RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
EUT Name:	**WiFi & BT combo module**
Model:	**EWN-8822CSS3DA**
Sample ID:	**HC-C-202408-0012-1-01**
Test Standard:	**FCC Part 15.247**
Environmental Conditions	
Ambient Temperature:	**23.9℃**
Ambient Humidity:	**48%RH**
Test Power Supply:	**DC 3.3V**
Test Engineer:	**Jolin Lee**
Note: For a more detailed features description, please refer to the report TBR-C-202408-0012-1.	

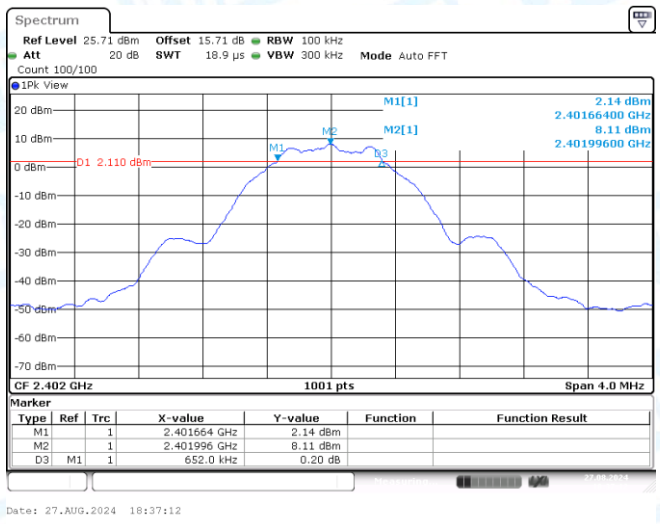
Contents

1: DTS Bandwidth

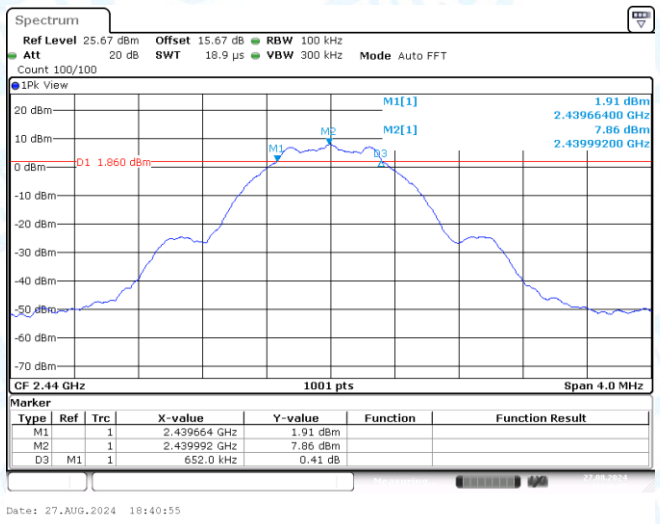
1.1 Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.65	2401.66	2402.32	0.5	PASS
BLE_1M	Ant1	2440	0.65	2439.66	2440.32	0.5	PASS
BLE_1M	Ant1	2480	0.65	2479.66	2480.32	0.5	PASS
BLE_2M	Ant1	2402	1.11	2401.44	2402.54	0.5	PASS
BLE_2M	Ant1	2440	0.96	2439.44	2440.40	0.5	PASS
BLE_2M	Ant1	2480	1.11	2479.44	2480.56	0.5	PASS

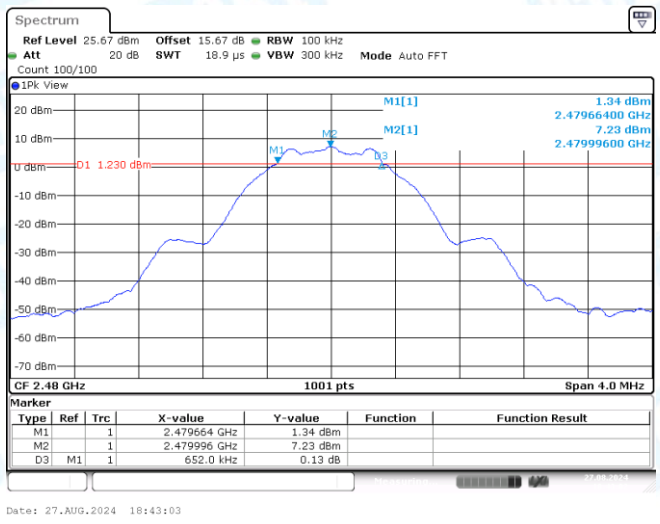
1.2 Test Graphs



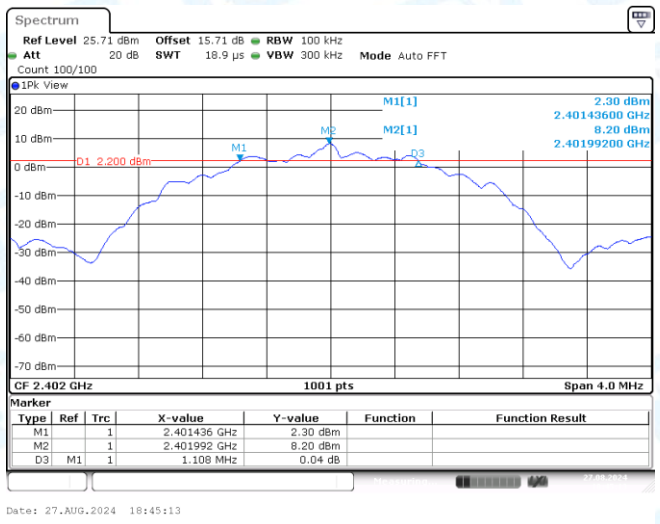
BLE_1M-Ant1-2402-PASS



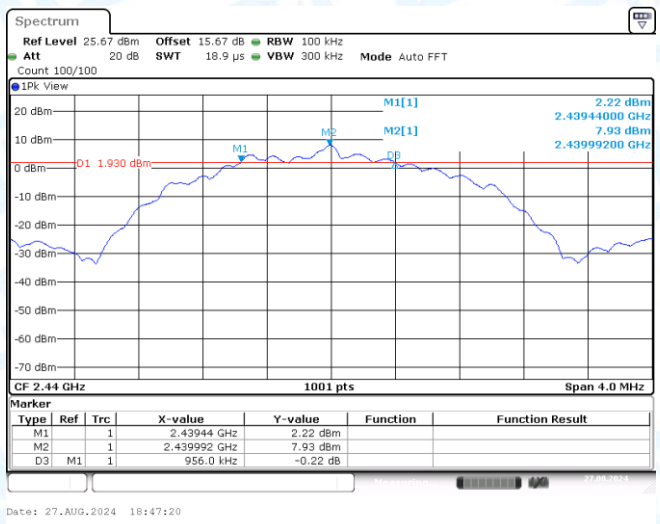
BLE_1M-Ant1-2440-PASS



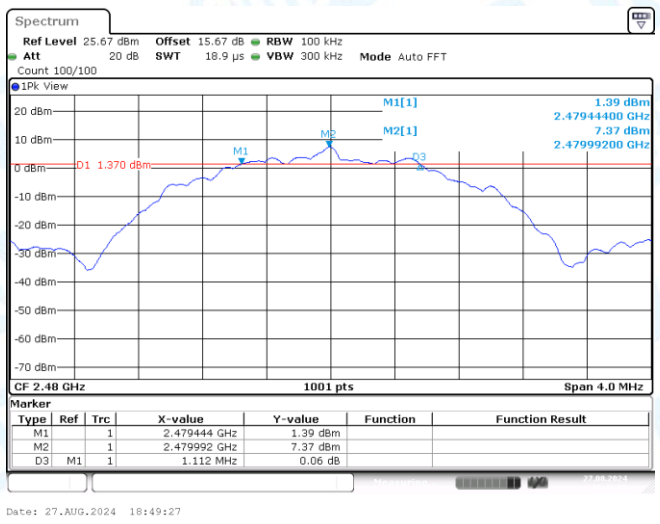
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



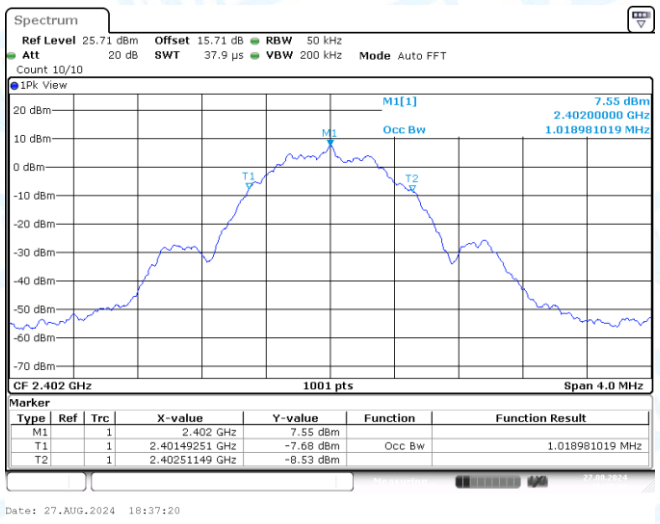
BLE_2M-Ant1-2480-PASS

2: Occupied Channel Bandwidth

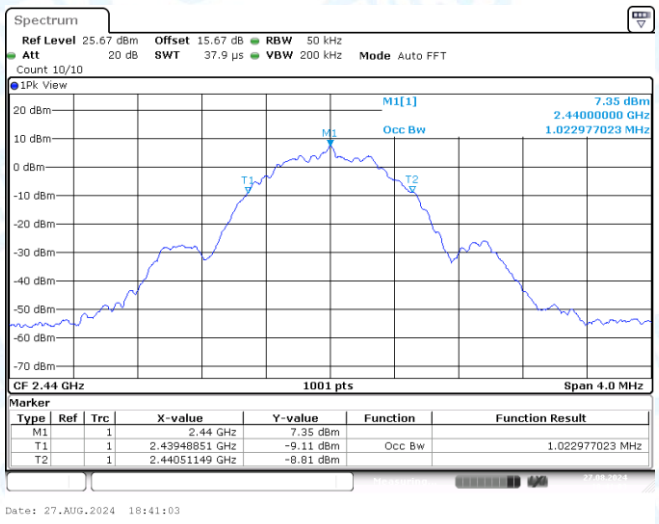
2.1 Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.019	2401.4925	2402.5115	---	---
BLE_1M	Ant1	2440	1.023	2439.4885	2440.5115	---	---
BLE_1M	Ant1	2480	1.019	2479.4925	2480.5115	---	---
BLE_2M	Ant1	2402	2.054	2400.9810	2403.0350	---	---
BLE_2M	Ant1	2440	2.05	2438.9850	2441.0350	---	---
BLE_2M	Ant1	2480	2.046	2478.9890	2481.0350	---	---

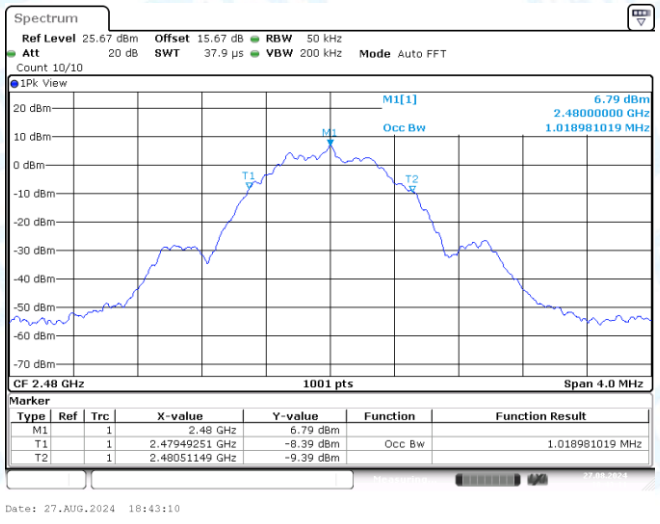
2.2 Test Graphs



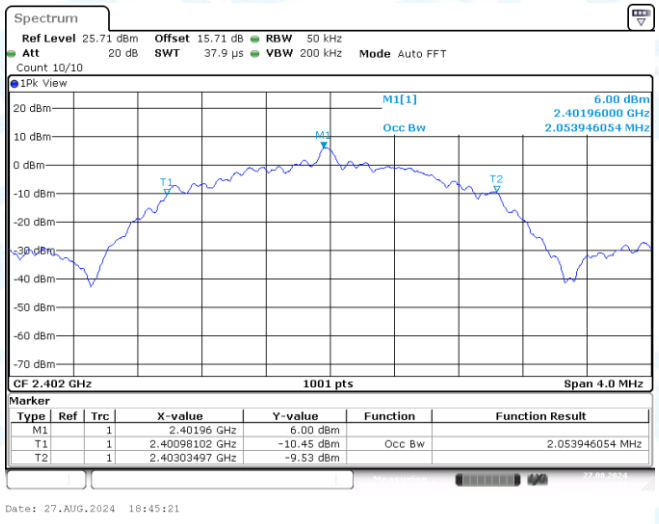
BLE_1M-Ant1-2402



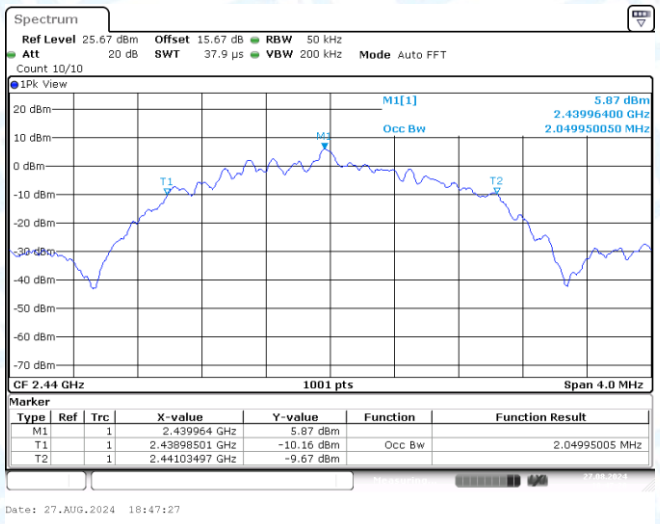
BLE_1M-Ant1-2440



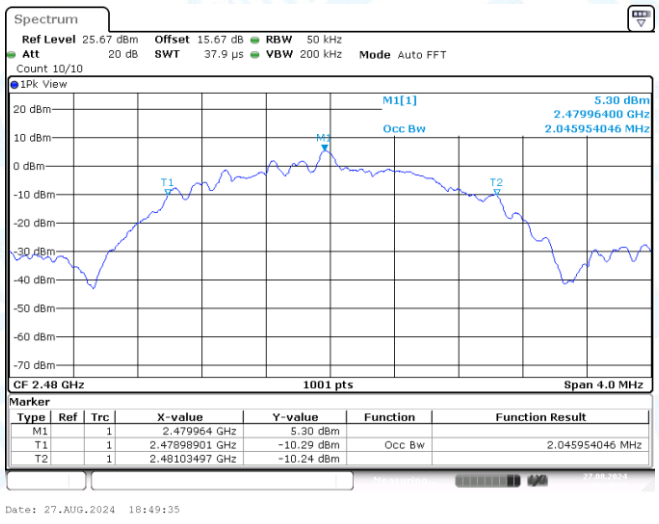
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



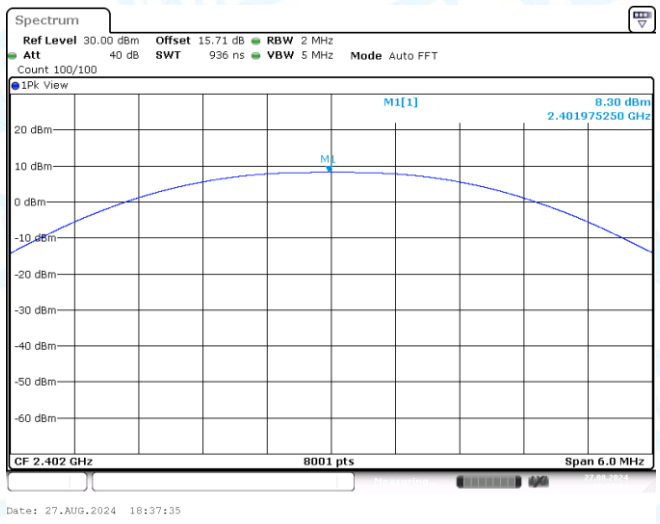
BLE_2M-Ant1-2480

3: Maximum conducted output power

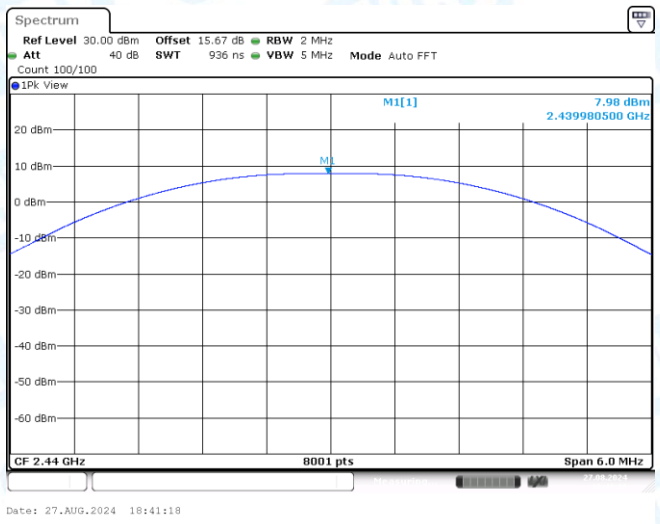
3.1 Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	8.30	≤30	PASS
BLE_1M	Ant1	2440	7.98	≤30	PASS
BLE_1M	Ant1	2480	7.45	≤30	PASS
BLE_2M	Ant1	2402	8.36	≤30	PASS
BLE_2M	Ant1	2440	8.13	≤30	PASS
BLE_2M	Ant1	2480	7.52	≤30	PASS

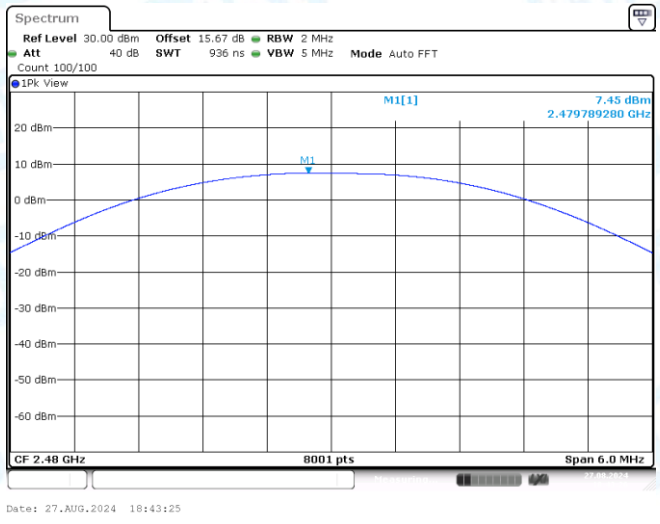
3.2 Test Graphs Peak



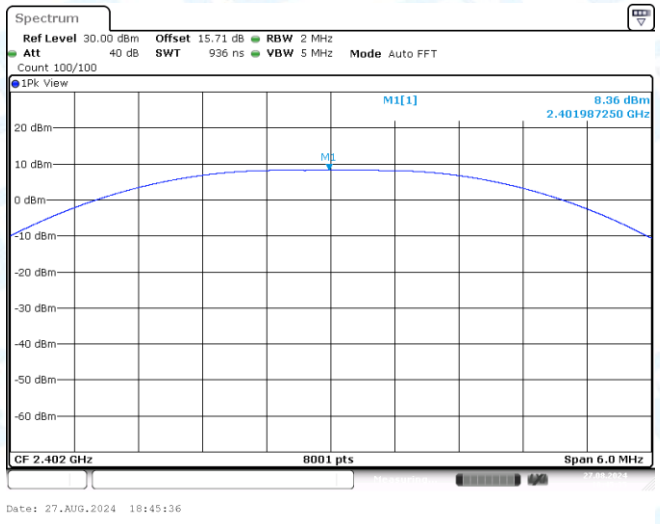
BLE_1M-Ant1-2402-PASS



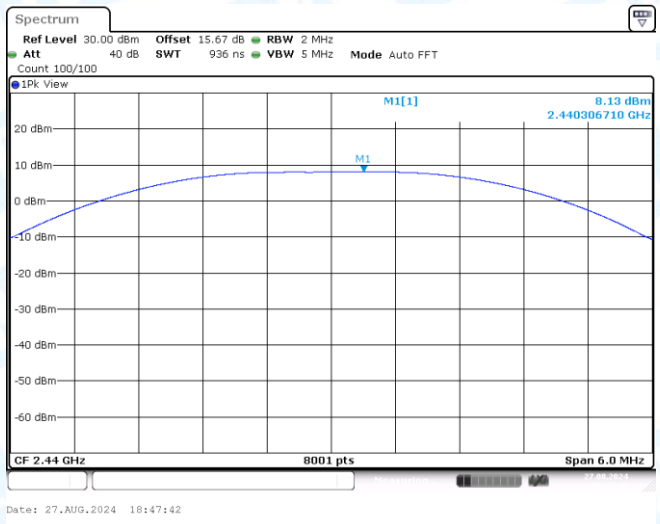
BLE_1M-Ant1-2440-PASS



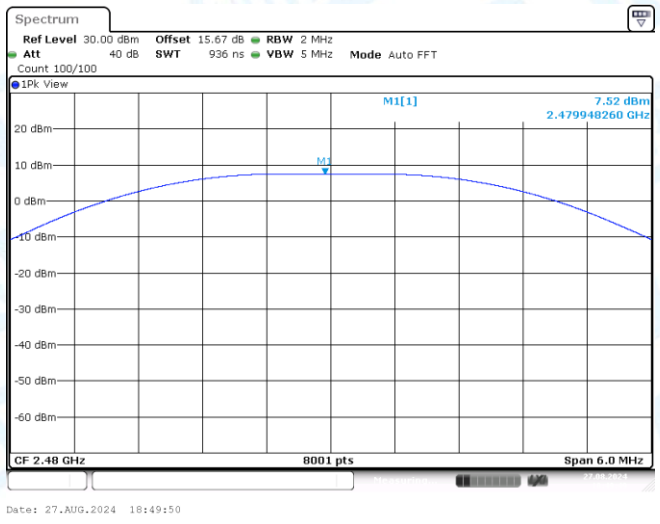
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



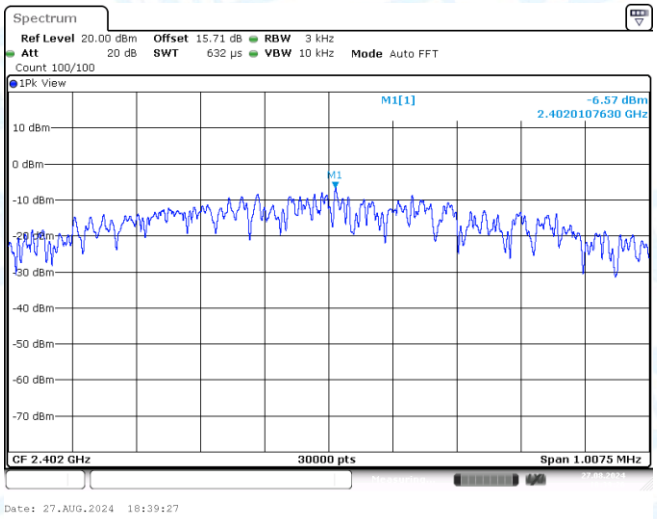
BLE_2M-Ant1-2480-PASS

4: Maximum power spectral density

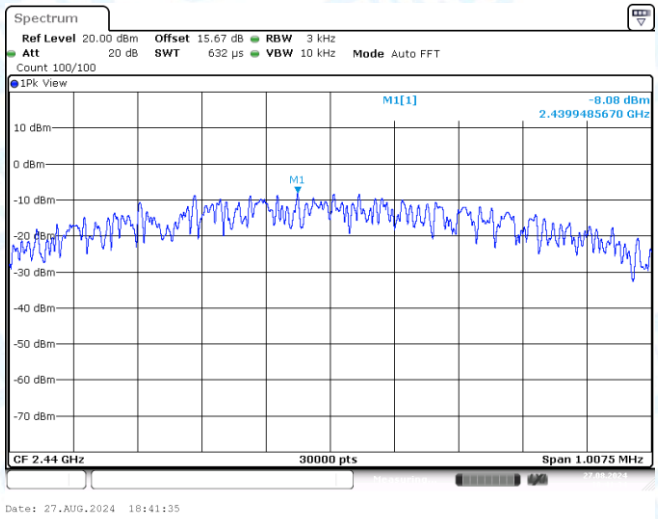
4.1 Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.57	≤8.00	PASS
BLE_1M	Ant1	2440	-8.08	≤8.00	PASS
BLE_1M	Ant1	2480	-8.72	≤8.00	PASS
BLE_2M	Ant1	2402	-8.93	≤8.00	PASS
BLE_2M	Ant1	2440	-9.04	≤8.00	PASS
BLE_2M	Ant1	2480	-9.95	≤8.00	PASS

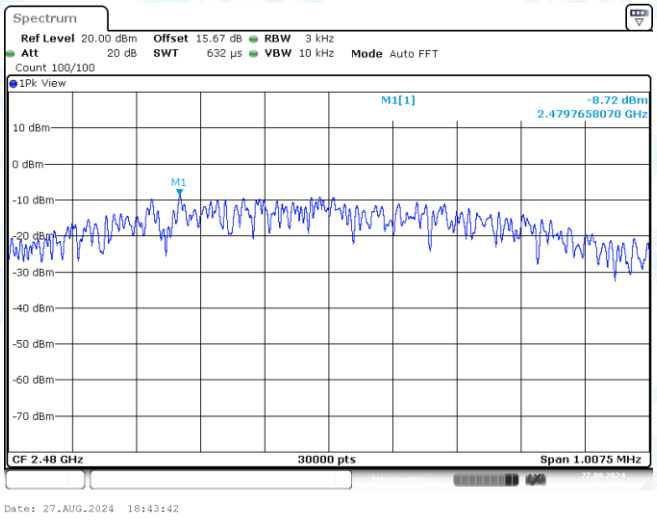
4.2 Test Graphs



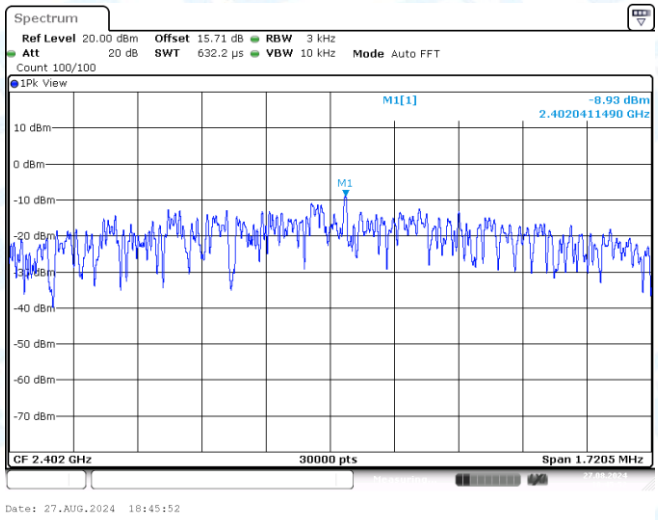
BLE_1M-Ant1-2402-PASS



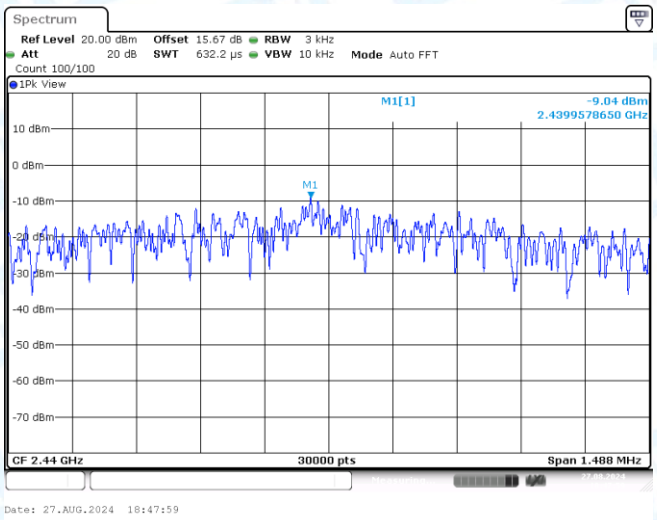
BLE_1M-Ant1-2440-PASS



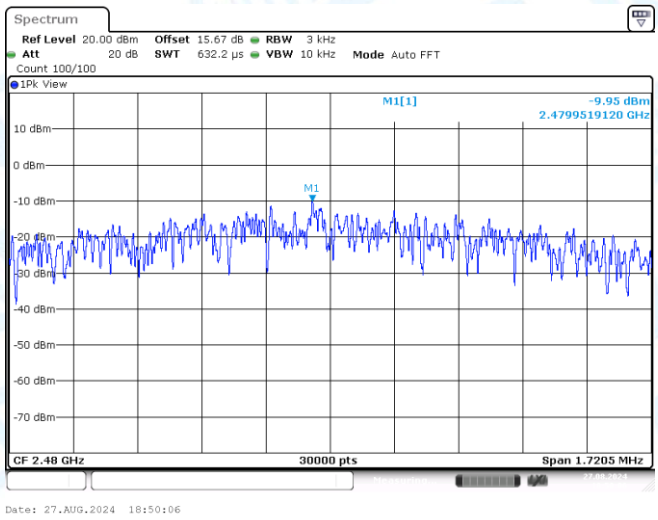
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



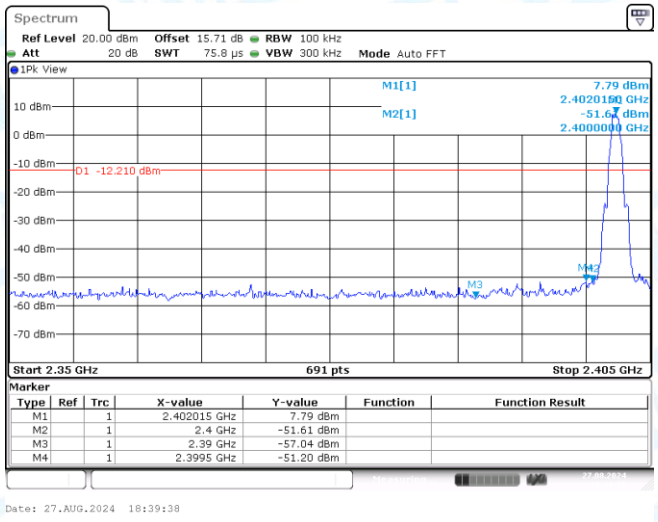
BLE_2M-Ant1-2480-PASS

5: Band edge measurements

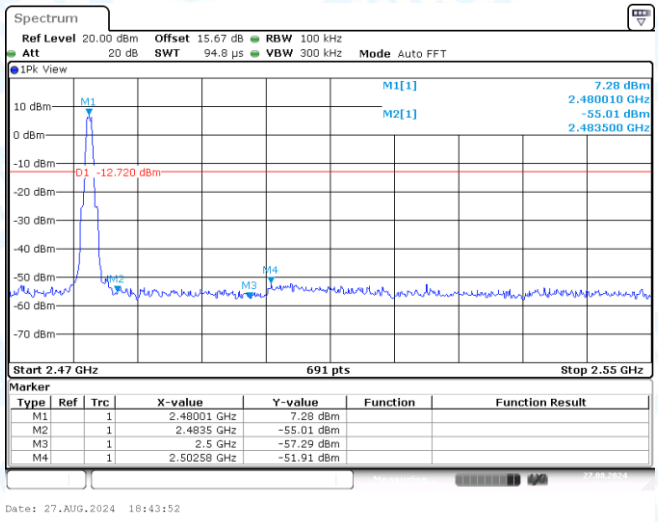
5.1 Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	7.79	-51.2	≤-12.21	PASS
BLE_1M	Ant1	High	2480	7.28	-51.91	≤-12.72	PASS
BLE_2M	Ant1	Low	2402	7.99	-25.27	≤-12.01	PASS
BLE_2M	Ant1	High	2480	7.41	-51.9	≤-12.59	PASS

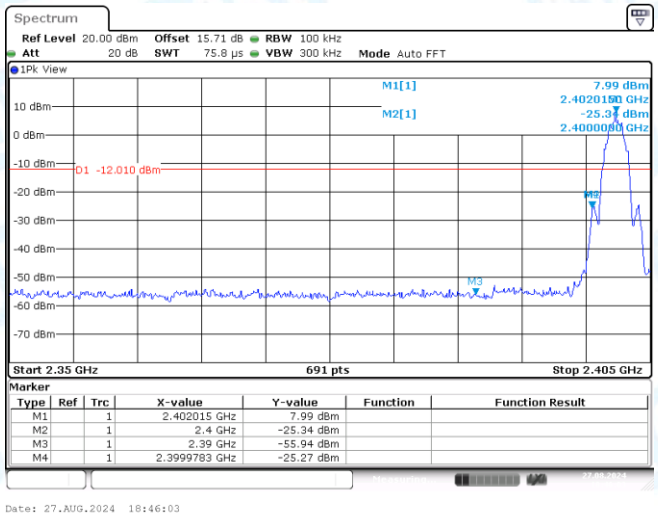
5.2 Test Graphs



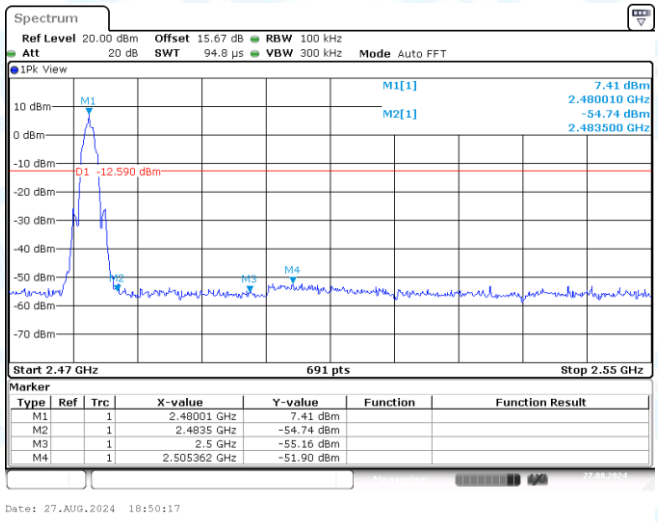
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



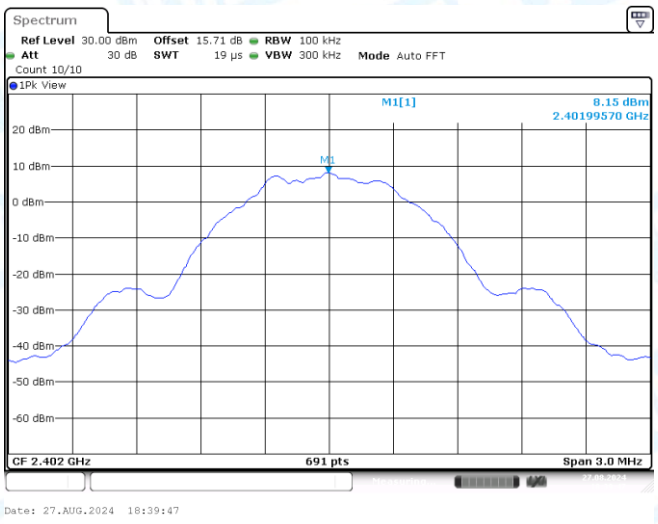
BLE_2M-Ant1-2480-PASS

6: Conducted Spurious Emission

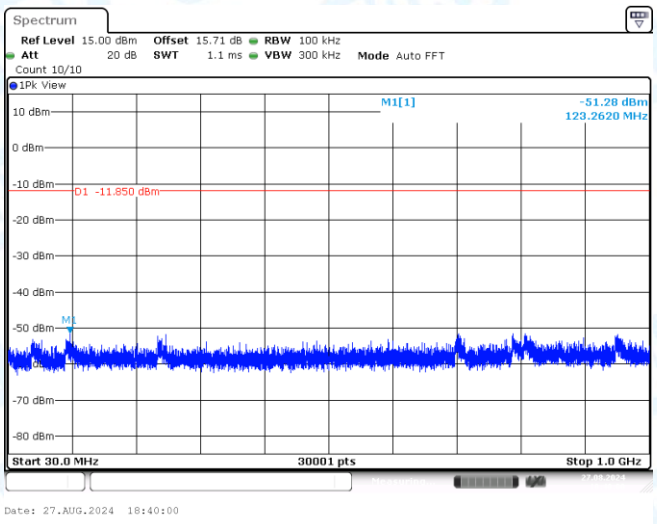
6.1 Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	8.15	8.15	---	PASS
BLE_1M	Ant1	2402	30~1000	8.15	-51.28	≤-11.85	PASS
BLE_1M	Ant1	2402	1000~26500	8.15	-44.87	≤-11.85	PASS
BLE_1M	Ant1	2440	0~Reference	7.80	7.80	---	PASS
BLE_1M	Ant1	2440	30~1000	7.80	-50.75	≤-12.2	PASS
BLE_1M	Ant1	2440	1000~26500	7.80	-45.53	≤-12.2	PASS
BLE_1M	Ant1	2480	0~Reference	7.23	7.23	---	PASS
BLE_1M	Ant1	2480	30~1000	7.23	-50.89	≤-12.77	PASS
BLE_1M	Ant1	2480	1000~26500	7.23	-45.21	≤-12.77	PASS
BLE_2M	Ant1	2402	0~Reference	8.26	8.26	---	PASS
BLE_2M	Ant1	2402	30~1000	8.26	-51.06	≤-11.74	PASS
BLE_2M	Ant1	2402	1000~26500	8.26	-45	≤-11.74	PASS
BLE_2M	Ant1	2440	0~Reference	7.90	7.90	---	PASS
BLE_2M	Ant1	2440	30~1000	7.90	-50.09	≤-12.1	PASS
BLE_2M	Ant1	2440	1000~26500	7.90	-45.84	≤-12.1	PASS
BLE_2M	Ant1	2480	0~Reference	7.37	7.37	---	PASS
BLE_2M	Ant1	2480	30~1000	7.37	-51.33	≤-12.63	PASS
BLE_2M	Ant1	2480	1000~26500	7.37	-45.86	≤-12.63	PASS

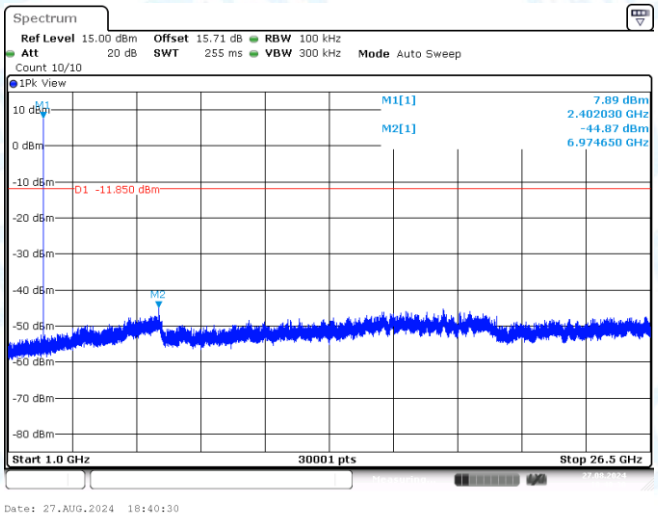
6.2 Test Graphs



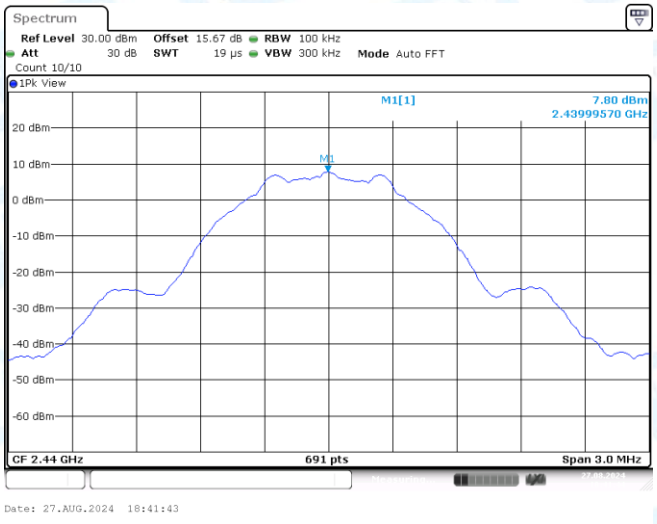
BLE_1M-Ant1-2402-0~Reference-PASS



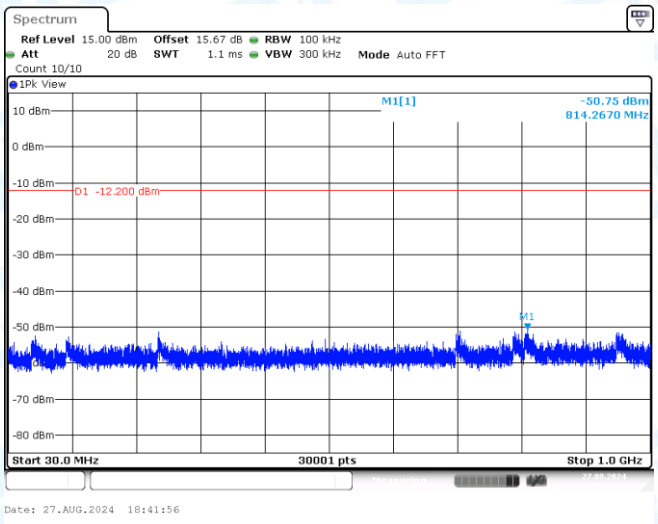
BLE_1M-Ant1-2402-30~1000-PASS



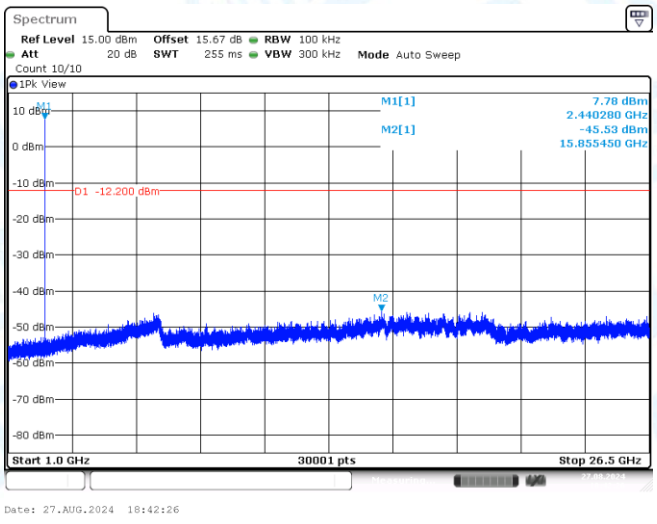
BLE_1M-Ant1-2402-1000~26500-PASS



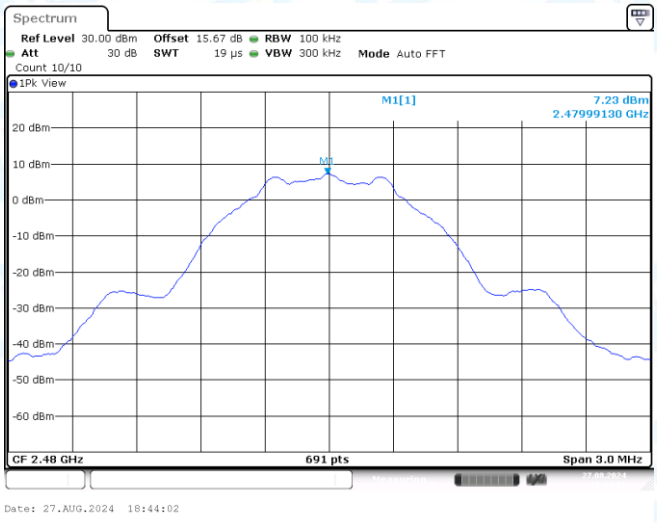
BLE_1M-Ant1-2440-0~Reference-PASS



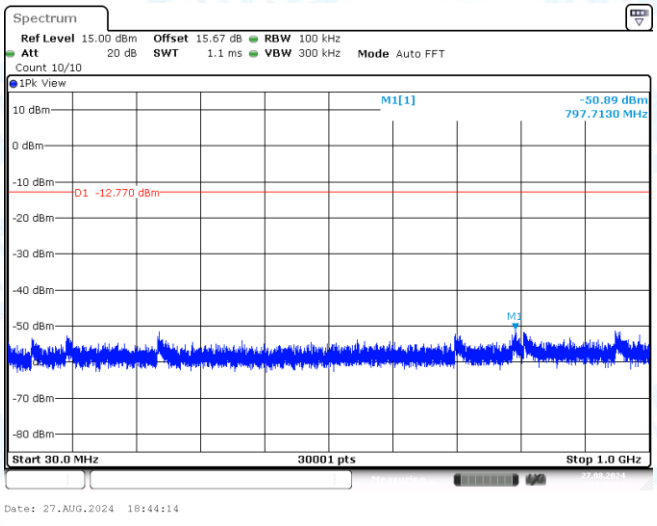
BLE_1M-Ant1-2440-30~1000-PASS



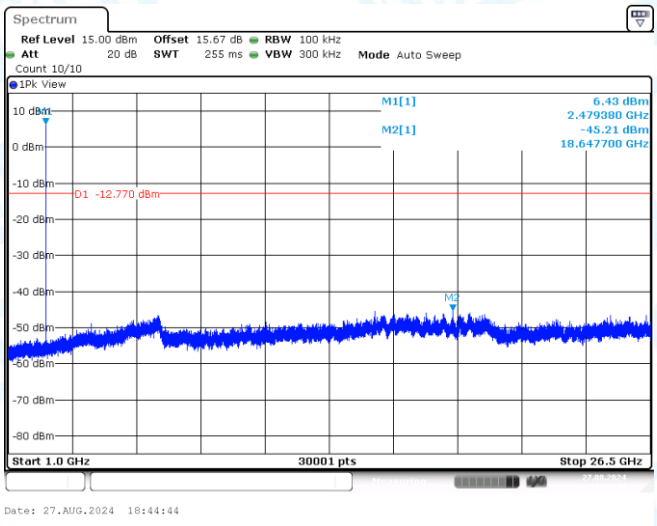
BLE_1M-Ant1-2440-1000~26500-PASS



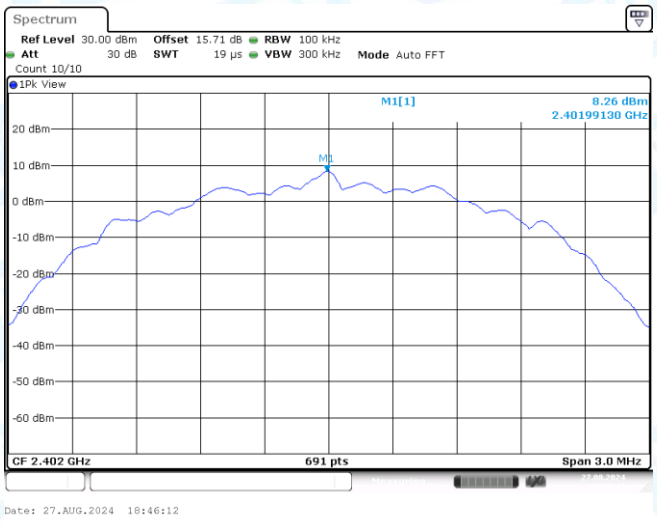
BLE_1M-Ant1-2480-0~Reference-PASS



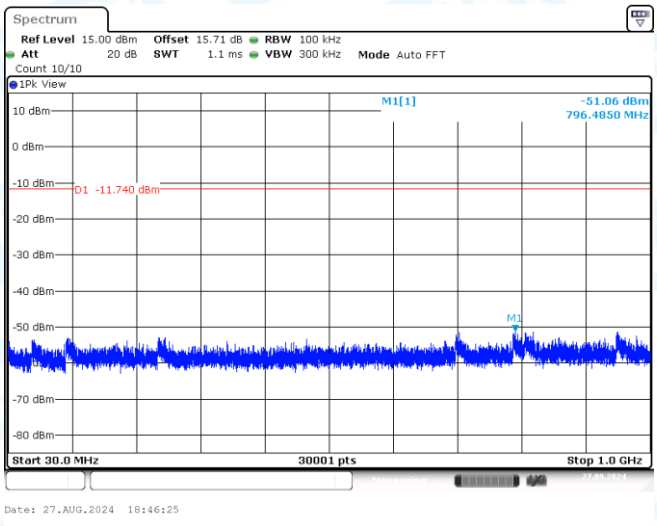
BLE_1M-Ant1-2480-30~1000-PASS



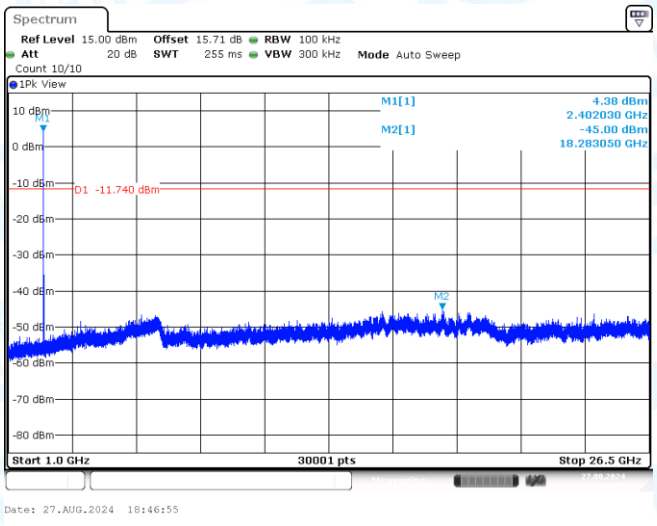
BLE_1M-Ant1-2480-1000~26500-PASS



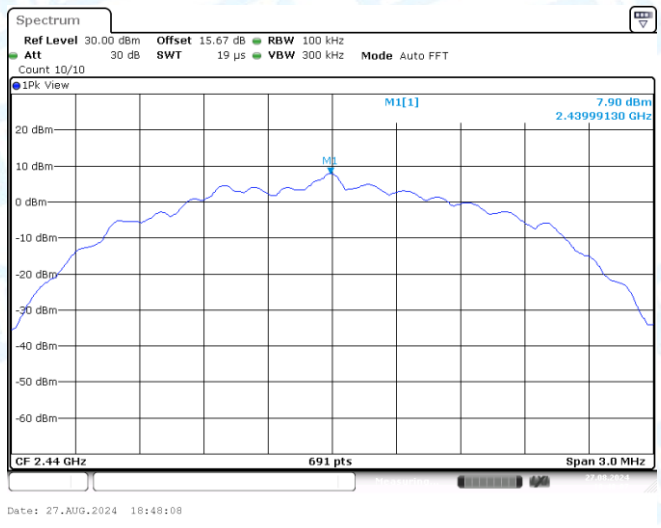
BLE_2M-Ant1-2402-0~Reference-PASS



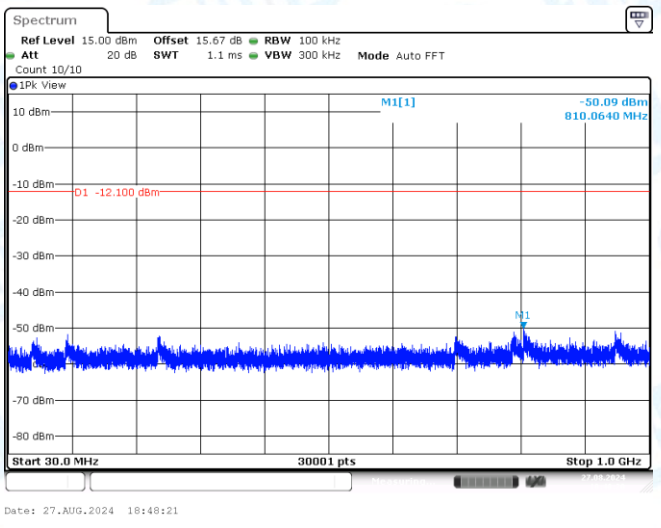
BLE_2M-Ant1-2402-30~1000-PASS



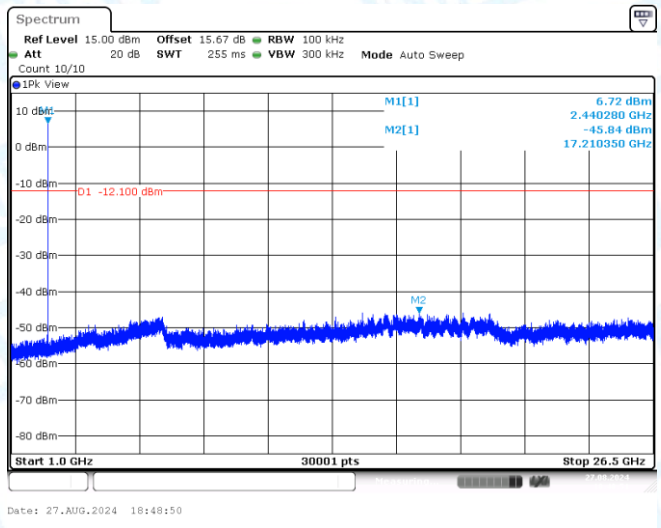
BLE_2M-Ant1-2402-1000~26500-PASS



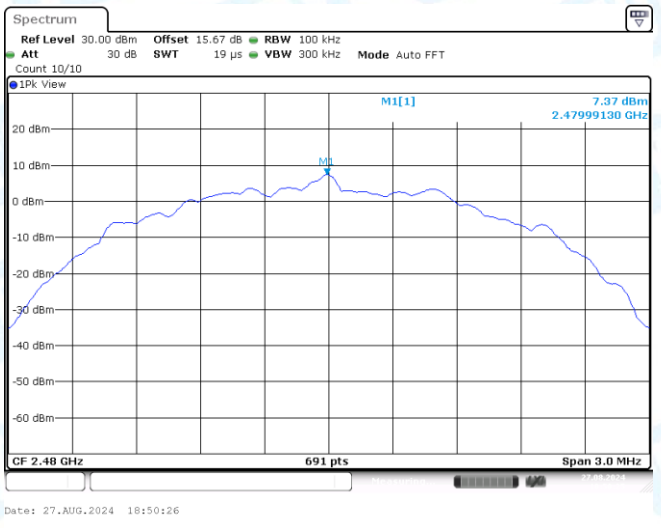
BLE_2M-Ant1-2440-0~Reference-PASS



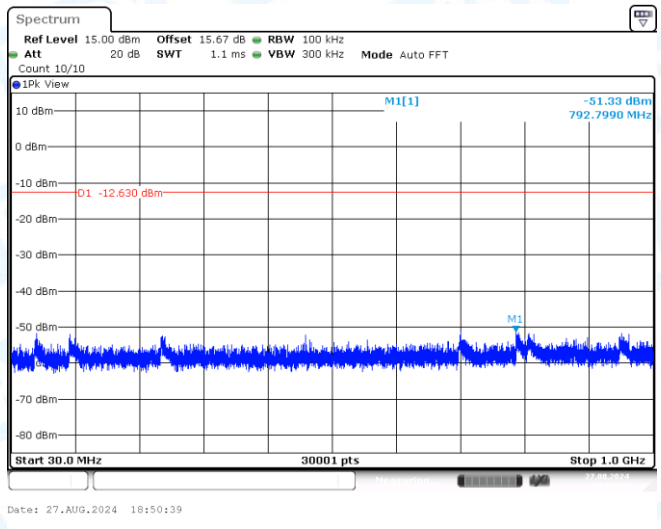
BLE_2M-Ant1-2440-30~1000-PASS



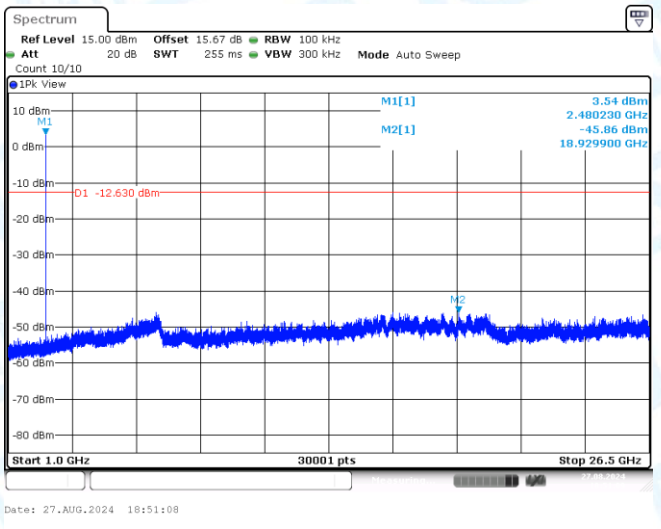
BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS



BLE_2M-Ant1-2480-1000~26500-PASS

7: Duty Cycle

7.1 Test Result

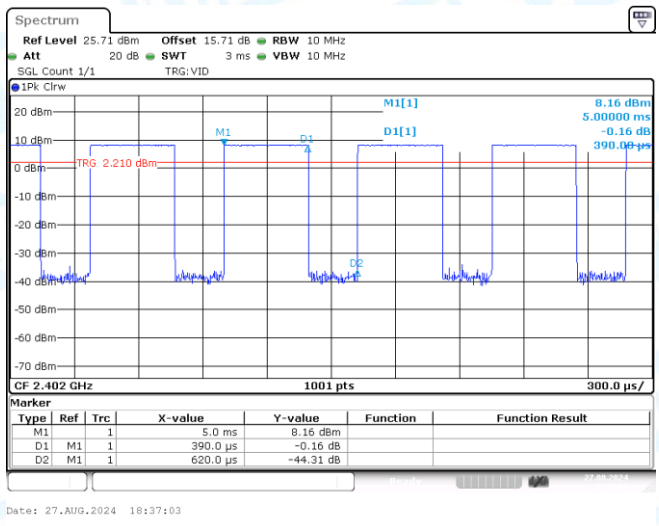
TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factory	1/T [kHz]
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.01	2.56
BLE_1M	Ant1	2440	0.39	0.62	62.90	2.01	2.56
BLE_1M	Ant1	2480	0.39	0.62	62.90	2.01	2.56
BLE_2M	Ant1	2402	0.21	0.63	33.33	4.77	4.76
BLE_2M	Ant1	2440	0.21	0.63	33.33	4.77	4.76
BLE_2M	Ant1	2480	0.21	0.63	33.33	4.77	4.76

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

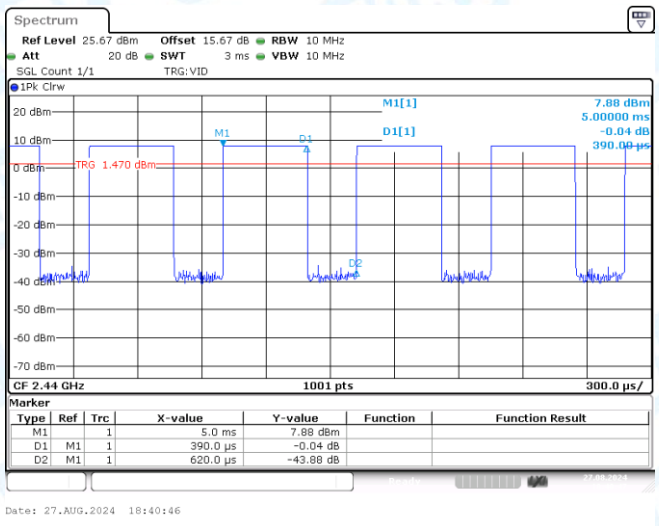
2, DC Factory=$10*\mathrm{Log}_{10}(1/\text{Duty Cycle})$

3, 1/T=1/ Transmission Duration

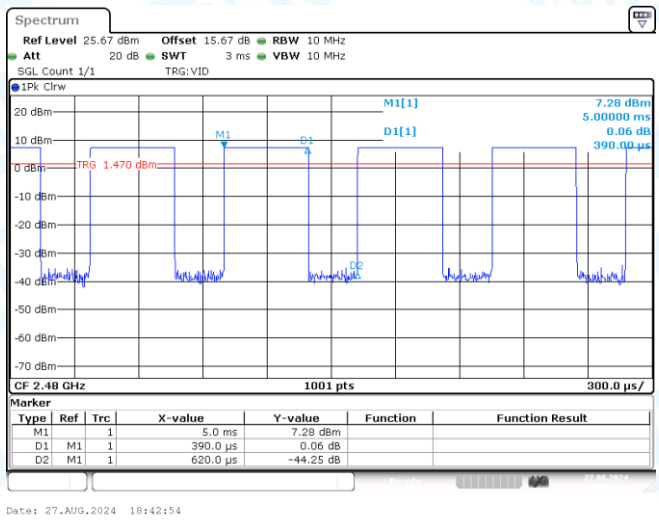
7.2 Test Graphs



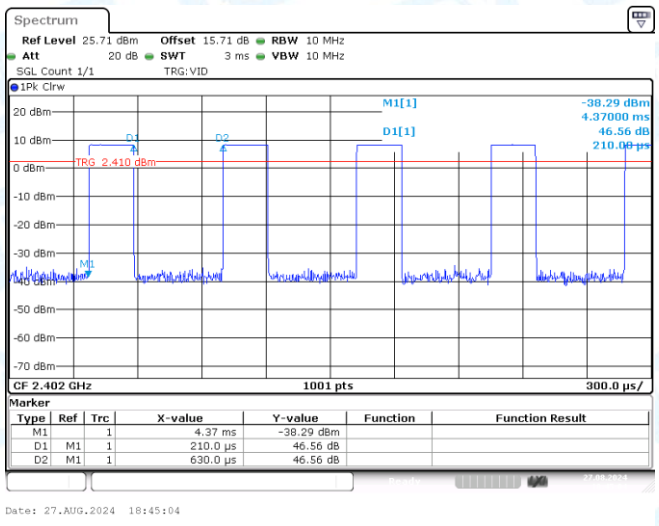
NTNV-BLE_1M-Ant1-2402



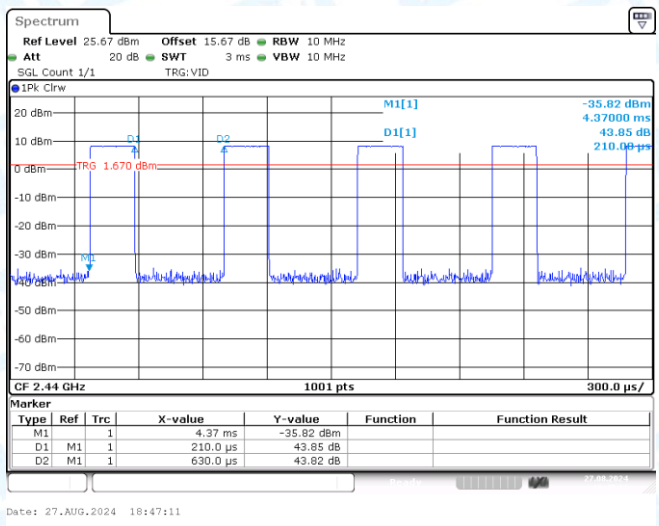
NTNV-BLE_1M-Ant1-2440



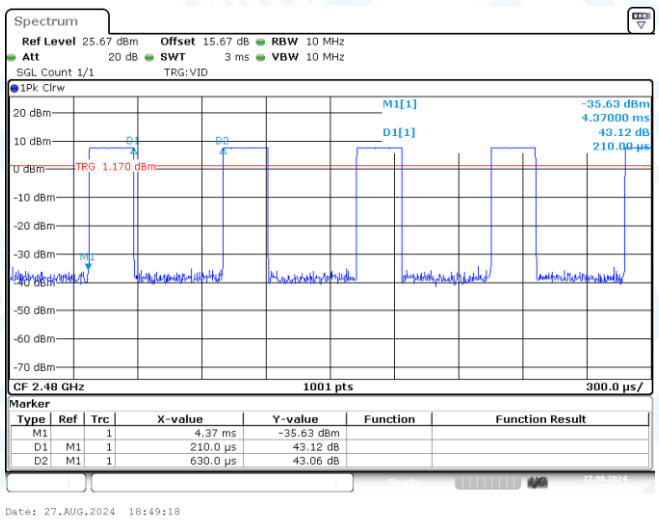
NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480

-----END OF THE REPORT-----