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Annex for Bluetooth Low Energy

Test Report No.: CTL2604274011-WF02

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FCC ID: 2BSEJ-A2C

1. Duty Cycle

1.1 Test Result

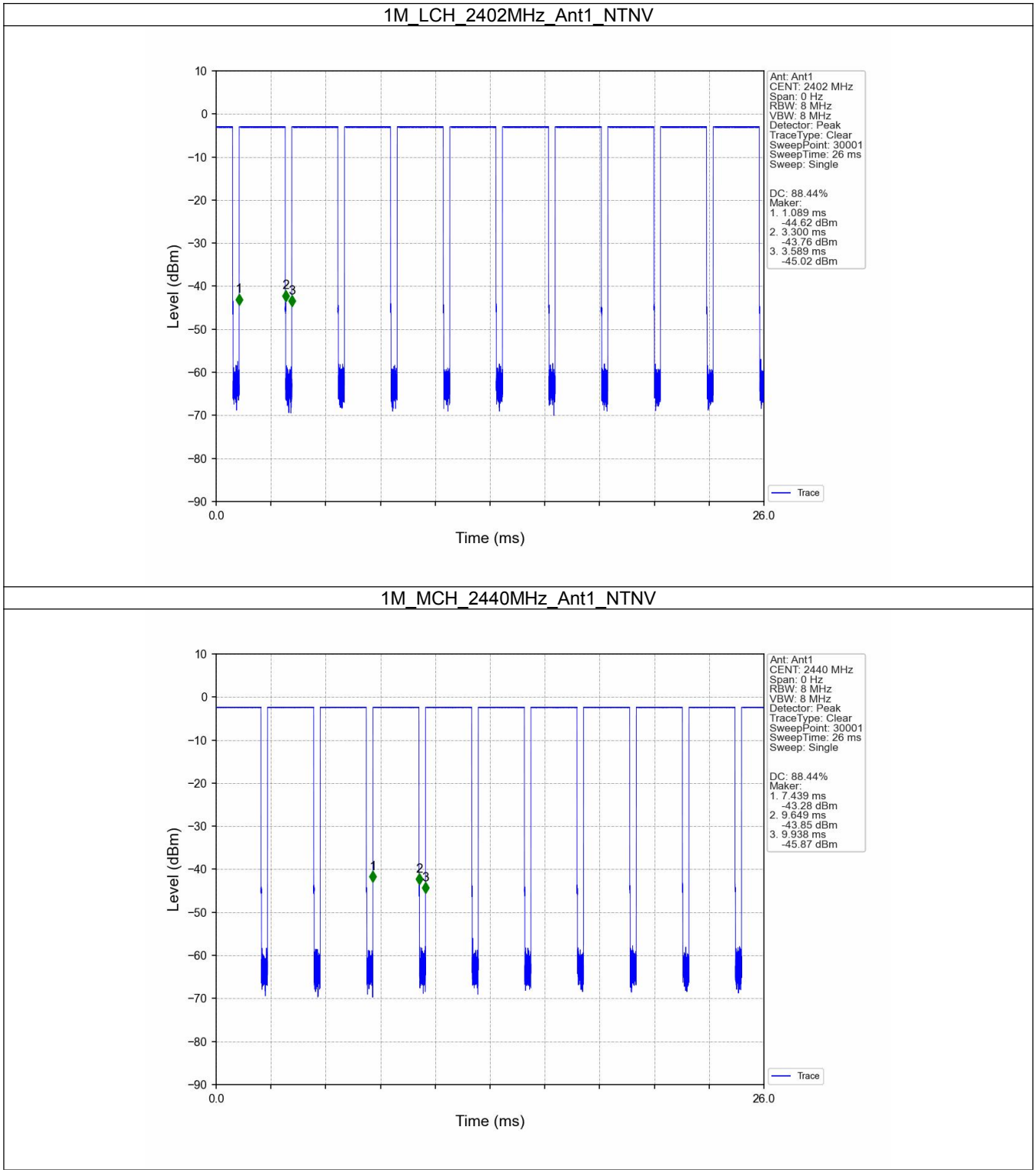
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.211	2.500	88.44	0.53	0.00
		2440	2.210	2.499	88.44	0.53	0.00
		2480	2.211	2.500	88.44	0.53	0.00
2M	SISO	2402	1.155	2.500	46.20	3.35	0.03
		2440	1.156	2.501	46.22	3.35	0.03
		2480	1.155	2.500	46.20	3.35	0.03

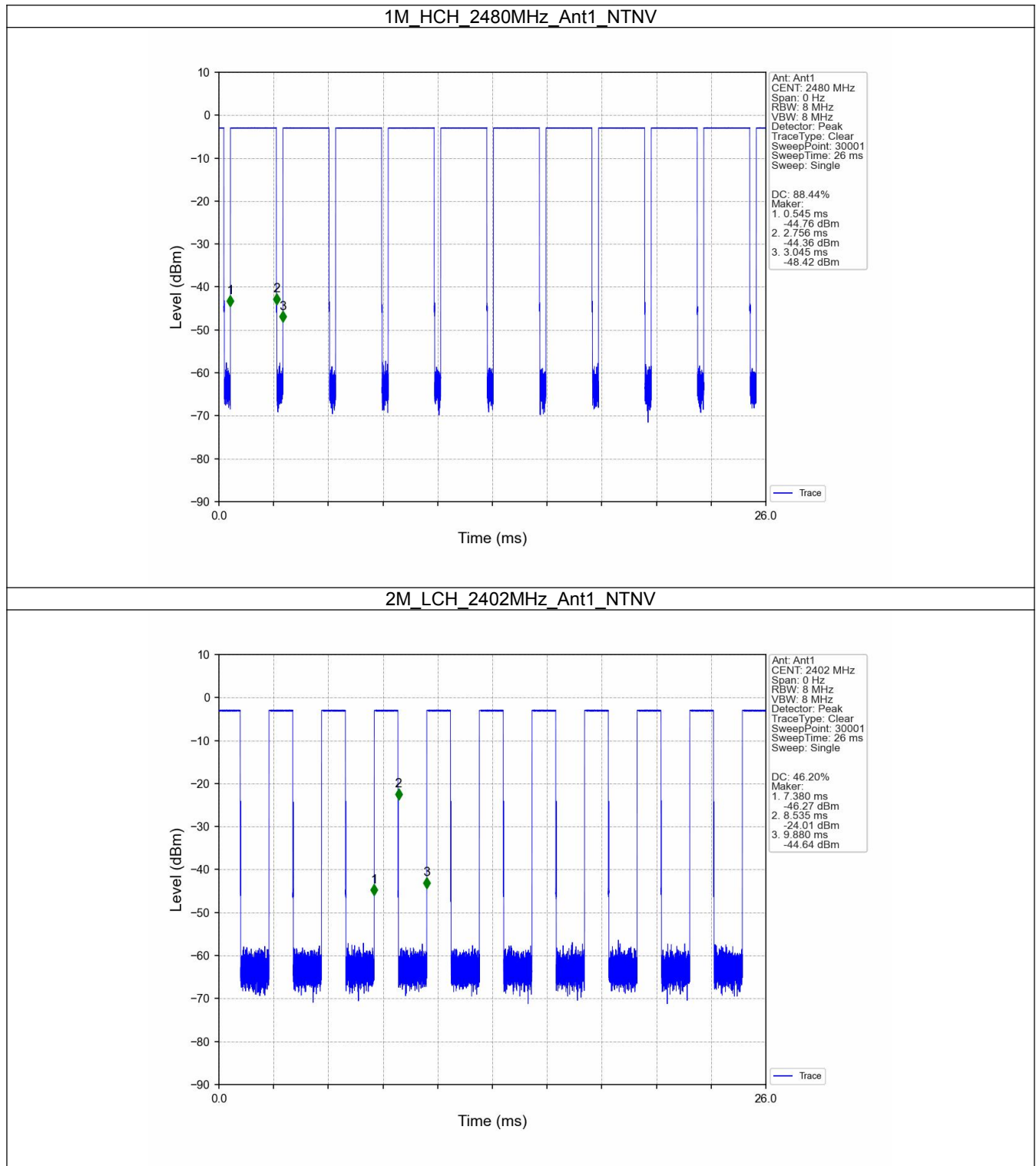
FCC ID: 2BSEJ-A2C

1.2 Test Graph

1.2.1 Ant1

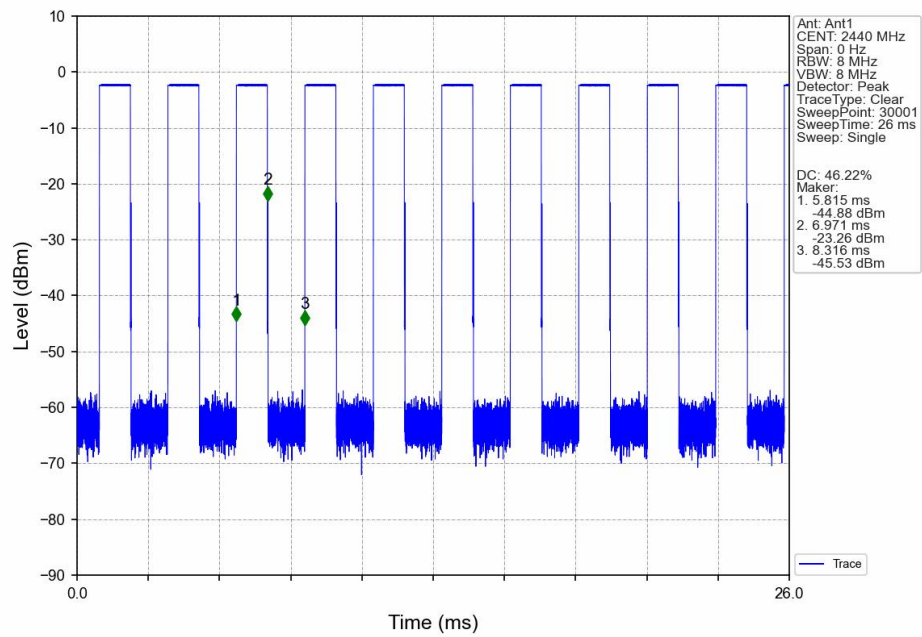


FCC ID: 2BSEJ-A2C

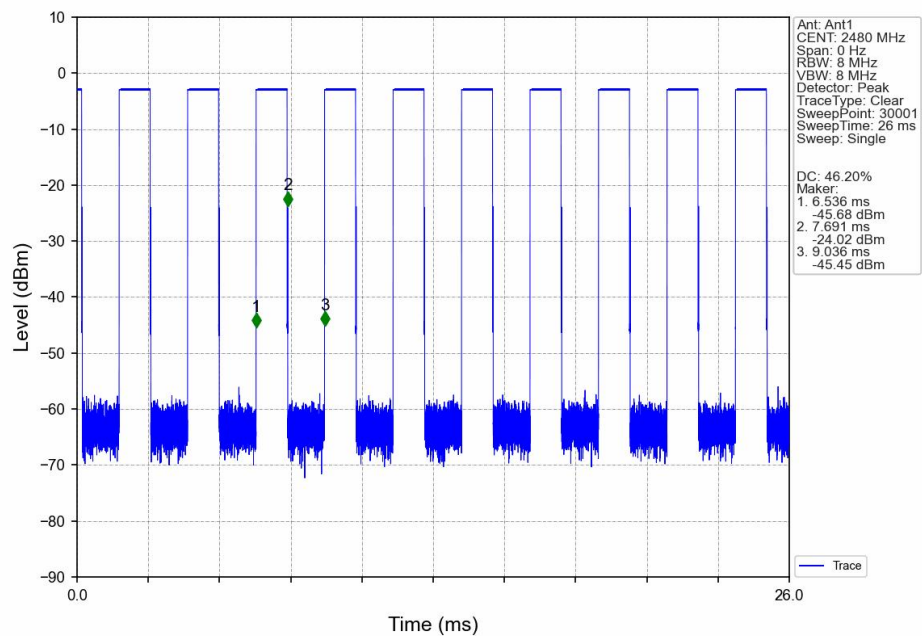


FCC ID: 2BSEJ-A2C

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BSEJ-A2C

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	1.015	/	Pass
		2440	1	1.011	/	Pass
		2480	1	1.014	/	Pass
2M	SISO	2402	1	1.998	/	Pass
		2440	1	2.000	/	Pass
		2480	1	1.996	/	Pass

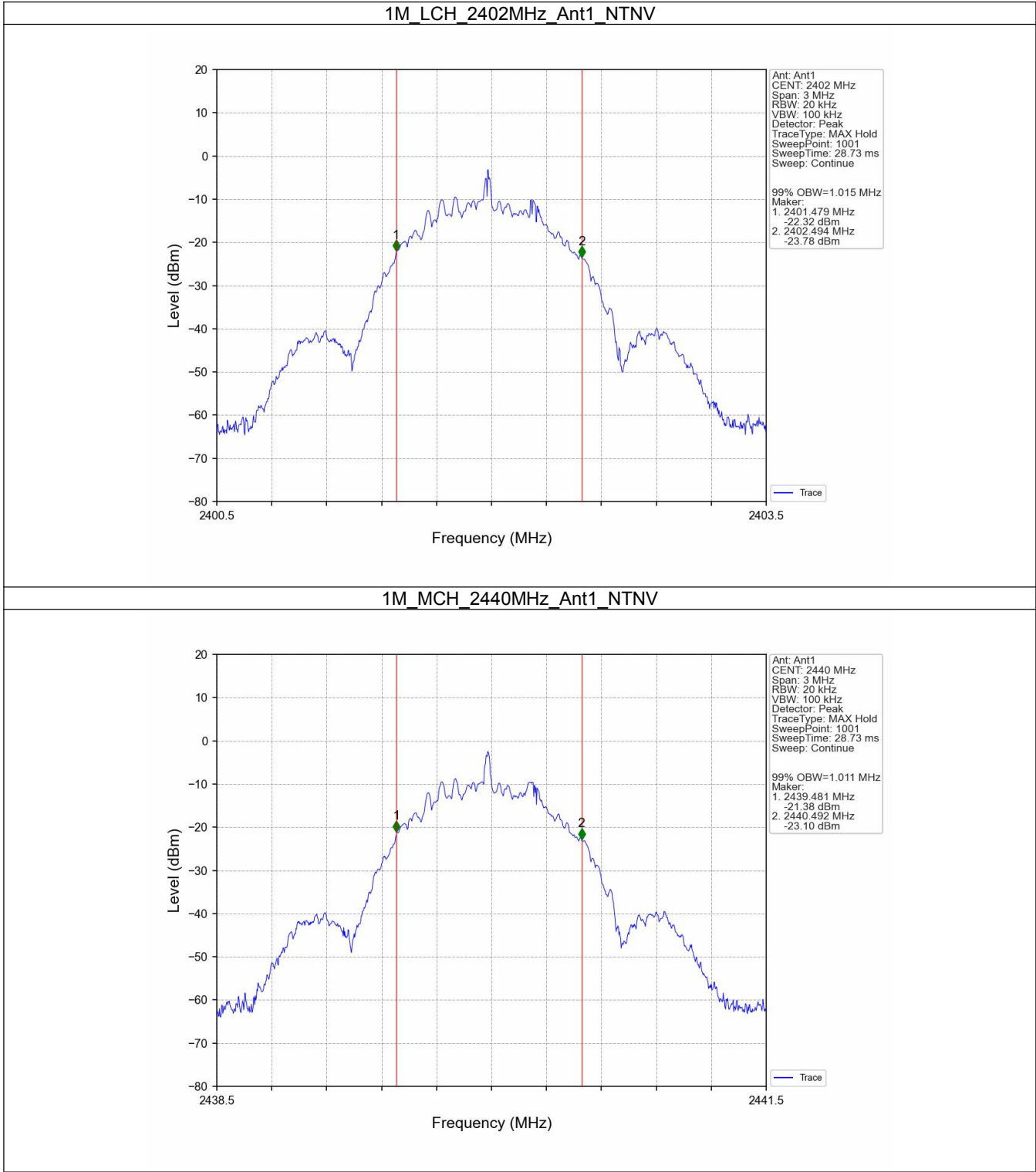
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.664	≥ 0.5	Pass
		2440	1	0.664	≥ 0.5	Pass
		2480	1	0.667	≥ 0.5	Pass
2M	SISO	2402	1	1.143	≥ 0.5	Pass
		2440	1	1.141	≥ 0.5	Pass
		2480	1	1.131	≥ 0.5	Pass

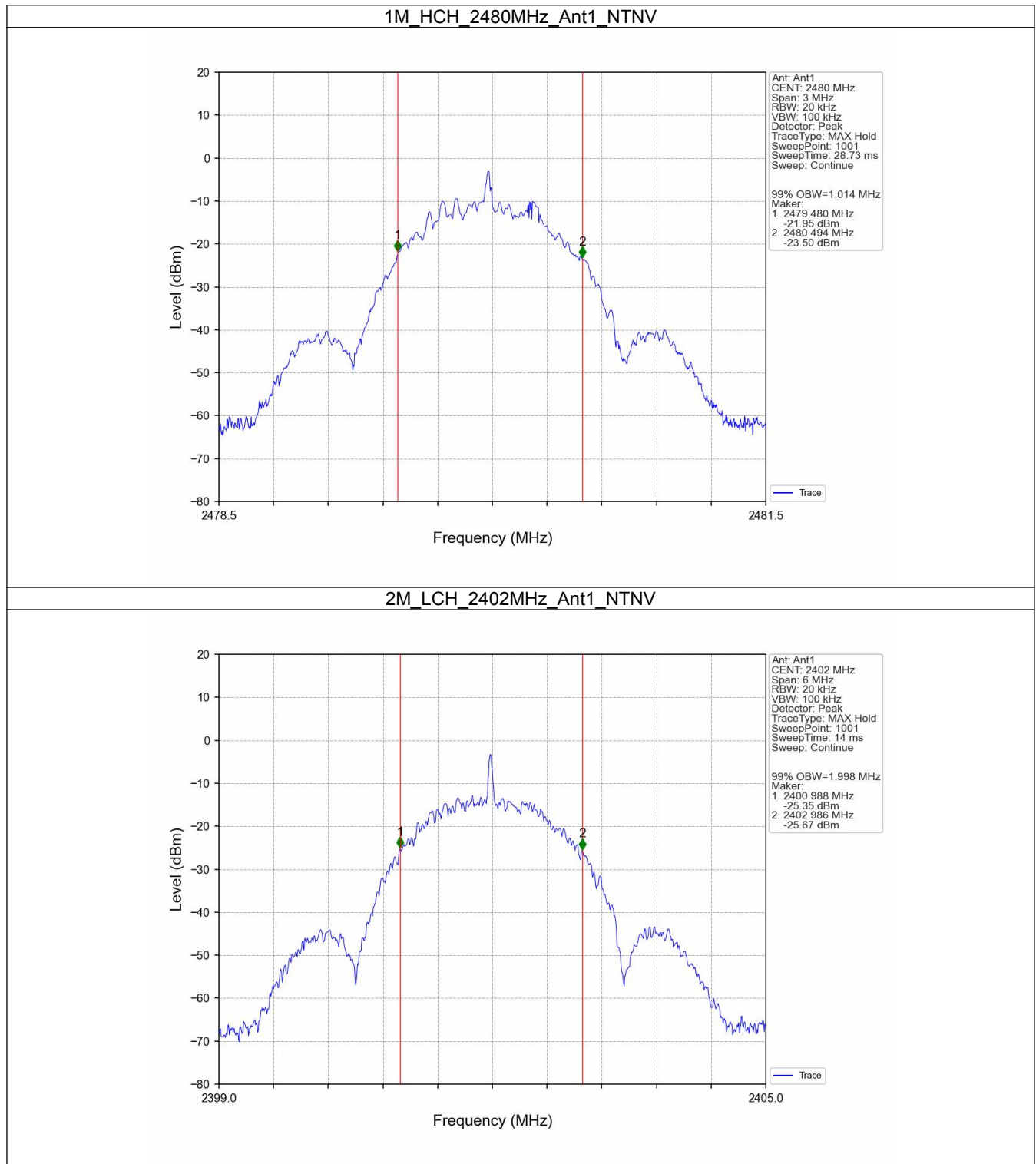
FCC ID: 2BSEJ-A2C

2.2 Test Graph

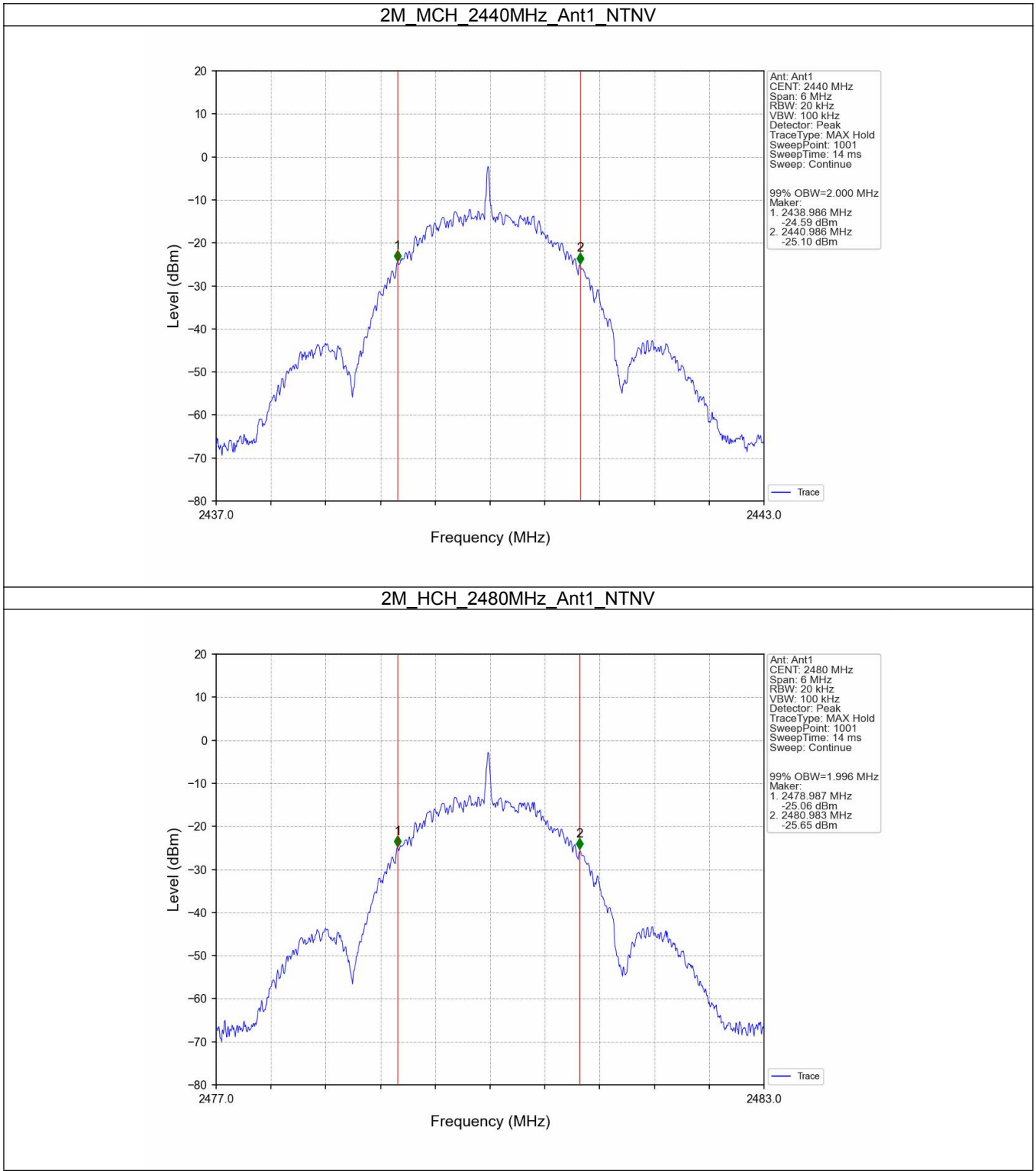
2.2.1 OBW



FCC ID: 2BSEJ-A2C

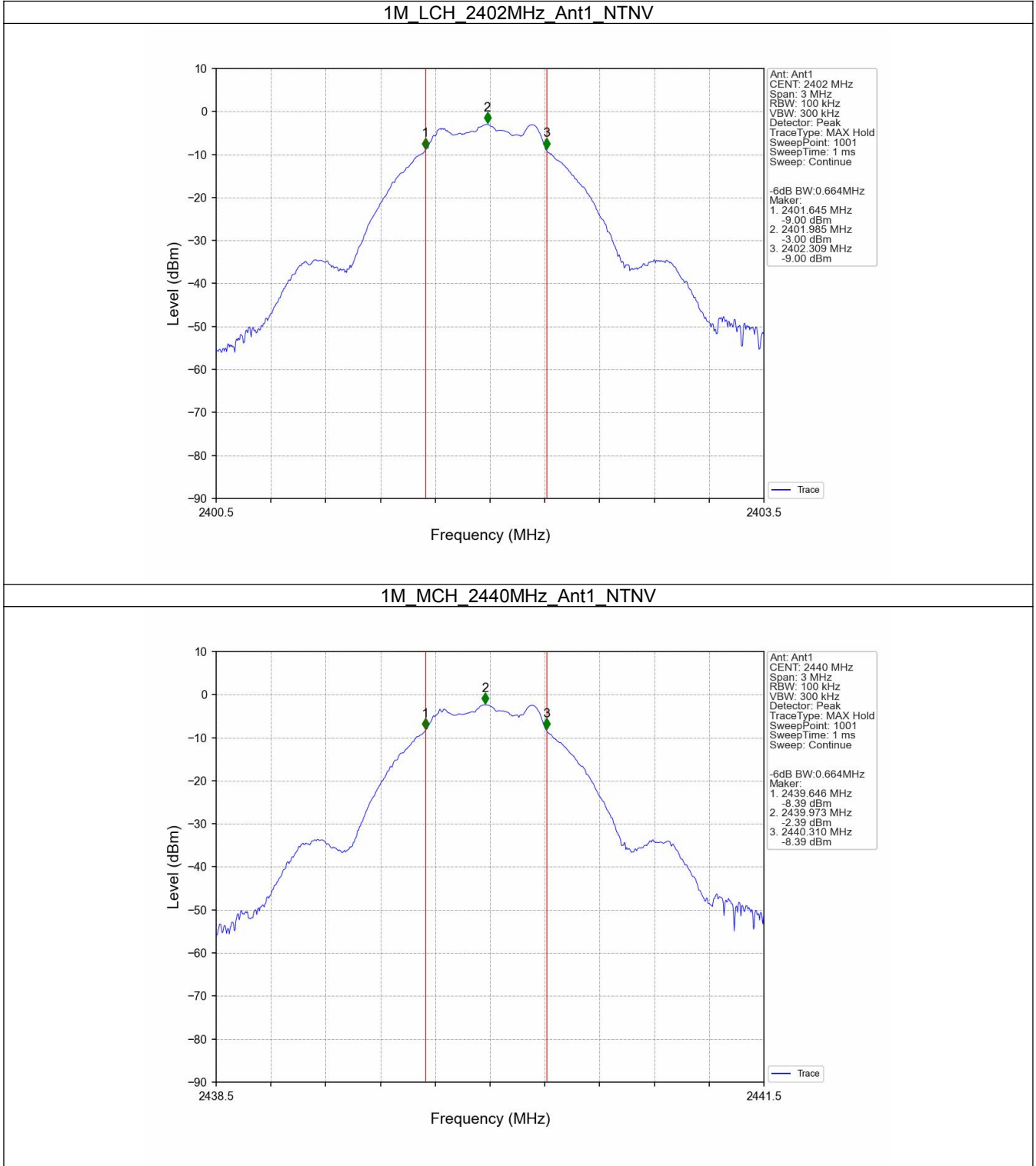


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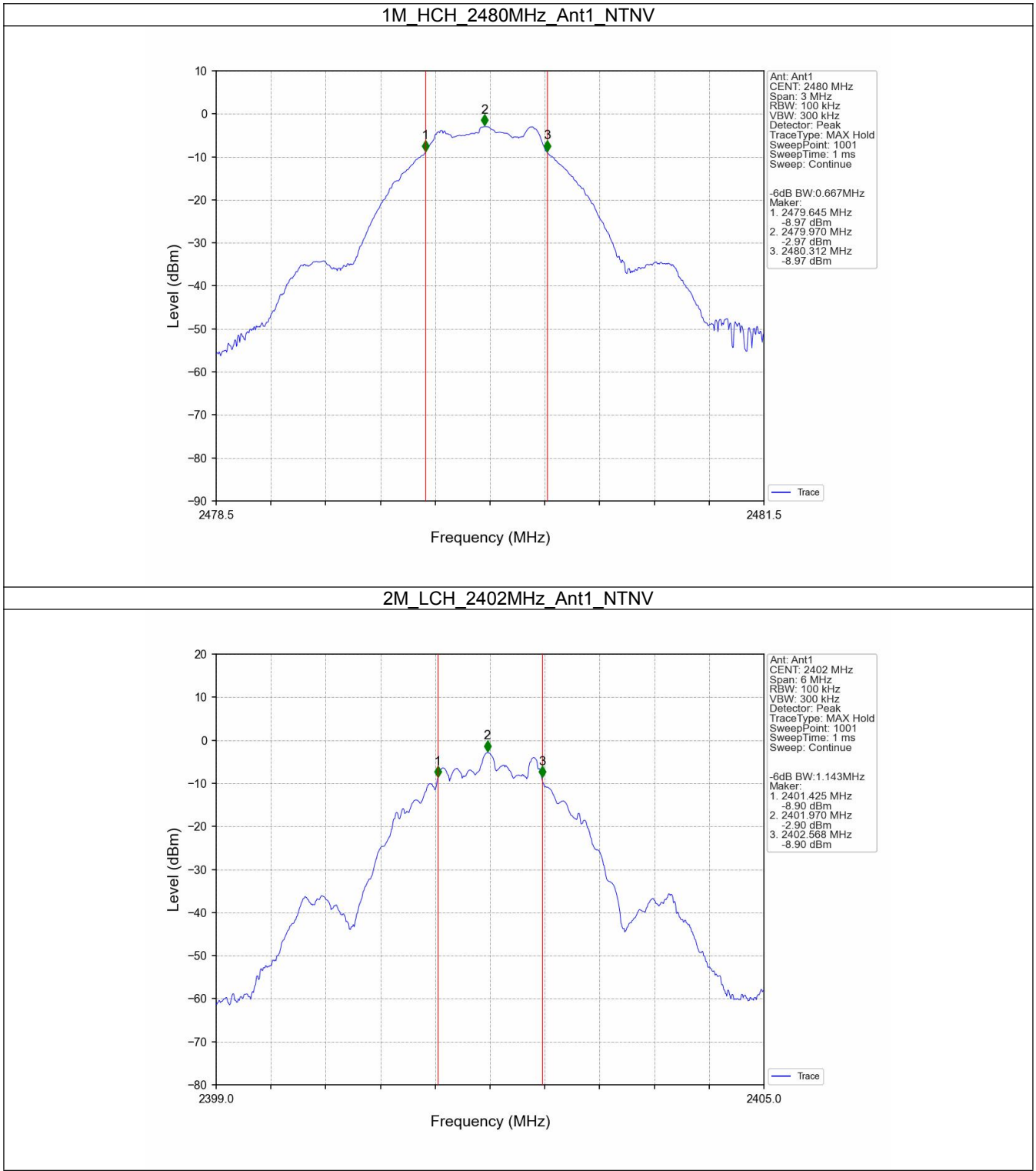


FCC ID: 2BSEJ-A2C

2.2.2 6dB BW

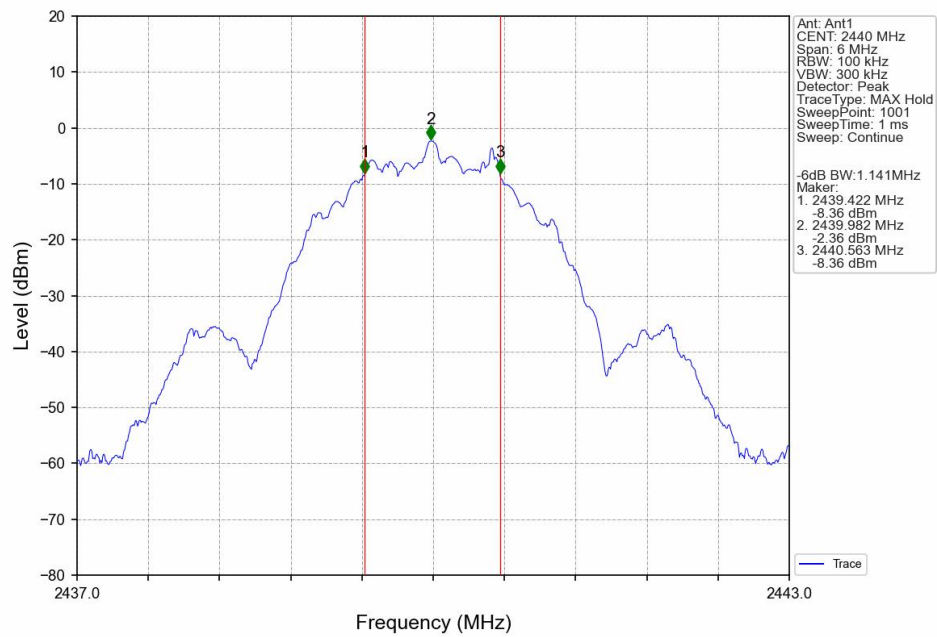


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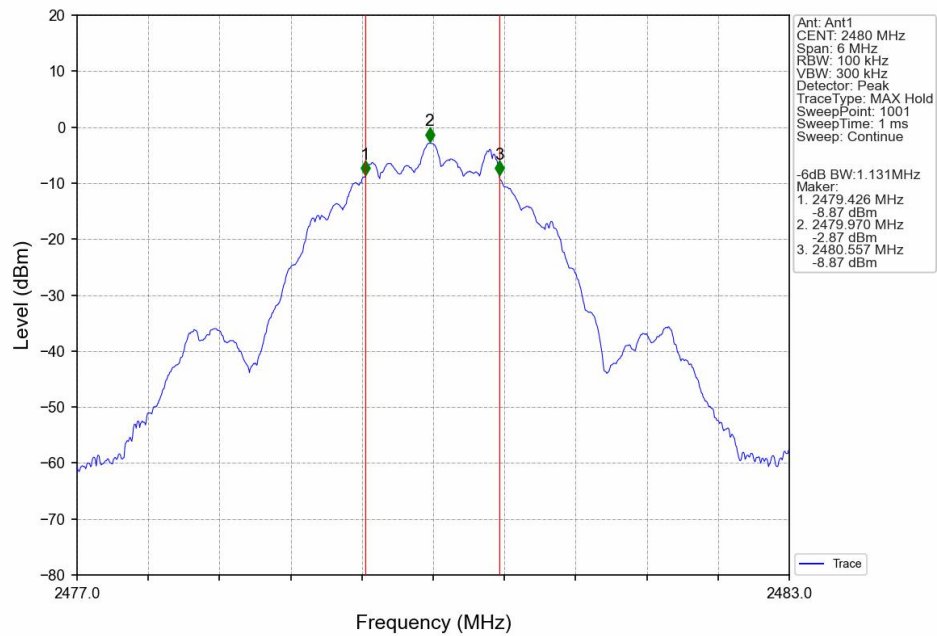


FCC ID: 2BSEJ-A2C

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BSEJ-A2C

3. Maximum Conducted Output Power

3.1 Test Result

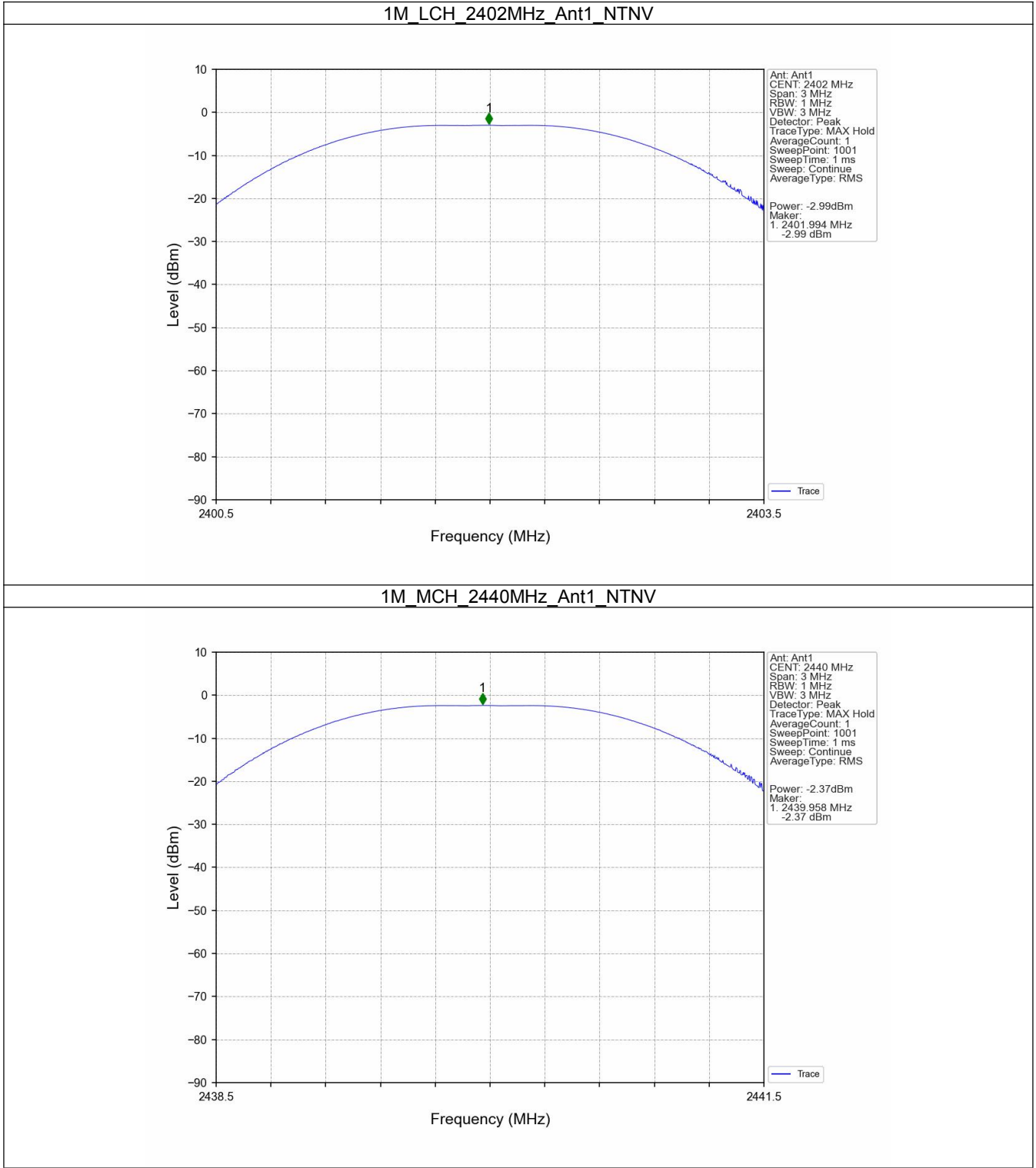
3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-2.99	<=30	Pass
		2440	-2.37	<=30	Pass
		2480	-2.96	<=30	Pass
2M	SISO	2402	-2.96	<=30	Pass
		2440	-2.34	<=30	Pass
		2480	-2.88	<=30	Pass
Note1: Antenna Gain: Ant1: 2.13dBi; Note2: RF Cable loss=0.5dB Note3: The test results include RF Cable loss.					

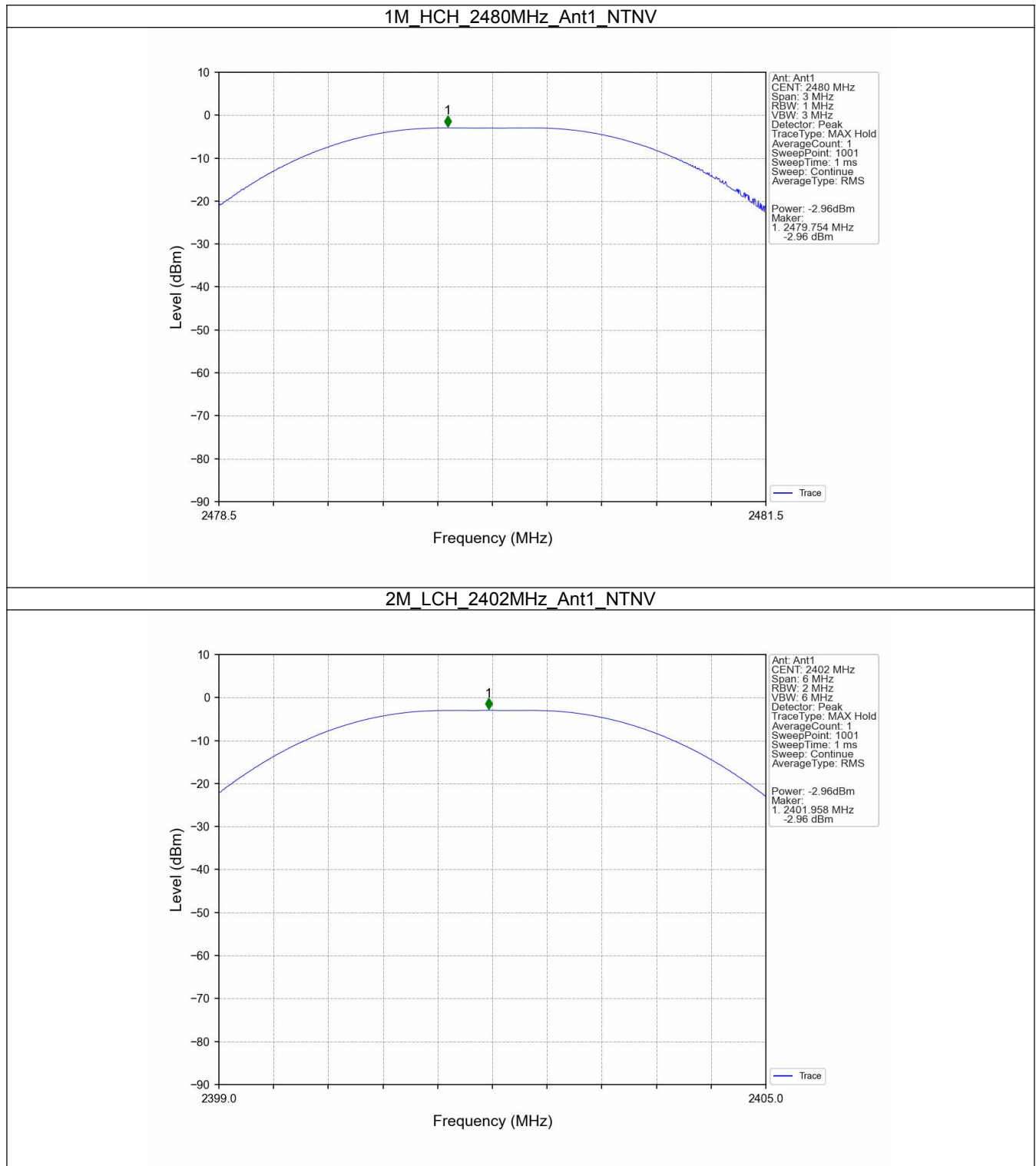
FCC ID: 2BSEJ-A2C

3.2 Test Graph

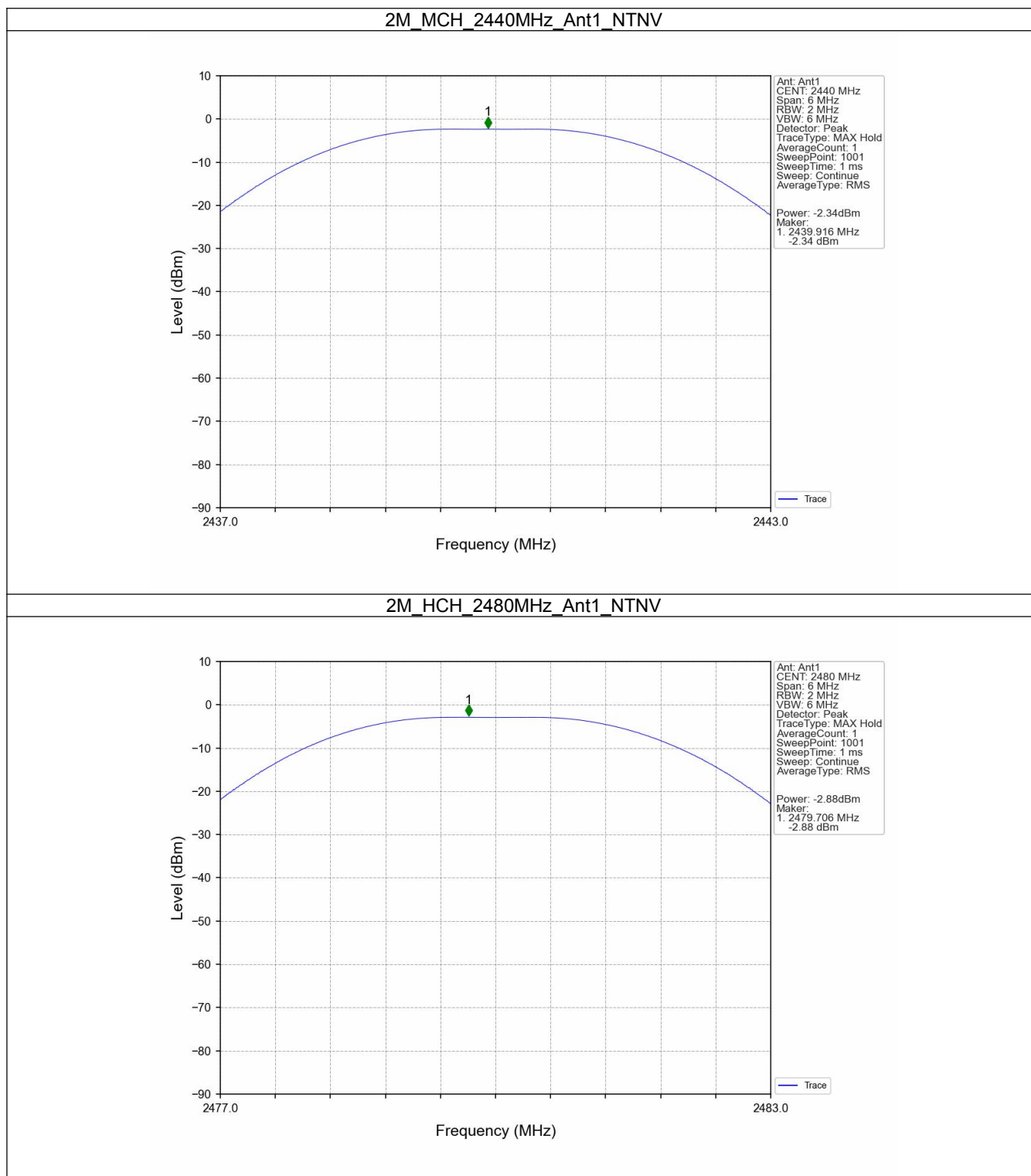
3.2.1 Power



FCC ID: 2BSEJ-A2C



FCC ID: 2BSEJ-A2C



FCC ID: 2BSEJ-A2C

4. Maximum Power Spectral Density

4.1 Test Result

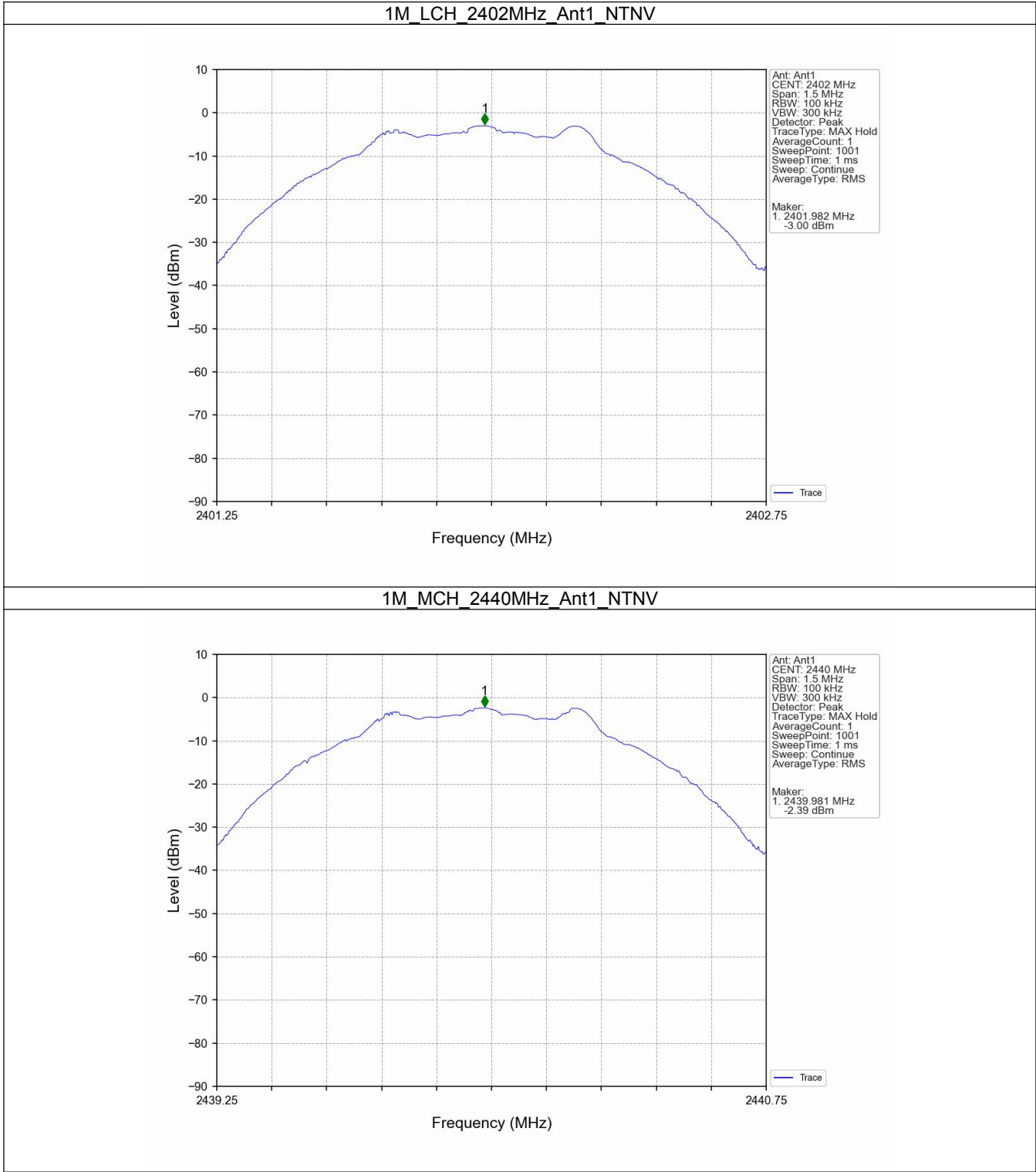
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit(dBm/3kHz)	
1M	SISO	2402	-3.00dBm/100kHz	<=8	Pass
		2440	-2.39dBm/100kHz	<=8	Pass
		2480	-2.99dBm/100kHz	<=8	Pass
2M	SISO	2402	-2.97dBm/100kHz	<=8	Pass
		2440	-2.36dBm/100kHz	<=8	Pass
		2480	-2.94dBm/100kHz	<=8	Pass
Note1: Antenna Gain: Ant1: 2.13dBi; Note2: RF Cable loss=0.5dB Note3: The test results include RF Cable loss.					

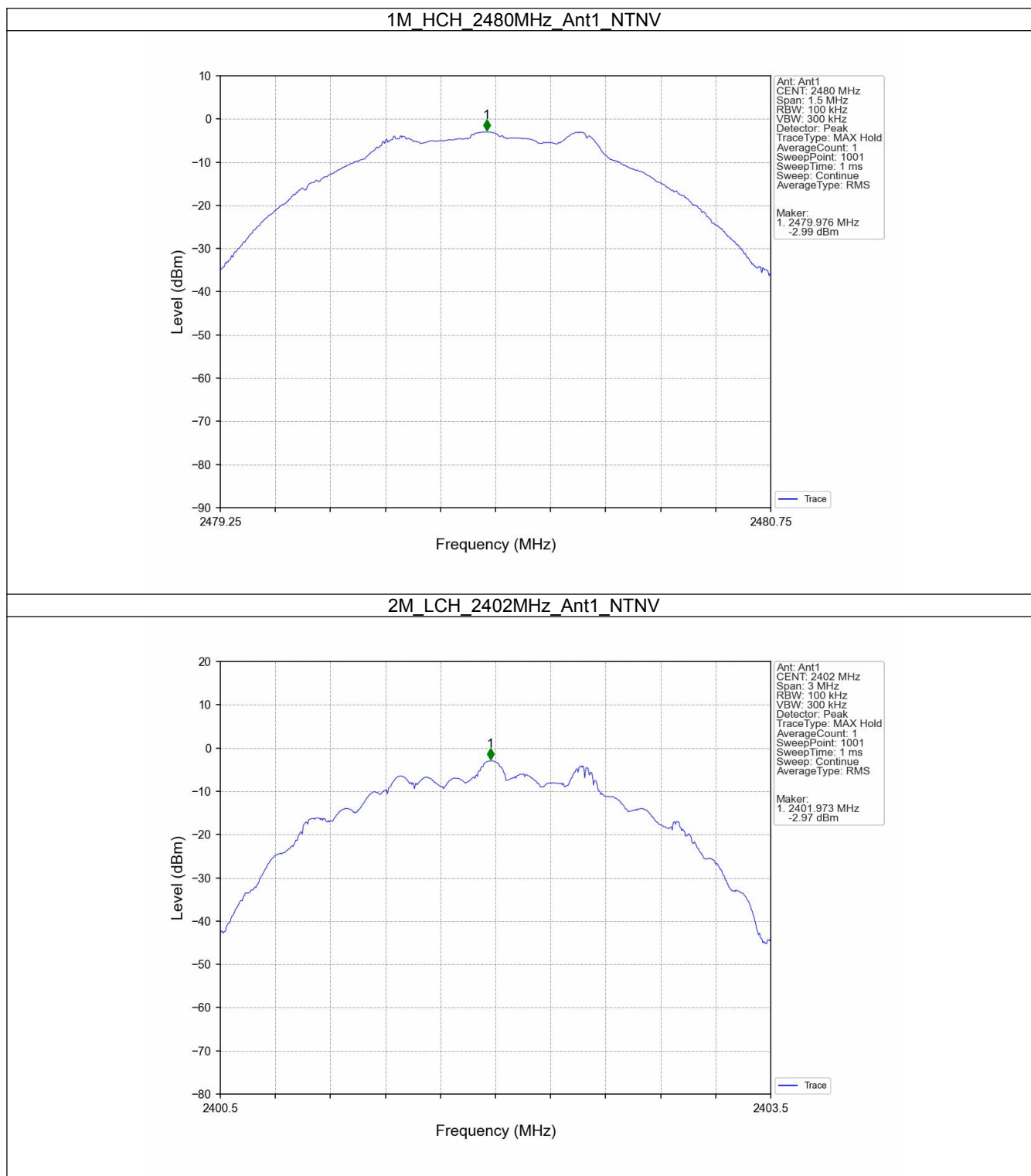
FCC ID: 2BSEJ-A2C

4.2 Test Graph

4.2.1 PSD

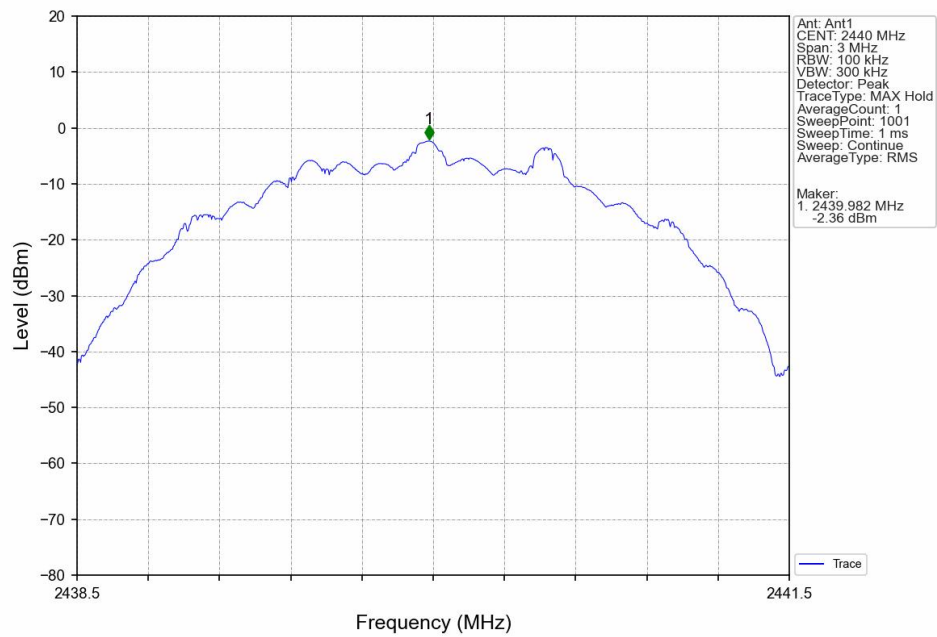


FCC ID: 2BSEJ-A2C

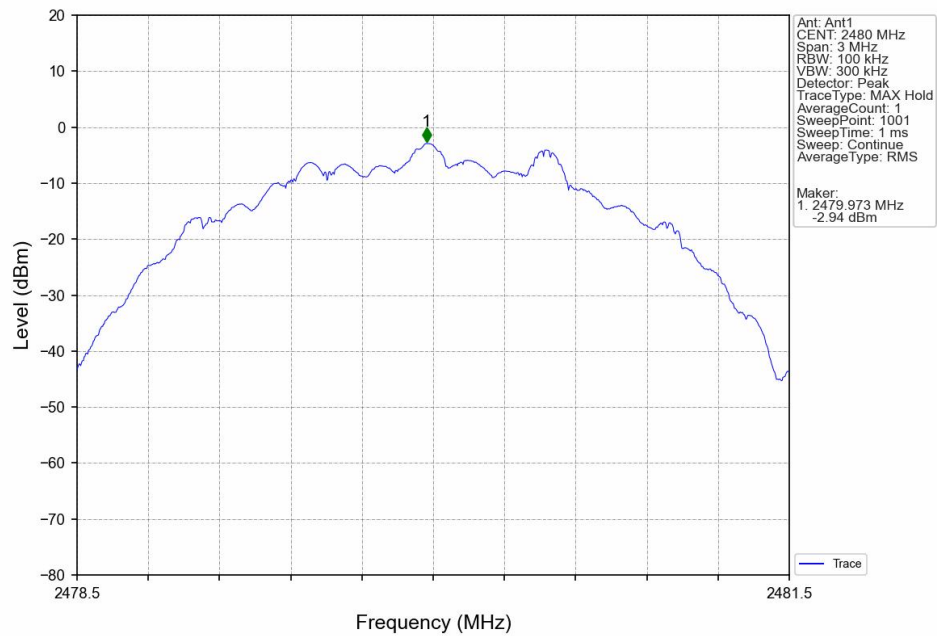


FCC ID: 2BSEJ-A2C

2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BSEJ-A2C

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	-2.99
		2440	1	-2.39
		2480	1	-3.00
2M	SISO	2402	1	-2.94
		2440	1	-2.34
		2480	1	-2.92

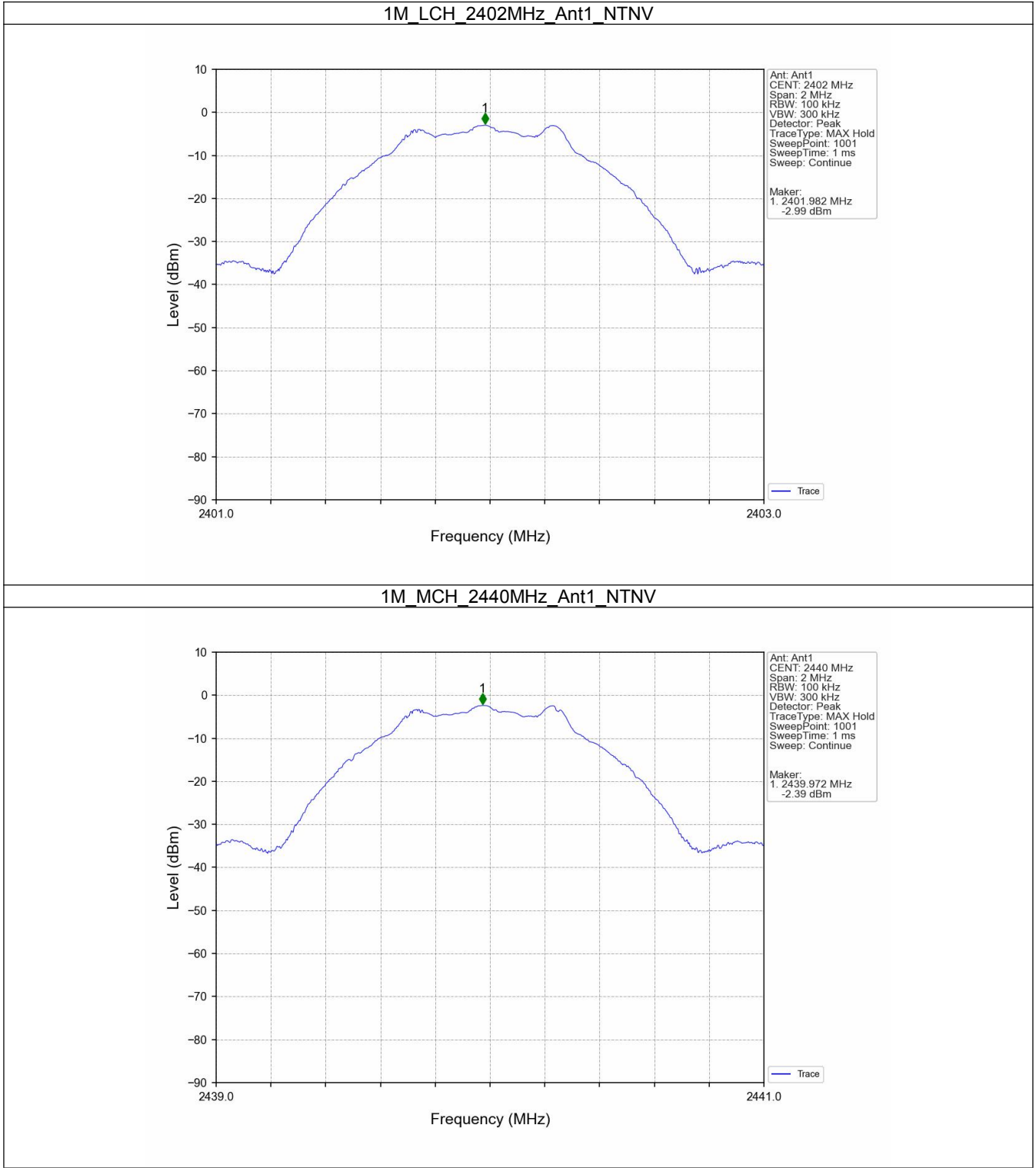
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-2.99	-22.99	Pass
		2440	1	-2.39	-22.39	Pass
		2480	1	-3.00	-23.00	Pass
2M	SISO	2402	1	-2.94	-22.94	Pass
		2440	1	-2.34	-22.34	Pass
		2480	1	-2.92	-22.92	Pass

FCC ID: 2BSEJ-A2C

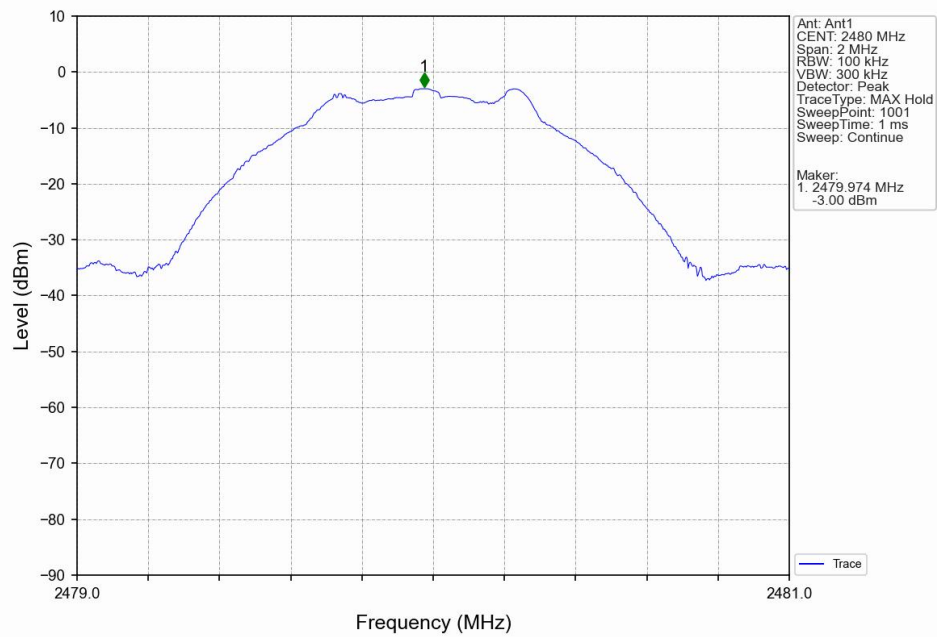
5.2 Test Graph

5.2.1 Ref

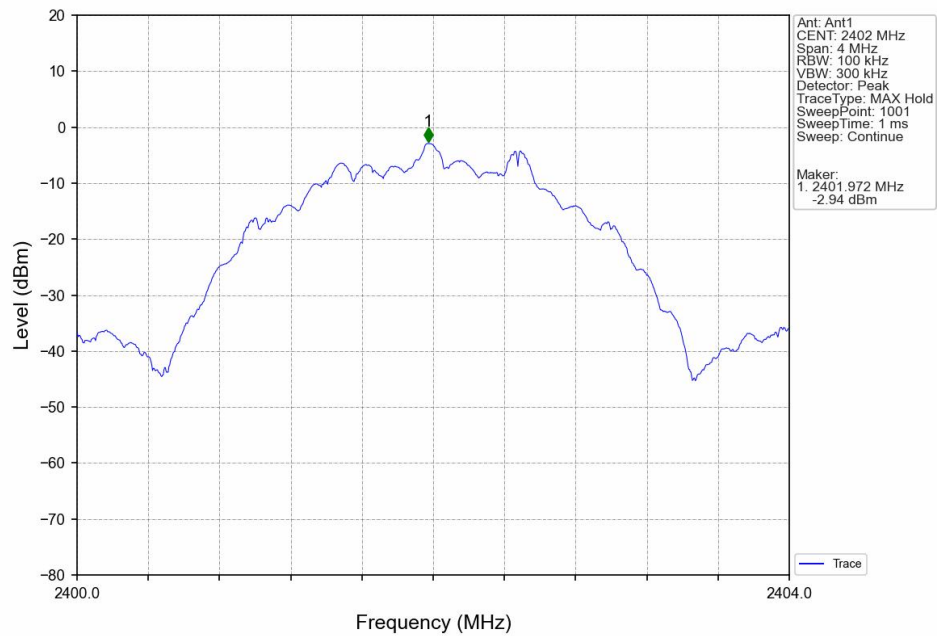


FCC ID: 2BSEJ-A2C

1M_HCH_2480MHz_Ant1_NTNV

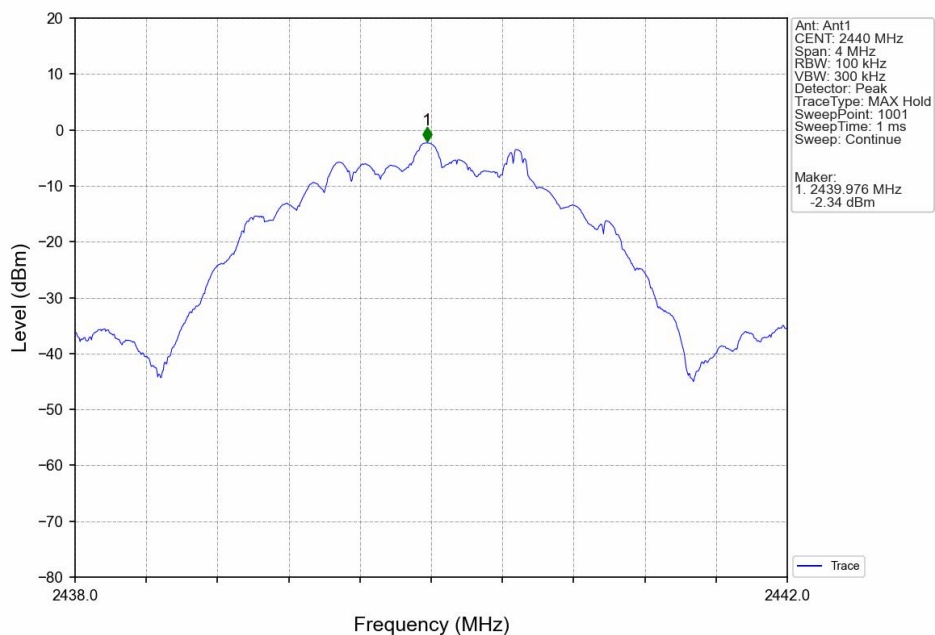


2M_LCH_2402MHz_Ant1_NTNV

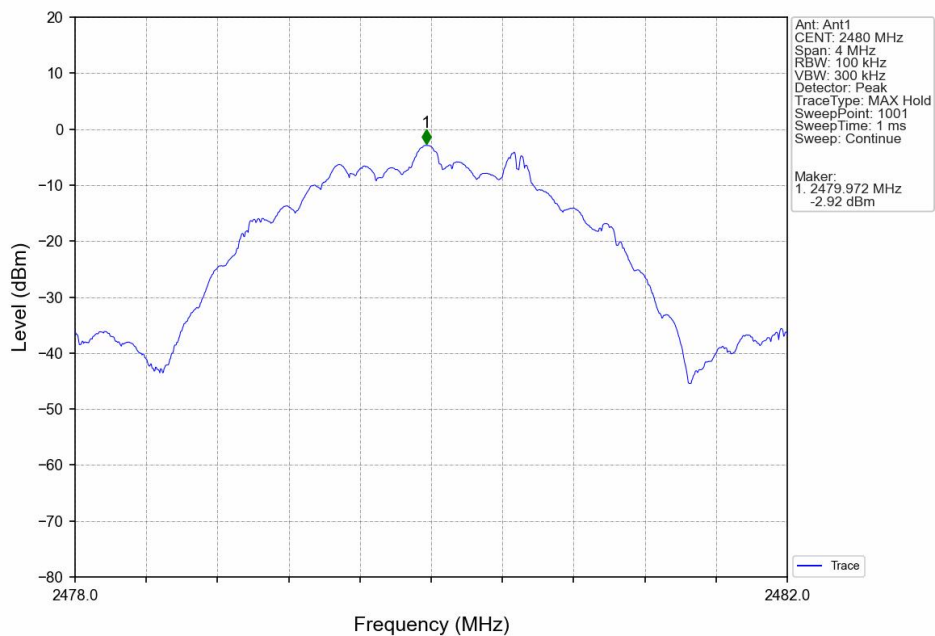


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2M_MCH_2440MHz_Ant1_NTNV

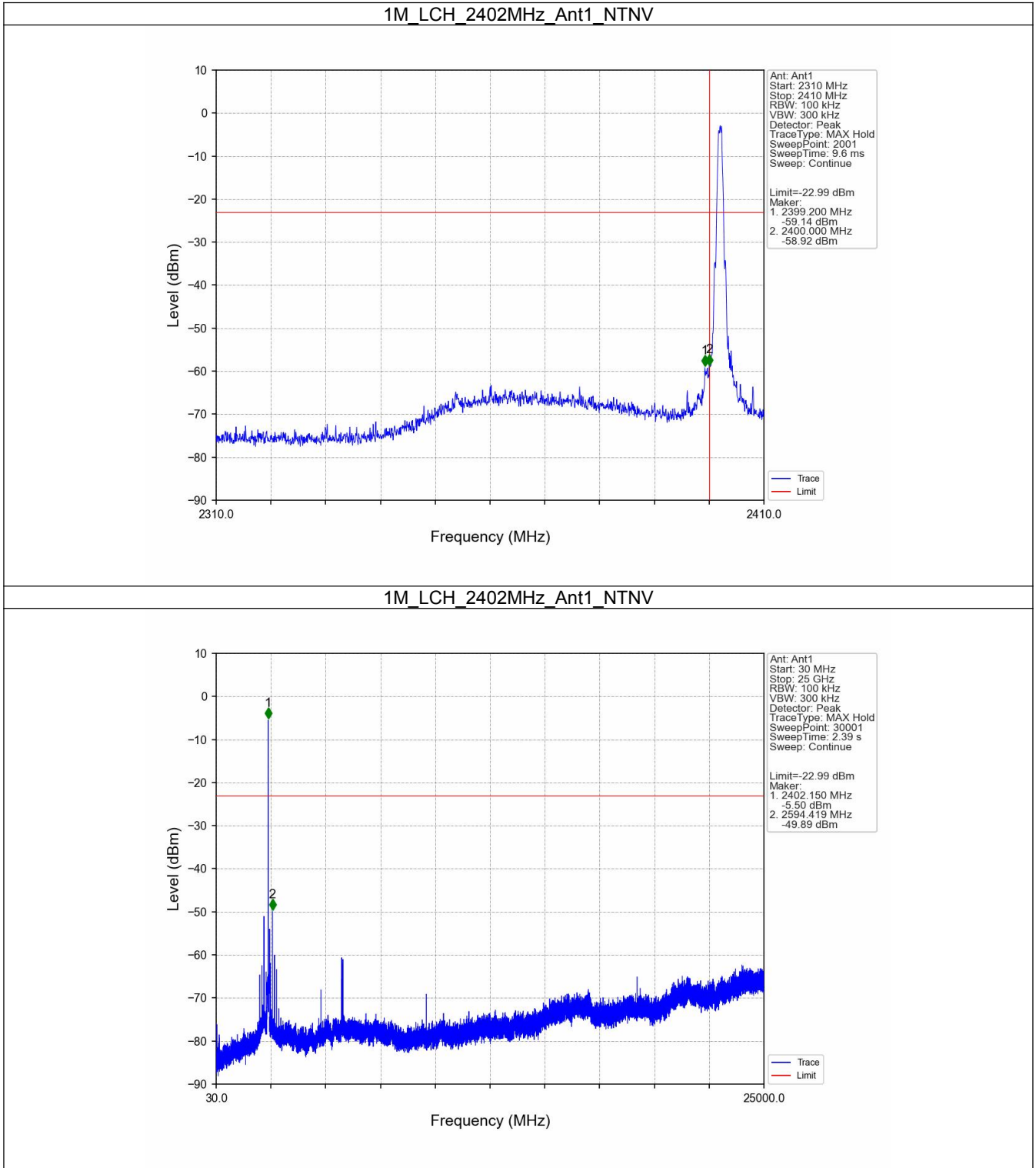


2M_HCH_2480MHz_Ant1_NTNV

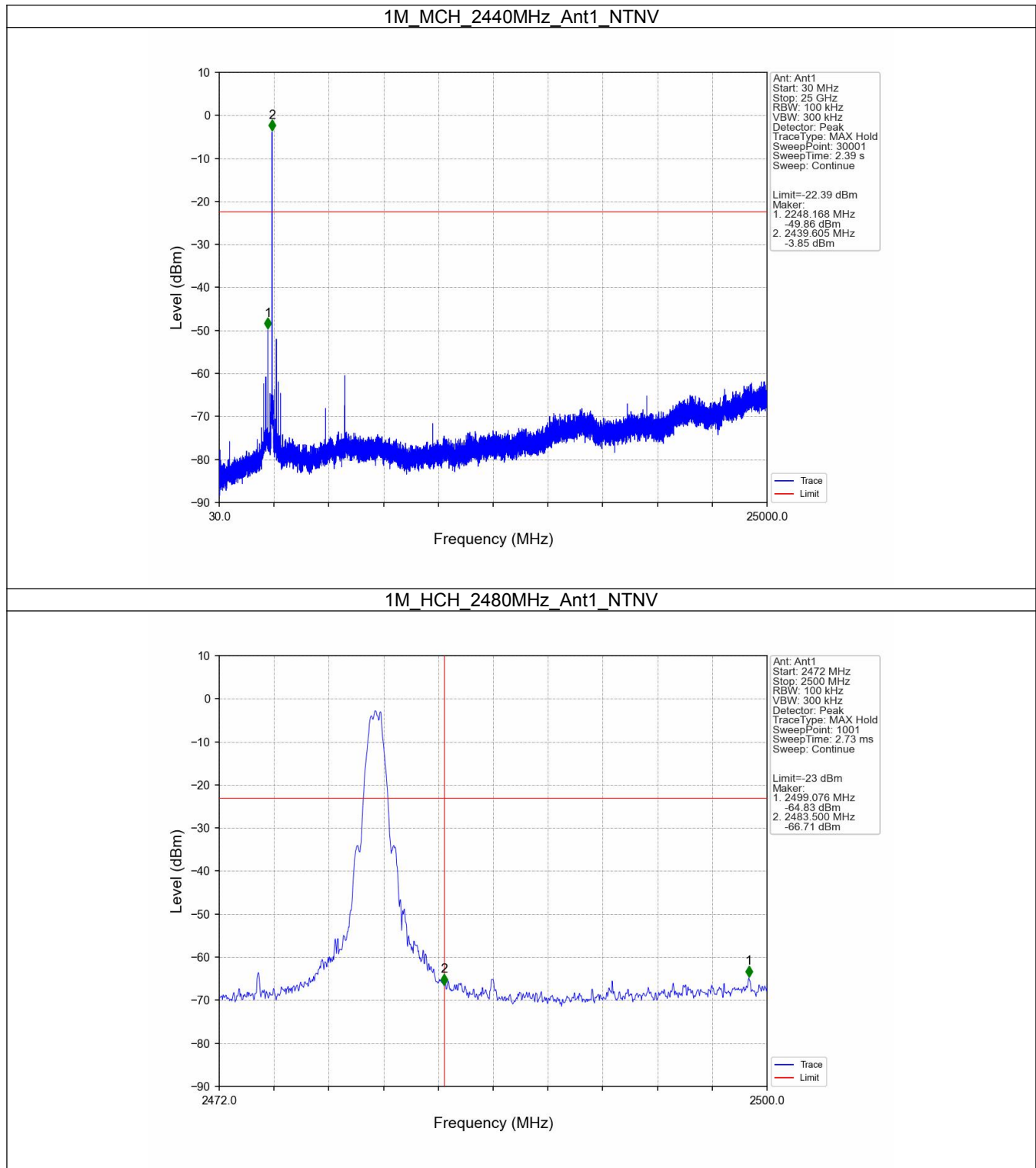


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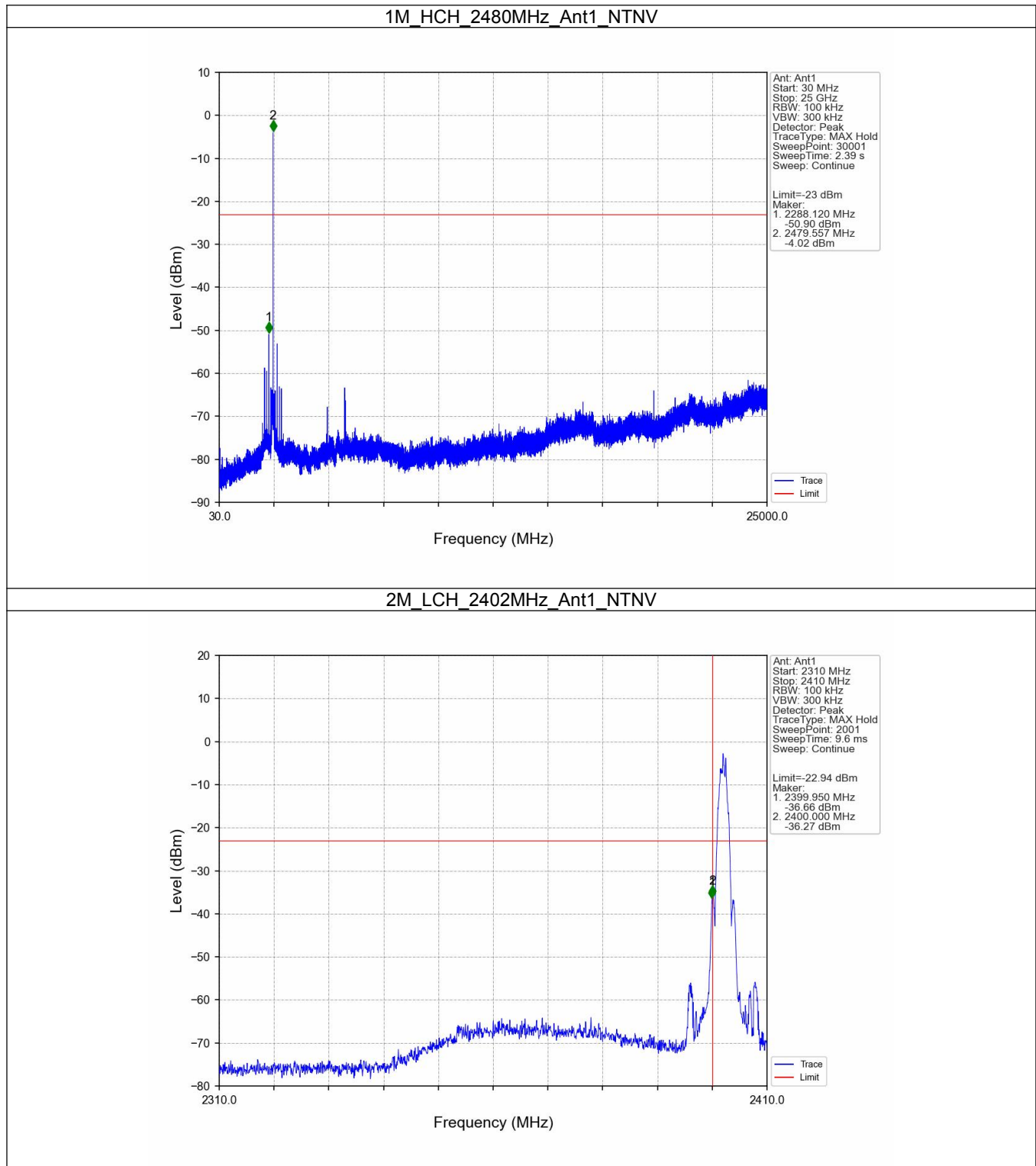
5.2.2 CSE



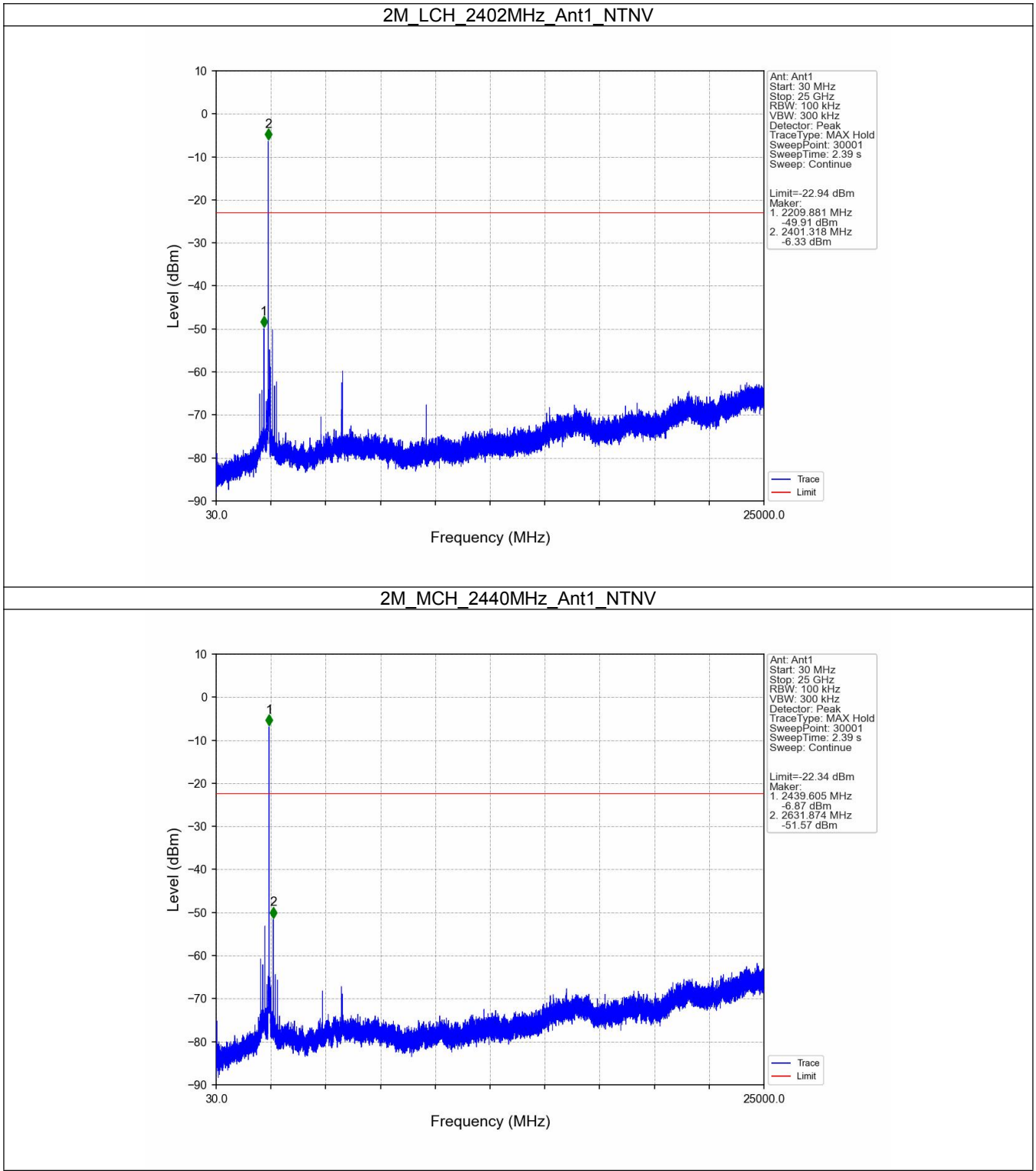
FCC ID: 2BSEJ-A2C



FCC ID: 2BSEJ-A2C

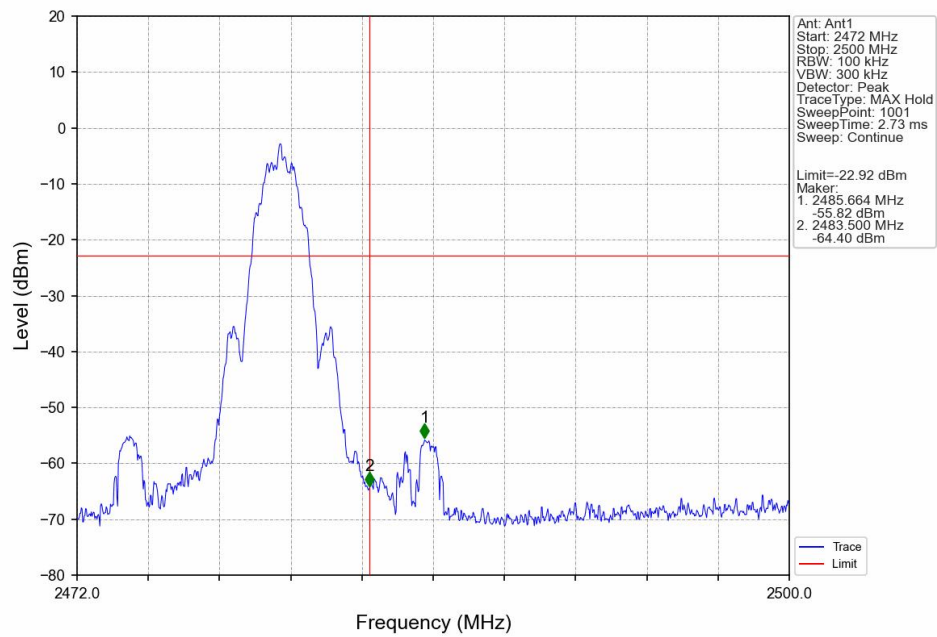


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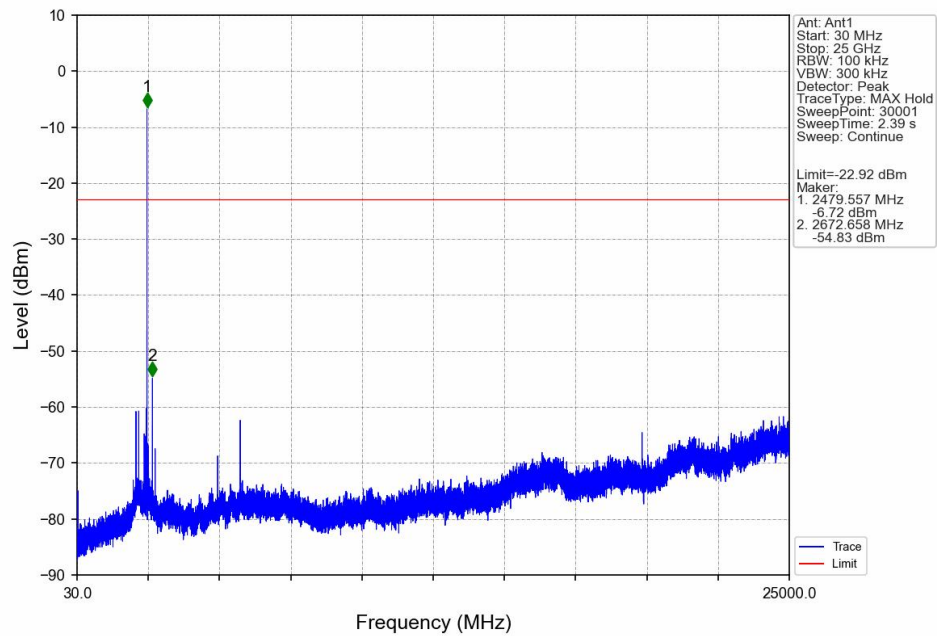


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2M_HCH_2480MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



FCC ID: 2BSEJ-A2C

6. Form731

6.1 Test Result

6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2402	2480	0.0006	-2.34