

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Bluetooth Earbuds

Trade Mark: GEG

Test Model: ORF-ME00

FCC ID: 2BOAY-ORF-ME00

Environmental Conditions

Temperature:	26.0°C
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

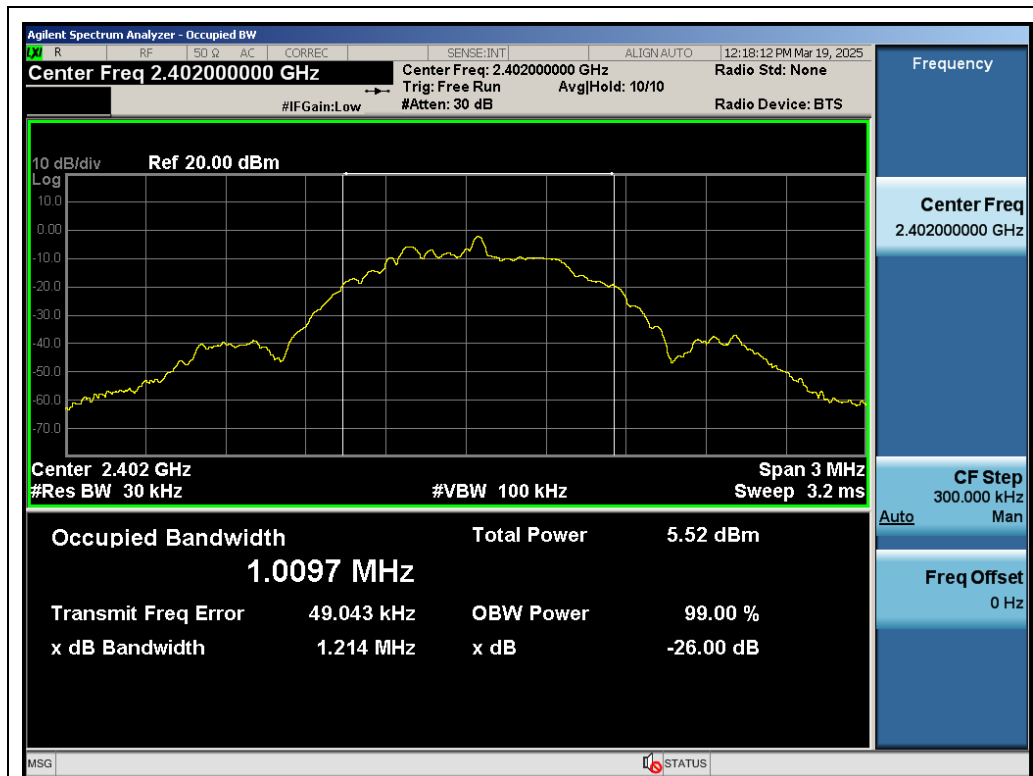
Appendix A: DTS Bandwidth & Occupied Channel Bandwidth

Test Result

Test Mode	Test Frequency	Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail
GFSK_1Mbps	2402	1.010	0.658	≥ 0.5	Pass
	2440	1.009	0.657	≥ 0.5	Pass
	2480	1.008	0.661	≥ 0.5	Pass
GFSK_2Mbps	2402	1.979	1.145	≥ 0.5	Pass
	2440	1.975	1.143	≥ 0.5	Pass
	2480	1.973	1.146	≥ 0.5	Pass

Remark: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_OBW



Test_Graph_LE1M_ANT1_2440_1Mbps_OBW



Test_Graph_LE1M_ANT1_2480_1Mbps_OBW



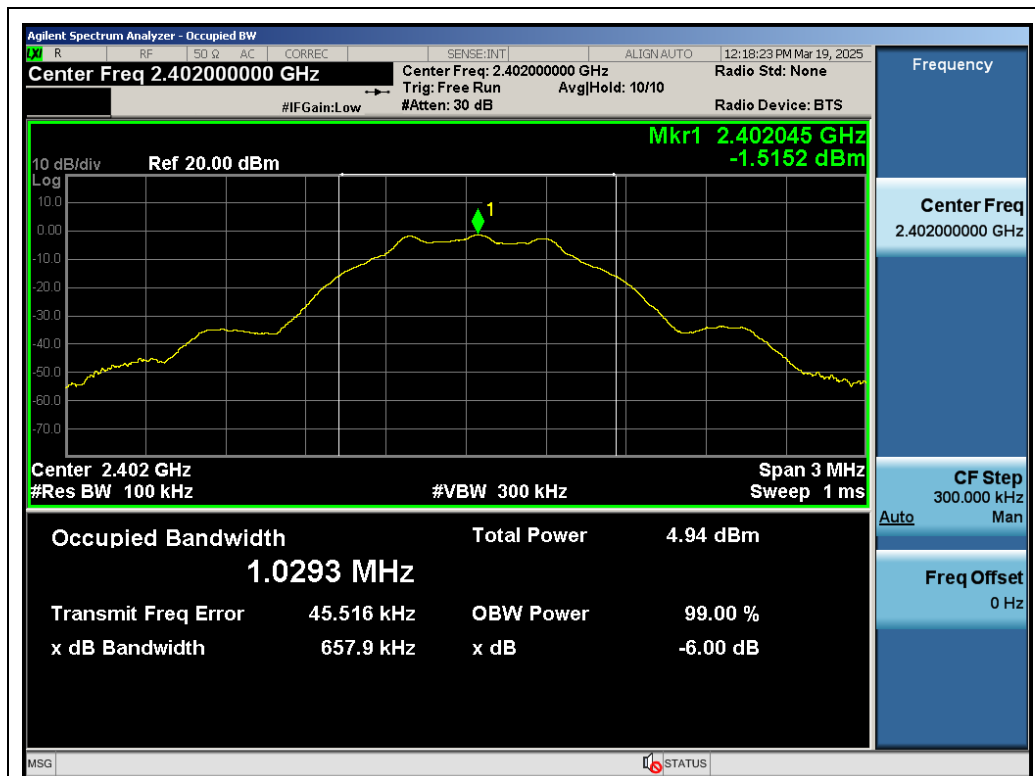
Test_Graph_LE2M_ANT1_2402_2Mbps_OBW



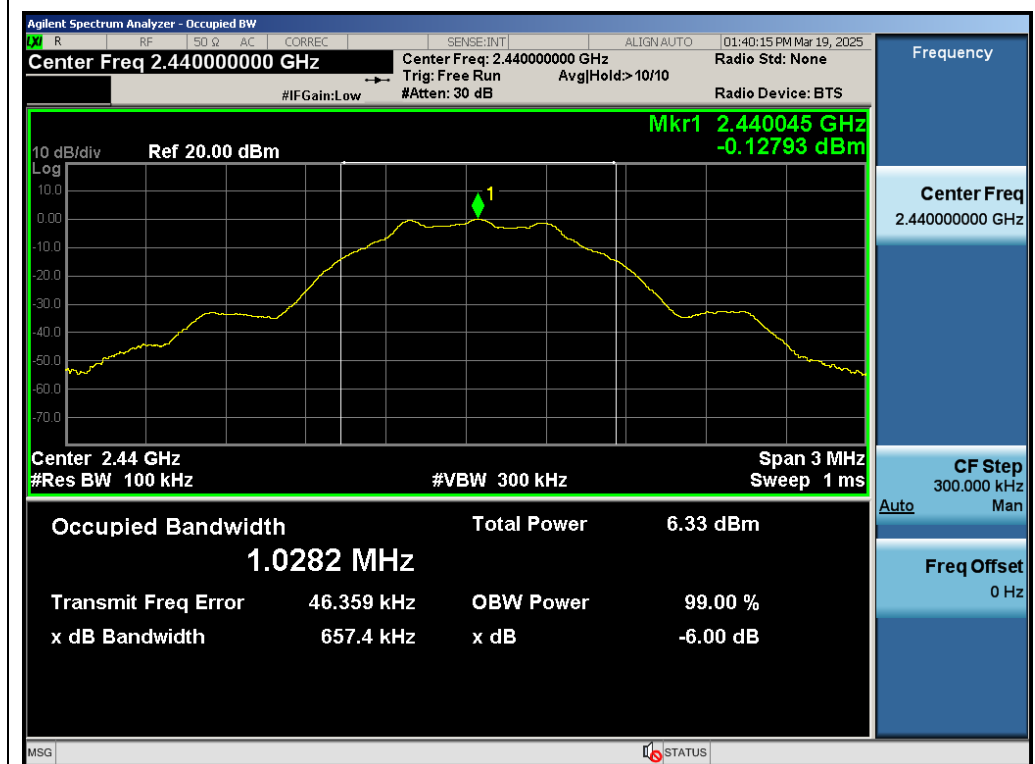
Test_Graph_LE2M_ANT1_2440_2Mbps_OBW



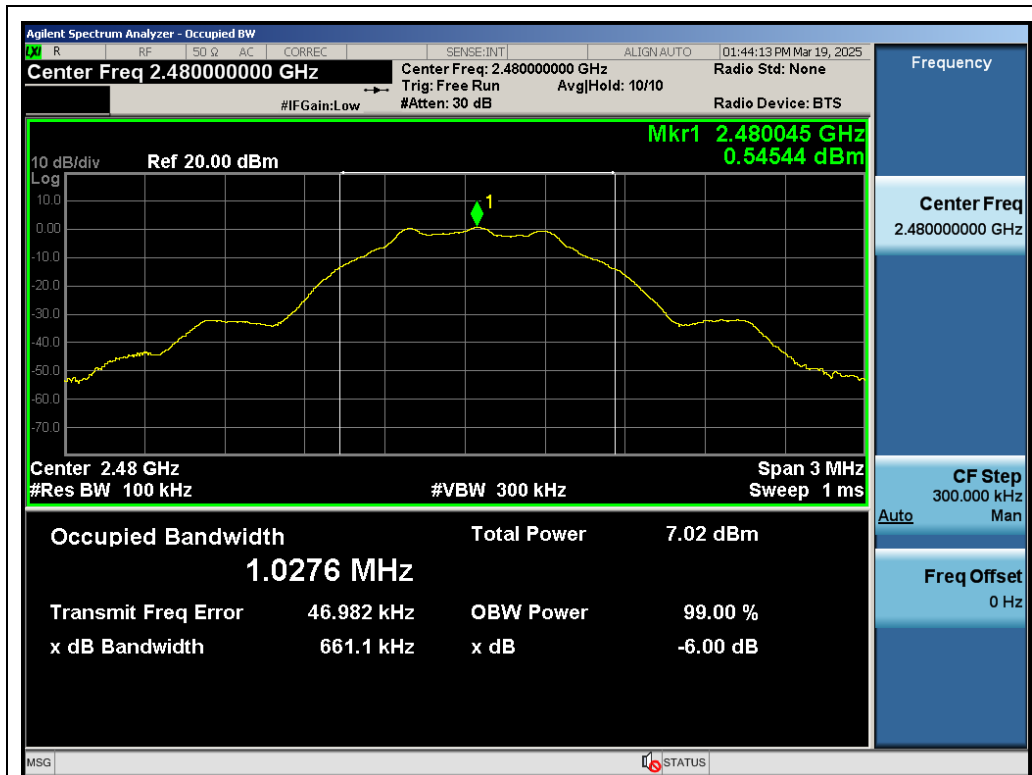
Test_Graph_LE2M_ANT1_2480_2Mbps_OBW



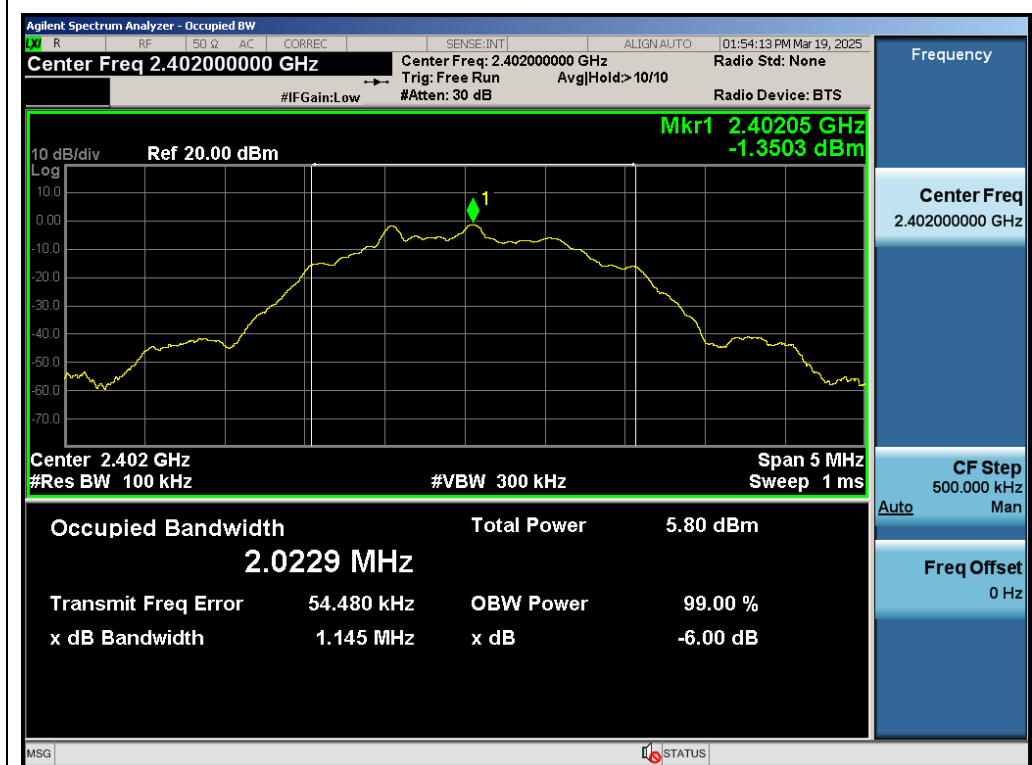
Test_Graph_LE1M_ANT1_2402_1Mbps_DTSBW



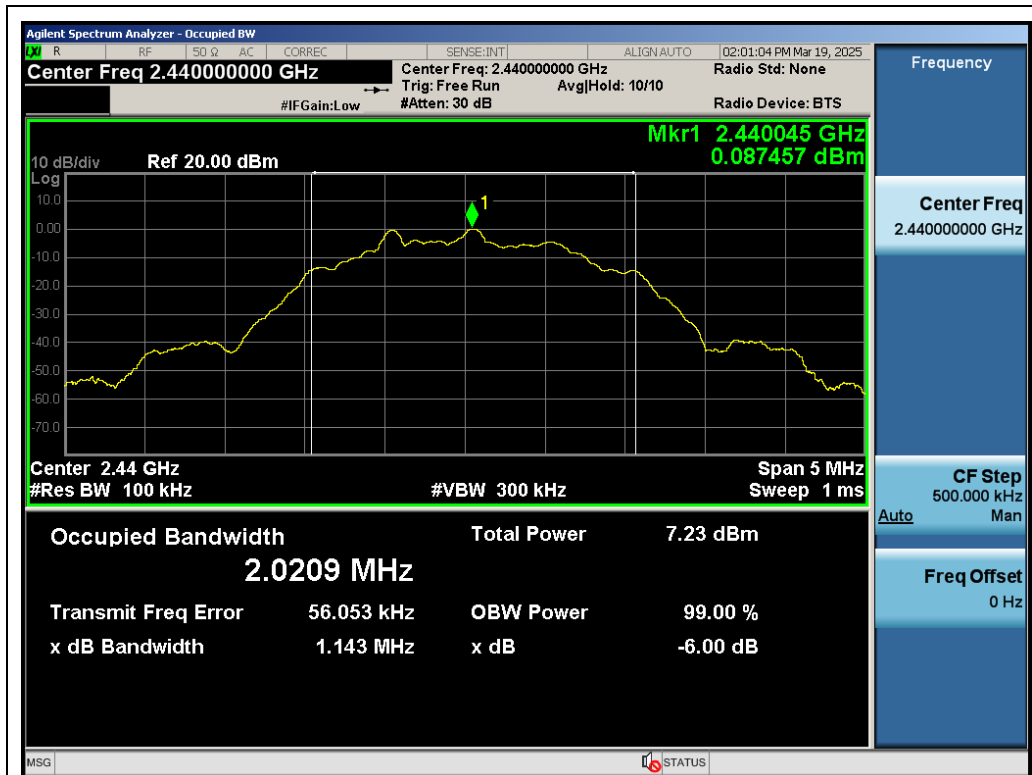
Test_Graph_LE1M_ANT1_2440_1Mbps_DTSBW



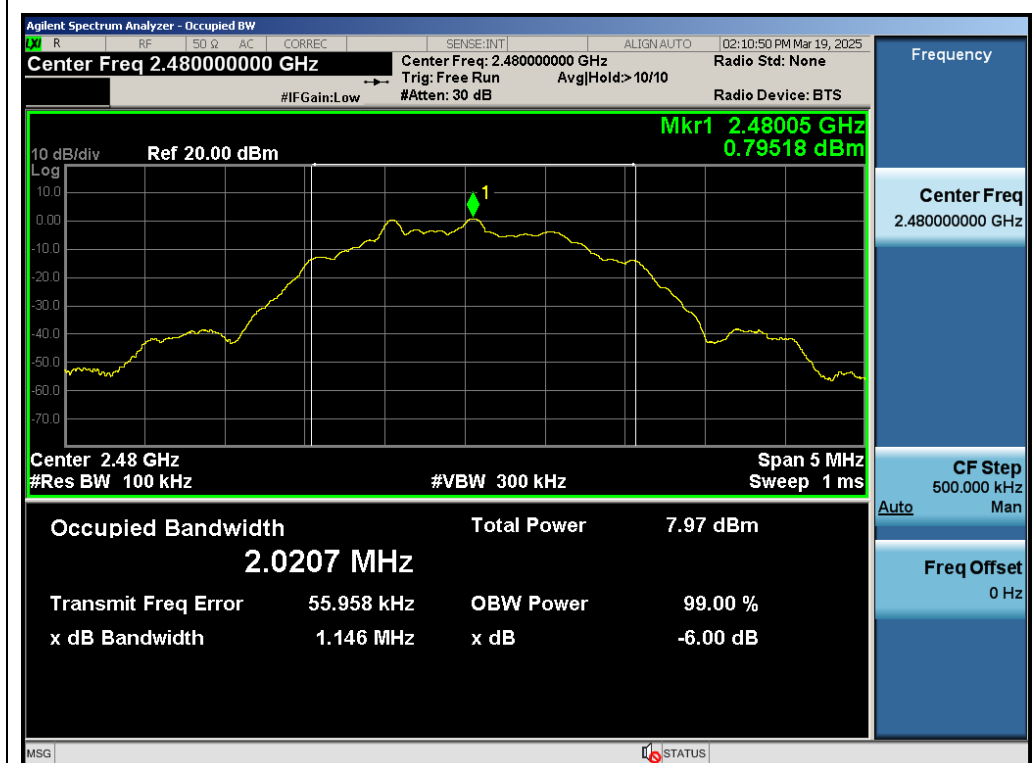
Test_Graph_LE1M_ANT1_2480_1Mbps_DTSBW



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

Right earphone

Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK_1Mbps	2402	-1.301	≤ 30	Pass
	2440	0.134	≤ 30	Pass
	2480	0.730	≤ 30	Pass
GFSK_2Mbps	2402	-1.268	≤ 30	Pass
	2440	0.228	≤ 30	Pass
	2480	0.887	≤ 30	Pass

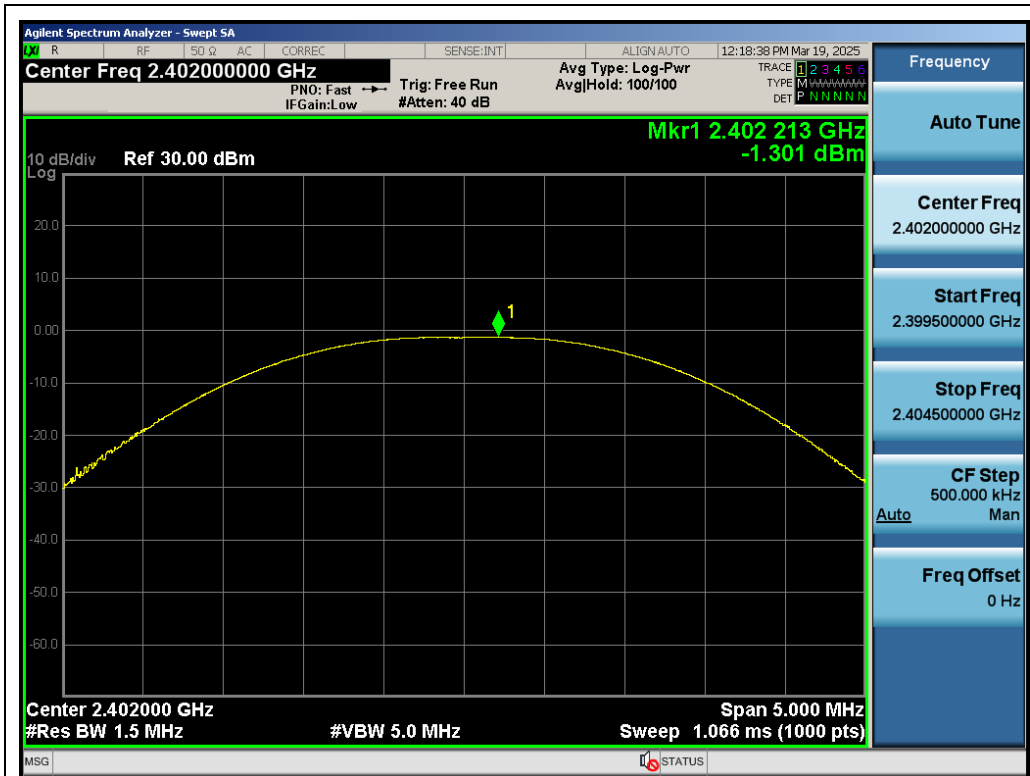
Left earphone

Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK_1Mbps	2402	-0.271	≤ 30	Pass
	2440	0.663	≤ 30	Pass
	2480	0.887	≤ 30	Pass
GFSK_2Mbps	2402	-0.543	≤ 30	Pass
	2440	0.580	≤ 30	Pass
	2480	0.893	≤ 30	Pass

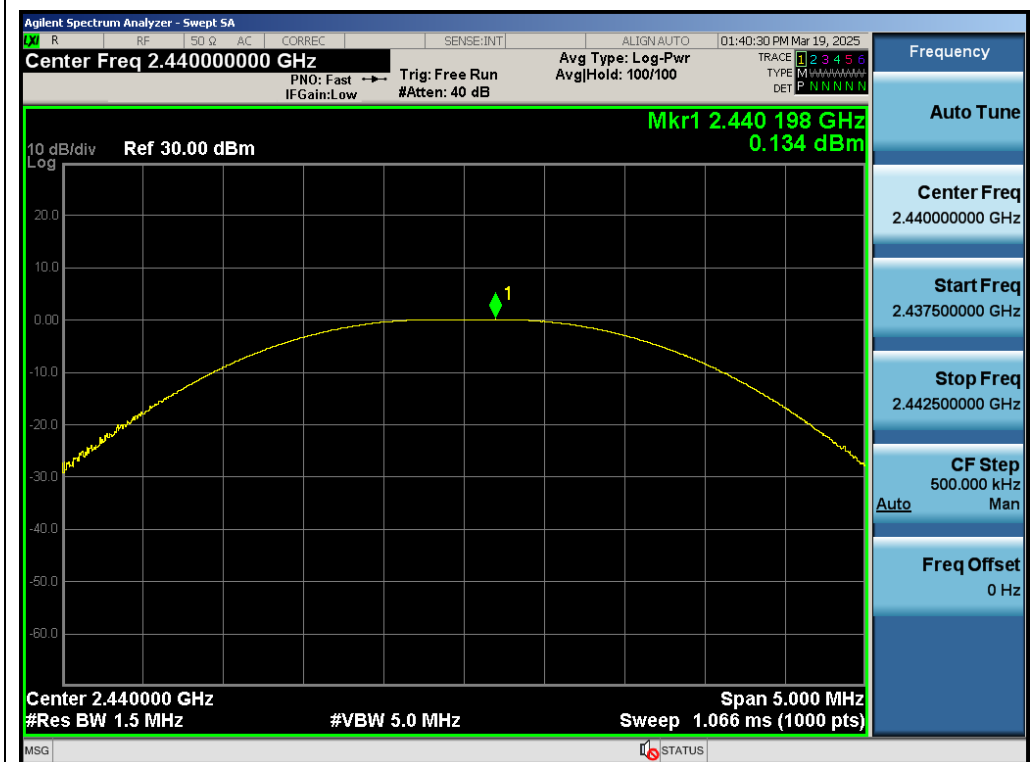
Remark: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

Test Graphs Peak

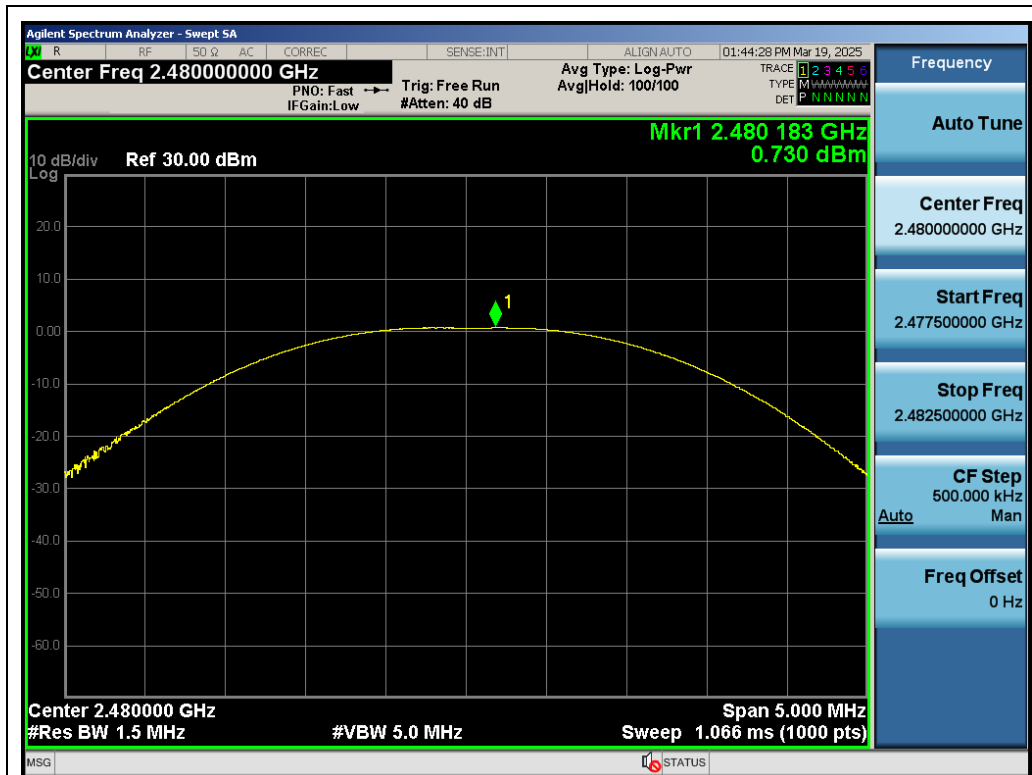
Right earphone



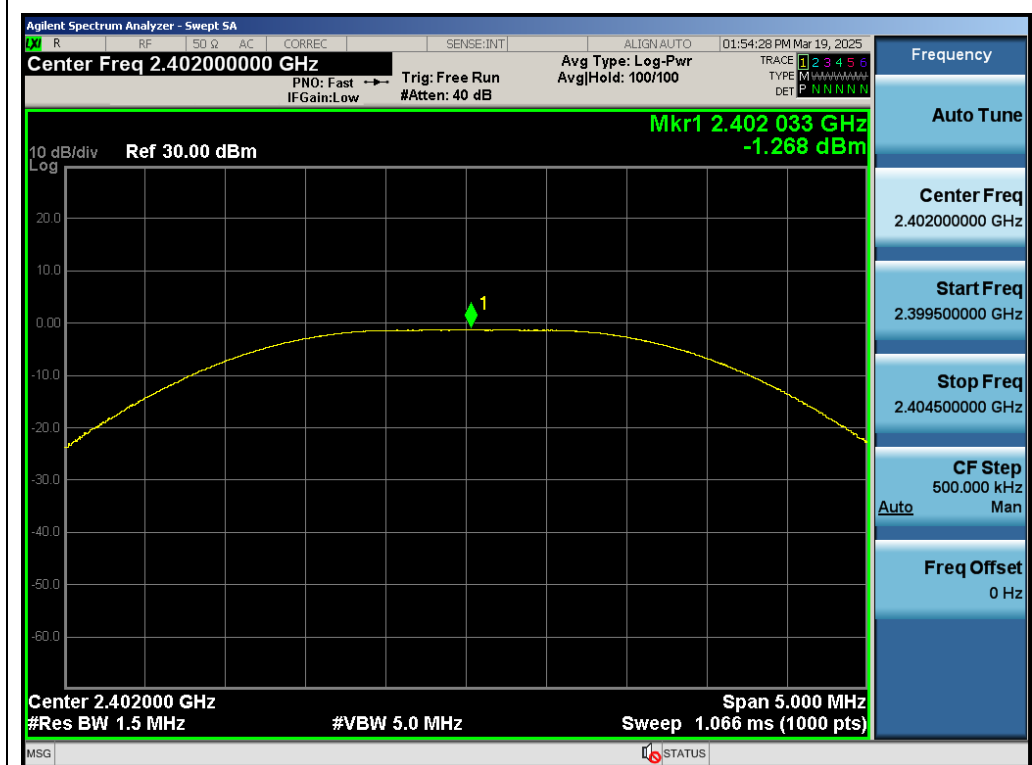
Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power



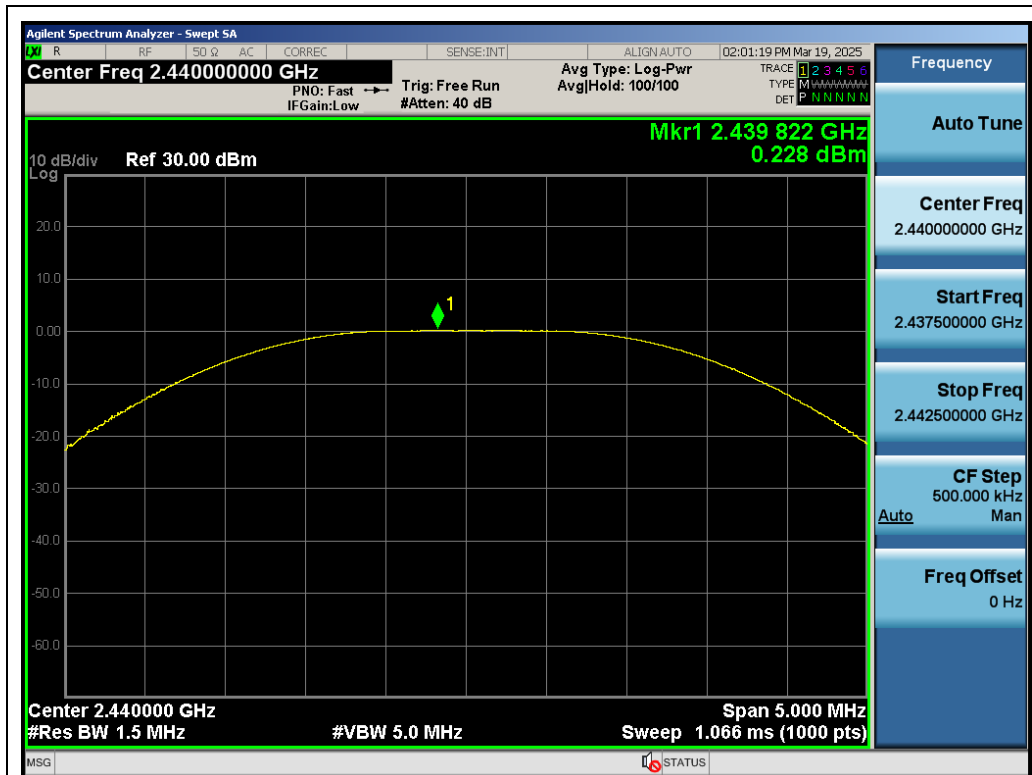
Test_Graph_LE1M_ANT1_2440_1Mbps_Peak Power



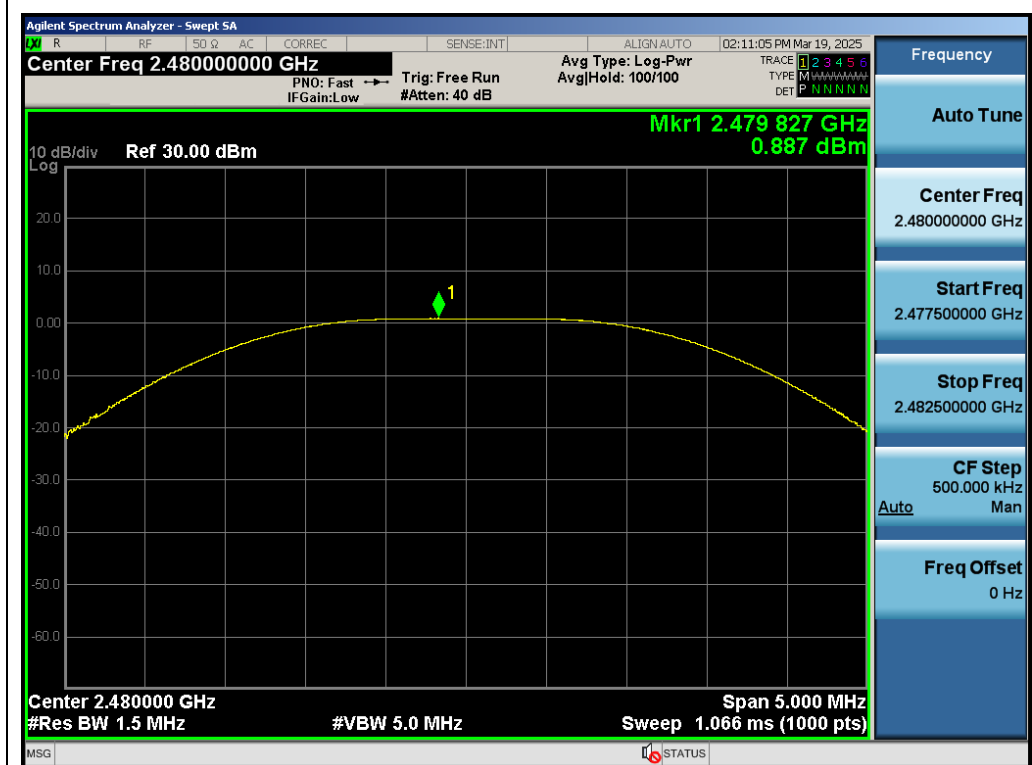
Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power



Test_Graph_LE2M_ANT1_2402_2Mbps_Peak Power

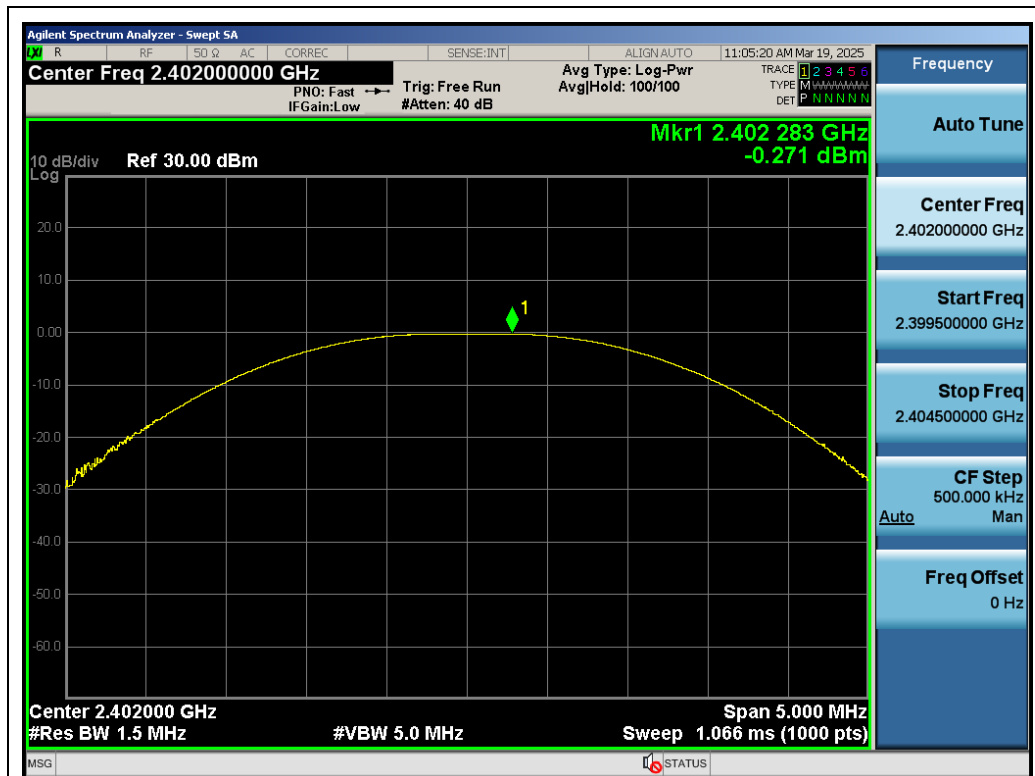


Test_Graph_LE2M_ANT1_2440_2Mbps_Peak Power

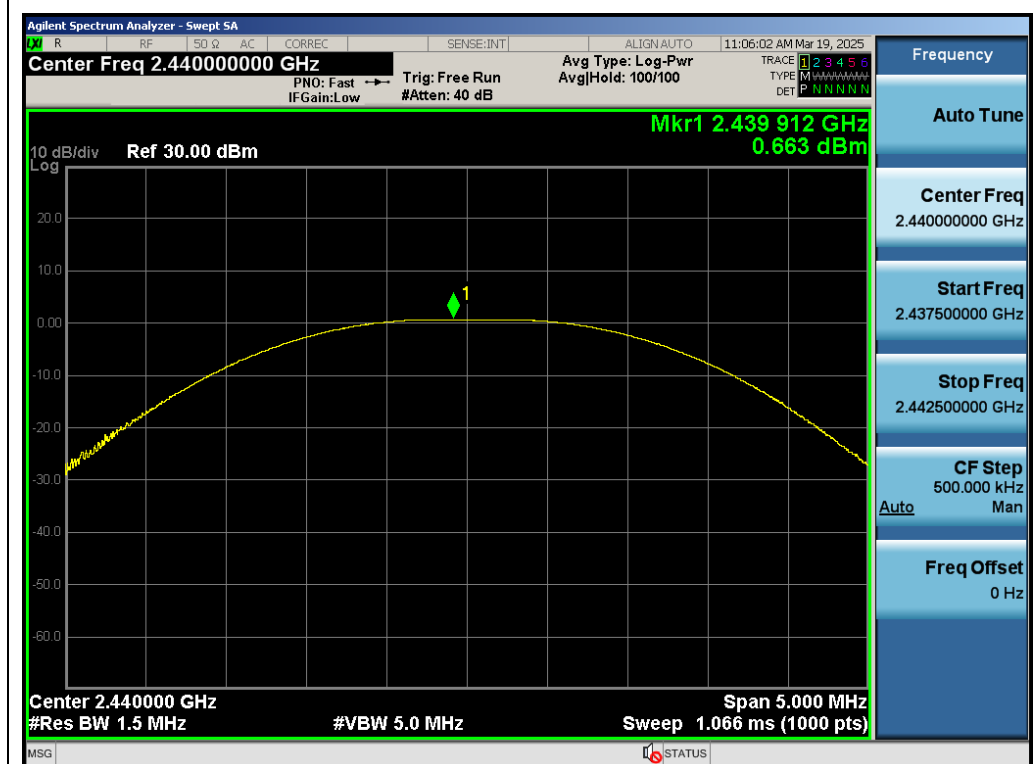


Test_Graph_LE2M_ANT1_2480_2Mbps_Peak Power

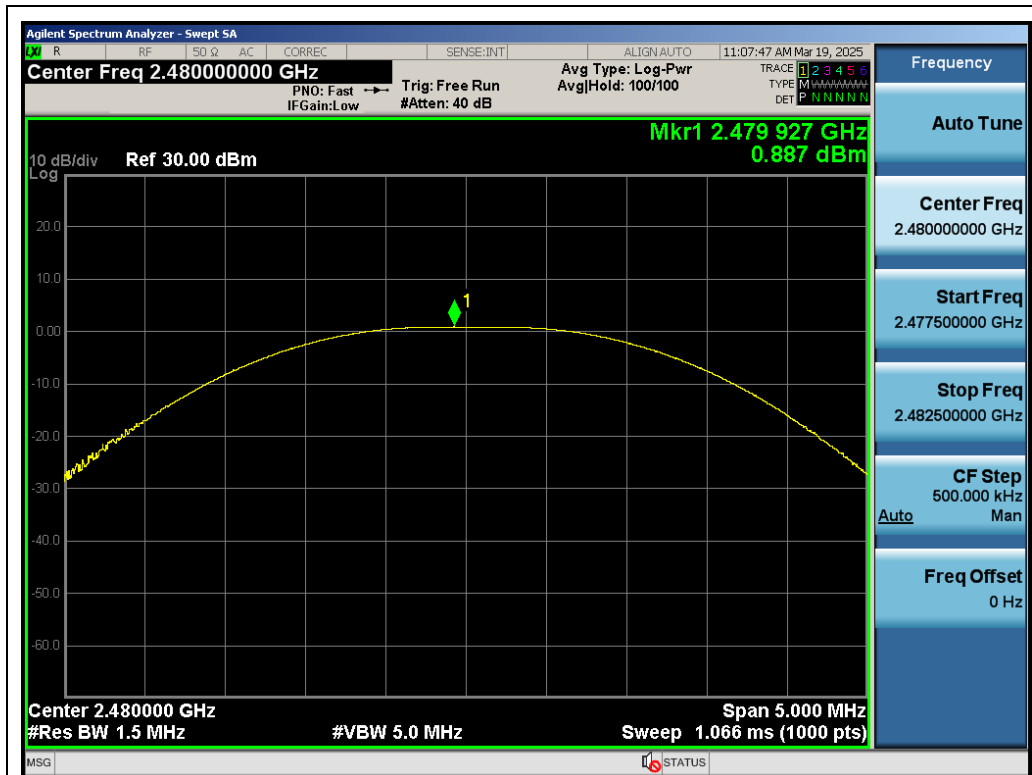
Left earphone



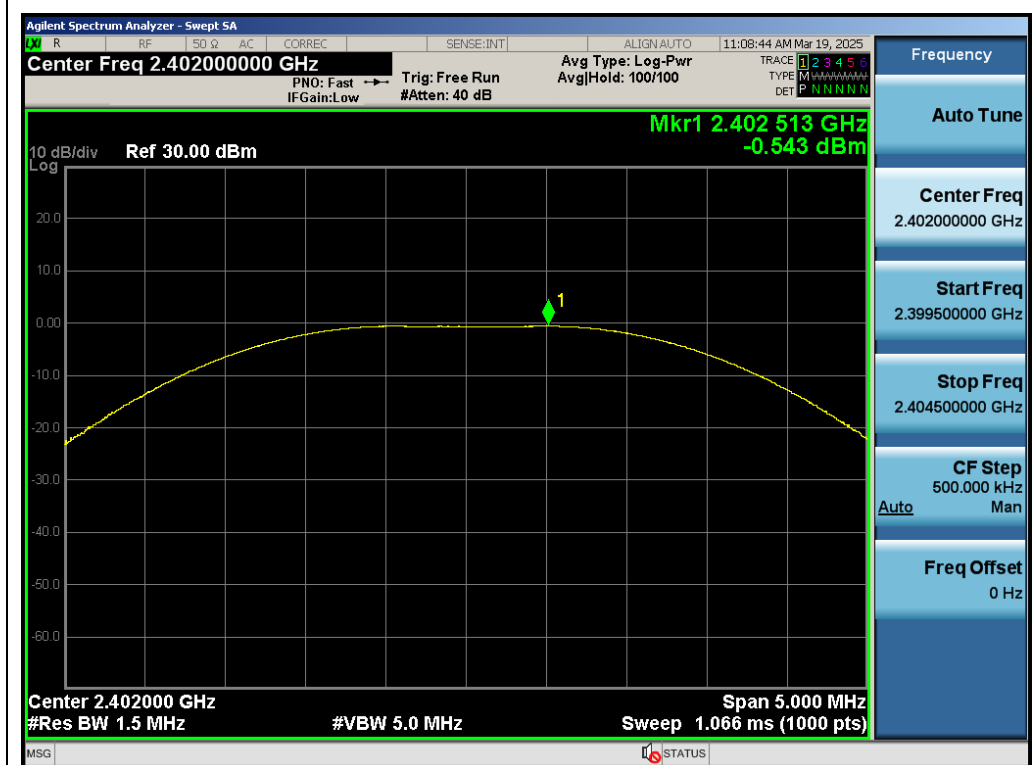
Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power



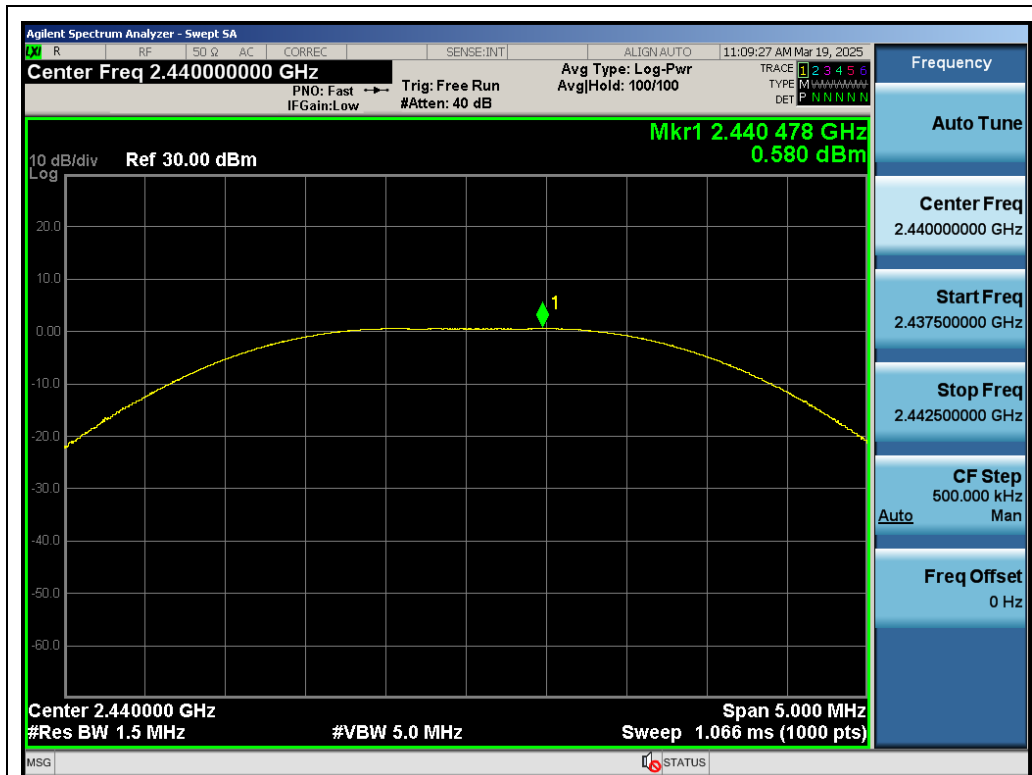
Test_Graph_LE1M_ANT1_2440_1Mbps_Peak Power



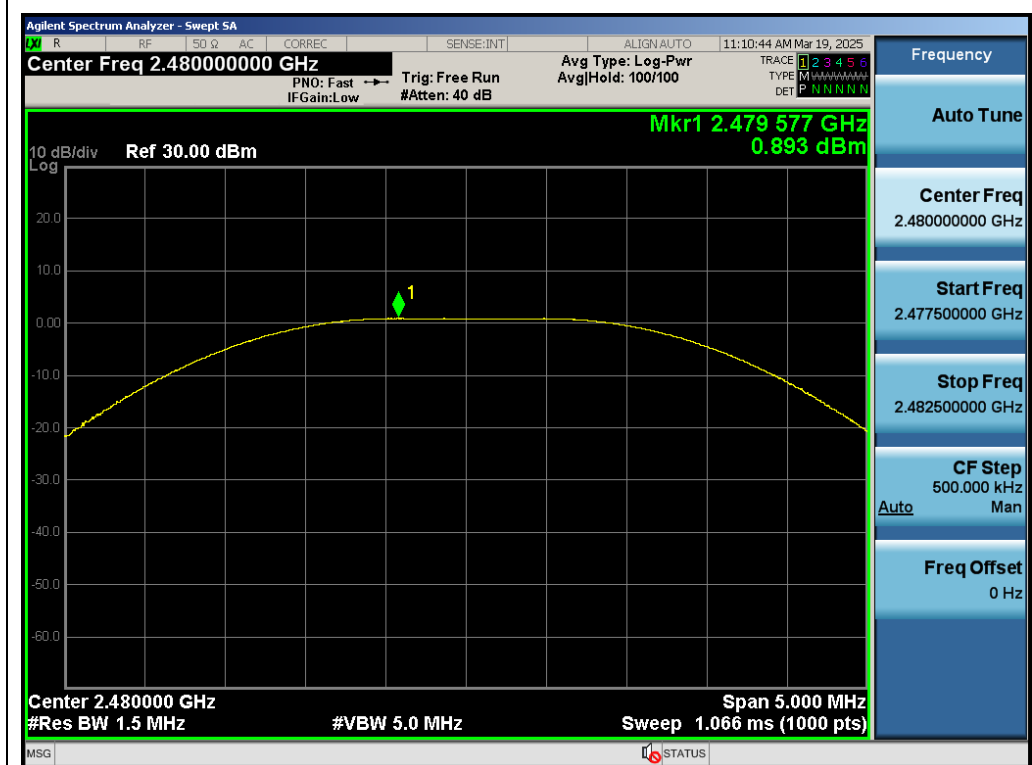
Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power



Test_Graph_LE2M_ANT1_2402_2Mbps_Peak Power



Test_Graph_LE2M_ANT1_2440_2Mbps_Peak Power



Test_Graph_LE2M_ANT1_2480_2Mbps_Peak Power

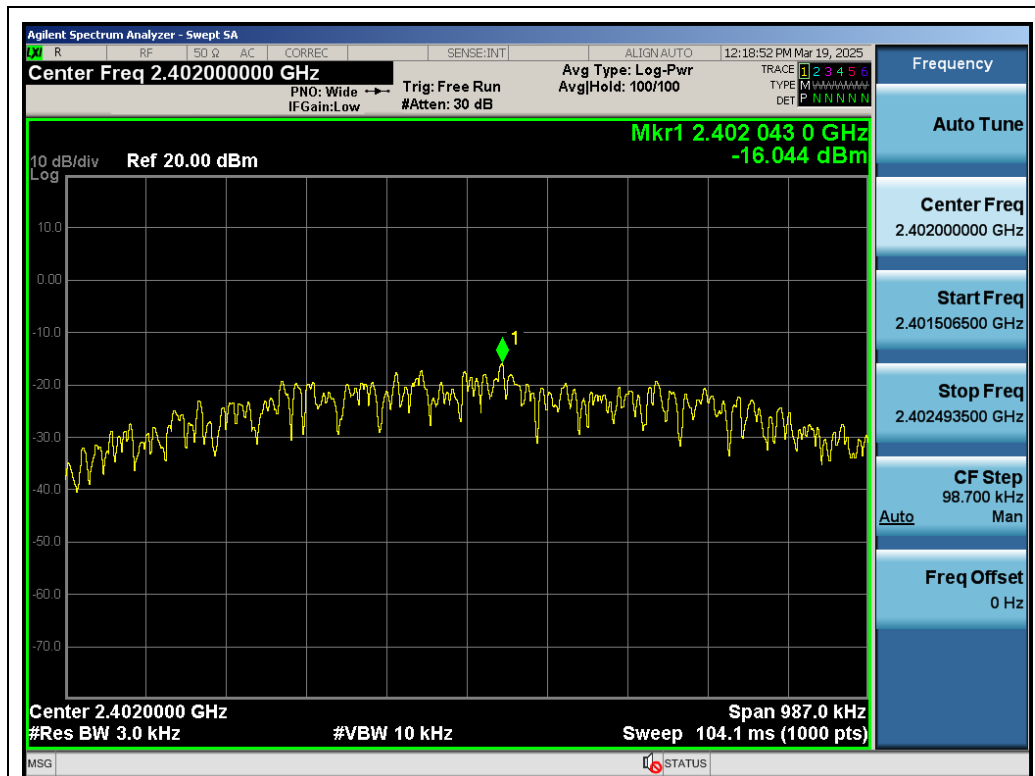
Appendix C: Maximum peak power spectral density

Test Result

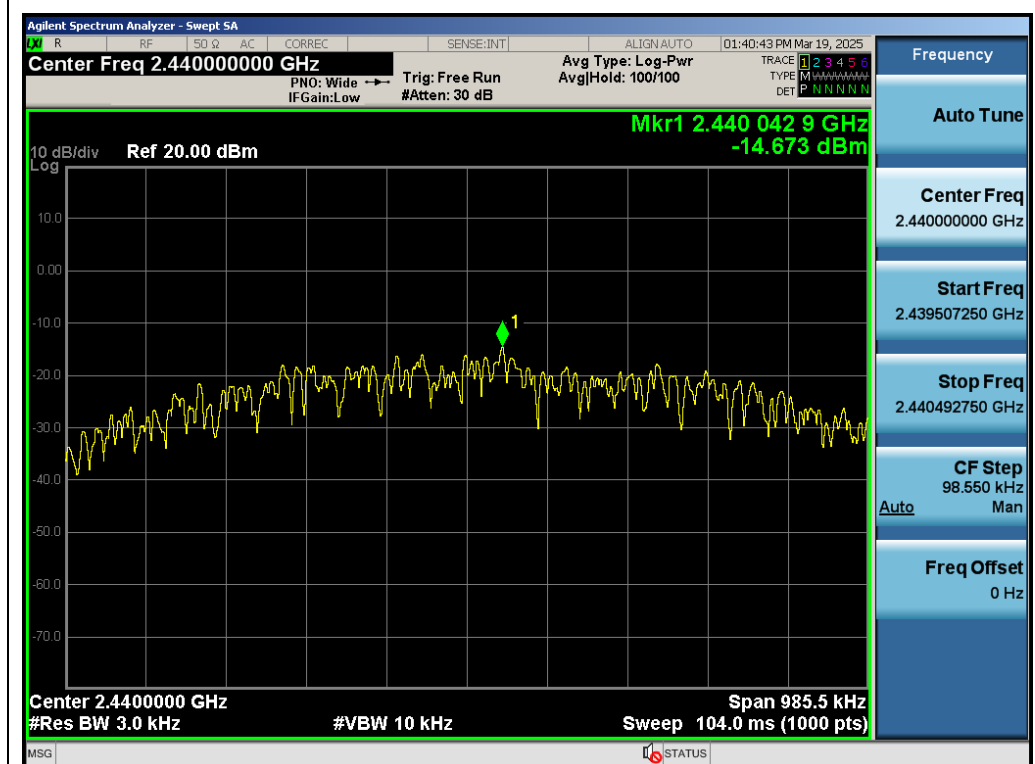
Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
GFSK_1Mbps	2402	-16.044	≤ 8	Pass
	2440	-14.673	≤ 8	Pass
	2480	-13.956	≤ 8	Pass
GFSK_2Mbps	2402	-16.797	≤ 8	Pass
	2440	-15.358	≤ 8	Pass
	2480	-14.563	≤ 8	Pass

Remark: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

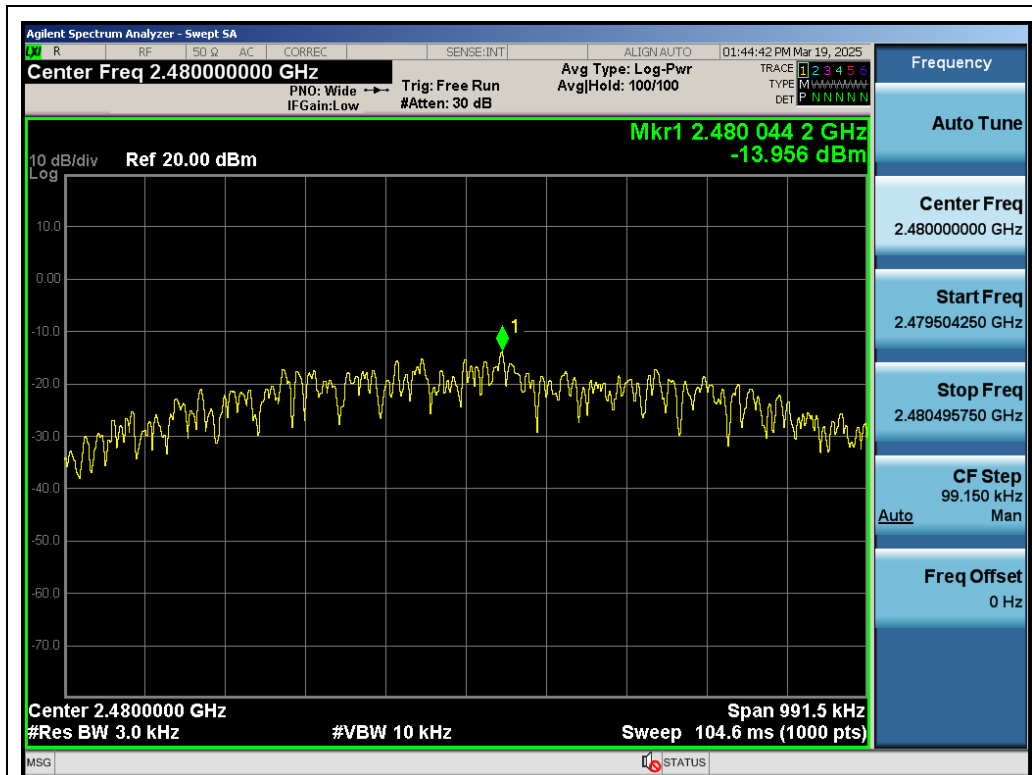
Test Graphs



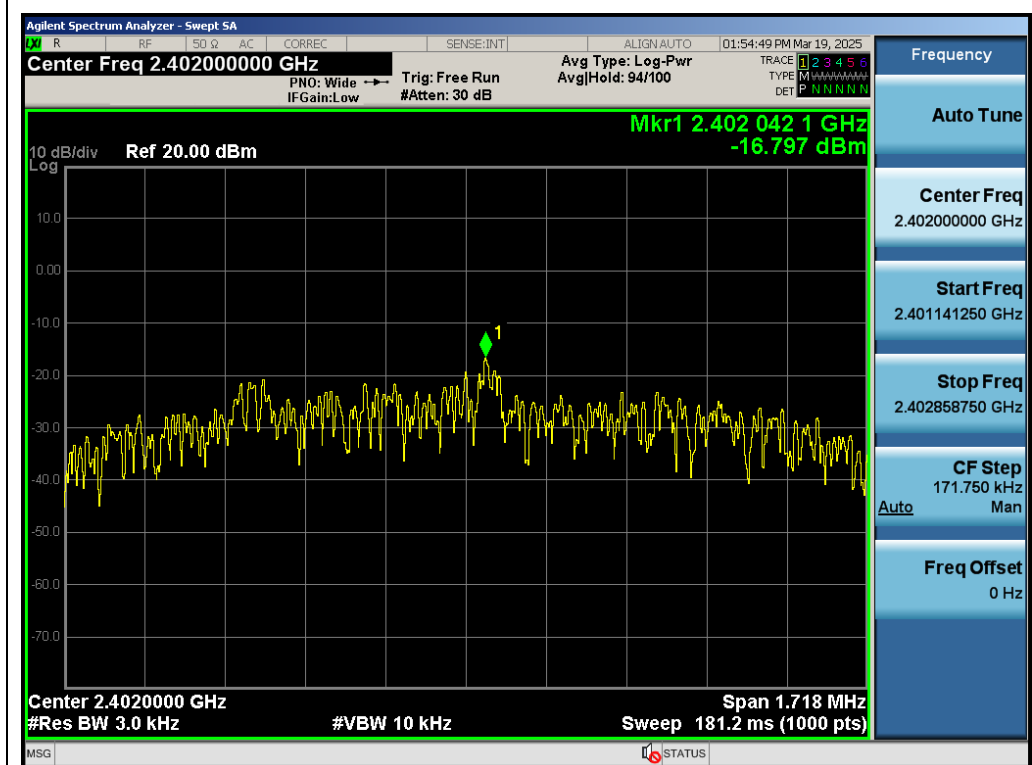
Test_Graph_LE1M_ANT1_2402_1Mbps_PSD



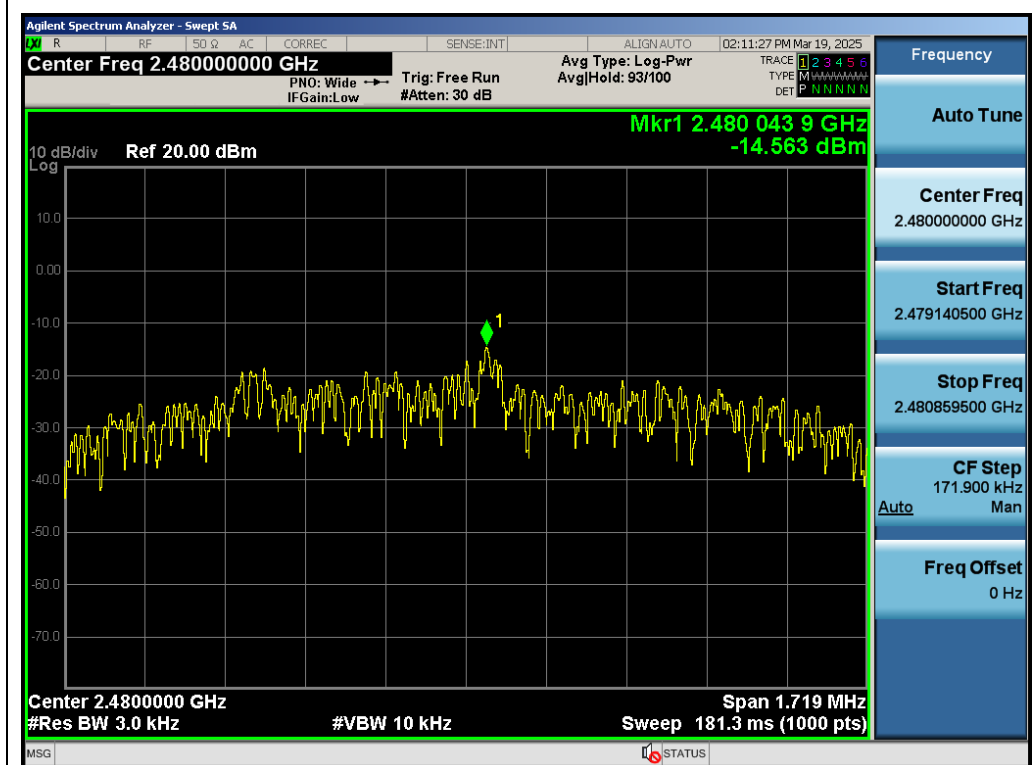
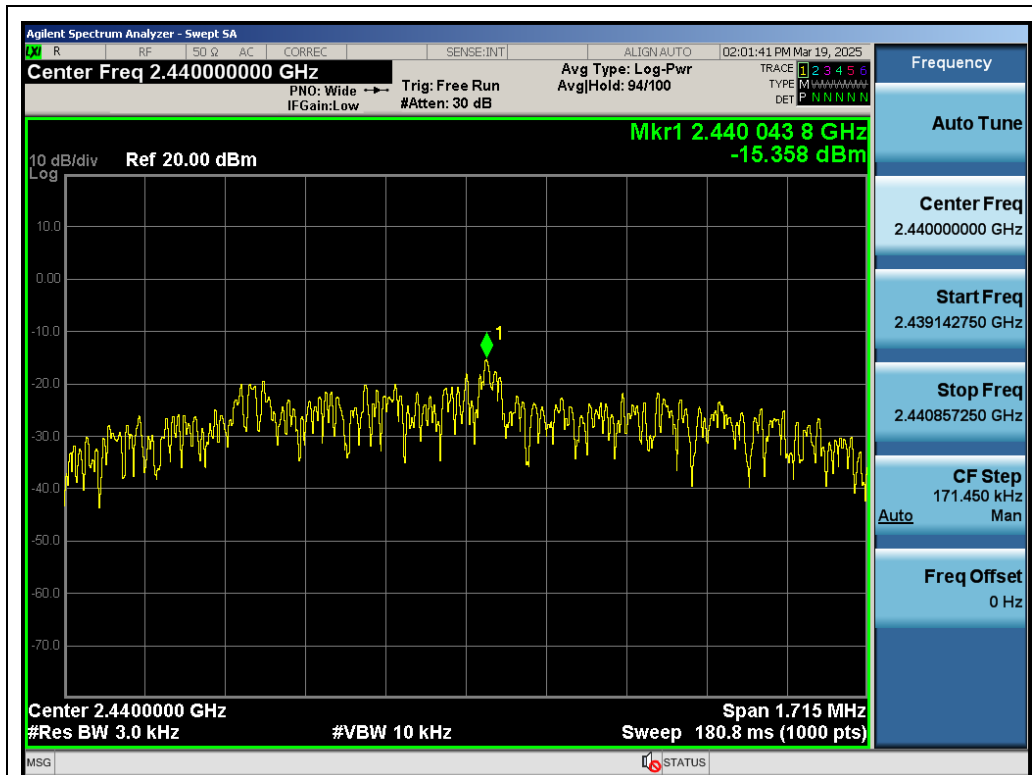
Test_Graph_LE1M_ANT1_2440_1Mbps_PSD



Test_Graph_LE1M_ANT1_2480_1Mbps_PSD



Test_Graph_LE2M_ANT1_2402_2Mbps_PSD



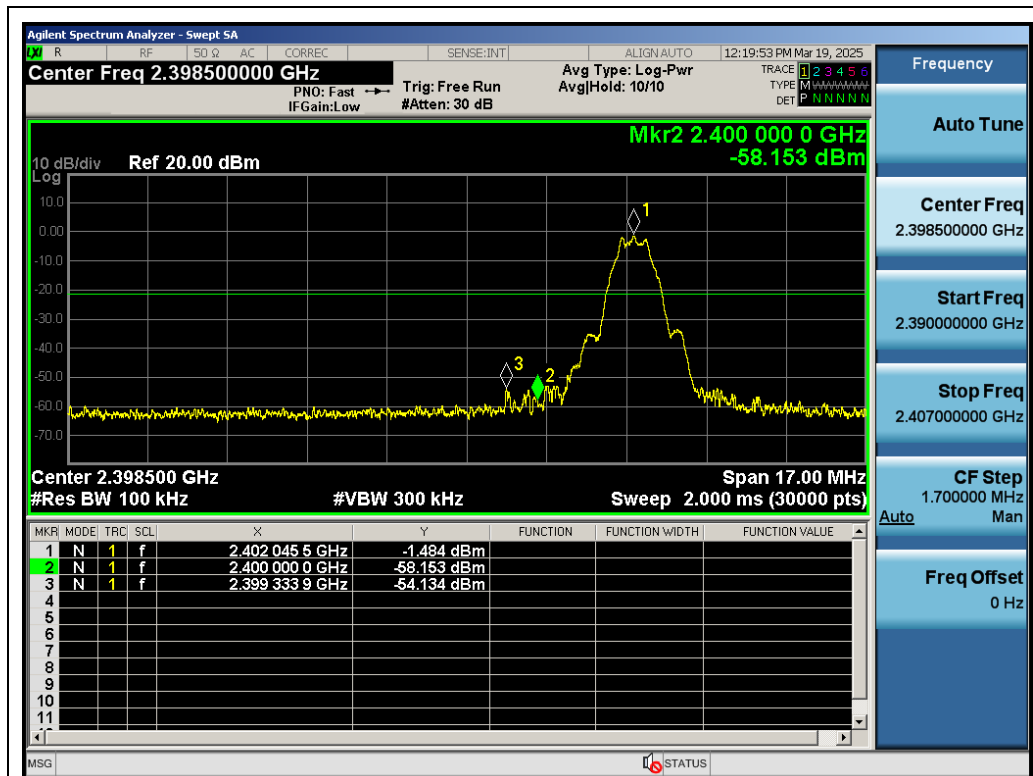
Appendix D: Band edge measurements

Test Result

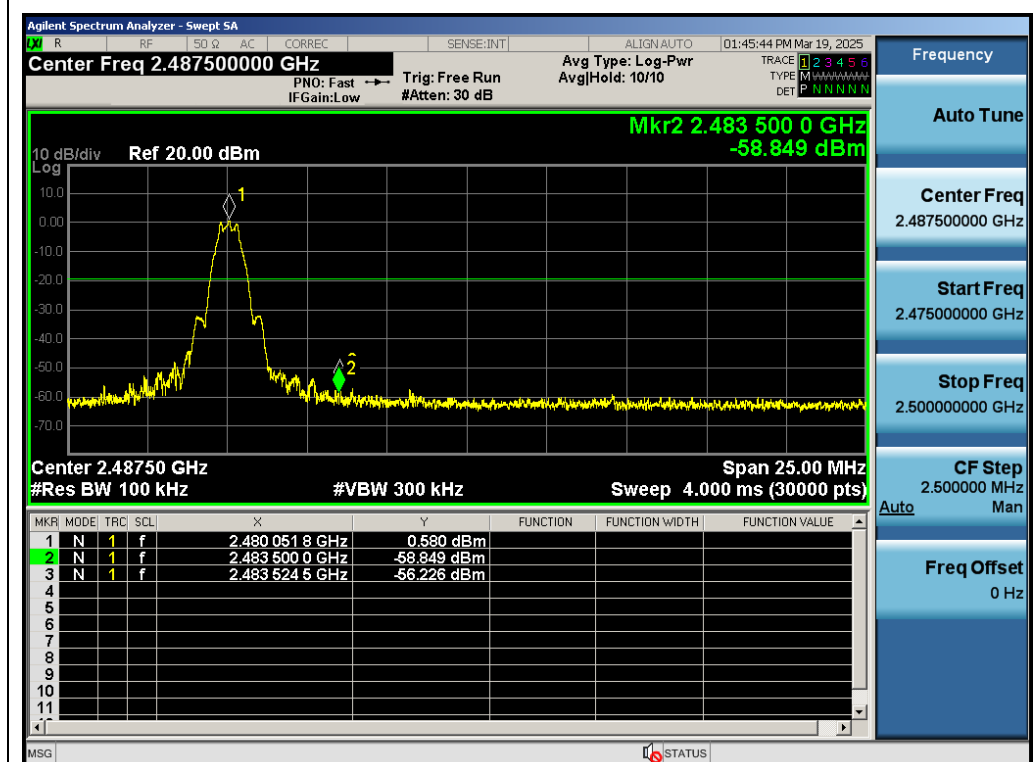
Test Mode	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	Low	2402	-1.484	-58.153	≤ -21.48	Pass
GFSK_1Mbps	High	2480	0.580	-58.849	≤ -19.42	Pass
GFSK_2Mbps	Low	2402	-1.306	-46.575	≤ -21.31	Pass
GFSK_2Mbps	High	2480	0.796	-61.180	≤ -19.20	Pass

Remark: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

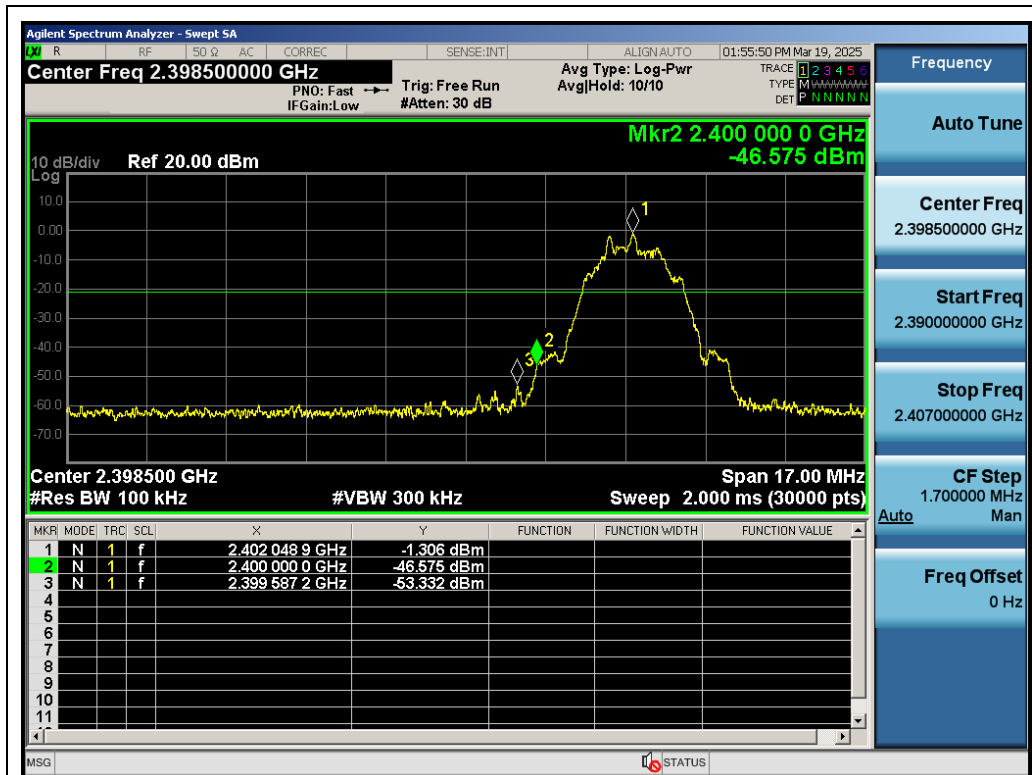
Test Graphs



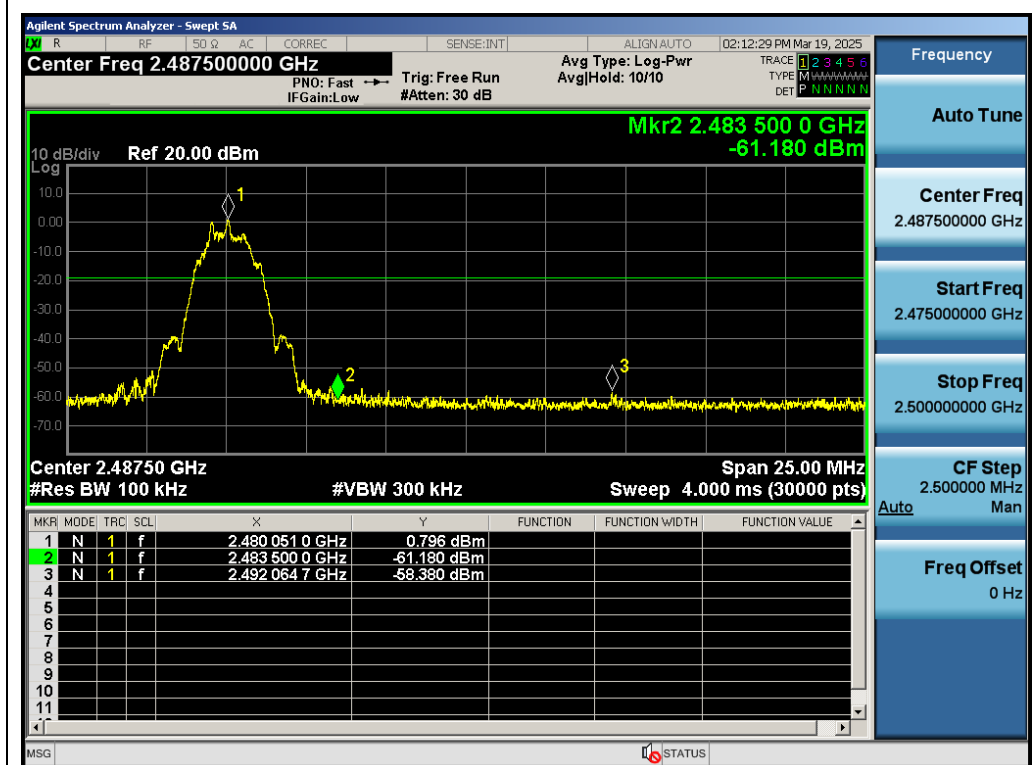
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Edge Emissions



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

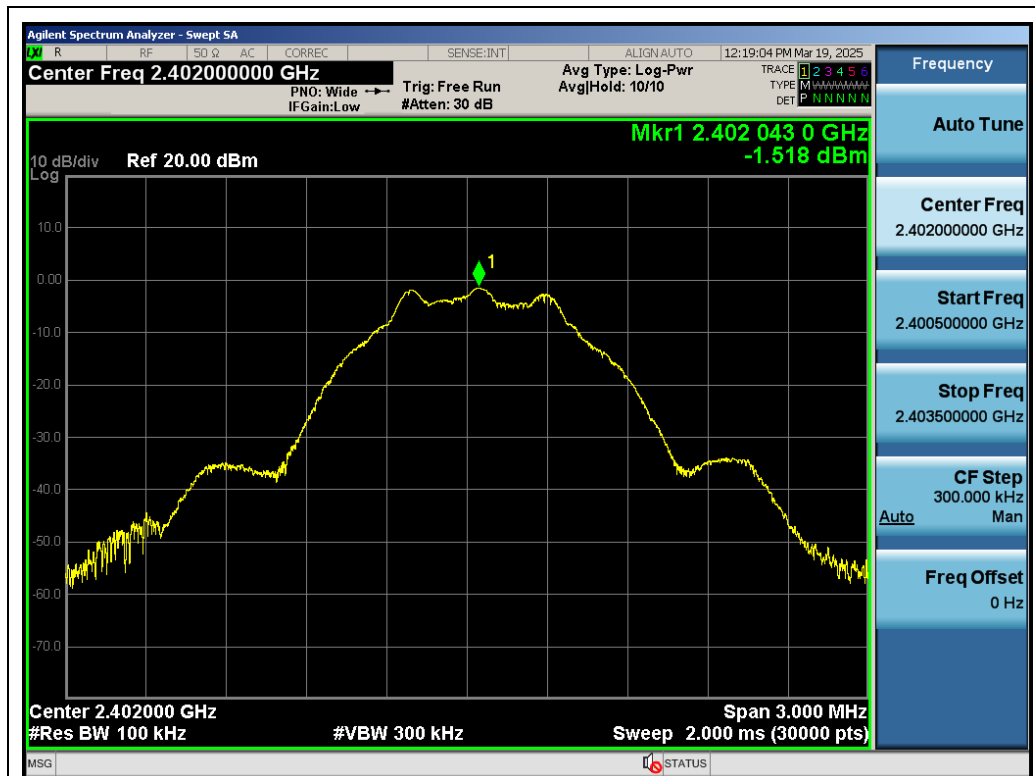
Appendix E: Conducted Spurious Emission

Test Result

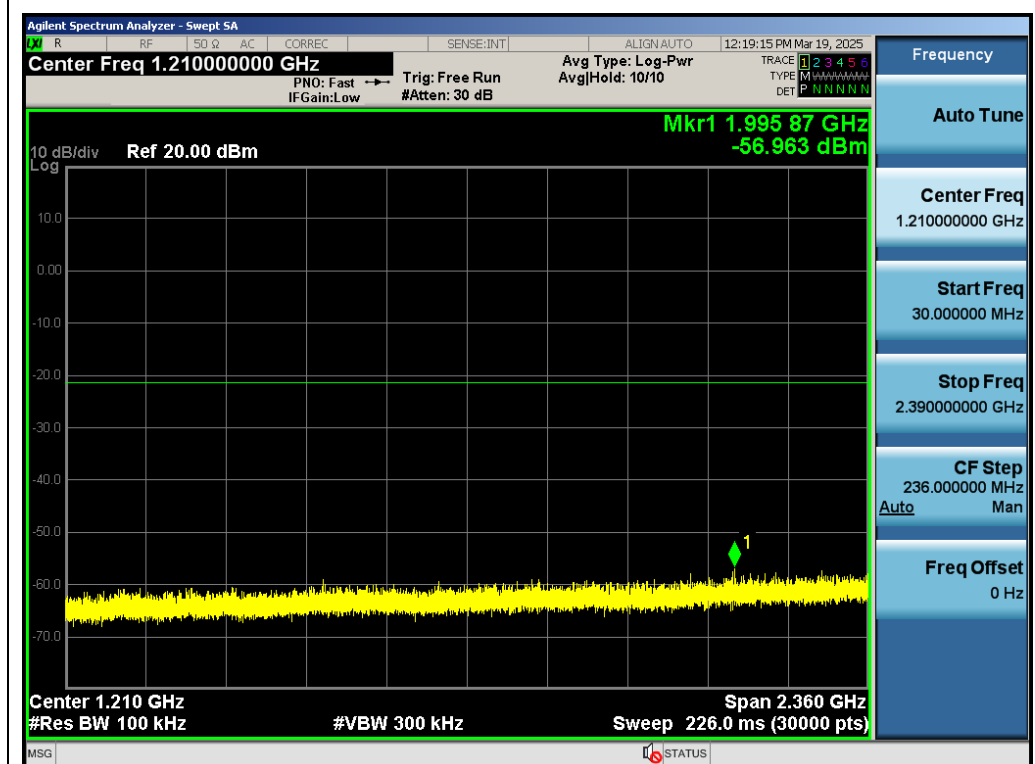
Test Mode	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
GFSK_1Mbps	2402	0~Reference	-1.518	-1.518	---	Pass
GFSK_1Mbps	2402	30~2390	-1.518	-56.963	≤-21.52	Pass
GFSK_1Mbps	2402	2483.5~25000	-1.518	-48.194	≤-21.52	Pass
GFSK_1Mbps	2440	0~Reference	-0.167	-0.167	---	Pass
GFSK_1Mbps	2440	30~2400	-0.167	-57.231	≤-20.17	Pass
GFSK_1Mbps	2440	2483.5~25000	-0.167	-48.818	≤-20.17	Pass
GFSK_1Mbps	2480	0~Reference	0.533	0.533	---	Pass
GFSK_1Mbps	2480	30~2400	0.533	-56.740	≤-19.47	Pass
GFSK_1Mbps	2480	2500~26500	0.533	-48.658	≤-19.47	Pass
GFSK_2Mbps	2402	0~Reference	-1.359	-1.359	---	Pass
GFSK_2Mbps	2402	30~2390	-1.359	-56.917	≤-21.36	Pass
GFSK_2Mbps	2402	2483.5~25000	-1.359	-48.730	≤-21.36	Pass
GFSK_2Mbps	2440	0~Reference	-0.001	-0.001	---	Pass
GFSK_2Mbps	2440	30~2400	-0.001	-57.428	≤-20.00	Pass
GFSK_2Mbps	2440	2483.5~25000	-0.001	-48.621	≤-20.00	Pass
GFSK_2Mbps	2480	0~Reference	0.759	0.759	---	Pass
GFSK_2Mbps	2480	30~2400	0.759	-57.213	≤-19.24	Pass
GFSK_2Mbps	2480	2500~26500	0.759	-48.261	≤-19.24	Pass

Remark: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

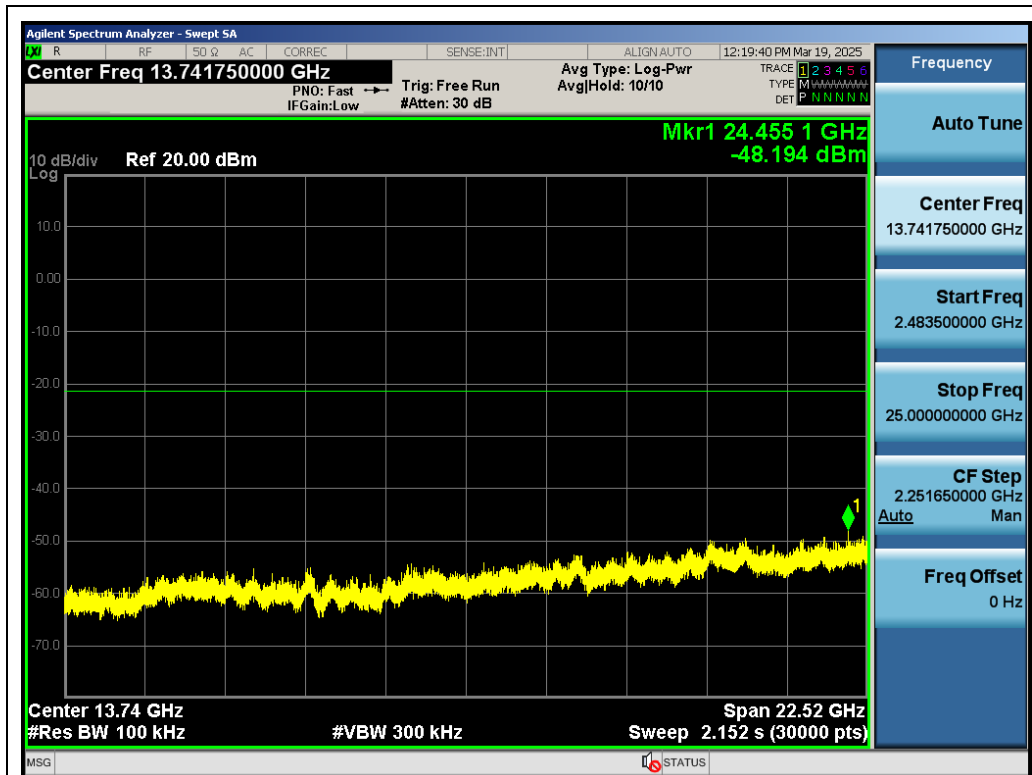
Test Graphs



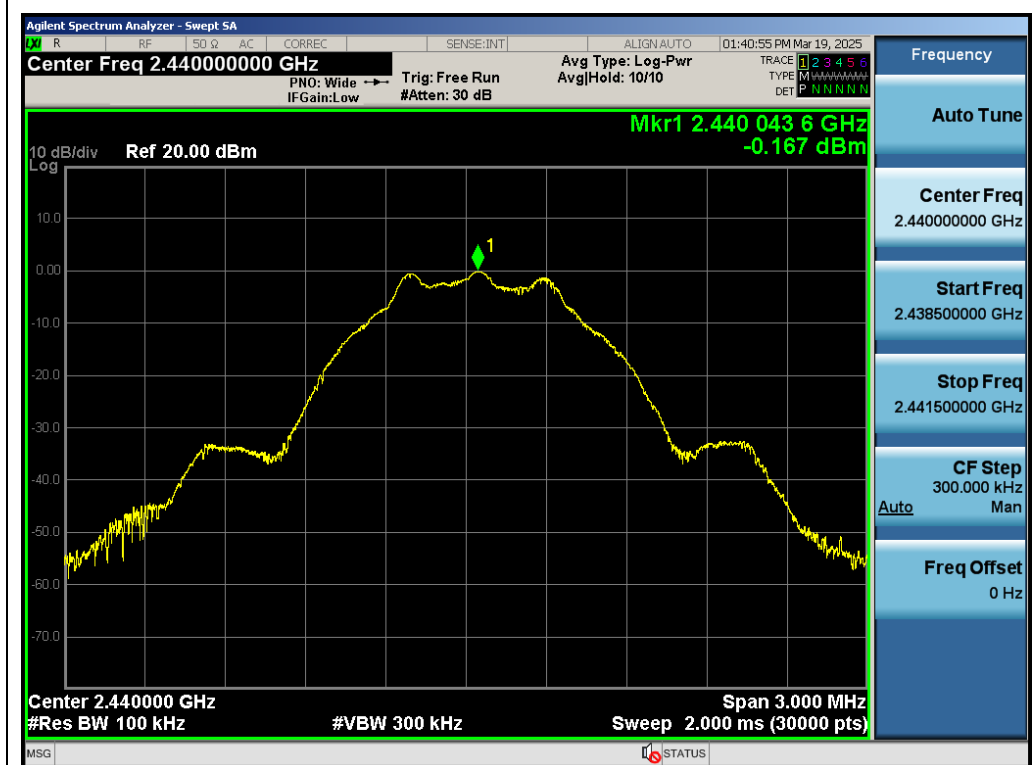
Test_Graph_LE1M_ANT1_2402_1Mbps_Reference Level



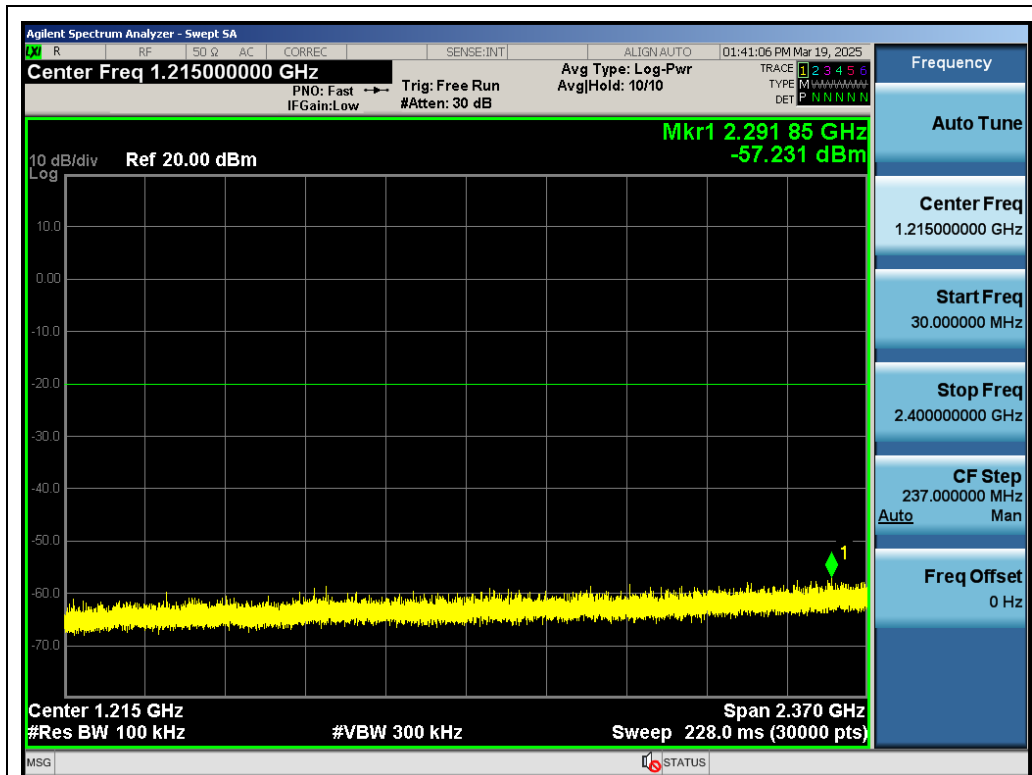
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions



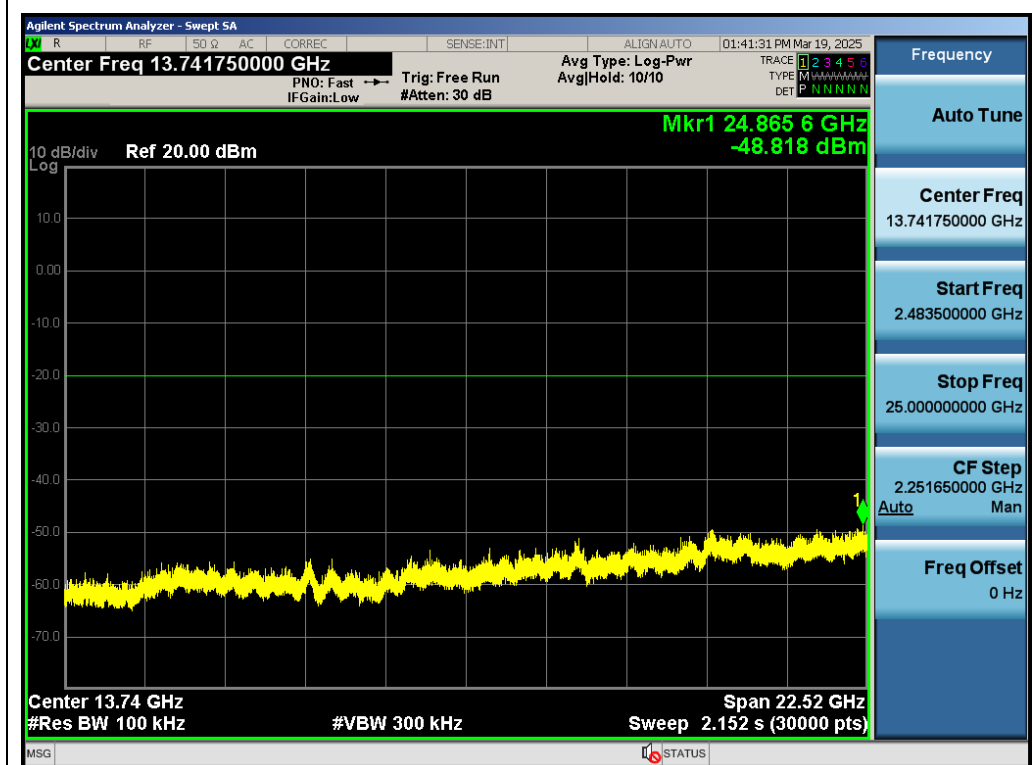
Test_Graph_LE1M_ANT1_2402_1Mbps_Higher Band Emissions



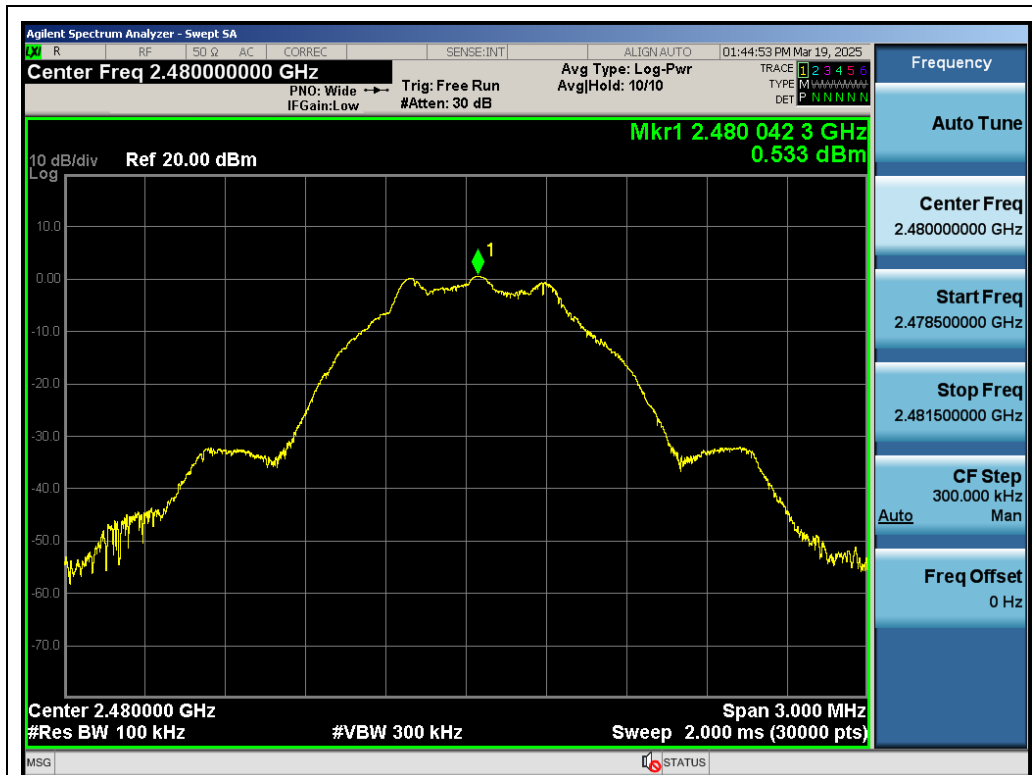
Test_Graph_LE1M_ANT1_2440_1Mbps_Reference Level



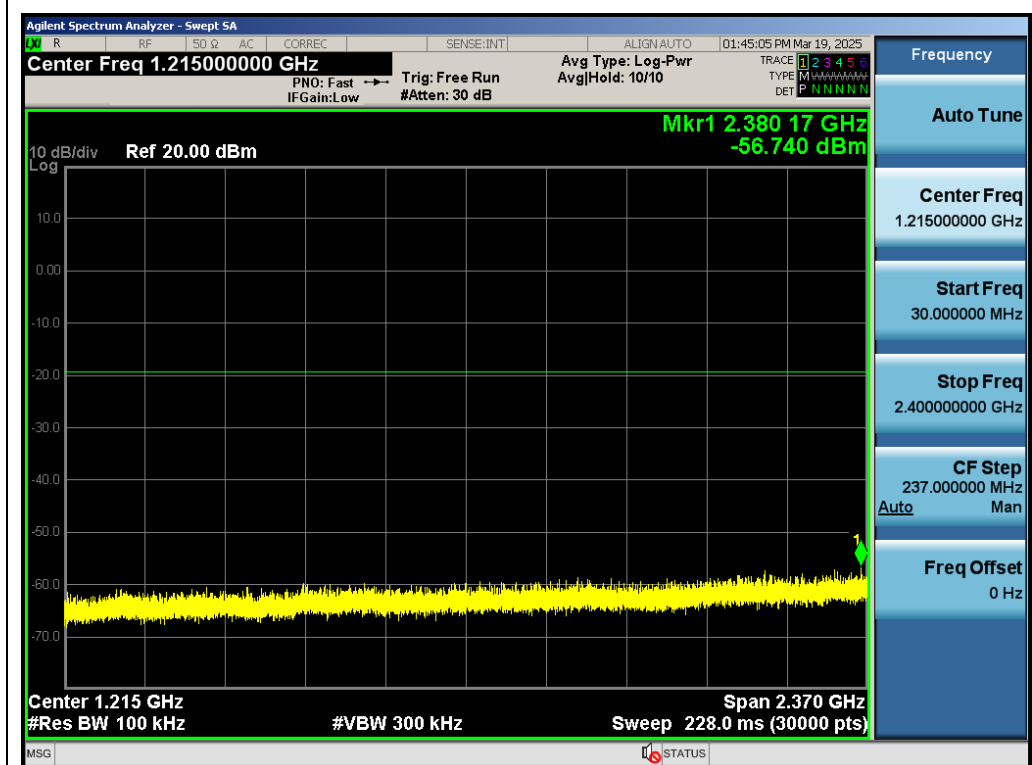
Test_Graph_LE1M_ANT1_2440_1Mbps_Lower Band Emissions



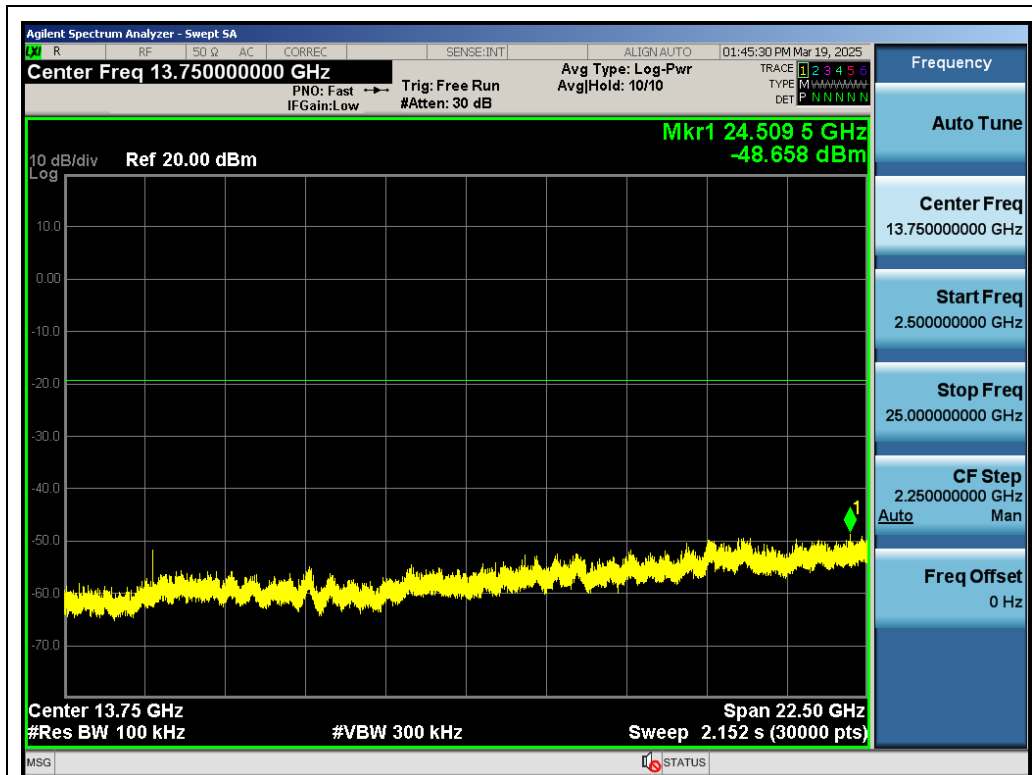
Test_Graph_LE1M_ANT1_2440_1Mbps_Higher Band Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Reference Level



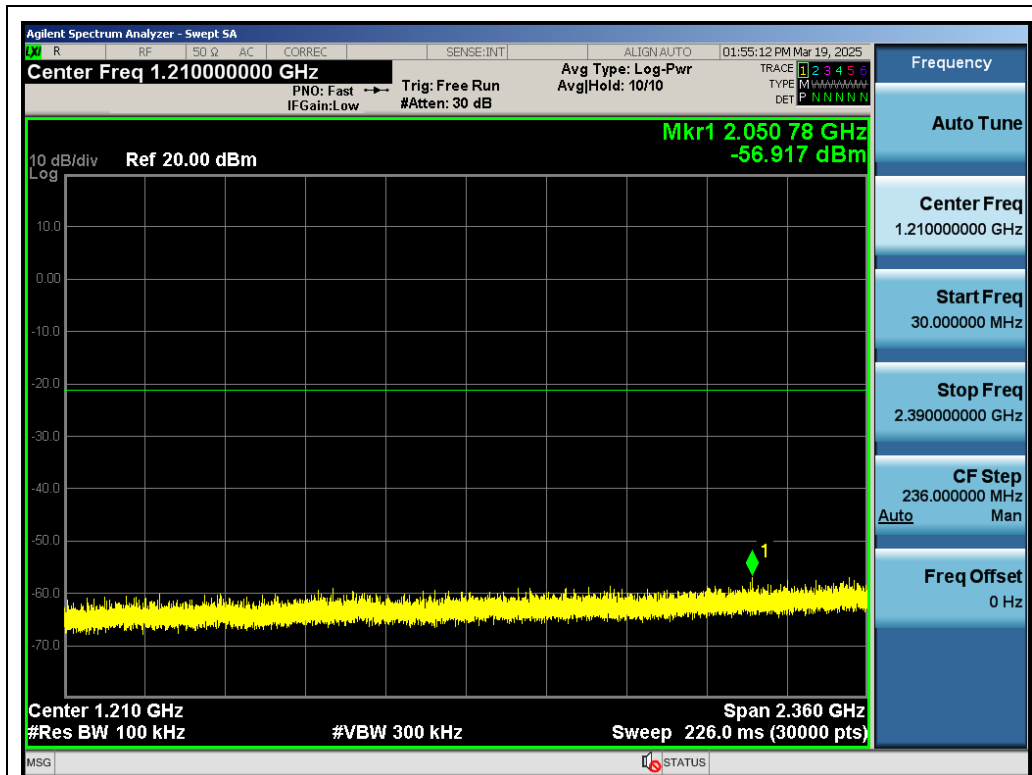
Test_Graph_LE1M_ANT1_2480_1Mbps_Lower Band Emissions



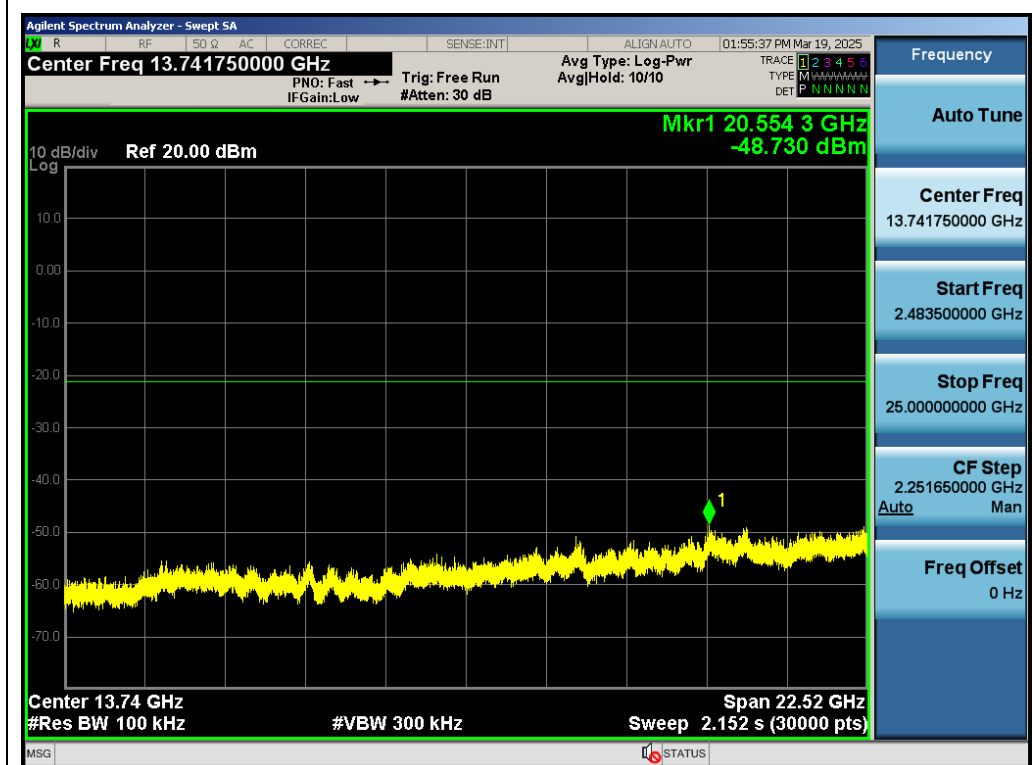
Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2402_2Mbps_Reference Level



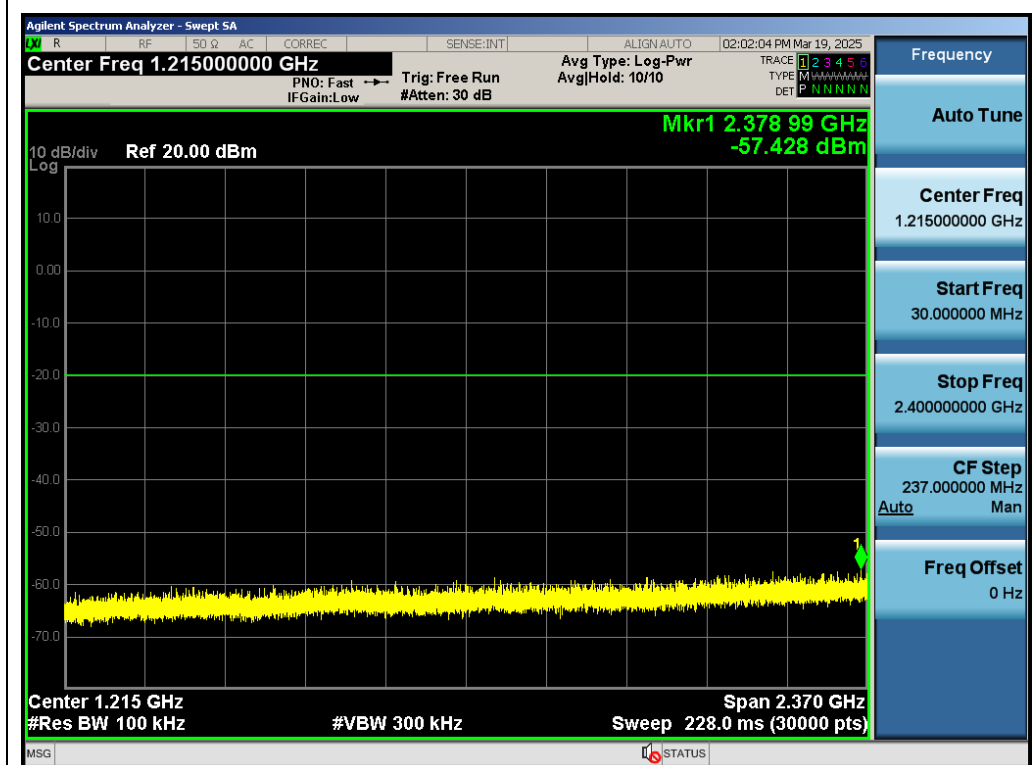
Test_Graph_LE2M_ANT1_2402_2Mbps_Lower Band Emissions



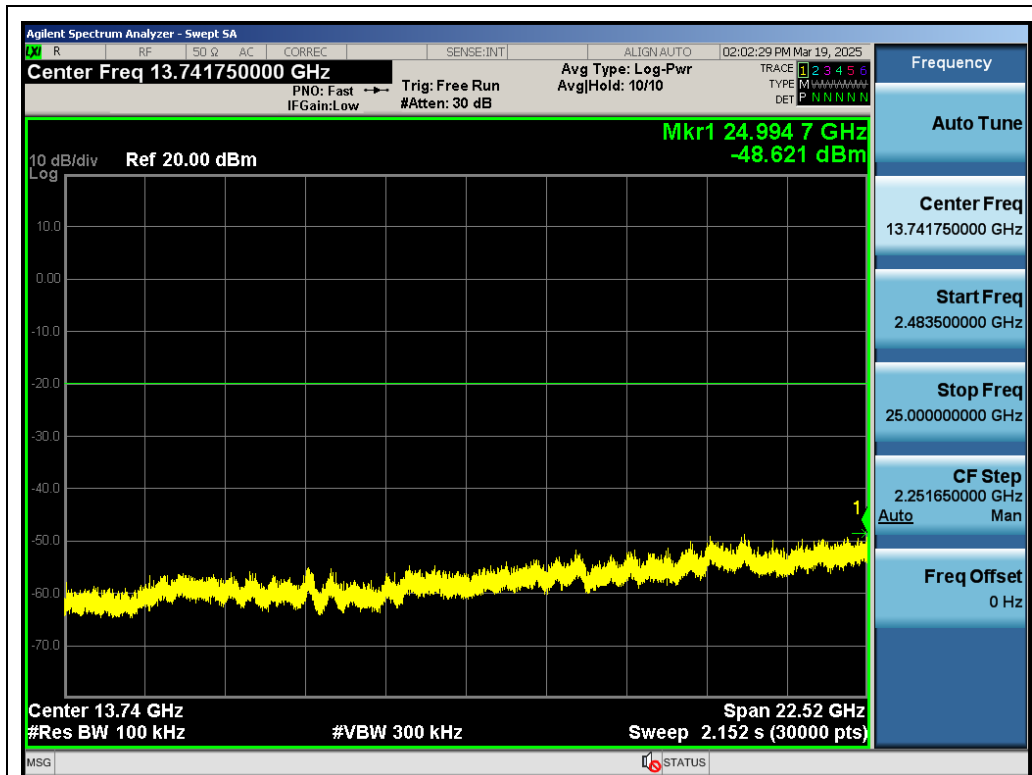
Test_Graph_LE2M_ANT1_2402_2Mbps_Higher Band Emissions



Test_Graph_LE2M_ANT1_2440_2Mbps_Reference Level



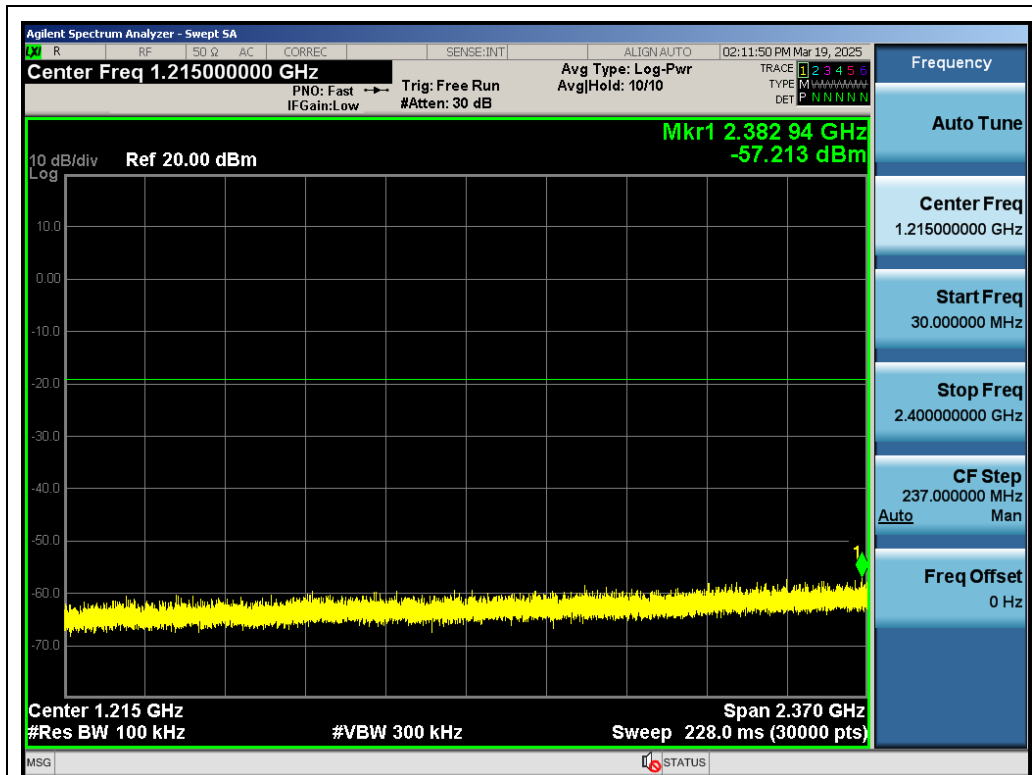
Test_Graph_LE2M_ANT1_2440_2Mbps_Lower Band Emissions



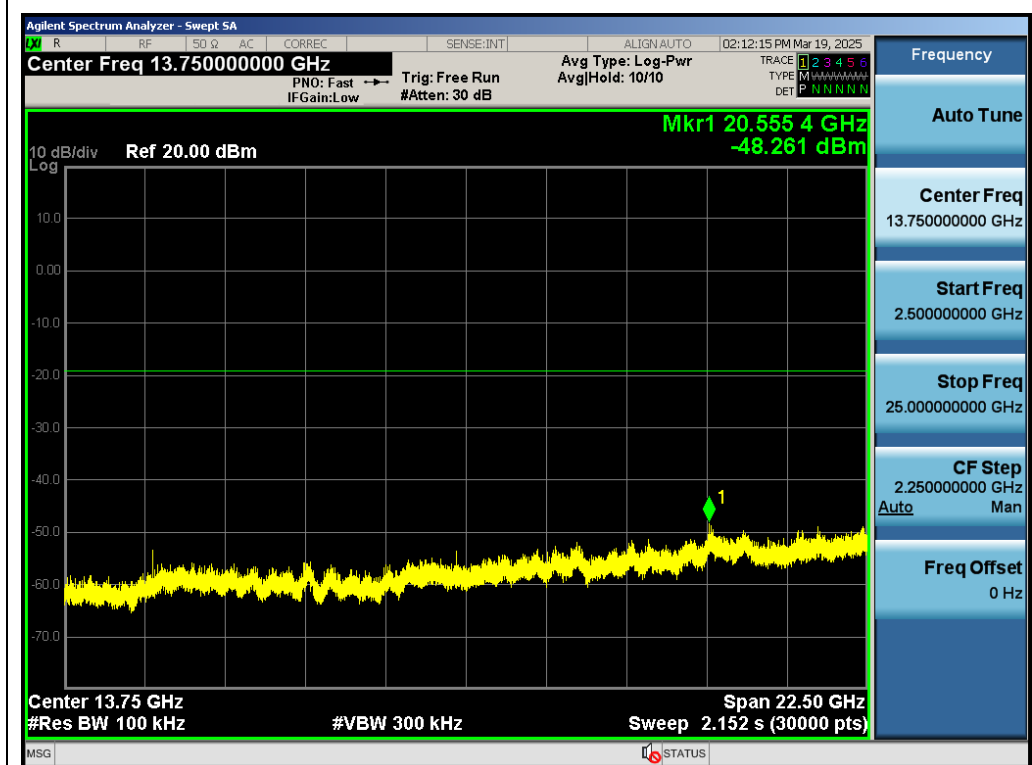
Test_Graph_LE2M_ANT1_2440_2Mbps_Higher Band Emissions



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

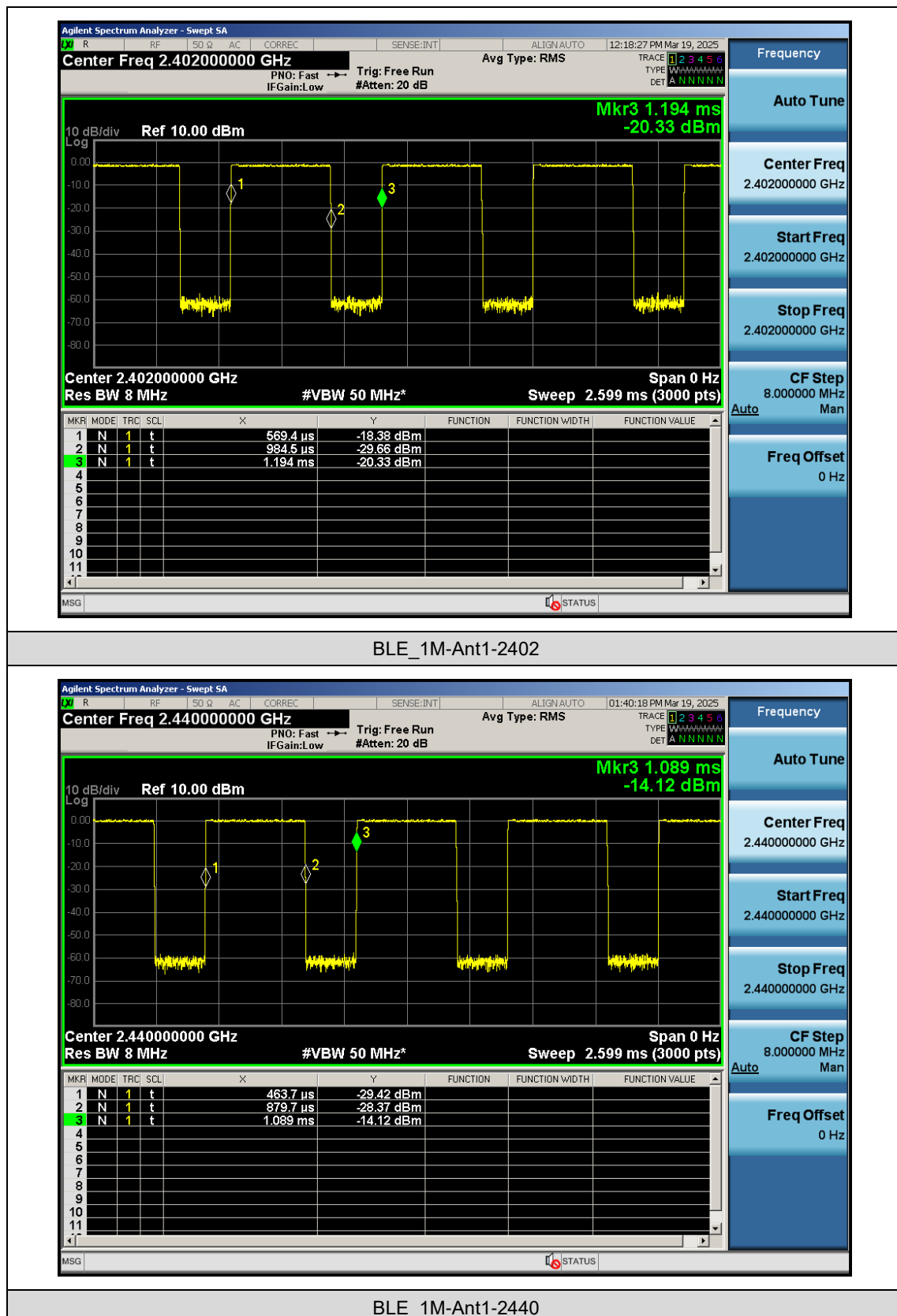
Appendix F: Duty Cycle

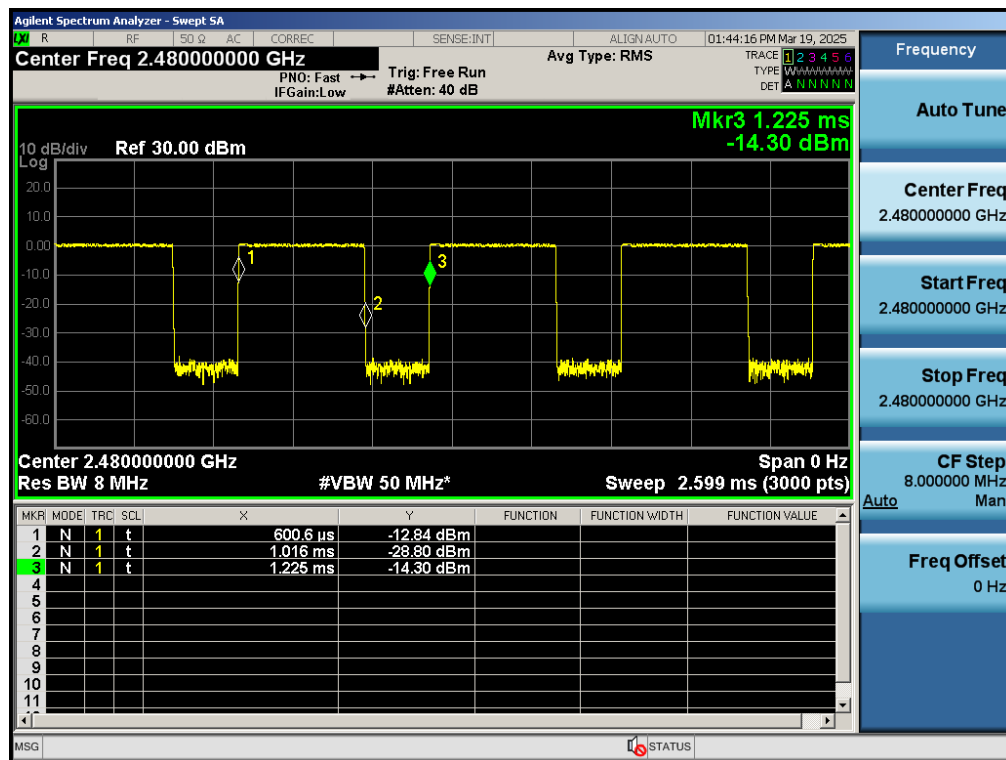
Test Result

Test Mode	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
GFSK_1Mbps	2402	0.415	0.625	66.46	1.77
GFSK_1Mbps	2440	0.416	0.625	66.53	1.77
GFSK_1Mbps	2480	0.415	0.624	66.53	1.77
GFSK_2Mbps	2402	0.232	0.625	37.16	4.30
GFSK_2Mbps	2440	0.231	0.625	37.03	4.31
GFSK_2Mbps	2480	0.231	0.625	37.03	4.31

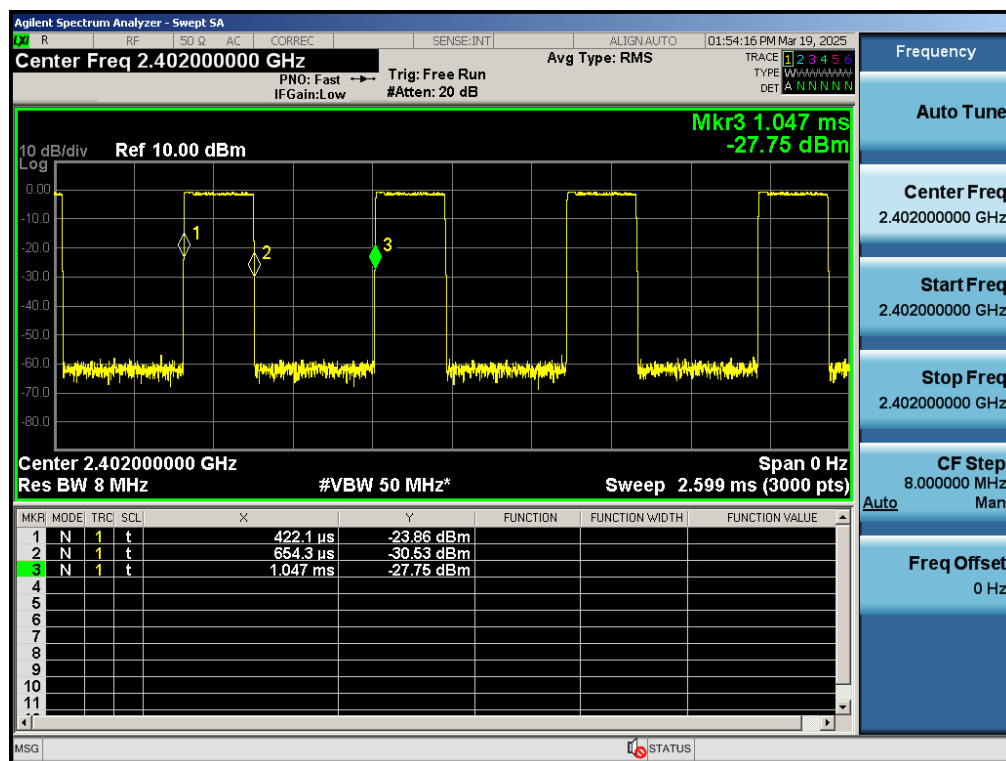
Remark: The factor had been edited in the “Input Correction” of the Spectrum Analyzer. Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

Test Graphs

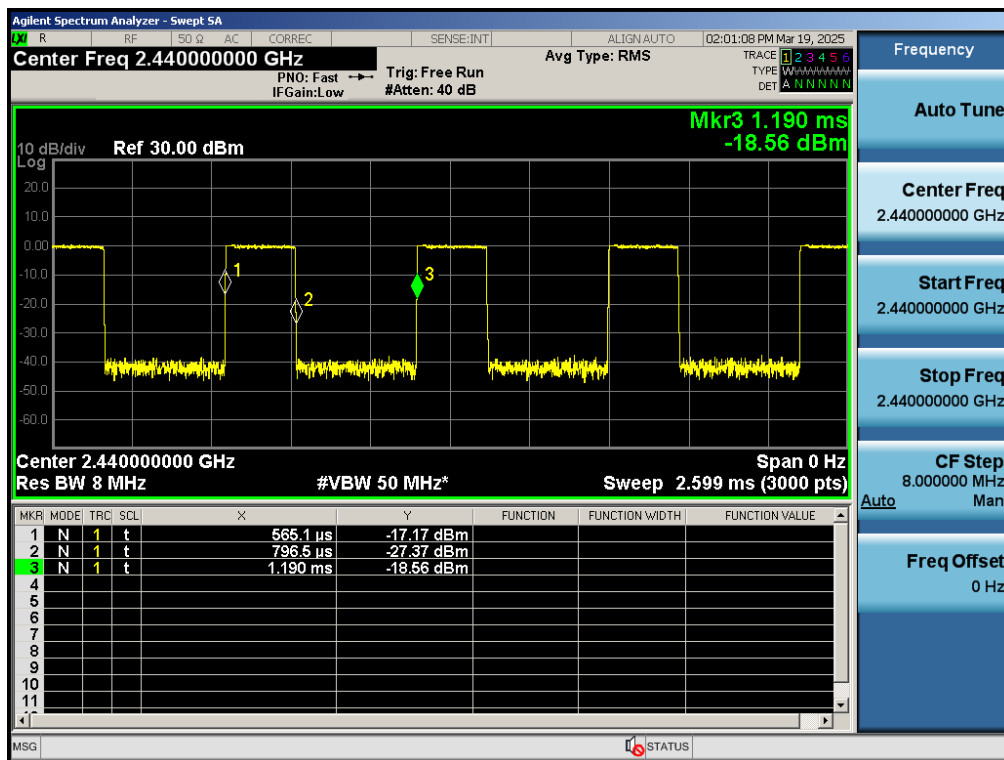




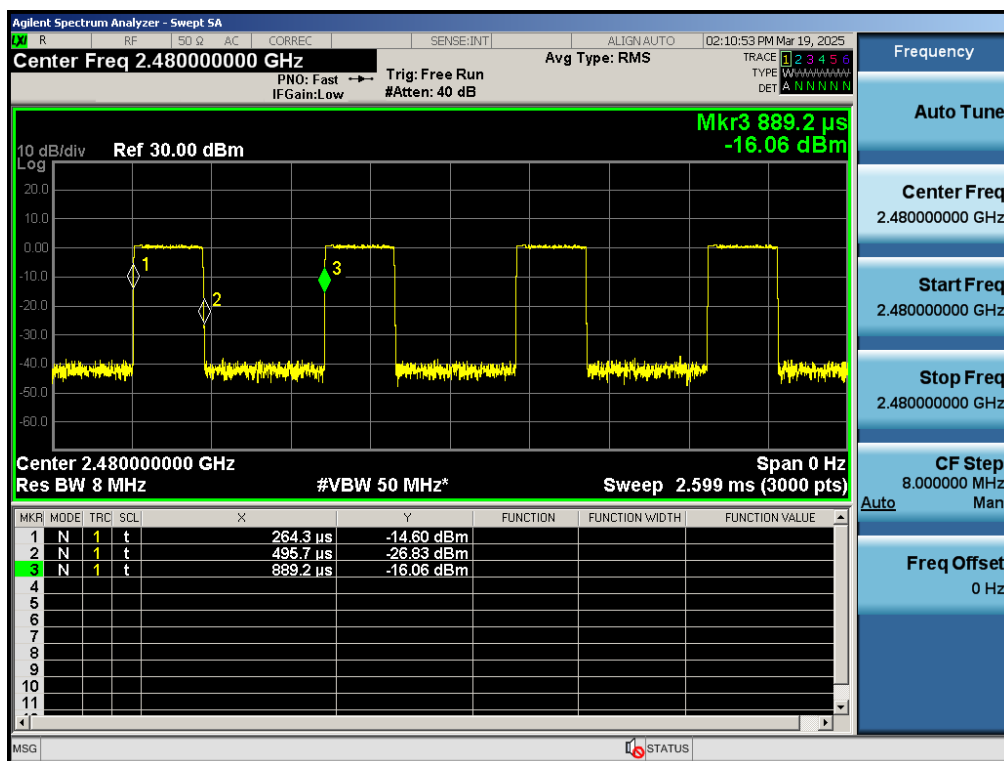
BLE_1M-Ant1-2480



BLE_2M-Ant1-2402



BLE_2M-Ant1-2440



BLE_2M-Ant1-2480