

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Portable Power Station
Test Model:	AP-SS-009
Sample ID:	202202-0060_01-02#
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-202202-0060-2	

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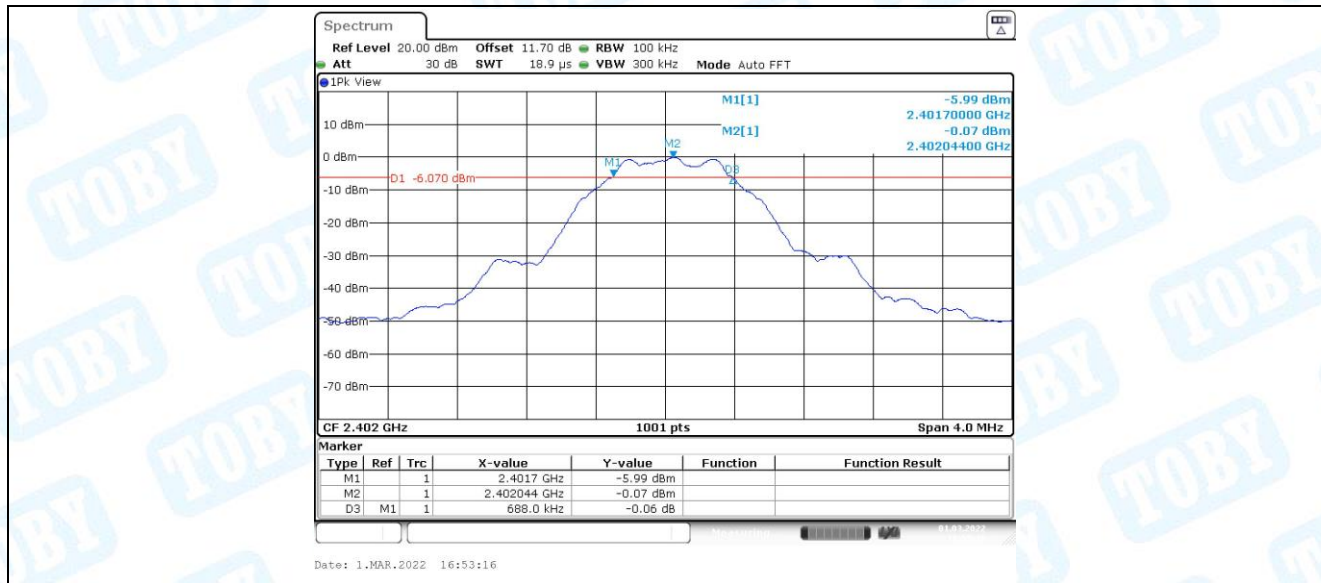
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1. DTS Bandwidth

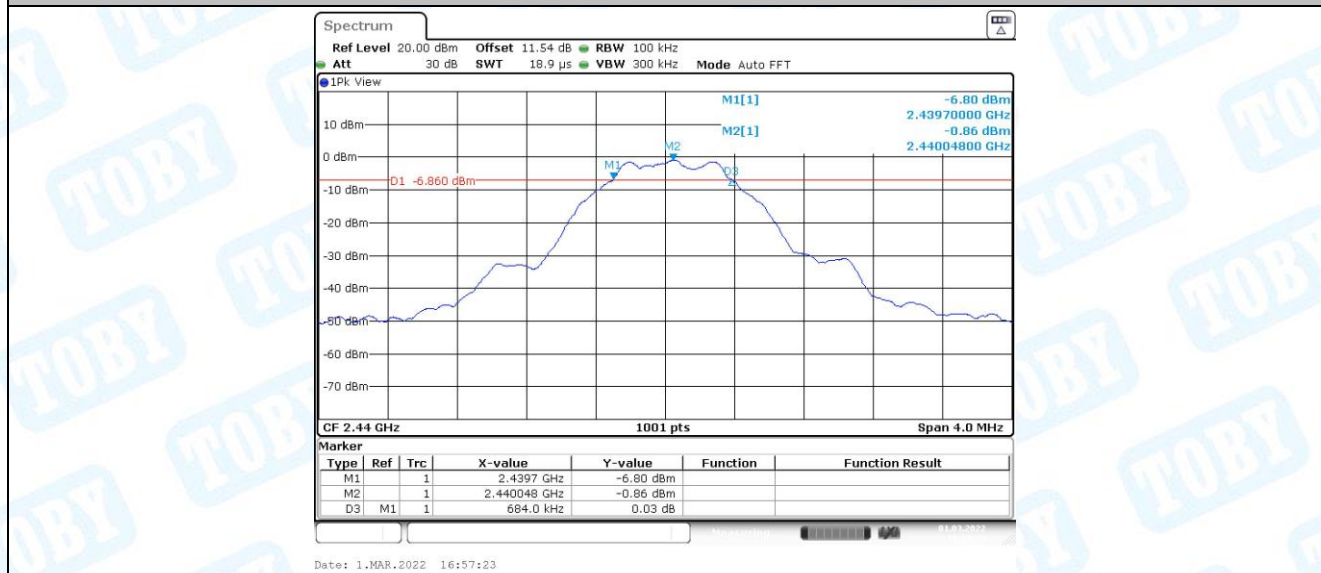
1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.69	2401.70	2402.39	0.5	PASS
		2440	0.68	2439.70	2440.38	0.5	PASS
		2480	0.69	2479.70	2480.39	0.5	PASS
BLE_2M	Ant1	2402	1.14	2401.47	2402.61	0.5	PASS
		2440	1.14	2439.47	2440.61	0.5	PASS
		2480	1.16	2479.46	2480.62	0.5	PASS

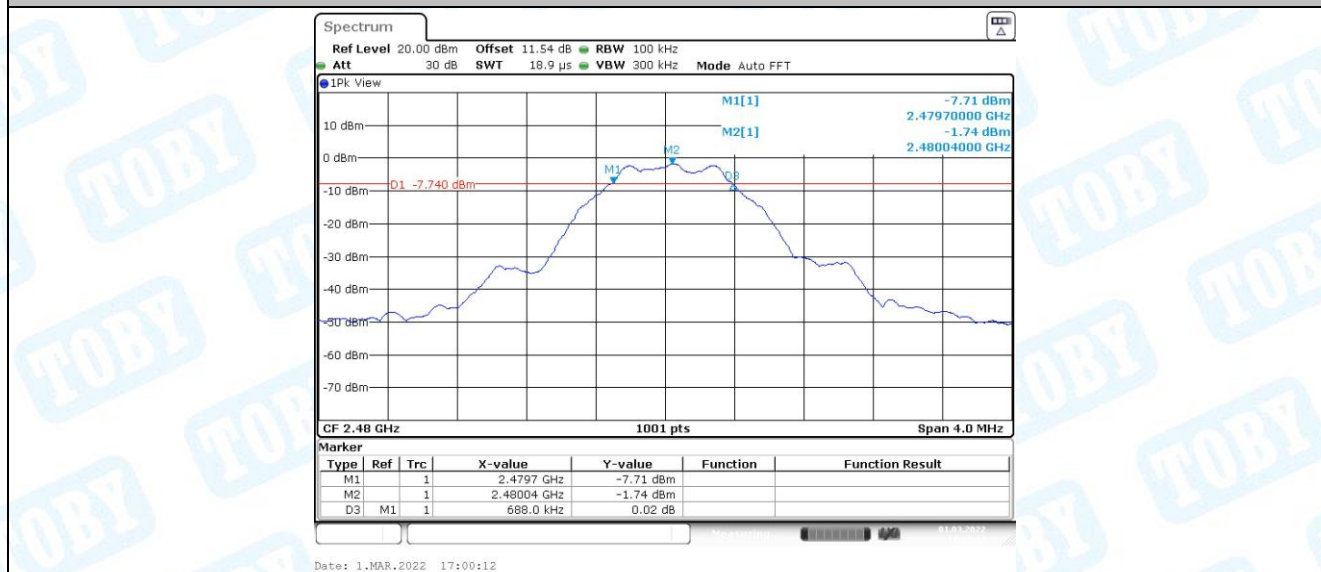
1.2. Test Graphs



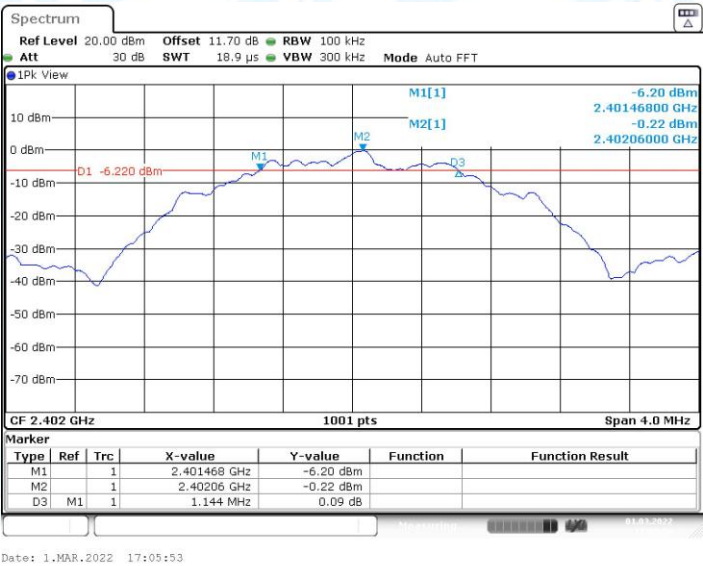
BLE_1M_Ant1_2402



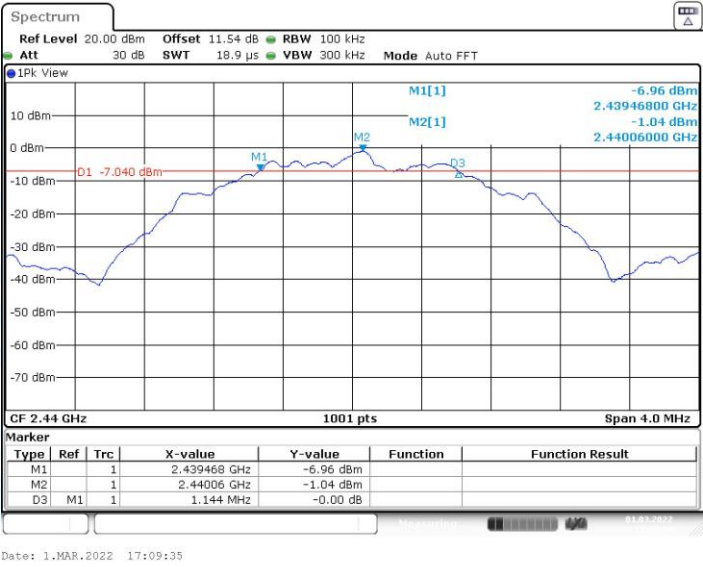
BLE_1M_Ant1_2440



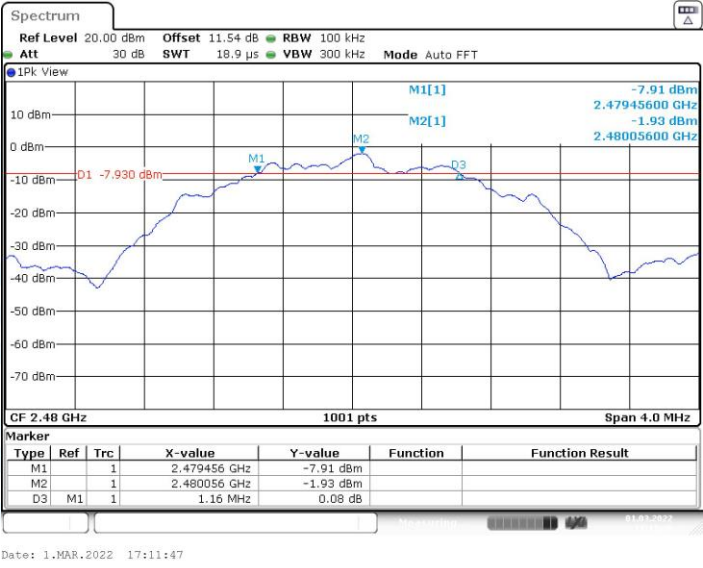
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



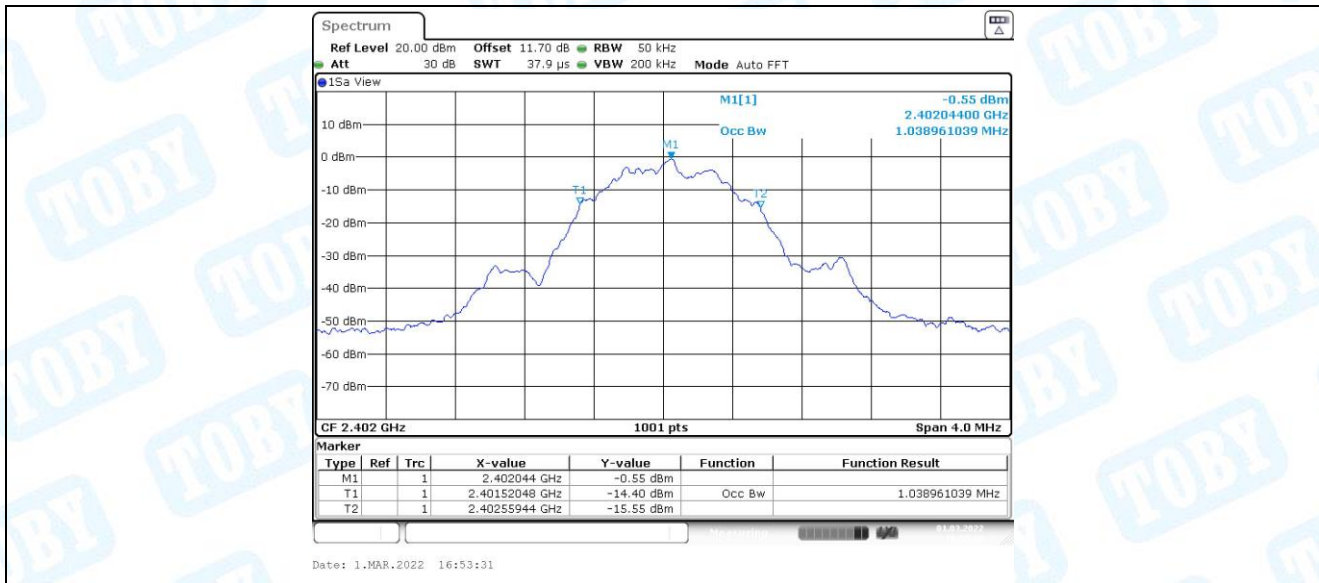
BLE_2M_Ant1_2480

2. Occupied Channel Bandwidth

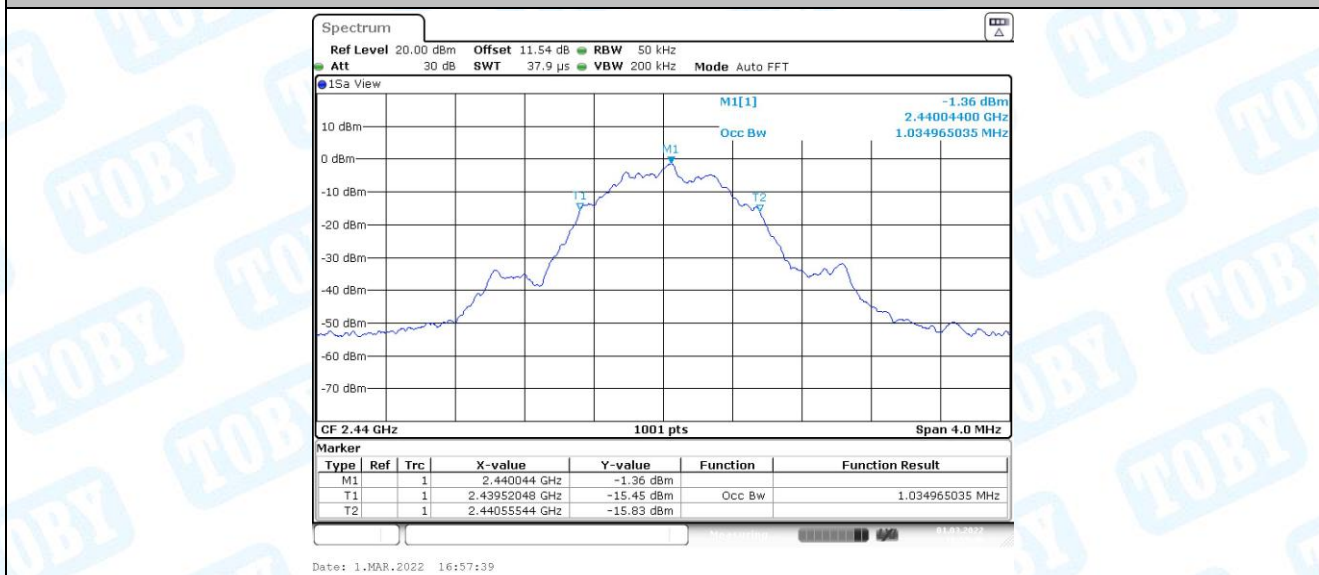
2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.039	2401.520	2402.559	---	---
		2440	1.035	2439.520	2440.555	---	---
		2480	1.035	2479.520	2480.555	---	---
BLE_2M	Ant1	2402	2.054	2401.017	2403.071	---	---
		2440	2.054	2439.017	2441.071	---	---
		2480	2.062	2479.013	2481.075	---	---

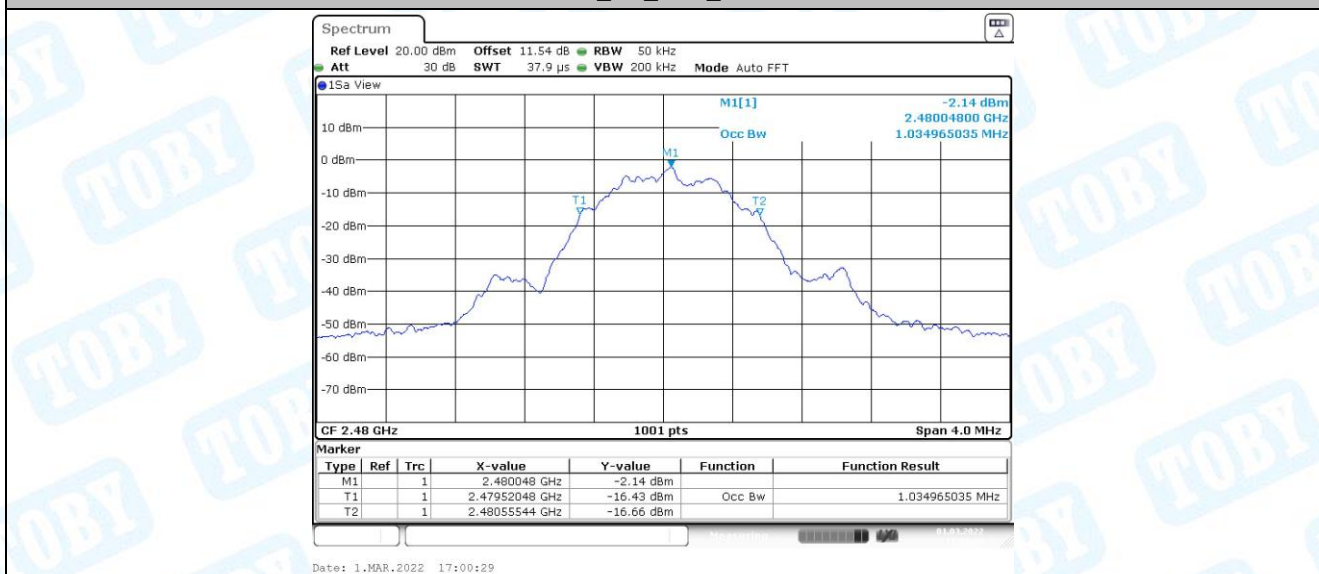
2.2. Test Graphs



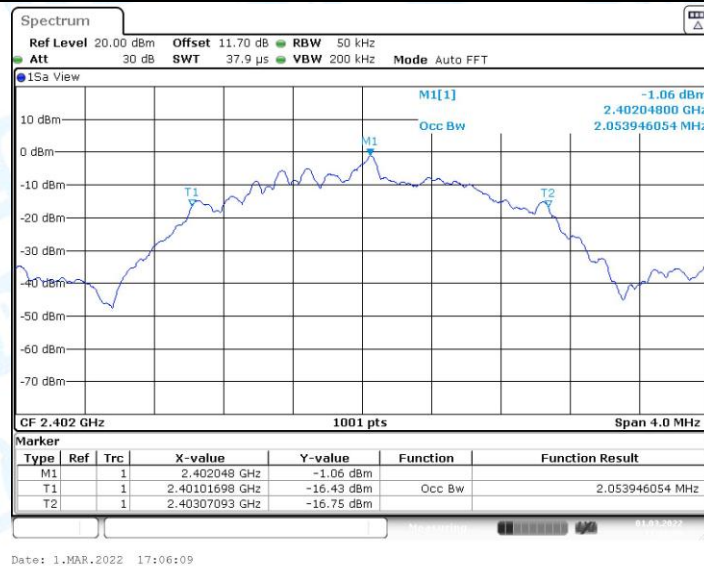
BLE_1M_Ant1_2402



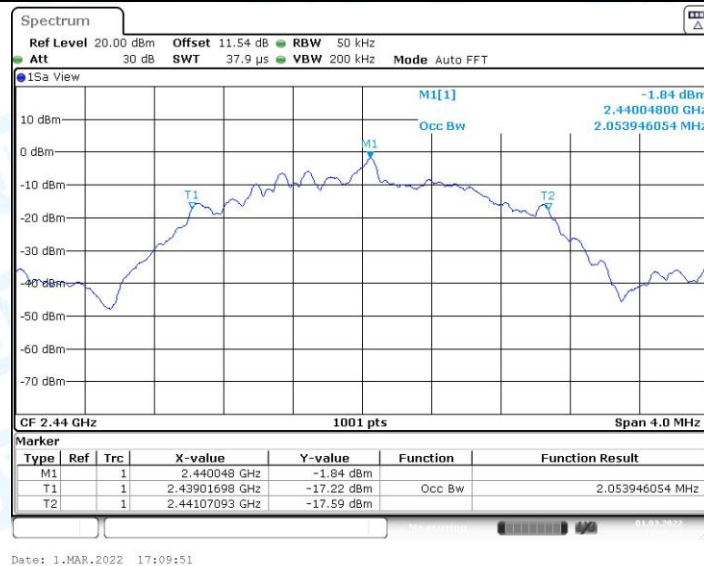
BLE_1M_Ant1_2440



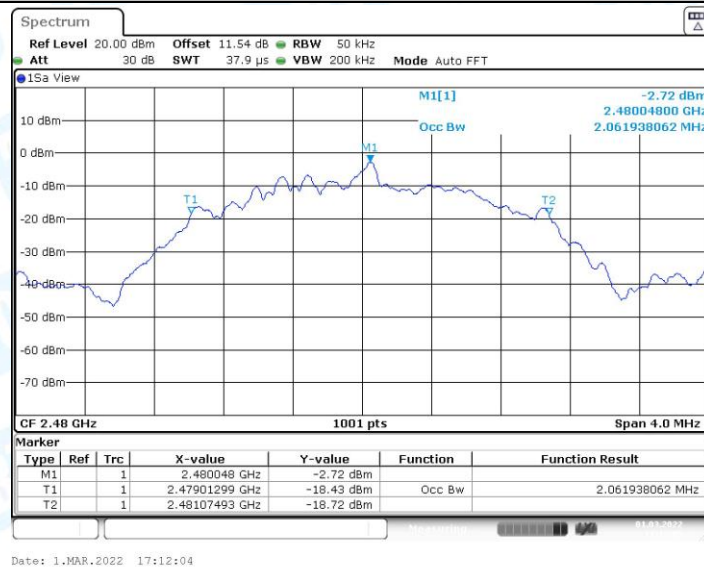
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



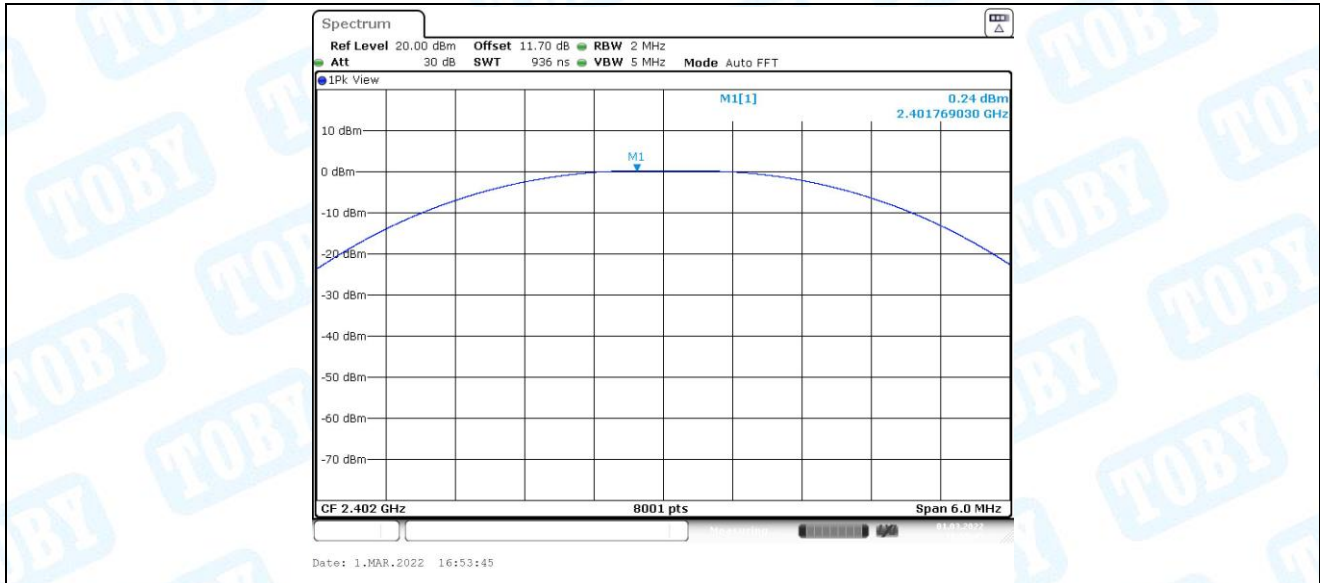
BLE_2M_Ant1_2480

3. Maximum conducted output power

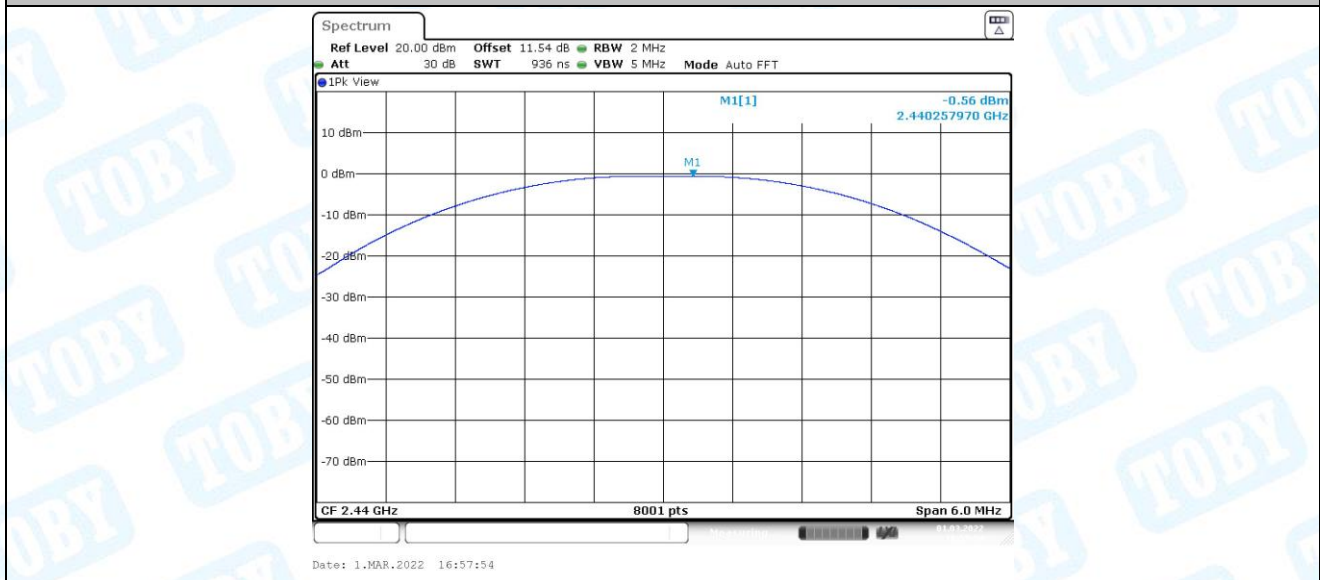
3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.24	≤30	PASS
		2440	-0.56	≤30	PASS
		2480	-1.45	≤30	PASS
BLE_2M	Ant1	2402	0.35	≤30	PASS
		2440	-0.52	≤30	PASS
		2480	-1.45	≤30	PASS

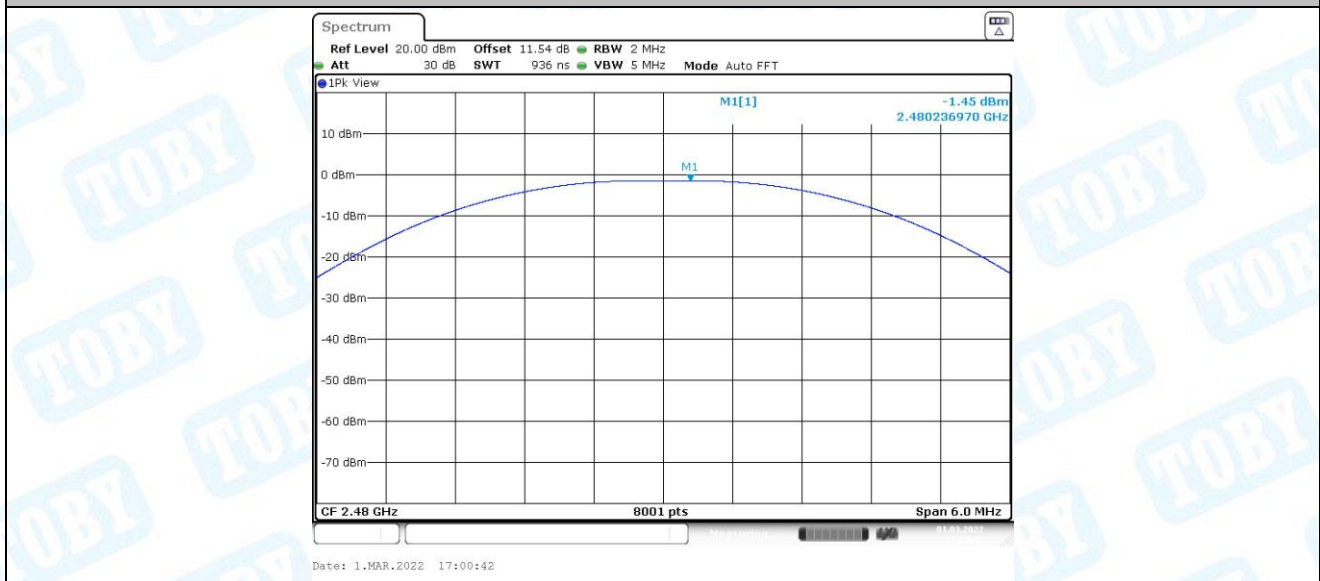
3.2. Test Graphs



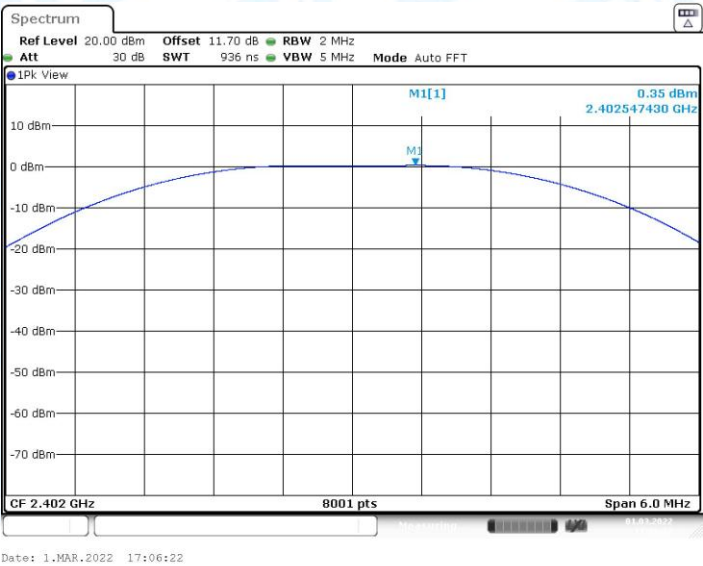
BLE_1M_Ant1_2402



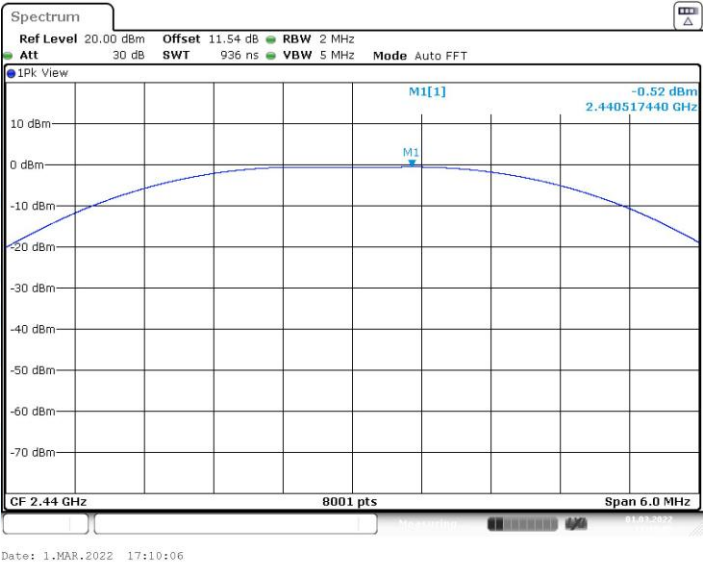
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



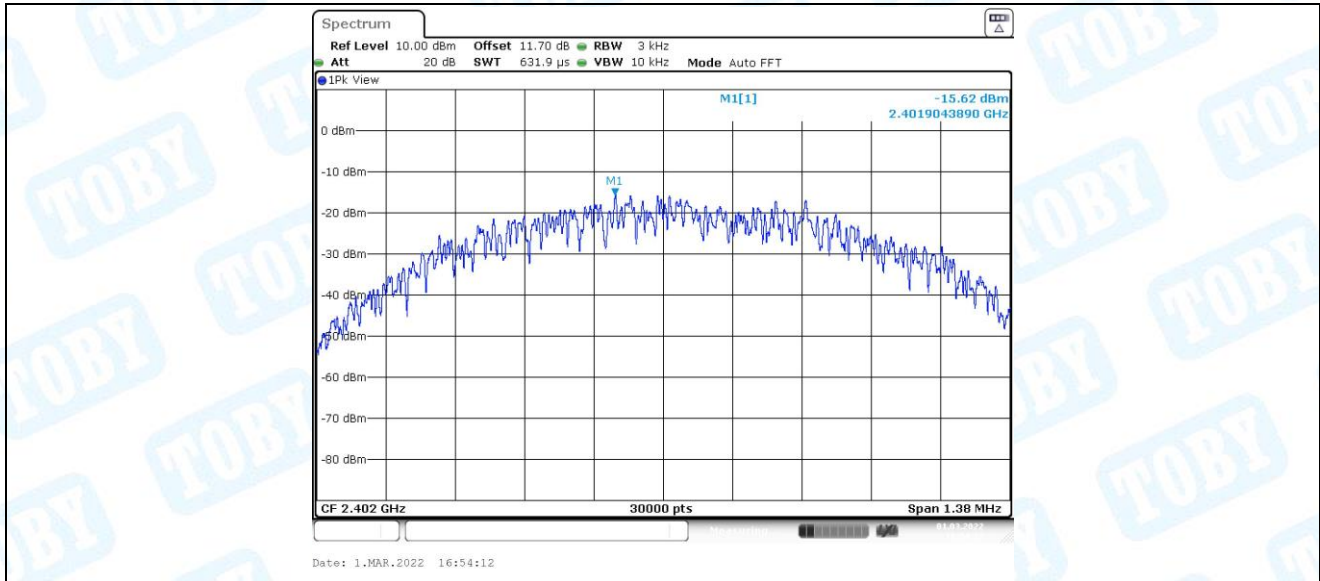
BLE_2M_Ant1_2480

4. Maximum power spectral density

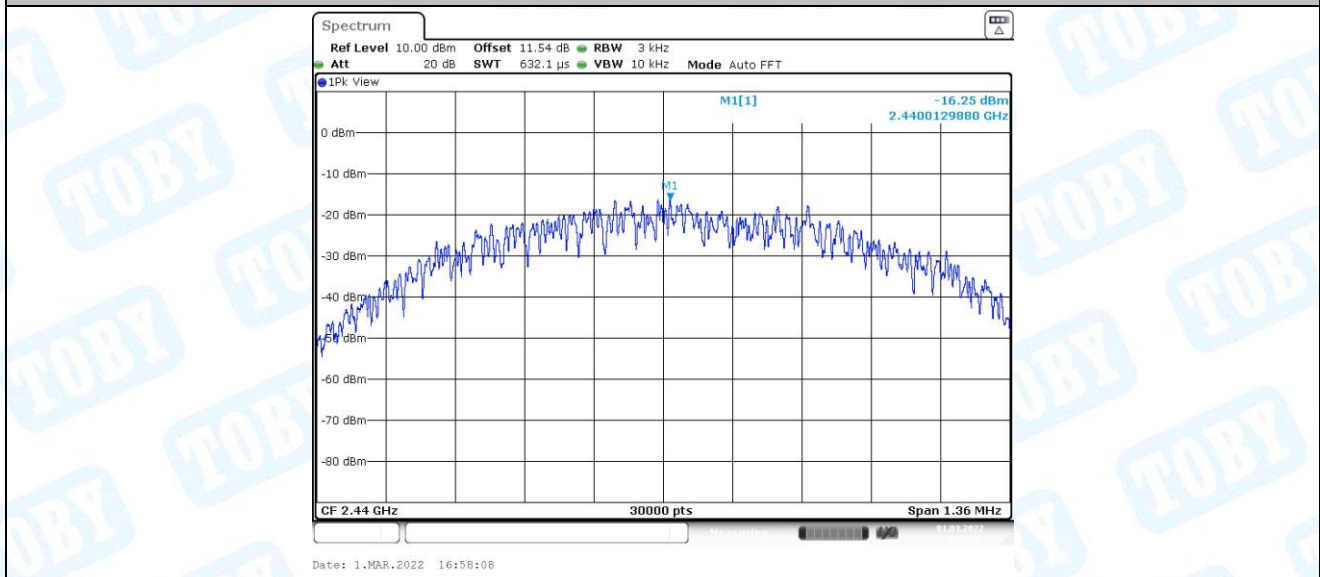
4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.62	≤8.00	PASS
		2440	-16.25	≤8.00	PASS
		2480	-17.04	≤8.00	PASS
BLE_2M	Ant1	2402	-18.22	≤8.00	PASS
		2440	-19.07	≤8.00	PASS
		2480	-19.87	≤8.00	PASS

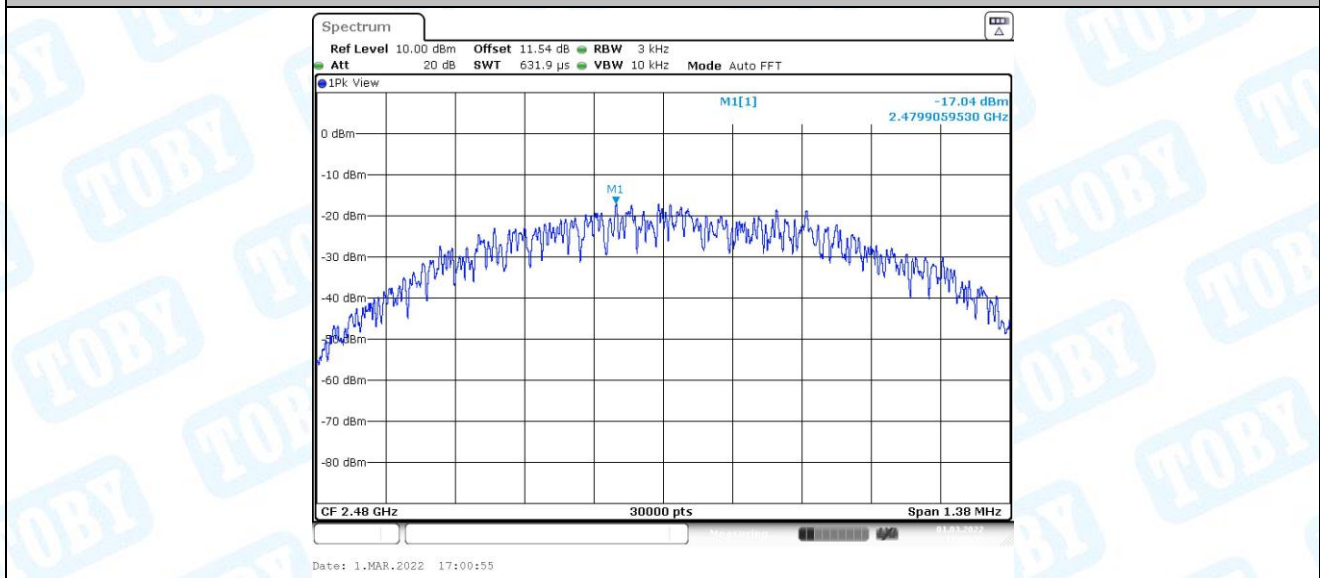
4.2. Test Graphs



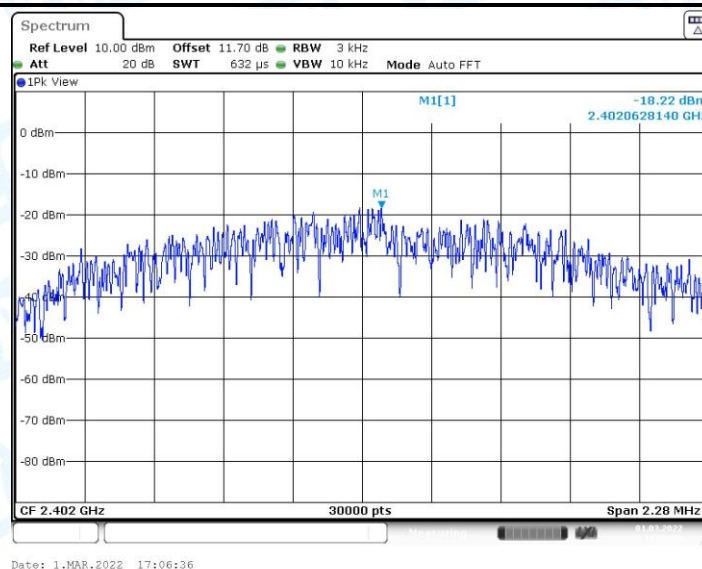
BLE_1M_Ant1_2402



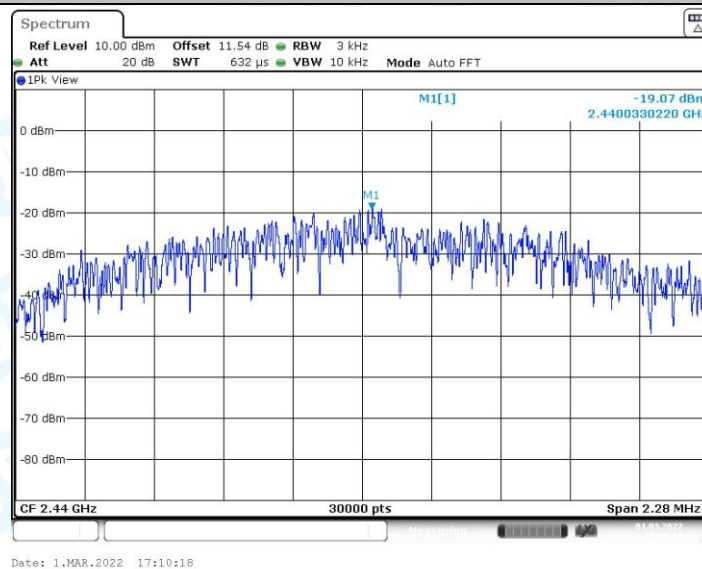
BLE_1M_Ant1_2440



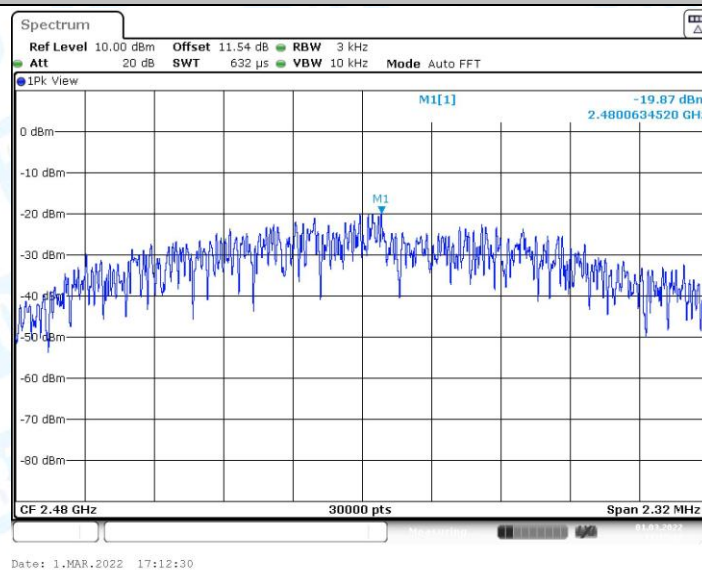
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



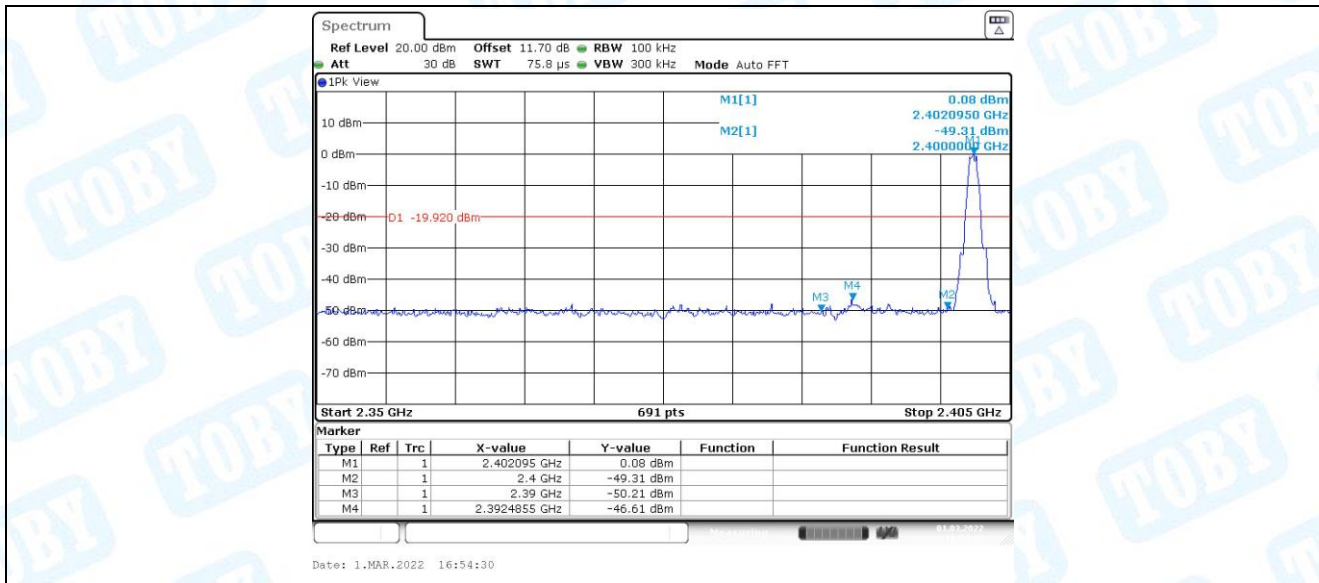
BLE_2M_Ant1_2480

5. Band edge measurements

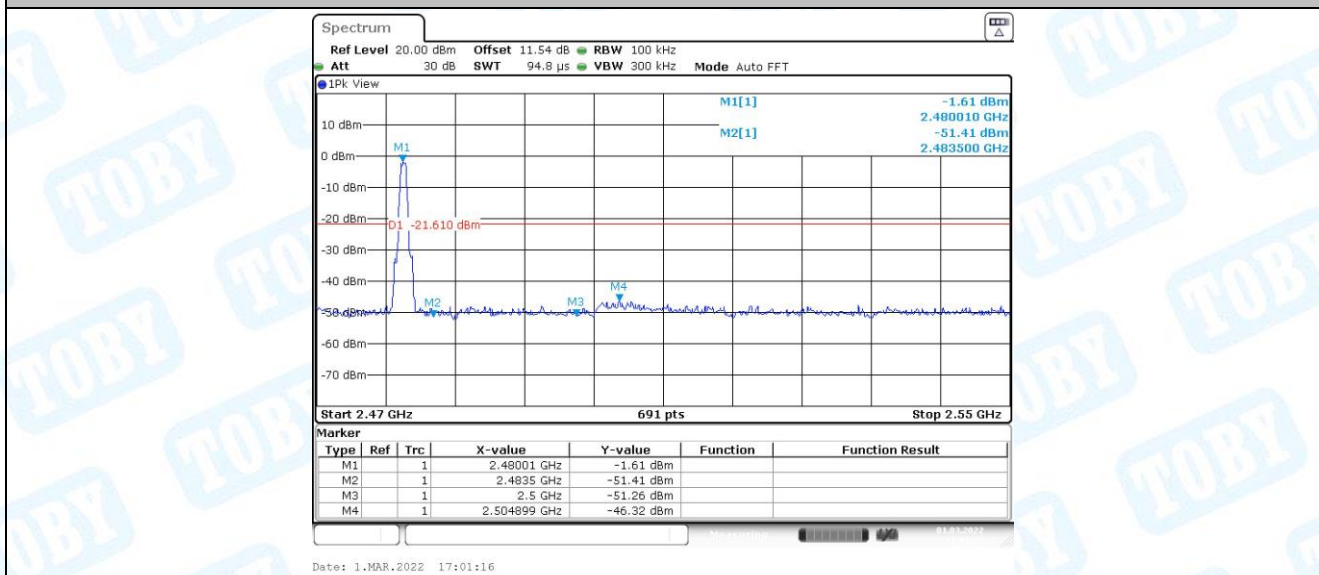
5.1. Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.08	-46.61	≤ -19.92	PASS
		High	2480	-1.61	-46.32	≤ -21.61	PASS
BLE_2M	Ant1	Low	2402	-0.06	-34.45	≤ -20.06	PASS
		High	2480	-1.84	-45.97	≤ -21.84	PASS

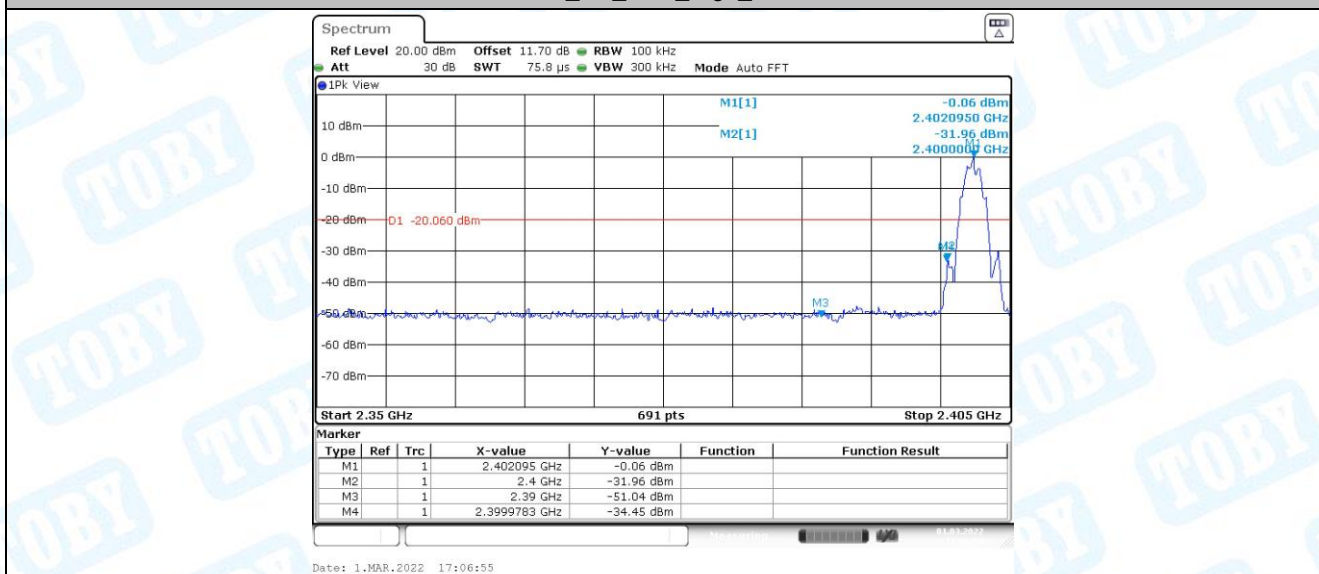
5.2. Test Graphs



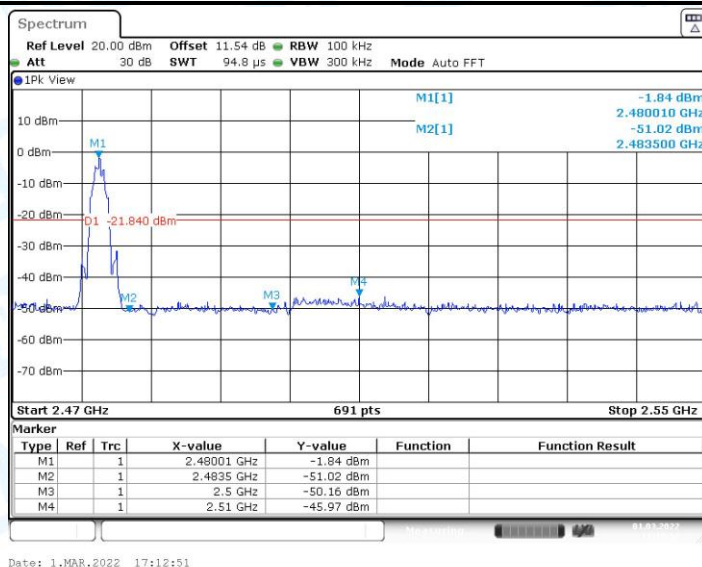
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



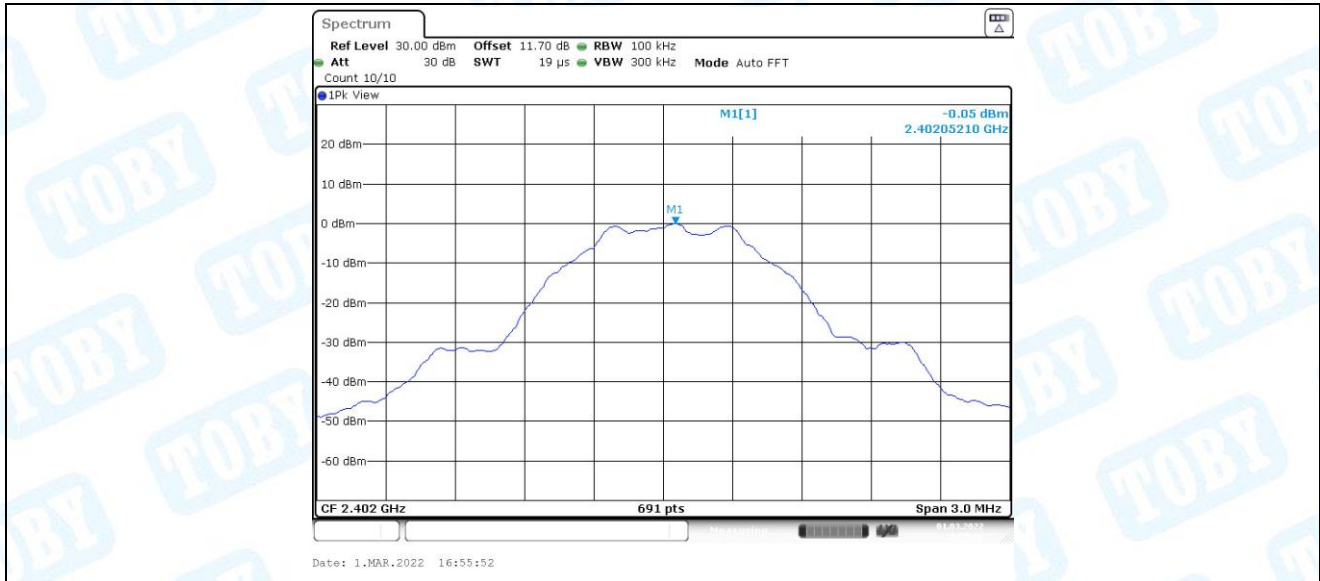
BLE_2M_Ant1_High_2480

6. Conducted Spurious Emission

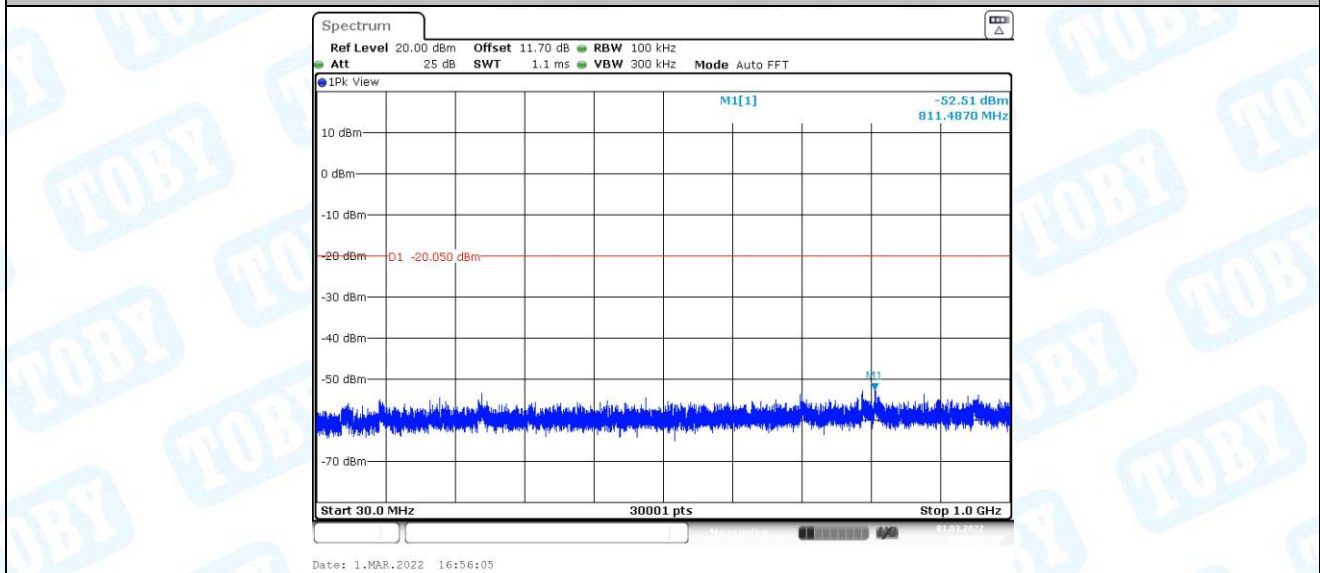
6.1. Test Result

Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.05	-0.05	---	PASS
			30~1000	-0.05	-52.51	≤-20.05	PASS
			1000~26500	-0.05	-46.33	≤-20.05	PASS
		2440	Reference	-0.88	-0.88	---	PASS
			30~1000	-0.88	-52.87	≤-20.88	PASS
			1000~26500	-0.88	-46.78	≤-20.88	PASS
		2480	Reference	-1.72	-1.72	---	PASS
			30~1000	-1.72	-52.72	≤-21.72	PASS
			1000~26500	-1.72	-47.04	≤-21.72	PASS
BLE_2M	Ant1	2402	Reference	-0.23	-0.23	---	PASS
			30~1000	-0.23	-53.42	≤-20.23	PASS
			1000~26500	-0.23	-47.02	≤-20.23	PASS
		2440	Reference	-1.03	-1.03	---	PASS
			30~1000	-1.03	-53.1	≤-21.03	PASS
			1000~26500	-1.03	-46.23	≤-21.03	PASS
		2480	Reference	-1.97	-1.97	---	PASS
			30~1000	-1.97	-53.02	≤-21.97	PASS
			1000~26500	-1.97	-46.45	≤-21.97	PASS

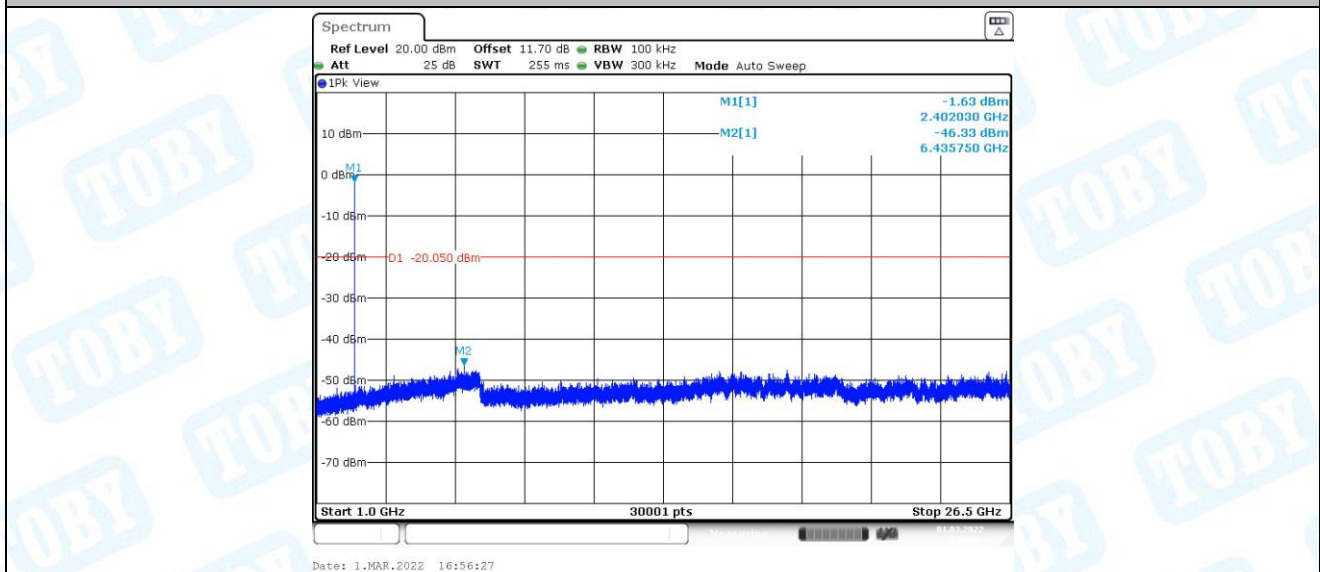
6.2. Test Graphs



BLE_1M_Ant1_2402_0~Reference



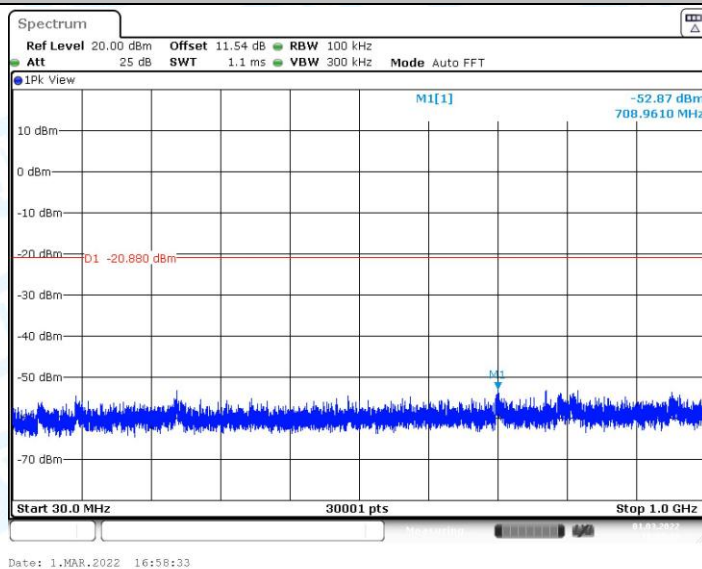
BLE_1M_Ant1_2402_30~1000



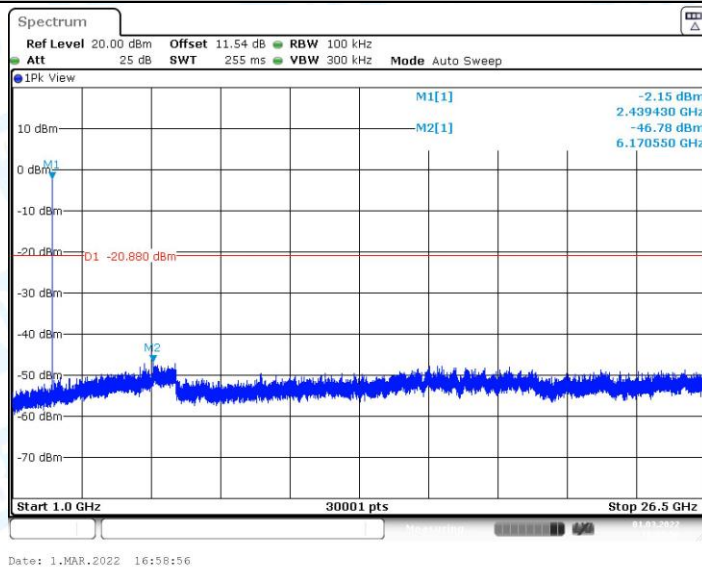
BLE_1M_Ant1_2402_1000~26500



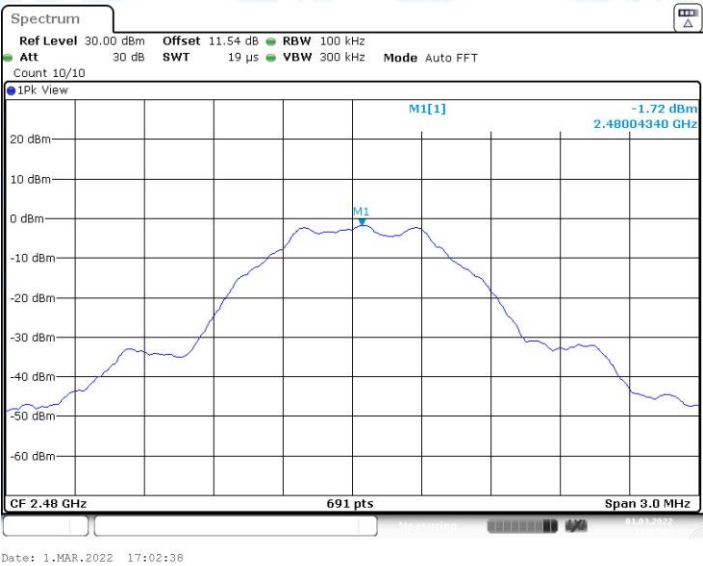
BLE_1M_Ant1_2440_0~Reference



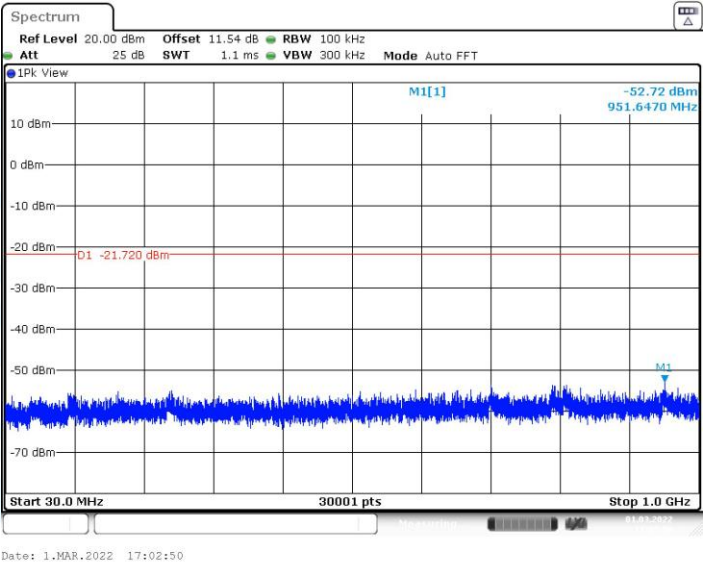
BLE_1M_Ant1_2440_30~1000



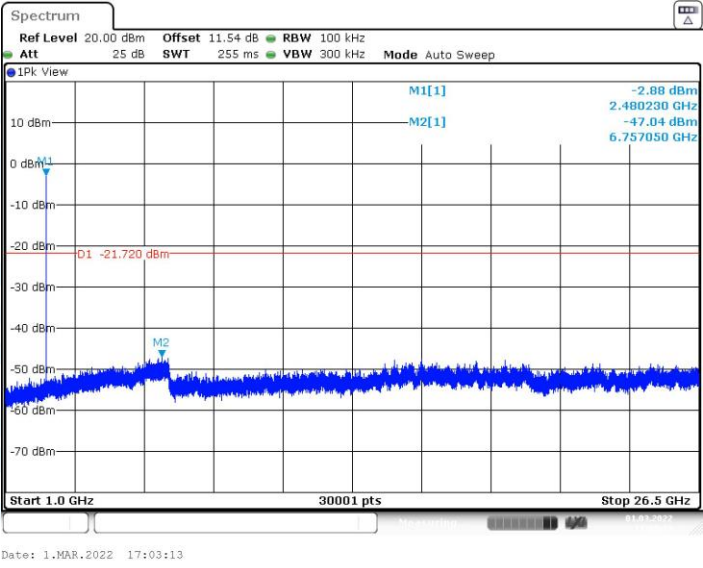
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



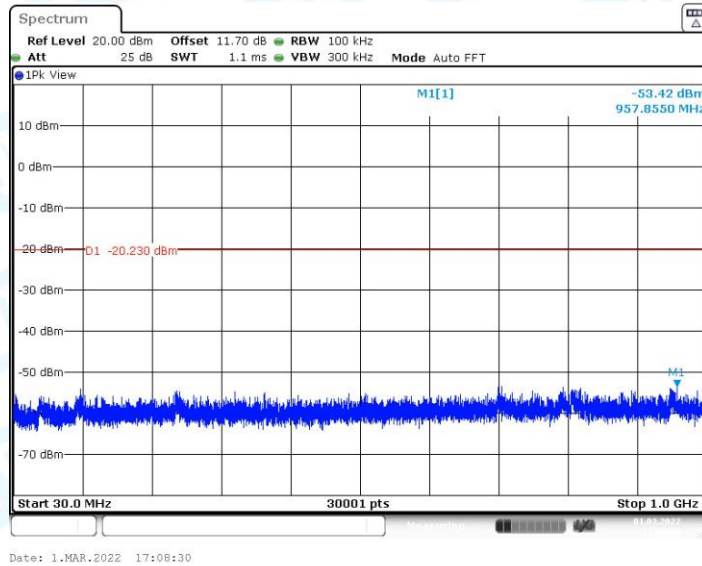
BLE_1M_Ant1_2480_30~1000



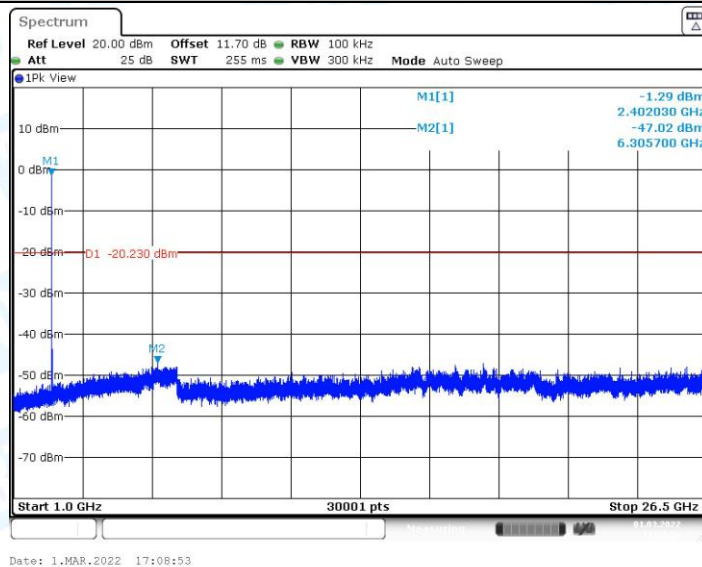
BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_0~Reference



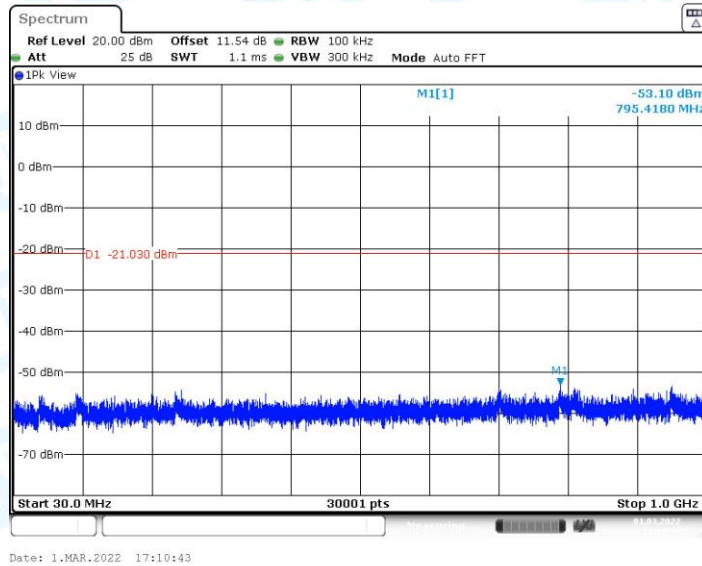
BLE_2M_Ant1_2402_30~1000



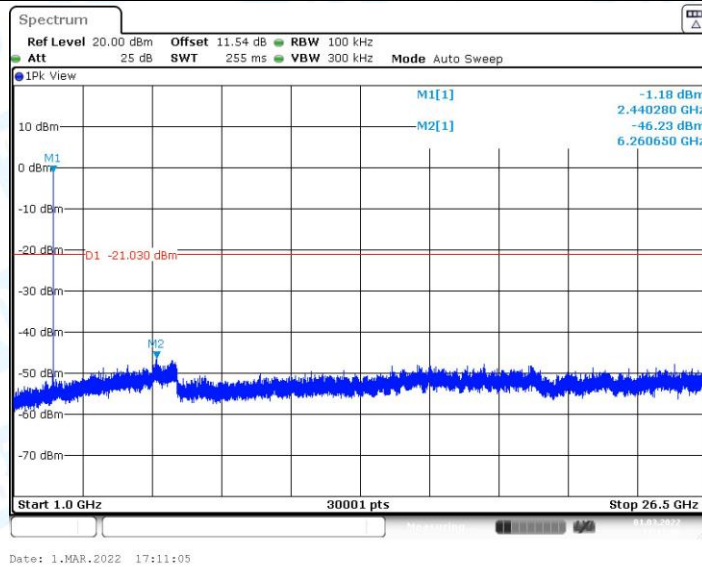
BLE_2M_Ant1_2402_1000~26500



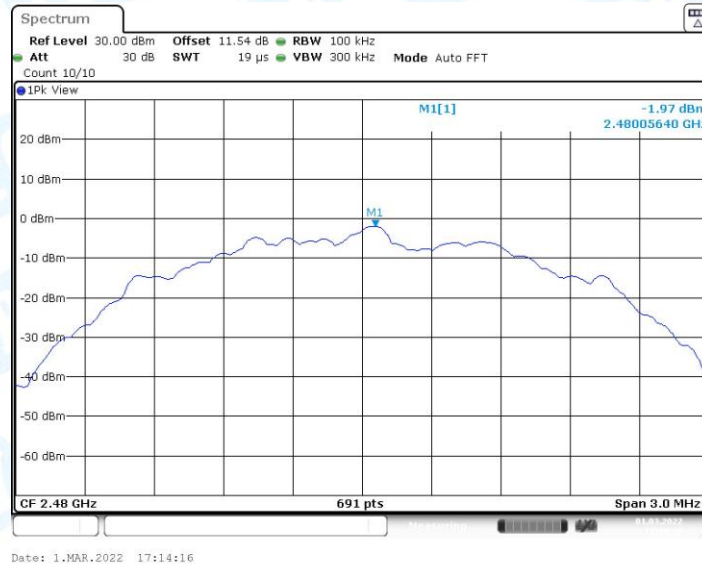
BLE_2M_Ant1_2440_0~Reference



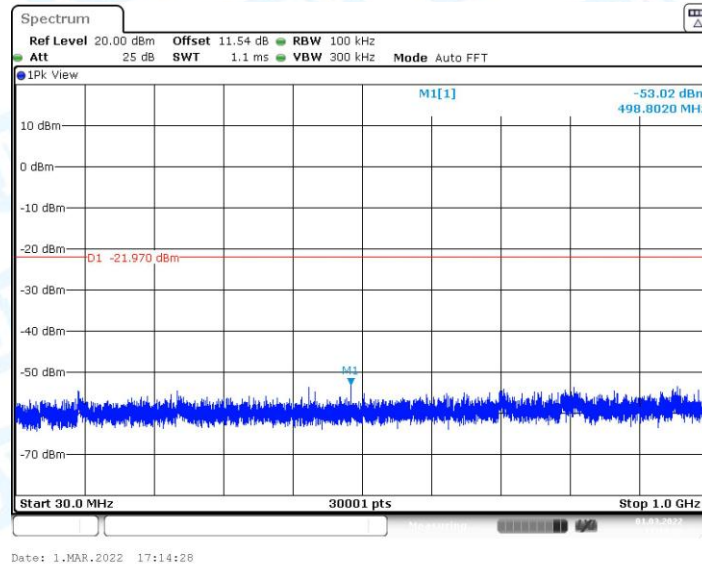
BLE_2M_Ant1_2440_30~1000



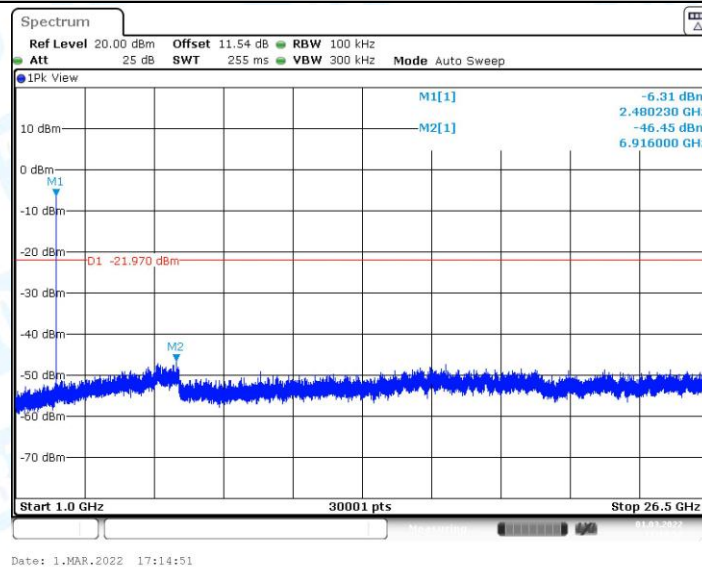
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



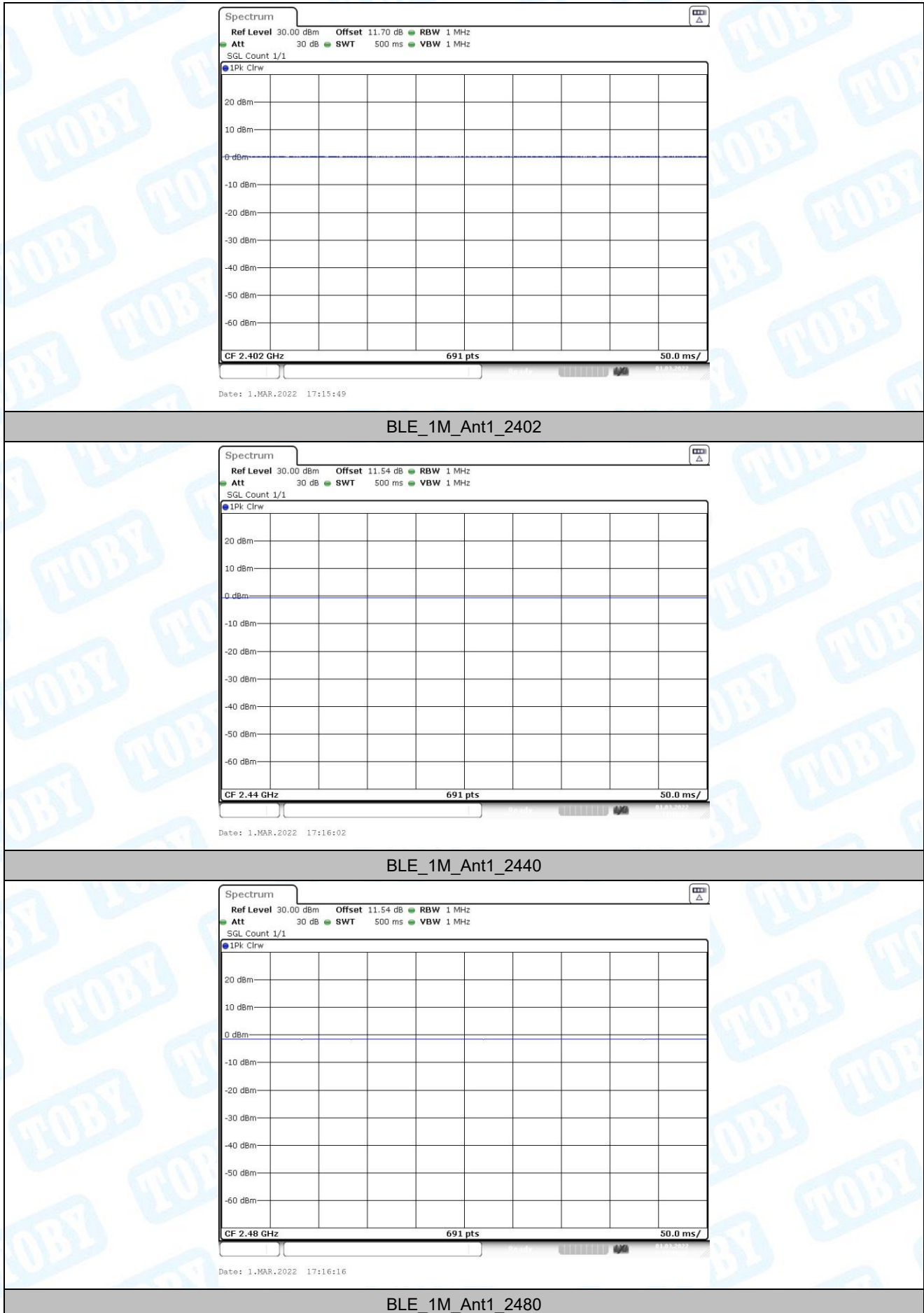
BLE_2M_Ant1_2480_1000~26500

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

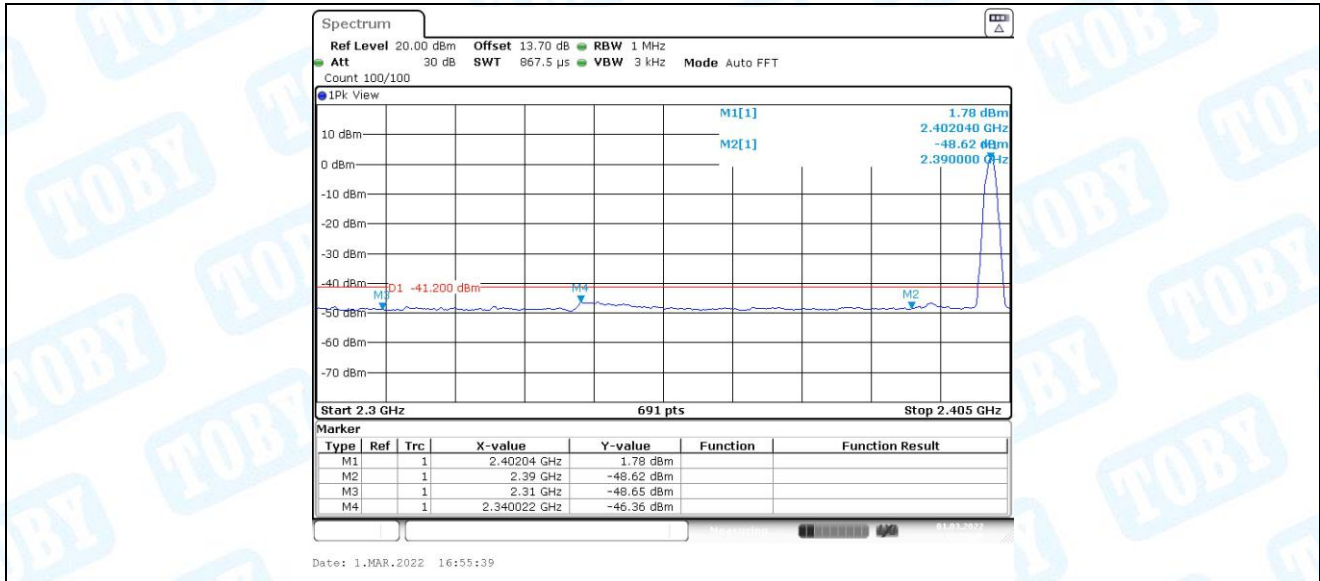
8.1. Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.65	≤-41.20	PASS
				AV	2340.022	-46.36	≤-41.20	PASS
				AV	2390.000	-48.62	≤-41.20	PASS
				Peak	2310.000	-39.42	≤-21.20	PASS
				Peak	2343.217	-35.87	≤-21.20	PASS
				Peak	2390.000	-39.63	≤-21.20	PASS
		High	2480	AV	2483.500	-48.16	≤-41.20	PASS
				AV	2497.246	-47.52	≤-41.20	PASS
				AV	2500.000	-47.93	≤-41.20	PASS
				Peak	2483.500	-40.06	≤-21.20	PASS
				Peak	2487.971	-35.85	≤-21.20	PASS
				Peak	2500.000	-37.34	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.36	≤-41.20	PASS
				AV	2340.935	-45.68	≤-41.20	PASS
				AV	2390.000	-48.14	≤-41.20	PASS
				Peak	2310.000	-39.31	≤-21.20	PASS
				Peak	2341.848	-36.26	≤-21.20	PASS
				Peak	2390.000	-38.91	≤-21.20	PASS
		High	2480	AV	2483.500	-47.16	≤-41.20	PASS
				AV	2492.609	-46.81	≤-41.20	PASS
				AV	2500.000	-47.46	≤-41.20	PASS
				Peak	2483.500	-39.01	≤-21.20	PASS
				Peak	2497.246	-35.93	≤-21.20	PASS
				Peak	2500.000	-37.09	≤-21.20	PASS

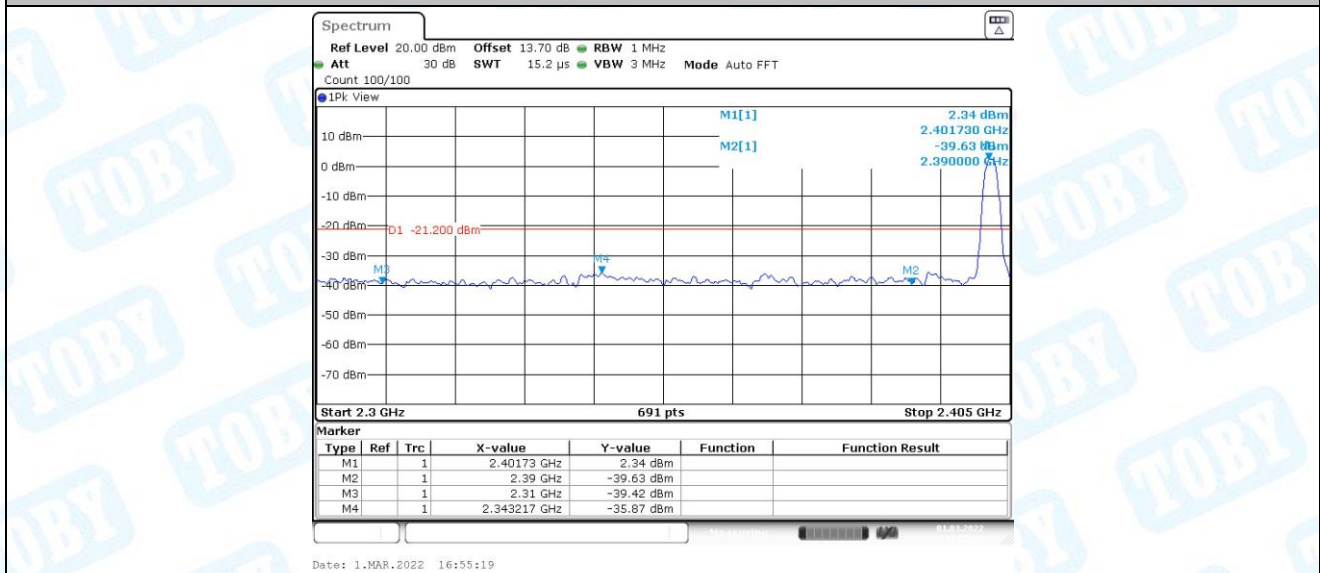
Note:

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.

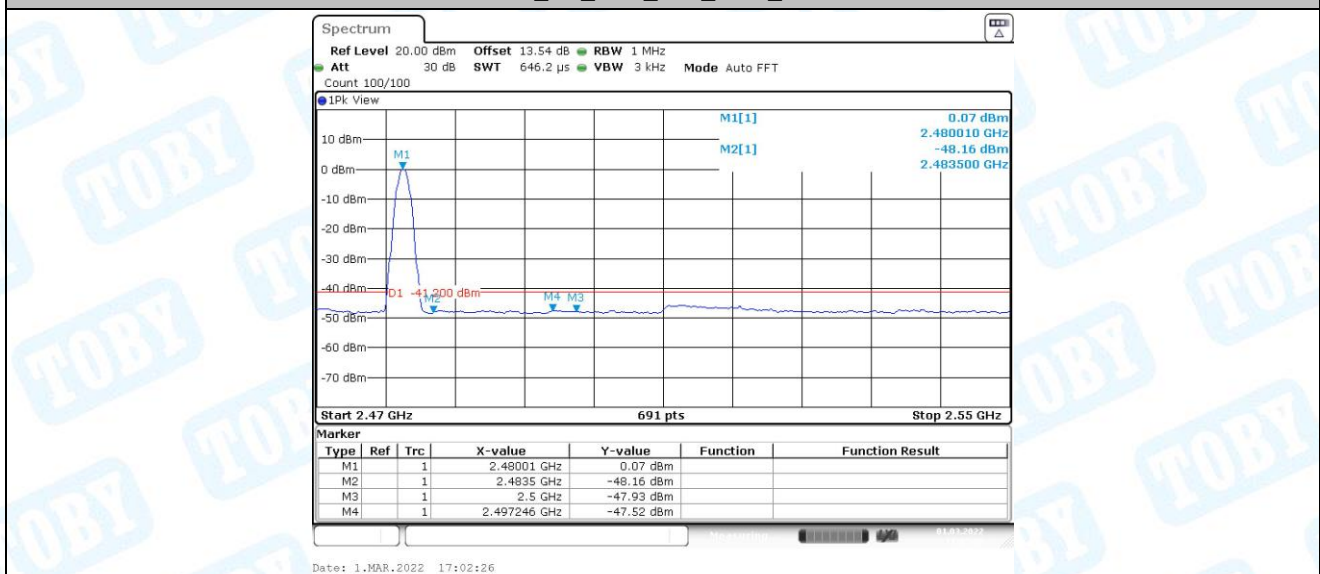
8.2. Test Graphs



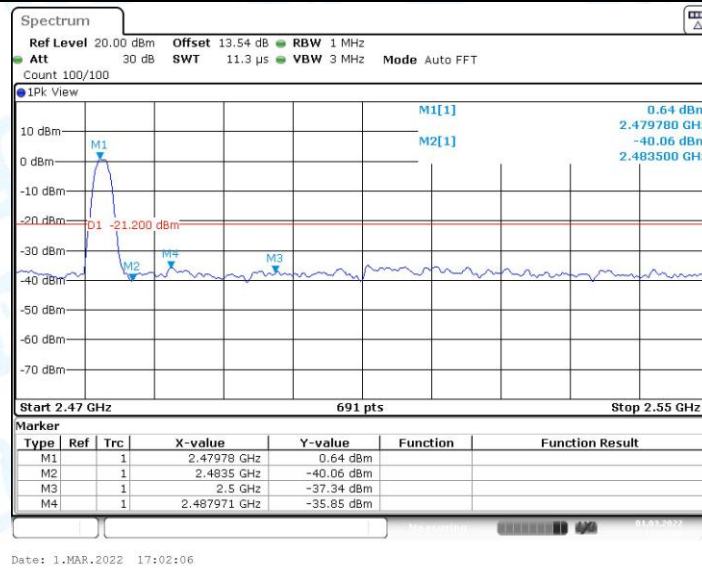
BLE_1M_Ant1_Low_2402_AV



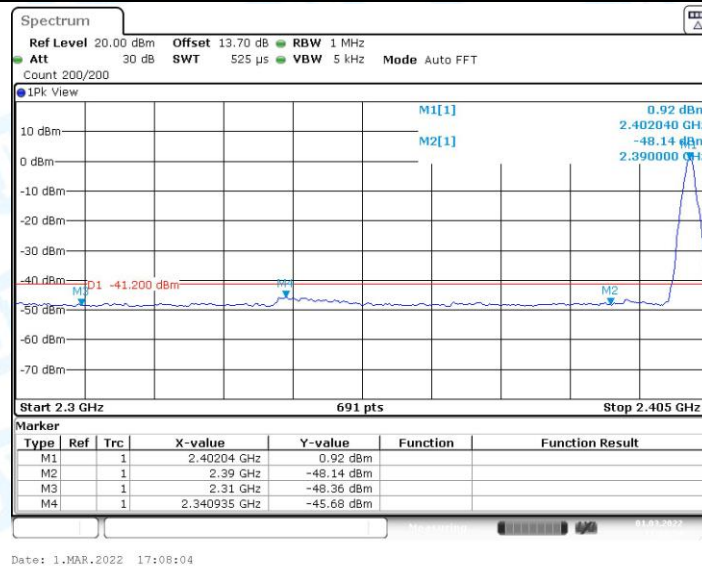
BLE_1M_Ant1_Low_2402_Peak



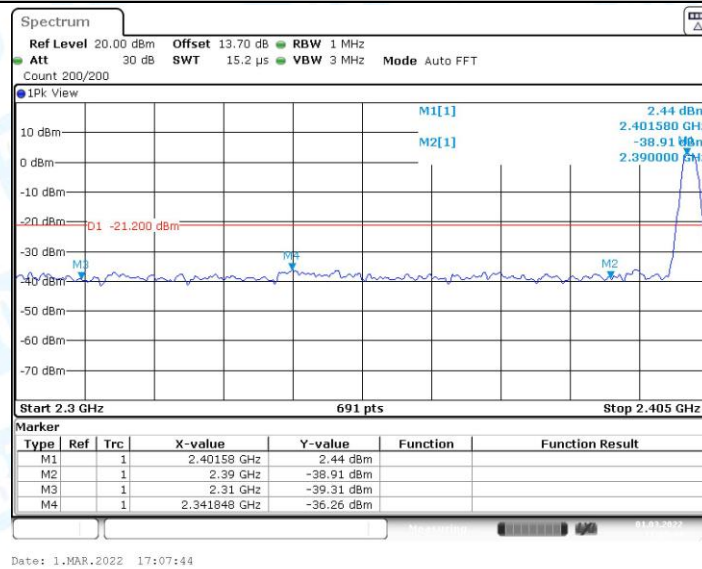
BLE_1M_Ant1_High_2480_AV



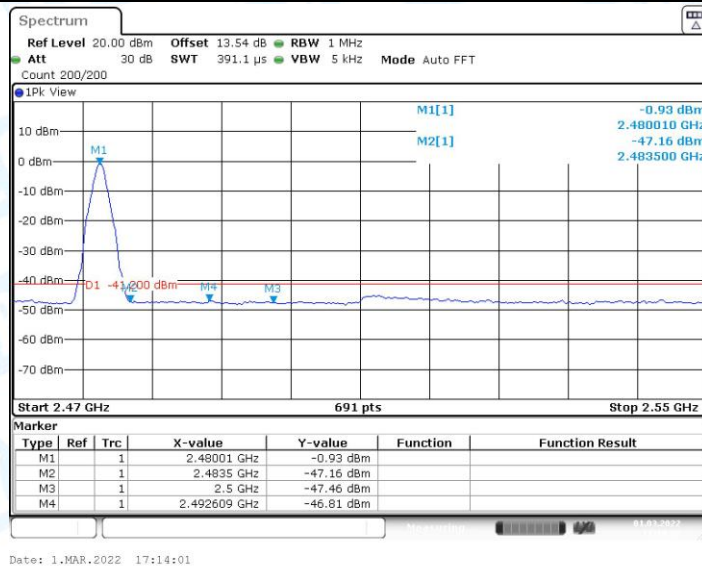
BLE_1M_Ant1_High_2480_Peak



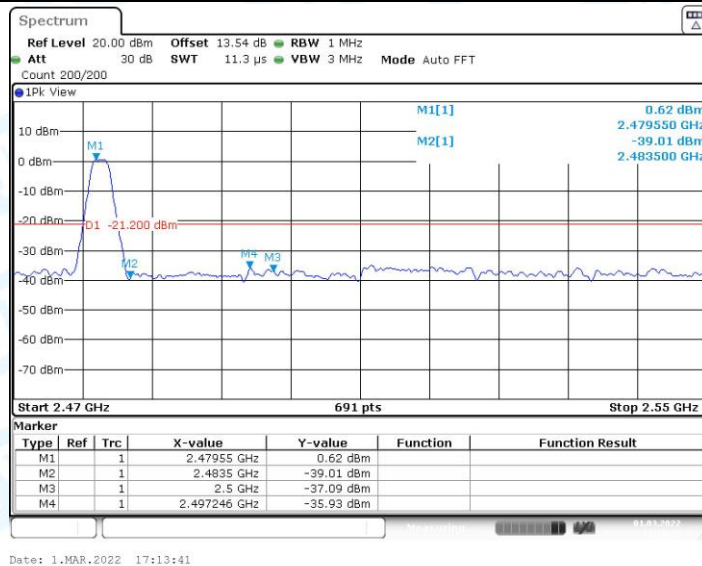
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

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