RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Wi-Fi BT Module
Test Model:	CDW-N37663U-02
Sample ID:	HC-C-202403-0360-02-01
Environmental Conditions	
Temperature:	23.6℃
Relative Humidity:	48%
Test Voltage:	DC 3.3V
Test Engineer:	Mike Yan
Note: For a more detailed features description, please refer to the report TBR-C-202403-0360-7.	

Contents

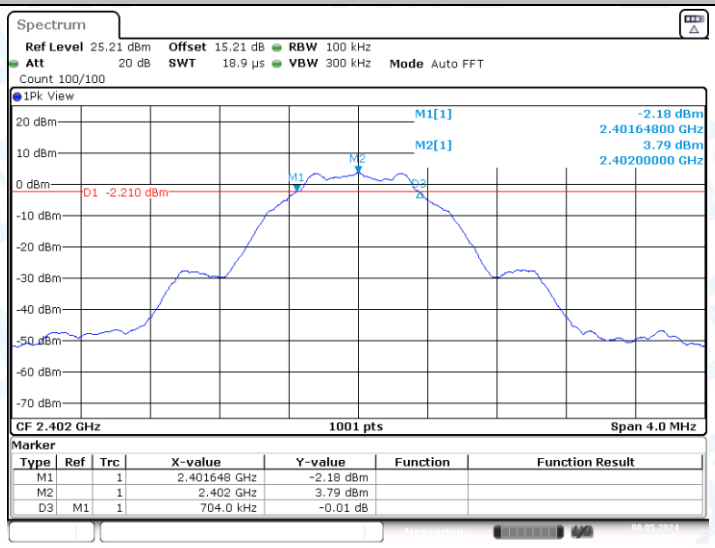
1. DTS Bandwidth

1.1.Test Result

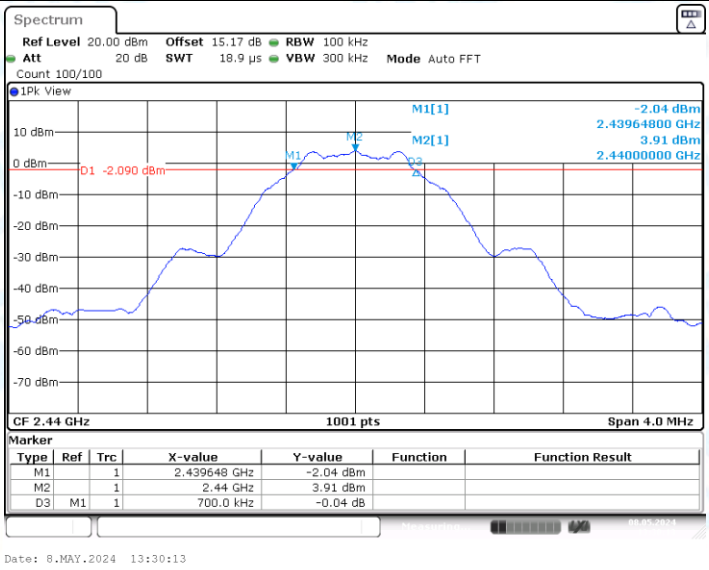
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.70	2401.65	2402.35	0.5	PASS
		2440	0.70	2439.65	2440.35	0.5	PASS
		2480	0.70	2479.65	2480.35	0.5	PASS
BLE_2M	Ant1	2402	1.15	2401.43	2402.58	0.5	PASS
		2440	1.15	2439.43	2440.58	0.5	PASS
		2480	1.15	2479.43	2480.58	0.5	PASS

1.2.Test Graphs

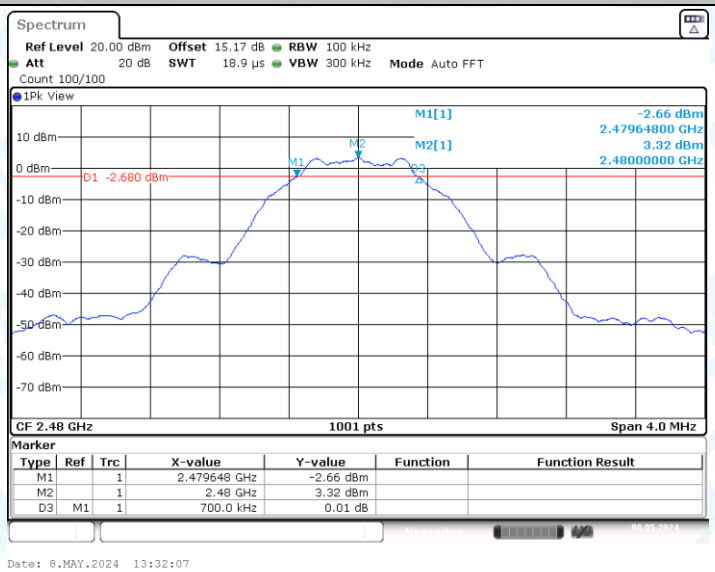
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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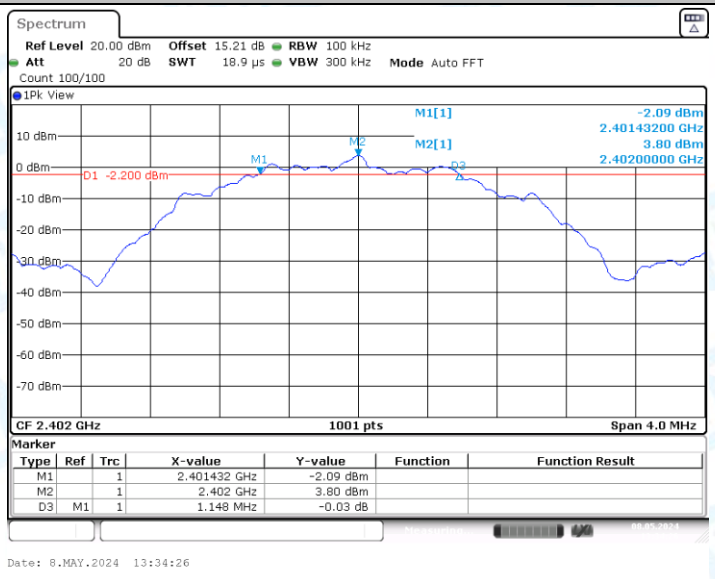

Date: 8.MAY.2024 13:34:26

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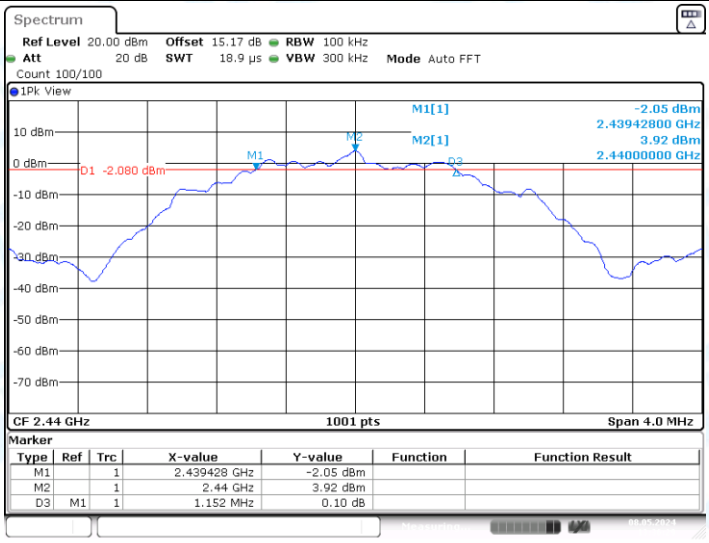

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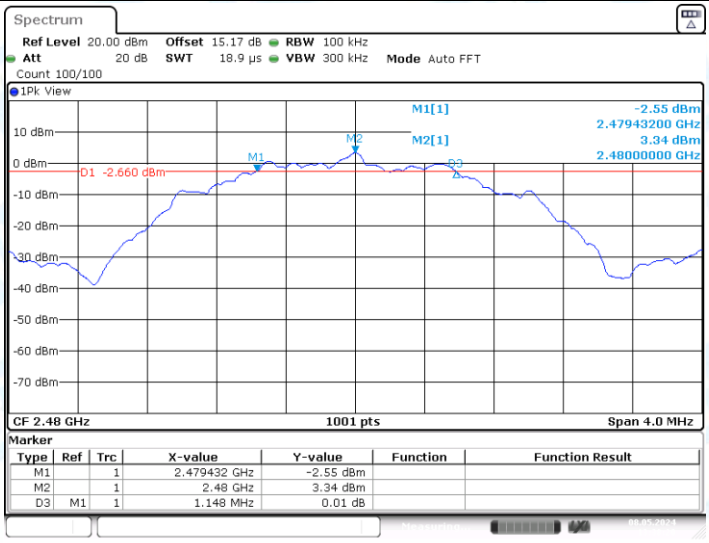


Date: 8.MAY.2024 13:38:20

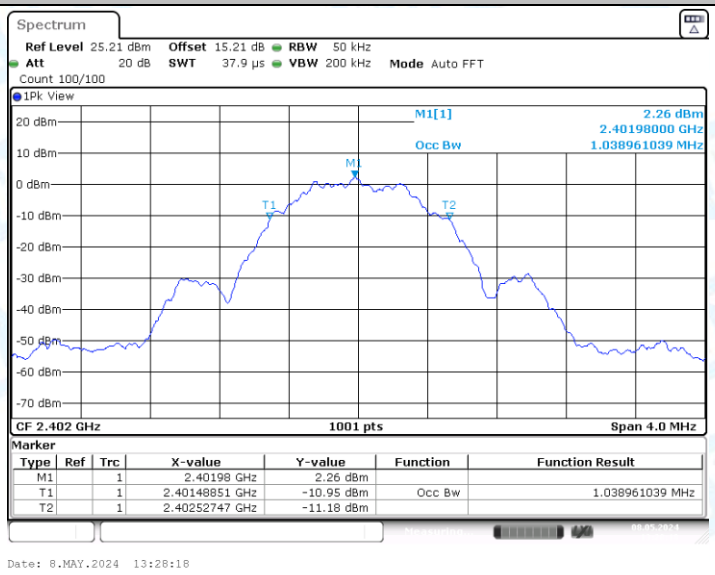
2. Occupied Channel Bandwidth

2.1.Test Result

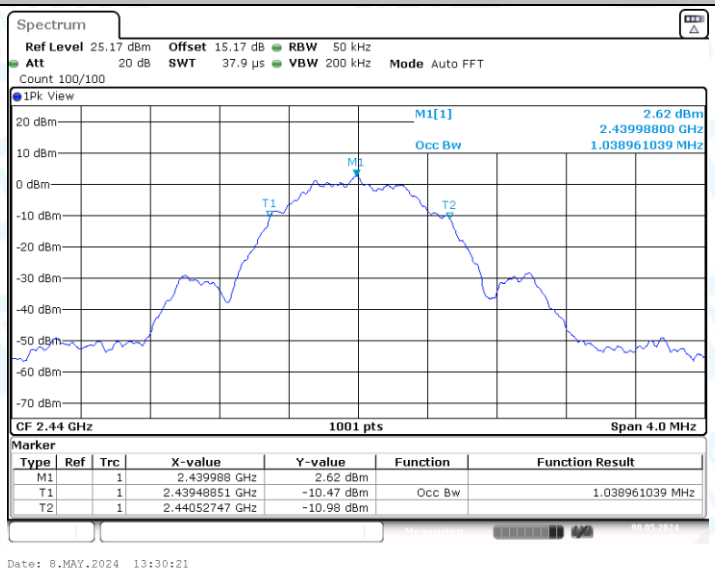
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.039	2401.4885	2402.5275	---	---
		2440	1.039	2439.4885	2440.5275	---	---
		2480	1.043	2479.4845	2480.5275	---	---
BLE_2M	Ant1	2402	2.066	2400.9810	2403.0470	---	---
		2440	2.066	2438.9810	2441.0470	---	---
		2480	2.066	2478.9810	2481.0470	---	---

2.2.Test Graphs

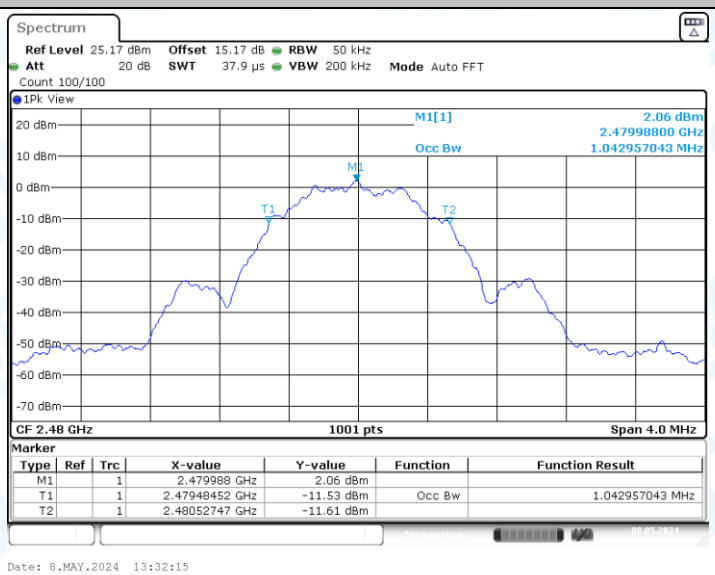
BLE_1M_Ant1_2402



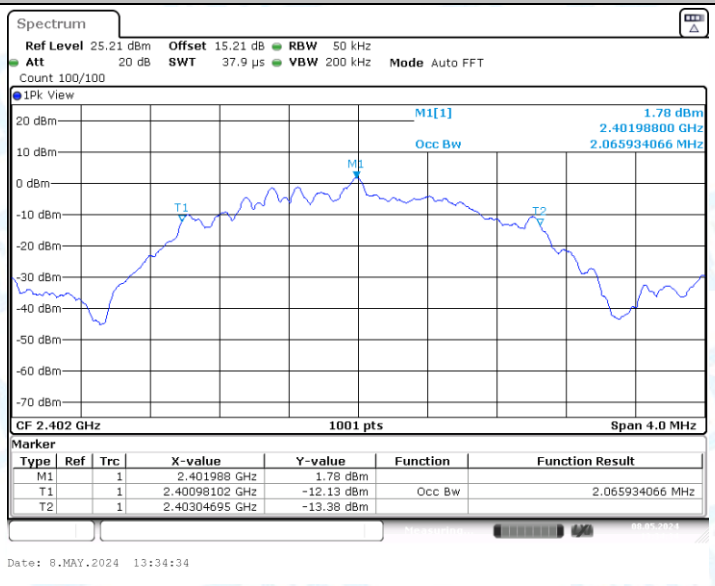
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



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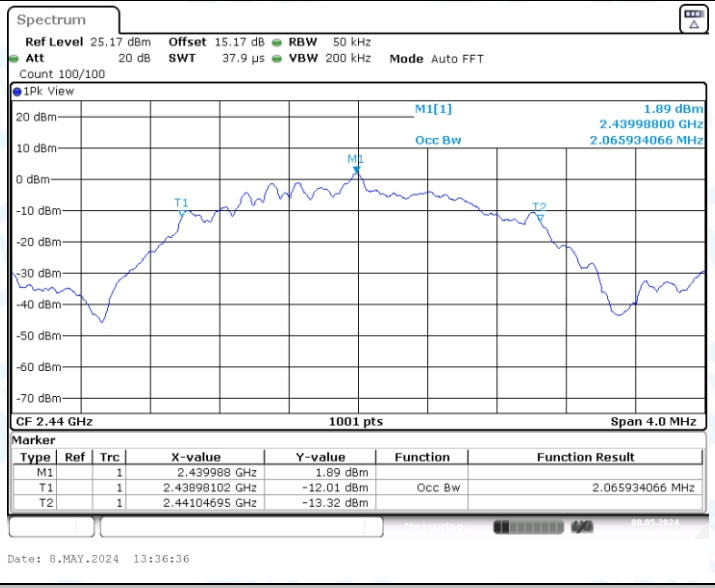
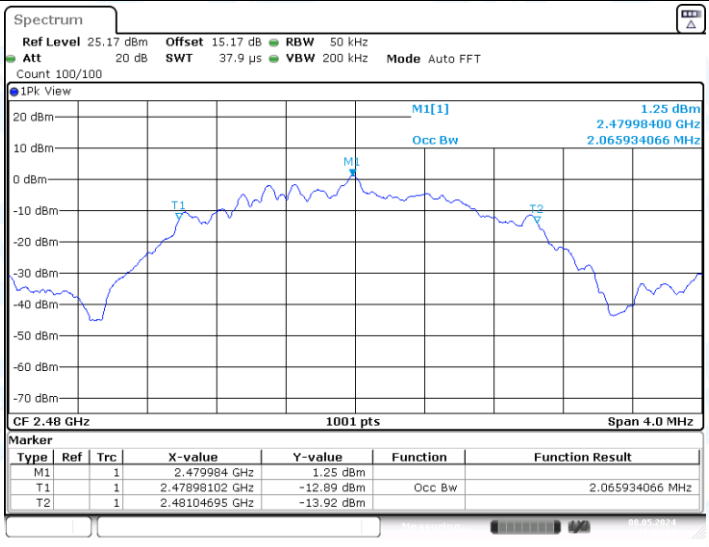


BLE_2M_Ant1_2480



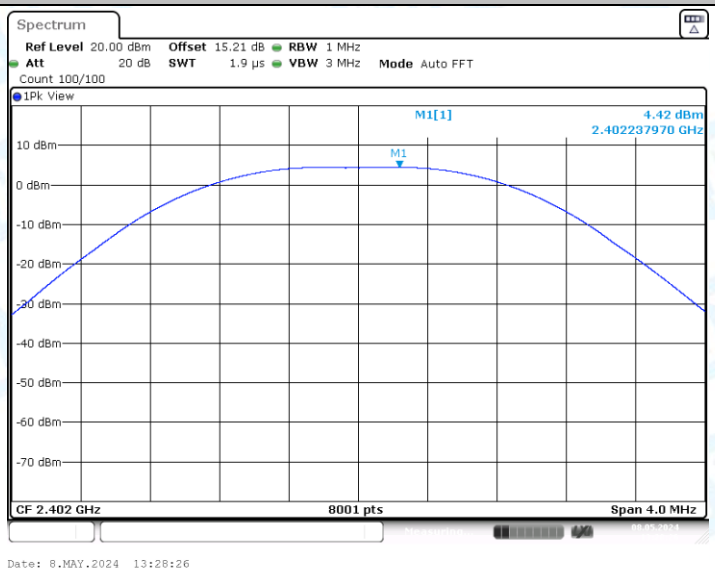
3. Maximum Peak conducted output power

3.1.Test Result

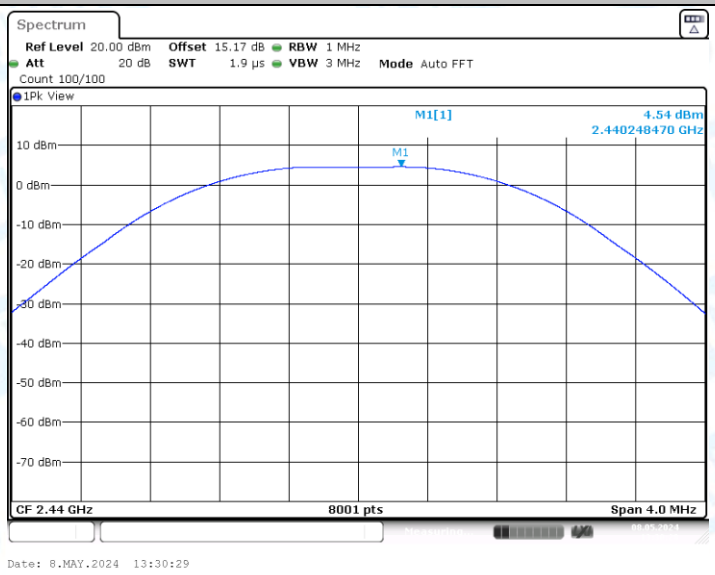
Test Mode	Antenna	Channel	Result [dBm]	Limit [dBm]	Gain [dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.42	≤30	4.70	9.12	≤36	PASS
		2440	4.54	≤30	4.70	9.24	≤36	PASS
		2480	3.95	≤30	4.70	8.65	≤36	PASS
BLE_2M	Ant1	2402	4.44	≤30	4.70	9.14	≤36	PASS
		2440	4.59	≤30	4.70	9.29	≤36	PASS
		2480	3.97	≤30	4.70	8.67	≤36	PASS
Note: This module will use two different BT antennas, and only the one with the larger antenna gain(4.70dBi) will be used for conducted test.								

3.2.Test Graphs

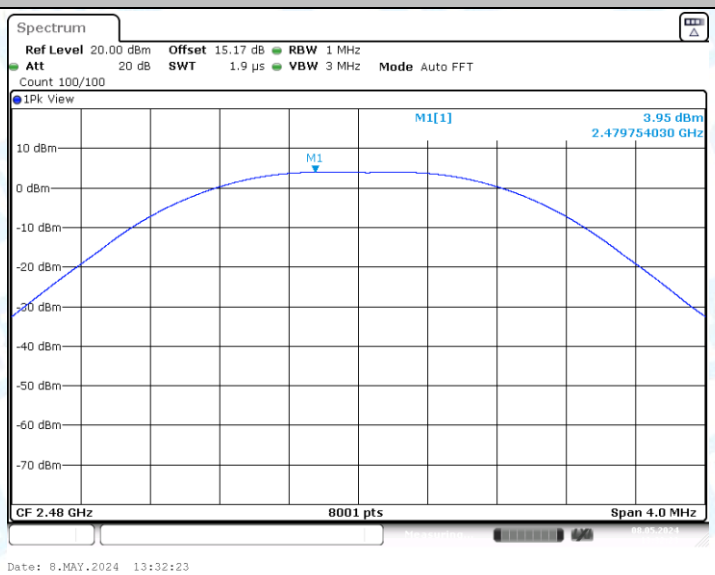
BLE_1M_Ant1_2402



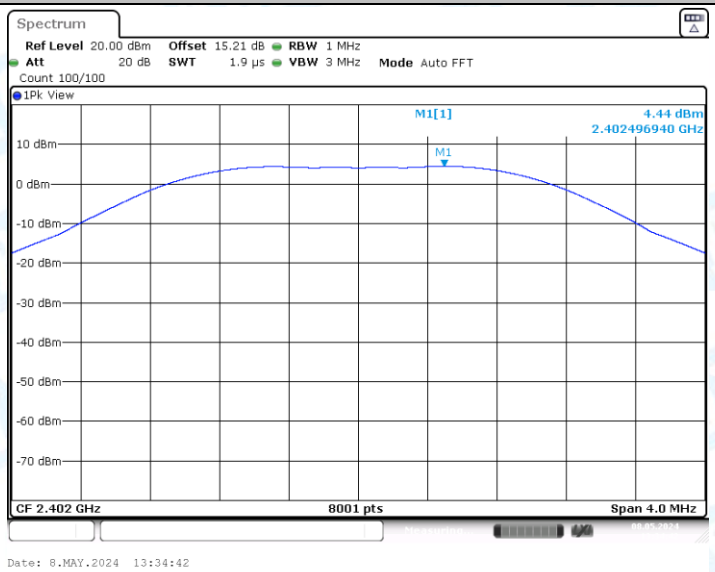
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



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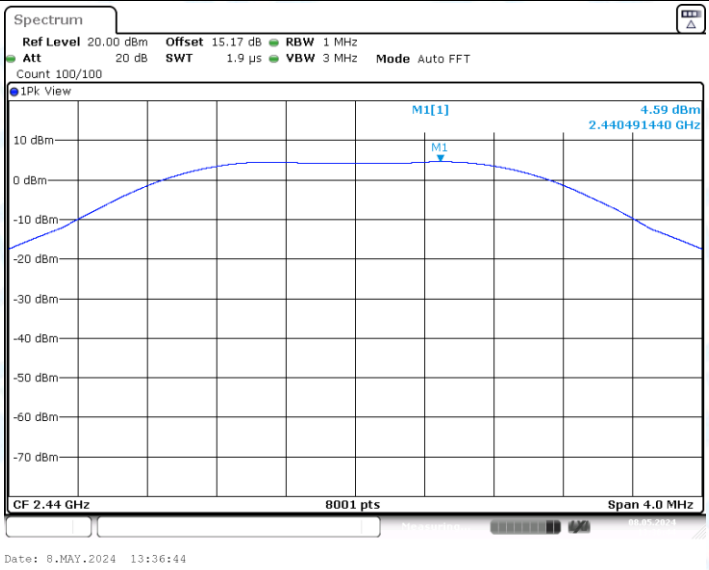
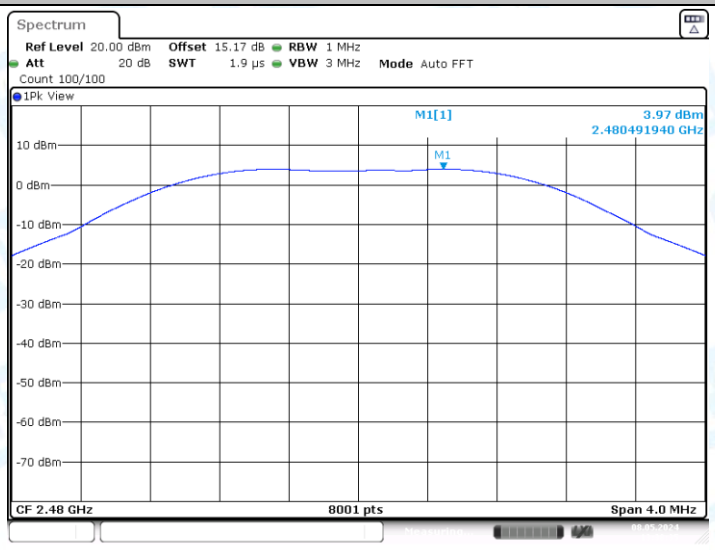


BLE_2M_Ant1_2480



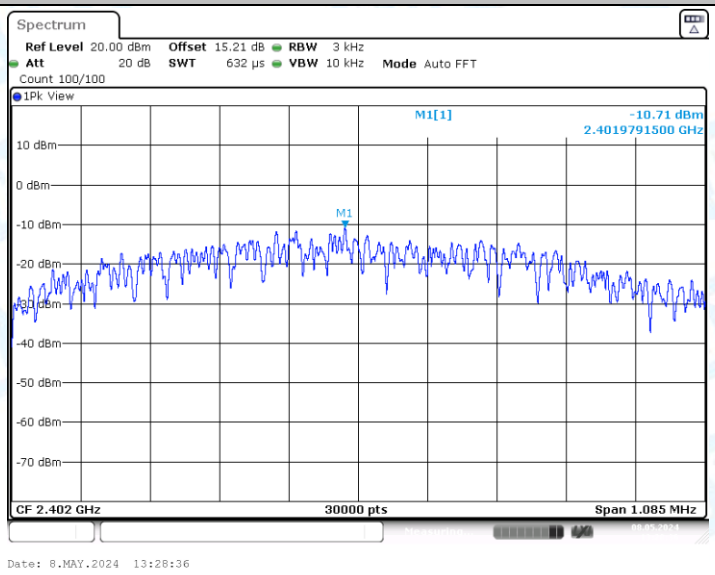
4. Maximum power spectral density

4.1.Test Result

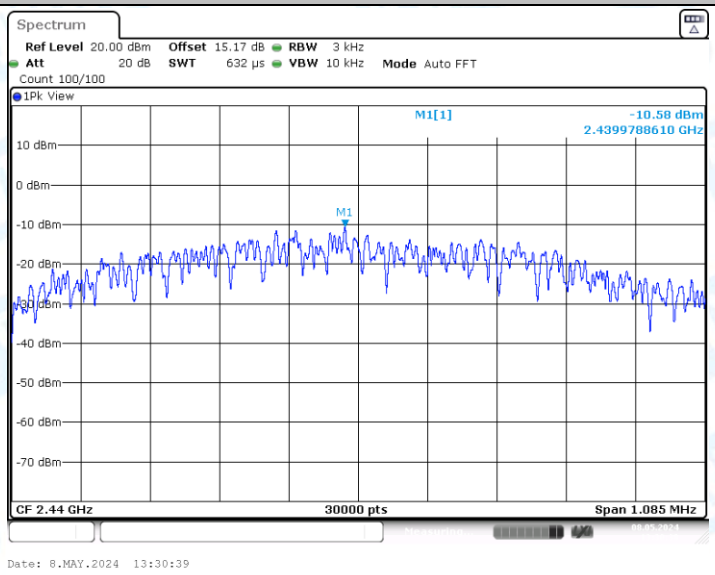
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-10.71	≤8.00	PASS
		2440	-10.58	≤8.00	PASS
		2480	-11.19	≤8.00	PASS
BLE_2M	Ant1	2402	-13.27	≤8.00	PASS
		2440	-13.20	≤8.00	PASS
		2480	-13.74	≤8.00	PASS

4.2.Test Graphs

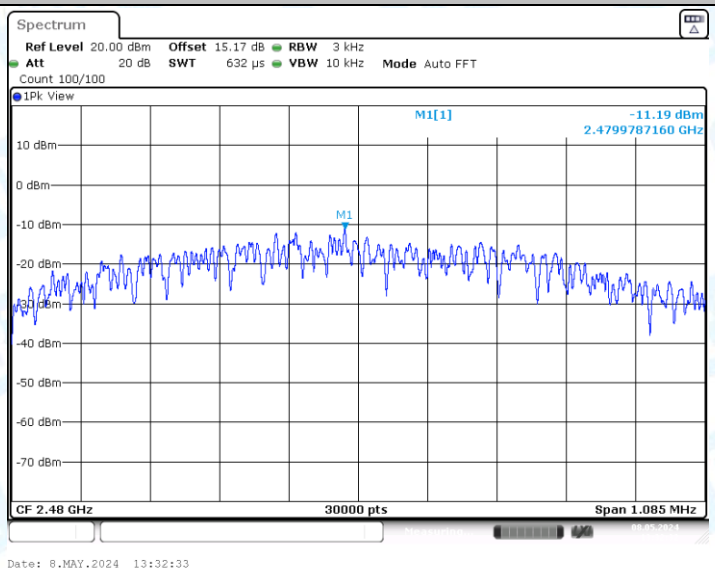
BLE_1M_Ant1_2402



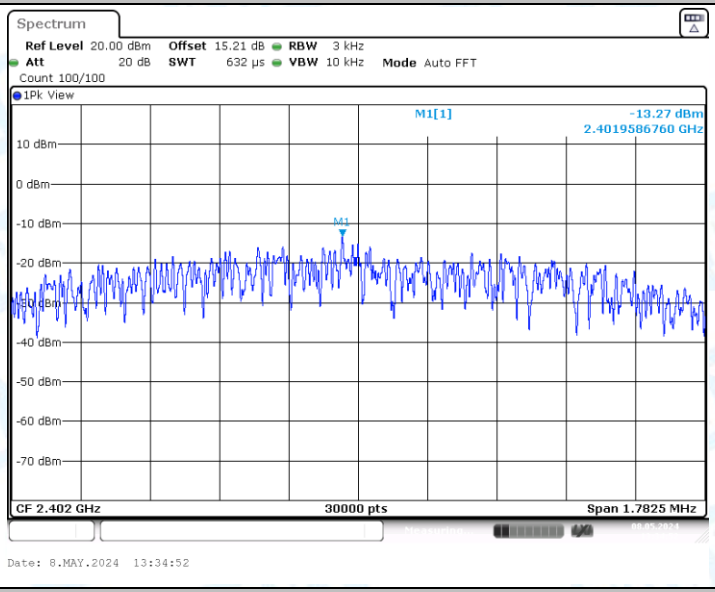
BLE_1M_Ant1_2440



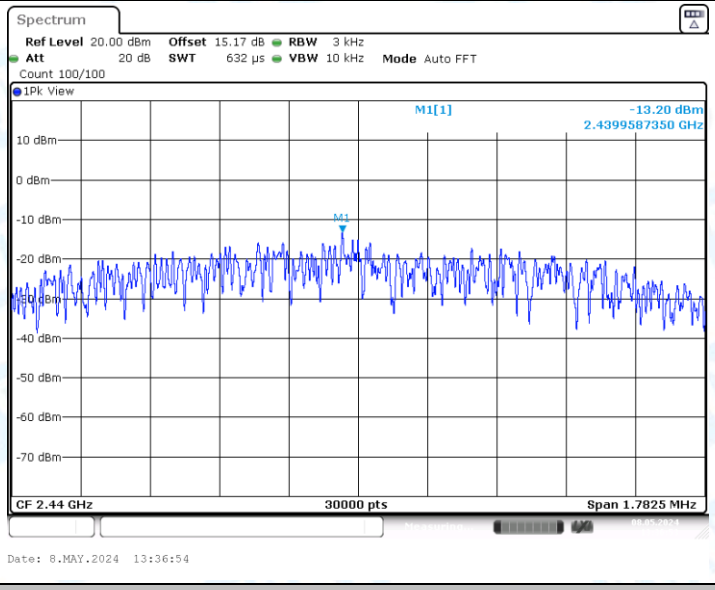
BLE_1M_Ant1_2480



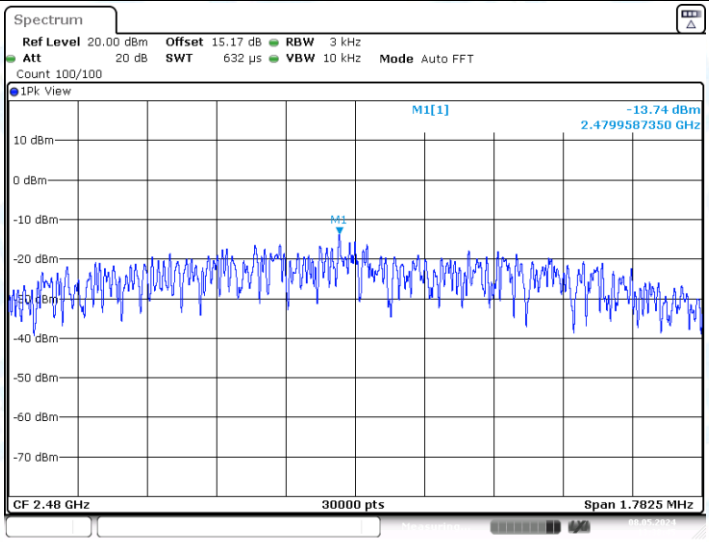
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



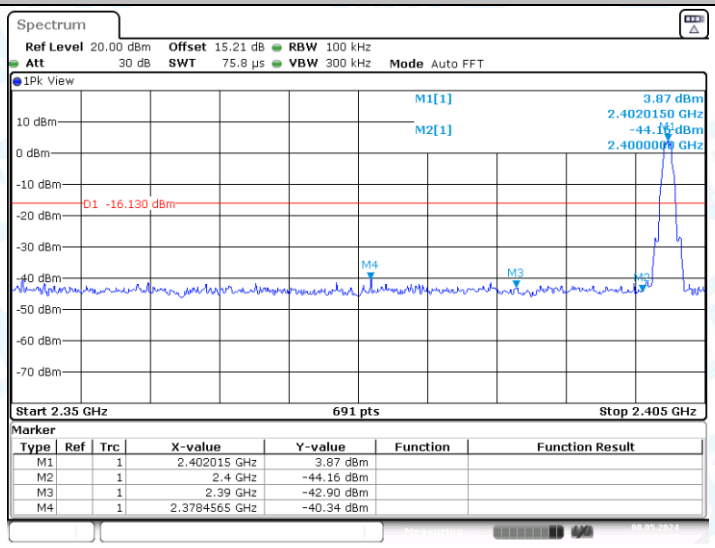
5. Band edge measurements

5.1.Test Result

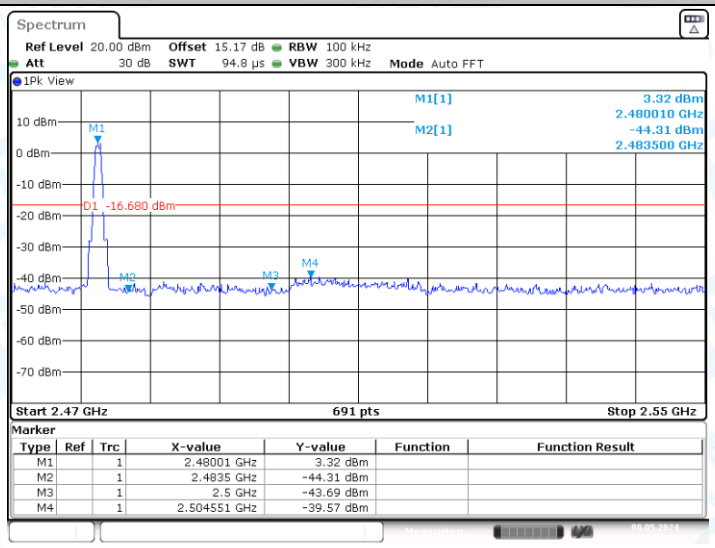
Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.87	-40.34	≤-16.13	PASS
		High	2480	3.32	-39.57	≤-16.68	PASS
BLE_2M	Ant1	Low	2402	3.88	-27.75	≤-16.12	PASS
		High	2480	3.33	-39.44	≤-16.67	PASS

5.2.Test Graphs

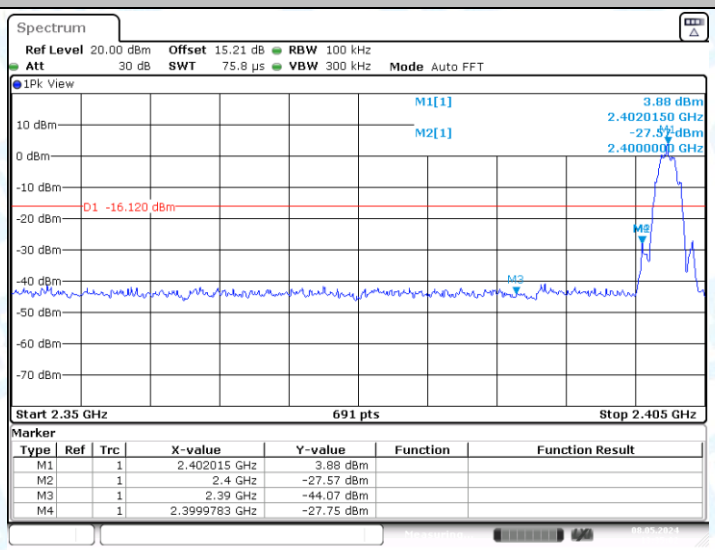
BLE_1M_Ant1_Low_2402



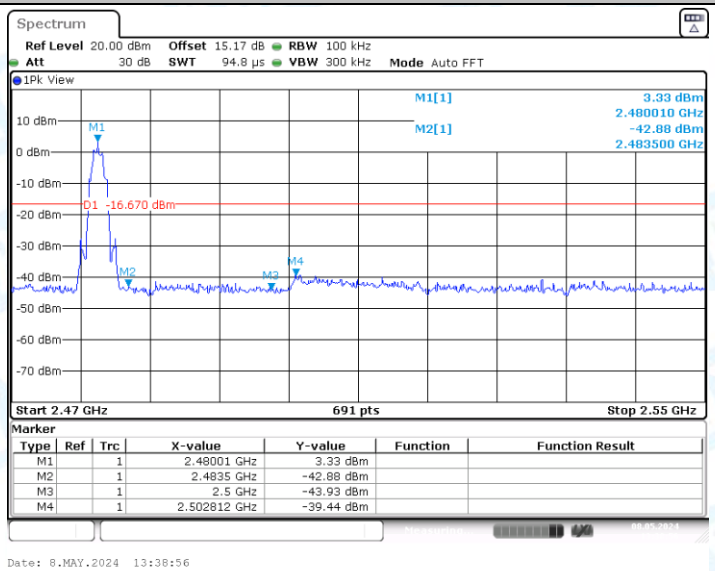
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



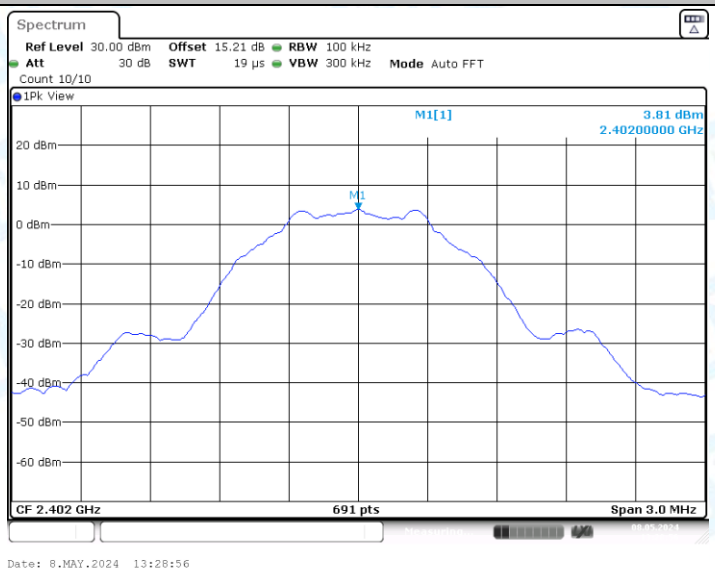
6. Conducted Spurious Emission

6.1.Test Result

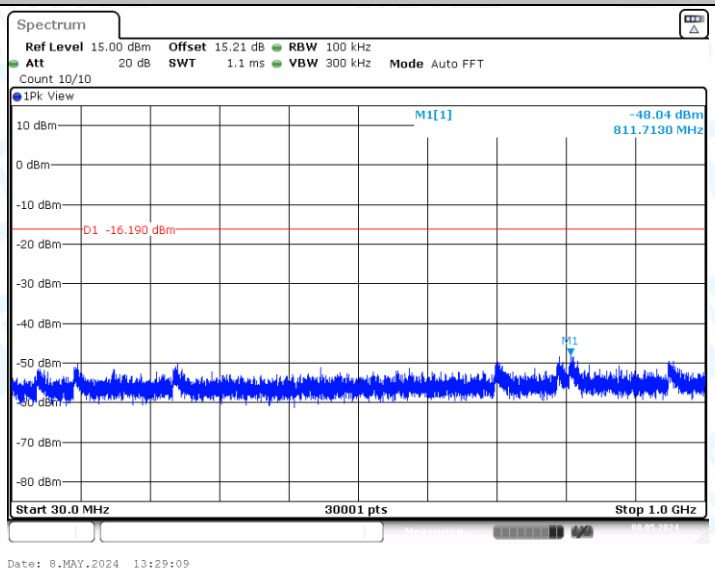
Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.81	3.81	---	PASS
			30~1000	3.81	-48.04	≤-16.19	PASS
			1000~26500	3.81	-43.69	≤-16.19	PASS
		2440	Reference	3.90	3.90	---	PASS
			30~1000	3.90	-48.69	≤-16.1	PASS
			1000~26500	3.90	-43.18	≤-16.1	PASS
		2480	Reference	3.29	3.29	---	PASS
			30~1000	3.29	-47.56	≤-16.71	PASS
			1000~26500	3.29	-43.33	≤-16.71	PASS
BLE_2M	Ant1	2402	Reference	3.83	3.83	---	PASS
			30~1000	3.83	-48.14	≤-16.17	PASS
			1000~26500	3.83	-43.28	≤-16.17	PASS
		2440	Reference	3.90	3.90	---	PASS
			30~1000	3.90	-48.07	≤-16.1	PASS
			1000~26500	3.90	-43.39	≤-16.1	PASS
		2480	Reference	3.31	3.31	---	PASS
			30~1000	3.31	-48.12	≤-16.69	PASS
			1000~26500	3.31	-43.93	≤-16.69	PASS

6.2.Test Graphs

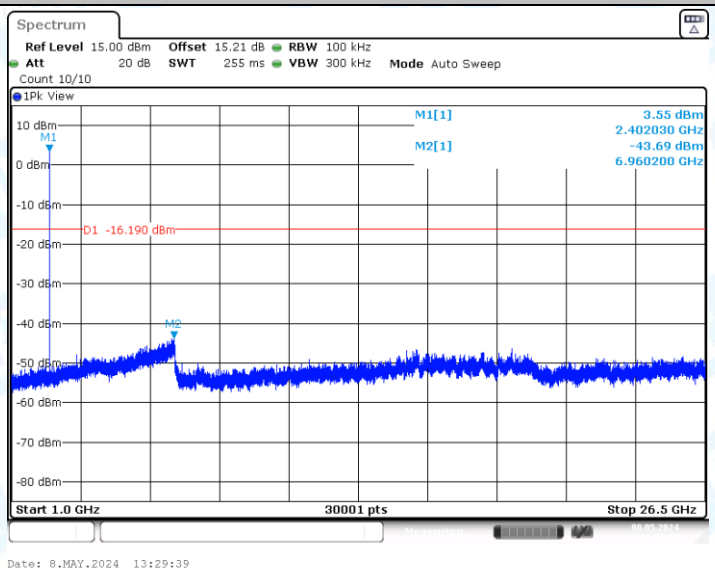
BLE_1M_Ant1_2402_0~Reference



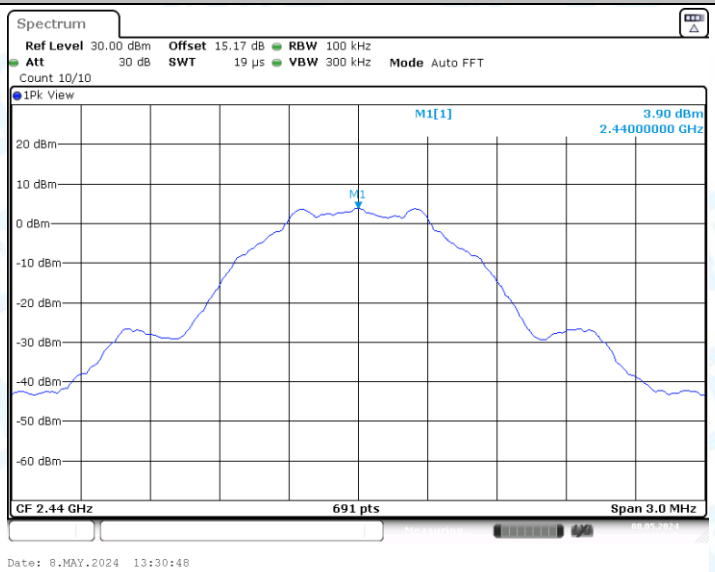
BLE_1M_Ant1_2402_30~1000



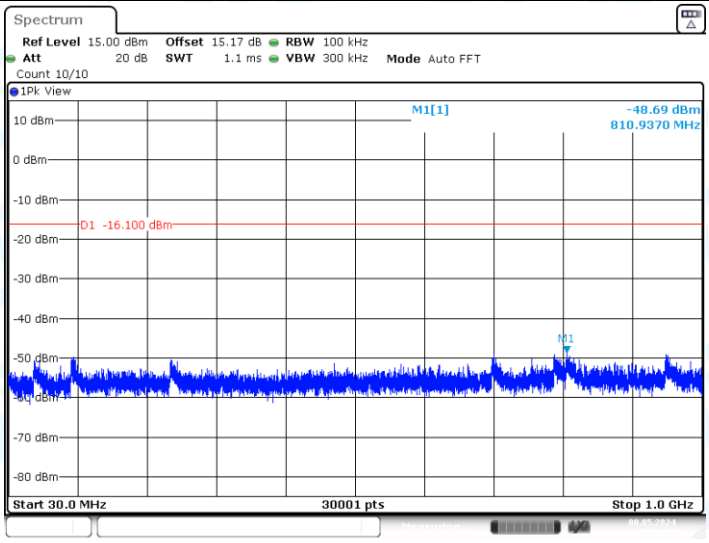
BLE_1M_Ant1_2402_1000~26500



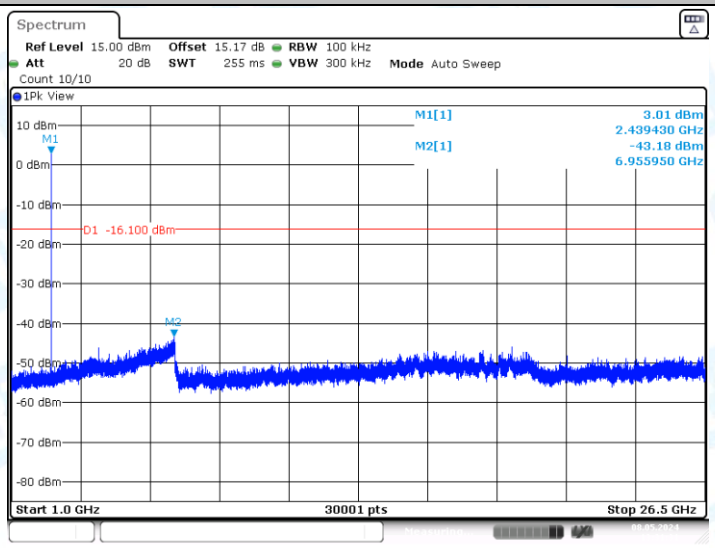
BLE_1M_Ant1_2440_0~Reference



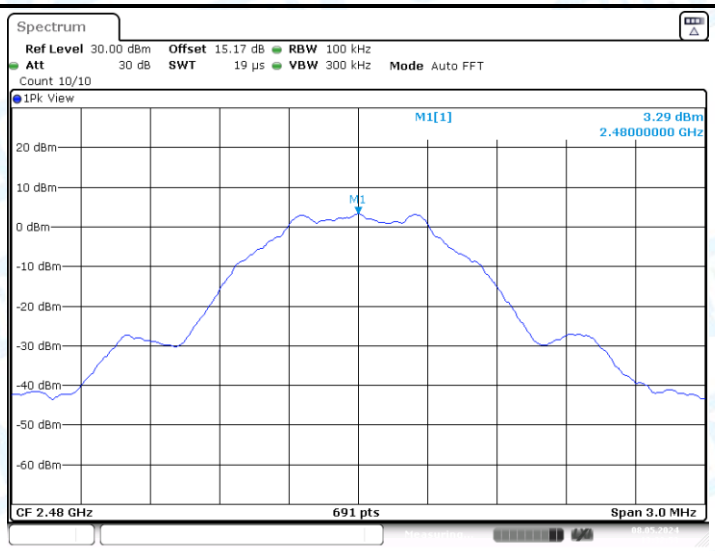
BLE_1M_Ant1_2440_30~1000



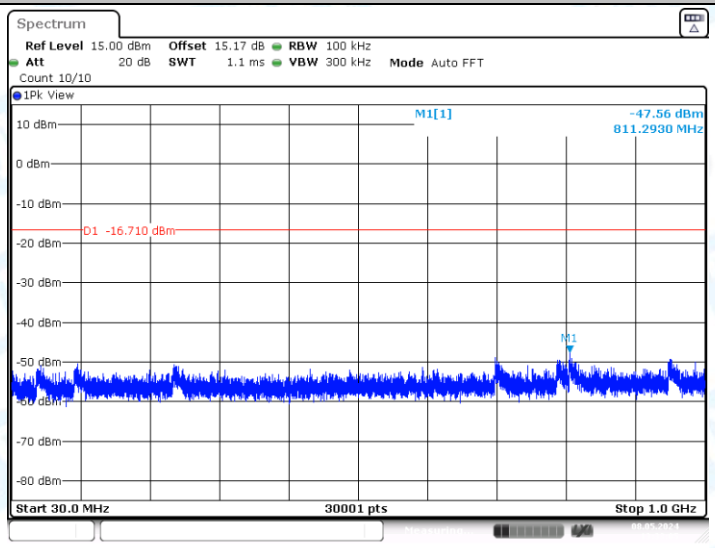
BLE_1M_Ant1_2440_1000~26500



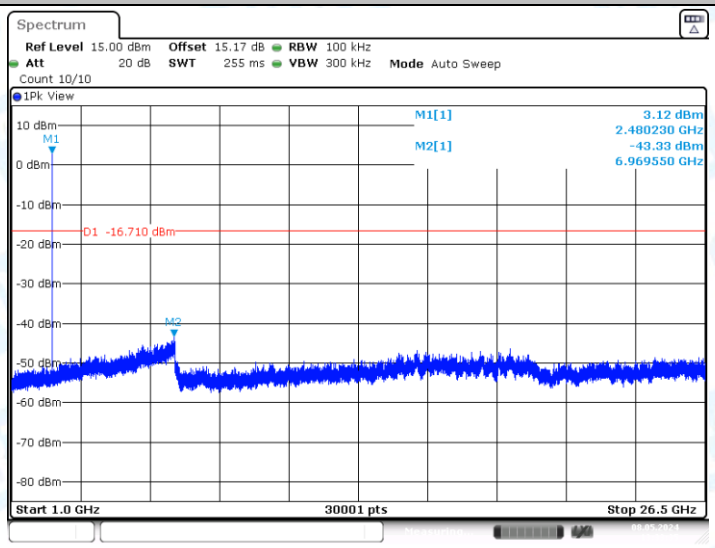
BLE_1M_Ant1_2480_0~Reference



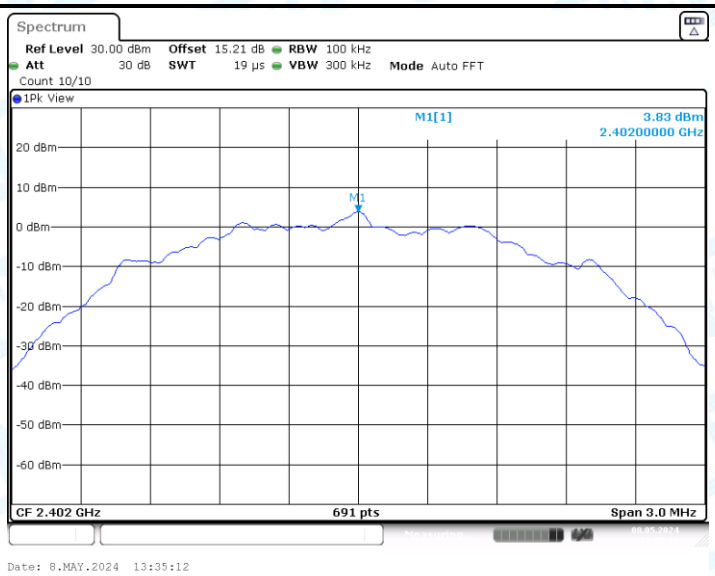
BLE_1M_Ant1_2480_30~1000



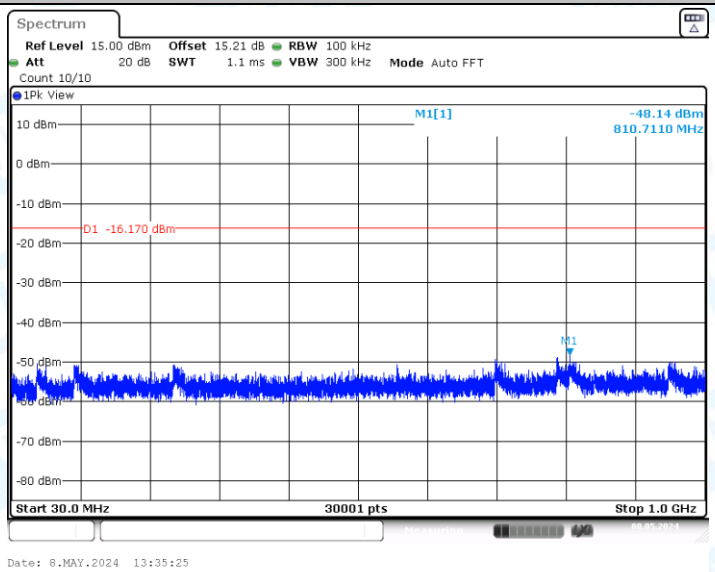
BLE_1M_Ant1_2480_1000~26500



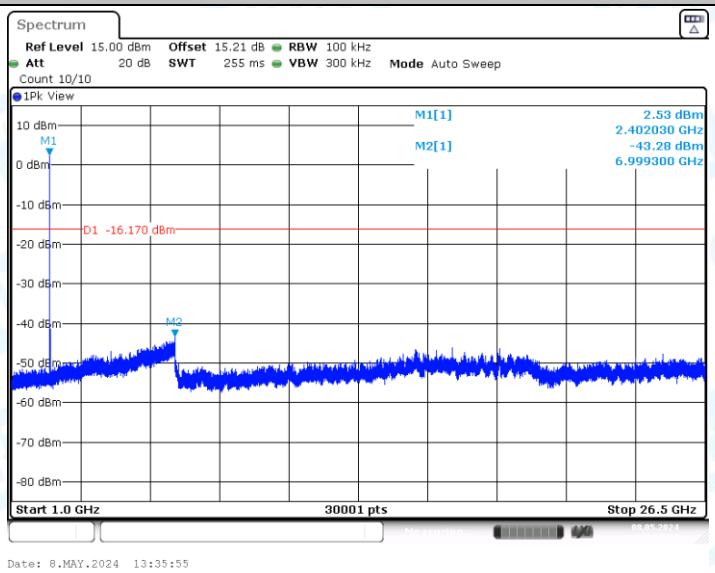
BLE_2M_Ant1_2402_0~Reference



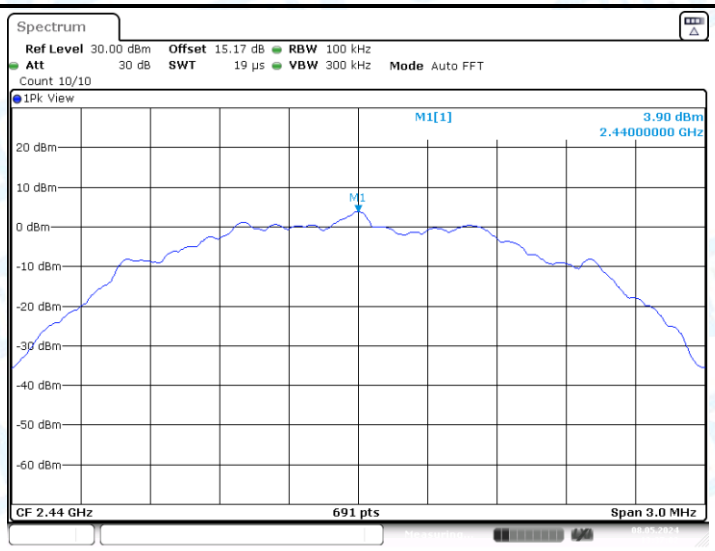
BLE_2M_Ant1_2402_30~1000



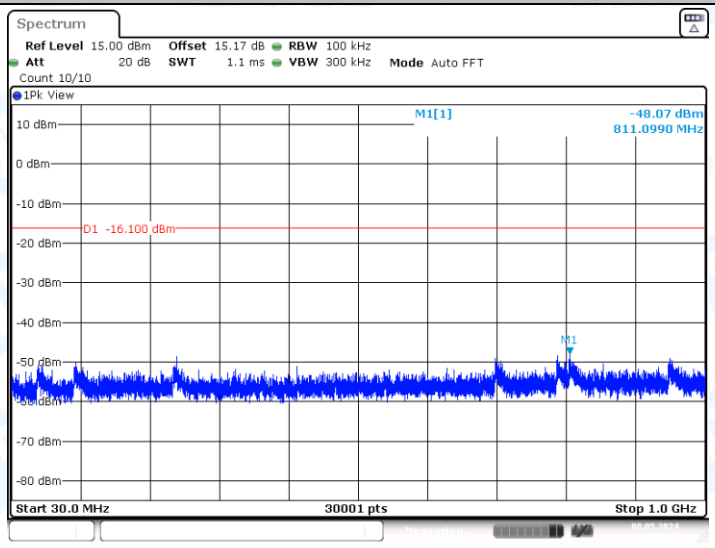
BLE_2M_Ant1_2402_1000~26500



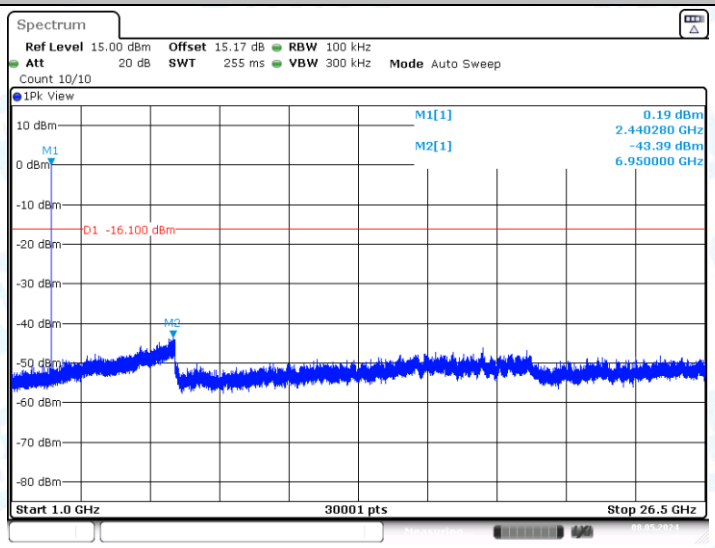
BLE_2M_Ant1_2440_0~Reference



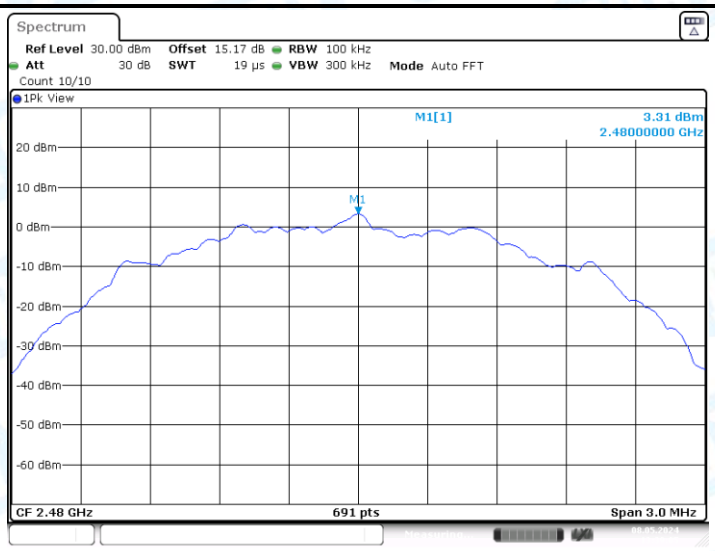
BLE_2M_Ant1_2440_30~1000



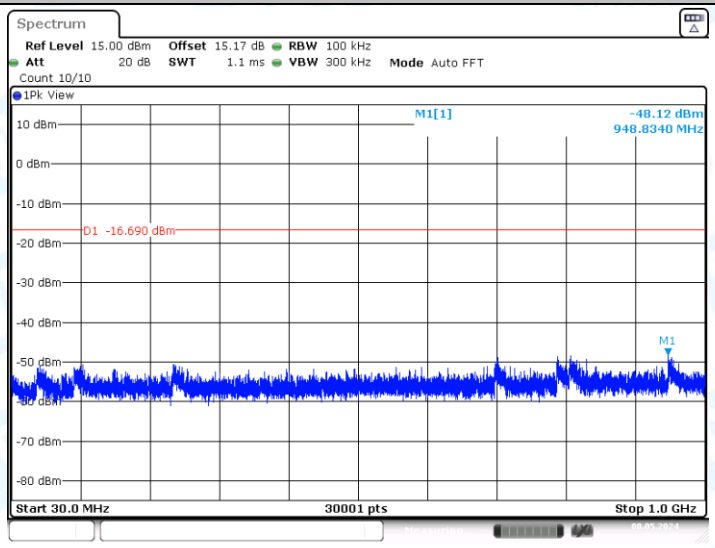
BLE_2M_Ant1_2440_1000~26500



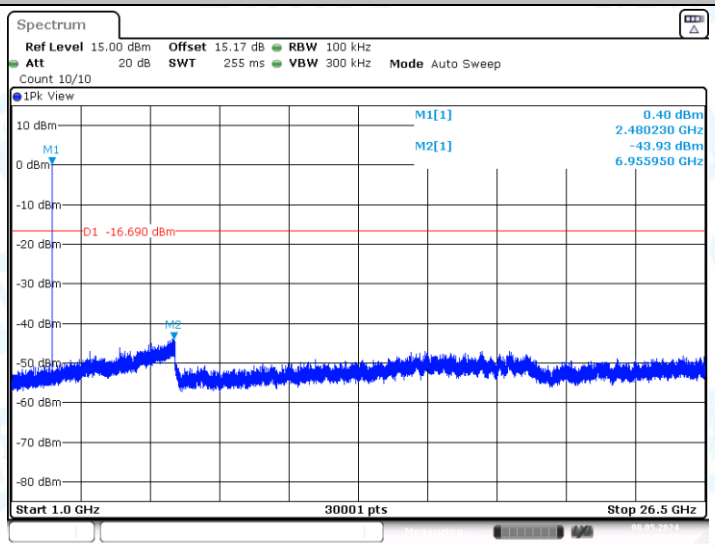
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



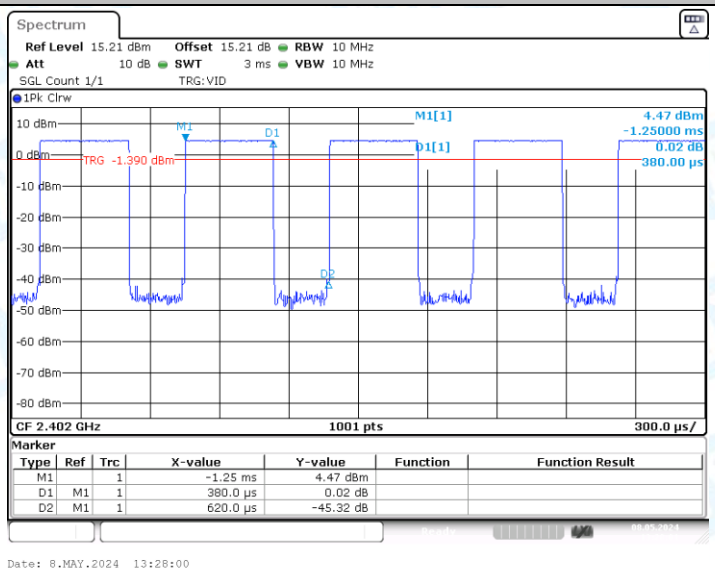
7. Duty Cycle

7.1.Test Result

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [kHz]	Verdict
BLE_1M	Ant1	2402	0.38	0.62	61.29	2.63	---
		2440	0.38	0.62	61.29	2.63	---
		2480	0.38	0.62	61.29	2.63	---
BLE_2M	Ant1	2402	0.20	0.63	31.75	5.00	---
		2440	0.20	0.63	31.75	5.00	---
		2480	0.20	0.63	31.75	5.00	---

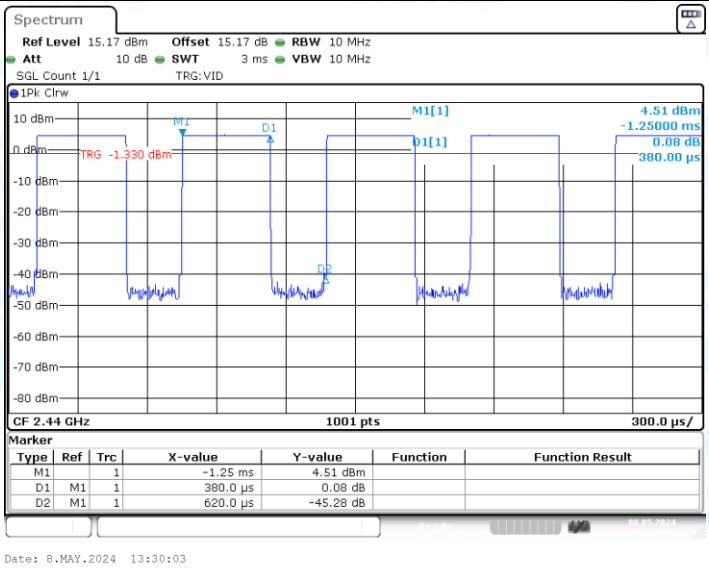
7.2.Test Graphs

BLE_1M_Ant1_2402



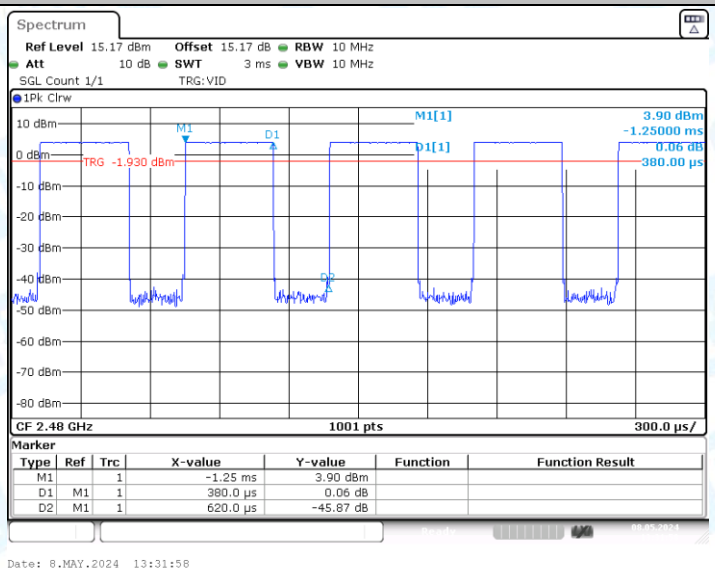
Date: 8.MAY.2024 13:28:00

BLE_1M_Ant1_2440



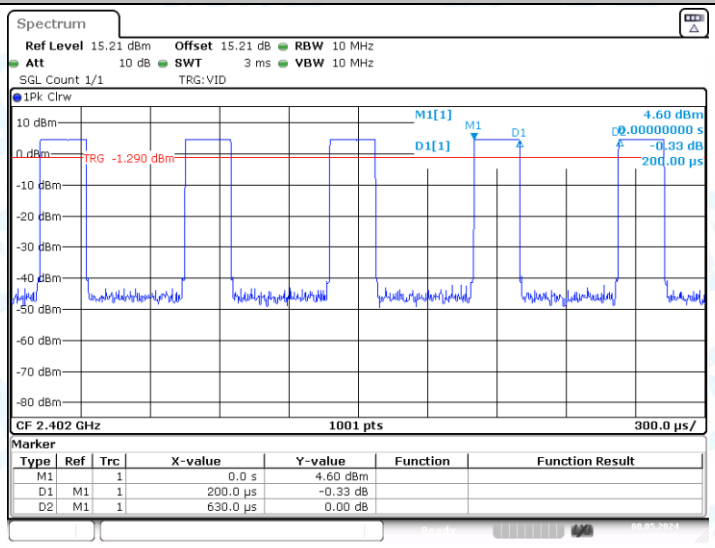
Date: 8.MAY.2024 13:30:03

BLE_1M_Ant1_2480

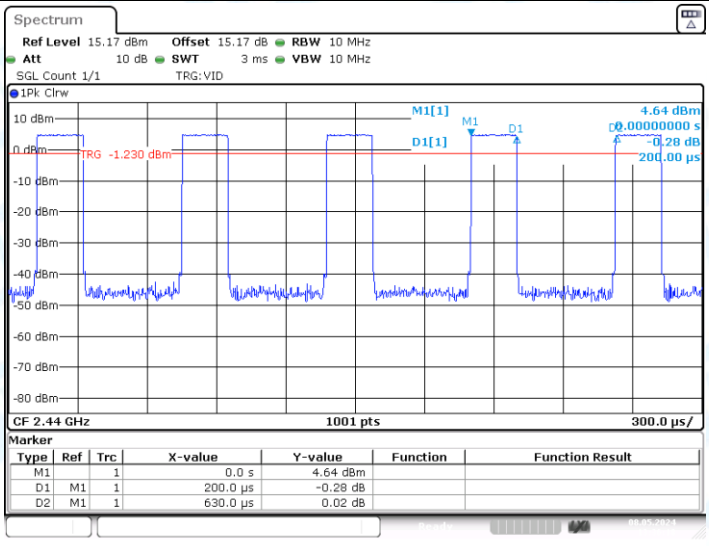


Date: 8.MAY.2024 13:31:58

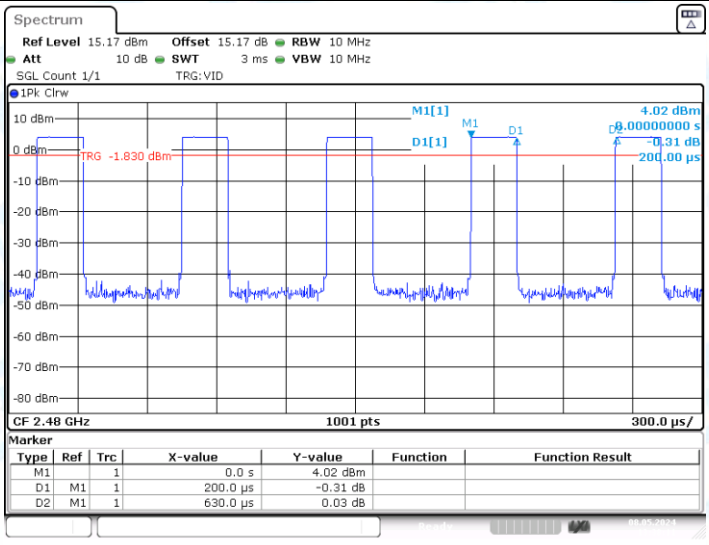
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



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