

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Heart Rate Monitor

Trade Mark: N/A

Test Model: HRM802L

FCC ID: 2ACN7HRM802L

Environmental Conditions

Temperature:	24.0°C
Relative Humidity:	59%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

Appendix A: DTS Bandwidth & Occupied Channel Bandwidth

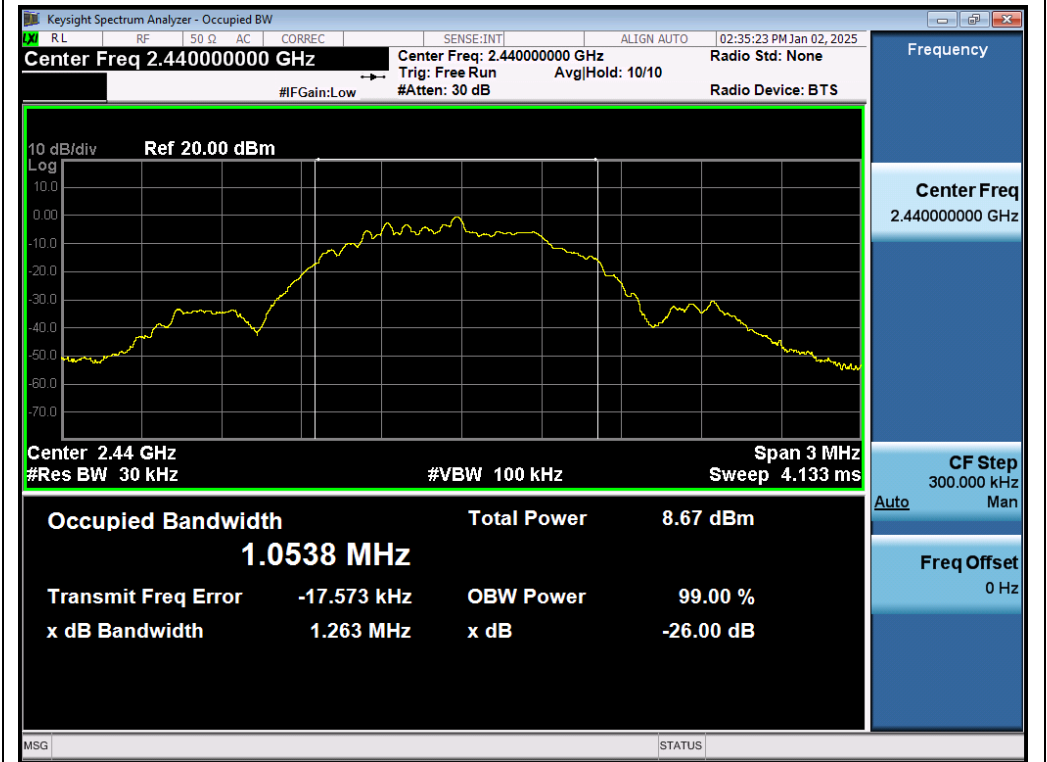
Test Result

Test Mode	Test Frequency	Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail
GFSK_1Mbps	2402	1.052	0.691	≥ 0.5	Pass
	2440	1.054	0.701	≥ 0.5	Pass
	2480	1.055	0.693	≥ 0.5	Pass
GFSK_2Mbps	2402	2.056	1.158	≥ 0.5	Pass
	2440	2.063	1.159	≥ 0.5	Pass
	2480	2.062	1.148	≥ 0.5	Pass

Test Graphs



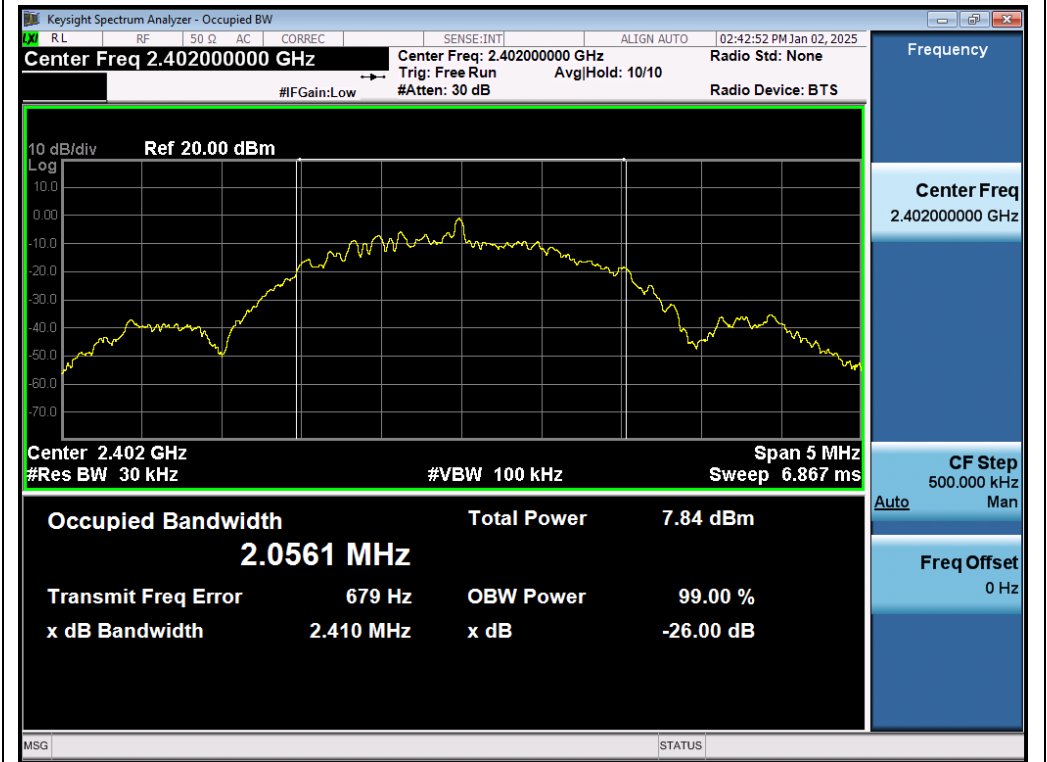
Test_Graph_LE1M_ANT1_2402_1Mbps_OBW



Test_Graph_LE1M_ANT1_2440_1Mbps_OBW



Test_Graph_LE1M_ANT1_2480_1Mbps_OBW



Test_Graph_LE2M_ANT1_2402_2Mbps_OBW



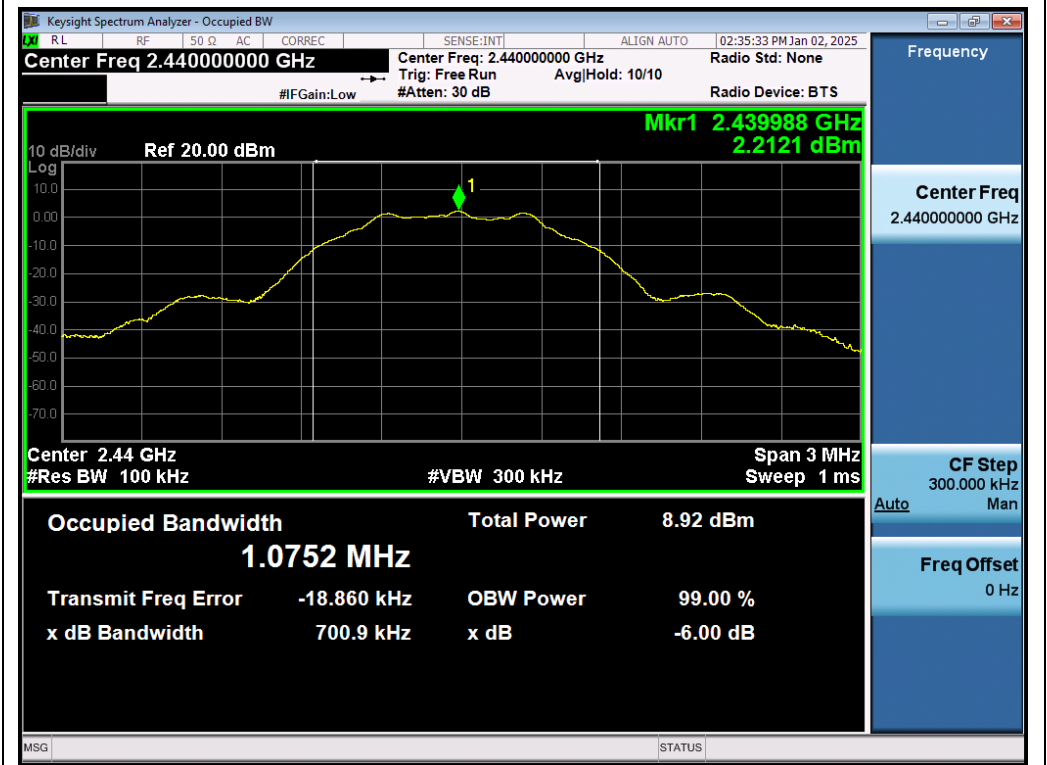
Test_Graph_LE2M_ANT1_2440_2Mbps_OBW



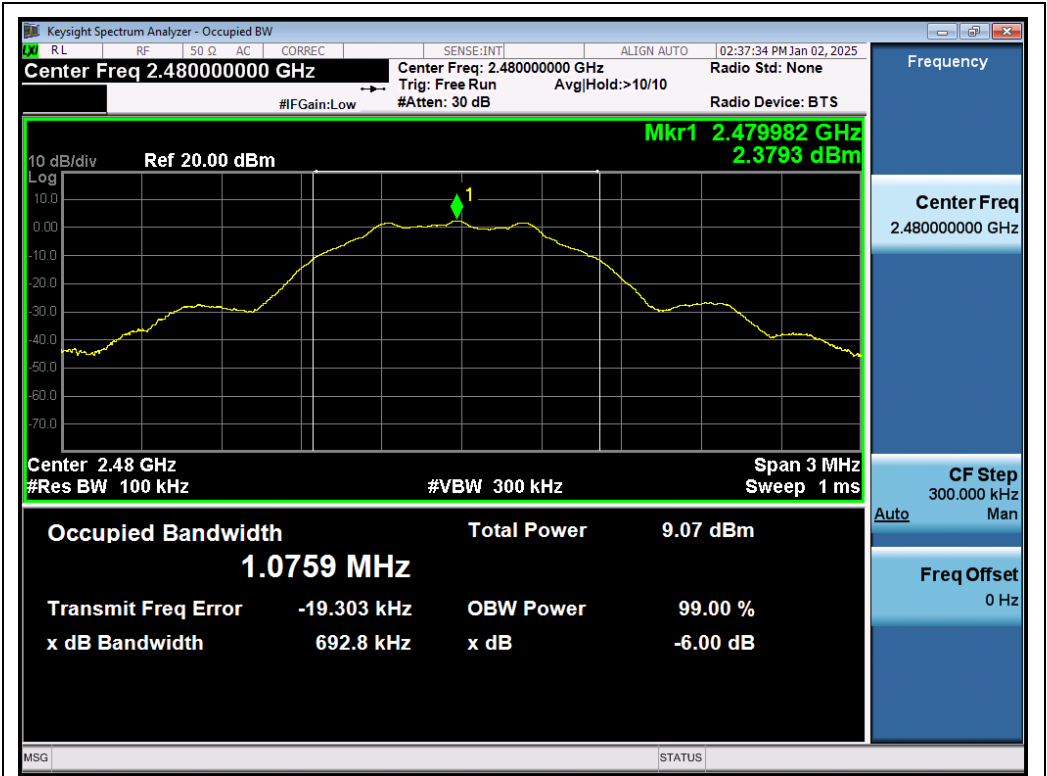
Test_Graph_LE2M_ANT1_2480_2Mbps_OBW



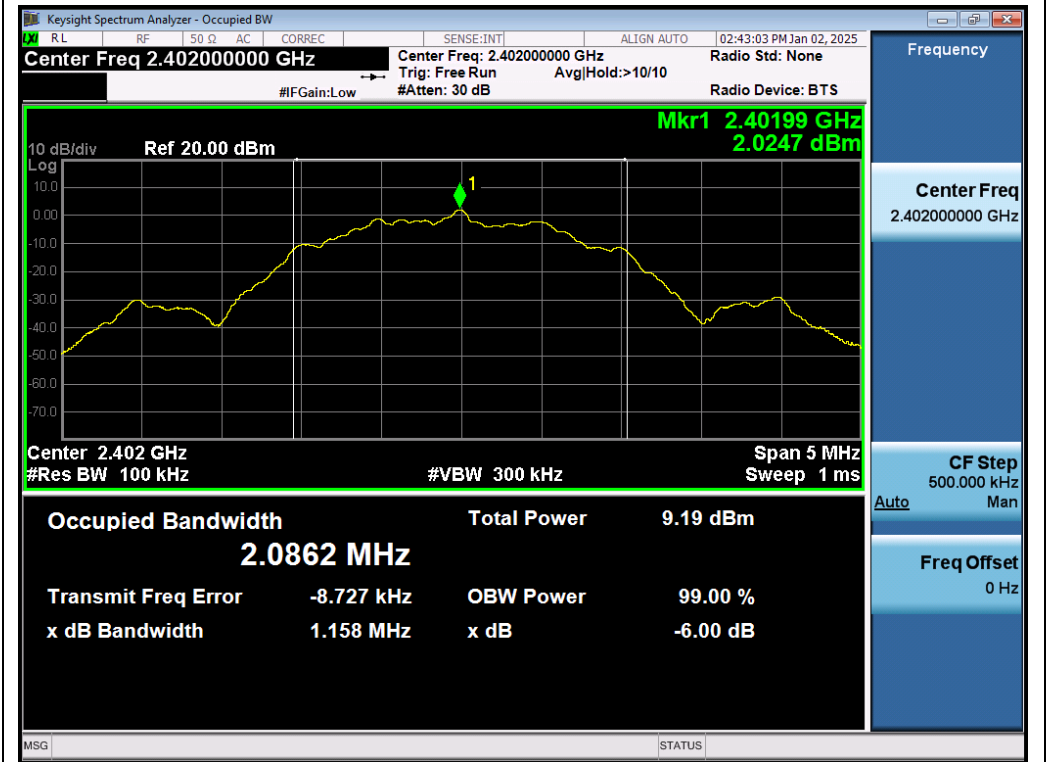
Test_Graph_LE1M_ANT1_2402_1Mbps_DTSBW



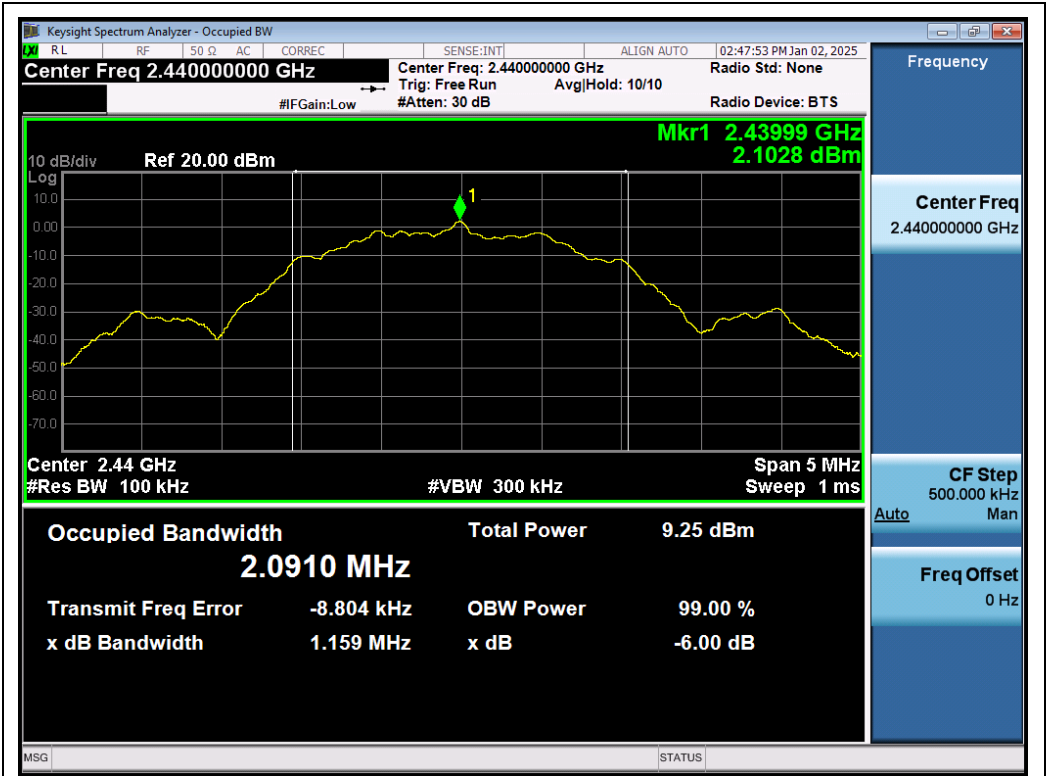
Test_Graph_LE1M_ANT1_2440_1Mbps_DTSBW



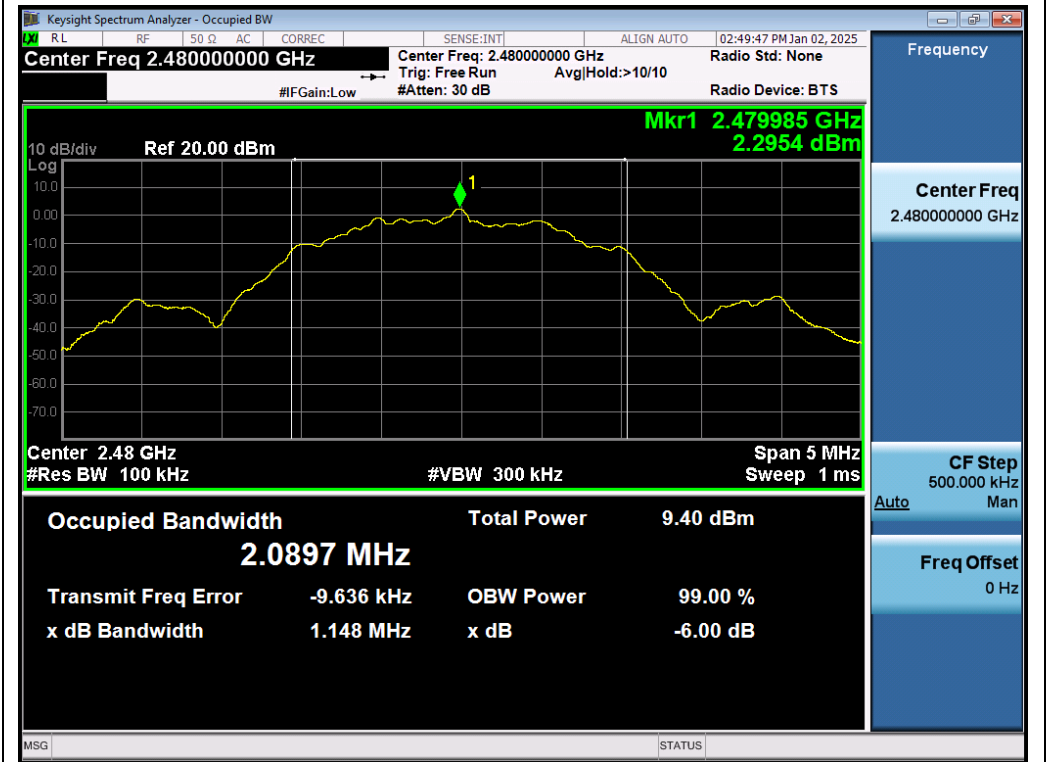
Test_Graph_LE1M_ANT1_2480_1Mbps_DTSBW



Test_Graph_LE2M_ANT1_2402_2Mbps_DTSBW



Test_Graph_LE2M_ANT1_2440_2Mbps_DTSBW



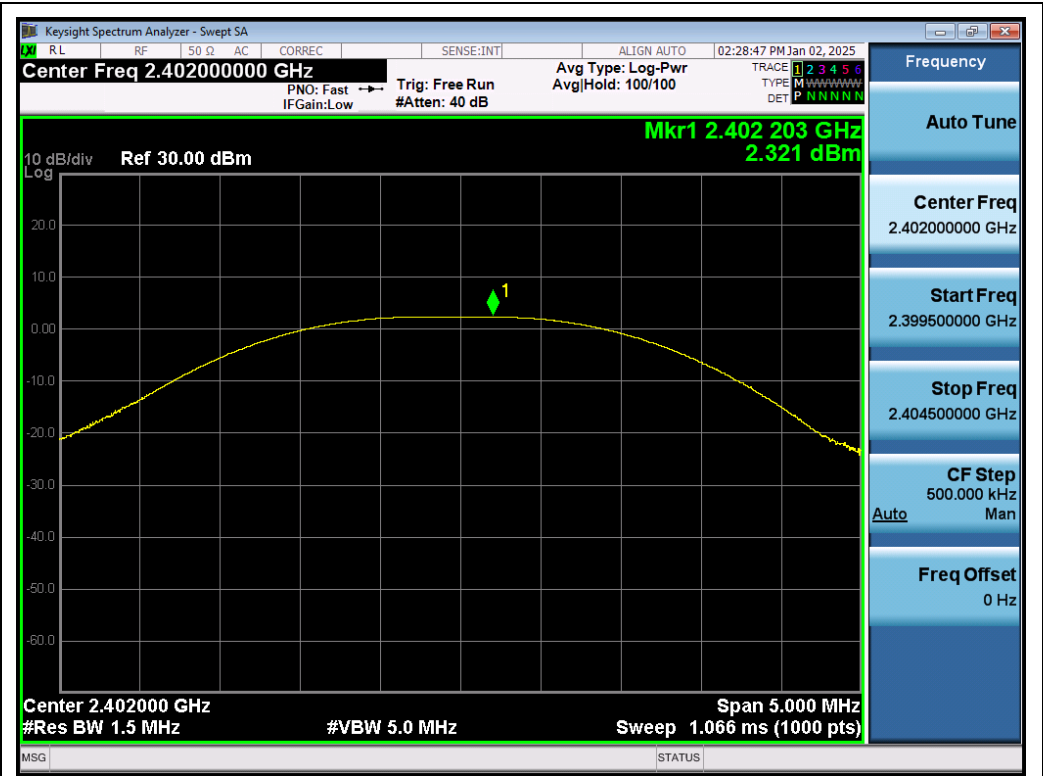
Test_Graph_LE2M_ANT1_2480_2Mbps_DTSBW

Appendix B: Maximum peak conducted output power

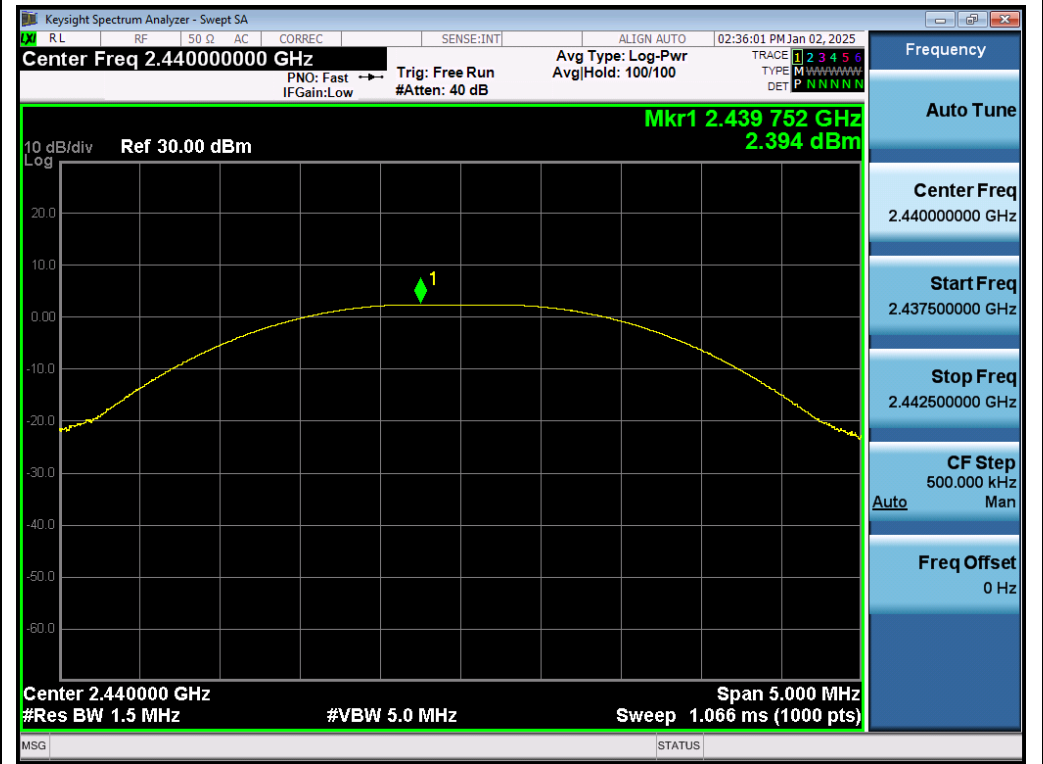
Test Result Peak

Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK_1Mbps	2402	2.321	≤ 30	Pass
	2440	2.394	≤ 30	Pass
	2480	2.466	≤ 30	Pass
GFSK_2Mbps	2402	2.271	≤ 30	Pass
	2440	2.357	≤ 30	Pass
	2480	2.429	≤ 30	Pass

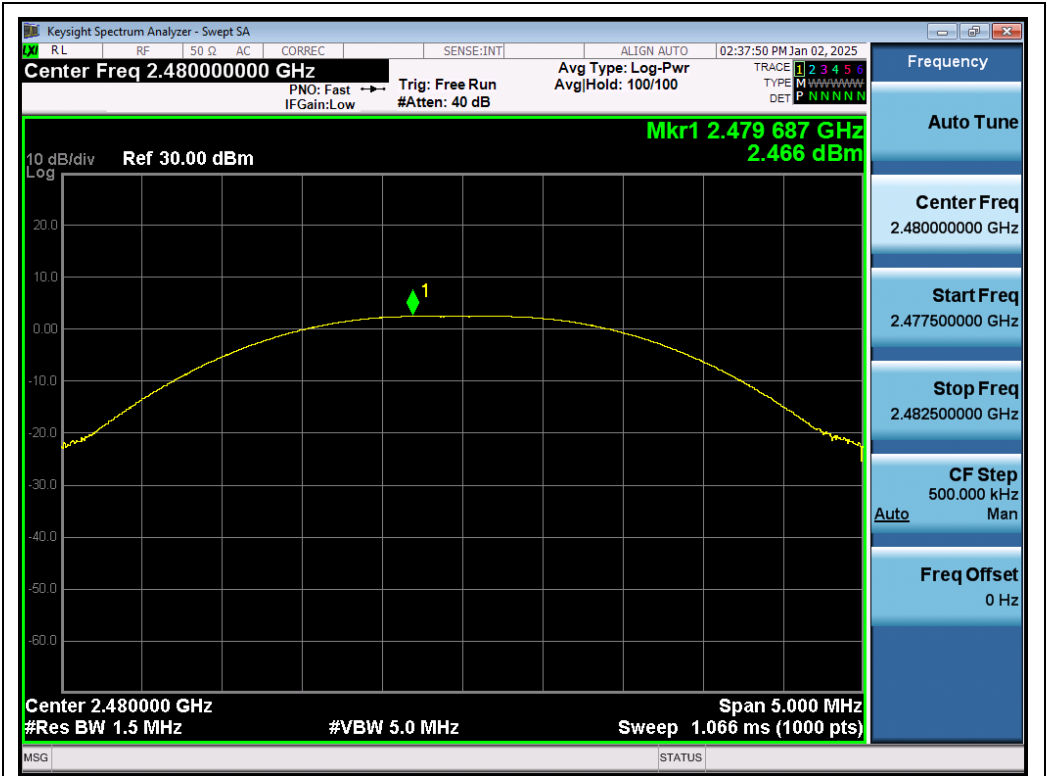
Test Graphs Peak



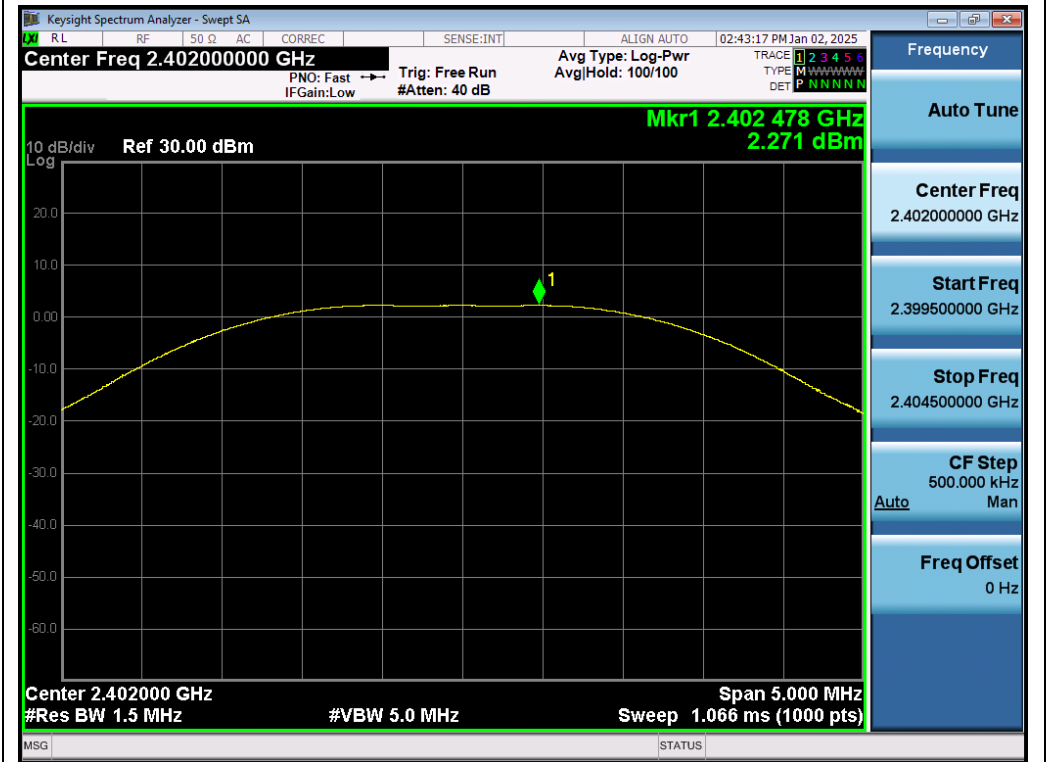
Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power



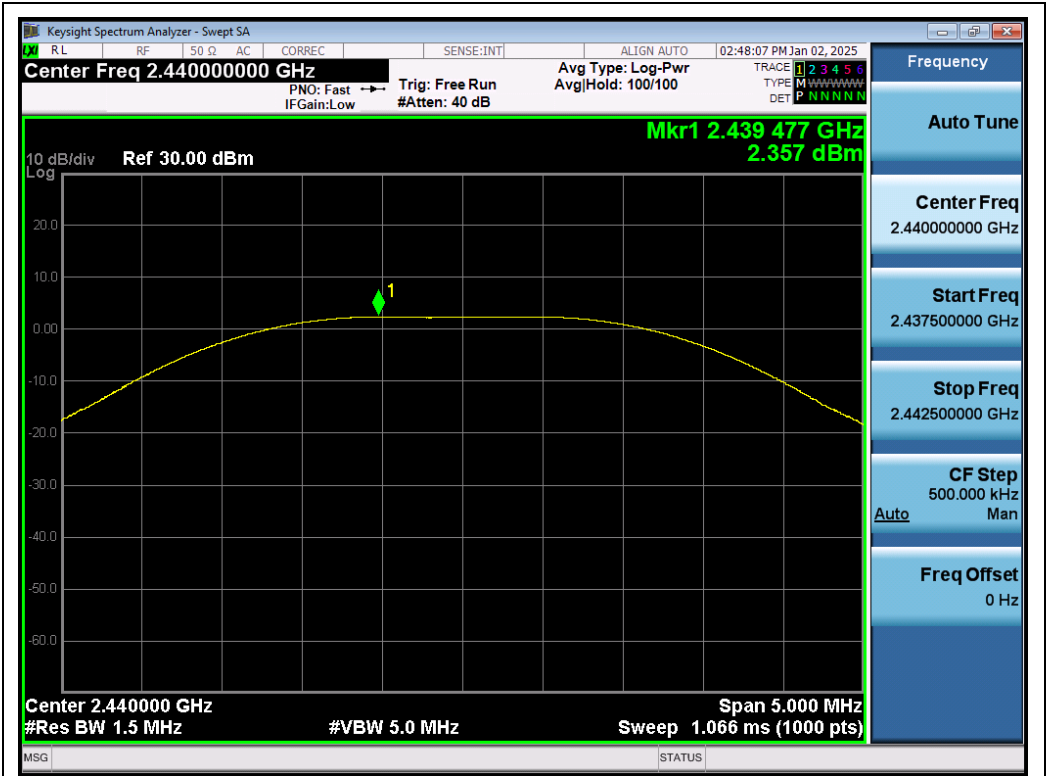
Test_Graph_LE1M_ANT1_2440_1Mbps_Peak Power



Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power



Test_Graph_LE2M_ANT1_2402_2Mbps_Peak Power



Test_Graph_LE2M_ANT1_2440_2Mbps_Peak Power



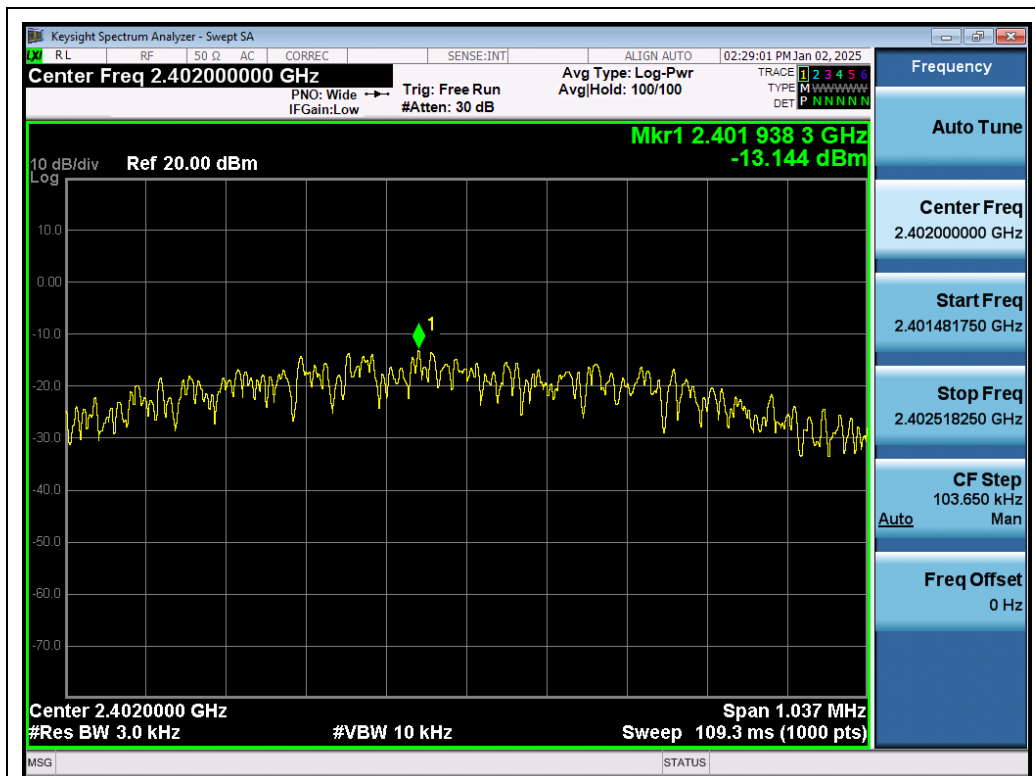
Test_Graph_LE2M_ANT1_2480_2Mbps_Peak Power

Appendix C: Maximum peak power spectral density

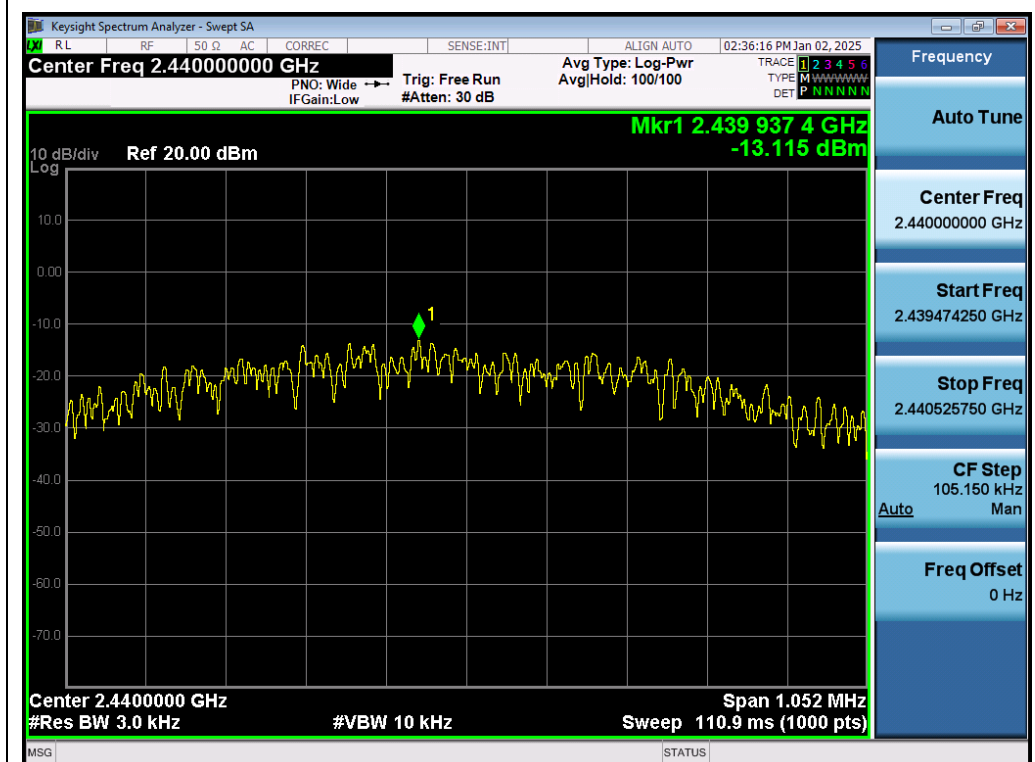
Test Result

Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
GFSK_1Mbps	2402	-13.144	≤ 8	Pass
	2440	-13.115	≤ 8	Pass
	2480	-12.990	≤ 8	Pass
GFSK_2Mbps	2402	-15.961	≤ 8	Pass
	2440	-15.915	≤ 8	Pass
	2480	-15.611	≤ 8	Pass

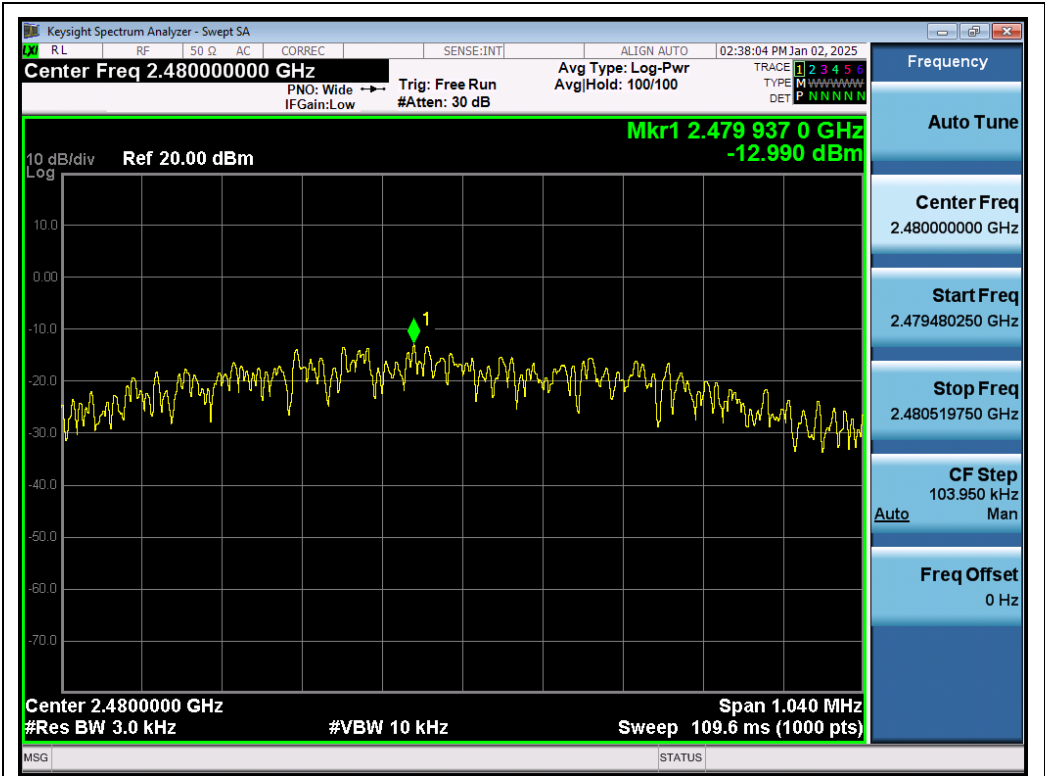
Test Graphs



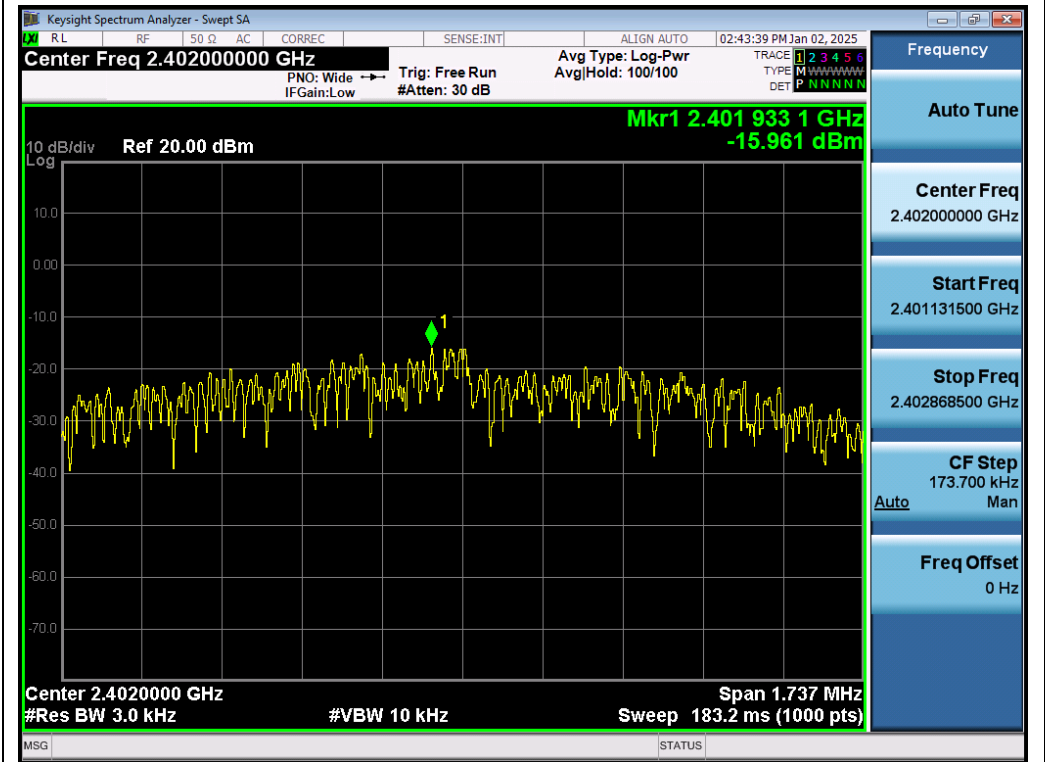
Test_Graph_LE1M_ANT1_2402_1Mbps_PSD



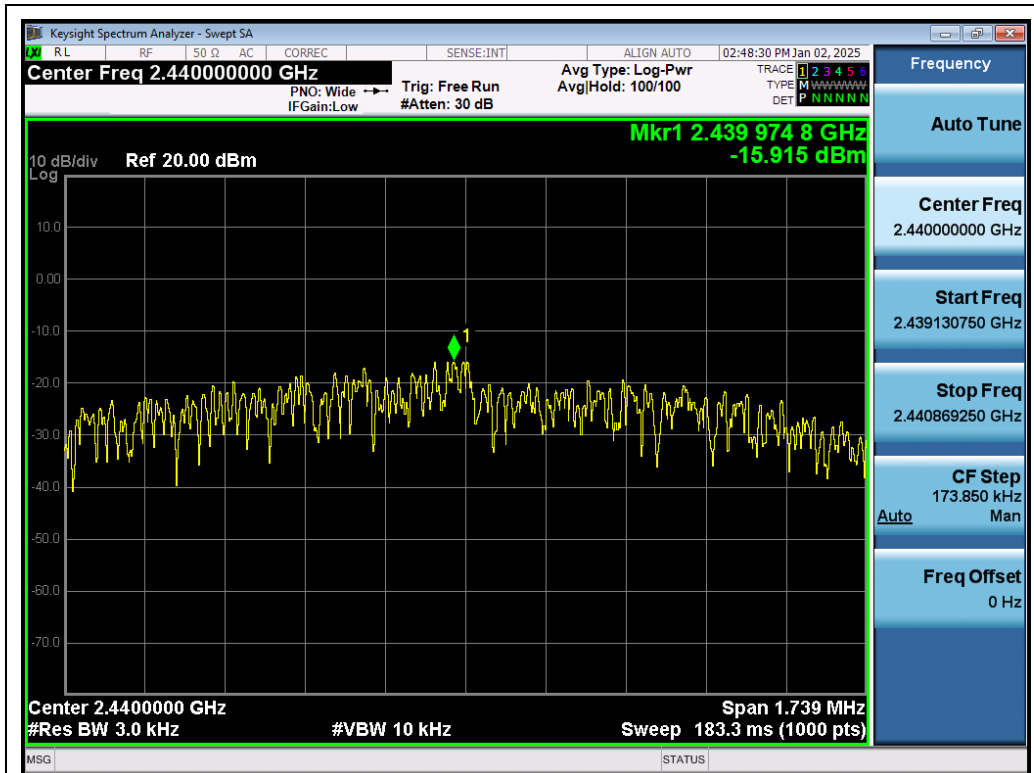
Test_Graph_LE1M_ANT1_2440_1Mbps_PSD



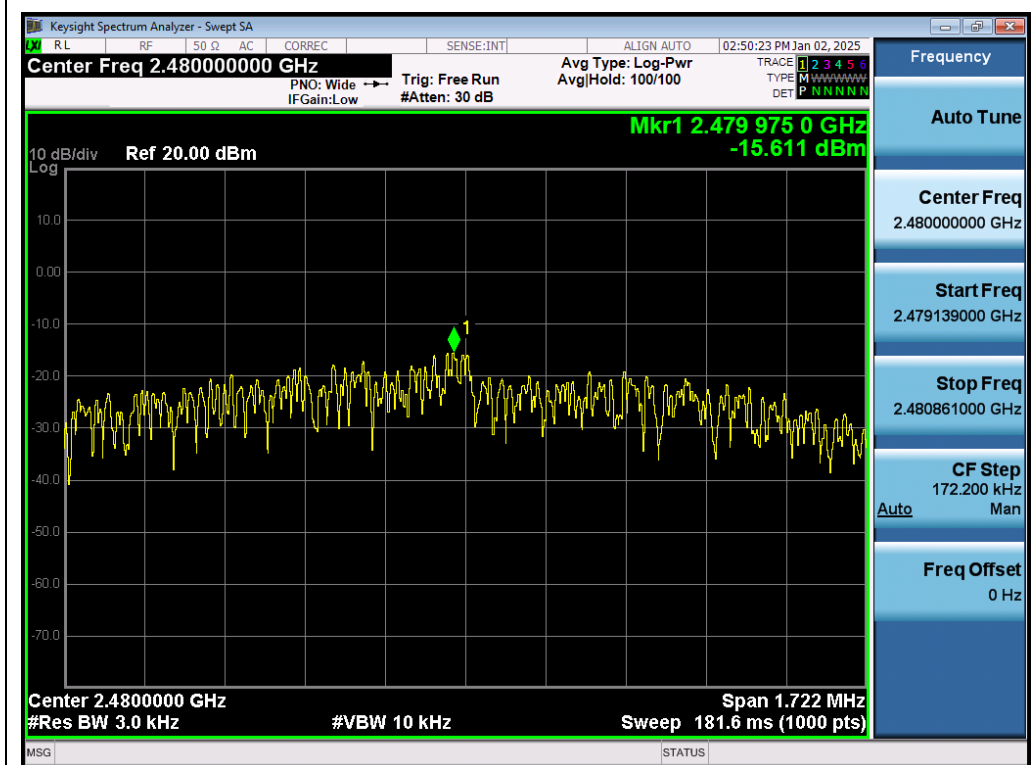
Test_Graph_LE1M_ANT1_2480_1Mbps_PSD



Test_Graph_LE2M_ANT1_2402_2Mbps_PSD



Test_Graph_LE2M_ANT1_2440_2Mbps_PSD



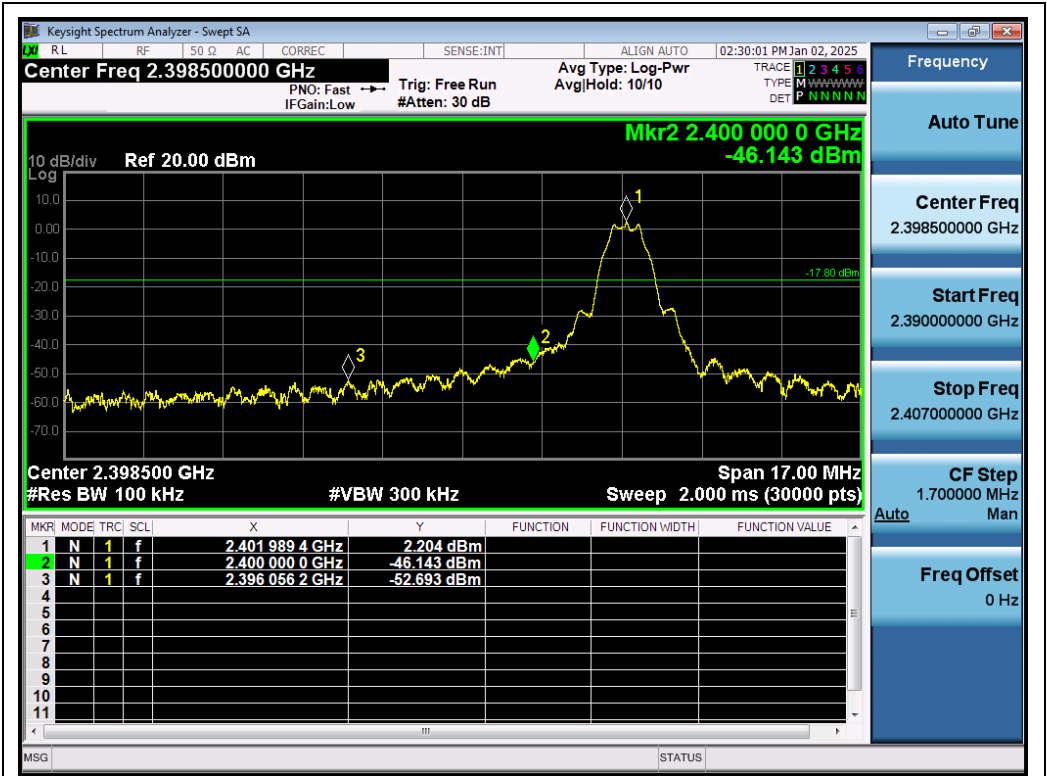
Test_Graph_LE2M_ANT1_2480_2Mbps_PSD

Appendix D: Band edge measurements

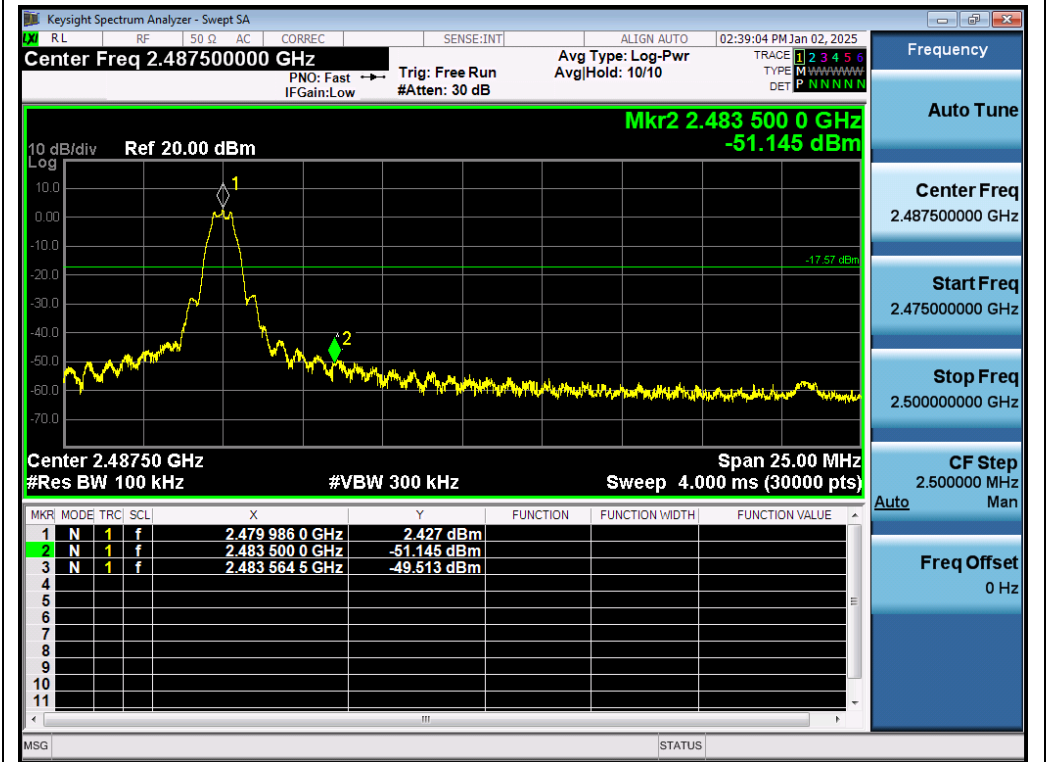
Test Result

Test Mode	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	Low	2402	2.204	-46.143	≤ -17.80	Pass
GFSK_1Mbps	High	2480	2.427	-51.145	≤ -17.57	Pass
GFSK_2Mbps	Low	2402	2.139	-30.579	≤ -17.86	Pass
GFSK_2Mbps	High	2480	2.403	-52.097	≤ -17.60	Pass

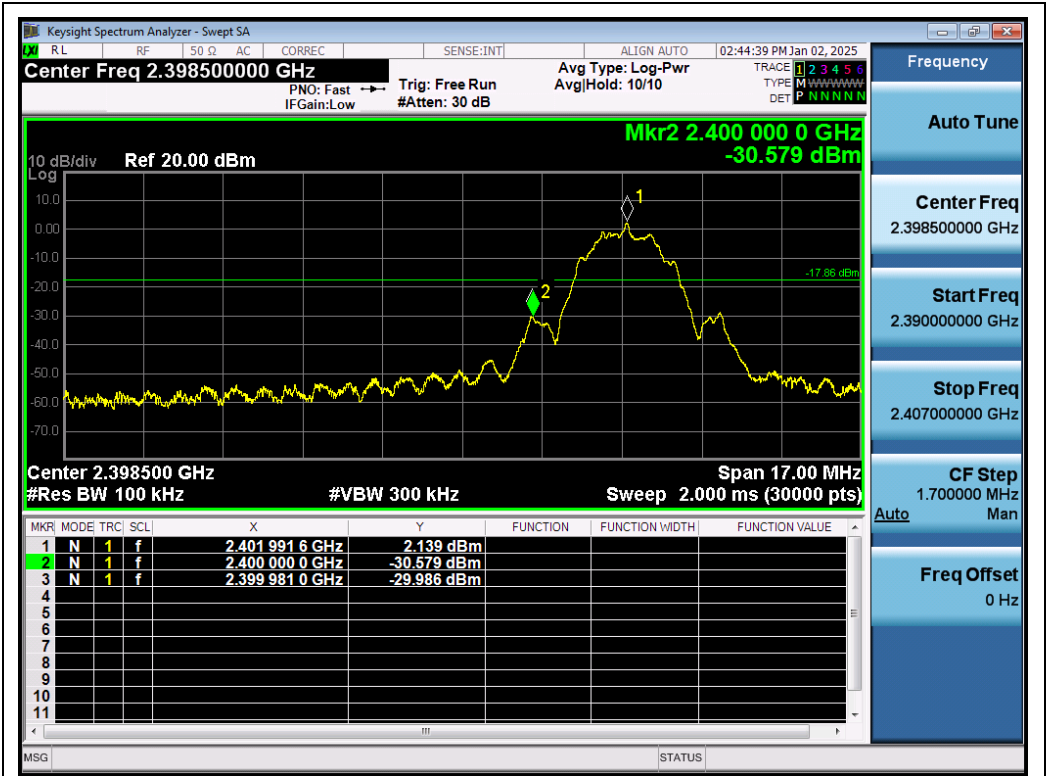
Test Graphs



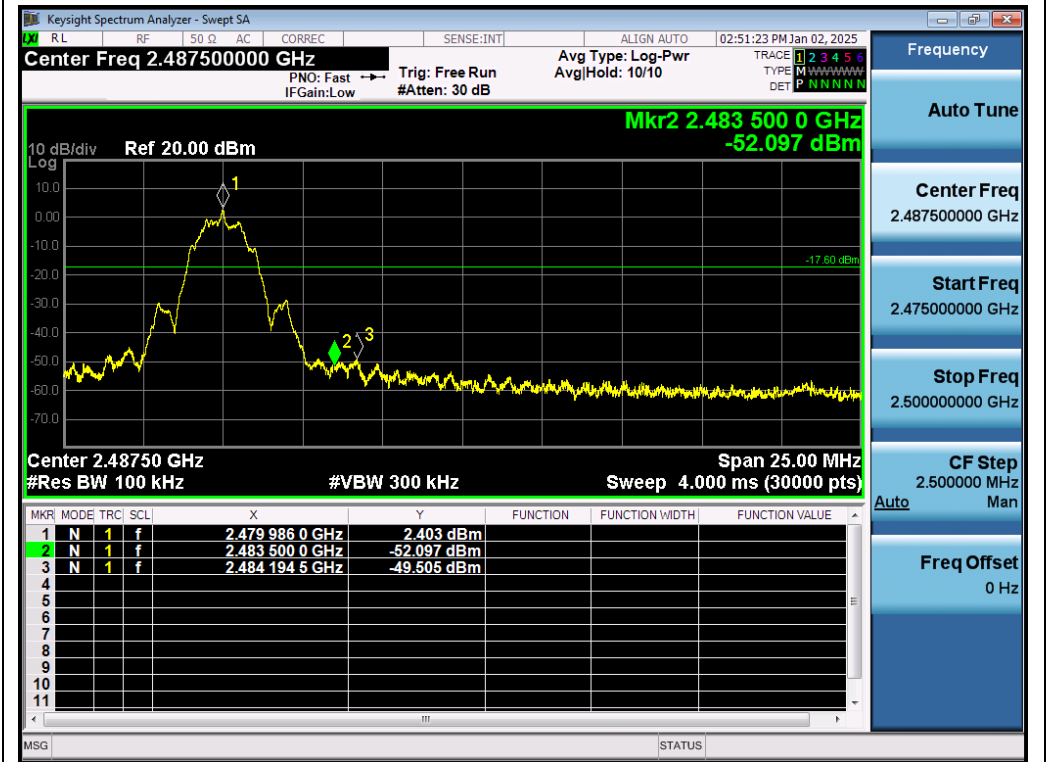
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Edge Emissions



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

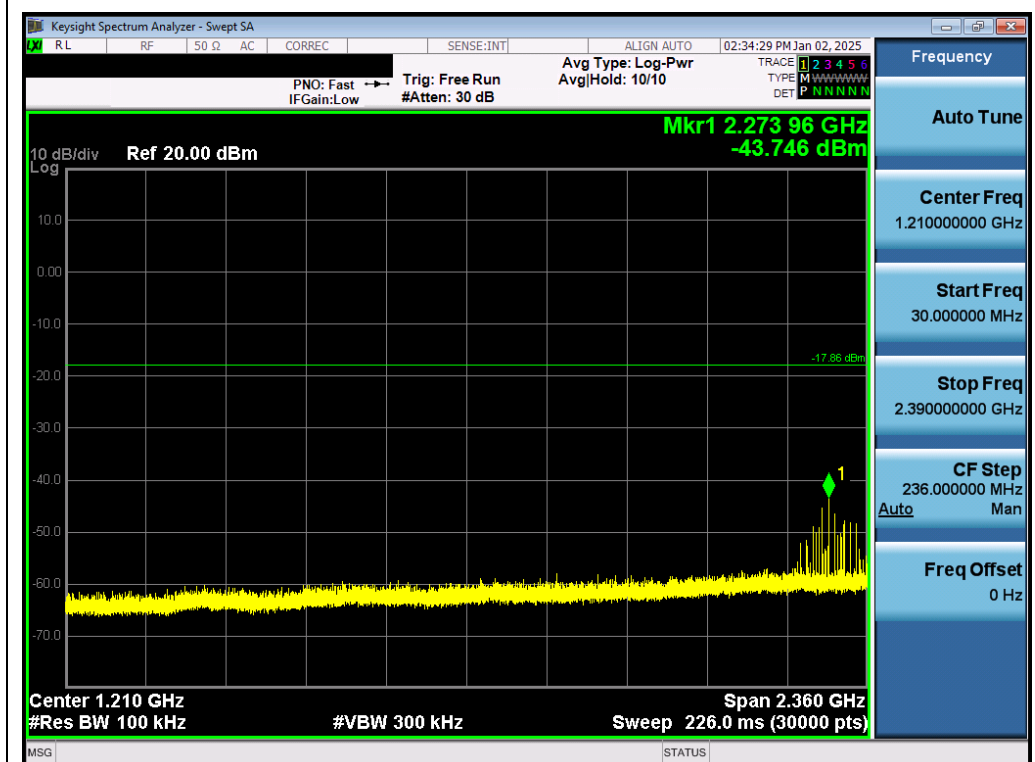
Test Result

Test Mode	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	2402	0~Reference	2.141	2.141	---	Pass
GFSK_1Mbps	2402	30~2390	2.141	-43.746	≤ -17.86	Pass
GFSK_1Mbps	2402	2483.5~25000	2.141	-45.223	≤ -17.86	Pass
GFSK_1Mbps	2440	0~Reference	2.247	2.247	---	Pass
GFSK_1Mbps	2440	30~2400	2.247	-44.568	≤ -17.75	Pass
GFSK_1Mbps	2440	2483.5~25000	2.247	-44.307	≤ -17.75	Pass
GFSK_1Mbps	2480	0~Reference	2.403	2.403	---	Pass
GFSK_1Mbps	2480	30~2400	2.403	-45.486	≤ -17.60	Pass
GFSK_1Mbps	2480	2500~26500	2.403	-43.996	≤ -17.60	Pass
GFSK_2Mbps	2402	0~Reference	2.073	2.073	---	Pass
GFSK_2Mbps	2402	30~2390	2.073	-44.658	≤ -17.93	Pass
GFSK_2Mbps	2402	2483.5~25000	2.073	-45.458	≤ -17.93	Pass
GFSK_2Mbps	2440	0~Reference	2.192	2.192	---	Pass
GFSK_2Mbps	2440	30~2400	2.192	-44.500	≤ -17.81	Pass
GFSK_2Mbps	2440	2483.5~25000	2.192	-47.856	≤ -17.81	Pass
GFSK_2Mbps	2480	0~Reference	2.361	2.361	---	Pass
GFSK_2Mbps	2480	30~2400	2.361	-44.896	≤ -17.64	Pass
GFSK_2Mbps	2480	2500~26500	2.361	-47.812	≤ -17.64	Pass

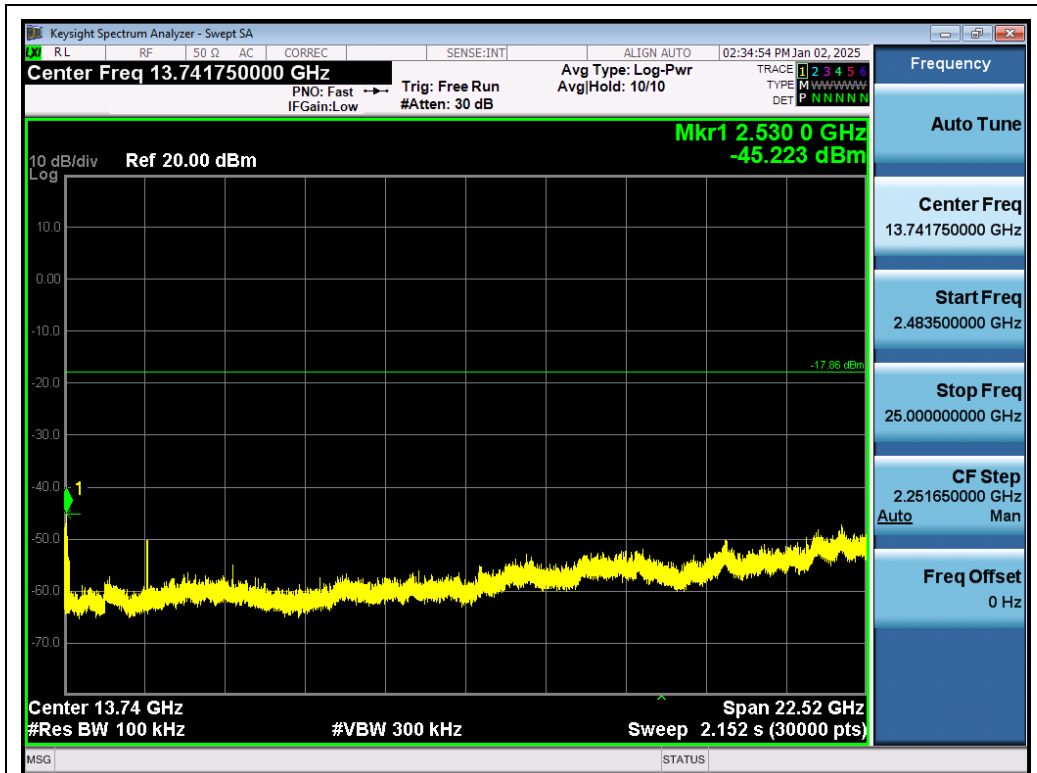
Test Graphs



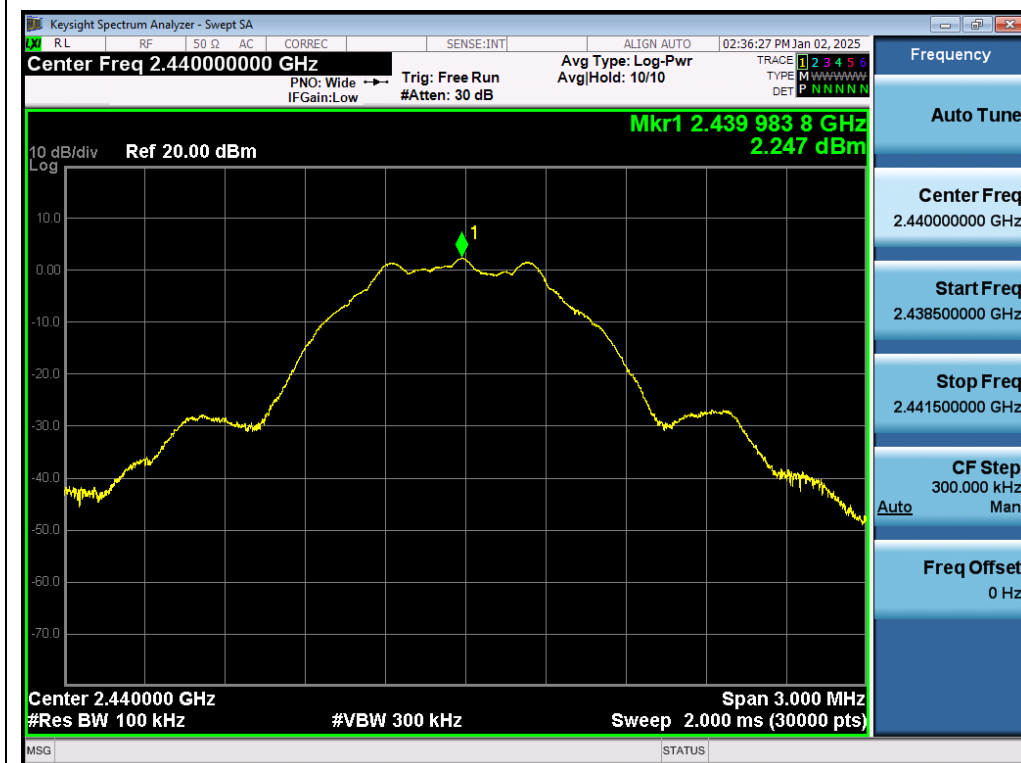
Test_Graph_LE1M_ANT1_2402_1Mbps_Reference Level



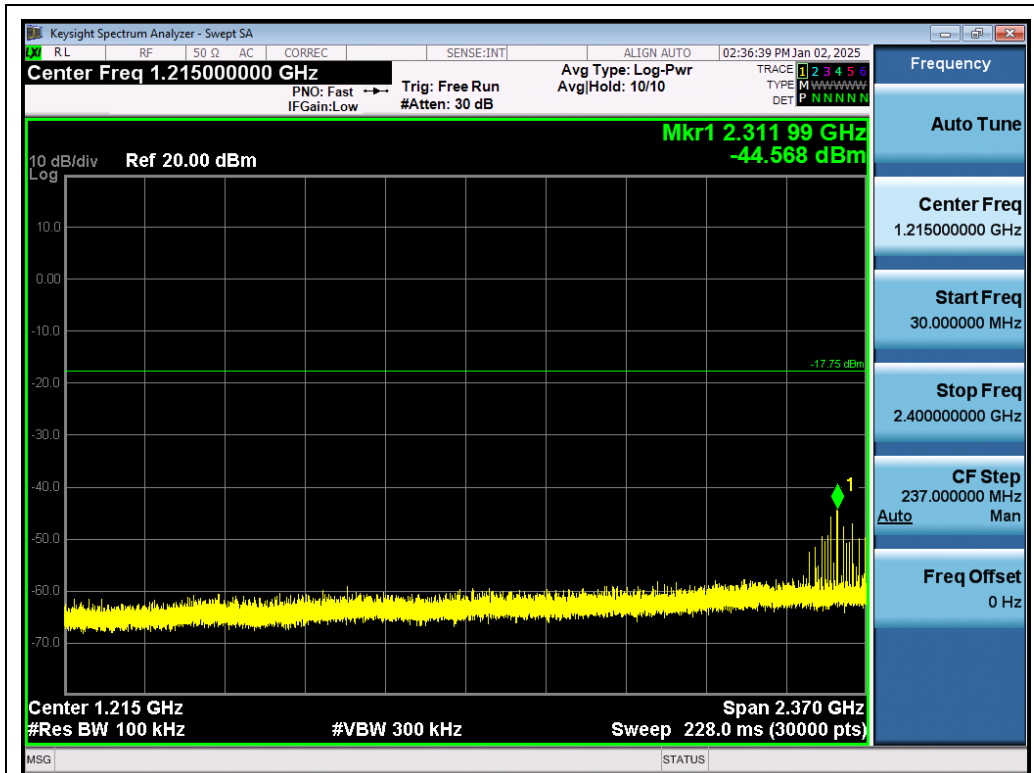
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions



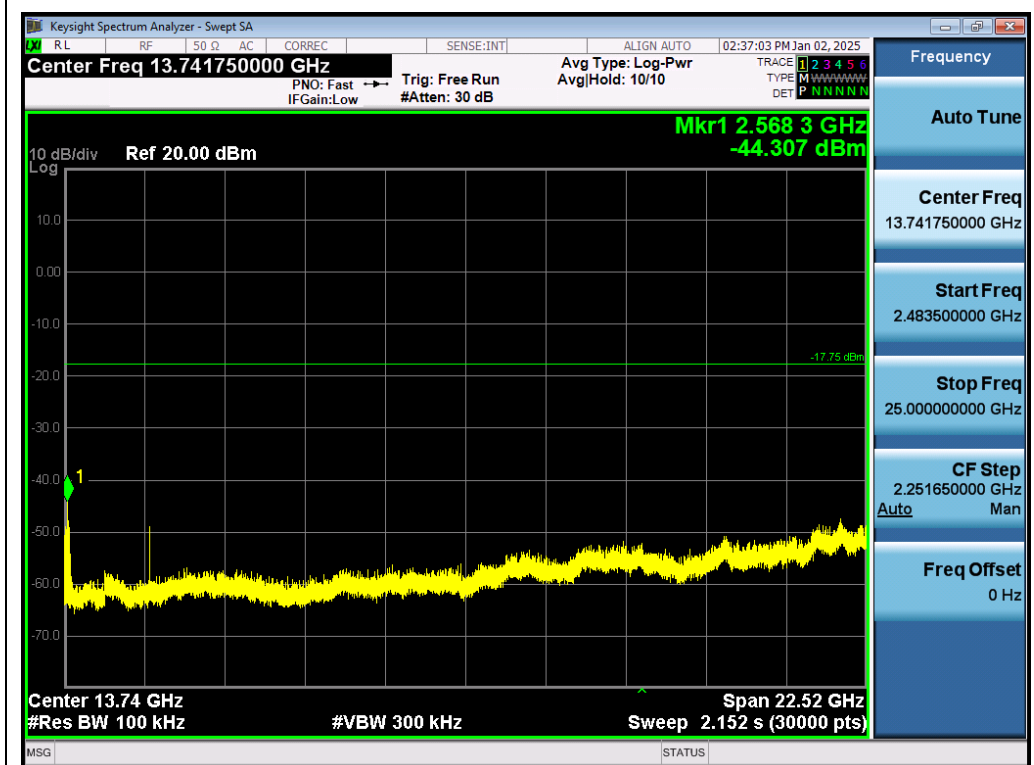
Test_Graph_LE1M_ANT1_2402_1Mbps_Higher Band Emissions



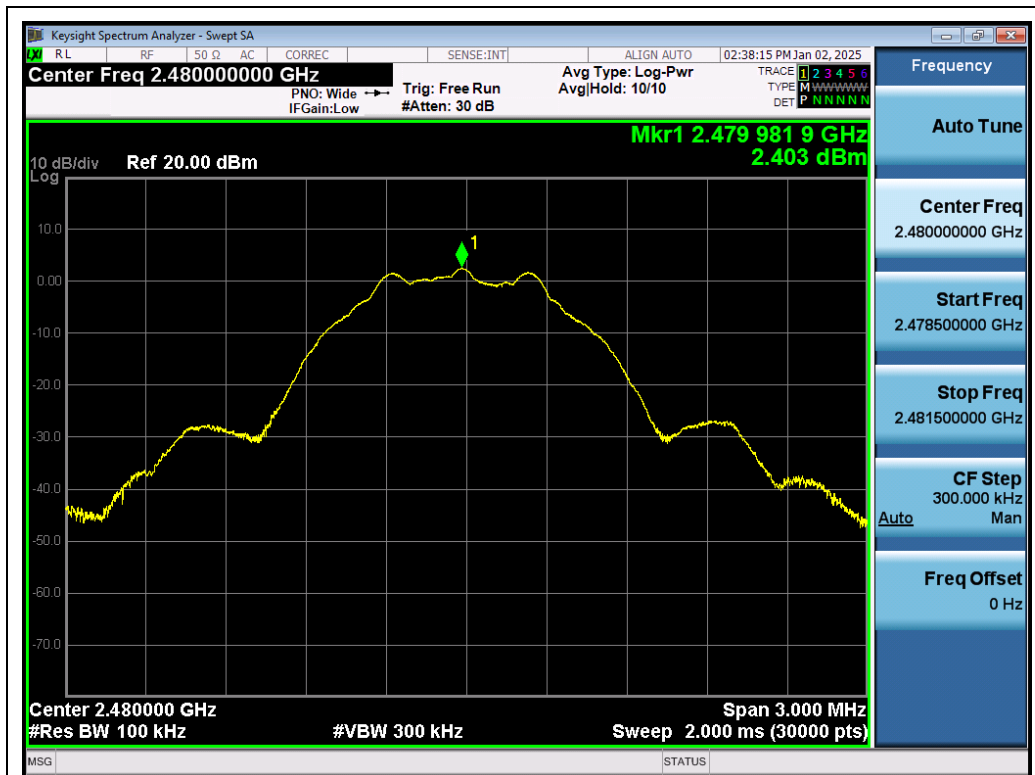
Test_Graph_LE1M_ANT1_2440_1Mbps_Reference Level



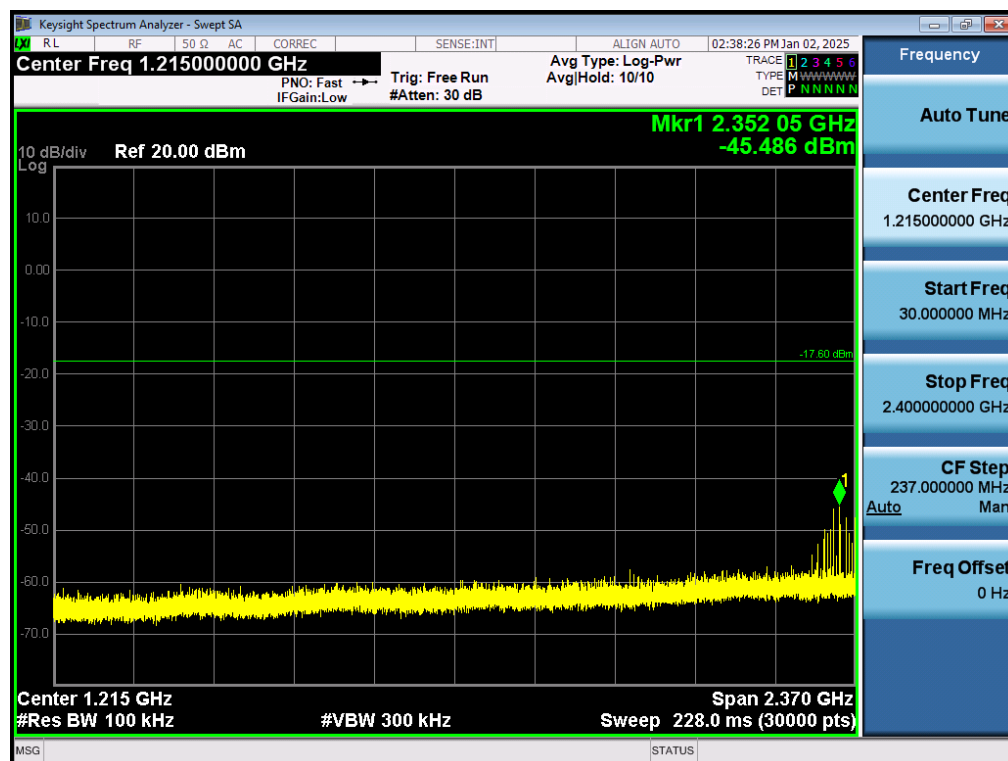
Test_Graph_LE1M_ANT1_2440_1Mbps_Lower Band Emissions



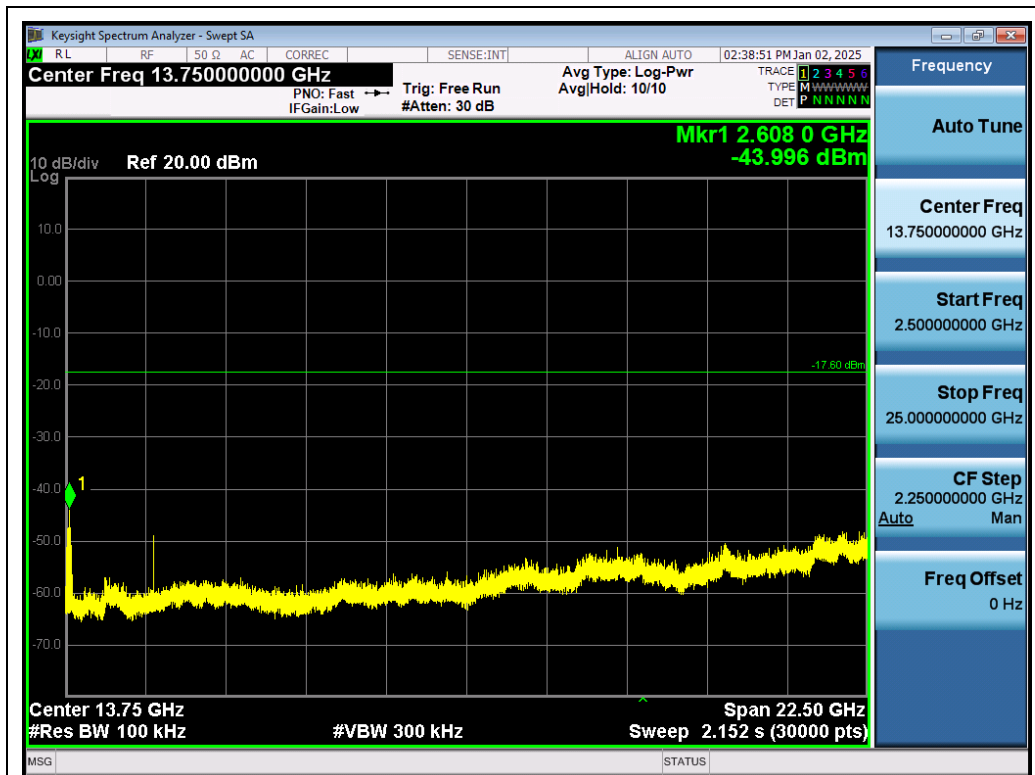
Test_Graph_LE1M_ANT1_2440_1Mbps_Higher Band Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Reference Level



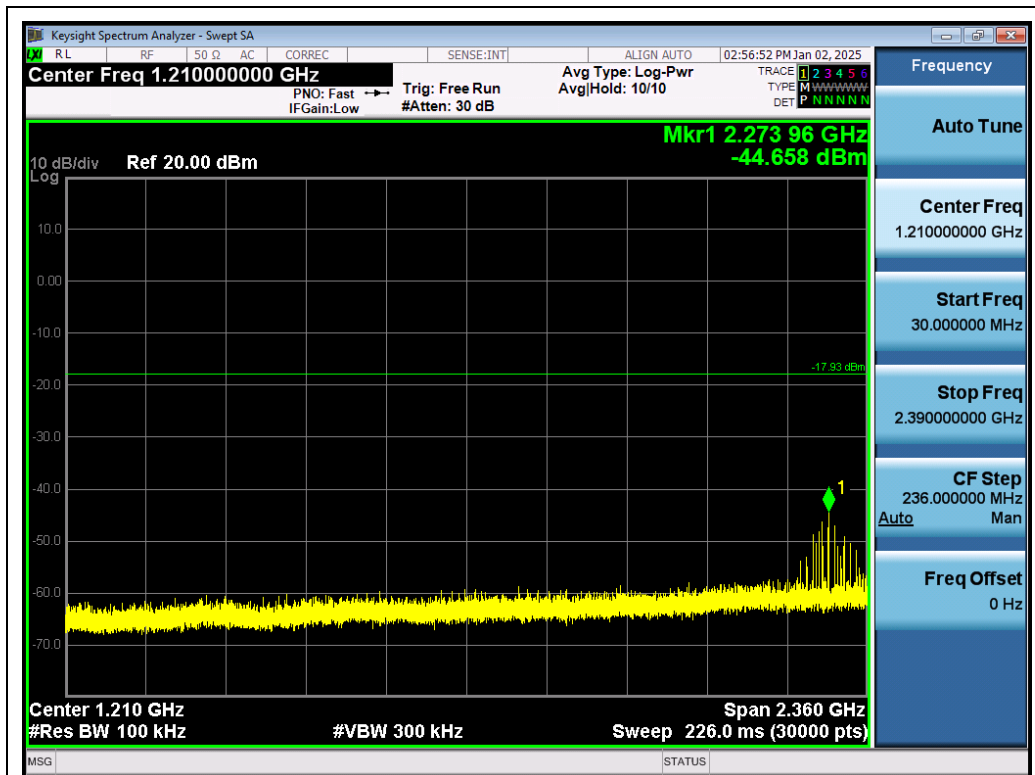
Test_Graph_LE1M_ANT1_2480_1Mbps_Lower Band Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2402_2Mbps_Reference Level



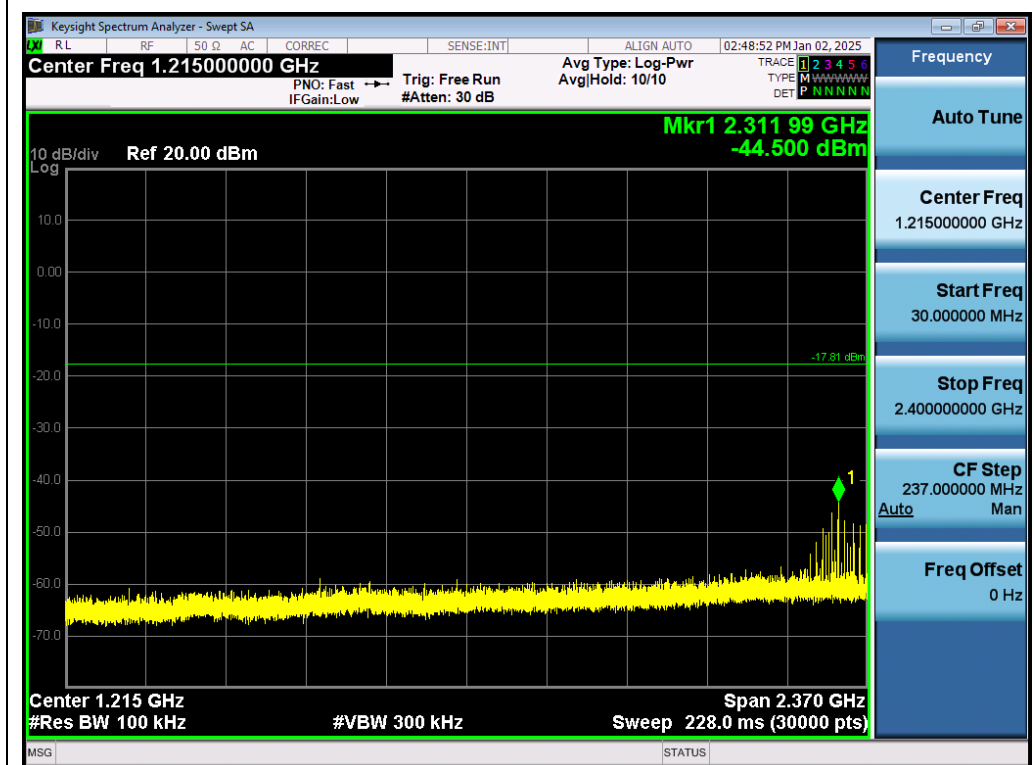
Test_Graph_LE2M_ANT1_2402_2Mbps_Lower Band Emissions



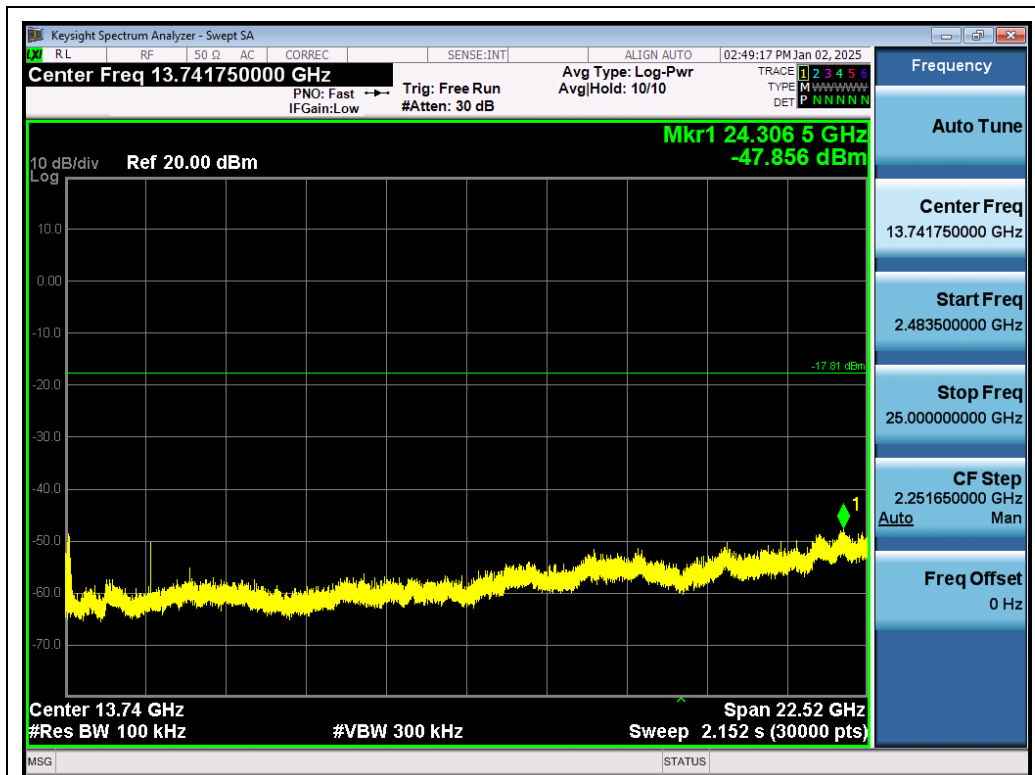
Test_Graph_LE2M_ANT1_2402_2Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2440_2Mbps_Reference Level



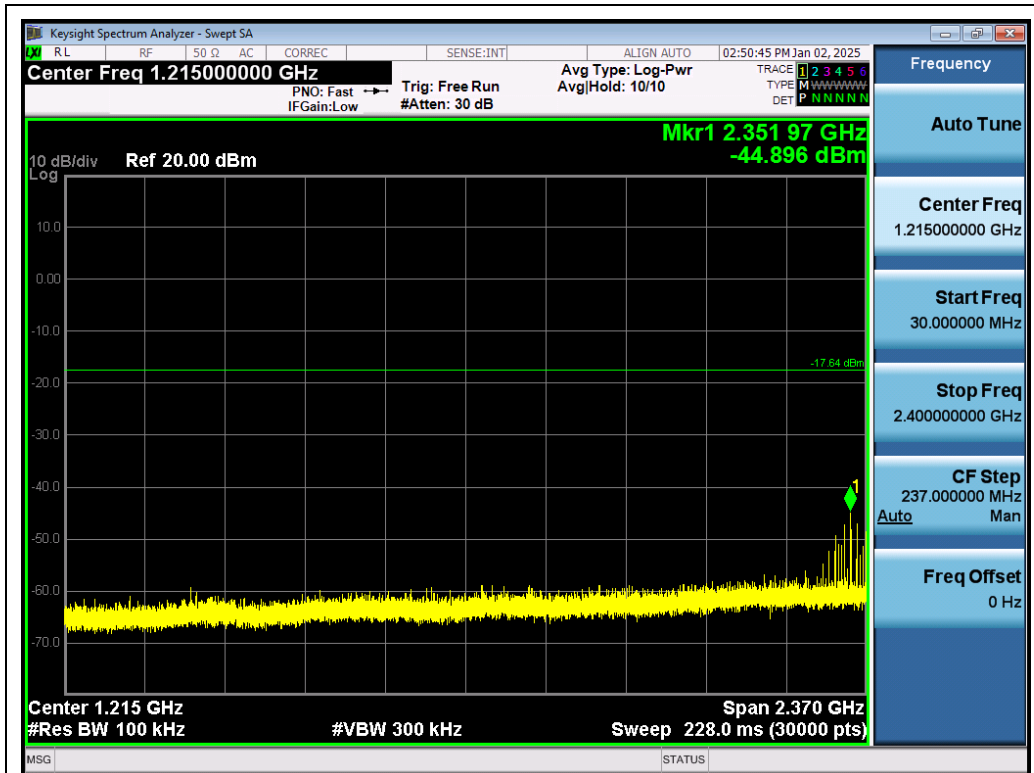
Test_Graph_LE2M_ANT1_2440_2Mbps_Lower Band Emissions



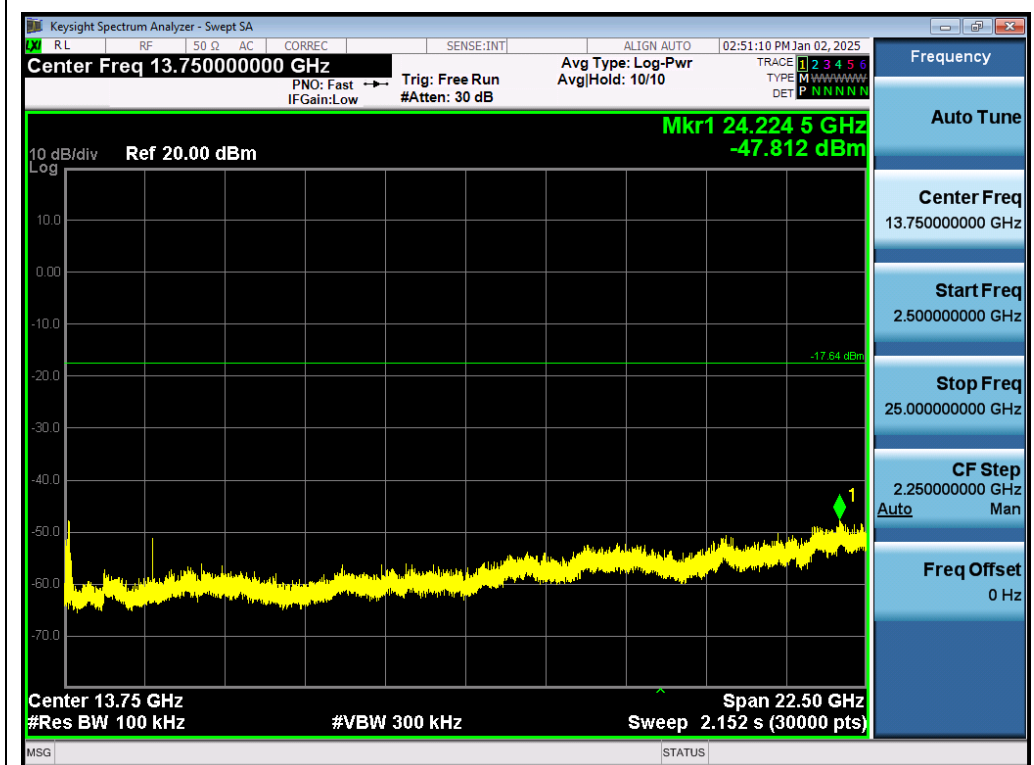
Test_Graph_LE2M_ANT1_2440_2Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2480_2Mbps_Reference Level



Test_Graph_LE2M_ANT1_2480_2Mbps_Lower Band Emissions



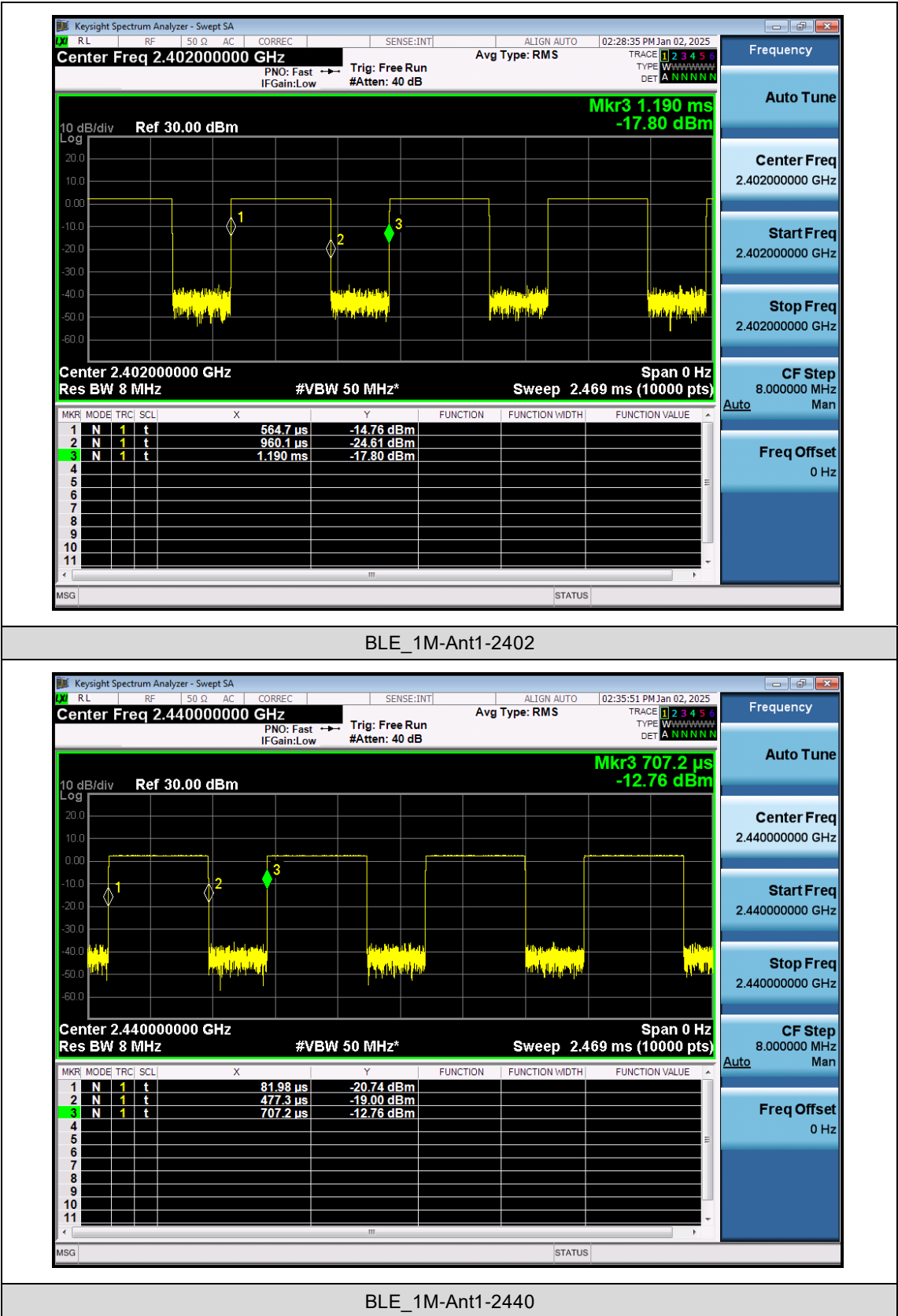
Test_Graph_LE2M_ANT1_2480_2Mbps_Higher Band Emissions

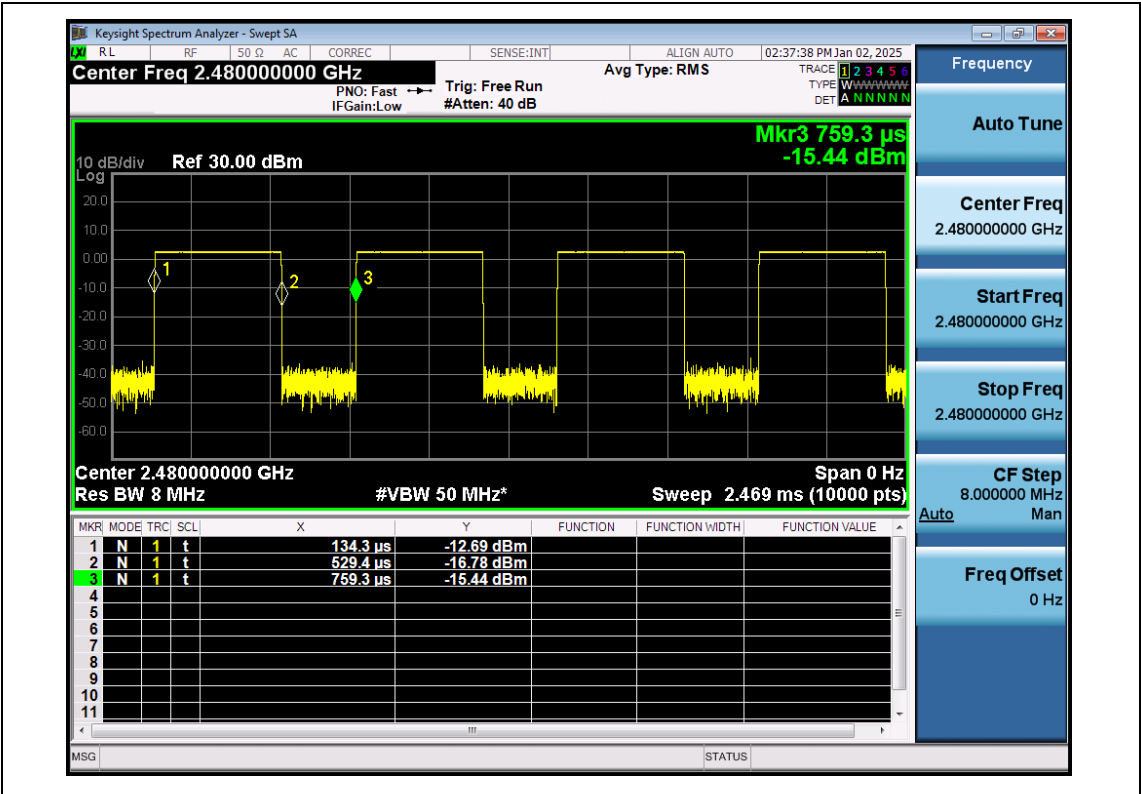
Appendix F: Duty Cycle

Test Result

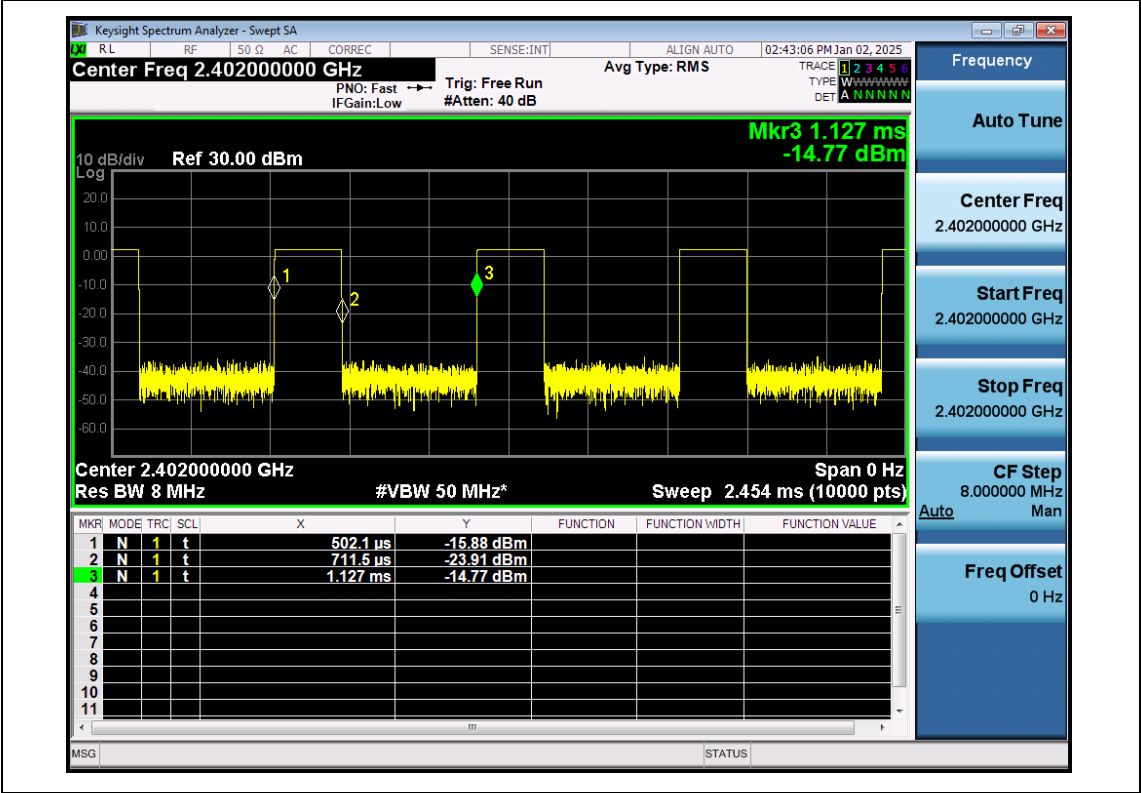
Test Mode	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
GFSK_1Mbps	2402	0.395	0.625	63.23	1.99
GFSK_1Mbps	2440	0.395	0.625	63.23	1.99
GFSK_1Mbps	2480	0.395	0.625	63.22	1.99
GFSK_2Mbps	2402	0.209	0.625	33.51	4.75
GFSK_2Mbps	2440	0.209	0.625	33.49	4.75
GFSK_2Mbps	2480	0.209	0.625	33.51	4.75

Test Graphs

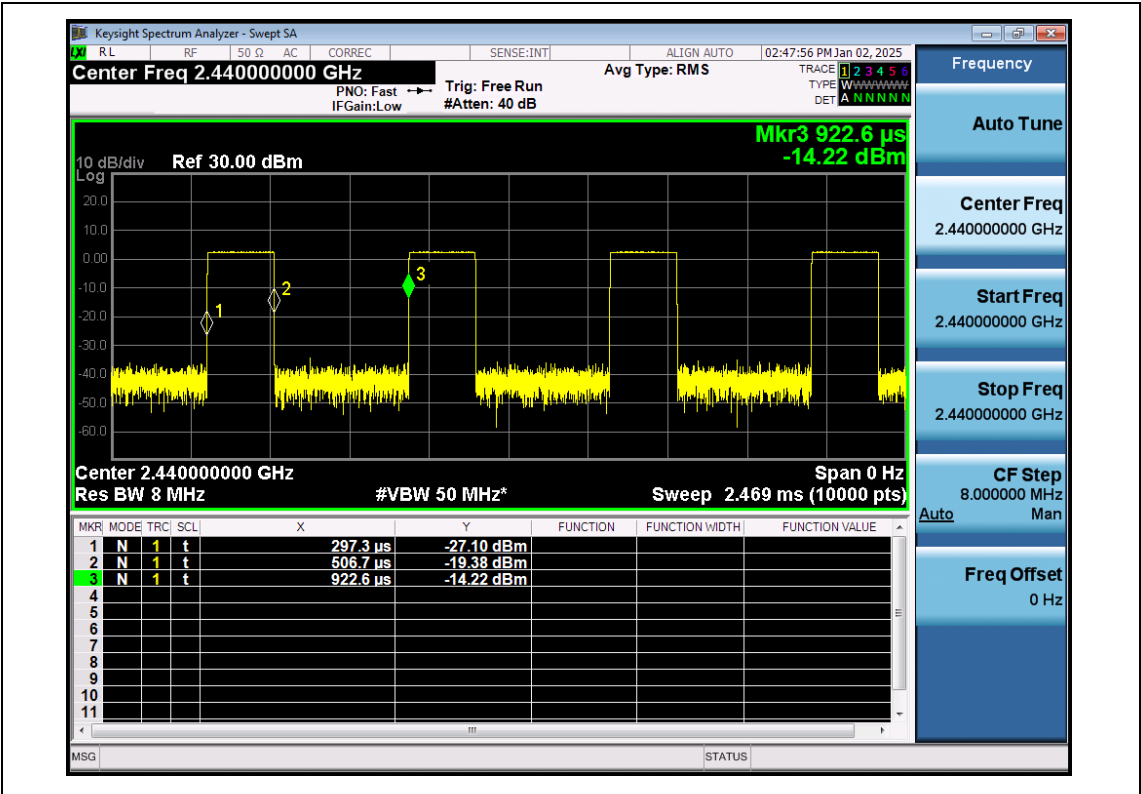




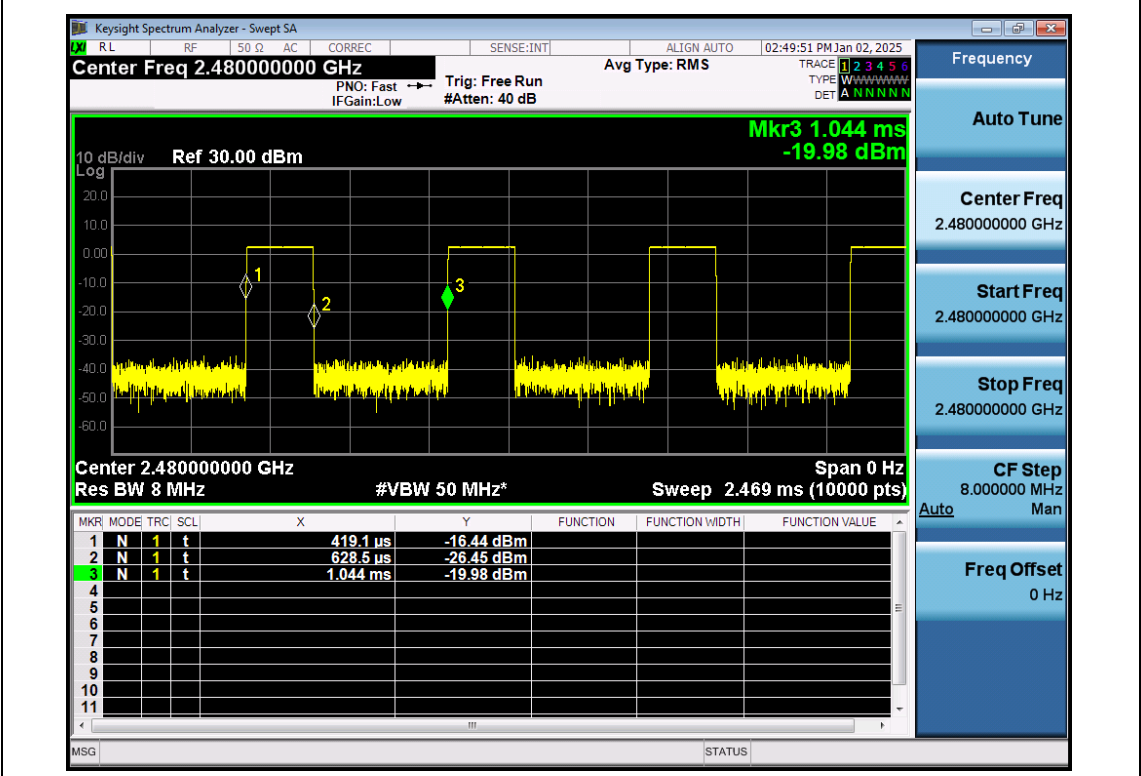
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



BLE_2M-Ant1-2480