

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Smart Tag, B+ PROFINDER WITH SILICONE CASE

Trade Mark: DNS, Batteries Plus

Test Model: SH-206M

FCC ID: ZBC-SH206M

Environmental Conditions

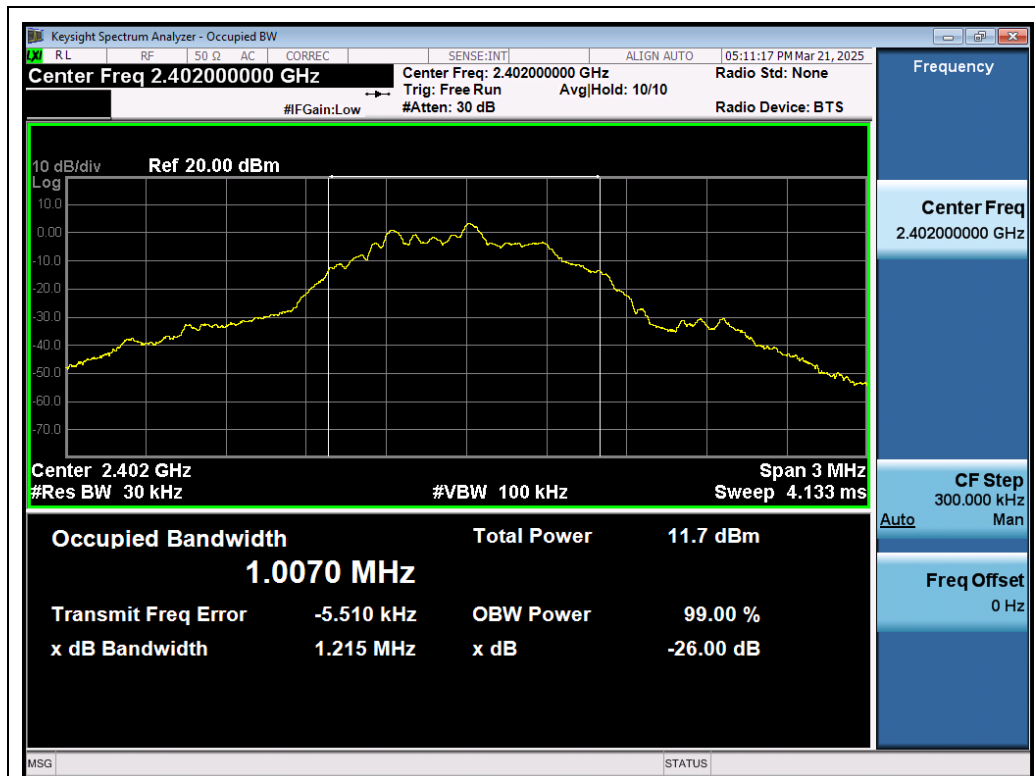
Temperature:	24.3℃
Relative Humidity:	42%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth & Occupied Channel Bandwidth

Test Result

Test Mode	Test Frequency	Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail
GFSK_1Mbps	2402	1.007	0.699	≥ 0.5	Pass
	2440	1.005	0.696	≥ 0.5	Pass
	2480	1.005	0.698	≥ 0.5	Pass
GFSK_2Mbps	2402	1.980	1.193	≥ 0.5	Pass
	2440	1.981	1.199	≥ 0.5	Pass
	2480	1.986	1.197	≥ 0.5	Pass

Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_OBW



Test_Graph_LE1M_ANT1_2440_1Mbps_OBW



Test_Graph_LE1M_ANT1_2480_1Mbps_OBW



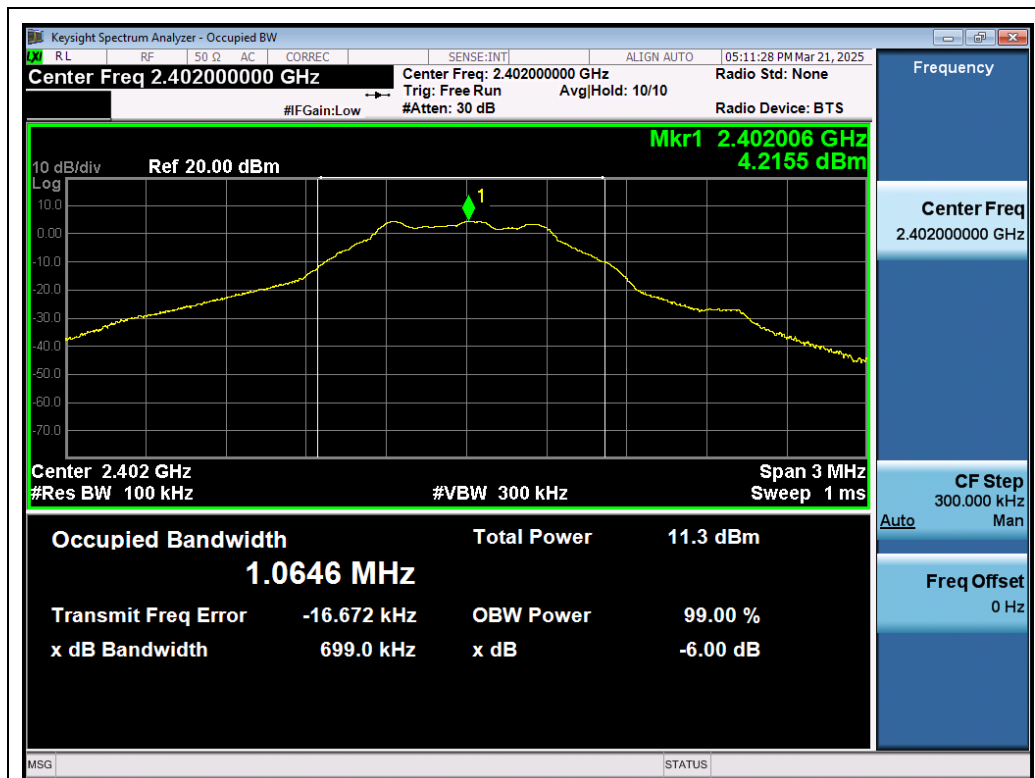
Test_Graph_LE2M_ANT1_2402_2Mbps_OBW



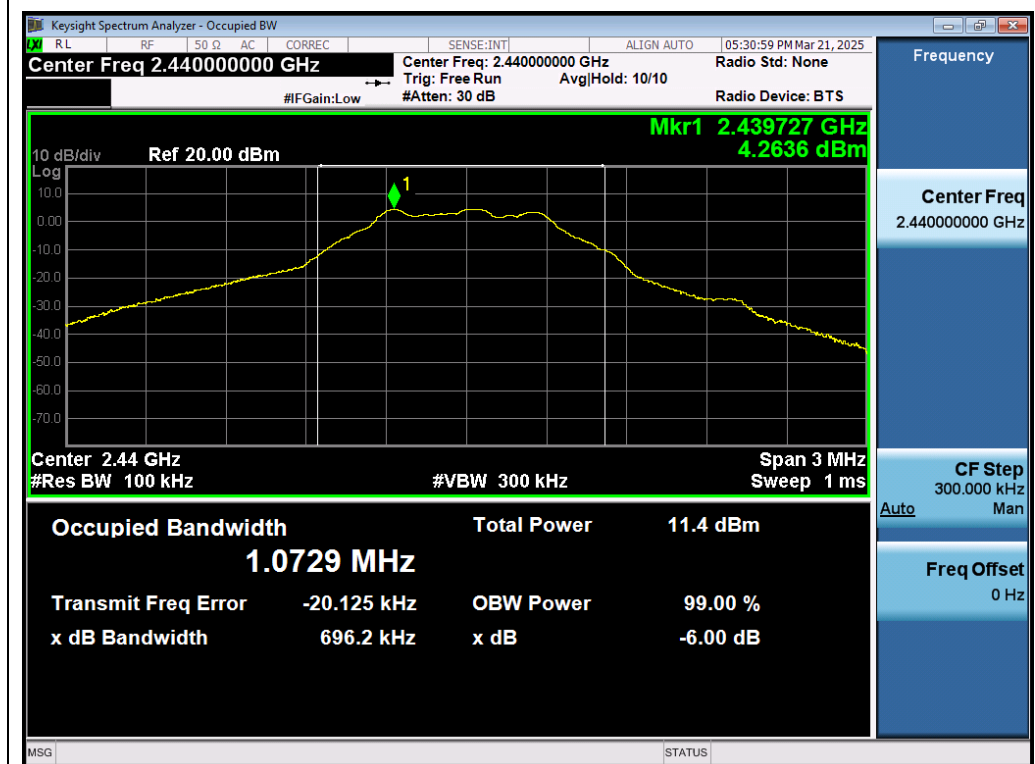
Test_Graph_LE2M_ANT1_2440_2Mbps_OBW



Test_Graph_LE2M_ANT1_2480_2Mbps_OBW



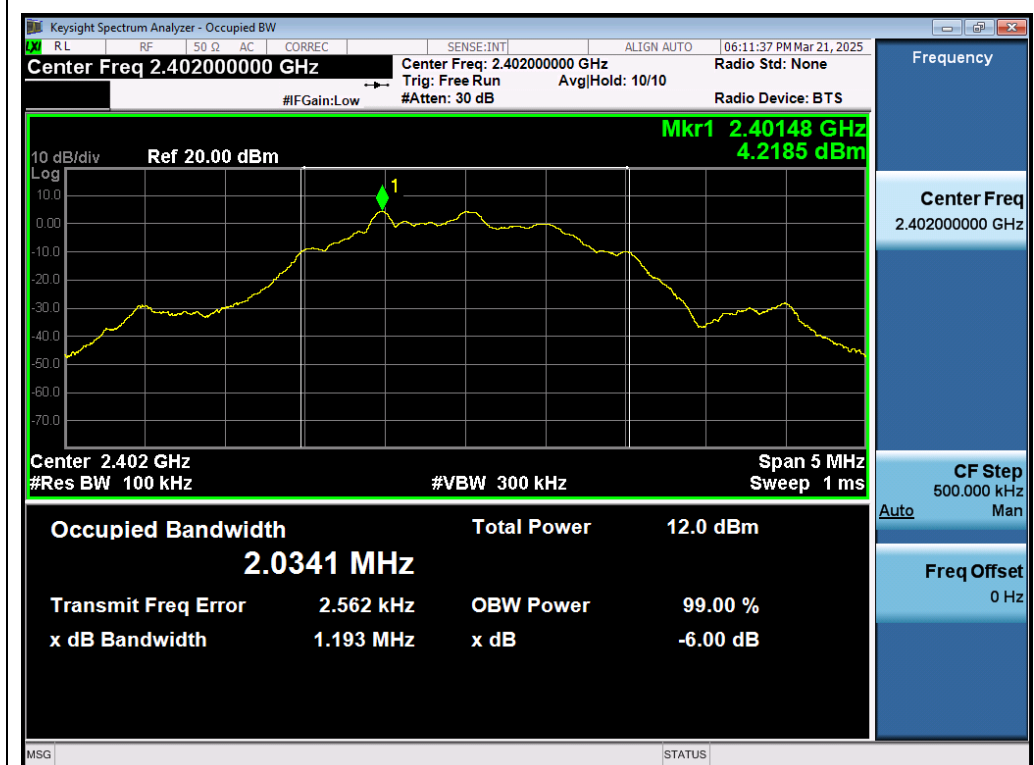
Test_Graph_LE1M_ANT1_2402_1Mbps_DTSBW



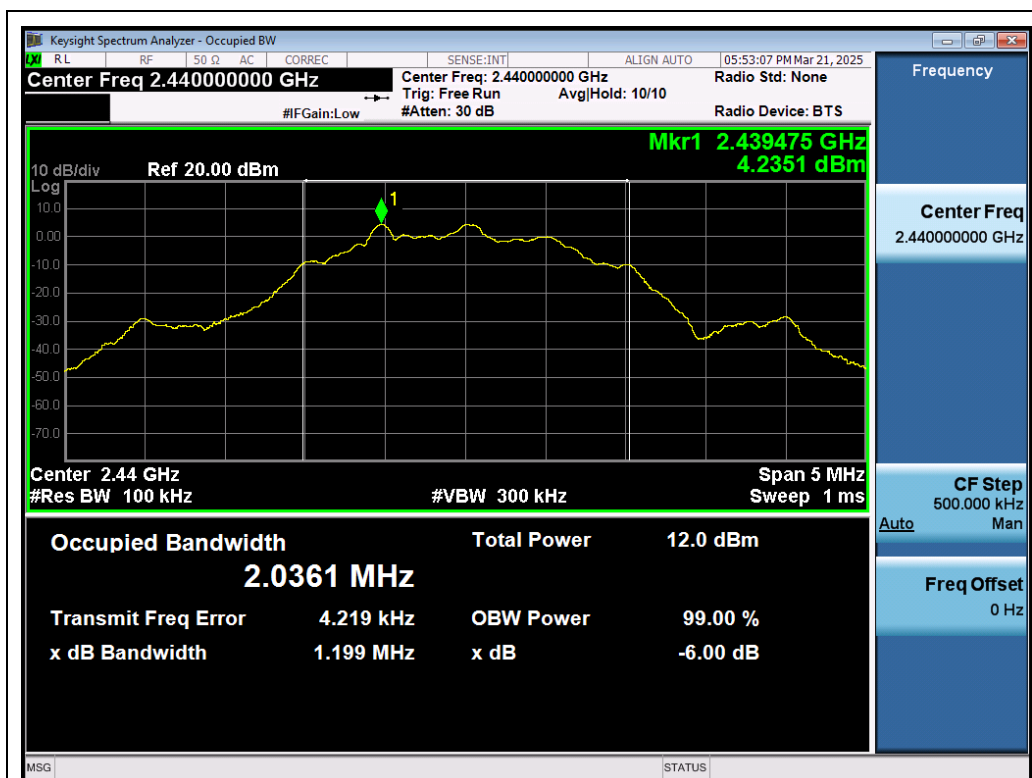
Test_Graph_LE1M_ANT1_2440_1Mbps_DTSBW



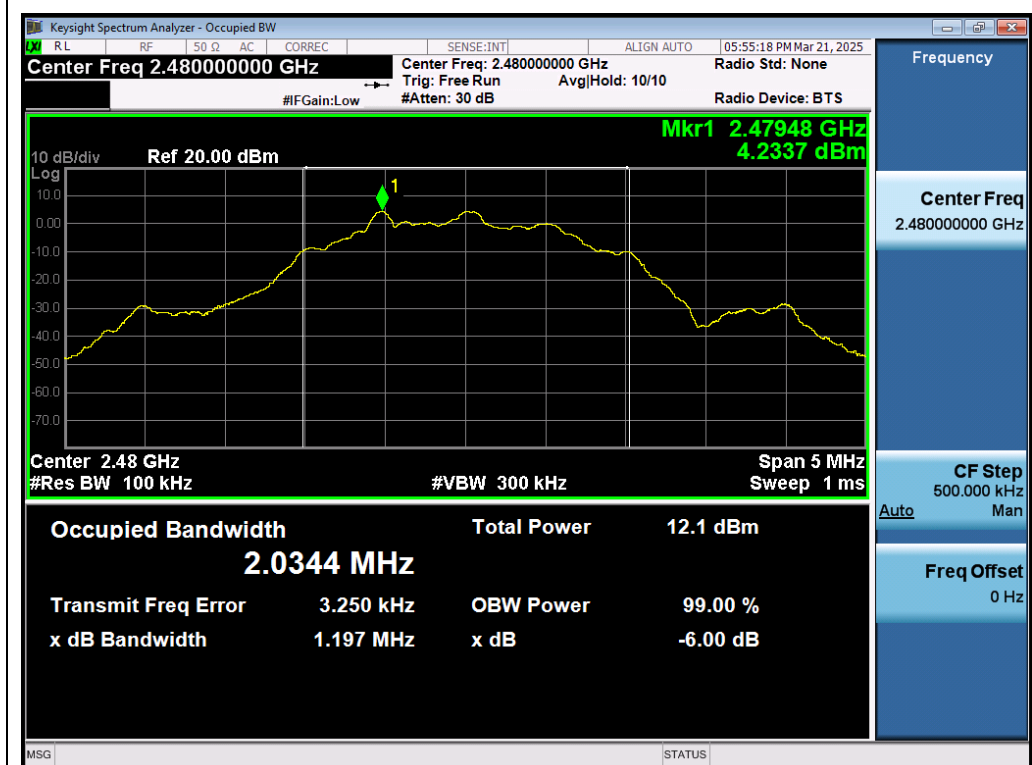
Test_Graph_LE1M_ANT1_2480_1Mbps_DTSSBW



Test_Graph_LE2M_ANT1_2402_2Mbps_DTSSBW



Test_Graph_LE2M_ANT1_2440_2Mbps_DTSBW



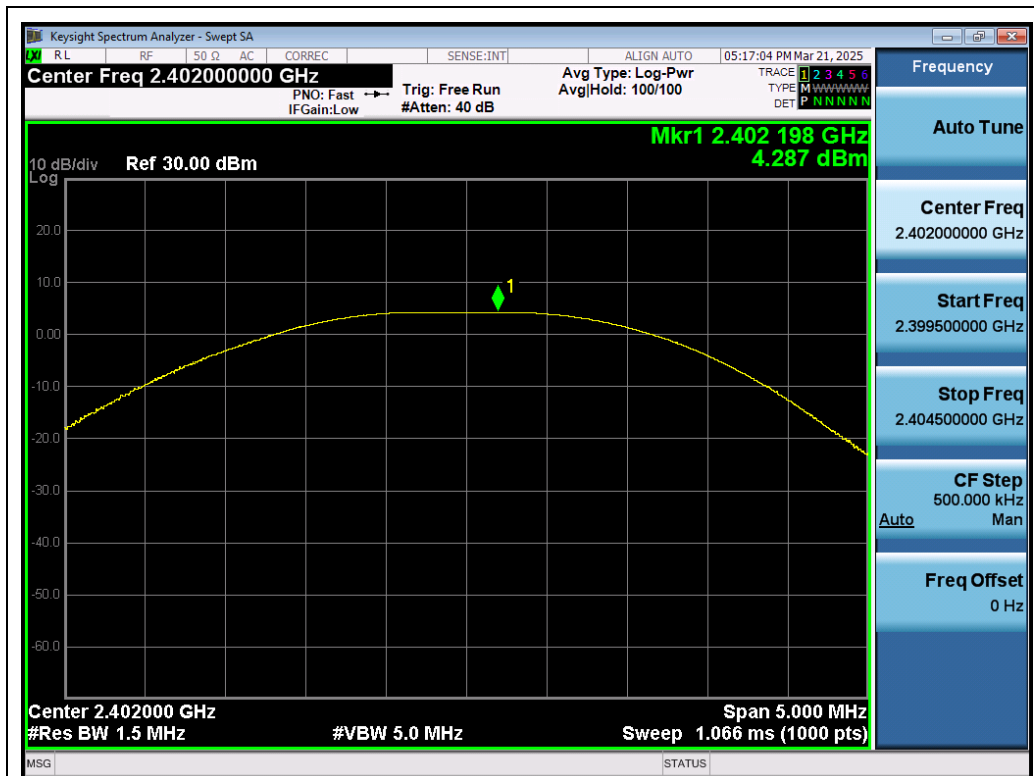
Test_Graph_LE2M_ANT1_2480_2Mbps_DTSBW

Appendix B: Maximum peak conducted output power

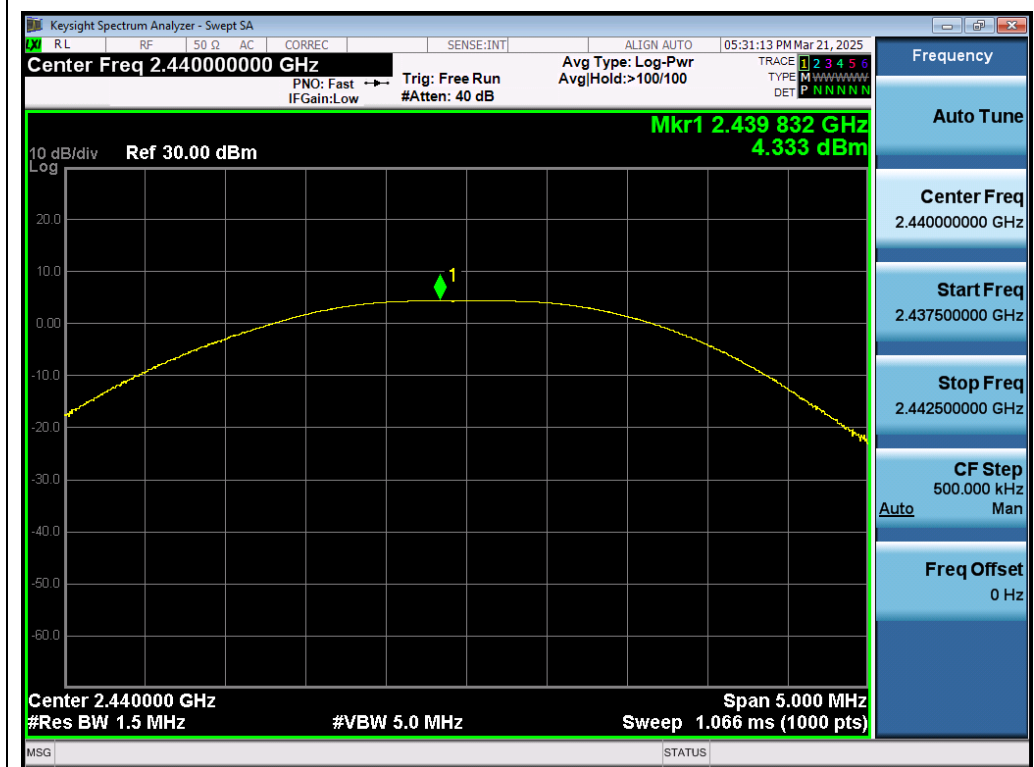
Test Result Peak

Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK_1Mbps	2402	4.287	≤ 30	Pass
	2440	4.333	≤ 30	Pass
	2480	4.278	≤ 30	Pass
GFSK_2Mbps	2402	4.296	≤ 30	Pass
	2440	4.344	≤ 30	Pass
	2480	4.276	≤ 30	Pass

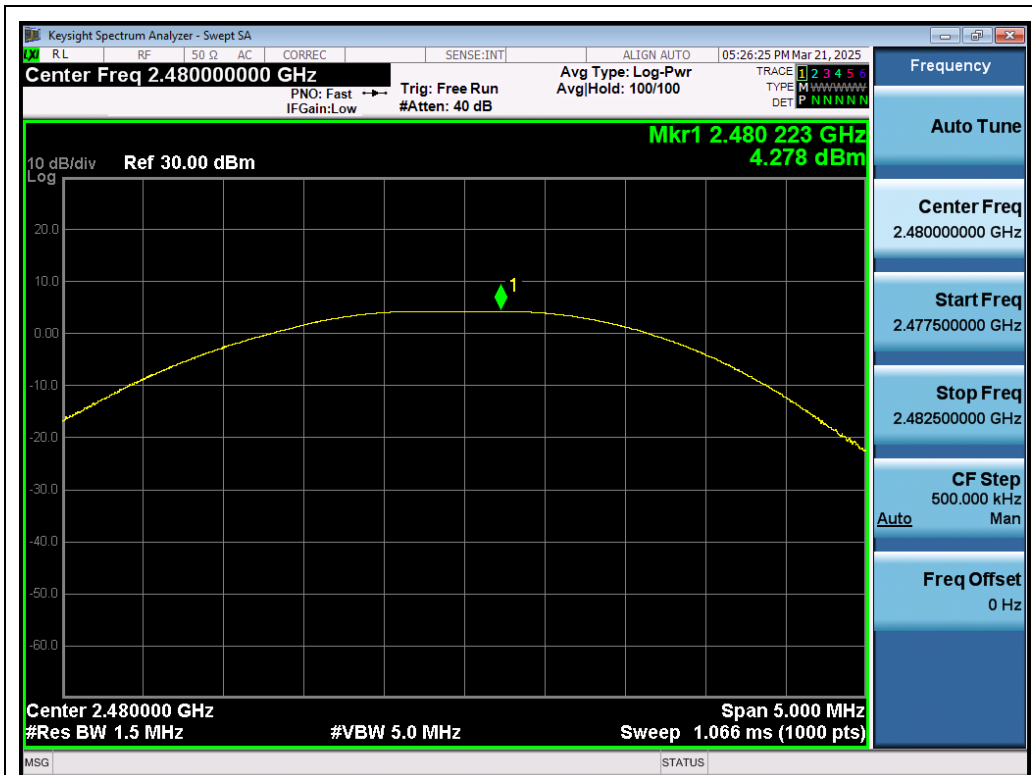
Test Graphs Peak



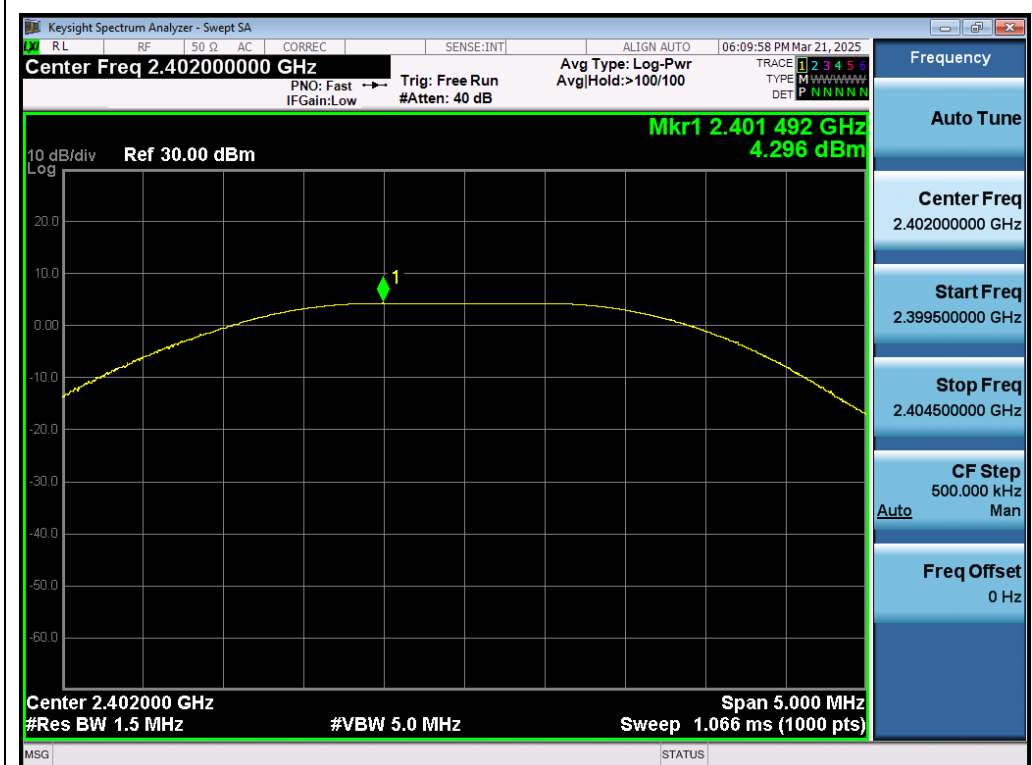
Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power



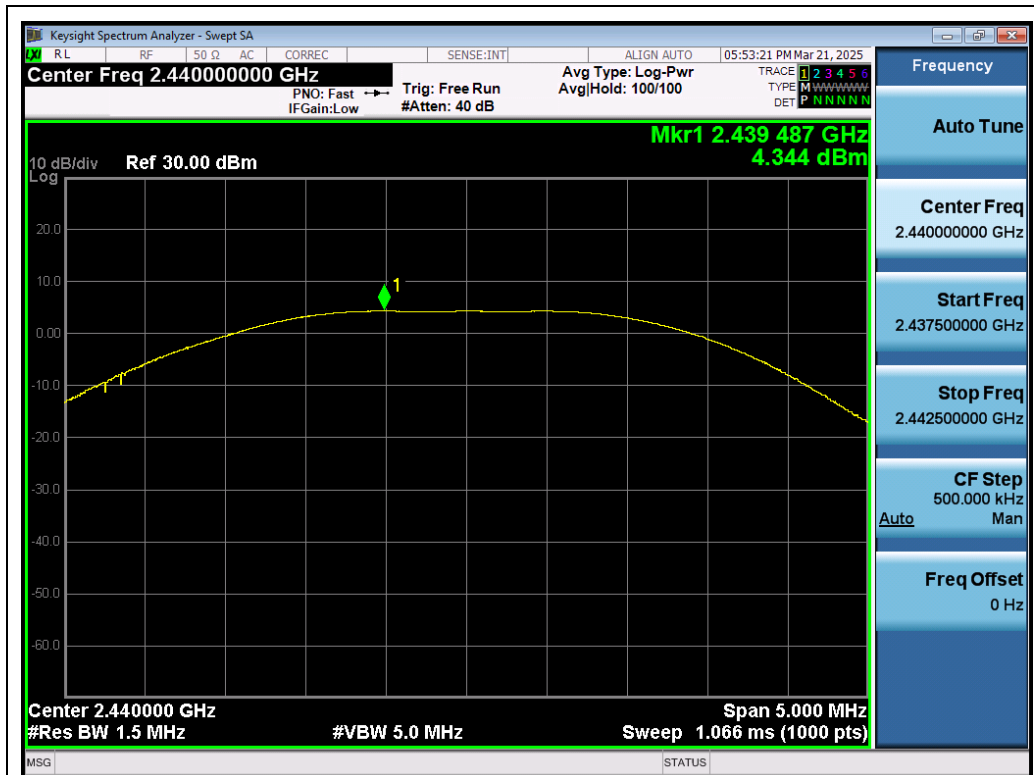
Test_Graph_LE1M_ANT1_2440_1Mbps_Peak Power



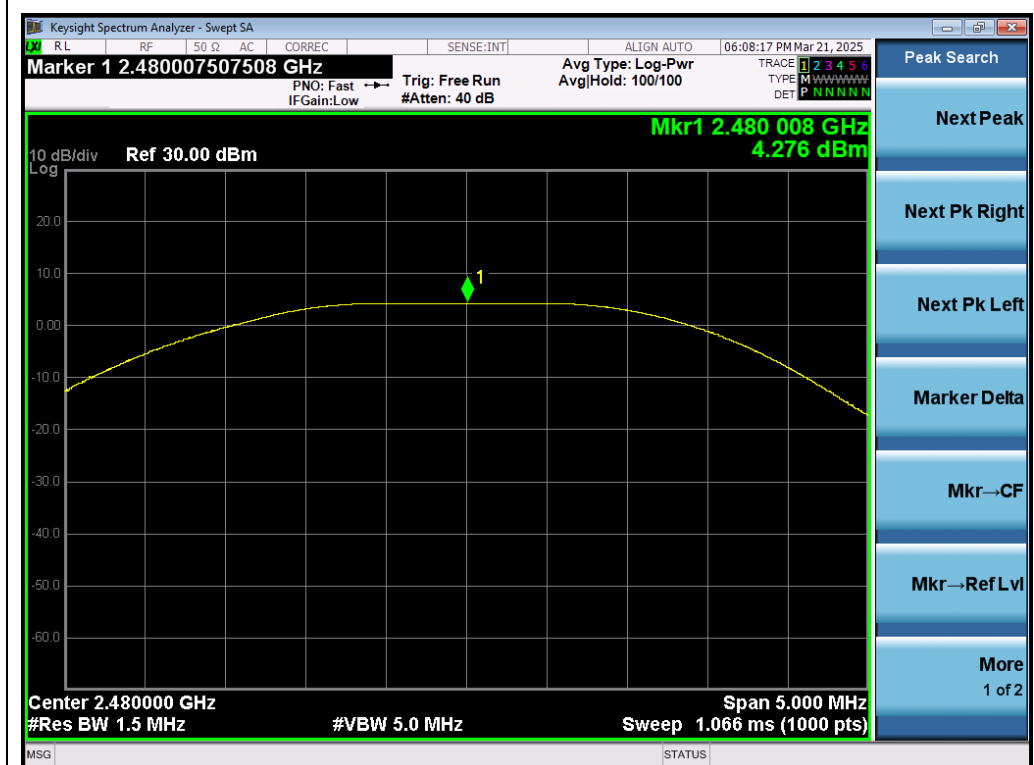
Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power



Test_Graph_LE2M_ANT1_2402_2Mbps_Peak Power



Test_Graph_LE2M_ANT1_2440_2Mbps_Peak Power



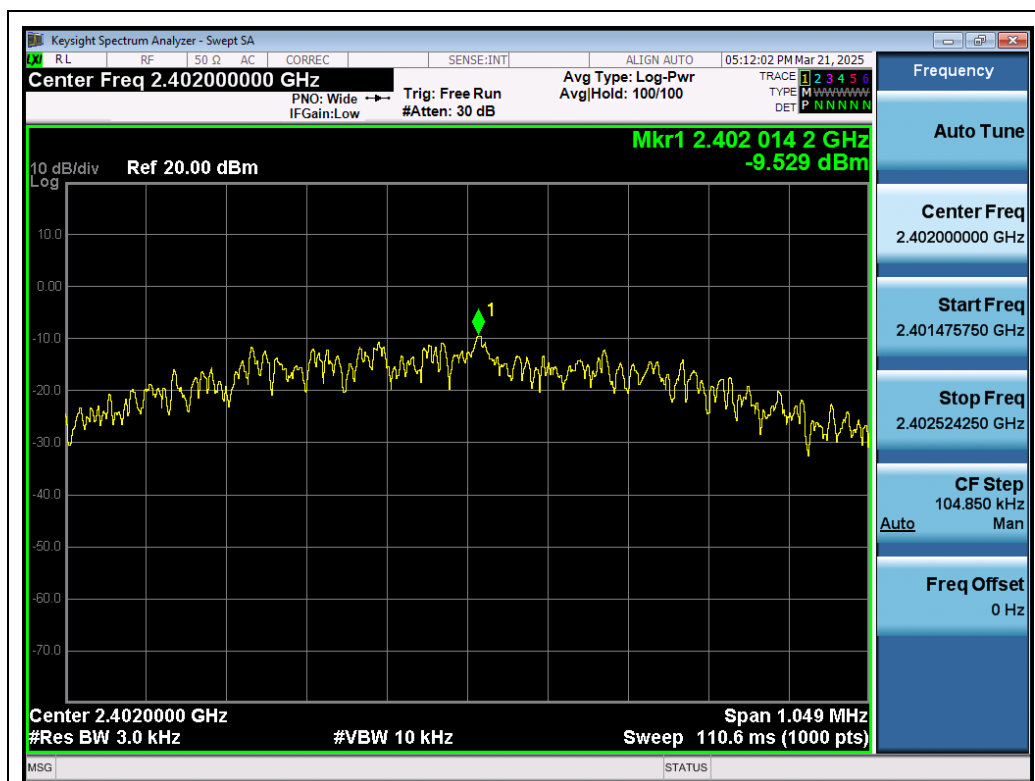
Test_Graph_LE2M_ANT1_2480_2Mbps_Peak Power

Appendix C: Maximum peak power spectral density

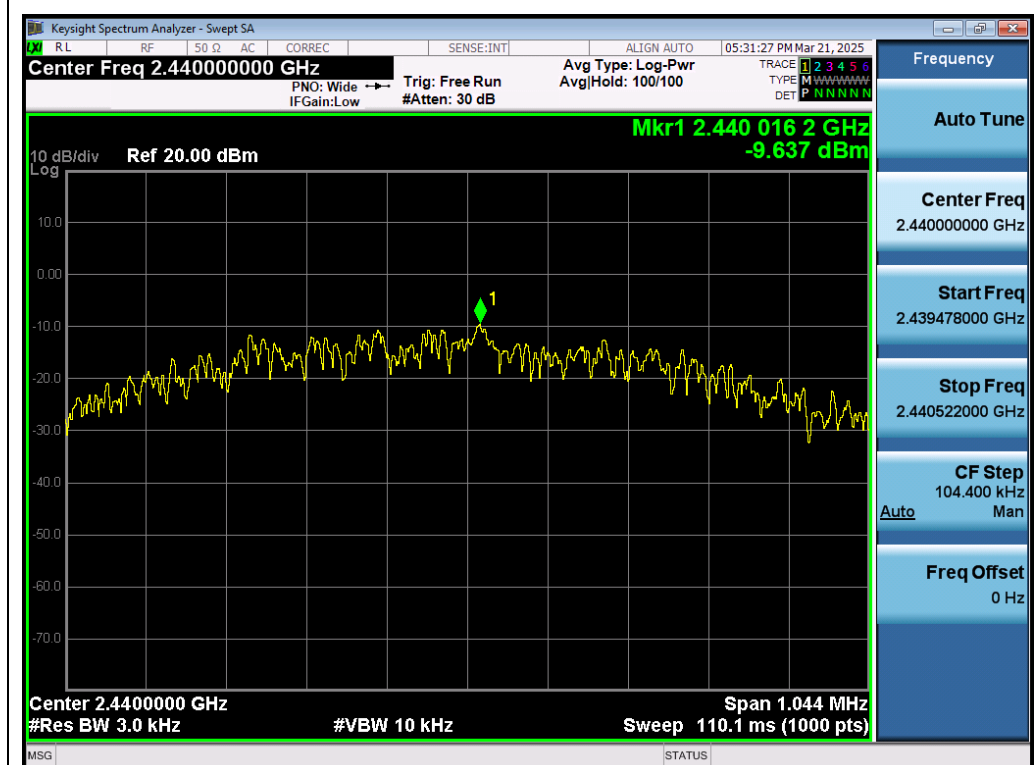
Test Result

Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
GFSK_1Mbps	2402	-9.529	≤ 8	Pass
	2440	-9.637	≤ 8	Pass
	2480	-9.664	≤ 8	Pass
GFSK_2Mbps	2402	-9.846	≤ 8	Pass
	2440	-10.185	≤ 8	Pass
	2480	-10.042	≤ 8	Pass

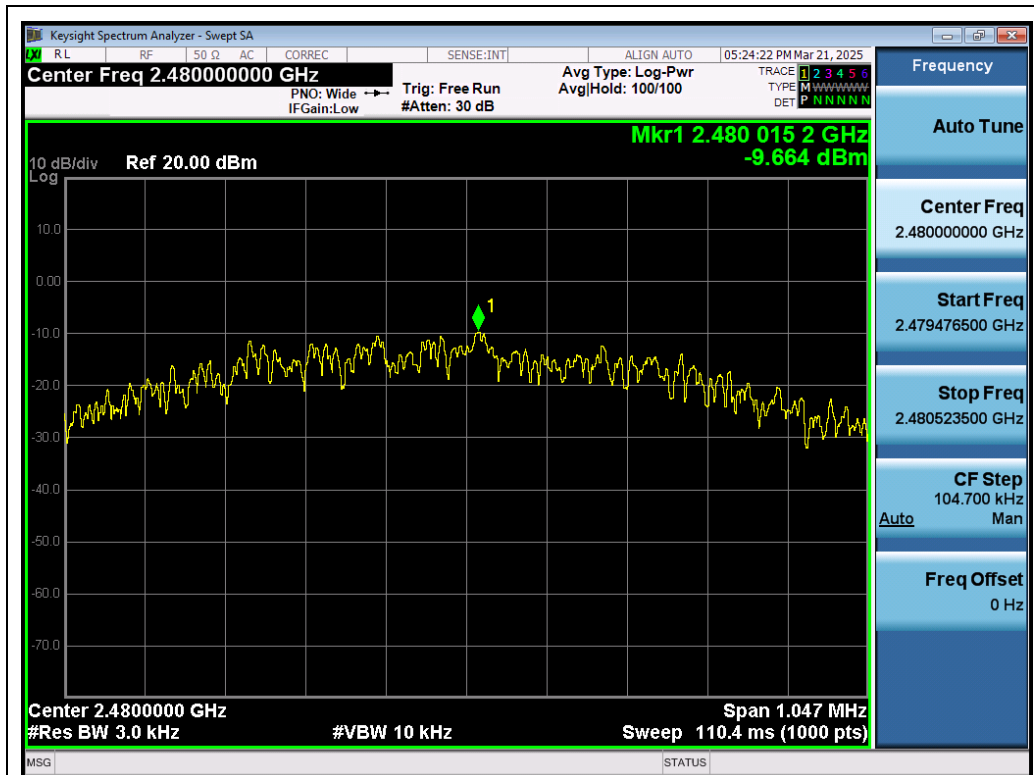
Test Graphs



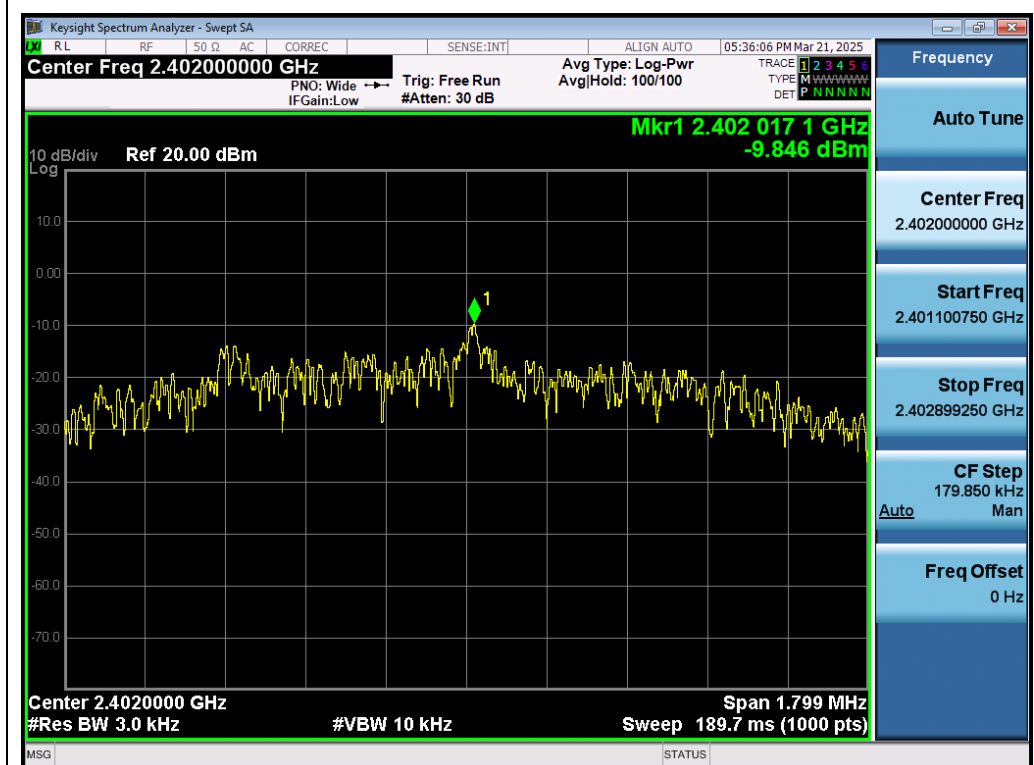
Test_Graph_LE1M_ANT1_2402_1Mbps_PSD



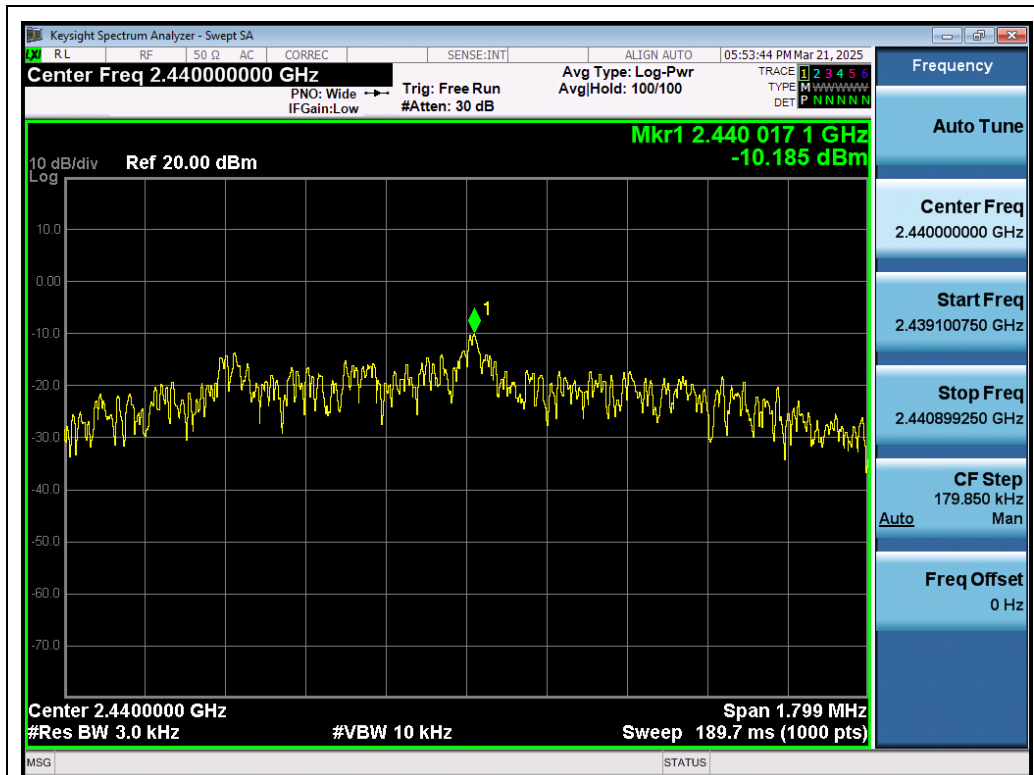
Test_Graph_LE1M_ANT1_2440_1Mbps_PSD



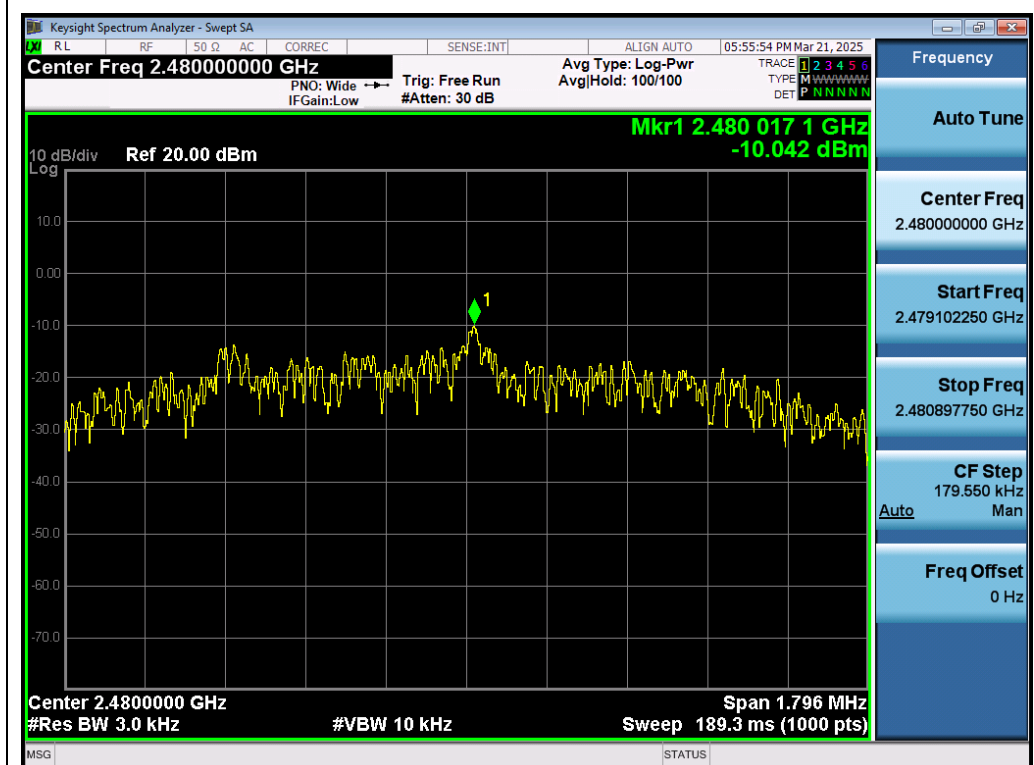
Test_Graph_LE1M_ANT1_2480_1Mbps_PSD



Test_Graph_LE2M_ANT1_2402_2Mbps_PSD



Test_Graph_LE2M_ANT1_2440_2Mbps_PSD



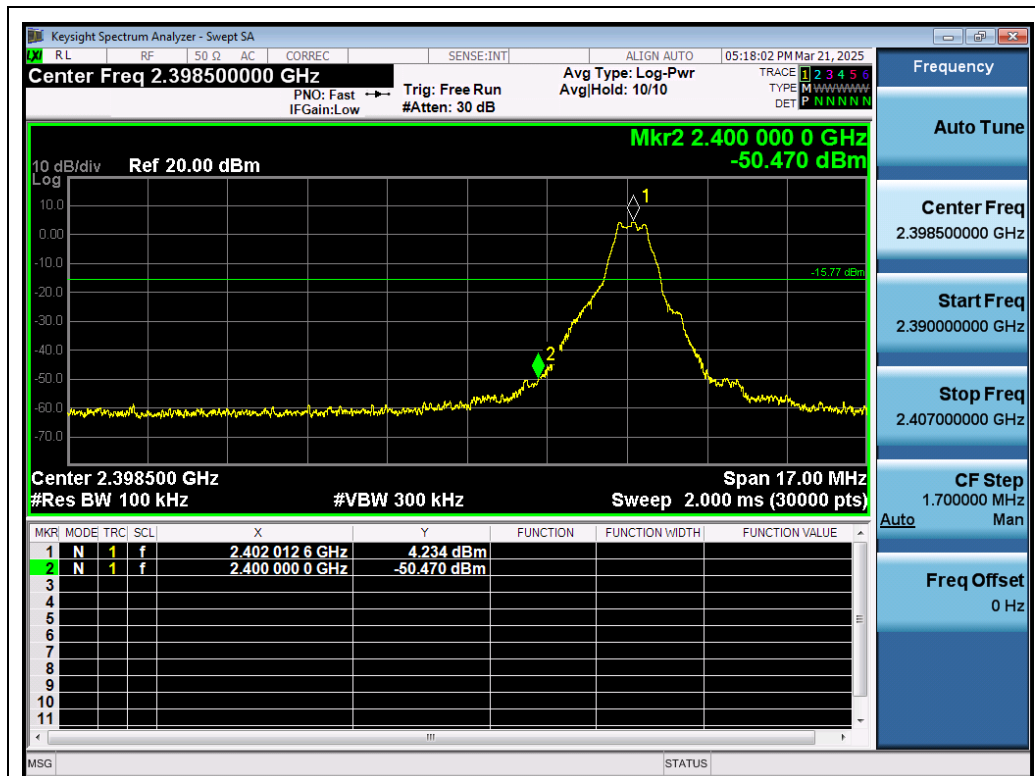
Test_Graph_LE2M_ANT1_2480_2Mbps_PSD

Appendix D: Band edge measurements

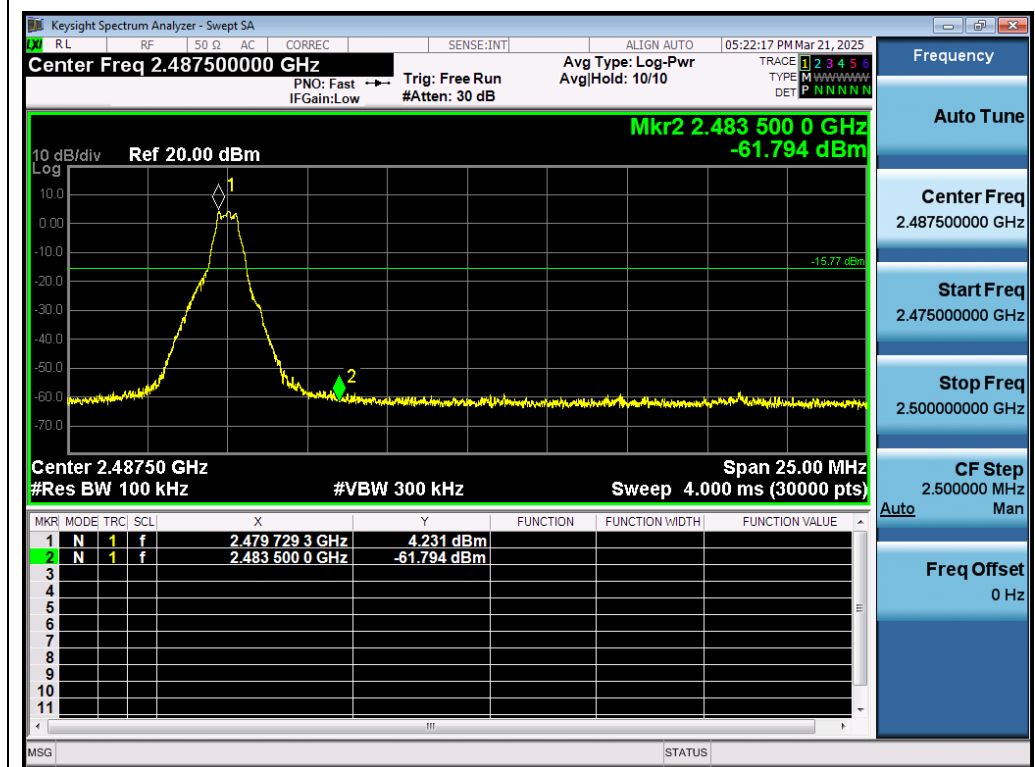
Test Result

Test Mode	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	Low	2402	4.234	-50.470	≤ -15.77	Pass
GFSK_1Mbps	High	2480	4.231	-61.794	≤ -15.77	Pass
GFSK_2Mbps	Low	2402	4.269	-29.502	≤ -15.73	Pass
GFSK_2Mbps	High	2480	4.273	-58.993	≤ -15.73	Pass

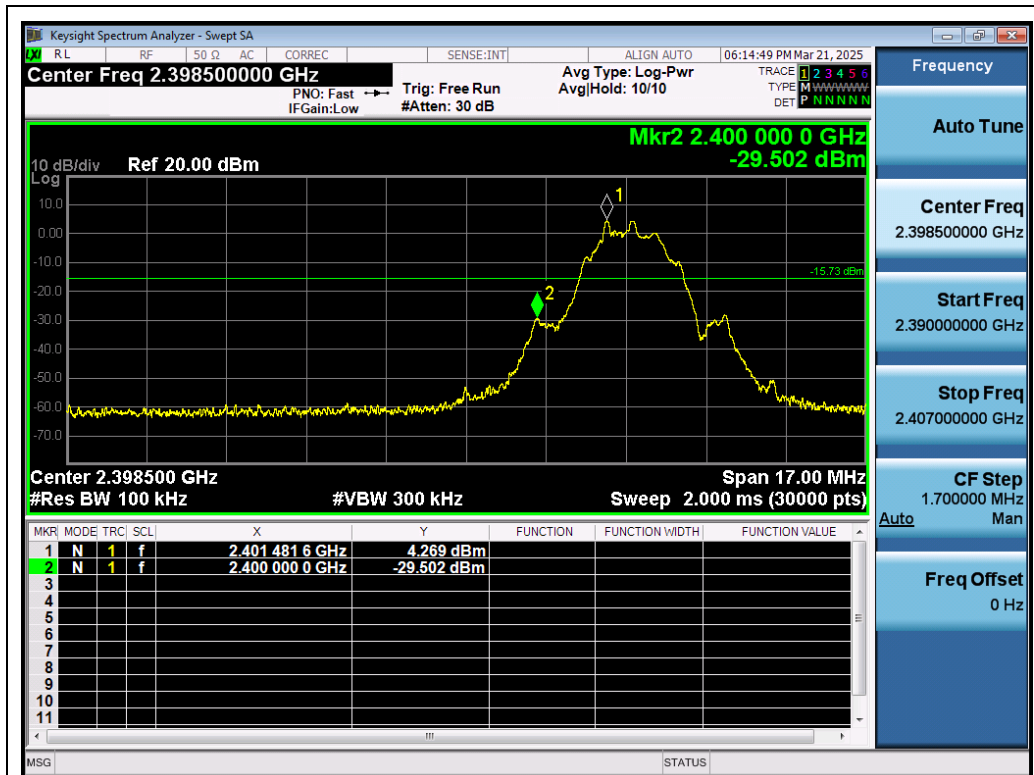
Test Graphs



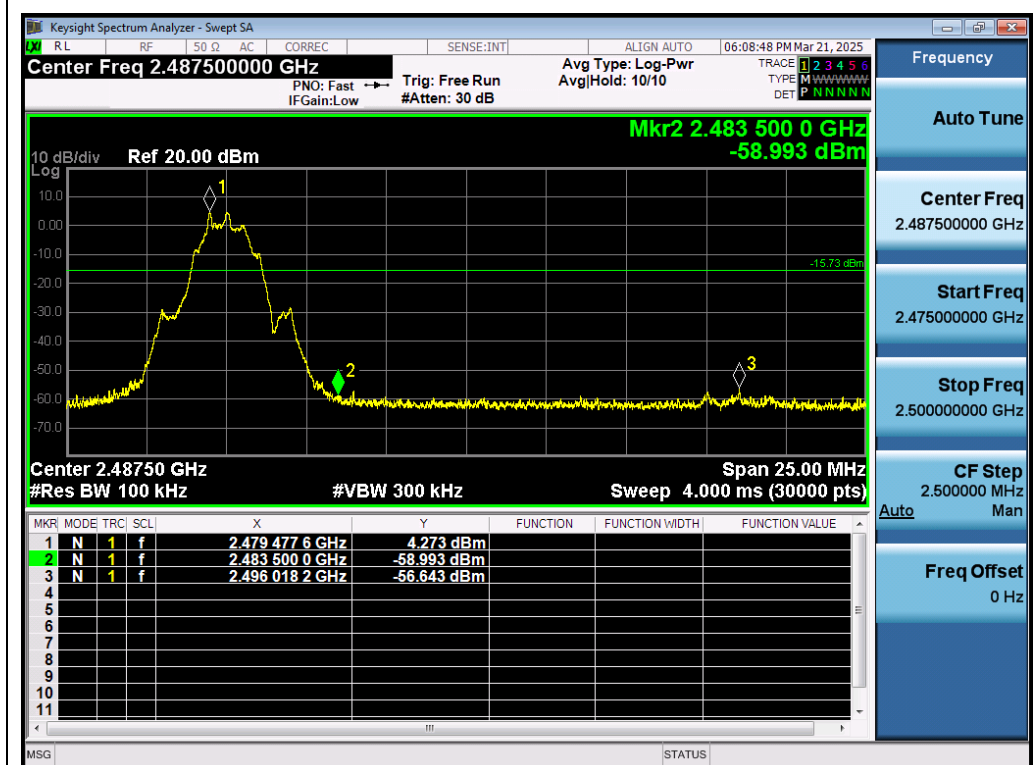
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Edge Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Edge Emissions



Test_Graph_LE2M_ANT1_2402_2Mbps_Lower Band Edge Emissions



Test_Graph_LE2M_ANT1_2480_2Mbps_Higher Band Edge Emissions

Appendix E: Conducted Spurious Emission

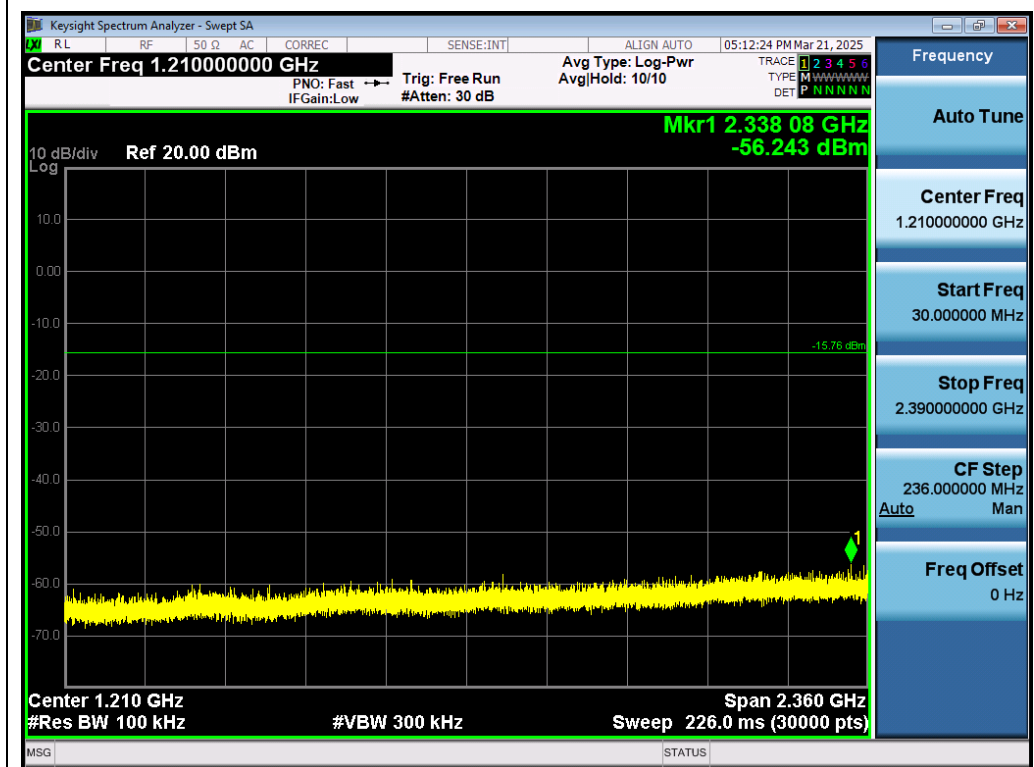
Test Result

Test Mode	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	2402	0~Reference	4.241	4.241	---	Pass
GFSK_1Mbps	2402	30~2390	4.241	-56.243	≤ -15.76	Pass
GFSK_1Mbps	2402	2483.5~25000	4.241	-47.343	≤ -15.76	Pass
GFSK_1Mbps	2440	0~Reference	4.268	4.268	---	Pass
GFSK_1Mbps	2440	30~2400	4.268	-56.391	≤ -15.73	Pass
GFSK_1Mbps	2440	2483.5~25000	4.268	-47.323	≤ -15.73	Pass
GFSK_1Mbps	2480	0~Reference	4.274	4.274	---	Pass
GFSK_1Mbps	2480	30~2400	4.274	-56.649	≤ -15.73	Pass
GFSK_1Mbps	2480	2500~26500	4.274	-47.885	≤ -15.73	Pass
GFSK_2Mbps	2402	0~Reference	4.260	4.260	---	Pass
GFSK_2Mbps	2402	30~2390	4.260	-55.689	≤ -15.74	Pass
GFSK_2Mbps	2402	2483.5~25000	4.260	-48.282	≤ -15.74	Pass
GFSK_2Mbps	2440	0~Reference	4.283	4.283	---	Pass
GFSK_2Mbps	2440	30~2400	4.283	-56.515	≤ -15.72	Pass
GFSK_2Mbps	2440	2483.5~25000	4.283	-46.876	≤ -15.72	Pass
GFSK_2Mbps	2480	0~Reference	4.270	4.270	---	Pass
GFSK_2Mbps	2480	30~2400	4.270	-56.463	≤ -15.73	Pass
GFSK_2Mbps	2480	2500~26500	4.270	-47.800	≤ -15.73	Pass

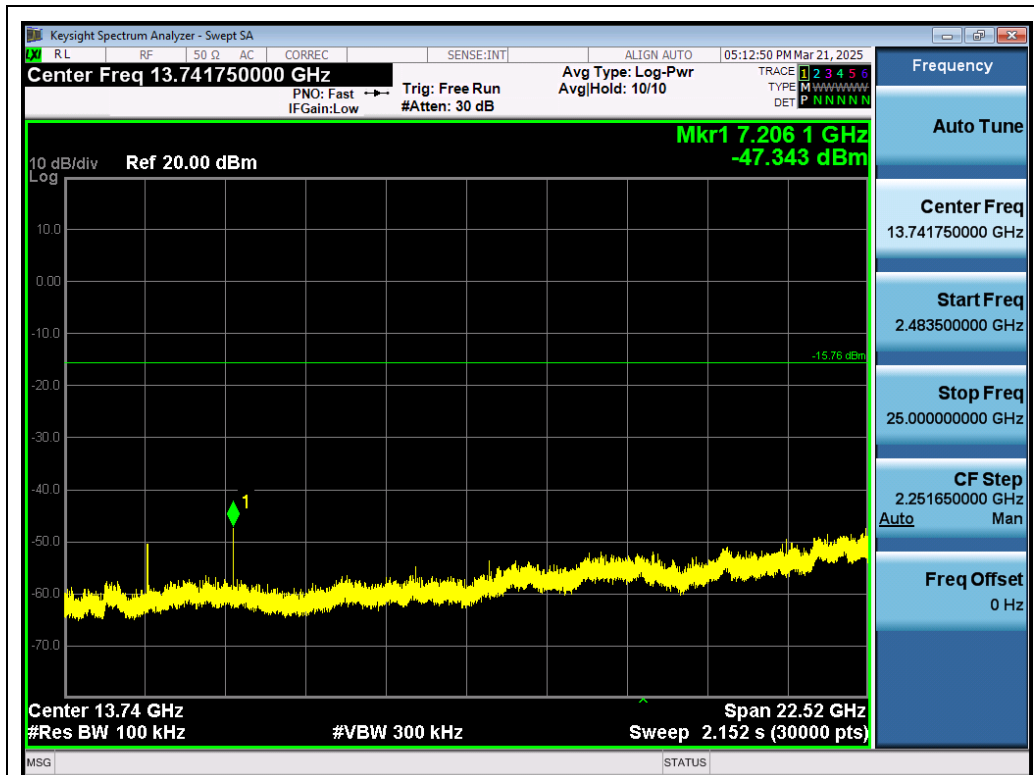
Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_Reference Level



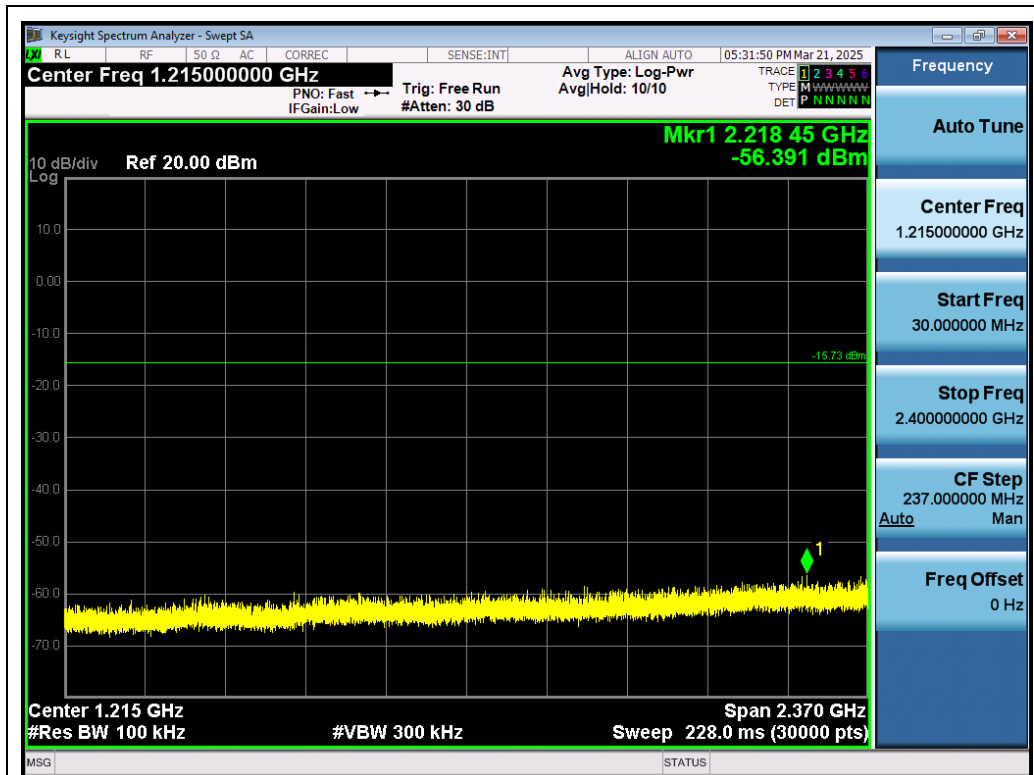
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions



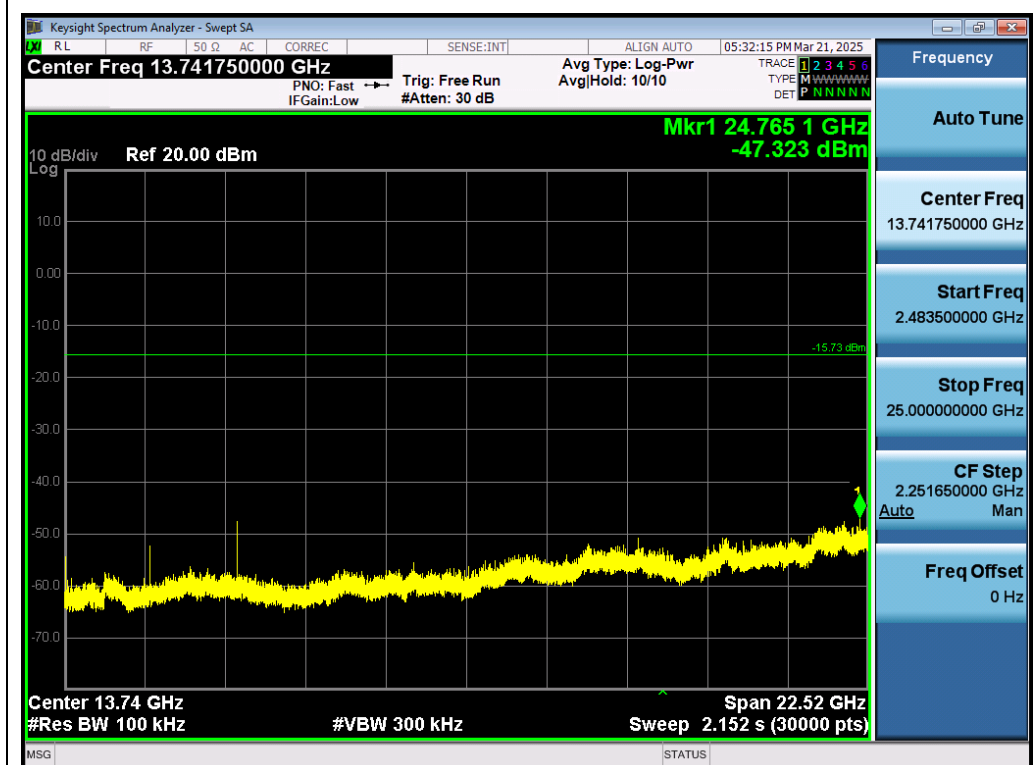
Test_Graph_LE1M_ANT1_2402_1Mbps_Higher Band Emissions



Test_Graph_LE1M_ANT1_2440_1Mbps_Reference Level



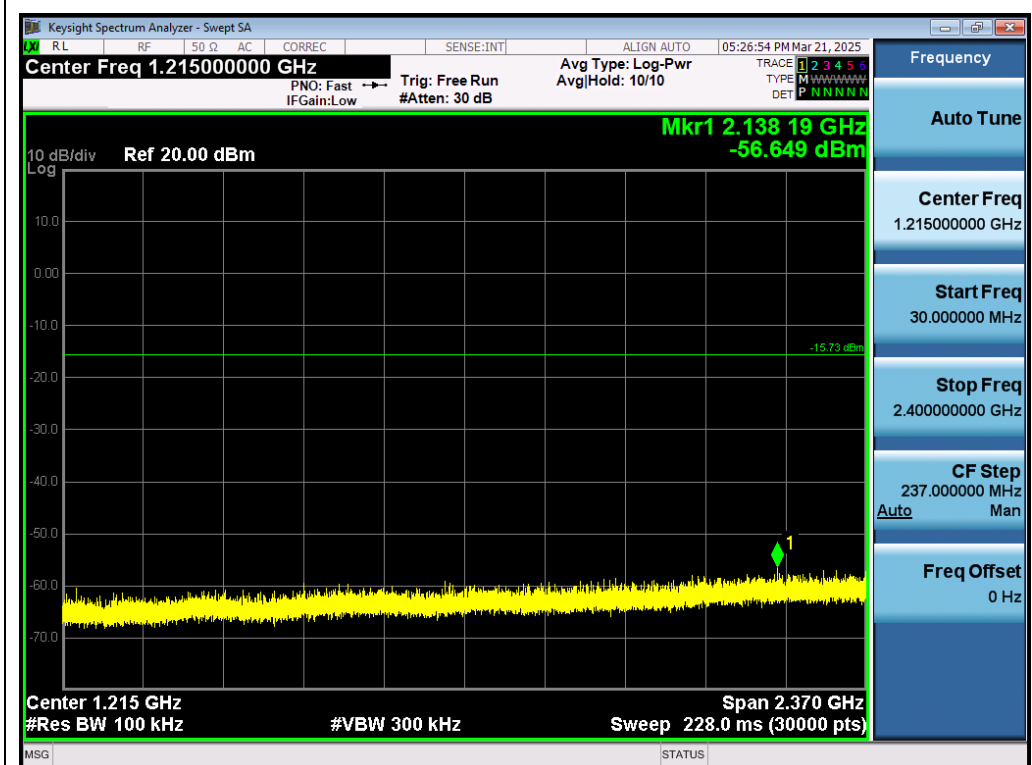
Test_Graph_LE1M_ANT1_2440_1Mbps_Lower Band Emissions



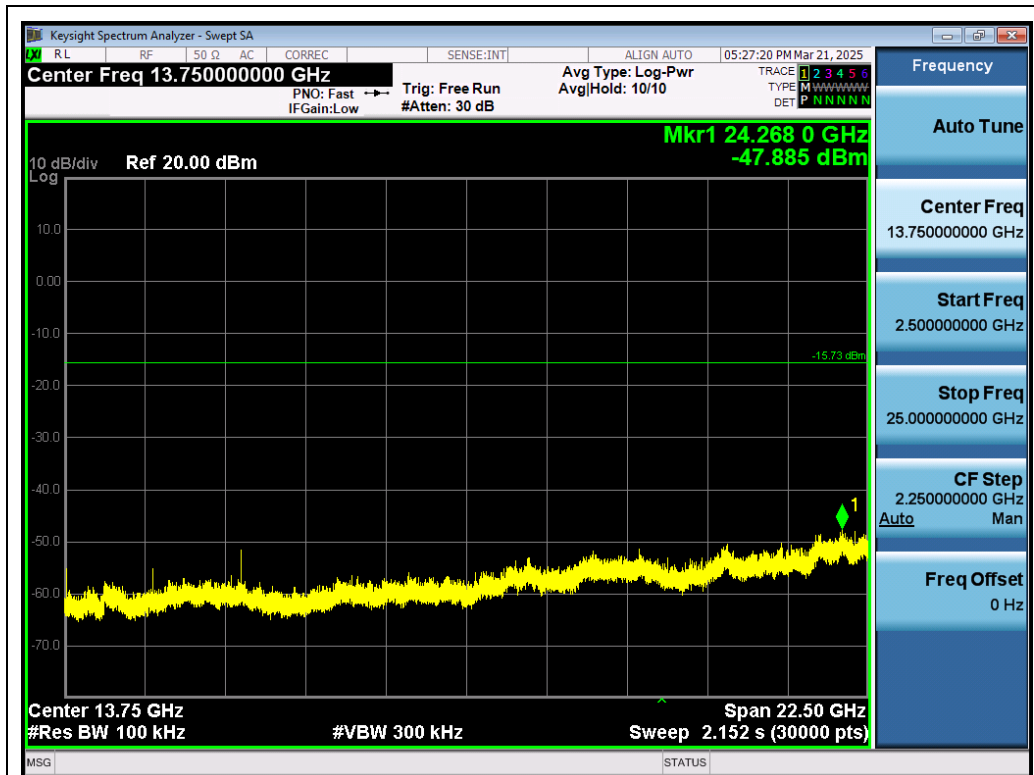
Test_Graph_LE1M_ANT1_2440_1Mbps_Higher Band Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Reference Level



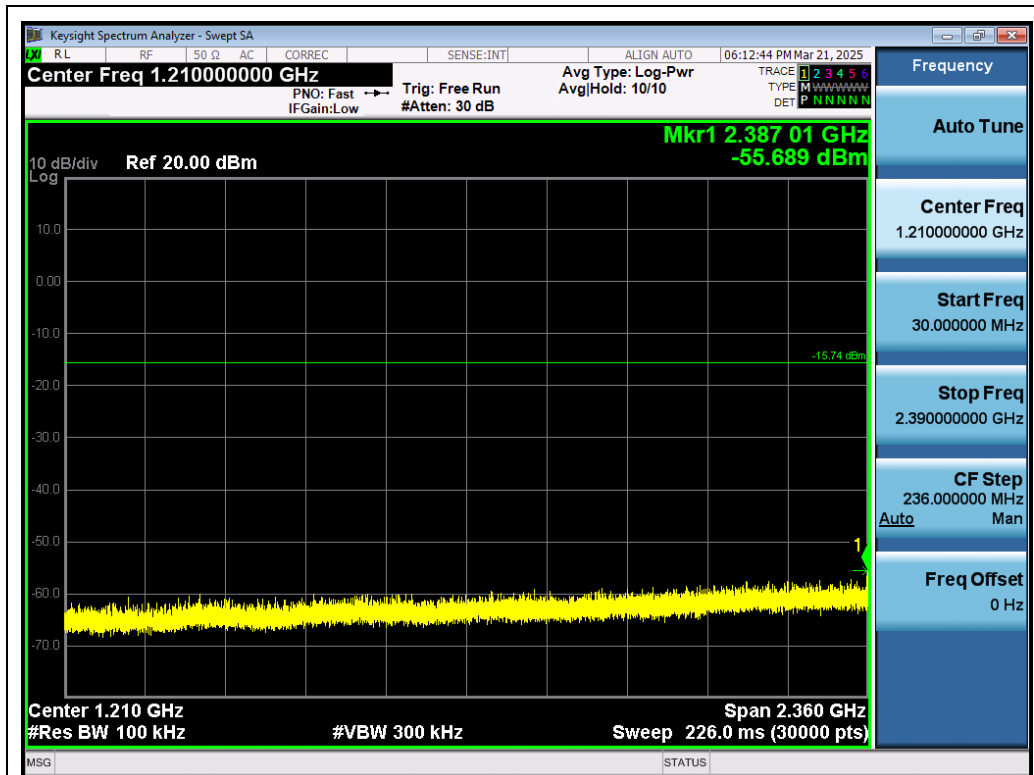
Test_Graph_LE1M_ANT1_2480_1Mbps_Lower Band Emissions



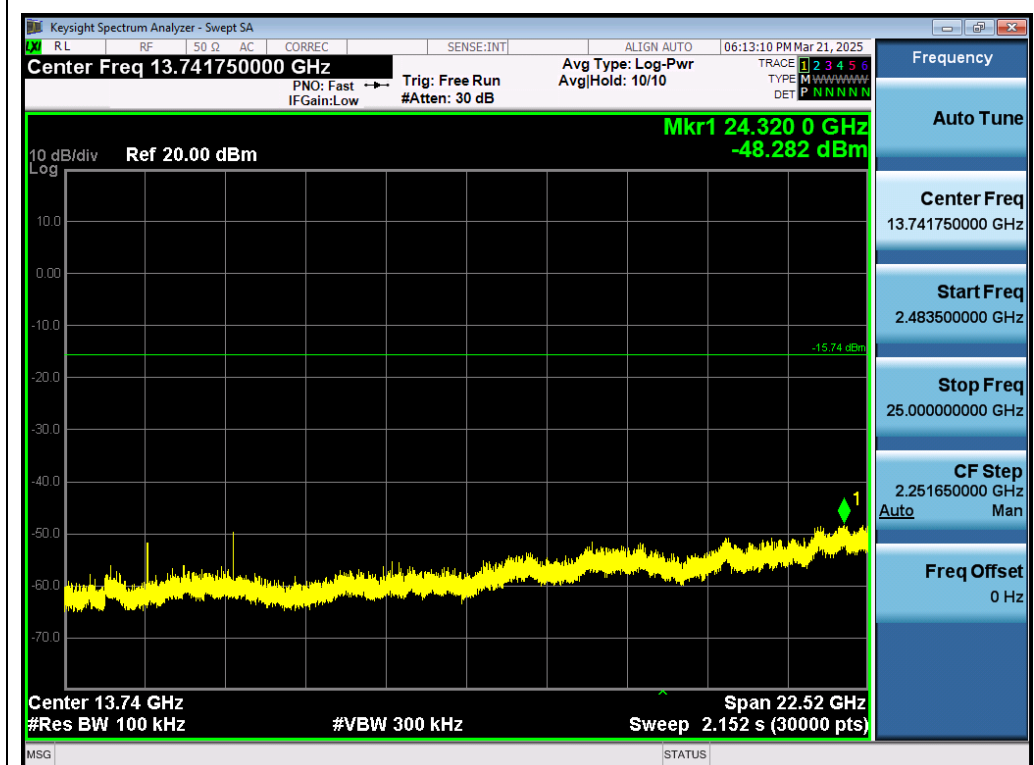
Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2402_2Mbps_Reference Level



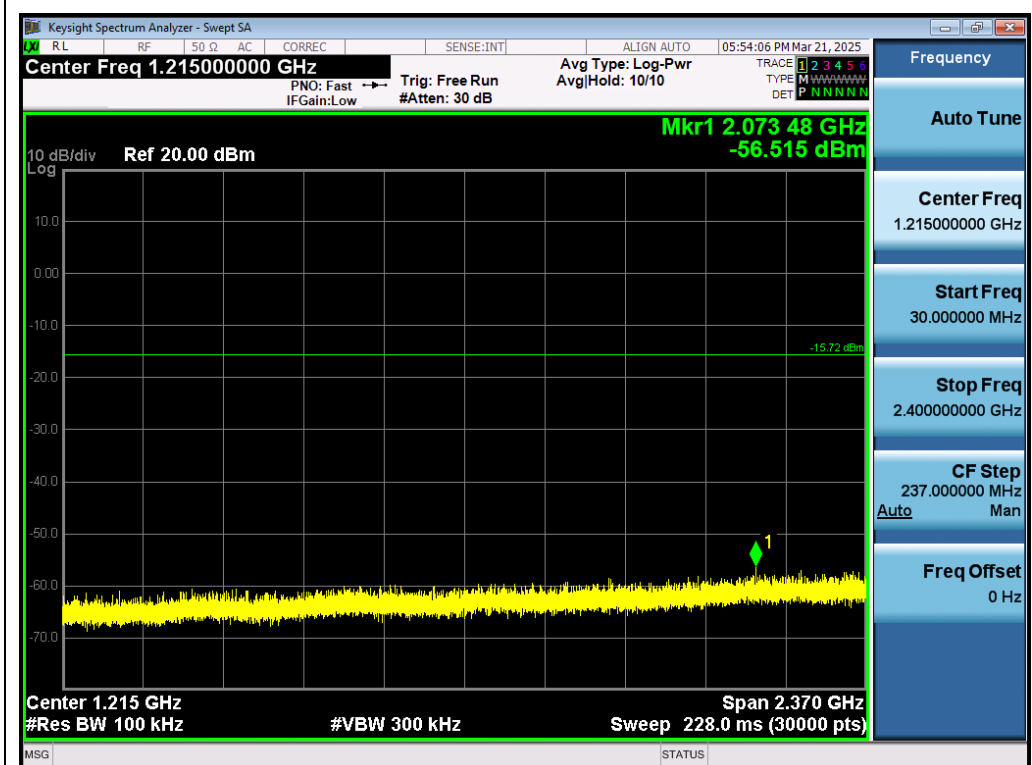
Test_Graph_LE2M_ANT1_2402_2Mbps_Lower Band Emissions



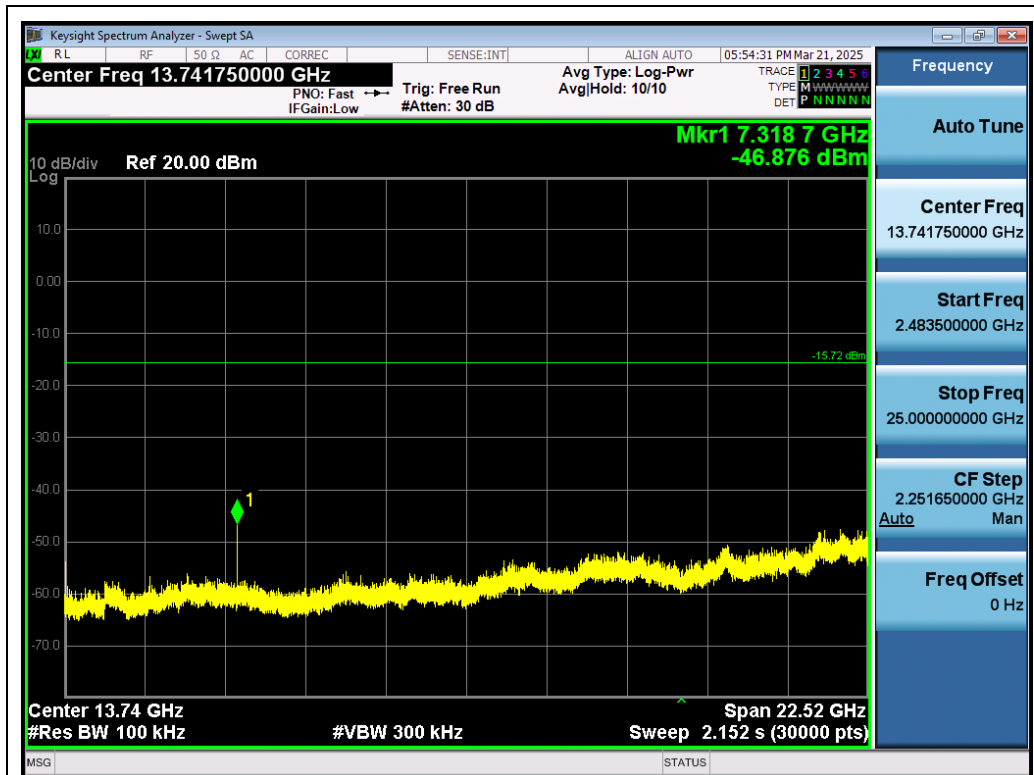
Test_Graph_LE2M_ANT1_2402_2Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2440_2Mbps_Reference Level



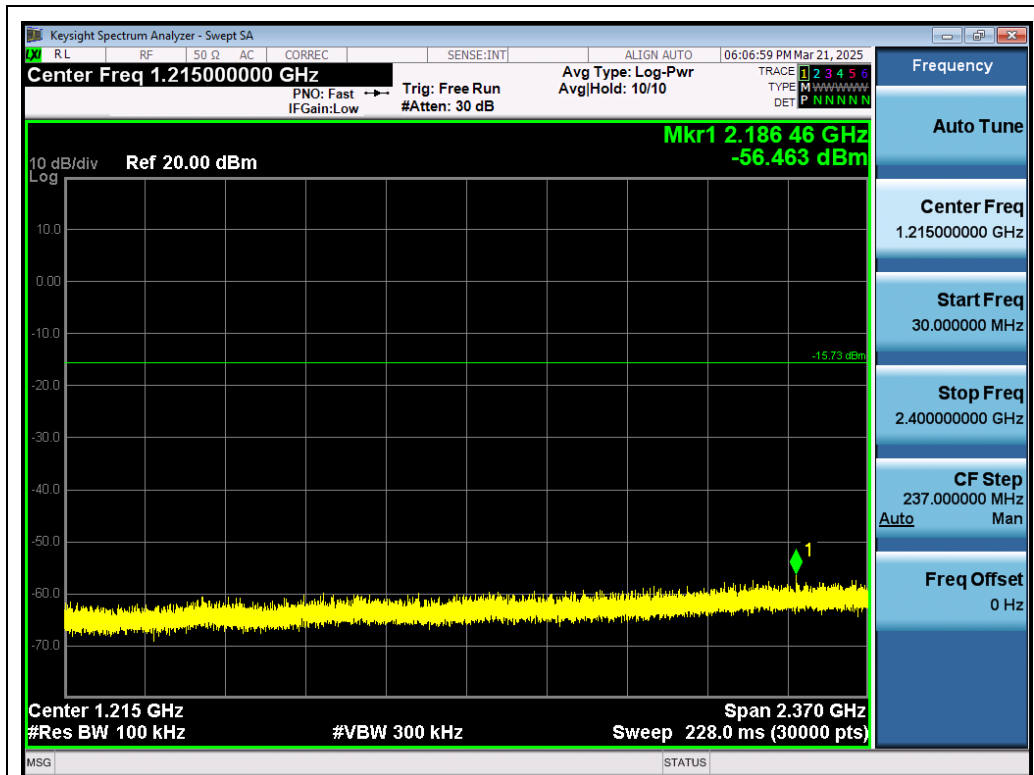
Test_Graph_LE2M_ANT1_2440_2Mbps_Lower Band Emissions



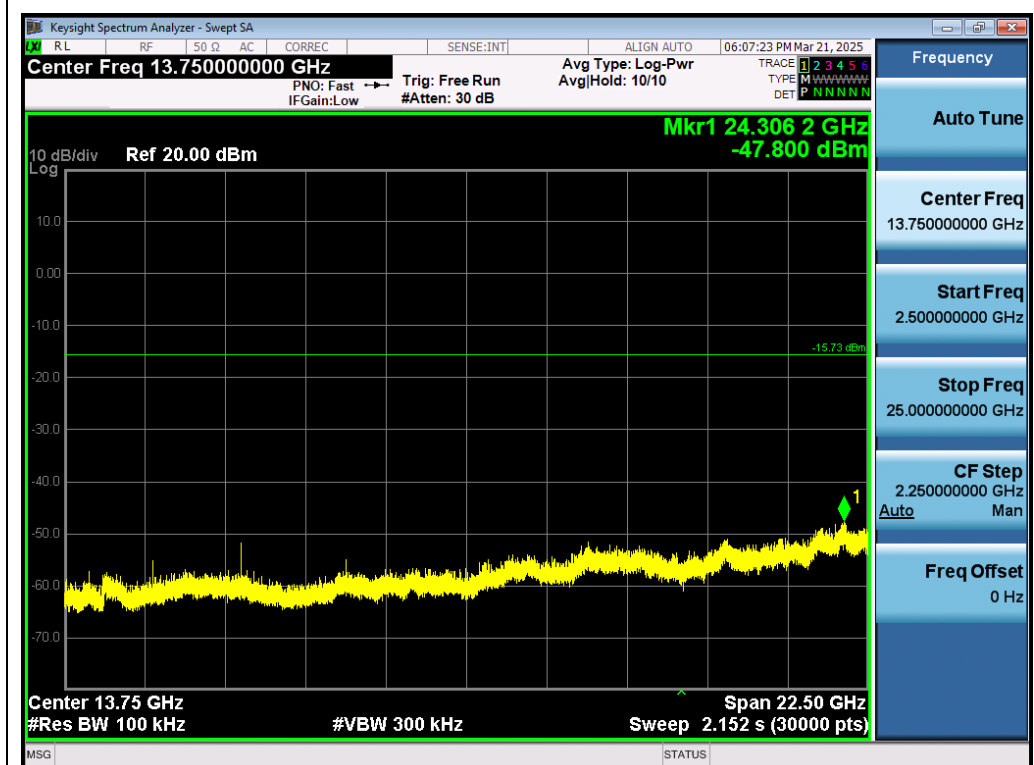
Test_Graph_LE2M_ANT1_2440_2Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2480_2Mbps_Reference Level



Test_Graph_LE2M_ANT1_2480_2Mbps_Lower Band Emissions



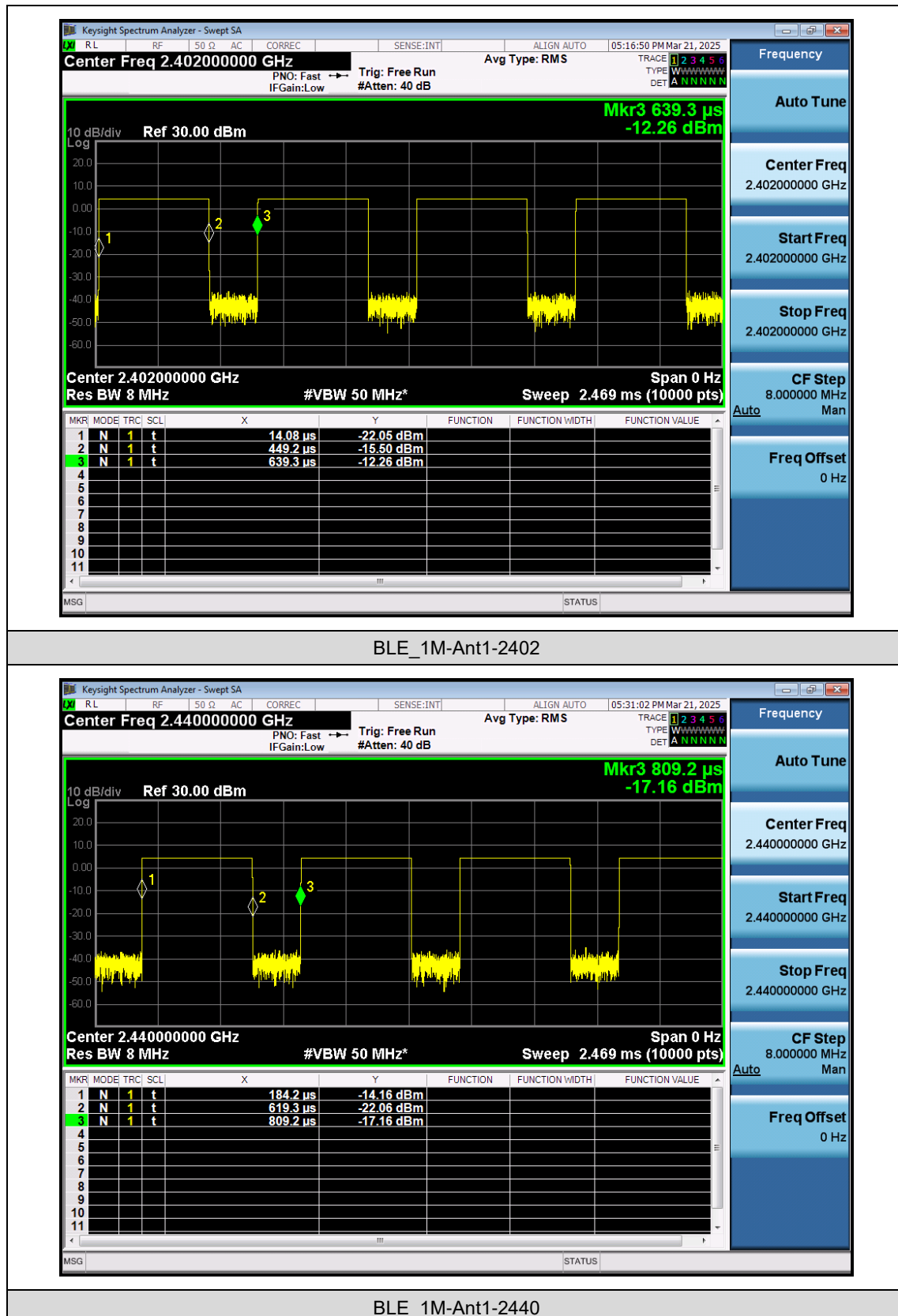
Test_Graph_LE2M_ANT1_2480_2Mbps_Higher Band Emissions

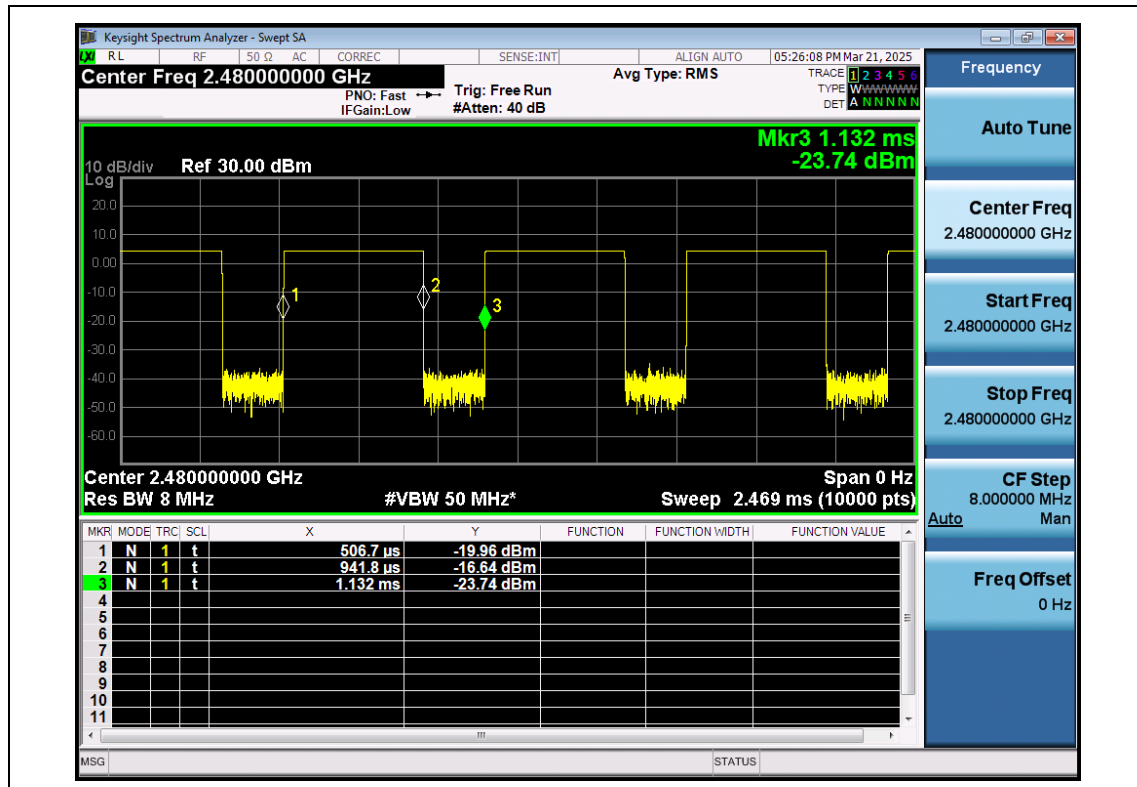
Appendix F: Duty Cycle

Test Result

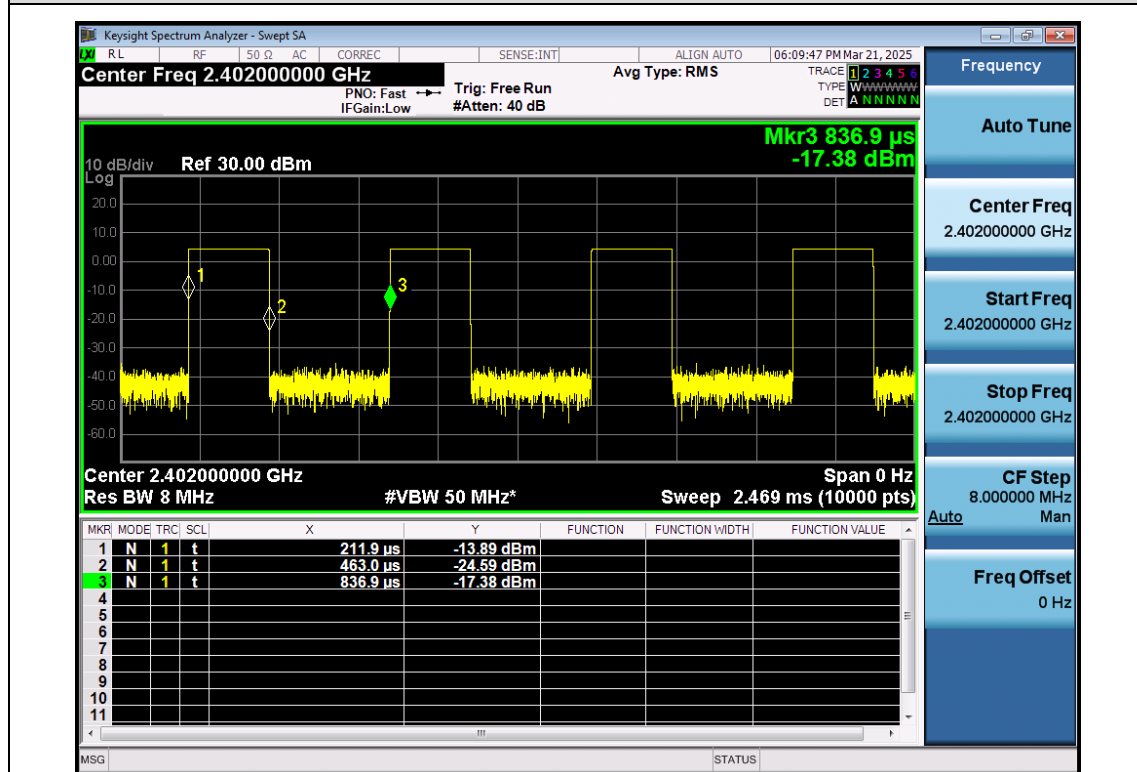
Test Mode	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
GFSK_1Mbps	2402	0.44	0.63	69.59	1.55
GFSK_1Mbps	2440	0.44	0.63	69.62	1.55
GFSK_1Mbps	2480	0.44	0.63	69.57	1.55
GFSK_2Mbps	2402	0.25	0.63	40.18	3.98
GFSK_2Mbps	2440	0.25	0.63	40.21	3.98
GFSK_2Mbps	2480	0.25	0.63	40.17	3.98

Test Graphs

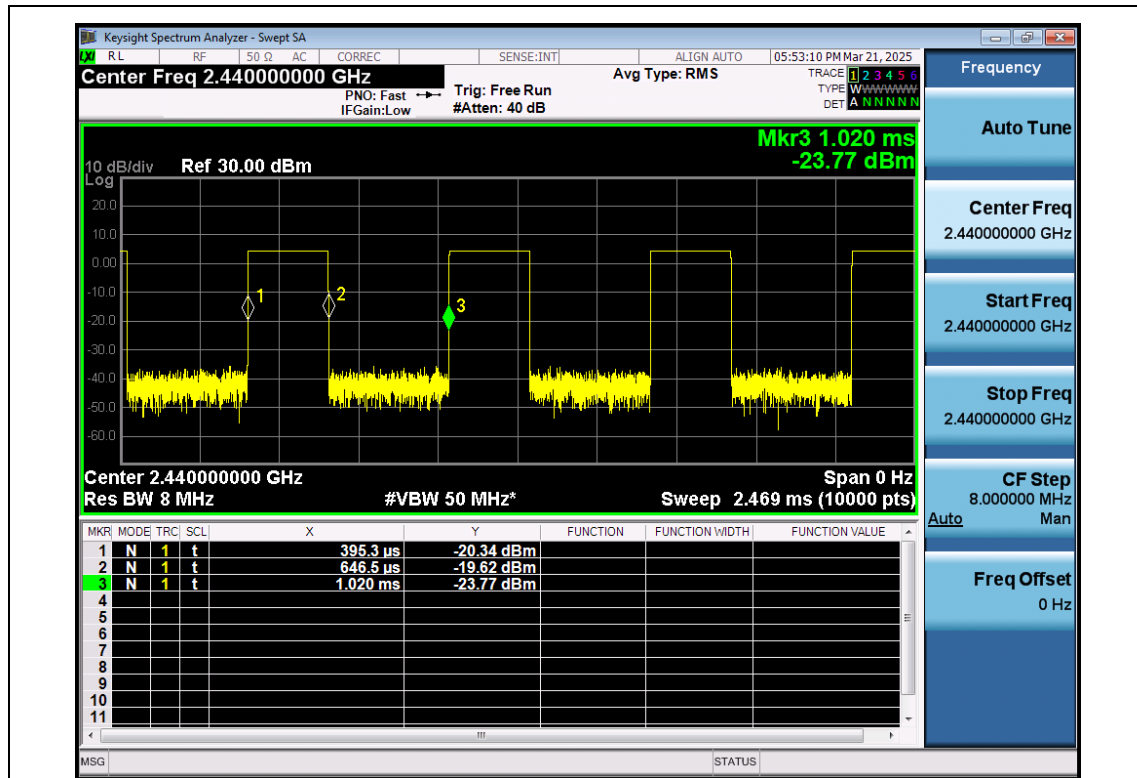




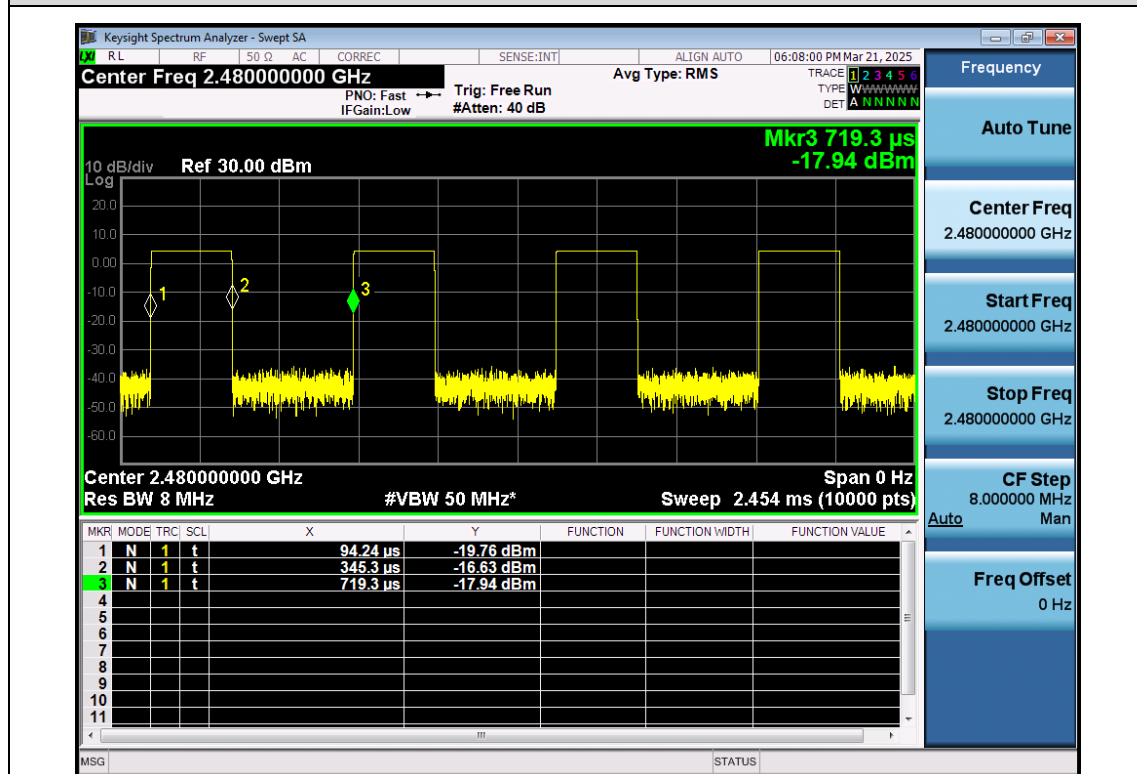
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



BLE_2M-Ant1-2480