

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Portable Power Station
Test Model:	AP-SS-005
Sample ID:	202202-0060_02-02#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Huangjianping
Note: For a more detailed features description, please refer to the report TBR-C-202202-0060-3	

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1. DTS Bandwidth

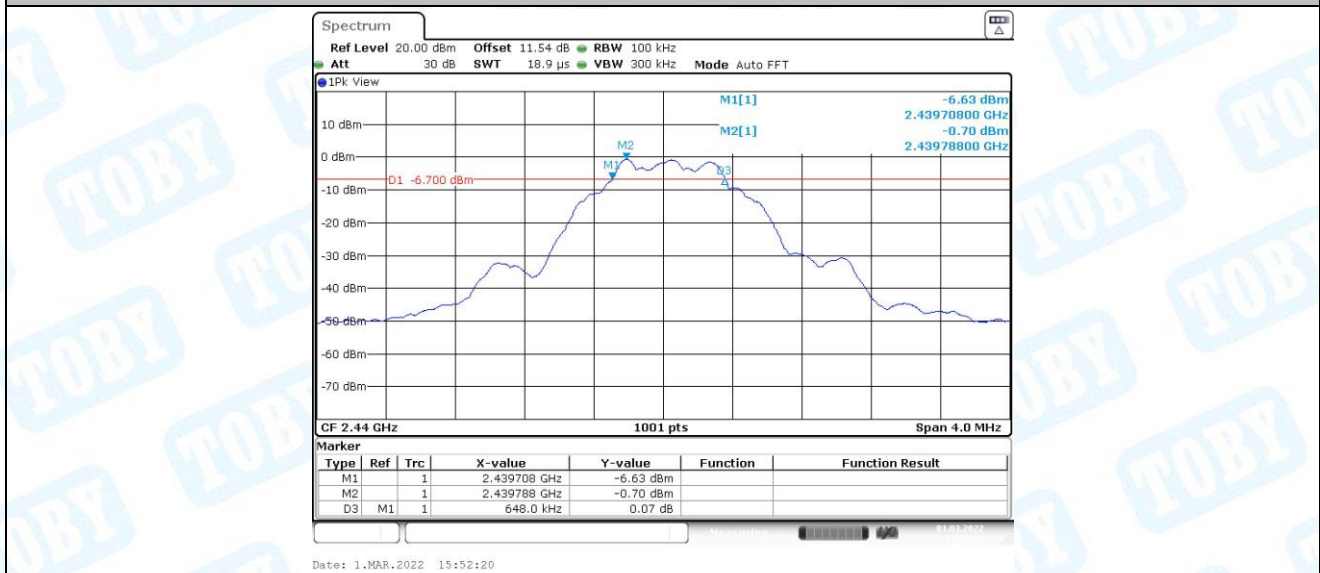
1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.65	2401.71	2402.36	0.5	PASS
		2440	0.65	2439.71	2440.36	0.5	PASS
		2480	0.65	2479.71	2480.36	0.5	PASS
BLE_2M	Ant1	2402	1.16	2401.45	2402.62	0.5	PASS
		2440	1.16	2439.45	2440.61	0.5	PASS
		2480	1.16	2479.45	2480.62	0.5	PASS

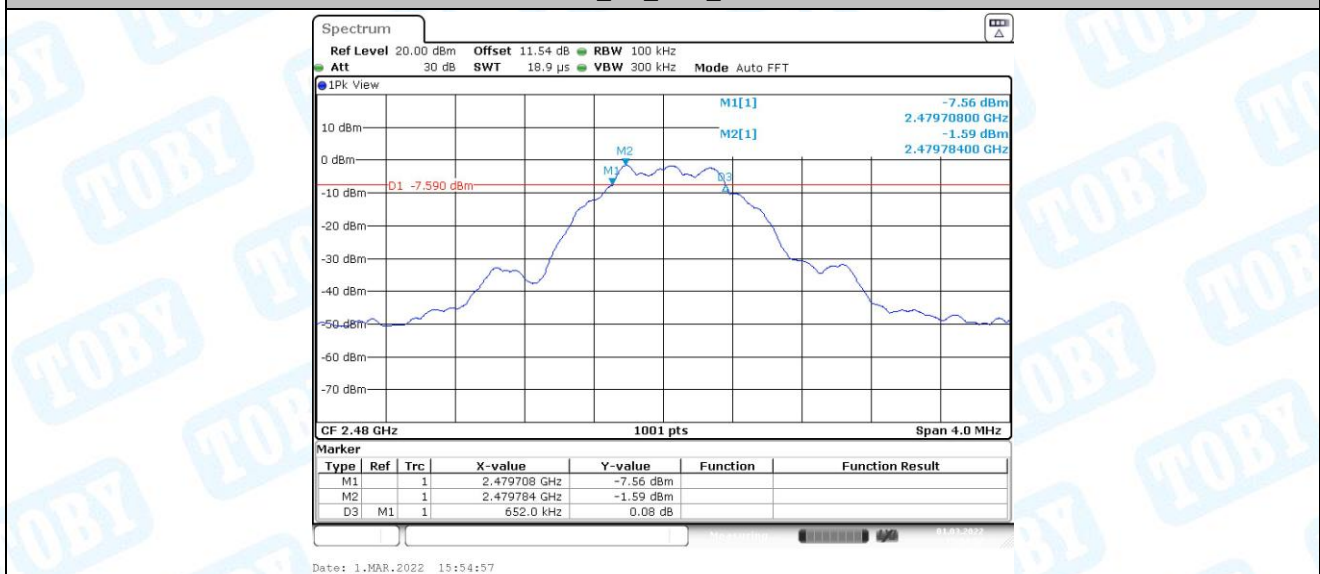
1.2. Test Graphs



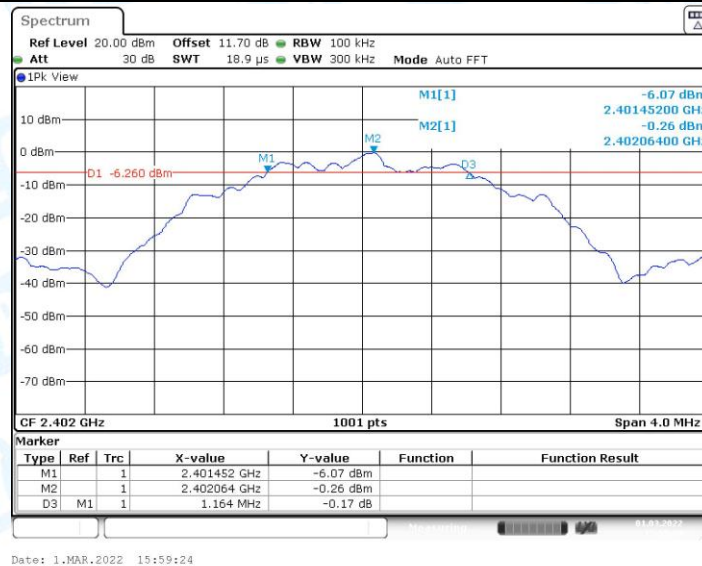
BLE_1M_Ant1_2402



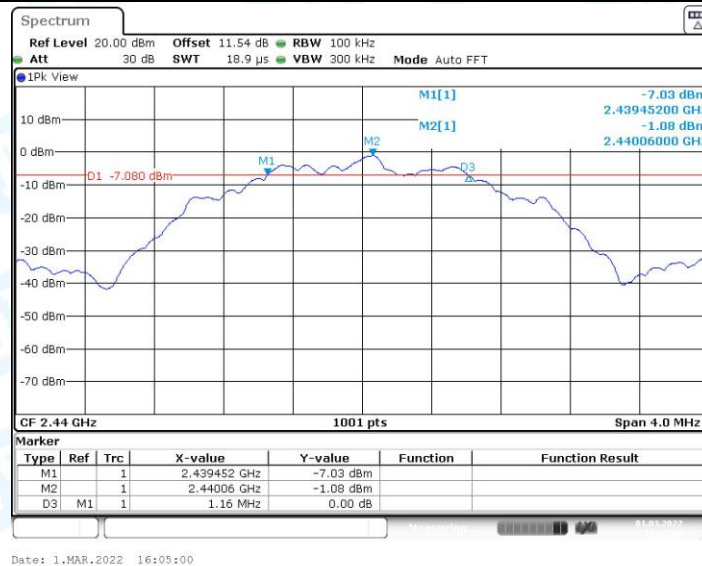
BLE_1M_Ant1_2440



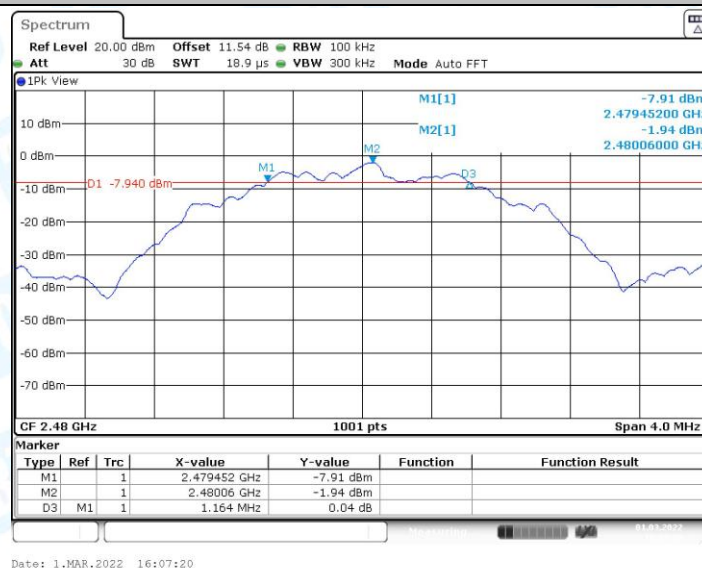
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



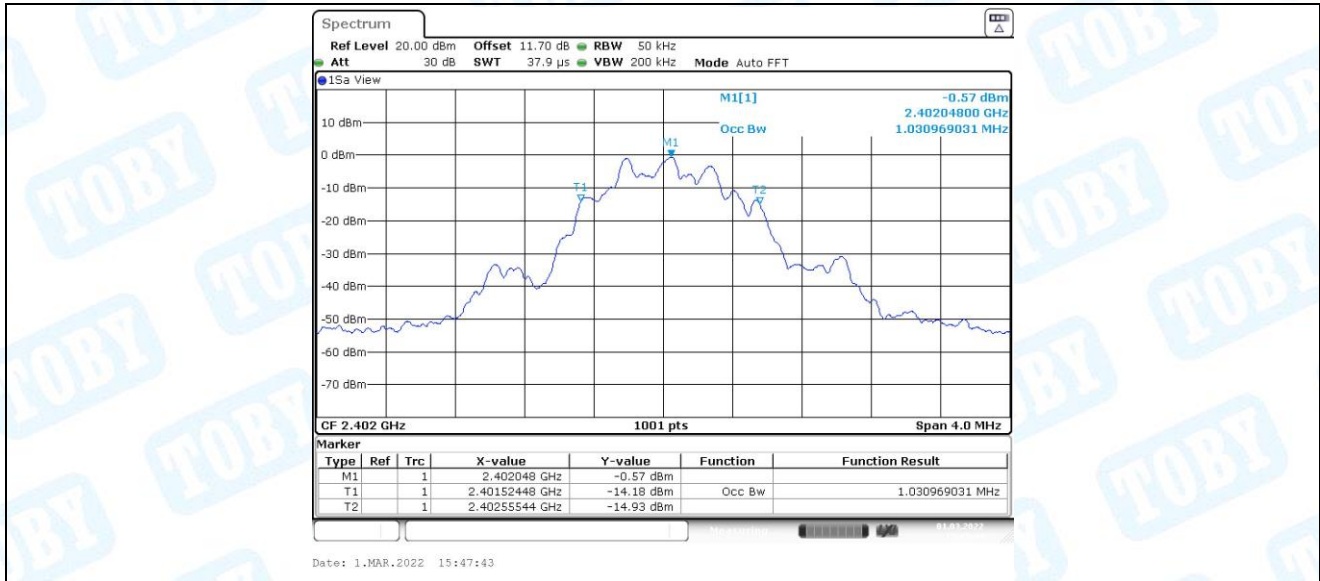
BLE_2M_Ant1_2480

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	1.031	2401.524	2402.555	---	---
		2440	1.031	2439.524	2440.555	---	---
		2480	1.035	2479.524	2480.559	---	---
BLE_2M	Ant1	2402	2.054	2401.017	2403.071	---	---
		2440	2.054	2439.017	2441.071	---	---
		2480	2.058	2479.017	2481.075	---	---

2.2. Test Graphs



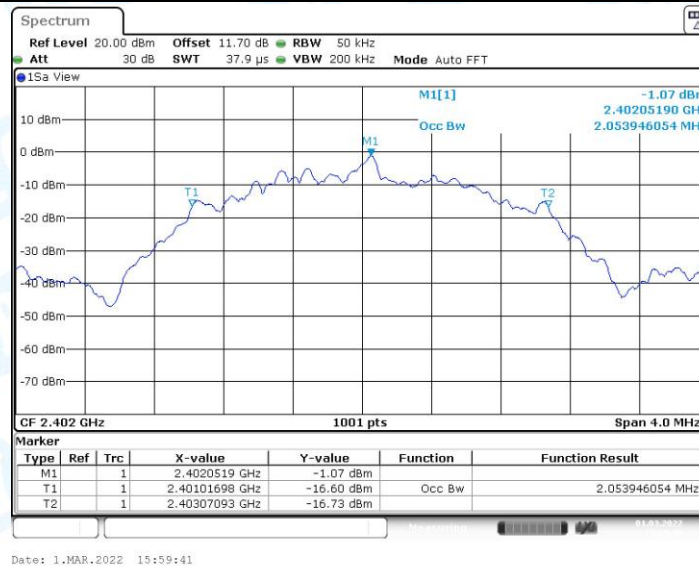
BLE_1M_Ant1_2402



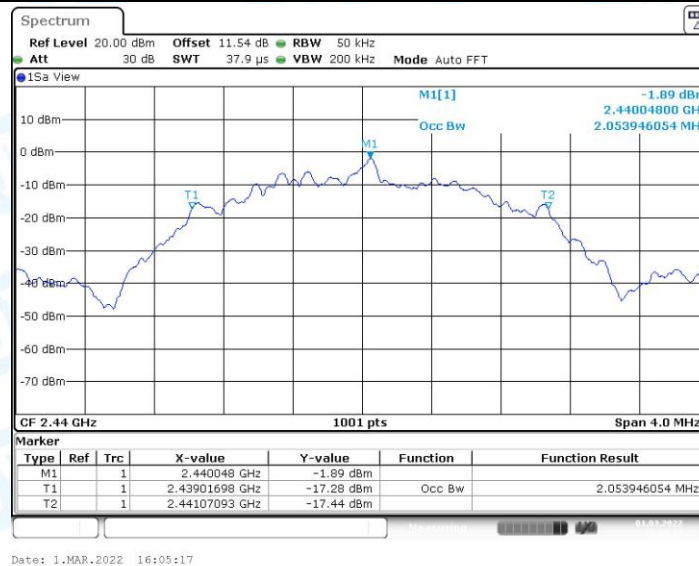
BLE_1M_Ant1_2440



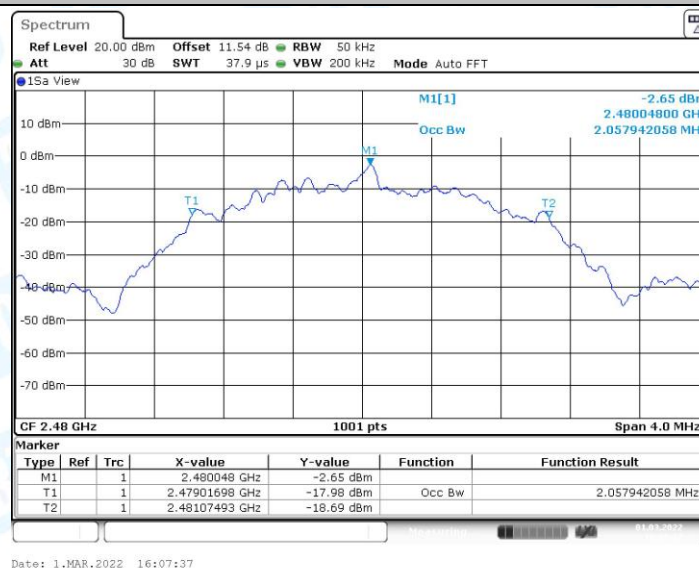
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



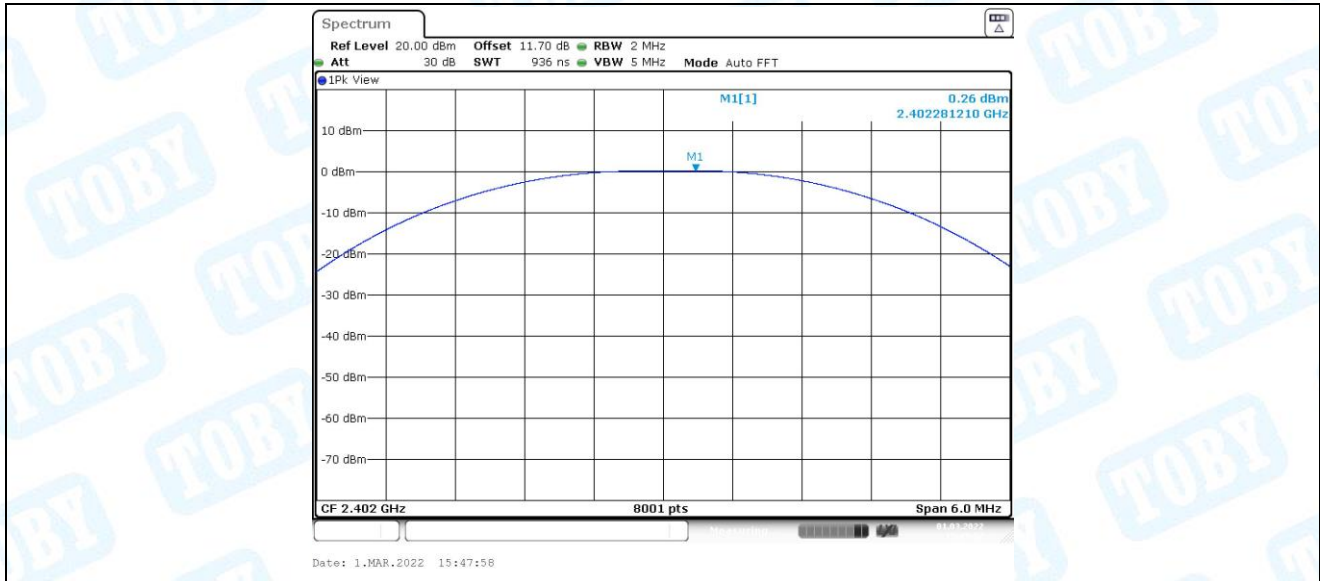
BLE_2M_Ant1_2480

3. Maximum conducted output power

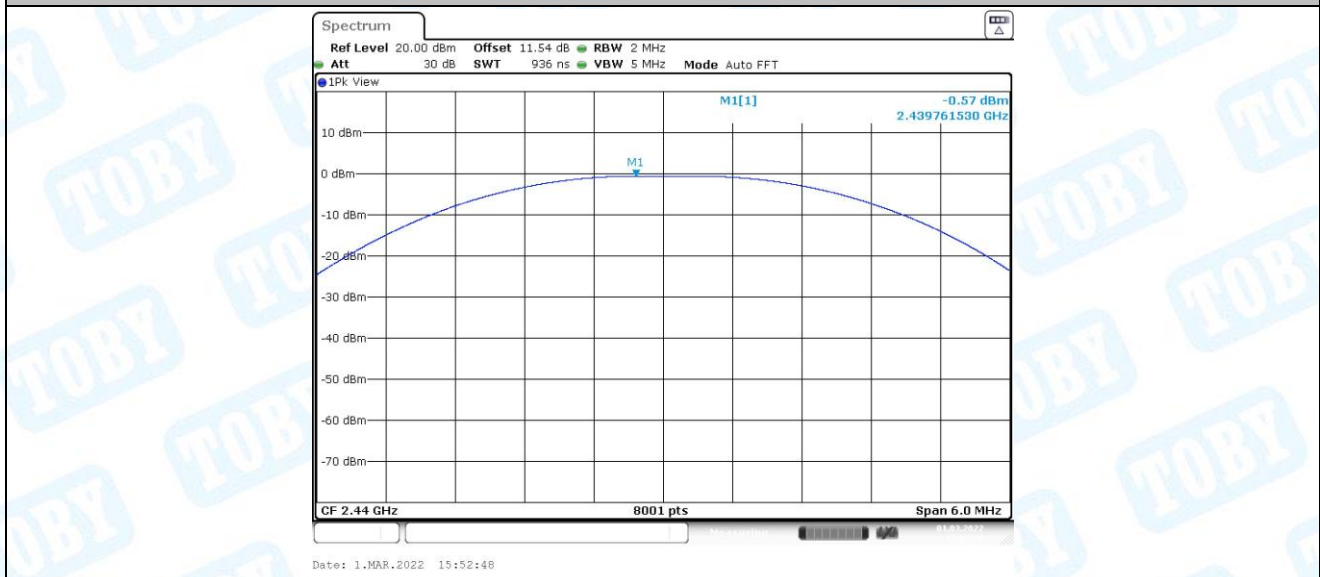
3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.26	≤30	PASS
		2440	-0.57	≤30	PASS
		2480	-1.47	≤30	PASS
BLE_2M	Ant1	2402	0.3	≤30	PASS
		2440	-0.57	≤30	PASS
		2480	-1.43	≤30	PASS

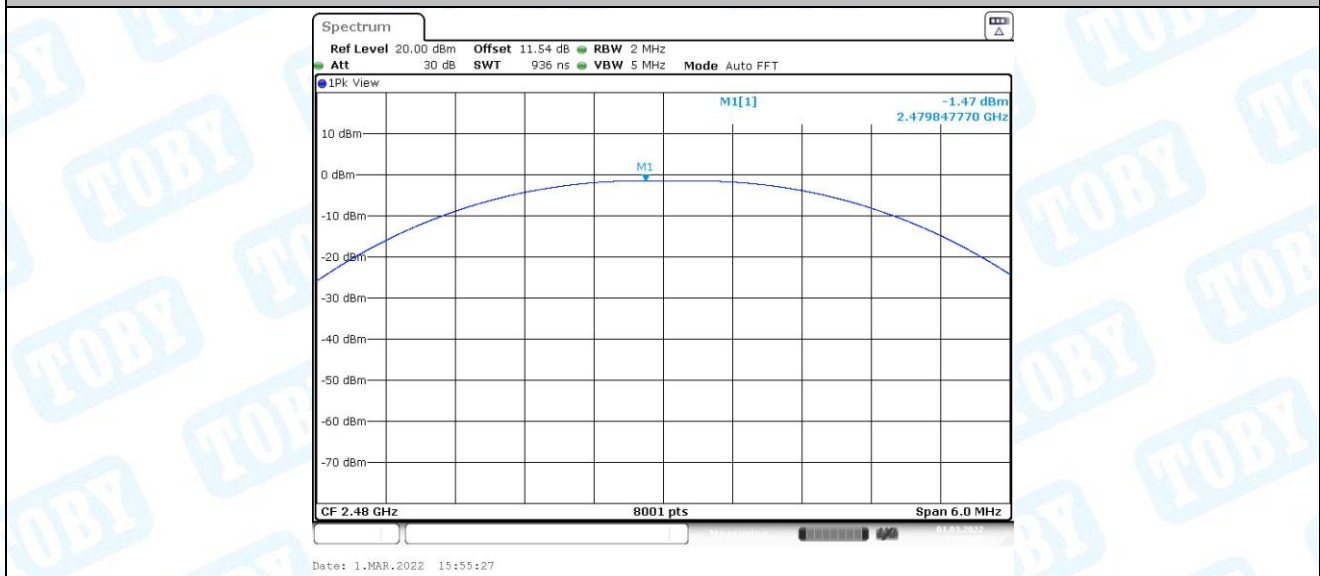
3.2. Test Graphs



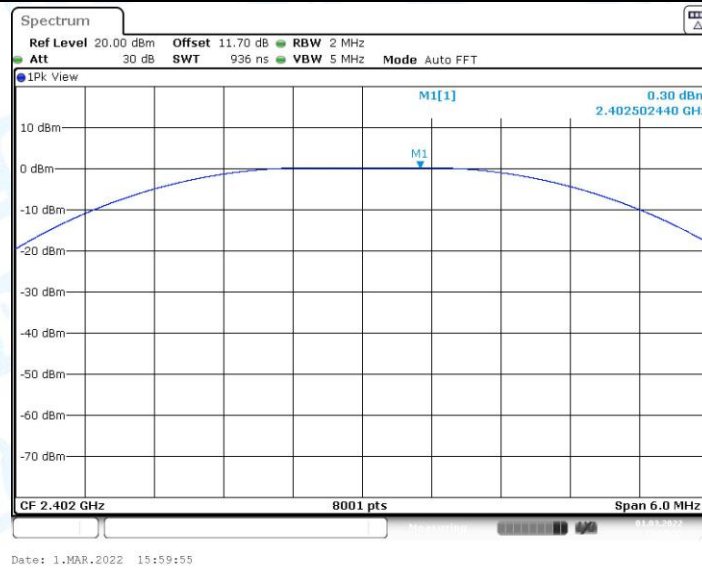
BLE_1M_Ant1_2402



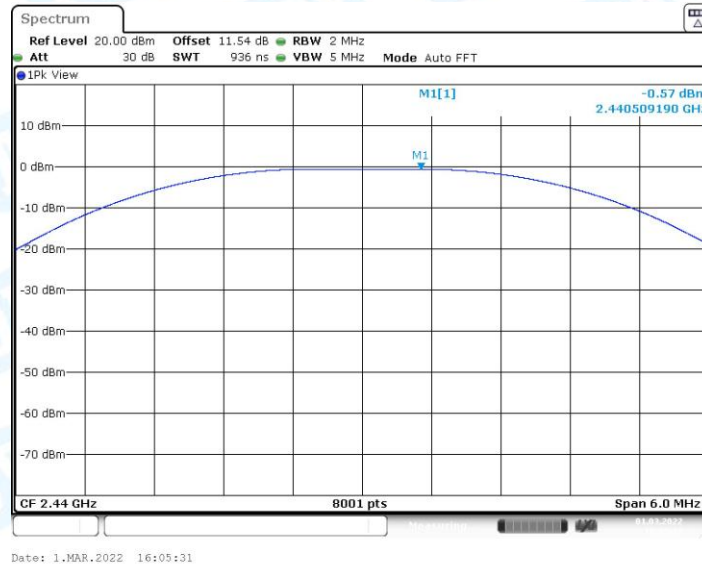
BLE_1M_Ant1_2440



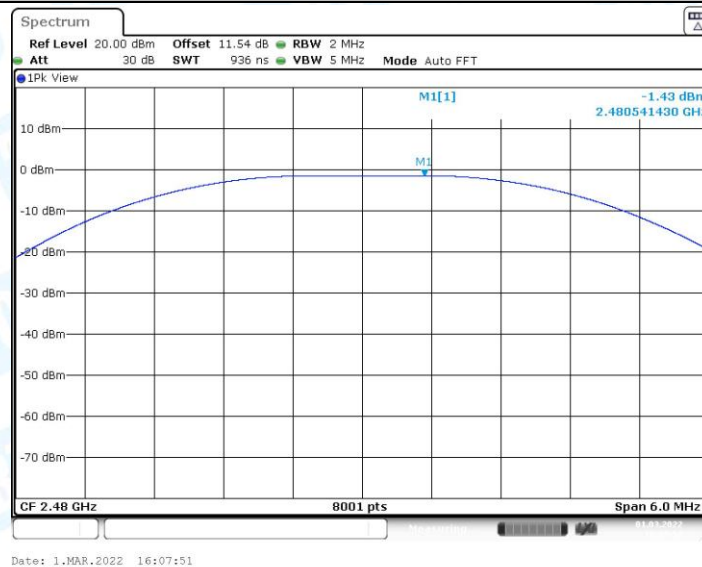
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



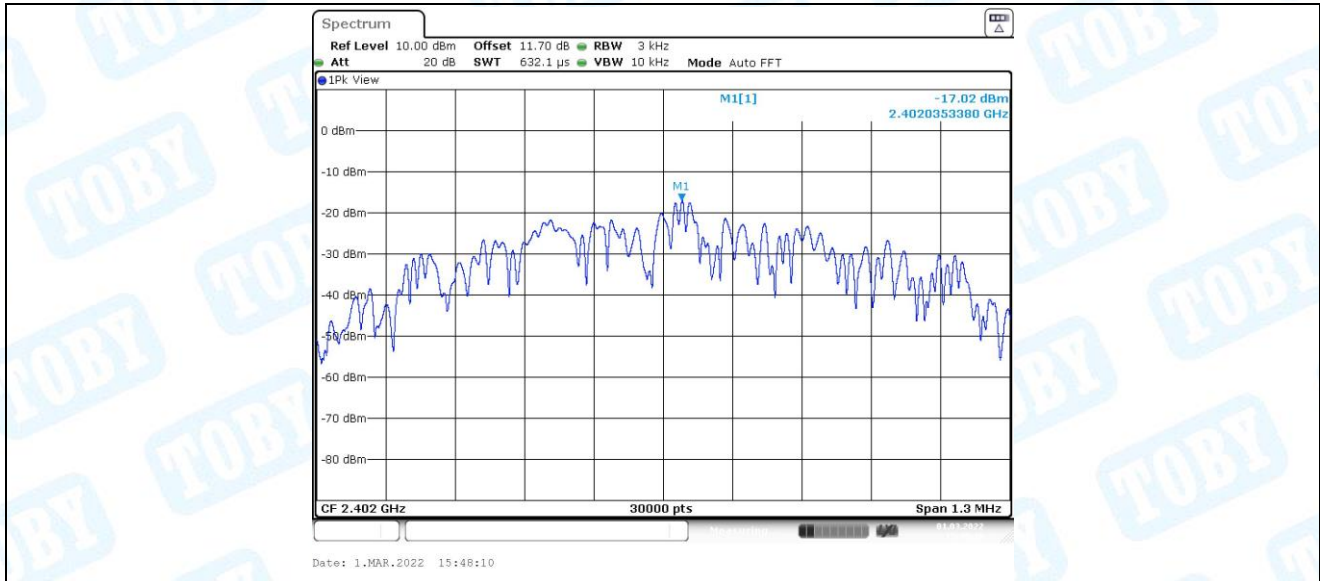
BLE_2M_Ant1_2480

4. Maximum power spectral density

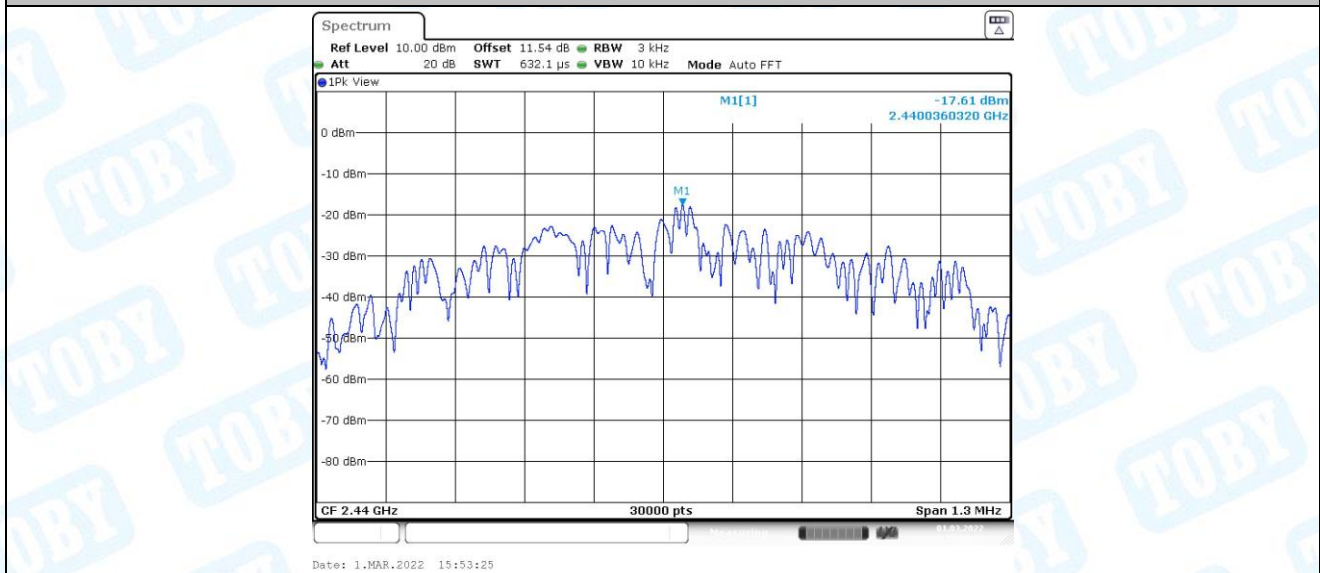
4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-17.02	≤8.00	PASS
		2440	-17.61	≤8.00	PASS
		2480	-18.2	≤8.00	PASS
BLE_2M	Ant1	2402	-18.02	≤8.00	PASS
		2440	-18.86	≤8.00	PASS
		2480	-19.59	≤8.00	PASS

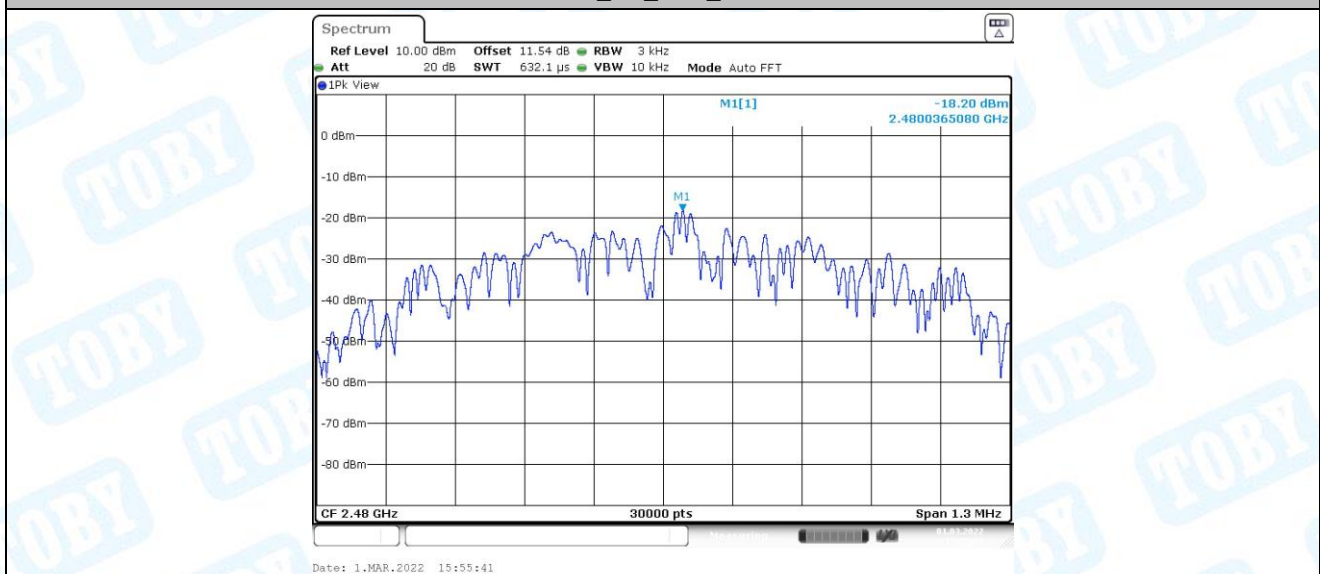
4.2. Test Graphs



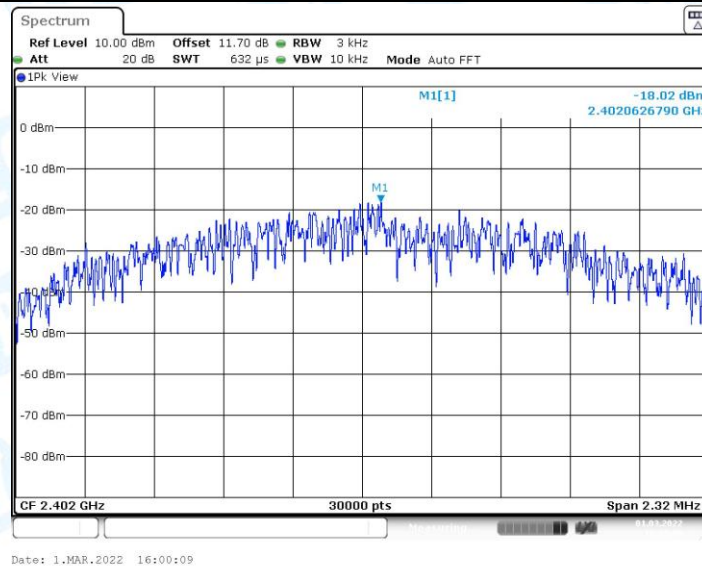
BLE_1M_Ant1_2402



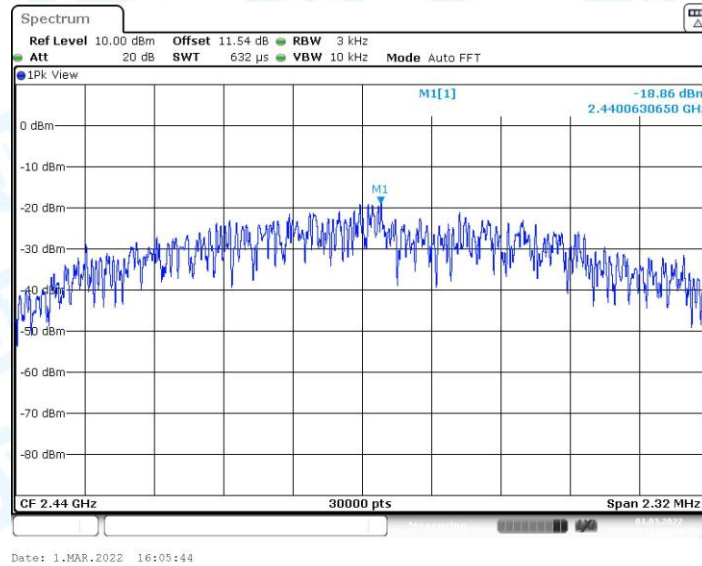
BLE_1M_Ant1_2440



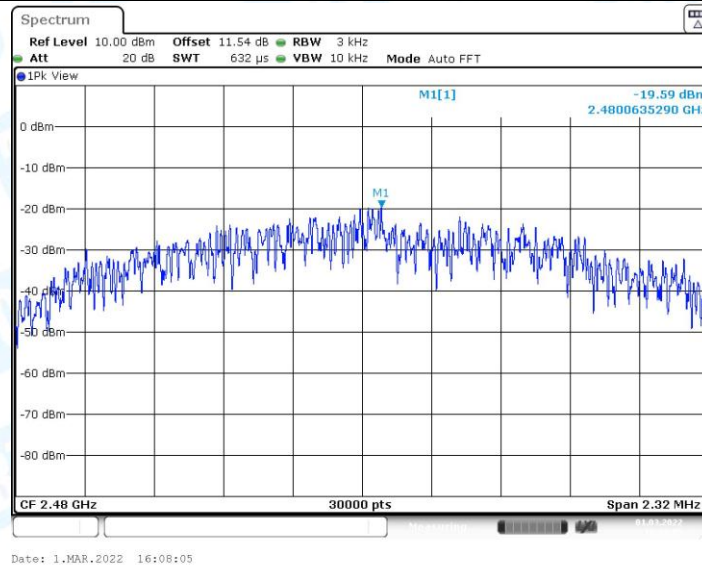
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



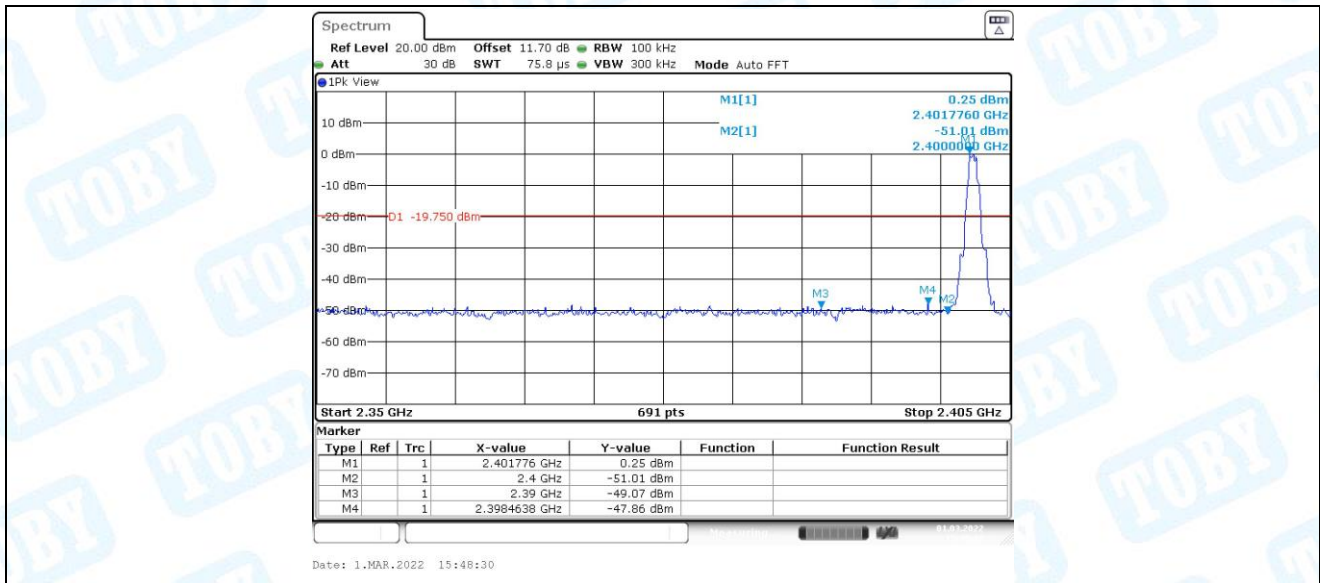
BLE_2M_Ant1_2480

5. Band edge measurements

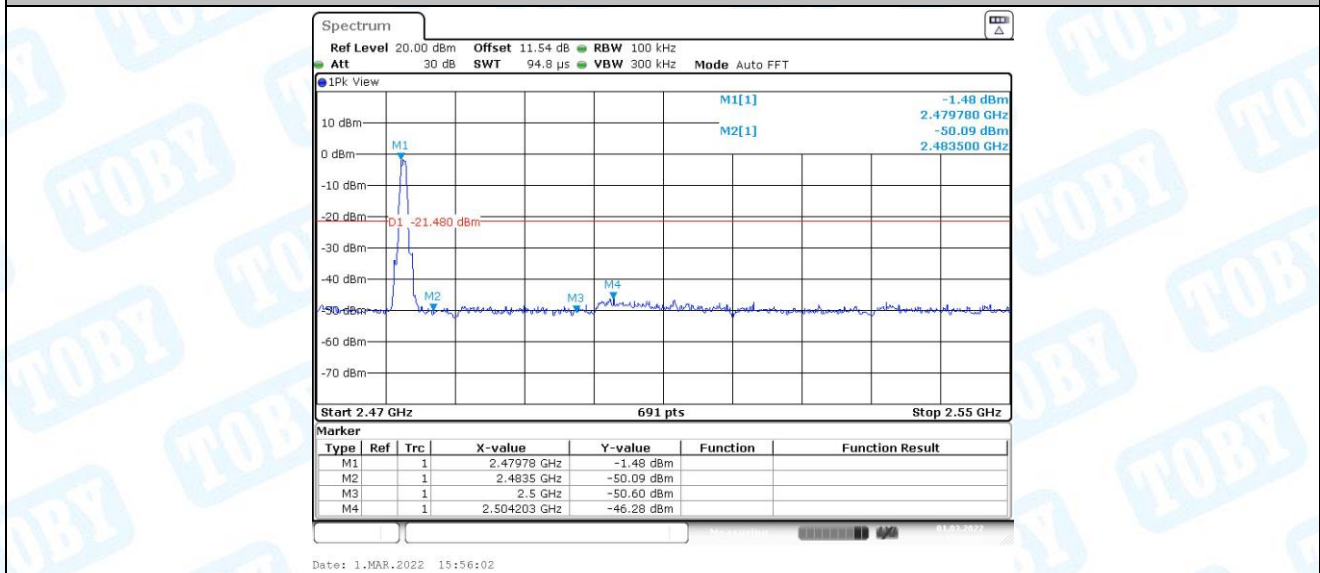
5.1. Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.25	-47.86	≤ -19.75	PASS
		High	2480	-1.48	-46.28	≤ -21.48	PASS
BLE_2M	Ant1	Low	2402	-0.04	-34.1	≤ -20.04	PASS
		High	2480	-1.85	-46.61	≤ -21.85	PASS

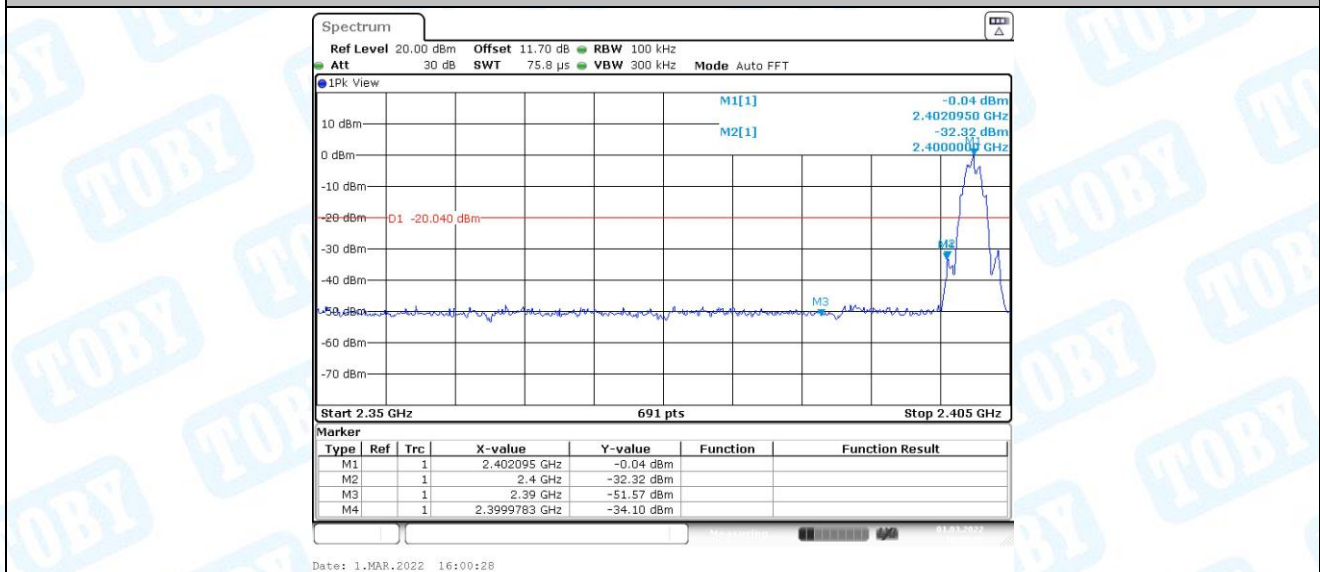
5.2. Test Graphs



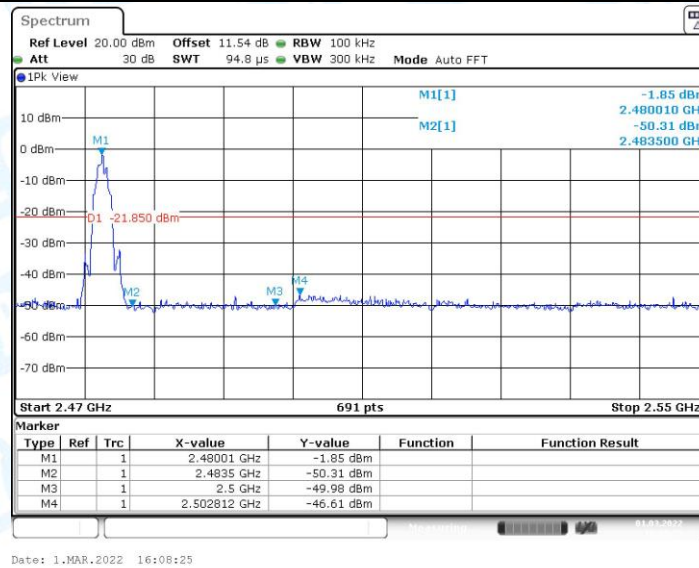
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



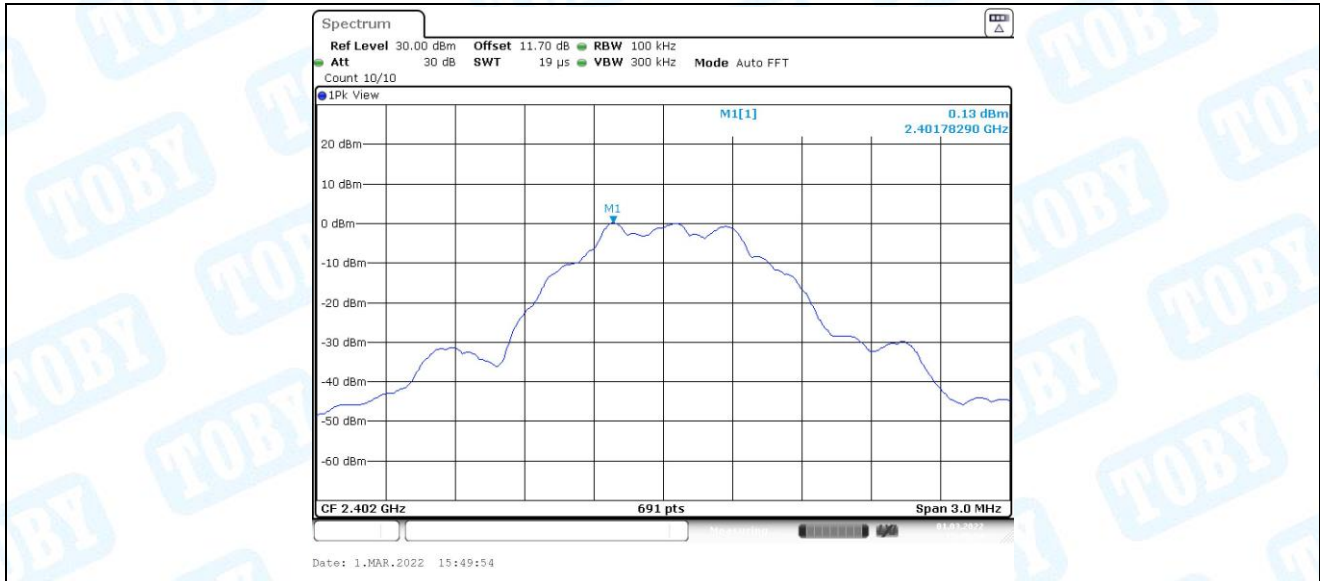
BLE_2M_Ant1_High_2480

6. Conducted Spurious Emission

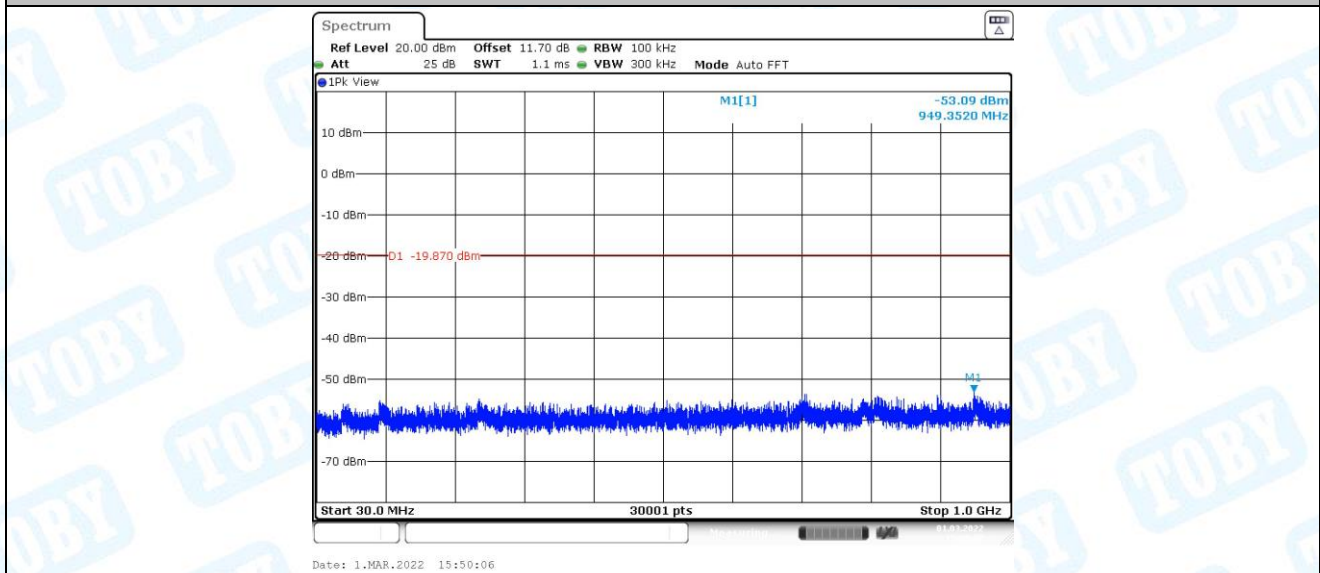
6.1. Test Result

Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.13	0.13	---	PASS
			30~1000	0.13	-53.09	≤-19.87	PASS
			1000~26500	0.13	-46.98	≤-19.87	PASS
		2440	Reference	-0.70	-0.70	---	PASS
			30~1000	-0.70	-53.78	≤-20.7	PASS
			1000~26500	-0.70	-47.38	≤-20.7	PASS
		2480	Reference	-1.56	-1.56	---	PASS
			30~1000	-1.56	-51.7	≤-21.56	PASS
			1000~26500	-1.56	-47.24	≤-21.56	PASS
BLE_2M	Ant1	2402	Reference	-0.28	-0.28	---	PASS
			30~1000	-0.28	-53.18	≤-20.28	PASS
			1000~26500	-0.28	-46.37	≤-20.28	PASS
		2440	Reference	-1.07	-1.07	---	PASS
			30~1000	-1.07	-53.24	≤-21.07	PASS
			1000~26500	-1.07	-46.65	≤-21.07	PASS
		2480	Reference	-1.99	-1.99	---	PASS
			30~1000	-1.99	-54.1	≤-21.99	PASS
			1000~26500	-1.99	-47.13	≤-21.99	PASS

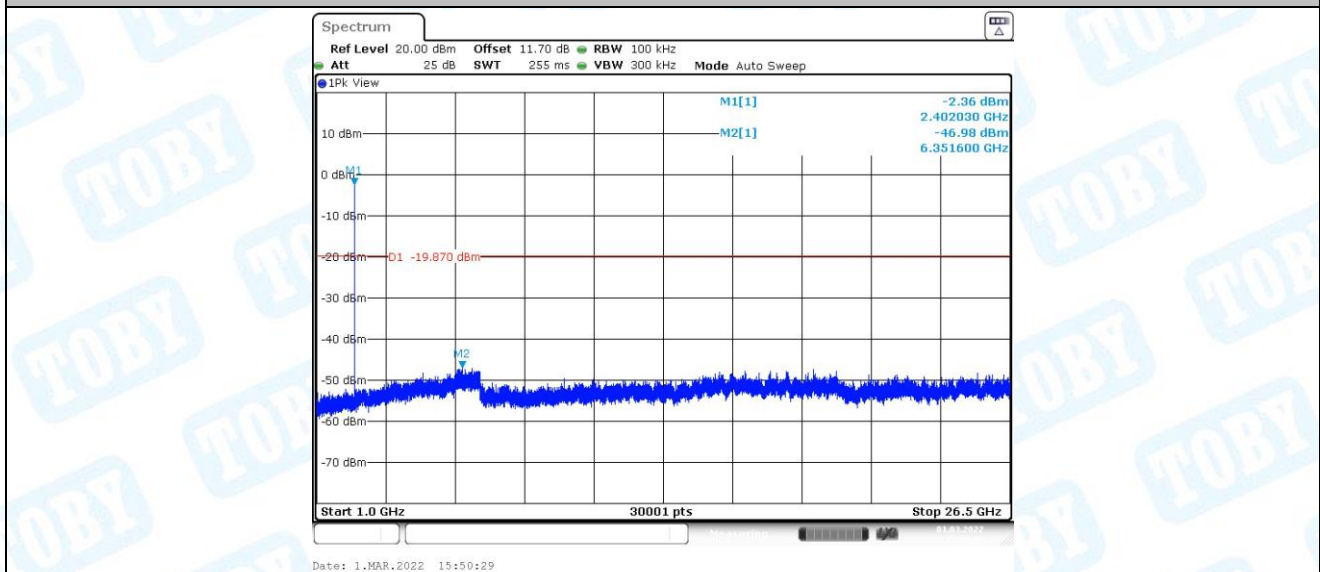
6.2. Test Graphs



BLE_1M_Ant1_2402_0~Reference



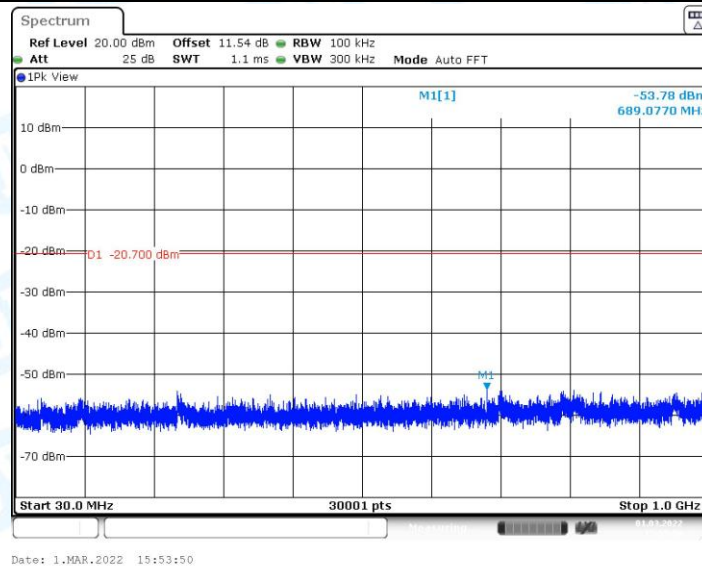
BLE_1M_Ant1_2402_30~1000



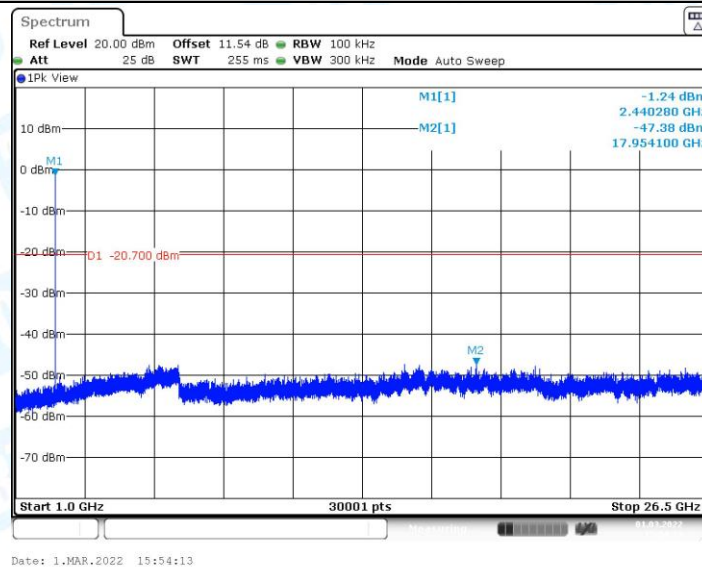
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



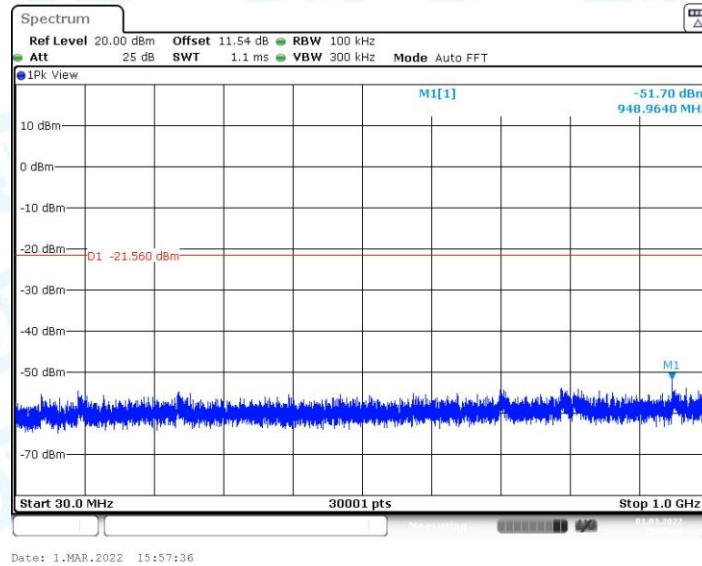
BLE_1M_Ant1_2440_30~1000



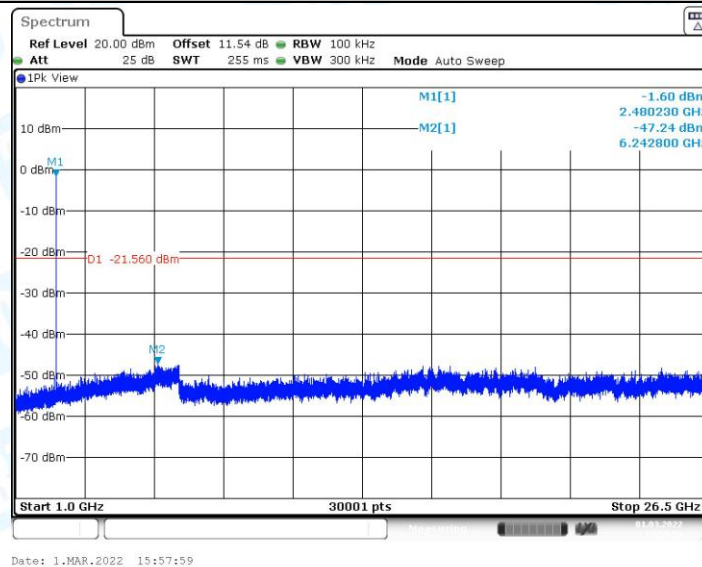
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



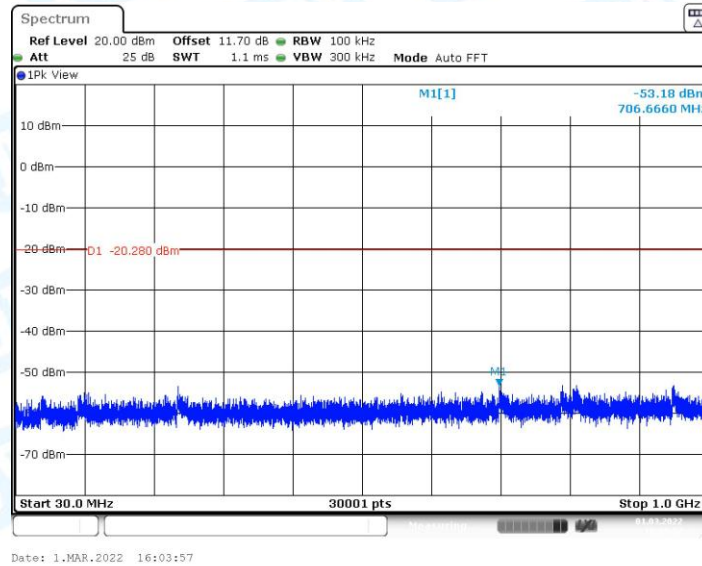
BLE_1M_Ant1_2480_30~1000



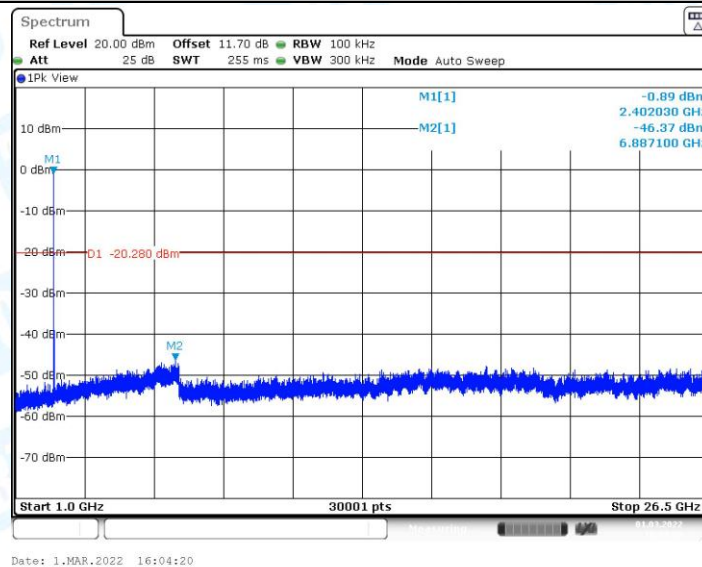
BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_0~Reference



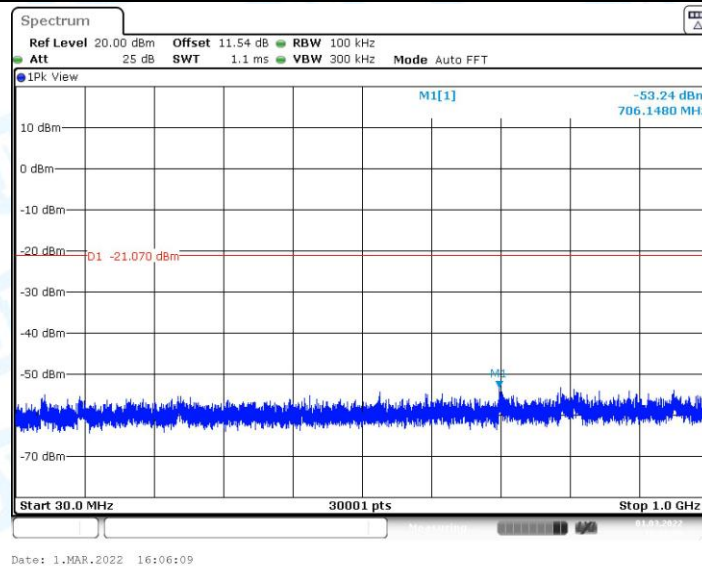
BLE_2M_Ant1_2402_30~1000



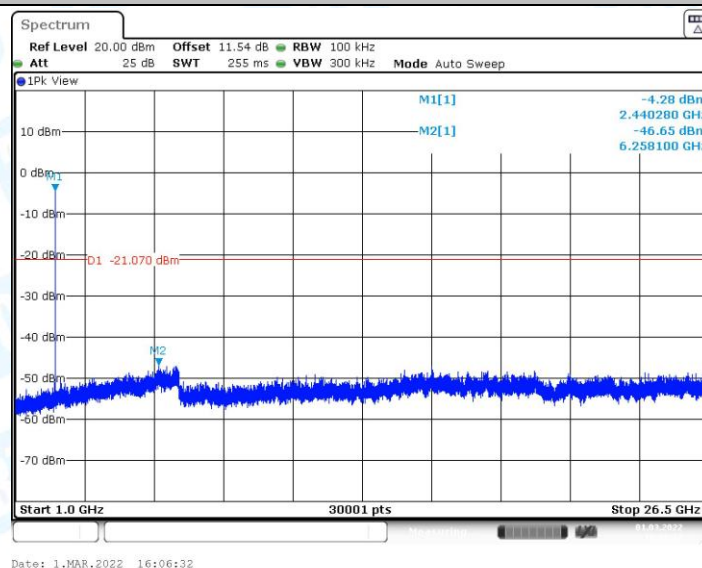
BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_0~Reference



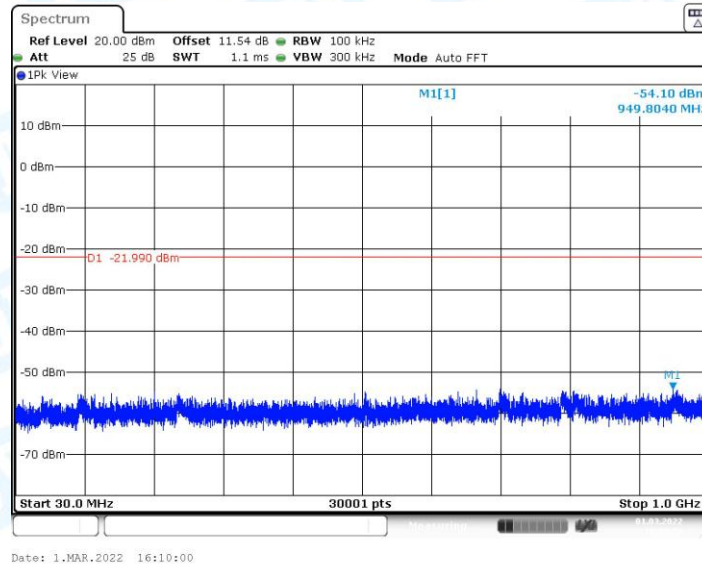
BLE_2M_Ant1_2440_30~1000



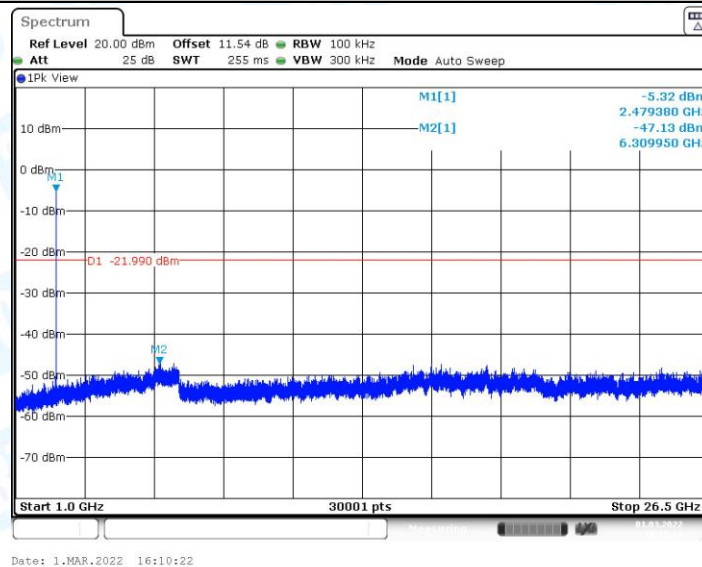
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



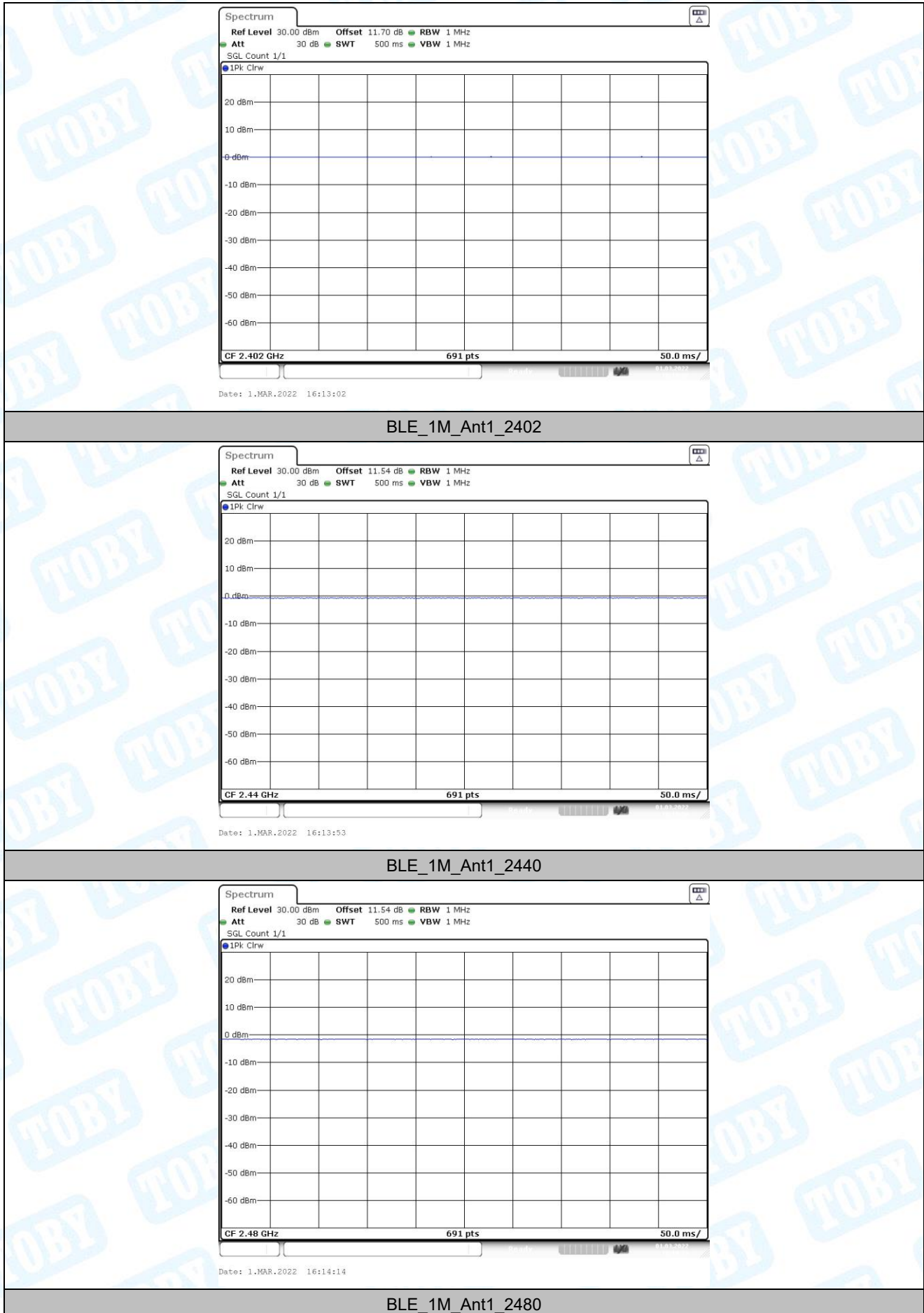
BLE_2M_Ant1_2480_1000~26500

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	0.00	0.00	100	---	---
		2440	0.00	0.00	100	---	---
		2480	0.00	0.00	100	---	---
BLE_2M	Ant1	2402	0.00	0.00	100	---	---
		2440	0.00	0.00	100	---	---
		2480	0.00	0.00	100	---	---

7.2.Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

8. Emissions in Restricted Bands

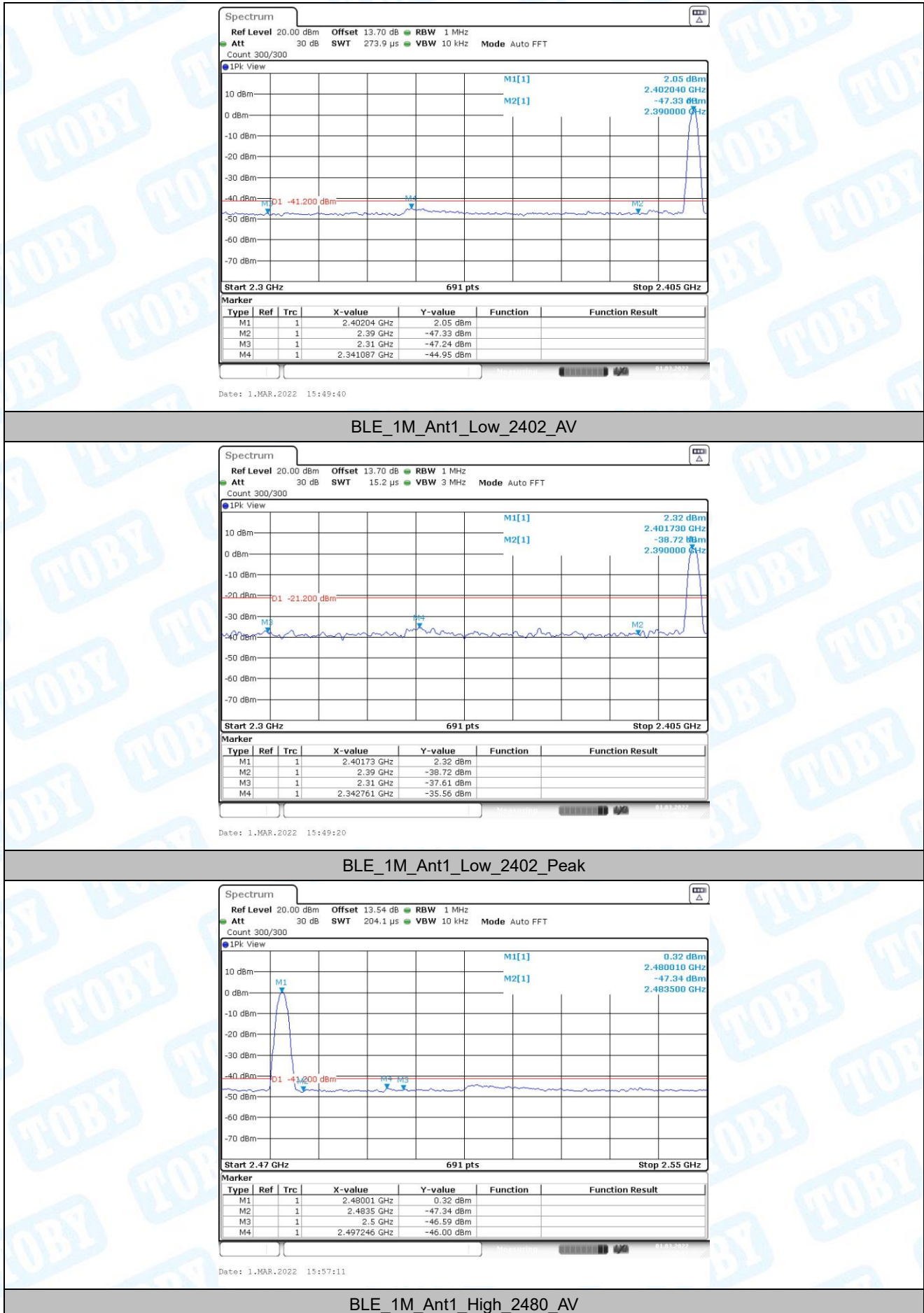
8.1. Test Result

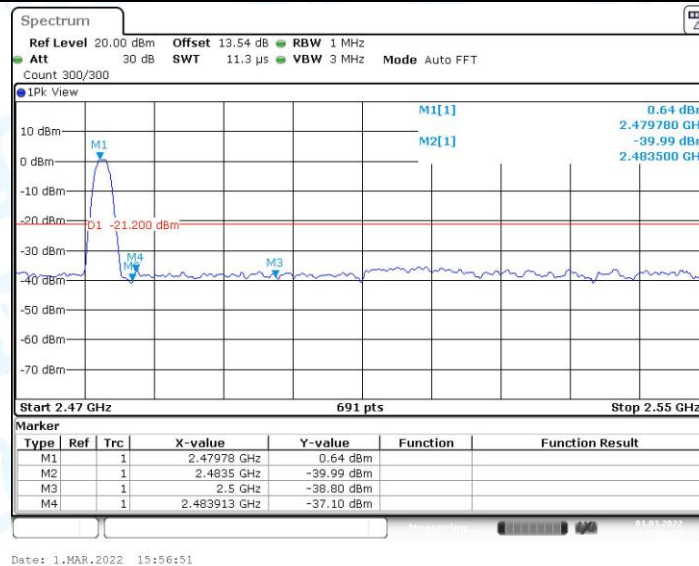
Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-47.24	≤-41.20	PASS
				AV	2341.087	-44.95	≤-41.20	PASS
				AV	2390.000	-47.33	≤-41.20	PASS
				Peak	2310.000	-37.61	≤-21.20	PASS
				Peak	2342.761	-35.56	≤-21.20	PASS
				Peak	2390.000	-38.72	≤-21.20	PASS
		High	2480	AV	2483.500	-47.34	≤-41.20	PASS
				AV	2497.246	-46	≤-41.20	PASS
				AV	2500.000	-46.59	≤-41.20	PASS
				Peak	2483.500	-39.99	≤-21.20	PASS
				Peak	2483.913	-37.1	≤-21.20	PASS
				Peak	2500.000	-38.8	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-47.87	≤-41.20	PASS
				AV	2341.696	-45.45	≤-41.20	PASS
				AV	2390.000	-47.75	≤-41.20	PASS
				Peak	2310.000	-39.13	≤-21.20	PASS
				Peak	2341.239	-36.06	≤-21.20	PASS
				Peak	2390.000	-37.92	≤-21.20	PASS
		High	2480	AV	2483.500	-47.17	≤-41.20	PASS
				AV	2483.797	-46.84	≤-41.20	PASS
				AV	2500.000	-47.82	≤-41.20	PASS
				Peak	2483.500	-40.51	≤-21.20	PASS
				Peak	2498.638	-37.02	≤-21.20	PASS
				Peak	2500.000	-38.49	≤-21.20	PASS

Note:

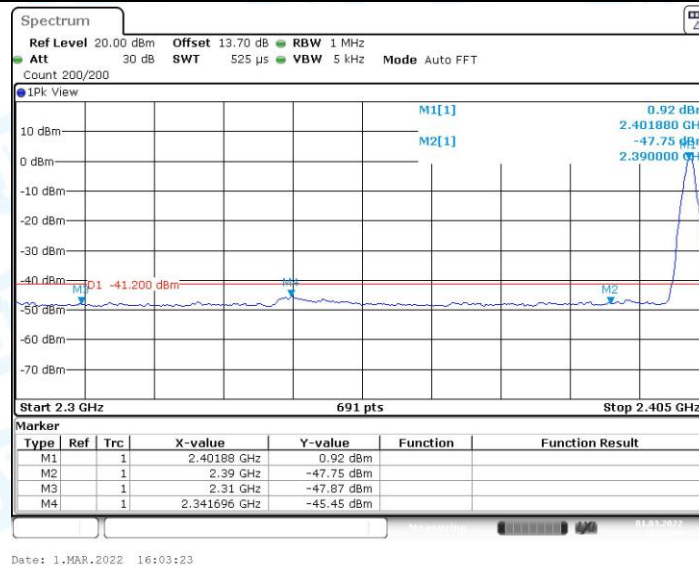
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

8.2.Test Graphs

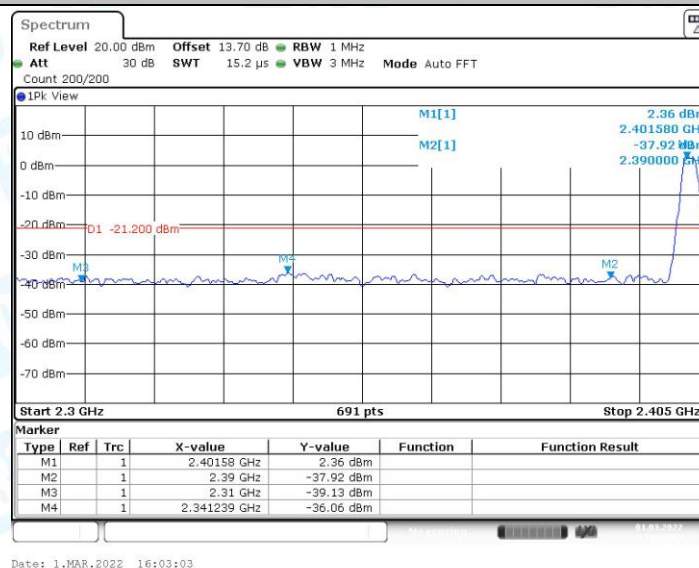




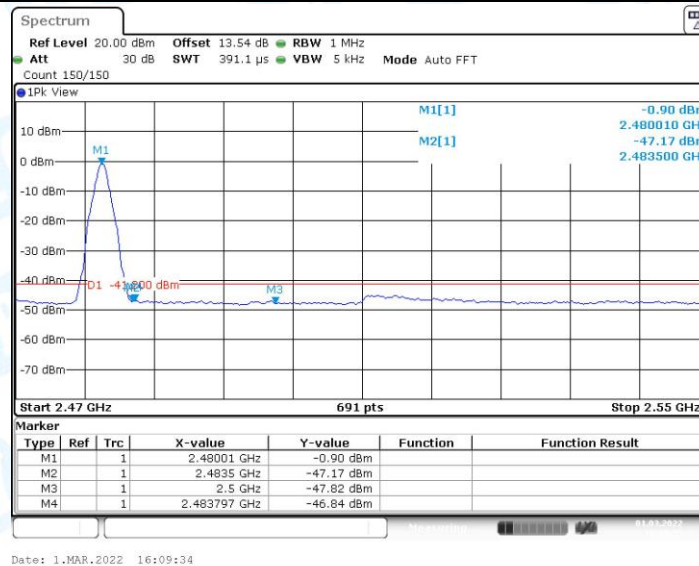
BLE_1M_Ant1_High_2480_Peak



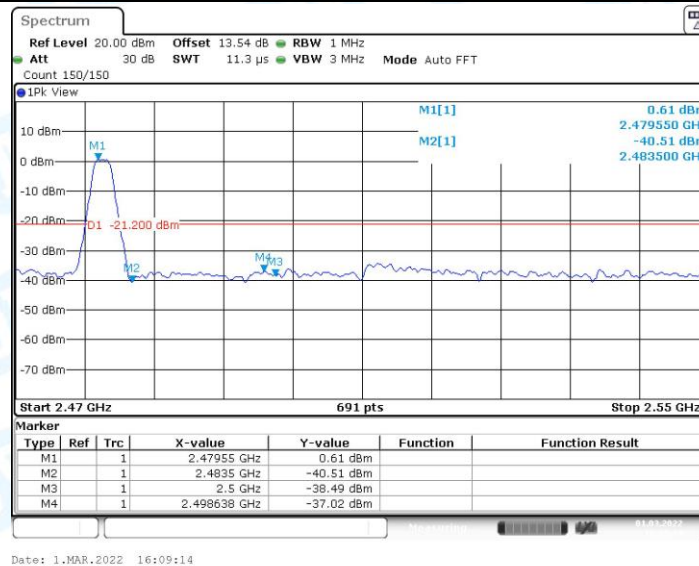
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

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