Appendix A

RF Test Data for BLE(Conducted Measurement)

Product Name: MX-Sensor
Trade Mark: AUTEL
Test Model: BLE-A001

Environmental Conditions

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

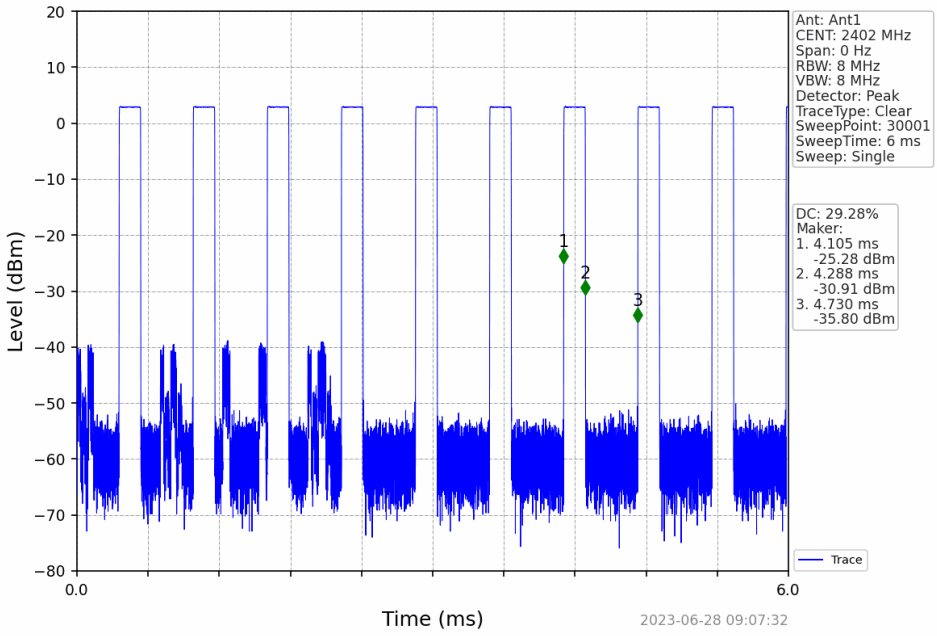
B.1. Duty Cycle

Test Result

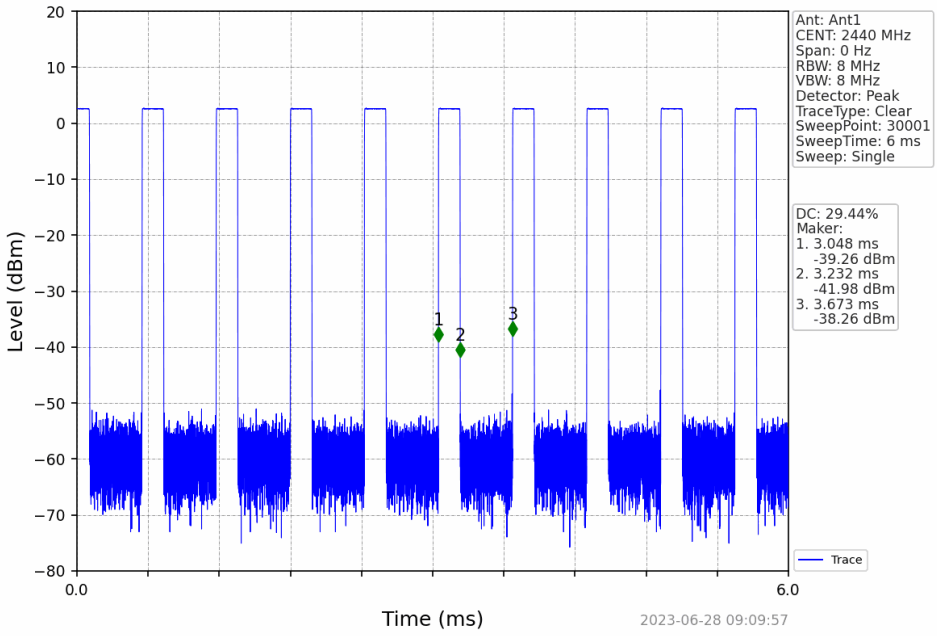
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.183	0.625	29.28	5.33	0.05
		2440	0.184	0.625	29.44	5.31	0.06
		2480	0.184	0.625	29.44	5.31	0.06

Test Graph

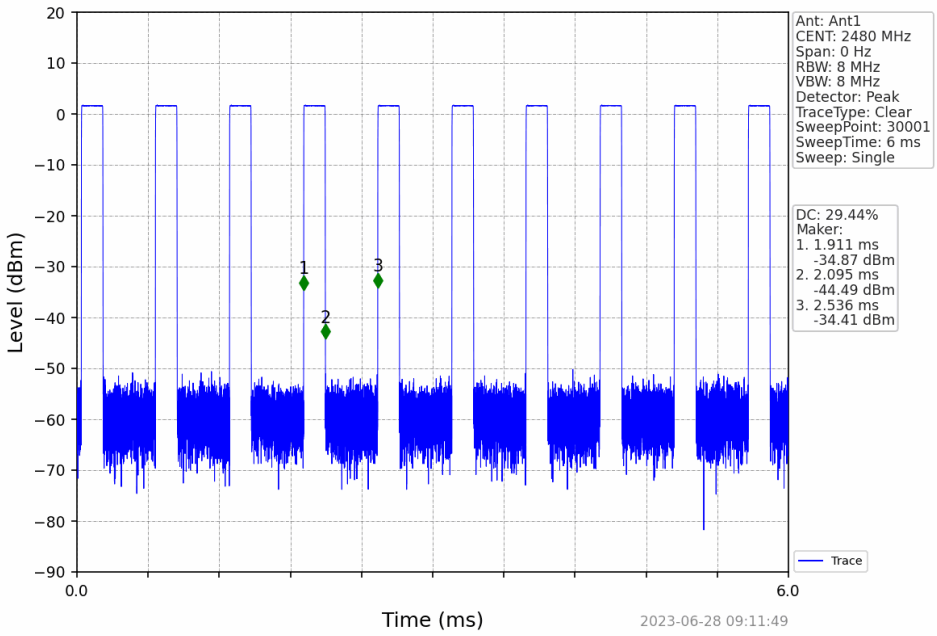
1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



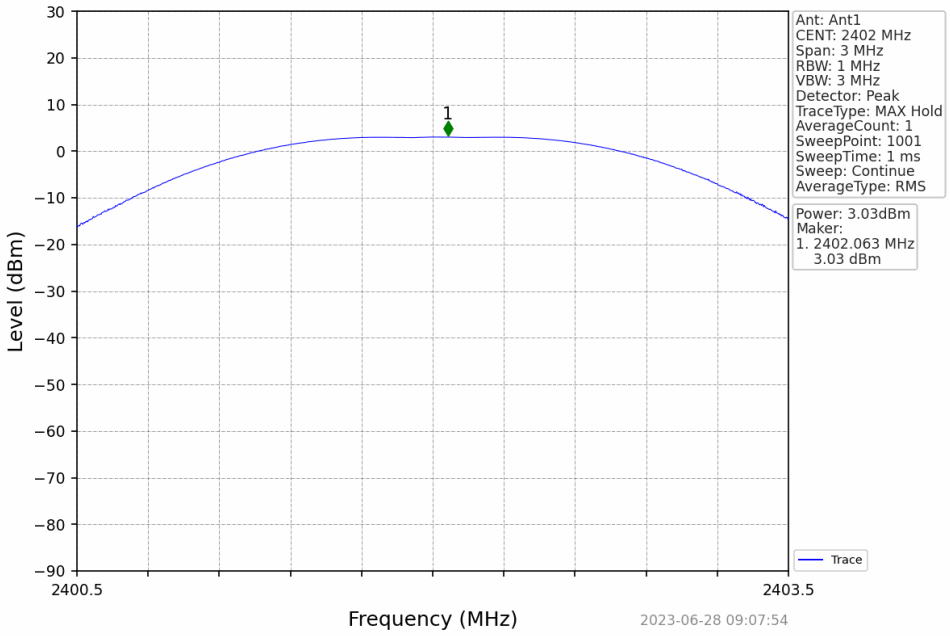
B.2. Maximum Conducted Output Power

Test Result

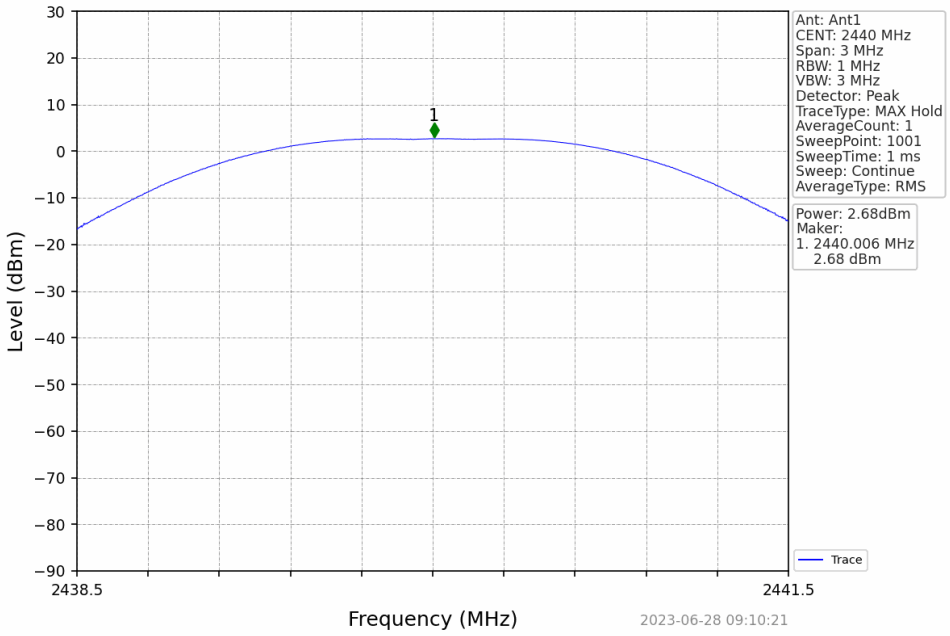
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	3.03	<=30	Pass
		2440	2.68	<=30	Pass
		2480	1.71	<=30	Pass

Test Graph

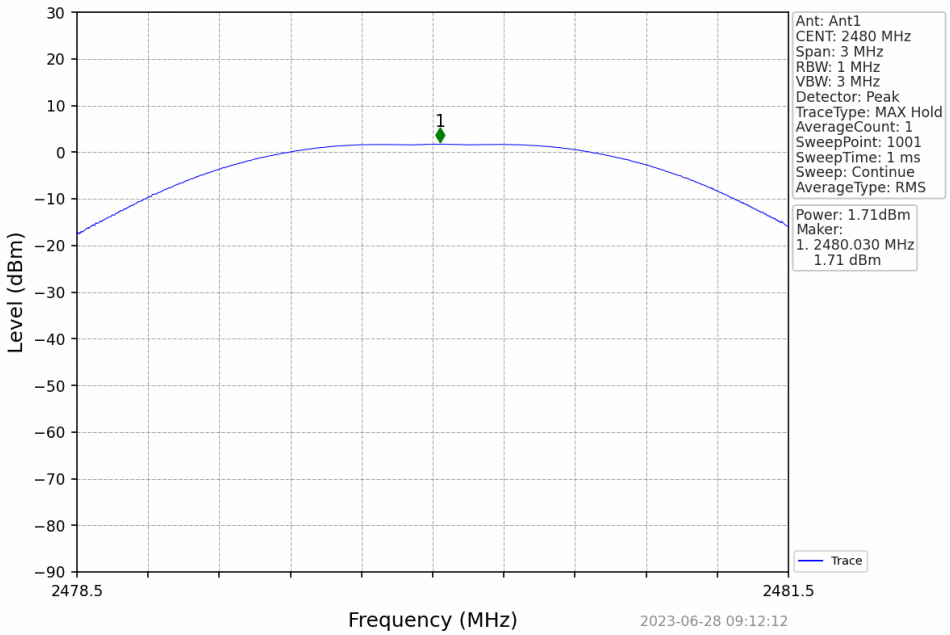
1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



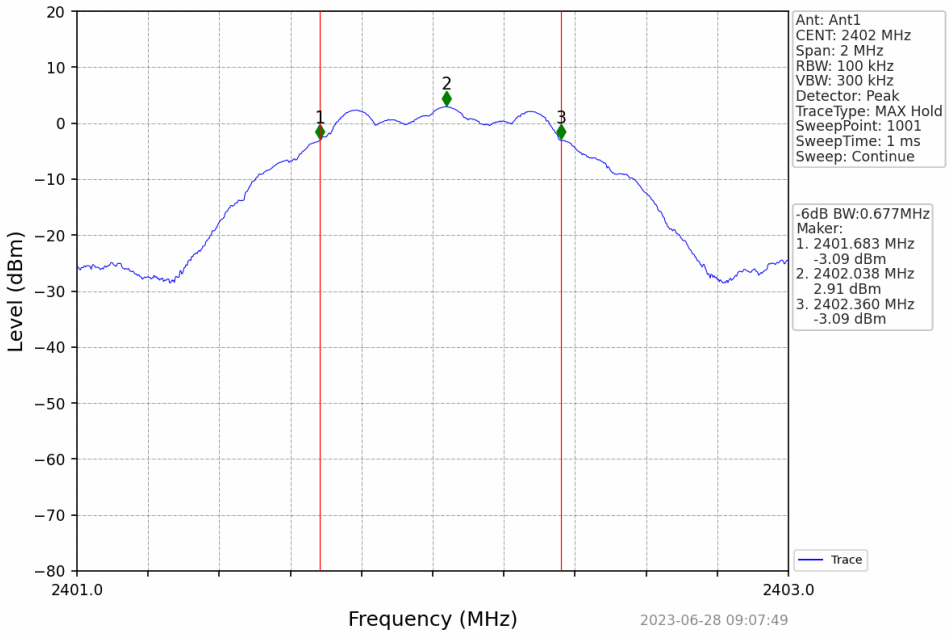
B.3. 6dB BW

Test Result

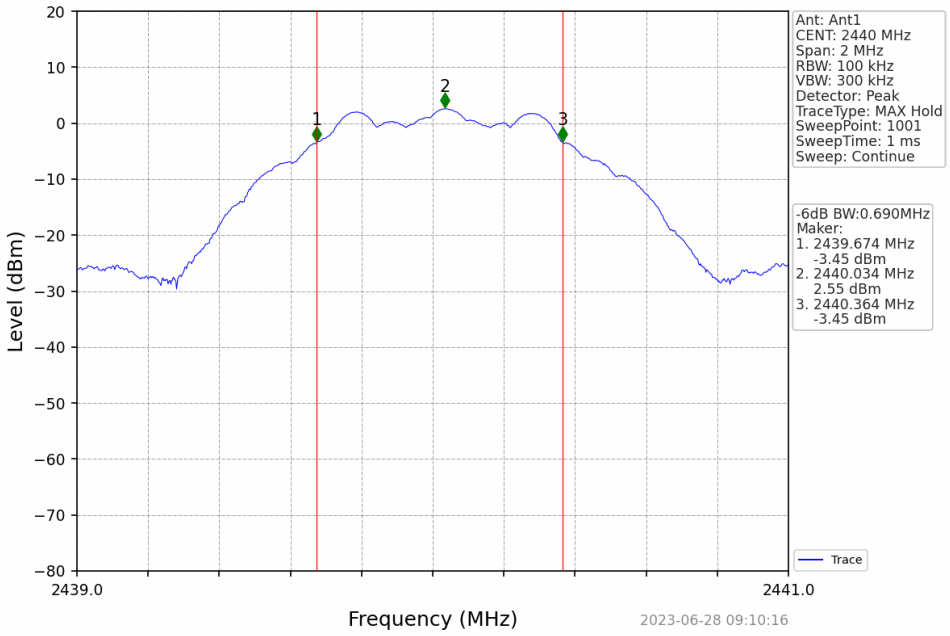
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.677	>=0.5	Pass
		2440	1	0.690	>=0.5	Pass
		2480	1	0.693	>=0.5	Pass

Test Graph

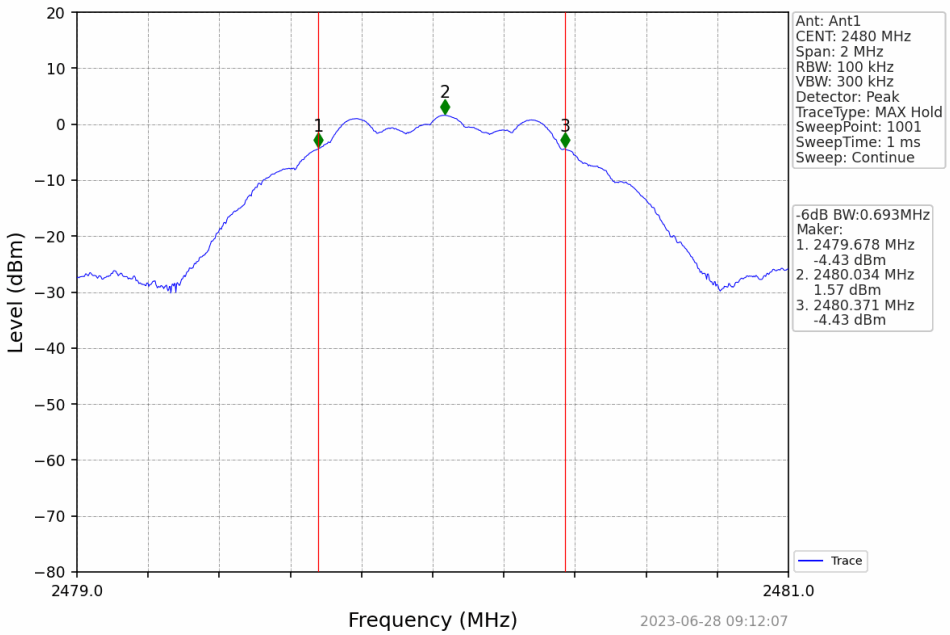
1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



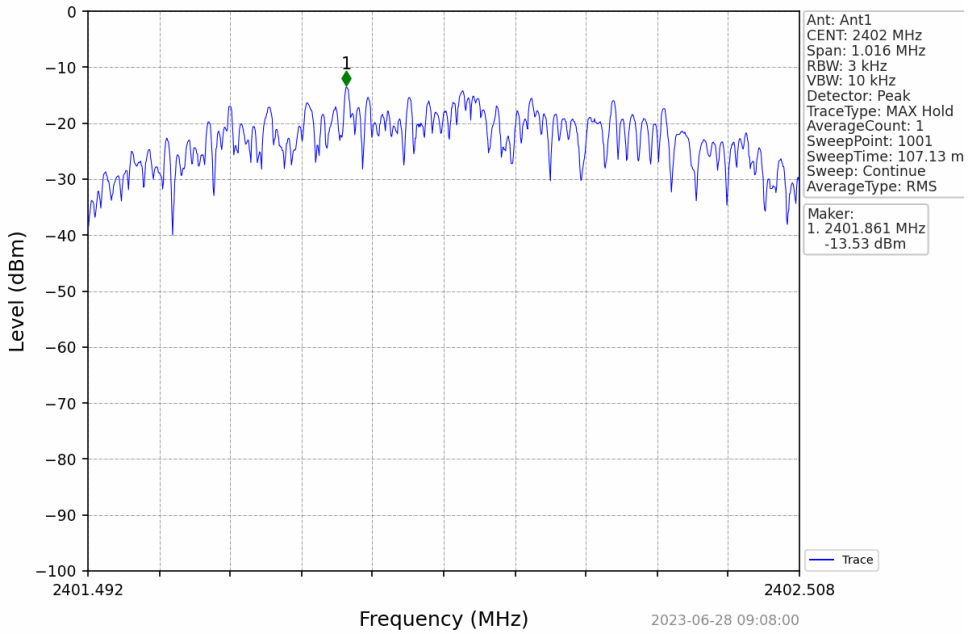
B.4. Maximum Power Spectral Density

Test Result

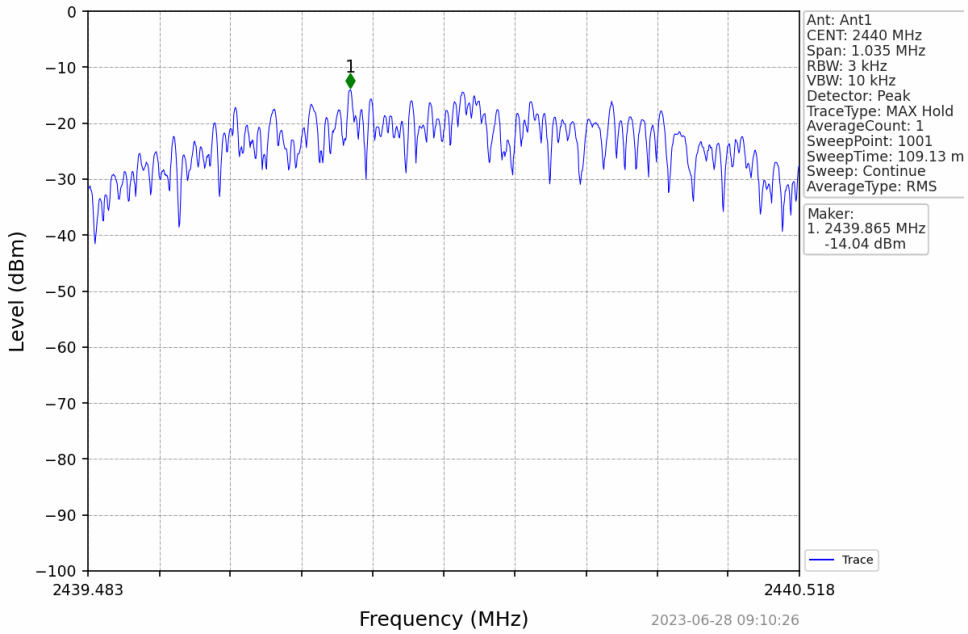
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-13.53	<=8	Pass
		2440	-14.04	<=8	Pass
		2480	-14.90	<=8	Pass

Test Graph

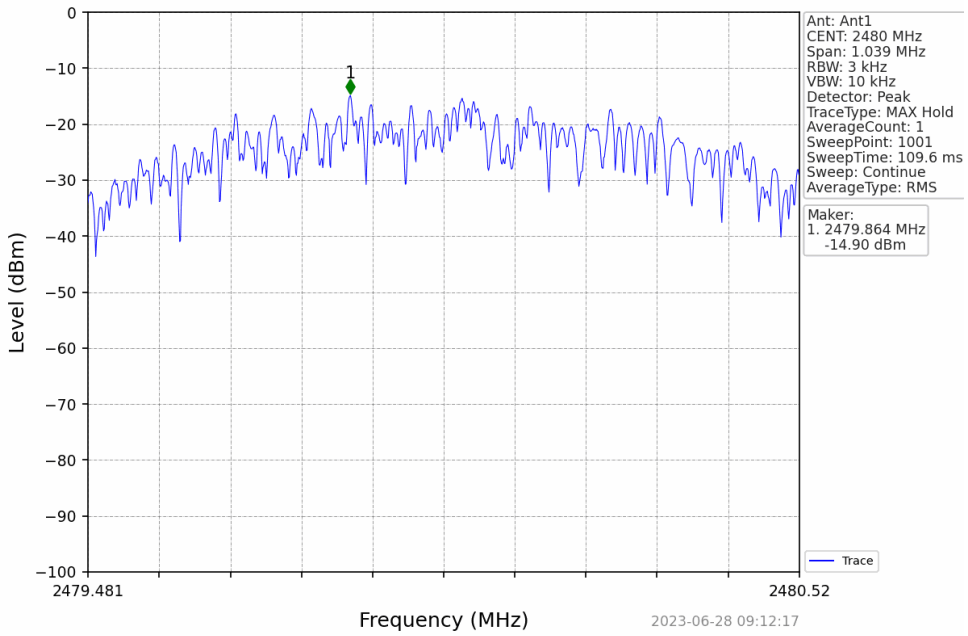
1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



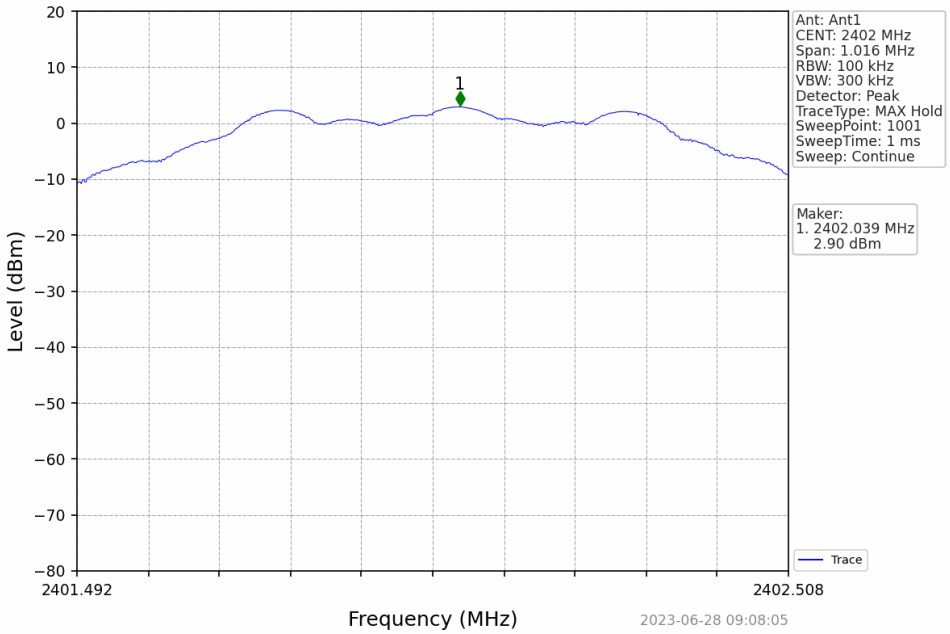
B.5. Conducted Spurious Emissions Test

Test Result

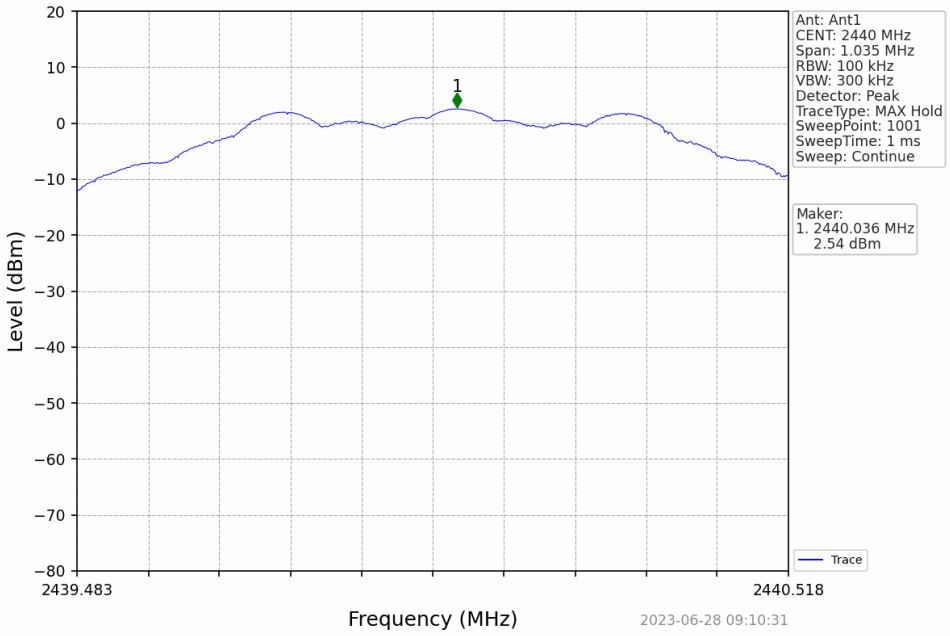
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	2.90
		2440	1	2.54
		2480	1	1.57

Test Graph

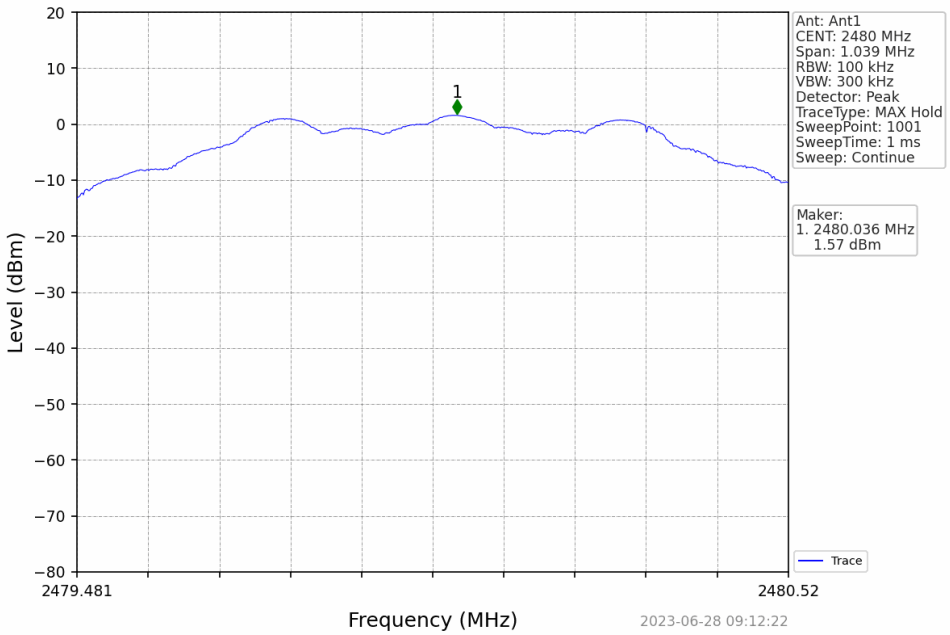
1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



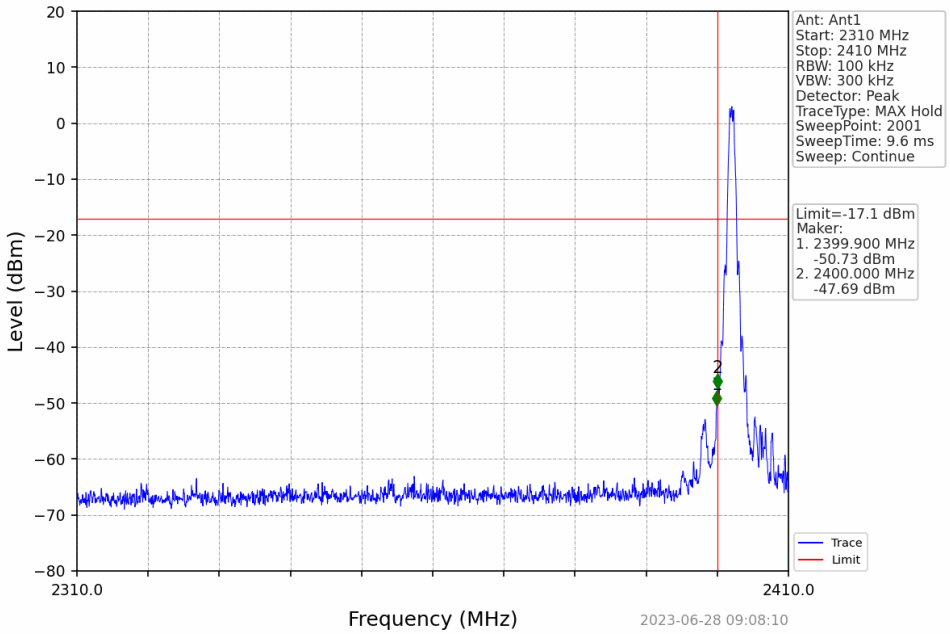
CSE

Test Result

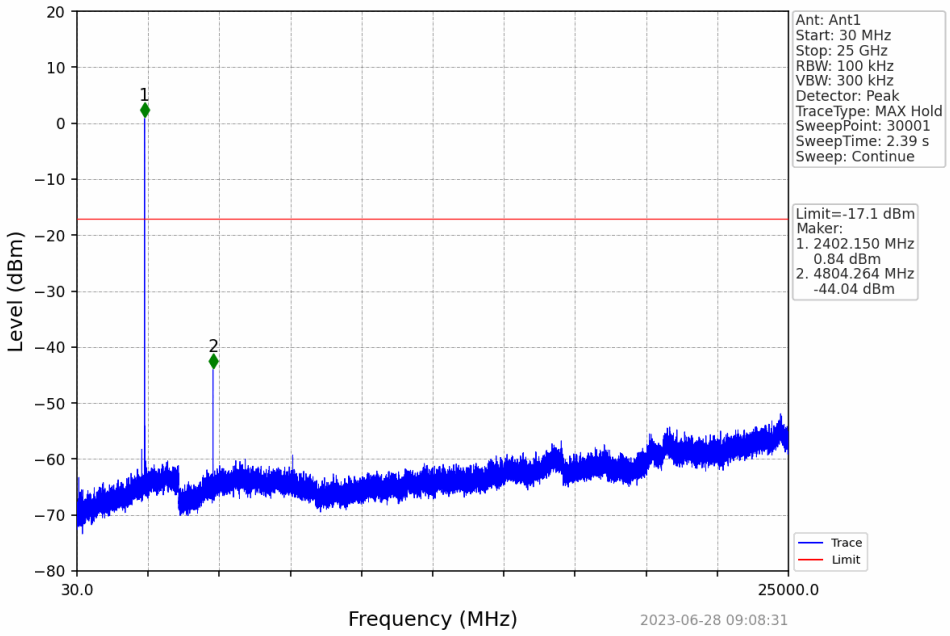
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	2.90	-17.10	Pass
		2440	1	2.90	-17.10	Pass
		2480	1	2.90	-17.10	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.						

Test Graph

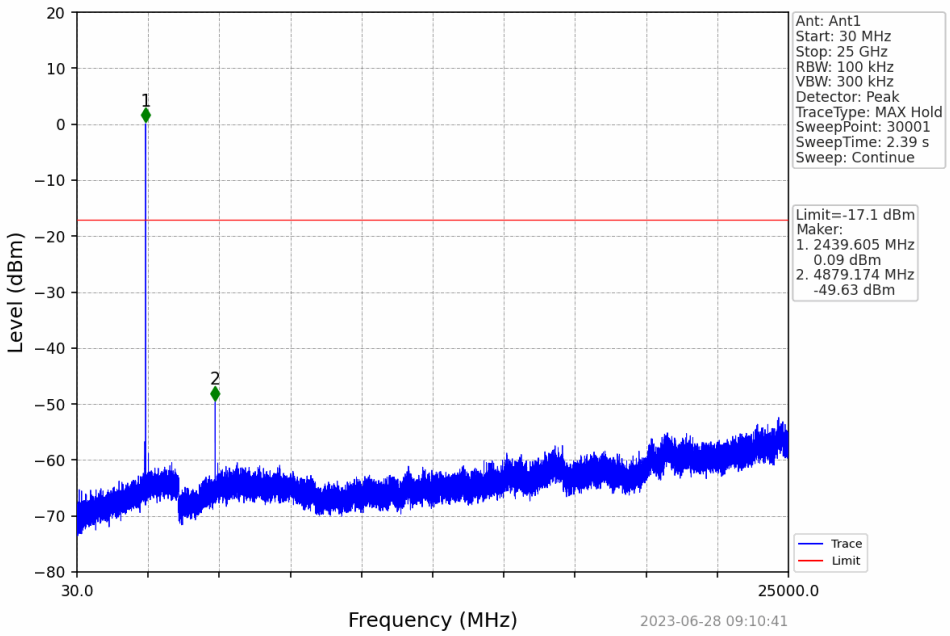
1M_LCH_2402MHz_Ant1_NTNV



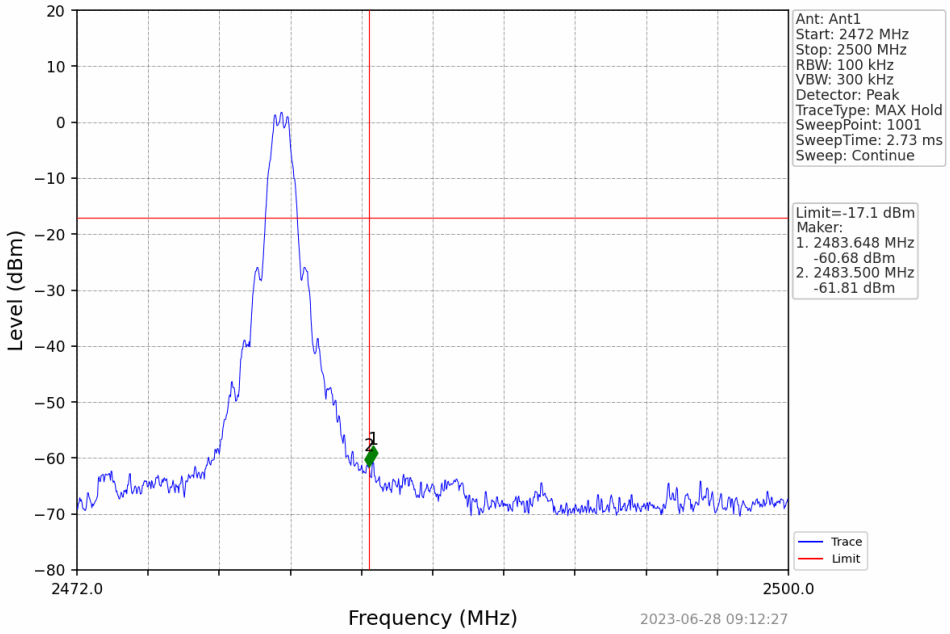
1M_LCH_2402MHz_Ant1_NTNV



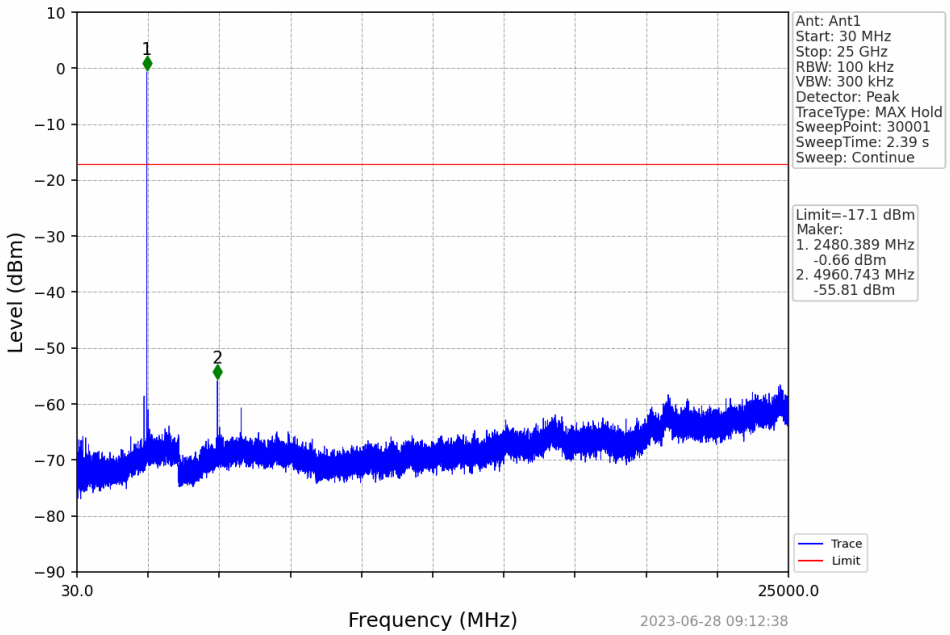
1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



B.6. Conducted band edge emission Test

Test Mode: GFSK										
Pol.	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
Low Channel: 2402MHz										
H	2390.00	46.69	29.15	3.41	34.01	45.24	74.00	-28.76	PK	PASS
H	2400.00	64.02	29.16	3.43	34.01	62.60	74.00	-11.40	PK	PASS
V	2390.00	47.60	29.15	3.41	34.01	46.15	74.00	-27.85	PK	PASS
V	2400.00	66.46	29.16	3.43	34.01	65.04	74.00	-8.96	PK	PASS
H	2390.00	36.38	29.15	3.41	34.01	34.93	54.00	-19.07	AV	PASS
H	2400.00	47.84	29.16	3.43	34.01	46.42	54.00	-7.58	AV	PASS
V	2390.00	36.59	29.15	3.41	34.01	35.14	54.00	-18.86	AV	PASS
V	2400.00	44.85	29.16	3.43	34.01	43.43	54.00	-10.57	AV	PASS
High Channel: 2480MHz										
H	2483.50	49.24	29.28	3.53	34.03	48.02	74.00	-25.98	PK	PASS
H	2500.00	47.69	29.30	3.56	34.03	46.52	74.00	-27.48	PK	PASS
V	2483.50	50.72	29.28	3.53	34.03	49.50	74.00	-24.50	PK	PASS
V	2500.00	49.05	29.30	3.56	34.03	47.88	74.00	-26.12	PK	PASS
H	2483.50	39.25	29.28	3.53	34.03	38.03	54.00	-15.97	AV	PASS
H	2500.00	36.71	29.30	3.56	34.03	35.54	54.00	-18.46	AV	PASS
V	2483.50	40.78	29.28	3.53	34.03	39.56	54.00	-14.44	AV	PASS
V	2500.00	36.94	29.30	3.56	34.03	35.77	54.00	-18.23	AV	PASS
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit										

End of the report