

RF Test Data for BT(BLE) (Conducted Measurement)

Product Name: Solar Charge Controller

Trade Mark: N/A

Test Model: MS4840N

FCC ID: 2A524-MS4840N

Environmental Conditions

Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

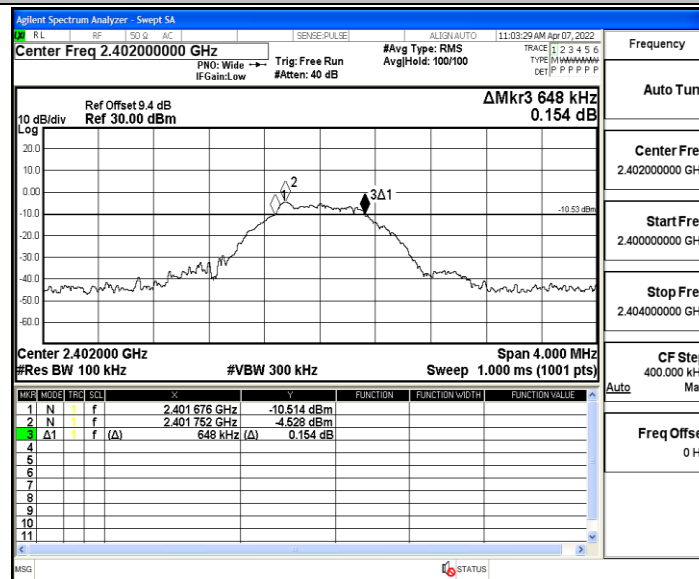
Appendix A: DTS Bandwidth

Test Result

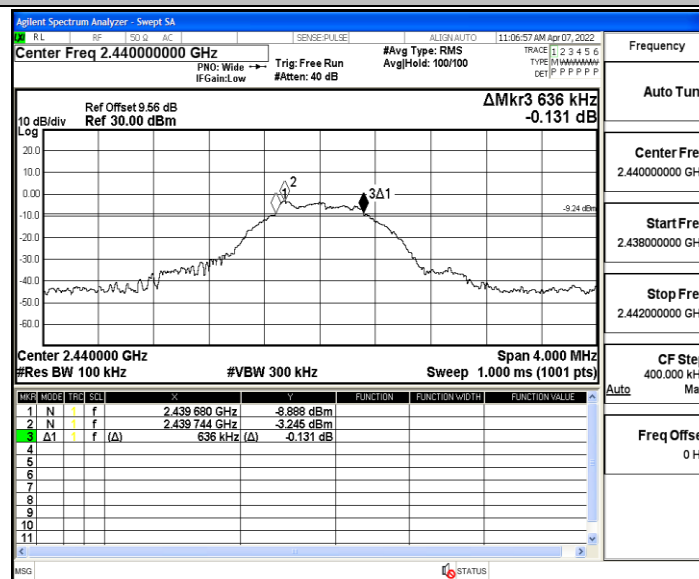
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.648	2401.676	2402.324	0.5	PASS
		2440	0.636	2439.680	2440.316	0.5	PASS
		2480	0.628	2479.692	2480.320	0.5	PASS

Test Graphs

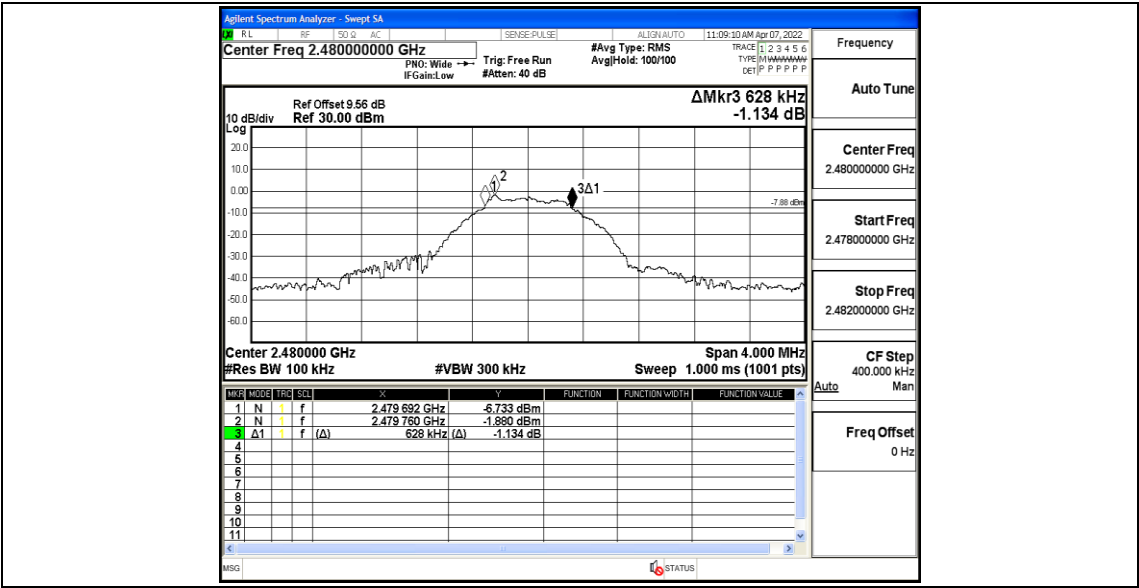
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

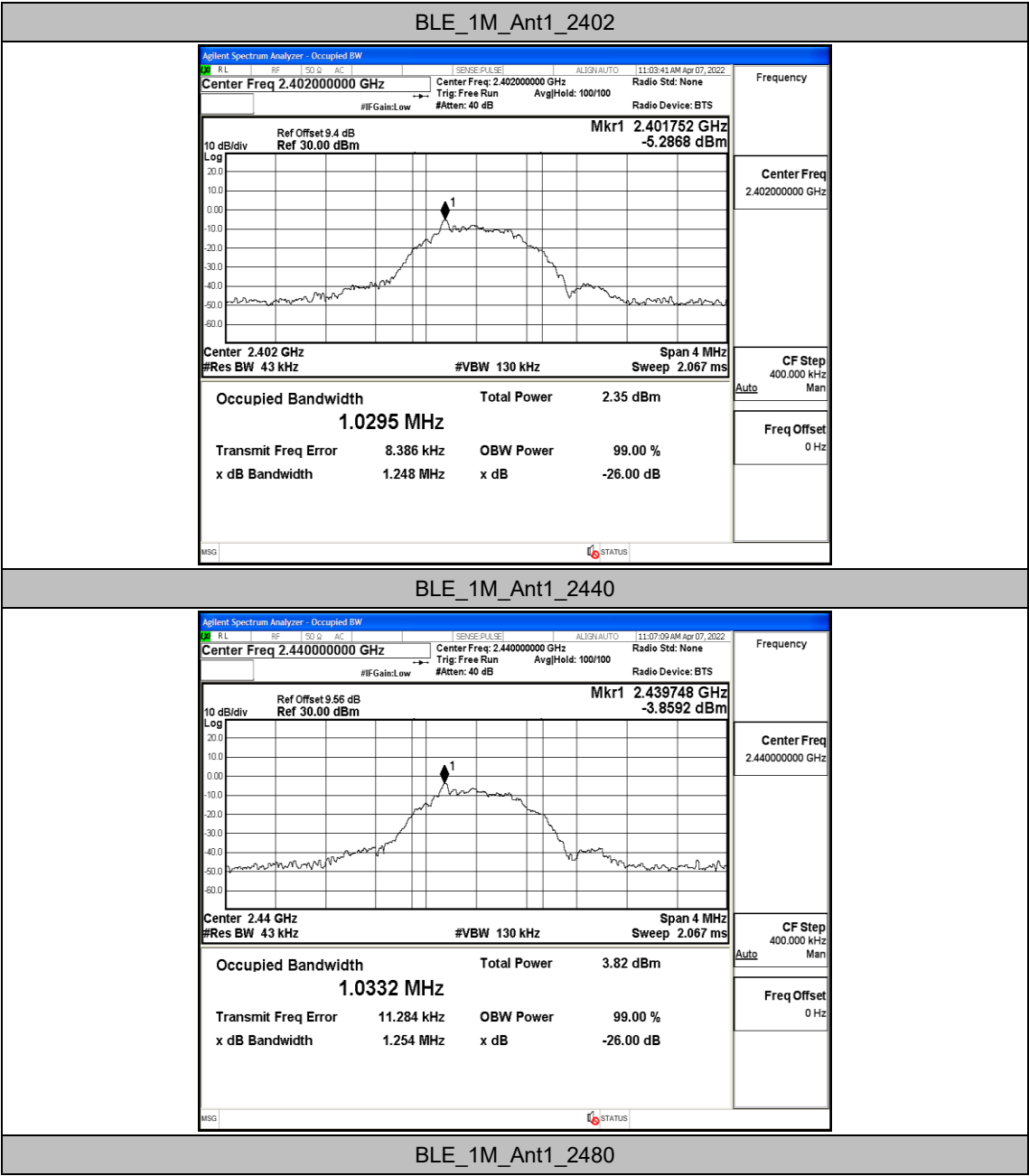


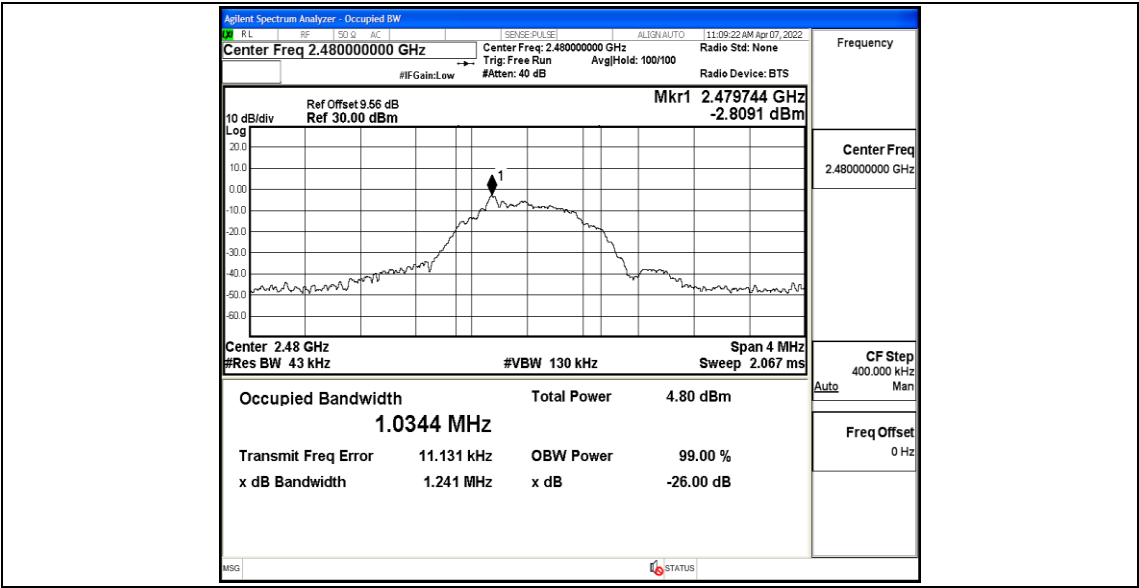
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0295	2401.494	2402.523	---	---
		2440	1.0332	2439.495	2440.528	---	---
		2480	1.0344	2479.494	2480.528	---	---

Test Graphs



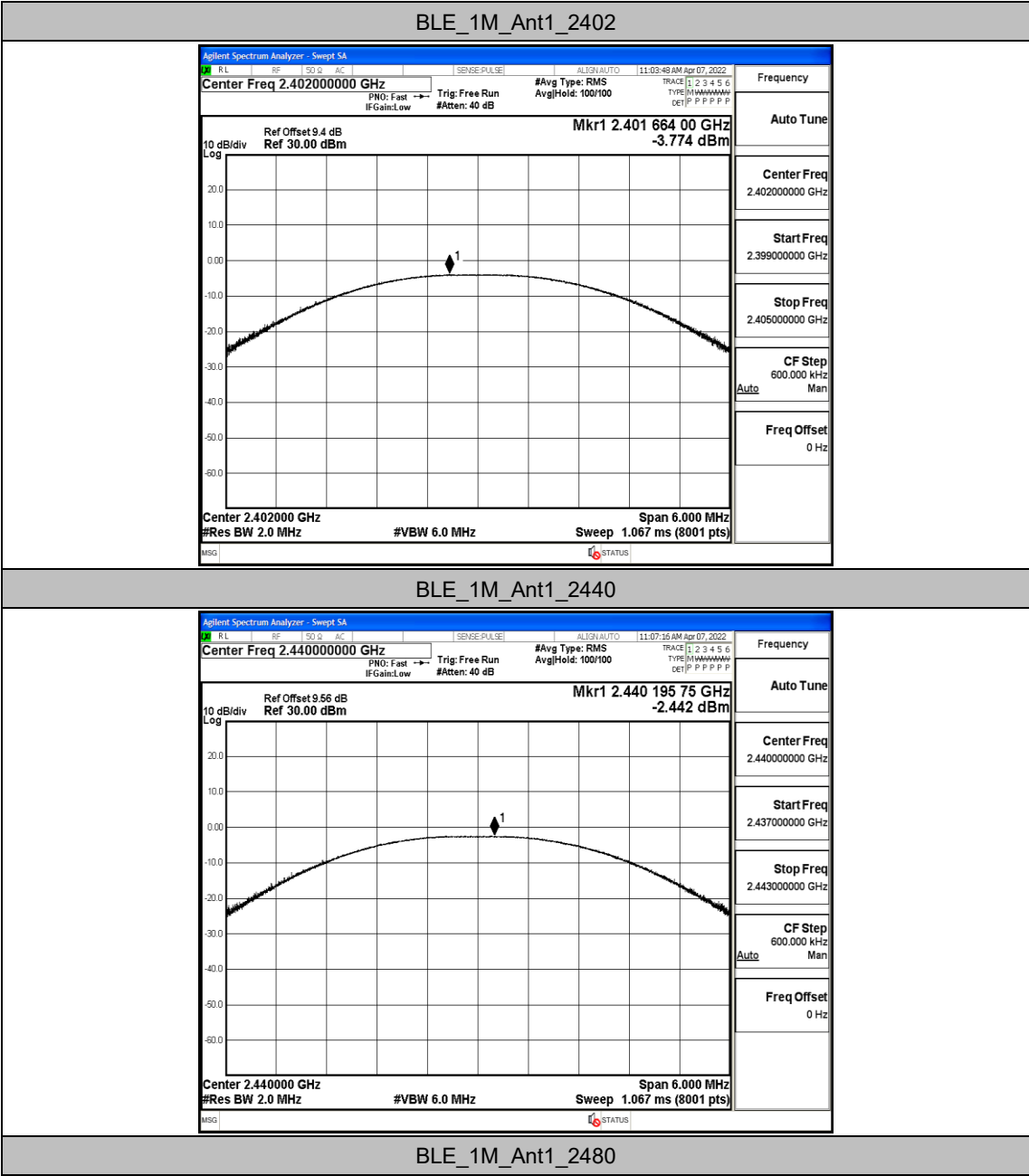


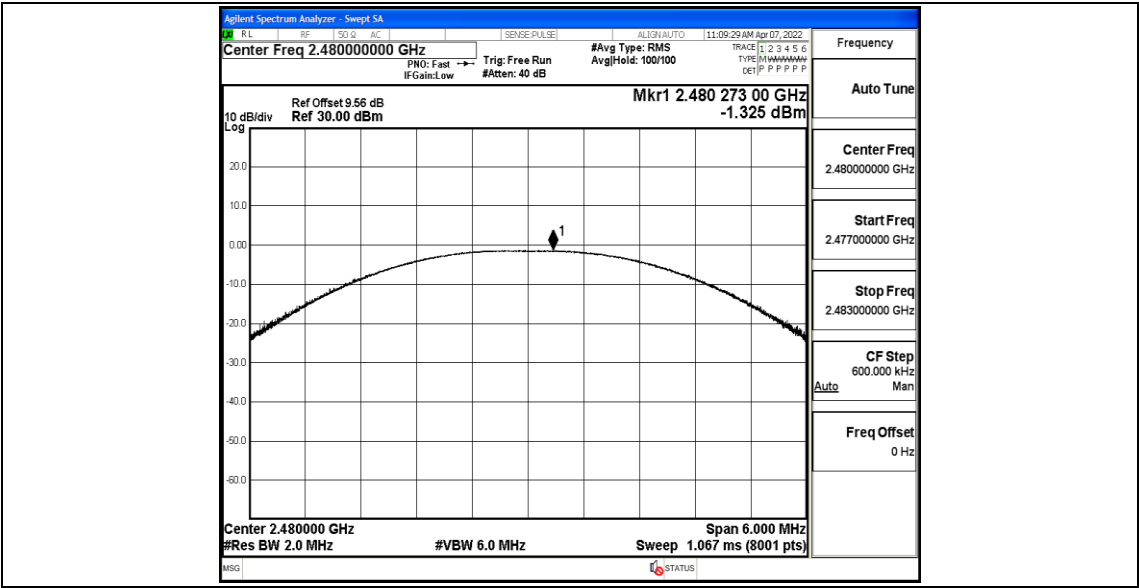
Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-3.77	≤30	PASS
		2440	-2.44	≤30	PASS
		2480	-1.33	≤30	PASS

Test Graphs



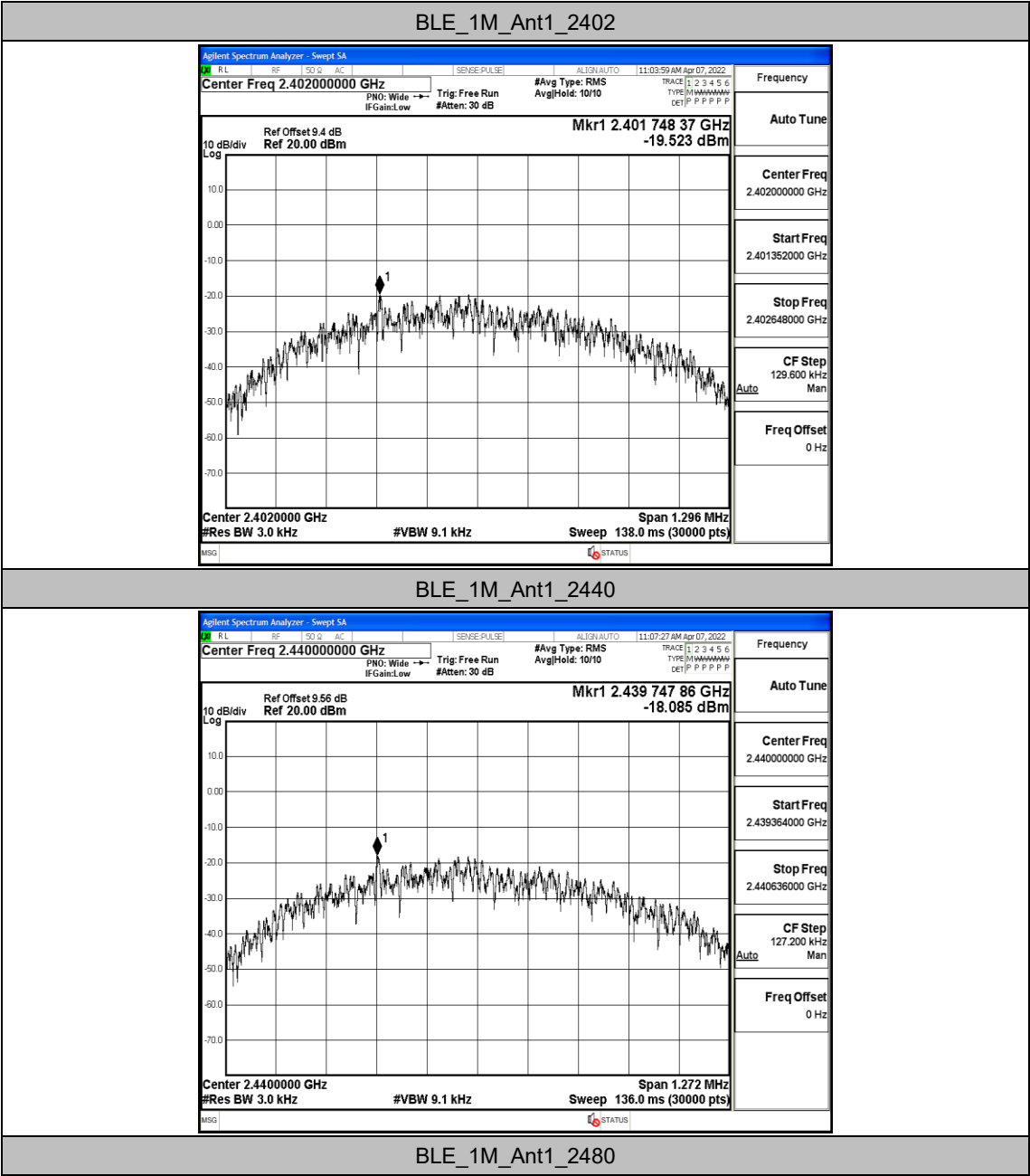


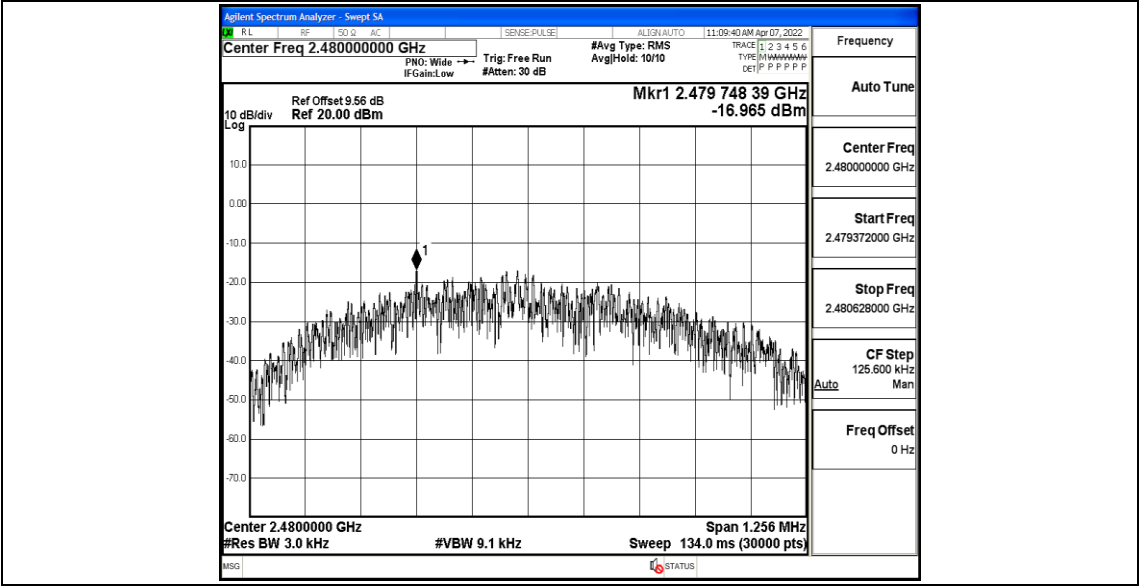
Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.52	≤8.00	PASS
		2440	-18.09	≤8.00	PASS
		2480	-16.97	≤8.00	PASS

Test Graphs



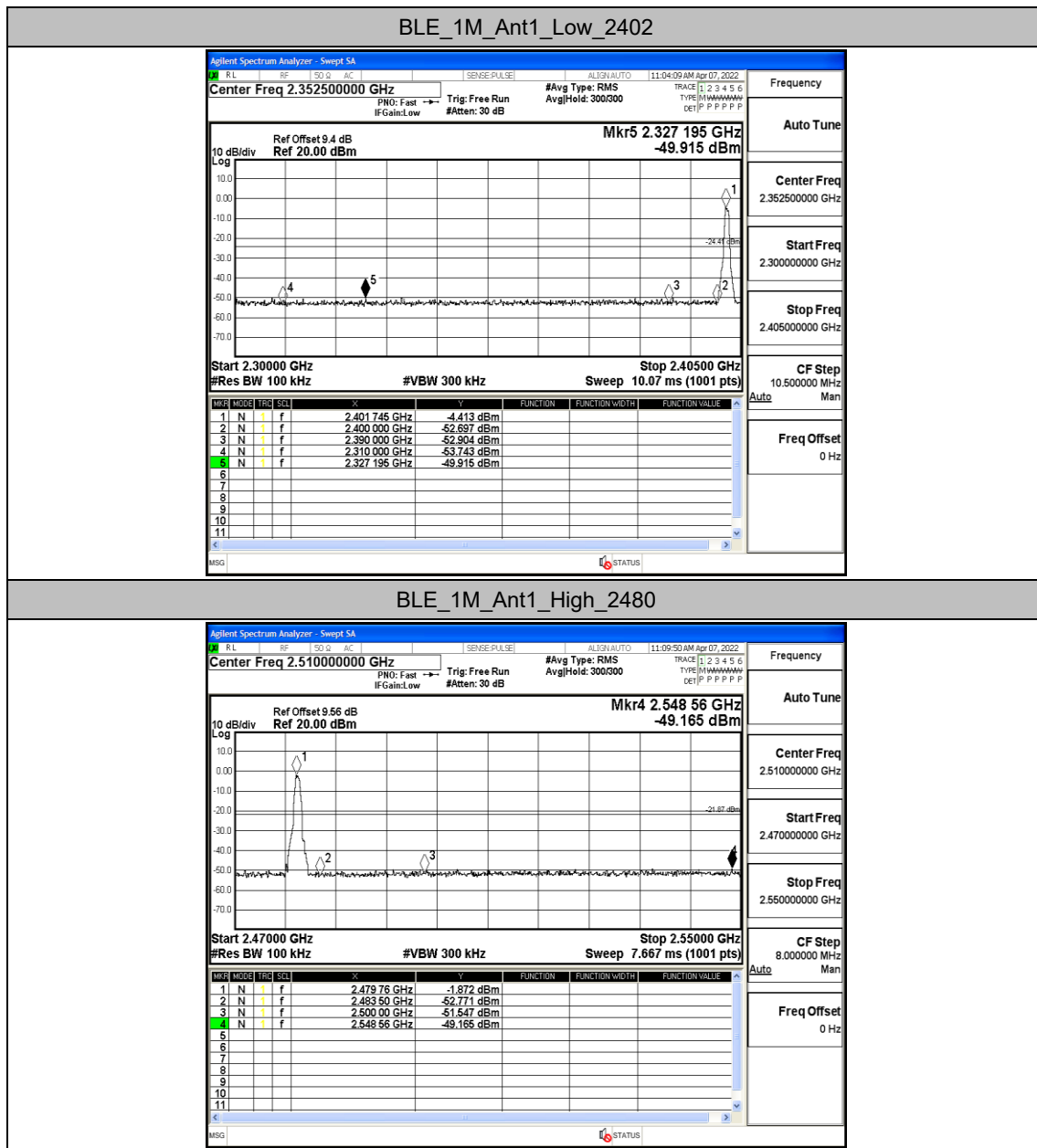


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-4.41	-49.92	≤-24.41	PASS
		High	2480	-1.87	-49.17	≤-21.87	PASS

Test Graphs



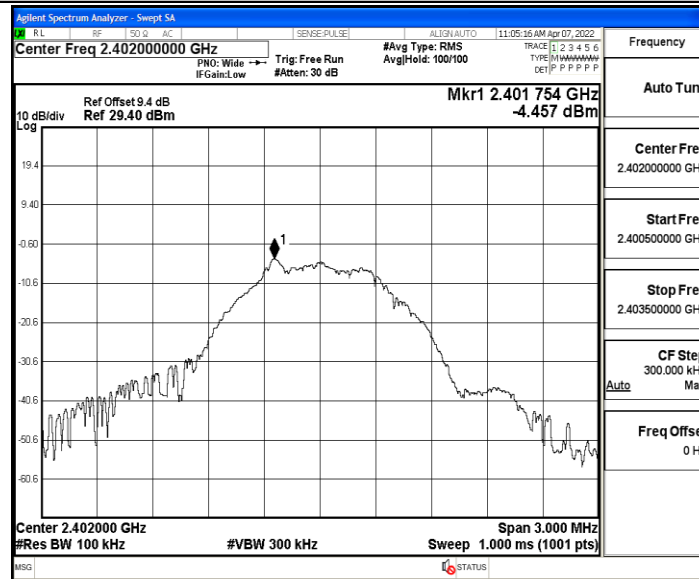
Appendix F: Conducted Spurious Emission

Test Result

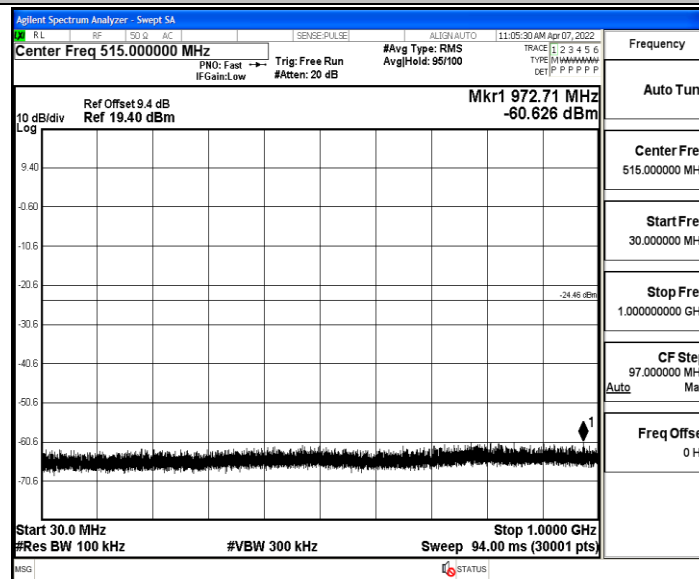
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.46	-4.46	---	PASS
			30~1000	-4.46	-60.63	≤-24.46	PASS
			1000~26500	-4.46	-48.6	≤-24.46	PASS
		2440	Reference	-2.96	-2.96	---	PASS
			30~1000	-2.96	-59.93	≤-22.96	PASS
			1000~26500	-2.96	-50.27	≤-22.96	PASS
		2480	Reference	-1.91	-1.91	---	PASS
			30~1000	-1.91	-59.96	≤-21.91	PASS
			1000~26500	-1.91	-50.54	≤-21.91	PASS

Test Graphs

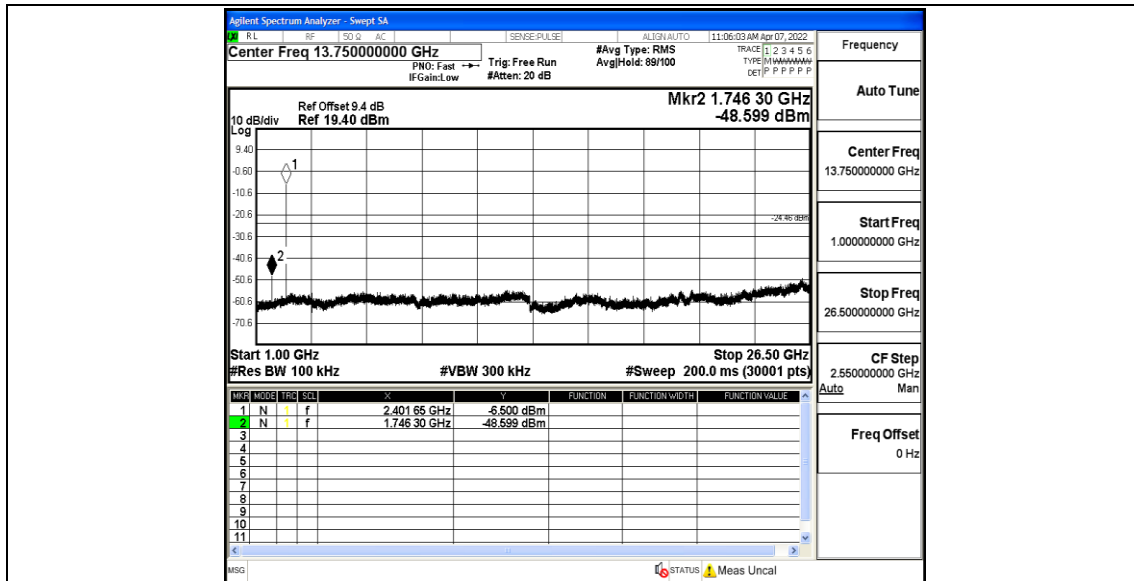
BLE_1M_Ant1_2402_0~Reference



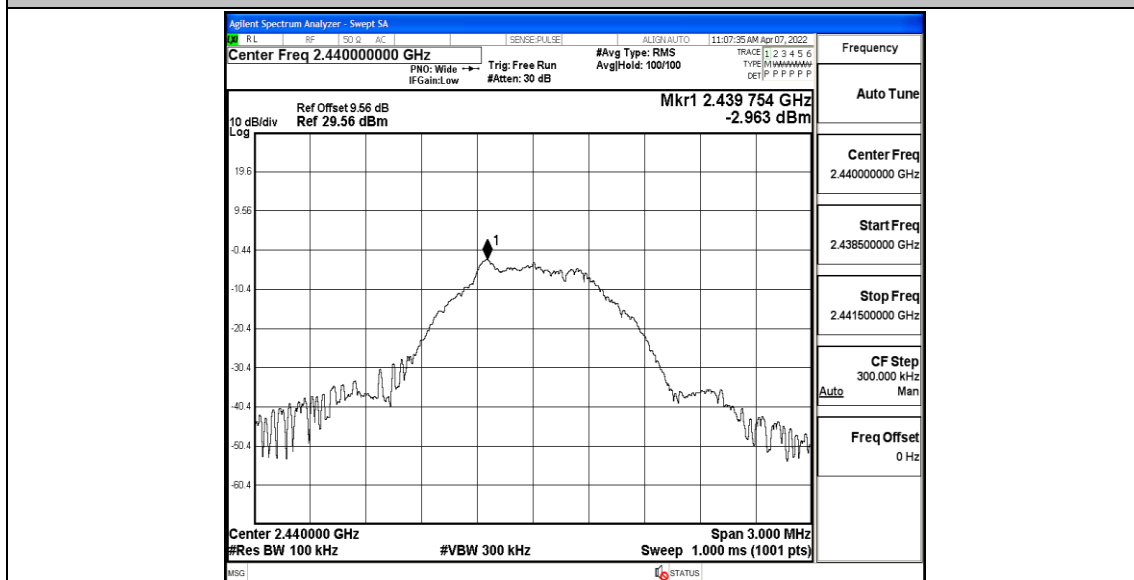
BLE_1M_Ant1_2402_30~1000



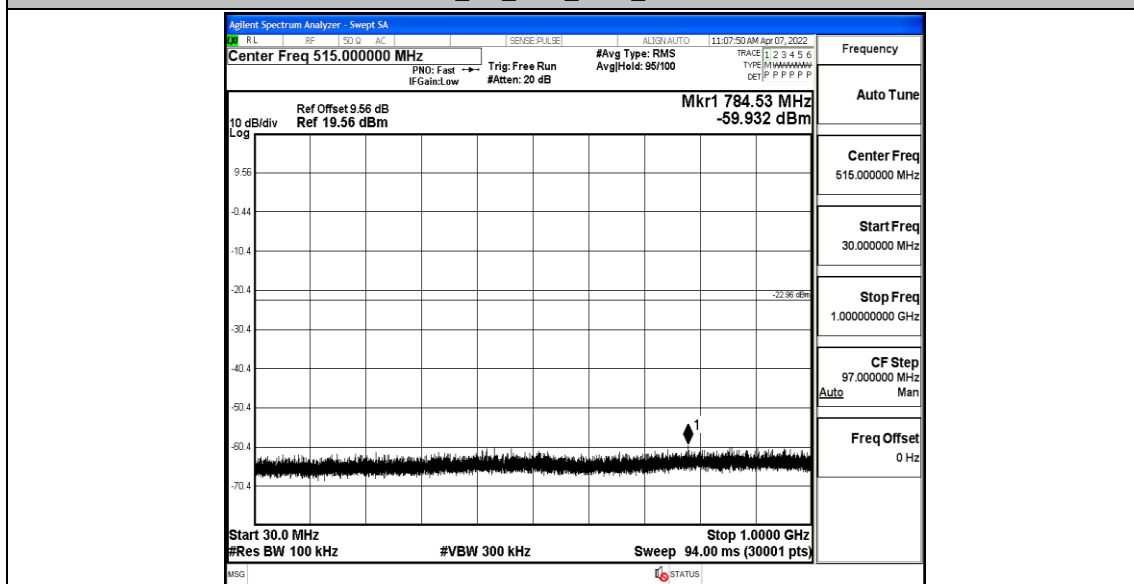
BLE_1M_Ant1_2402_1000~26500



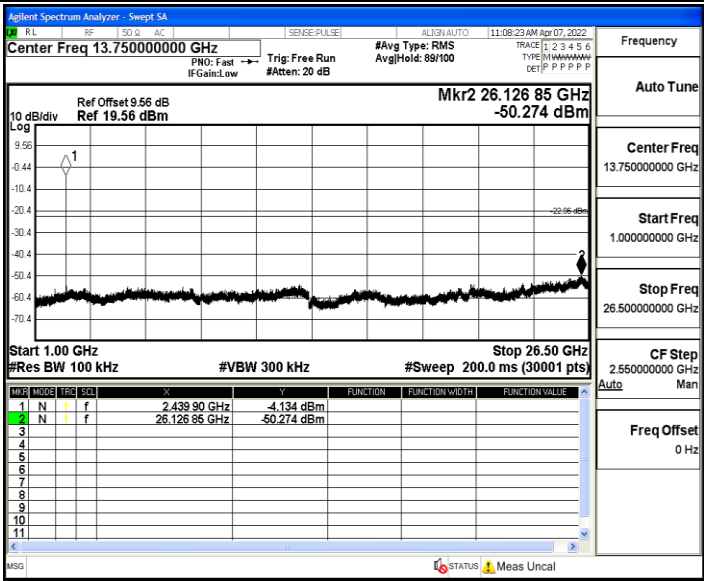
BLE_1M_Ant1_2440_0~Reference



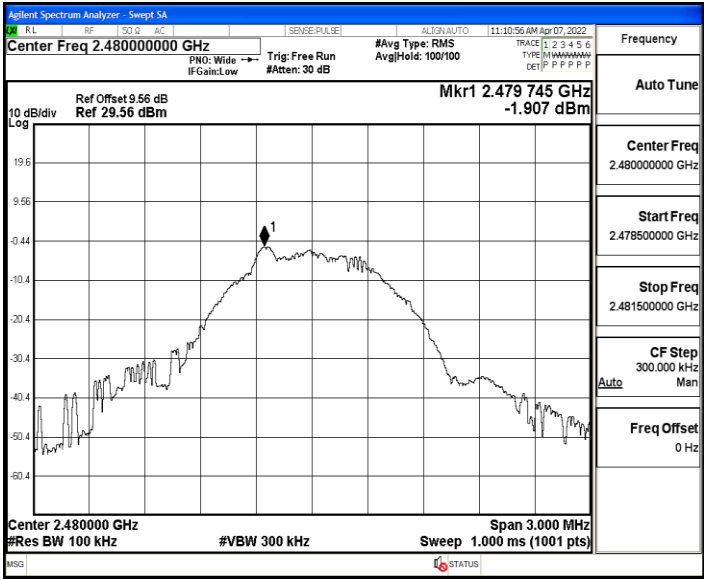
BLE_1M_Ant1_2440_30~1000



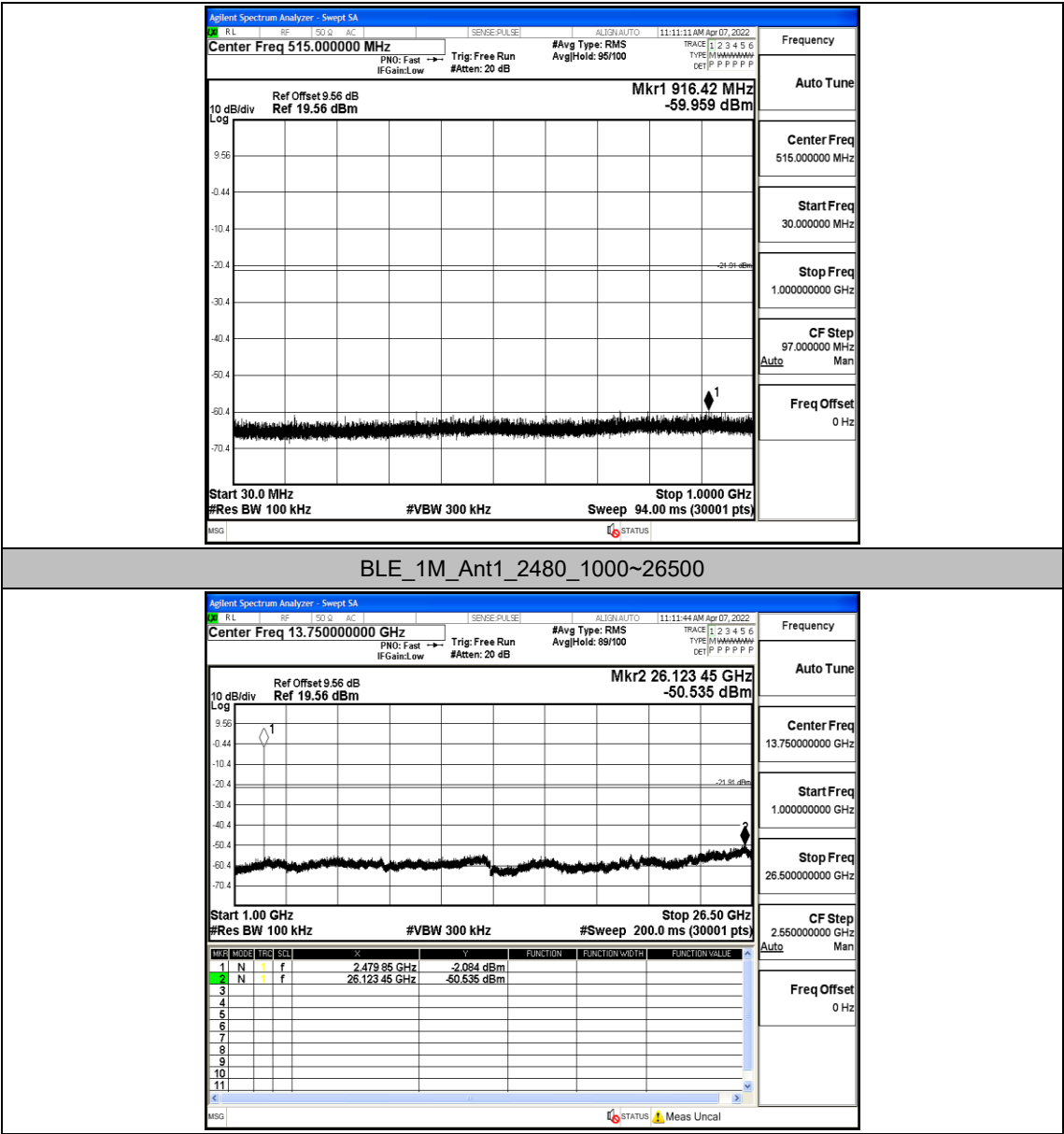
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

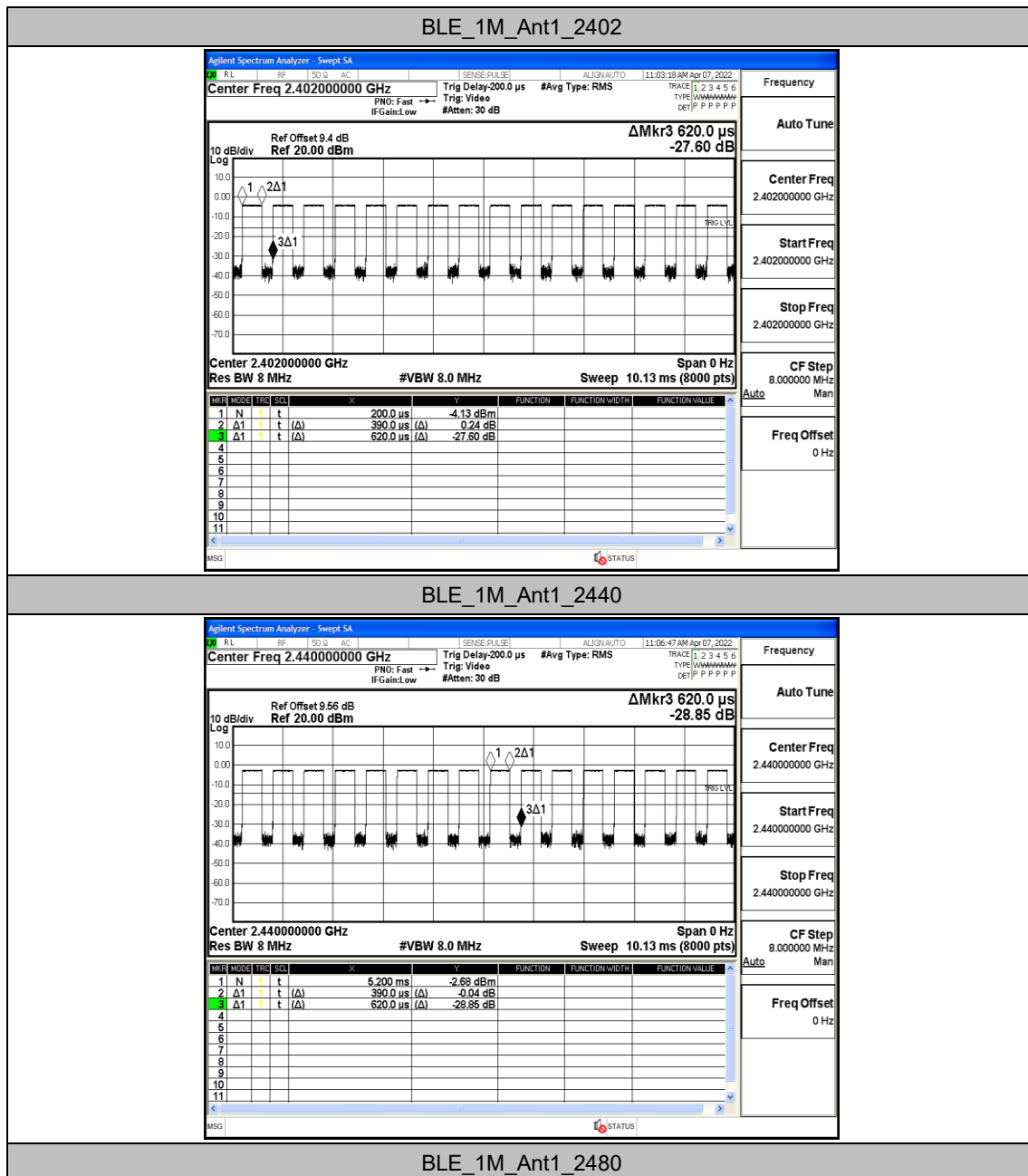


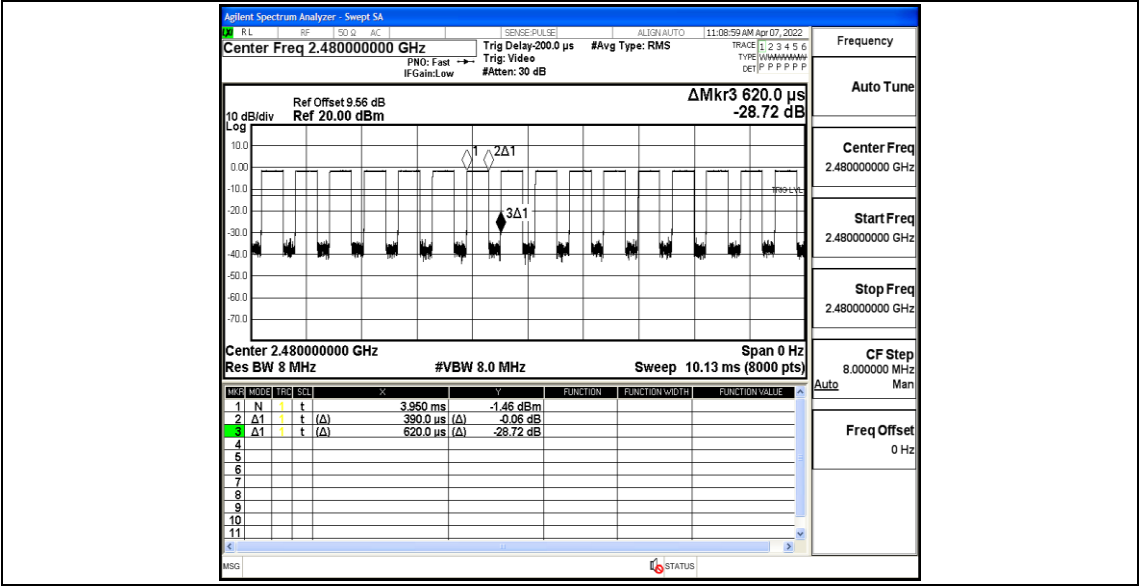
Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.56
		2440	0.39	0.62	62.90	2.56
		2480	0.39	0.62	62.90	2.56

Test Graphs





Appendix H: Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-48.5	≤-41.20	PASS
				AV	2376.755	-47.55	≤-41.20	PASS
				AV	2390.000	-48.16	≤-41.20	PASS
				Peak	2310.000	-42.54	≤-21.20	PASS
				Peak	2323.940	-38.13	≤-21.20	PASS
				Peak	2390.000	-41.18	≤-21.20	PASS
		High	2480	AV	2483.500	-47.49	≤-41.20	PASS
				AV	2498.560	-47.18	≤-41.20	PASS
				AV	2500.000	-47.48	≤-41.20	PASS
				Peak	2483.500	-41.37	≤-21.20	PASS
				Peak	2490.080	-38.15	≤-21.20	PASS
				Peak	2500.000	-42.28	≤-21.20	PASS

Note:

1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

