

**RF Test Data for BLE
(Conducted Measurements)**

General Description of EUT	
EUT Name:	Smart Watch
Model:	Endeavour
Sample ID:	HC-C-202412-0014-01-01-2#
Test Standard:	FCC Part 15.247
Environmental Conditions	
Ambient Temperature:	24.3℃
Ambient Humidity:	49%RH
Test Power Supply:	DC 3.7V
Test Engineer:	Zkn.zhou
Note: For a more detailed features description, please refer to the report TBR-C-202412-0014-66	

Contents

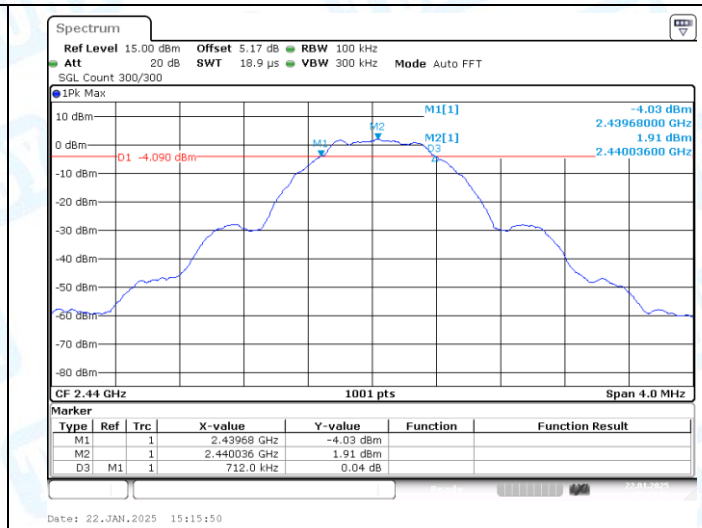
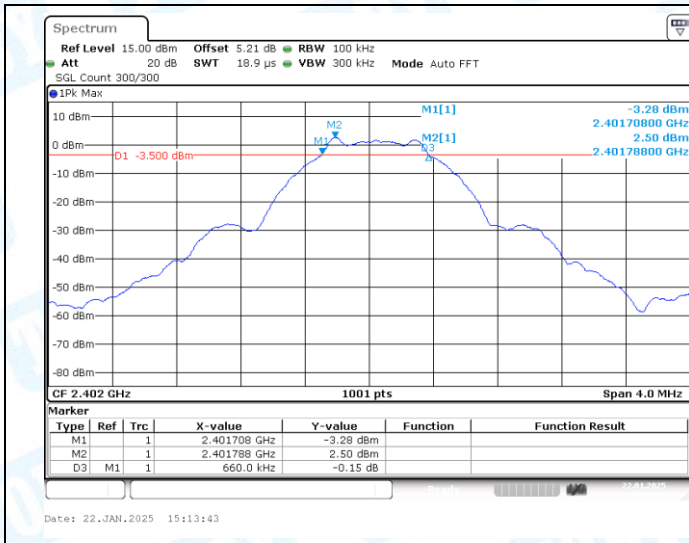
1: DTS Bandwidth	3
1.1 Test Result.....	3
1.2 Test Graphs	4
2: Occupied Channel Bandwidth	5
2.1 Test Result.....	5
2.2 Test Graphs	6
3: Maximum conducted output power	7
3.1 Test Result Peak.....	7
3.2 Test Graphs Peak.....	8
4: Maximum power spectral density	9
4.1 Test Result.....	9
4.2 Test Graphs	10
5: Band edge measurements.....	11
5.1 Test Result.....	11
5.2 Test Graphs	12
6: Conducted Spurious Emission	13
6.1 Test Result.....	13
6.2 Test Graphs	14
7: Duty Cycle.....	17
7.1 Test Result.....	17
7.2 Test Graphs	18
8: Emissions in Restricted Bands	19
8.1 Test Result.....	19
8.2 Test Graphs	20

1: DTS Bandwidth

1.1 Test Result

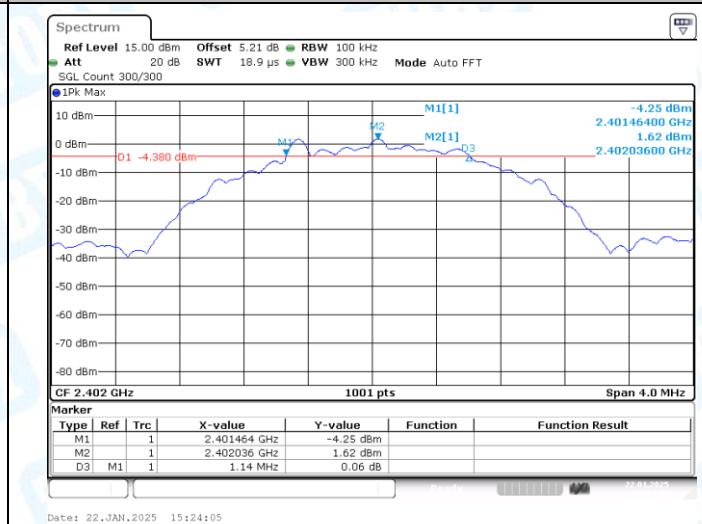
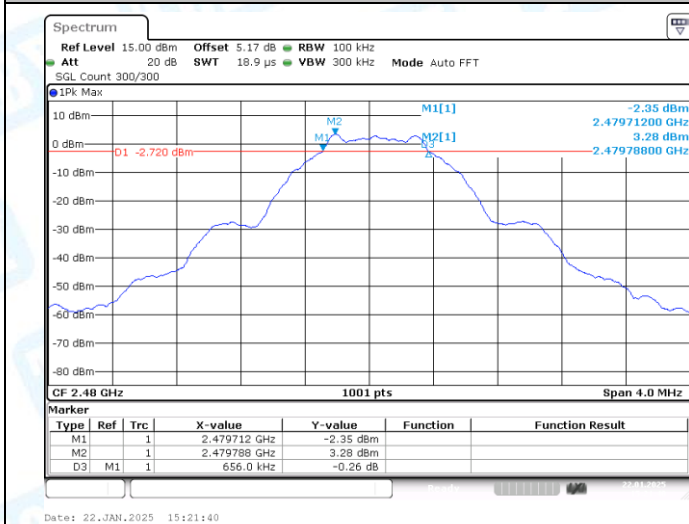
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.71	2402.37	0.5	PASS
BLE_1M	Ant1	2440	0.71	2439.68	2440.39	0.5	PASS
BLE_1M	Ant1	2480	0.66	2479.71	2480.37	0.5	PASS
BLE_2M	Ant1	2402	1.14	2401.46	2402.60	0.5	PASS
BLE_2M	Ant1	2440	1.13	2439.48	2440.61	0.5	PASS
BLE_2M	Ant1	2480	1.14	2479.47	2480.60	0.5	PASS

1.2 Test Graphs



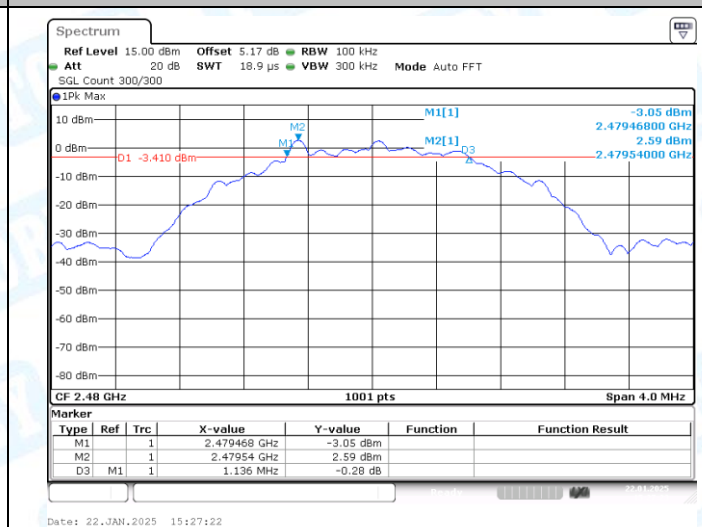
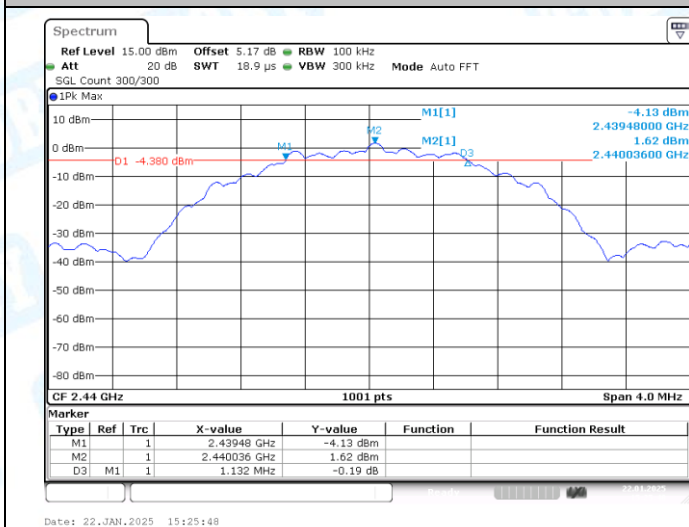
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS



BLE_1M-Ant1-2480-PASS

BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

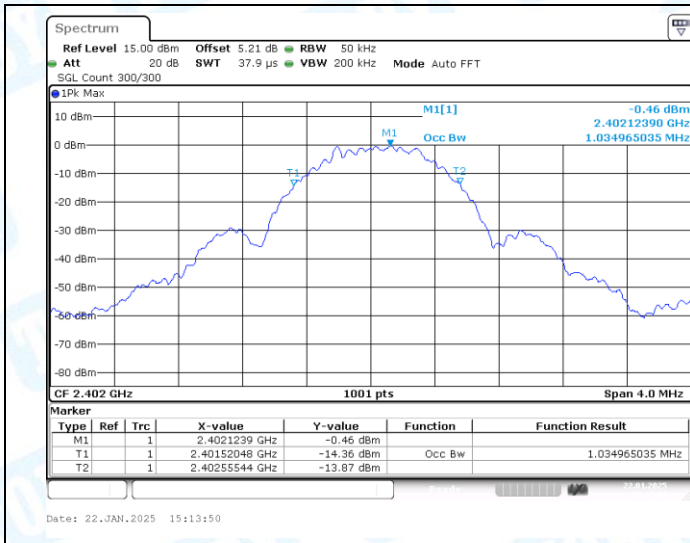
BLE_2M-Ant1-2480-PASS

2: Occupied Channel Bandwidth

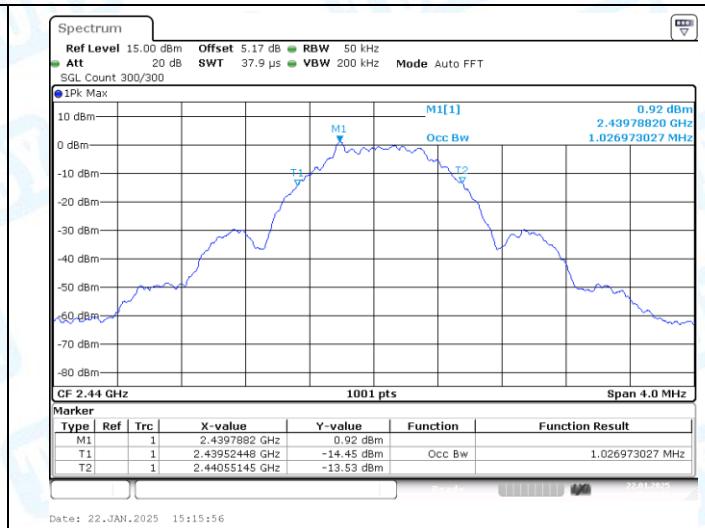
2.1 Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.035	2401.5205	2402.5554	---	---
BLE_1M	Ant1	2440	1.027	2439.5245	2440.5514	---	---
BLE_1M	Ant1	2480	1.027	2479.5285	2480.5554	---	---
BLE_2M	Ant1	2402	1.99	2401.0490	2403.0390	---	---
BLE_2M	Ant1	2440	1.958	2439.0689	2441.0270	---	---
BLE_2M	Ant1	2480	1.994	2479.0490	2481.0430	---	---

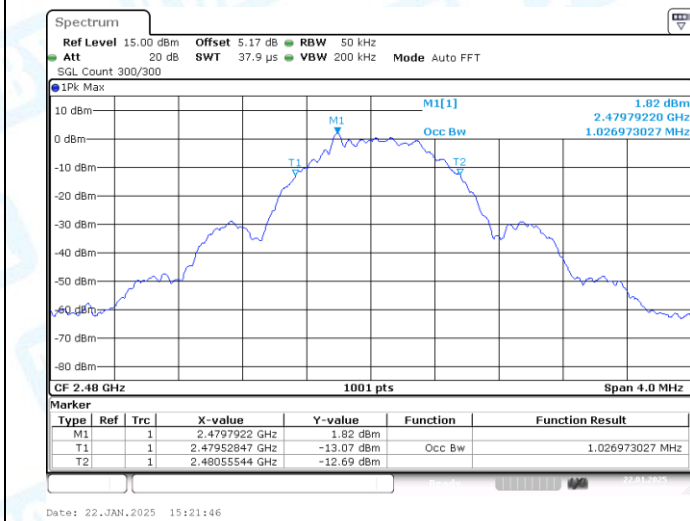
2.2 Test Graphs



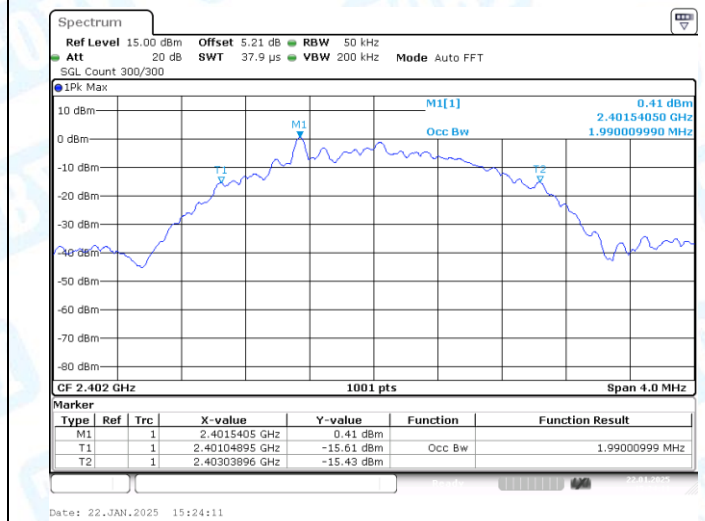
BLE_1M-Ant1-2402



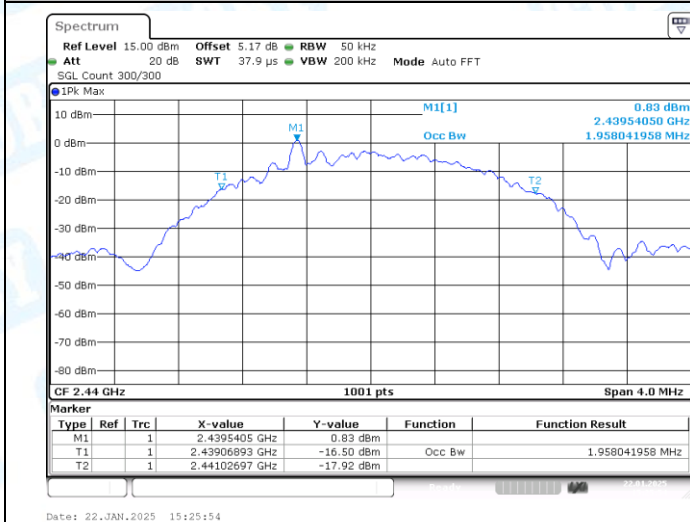
BLE_1M-Ant1-2440



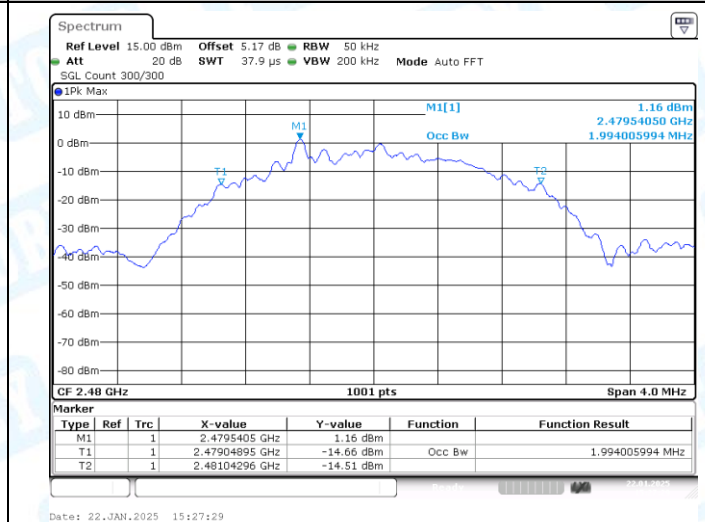
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



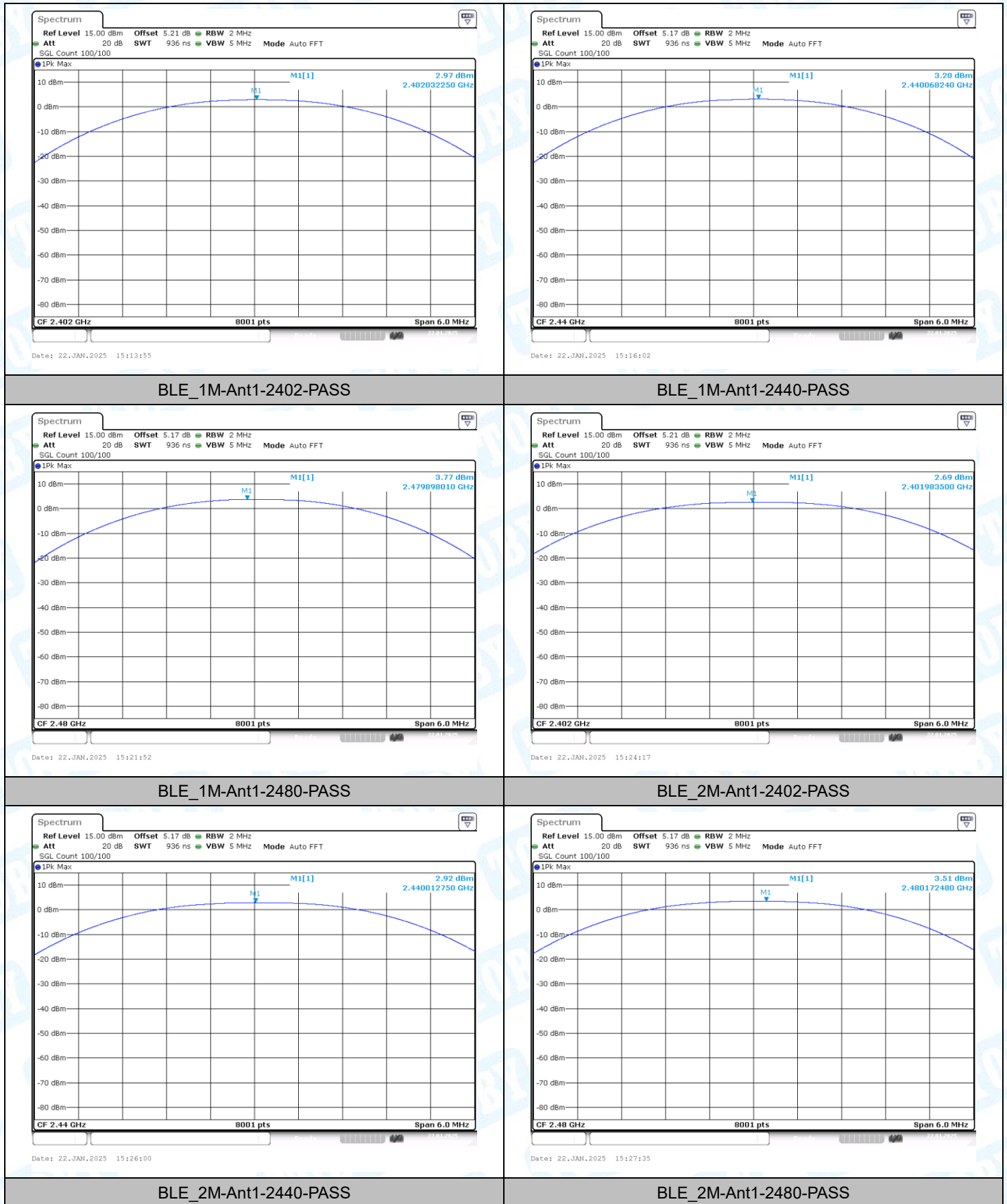
BLE_2M-Ant1-2480

3: Maximum conducted output power

3.1 Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.97	≤30	PASS
BLE_1M	Ant1	2440	3.20	≤30	PASS
BLE_1M	Ant1	2480	3.77	≤30	PASS
BLE_2M	Ant1	2402	2.69	≤30	PASS
BLE_2M	Ant1	2440	2.92	≤30	PASS
BLE_2M	Ant1	2480	3.51	≤30	PASS

3.2 Test Graphs Peak

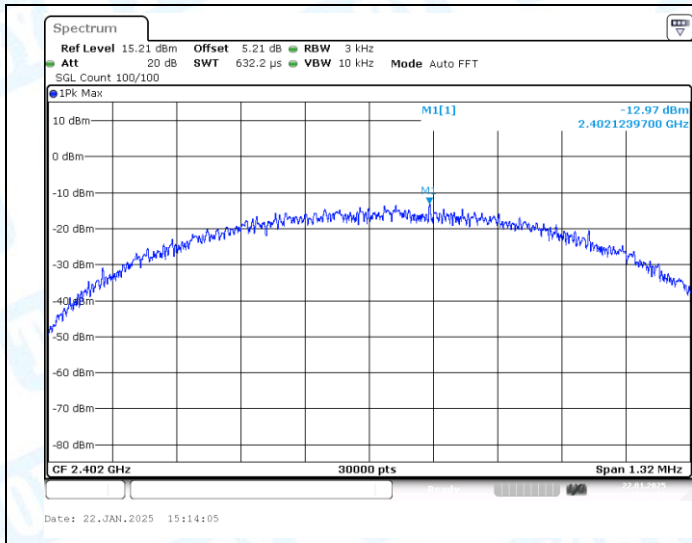


4: Maximum power spectral density

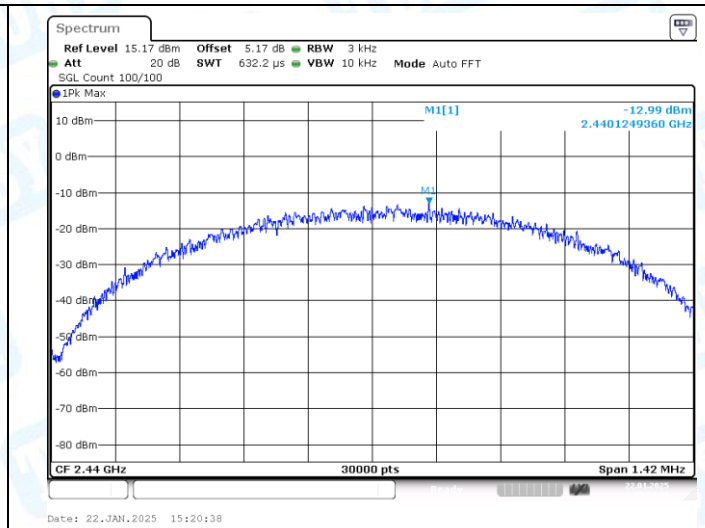
4.1 Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.97	≤8.00	PASS
BLE_1M	Ant1	2440	-12.99	≤8.00	PASS
BLE_1M	Ant1	2480	-12.25	≤8.00	PASS
BLE_2M	Ant1	2402	-16.42	≤8.00	PASS
BLE_2M	Ant1	2440	-16.18	≤8.00	PASS
BLE_2M	Ant1	2480	-15.65	≤8.00	PASS

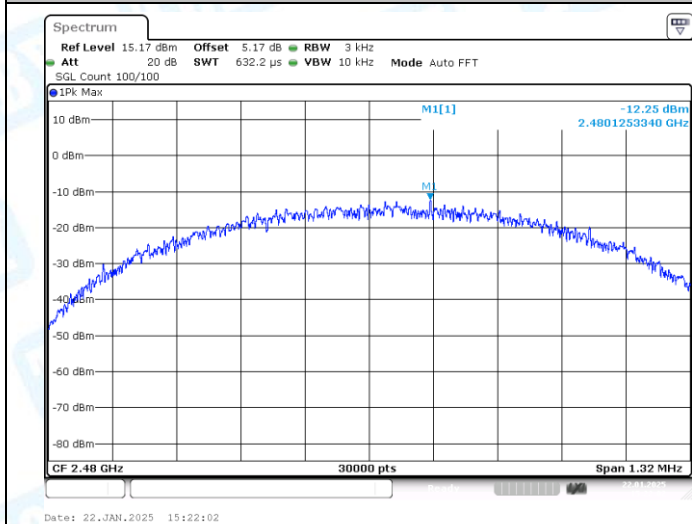
4.2 Test Graphs



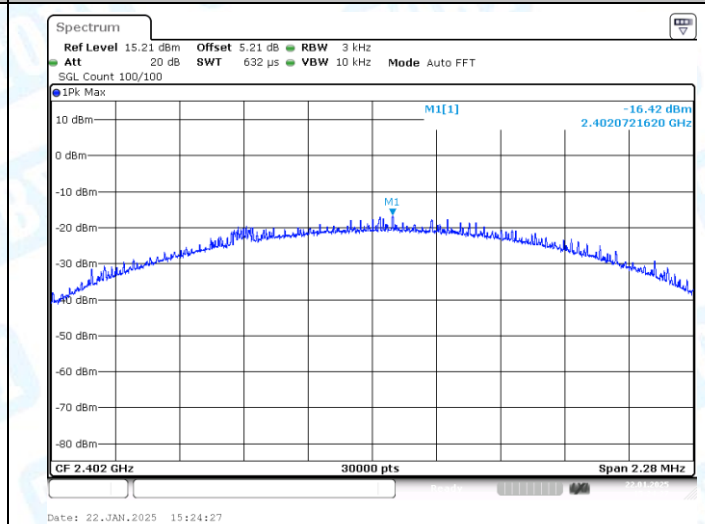
BLE_1M-Ant1-2402-PASS



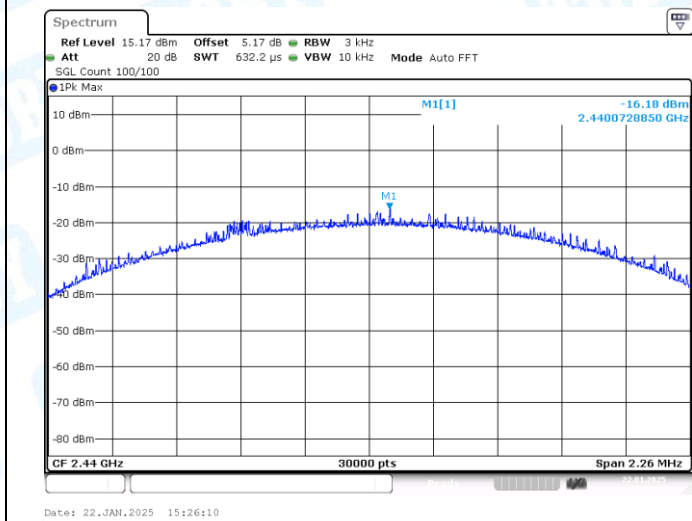
BLE_1M-Ant1-2440-PASS



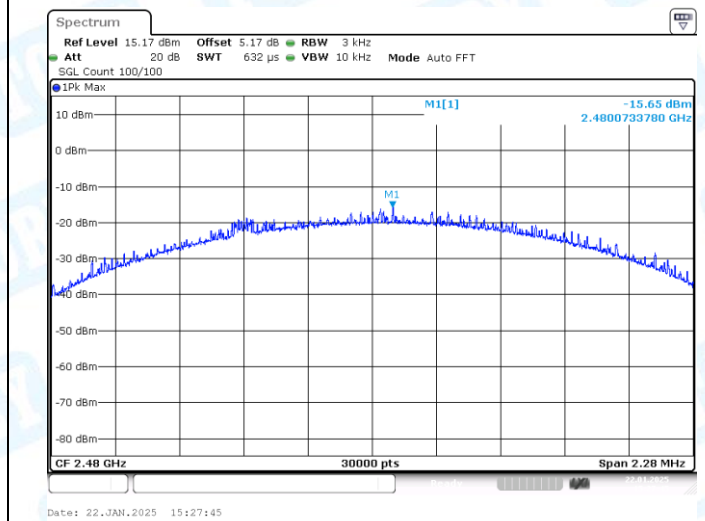
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



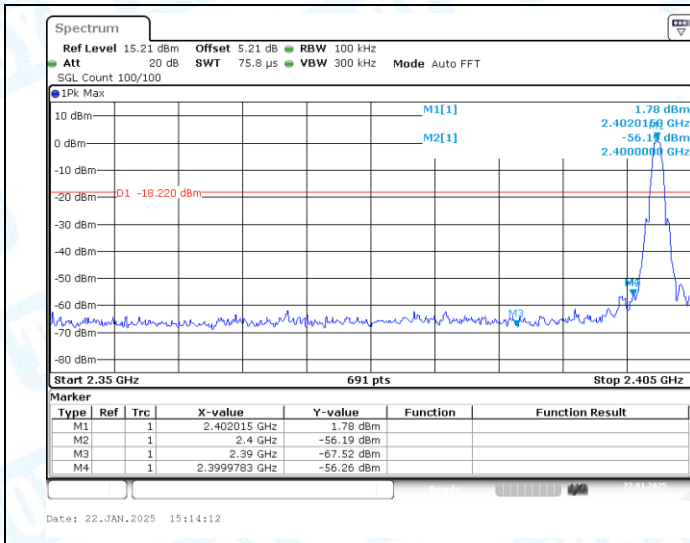
BLE_2M-Ant1-2480-PASS

5: Band edge measurements

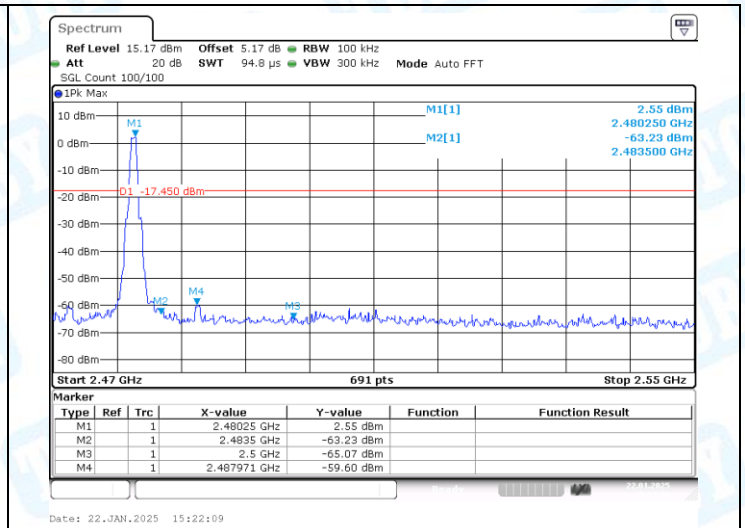
5.1 Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.78	-56.26	≤-18.22	PASS
BLE_1M	Ant1	High	2480	2.55	-59.6	≤-17.45	PASS
BLE_2M	Ant1	Low	2402	1.33	-38.08	≤-18.67	PASS
BLE_2M	Ant1	High	2480	2.68	-59.78	≤-17.32	PASS

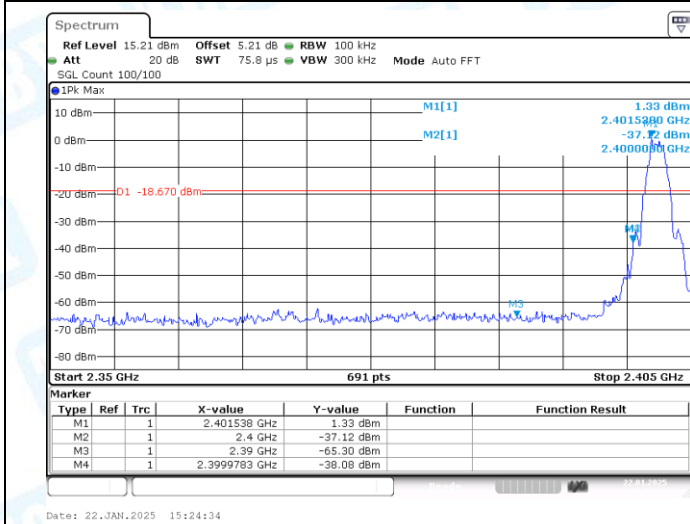
5.2 Test Graphs



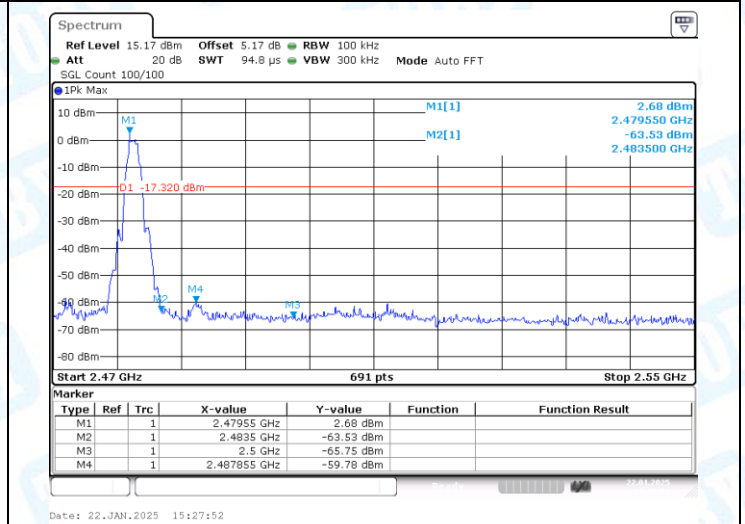
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



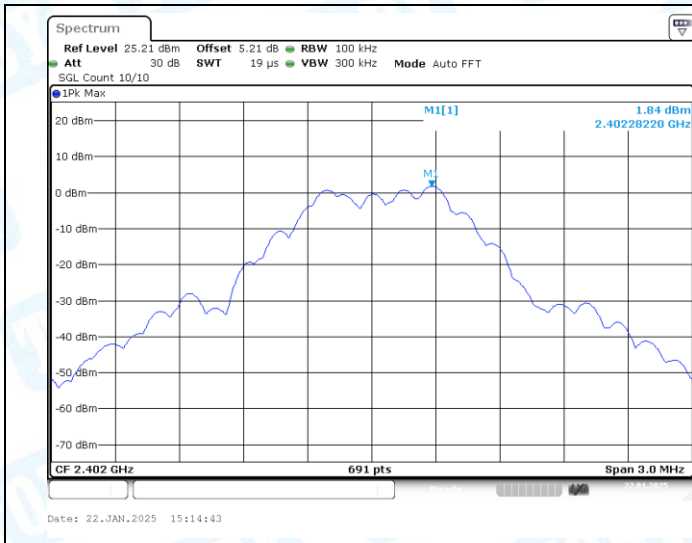
BLE_2M-Ant1-2480-PASS

6: Conducted Spurious Emission

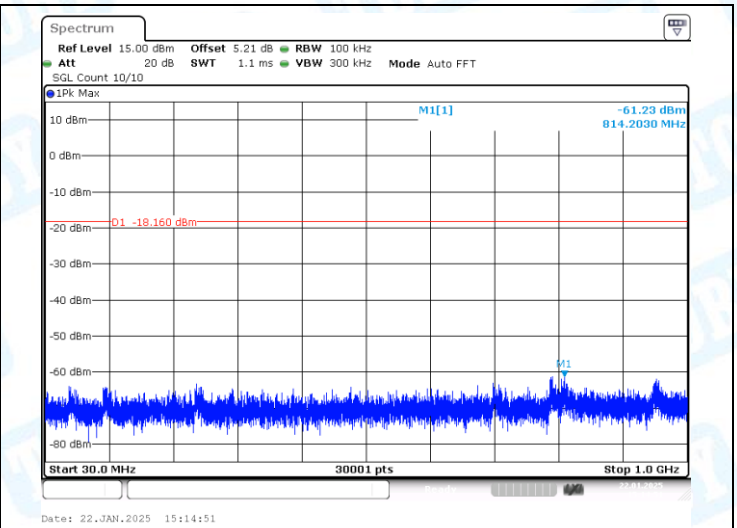
6.1 Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	1.84	1.84	---	PASS
BLE_1M	Ant1	2402	30~1000	1.84	-61.23	≤-18.16	PASS
BLE_1M	Ant1	2402	1000~26500	1.84	-44.2	≤-18.16	PASS
BLE_1M	Ant1	2440	0~Reference	0.38	0.38	---	PASS
BLE_1M	Ant1	2440	30~1000	0.38	-62.4	≤-19.62	PASS
BLE_1M	Ant1	2440	1000~26500	0.38	-46.96	≤-19.62	PASS
BLE_1M	Ant1	2480	0~Reference	1.83	1.83	---	PASS
BLE_1M	Ant1	2480	30~1000	1.83	-59.68	≤-18.17	PASS
BLE_1M	Ant1	2480	1000~26500	1.83	-49.56	≤-18.17	PASS
BLE_2M	Ant1	2402	0~Reference	-1.56	-1.56	---	PASS
BLE_2M	Ant1	2402	30~1000	-1.56	-61.05	≤-21.56	PASS
BLE_2M	Ant1	2402	1000~26500	-1.56	-47.6	≤-21.56	PASS
BLE_2M	Ant1	2440	0~Reference	-1.30	-1.30	---	PASS
BLE_2M	Ant1	2440	30~1000	-1.30	-61.63	≤-21.3	PASS
BLE_2M	Ant1	2440	1000~26500	-1.30	-49.67	≤-21.3	PASS
BLE_2M	Ant1	2480	0~Reference	-0.08	-0.08	---	PASS
BLE_2M	Ant1	2480	30~1000	-0.08	-61.84	≤-20.08	PASS
BLE_2M	Ant1	2480	1000~26500	-0.08	-49.79	≤-20.08	PASS

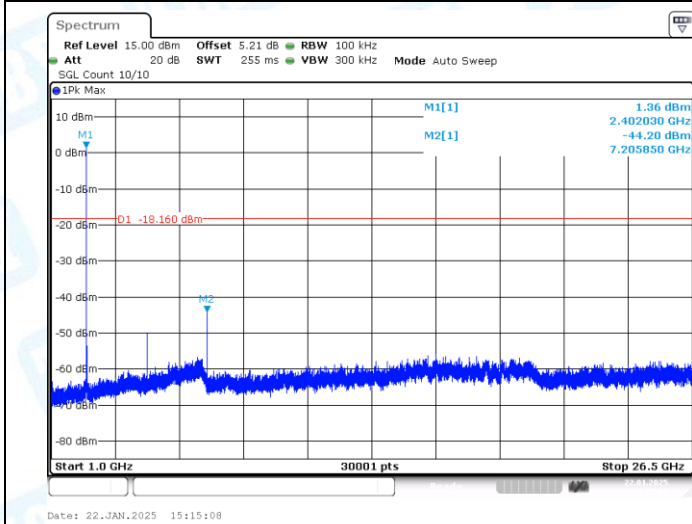
6.2 Test Graphs



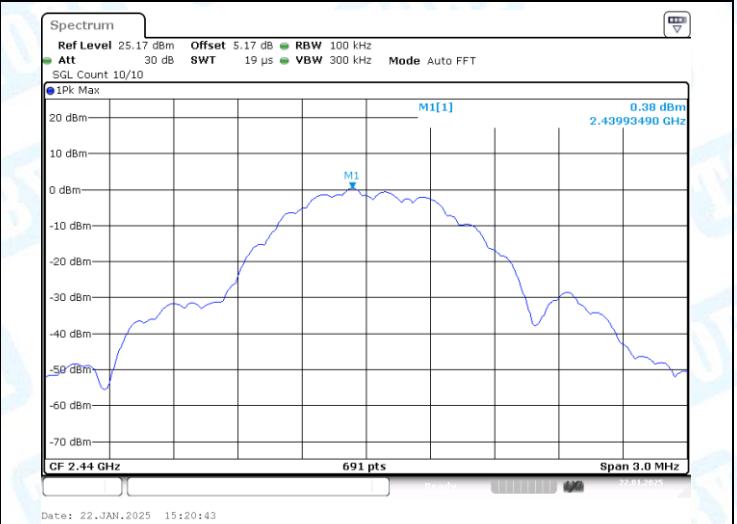
BLE_1M-Ant1-2402-0~Reference-PASS



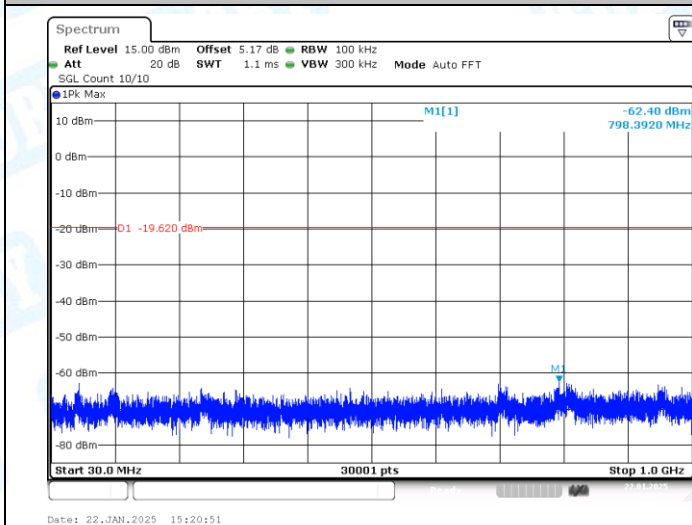
BLE_1M-Ant1-2402-30~1000-PASS



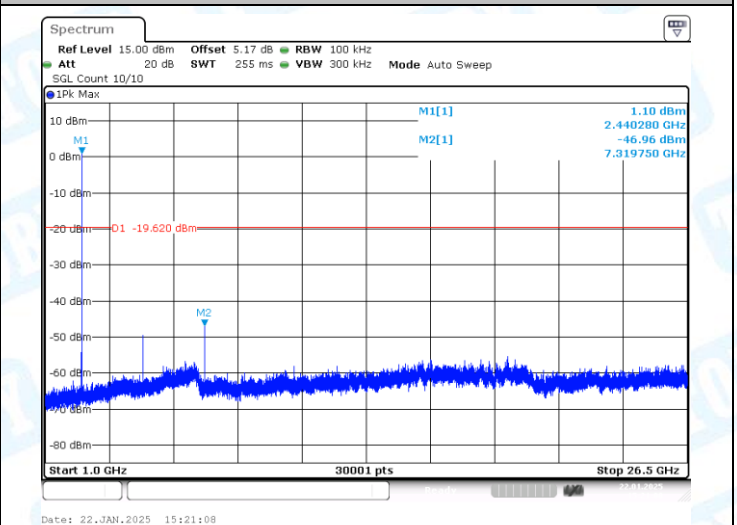
BLE_1M-Ant1-2402-1000~26500-PASS



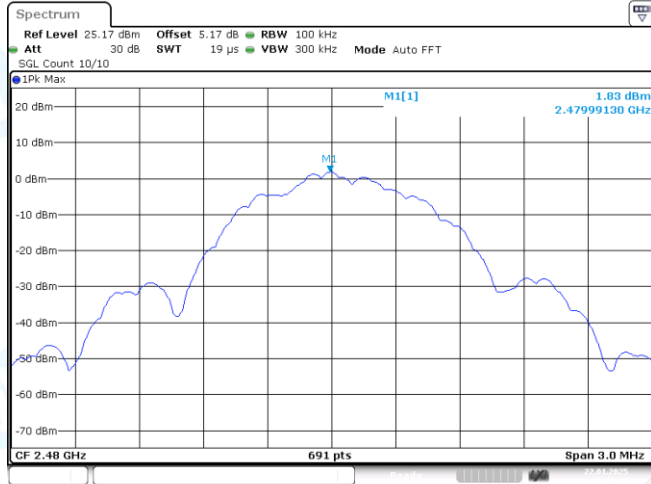
BLE_1M-Ant1-2440-0~Reference-PASS



BLE_1M-Ant1-2440-30~1000-PASS

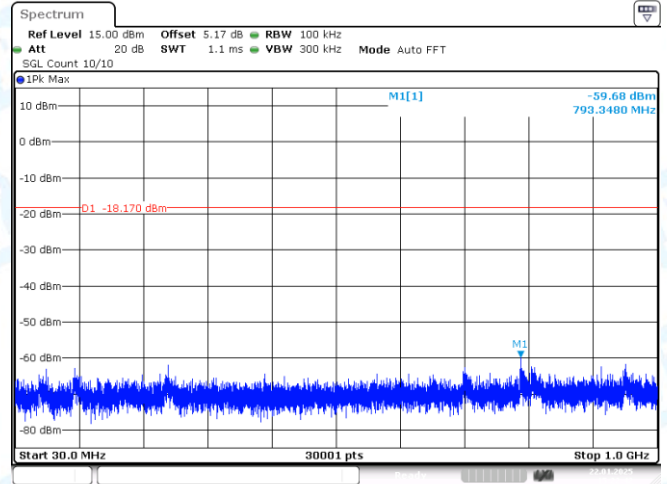


BLE_1M-Ant1-2440-1000~26500-PASS



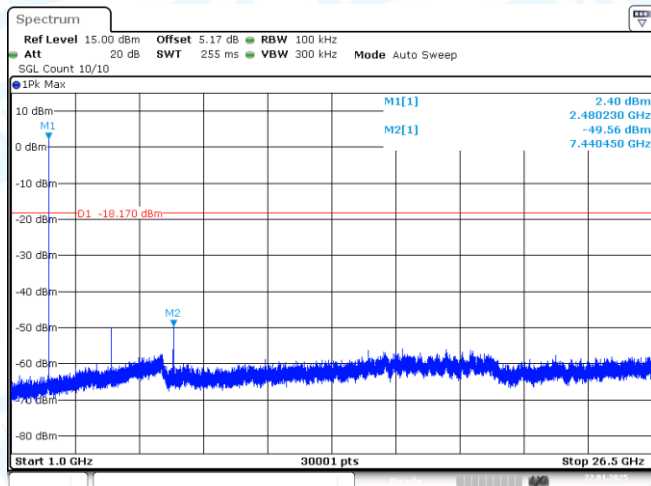
Date: 22.JAN.2025 15:22:34

BLE_1M-Ant1-2480-0~Reference-PASS



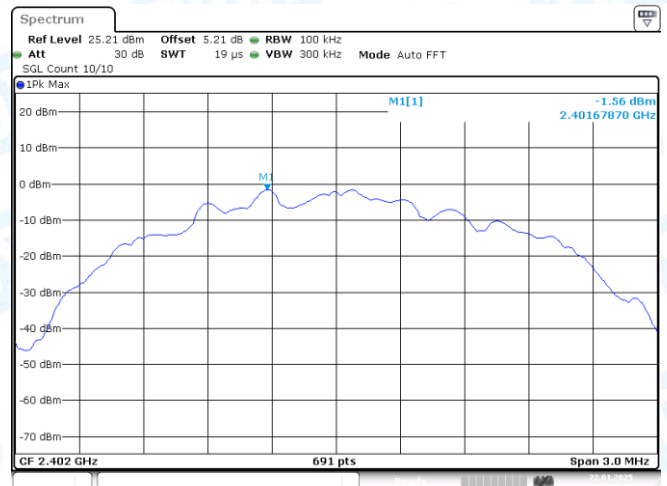
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BLE_1M-Ant1-2480-30~1000-PASS



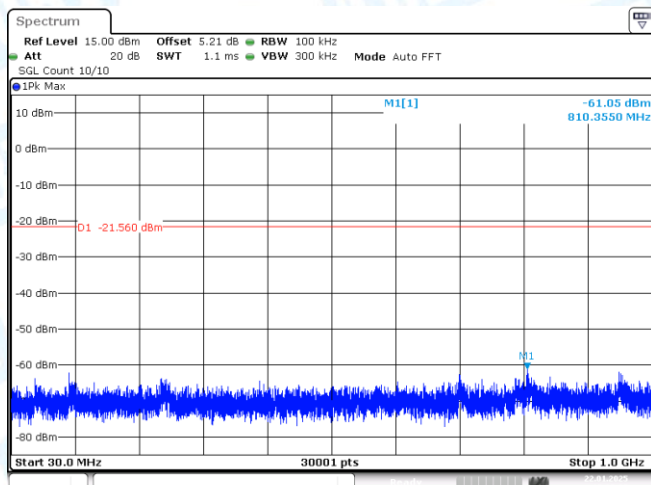
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BLE_1M-Ant1-2480-1000~26500-PASS



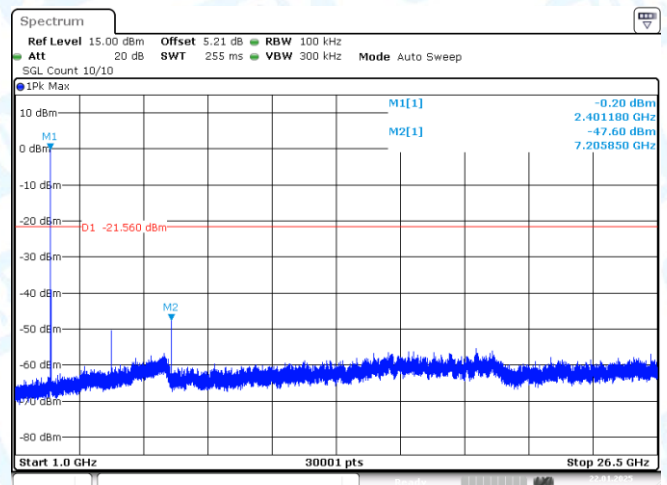
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BLE_2M-Ant1-2402-0~Reference-PASS



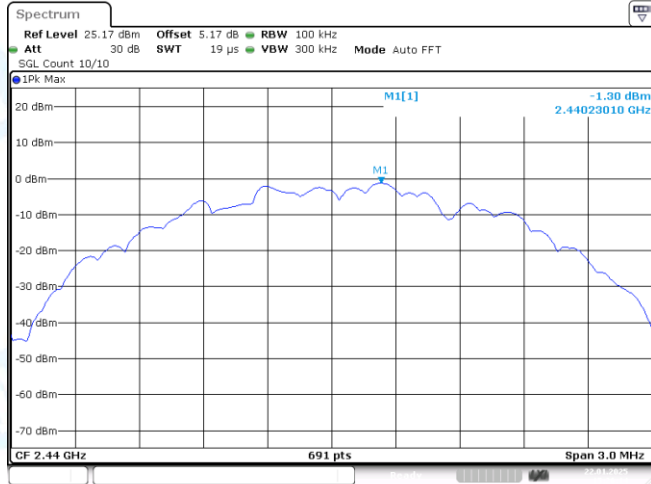
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BLE_2M-Ant1-2402-30~1000-PASS



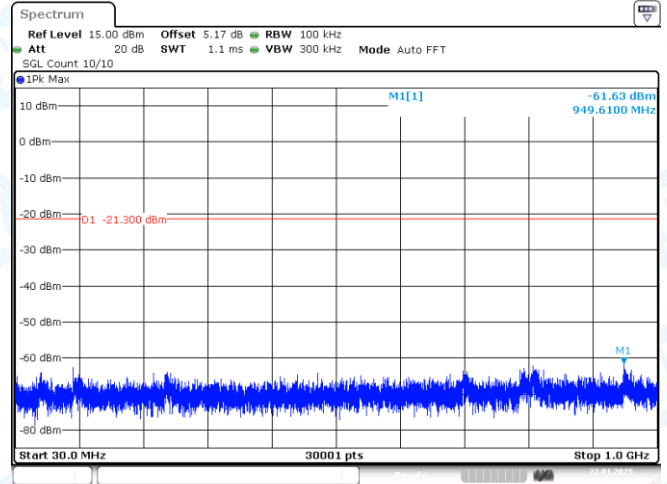
Date: 22.JAN.2025 15:25:25

BLE_2M-Ant1-2402-1000~26500-PASS



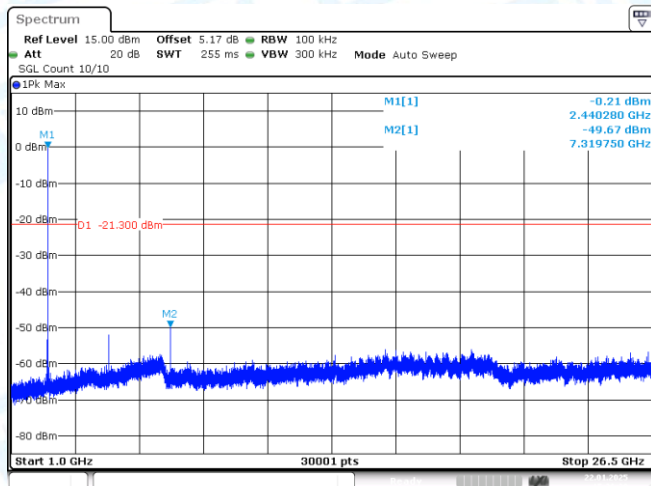
Date: 22.JAN.2025 15:26:14

BLE_2M-Ant1-2440-0~Reference-PASS



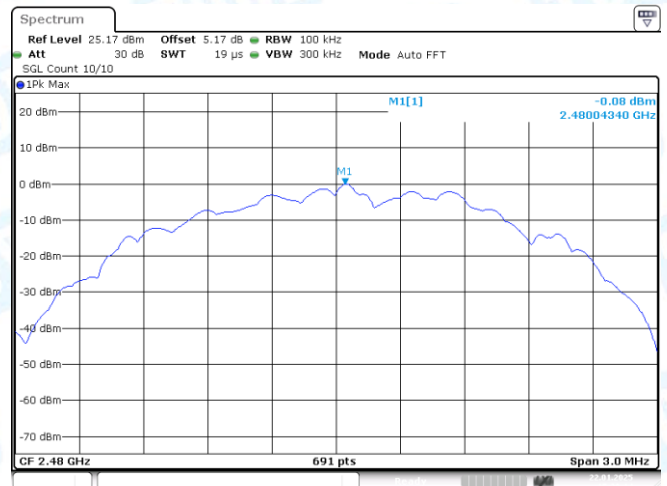
Date: 22.JAN.2025 15:26:21

BLE_2M-Ant1-2440-30~1000-PASS



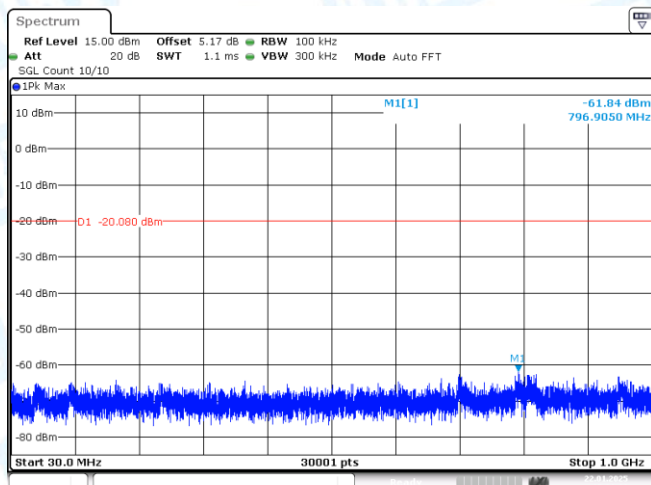
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BLE_2M-Ant1-2440-1000~26500-PASS



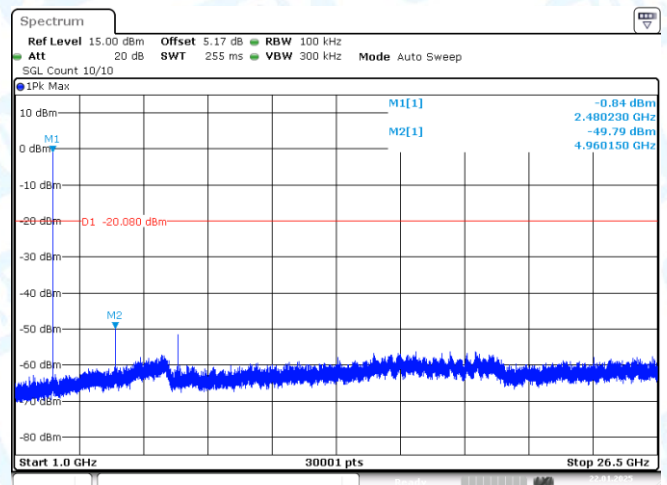
Date: 22.JAN.2025 15:28:14

BLE_2M-Ant1-2480-0~Reference-PASS



Date: 22.JAN.2025 15:28:22

BLE_2M-Ant1-2480-30~1000-PASS



Date: 22.JAN.2025 15:28:39

BLE_2M-Ant1-2480-1000~26500-PASS

7: Duty Cycle

7.1 Test Result

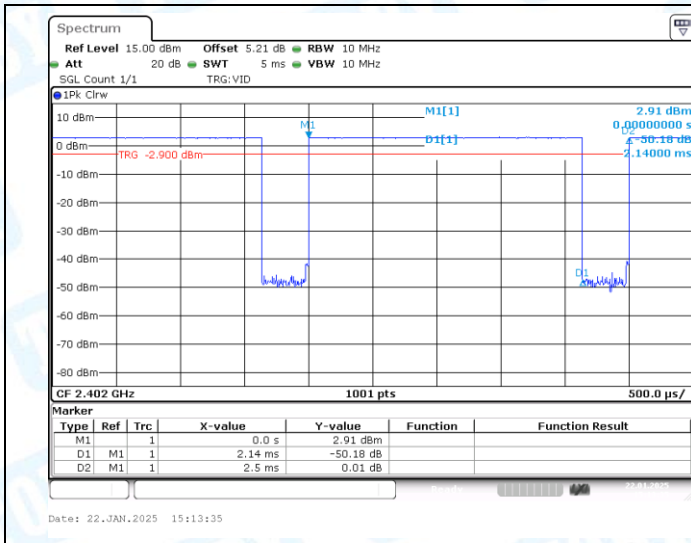
TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factory	1/T [kHz]
BLE_1M	Ant1	2402	2.14	2.50	85.60	0.68	0.47
BLE_1M	Ant1	2440	2.14	2.50	85.60	0.68	0.47
BLE_1M	Ant1	2480	2.14	2.50	85.60	0.68	0.47
BLE_2M	Ant1	2402	1.08	1.25	86.40	0.63	0.93
BLE_2M	Ant1	2440	1.08	1.25	86.40	0.63	0.93
BLE_2M	Ant1	2480	1.08	1.25	86.40	0.63	0.93

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

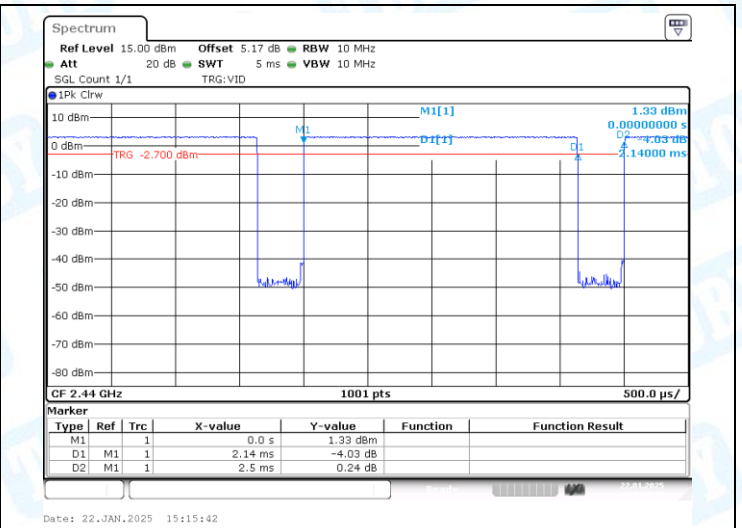
2, DC Factory=10*Log₁₀(1/Duty Cycle)

3, 1/T=1/ Transmission Duration

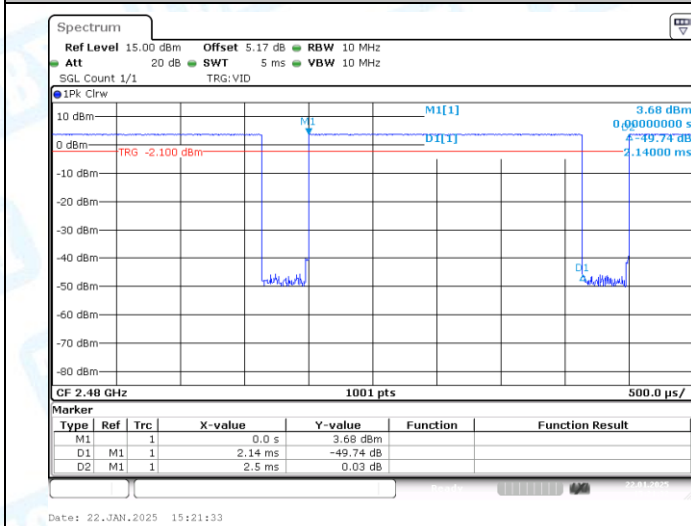
7.2 Test Graphs



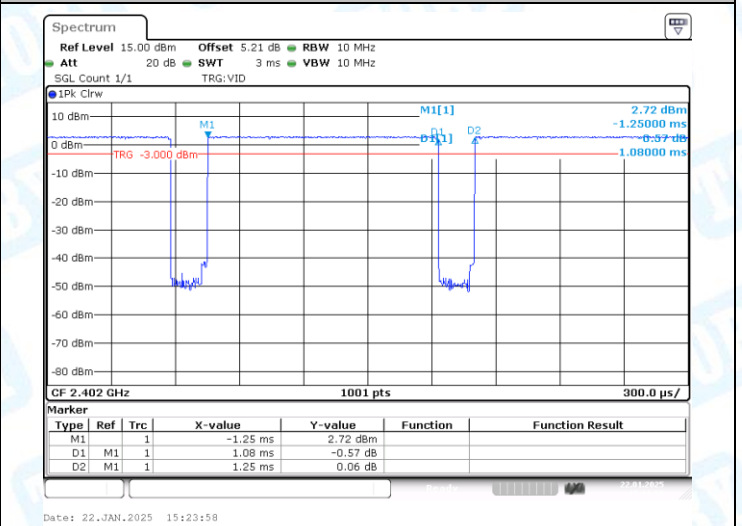
NTVN-BLE_1M-Ant1-2402



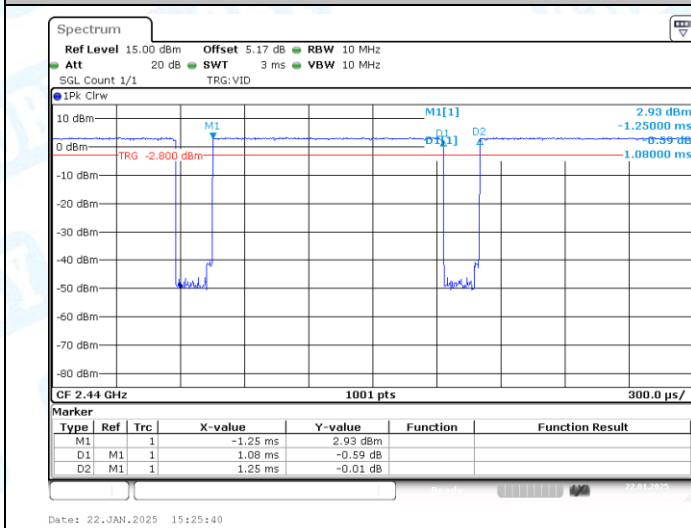
NTVN-BLE_1M-Ant1-2440



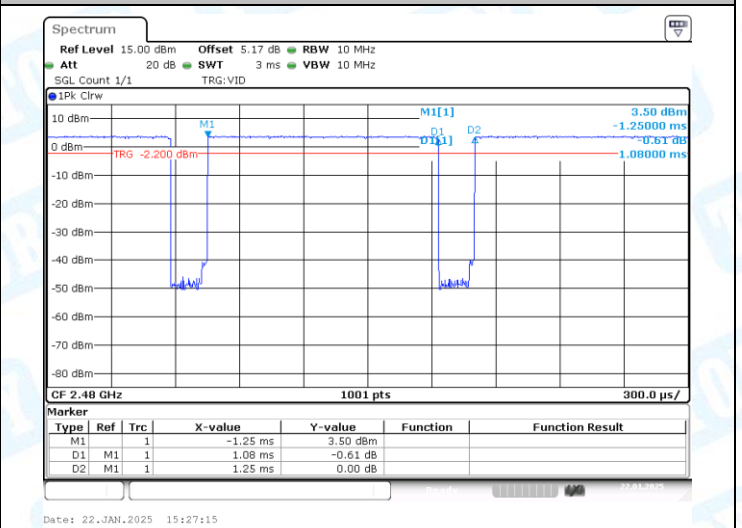
NTVN-BLE_1M-Ant1-2480



NTVN-BLE_2M-Ant1-2402



NTVN-BLE_2M-Ant1-2440



NTVN-BLE_2M-Ant1-2480

8: Emissions in Restricted Bands

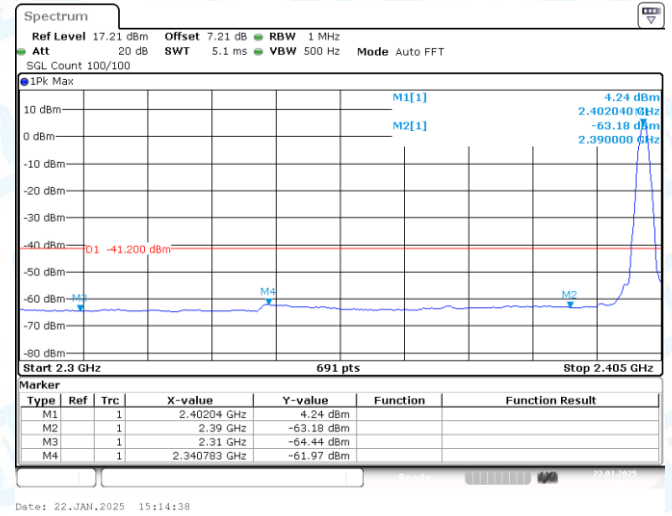
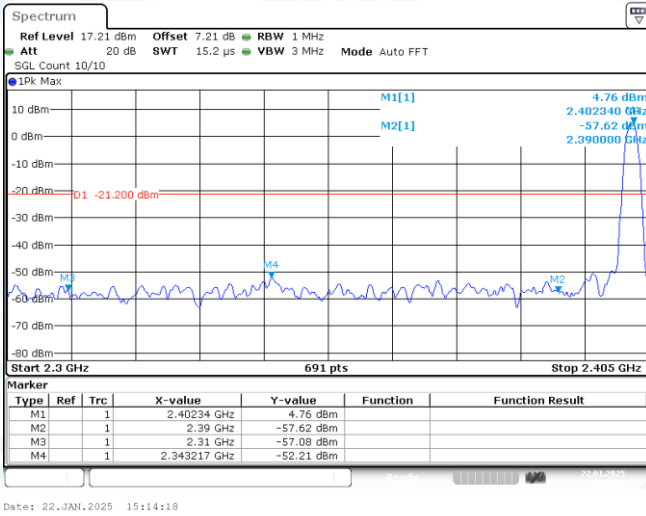
8.1 Test Result

Test Mode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	Peak	2390.000	-57.62	≤-21.20	37.58	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-57.08	≤-21.20	38.12	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2343.217	-52.21	≤-21.20	42.99	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-63.18	≤-41.20	32.02	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-64.44	≤-41.20	30.76	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2340.783	-61.97	≤-41.20	33.23	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-55.29	≤-21.20	39.91	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-58.54	≤-21.20	36.66	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2498.058	-51.99	≤-21.20	43.21	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-60.4	≤-41.20	34.80	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-63.17	≤-41.20	32.03	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2488.087	-57.92	≤-41.20	37.28	≤54	PASS
BLE_2M	Ant1	Low	2402	Peak	2390.000	-57.31	≤-21.20	37.89	≤74	PASS
BLE_2M	Ant1	Low	2402	Peak	2310.000	-58.24	≤-21.20	36.96	≤74	PASS
BLE_2M	Ant1	Low	2402	Peak	2340.630	-53.12	≤-21.20	42.08	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2390.000	-63.11	≤-41.20	32.09	≤54	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-64.31	≤-41.20	30.89	≤54	PASS
BLE_2M	Ant1	Low	2402	AV	2340.174	-61.95	≤-41.20	33.25	≤54	PASS
BLE_2M	Ant1	High	2480	Peak	2483.500	-49.05	≤-21.20	46.15	≤74	PASS
BLE_2M	Ant1	High	2480	Peak	2500.000	-58.54	≤-21.20	36.66	≤74	PASS
BLE_2M	Ant1	High	2480	Peak	2483.565	-51.08	≤-21.20	44.12	≤74	PASS
BLE_2M	Ant1	High	2480	AV	2483.500	-55.87	≤-41.20	39.33	≤54	PASS
BLE_2M	Ant1	High	2480	AV	2500.000	-63.06	≤-41.20	32.14	≤54	PASS
BLE_2M	Ant1	High	2480	AV	2483.565	-57.21	≤-41.20	37.99	≤54	PASS

Note:

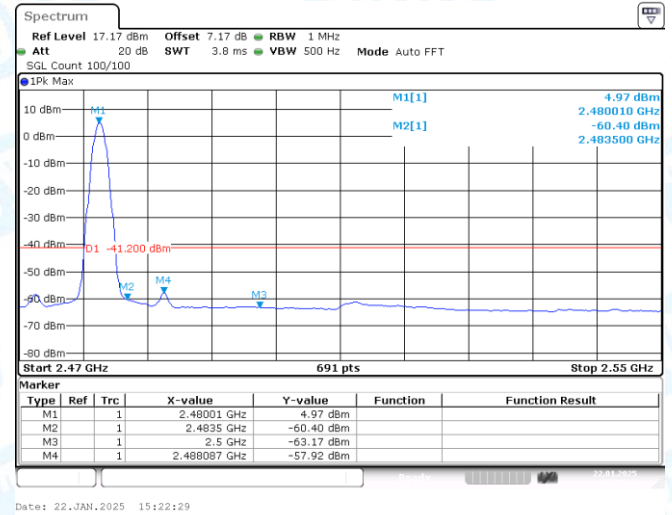
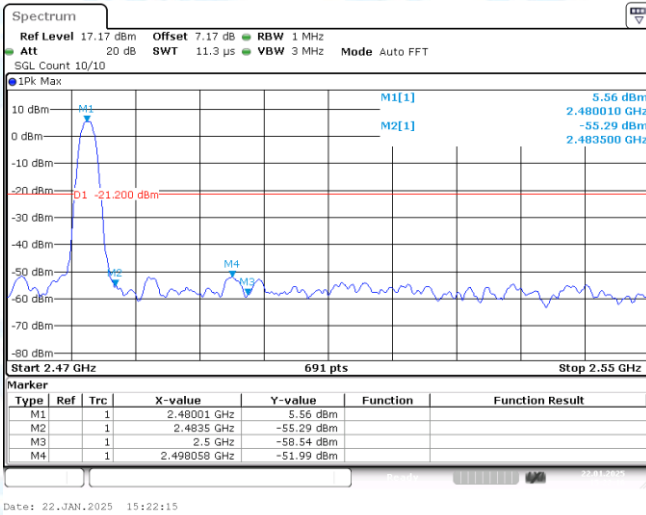
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

8.2 Test Graphs



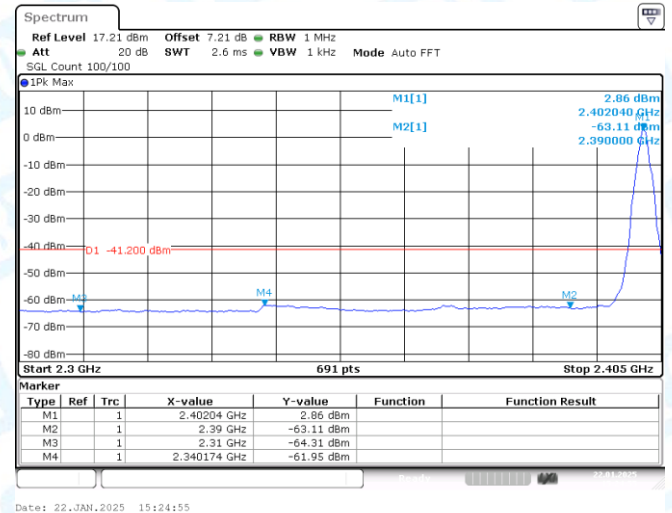
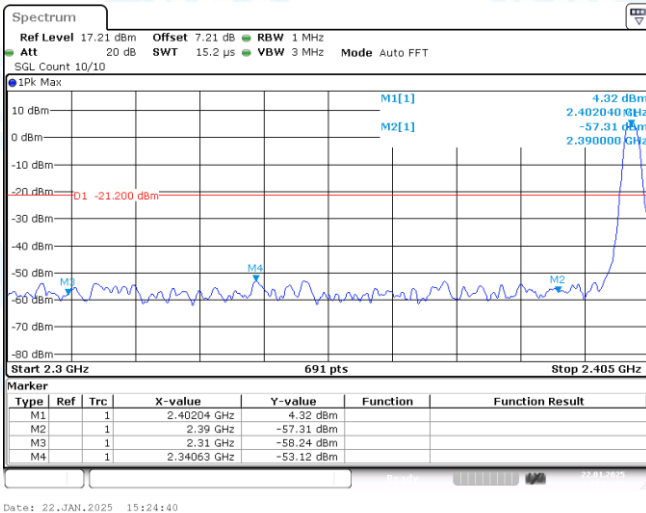
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2402-PASS



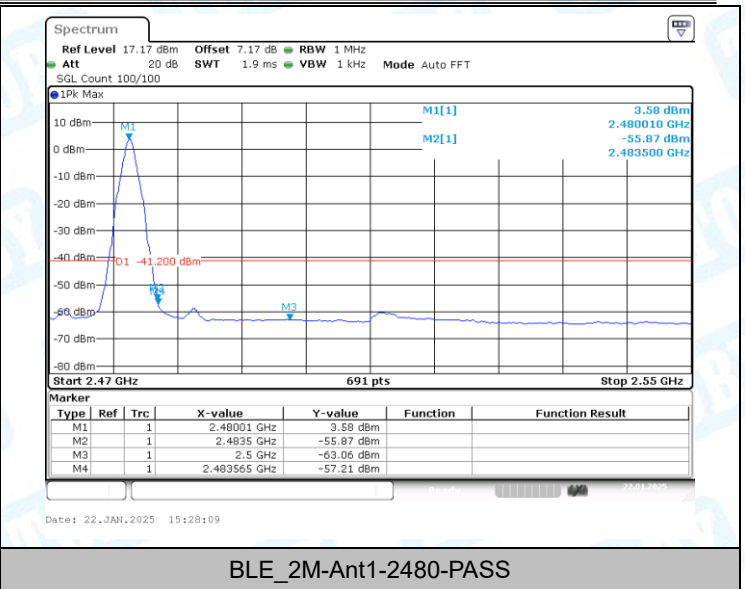
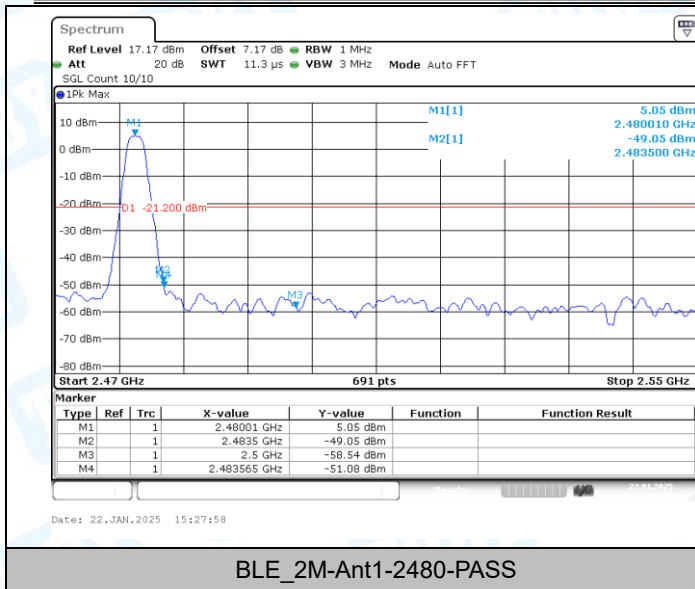
BLE_1M-Ant1-2480-PASS

BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS

BLE_2M-Ant1-2402-PASS



-----END OF THE REPORT-----