Appendix: Bluetooth LE

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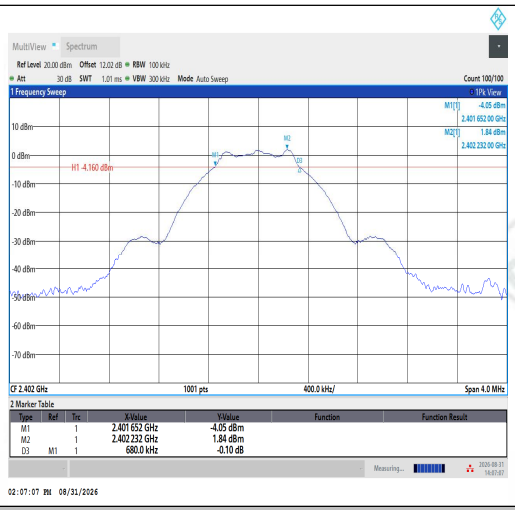
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.68	2401.65	2402.33	0.5	PASS
BLE_1M	Ant1	2440	0.68	2439.65	2440.34	0.5	PASS
BLE_1M	Ant1	2480	0.70	2479.64	2480.34	0.5	PASS
BLE_2M	Ant1	2402	1.12	2401.44	2402.56	0.5	PASS
BLE_2M	Ant1	2440	1.14	2439.44	2440.57	0.5	PASS
BLE_2M	Ant1	2480	1.16	2479.42	2480.58	0.5	PASS

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

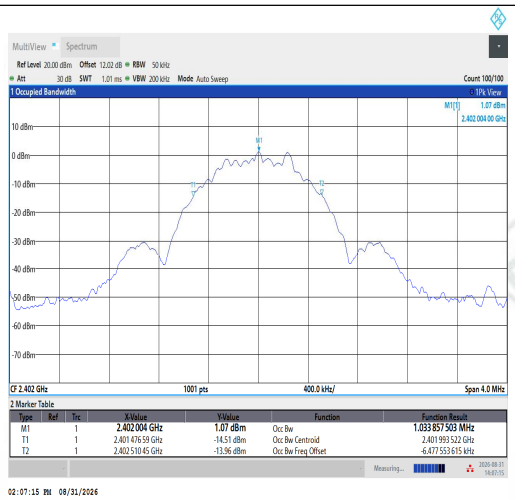
BLE_2M-Ant1-2480-PASS

Appendix B: Occupied Channel Bandwidth

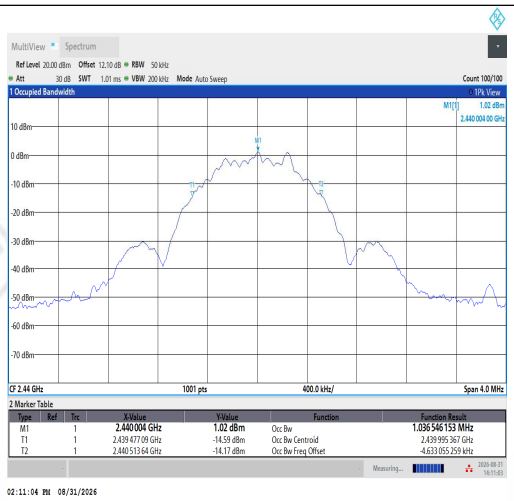
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0339	2401.4766	2402.5105	---	---
BLE_1M	Ant1	2440	1.0365	2439.4771	2440.5136	---	---
BLE_1M	Ant1	2480	1.0353	2479.4737	2480.5090	---	---
BLE_2M	Ant1	2402	2.0406	2400.9880	2403.0286	---	---
BLE_2M	Ant1	2440	2.0386	2438.9917	2441.0302	---	---
BLE_2M	Ant1	2480	2.0382	2478.9880	2481.0262	---	---

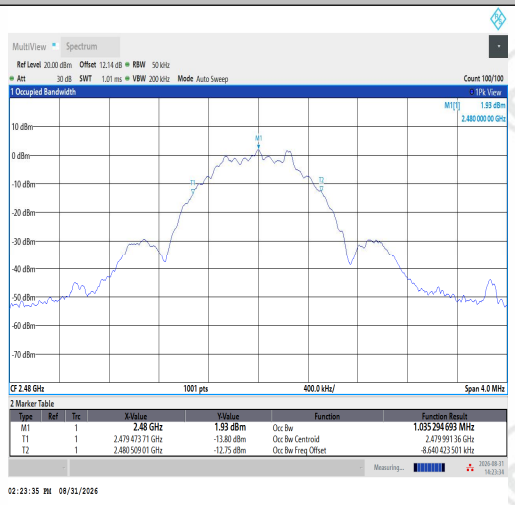
Test Graphs



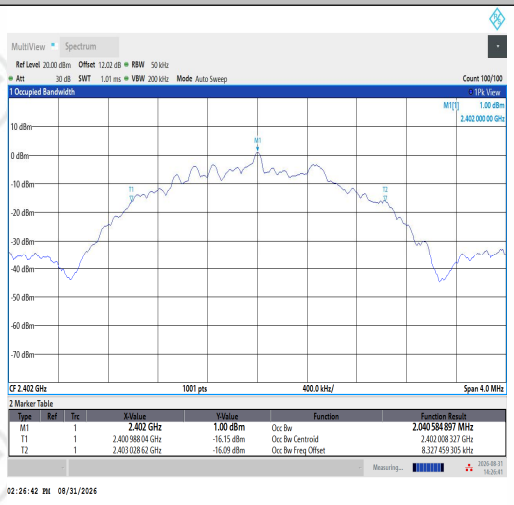
BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



BLE_1M-Ant1-2480



BLE_2M-Ant1-2402

BLE_2M-Ant1-2440

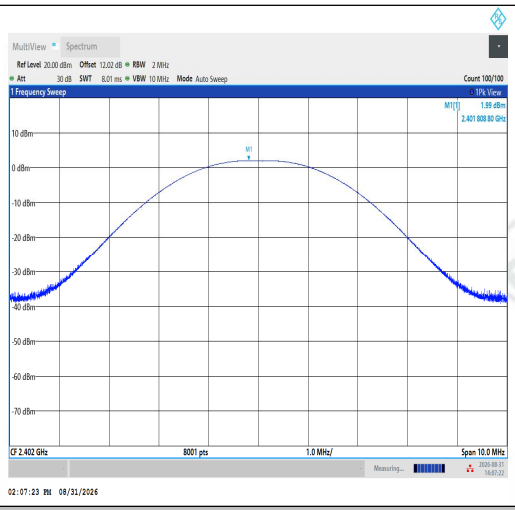
BLE_2M-Ant1-2480

Appendix C: Maximum conducted output power

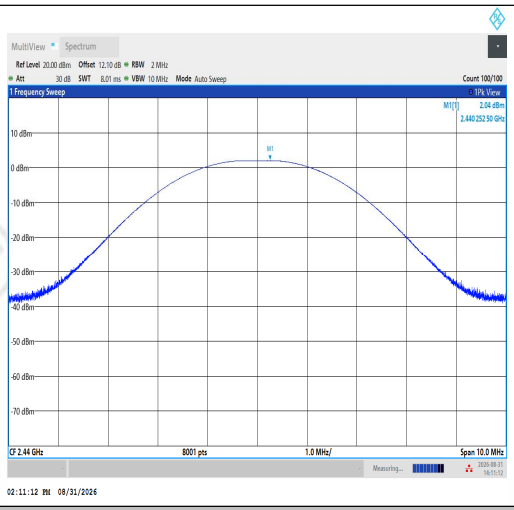
Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.99	≤30	-2.23	≤36	PASS
BLE_1M	Ant1	2440	2.04	≤30	-2.18	≤36	PASS
BLE_1M	Ant1	2480	2.95	≤30	-1.27	≤36	PASS
BLE_2M	Ant1	2402	1.96	≤30	-2.26	≤36	PASS
BLE_2M	Ant1	2440	2.04	≤30	-2.18	≤36	PASS
BLE_2M	Ant1	2480	2.92	≤30	-1.30	≤36	PASS

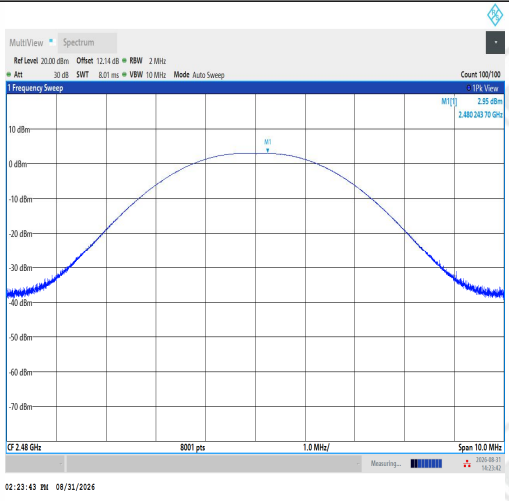
Test Graphs Peak



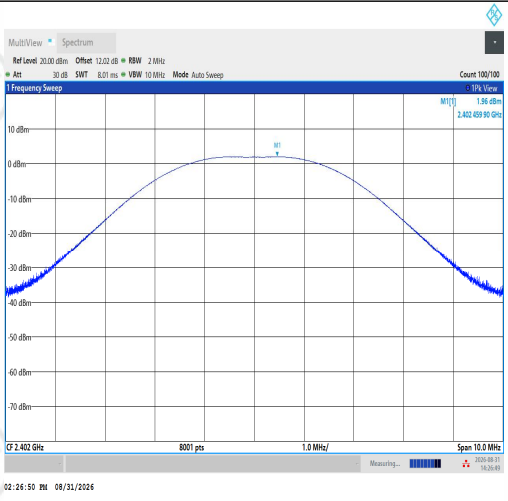
BLE_1M-Ant1-2402-PASS



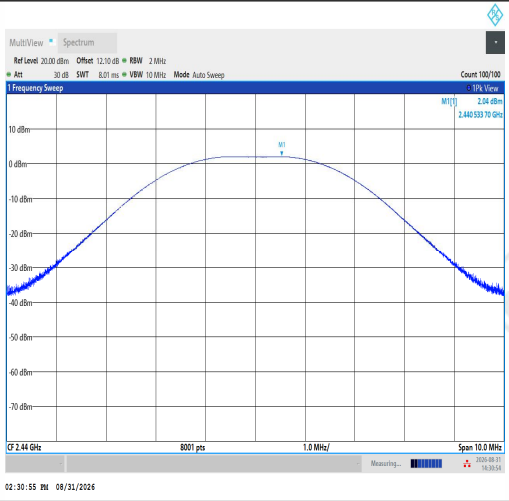
BLE_1M-Ant1-2440-PASS



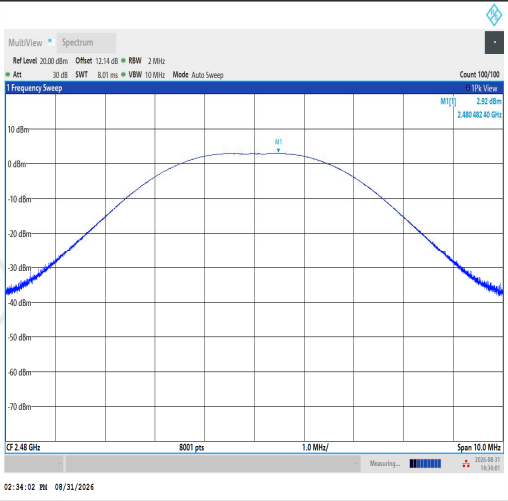
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



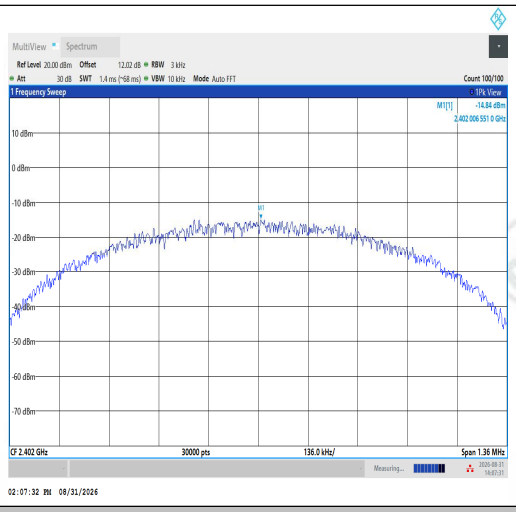
BLE_2M-Ant1-2480-PASS

Appendix D: Maximum power spectral density

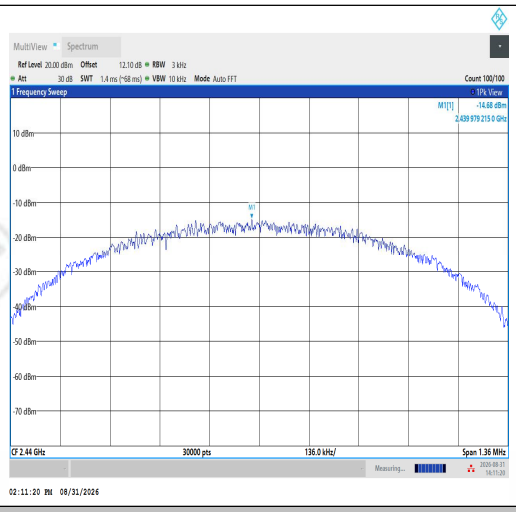
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.84	≤8.00	PASS
BLE_1M	Ant1	2440	-14.68	≤8.00	PASS
BLE_1M	Ant1	2480	-13.79	≤8.00	PASS
BLE_2M	Ant1	2402	-15.93	≤8.00	PASS
BLE_2M	Ant1	2440	-15.84	≤8.00	PASS
BLE_2M	Ant1	2480	-14.60	≤8.00	PASS

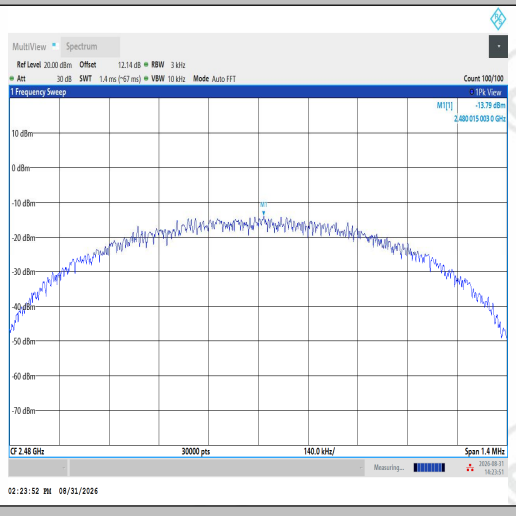
Test Graphs



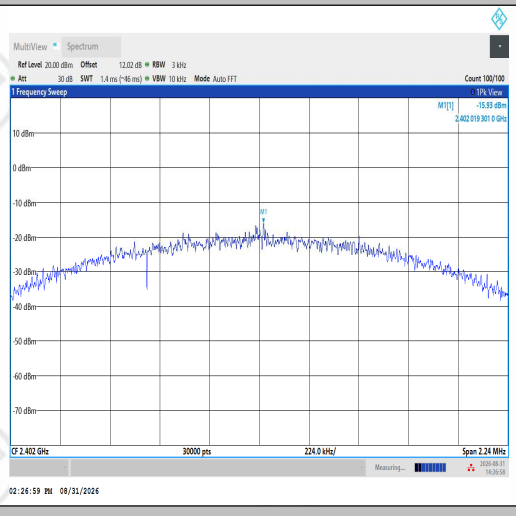
BLE_1M-Ant1-2402-PASS



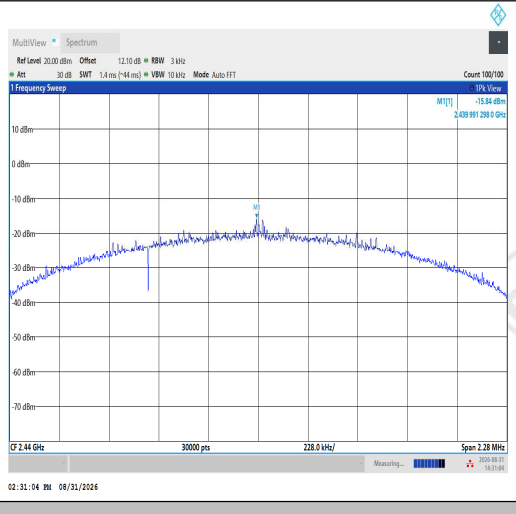
BLE_1M-Ant1-2440-PASS



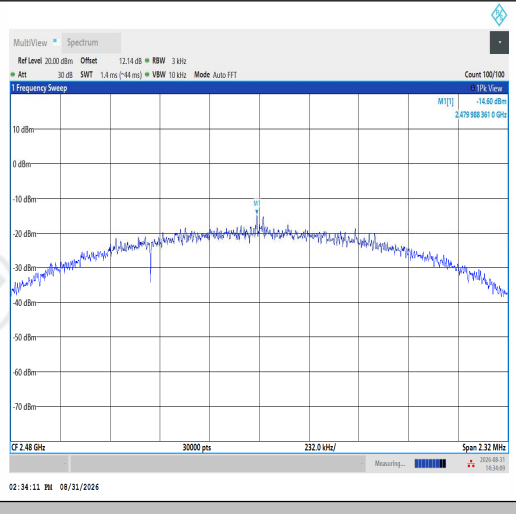
BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS



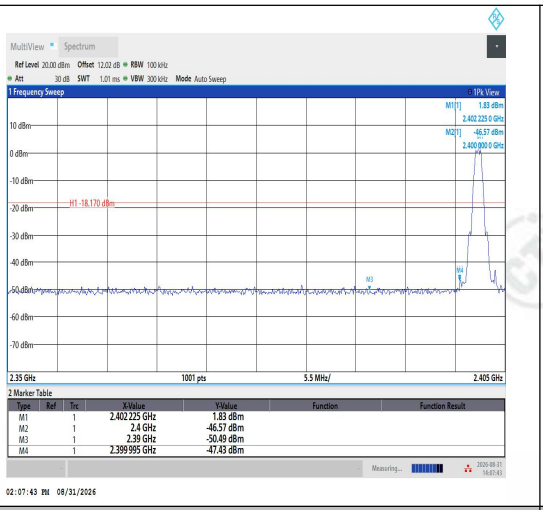
BLE_2M-Ant1-2480-PASS

Appendix E: Band edge measurements

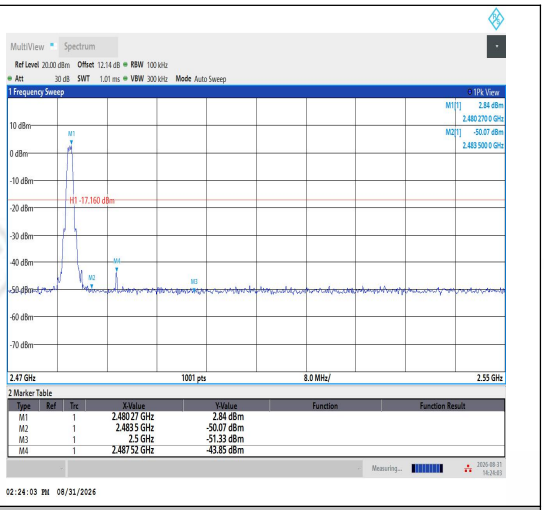
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.83	-47.43	≤-18.17	PASS
BLE_1M	Ant1	High	2480	2.84	-43.85	≤-17.16	PASS
BLE_2M	Ant1	Low	2402	1.77	-30.08	≤-18.23	PASS
BLE_2M	Ant1	High	2480	2.69	-43.33	≤-17.31	PASS

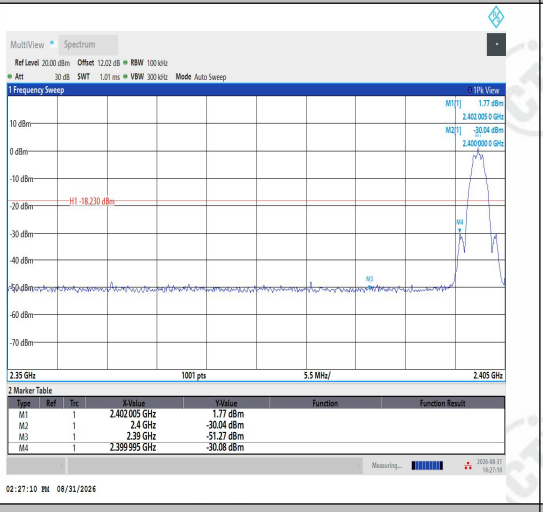
Test Graphs



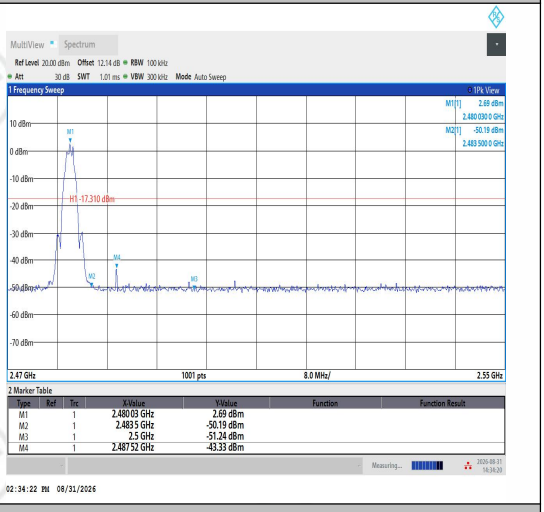
BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



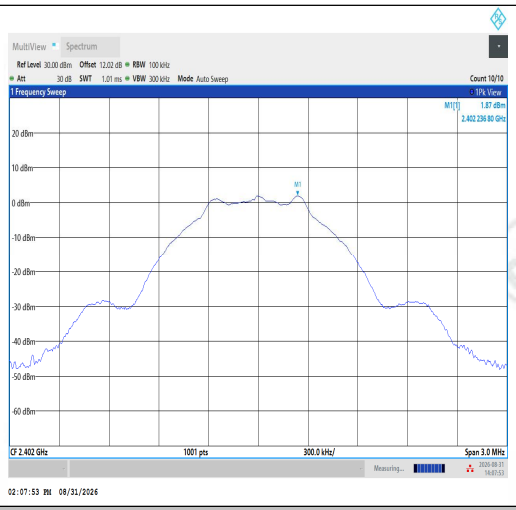
BLE_2M-Ant1-2480-PASS

Appendix F: Conducted Spurious Emission

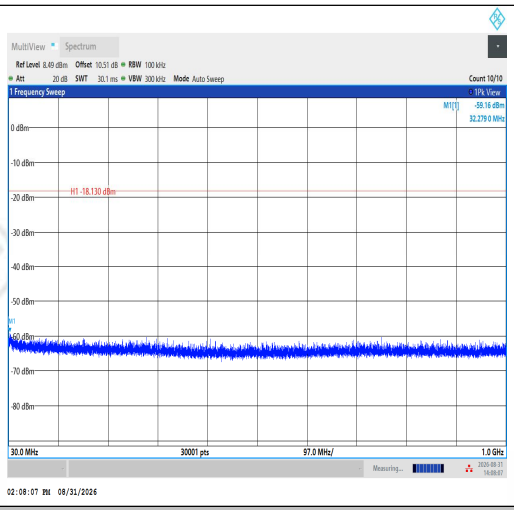
Test Result

TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	1.87	1.87	---	PASS
BLE_1M	Ant1	2402	30~1000	1.87	-59.16	≤-18.13	PASS
BLE_1M	Ant1	2402	1000~12750	1.87	-45.83	≤-18.13	PASS
BLE_1M	Ant1	2402	12750~26500	1.87	-28.48	≤-18.13	PASS
BLE_1M	Ant1	2440	0~Reference	1.91	1.91	---	PASS
BLE_1M	Ant1	2440	30~1000	1.91	-59.02	≤-18.09	PASS
BLE_1M	Ant1	2440	1000~12750	1.91	-45.48	≤-18.09	PASS
BLE_1M	Ant1	2440	12750~26500	1.91	-28.39	≤-18.09	PASS
BLE_1M	Ant1	2480	0~Reference	2.85	2.85	---	PASS
BLE_1M	Ant1	2480	30~1000	2.85	-59.11	≤-17.15	PASS
BLE_1M	Ant1	2480	1000~12750	2.85	-45.71	≤-17.15	PASS
BLE_1M	Ant1	2480	12750~26500	2.85	-27.5	≤-17.15	PASS
BLE_2M	Ant1	2402	0~Reference	1.81	1.81	---	PASS
BLE_2M	Ant1	2402	30~1000	1.81	-59.43	≤-18.19	PASS
BLE_2M	Ant1	2402	1000~12750	1.81	-44.95	≤-18.19	PASS
BLE_2M	Ant1	2402	12750~26500	1.81	-27.5	≤-18.19	PASS
BLE_2M	Ant1	2440	0~Reference	1.88	1.88	---	PASS
BLE_2M	Ant1	2440	30~1000	1.88	-59.41	≤-18.12	PASS
BLE_2M	Ant1	2440	1000~12750	1.88	-44.67	≤-18.12	PASS
BLE_2M	Ant1	2440	12750~26500	1.88	-28.43	≤-18.12	PASS
BLE_2M	Ant1	2480	0~Reference	2.74	2.74	---	PASS
BLE_2M	Ant1	2480	30~1000	2.74	-58.73	≤-17.26	PASS
BLE_2M	Ant1	2480	1000~12750	2.74	-45.63	≤-17.26	PASS
BLE_2M	Ant1	2480	12750~26500	2.74	-27.87	≤-17.26	PASS

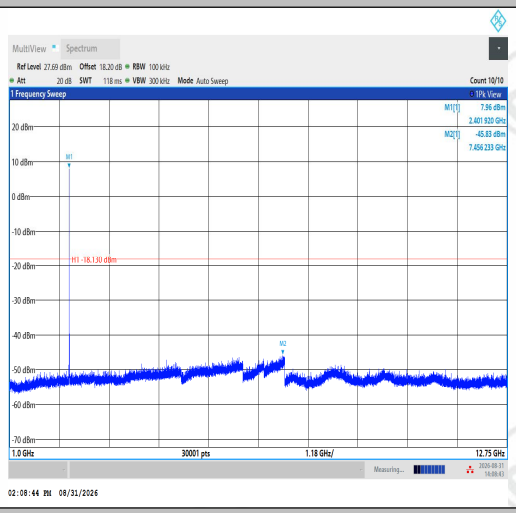
Test Graphs



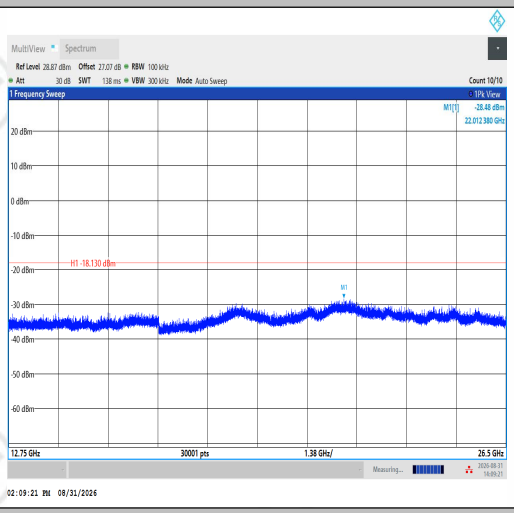
BLE_1M-Ant1-2402-0~Reference-PASS



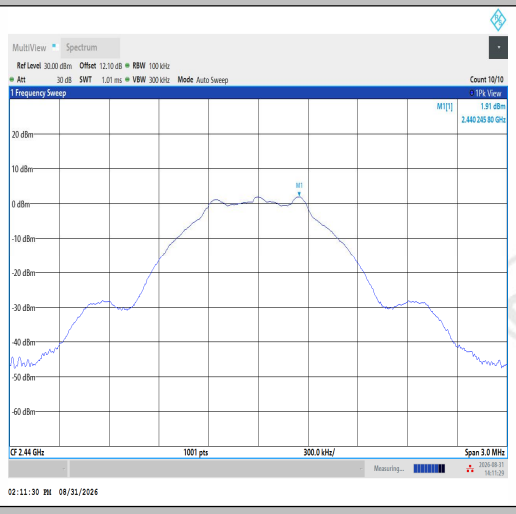
BLE_1M-Ant1-2402-30~1000-PASS



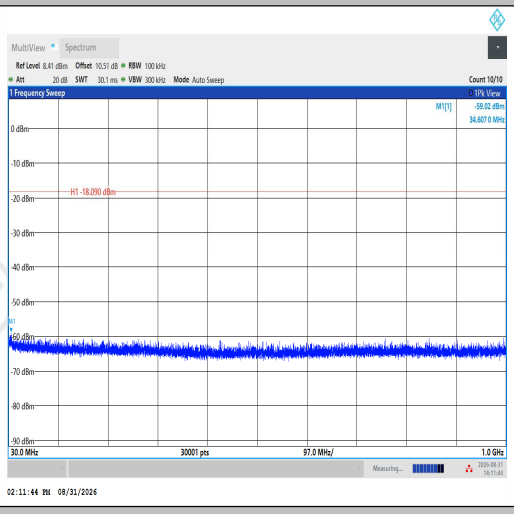
BLE_1M-Ant1-2402-1000~12750-PASS



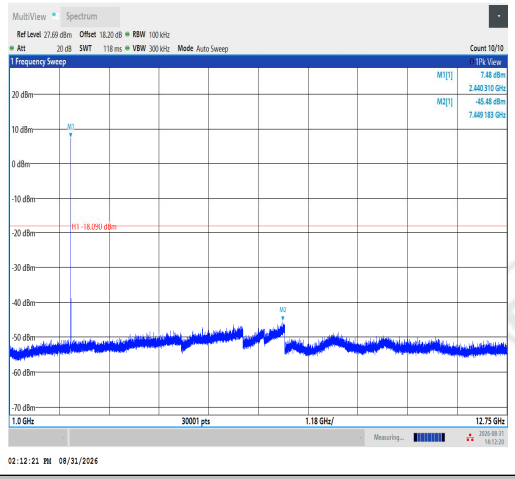
BLE_1M-Ant1-2402-12750~26500-PASS



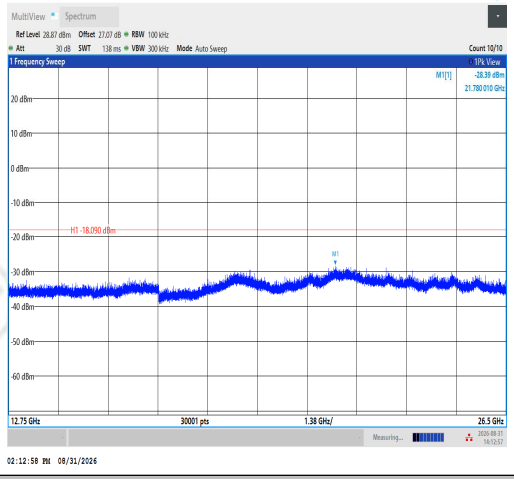
BLE_1M-Ant1-2440-0~Reference-PASS



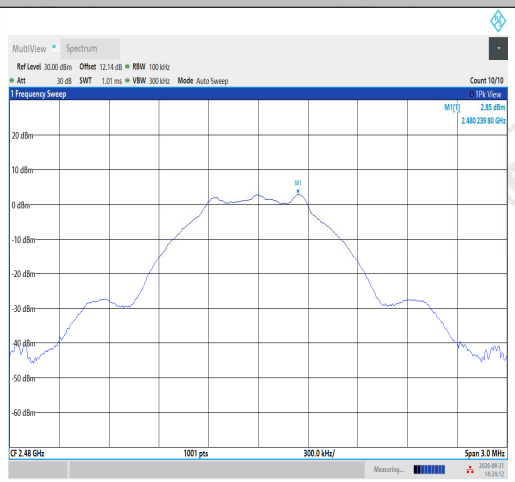
BLE_1M-Ant1-2440-30~1000-PASS



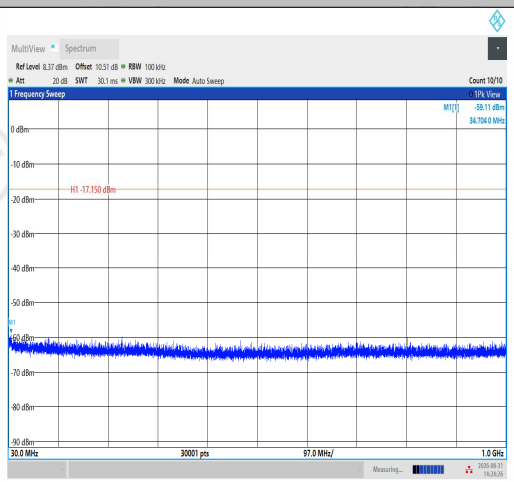
BLE_1M-Ant1-2440-1000~12750-PASS



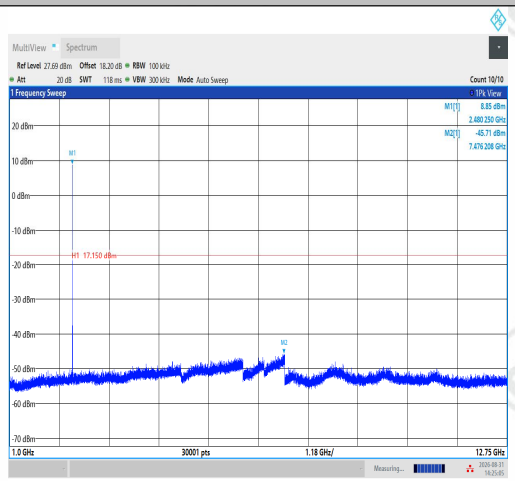
BLE_1M-Ant1-2440-12750~26500-PASS



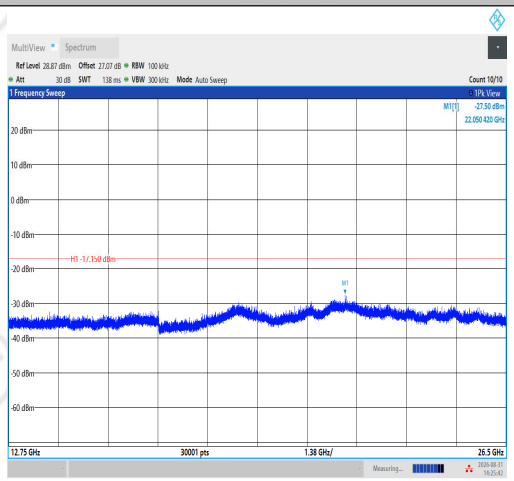
BLE_1M-Ant1-2480-0~Reference-PASS



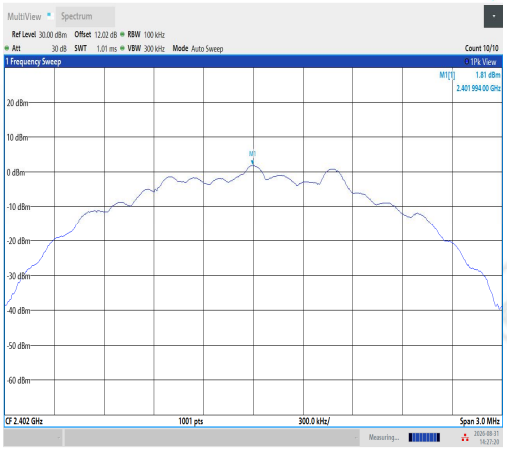
BLE_1M-Ant1-2480-30~1000-PASS



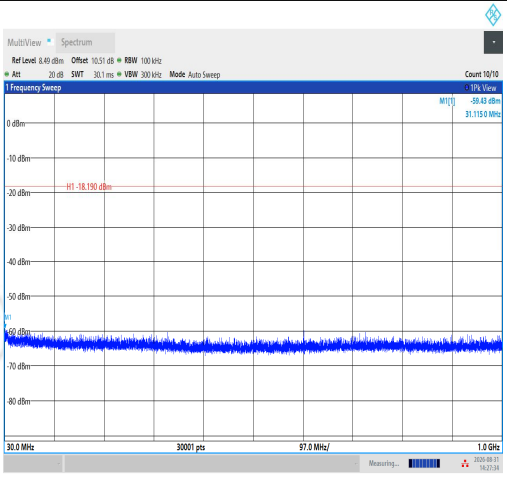
BLE_1M-Ant1-2480-1000~12750-PASS



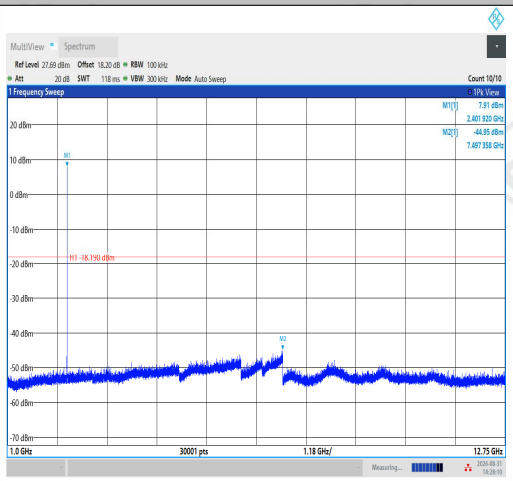
BLE_1M-Ant1-2480-12750~26500-PASS



BLE_2M-Ant1-2402-0~Reference-PASS



BLE_2M-Ant1-2402-30~1000-PASS



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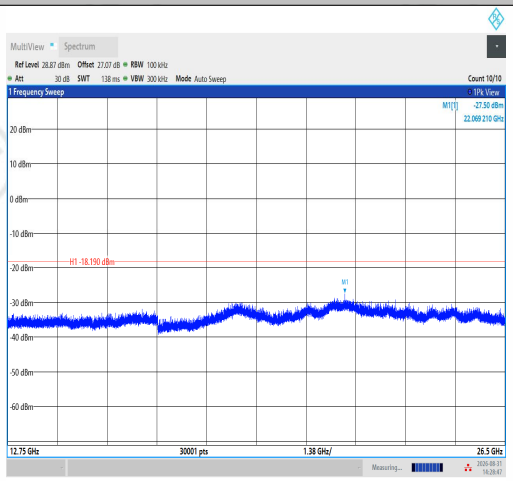
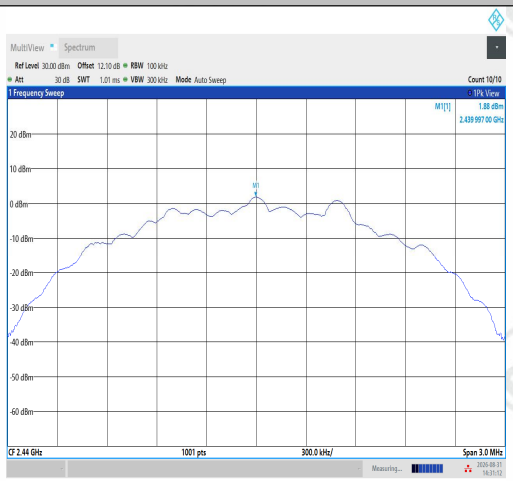
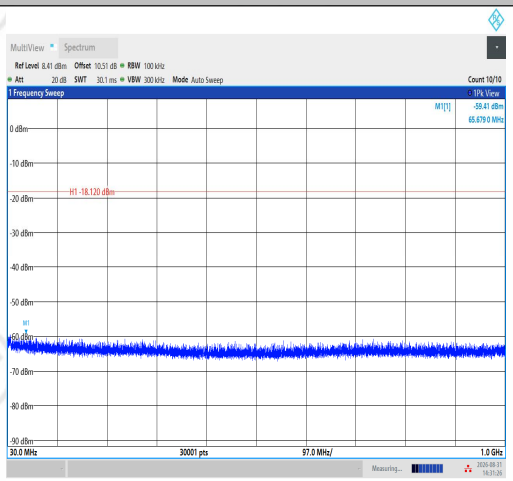


BLE_2M-Ant1-2402-12750~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



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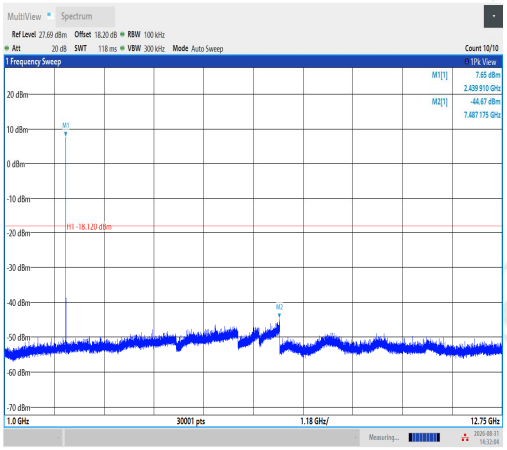

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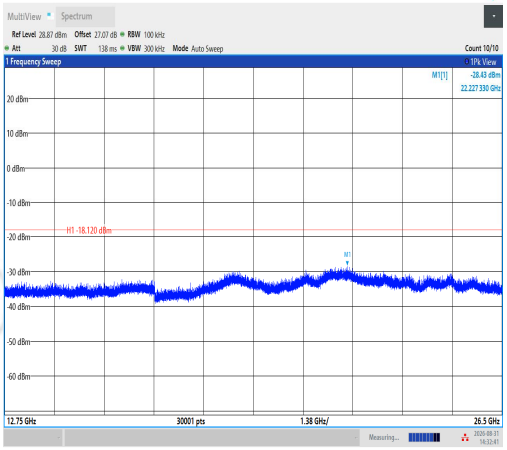
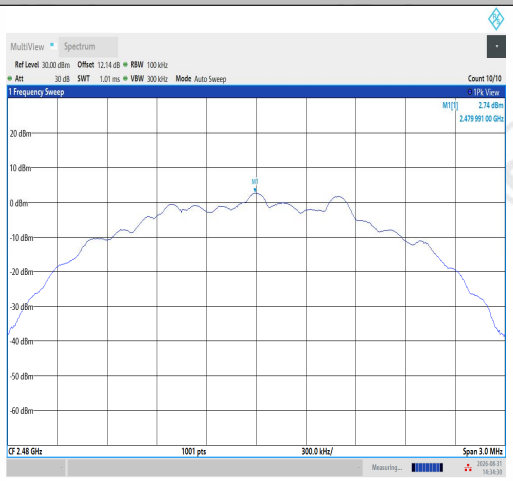
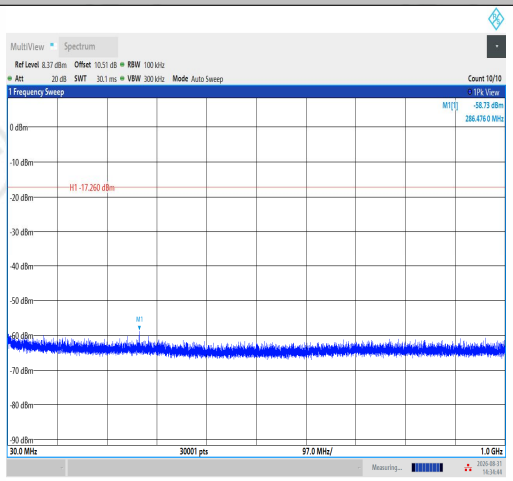


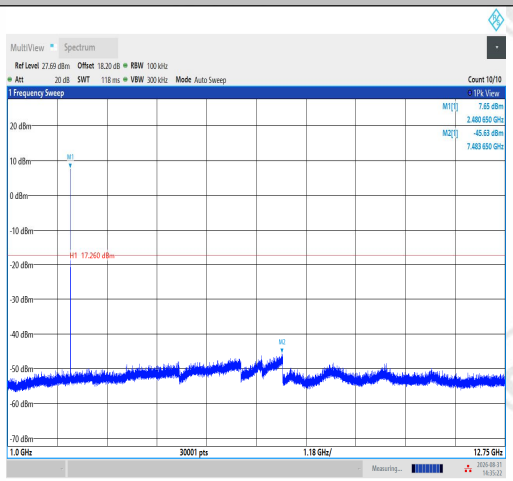
BLE_2M-Ant1-2440-12750~26500-PASS



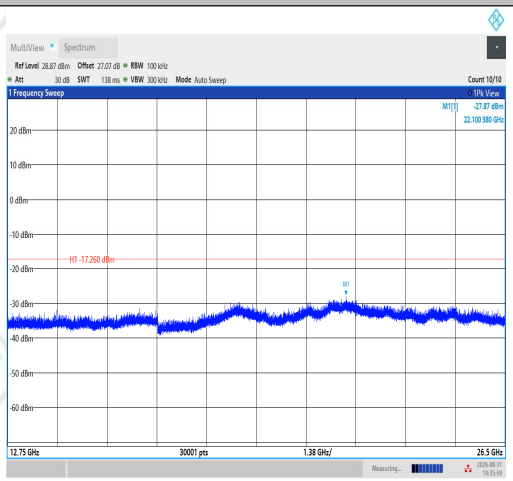
BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS



BLE_2M-Ant1-2480-1000~12750-PASS



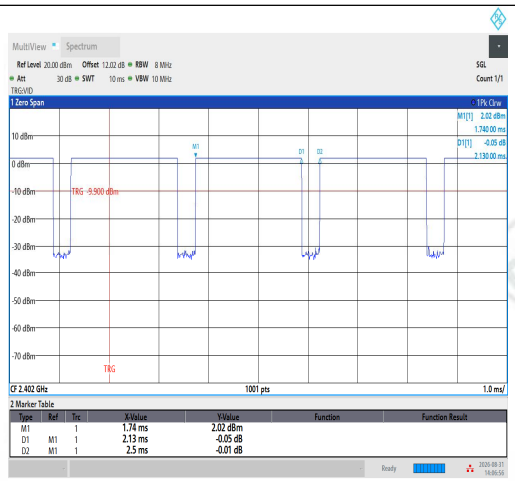
BLE_2M-Ant1-2480-12750~26500-PASS

Appendix G: Duty Cycle

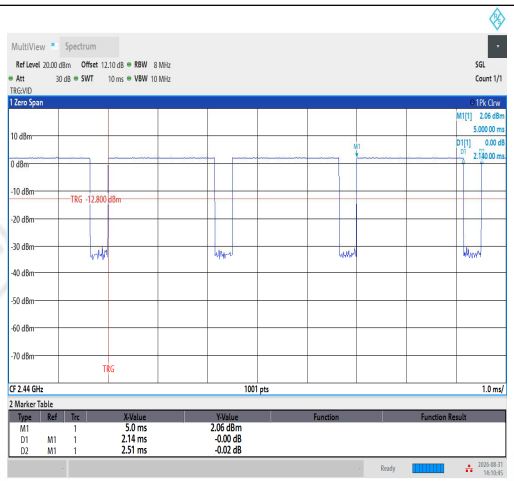
Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.13	2.50	85.20	0.70
BLE_1M	Ant1	2440	2.14	2.51	85.26	0.69
BLE_1M	Ant1	2480	2.14	2.51	85.26	0.69
BLE_2M	Ant1	2402	1.08	1.88	57.45	2.41
BLE_2M	Ant1	2440	1.08	1.88	57.45	2.41
BLE_2M	Ant1	2480	1.08	1.88	57.45	2.41

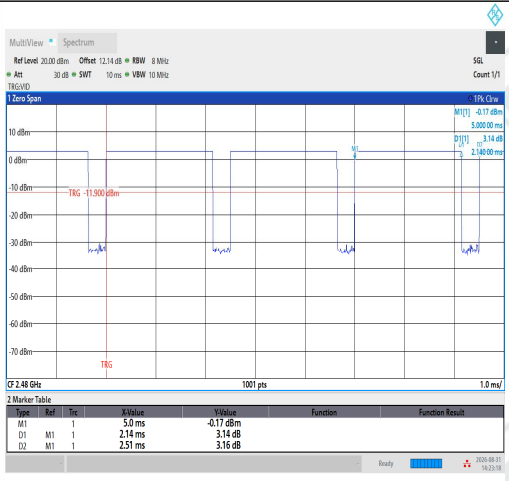
Test Graphs



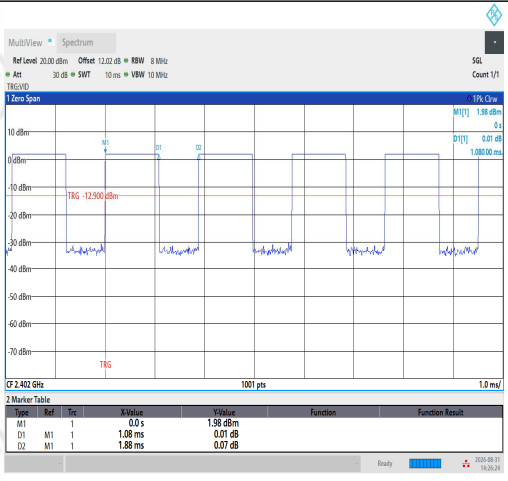
NTNV-BLE_1M-Ant1-2402



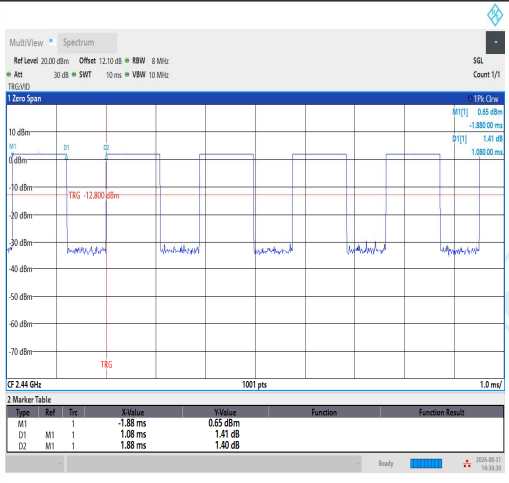
NTNV-BLE_1M-Ant1-2440



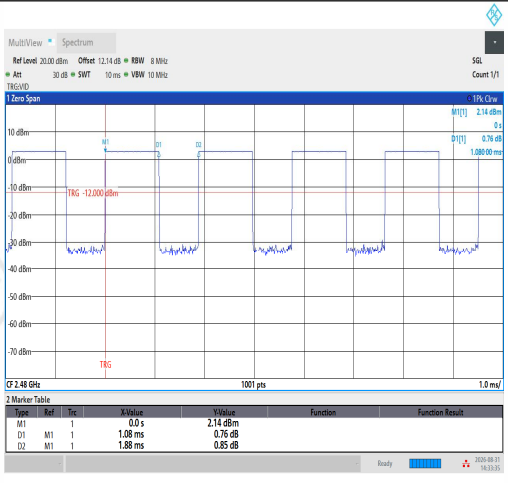
NTNV-BLE_1M-Ant1-2480



NTNV-BLE_2M-Ant1-2402



NTNV-BLE_2M-Ant1-2440



NTNV-BLE_2M-Ant1-2480

*** End of Report ***