

Appendix B

RF Test Data for BLE(Conducted Measurement)

Product Name: roof speaker system
Trade Mark: N/A
Test Model: KM-RWS-XP

Environmental Conditions

Temperature:	24.6°C
Relative Humidity:	51.4%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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

1. Duty Cycle

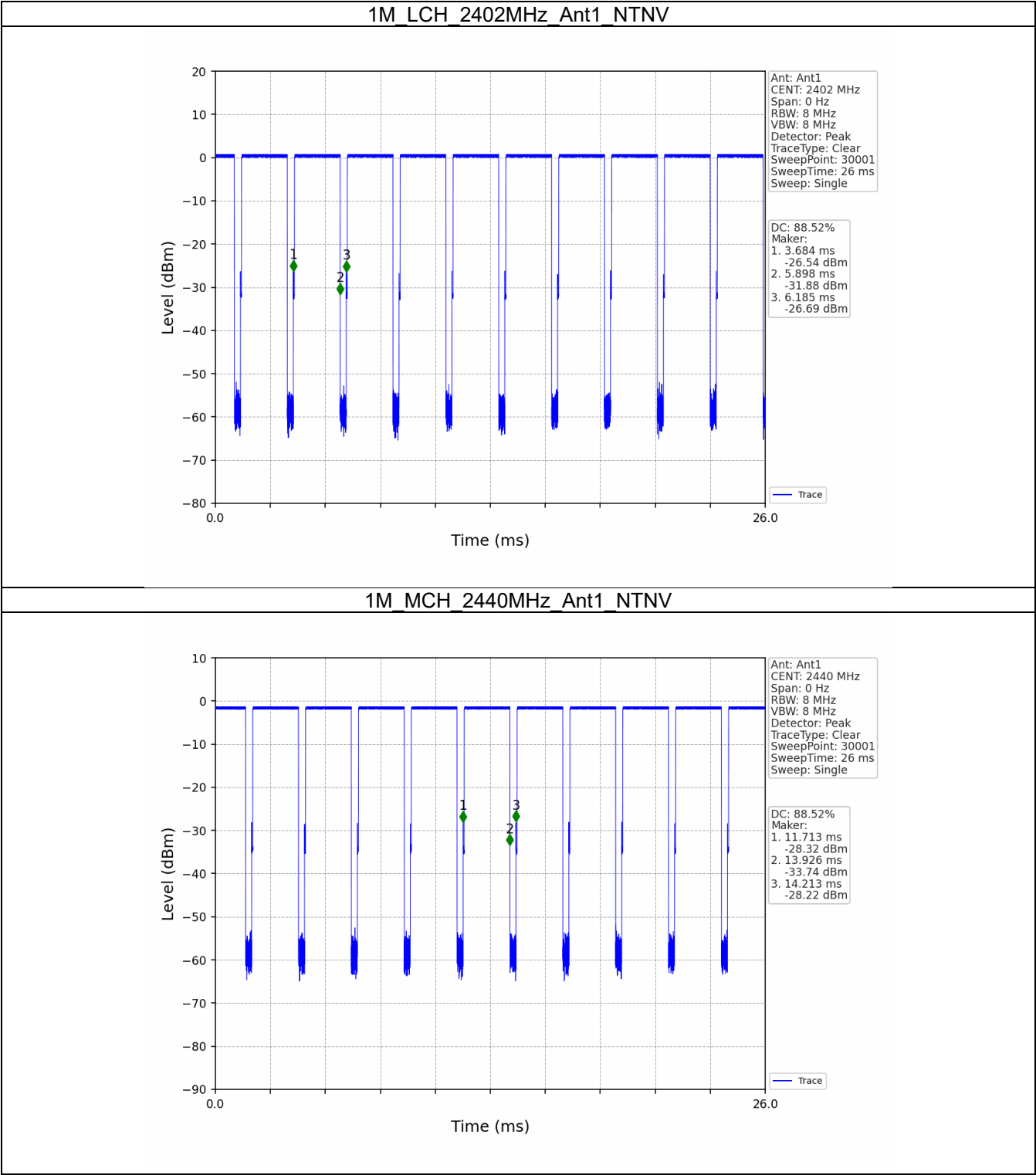
1.1 Test Result

1.1.1 Ant1

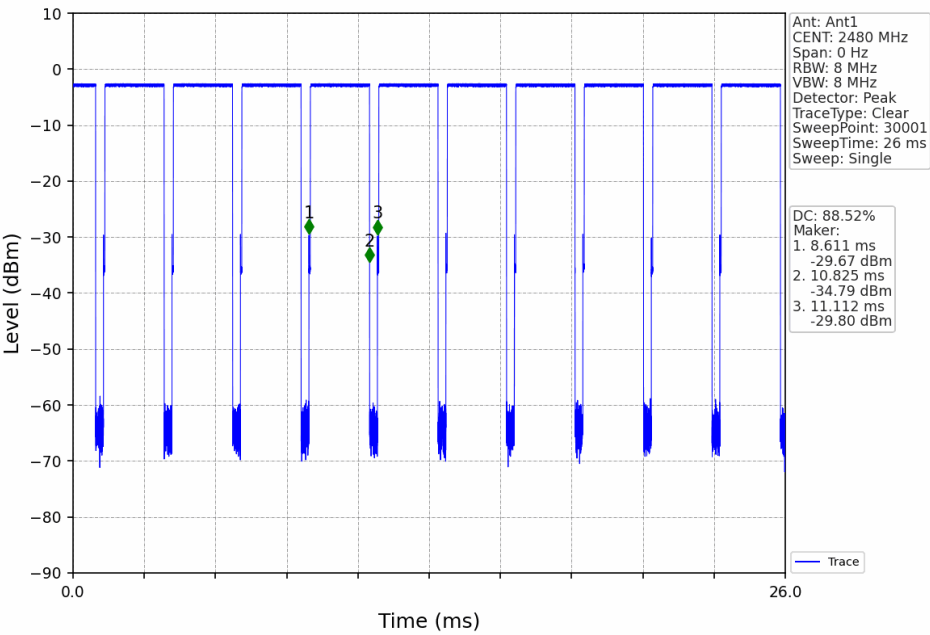
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	2.214	2.501	88.52	0.53	0.03
		2440	2.213	2.500	88.52	0.53	0.03
		2480	2.214	2.501	88.52	0.53	0.03

1.2 Test Graph

1.2.1 Ant1



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2. Bandwidth

2.1 Test Result

2.1.1 OBW

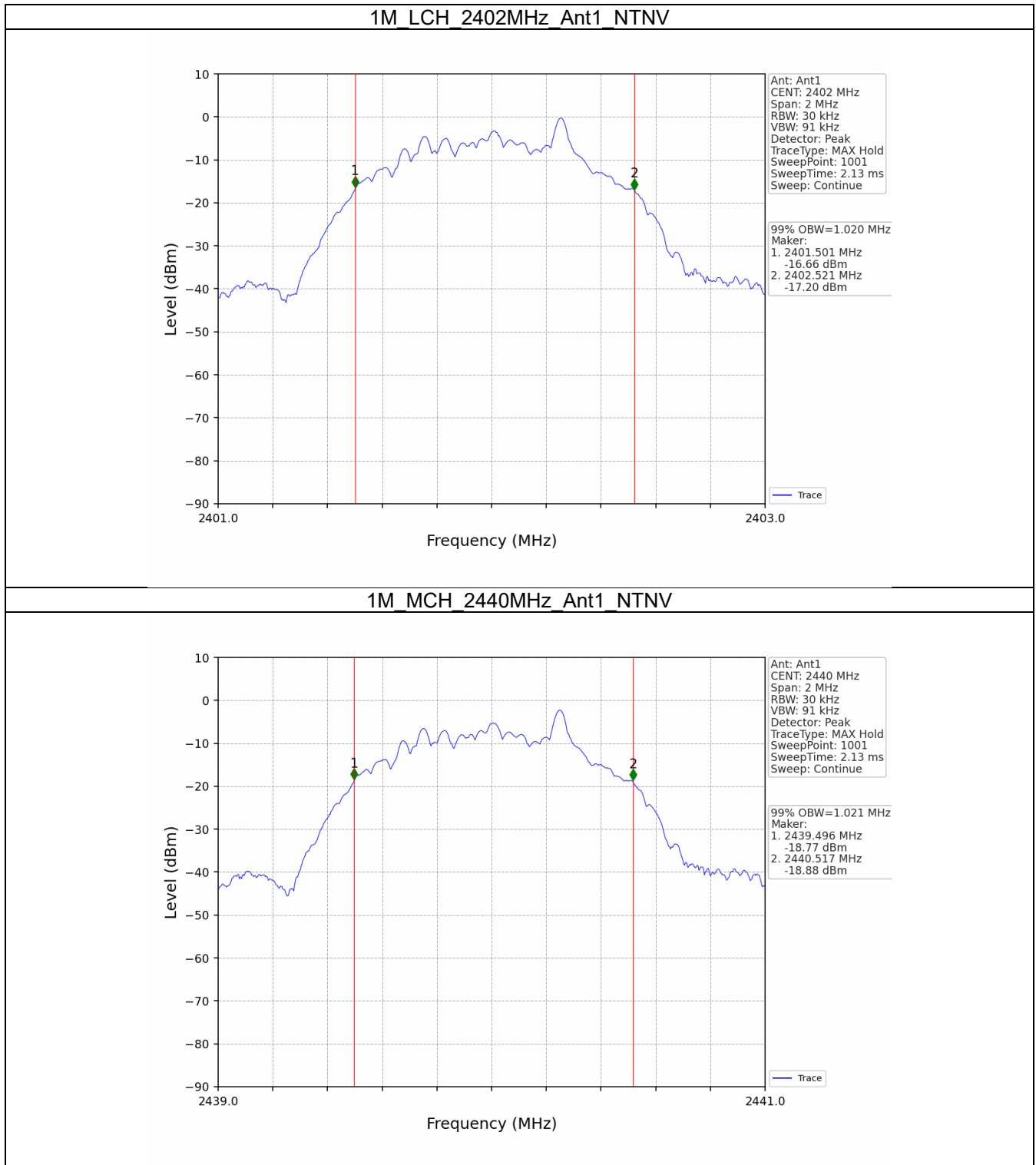
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.020	/	Pass
		2440	1	1.021	/	Pass
		2480	1	1.022	/	Pass

2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.667	≥ 0.5	Pass
		2440	1	0.668	≥ 0.5	Pass
		2480	1	0.664	≥ 0.5	Pass

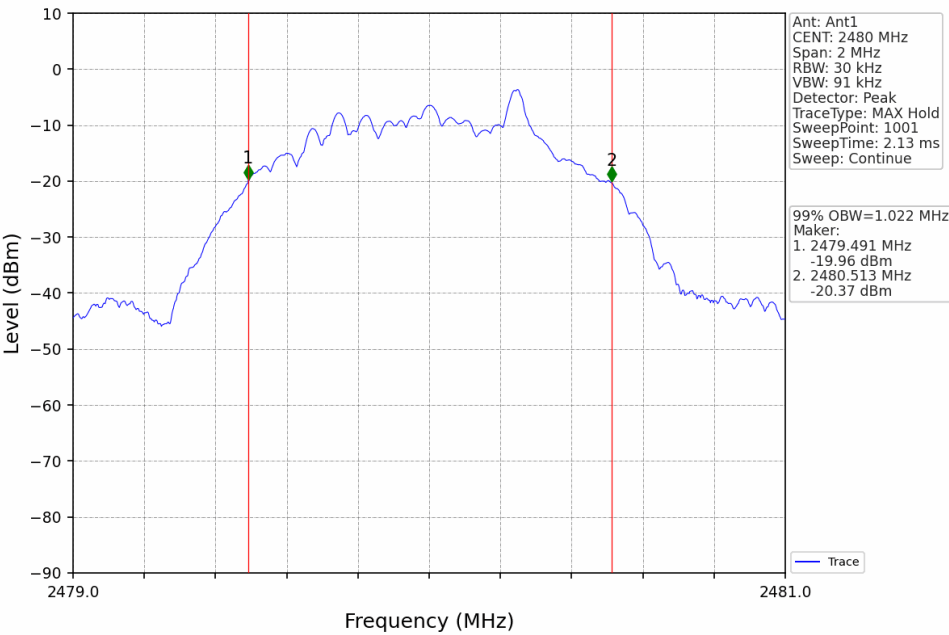
2.2 Test Graph

2.2.1 OBW

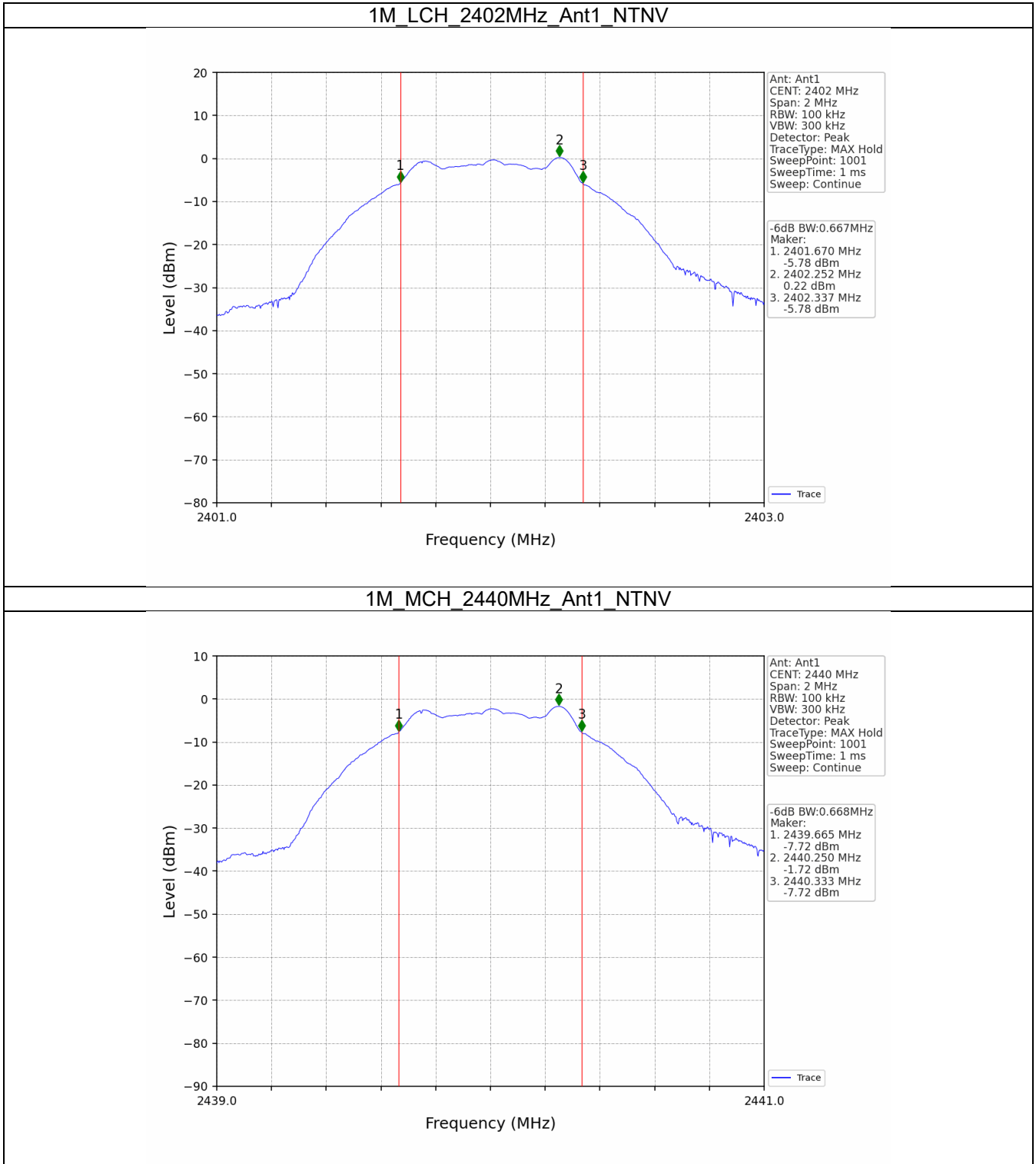




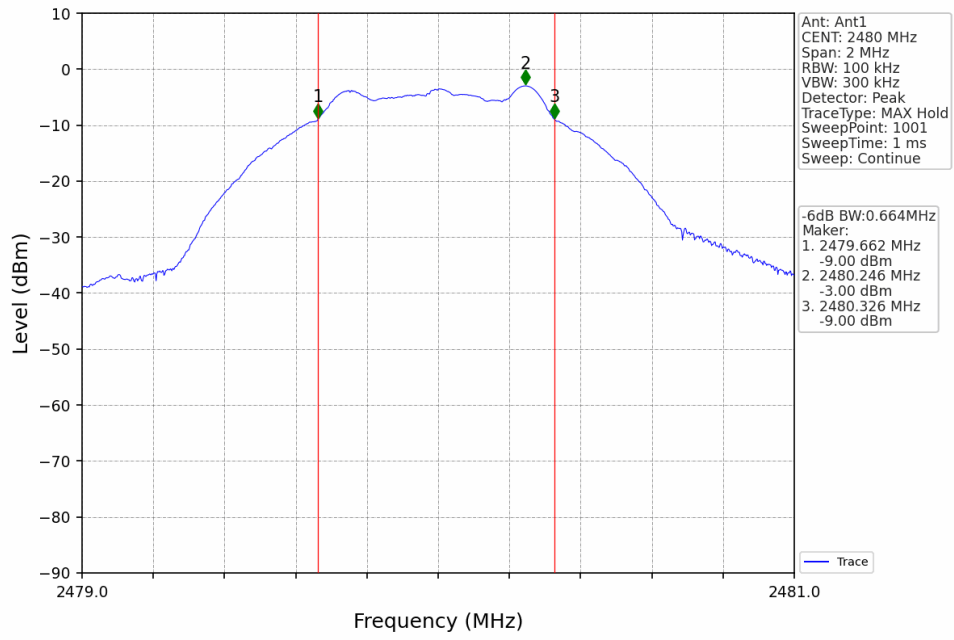
1M_HCH_2480MHz_Ant1_NTNV



2.2.2 6dB BW



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3. Maximum Conducted Output Power

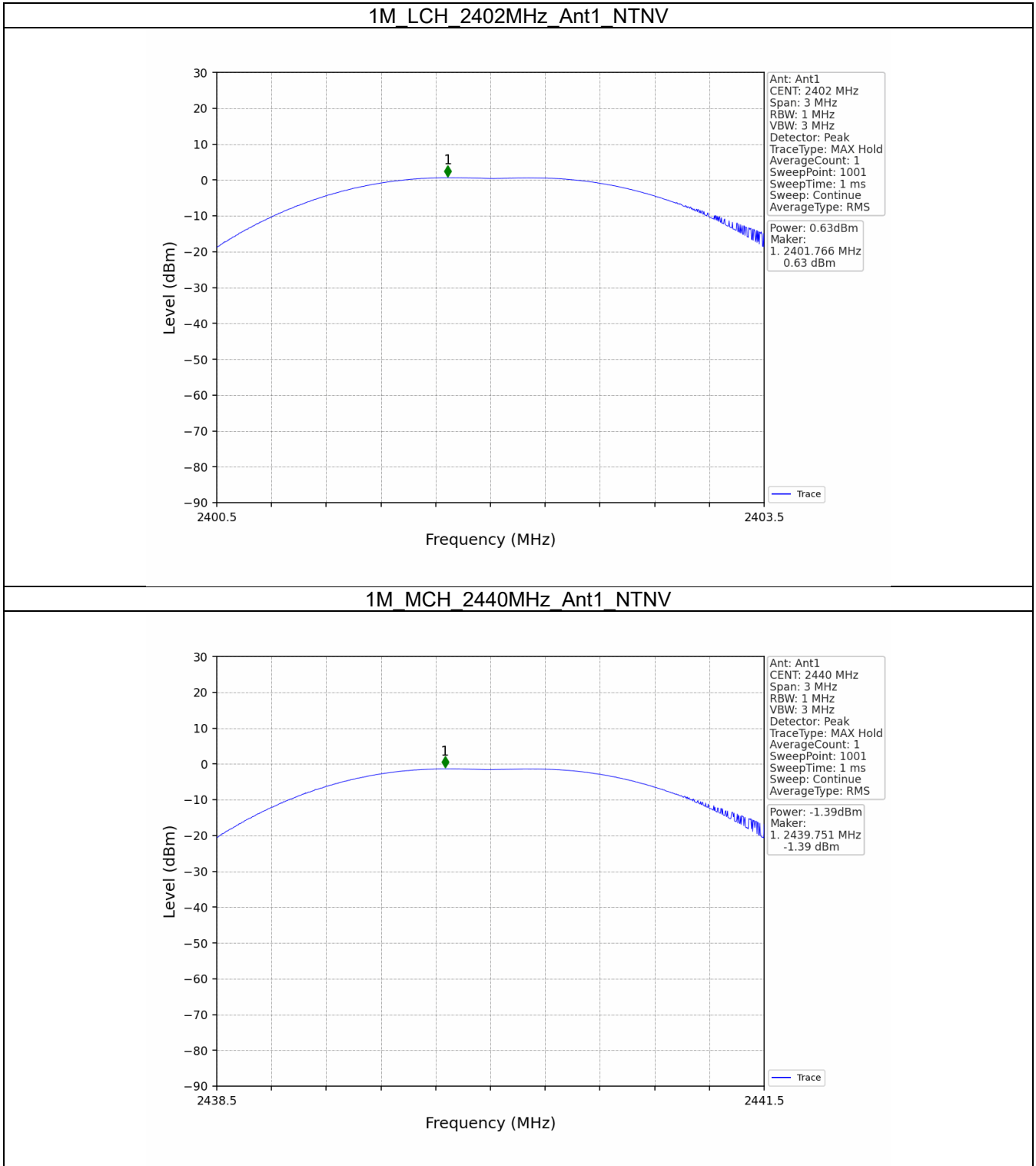
3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	0.63	<=30	Pass
		2440	-1.39	<=30	Pass
		2480	-2.64	<=30	Pass

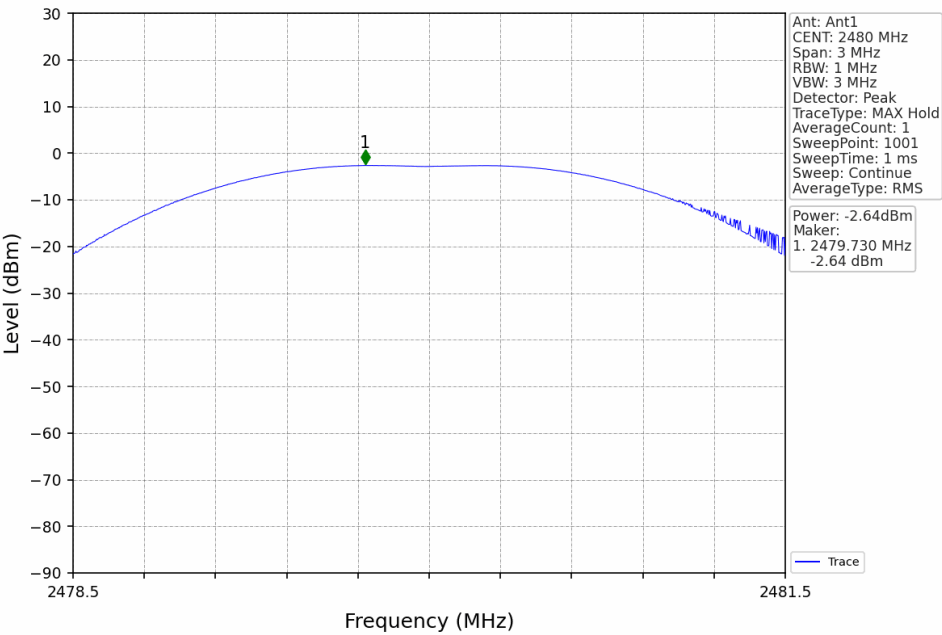
3.2 Test Graph

3.2.1 Power





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4. Maximum Power Spectral Density

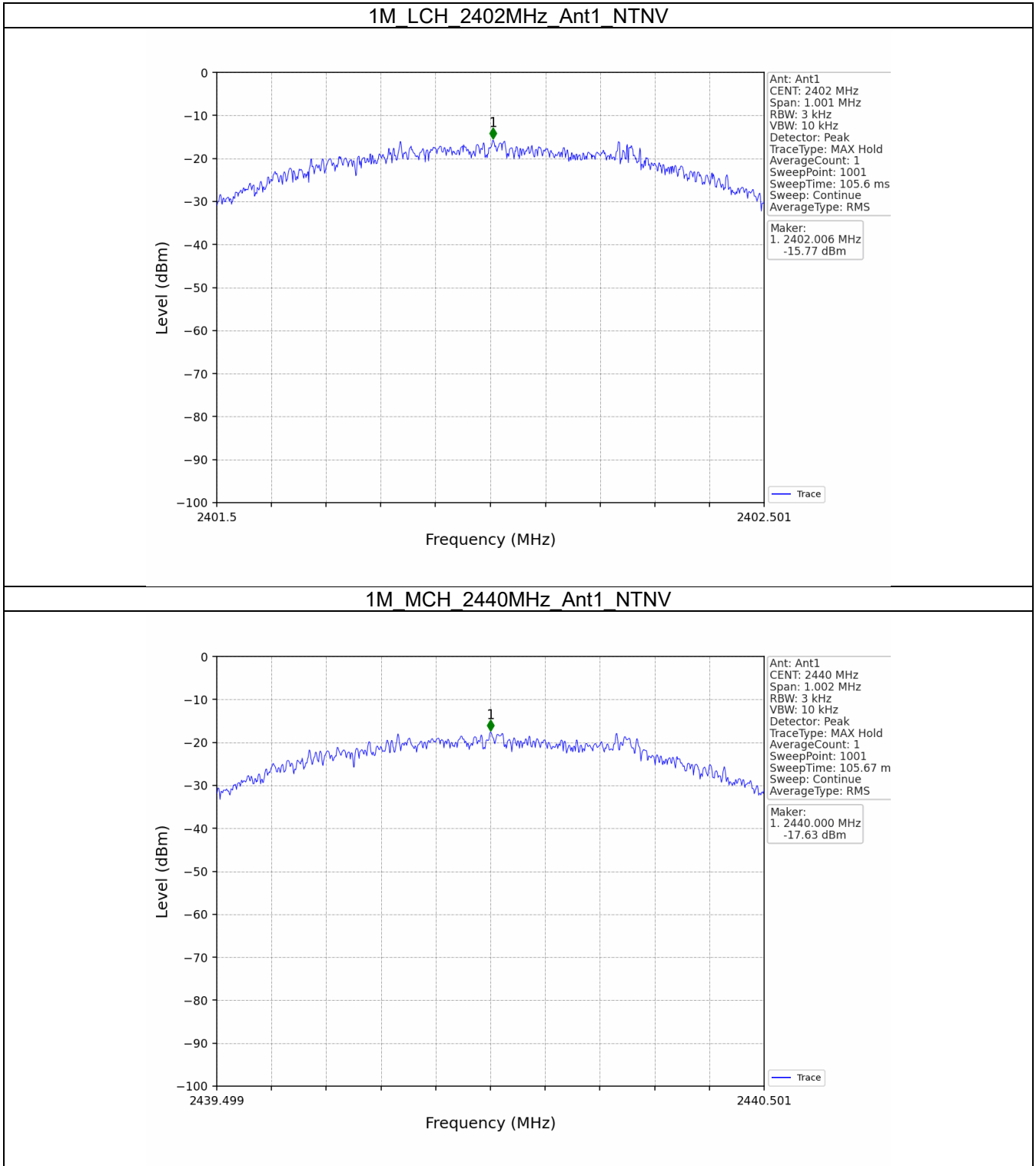
4.1 Test Result

4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-15.77	≤ 8	Pass
		2440	-17.63	≤ 8	Pass
		2480	-18.87	≤ 8	Pass

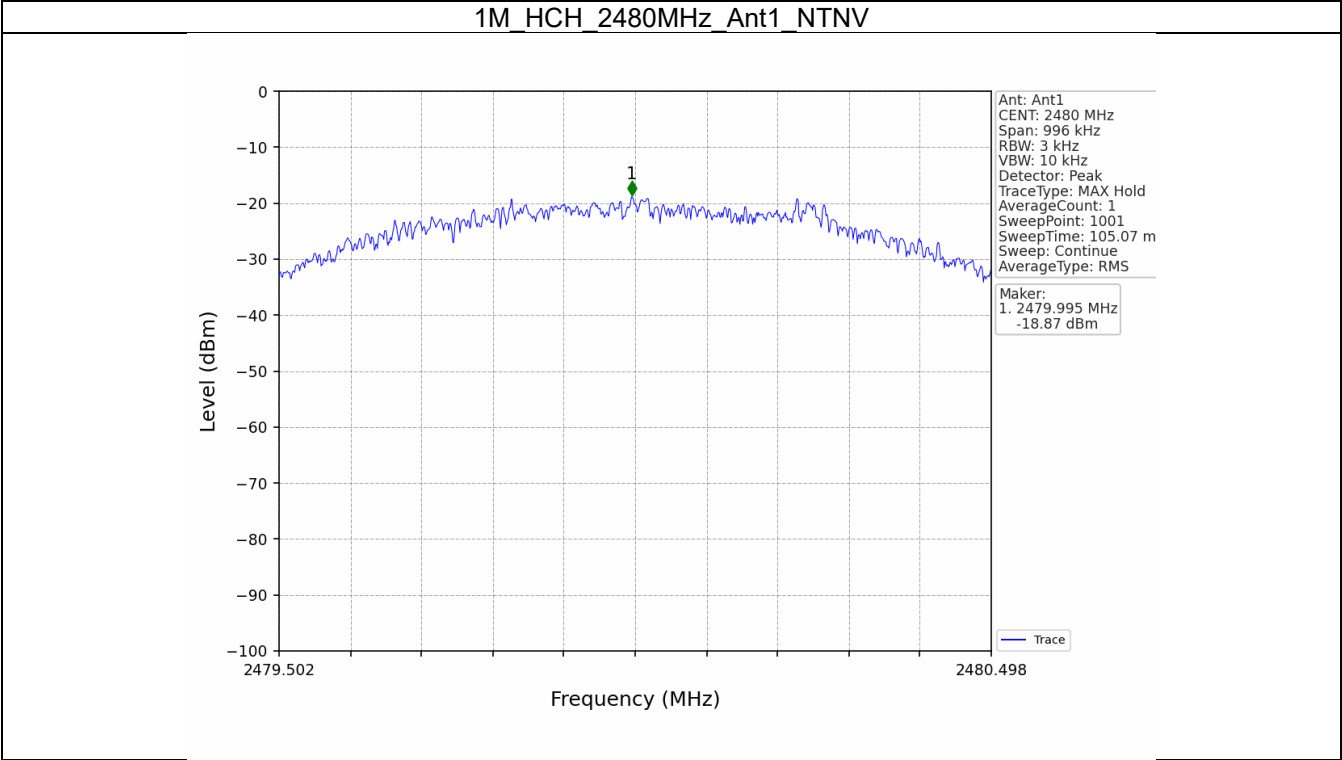
4.2 Test Graph

4.2.1 PSD





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5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

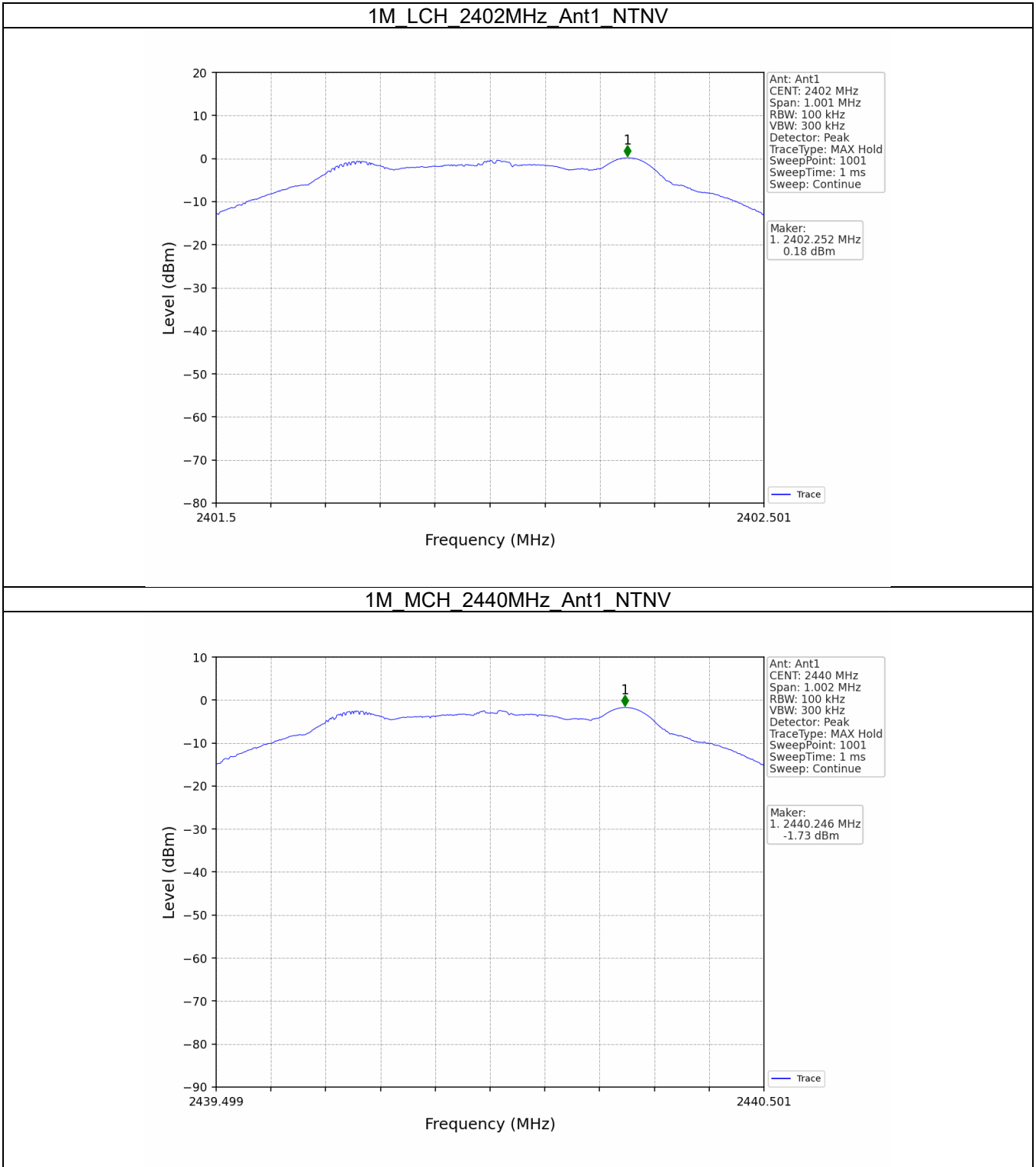
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	0.18
		2440	1	-1.73
		2480	1	-2.98
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.				

5.1.2 CSE

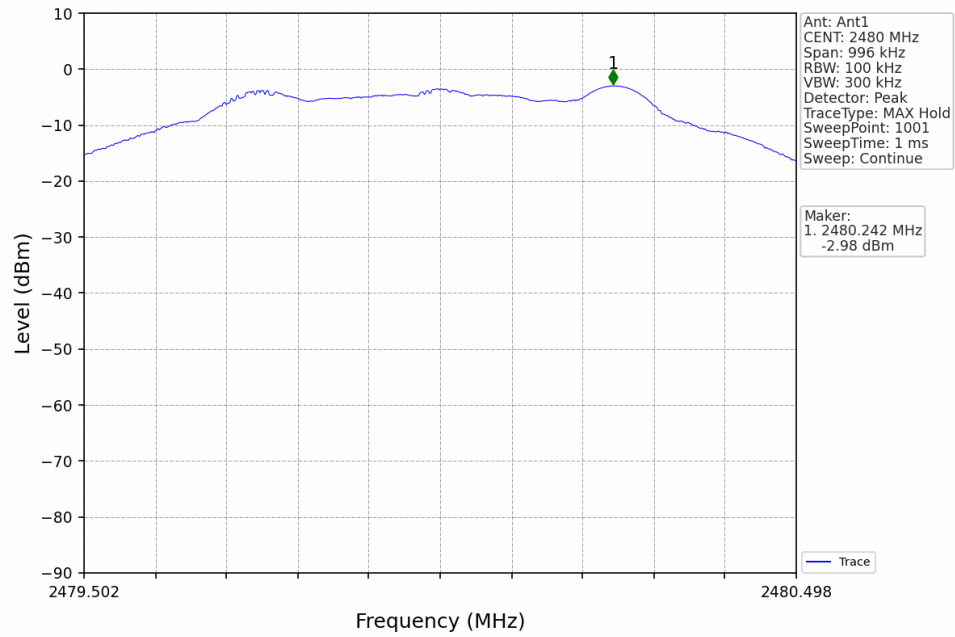
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	0.18	-19.82	Pass
		2440	1	-1.73	-21.73	Pass
		2480	1	-2.98	-22.98	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.						

5.2 Test Graph

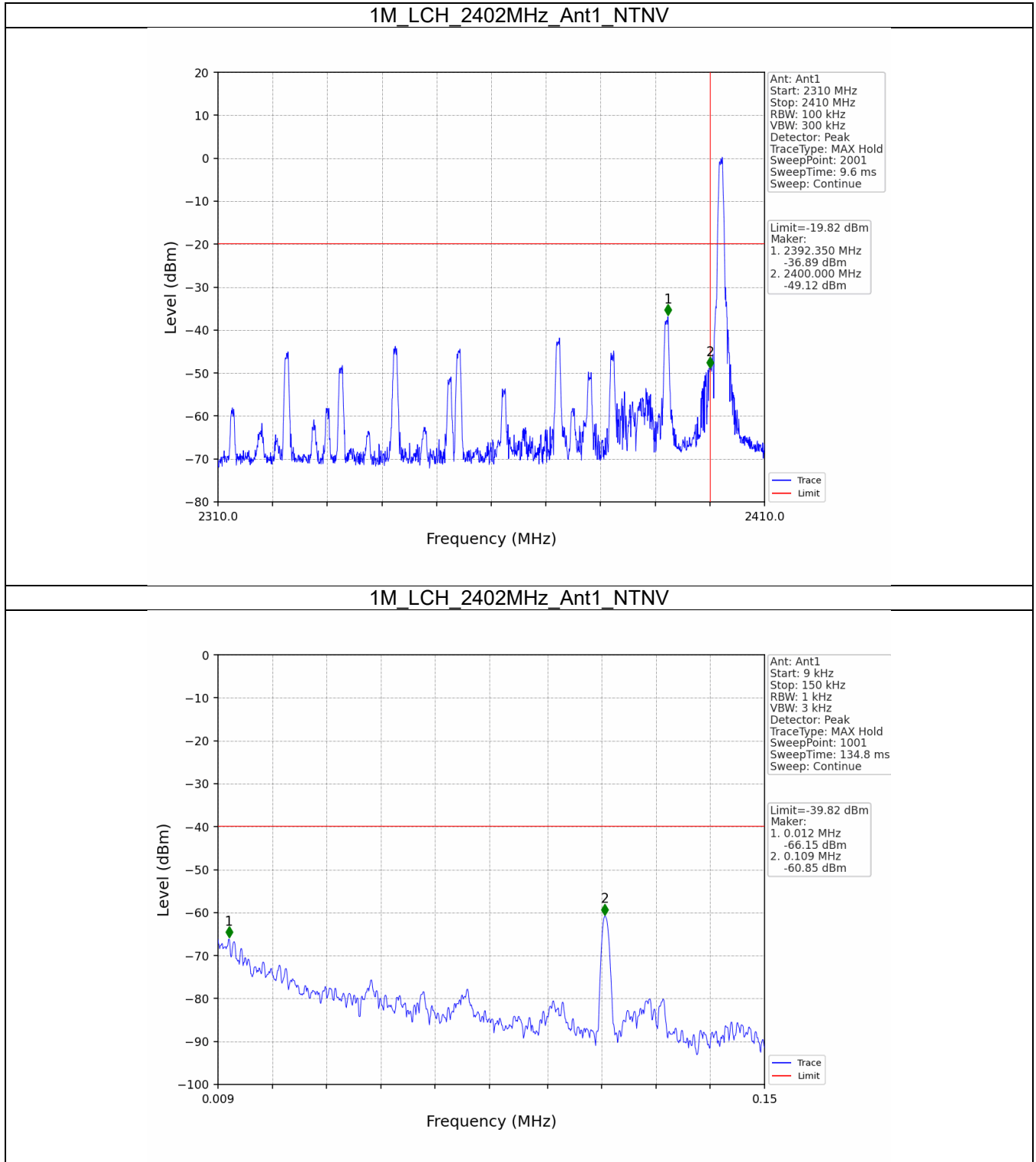
5.2.1 Ref



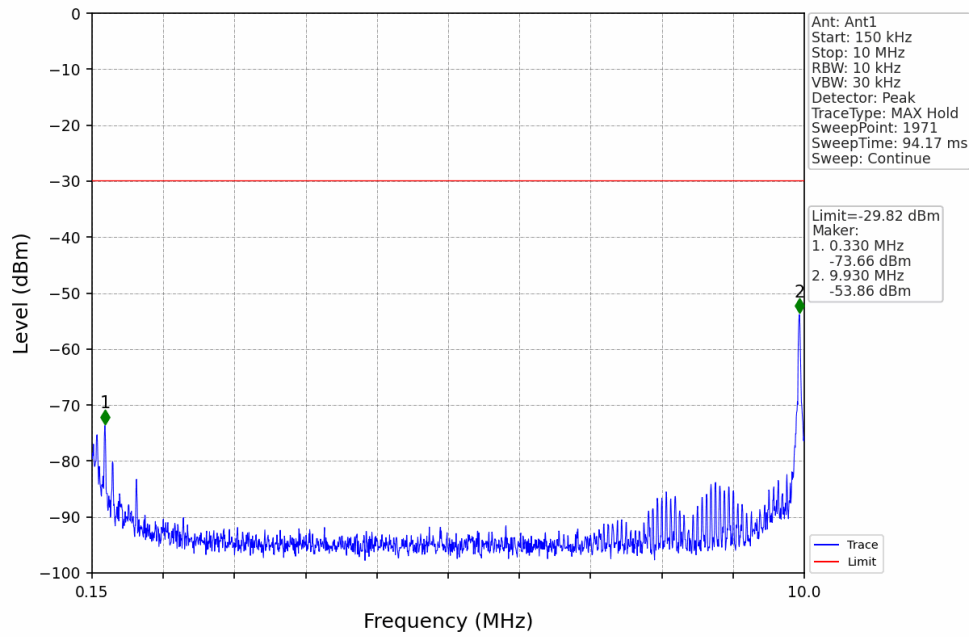
1M_HCH_2480MHz_Ant1_NTNV



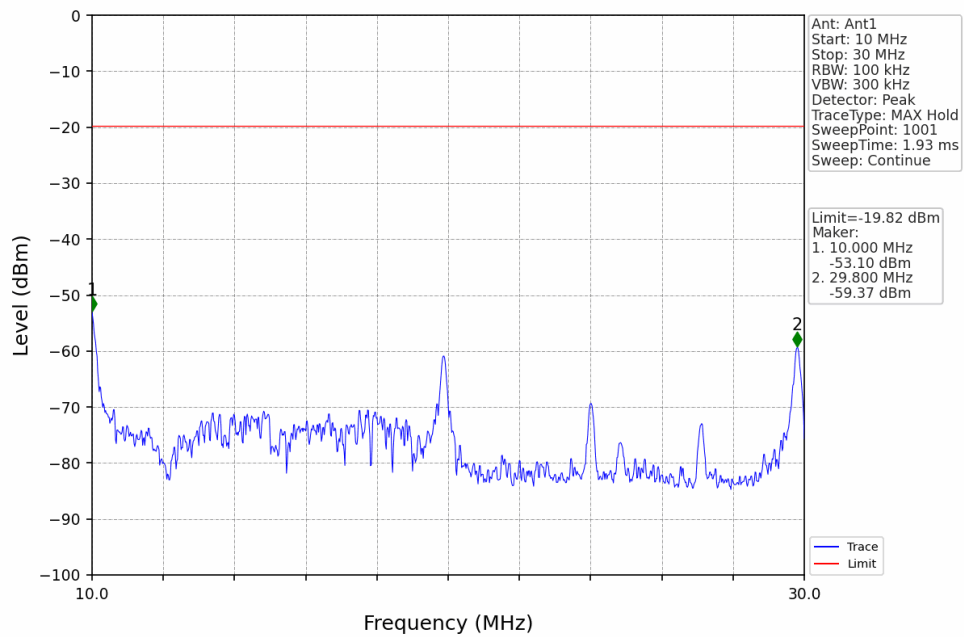
5.2.2 CSE



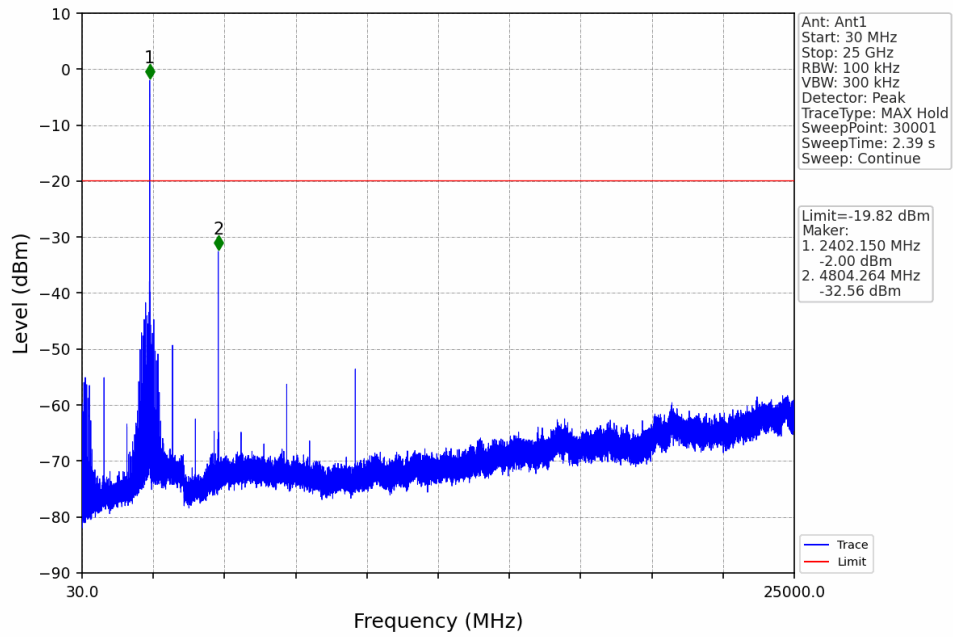
1M_LCH_2402MHz_Ant1_NTNV



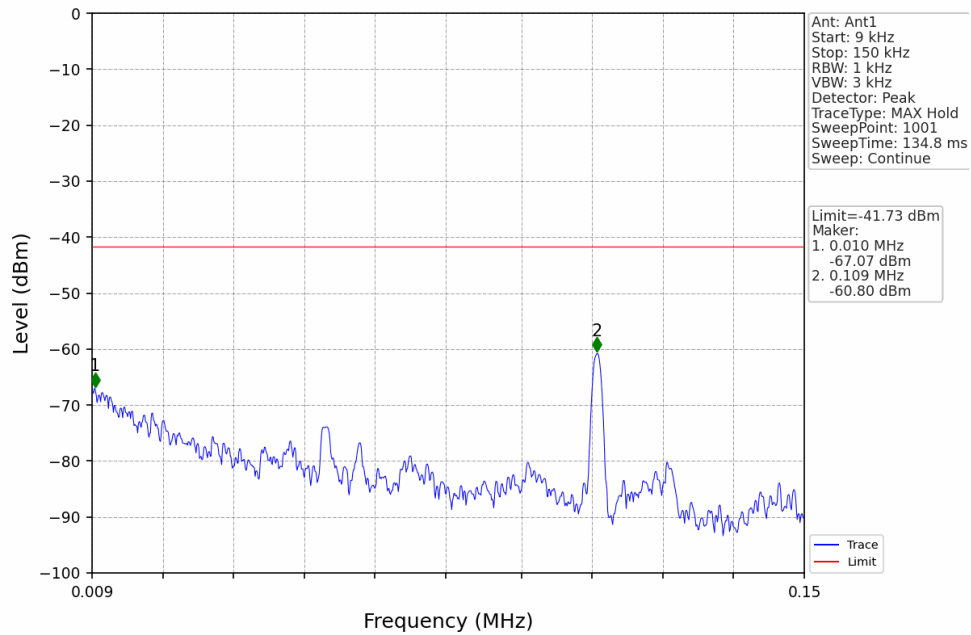
1M_LCH_2402MHz_Ant1_NTNV



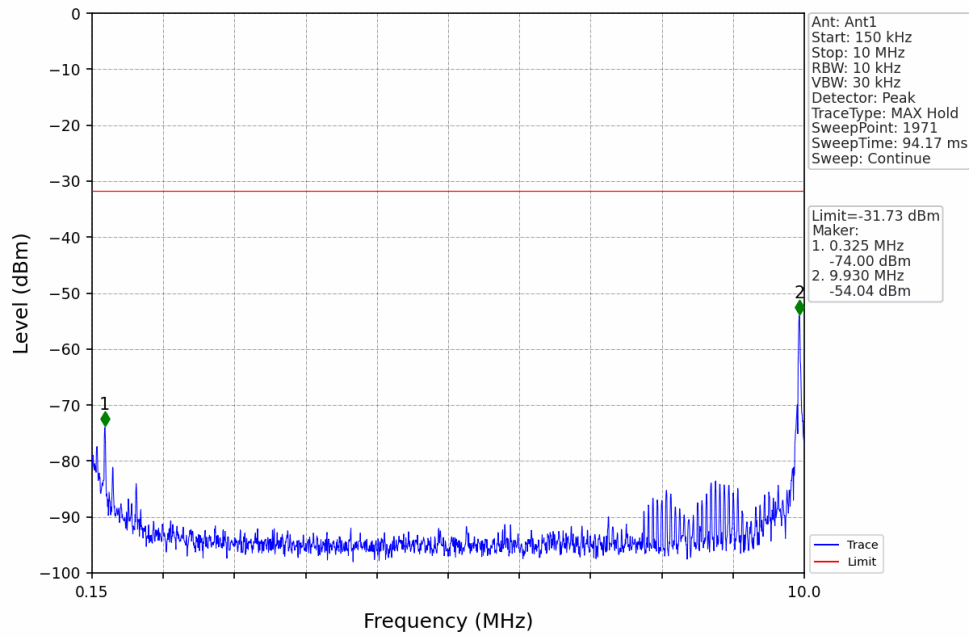
1M_LCH_2402MHz_Ant1_NTNV



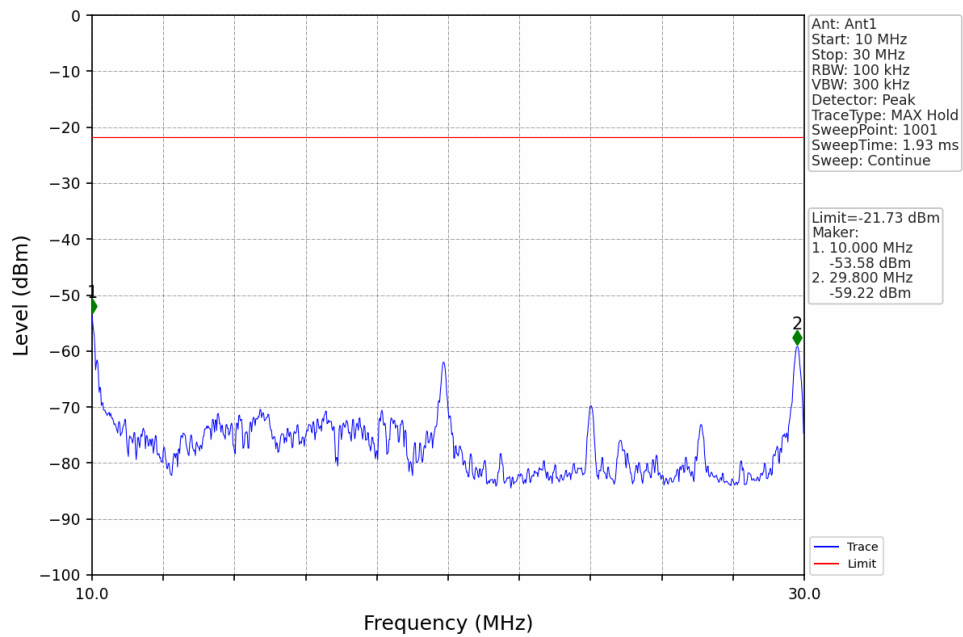
1M_MCH_2440MHz_Ant1_NTNV



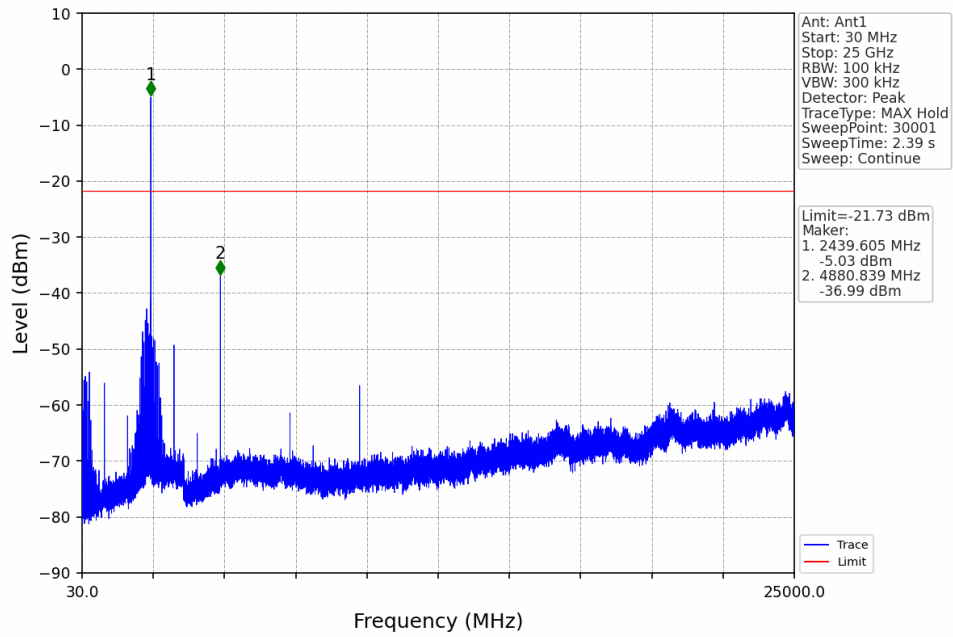
1M_MCH_2440MHz_Ant1_NTNV



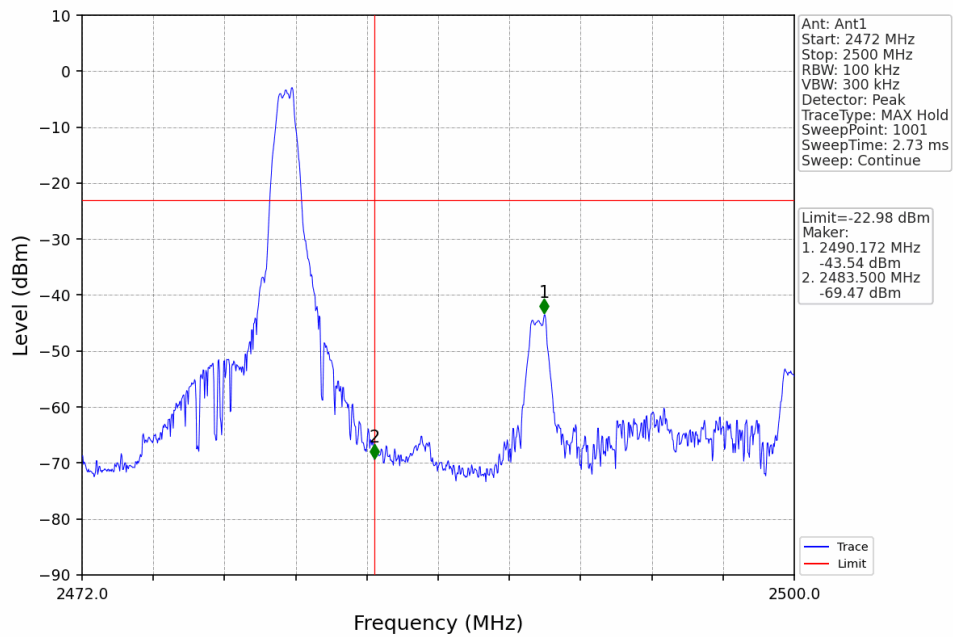
1M_MCH_2440MHz_Ant1_NTNV



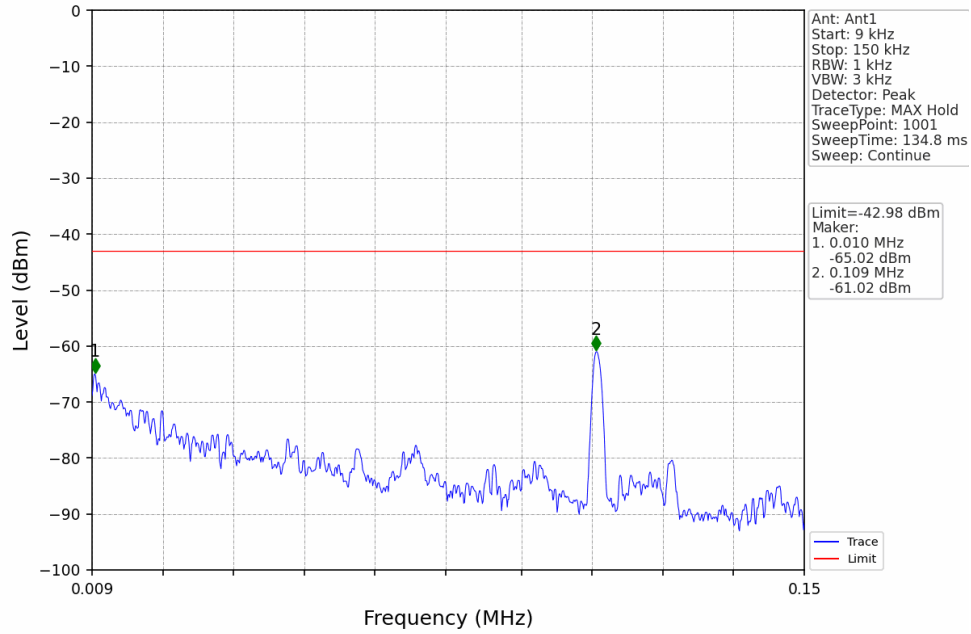
1M_MCH_2440MHz_Ant1_NTNV



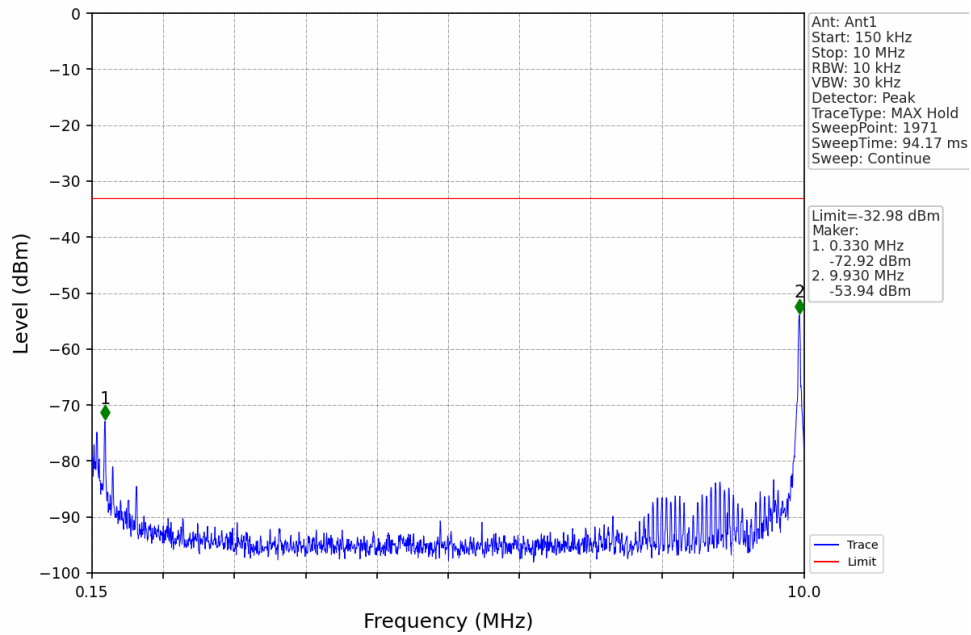
1M_HCH_2480MHz_Ant1_NTNV



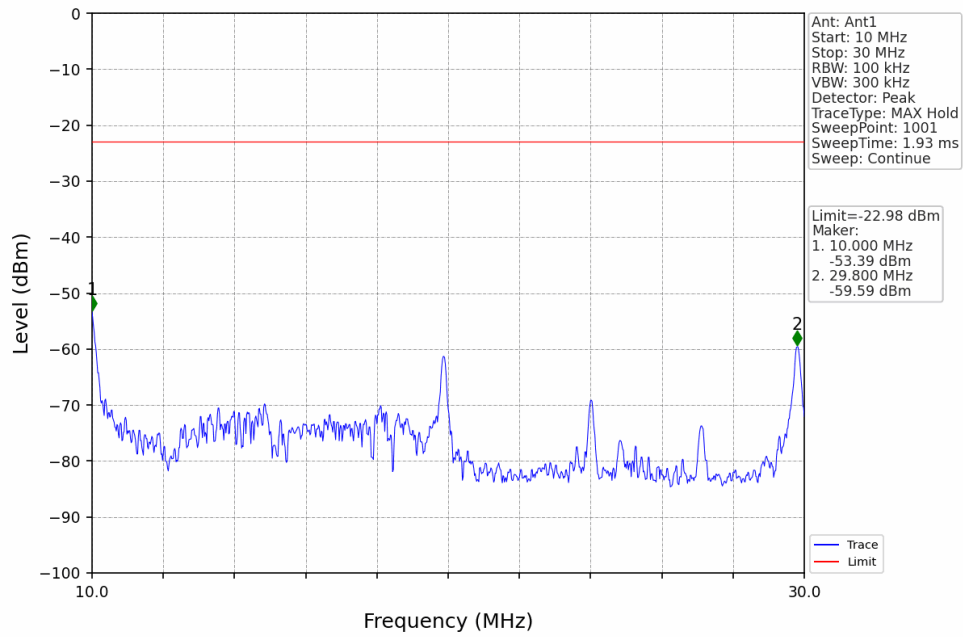
1M_HCH_2480MHz_Ant1_NTNV



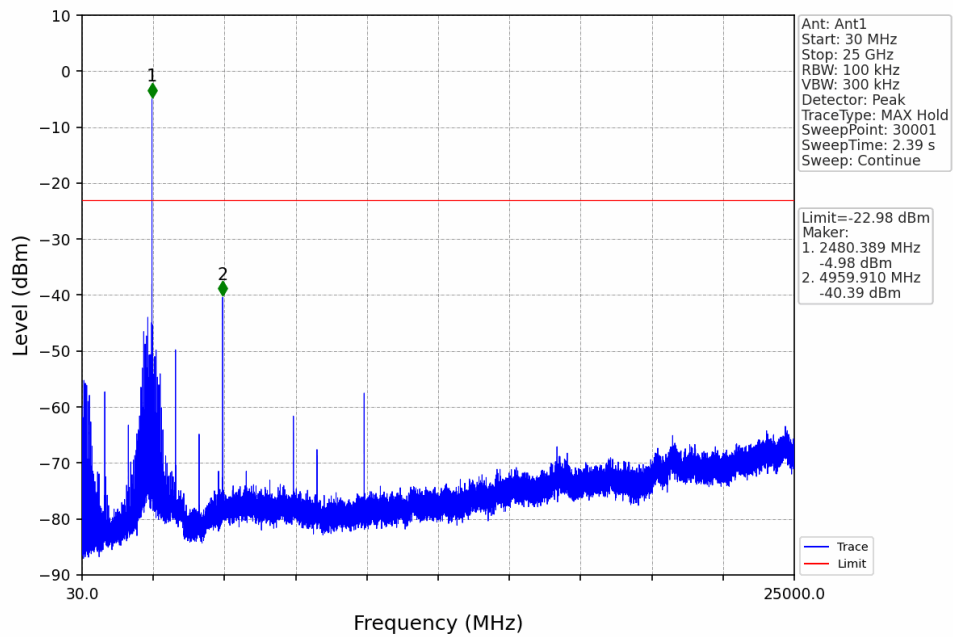
1M_HCH_2480MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



6. Conducted band edge emission Test

6.1 Test Result

Test Mode: TX-GFSK-1M					CH Low: 2402 MHz			
Pol.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Emission level	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
				(dBuV/m)				
H	2310.00	44.05	-2.81	41.24	74.00	-32.76	PK	PASS
H	2390.00	49.58	-2.69	46.89	74.00	-27.11	PK	PASS
H	**2400.00	62.46	-2.68	59.78	74.00	-14.22	PK	PASS
V	2310.00	43.03	-2.81	40.22	74.00	-33.78	PK	PASS
V	2390.00	47.53	-2.69	44.84	74.00	-29.16	PK	PASS
V	**2400.00	63.62	-2.68	60.94	74.00	-13.06	PK	PASS
H	2310.00	34.42	-2.81	31.61	54.00	-22.39	AV	PASS
H	2390.00	37.18	-2.69	34.49	54.00	-19.51	AV	PASS
H	**2400.00	47.46	-2.68	44.78	54.00	-9.22	AV	PASS
V	2310.00	34.03	-2.81	31.22	54.00	-22.78	AV	PASS
V	2390.00	35.51	-2.69	32.82	54.00	-21.18	AV	PASS
V	**2400.00	49.89	-2.68	47.21	54.00	-6.79	AV	PASS

Test Mode: TX-GFSK-1M					CH High: 2480 MHz			
Pol.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Emission level	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
				(dBuV/m)				
H	**2483.50	49.39	-2.56	46.83	74.00	-27.17	PK	PASS
H	2500.00	51.77	-2.54	49.23	74.00	-24.77	PK	PASS
V	**2483.50	48.14	-2.56	45.58	74.00	-28.42	PK	PASS
V	2500.00	51.50	-2.54	48.96	74.00	-25.04	PK	PASS
H	**2483.50	39.46	-2.56	36.90	54.00	-17.10	AV	PASS
H	2500.00	41.03	-2.54	38.49	54.00	-15.51	AV	PASS
V	**2483.50	39.04	-2.56	36.48	54.00	-17.52	AV	PASS
V	2500.00	39.37	-2.54	36.83	54.00	-17.17	AV	PASS

1. Emission Level = Reading + Factor, Margin= Emission Level – Limit.

.....End.....