

RF Test Data for BLE (Conducted Measurements)

General Description of EUT	
EUT Name:	W665S3
Model:	W665S3
Sample ID:	RW-C-202502-0011-1-2#
Test Standard:	FCC Part 15.247
Environmental Conditions	
Ambient Temperature:	25°C
Ambient Humidity:	45%RH
Test Power Supply:	DC 3.3V
Test Engineer:	Rick.chen
Note: For a more detailed features description, please refer to the report TBR-C-202502-0011-11	

Contents

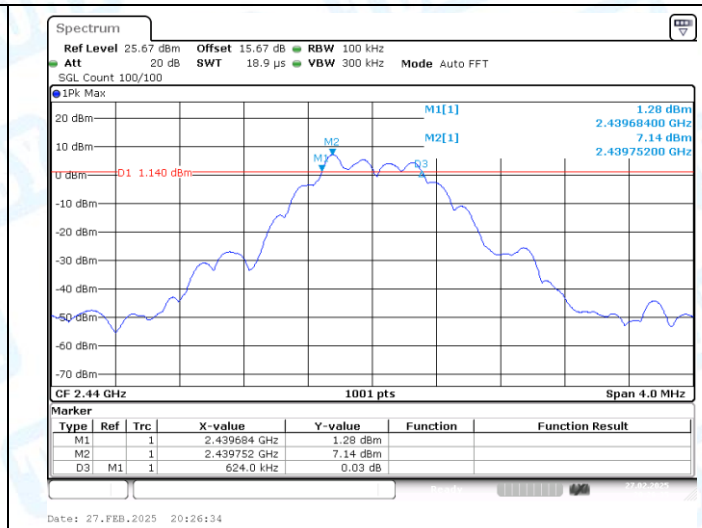
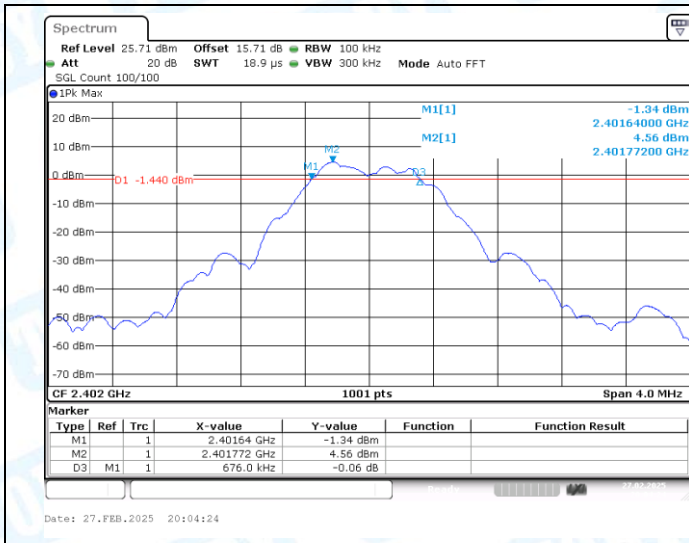
1: DTS Bandwidth	3
1.1 Test Result.....	3
1.2 Test Graphs	4
2: Occupied Channel Bandwidth	5
2.1 Test Result.....	5
2.2 Test Graphs	6
3: Maximum conducted output power	7
3.1 Test Result Peak.....	7
3.2 Test Graphs Peak.....	8
4: Maximum power spectral density	9
4.1 Test Result.....	9
4.2 Test Graphs	10
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

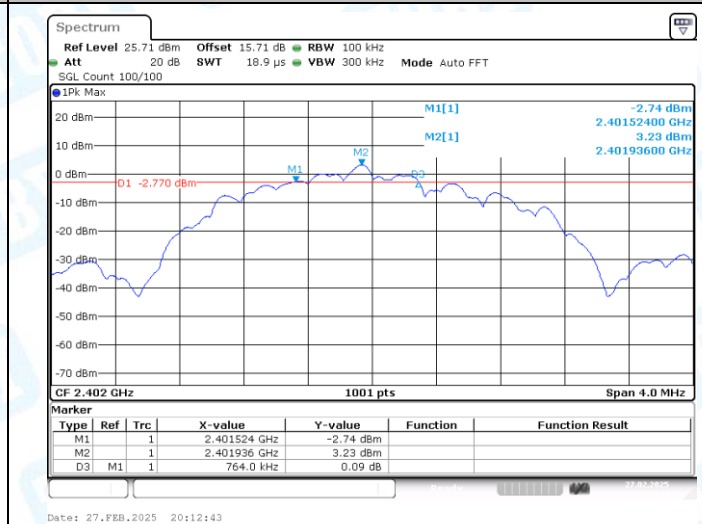
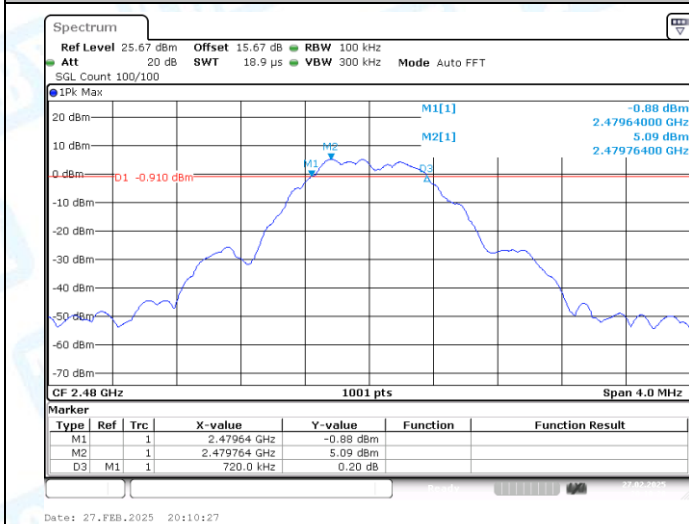
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.68	2401.64	2402.32	0.5	PASS
BLE_1M	Ant1	2440	0.62	2439.68	2440.31	0.5	PASS
BLE_1M	Ant1	2480	0.72	2479.64	2480.36	0.5	PASS
BLE_2M	Ant1	2402	0.76	2401.52	2402.29	0.5	PASS
BLE_2M	Ant1	2440	1.23	2439.48	2440.70	0.5	PASS
BLE_2M	Ant1	2480	1.30	2479.31	2480.60	0.5	PASS

1.2 Test Graphs



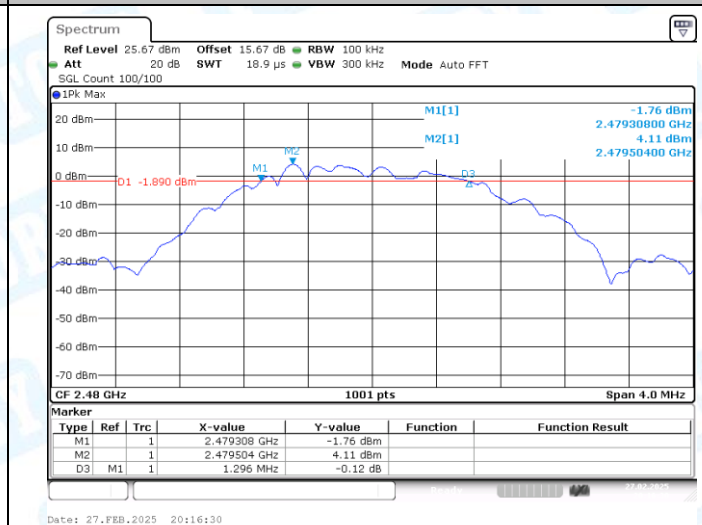
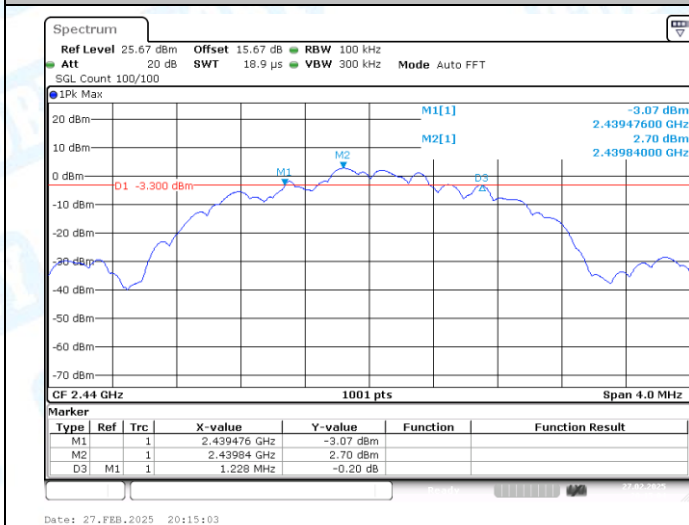
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS



BLE_1M-Ant1-2480-PASS

BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

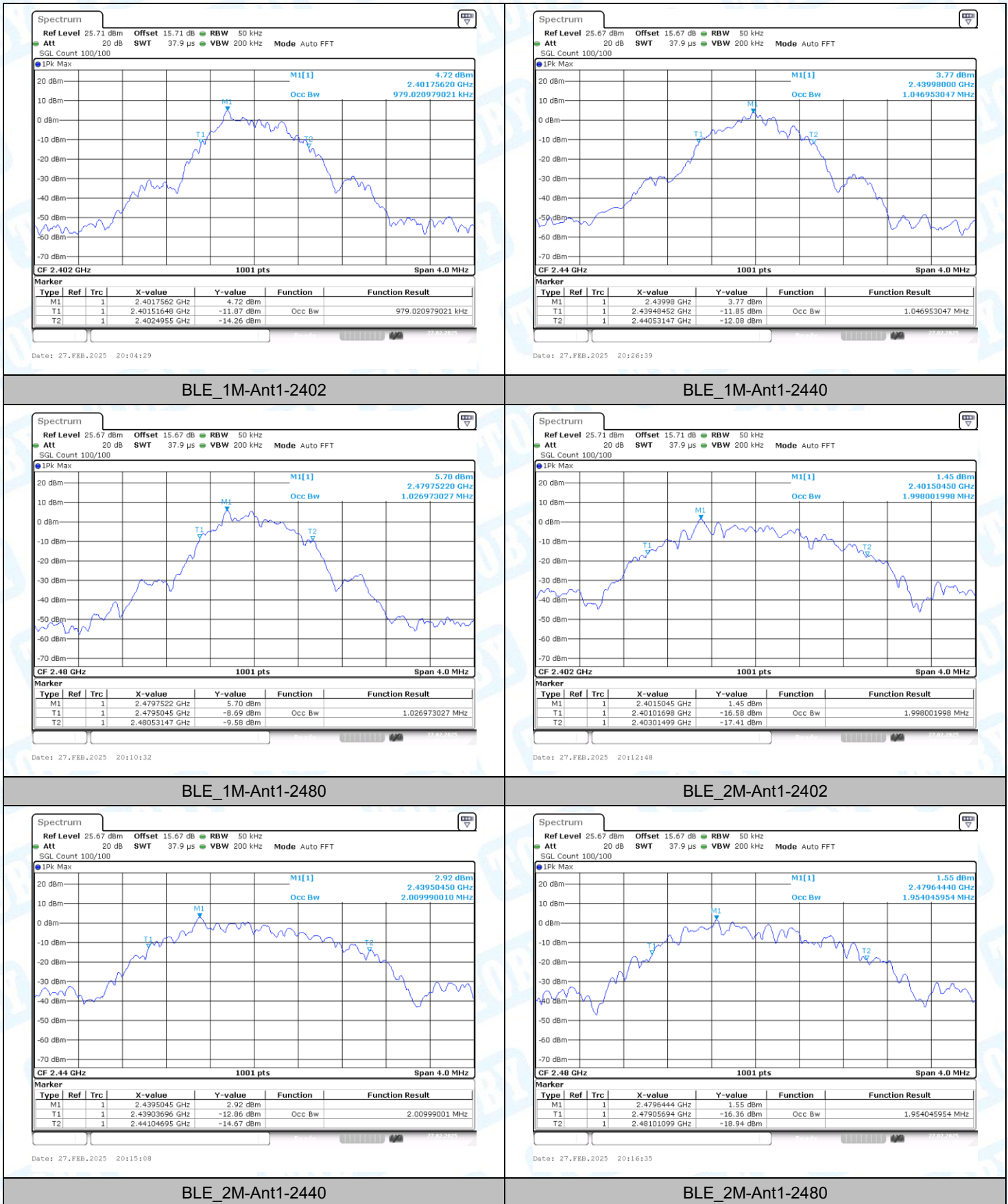
BLE_2M-Ant1-2480-PASS

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	0.979	2401.5165	2402.4955	---	---
BLE_1M	Ant1	2440	1.047	2439.4845	2440.5315	---	---
BLE_1M	Ant1	2480	1.027	2479.5045	2480.5315	---	---
BLE_2M	Ant1	2402	1.998	2401.0170	2403.0150	---	---
BLE_2M	Ant1	2440	2.01	2439.0370	2441.0470	---	---
BLE_2M	Ant1	2480	1.954	2479.0569	2481.0110	---	---

2.2 Test Graphs

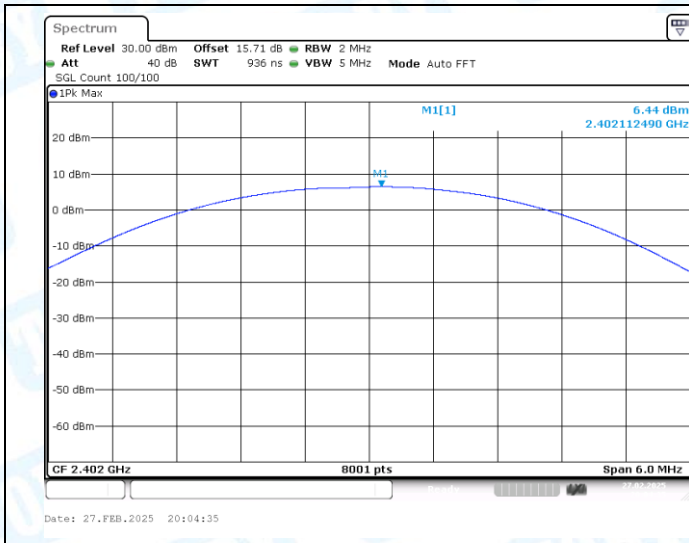


3: Maximum conducted output power

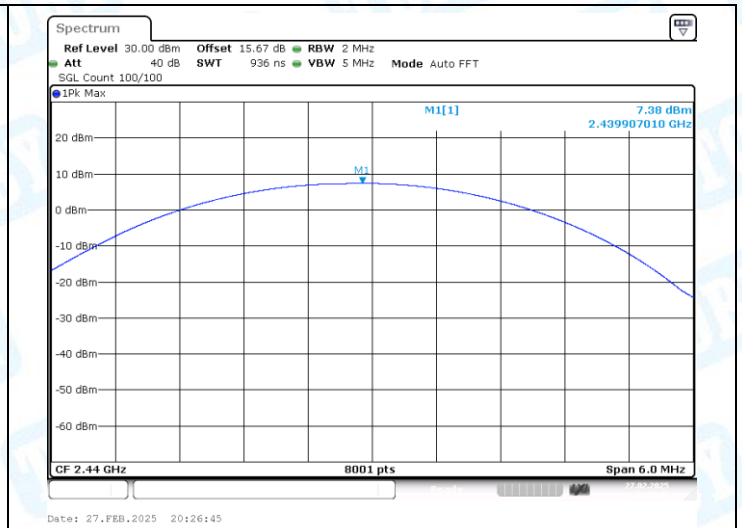
3.1 Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	6.44	≤30	PASS
BLE_1M	Ant1	2440	7.38	≤30	PASS
BLE_1M	Ant1	2480	7.89	≤30	PASS
BLE_2M	Ant1	2402	6.28	≤30	PASS
BLE_2M	Ant1	2440	7.16	≤30	PASS
BLE_2M	Ant1	2480	7.93	≤30	PASS

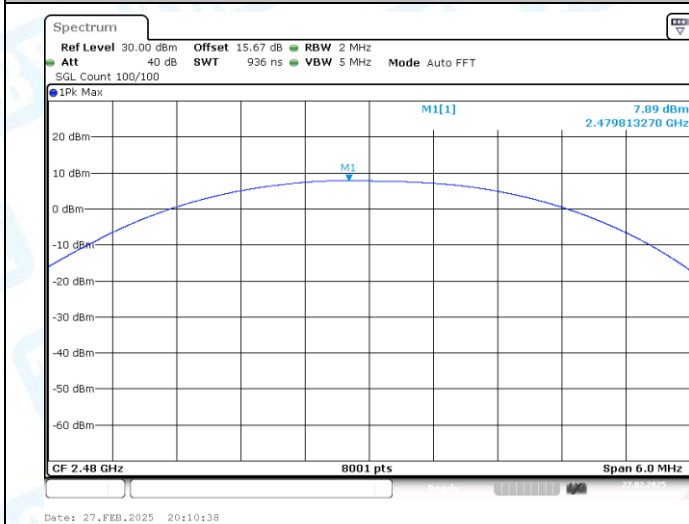
3.2 Test Graphs Peak



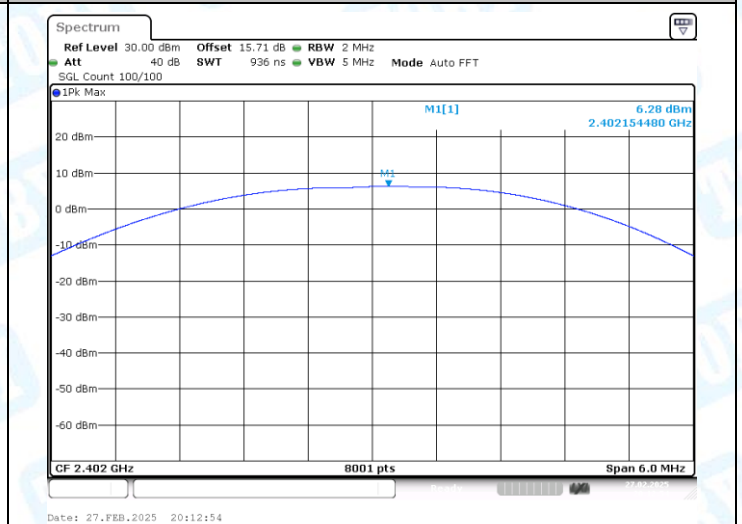
BLE_1M-Ant1-2402-PASS



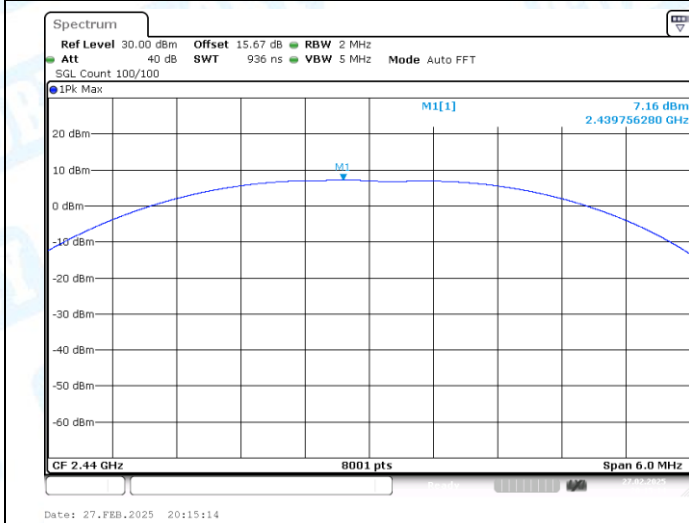
BLE_1M-Ant1-2440-PASS



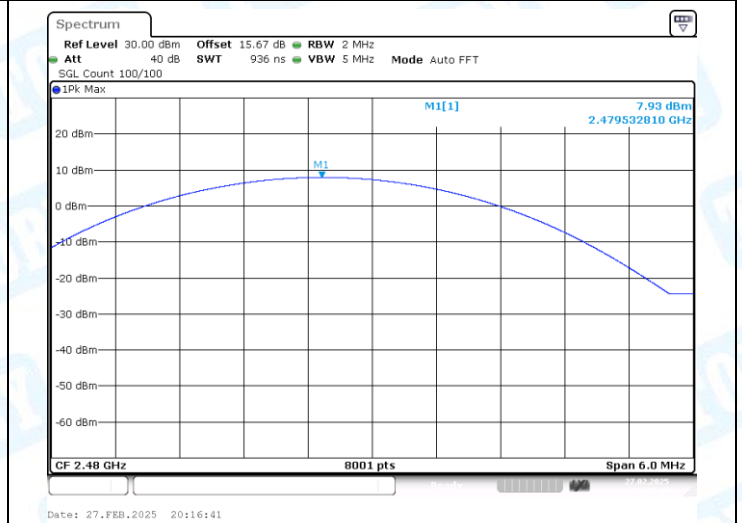
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



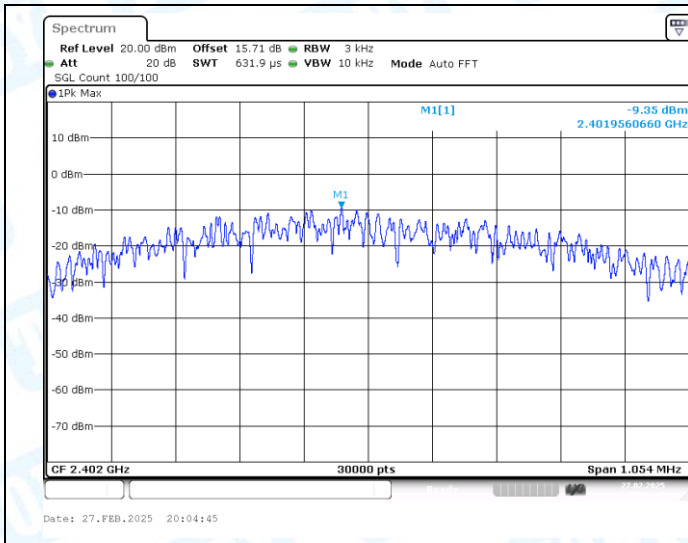
BLE_2M-Ant1-2480-PASS

4: Maximum power spectral density

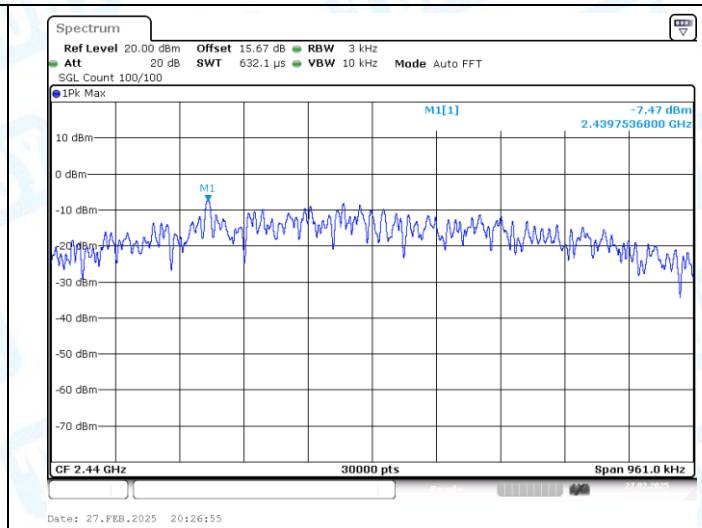
4.1 Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.35	≤8.00	PASS
BLE_1M	Ant1	2440	-7.47	≤8.00	PASS
BLE_1M	Ant1	2480	-7.81	≤8.00	PASS
BLE_2M	Ant1	2402	-12.64	≤8.00	PASS
BLE_2M	Ant1	2440	-11.27	≤8.00	PASS
BLE_2M	Ant1	2480	-10.55	≤8.00	PASS

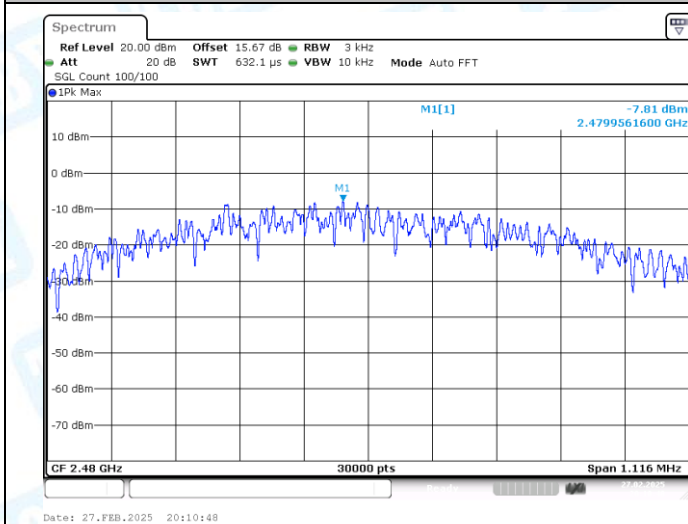
4.2 Test Graphs



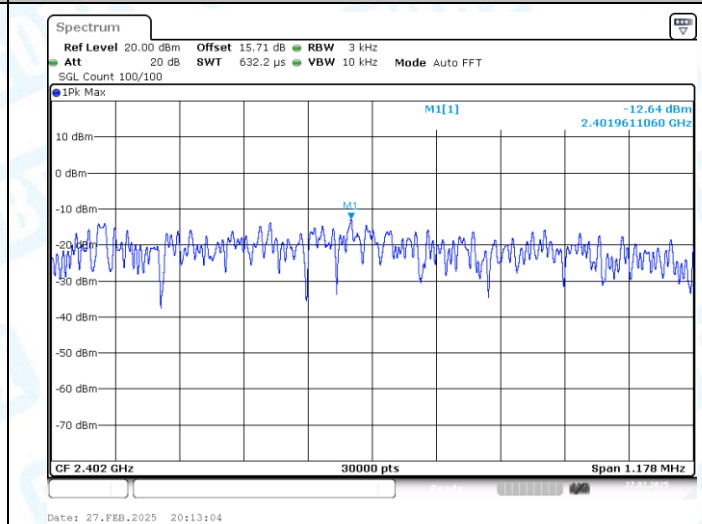
BLE_1M-Ant1-2402-PASS



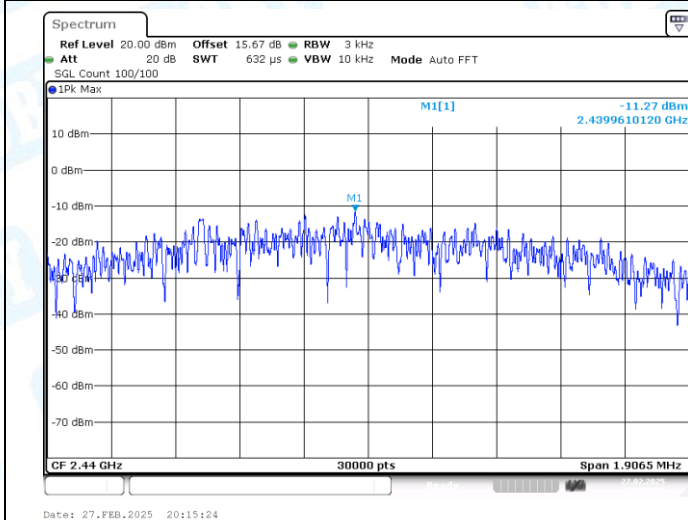
BLE_1M-Ant1-2440-PASS



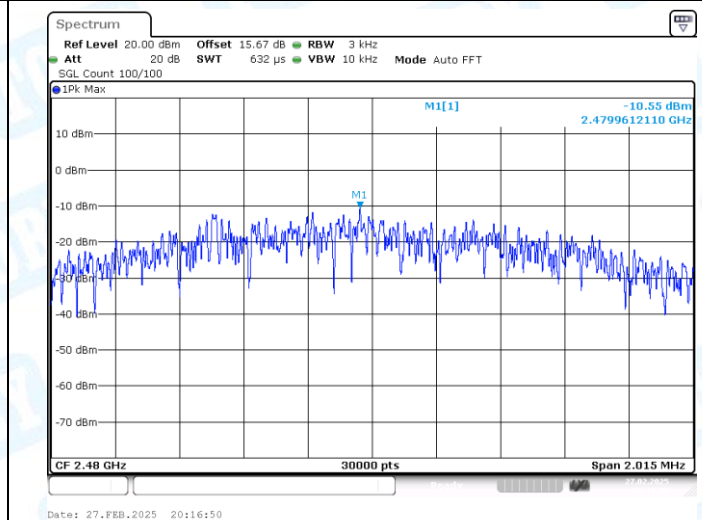
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



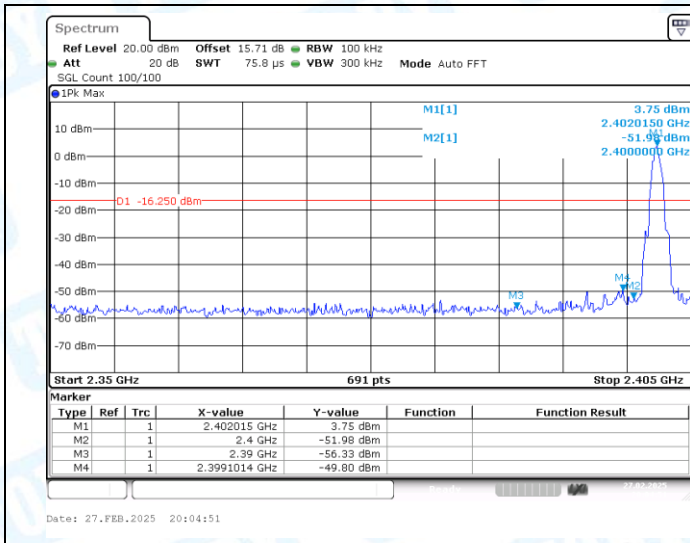
BLE_2M-Ant1-2480-PASS

5: Band edge measurements

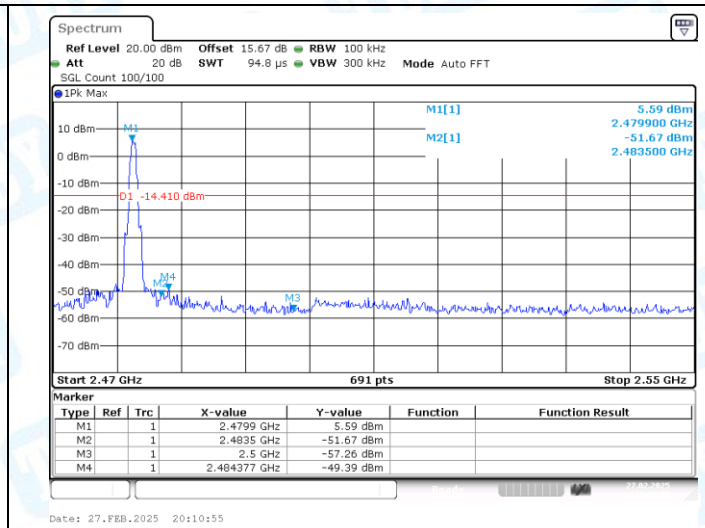
5.1 Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.75	-49.8	≤-16.25	PASS
BLE_1M	Ant1	High	2480	5.59	-49.39	≤-14.41	PASS
BLE_2M	Ant1	Low	2402	3.40	-31	≤-16.6	PASS
BLE_2M	Ant1	High	2480	6.22	-50.19	≤-13.78	PASS

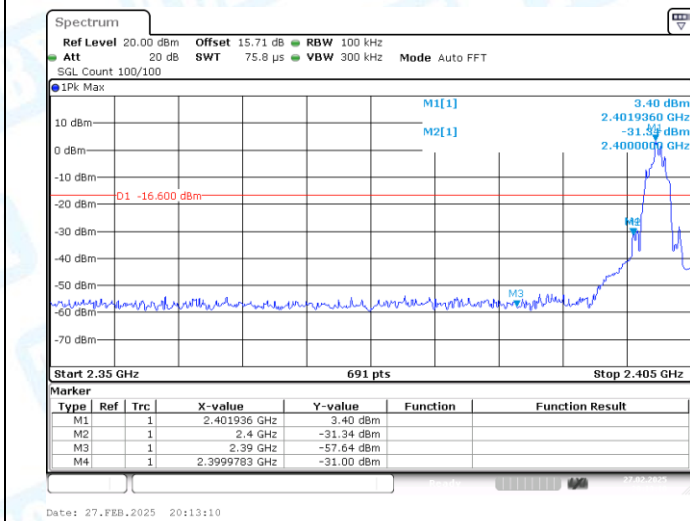
5.2 Test Graphs



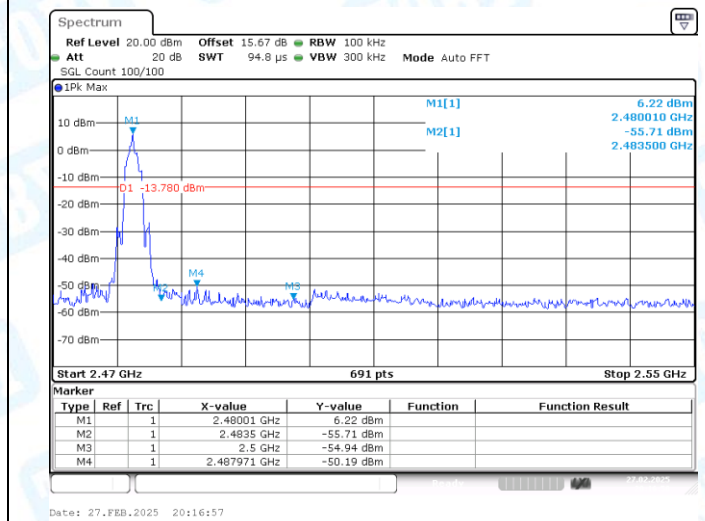
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



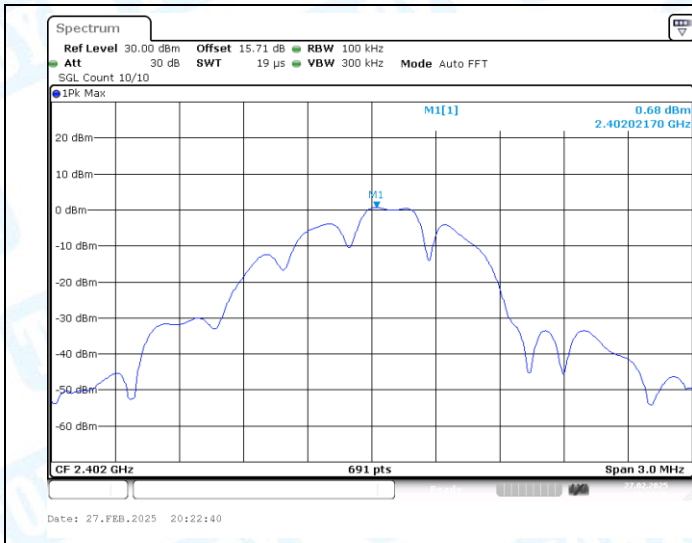
BLE_2M-Ant1-2480-PASS

6: Conducted Spurious Emission

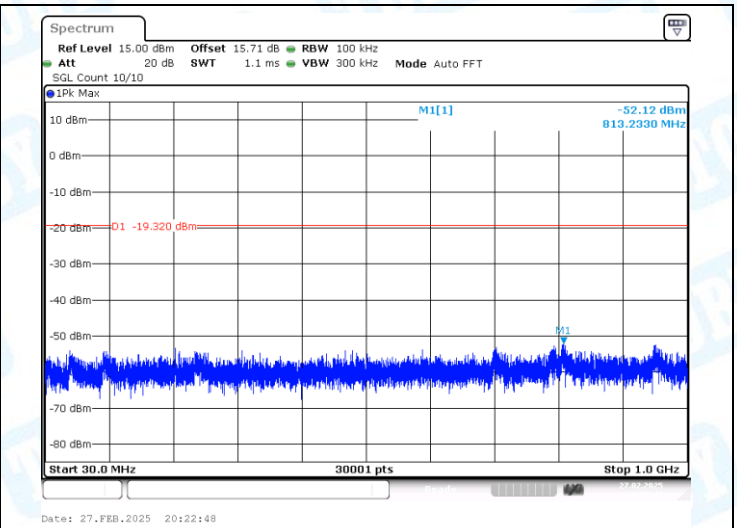
6.1 Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	0.68	0.68	---	PASS
BLE_1M	Ant1	2402	30~1000	0.68	-52.12	≤-19.32	PASS
BLE_1M	Ant1	2402	1000~26500	0.68	-46.09	≤-19.32	PASS
BLE_1M	Ant1	2440	0~Reference	2.03	2.03	---	PASS
BLE_1M	Ant1	2440	30~1000	2.03	-51.47	≤-17.97	PASS
BLE_1M	Ant1	2440	1000~26500	2.03	-45.92	≤-17.97	PASS
BLE_1M	Ant1	2480	0~Reference	4.26	4.26	---	PASS
BLE_1M	Ant1	2480	30~1000	4.26	-51.12	≤-15.74	PASS
BLE_1M	Ant1	2480	1000~26500	4.26	-45.77	≤-18.61	PASS
BLE_2M	Ant1	2402	0~Reference	1.63	1.63	---	PASS
BLE_2M	Ant1	2402	30~1000	1.63	-52.16	≤-18.37	PASS
BLE_2M	Ant1	2402	1000~26500	1.63	-45.72	≤-18.37	PASS
BLE_2M	Ant1	2440	0~Reference	2.53	2.53	---	PASS
BLE_2M	Ant1	2440	30~1000	2.53	-51.45	≤-17.47	PASS
BLE_2M	Ant1	2440	1000~26500	2.53	-45.7	≤-17.47	PASS
BLE_2M	Ant1	2480	0~Reference	1.39	1.39	---	PASS
BLE_2M	Ant1	2480	30~1000	1.39	-51.52	≤-18.61	PASS
BLE_2M	Ant1	2480	1000~26500	1.39	-45.77	≤-18.61	PASS

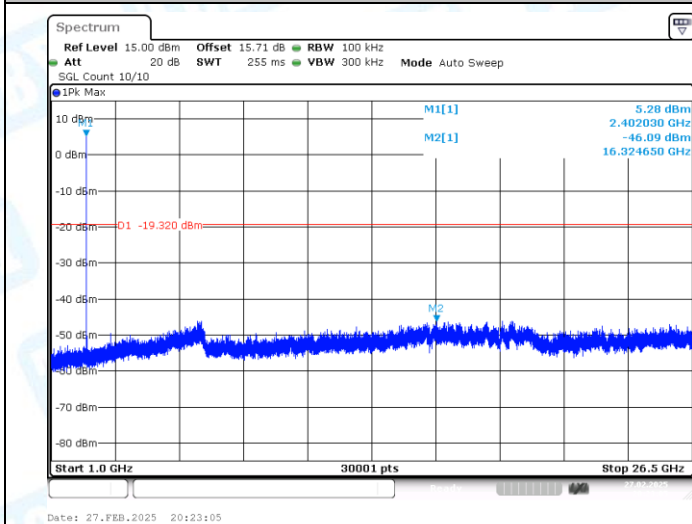
6.2 Test Graphs



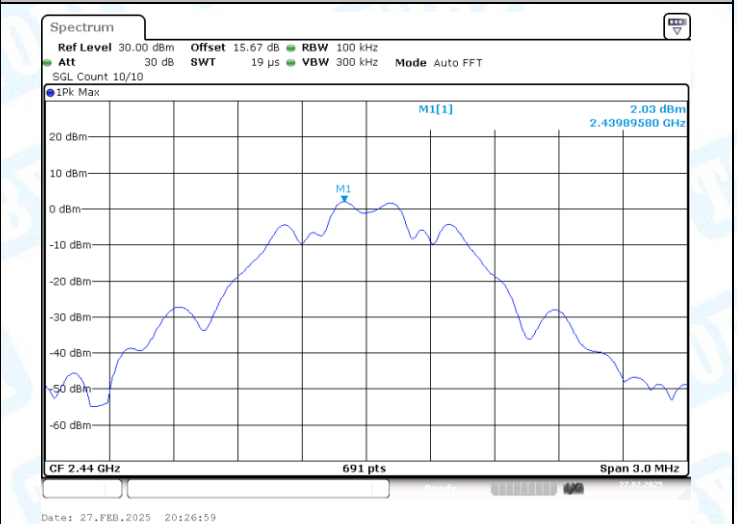
BLE_1M-Ant1-2402-0~Reference-PASS



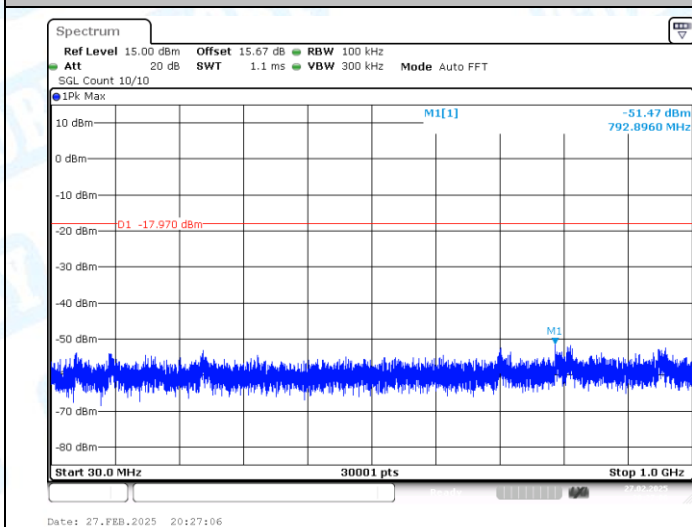
BLE_1M-Ant1-2402-30~1000-PASS



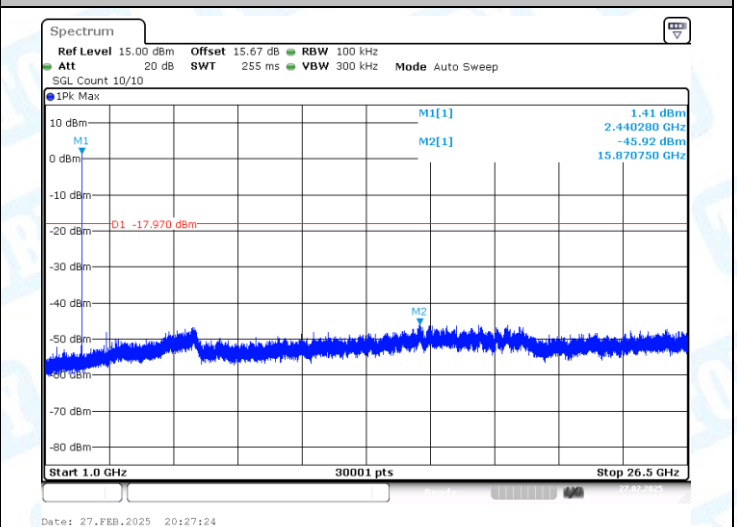
BLE_1M-Ant1-2402-1000~26500-PASS



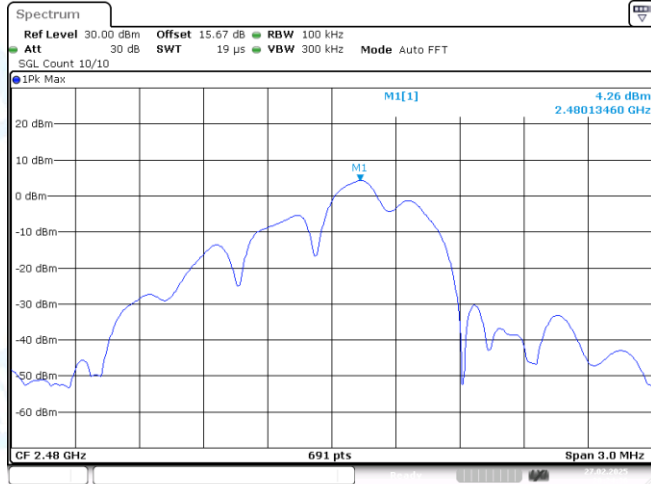
BLE_1M-Ant1-2440-0~Reference-PASS



BLE_1M-Ant1-2440-30~1000-PASS

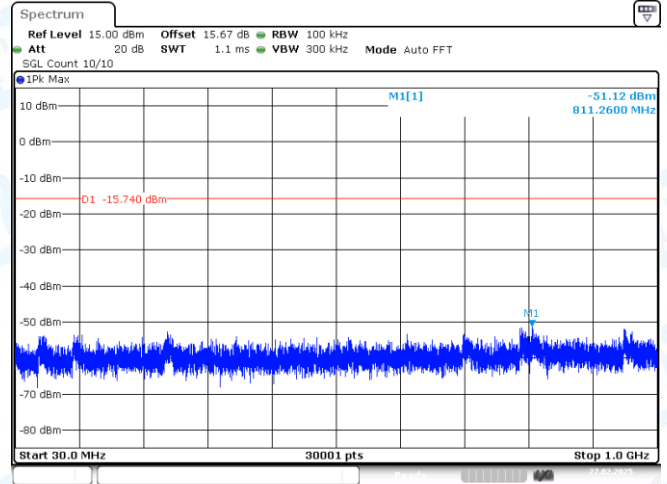


BLE_1M-Ant1-2440-1000~26500-PASS



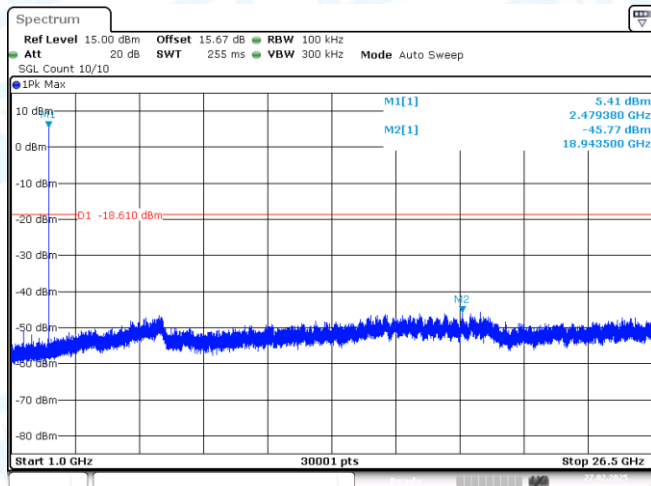
Date: 27.FEB.2025 20:24:36

BLE_1M-Ant1-2480-0~Reference-PASS



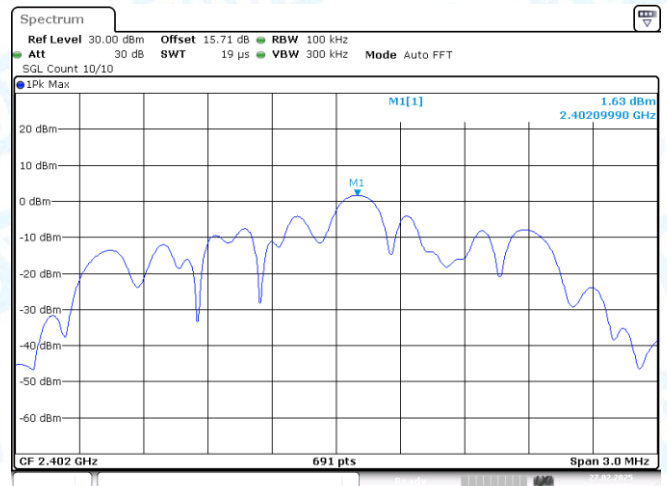
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BLE_1M-Ant1-2480-30~1000-PASS



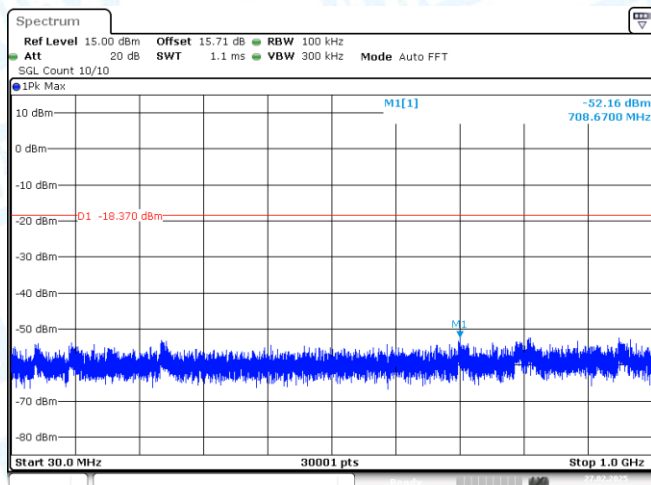
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BLE_1M-Ant1-2480-1000~26500-PASS



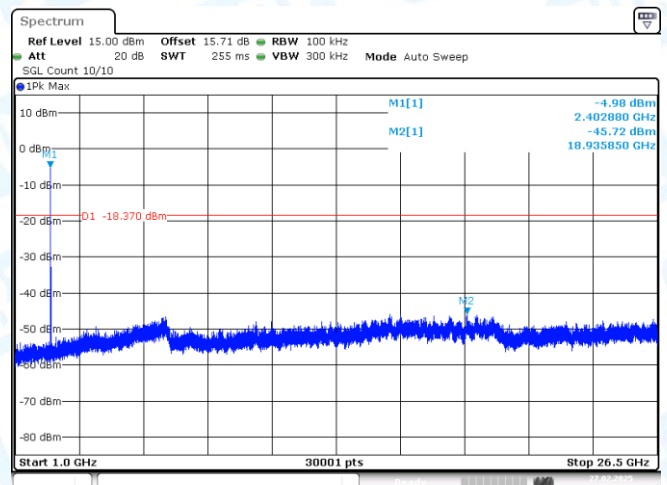
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BLE_2M-Ant1-2402-0~Reference-PASS



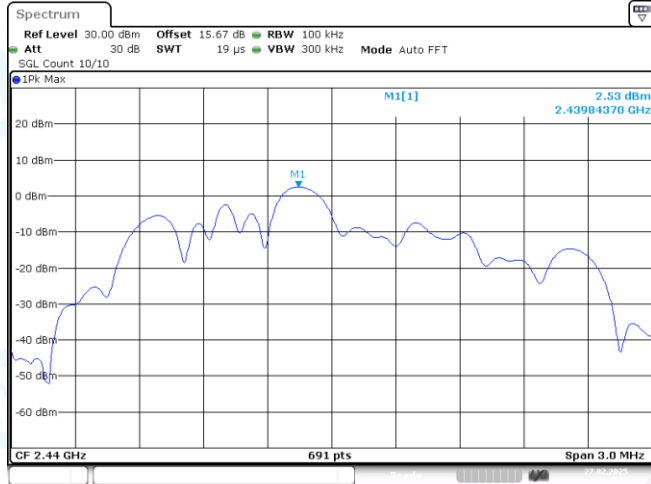
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BLE_2M-Ant1-2402-30~1000-PASS



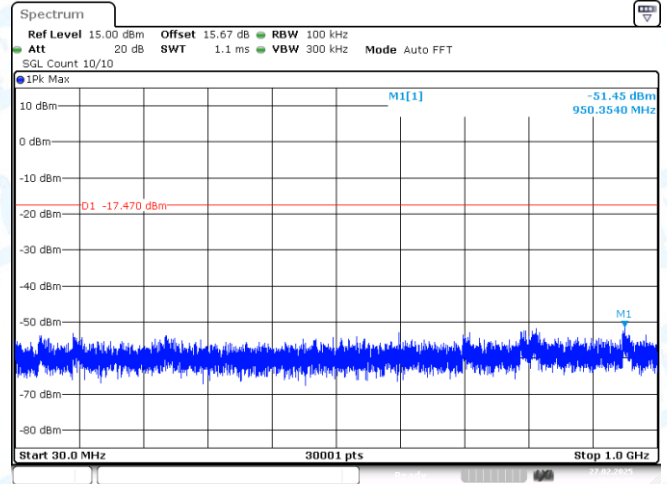
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BLE_2M-Ant1-2402-1000~26500-PASS



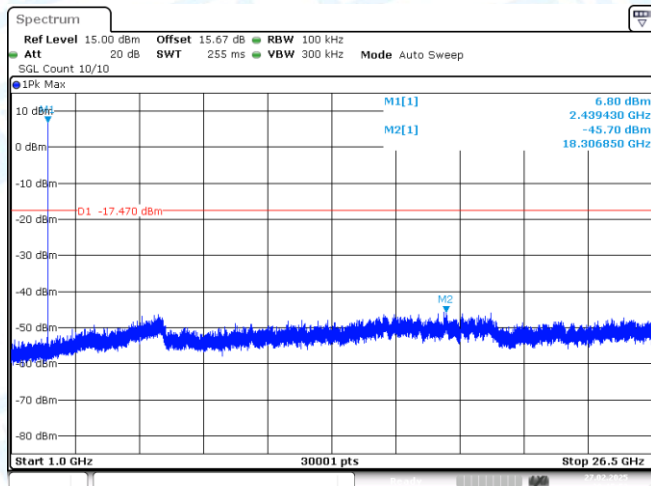
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BLE_2M-Ant1-2440-0~Reference-PASS



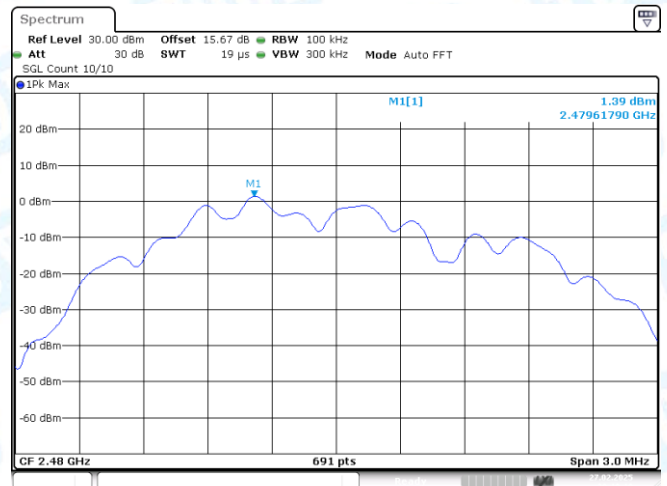
Date: 27.FEB.2025 20:15:35

BLE_2M-Ant1-2440-30~1000-PASS



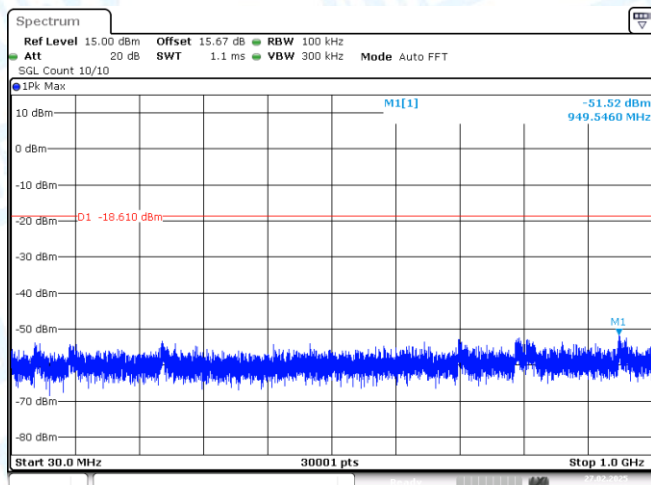
Date: 27.FEB.2025 20:15:52

BLE_2M-Ant1-2440-1000~26500-PASS



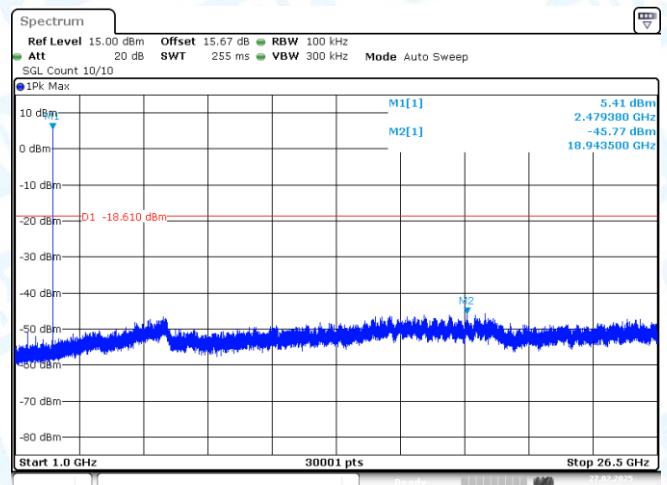
Date: 27.FEB.2025 20:19:11

BLE_2M-Ant1-2480-0~Reference-PASS



Date: 27.FEB.2025 20:19:18

BLE_2M-Ant1-2480-30~1000-PASS



Date: 27.FEB.2025 20:19:36

BLE_2M-Ant1-2480-1000~26500-PASS

7: Duty Cycle

7.1 Test Result

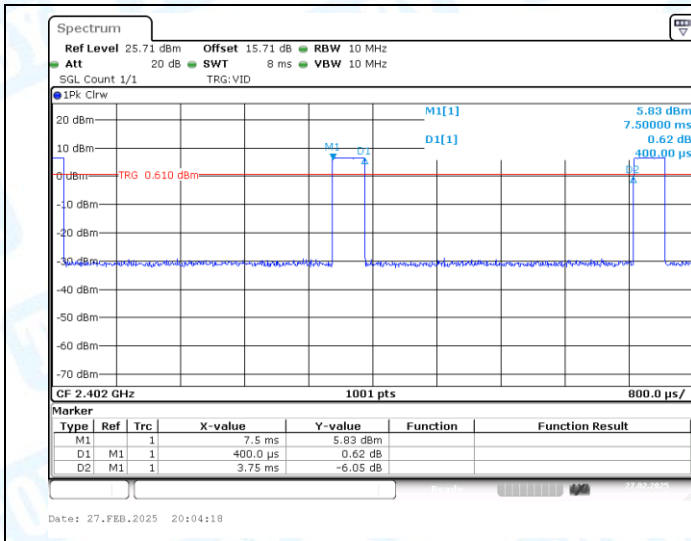
TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factory	1/T [kHz]
BLE_1M	Ant1	2402	0.40	3.75	10.67	9.72	2.50
BLE_1M	Ant1	2440	0.40	3.76	10.64	9.73	2.50
BLE_1M	Ant1	2480	0.40	3.75	10.67	9.72	2.50
BLE_2M	Ant1	2402	0.20	3.75	5.33	12.73	5.00
BLE_2M	Ant1	2440	0.20	3.75	5.33	12.73	5.00
BLE_2M	Ant1	2480	0.20	3.75	5.33	12.73	5.00

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

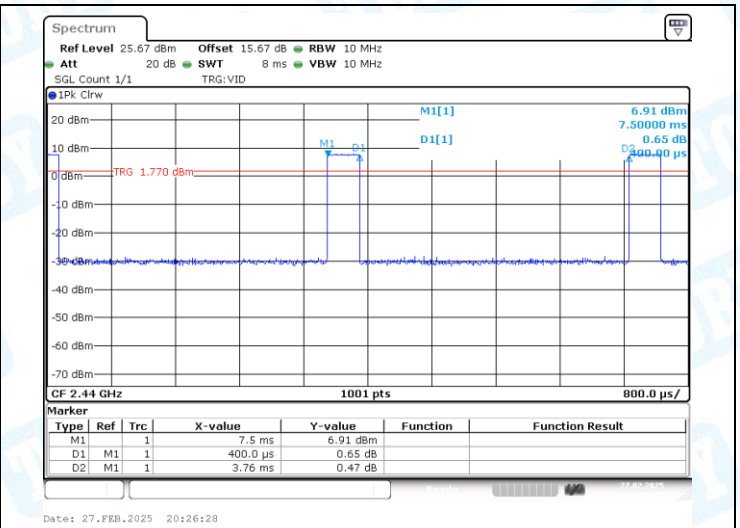
2, DC Factory=10*Log₁₀(1/Duty Cycle)

3, 1/T=1/ Transmission Duration

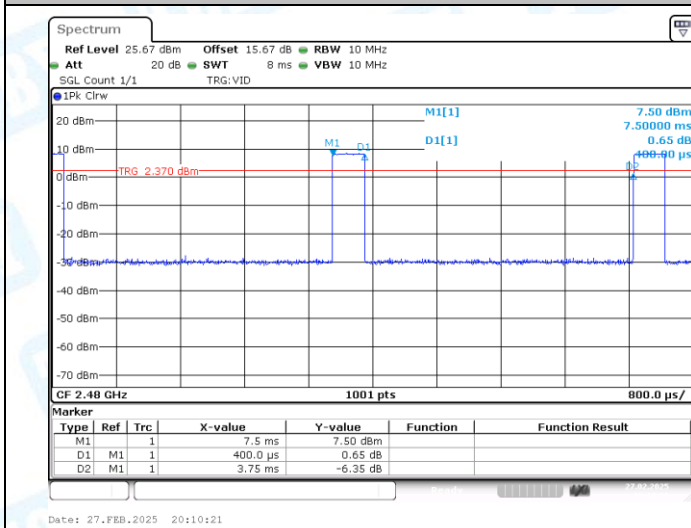
7.2 Test Graphs



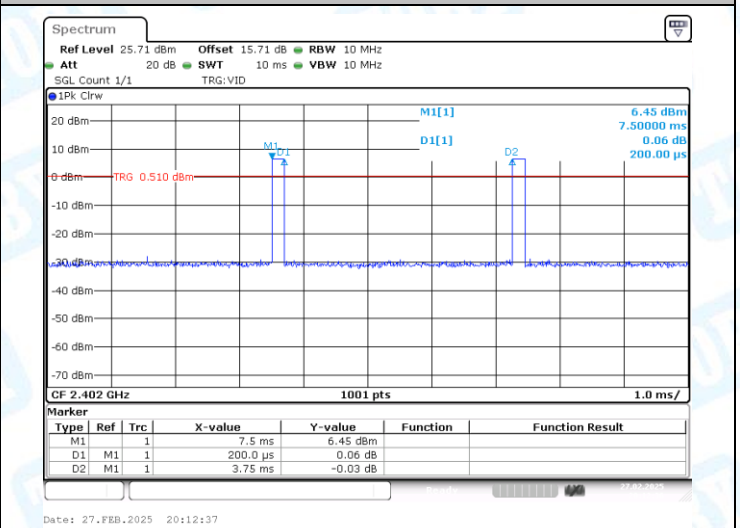
NTNV-BLE_1M-Ant1-2402



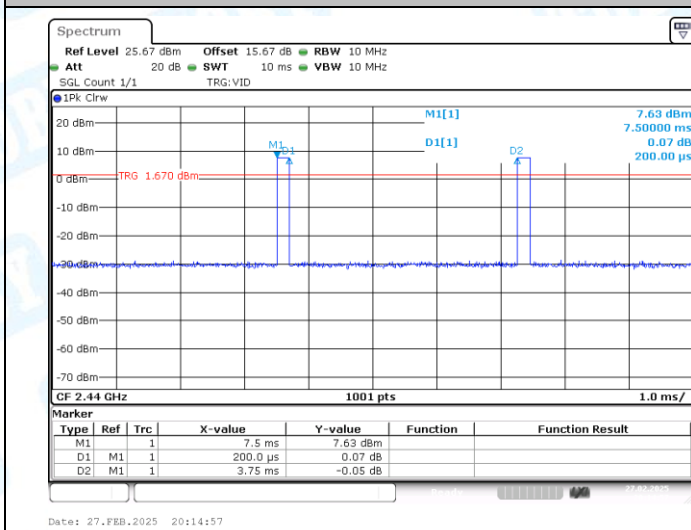
NTNV-BLE_1M-Ant1-2440



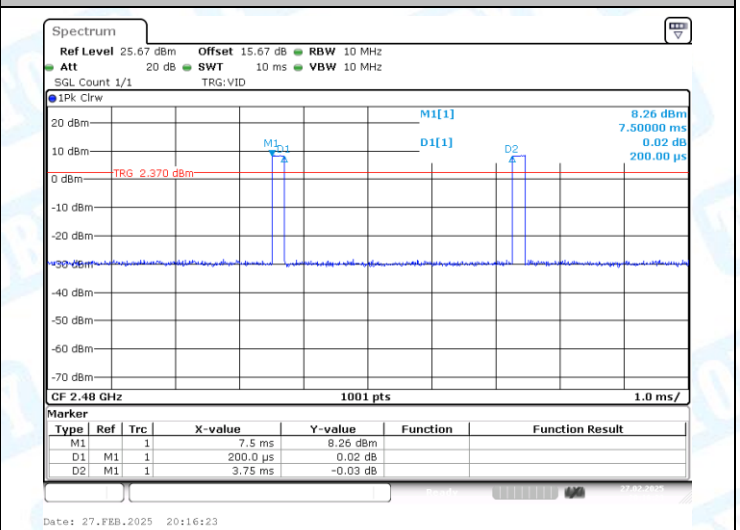
NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480

8: Emissions in Restricted Bands

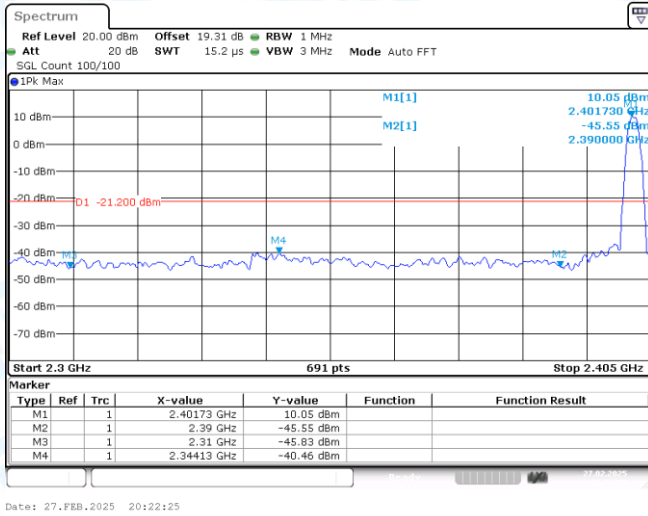
8.1 Test Result

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	-45.55	≤-21.20	49.65	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-45.83	≤-21.20	49.37	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2344.130	-40.46	≤-21.20	54.74	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-50.8	≤-41.20	44.40	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-51.12	≤-41.20	44.08	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2340.022	-48.4	≤-41.20	46.80	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-38.62	≤-21.20	56.58	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-42.33	≤-21.20	52.87	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2484.261	-36.88	≤-21.20	58.32	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-48.71	≤-41.20	46.49	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-50.26	≤-41.20	44.94	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2483.913	-48.3	≤-41.20	46.90	≤54	PASS
BLE_2M	Ant1	Low	2402	Peak	2390.000	-44.64	≤-21.20	50.56	≤74	PASS
BLE_2M	Ant1	Low	2402	Peak	2310.000	-44.7	≤-21.20	50.50	≤74	PASS
BLE_2M	Ant1	Low	2402	Peak	2377.913	-40.26	≤-21.20	54.94	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2390.000	-51.05	≤-41.20	44.15	≤54	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-51.15	≤-41.20	44.05	≤54	PASS
BLE_2M	Ant1	Low	2402	AV	2342.913	-48.61	≤-41.20	46.59	≤54	PASS
BLE_2M	Ant1	High	2480	Peak	2483.500	-45.06	≤-21.20	50.14	≤74	PASS
BLE_2M	Ant1	High	2480	Peak	2500.000	-42.66	≤-21.20	52.54	≤74	PASS
BLE_2M	Ant1	High	2480	Peak	2484.725	-40.22	≤-21.20	54.98	≤74	PASS
BLE_2M	Ant1	High	2480	AV	2483.500	-50.58	≤-41.20	44.62	≤54	PASS
BLE_2M	Ant1	High	2480	AV	2500.000	-51.06	≤-41.20	44.14	≤54	PASS
BLE_2M	Ant1	High	2480	AV	2484.261	-48.89	≤-41.20	46.31	≤54	PASS

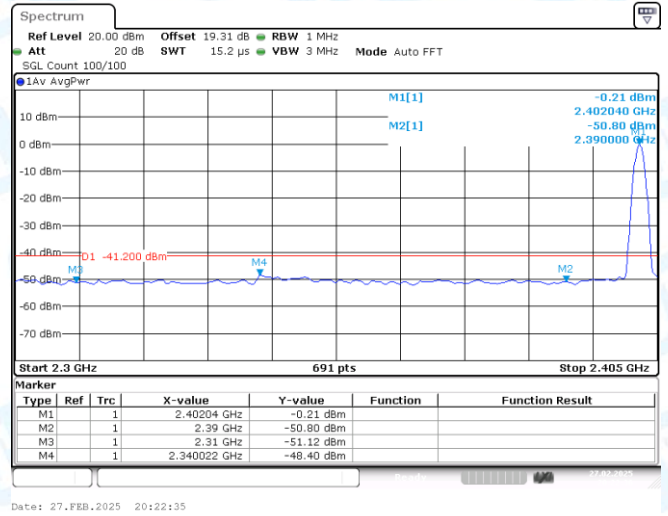
Note:

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.

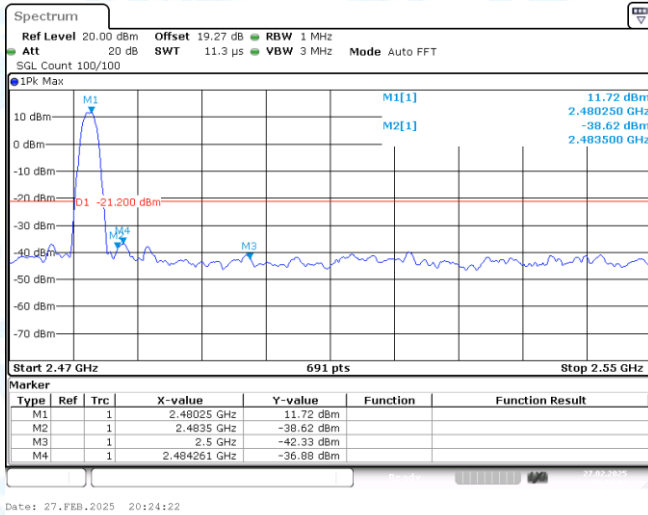
8.2 Test Graphs



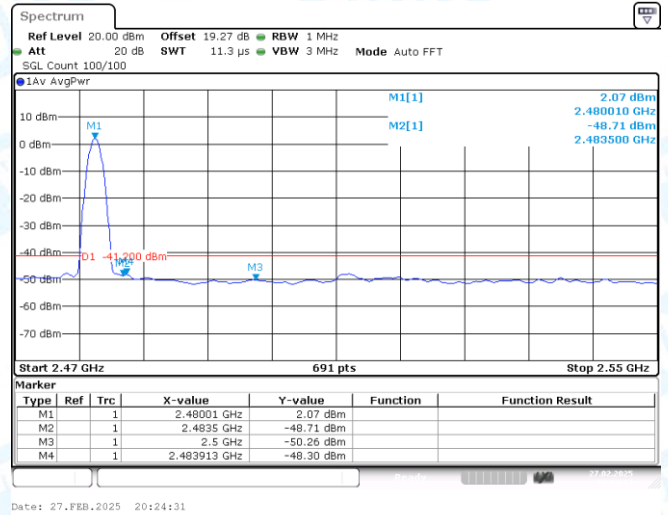
BLE_1M-Ant1-2402-PASS



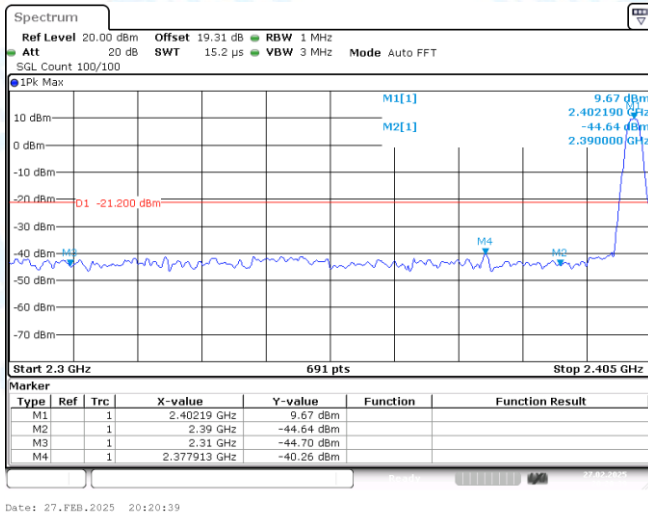
BLE_1M-Ant1-2402-PASS



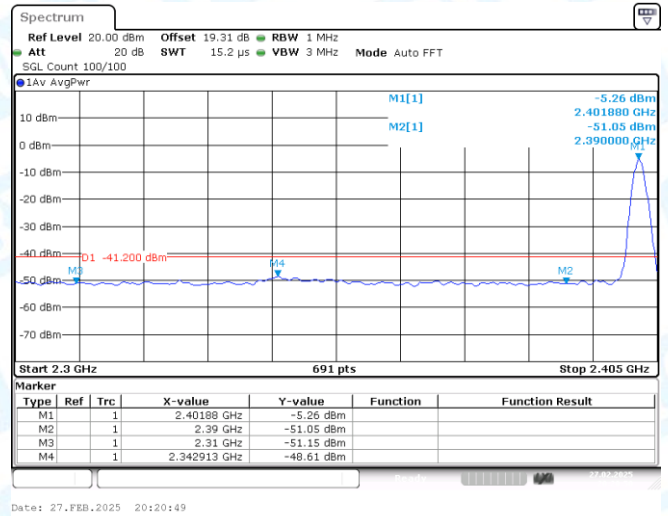
BLE_1M-Ant1-2480-PASS



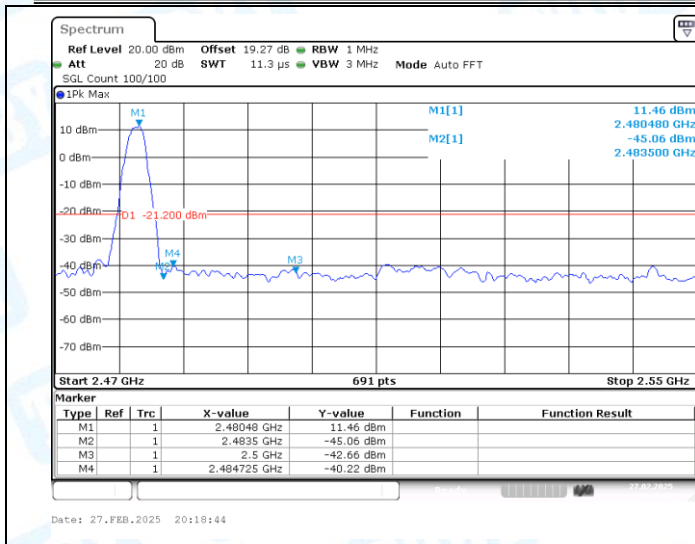
BLE_1M-Ant1-2480-PASS



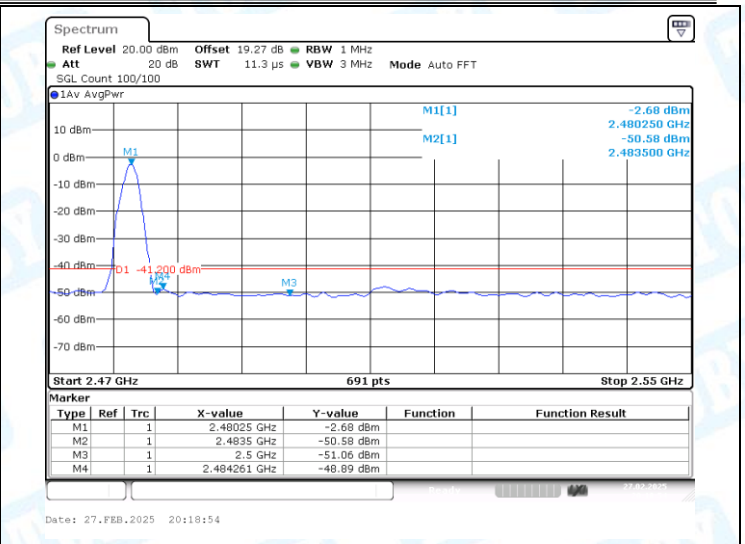
BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2480-PASS



BLE_2M-Ant1-2480-PASS

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