Appendix Test Data for BLE (Conducted Measurement)

Product Name: GravaStar Mercury X Wireless Gaming Mouse

Trade Mark: GravaStar

Test Model: GS X

FCC ID: 2ASXF-GSX

Environmental Conditions

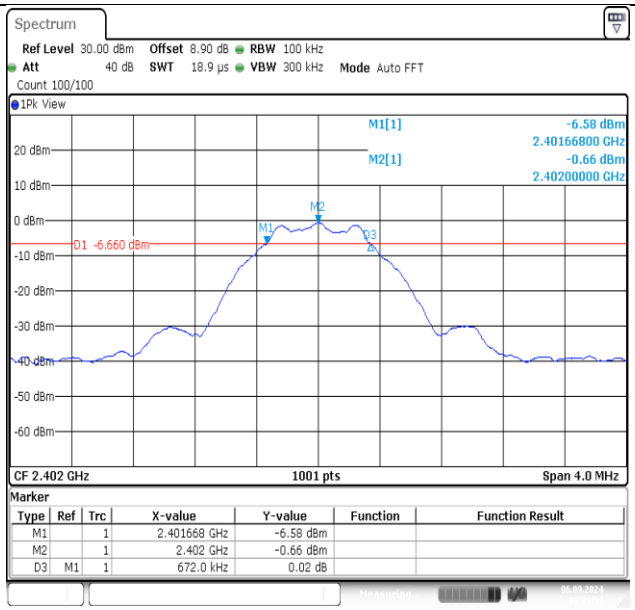
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

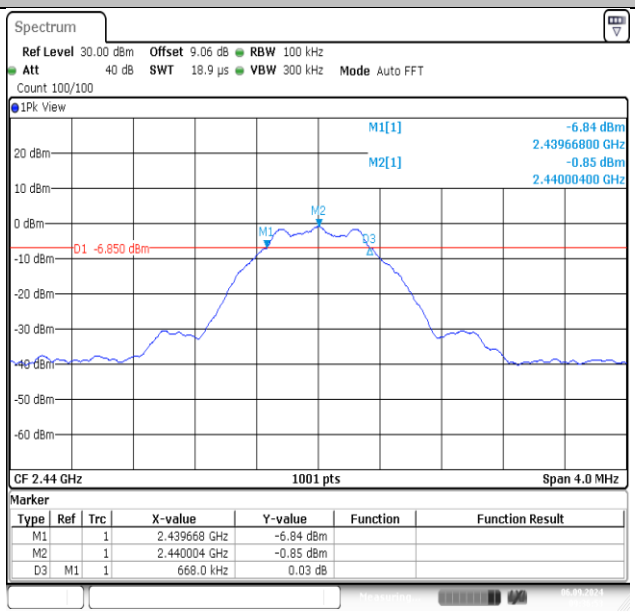
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.67	2401.67	2402.34	0.5	PASS
BLE_1M	Ant1	2440	0.67	2439.67	2440.34	0.5	PASS
BLE_1M	Ant1	2480	0.70	2479.65	2480.34	0.5	PASS

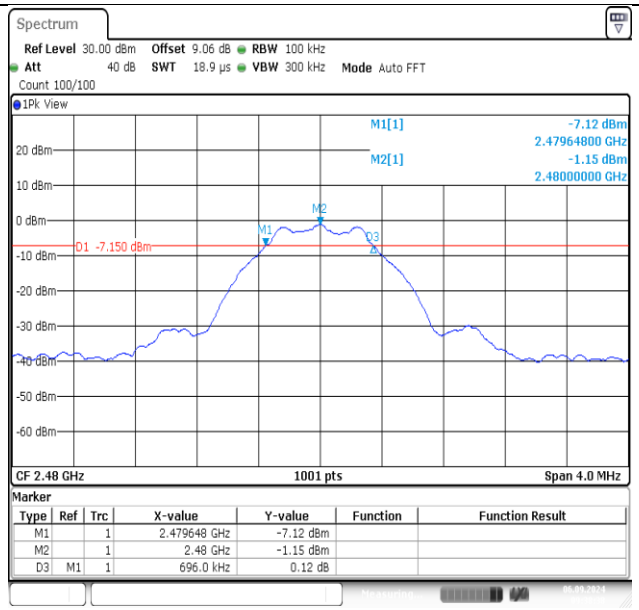
Test Graphs



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



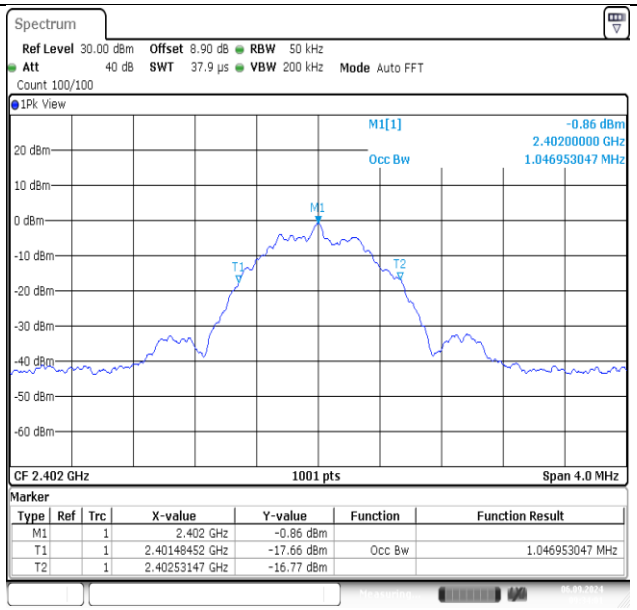
BLE_1M-Ant1-2480-PASS

Appendix B: Occupied Channel Bandwidth

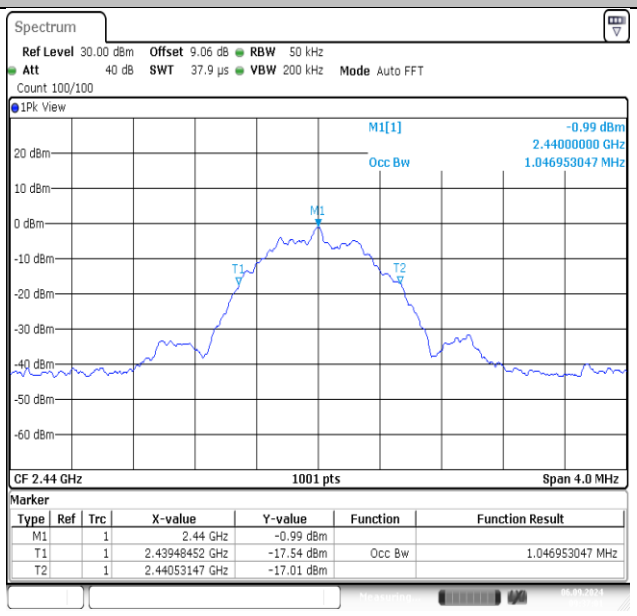
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.047	2401.4845	2402.5315	---	---
BLE_1M	Ant1	2440	1.047	2439.4845	2440.5315	---	---
BLE_1M	Ant1	2480	1.047	2479.4845	2480.5315	---	---

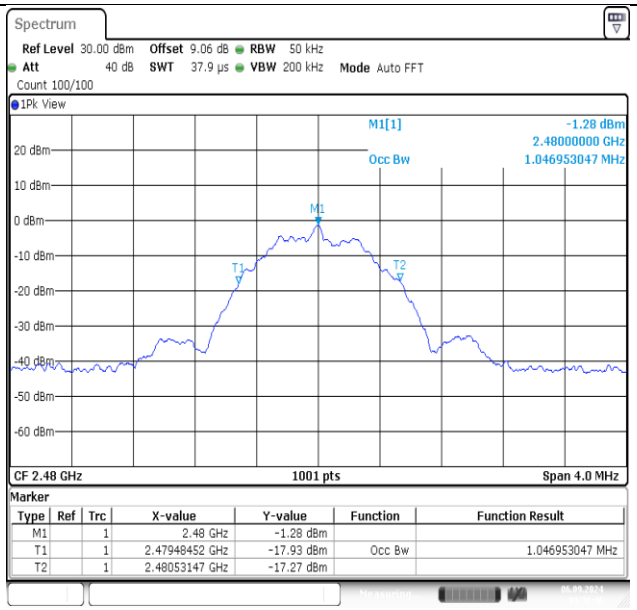
Test Graphs



BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



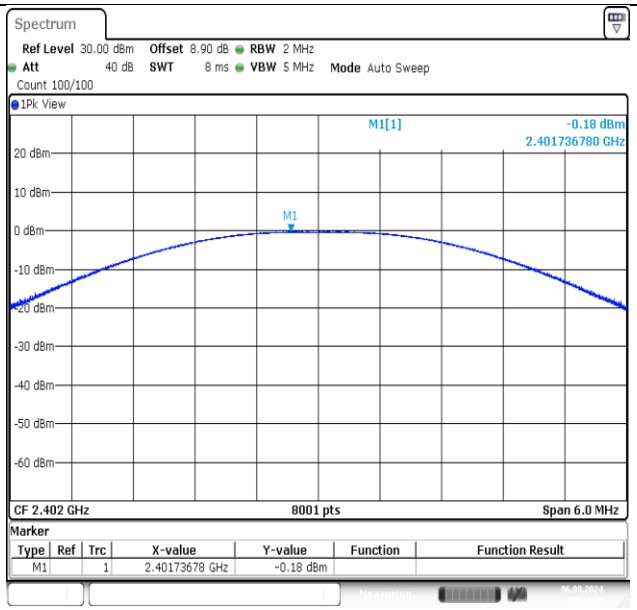
BLE_1M-Ant1-2480

Appendix C: Maximum peak conducted output power

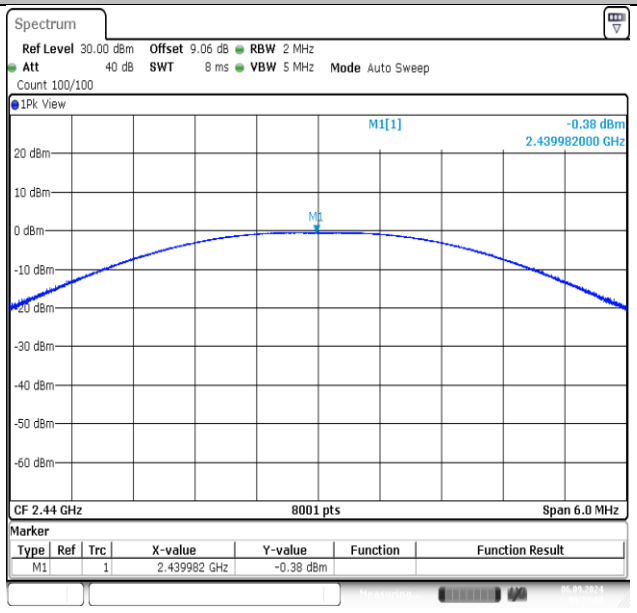
Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-0.18	≤30	PASS
BLE_1M	Ant1	2440	-0.38	≤30	PASS
BLE_1M	Ant1	2480	-0.62	≤30	PASS

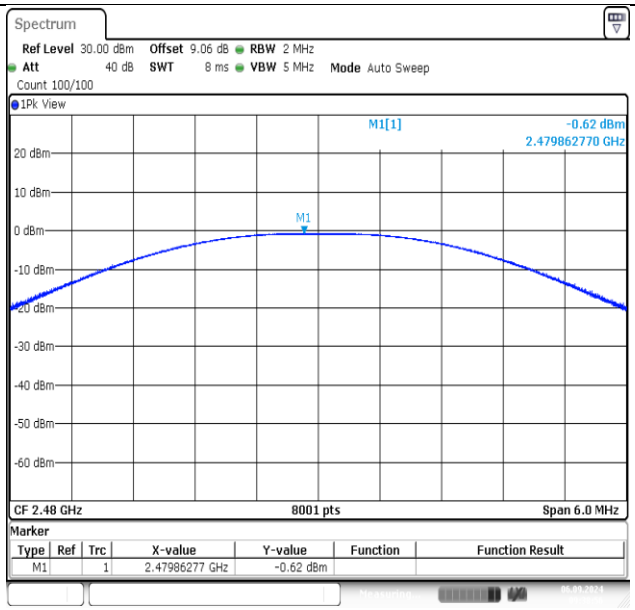
Test Graphs Peak



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



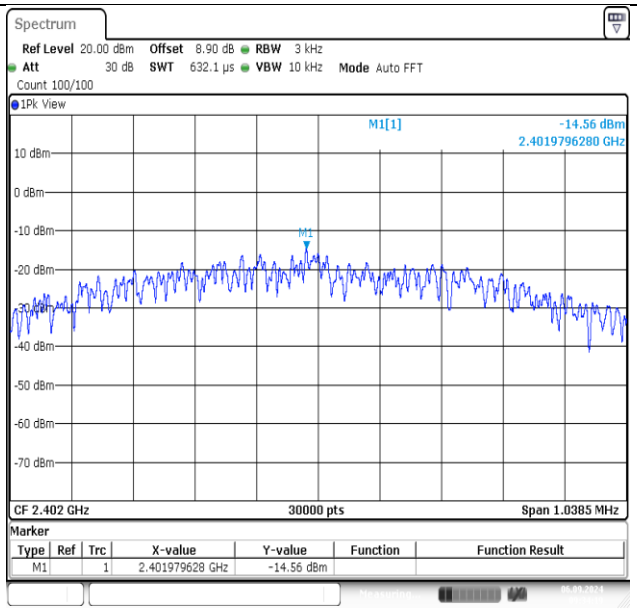
BLE_1M-Ant1-2480-PASS

Appendix D: Maximum peak power spectral density

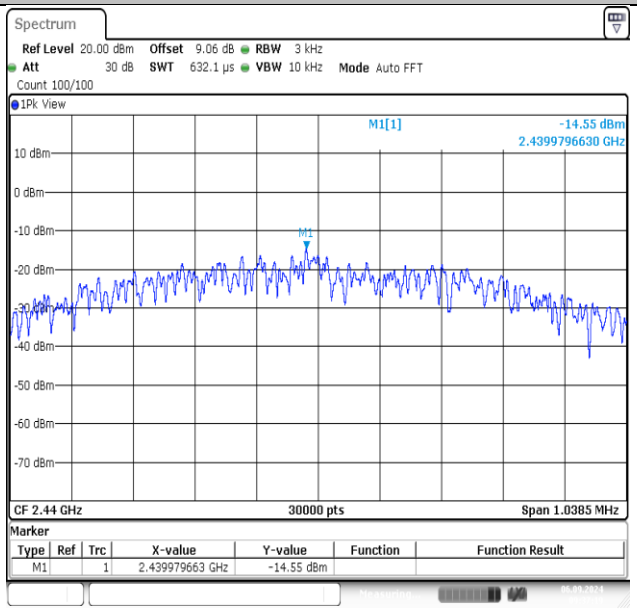
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.56	≤8.00	PASS
BLE_1M	Ant1	2440	-14.55	≤8.00	PASS
BLE_1M	Ant1	2480	-14.76	≤8.00	PASS

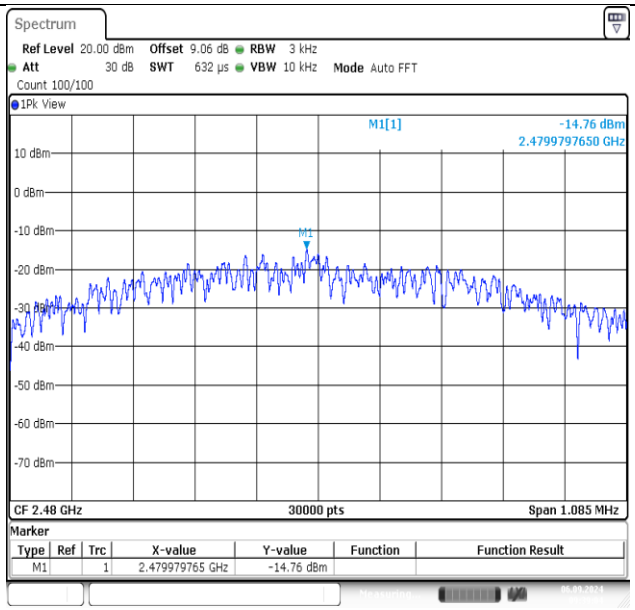
Test Graphs



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2440-PASS



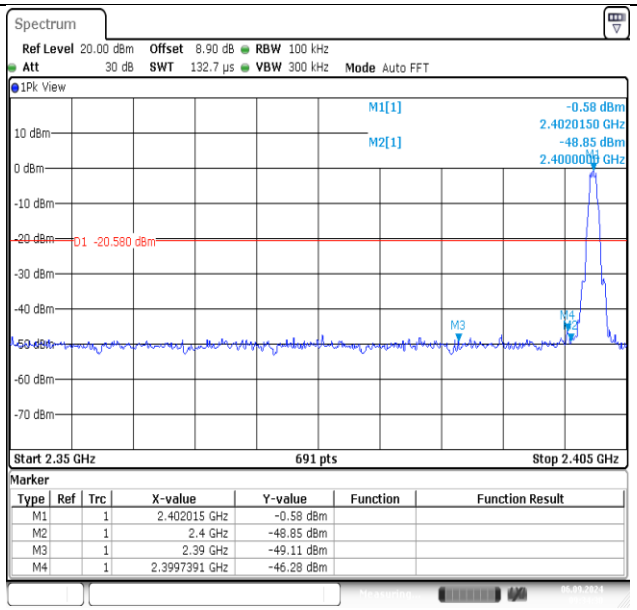
BLE_1M-Ant1-2480-PASS

Appendix E: Band edge measurements

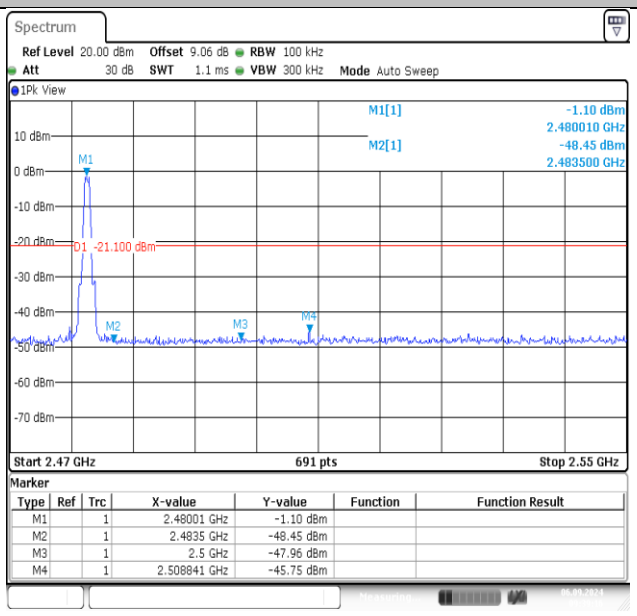
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.58	-46.28	≤-20.58	PASS
BLE_1M	Ant1	High	2480	-1.10	-45.75	≤-21.1	PASS

Test Graphs



BLE_1M-Ant1-2402-PASS



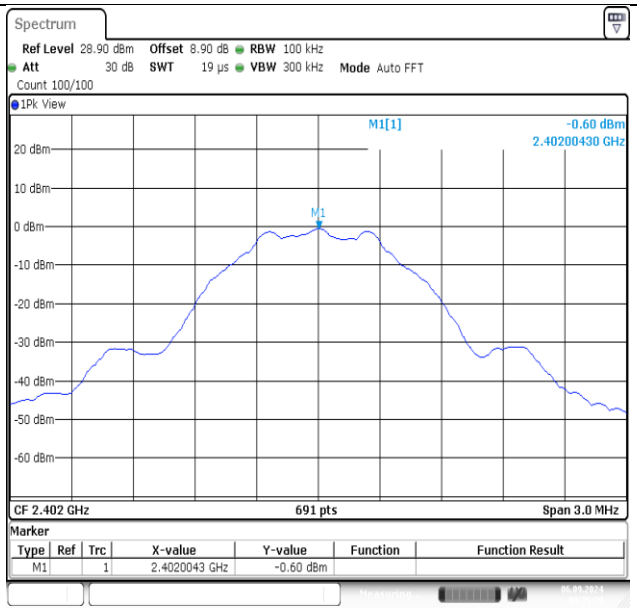
BLE_1M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

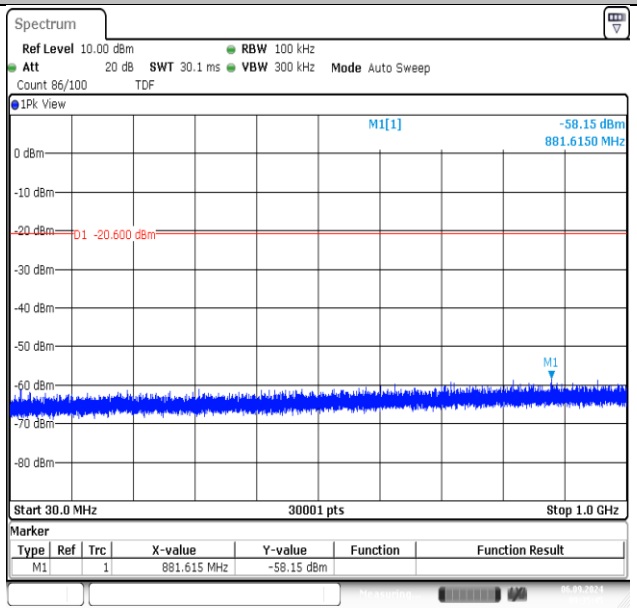
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-0.60	-0.60	---	PASS
BLE_1M	Ant1	2402	30~1000	-0.60	-58.15	≤-20.6	PASS
BLE_1M	Ant1	2402	1000~26500	-0.60	-47.57	≤-20.6	PASS
BLE_1M	Ant1	2440	0~Reference	-0.78	-0.78	---	PASS
BLE_1M	Ant1	2440	30~1000	-0.78	-58.76	≤-20.78	PASS
BLE_1M	Ant1	2440	1000~26500	-0.78	-50.24	≤-20.78	PASS
BLE_1M	Ant1	2480	0~Reference	-1.10	-1.10	---	PASS
BLE_1M	Ant1	2480	30~1000	-1.10	-58.61	≤-21.1	PASS
BLE_1M	Ant1	2480	1000~26500	-1.10	-50.59	≤-21.1	PASS

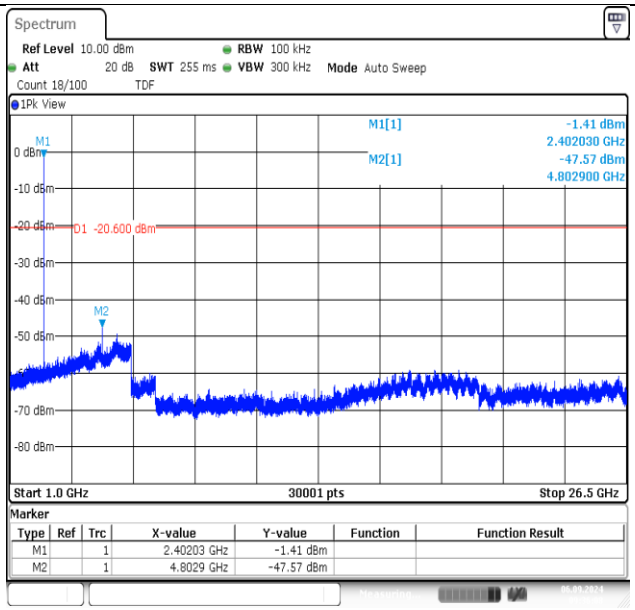
Test Graphs



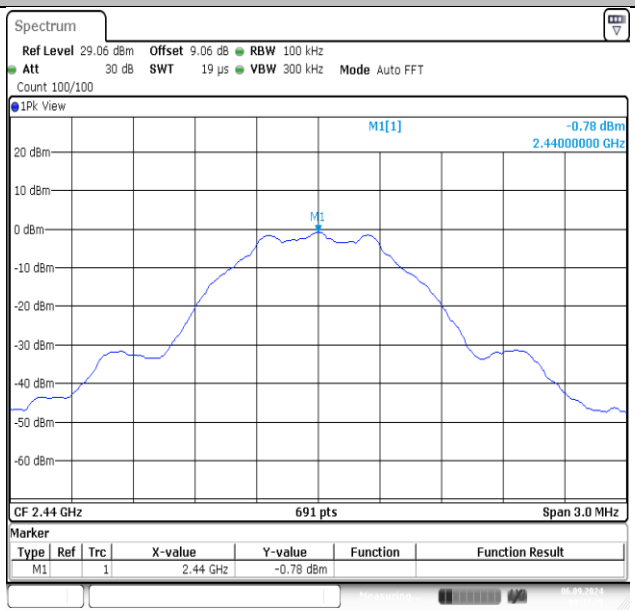
BLE_1M-Ant1-2402-0~Reference-PASS



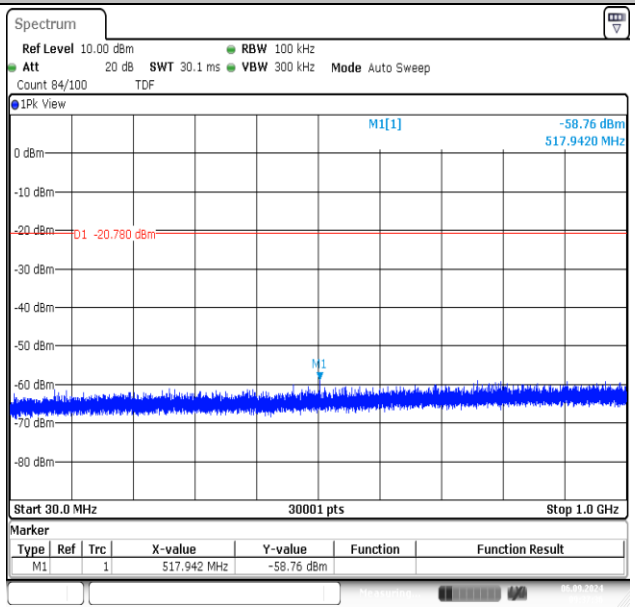
BLE_1M-Ant1-2402-30~1000-PASS



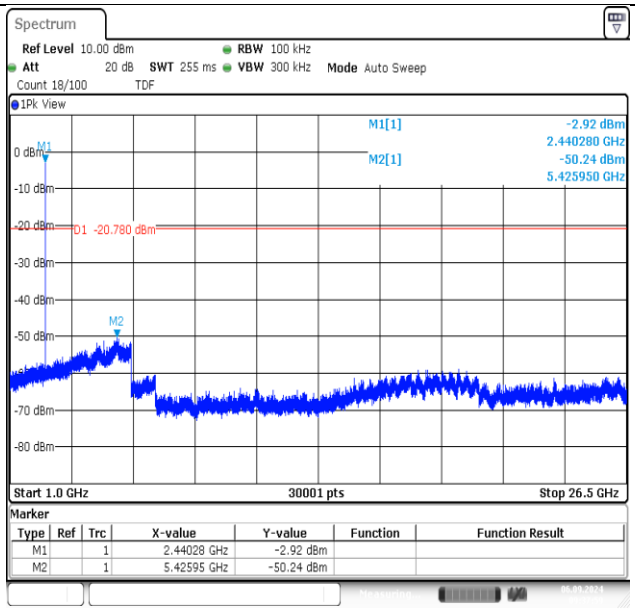
BLE_1M-Ant1-2402-1000~26500-PASS



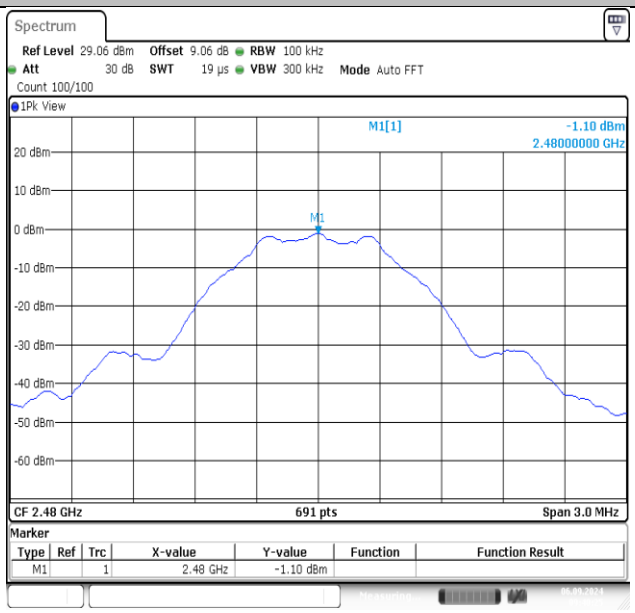
BLE_1M-Ant1-2440-0~Reference-PASS



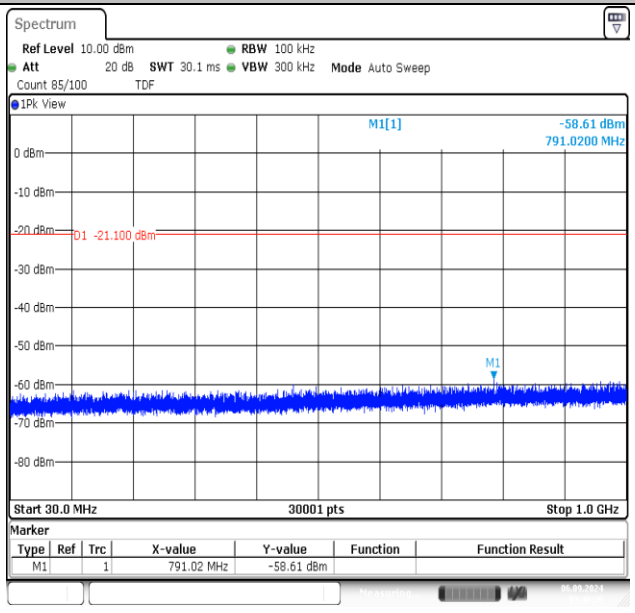
BLE_1M-Ant1-2440-30~1000-PASS



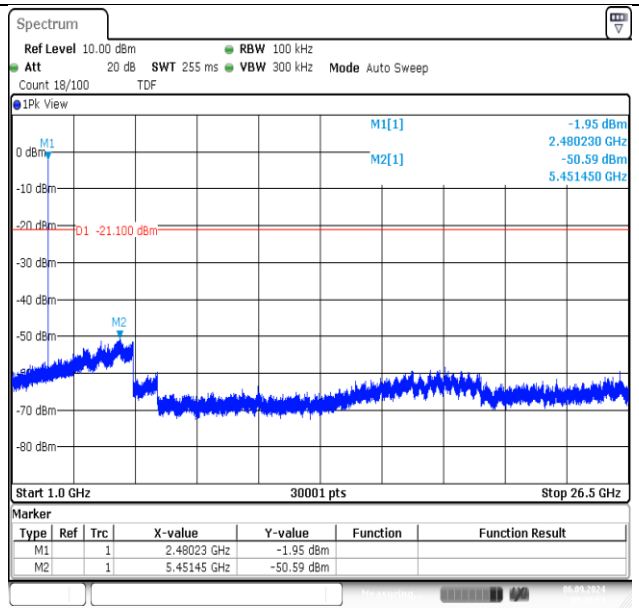
BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



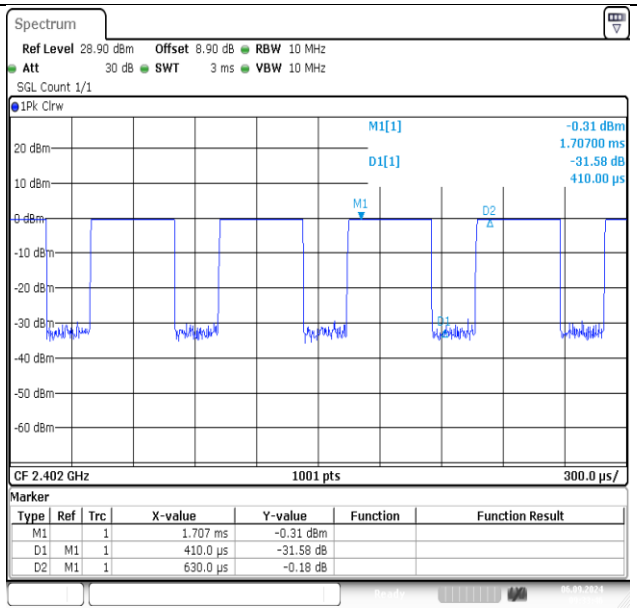
BLE_1M-Ant1-2480-1000~26500-PASS

Appendix G: Duty Cycle

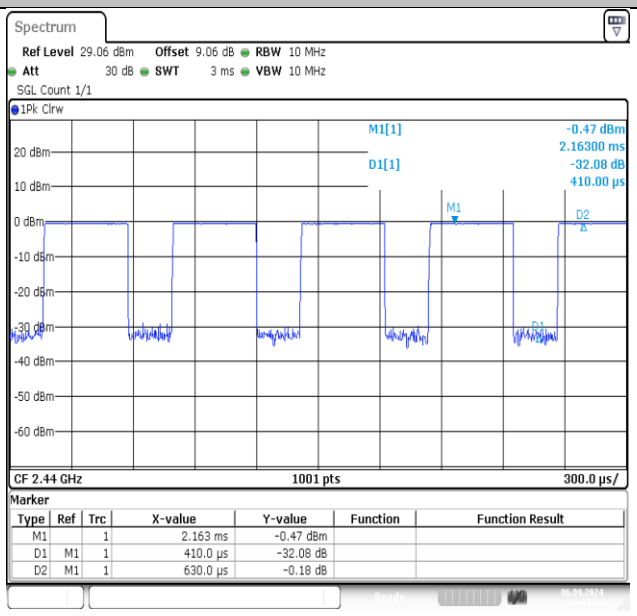
Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.41	0.63	65.08	1.87
BLE_1M	Ant1	2440	0.41	0.63	65.08	1.87
BLE_1M	Ant1	2480	0.42	0.63	66.67	1.76

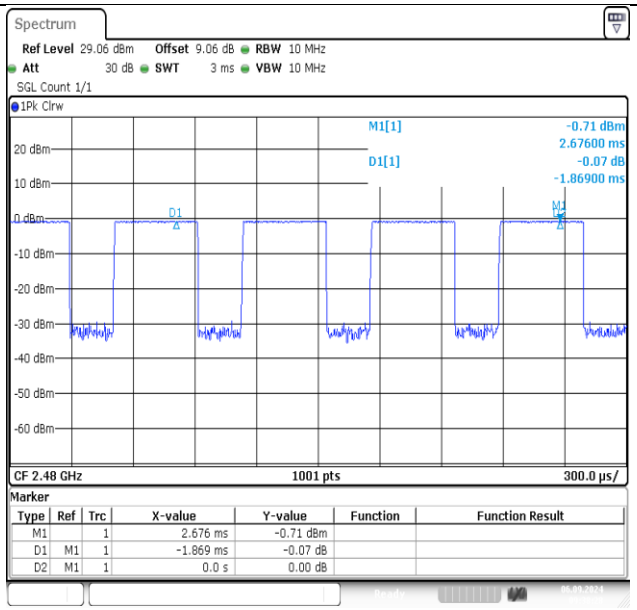
Test Graphs



NTNV-BLE_1M-Ant1-2402



NTNV-BLE_1M-Ant1-2440



NTNV-BLE_1M-Ant1-2480