

Appendix: Bluetooth LE

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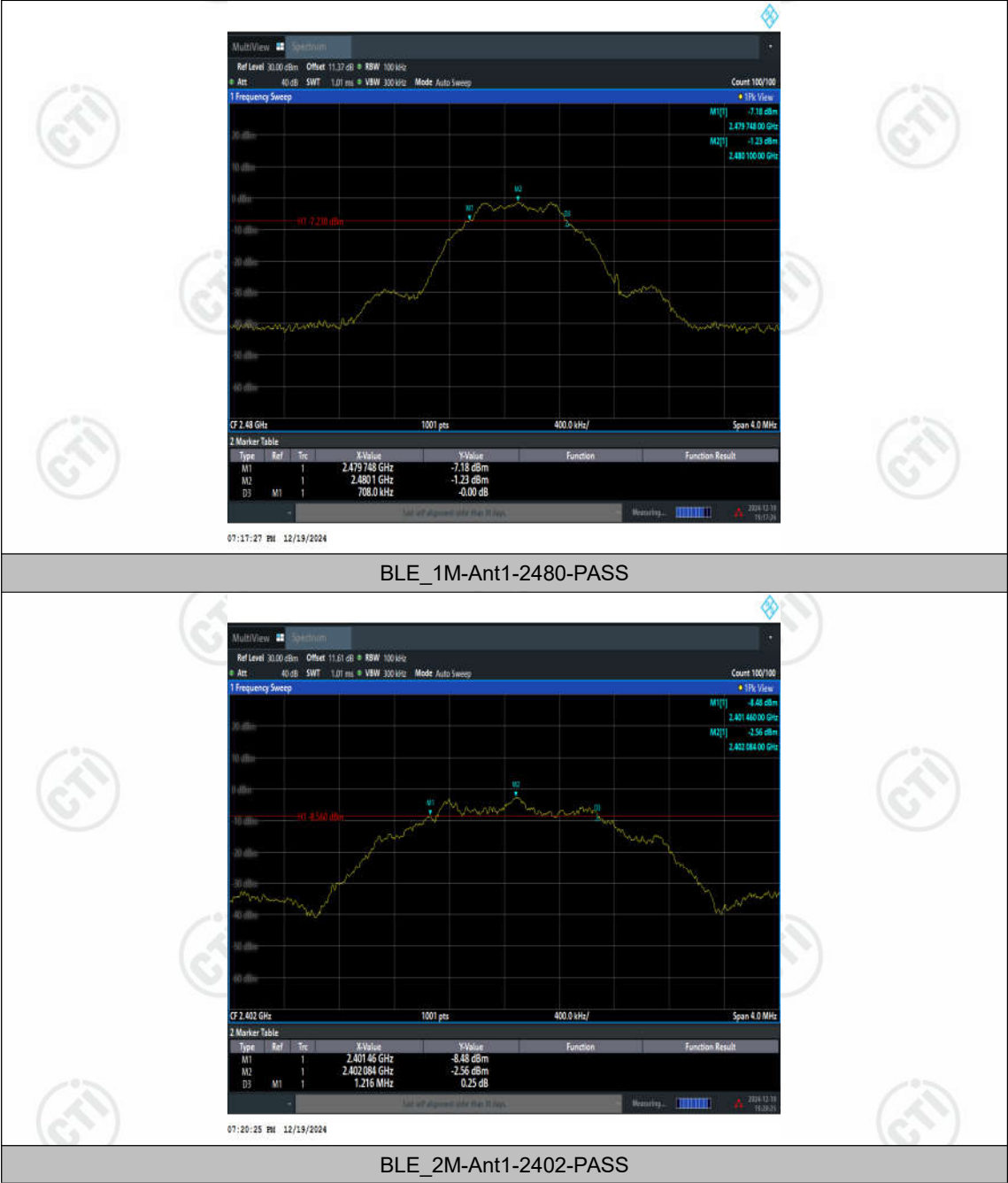
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.67	2401.76	2402.44	0.5	PASS
BLE_1M	Ant1	2440	0.70	2439.75	2440.45	0.5	PASS
BLE_1M	Ant1	2480	0.71	2479.75	2480.46	0.5	PASS
BLE_2M	Ant1	2402	1.22	2401.46	2402.68	0.5	PASS
BLE_2M	Ant1	2440	1.25	2439.45	2440.70	0.5	PASS
BLE_2M	Ant1	2480	1.17	2479.52	2480.68	0.5	PASS

Test Graphs







BLE_2M-Ant1-2440-PASS



BLE_2M-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	1.061	2401.5818	2402.6430	---	---
BLE_1M	Ant1	2440	1.067	2439.5812	2440.6484	---	---
BLE_1M	Ant1	2480	1.072	2479.5755	2480.6472	---	---
BLE_2M	Ant1	2402	2.073	2401.0856	2403.1582	---	---
BLE_2M	Ant1	2440	2.088	2439.0768	2441.1643	---	---
BLE_2M	Ant1	2480	2.079	2479.0820	2481.1608	---	---

Test Graphs





BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



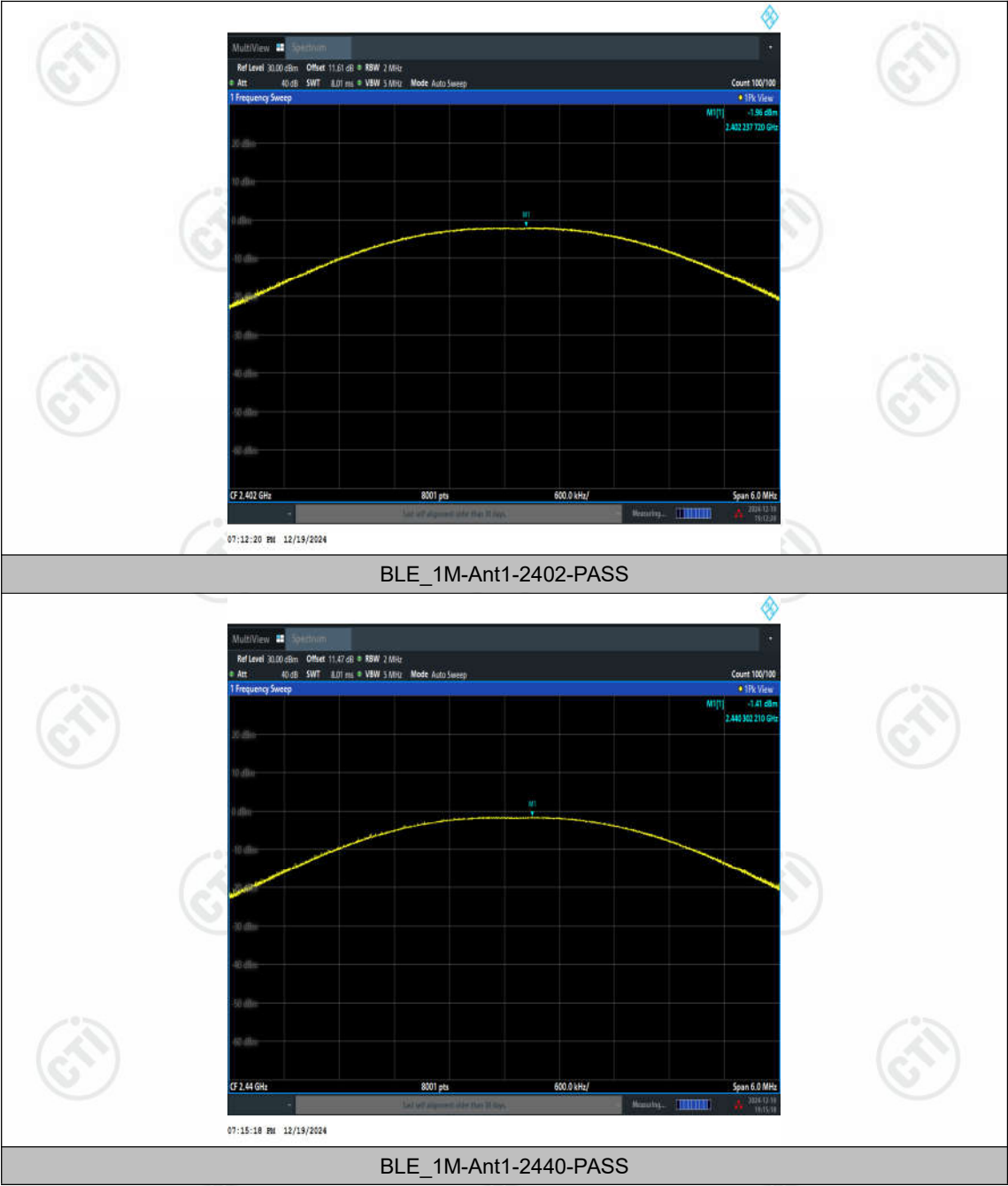
BLE_2M-Ant1-2480

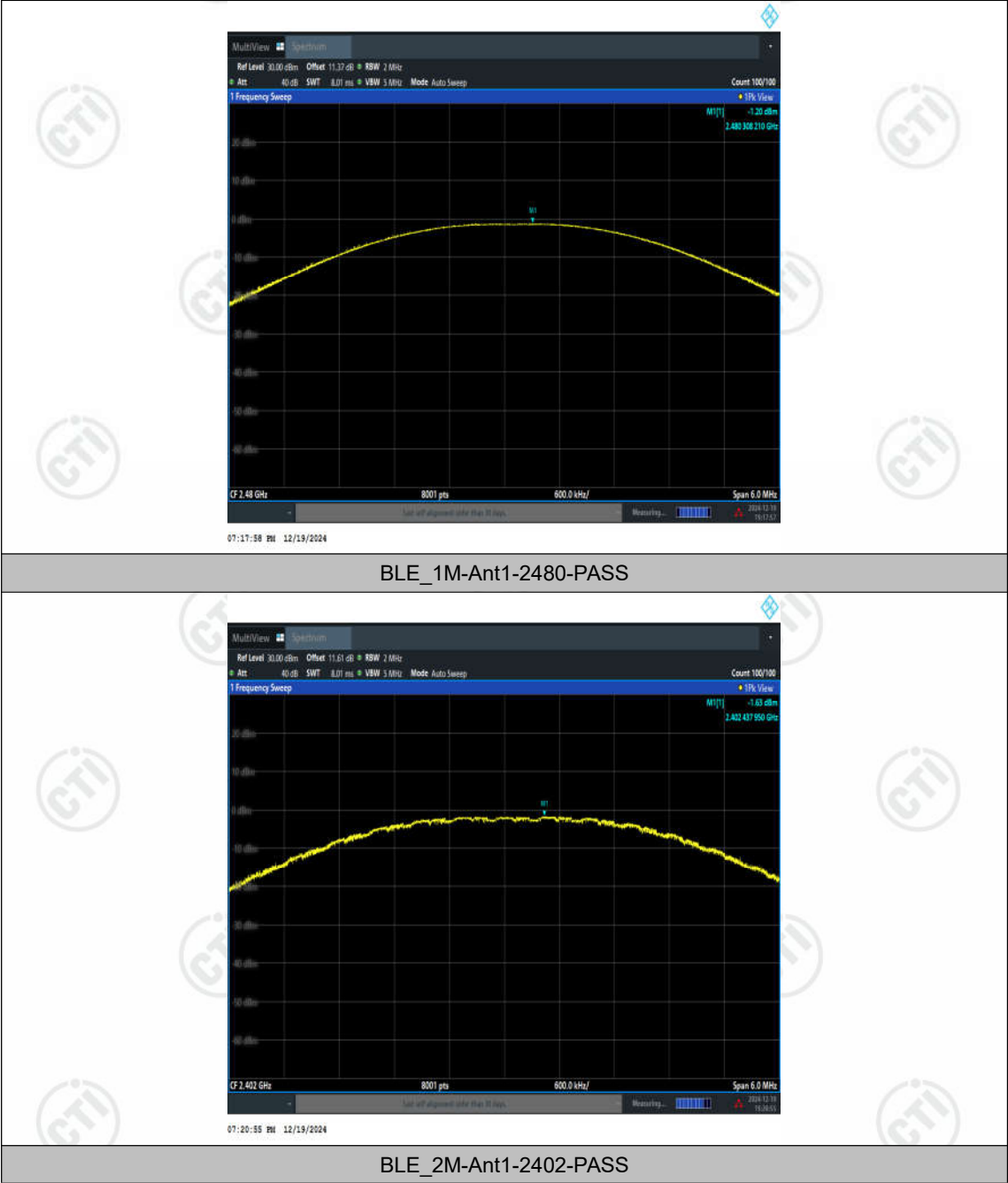
Appendix C: Maximum conducted output power

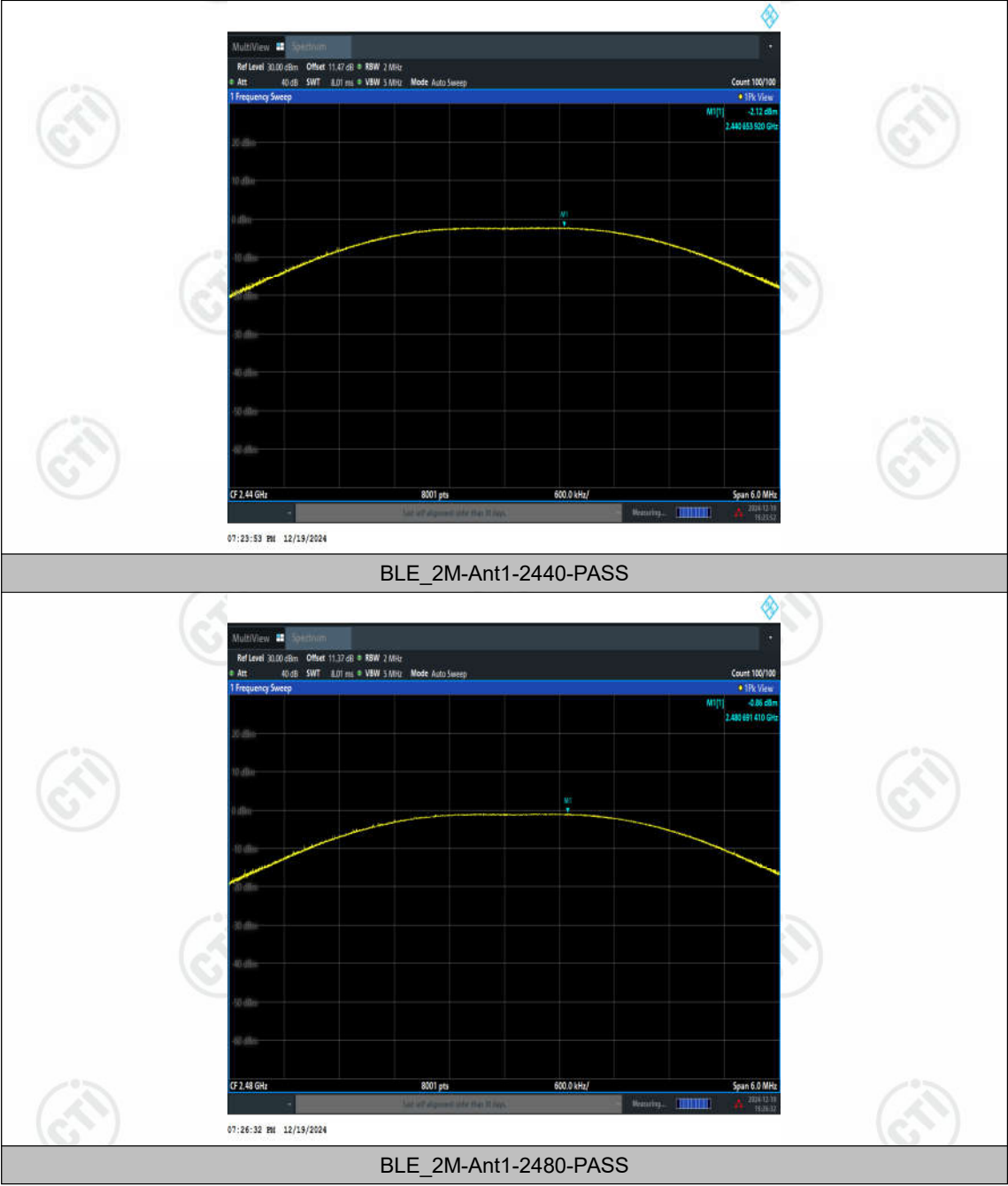
Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.96	≤30	PASS
BLE_1M	Ant1	2440	-1.41	≤30	PASS
BLE_1M	Ant1	2480	-1.20	≤30	PASS
BLE_2M	Ant1	2402	-1.63	≤30	PASS
BLE_2M	Ant1	2440	-2.12	≤30	PASS
BLE_2M	Ant1	2480	-0.86	≤30	PASS

Test Graphs Peak





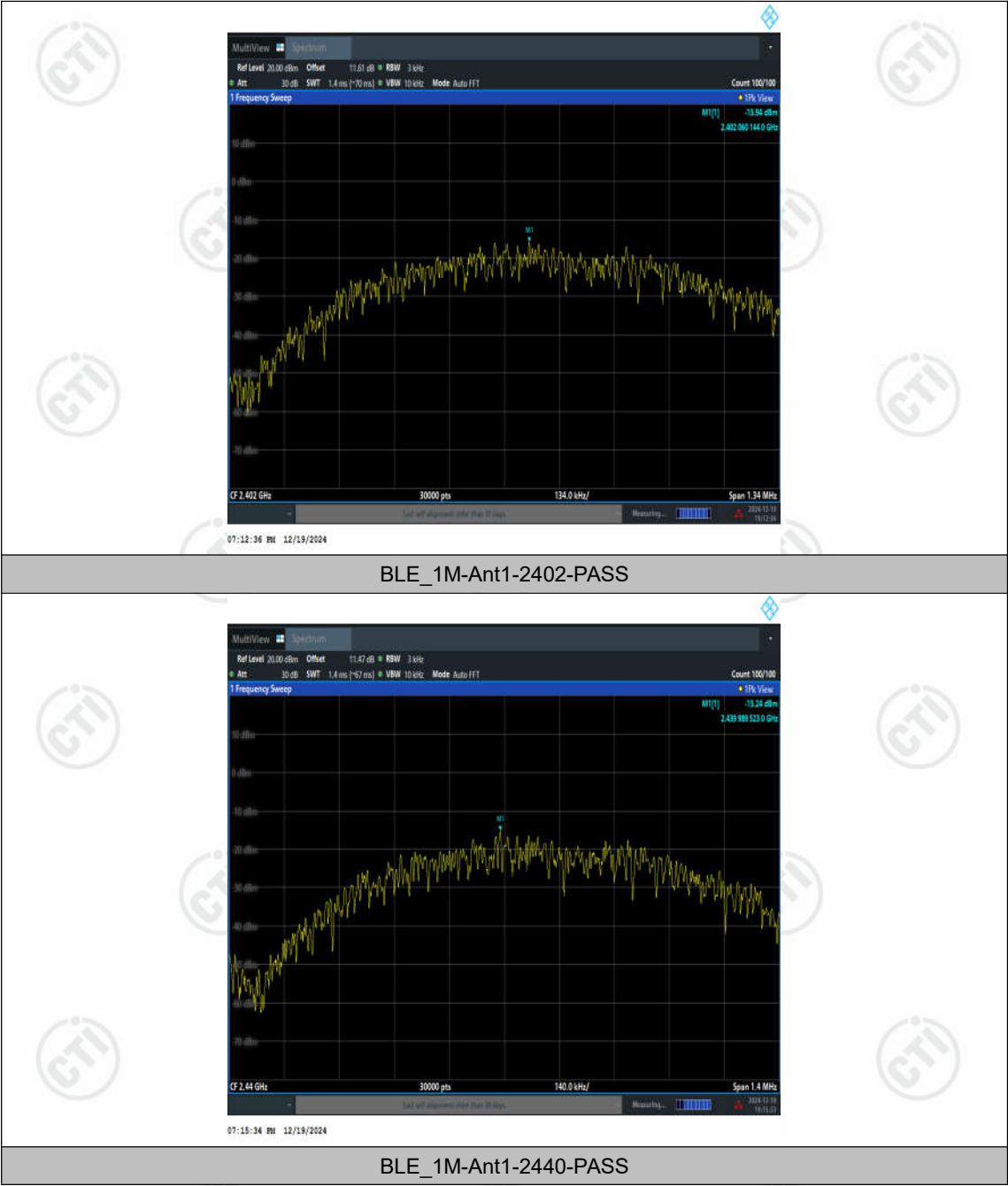


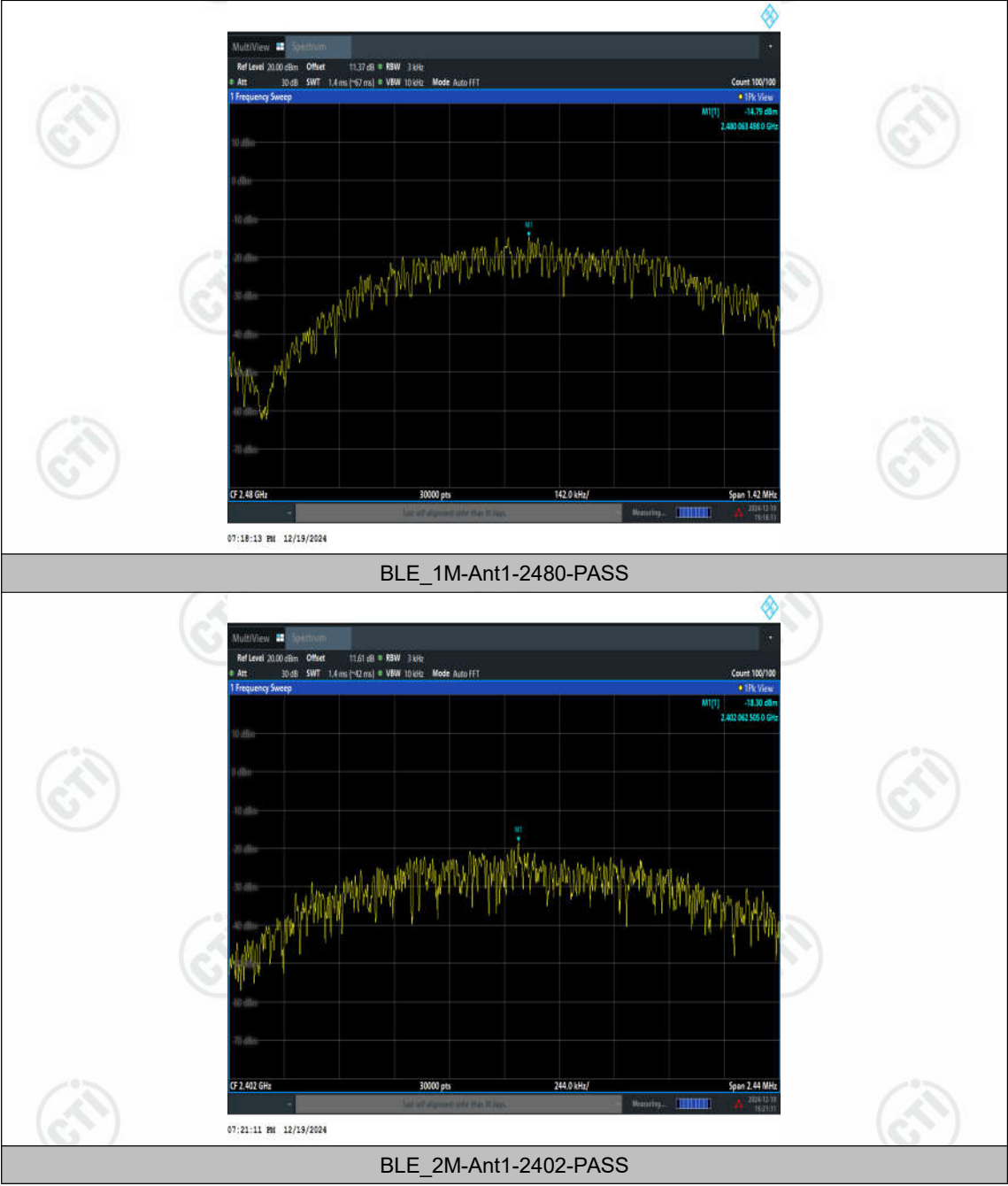
Appendix D: Maximum power spectral density

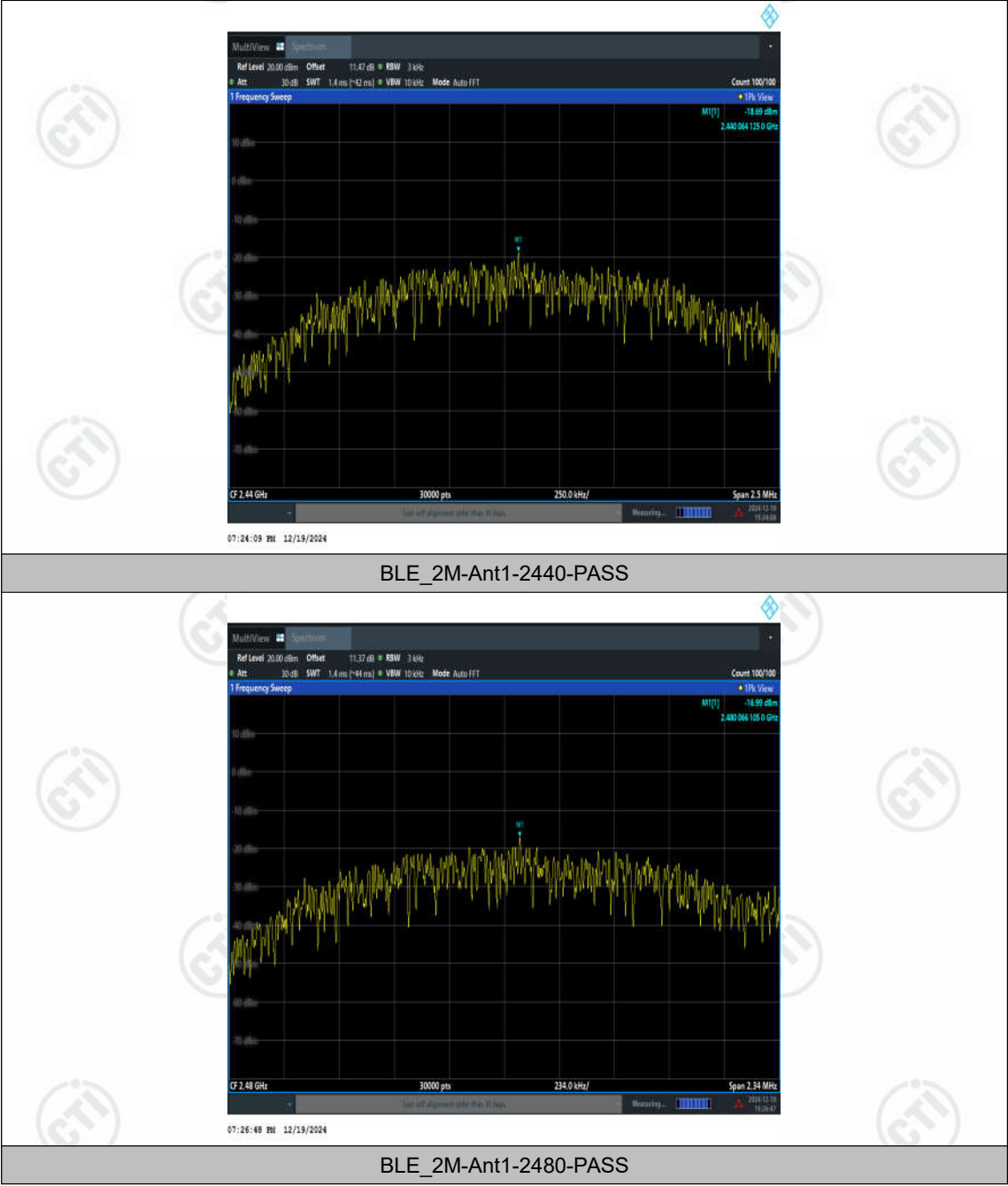
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.94	≤8.00	PASS
BLE_1M	Ant1	2440	-15.24	≤8.00	PASS
BLE_1M	Ant1	2480	-14.79	≤8.00	PASS
BLE_2M	Ant1	2402	-18.30	≤8.00	PASS
BLE_2M	Ant1	2440	-18.69	≤8.00	PASS
BLE_2M	Ant1	2480	-16.99	≤8.00	PASS

Test Graphs







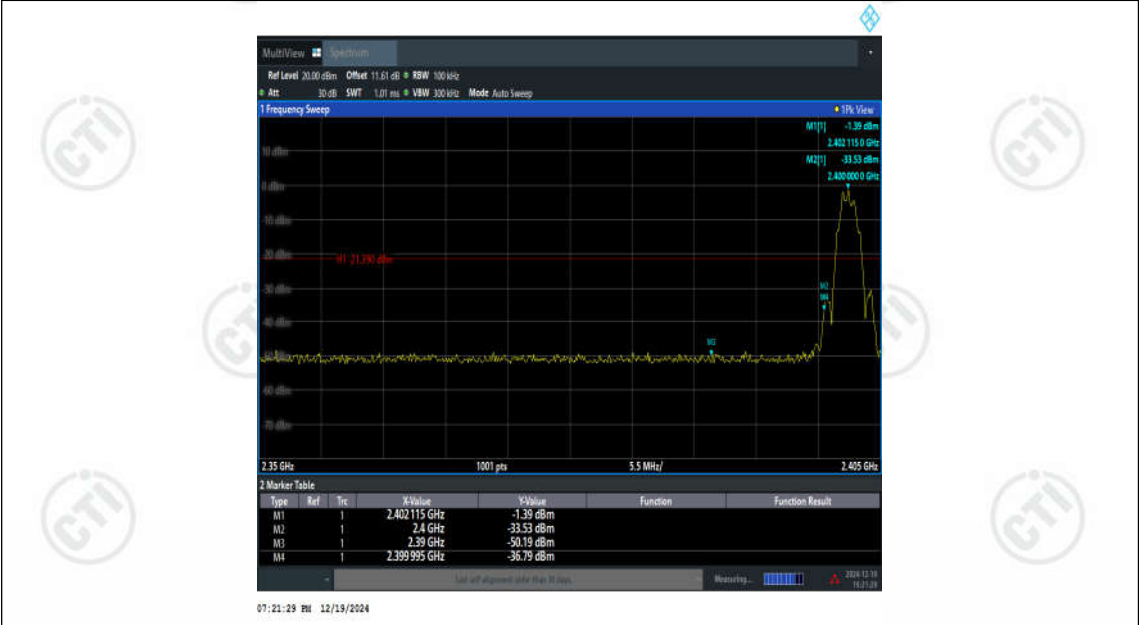
Appendix E: Band edge measurements

Test Result

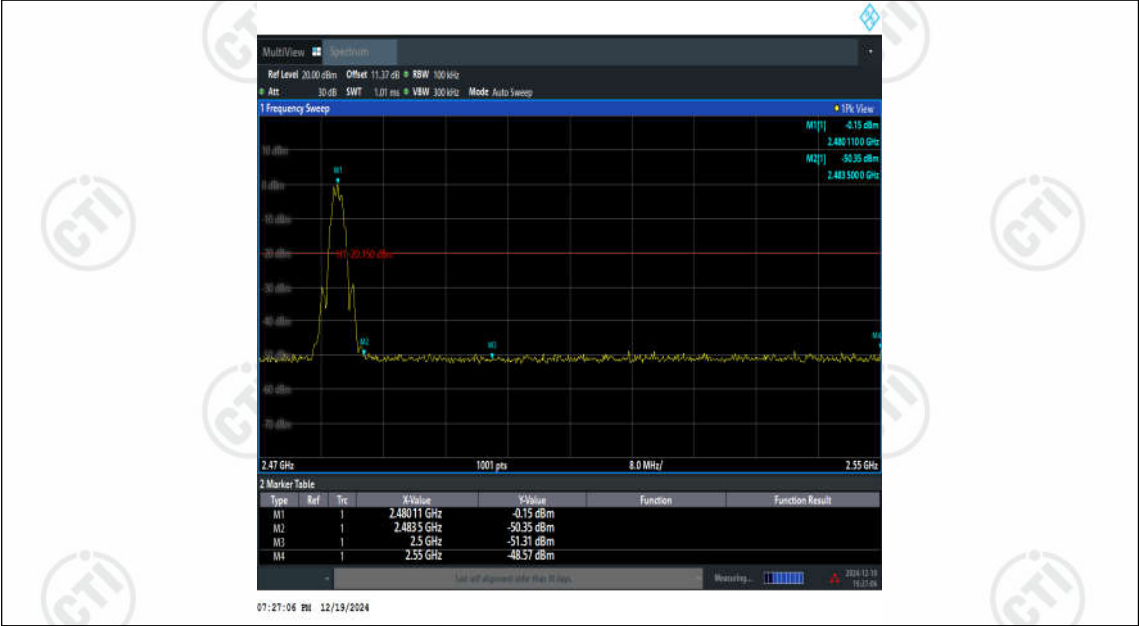
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-1.02	-48.54	≤-21.02	PASS
BLE_1M	Ant1	High	2480	0.23	-49.15	≤-19.77	PASS
BLE_2M	Ant1	Low	2402	-1.39	-36.79	≤-21.39	PASS
BLE_2M	Ant1	High	2480	-0.15	-48.57	≤-20.15	PASS

Test Graphs





BLE_2M-Ant1-2402-PASS



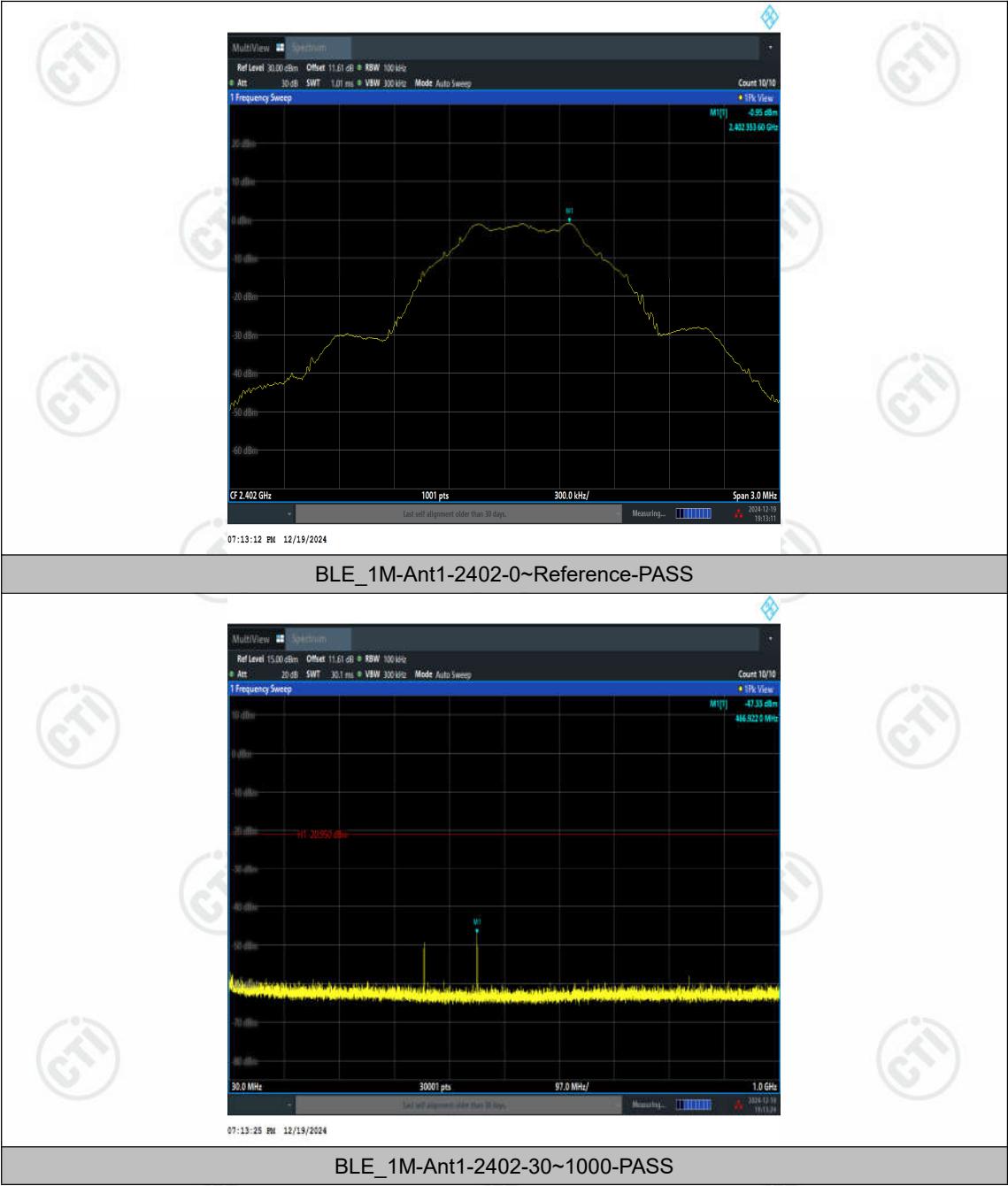
BLE_2M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

Test Result

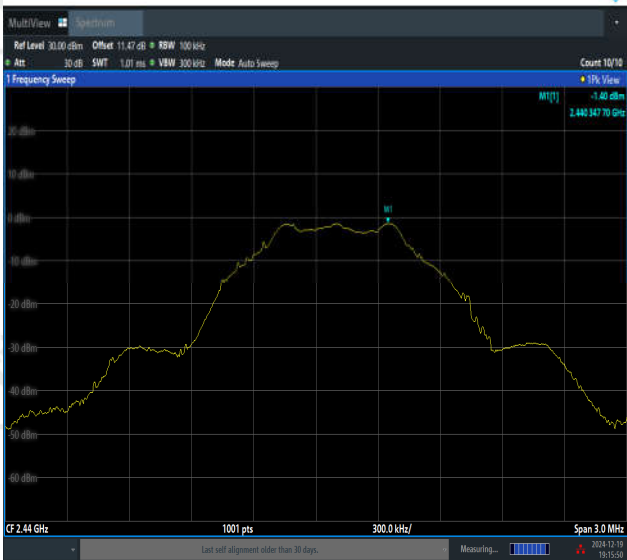
TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-0.95	-0.95	---	PASS
BLE_1M	Ant1	2402	30~1000	-0.95	-47.33	≤-20.95	PASS
BLE_1M	Ant1	2402	1000~26500	-0.95	-39.38	≤-20.95	PASS
BLE_1M	Ant1	2440	0~Reference	-1.40	-1.40	---	PASS
BLE_1M	Ant1	2440	30~1000	-1.40	-41.32	≤-21.4	PASS
BLE_1M	Ant1	2440	1000~26500	-1.40	-39.87	≤-21.4	PASS
BLE_1M	Ant1	2480	0~Reference	0.33	0.33	---	PASS
BLE_1M	Ant1	2480	30~1000	0.33	-50.96	≤-19.67	PASS
BLE_1M	Ant1	2480	1000~26500	0.33	-39.15	≤-19.67	PASS
BLE_2M	Ant1	2402	0~Reference	-1.34	-1.34	---	PASS
BLE_2M	Ant1	2402	30~1000	-1.34	-45.84	≤-21.34	PASS
BLE_2M	Ant1	2402	1000~26500	-1.34	-40.59	≤-21.34	PASS
BLE_2M	Ant1	2440	0~Reference	-1.82	-1.82	---	PASS
BLE_2M	Ant1	2440	30~1000	-1.82	-53.2	≤-21.82	PASS
BLE_2M	Ant1	2440	1000~26500	-1.82	-39.21	≤-21.82	PASS
BLE_2M	Ant1	2480	0~Reference	-0.08	-0.08	---	PASS
BLE_2M	Ant1	2480	30~1000	-0.08	-49.43	≤-20.08	PASS
BLE_2M	Ant1	2480	1000~26500	-0.08	-38.77	≤-20.08	PASS

Test Graphs

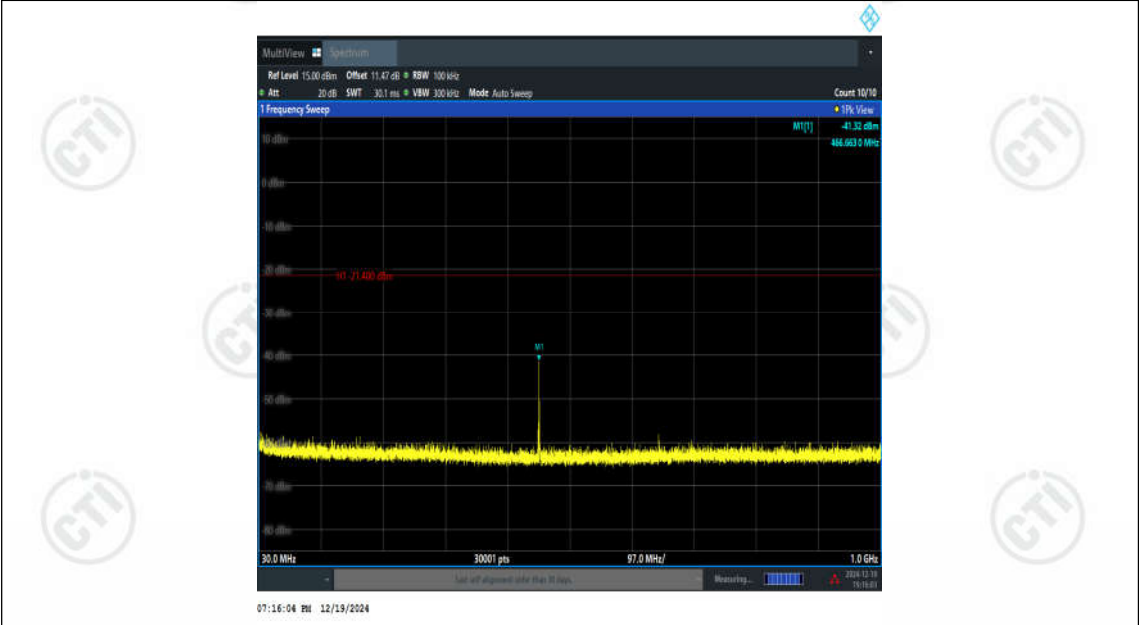




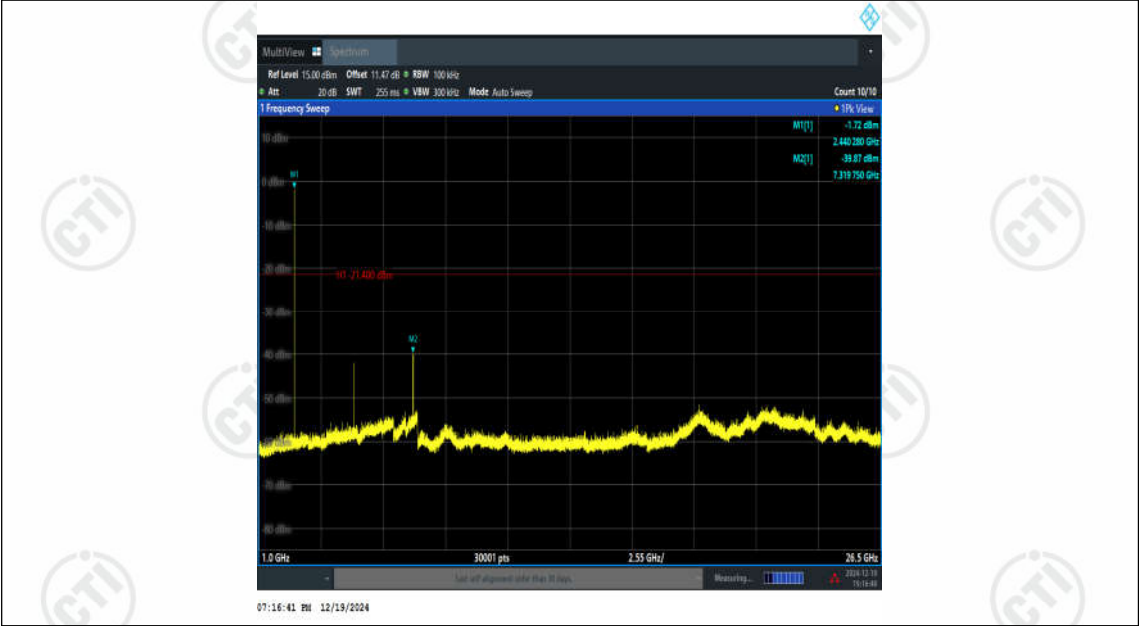
BLE_1M-Ant1-2402-1000~26500-PASS



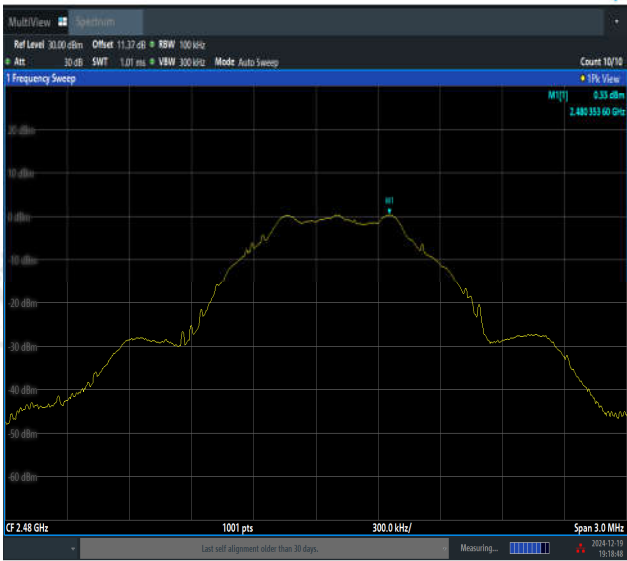
BLE_1M-Ant1-2440-0~Reference-PASS



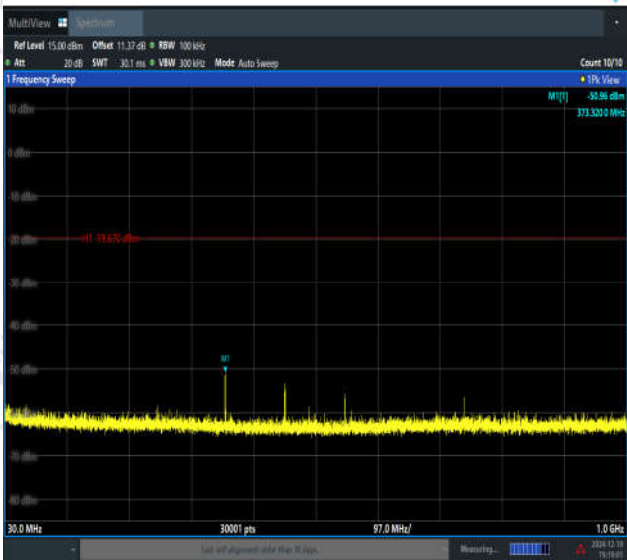
BLE_1M-Ant1-2440-30~1000-PASS



BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



BLE_1M-Ant1-2480-30~1000-PASS



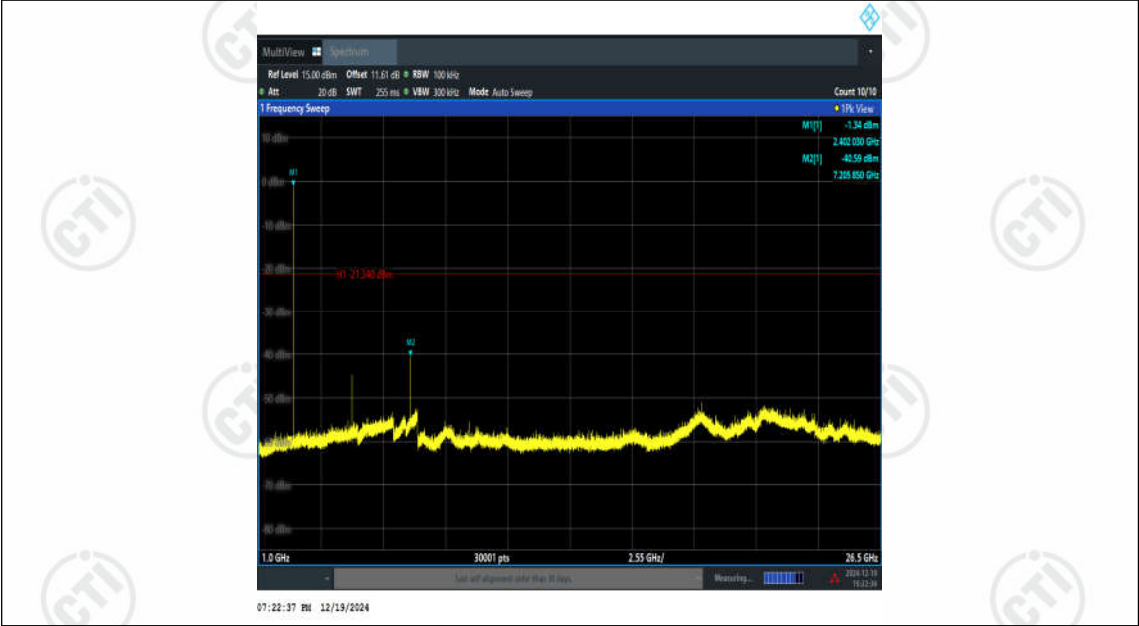
BLE_1M-Ant1-2480-1000~26500-PASS



BLE_2M-Ant1-2402-0~Reference-PASS



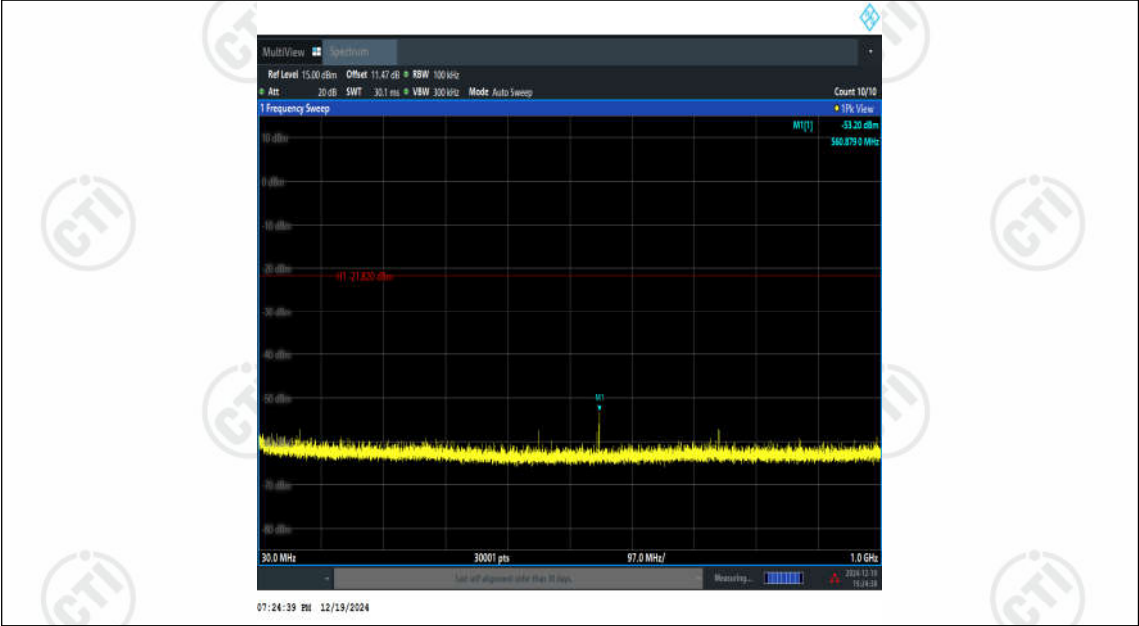
BLE_2M-Ant1-2402-30~1000-PASS



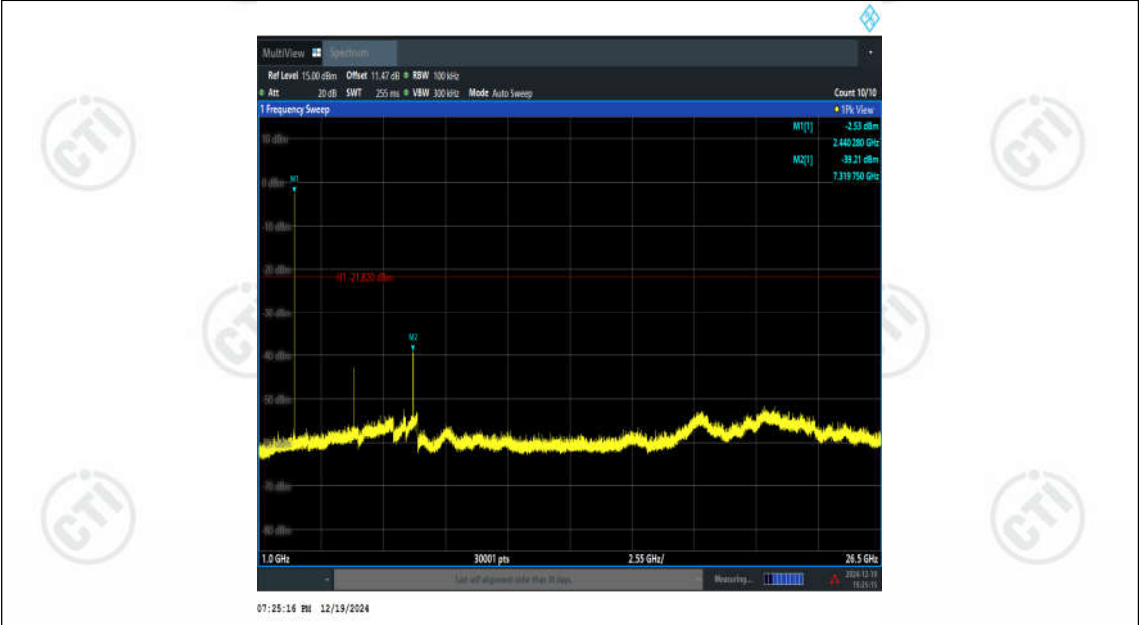
BLE_2M-Ant1-2402-1000~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



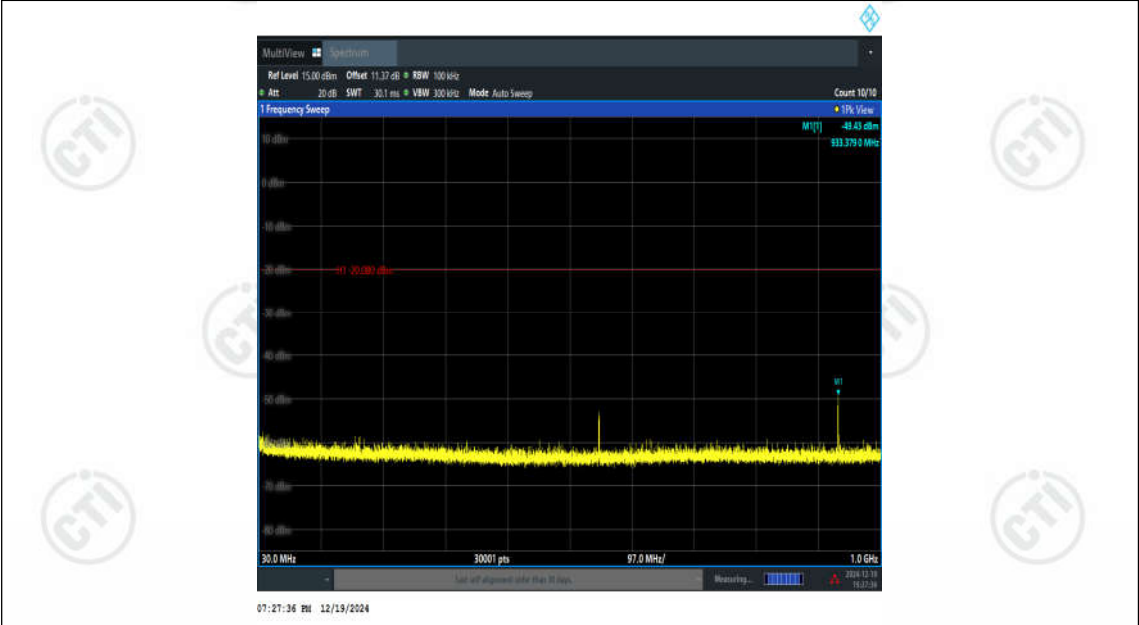
BLE_2M-Ant1-2440-30~1000-PASS



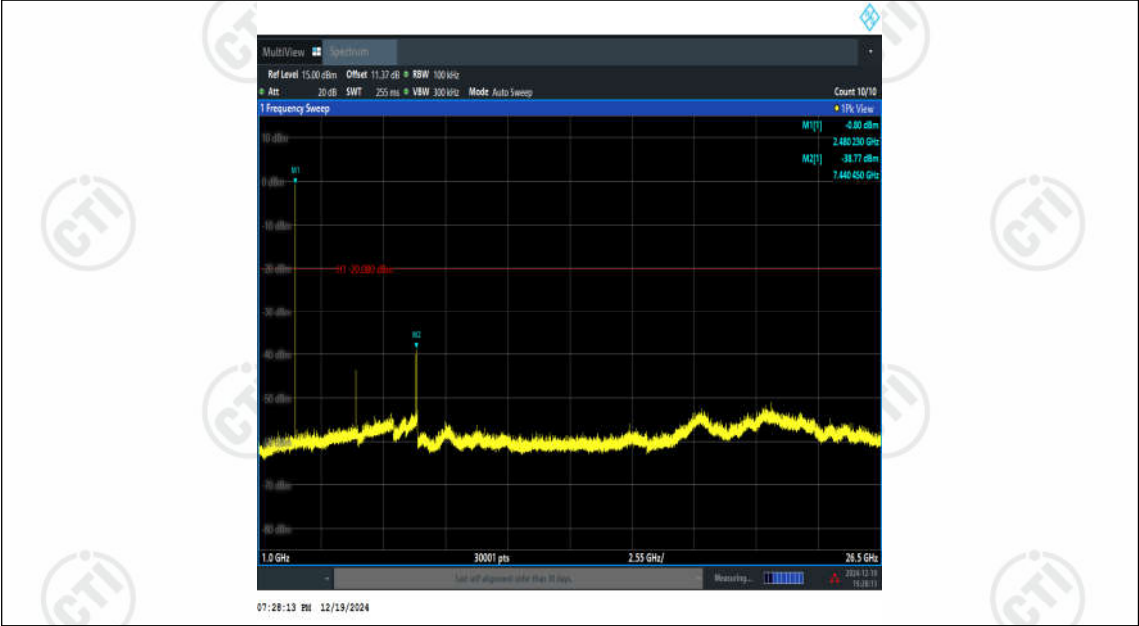
BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS



BLE_2M-Ant1-2480-1000~26500-PASS

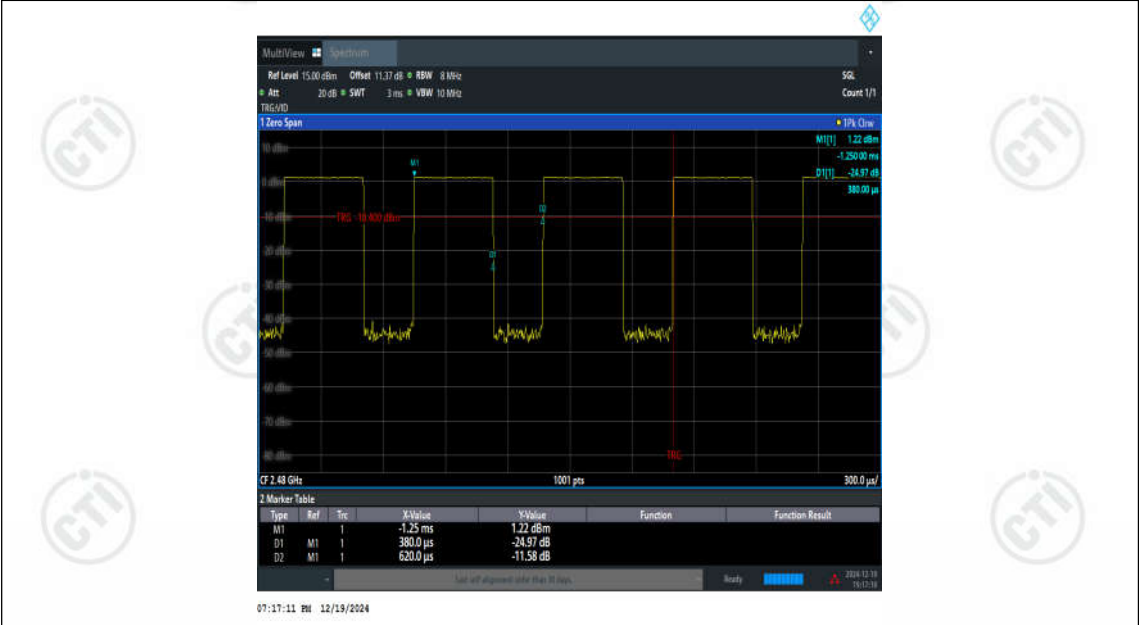
Appendix G: Duty Cycle

Test Result

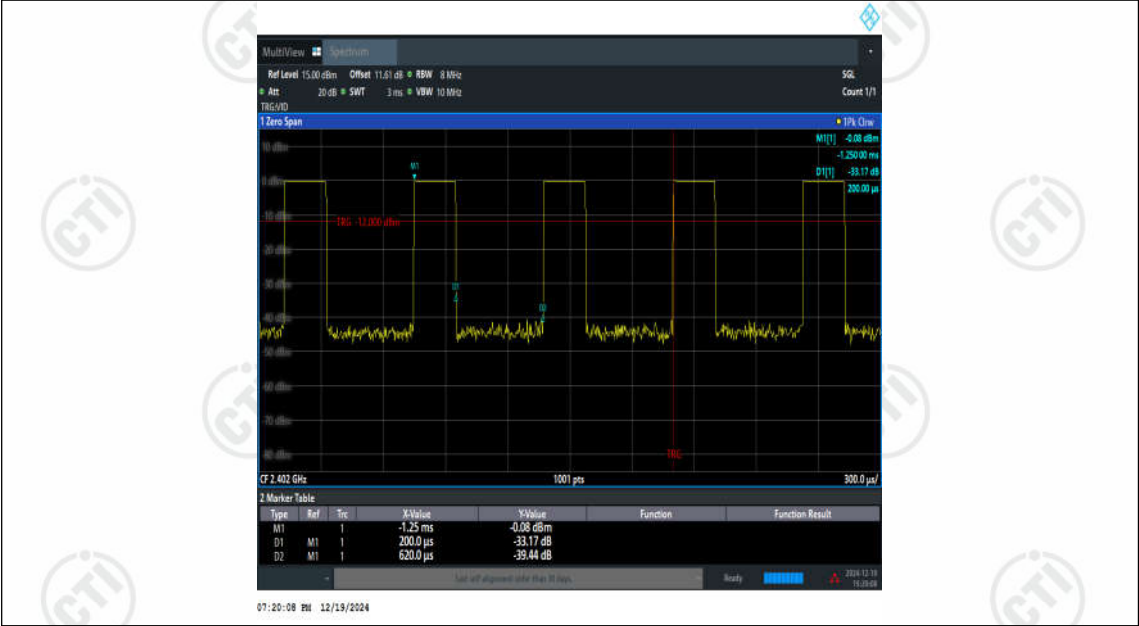
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.38	0.62	61.29	2.13
BLE_1M	Ant1	2440	0.38	0.63	60.32	2.20
BLE_1M	Ant1	2480	0.38	0.62	61.29	2.13
BLE_2M	Ant1	2402	0.20	0.62	32.26	4.91
BLE_2M	Ant1	2440	0.21	0.63	33.33	4.77
BLE_2M	Ant1	2480	0.20	0.62	32.26	4.91

Test Graphs





NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



END OF REPORT