

Appendix: Bluetooth LE

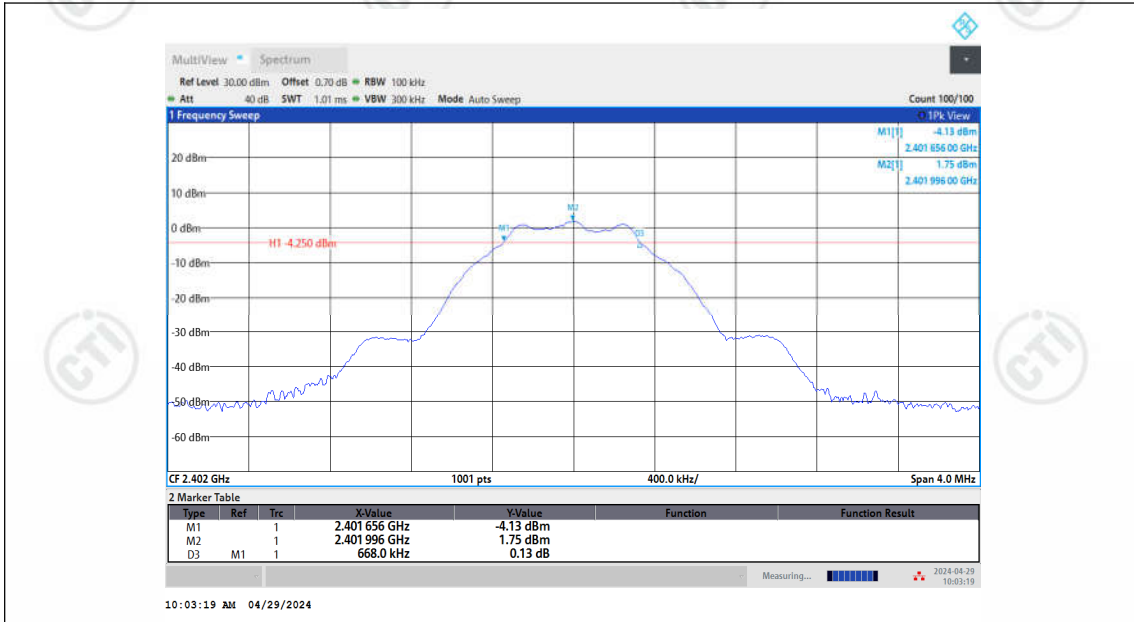
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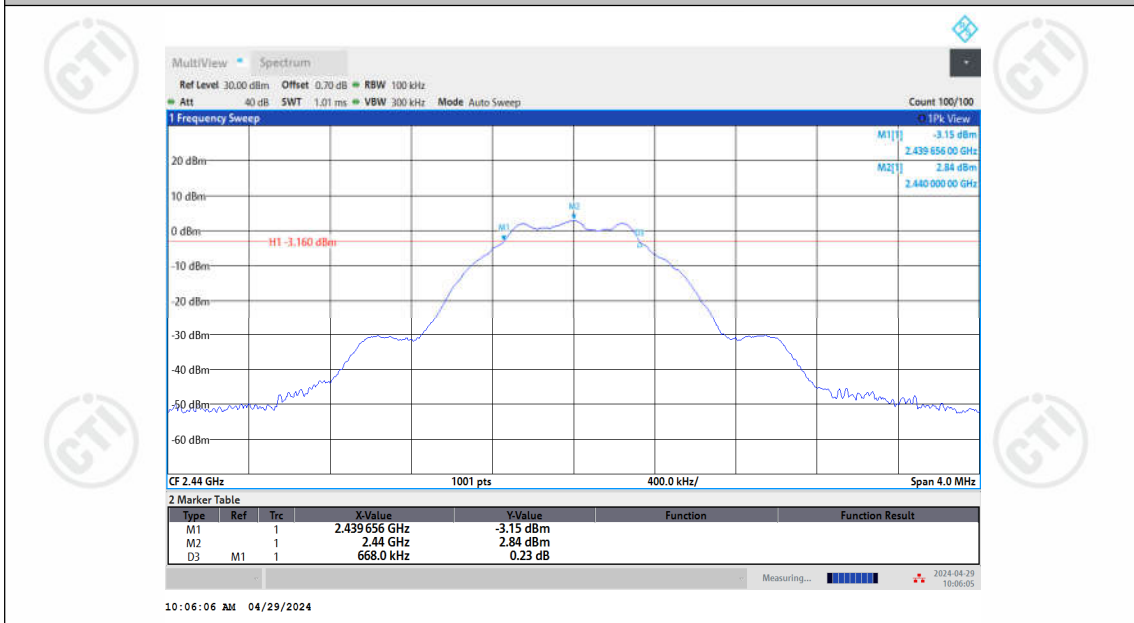
Appendix A: DTS Bandwidth**Test Result**

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.67	2401.66	2402.32	0.5	PASS
		2440	0.67	2439.66	2440.32	0.5	PASS
		2480	0.66	2479.66	2480.32	0.5	PASS
BLE_2M	Ant1	2402	1.14	2401.43	2402.57	0.5	PASS
		2440	1.14	2439.43	2440.57	0.5	PASS
		2480	1.14	2479.43	2480.57	0.5	PASS

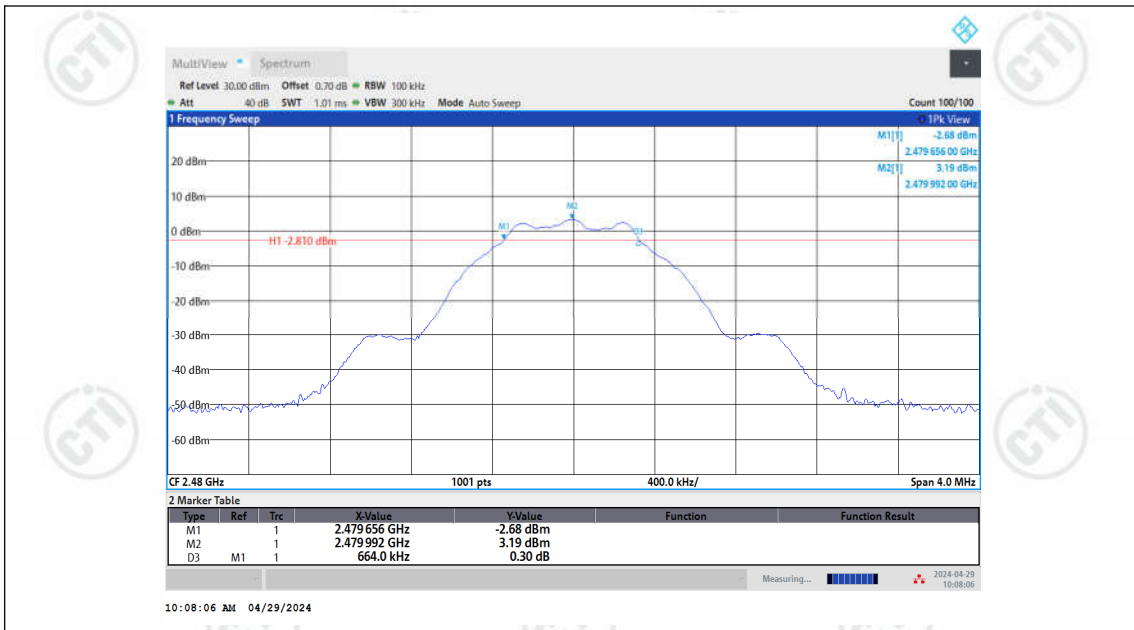
Test Graphs



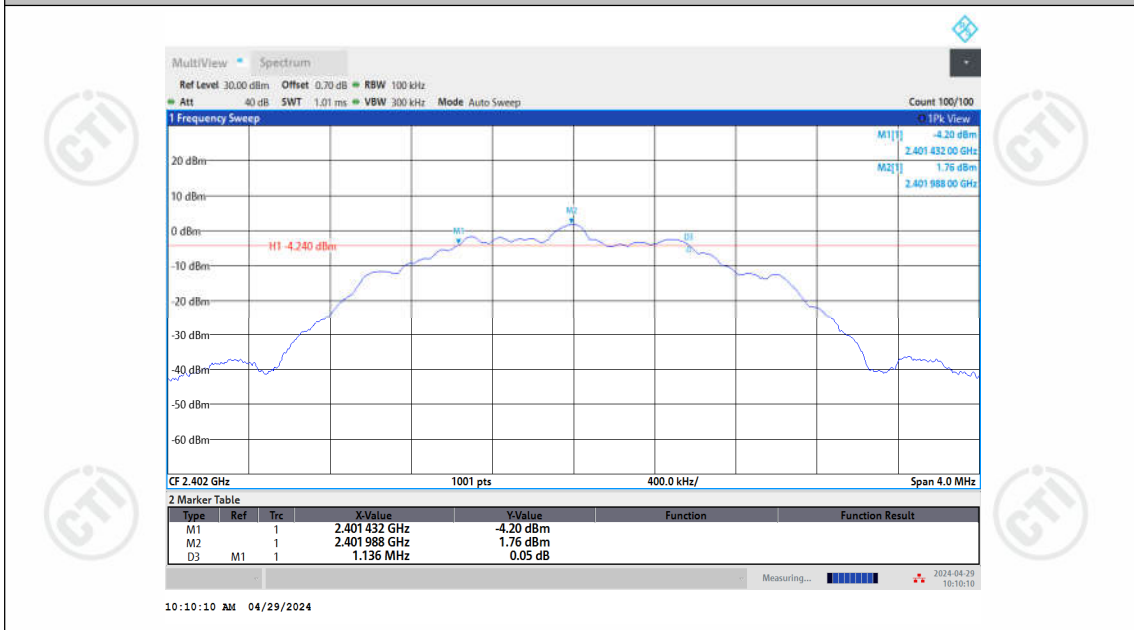
BLE_1M_Ant1_2402



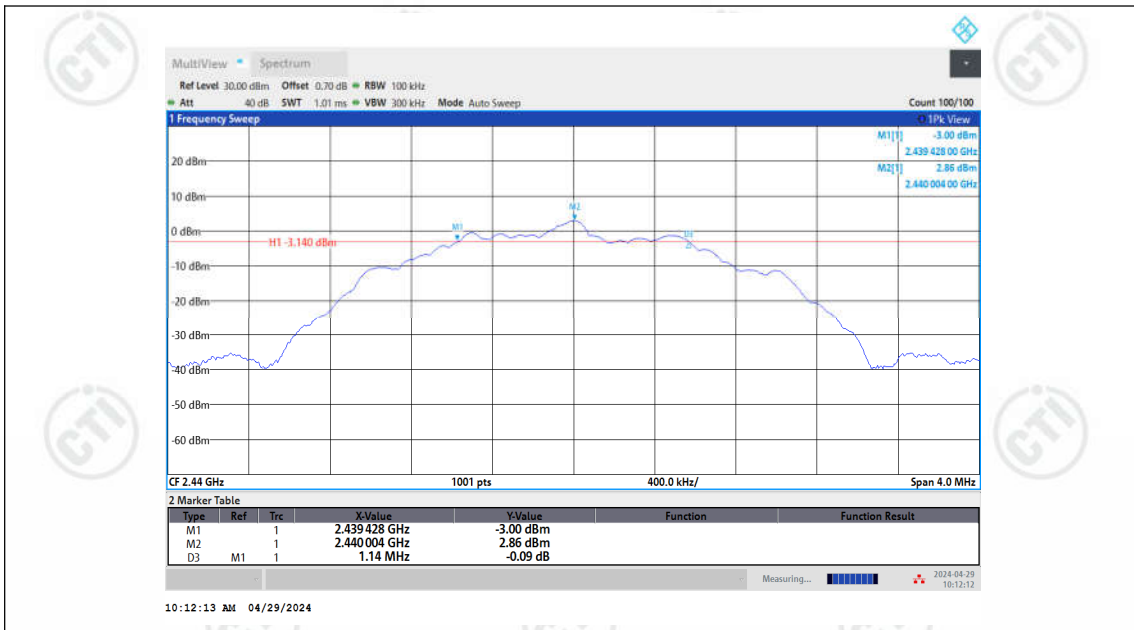
BLE_1M_Ant1_2440



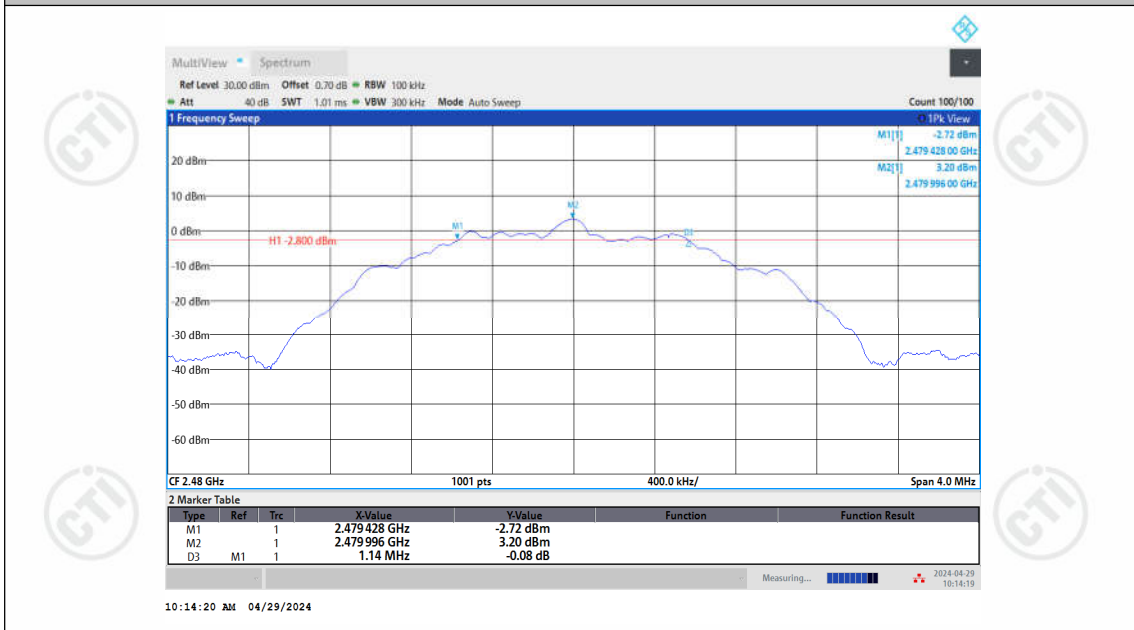
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

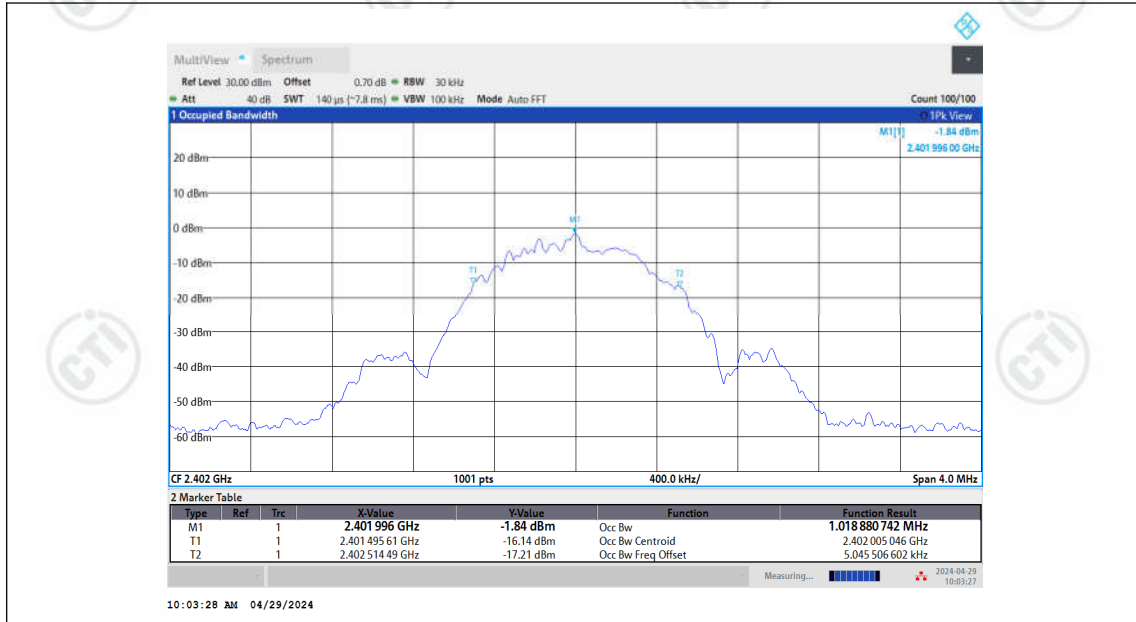


BLE_2M_Ant1_2480

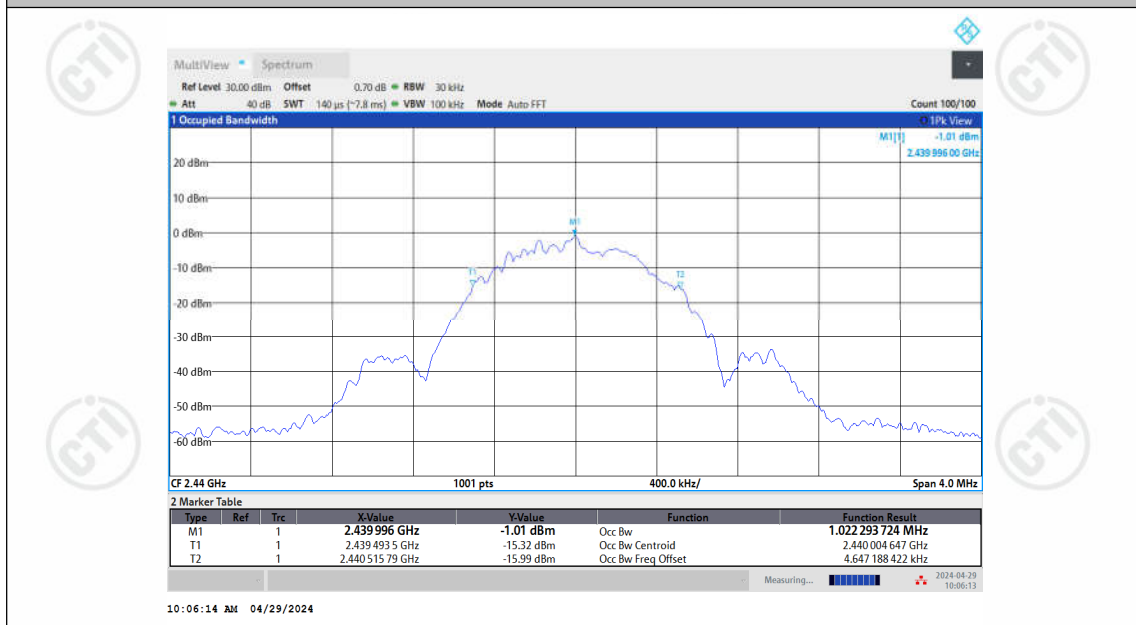
Appendix B: Occupied Channel Bandwidth**Test Result**

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.019	2401.496	2402.514	---	---
		2440	1.022	2439.494	2440.516	---	---
		2480	1.023	2479.493	2480.516	---	---
BLE_2M	Ant1	2402	2.01	2401.015	2403.025	---	---
		2440	2.011	2439.014	2441.025	---	---
		2480	2.012	2479.013	2481.025	---	---

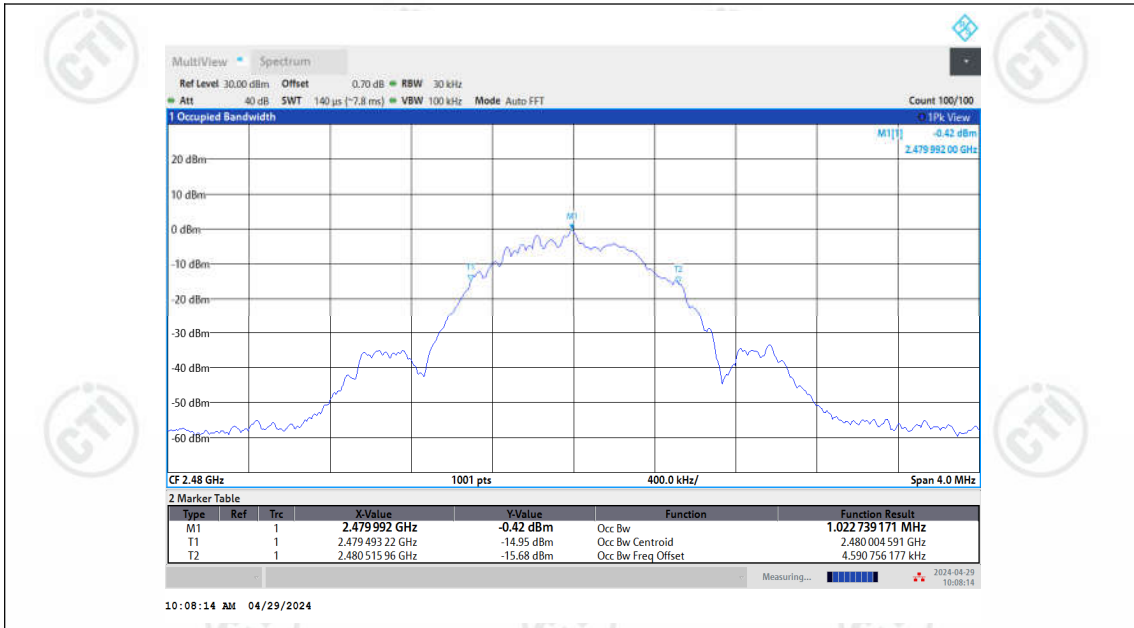
Test Graphs



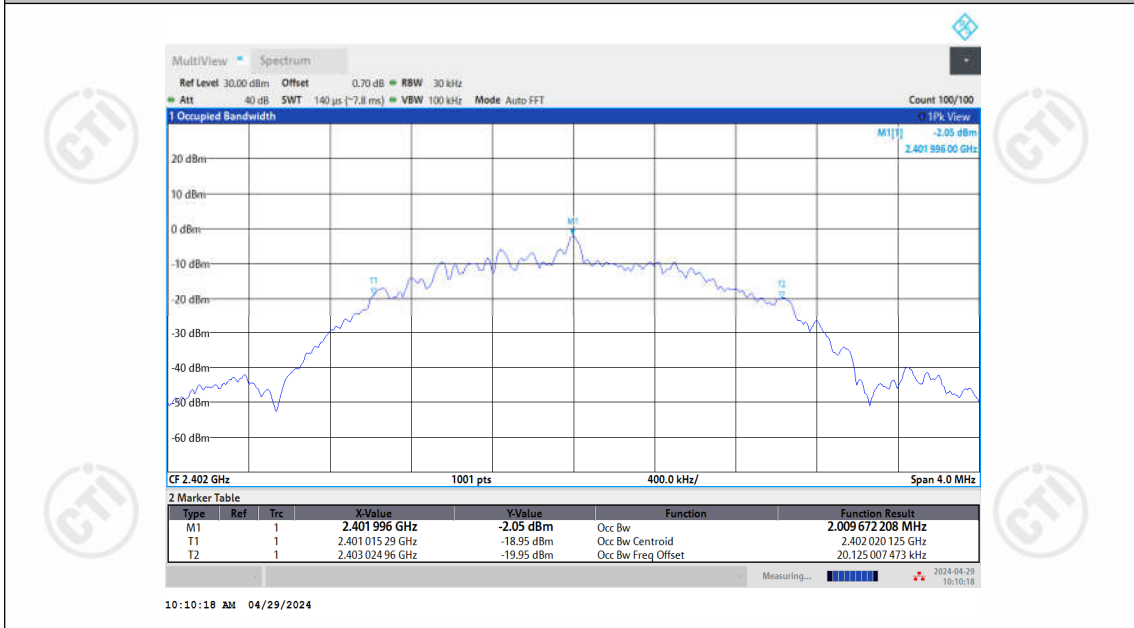
BLE_1M_Ant1_2402



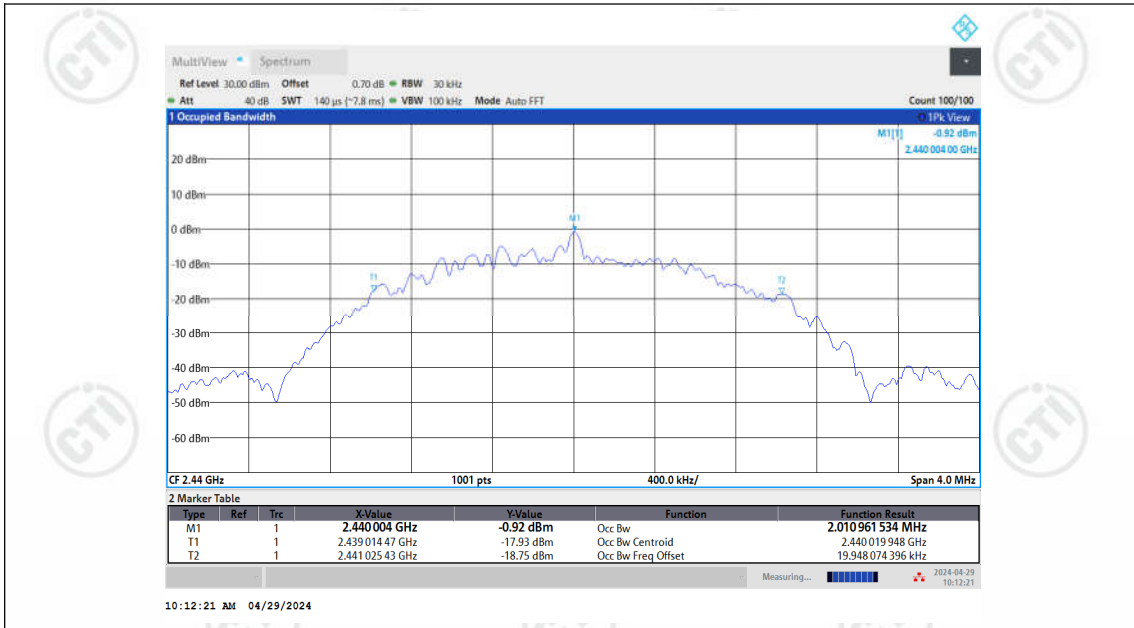
BLE_1M_Ant1_2440



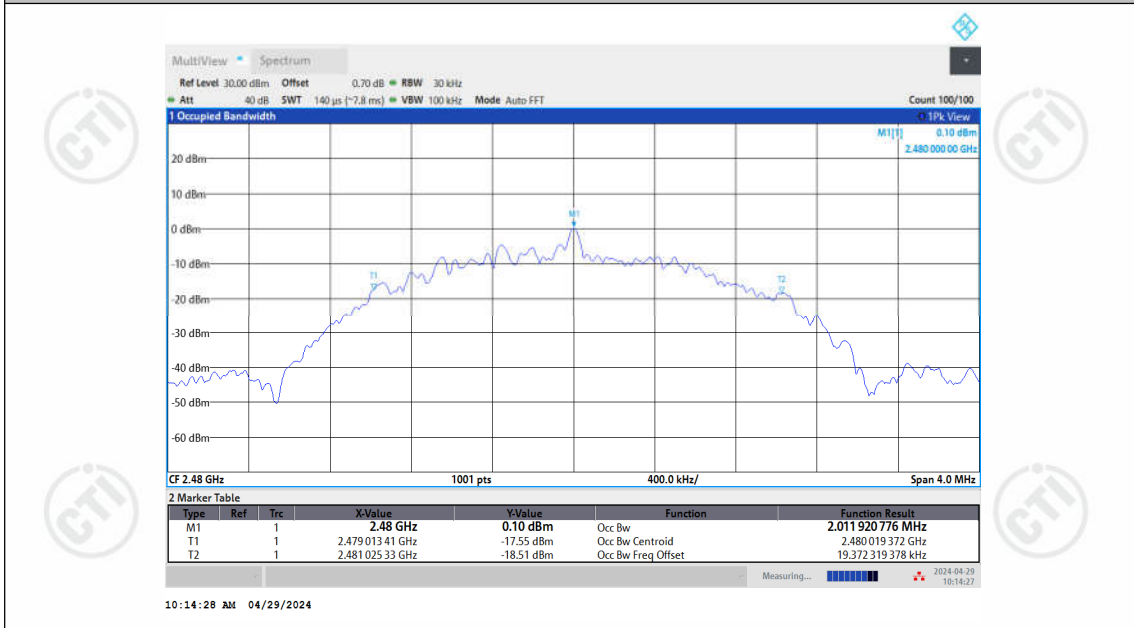
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



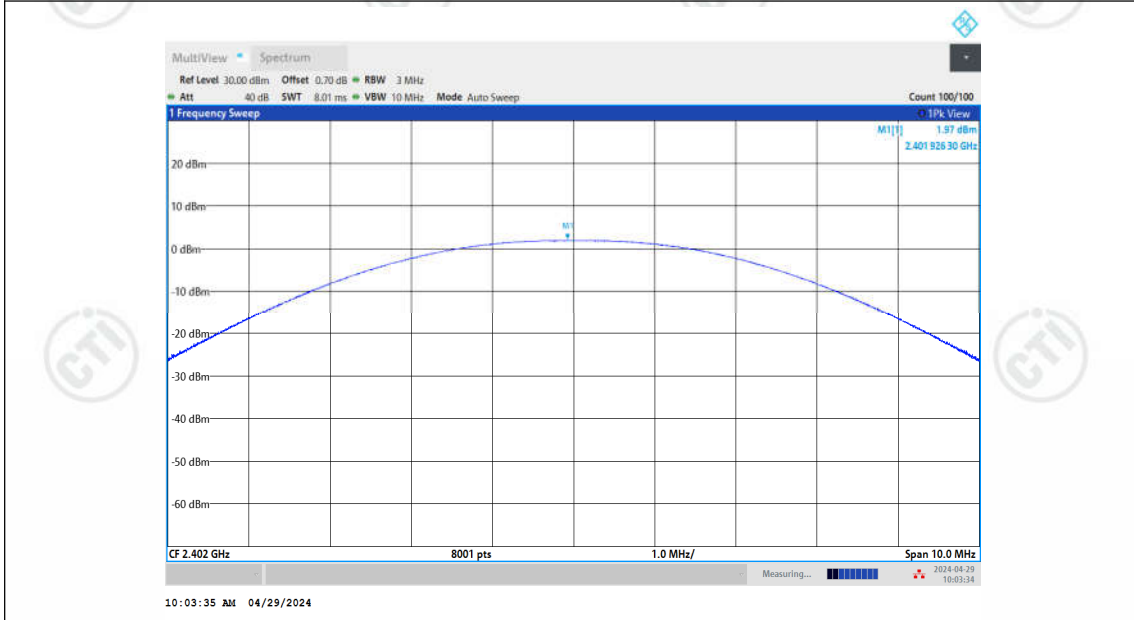
BLE_2M_Ant1_2480

Appendix C: Maximum conducted output power

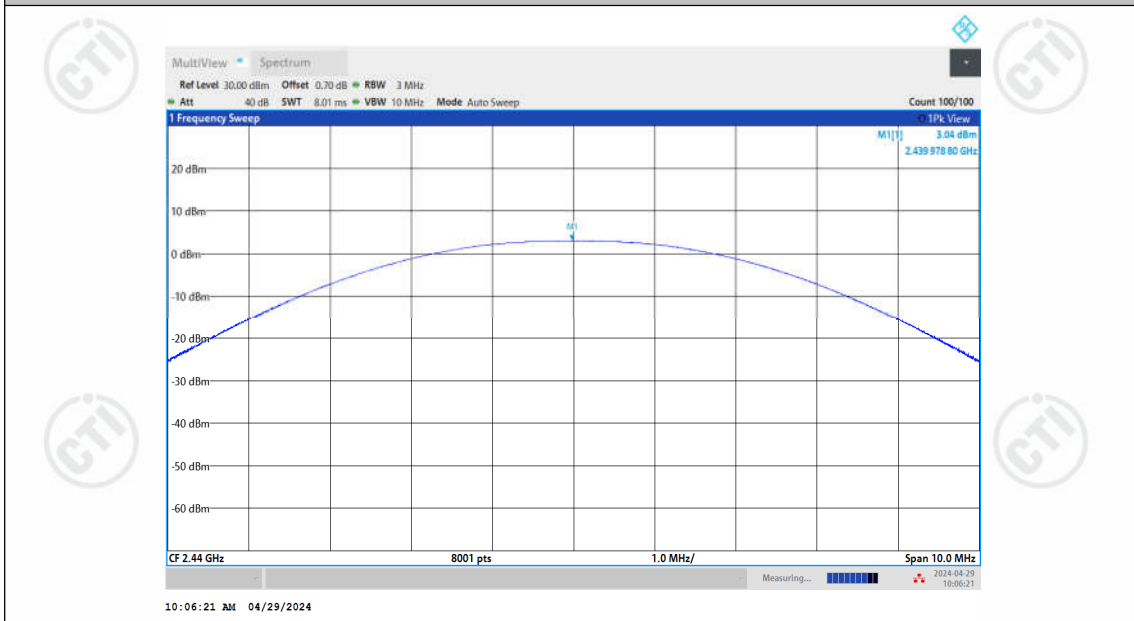
Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.97	≤30	PASS
		2440	3.04	≤30	PASS
		2480	3.27	≤30	PASS
BLE_2M	Ant1	2402	2.03	≤30	PASS
		2440	3.08	≤30	PASS
		2480	3.32	≤30	PASS

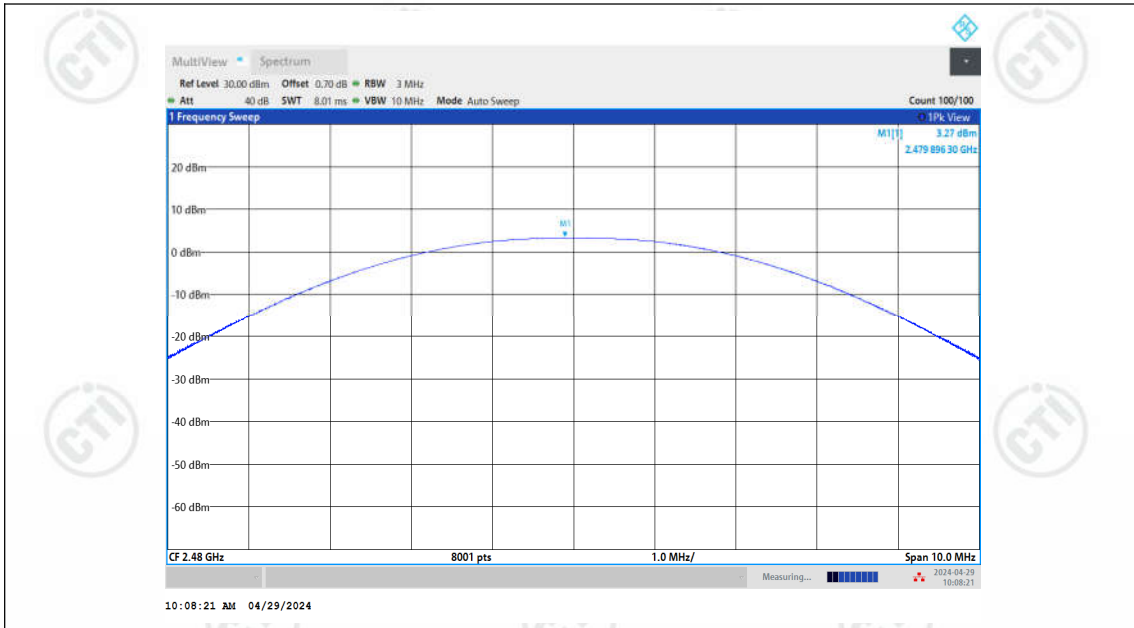
Test Graphs Peak



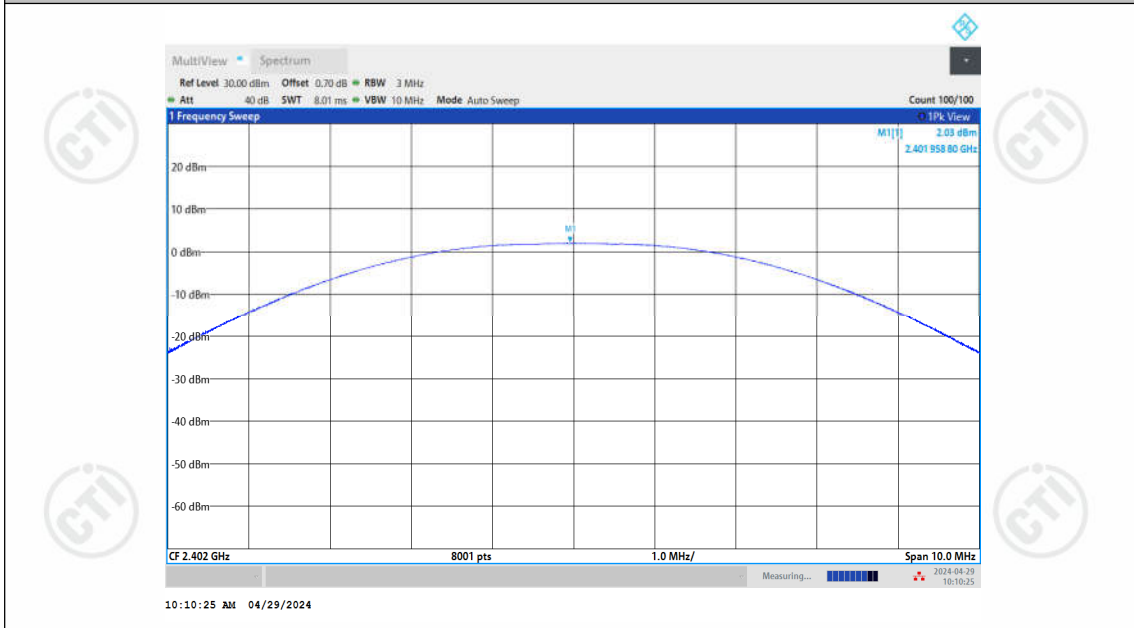
BLE_1M_Ant1_2402



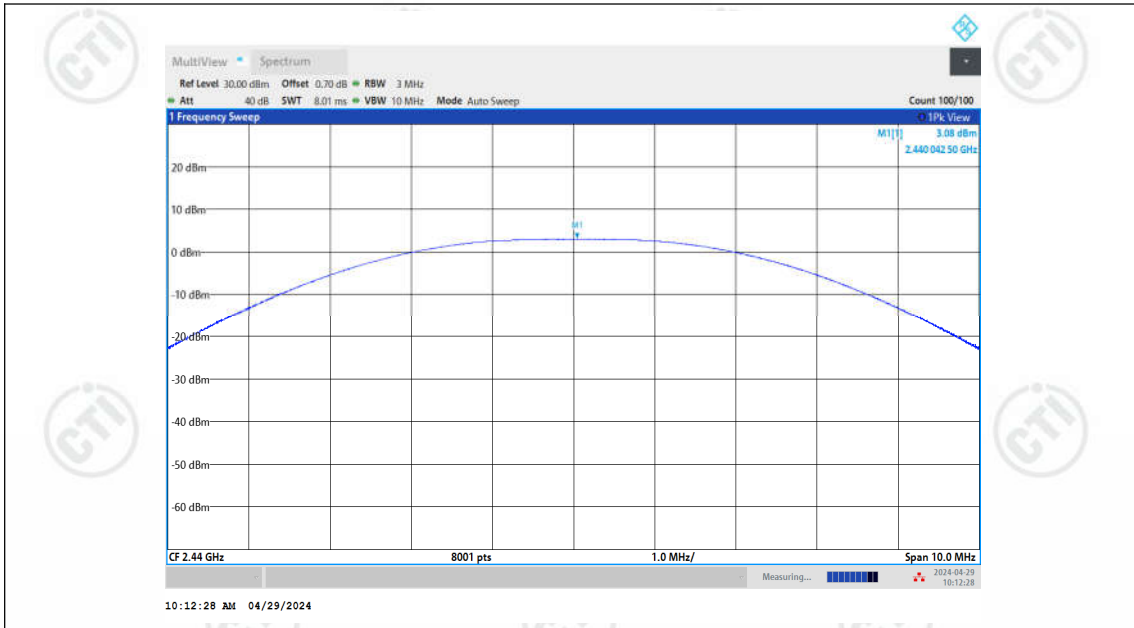
BLE_1M_Ant1_2440



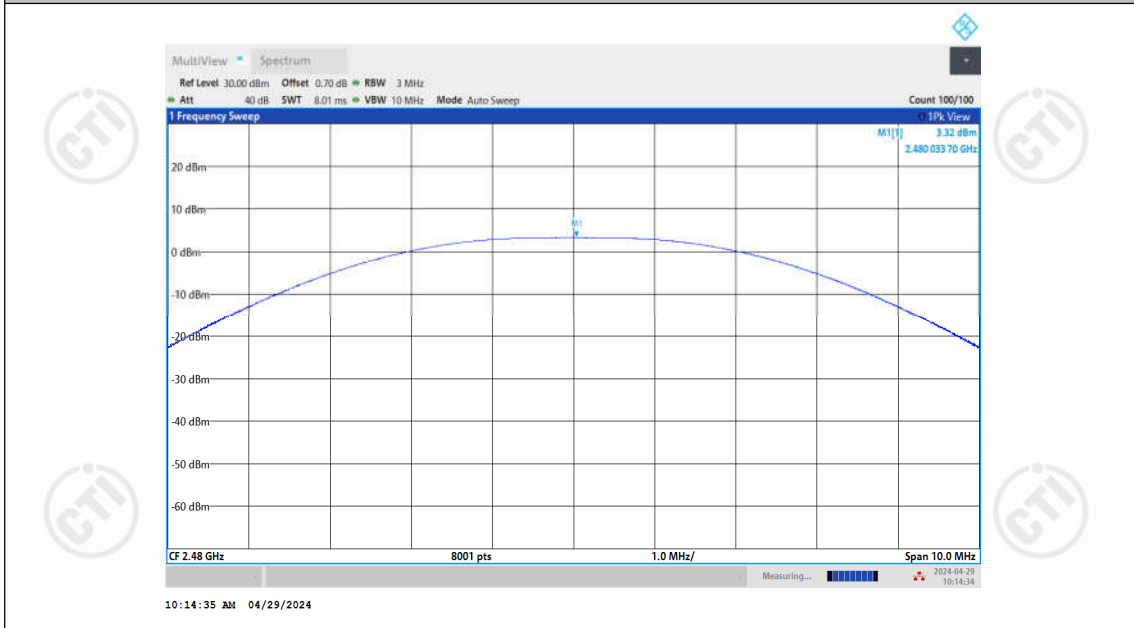
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

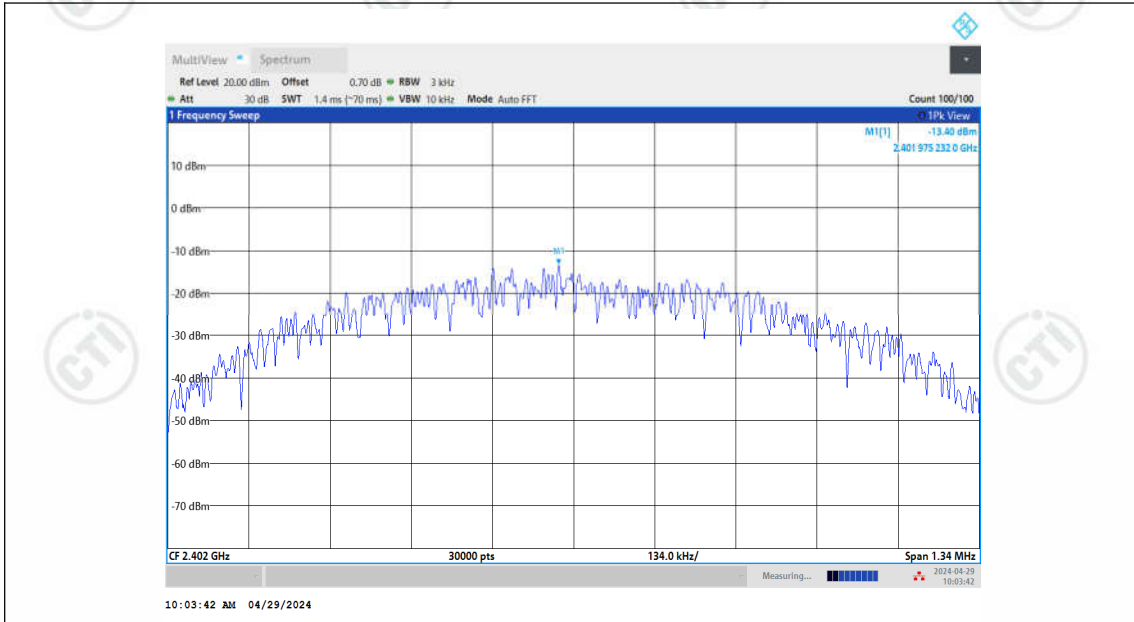


BLE_2M_Ant1_2480

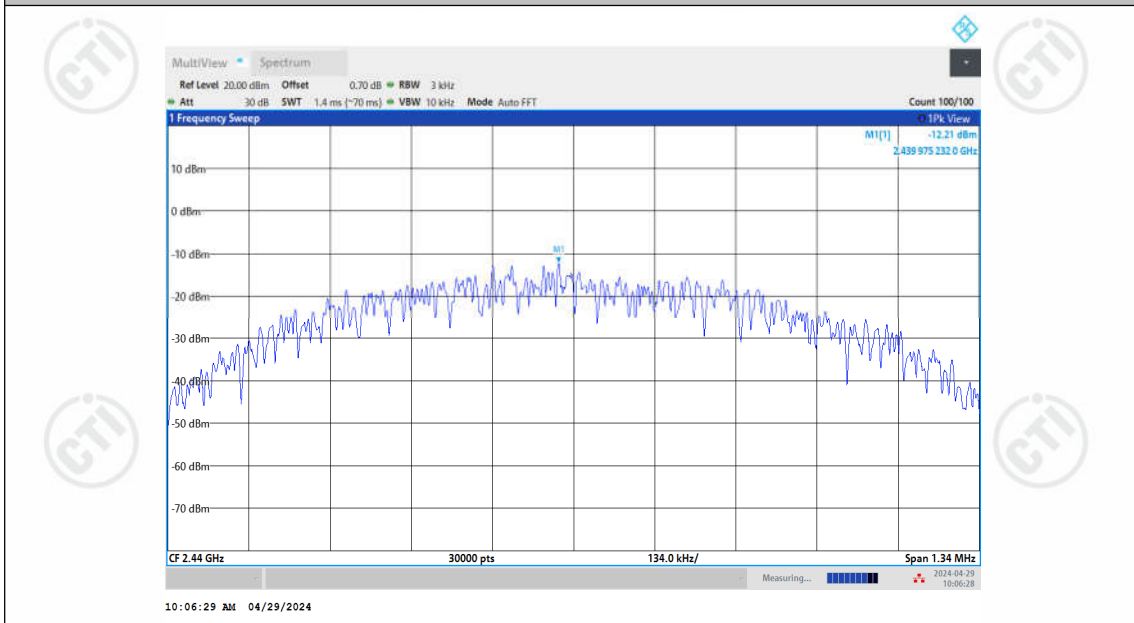
Appendix D: Maximum power spectral density**Test Result**

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.4	≤8.00	PASS
		2440	-12.21	≤8.00	PASS
		2480	-11.82	≤8.00	PASS
BLE_2M	Ant1	2402	-16.09	≤8.00	PASS
		2440	-15.08	≤8.00	PASS
		2480	-14.35	≤8.00	PASS

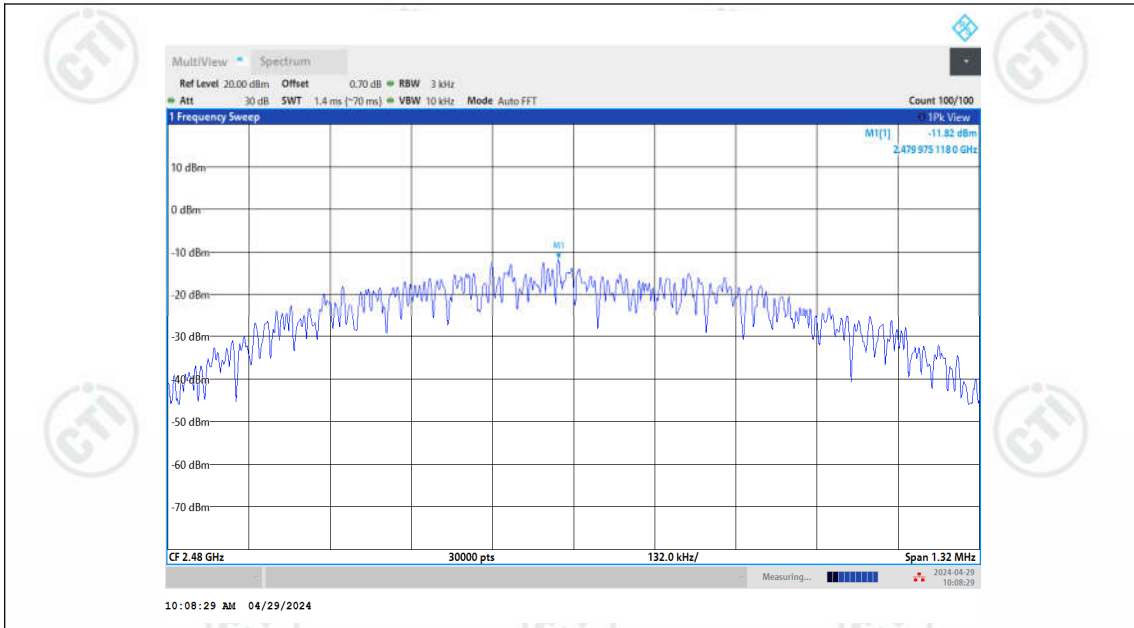
Test Graphs



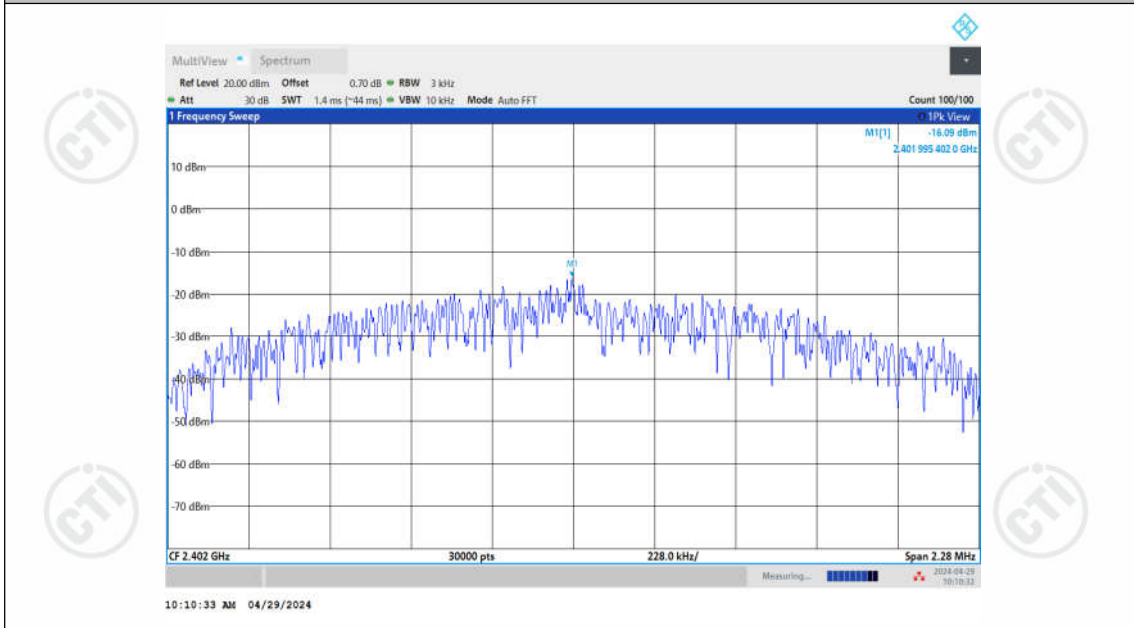
BLE_1M_Ant1_2402



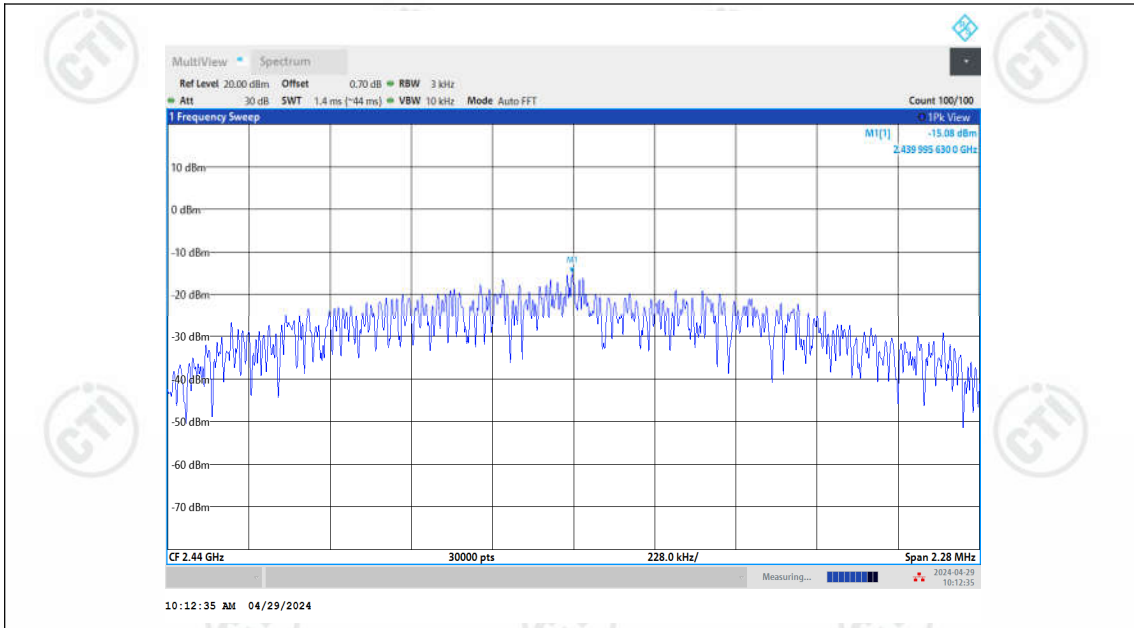
BLE_1M_Ant1_2440



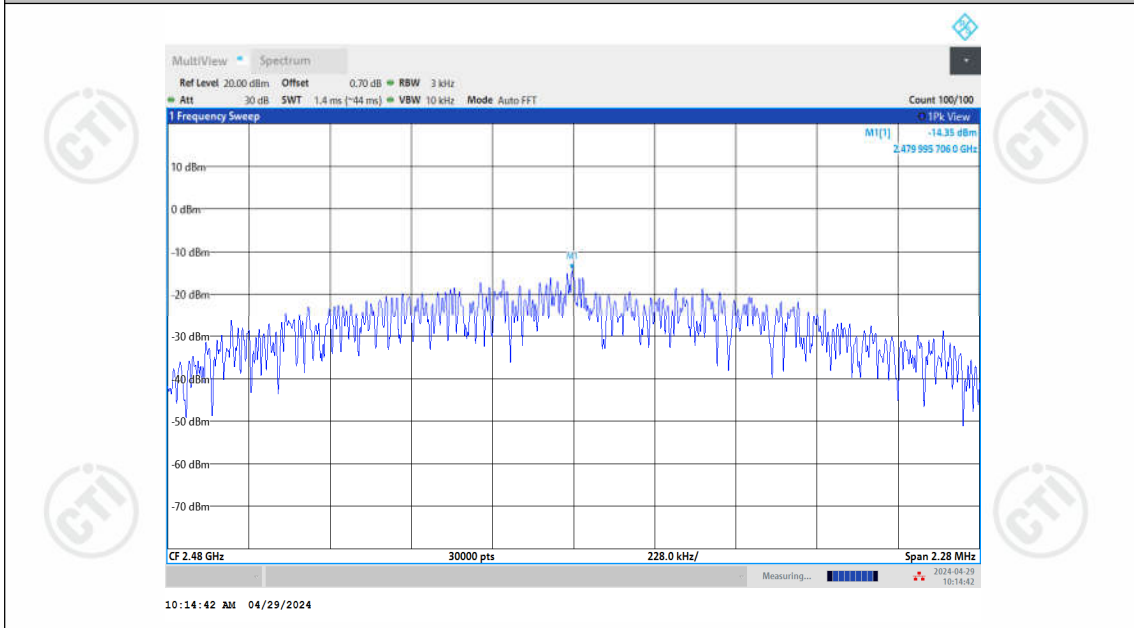
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

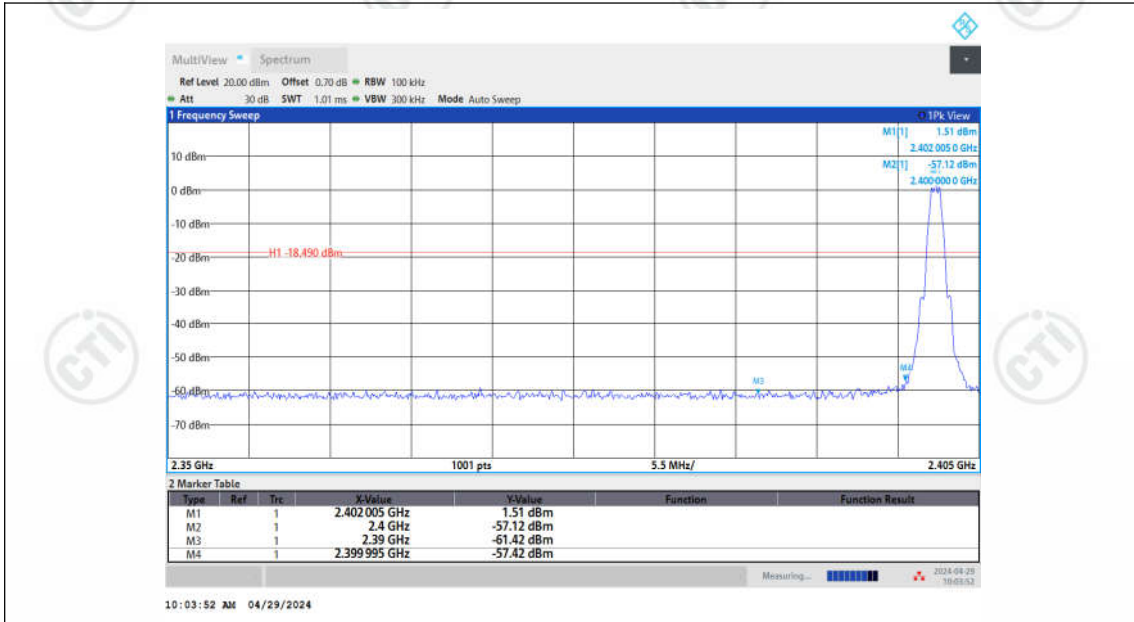


BLE_2M_Ant1_2480

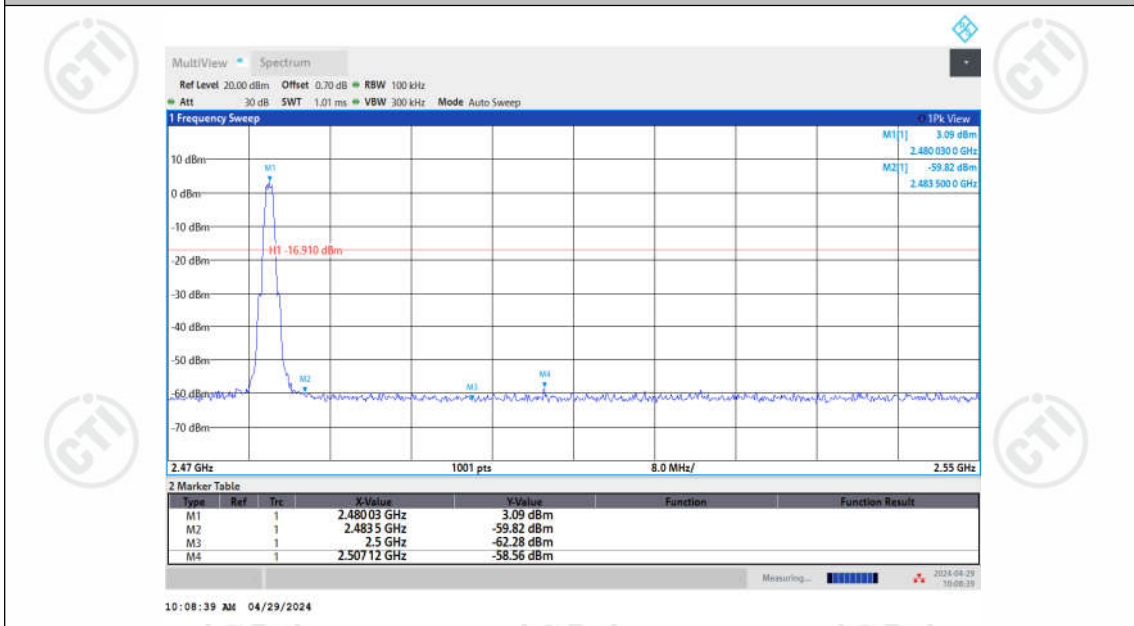
Appendix E: Band edge measurements**Test Result**

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.51	-57.42	≤-18.49	PASS
		High	2480	3.09	-58.56	≤-16.91	PASS
BLE_2M	Ant1	Low	2402	1.49	-43.47	≤-18.51	PASS
		High	2480	3.09	-59.22	≤-16.91	PASS

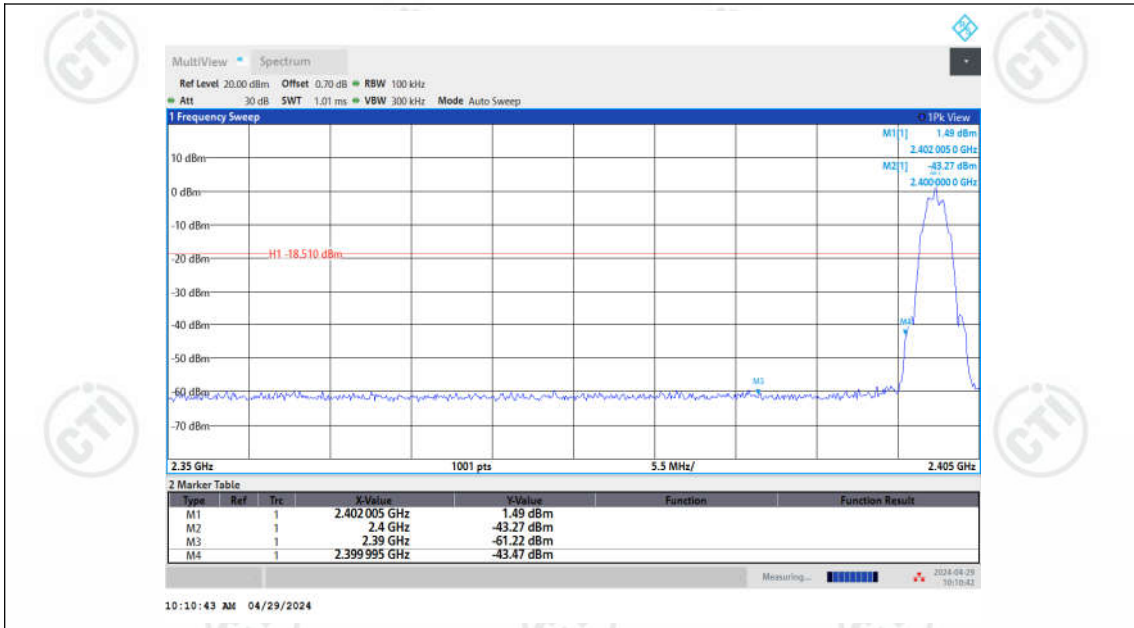
Test Graphs



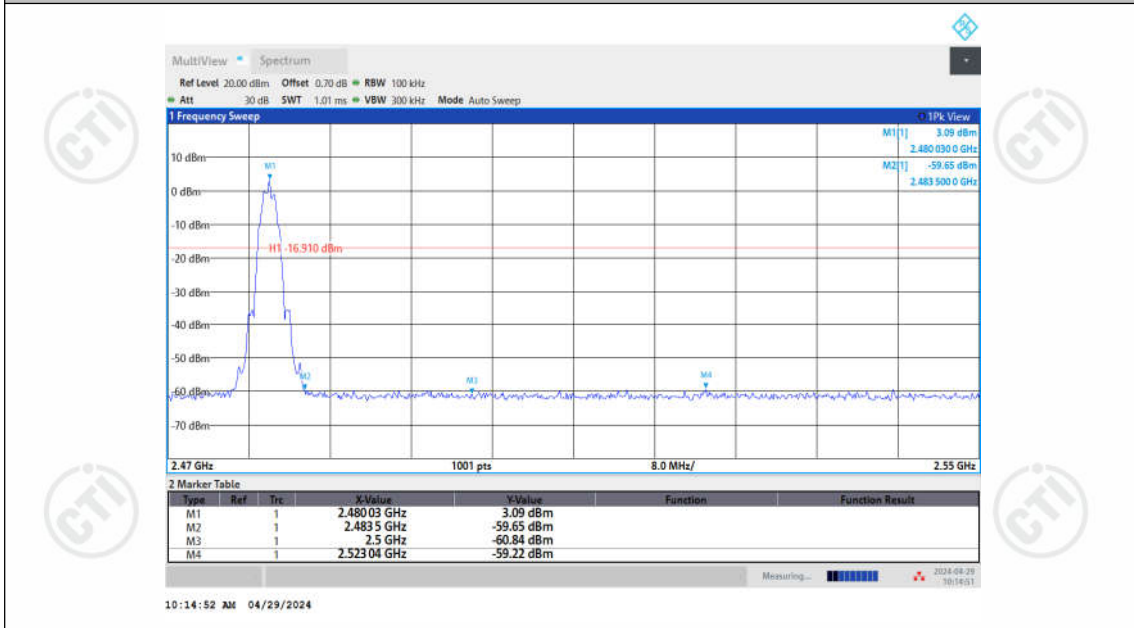
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



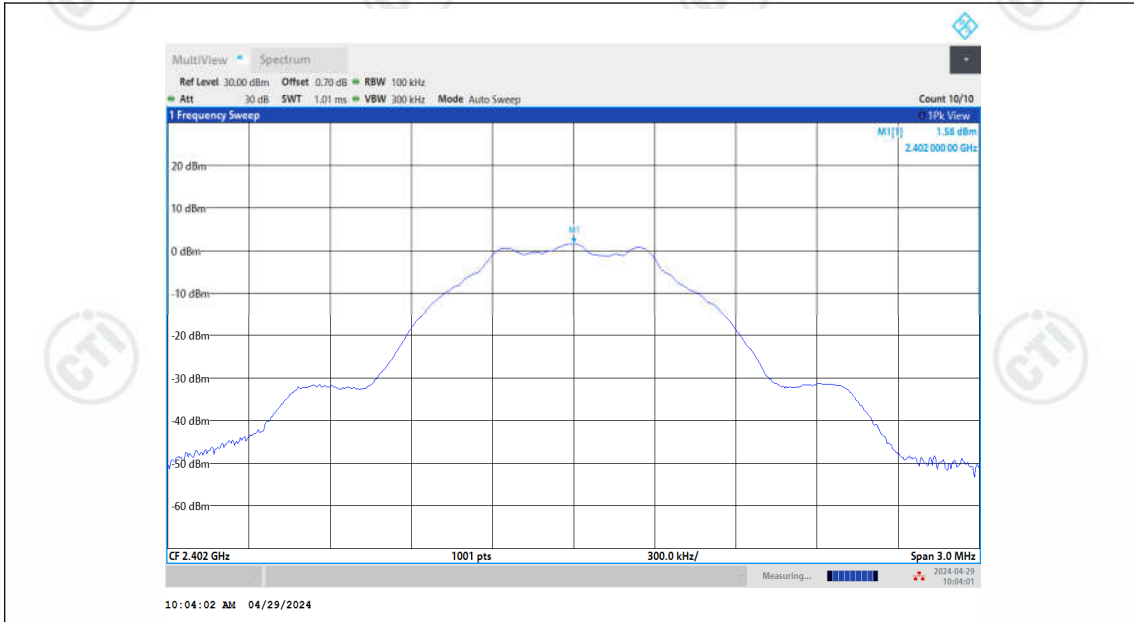
BLE_2M_Ant1_High_2480

Appendix F: Conducted Spurious Emission

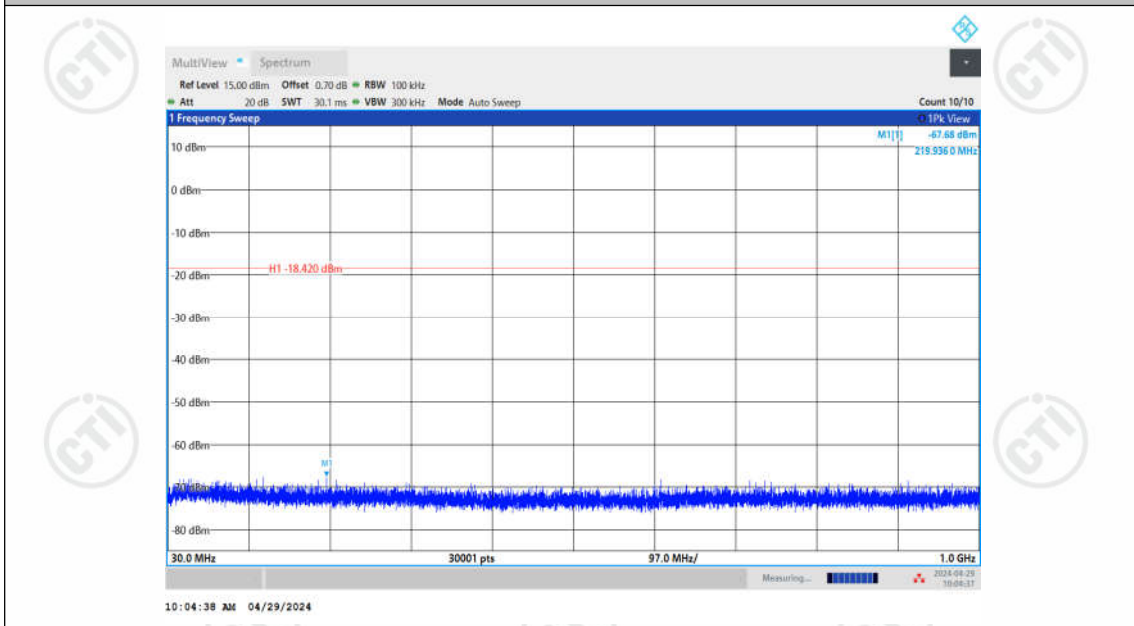
Test Result

Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.58	1.58	---	PASS
			30~1000	1.58	-67.68	≤-18.42	PASS
			1000~26500	1.58	-59.74	≤-18.42	PASS
		2440	Reference	2.80	2.80	---	PASS
			30~1000	2.80	-67.3	≤-17.2	PASS
			1000~26500	2.80	-60.32	≤-17.2	PASS
		2480	Reference	3.21	3.21	---	PASS
			30~1000	3.21	-67.14	≤-16.79	PASS
			1000~26500	3.21	-59.54	≤-16.79	PASS
BLE_2M	Ant1	2402	Reference	1.60	1.60	---	PASS
			30~1000	1.60	-66.44	≤-18.4	PASS
			1000~26500	1.60	-59.86	≤-18.4	PASS
		2440	Reference	2.80	2.80	---	PASS
			30~1000	2.80	-67.19	≤-17.2	PASS
			1000~26500	2.80	-60.11	≤-17.2	PASS
		2480	Reference	3.23	3.23	---	PASS
			30~1000	3.23	-66.77	≤-16.77	PASS
			1000~26500	3.23	-60.16	≤-16.77	PASS

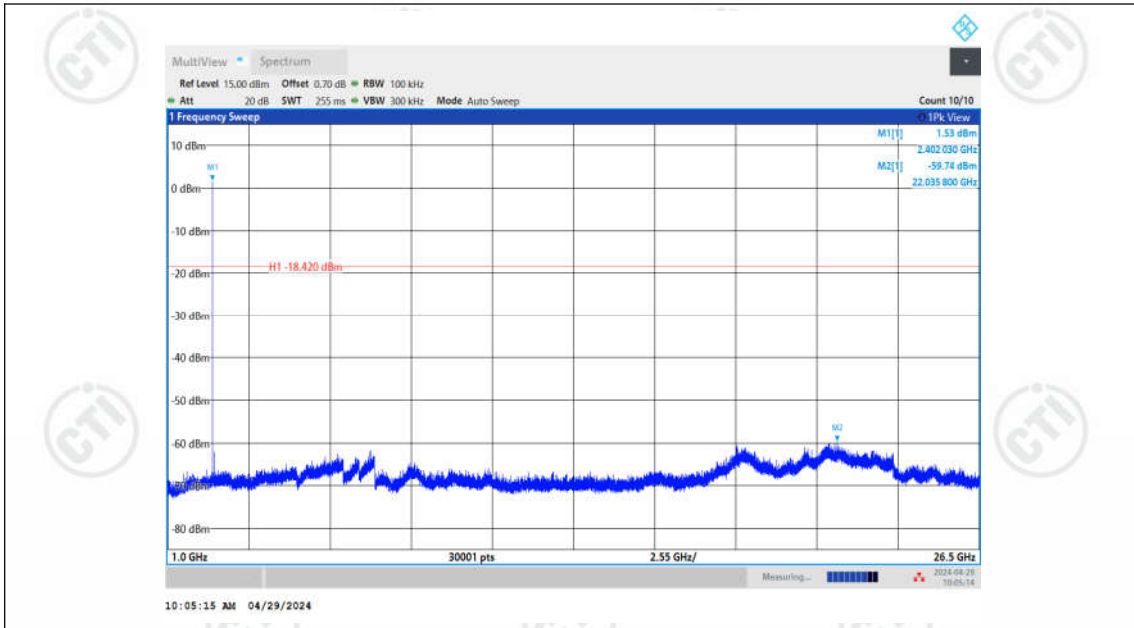
Test Graphs



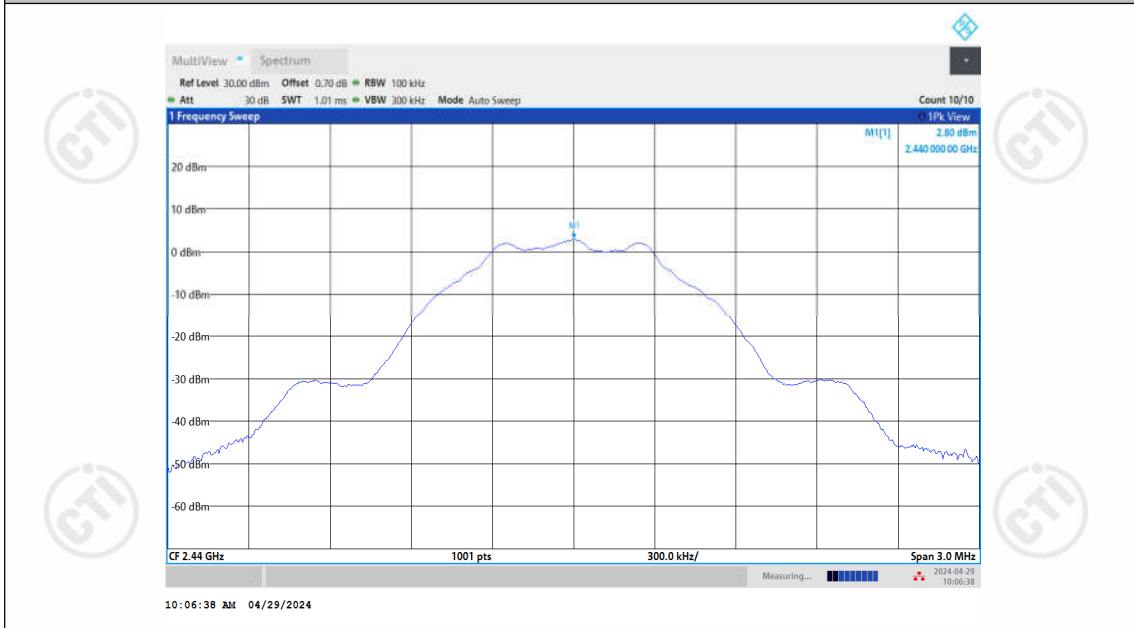
BLE_1M_Ant1_2402_0~Reference



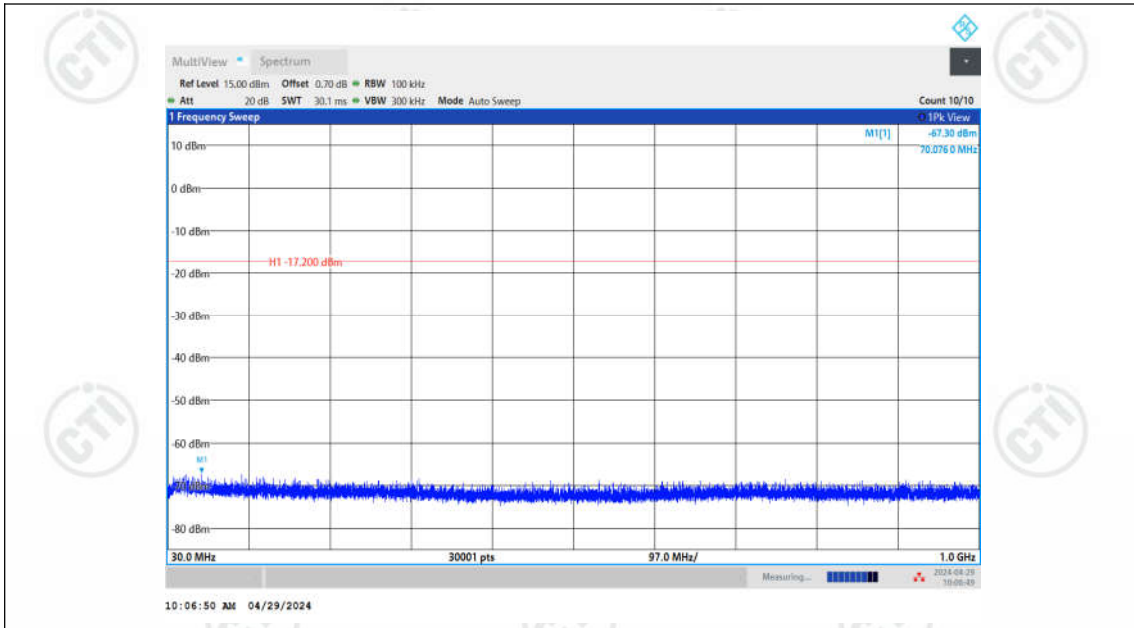
BLE_1M_Ant1_2402_30~1000



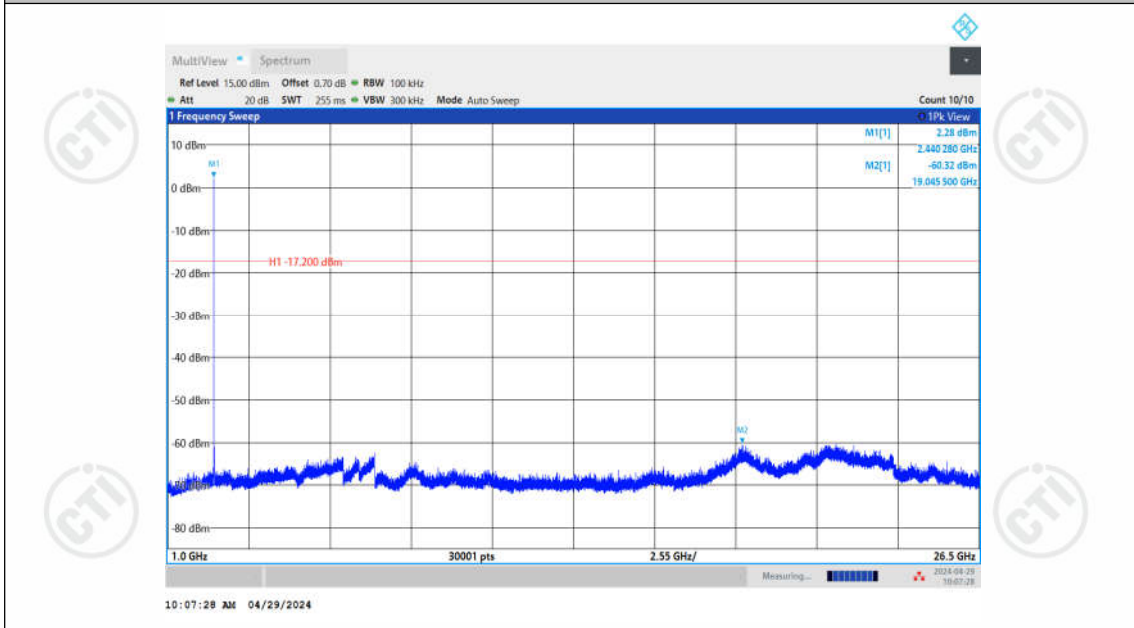
BLE_1M_Ant1_2402_1000~26500



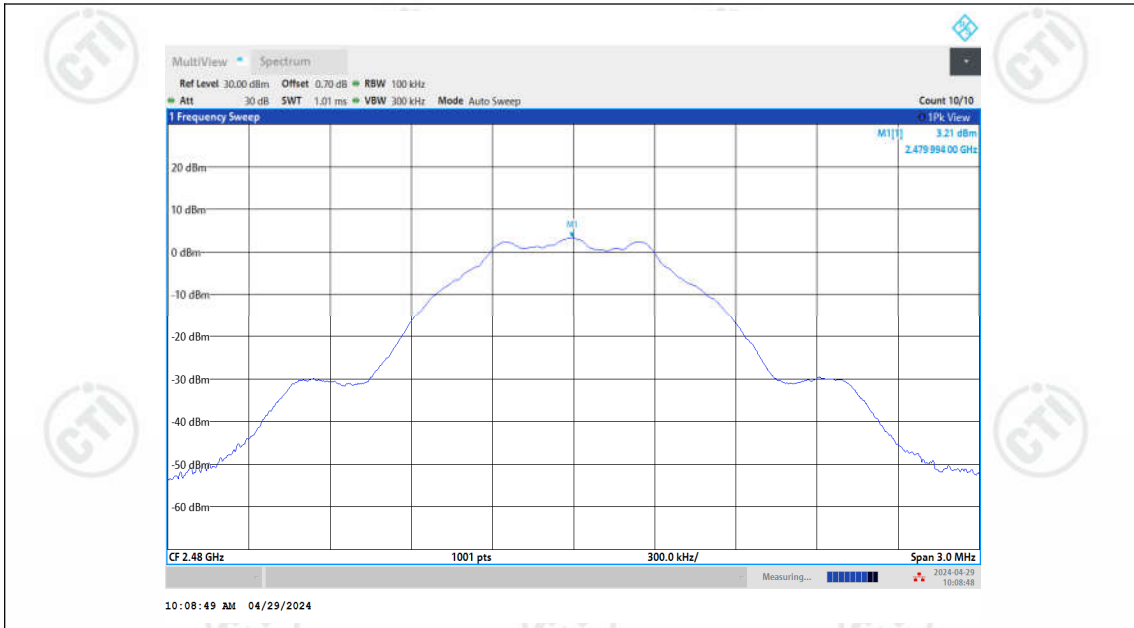
BLE_1M_Ant1_2440_0~Reference



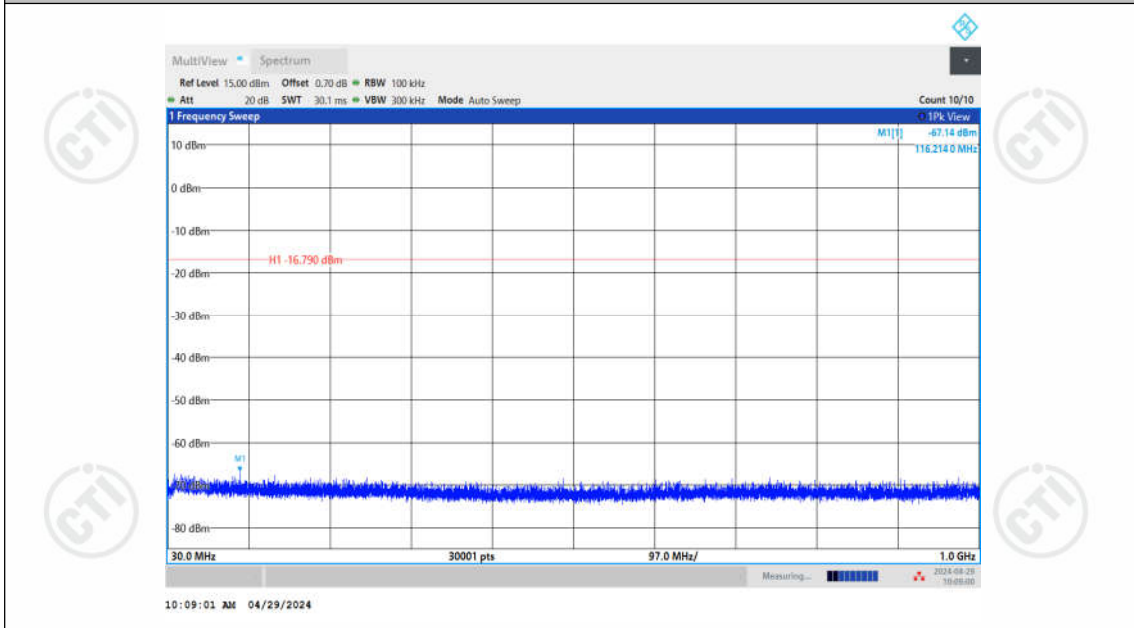
BLE_1M_Ant1_2440_30~1000



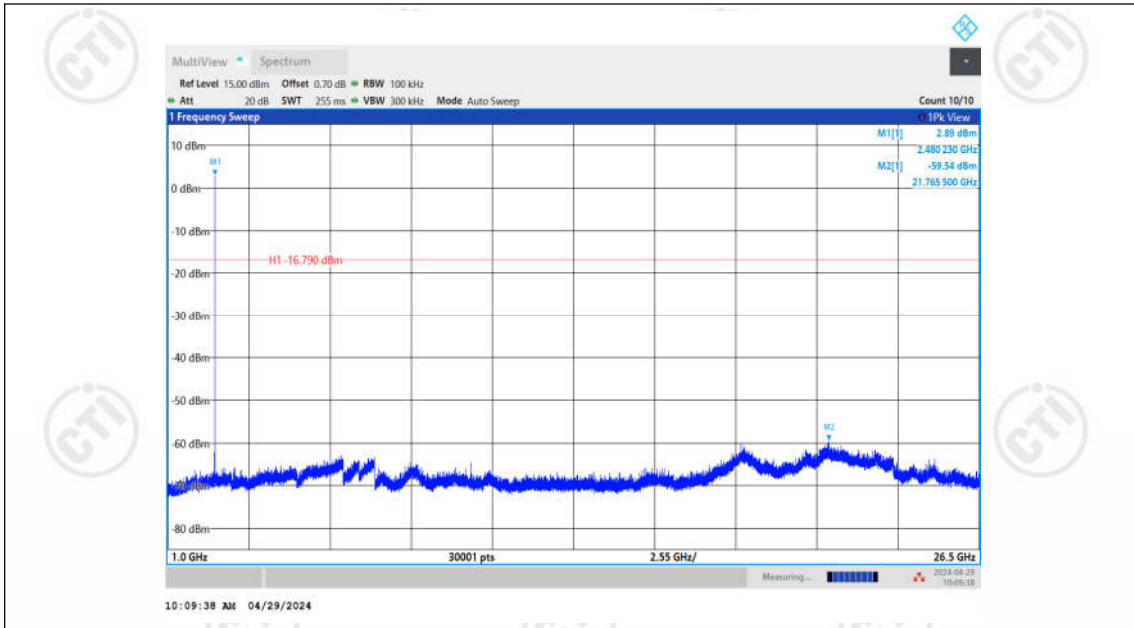
BLE_1M_Ant1_2440_1000~26500



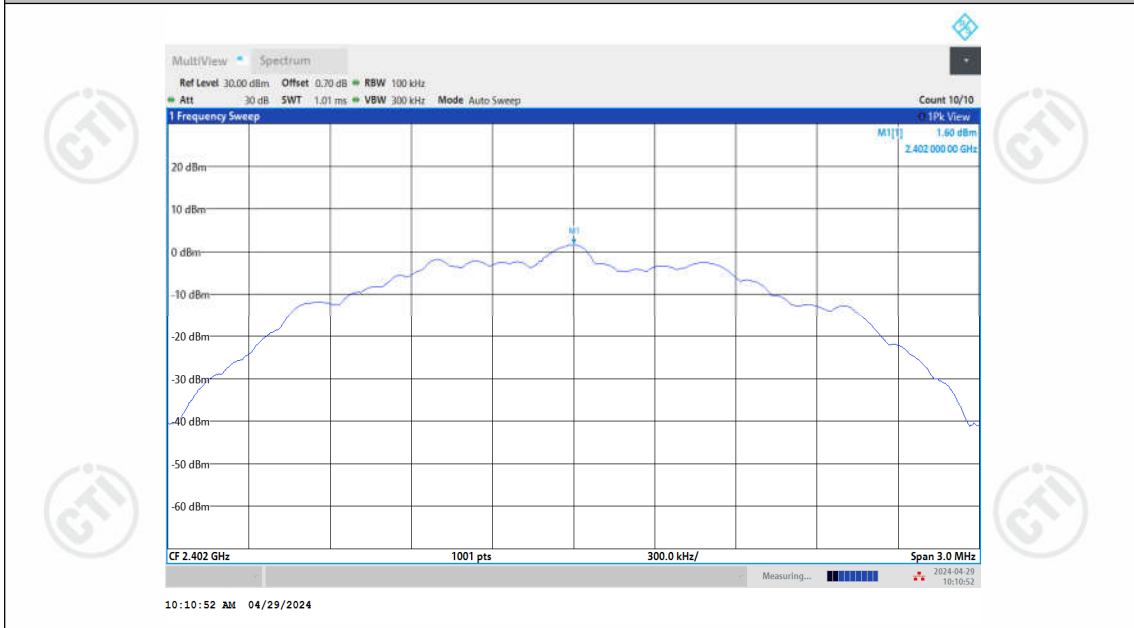
BLE_1M_Ant1_2480_0~Reference



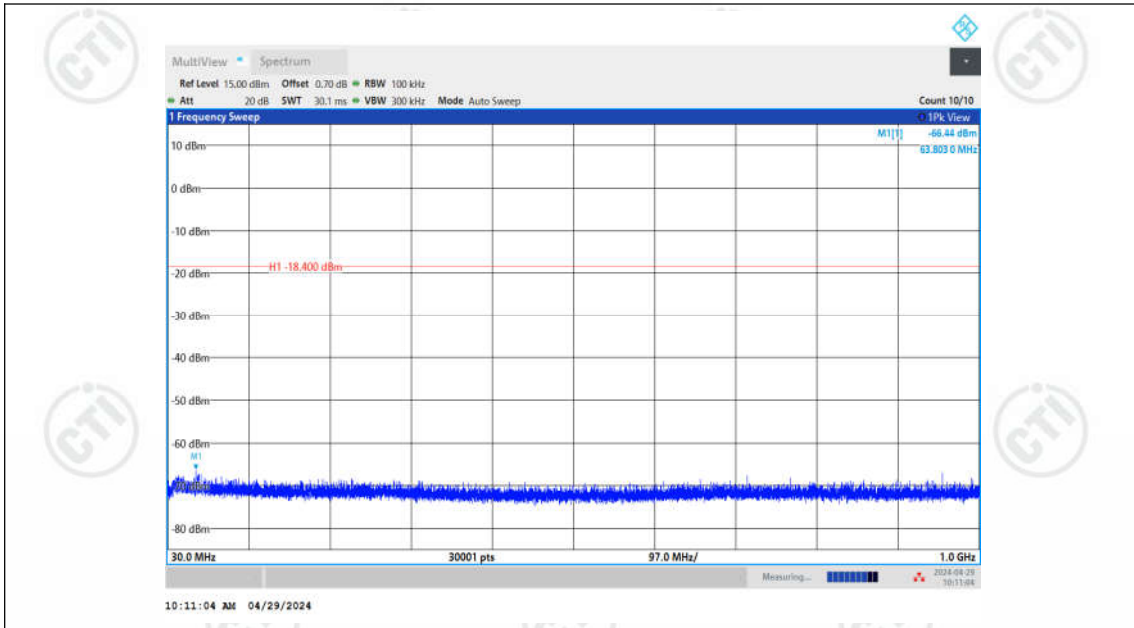
BLE_1M_Ant1_2480_30~1000



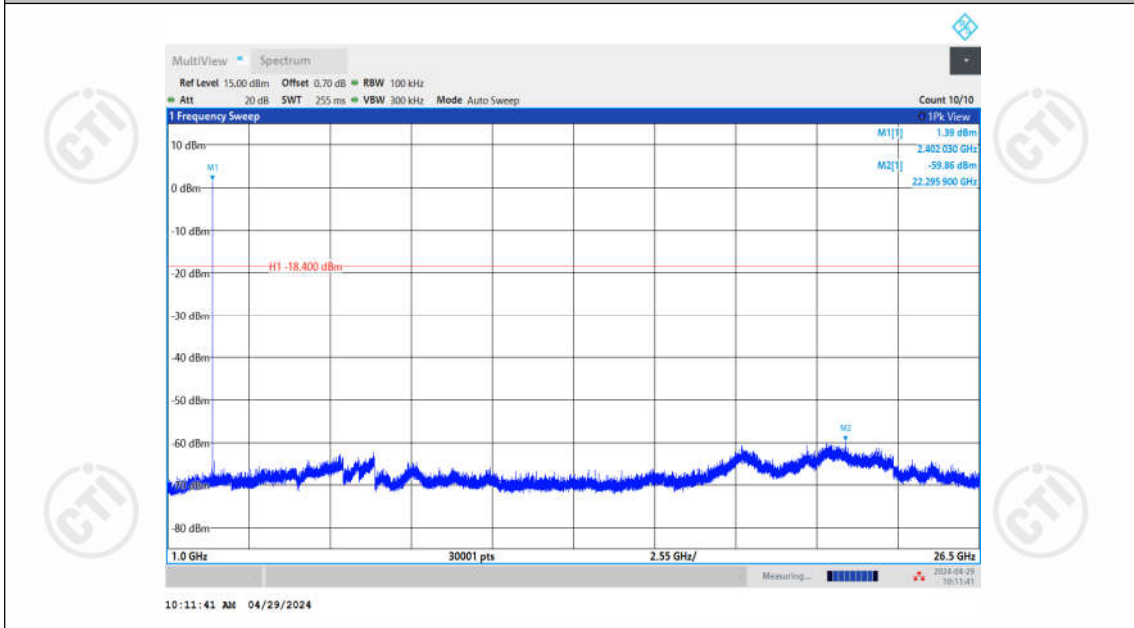
BLE_1M_Ant1_2480_1000~26500



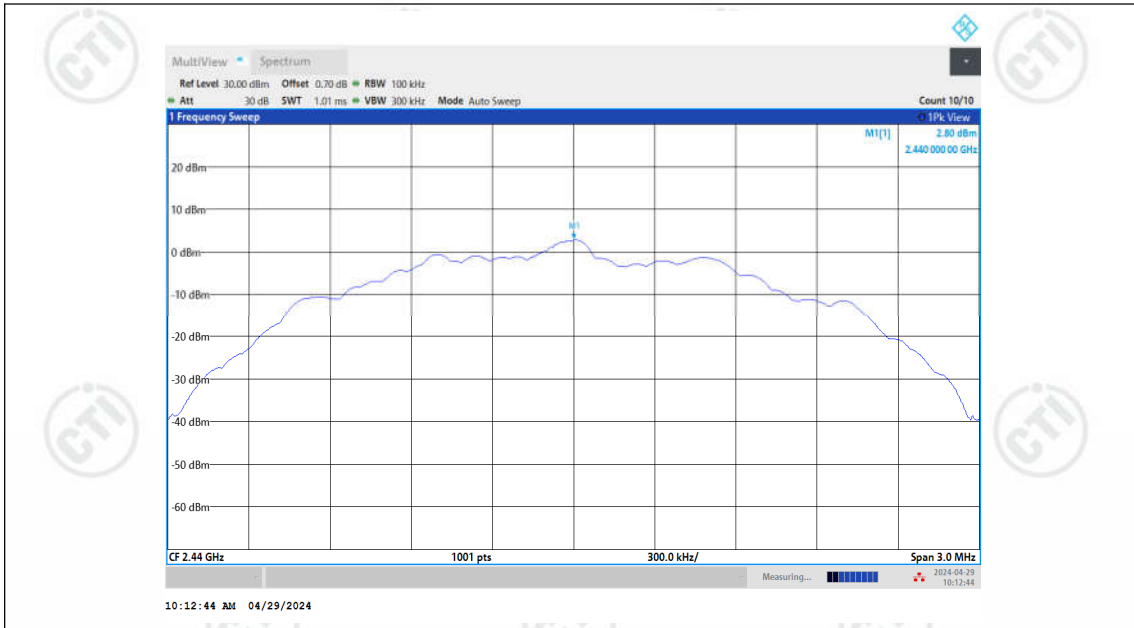
BLE_2M_Ant1_2402_0~Reference



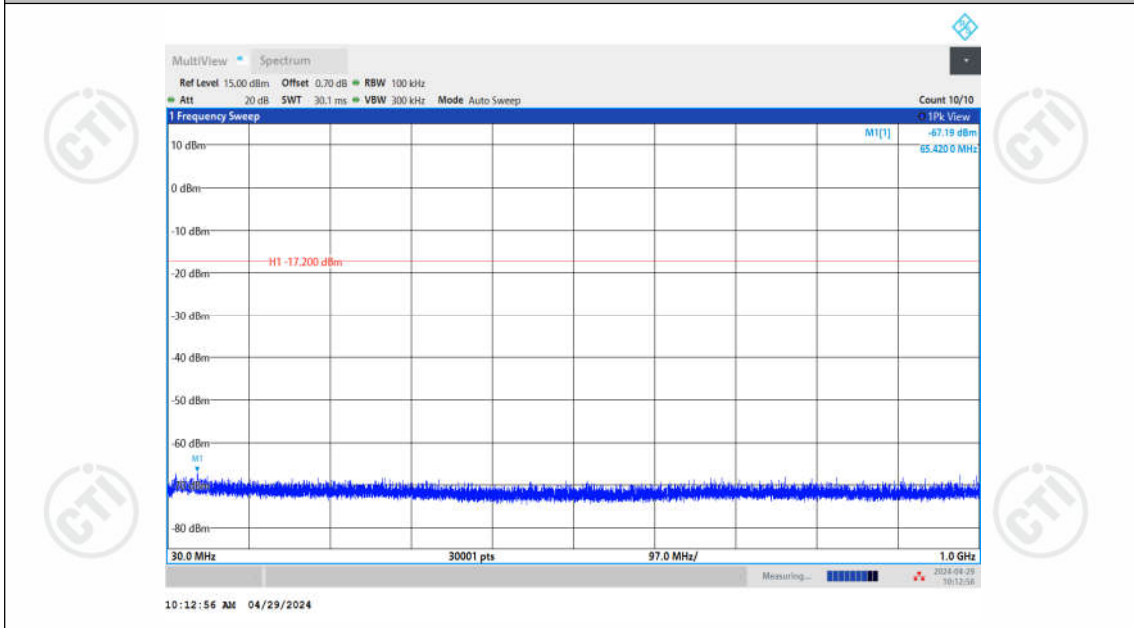
BLE_2M_Ant1_2402_30~1000



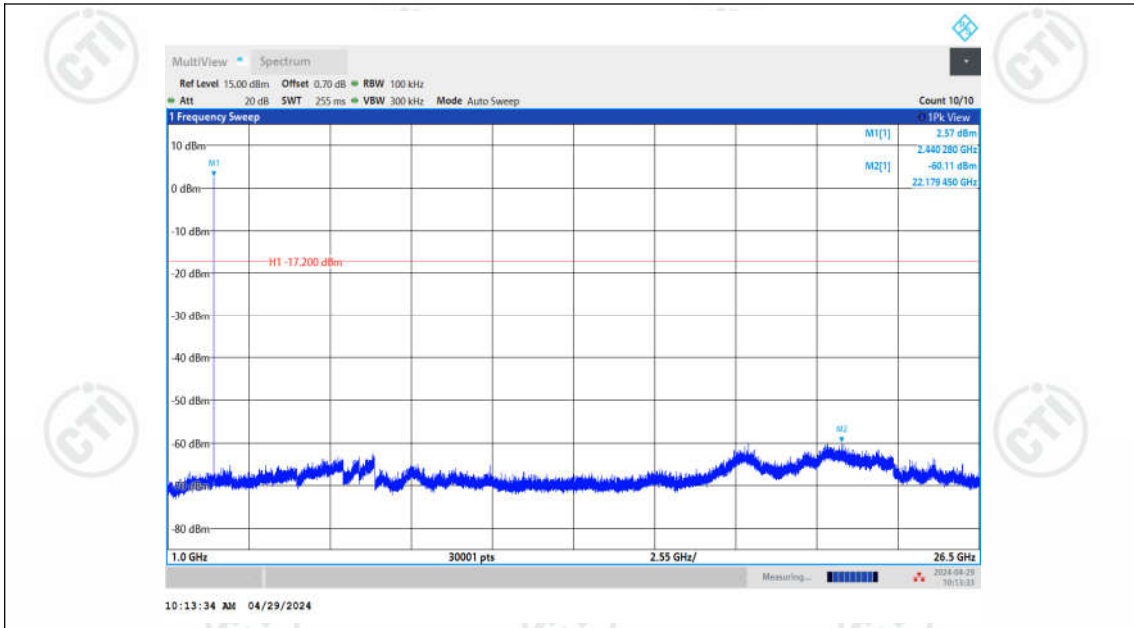
BLE_2M_Ant1_2402_1000~26500



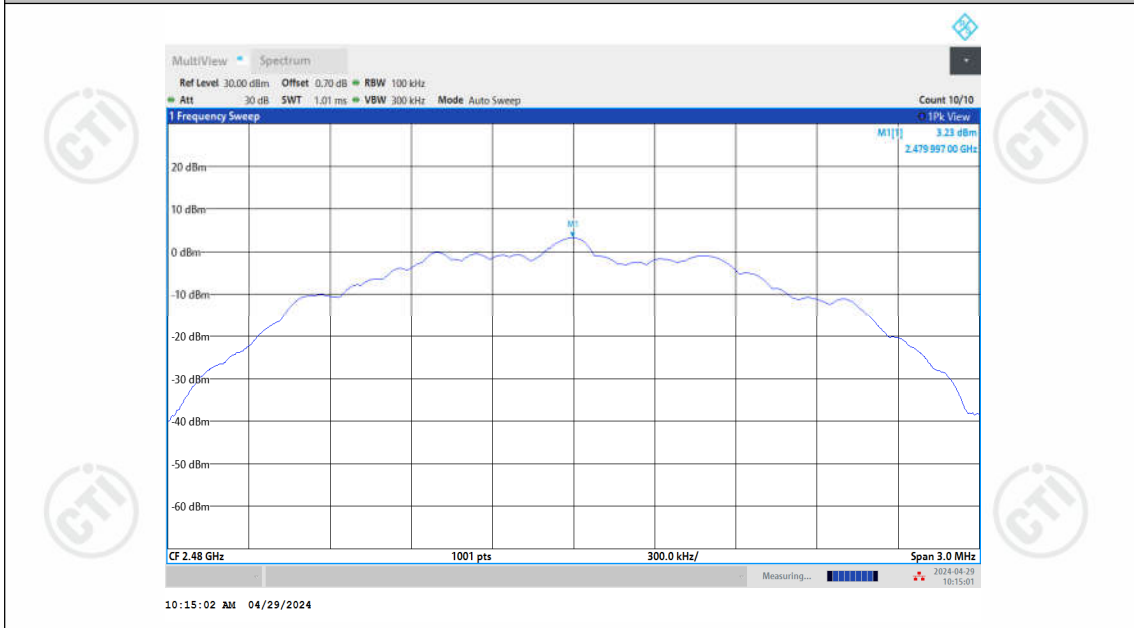
BLE_2M_Ant1_2440_0~Reference



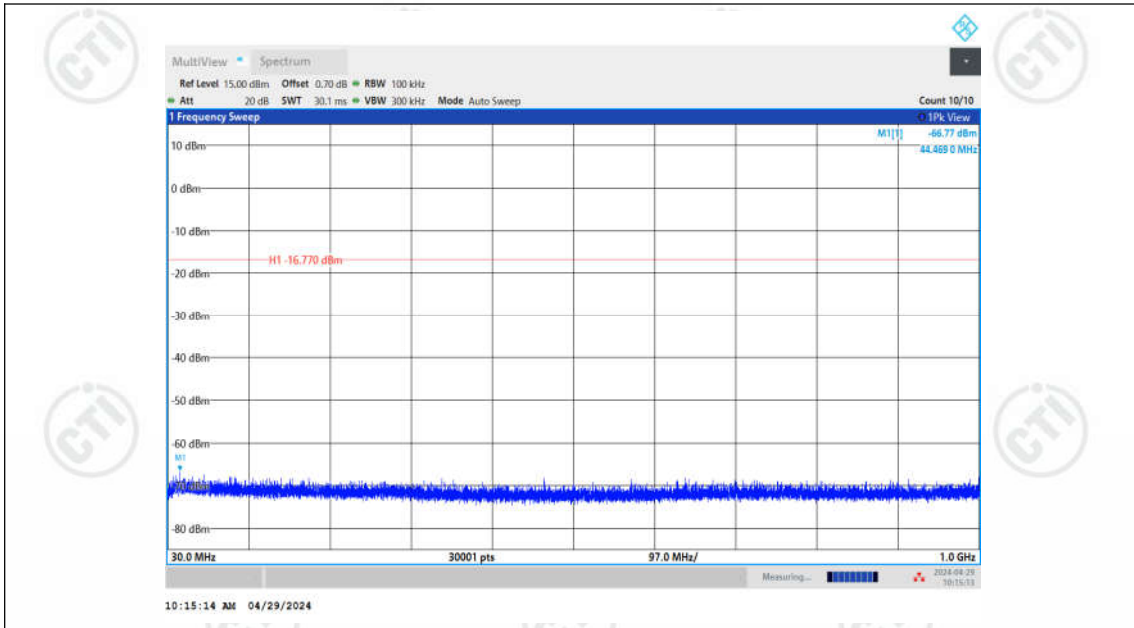
BLE_2M_Ant1_2440_30~1000



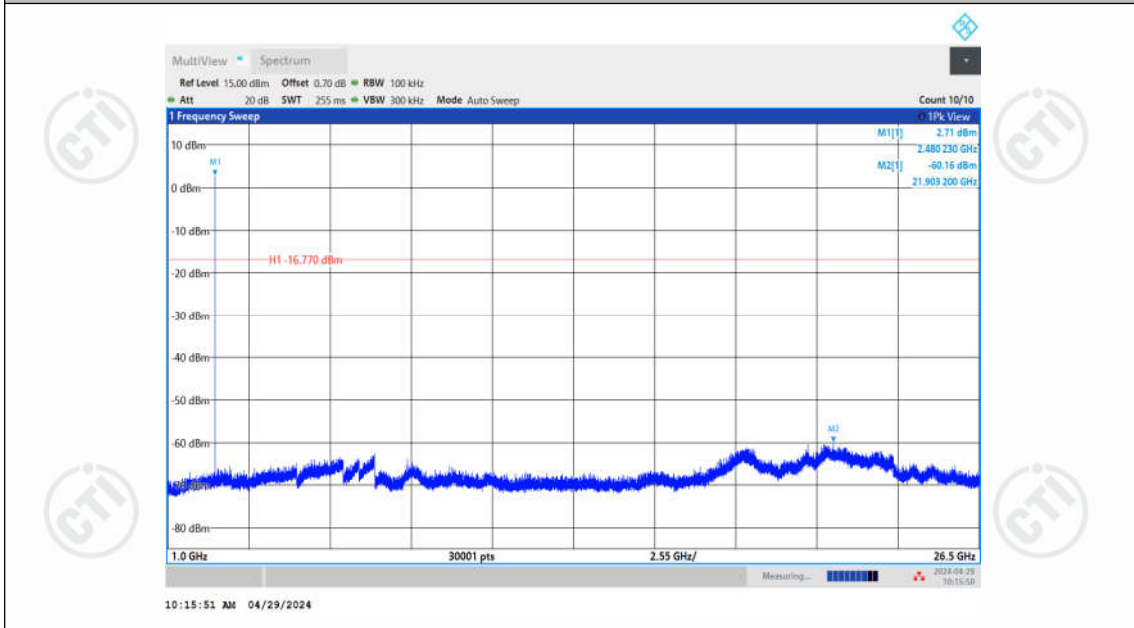
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



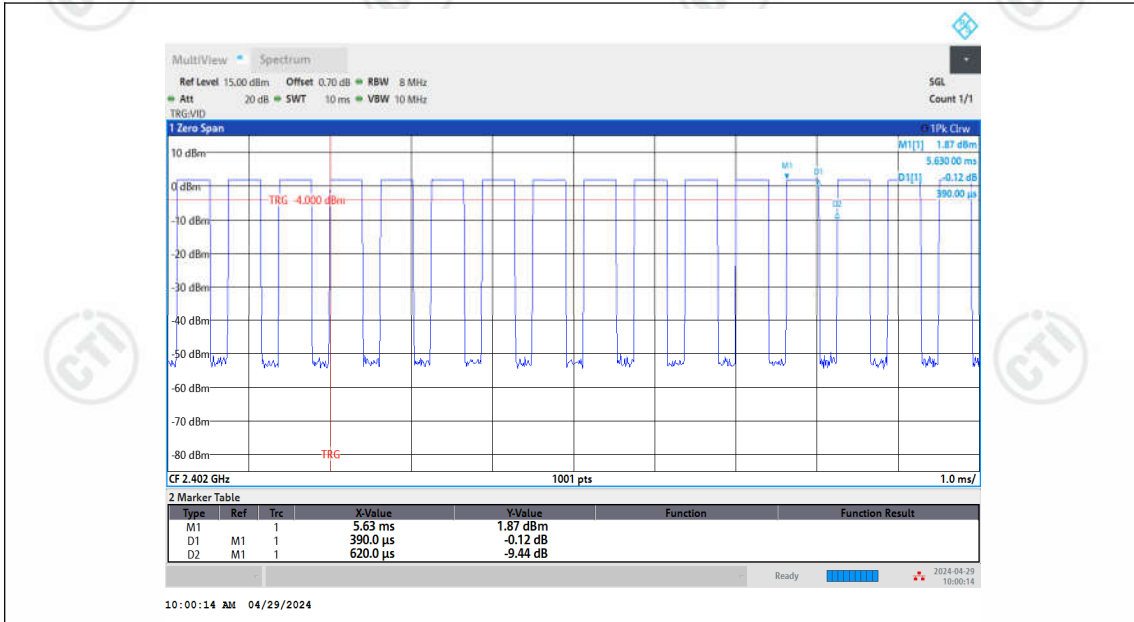
BLE_2M_Ant1_2480_1000~26500

Appendix G: Duty Cycle**Test Result**

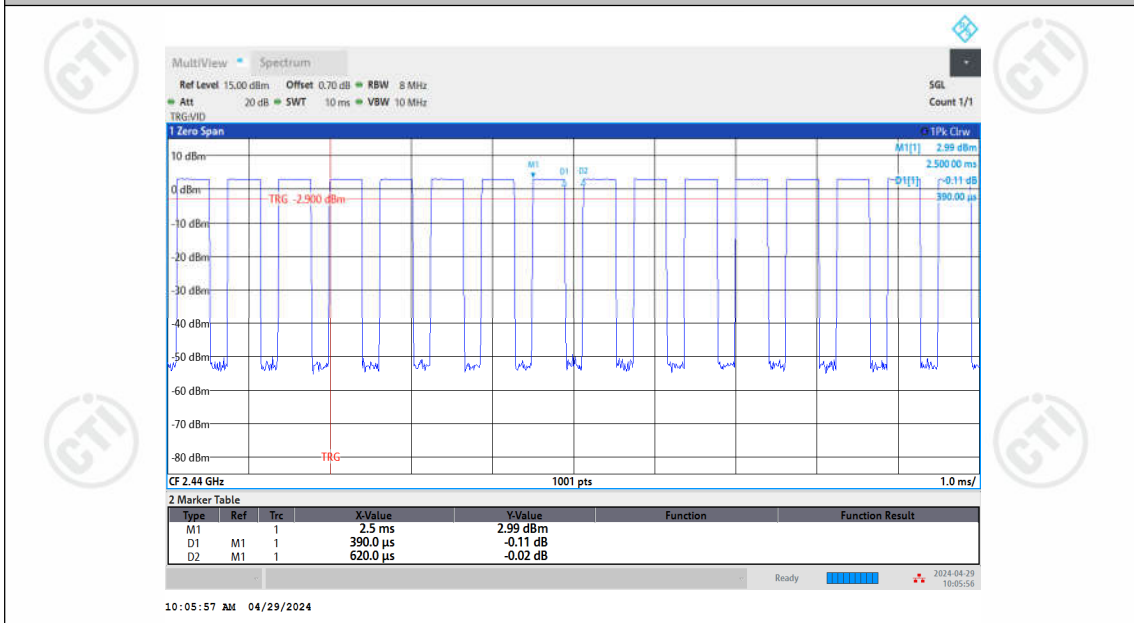
Test Mode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.01
		2440	0.39	0.62	62.90	2.01
		2480	0.39	0.62	62.90	2.01
BLE_2M	Ant1	2402	0.21	0.63	33.33	4.77
		2440	0.21	0.63	33.33	4.77
		2480	0.21	0.63	33.33	4.77

Note:Duty Cycle Factor[dB]=-10*IgDuty Cycle;

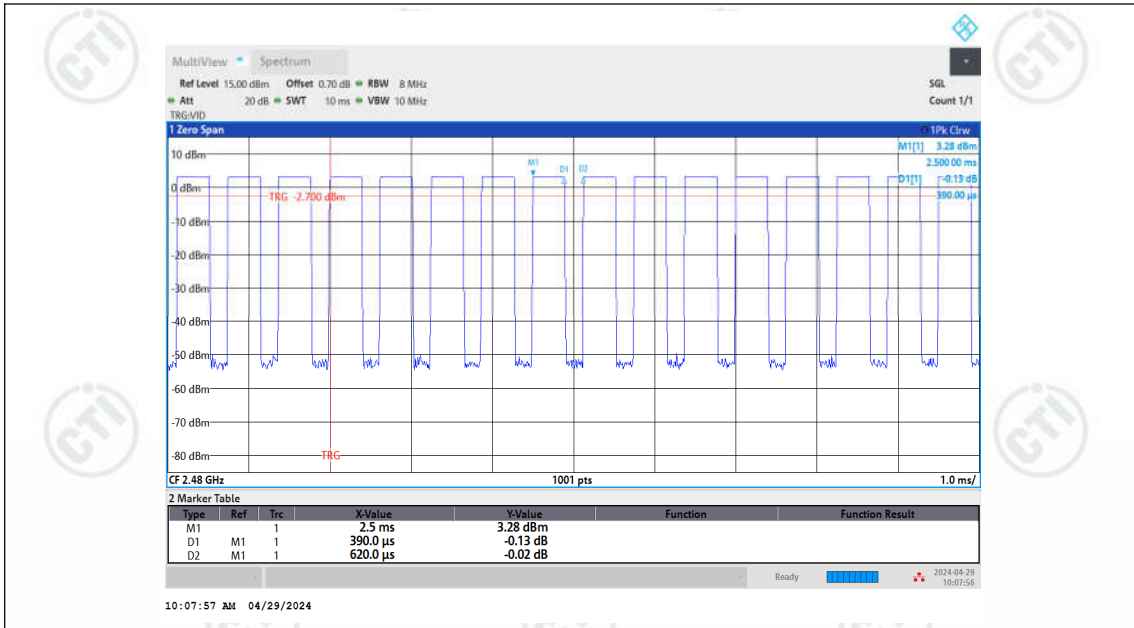
Test Graphs



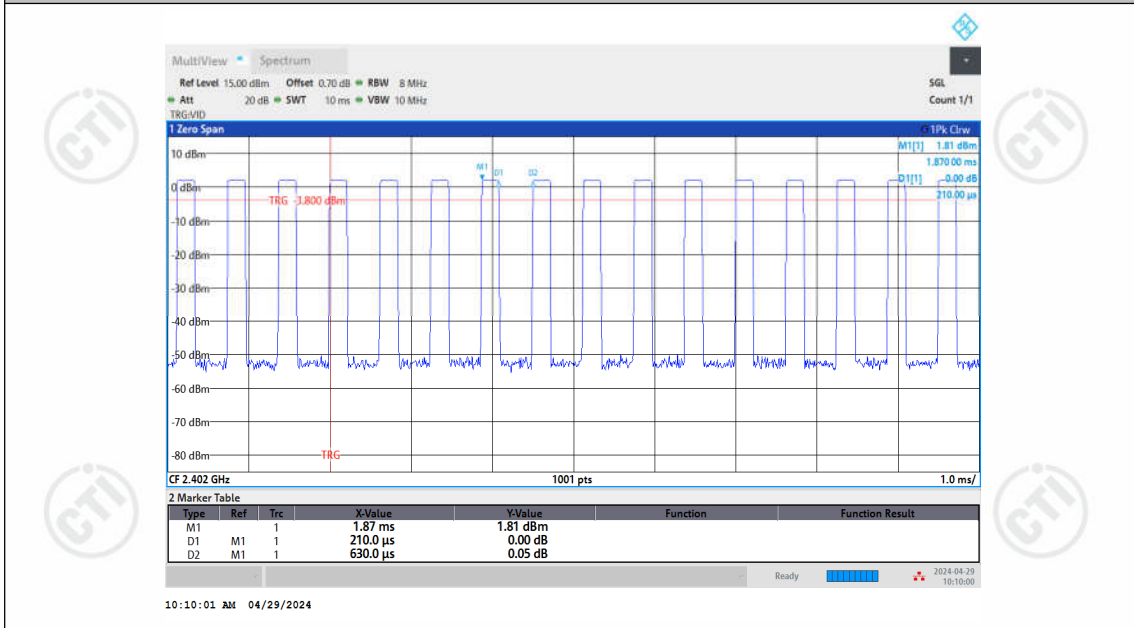
BLE_1M_Ant1_2402



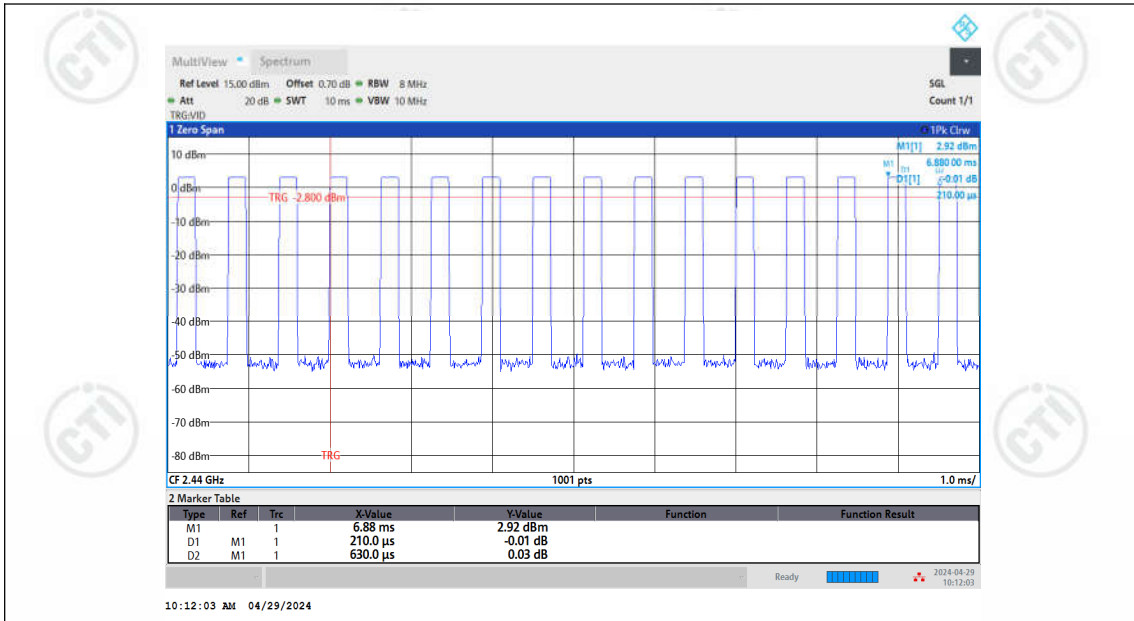
BLE_1M_Ant1_2440



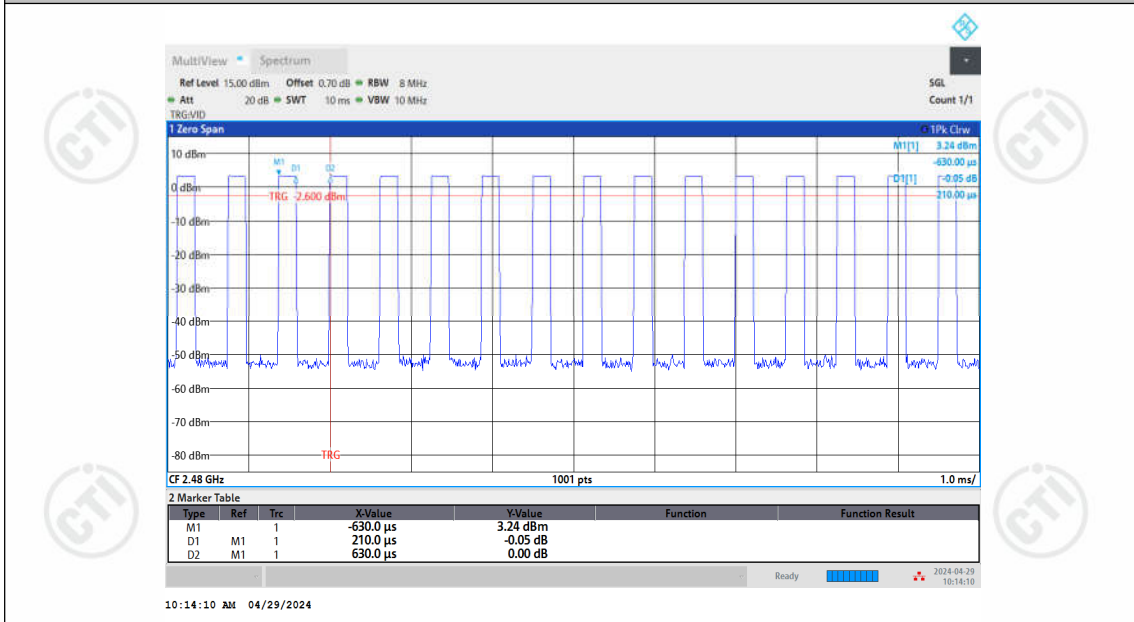
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

*** End of Report ***