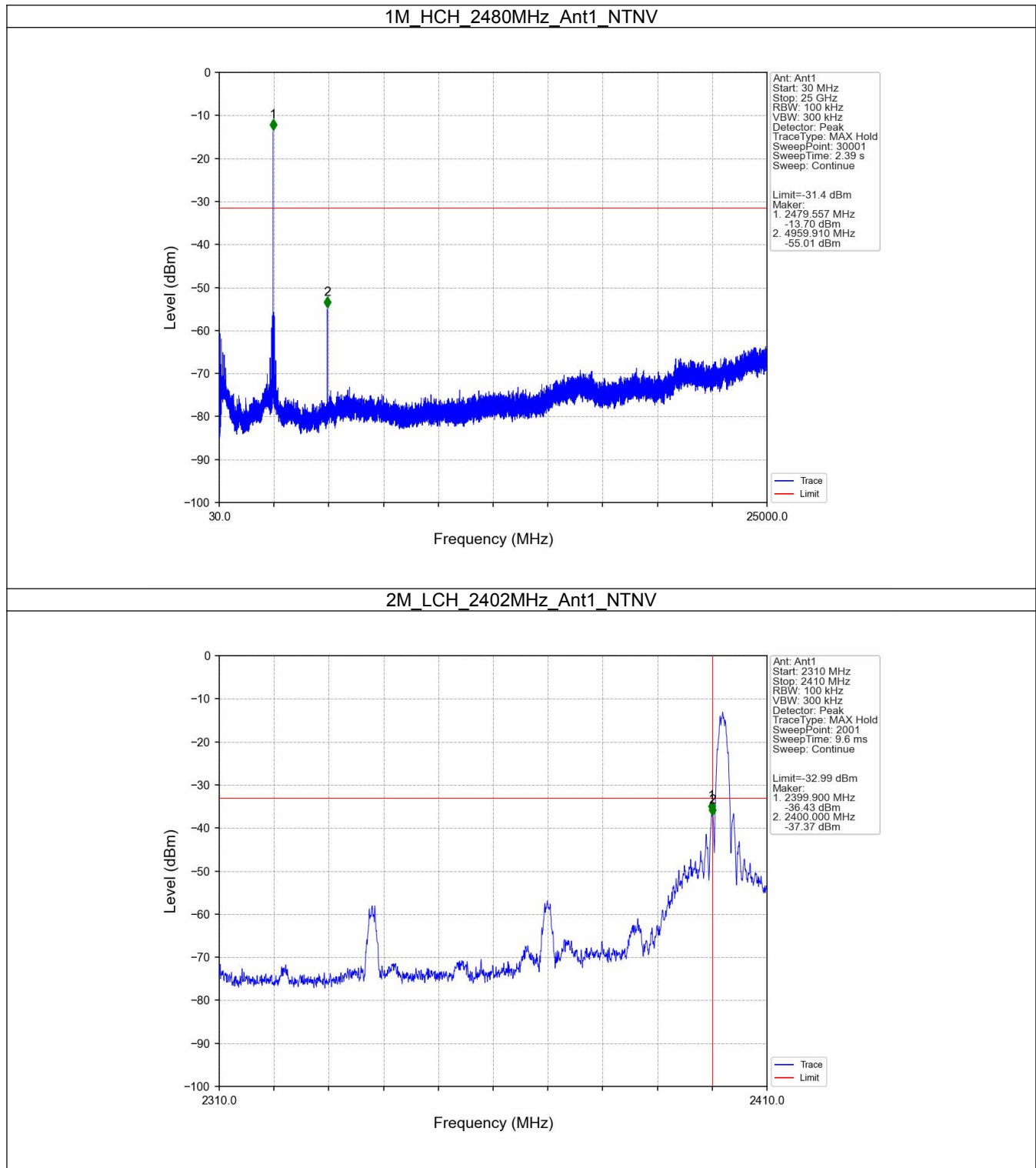
FCC ID: 2BFCV-TOUCH

4.2.2 CSE

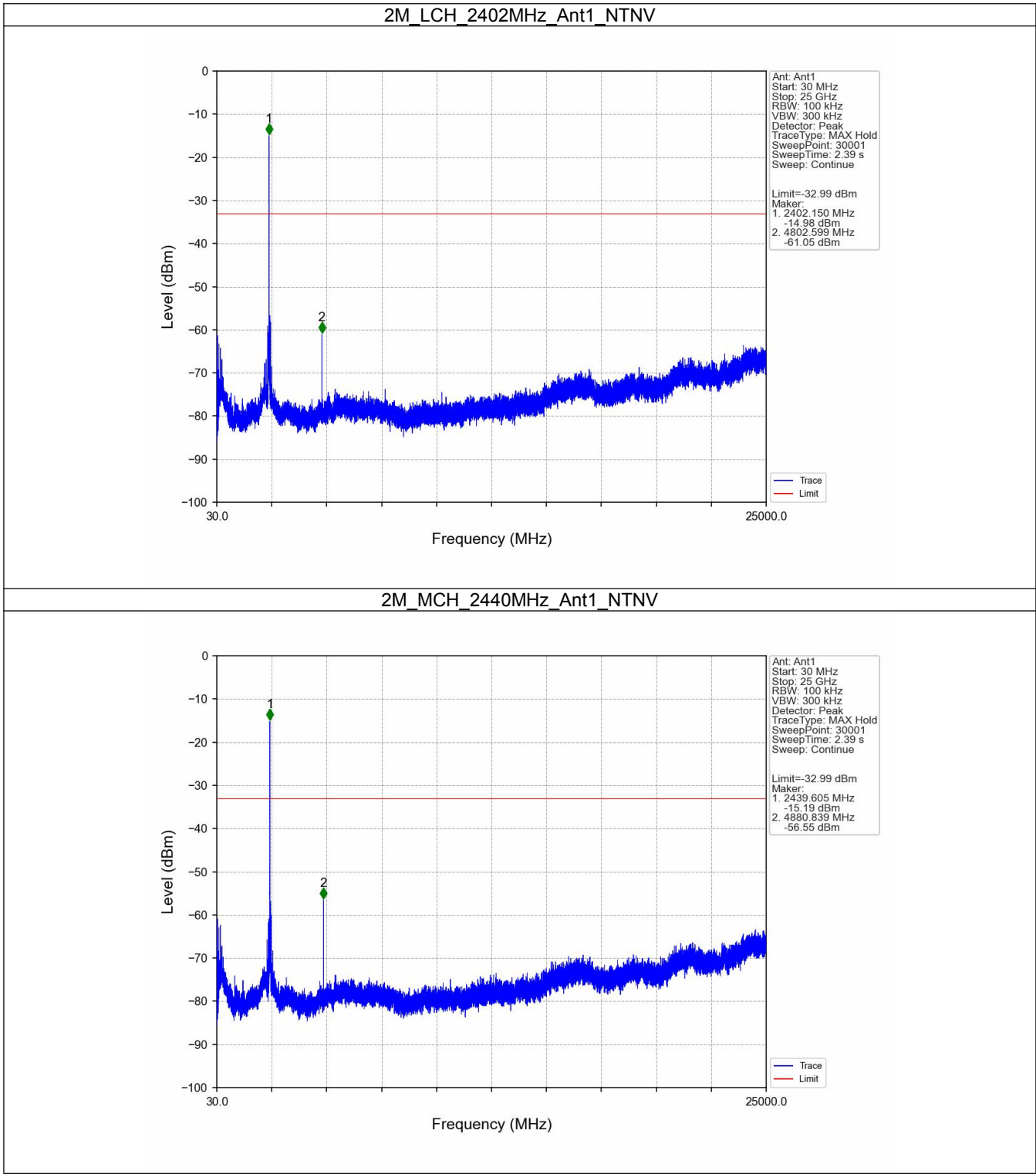
FCC ID: 2BFCV-TOUCH



FCC ID: 2BFCV-TOUCH



FCC ID: 2BFCV-TOUCH



FCC ID: 2BFCV-TOUCH

