RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	TV DECODER
Test Model:	VIP7300
Sample ID:	202202-0006-4-1#
Environmental Conditions	
Temperature:	24.5℃
Relative Humidity:	45%
Test Voltage:	DC 12V
Test Engineer:	Jianping Huang
Note: For a more detailed features description, please refer to the report TBR-C-202202-0006-41. The report only show the worst case data.	

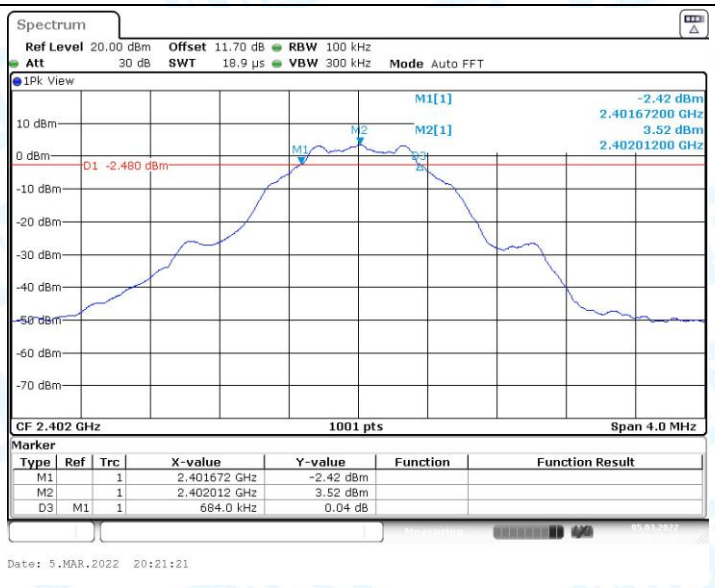
Contents

1. DTS Bandwidth

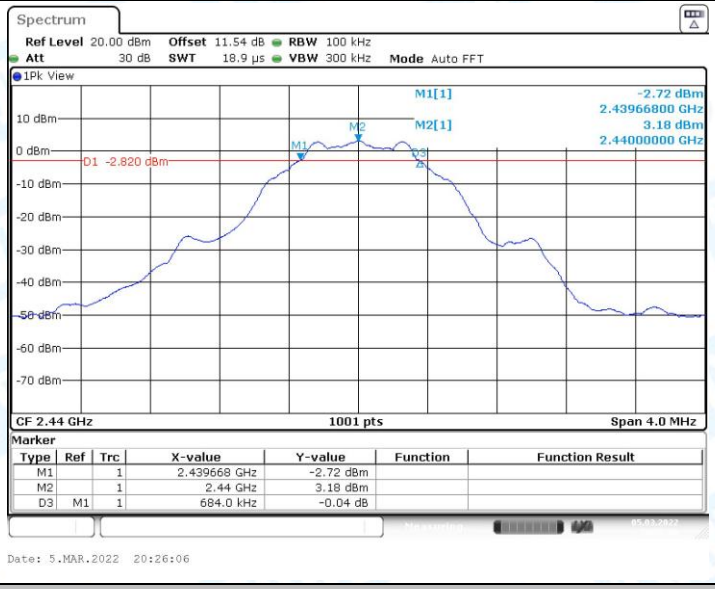
1.1.Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.68	2401.67	2402.36	0.5	PASS
		2440	0.68	2439.67	2440.35	0.5	PASS
		2480	0.68	2479.66	2480.34	0.5	PASS
BLE_2M	Ant1	2402	1.16	2401.44	2402.60	0.5	PASS
		2440	1.16	2439.43	2440.59	0.5	PASS
		2480	1.16	2479.42	2480.58	0.5	PASS

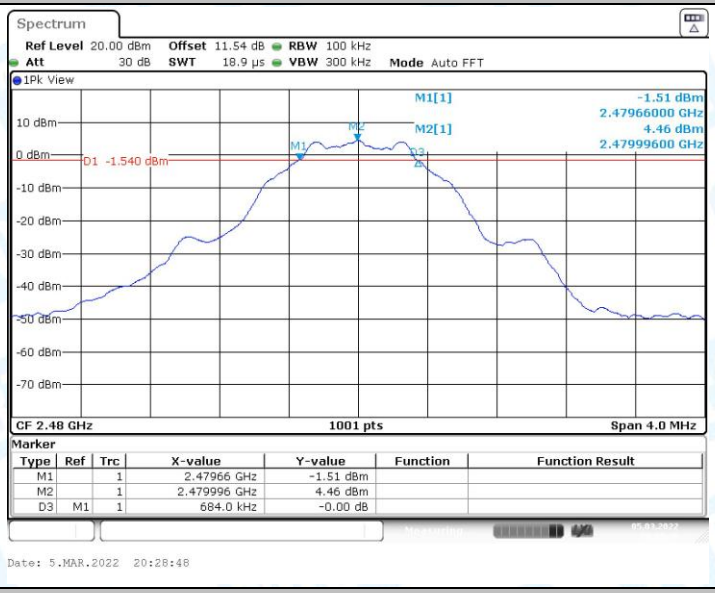
1.2.Test Graphs



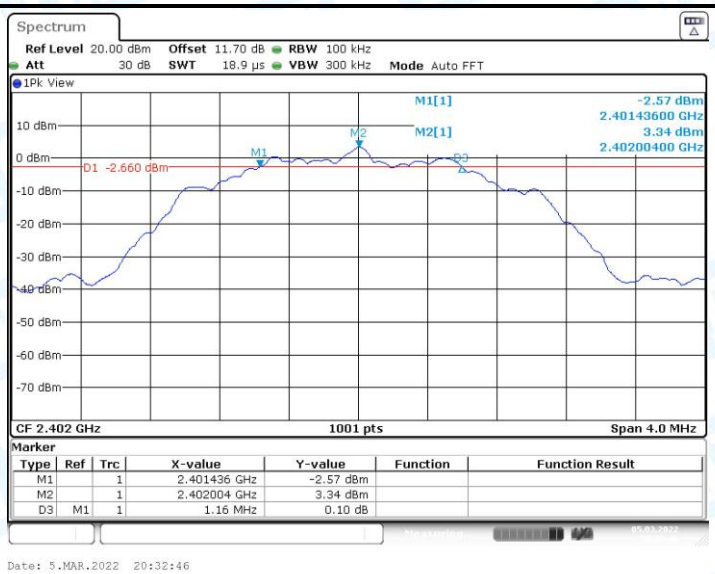
BLE_1M_Ant1_2402



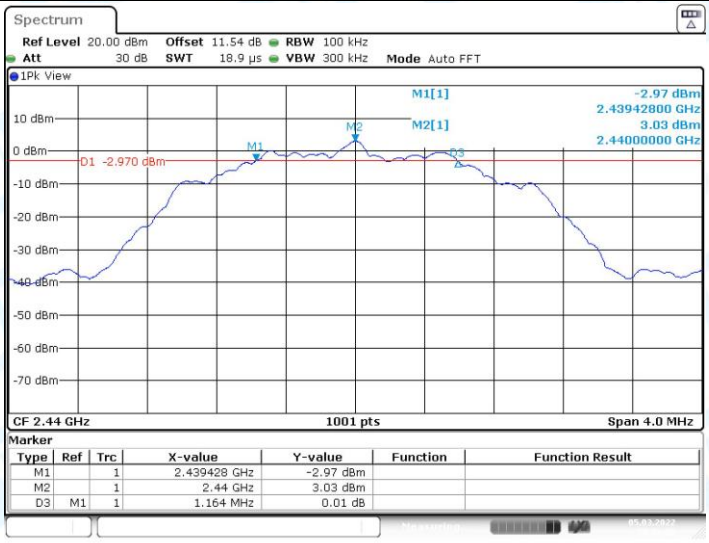
BLE_1M_Ant1_2440



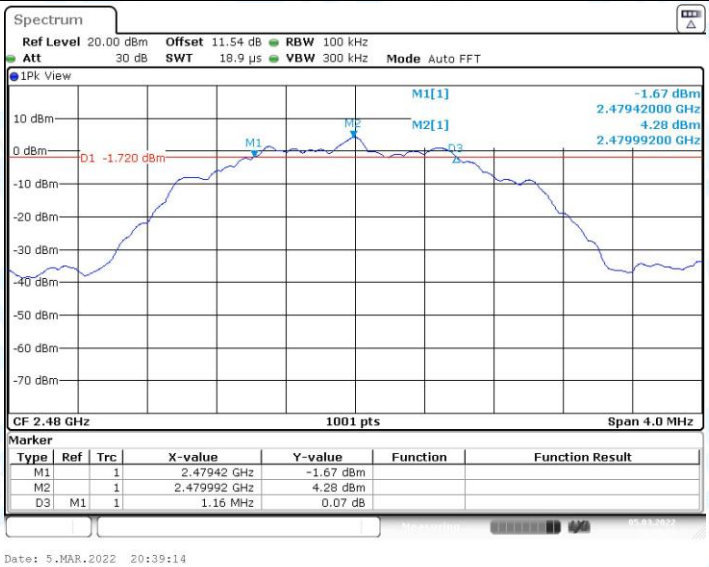
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



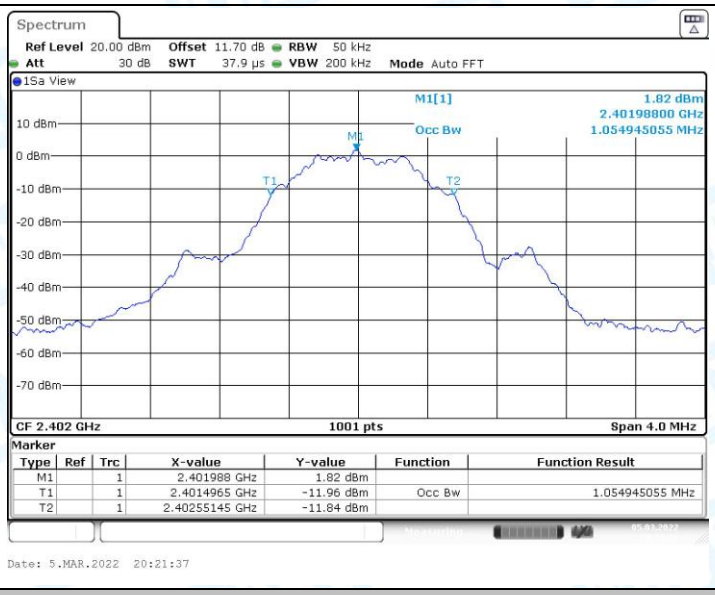
BLE_2M_Ant1_2480

2. Occupied Channel Bandwidth

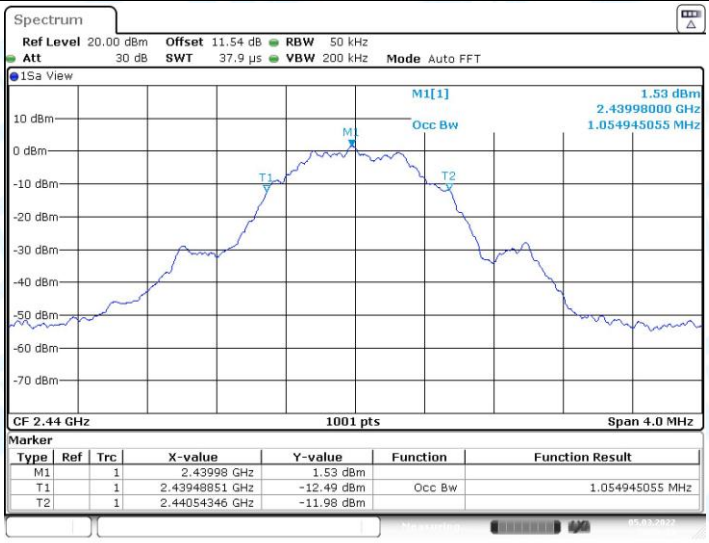
2.1.Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.055	2401.497	2402.551	---	---
		2440	1.055	2439.489	2440.543	---	---
		2480	1.051	2479.485	2480.535	---	---
BLE_2M	Ant1	2402	2.054	2401.001	2403.055	---	---
		2440	2.050	2438.997	2441.047	---	---
		2480	2.046	2478.993	2481.039	---	---

2.2.Test Graphs



BLE_1M_Ant1_2402



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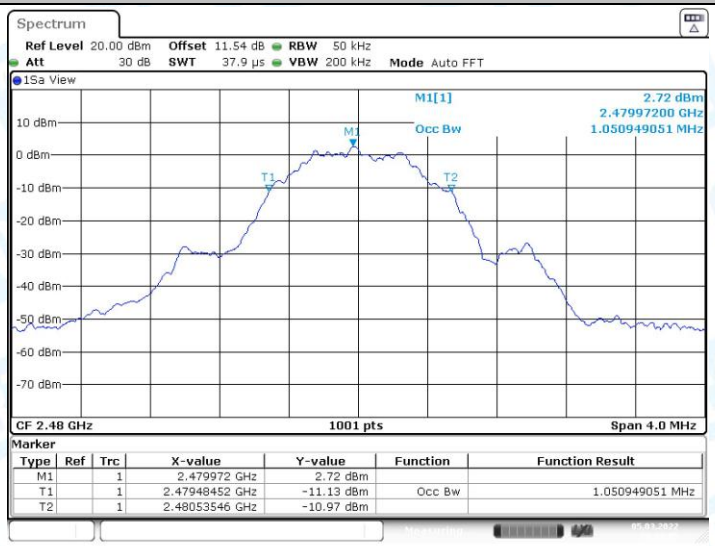
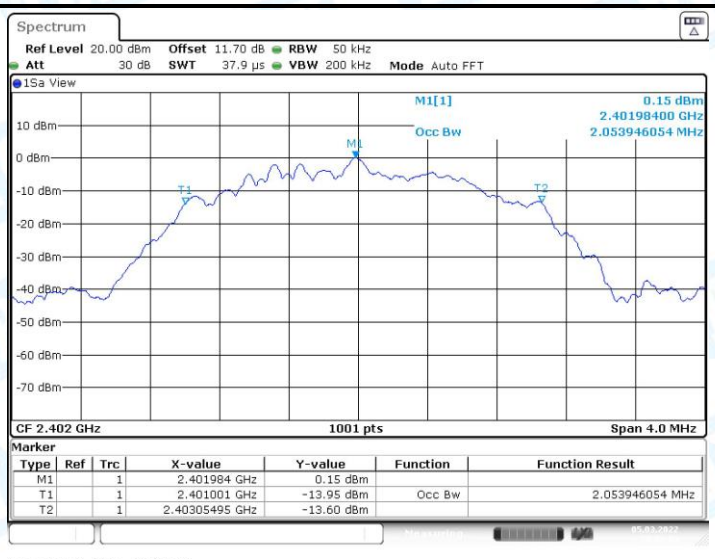
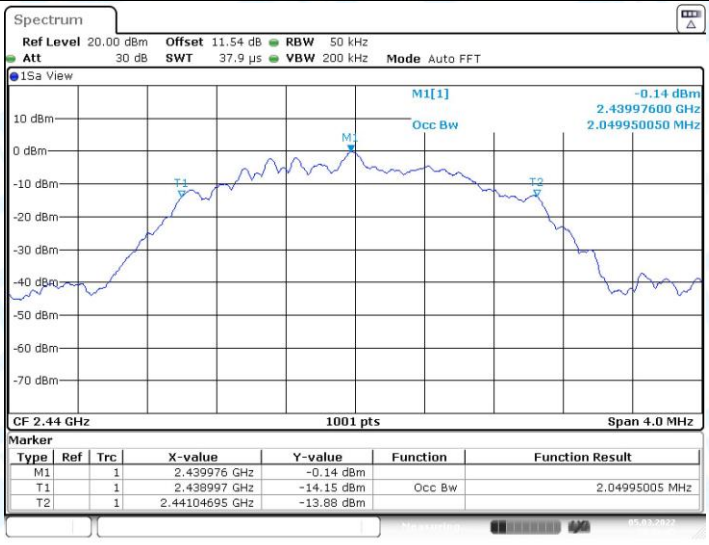


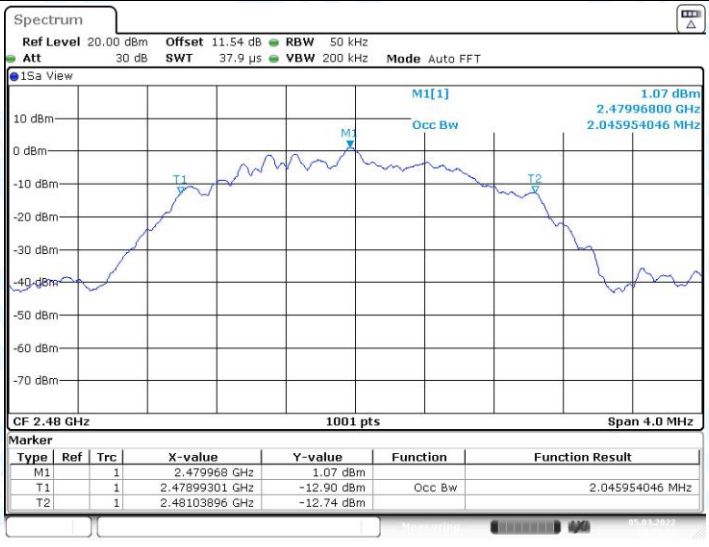
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



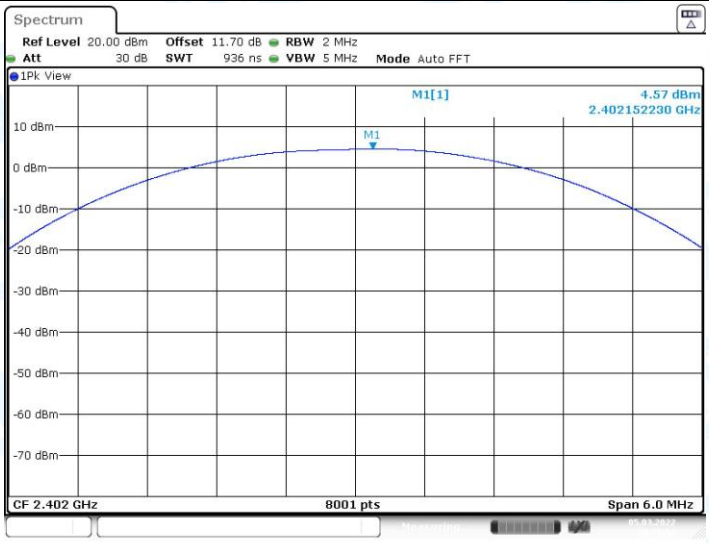
BLE_2M_Ant1_2480

3. Maximum conducted output power

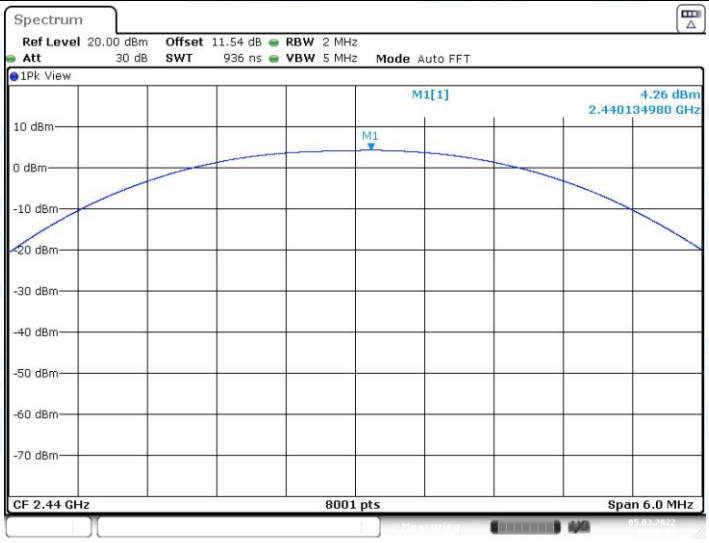
3.1.Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.57	≤30	PASS
		2440	4.26	≤30	PASS
		2480	5.38	≤30	PASS
BLE_2M	Ant1	2402	4.70	≤30	PASS
		2440	4.34	≤30	PASS
		2480	5.41	≤30	PASS

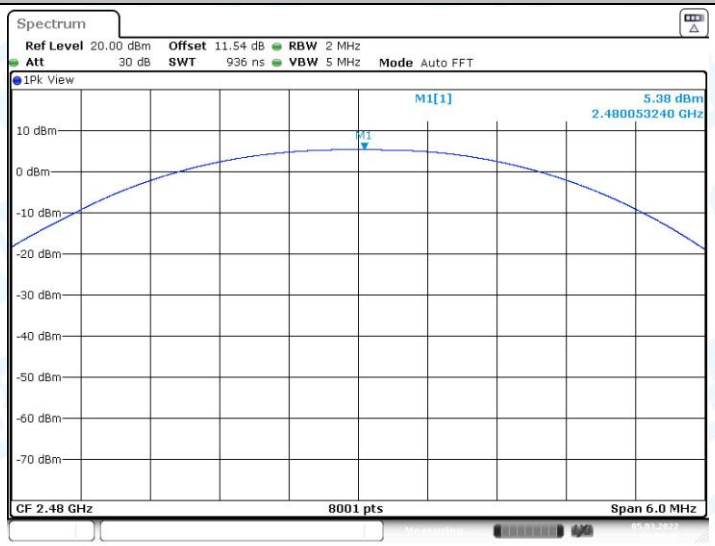
3.2.Test Graphs



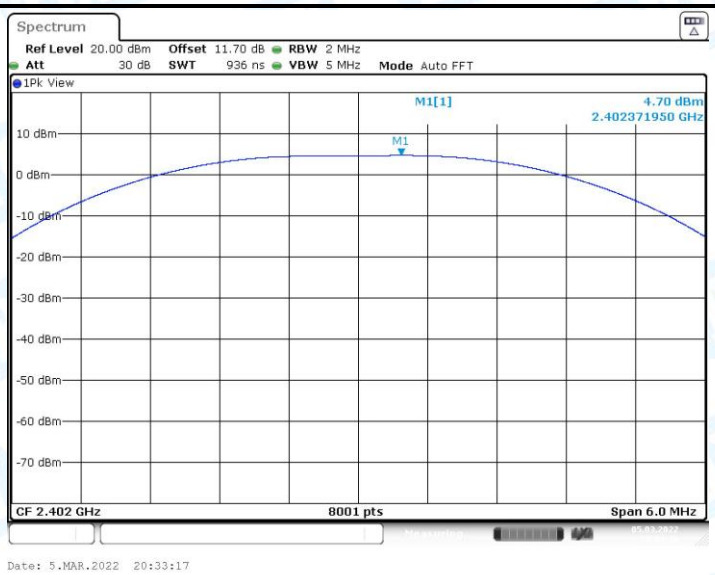
BLE_1M_Ant1_2402



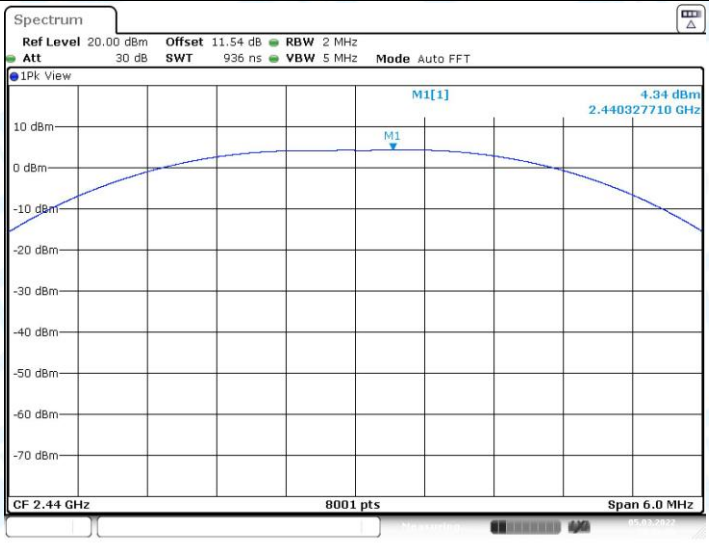
BLE_1M_Ant1_2440



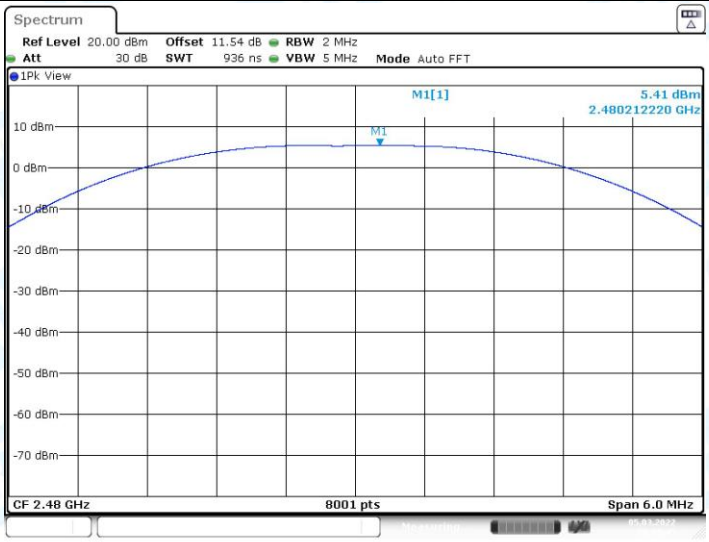
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



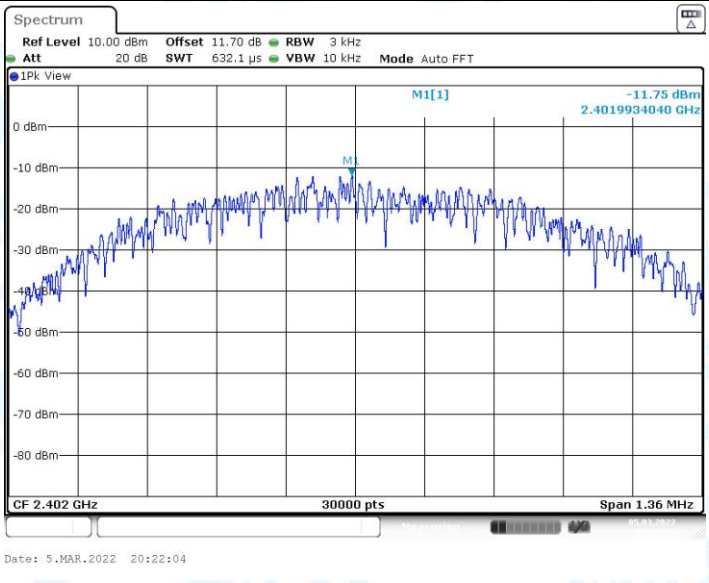
BLE_2M_Ant1_2480

4. Maximum power spectral density

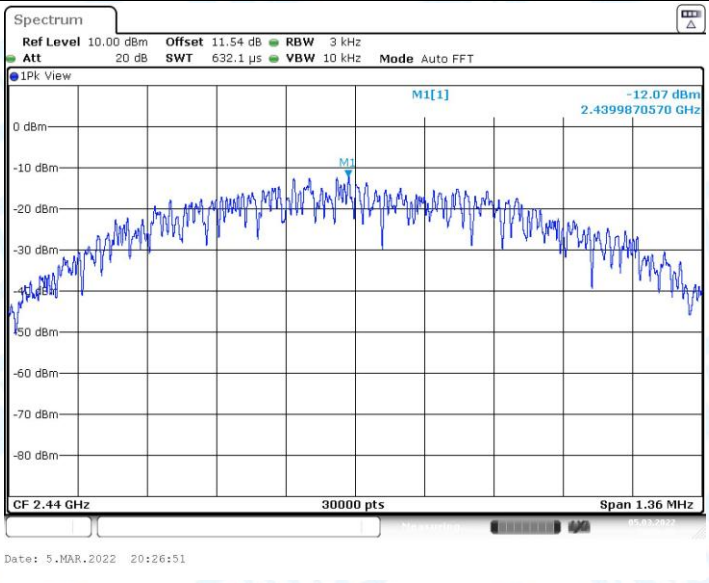
4.1.Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.75	≤8.00	PASS
		2440	-12.07	≤8.00	PASS
		2480	-10.78	≤8.00	PASS
BLE_2M	Ant1	2402	-14.21	≤8.00	PASS
		2440	-14.44	≤8.00	PASS
		2480	-13.21	≤8.00	PASS

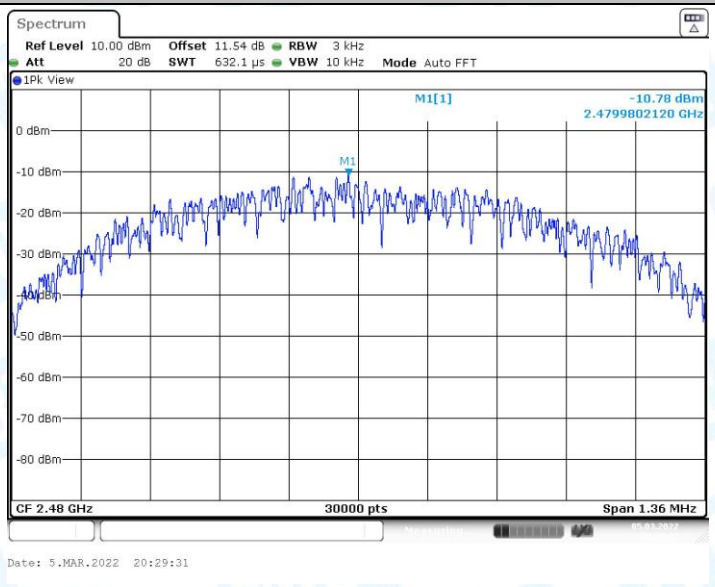
4.2.Test Graphs



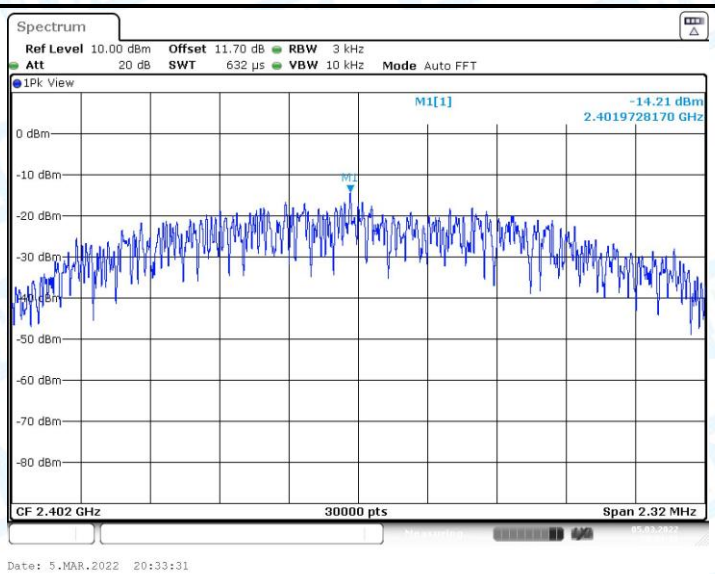
BLE_1M_Ant1_2402



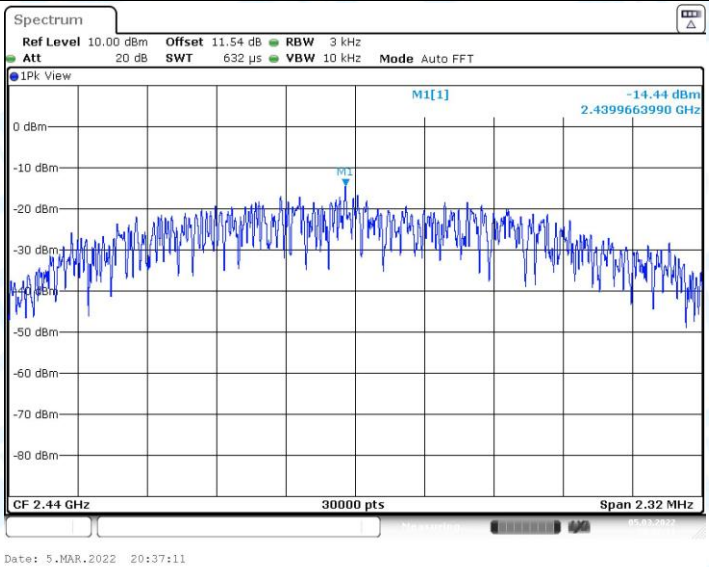
BLE_1M_Ant1_2440



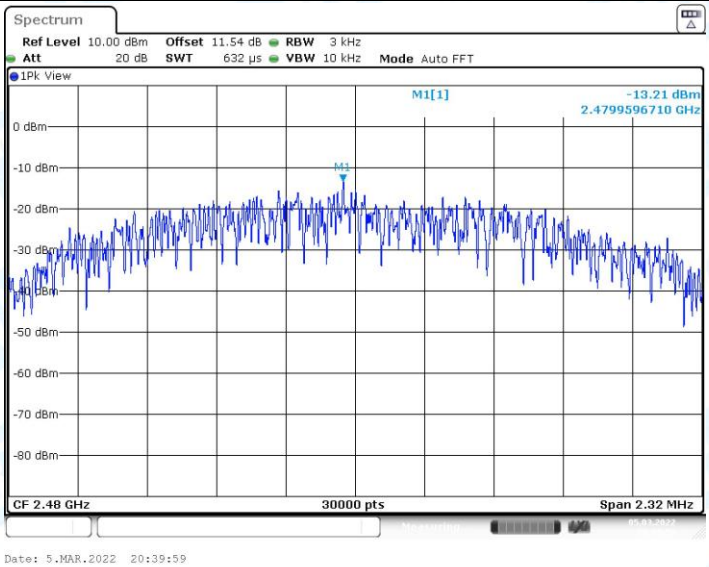
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



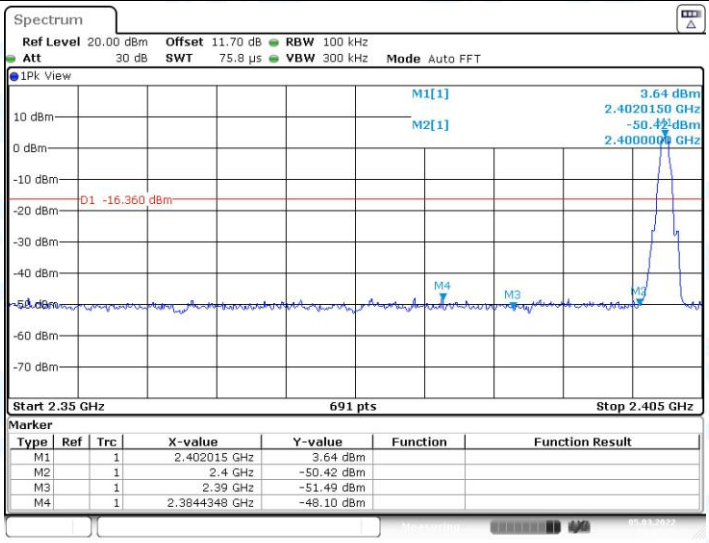
BLE_2M_Ant1_2480

5. Band edge measurements

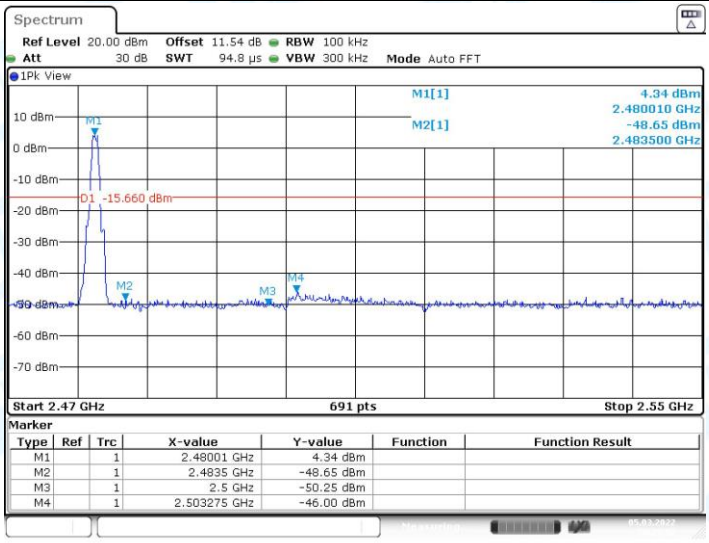
5.1.Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.64	-48.10	≤-16.36	PASS
		High	2480	4.34	-46.00	≤-15.66	PASS
BLE_2M	Ant1	Low	2402	3.49	-39.81	≤-16.51	PASS
		High	2480	4.34	-46.48	≤-15.66	PASS

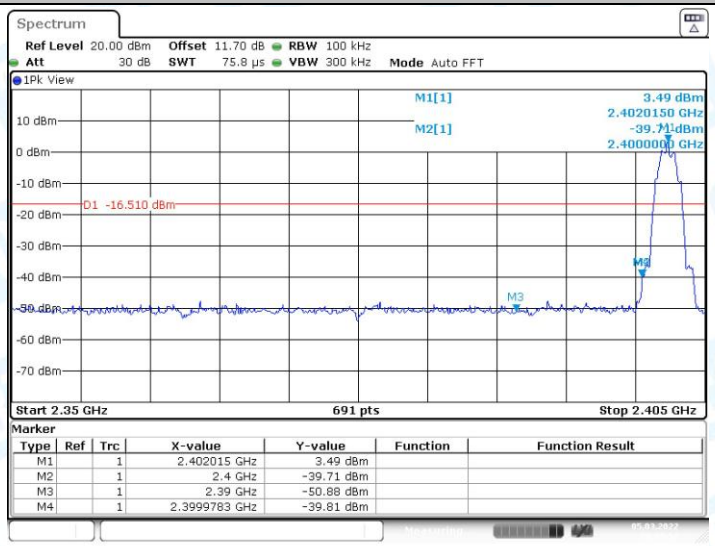
5.2.Test Graphs



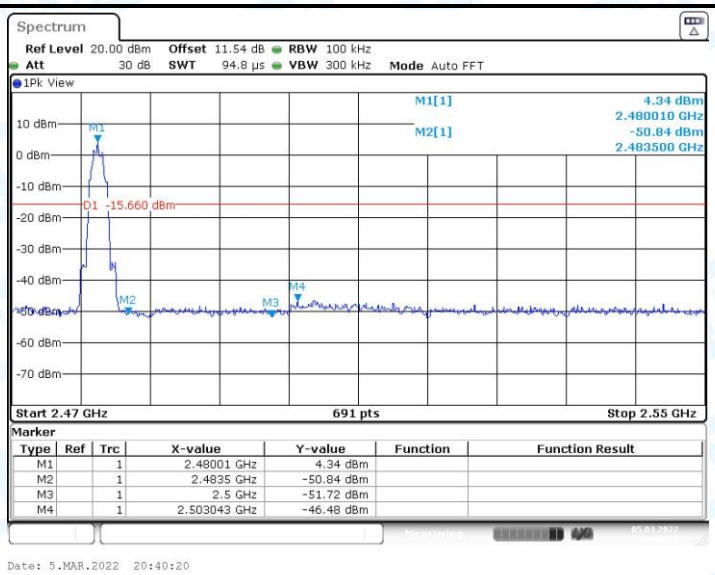
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



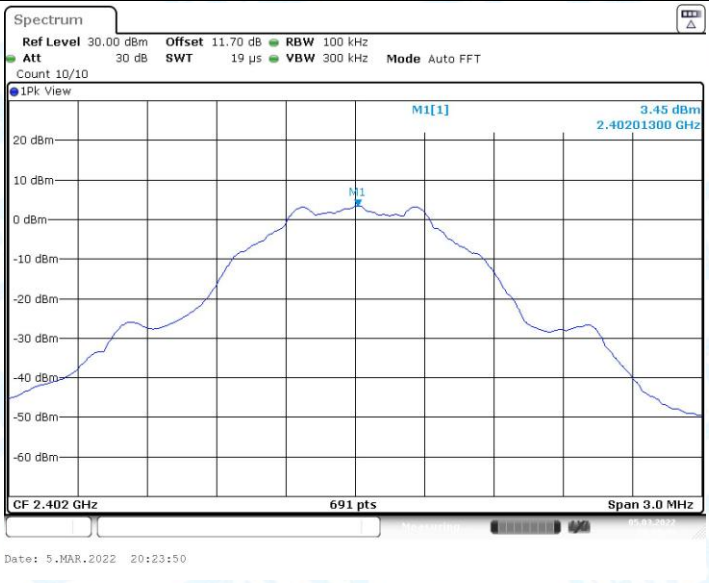
BLE_2M_Ant1_High_2480

6. Conducted Spurious Emission

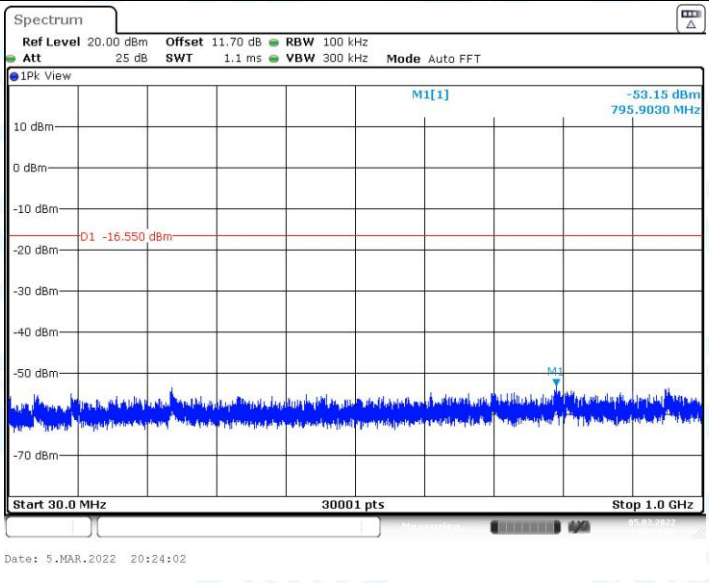
6.1.Test Result

Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.45	3.45	---	PASS
			30~1000	3.45	-53.15	≤-16.55	PASS
			1000~26500	3.45	-44.85	≤-16.55	PASS
		2440	Reference	4.72	4.72	---	PASS
			30~1000	4.72	-53.28	≤-15.28	PASS
			1000~26500	4.72	-45.88	≤-15.28	PASS
		2480	Reference	4.42	4.42	---	PASS
			30~1000	4.42	-53.04	≤-15.58	PASS
			1000~26500	4.42	-46.44	≤-15.58	PASS
BLE_2M	Ant1	2402	Reference	3.31	3.31	---	PASS
			30~1000	3.31	-52.71	≤-16.69	PASS
			1000~26500	3.31	-44.95	≤-16.69	PASS
		2440	Reference	3.00	3.00	---	PASS
			30~1000	3.00	-53.2	≤-17	PASS
			1000~26500	3.00	-46.79	≤-17	PASS
		2480	Reference	4.21	4.21	---	PASS
			30~1000	4.21	-53.55	≤-15.79	PASS
			1000~26500	4.21	-45.2	≤-15.79	PASS

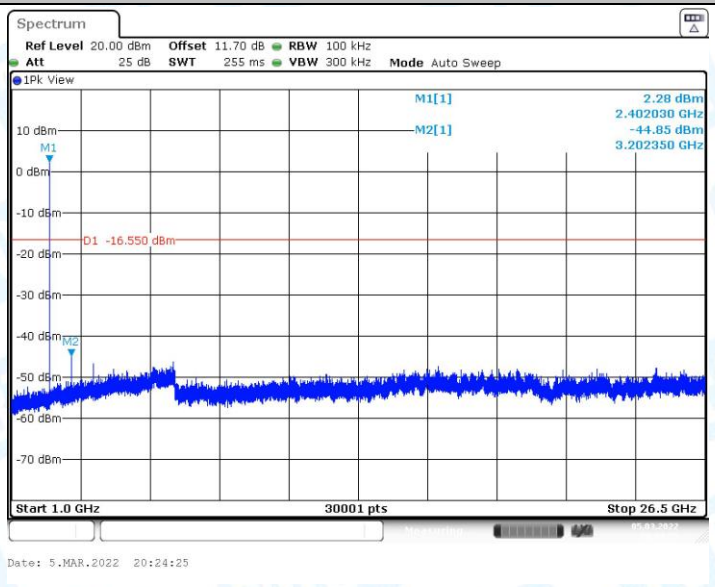
6.2.Test Graphs



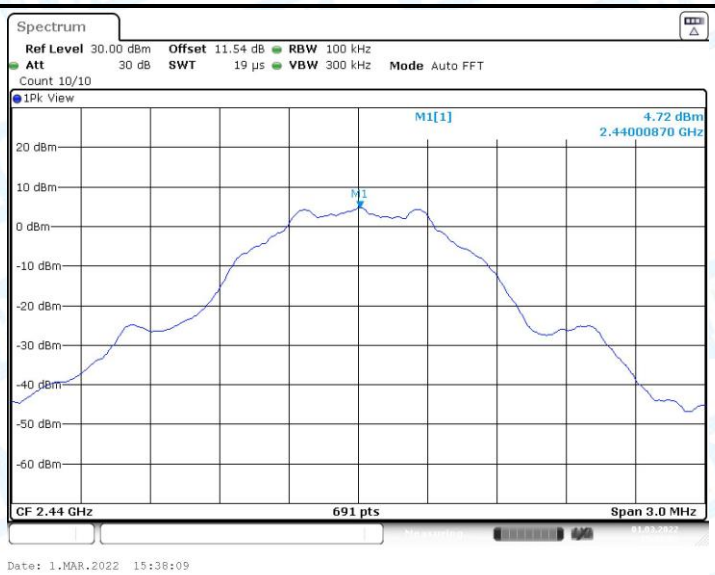
BLE_1M_Ant1_2402_0~Reference



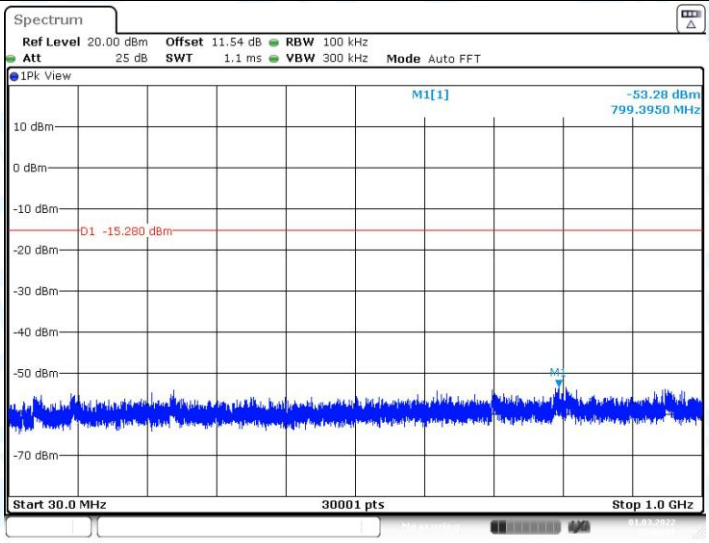
BLE_1M_Ant1_2402_30~1000



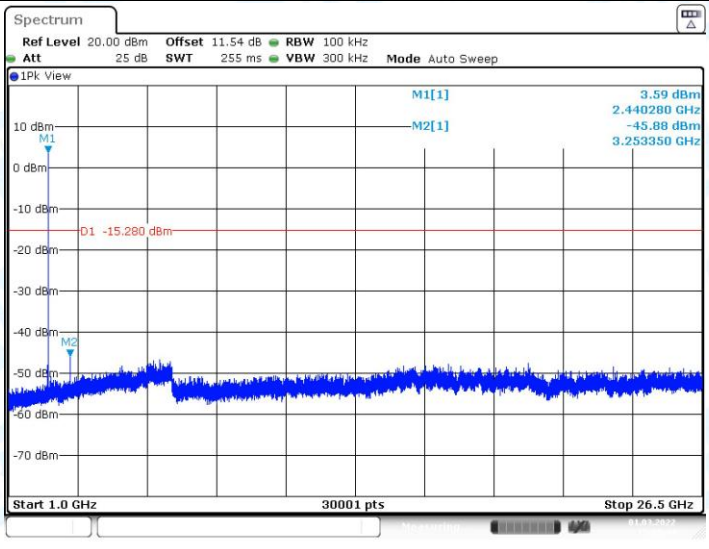
BLE_1M_Ant1_2402_1000~26500



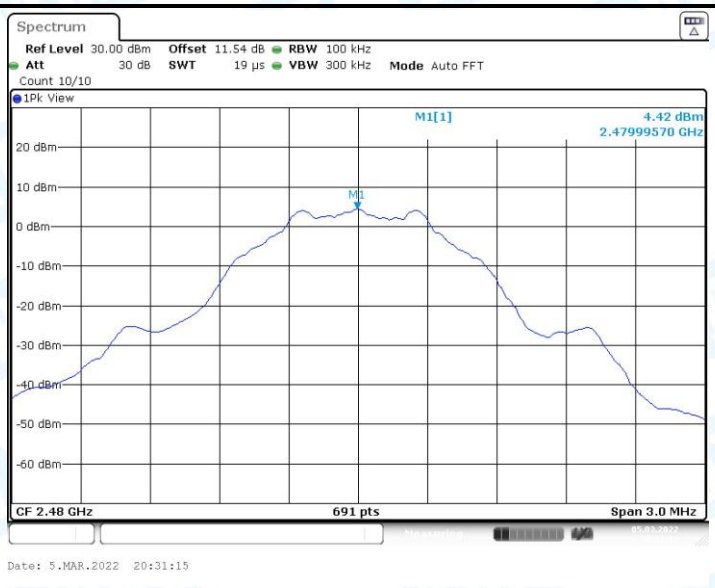
BLE_1M_Ant1_2440_0~Reference



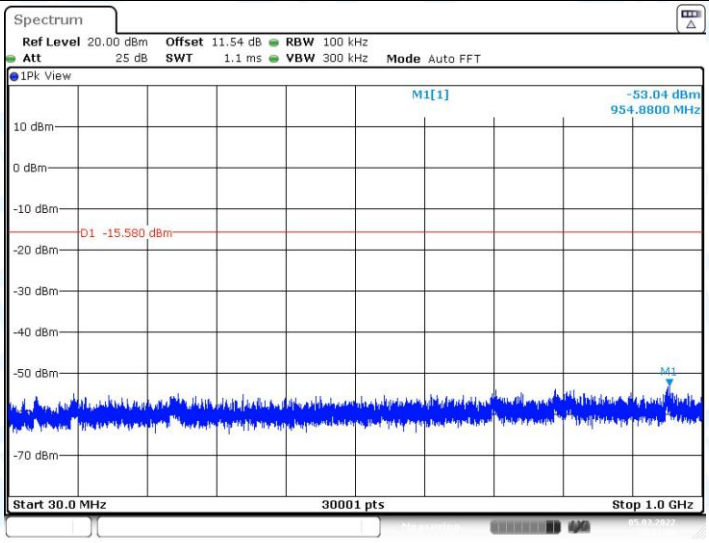
BLE_1M_Ant1_2440_30~1000



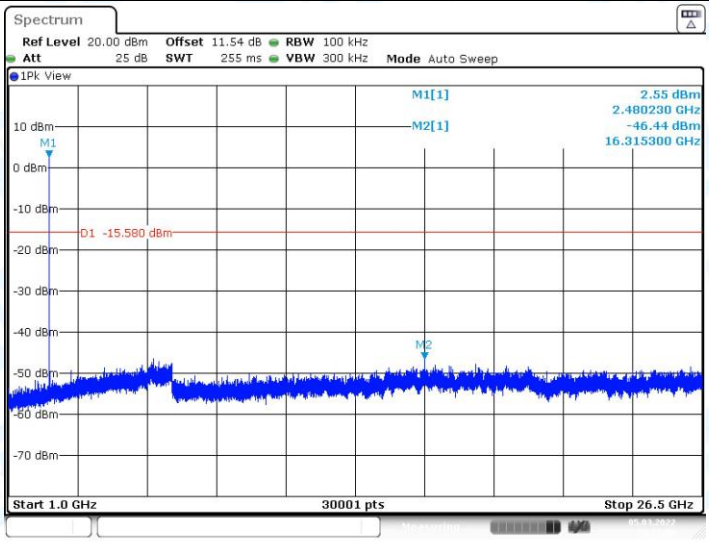
BLE_1M_Ant1_2440_1000~26500



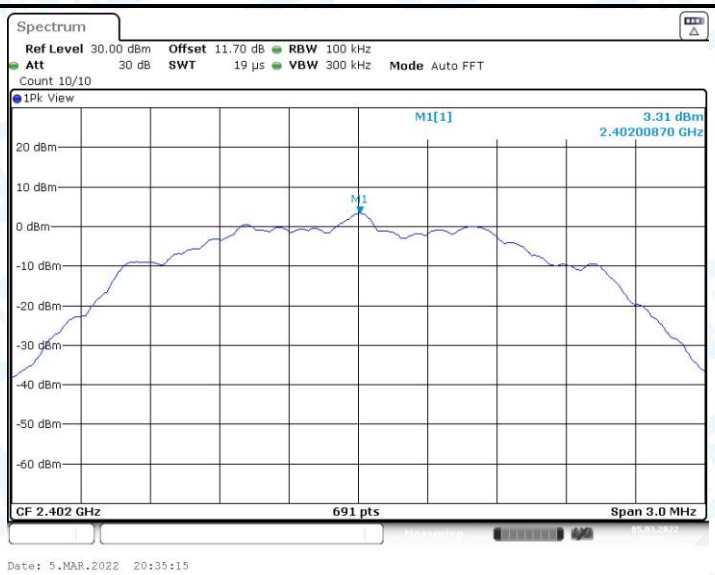
BLE_1M_Ant1_2480_0~Reference



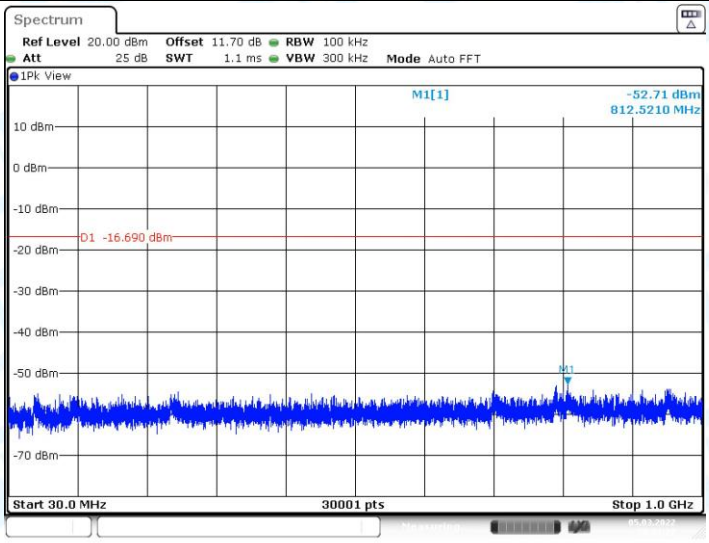
BLE_1M_Ant1_2480_30~1000



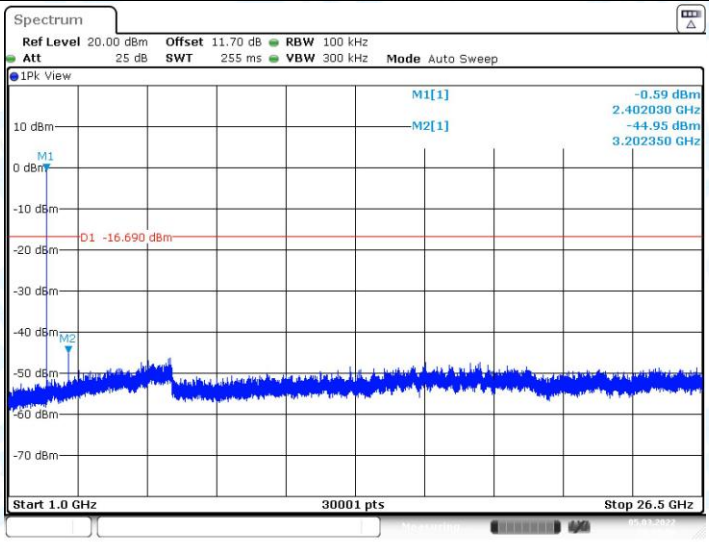
BLE_1M_Ant1_2480_1000~26500



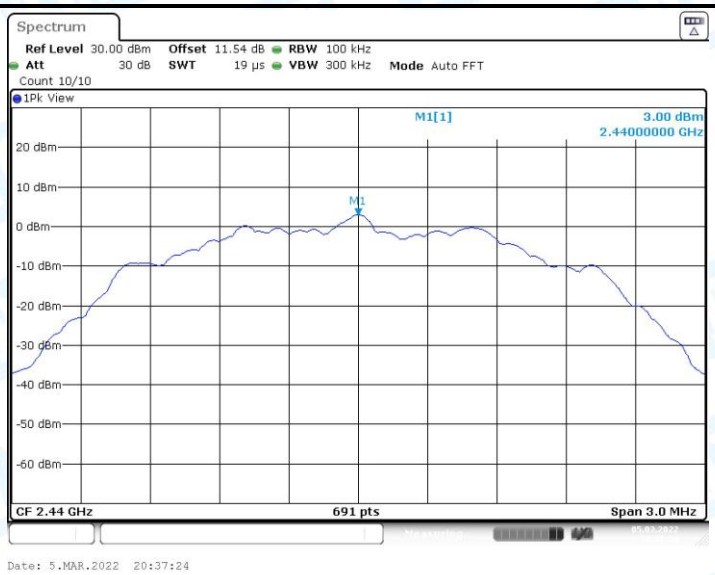
BLE_2M_Ant1_2402_0~Reference



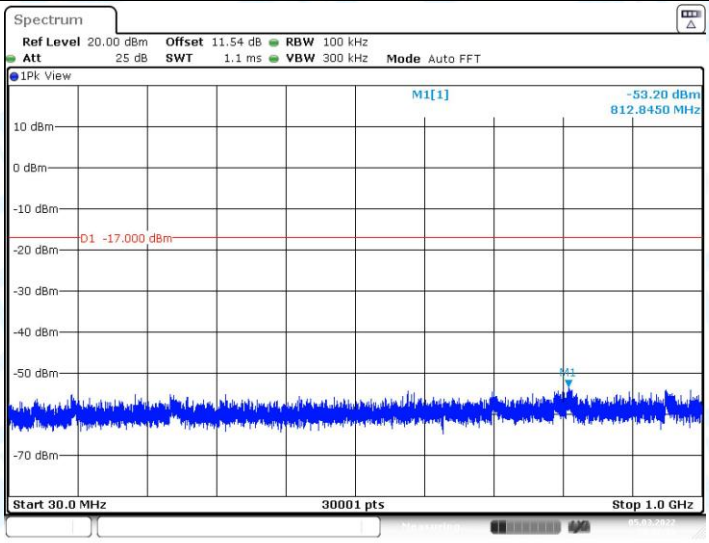
BLE_2M_Ant1_2402_30~1000



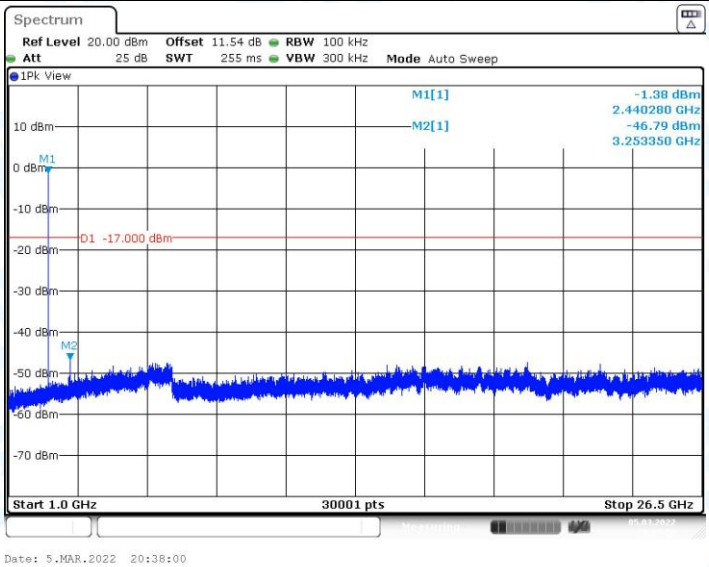
BLE_2M_Ant1_2402_1000~26500



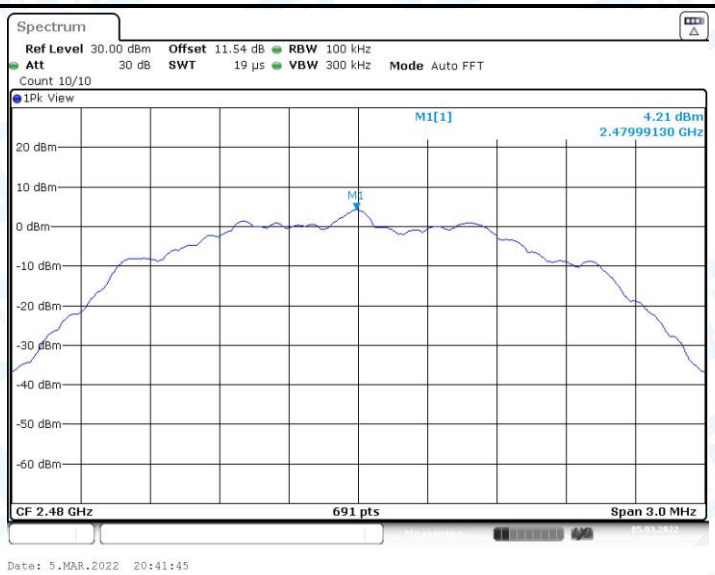
BLE_2M_Ant1_2440_0~Reference



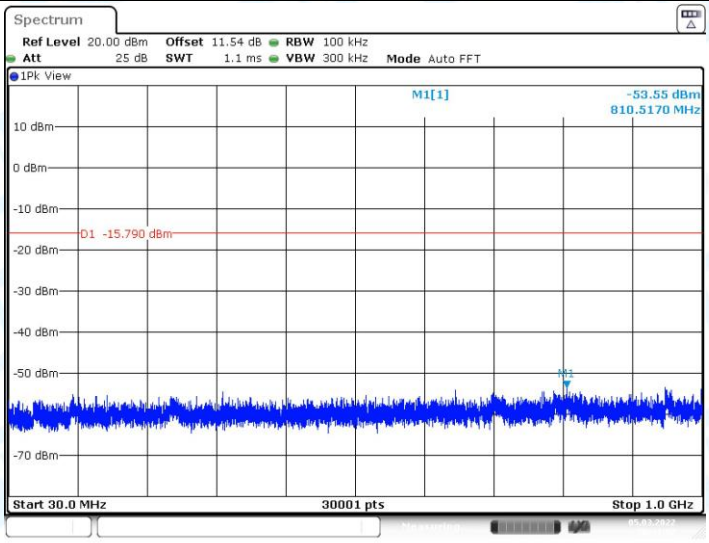
BLE_2M_Ant1_2440_30~1000



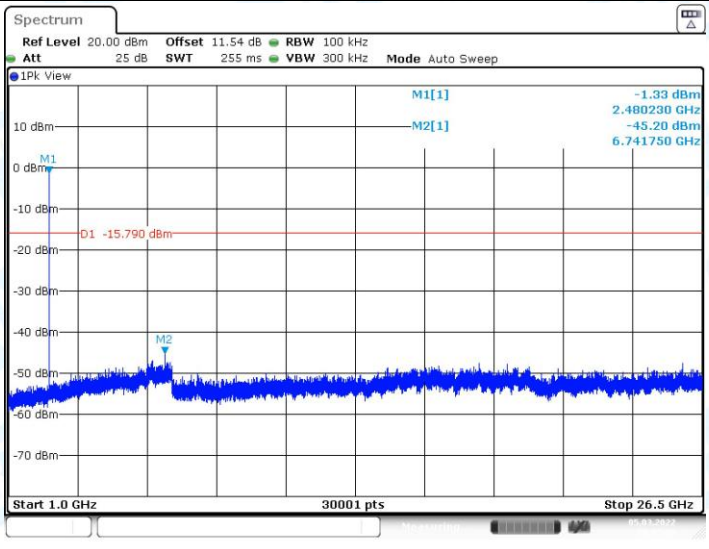
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



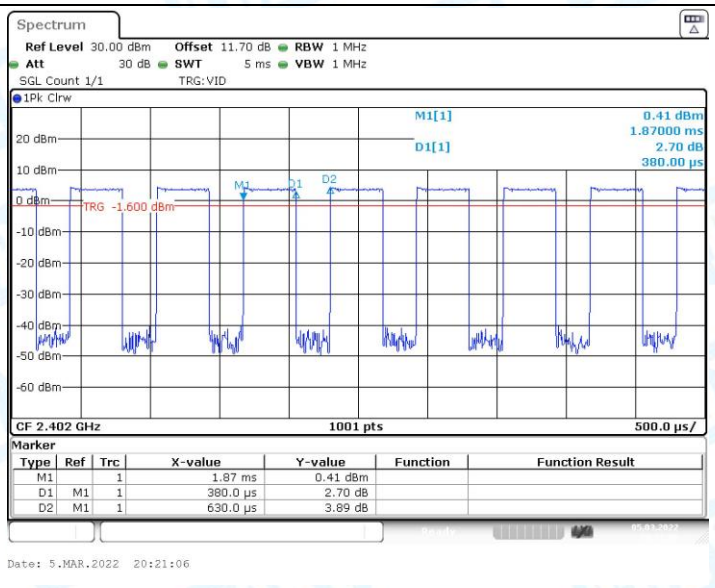
BLE_2M_Ant1_2480_1000~26500

7. Duty Cycle

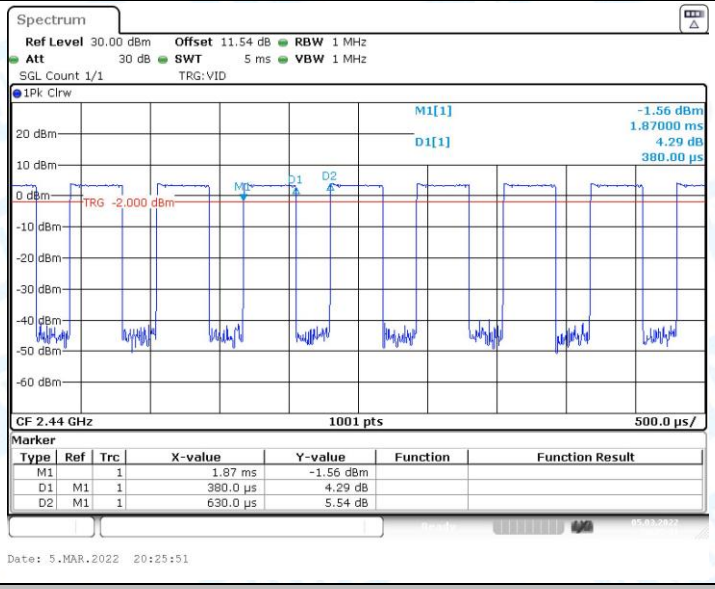
7.1.Test Result

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.38	0.63	60.32	---	---
		2440	0.38	0.63	60.32	---	---
		2480	0.38	0.63	60.32	---	---
BLE_2M	Ant1	2402	0.20	0.63	31.75	---	---
		2440	0.20	0.63	31.75	---	---
		2480	0.20	0.63	31.75	---	---

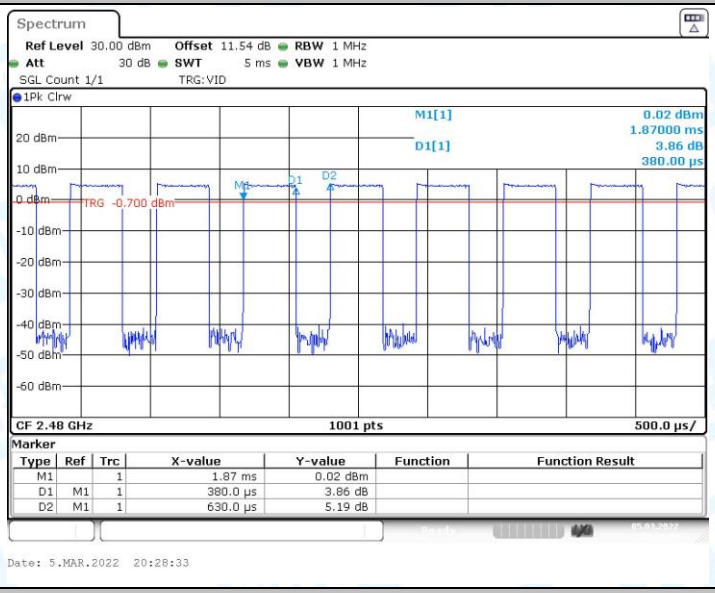
7.2.Test Graphs



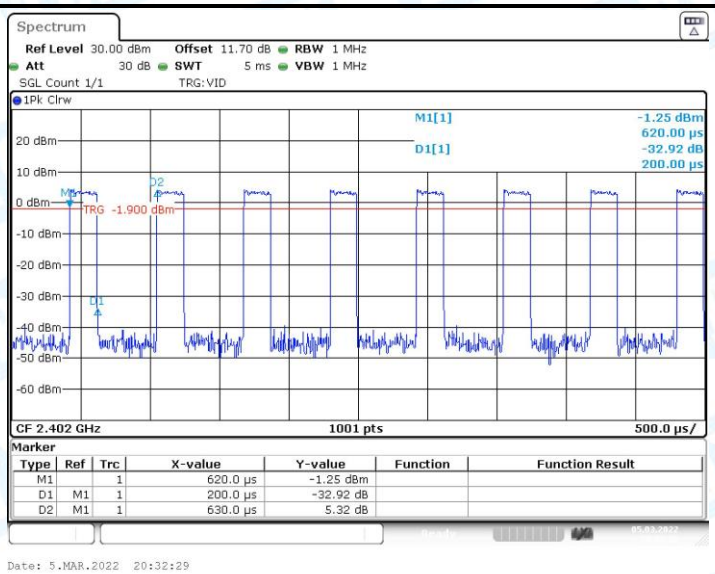
BLE_1M_Ant1_2402



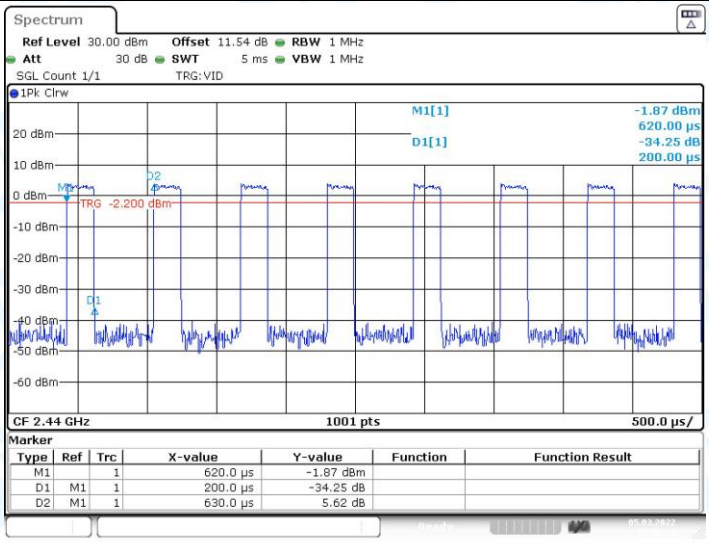
BLE_1M_Ant1_2440



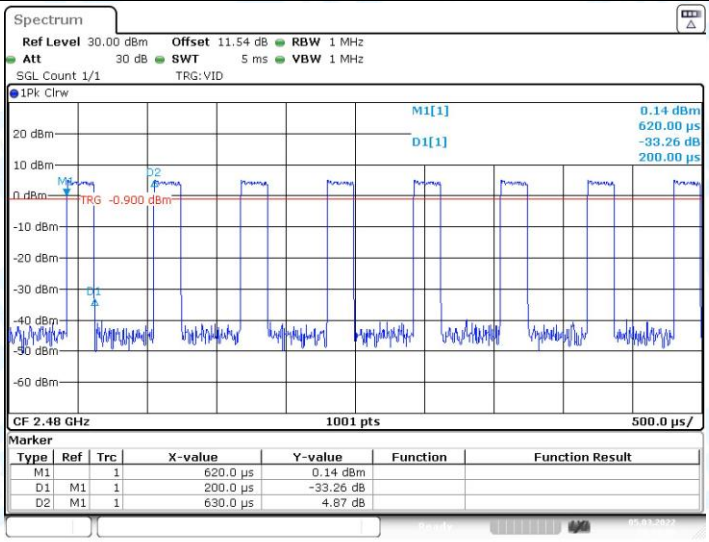
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

8. Emissions in Restricted Bands

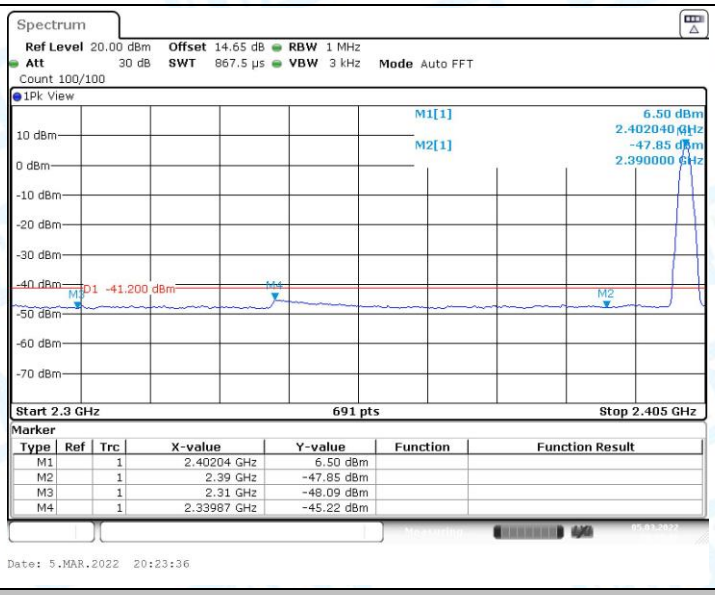
8.1.Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.09	≤-41.20	PASS
				AV	2339.870	-45.22	≤-41.20	PASS
				AV	2390.000	-47.85	≤-41.20	PASS
				Peak	2310.000	-37.97	≤-21.20	PASS
				Peak	2342.609	-34.98	≤-21.20	PASS
				Peak	2390.000	-38.82	≤-21.20	PASS
		High	2480	AV	2483.500	-47.3	≤-41.20	PASS
				AV	2484.725	-46.61	≤-41.20	PASS
				AV	2500.000	-46.92	≤-41.20	PASS
				Peak	2483.500	-39.53	≤-21.20	PASS
				Peak	2497.362	-35.63	≤-21.20	PASS
				Peak	2500.000	-37.59	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-47.41	≤-41.20	PASS
				AV	2340.783	-44.41	≤-41.20	PASS
				AV	2390.000	-47.38	≤-41.20	PASS
				Peak	2310.000	-37.49	≤-21.20	PASS
				Peak	2341.391	-33.55	≤-21.20	PASS
				Peak	2390.000	-38.08	≤-21.20	PASS
		High	2480	AV	2483.500	-46.62	≤-41.20	PASS
				AV	2484.145	-46.05	≤-41.20	PASS
				AV	2500.000	-46.76	≤-41.20	PASS
				Peak	2483.500	-39.11	≤-21.20	PASS
				Peak	2486.348	-35.86	≤-21.20	PASS
				Peak	2500.000	-36.94	≤-21.20	PASS

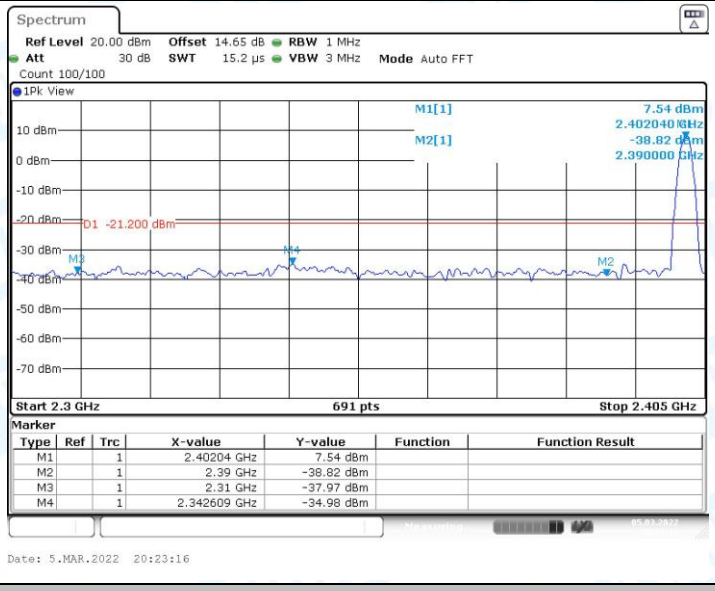
Note:

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.

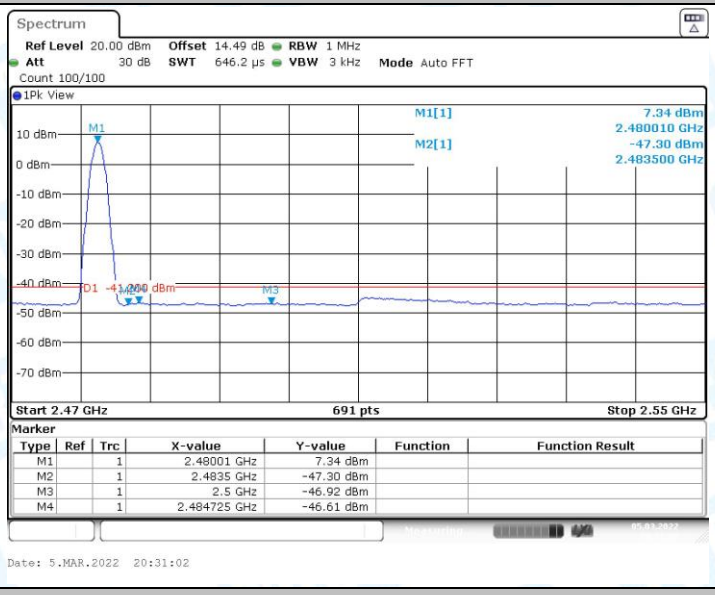
8.2.Test Graphs



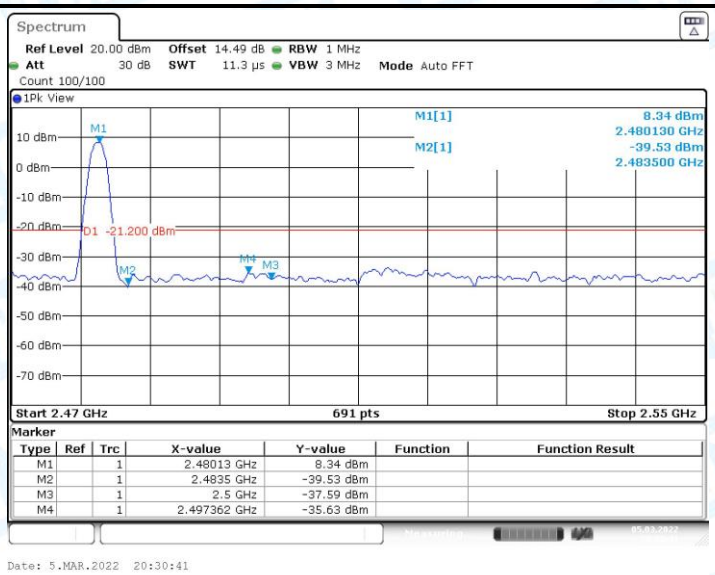
BLE_1M_Ant1_Low_2402_AV



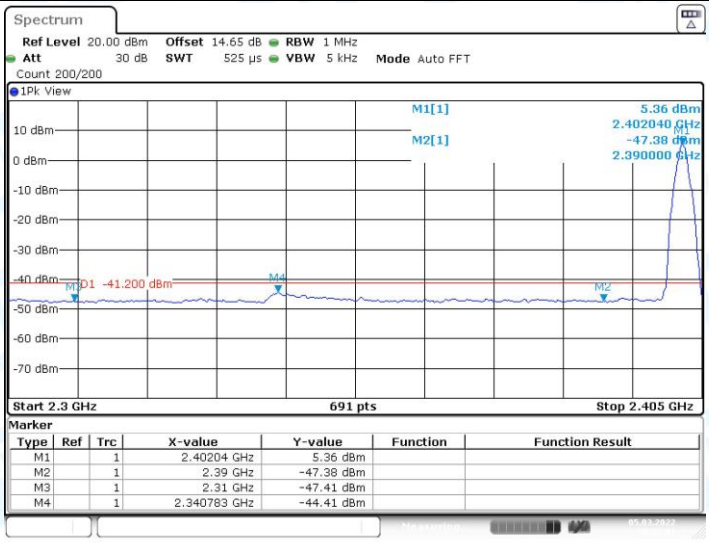
BLE_1M_Ant1_Low_2402_Peak



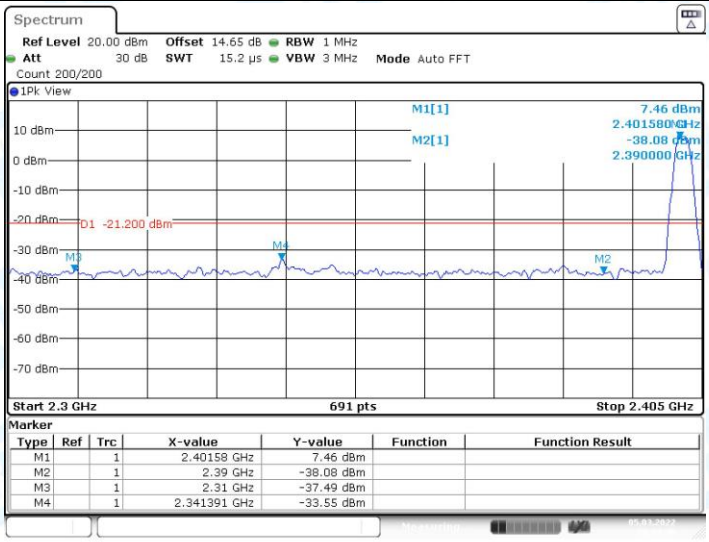
BLE_1M_Ant1_High_2480_AV



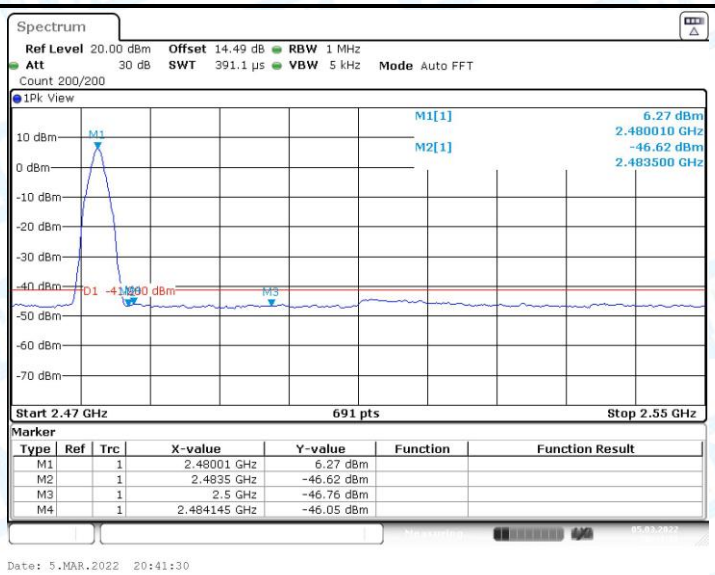
BLE_1M_Ant1_High_2480_Peak



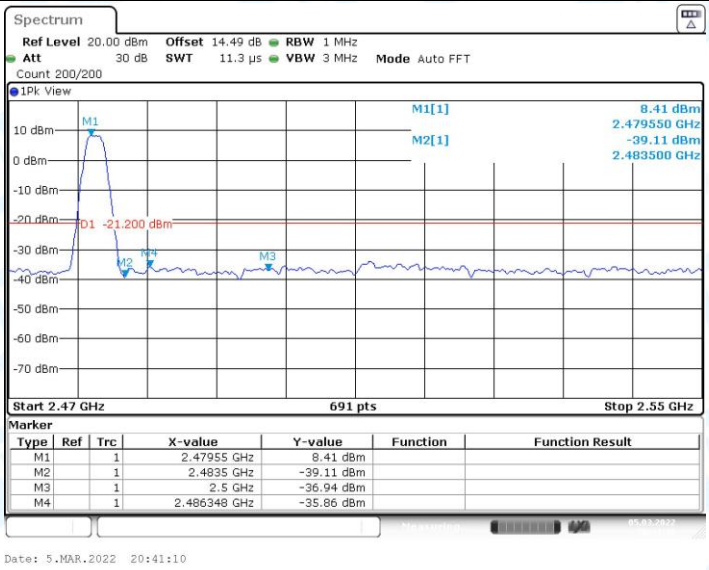
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

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