

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Retro Mini PC
Test Model:	AYANEO Retro Mini PC AM02
Sample ID:	HC-C-202311-0249-01-02-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 20V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202311-0249-61	

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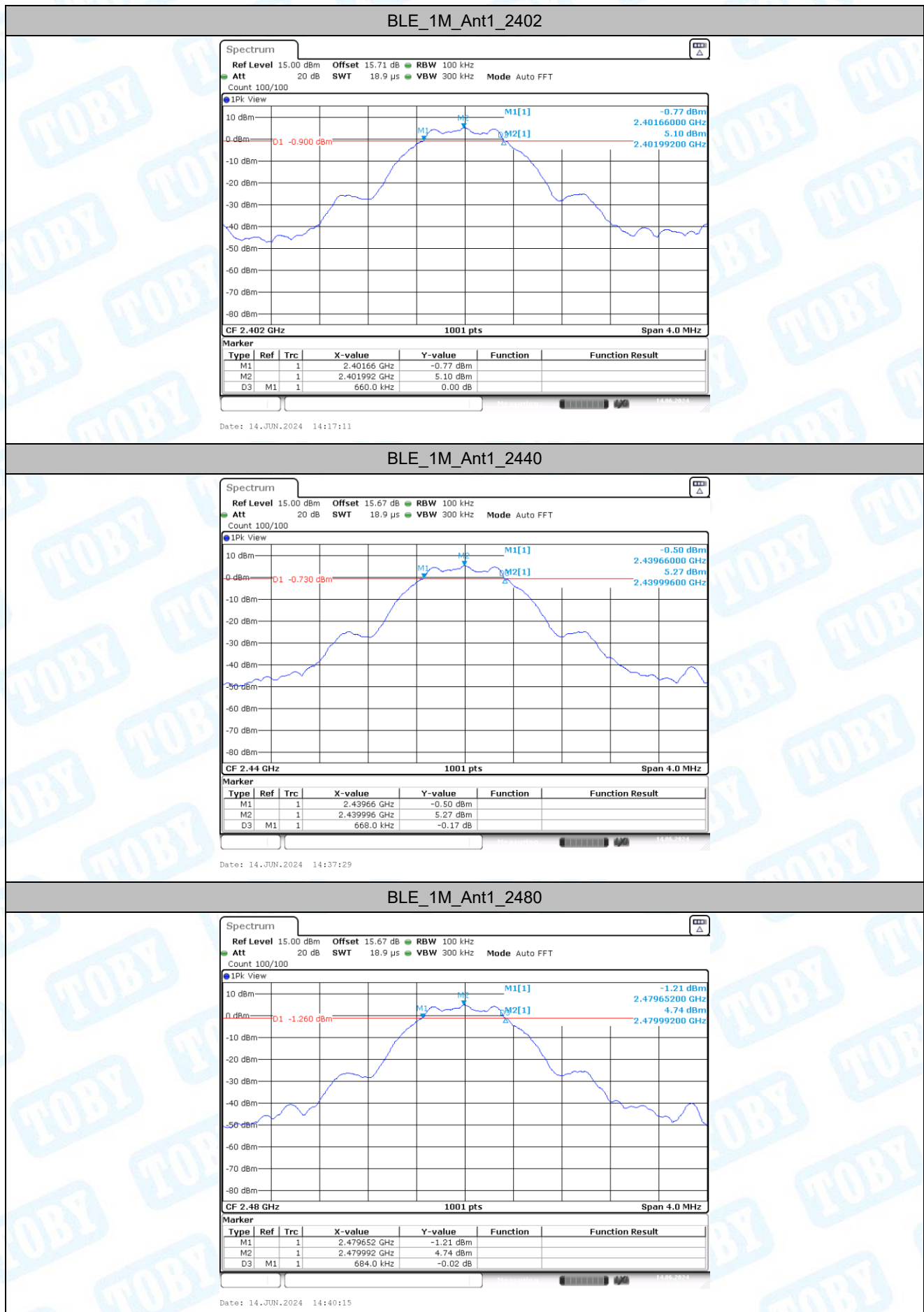
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1. DTS Bandwidth

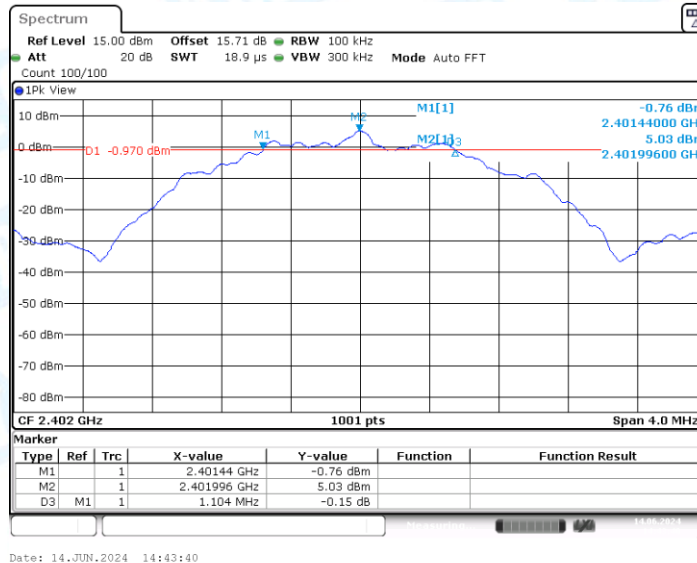
1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.66	2402.32	0.5	PASS
		2440	0.67	2439.66	2440.33	0.5	PASS
		2480	0.68	2479.65	2480.34	0.5	PASS
BLE_2M	Ant1	2402	1.10	2401.44	2402.54	0.5	PASS
		2440	1.12	2439.44	2440.56	0.5	PASS
		2480	1.12	2479.44	2480.56	0.5	PASS

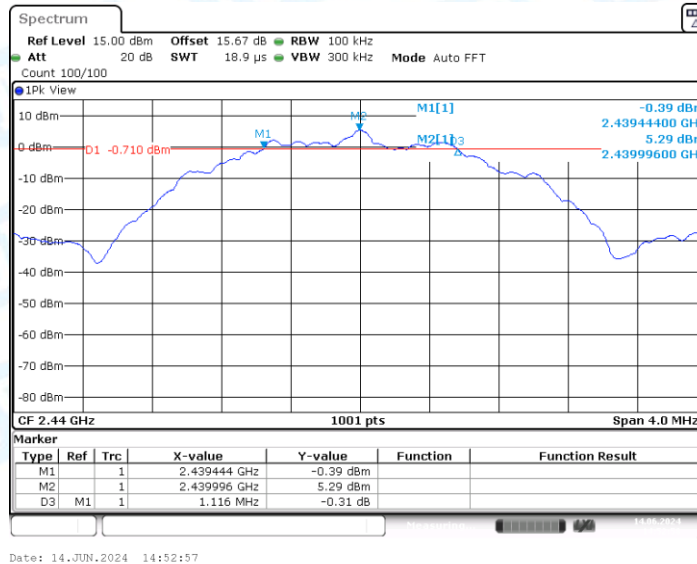
1.2. Test Graphs



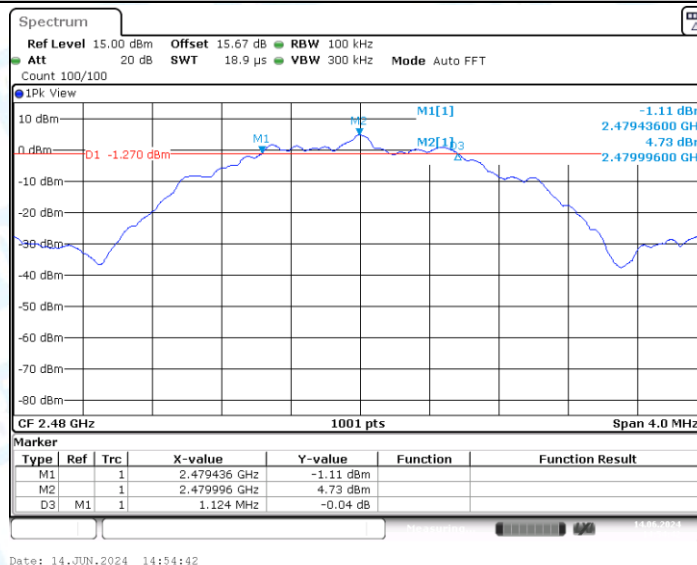
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

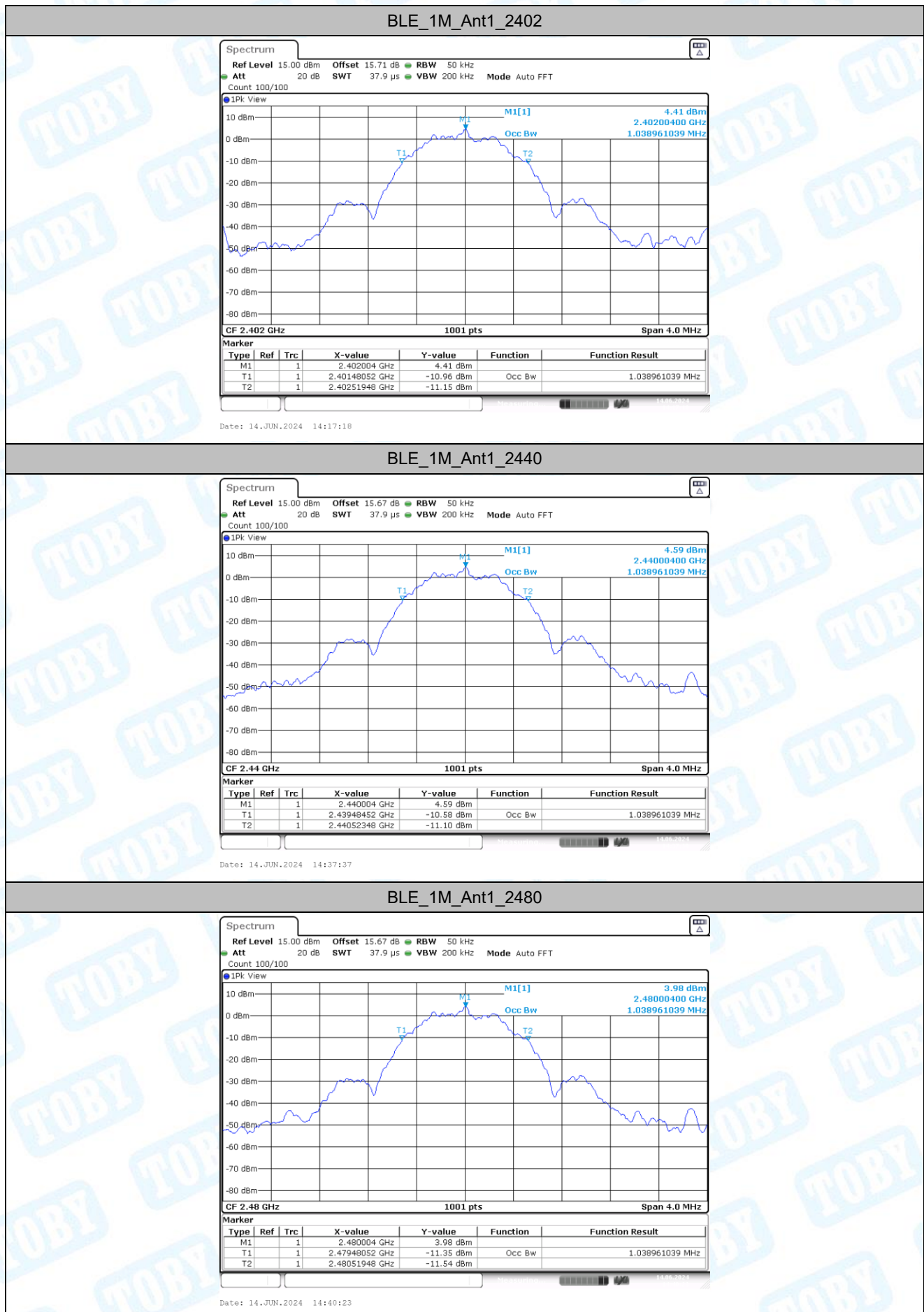


2. Occupied Channel Bandwidth

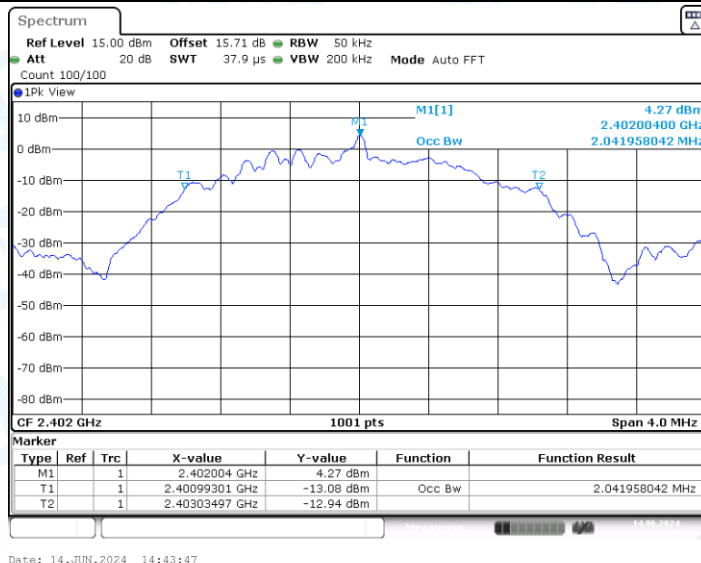
2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.039	2401.4805	2402.5195	---	---
		2440	1.039	2439.4845	2440.5235	---	---
		2480	1.039	2479.4805	2480.5195	---	---
BLE_2M	Ant1	2402	2.042	2400.9930	2403.0350	---	---
		2440	2.038	2438.9970	2441.0350	---	---
		2480	2.038	2478.9970	2481.0350	---	---

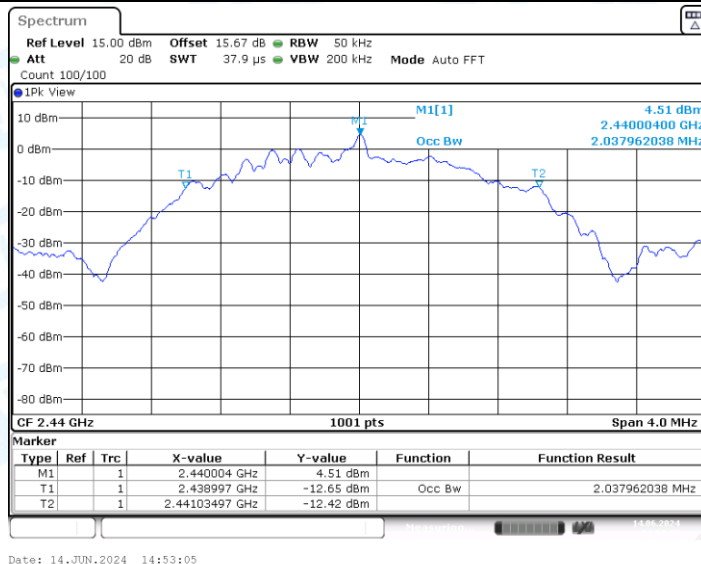
2.2. Test Graphs



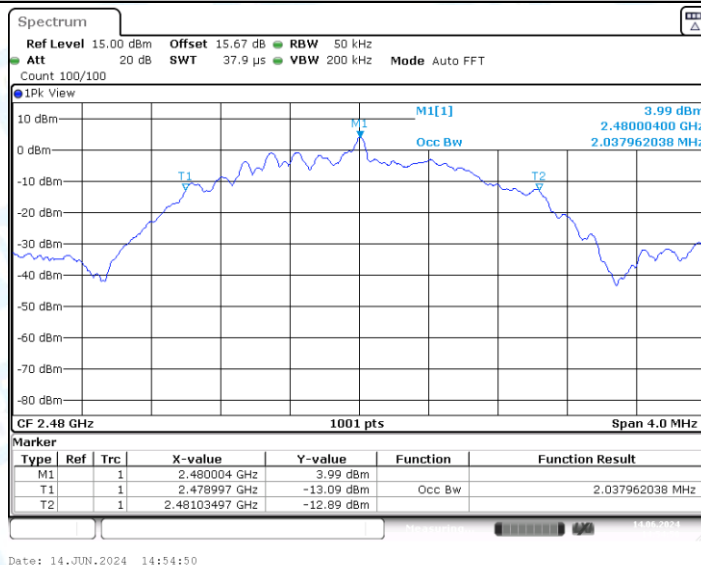
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

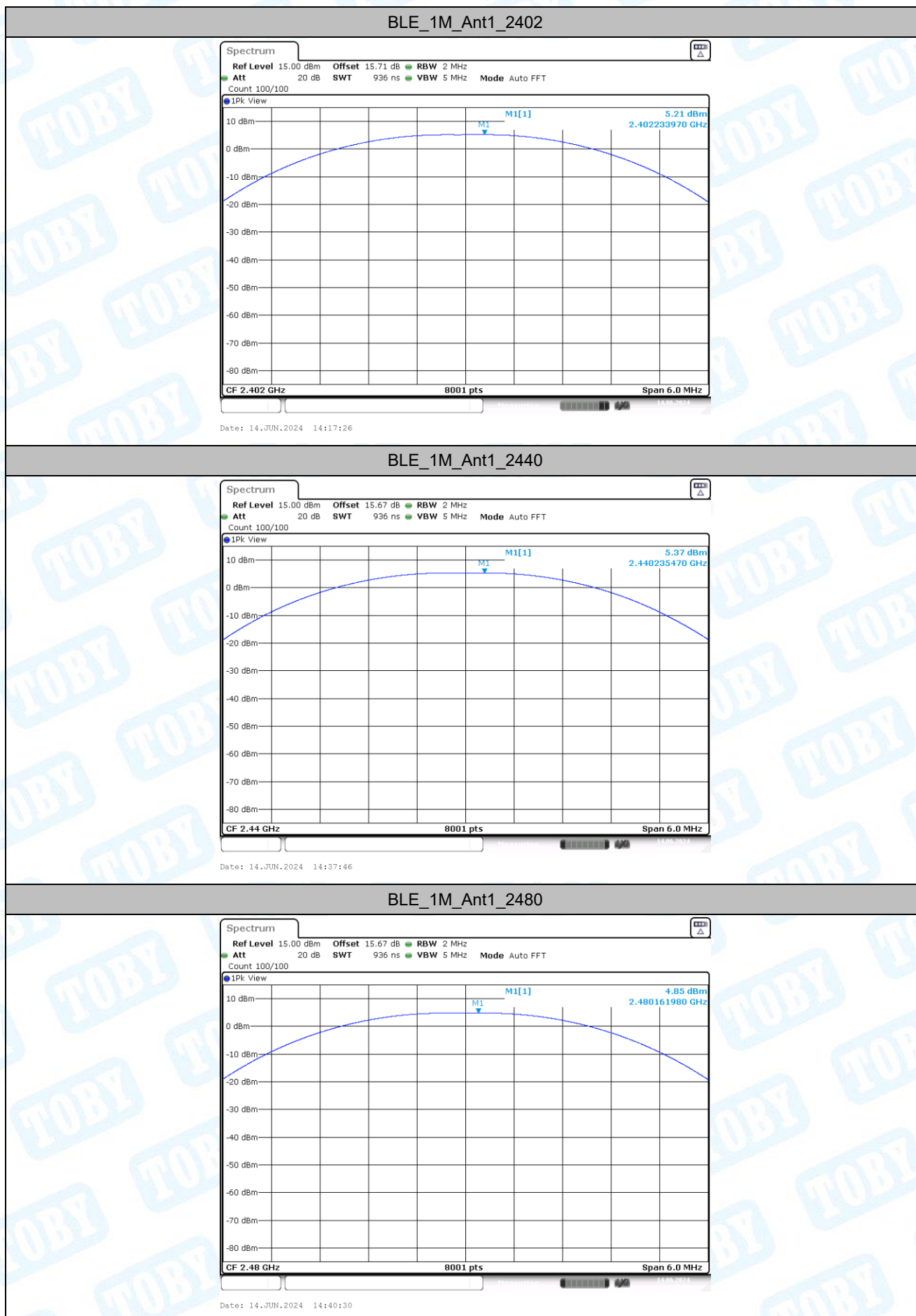


3. Maximum conducted output power

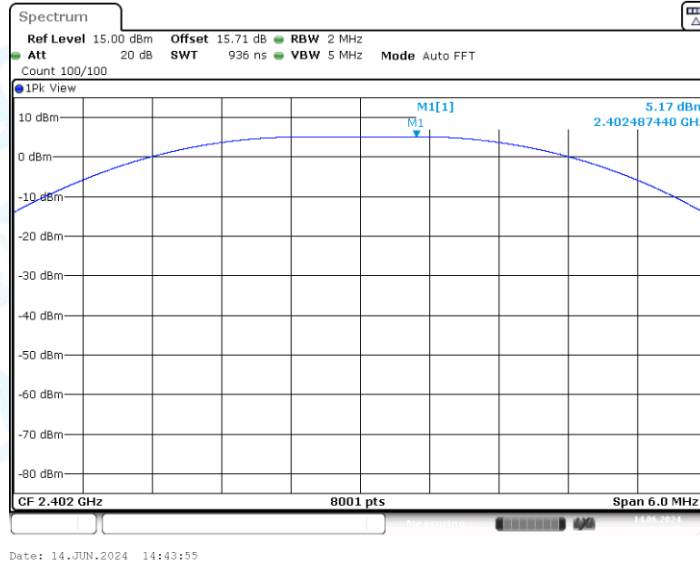
3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.21	≤30	PASS
		2440	5.37	≤30	PASS
		2480	4.85	≤30	PASS
BLE_2M	Ant1	2402	5.17	≤30	PASS
		2440	5.39	≤30	PASS
		2480	4.84	≤30	PASS

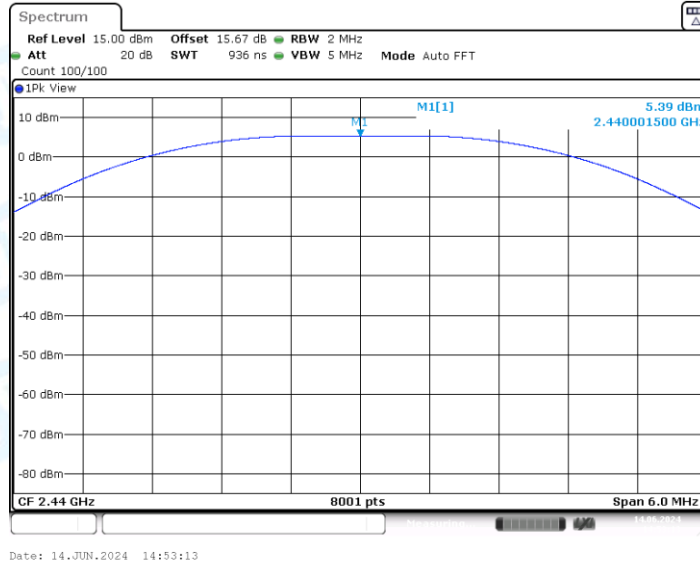
3.2. Test Graphs



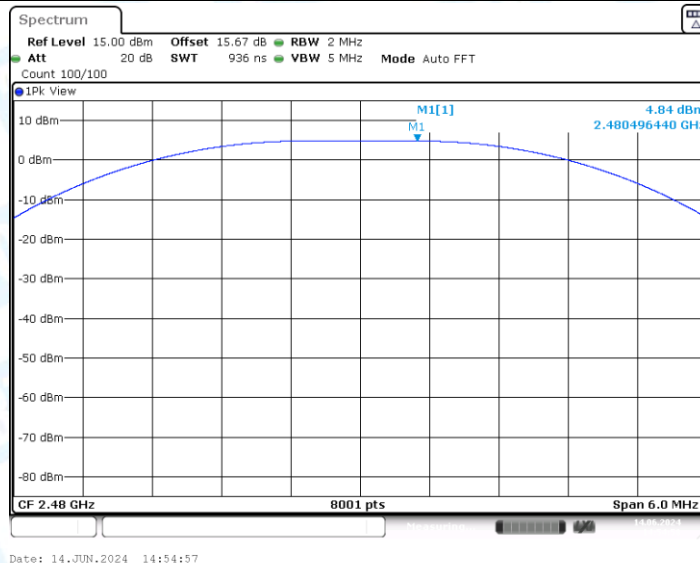
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

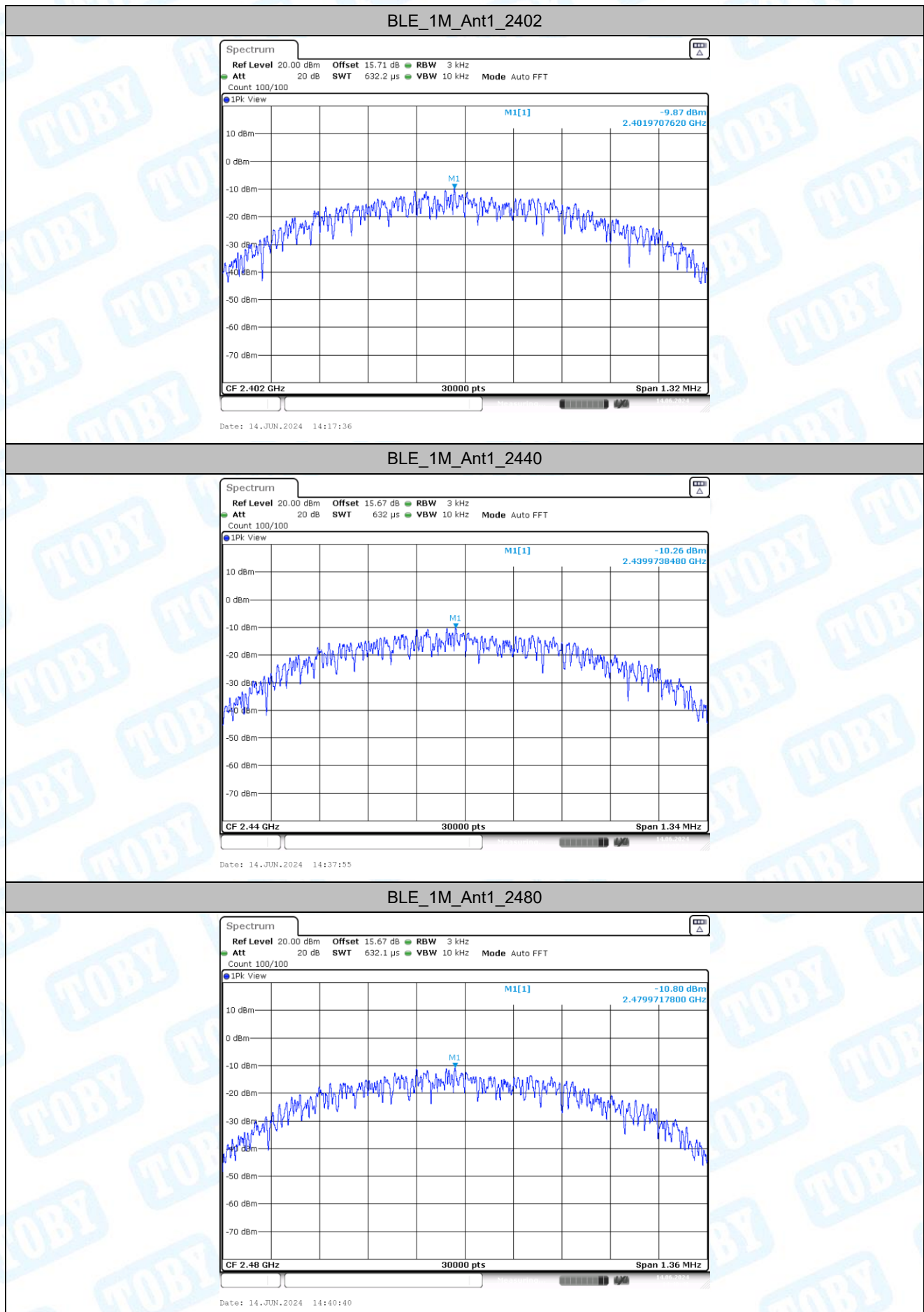


4. Maximum power spectral density

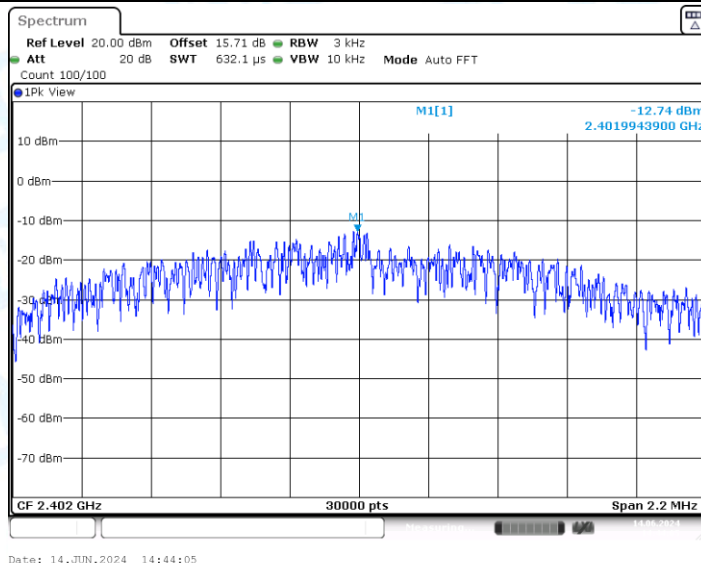
4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.87	≤8.00	PASS
		2440	-10.26	≤8.00	PASS
		2480	-10.80	≤8.00	PASS
BLE_2M	Ant1	2402	-12.74	≤8.00	PASS
		2440	-12.50	≤8.00	PASS
		2480	-12.94	≤8.00	PASS

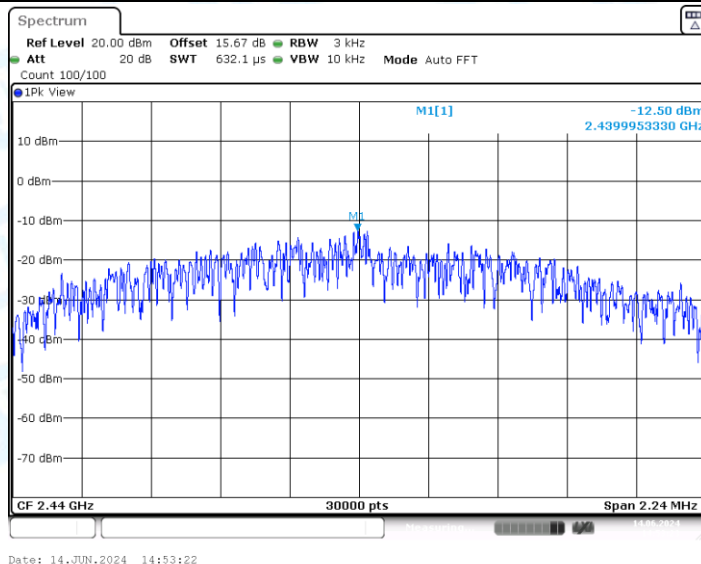
4.2. Test Graphs



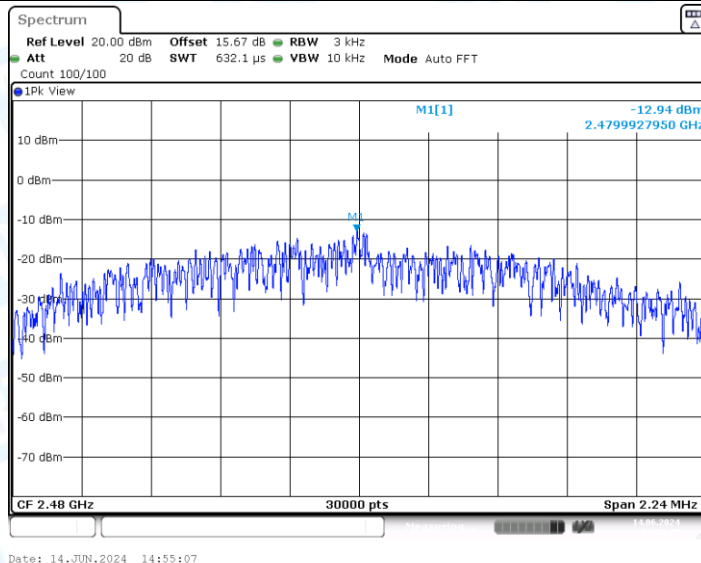
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

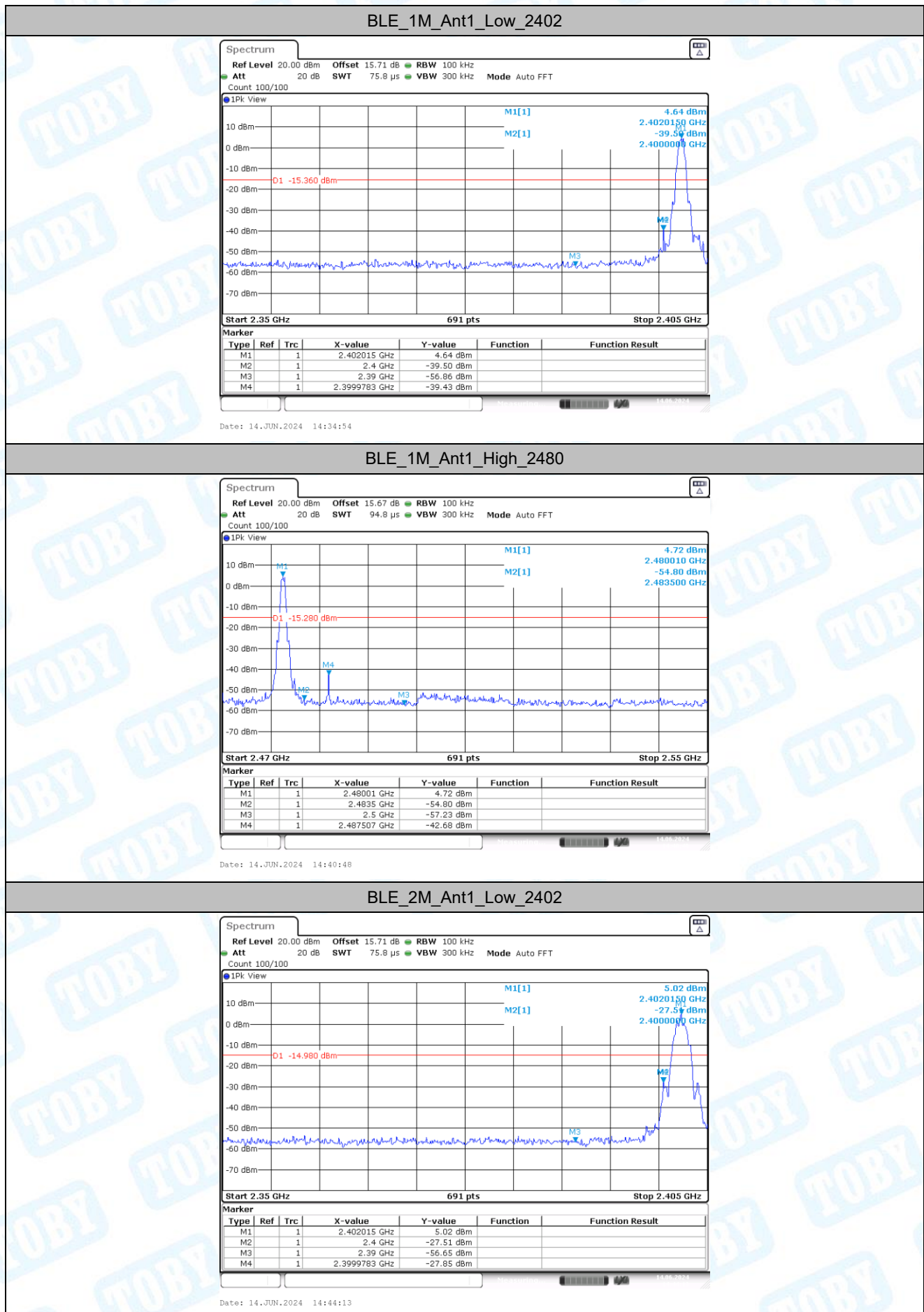


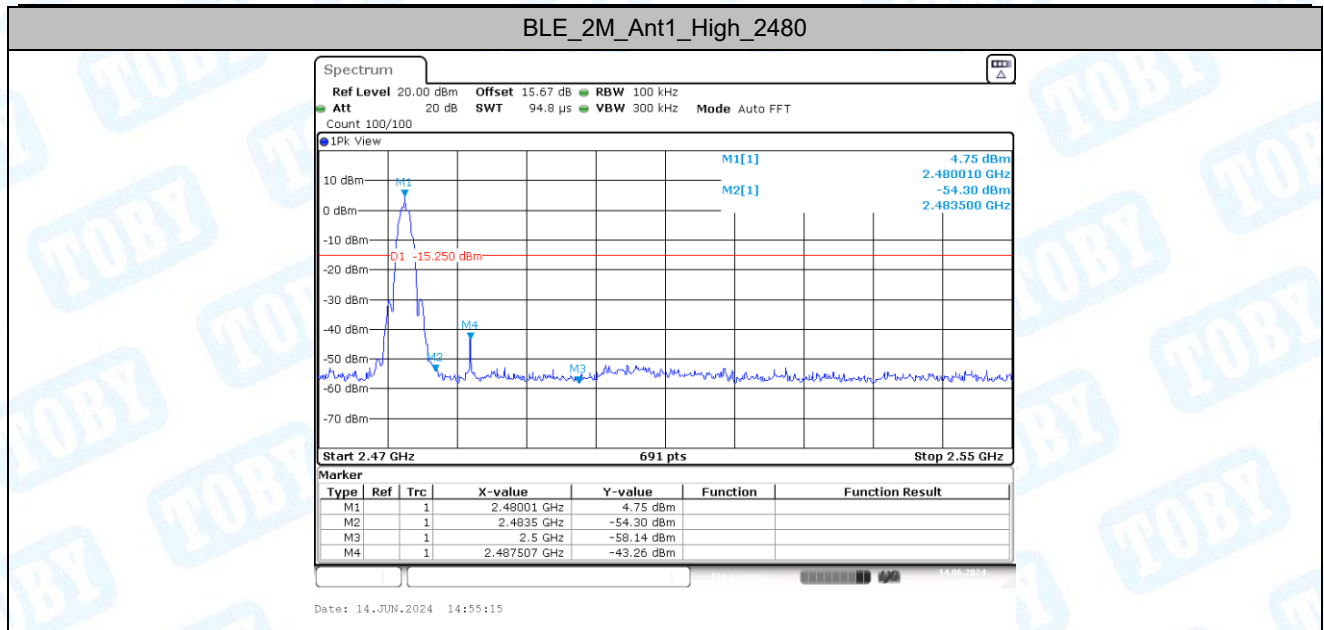
5. Band edge measurements

5.1. Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.64	-39.43	≤-15.36	PASS
		High	2480	4.72	-42.68	≤-15.28	PASS
BLE_2M	Ant1	Low	2402	5.02	-27.85	≤-14.98	PASS
		High	2480	4.75	-43.26	≤-15.25	PASS

5.2. Test Graphs





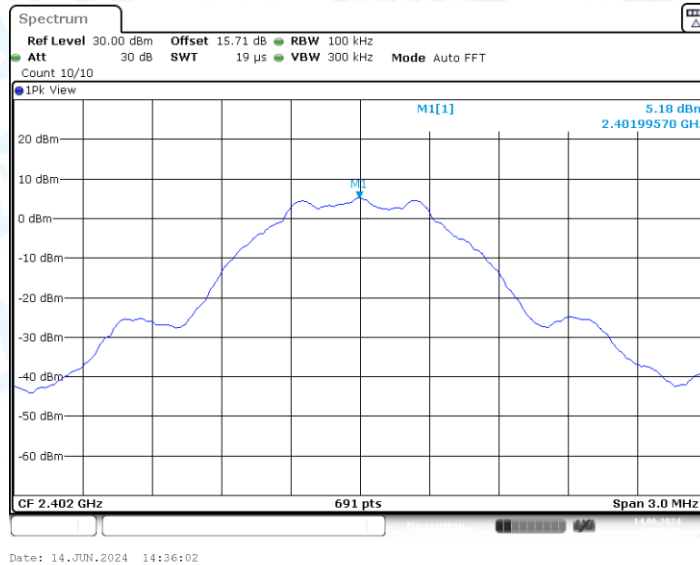
6. Conducted Spurious Emission

6.1. Test Result

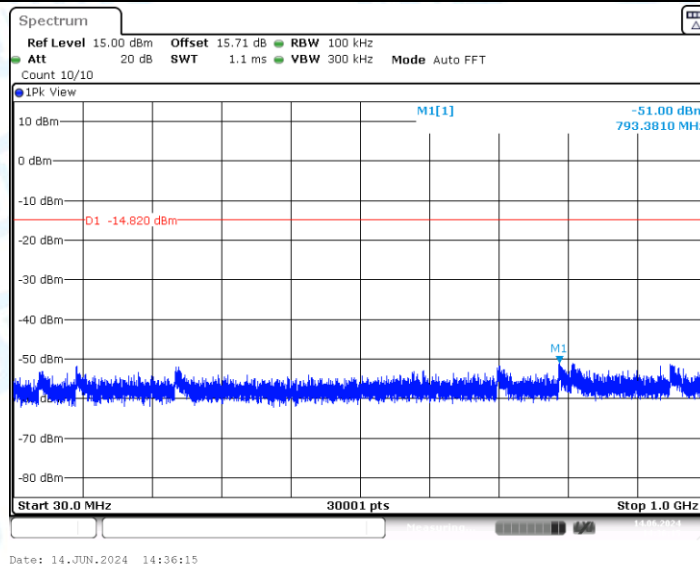
Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	5.18	5.18	---	PASS
			30~1000	5.18	-51	≤-14.82	PASS
			1000~26500	5.18	-45.45	≤-14.82	PASS
		2440	Reference	5.24	5.24	---	PASS
			30~1000	5.24	-50.72	≤-14.76	PASS
			1000~26500	5.24	-44.66	≤-14.76	PASS
		2480	Reference	4.72	4.72	---	PASS
			30~1000	4.72	-50.04	≤-15.28	PASS
			1000~26500	4.72	-45.08	≤-15.28	PASS
BLE_2M	Ant1	2402	Reference	5.09	5.09	---	PASS
			30~1000	5.09	-49.71	≤-14.91	PASS
			1000~26500	5.09	-45.06	≤-14.91	PASS
		2440	Reference	5.28	5.28	---	PASS
			30~1000	5.28	-50.41	≤-14.72	PASS
			1000~26500	5.28	-45.08	≤-14.72	PASS
		2480	Reference	4.72	4.72	---	PASS
			30~1000	4.72	-49.74	≤-15.28	PASS
			1000~26500	4.72	-43.96	≤-15.28	PASS

6.2. Test Graphs

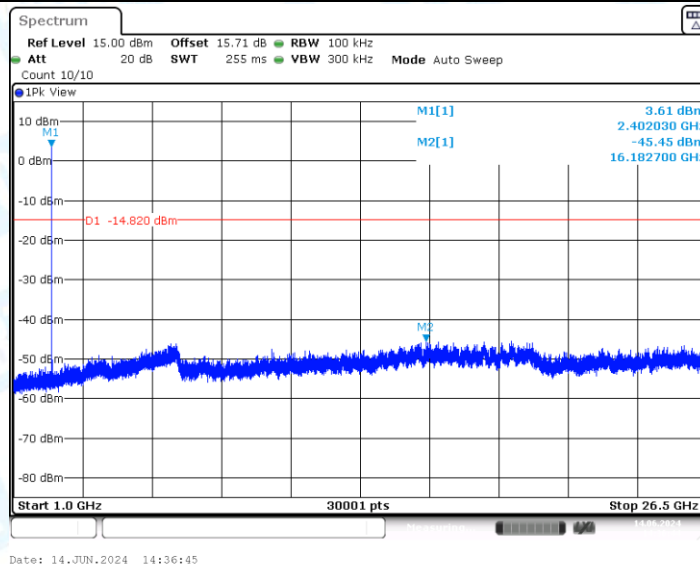
BLE_1M_Ant1_2402_0~Reference



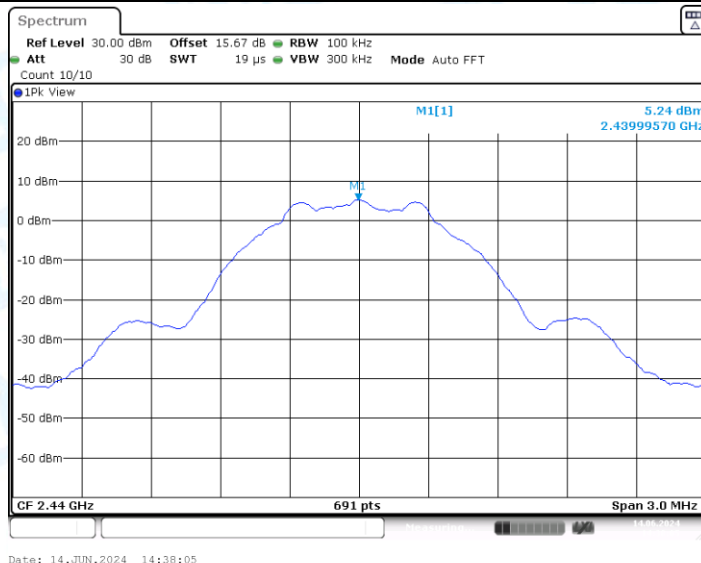
BLE_1M_Ant1_2402_30~1000



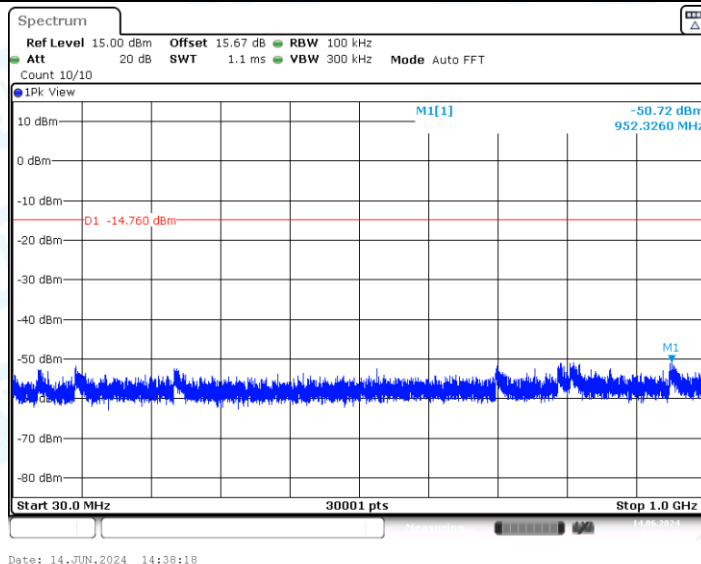
BLE_1M_Ant1_2402_1000~26500



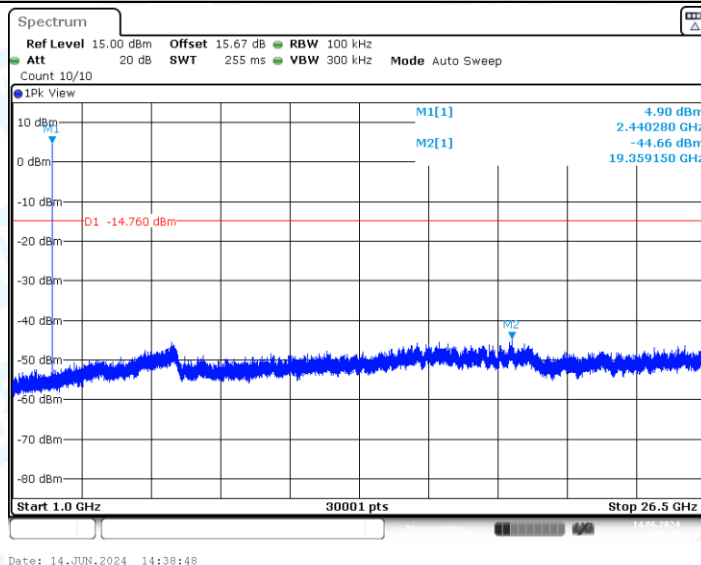
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



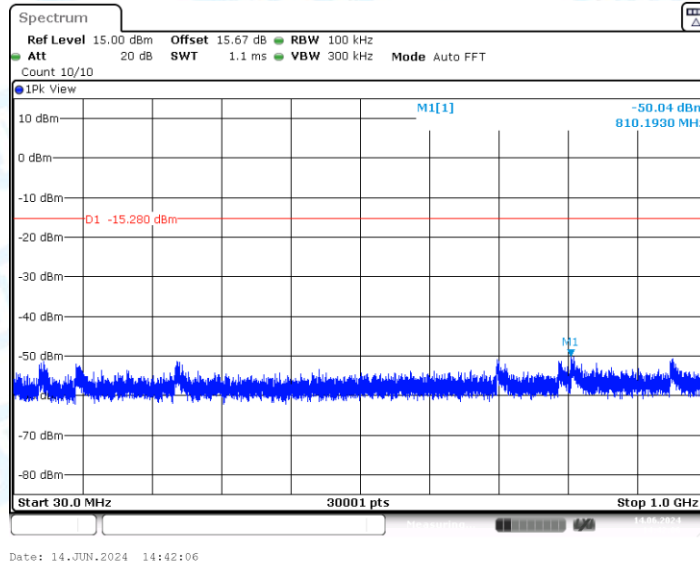
BLE_1M_Ant1_2440_1000~26500



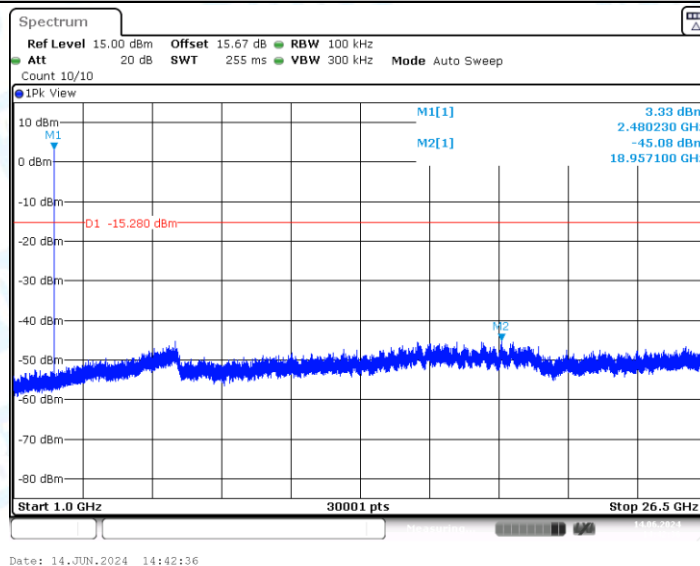
BLE_1M_Ant1_2480_0~Reference



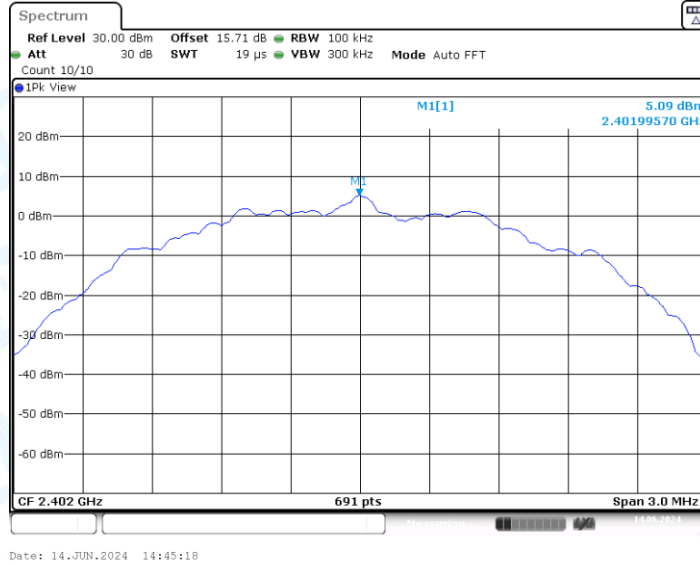
BLE_1M_Ant1_2480_30~1000



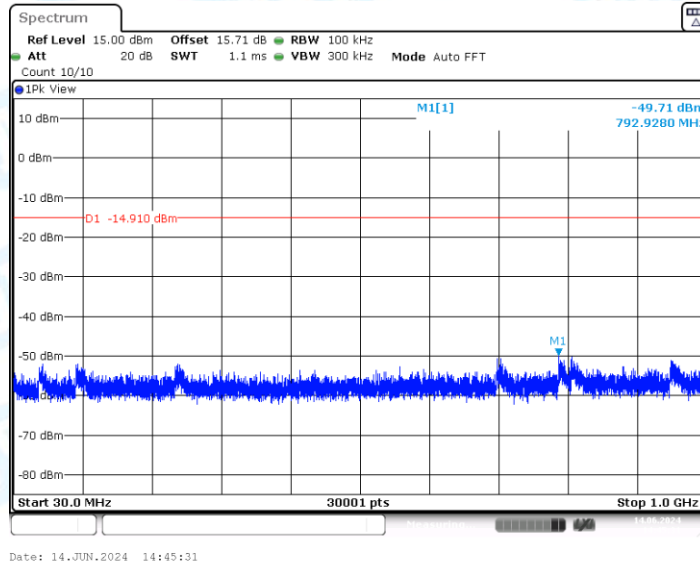
BLE_1M_Ant1_2480_1000~26500



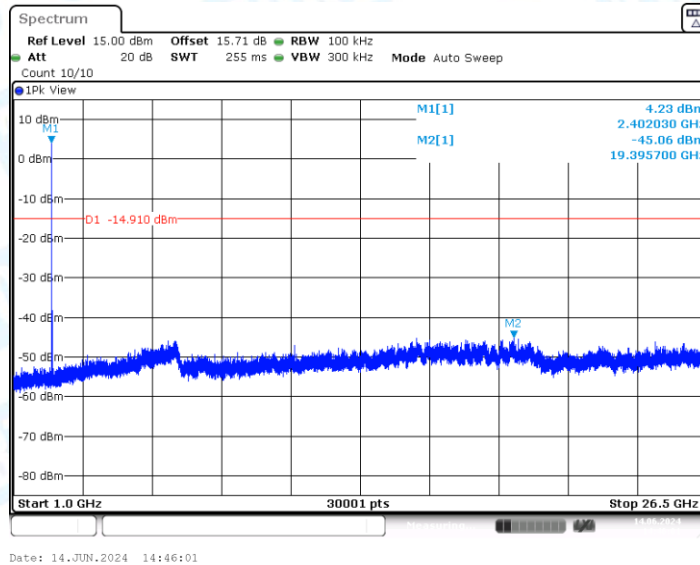
BLE_2M_Ant1_2402_0~Reference



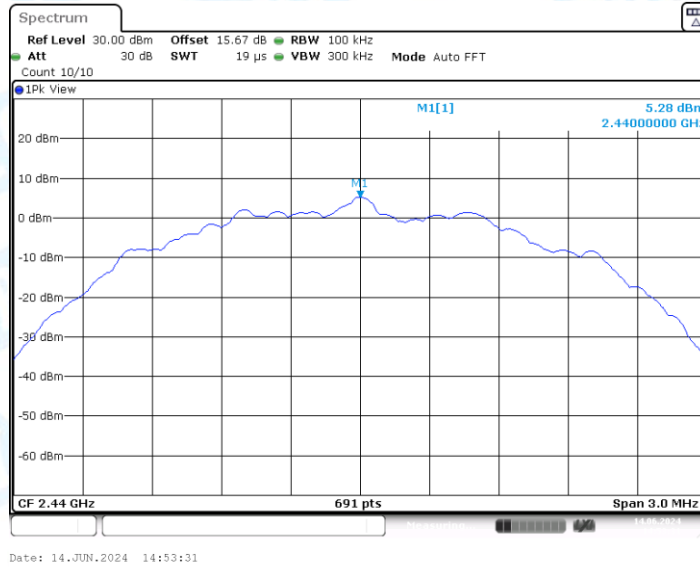
BLE_2M_Ant1_2402_30~1000



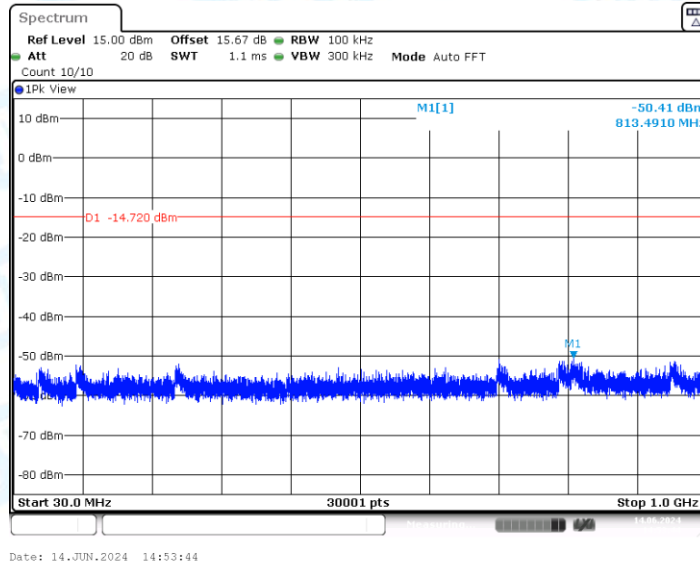
BLE_2M_Ant1_2402_1000~26500



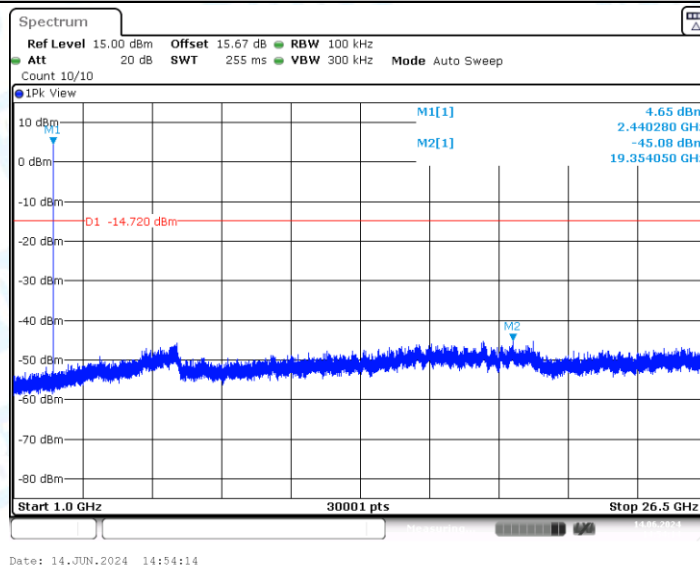
BLE_2M_Ant1_2440_0~Reference



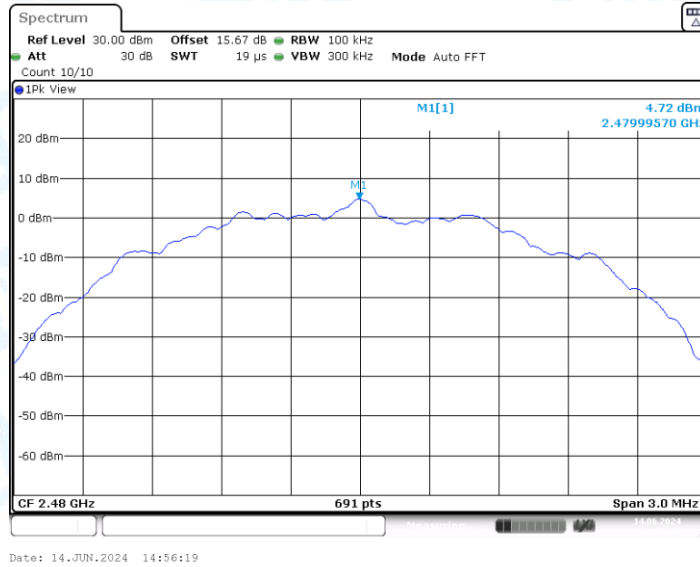
BLE_2M_Ant1_2440_30~1000



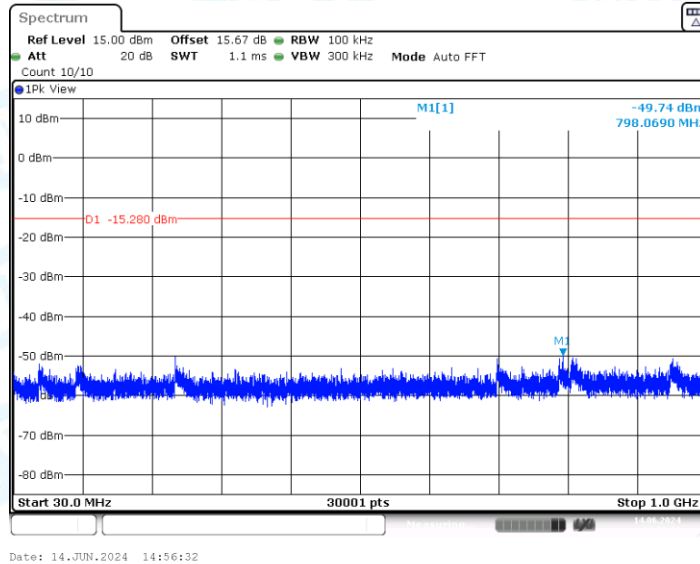
BLE_2M_Ant1_2440_1000~26500



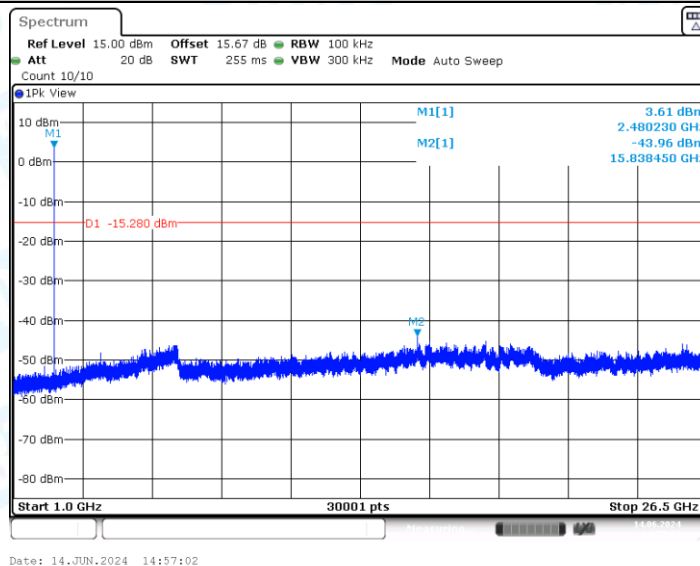
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



7. Duty Cycle

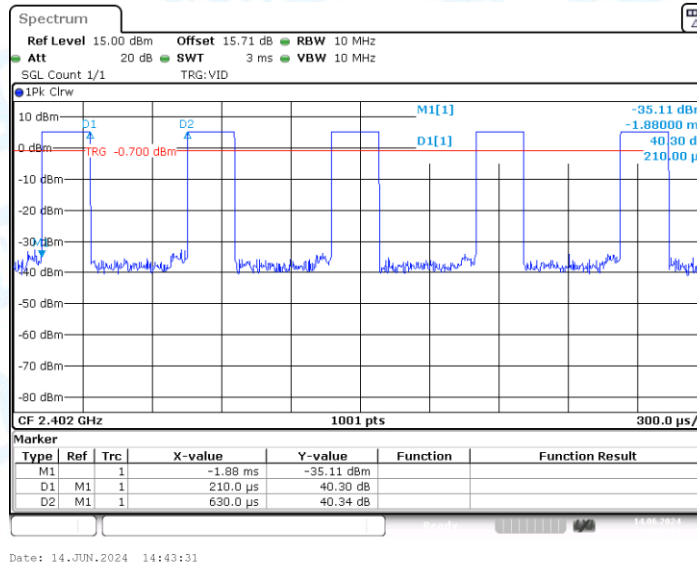
7.1. Test Result

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.39	0.62	62.90	---	---
		2440	0.39	0.62	62.90	---	---
		2480	0.39	0.62	62.90	---	---
BLE_2M	Ant1	2402	0.21	0.63	33.33	---	---
		2440	0.21	0.63	33.33	---	---
		2480	0.21	0.63	33.33	---	---

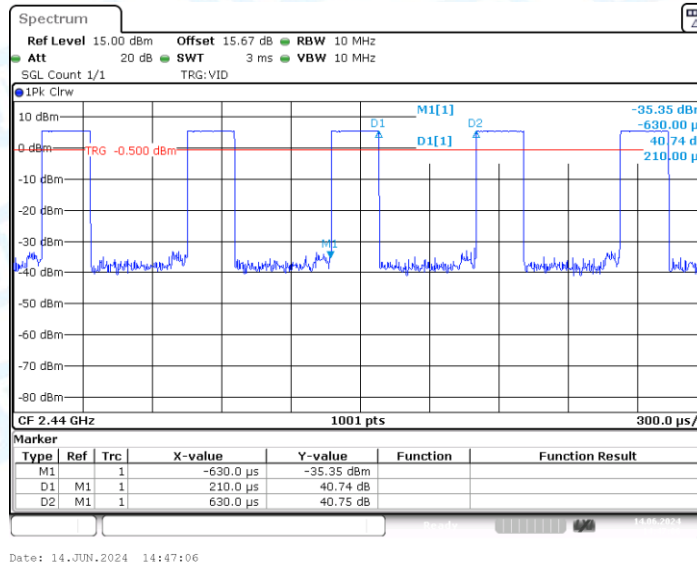
7.2. Test Graphs



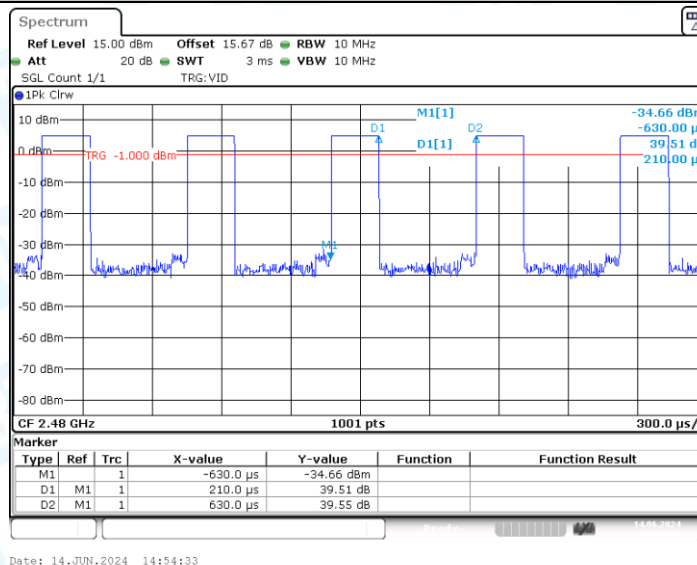
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



8. Emissions in Restricted Bands

8.1. Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-53.55	≤-41.20	PASS
				AV	2342.000	-50.17	≤-41.20	PASS
				AV	2390.000	-53.8	≤-41.20	PASS
				Peak	2310.000	-43.06	≤-21.20	PASS
				Peak	2341.696	-37.06	≤-21.20	PASS
				Peak	2390.000	-43.63	≤-21.20	PASS
		High	2480	AV	2483.500	-52.35	≤-41.20	PASS
				AV	2487.623	-51.01	≤-41.20	PASS
				AV	2500.000	-53.3	≤-41.20	PASS
				Peak	2483.500	-43.22	≤-21.20	PASS
				Peak	2487.507	-36.57	≤-21.20	PASS
				Peak	2500.000	-42.67	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-53.75	≤-41.20	PASS
				AV	2341.848	-49.98	≤-41.20	PASS
				AV	2390.000	-53.66	≤-41.20	PASS
				Peak	2310.000	-43.24	≤-21.20	PASS
				Peak	2342.304	-40.25	≤-21.20	PASS
				Peak	2390.000	-43.64	≤-21.20	PASS
		High	2480	AV	2483.500	-49.03	≤-41.20	PASS
				AV	2483.565	-49.81	≤-41.20	PASS
				AV	2500.000	-52.84	≤-41.20	PASS
				Peak	2483.500	-39.8	≤-21.20	PASS
				Peak	2487.507	-37.02	≤-21.20	PASS
				Peak	2500.000	-44.06	≤-21.20	PASS

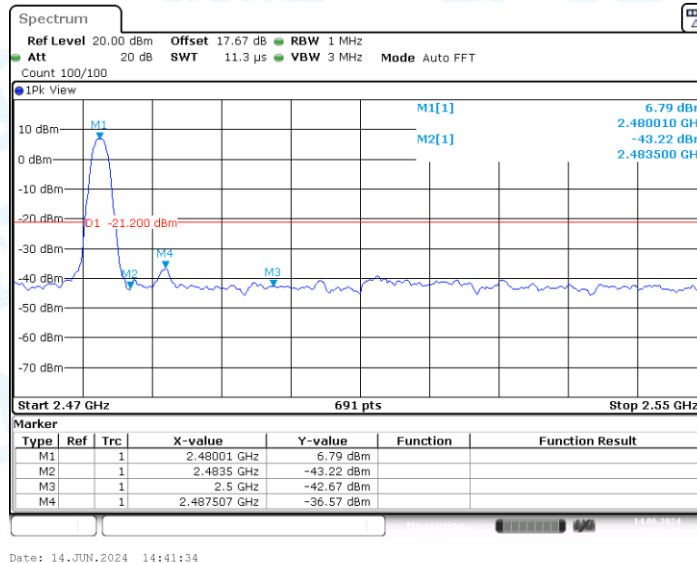
Note:

- The Antenna Gain is compensated in the graph.
- 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.

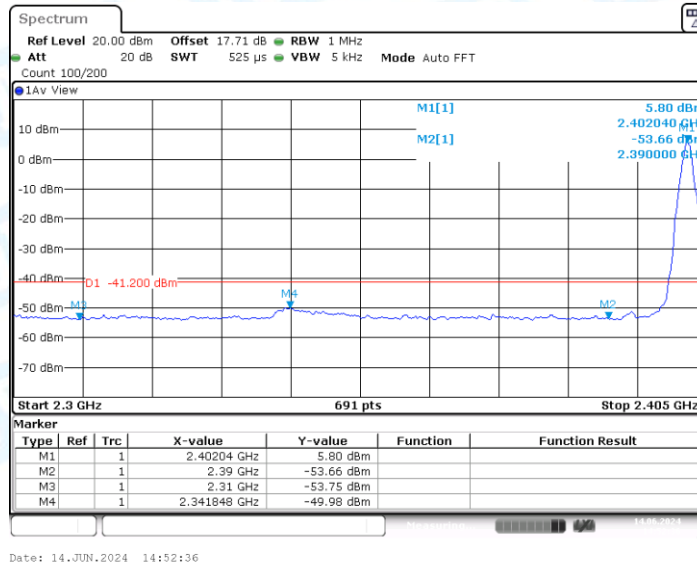
8.2. Test Graphs



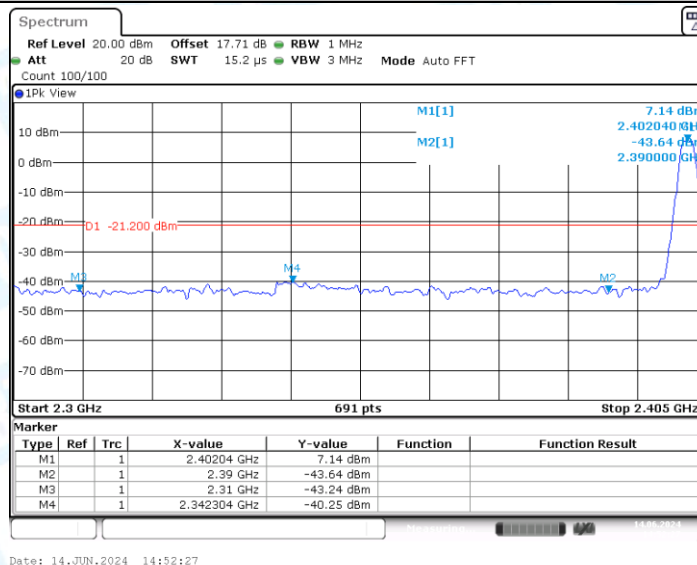
BLE_1M_Ant1_High_2480_Peak



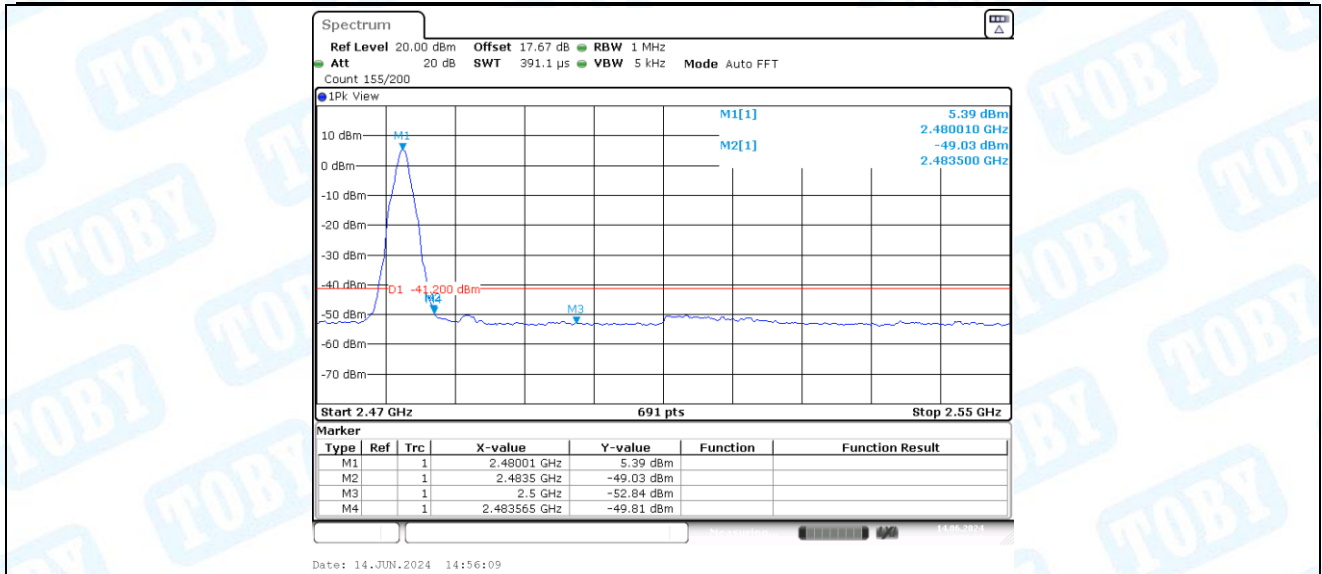
BLE_2M_Ant1_Low_2402_AV



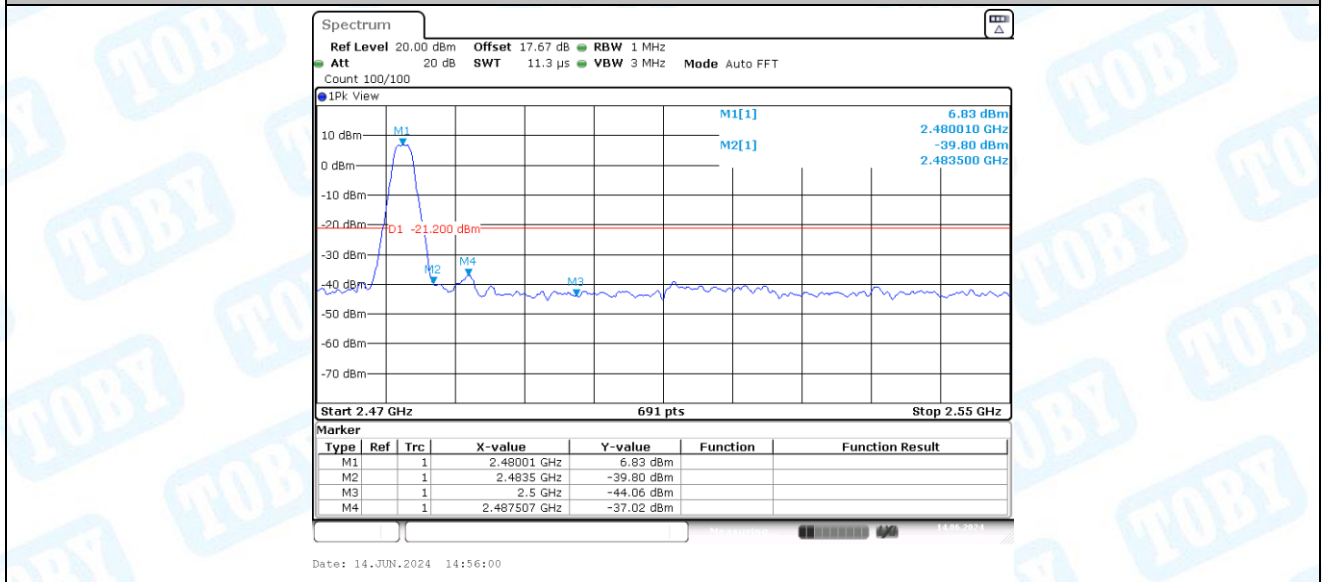
BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak



-----End of the report-----