RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Wellness Watch
Test Model:	KCWGP2174001(B09MMPLC2G)
Sample ID:	202202-0092-1-2#
Environmental Conditions	
Temperature:	24℃
Relative Humidity:	50%
Test Voltage:	DC3.7V
Test Engineer:	Hejingchang
Note: For a more detailed features description, please refer to the report TBR-C-202202-0092-1.	

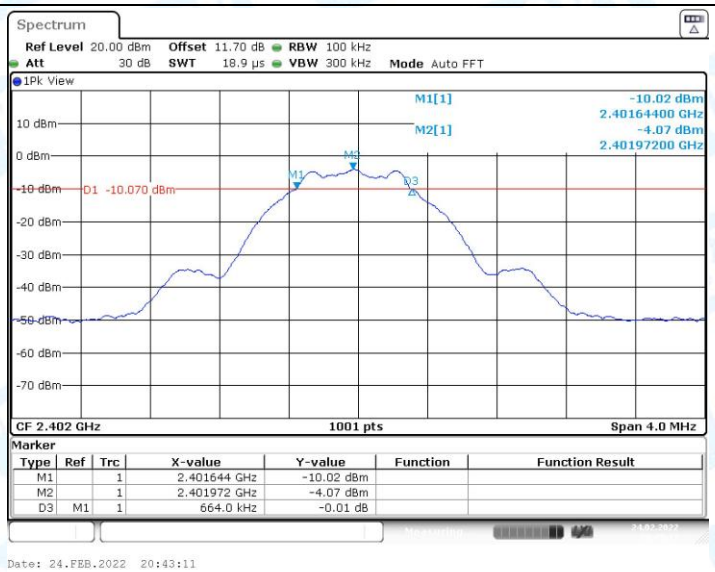
Contents

1. DTS Bandwidth

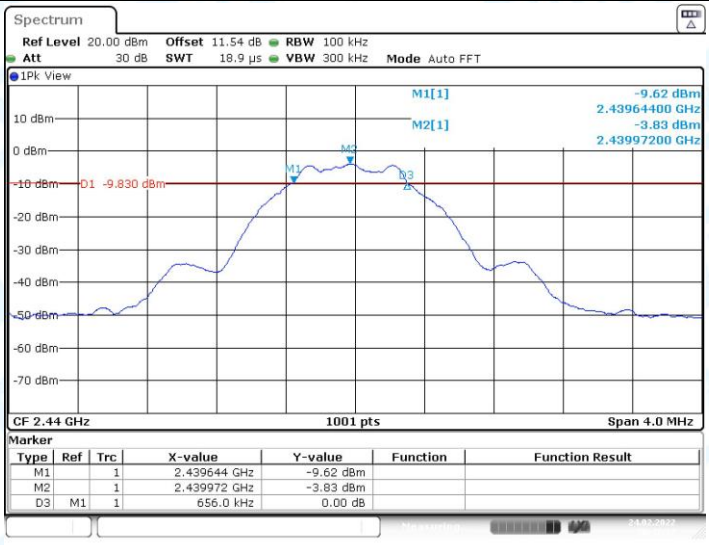
1.1.Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.64	2402.31	0.5	PASS
		2440	0.66	2439.64	2440.30	0.5	PASS
		2480	0.66	2479.64	2480.30	0.5	PASS
BLE_2M	Ant1	2402	0.95	2401.42	2402.38	0.5	PASS
		2440	1.10	2439.43	2440.54	0.5	PASS
		2480	1.10	2479.43	2480.54	0.5	PASS

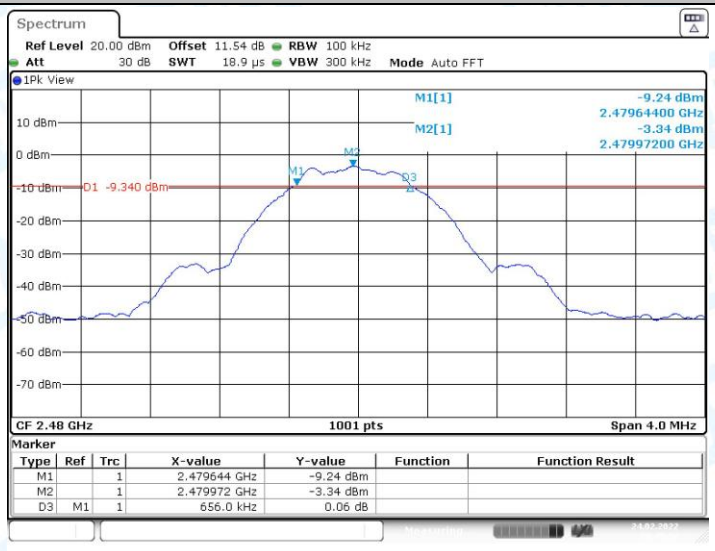
1.2.Test Graphs



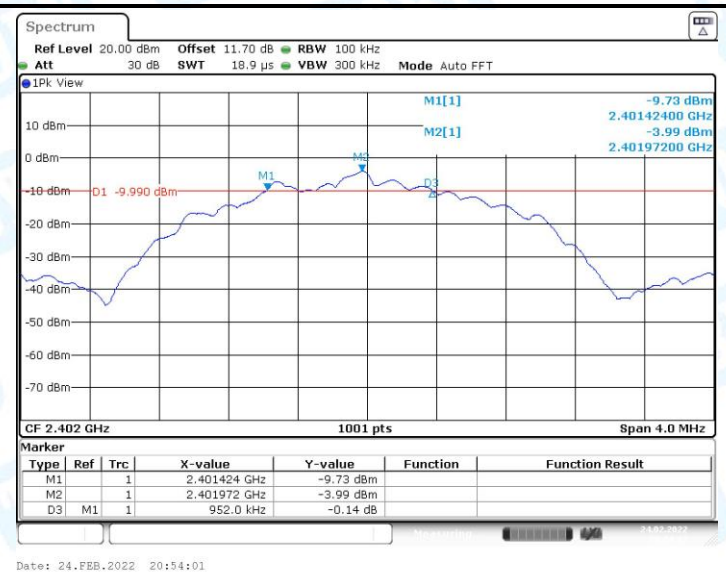
BLE_1M_Ant1_2402



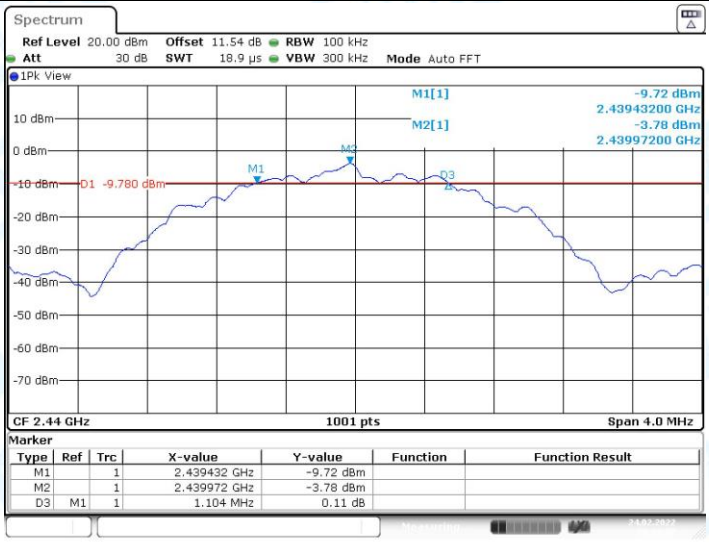
BLE_1M_Ant1_2440



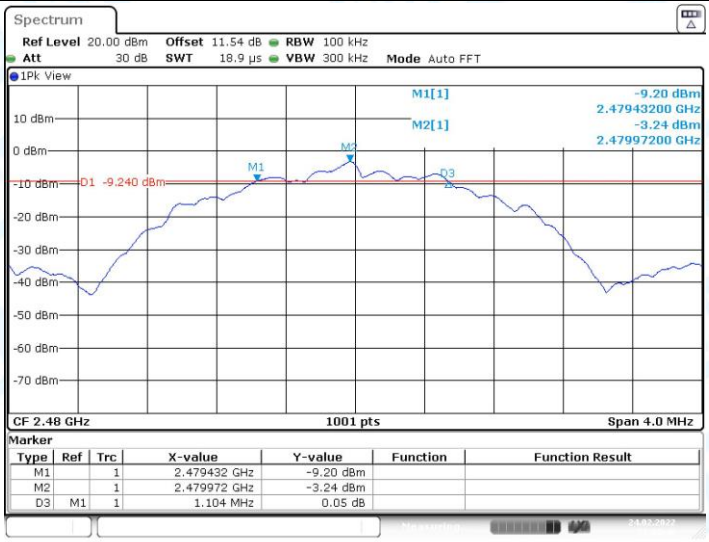
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



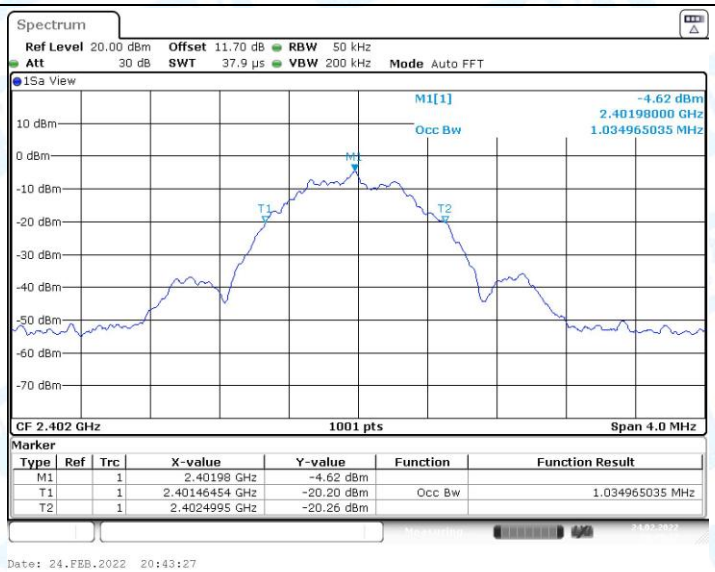
BLE_2M_Ant1_2480

2. Occupied Channel Bandwidth

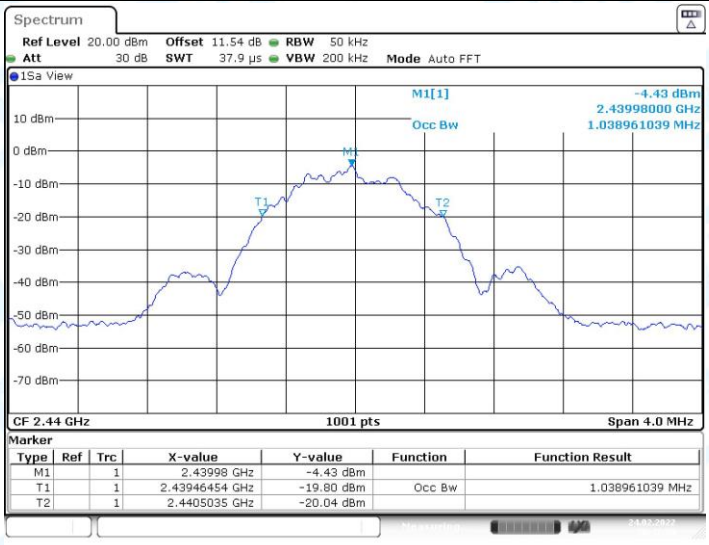
2.1.Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.035	2401.465	2402.500	---	---
		2440	1.039	2439.465	2440.503	---	---
		2480	1.047	2479.457	2480.503	---	---
BLE_2M	Ant1	2402	2.07	2400.957	2403.027	---	---
		2440	2.054	2438.965	2441.019	---	---
		2480	2.078	2478.957	2481.035	---	---

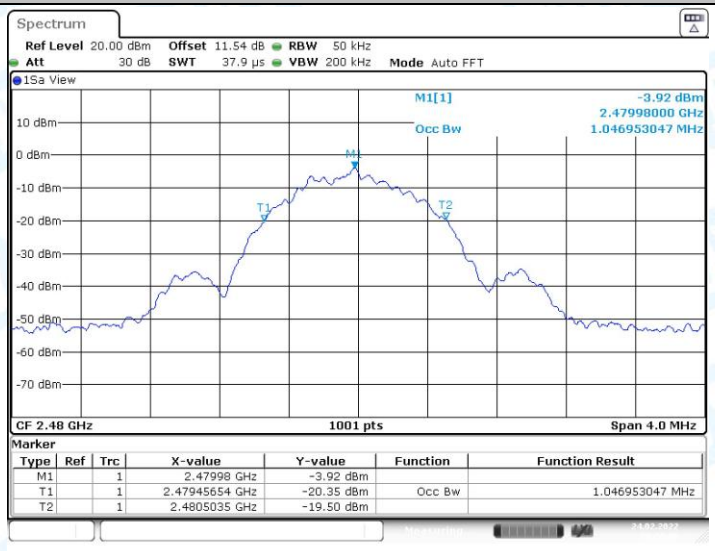
2.2.Test Graphs



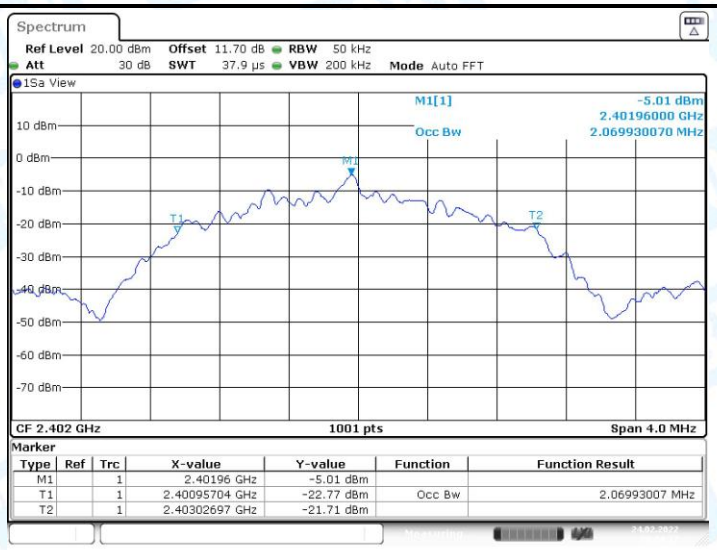
BLE_1M_Ant1_2402



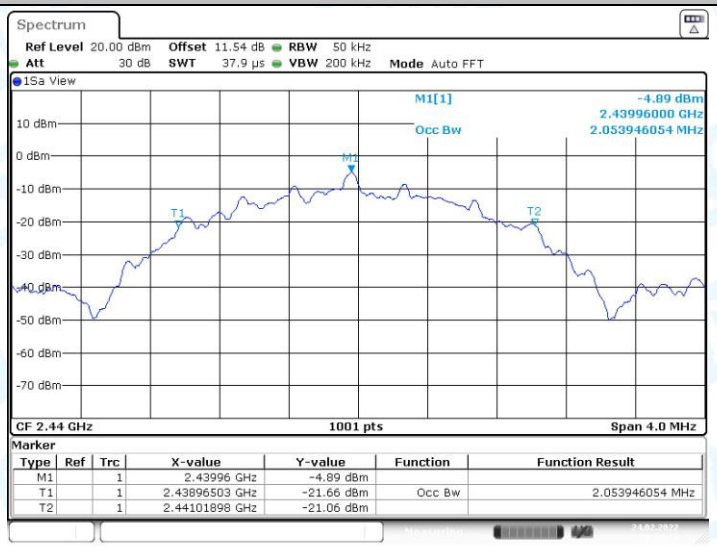
BLE_1M_Ant1_2440



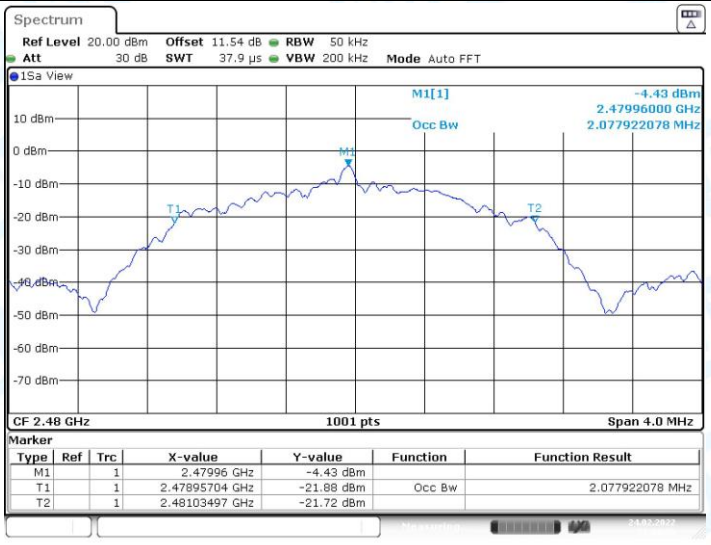
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



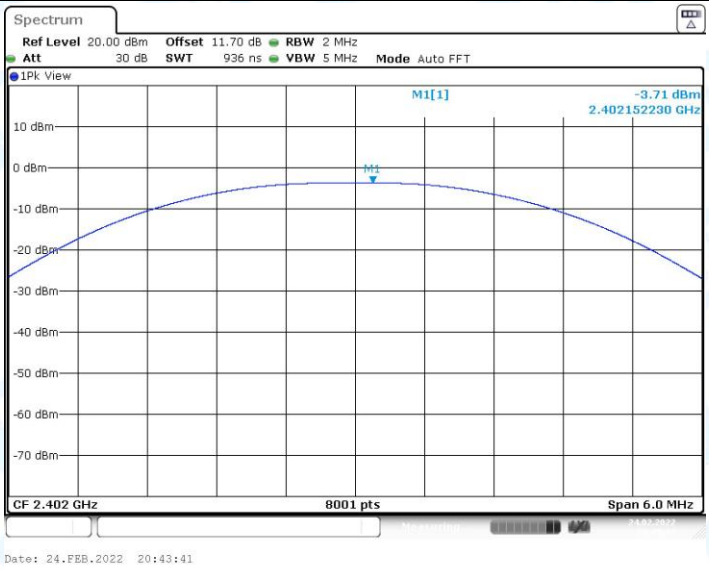
BLE_2M_Ant1_2480

3. Maximum conducted output power

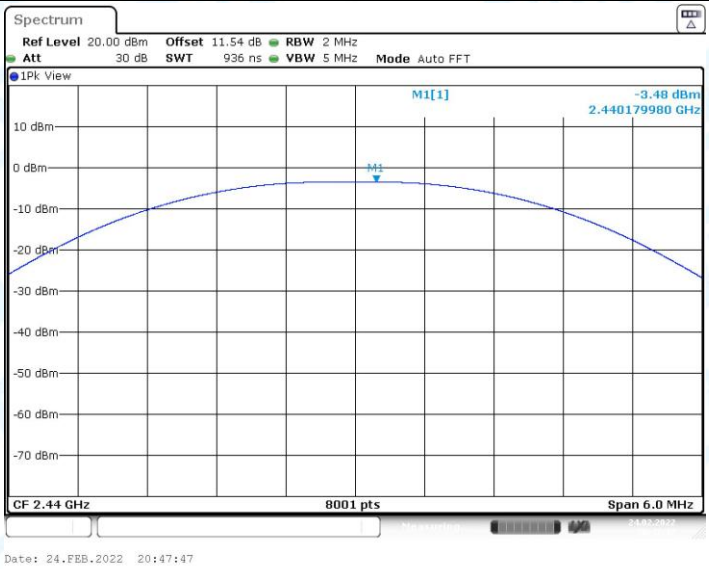
3.1.Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-3.71	≤30	PASS
		2440	-3.48	≤30	PASS
		2480	-2.96	≤30	PASS
BLE_2M	Ant1	2402	-3.65	≤30	PASS
		2440	-3.47	≤30	PASS
		2480	-2.9	≤30	PASS

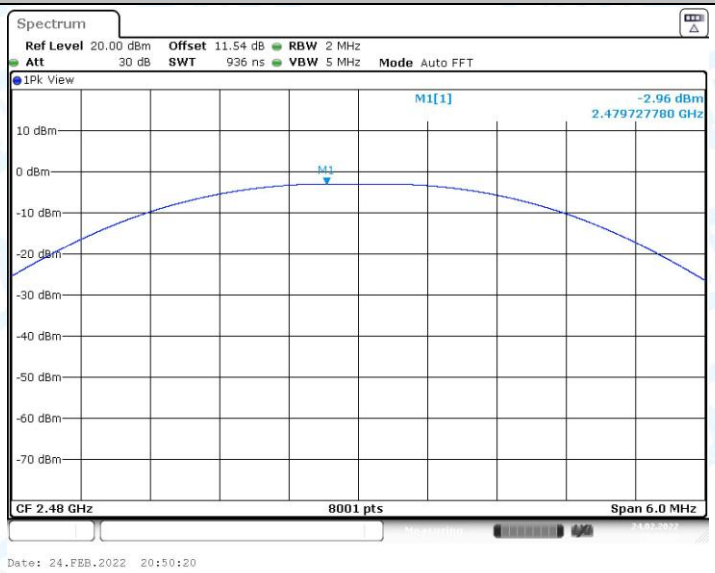
3.2.Test Graphs



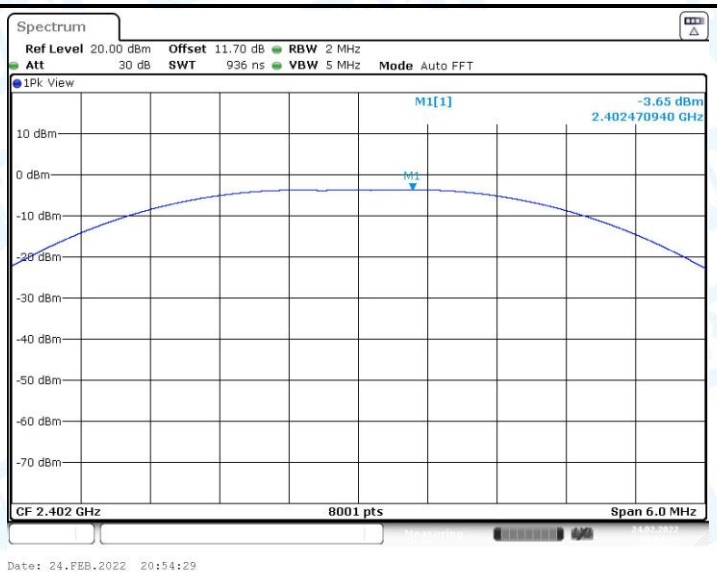
BLE_1M_Ant1_2402



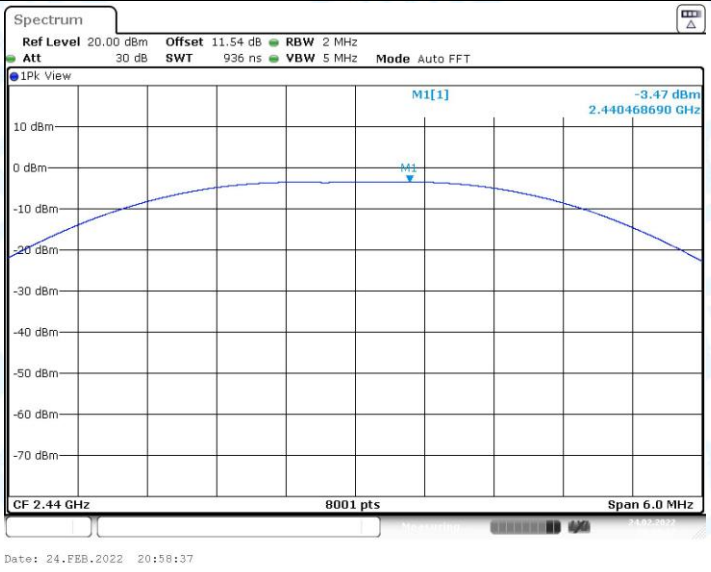
BLE_1M_Ant1_2440



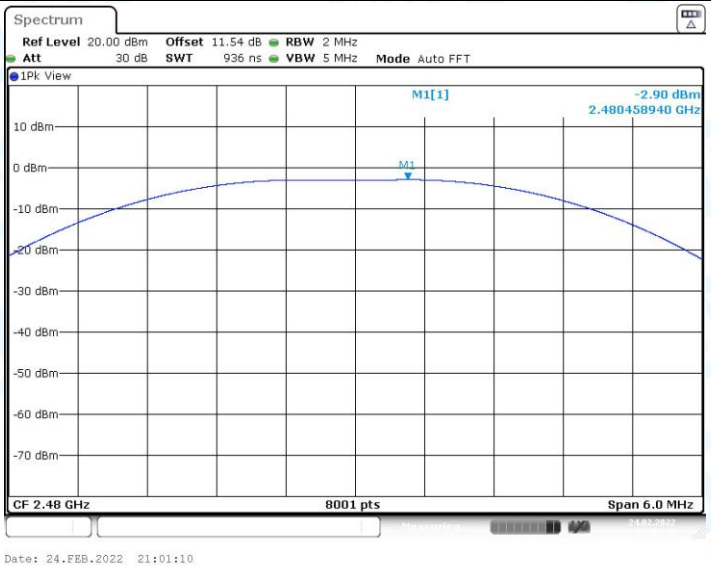
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



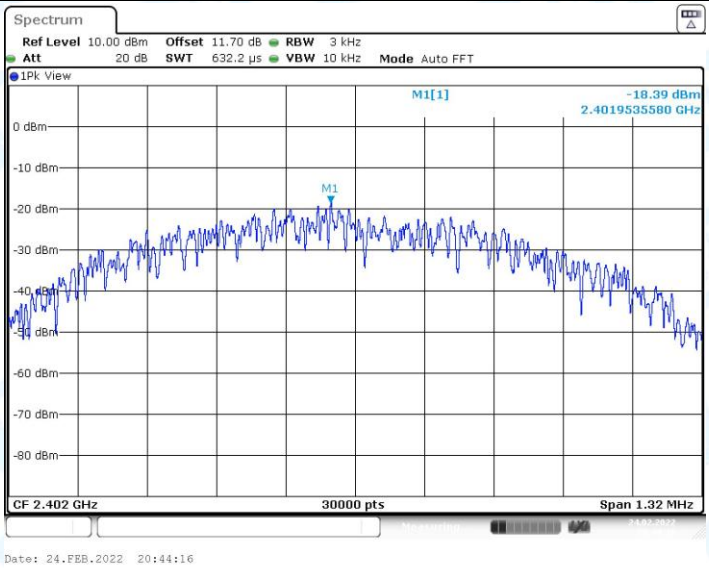
BLE_2M_Ant1_2480

4. Maximum power spectral density

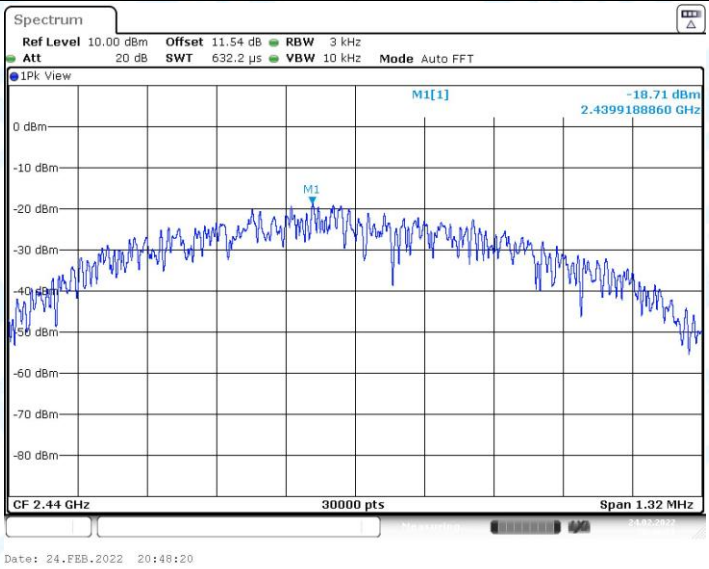
4.1.Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.39	≤8.00	PASS
		2440	-18.71	≤8.00	PASS
		2480	-17.93	≤8.00	PASS
BLE_2M	Ant1	2402	-20.56	≤8.00	PASS
		2440	-20.21	≤8.00	PASS
		2480	-18.06	≤8.00	PASS

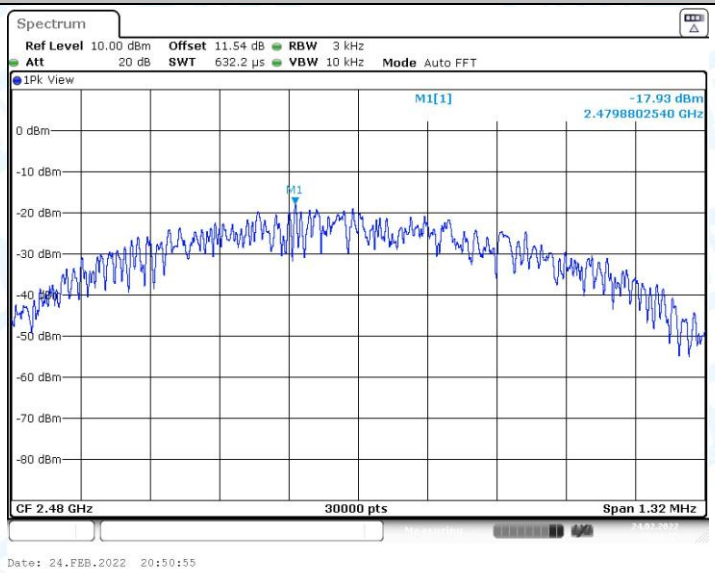
4.2.Test Graphs



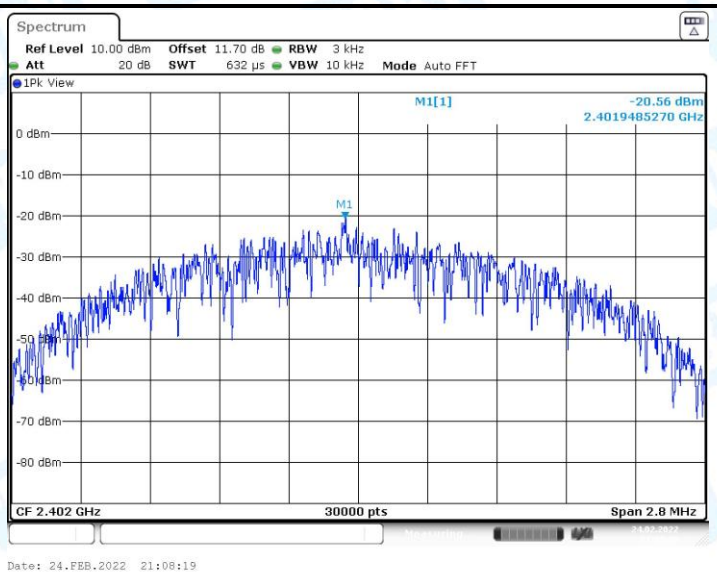
BLE_1M_Ant1_2402



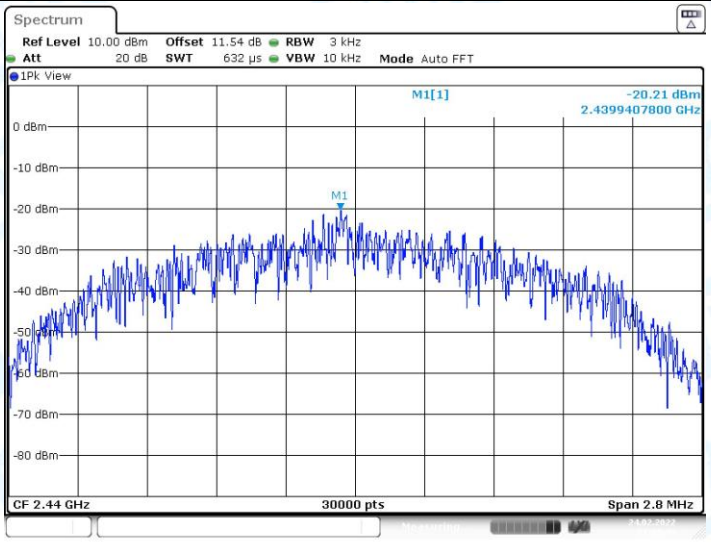
BLE_1M_Ant1_2440



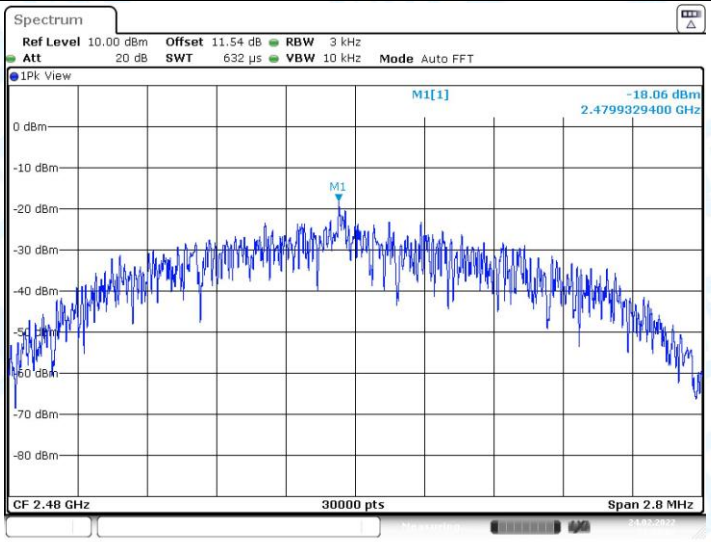
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



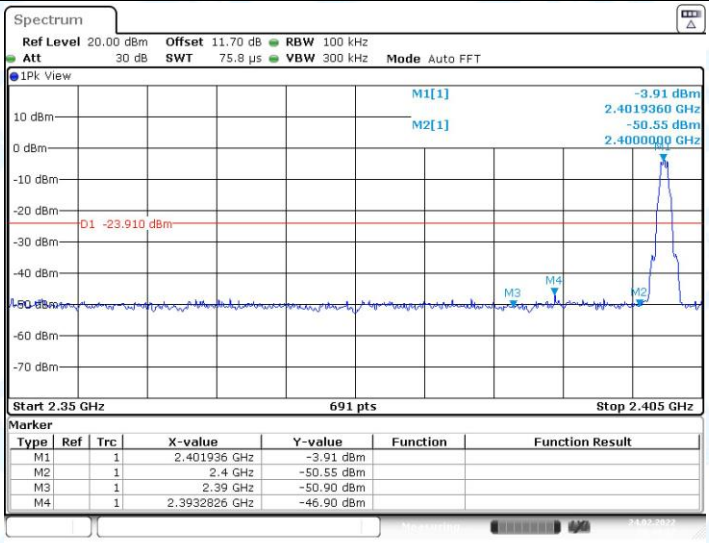
BLE_2M_Ant1_2480

5. Band edge measurements

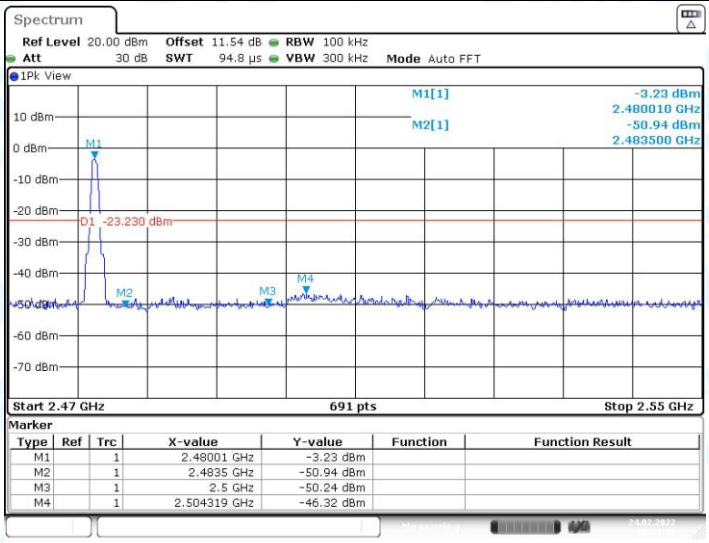
5.1.Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-3.91	-46.9	≤-23.91	PASS
		High	2480	-3.23	-46.32	≤-23.23	PASS
BLE_2M	Ant1	Low	2402	-3.81	-34.58	≤-23.81	PASS
		High	2480	-3.12	-46.02	≤-23.12	PASS

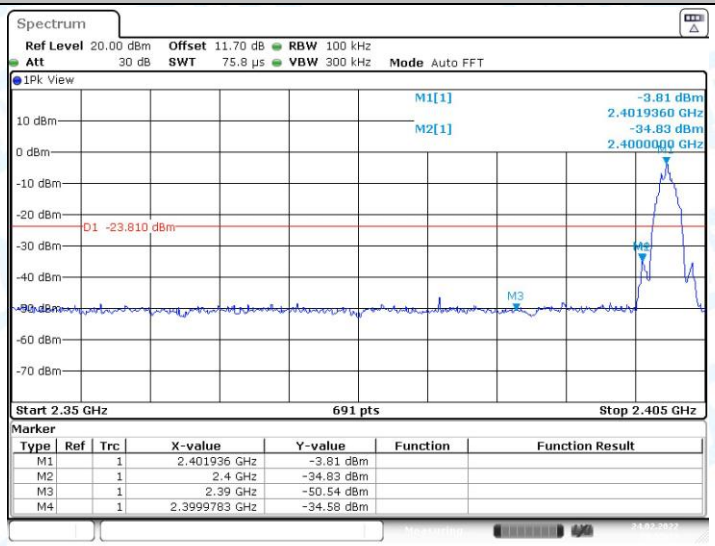
5.2.Test Graphs



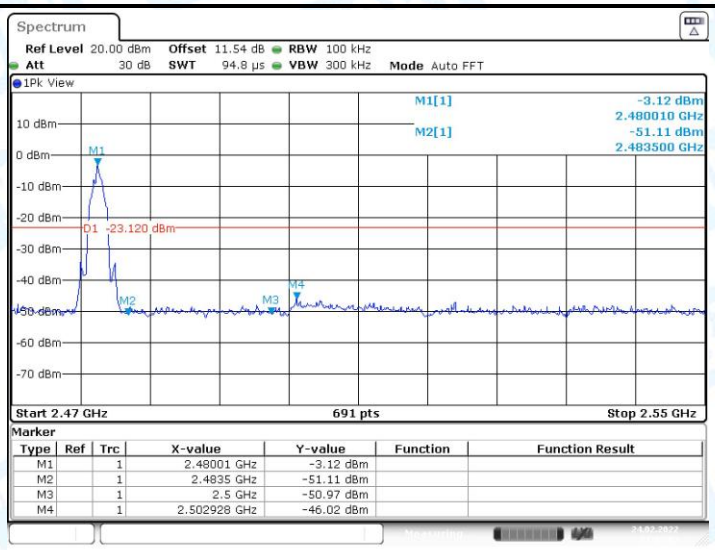
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

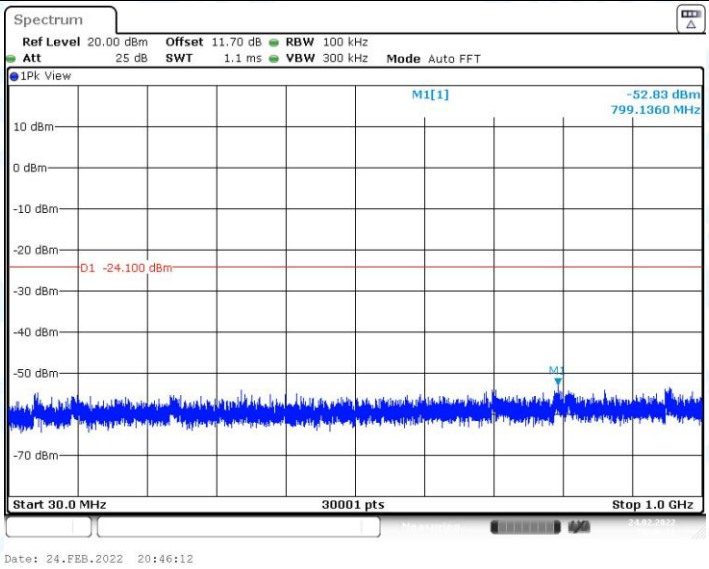
6. Conducted Spurious Emission

6.1.Test Result

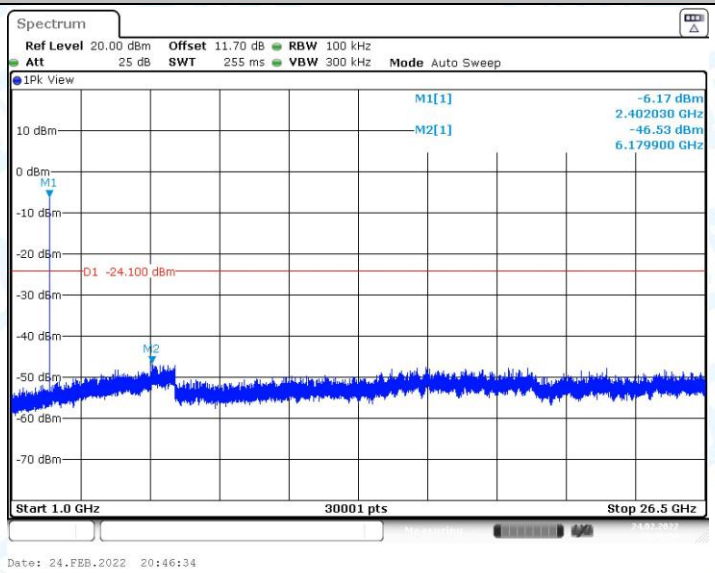
Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.10	-4.10	---	PASS
			30~1000	-4.10	-52.83	≤-24.1	PASS
			1000~26500	-4.10	-46.53	≤-24.1	PASS
		2440	Reference	-3.87	-3.87	---	PASS
			30~1000	-3.87	-52.68	≤-23.87	PASS
			1000~26500	-3.87	-46.88	≤-23.87	PASS
		2480	Reference	-3.33	-3.33	---	PASS
			30~1000	-3.33	-53.63	≤-23.33	PASS
			1000~26500	-3.33	-46.53	≤-23.33	PASS
BLE_2M	Ant1	2402	Reference	-3.98	-3.98	---	PASS
			30~1000	-3.98	-53.27	≤-23.98	PASS
			1000~26500	-3.98	-46.73	≤-23.98	PASS
		2440	Reference	-3.78	-3.78	---	PASS
			30~1000	-3.78	-52.92	≤-23.78	PASS
			1000~26500	-3.78	-47.34	≤-23.78	PASS
		2480	Reference	-3.26	-3.26	---	PASS
			30~1000	-3.26	-53.32	≤-23.26	PASS
			1000~26500	-3.26	-46.19	≤-23.26	PASS

6.2.Test Graphs

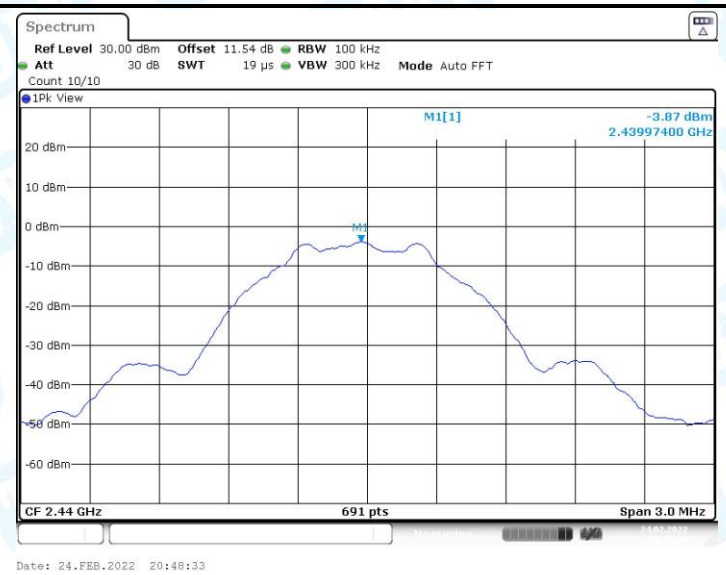
BLE_1M_Ant1_2402_0~Reference



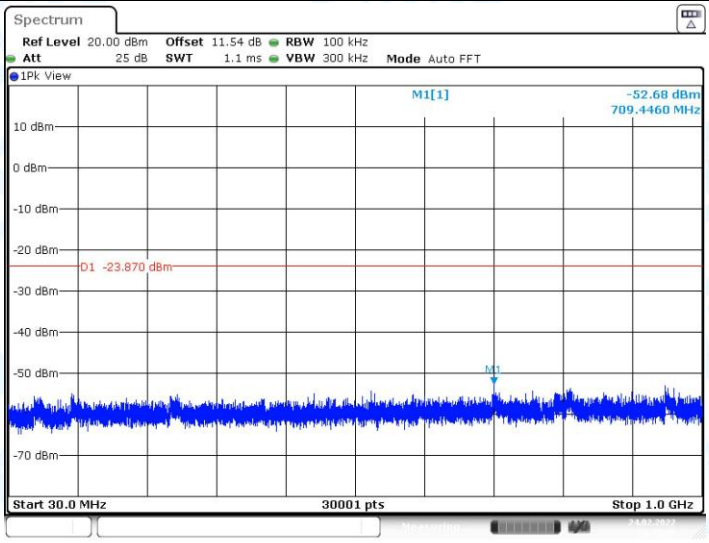
BLE_1M_Ant1_2402_30~1000



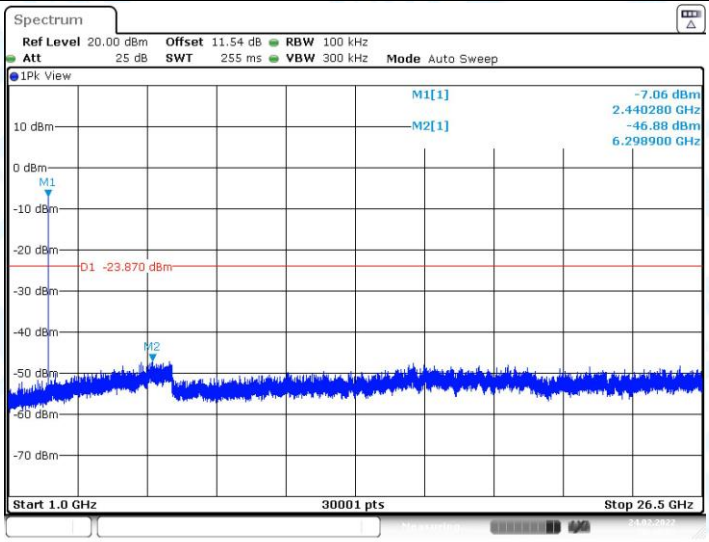
BLE_1M_Ant1_2402_1000~26500



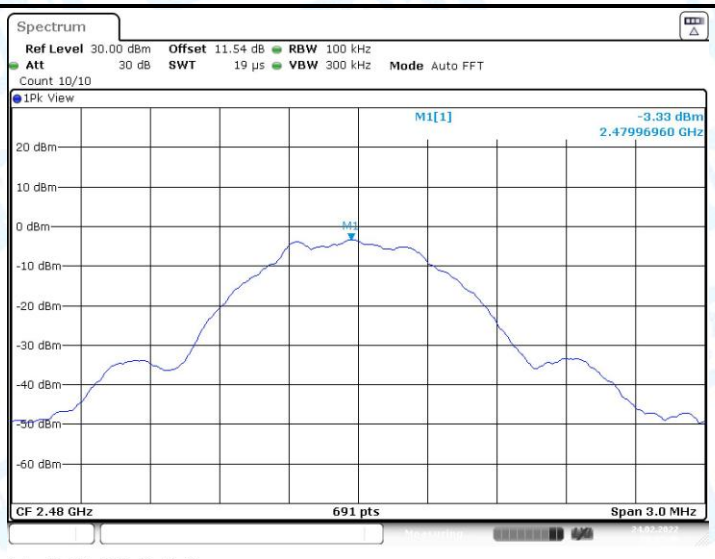
BLE_1M_Ant1_2440_0~Reference



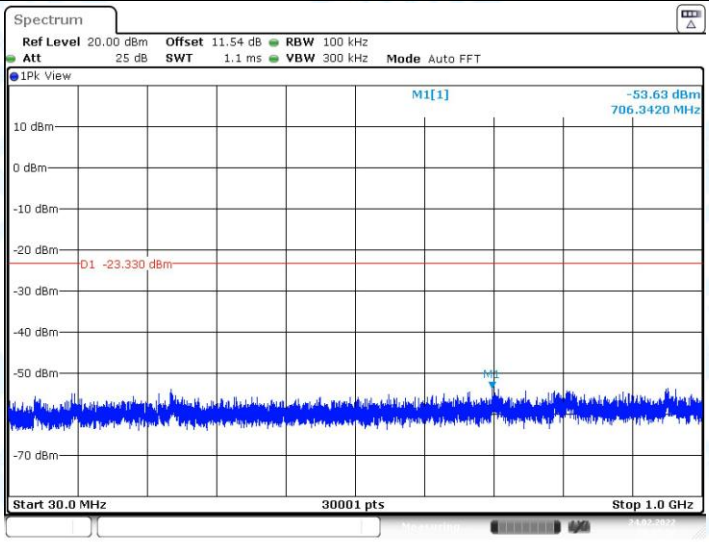
BLE_1M_Ant1_2440_30~1000



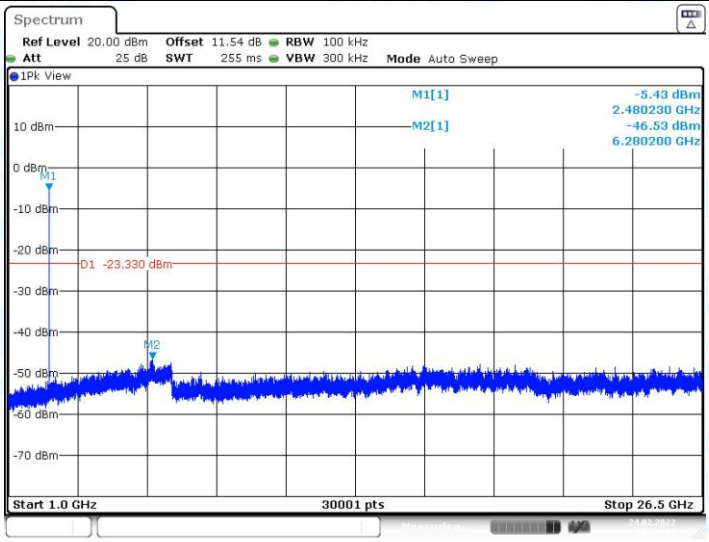
BLE_1M_Ant1_2440_1000~26500



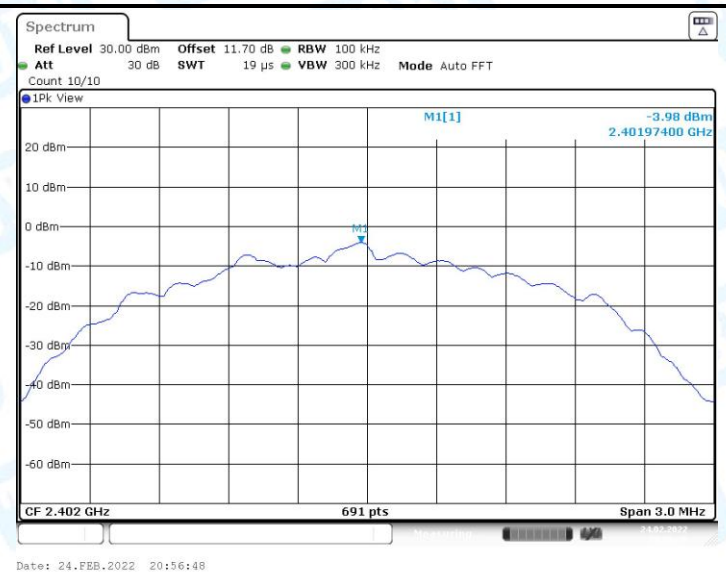
BLE_1M_Ant1_2480_0~Reference



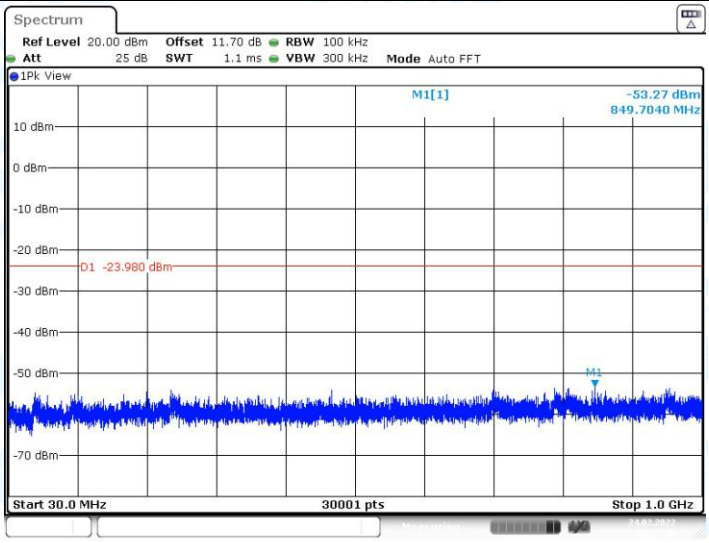
BLE_1M_Ant1_2480_30~1000



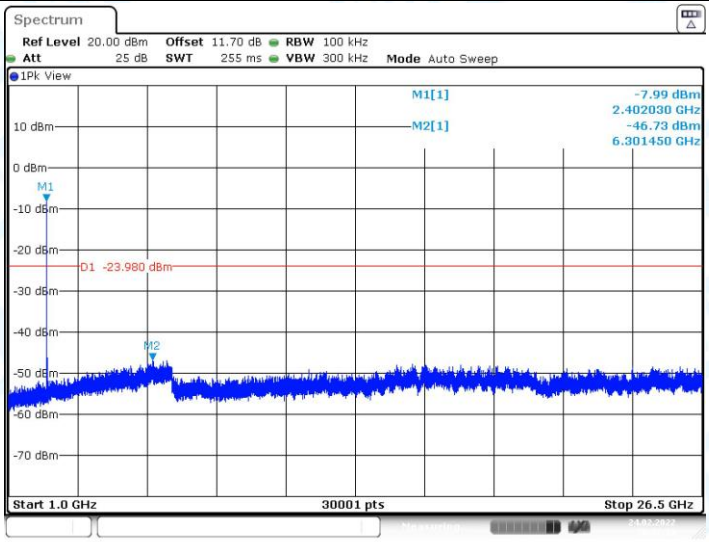
BLE_1M_Ant1_2480_1000~26500



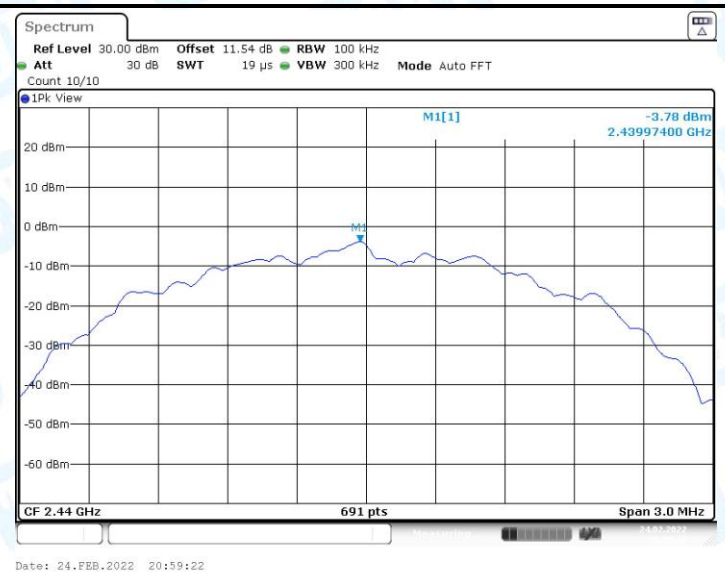
BLE_2M_Ant1_2402_0~Reference



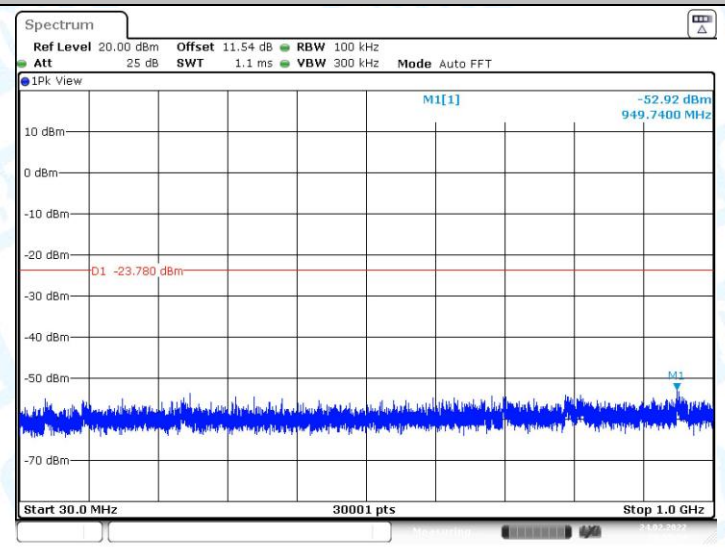
BLE_2M_Ant1_2402_30~1000



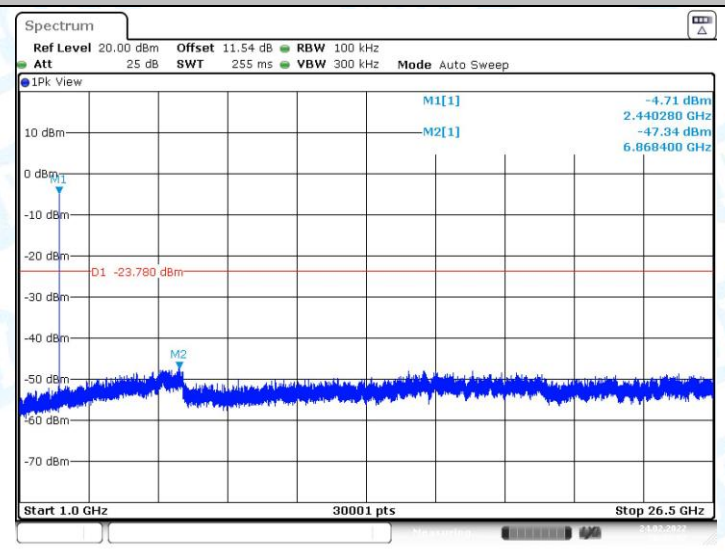
BLE_2M_Ant1_2402_1000~26500



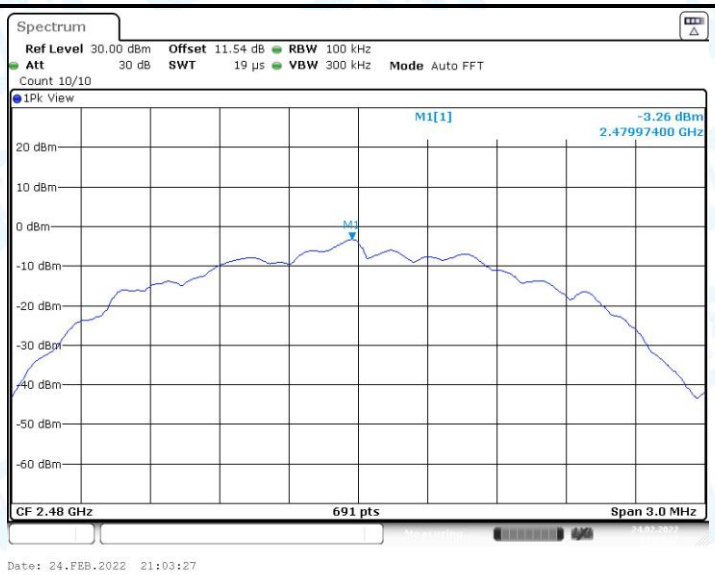
BLE_2M_Ant1_2440_0~Reference



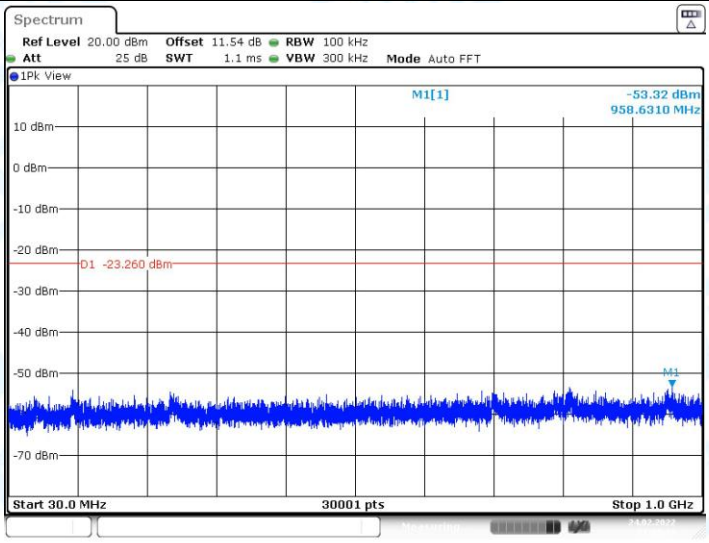
BLE_2M_Ant1_2440_30~1000



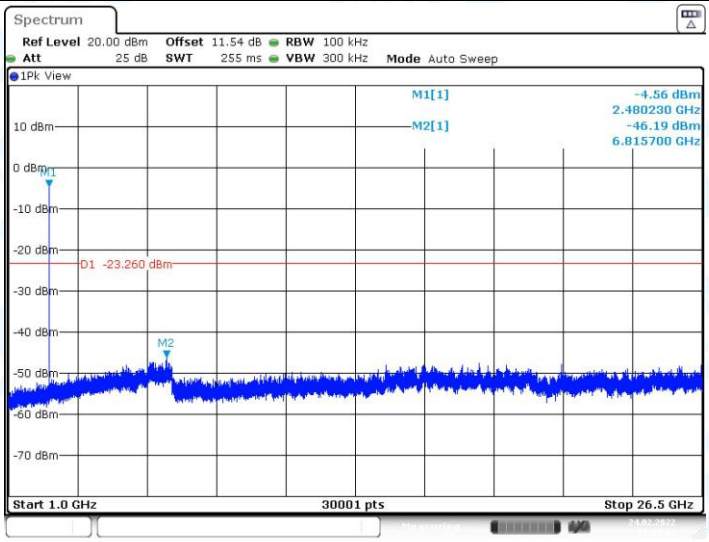
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



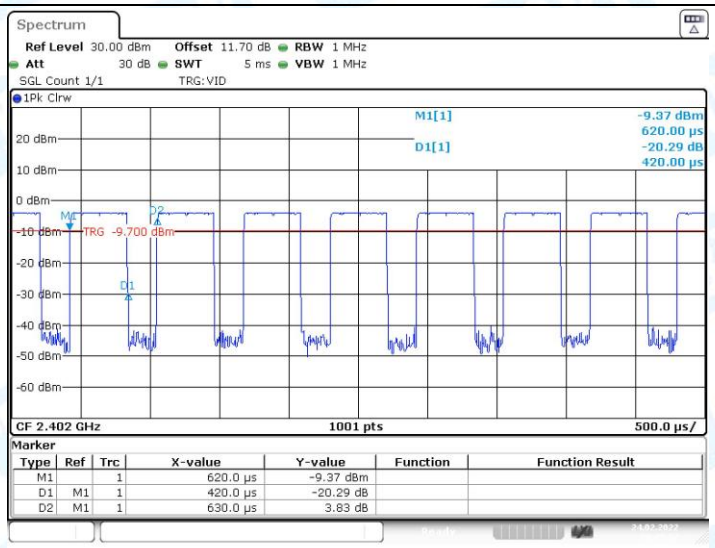
BLE_2M_Ant1_2480_1000~26500

7. Duty Cycle

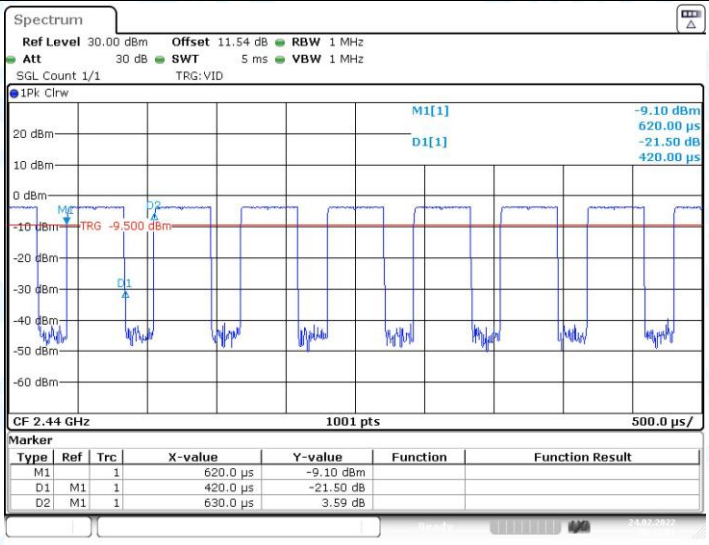
7.1.Test Result

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.42	0.63	66.67	---	---
		2440	0.42	0.63	66.67	---	---
		2480	0.42	0.63	66.67	---	---
BLE_2M	Ant1	2402	0.24	0.63	38.10	---	---
		2440	0.24	0.63	38.10	---	---
		2480	0.24	0.63	38.10	---	---

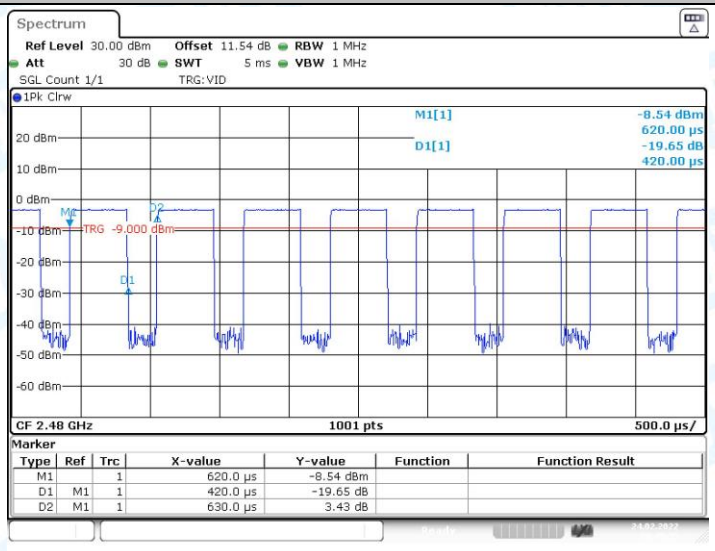
7.2.Test Graphs



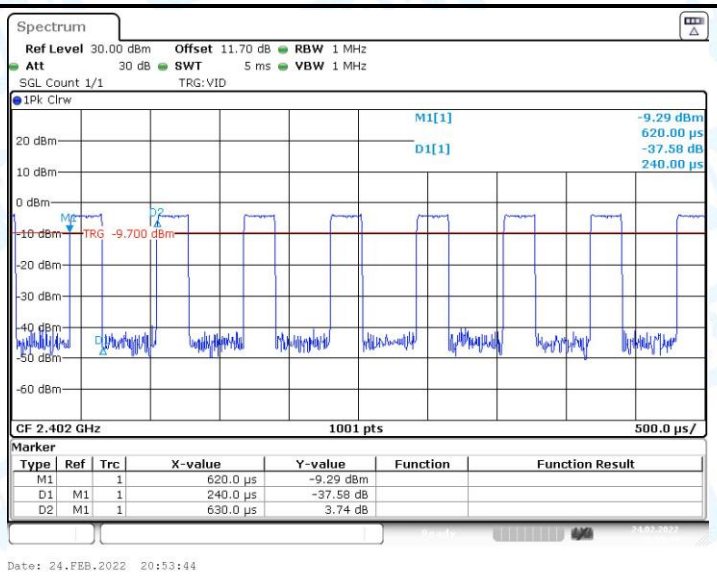
BLE_1M_Ant1_2402



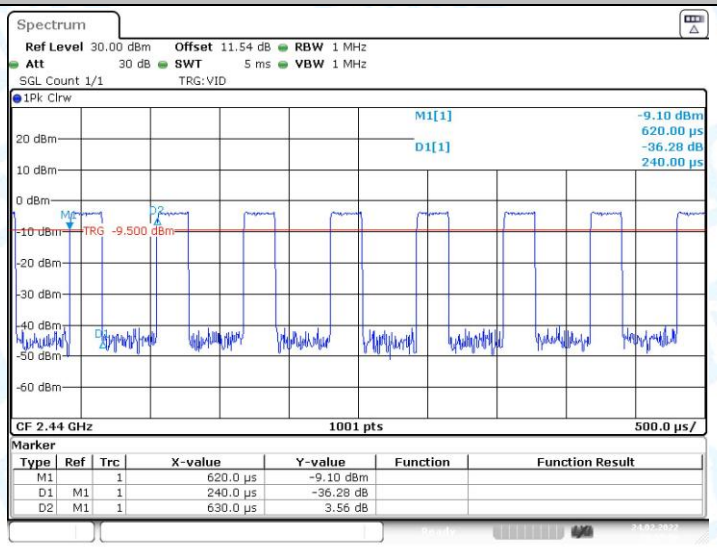
BLE_1M_Ant1_2440



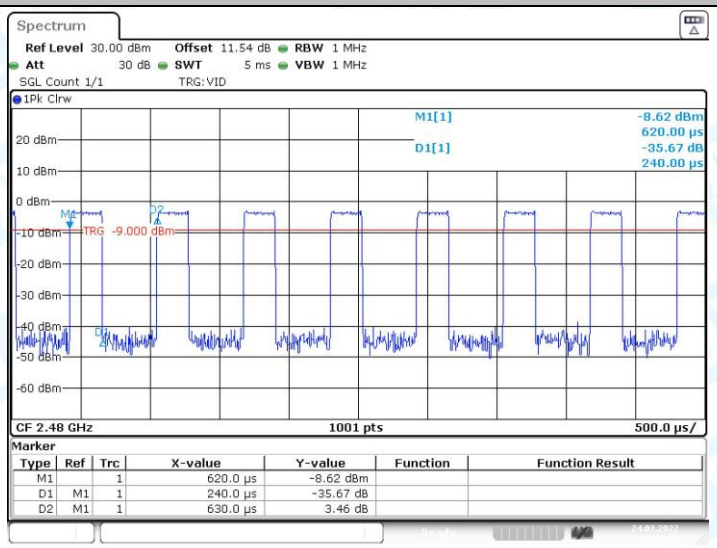
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

8. Emissions in Restricted Bands

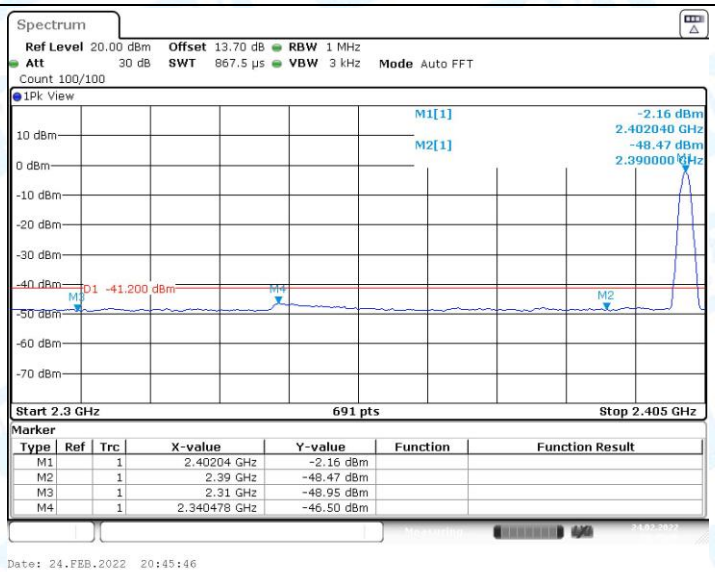
8.1.Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.95	≤-41.20	PASS
				AV	2340.478	-46.5	≤-41.20	PASS
				AV	2390.000	-48.47	≤-41.20	PASS
				Peak	2310.000	-38.23	≤-21.20	PASS
				Peak	2342.152	-35.13	≤-21.20	PASS
				Peak	2390.000	-39.16	≤-21.20	PASS
		High	2480	AV	2483.500	-48.19	≤-41.20	PASS
				AV	2497.942	-47.39	≤-41.20	PASS
				AV	2500.000	-47.9	≤-41.20	PASS
				Peak	2483.500	-39.22	≤-21.20	PASS
				Peak	2492.029	-36.54	≤-21.20	PASS
				Peak	2500.000	-37.44	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.15	≤-41.20	PASS
				AV	2341.696	-46.02	≤-41.20	PASS
				AV	2390.000	-47.79	≤-41.20	PASS
				Peak	2310.000	-39.47	≤-21.20	PASS
				Peak	2344.435	-35.03	≤-21.20	PASS
				Peak	2390.000	-36.66	≤-21.20	PASS
		High	2480	AV	2483.500	-47.56	≤-41.20	PASS
				AV	2498.406	-46.74	≤-41.20	PASS
				AV	2500.000	-47.61	≤-41.20	PASS
				Peak	2483.500	-39.83	≤-21.20	PASS
				Peak	2497.710	-36.65	≤-21.20	PASS
				Peak	2500.000	-38.09	≤-21.20	PASS

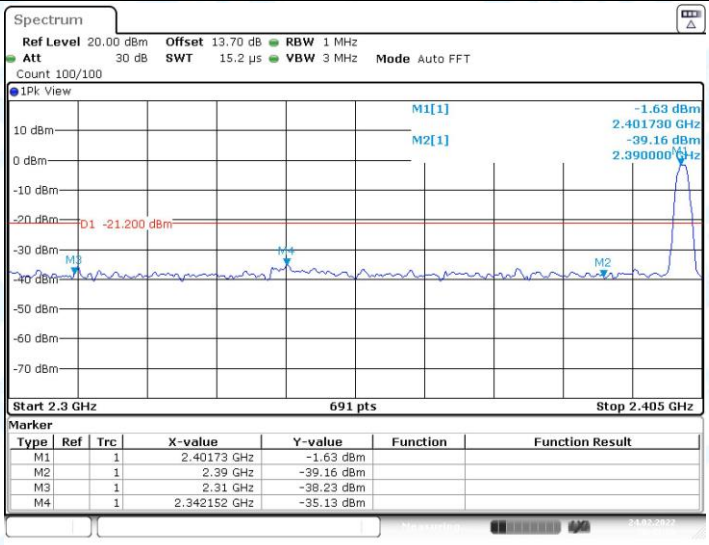
Note：

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.

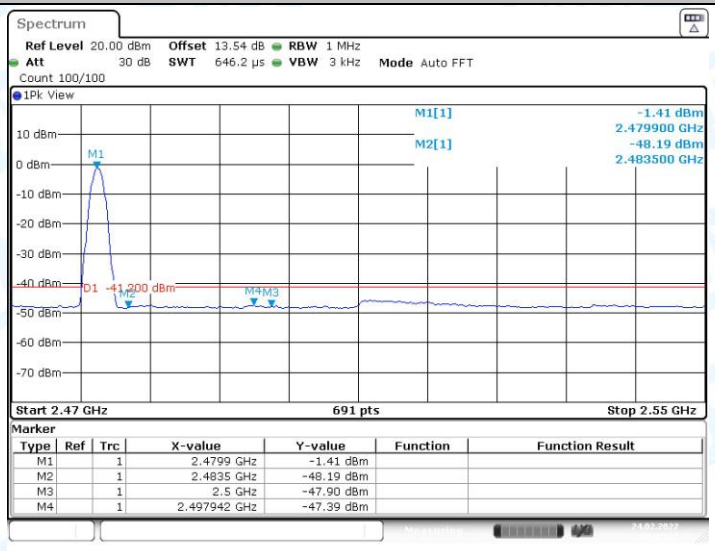
8.2.Test Graphs



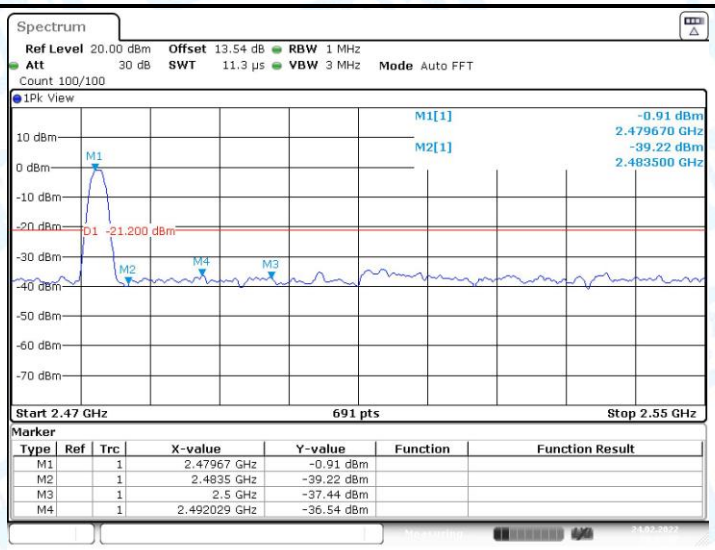
BLE_1M_Ant1_Low_2402_AV



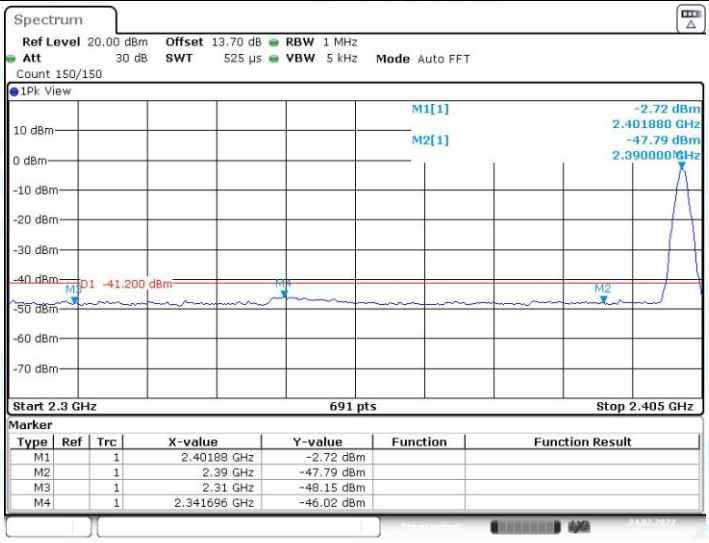
BLE_1M_Ant1_Low_2402_Peak



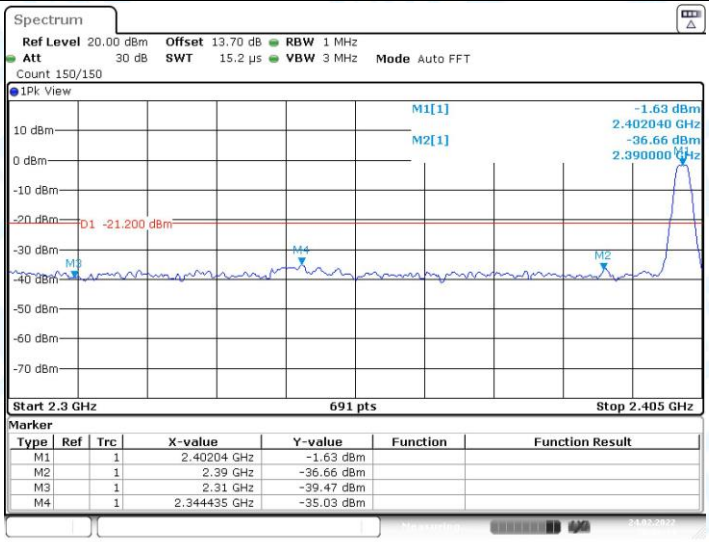
BLE_1M_Ant1_High_2480_AV



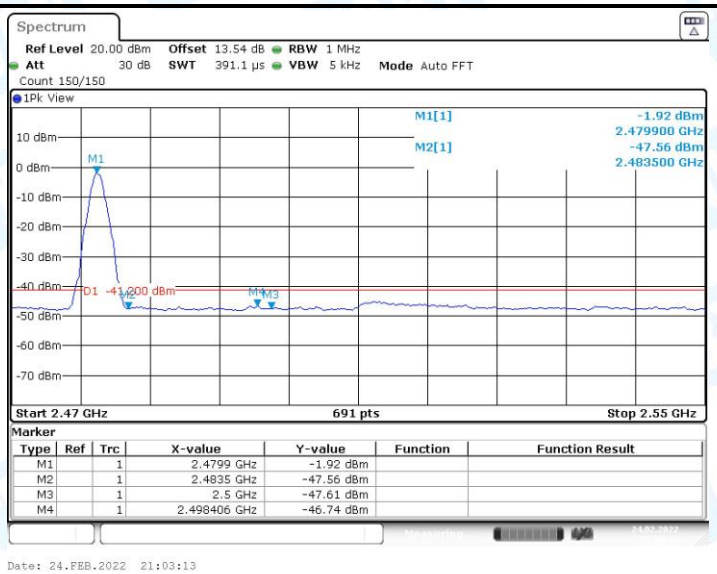
BLE_1M_Ant1_High_2480_Peak



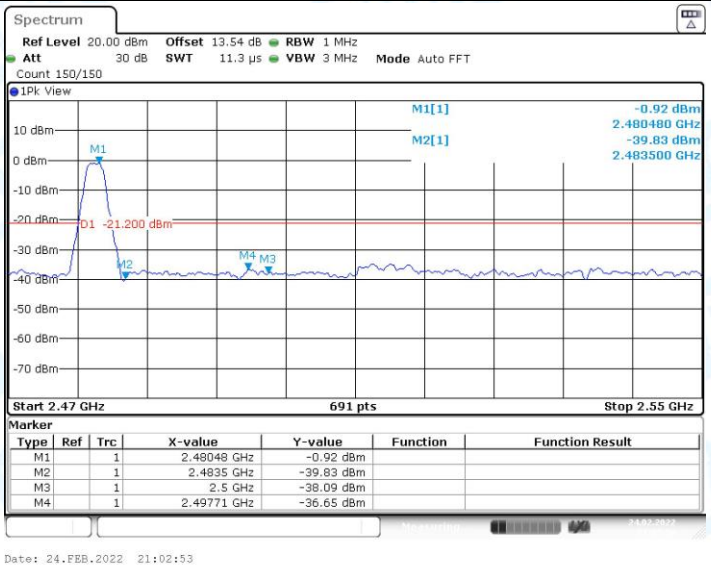
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

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