Appendix Test Data for BLE (Conducted Measurement)

Product Name: AI Nutriscale Hue

Trade Mark: ULTREAN

Test Model: JKS16

FCC ID: 2BCBU-JKS16

Environmental Conditions

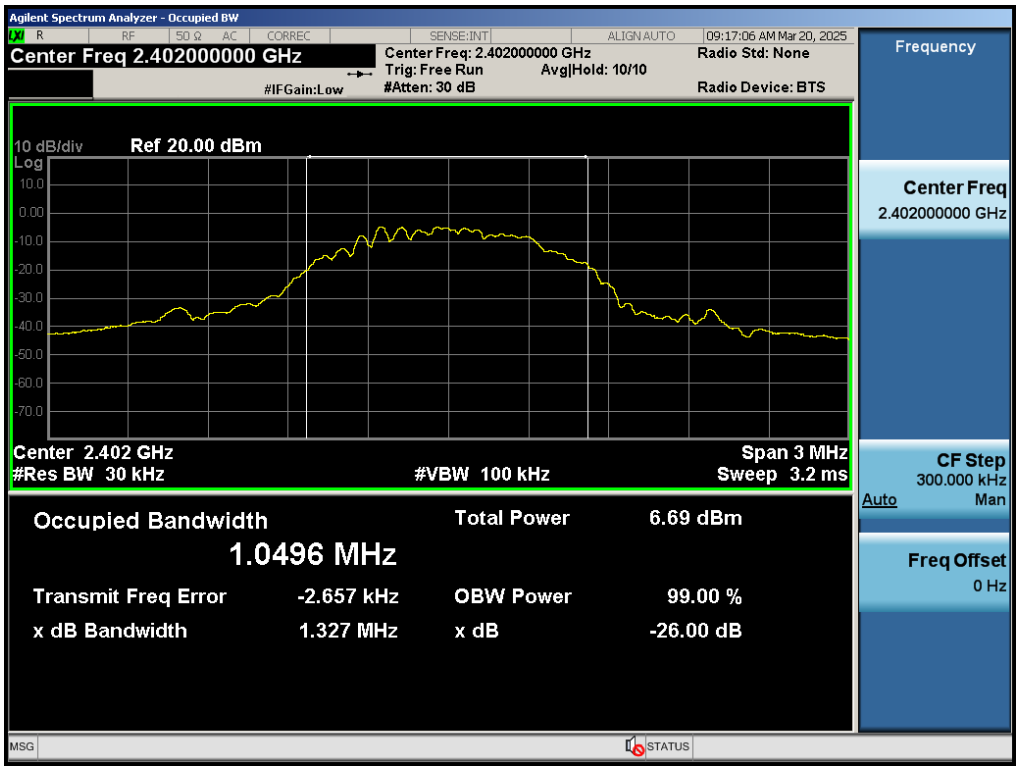
Temperature:	23.8℃
Relative Humidity:	56.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

Appendix A: DTS Bandwidth& Occupied Channel Bandwidth

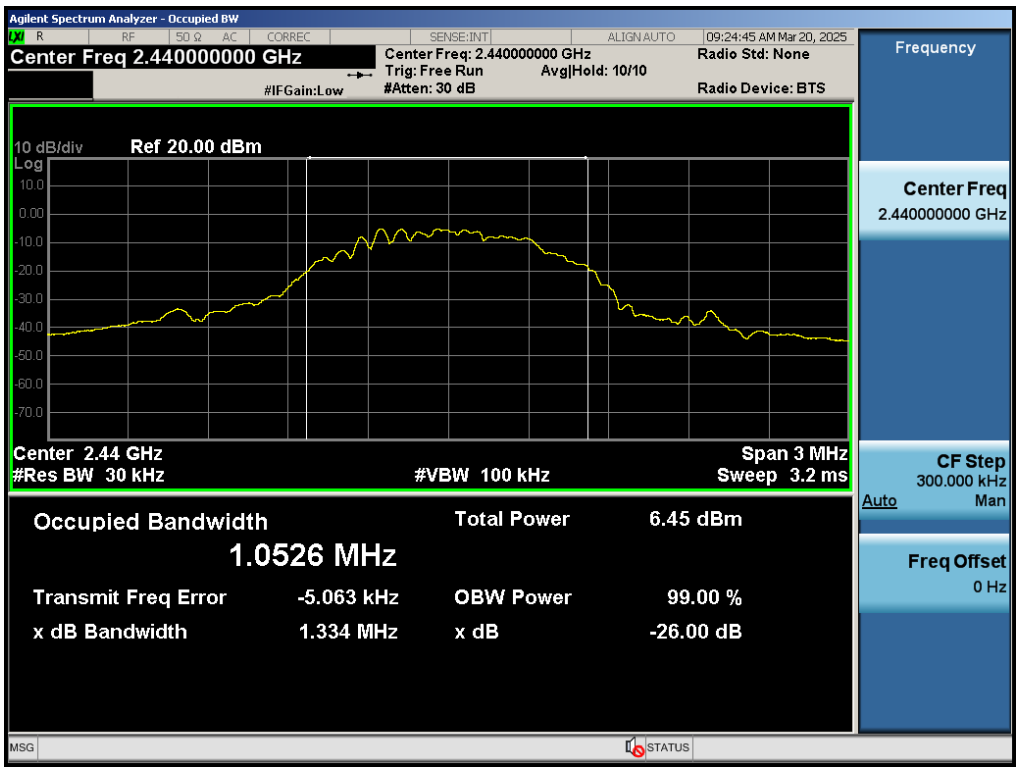
Test Result

Test Mode	Test Frequency	Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail
GFSK_1Mbps	2402	1.050	0.687	⩾0.5	Pass
	2440	1.053	0.687	⩾0.5	Pass
	2480	1.052	0.688	⩾0.5	Pass

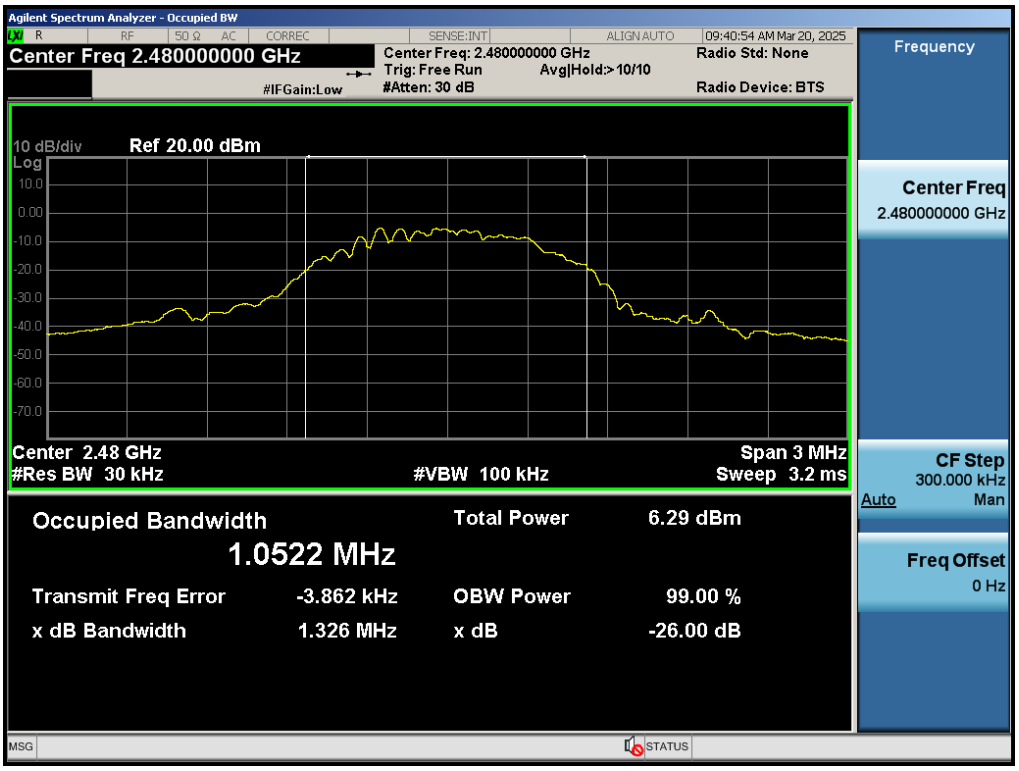
Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_OBW

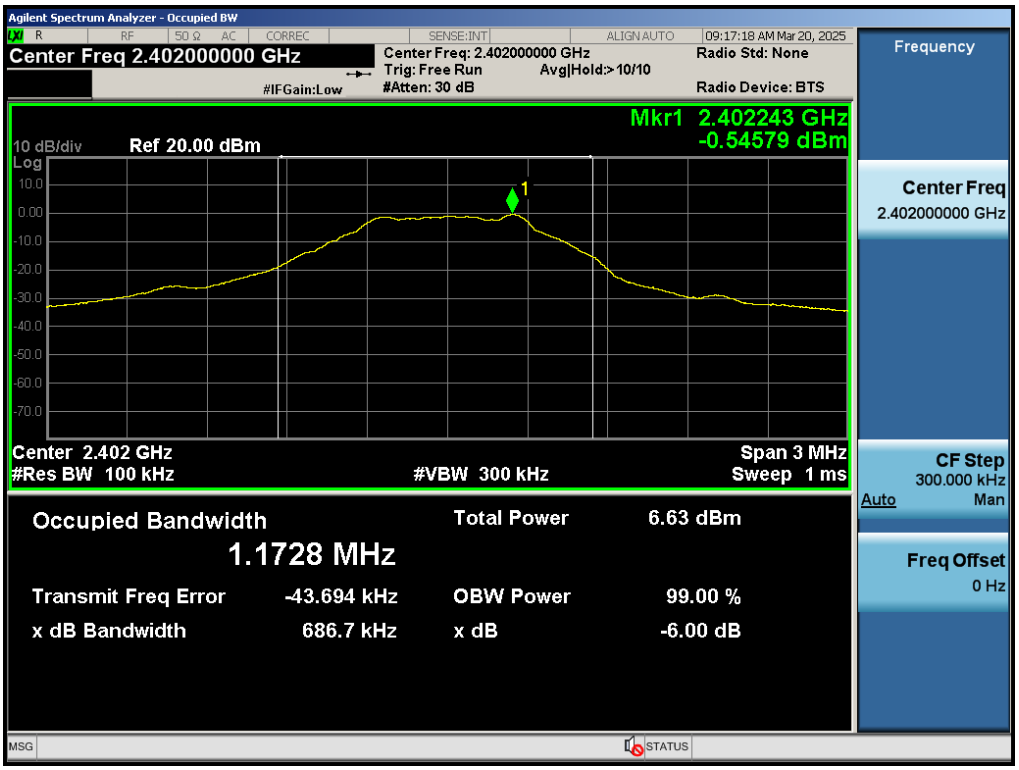


Test_Graph_LE1M_ANT1_2440_1Mbps_OBW

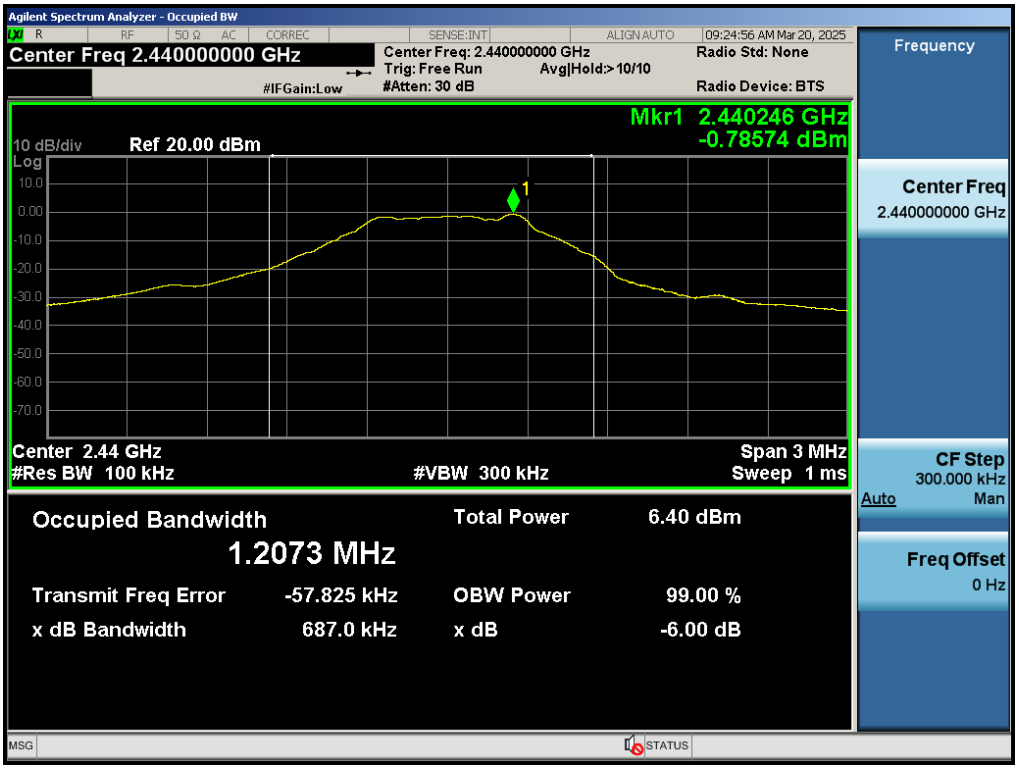


Test_Graph_LE1M_ANT1_2480_1Mbps_OBW

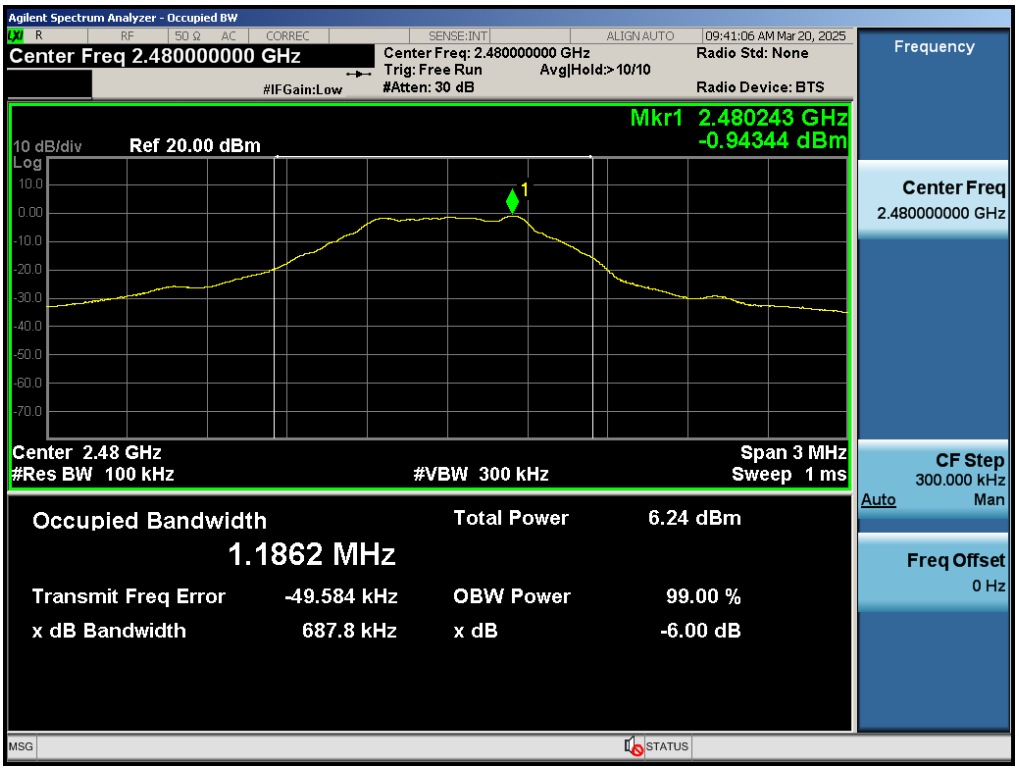
Test Graphs of DTS Bandwidth



Test_Graph_LE1M_ANT1_2402_1Mbps_DTSBW



Test_Graph_LE1M_ANT1_2440_1Mbps_DTSBW



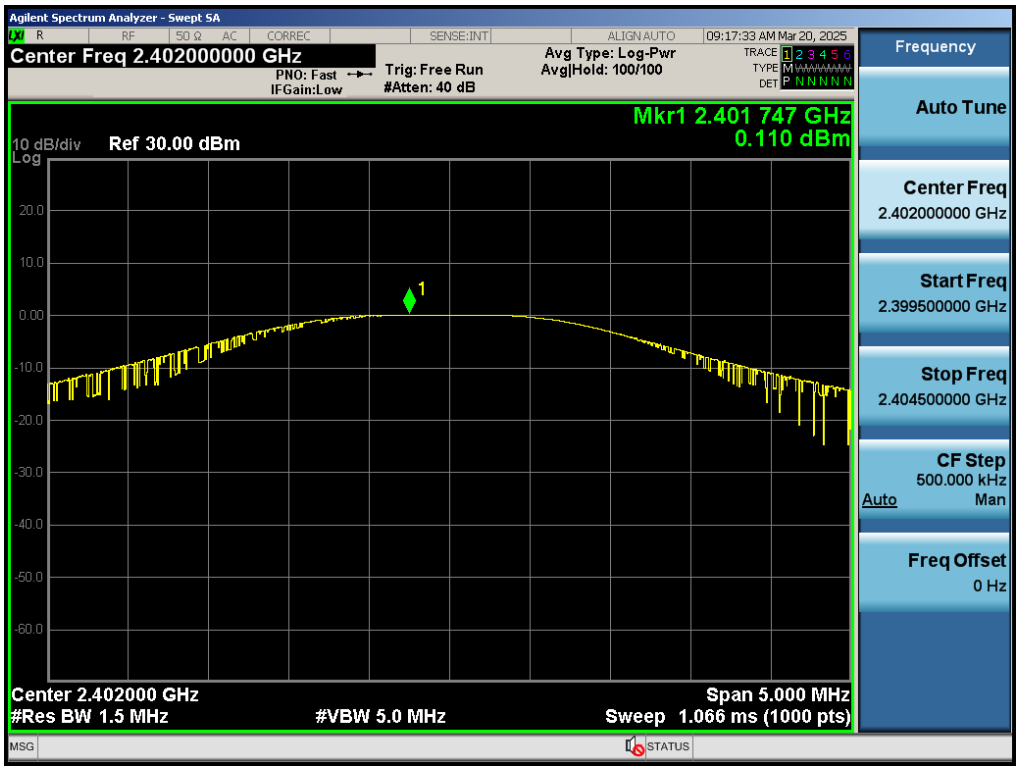
Test_Graph_LE1M_ANT1_2480_1Mbps_DTSBW

Appendix B: Maximum peak conducted output power

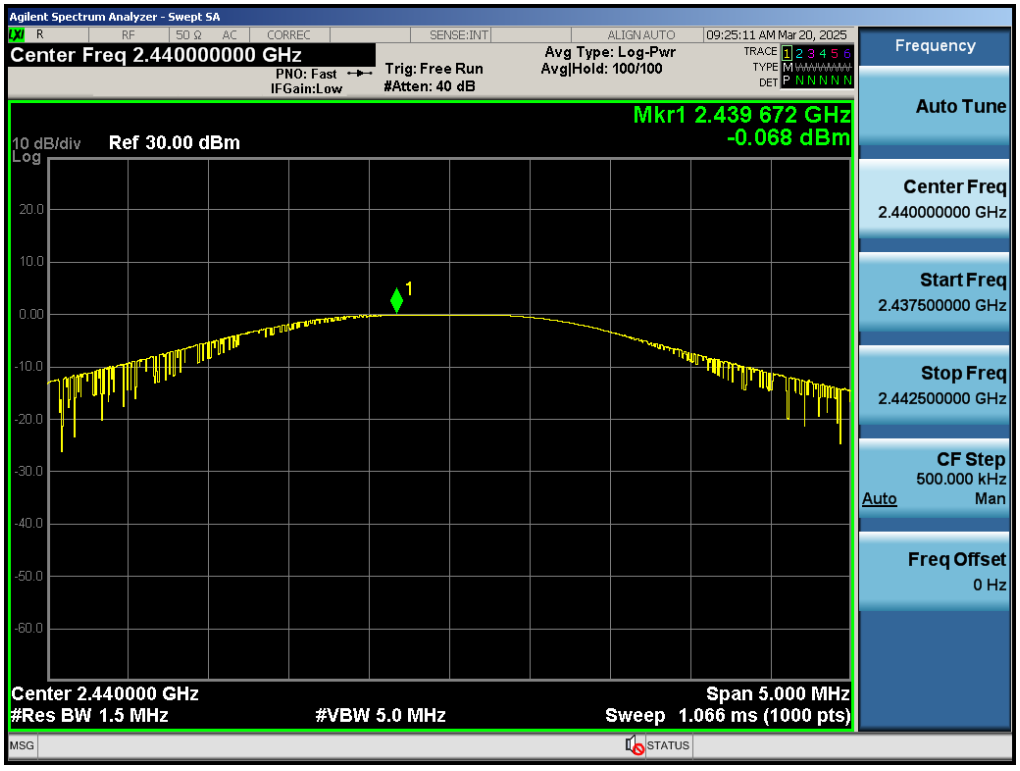
Test Result Peak

Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK_1Mbps	2402	0.110	≤30	Pass
	2440	-0.068	≤30	Pass
	2480	-0.306	≤30	Pass

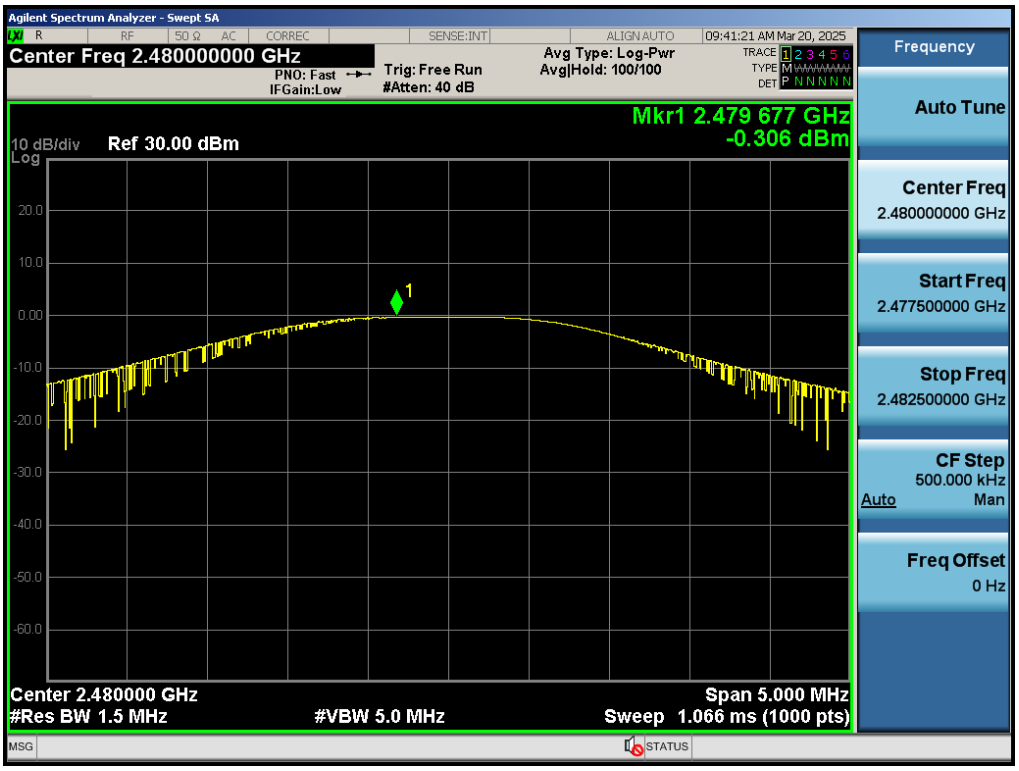
Test Graphs Peak



Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power



Test_Graph_LE1M_ANT1_2440_1Mbps_Peak Power



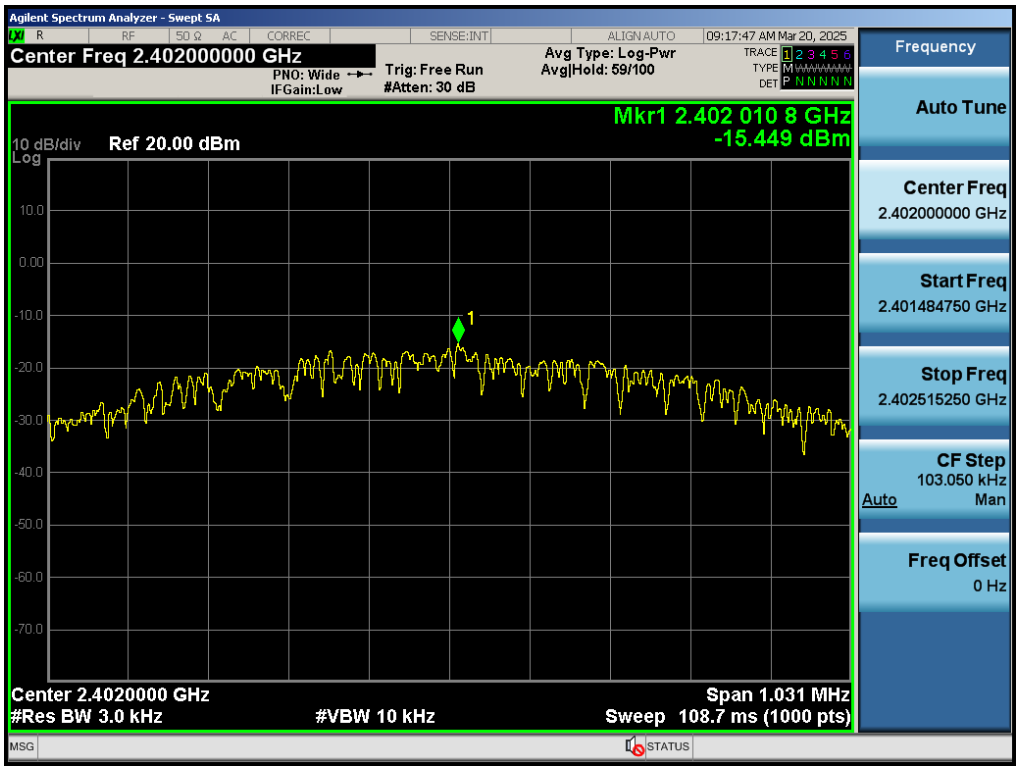
Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power

Appendix C: Maximum peak power spectral density

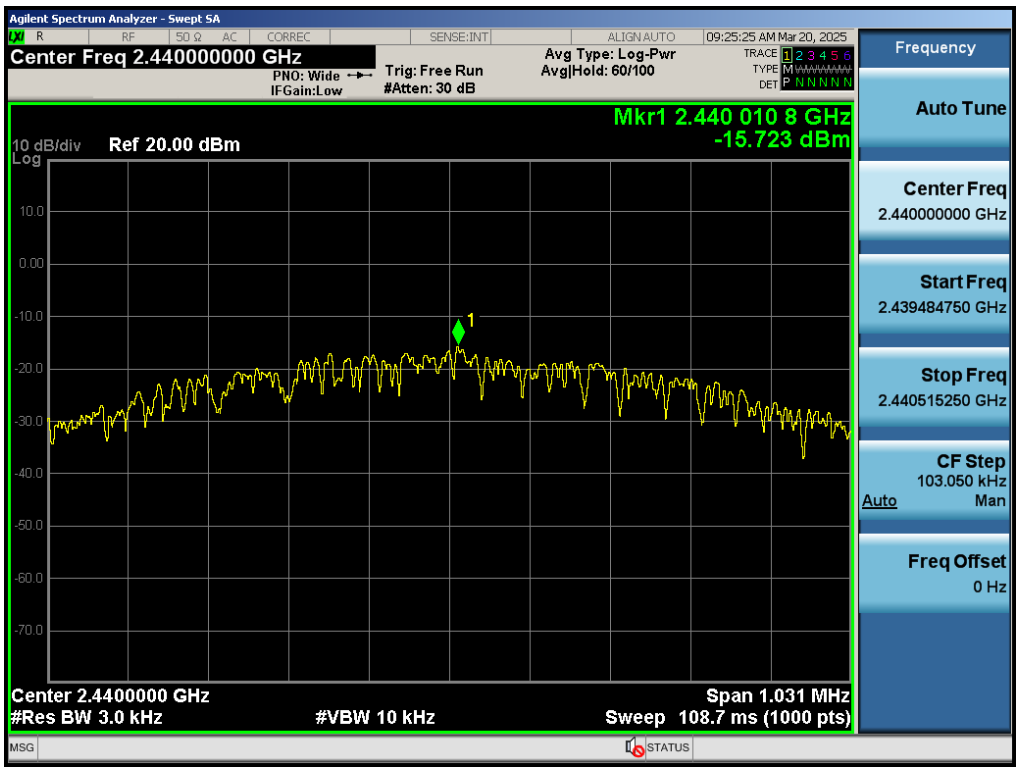
Test Result

Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
GFSK_1Mbps	2402	-15.449	≤8	Pass
	2440	-15.723	≤8	Pass
	2480	-15.835	≤8	Pass

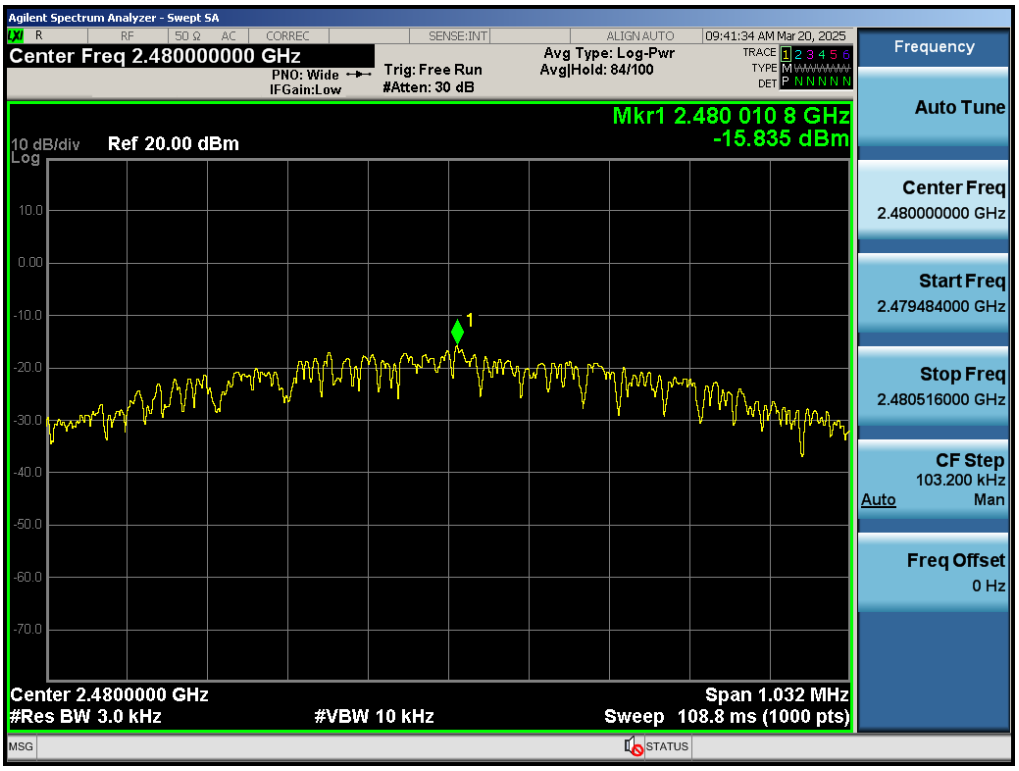
Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_PSD



Test_Graph_LE1M_ANT1_2440_1Mbps_PSD



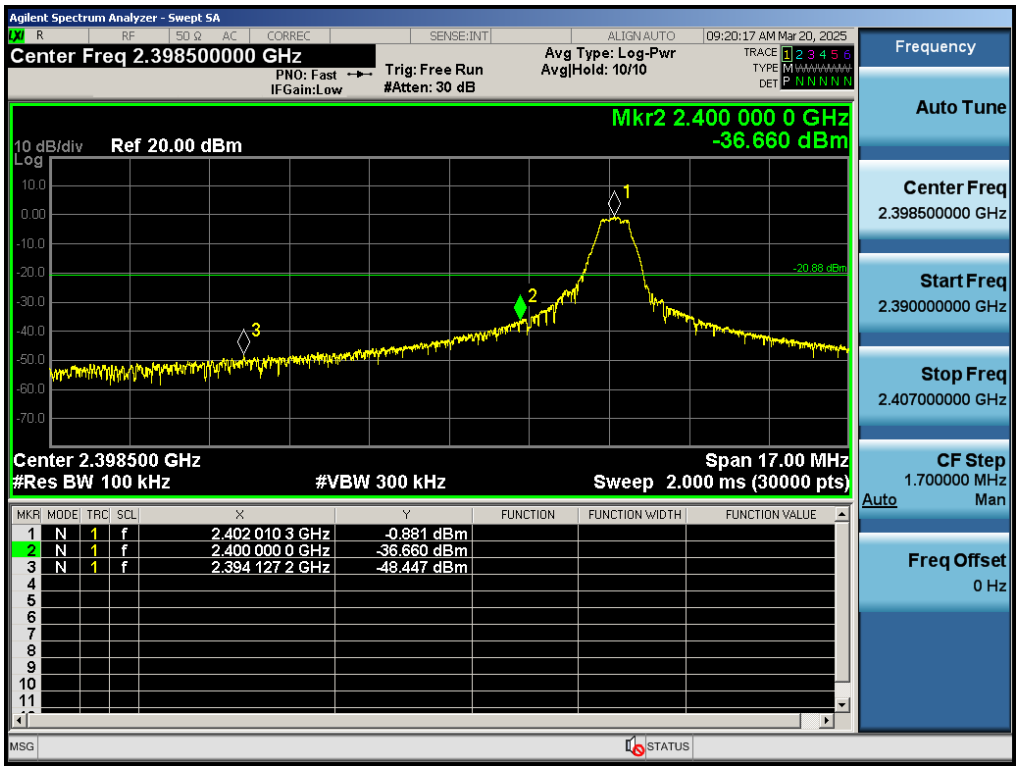
Test_Graph_LE1M_ANT1_2480_1Mbps_PSD

Appendix D: Band edge measurements

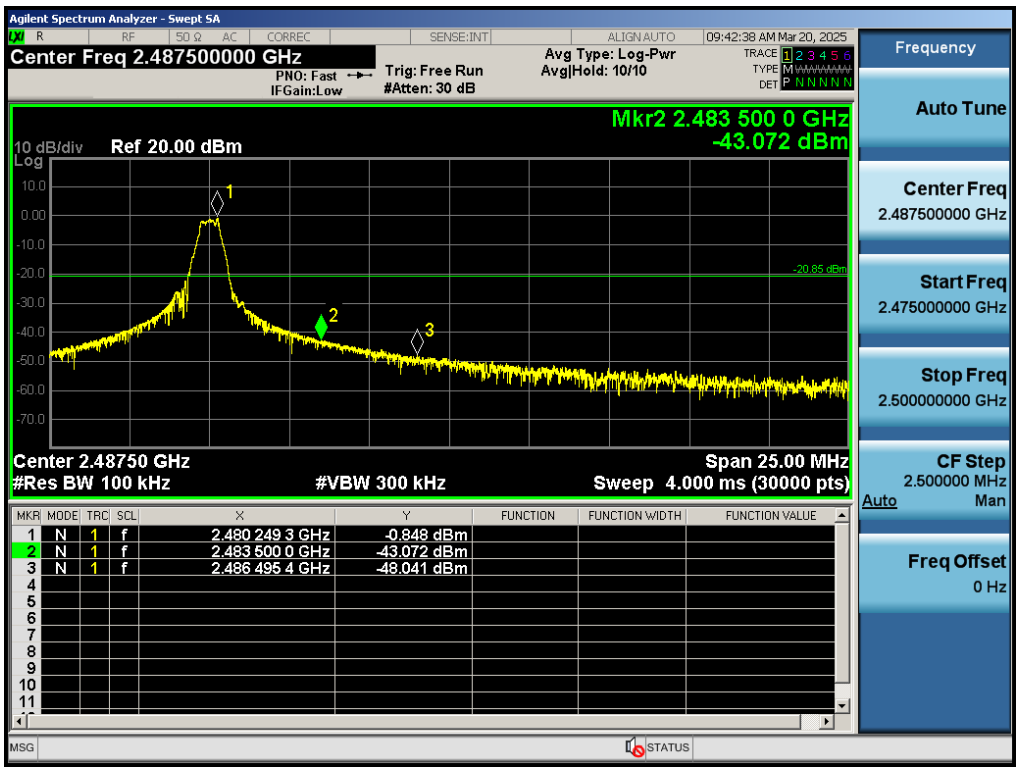
Test Result

Test Mode	Ch. Name	Frequency [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Low	2402	-0.881	-36.660	≤-15.59	PASS
BLE_1M	High	2480	-0.848	-43.072	≤-17.26	PASS

Test Graphs



Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Edge Emissions



Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Edge Emissions

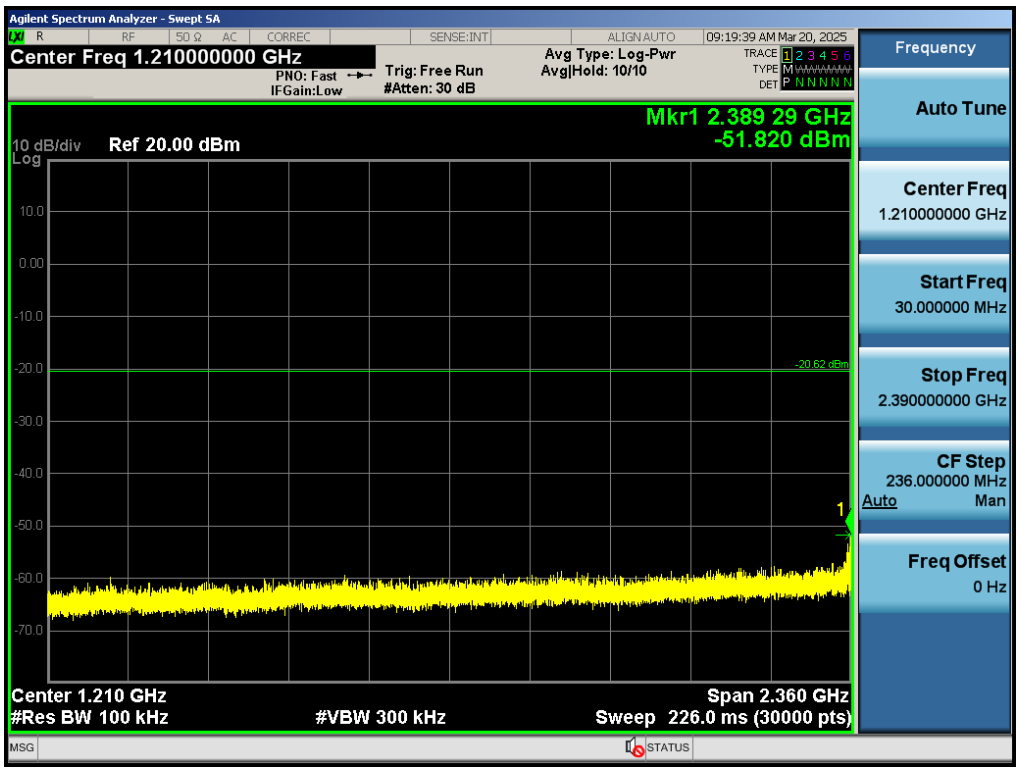
Appendix E: Conducted Spurious Emission

Test Result

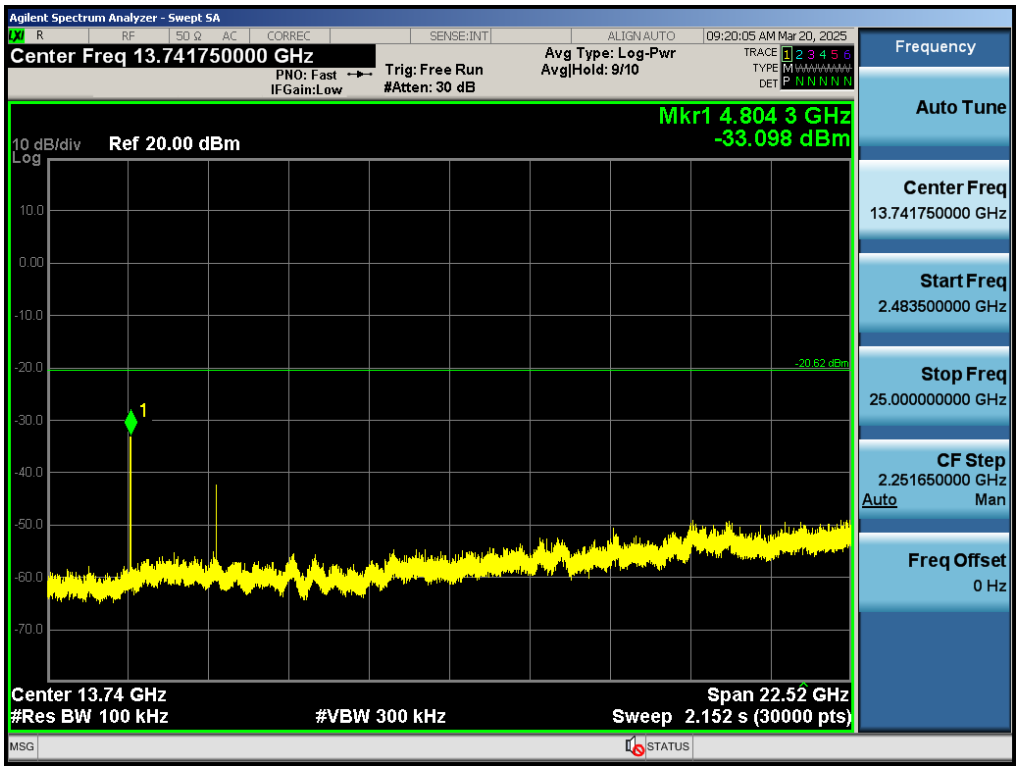
Test Mode	Frequency [MHz]	Freq. Range [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	2402	0~Reference	-1.354	-0.618	---	PASS
BLE_1M	2402	30~2390	-0.618	-51.820	-20.62	PASS
BLE_1M	2402	2483.5~25000	-0.618	-33.098	-20.62	PASS
BLE_1M	2440	0~Reference	-0.812	-0.812	---	PASS
BLE_1M	2440	30~2400	-0.812	-56.981	-20.81	PASS
BLE_1M	2440	2483.5~25000	-0.812	-35.045	-20.81	PASS
BLE_1M	2480	0~Reference	-0.957	-0.957	---	PASS
BLE_1M	2480	30~2400	-0.957	-51.036	-20.96	PASS
BLE_1M	2480	2500~26500	-0.957	-39.193	-20.96	PASS

Test Graphs

Test_Graph_LE1M_ANT1_2402_1Mbps_Reference Level

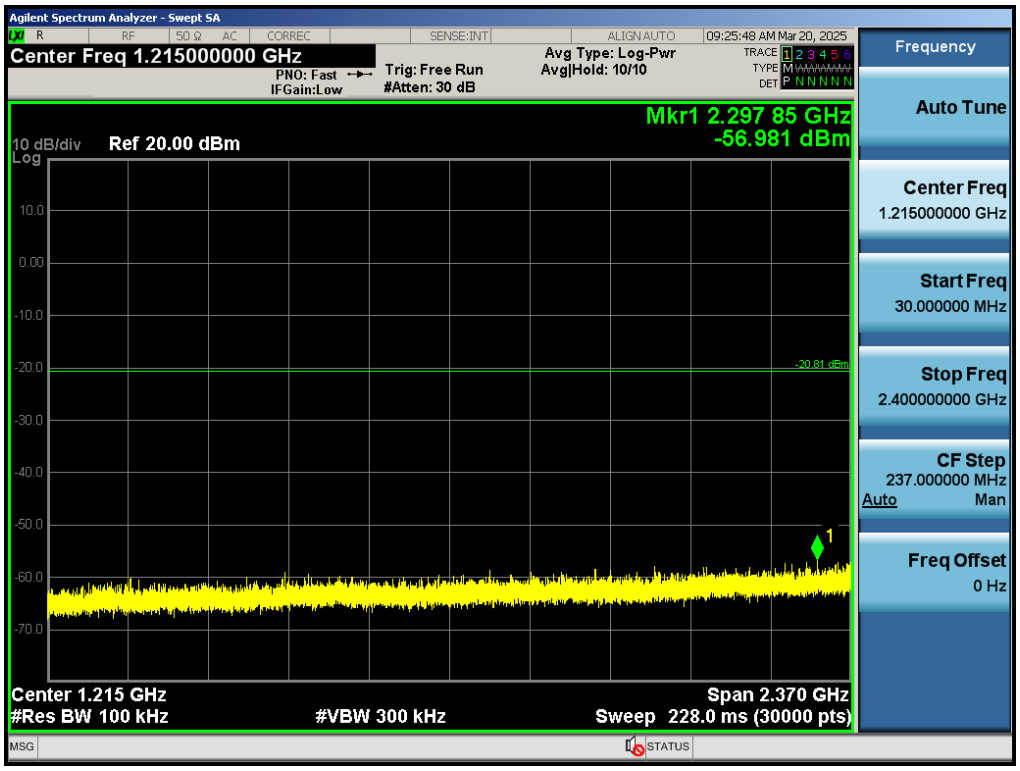


Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions

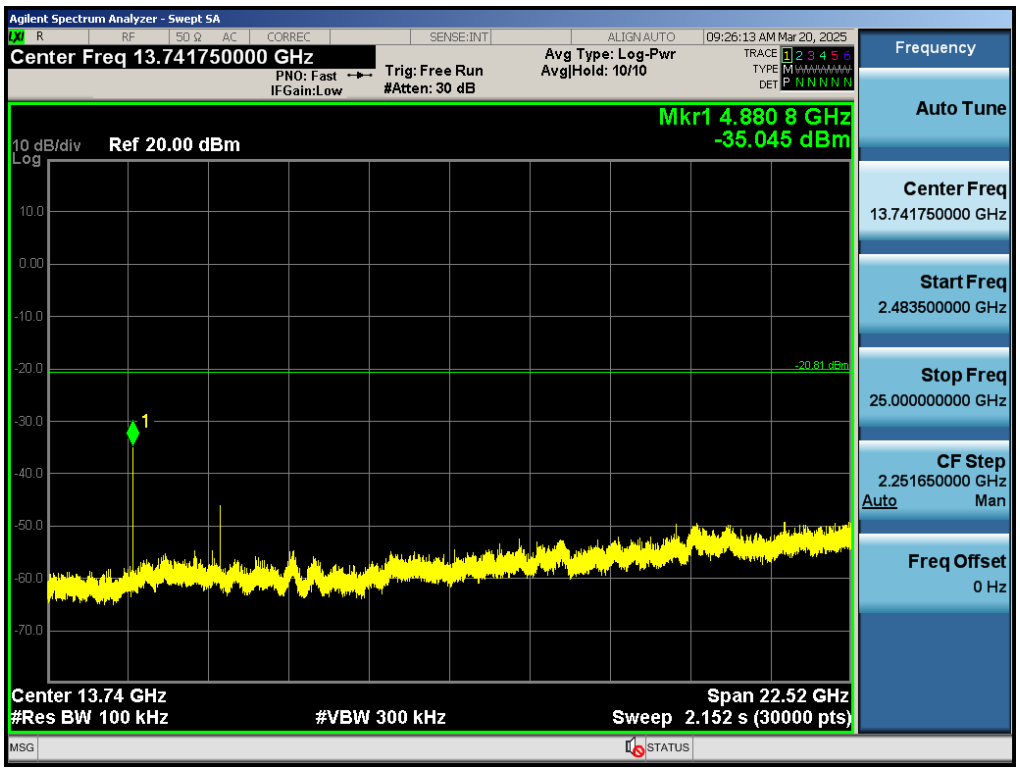


Test_Graph_LE1M_ANT1_2402_1Mbps_Higher Band Emissions

Test_Graph_LE1M_ANT1_2440_1Mbps_Reference Level

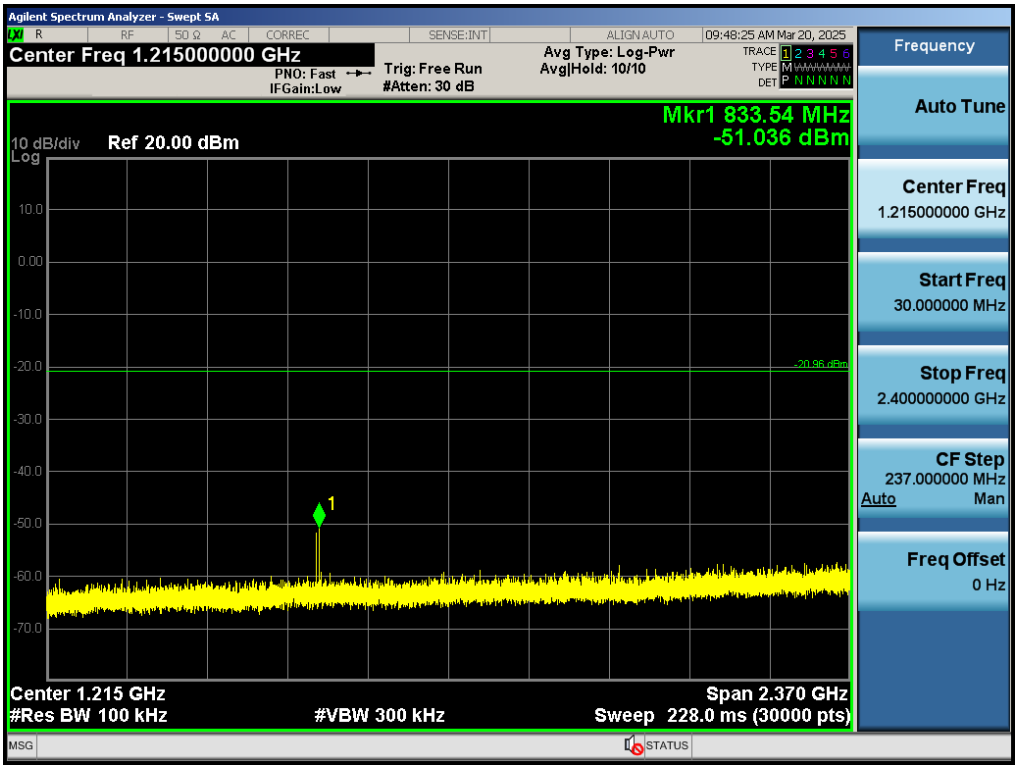


Test_Graph_LE1M_ANT1_2440_1Mbps_Lower Band Emissions

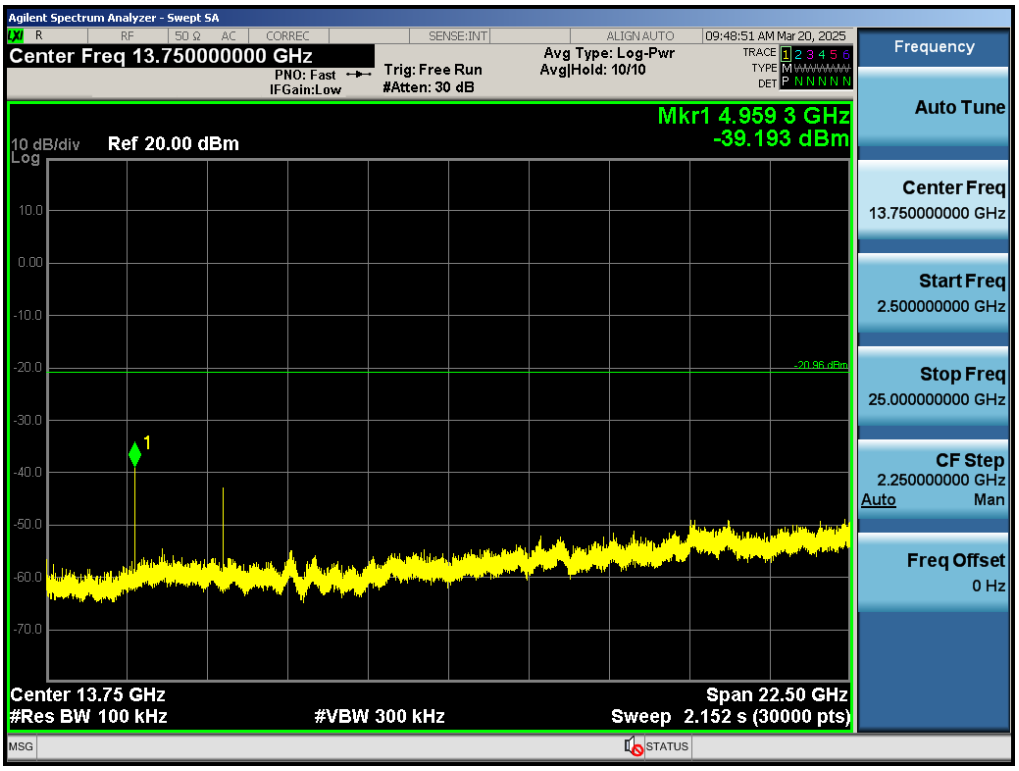


Test_Graph_LE1M_ANT1_2440_1Mbps_Higher Band Emissions

Test_Graph_LE1M_ANT1_2480_1Mbps_Reference Level



Test_Graph_LE1M_ANT1_2480_1Mbps_Lower Band Emissions



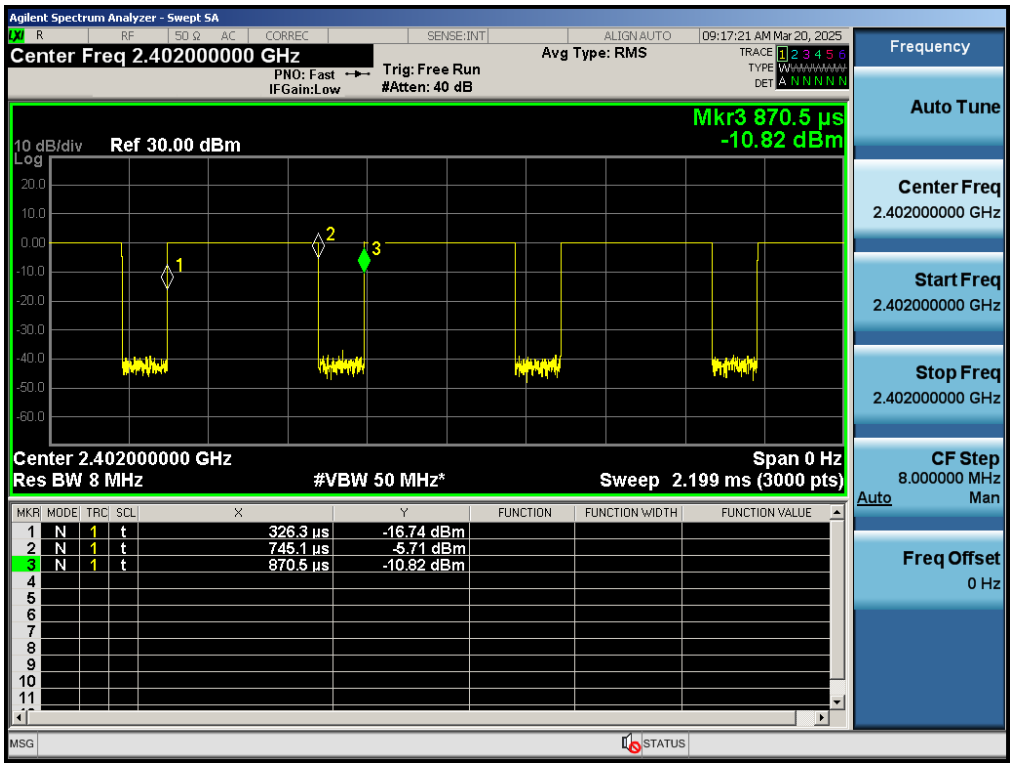
Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Emissions

Appendix F: Duty Cycle

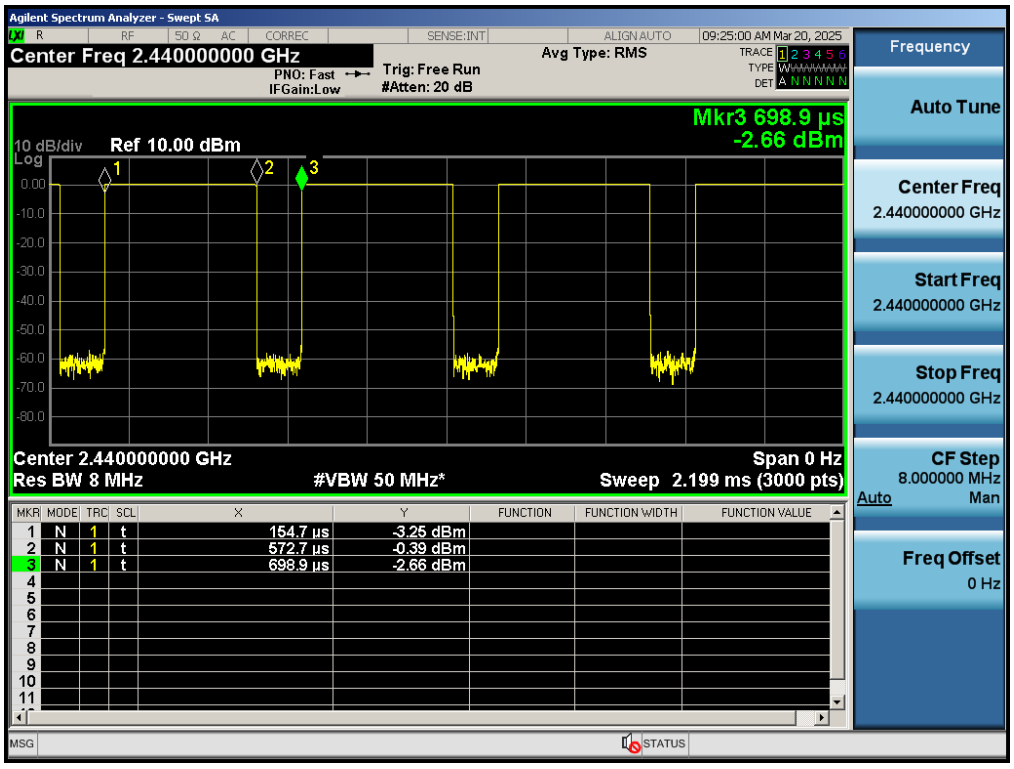
Test Result

Test Mode	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor [dB]
BLE_1M	2402	0.42	0.54	76.96	1.14
BLE_1M	2440	0.42	0.54	76.81	1.15
BLE_1M	2480	0.42	0.54	76.82	1.15

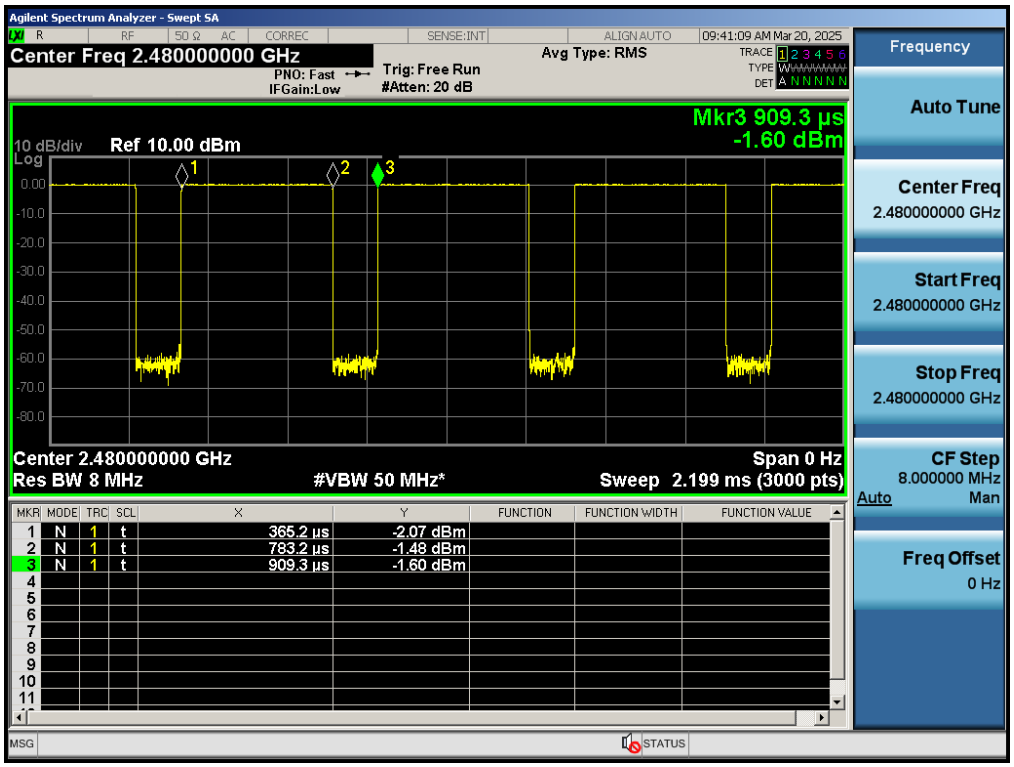
Test Graphs



BLE_1M-Ant1-2402



BLE_1M-Ant1-2440



BLE_1M-Ant1-2480