

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

Product Name: ProGLOW LED Accent Light Bluetooth App Controller

Trade Mark: Custom Dynamic

Test Model: PG-BTBOX-1

FCC ID: 2A55N-PG-BTBOX-1

Environmental Conditions

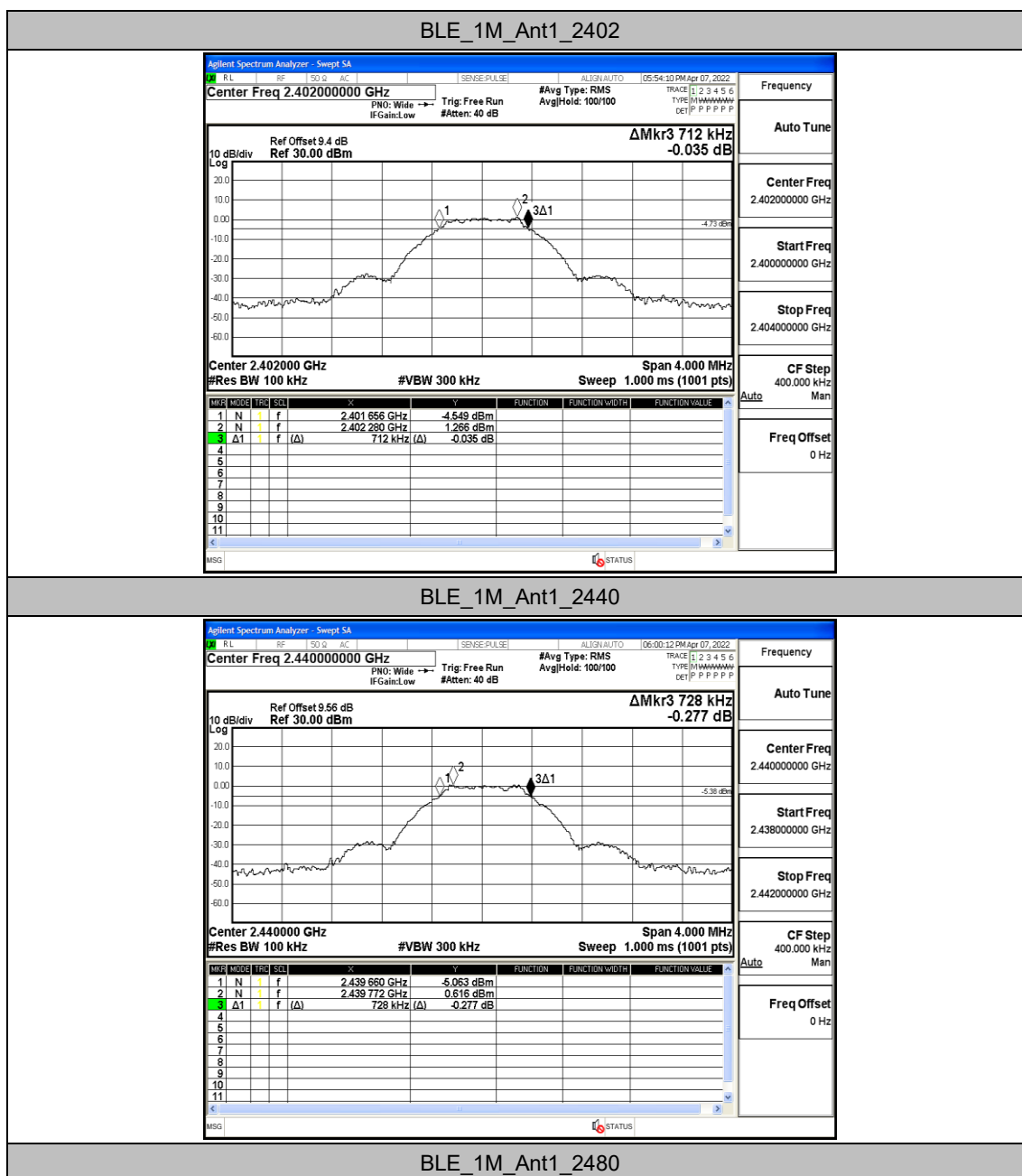
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

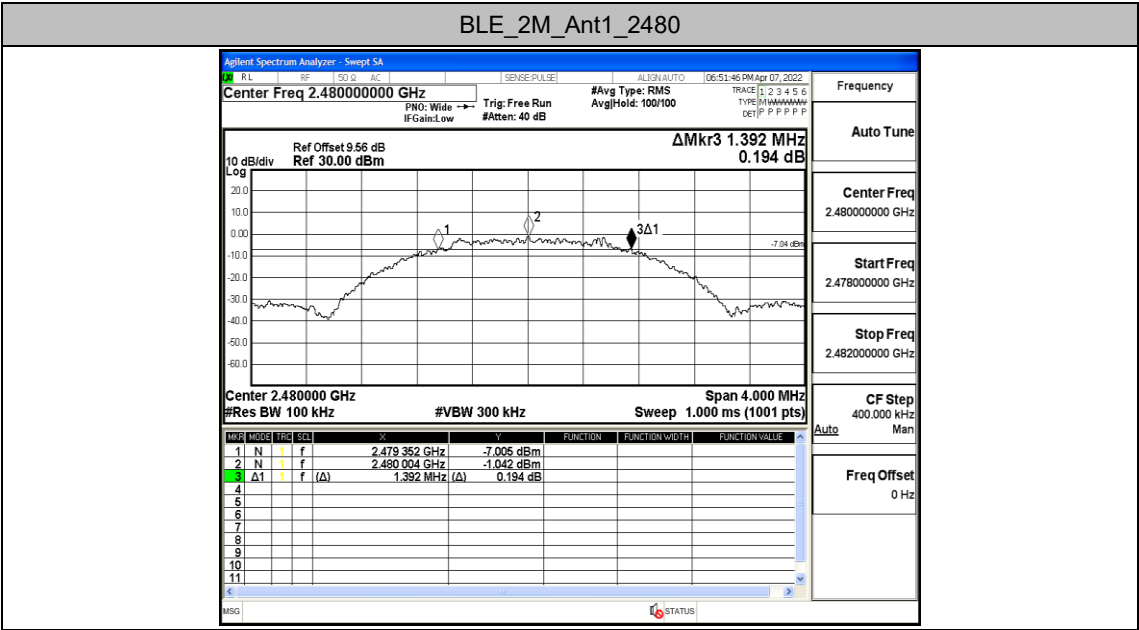
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.656	2402.368	0.5	PASS
		2440	0.728	2439.660	2440.388	0.5	PASS
		2480	0.736	2479.644	2480.380	0.5	PASS
BLE_2M	Ant1	2402	1.364	2401.348	2402.712	0.5	PASS
		2440	1.436	2439.300	2440.736	0.5	PASS
		2480	1.392	2479.352	2480.744	0.5	PASS

Test Graphs







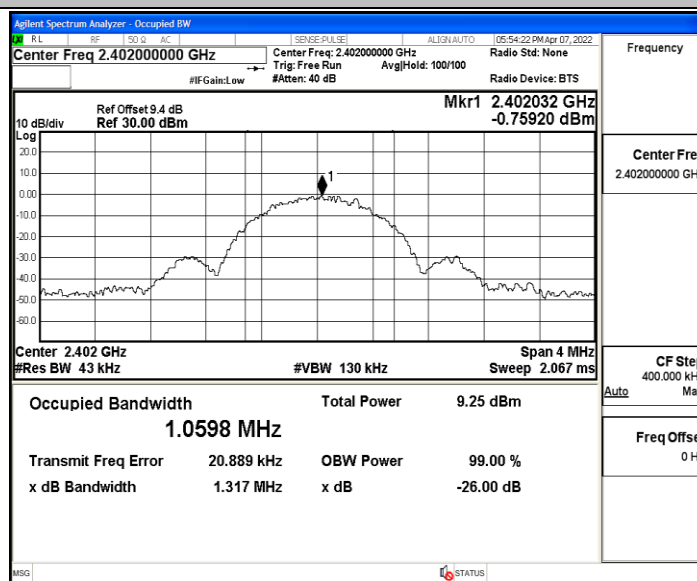
Appendix B: Occupied Channel Bandwidth

Test Result

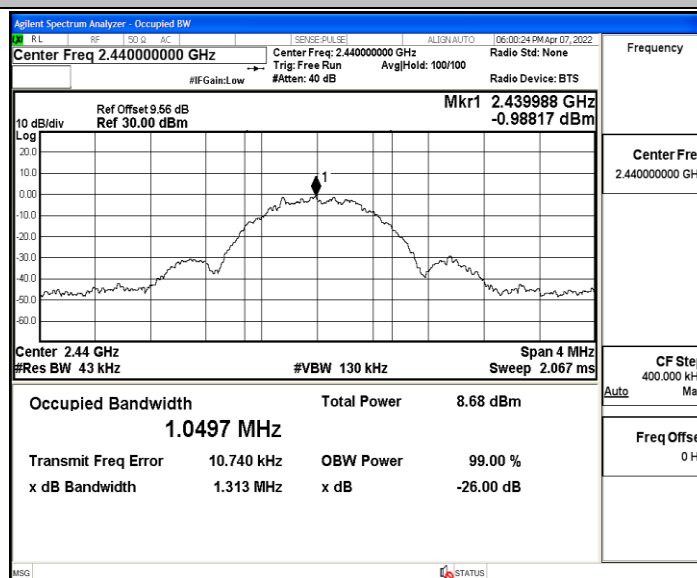
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0598	2401.491	2402.551	---	---
		2440	1.0497	2439.486	2440.536	---	---
		2480	1.0754	2479.479	2480.554	---	---
BLE_2M	Ant1	2402	2.0674	2400.972	2403.039	---	---
		2440	2.0796	2438.969	2441.049	---	---
		2480	2.0756	2478.980	2481.055	---	---

Test Graphs

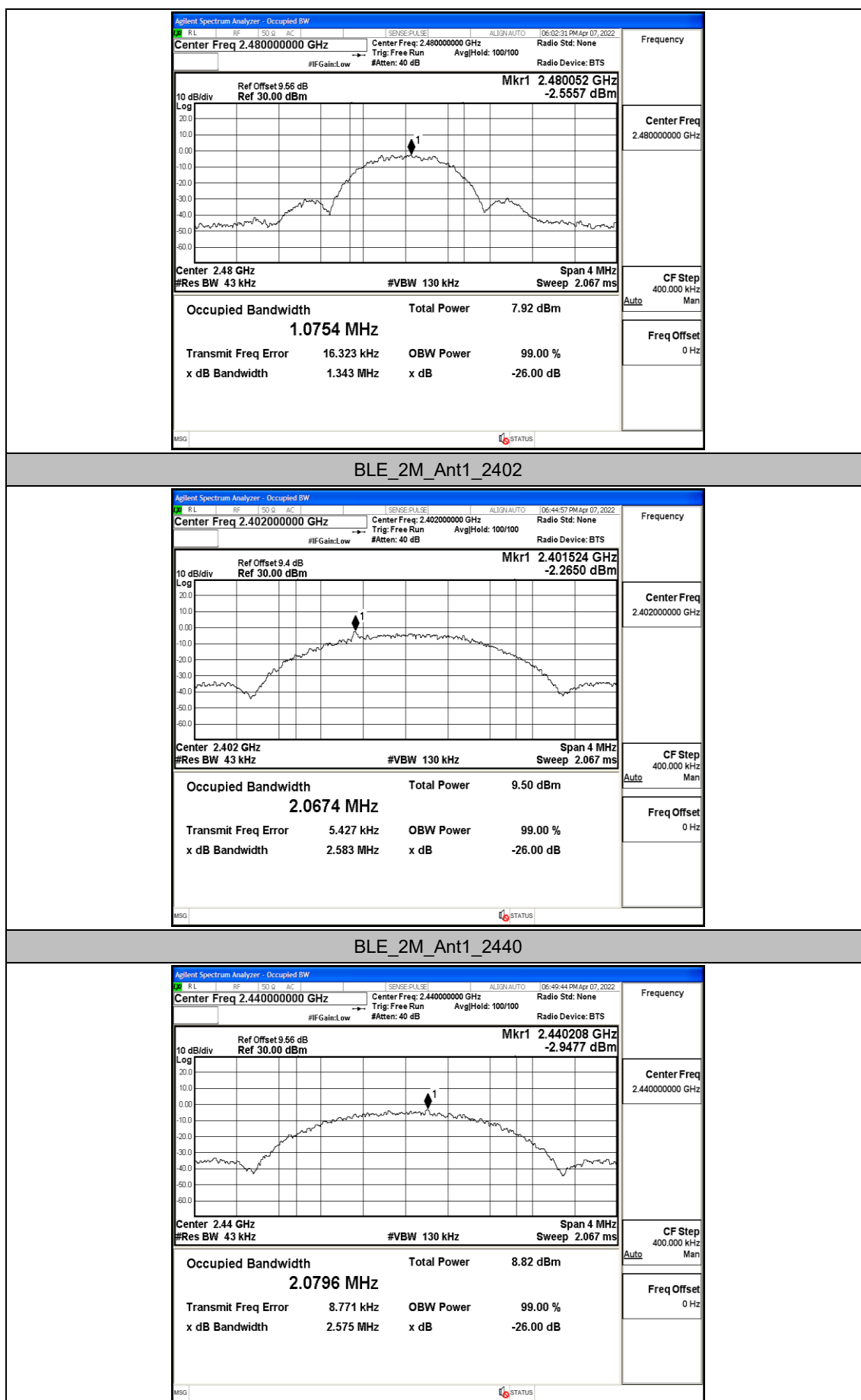
BLE_1M_Ant1_2402

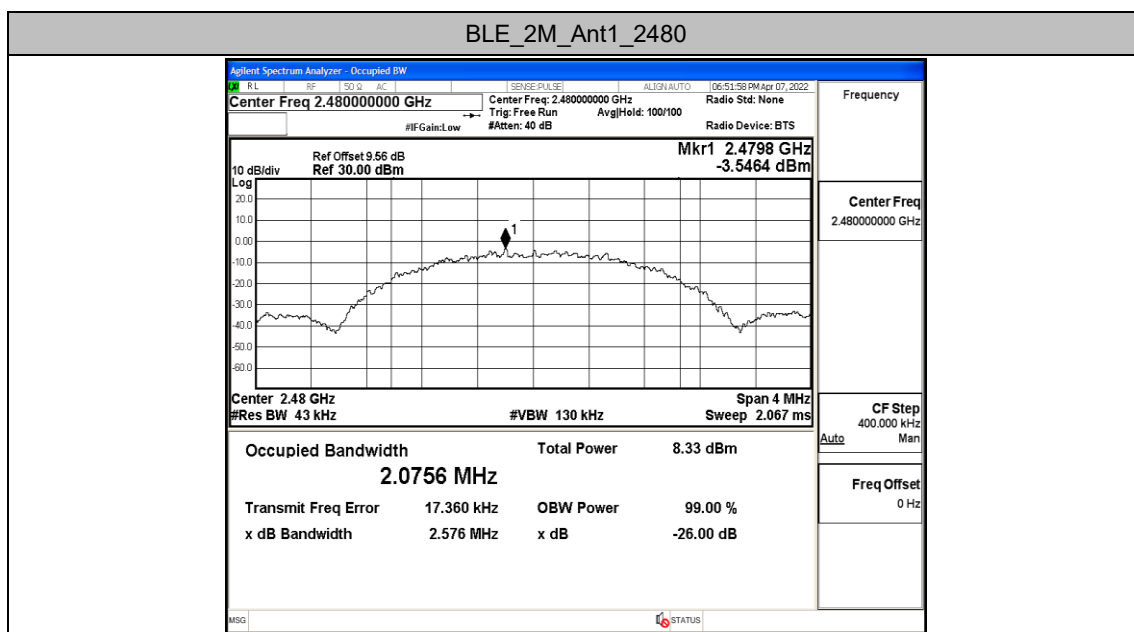


BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



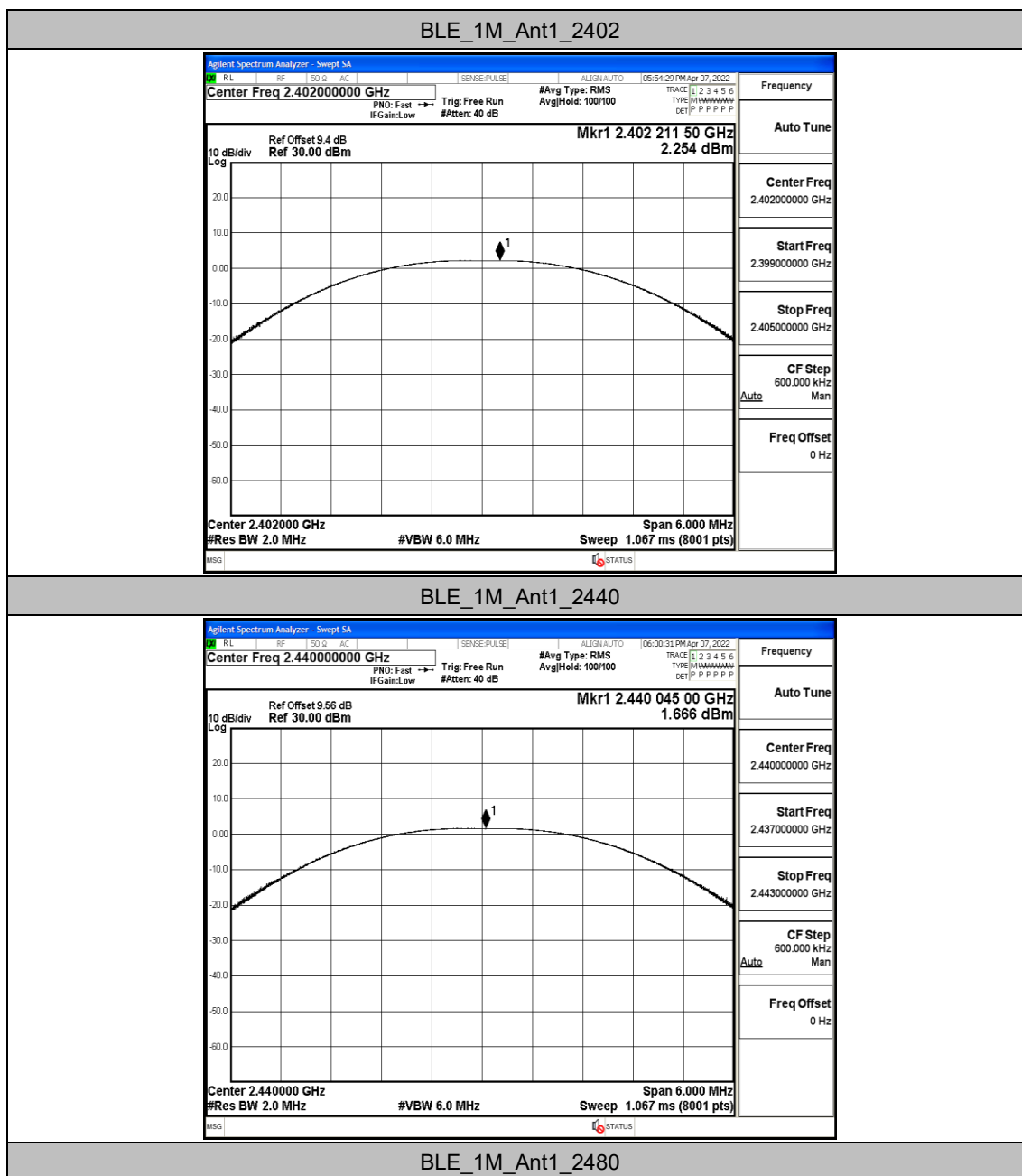


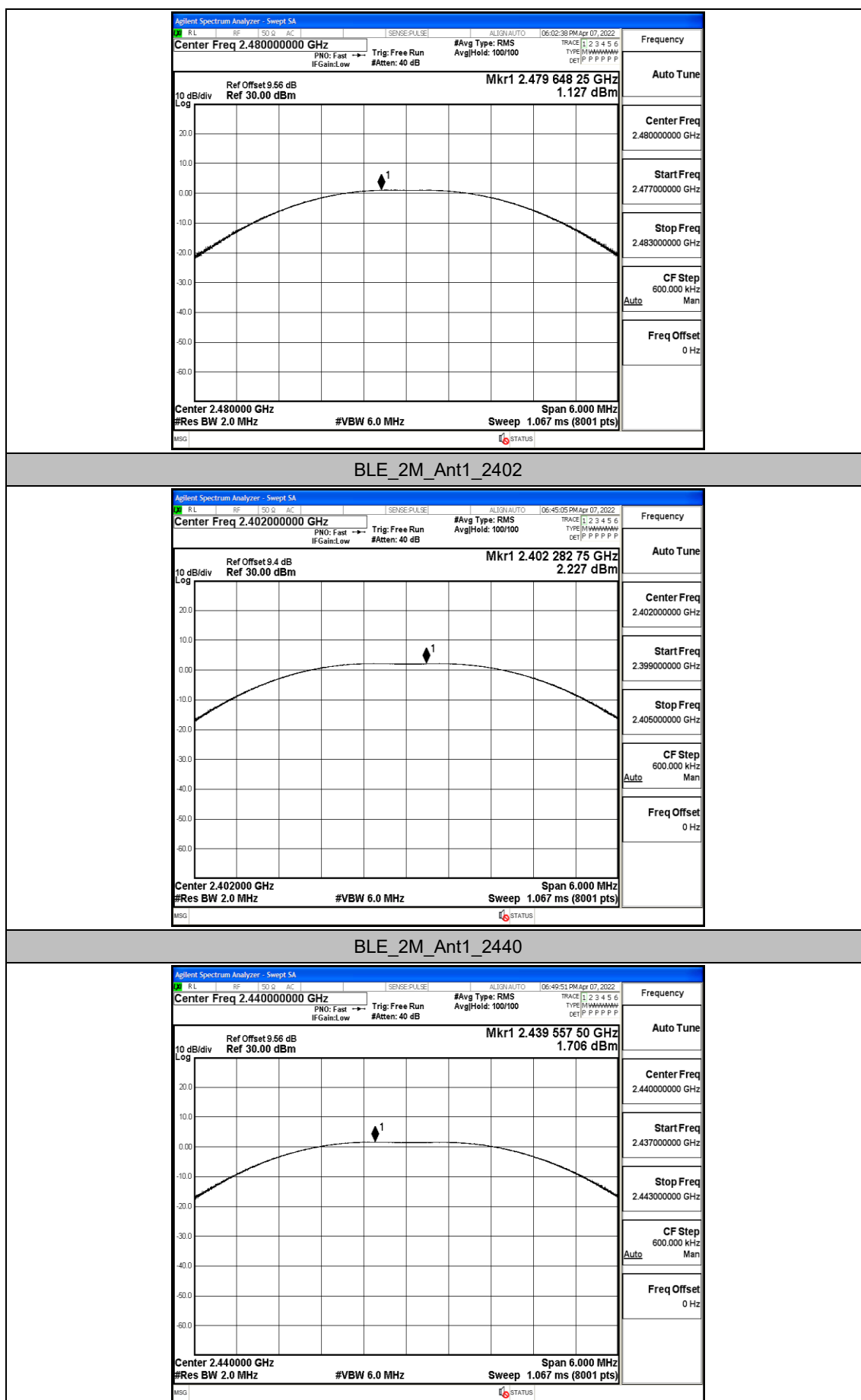
Appendix C: Maximum conducted output power

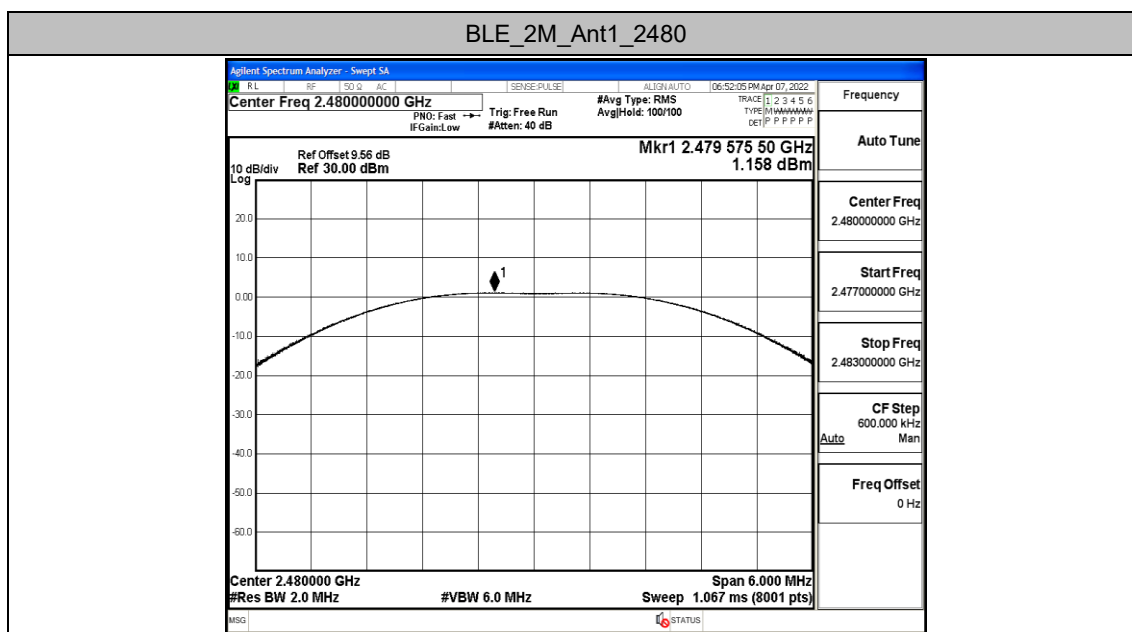
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.25	≤30	PASS
		2440	1.67	≤30	PASS
		2480	1.13	≤30	PASS
BLE_2M	Ant1	2402	2.23	≤30	PASS
		2440	1.71	≤30	PASS
		2480	1.16	≤30	PASS

Test Graphs





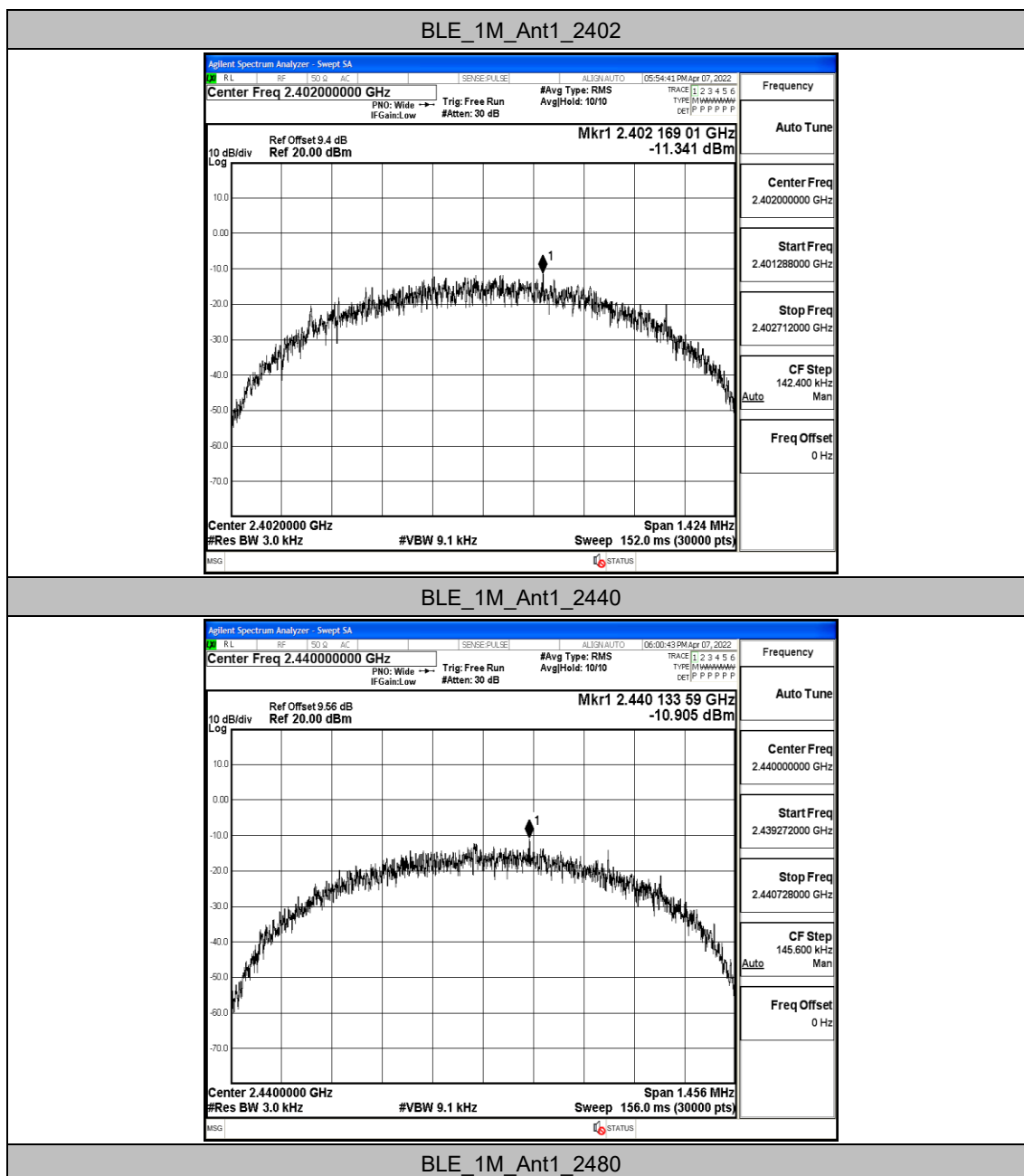


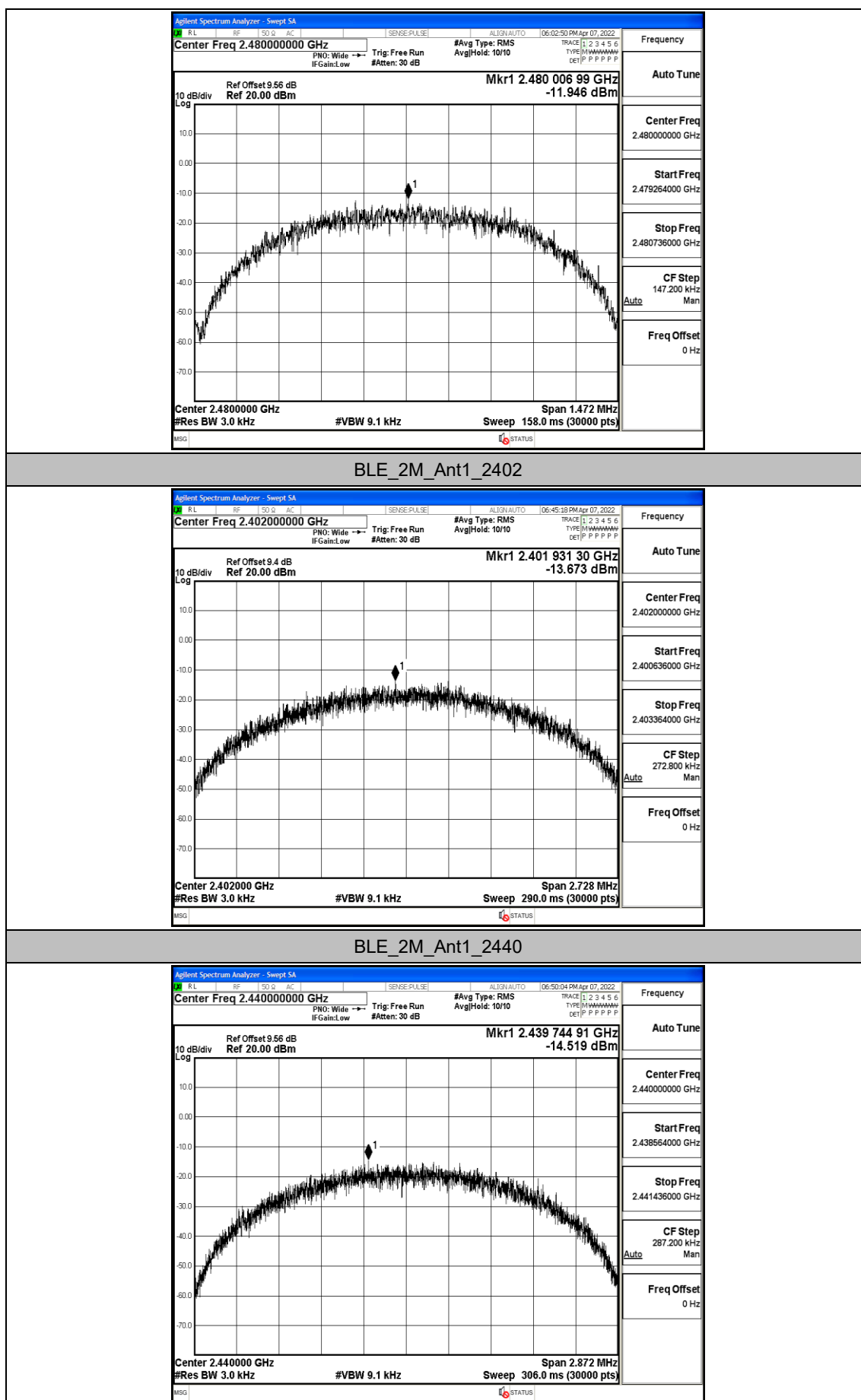
Appendix D: Maximum power spectral density

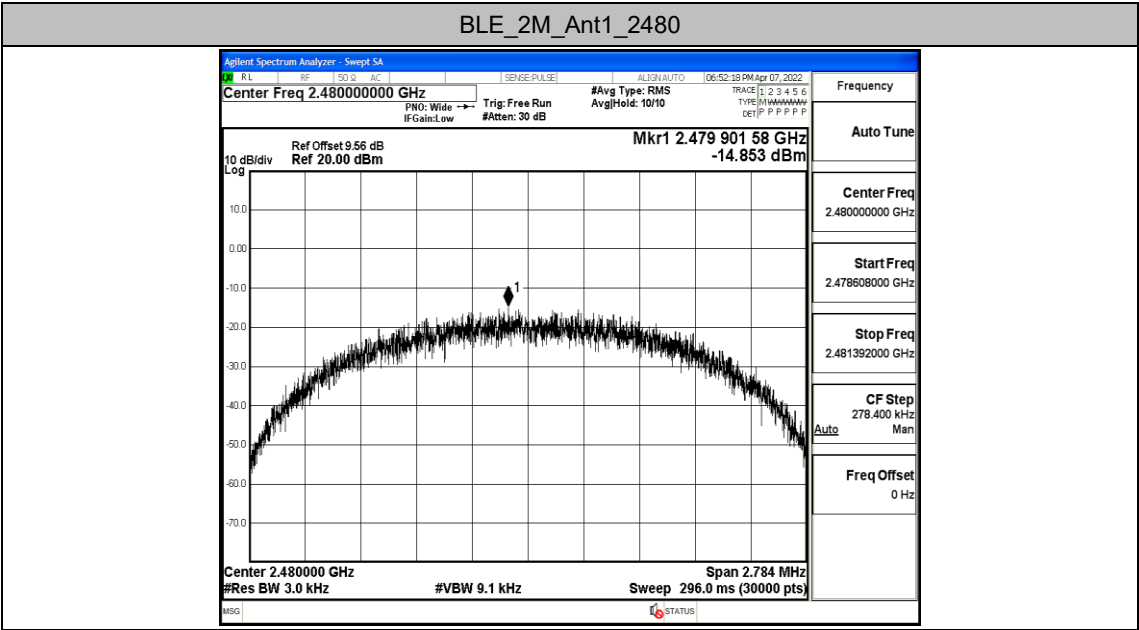
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.34	≤8.00	PASS
		2440	-10.91	≤8.00	PASS
		2480	-11.95	≤8.00	PASS
BLE_2M	Ant1	2402	-13.67	≤8.00	PASS
		2440	-14.52	≤8.00	PASS
		2480	-14.85	≤8.00	PASS

Test Graphs





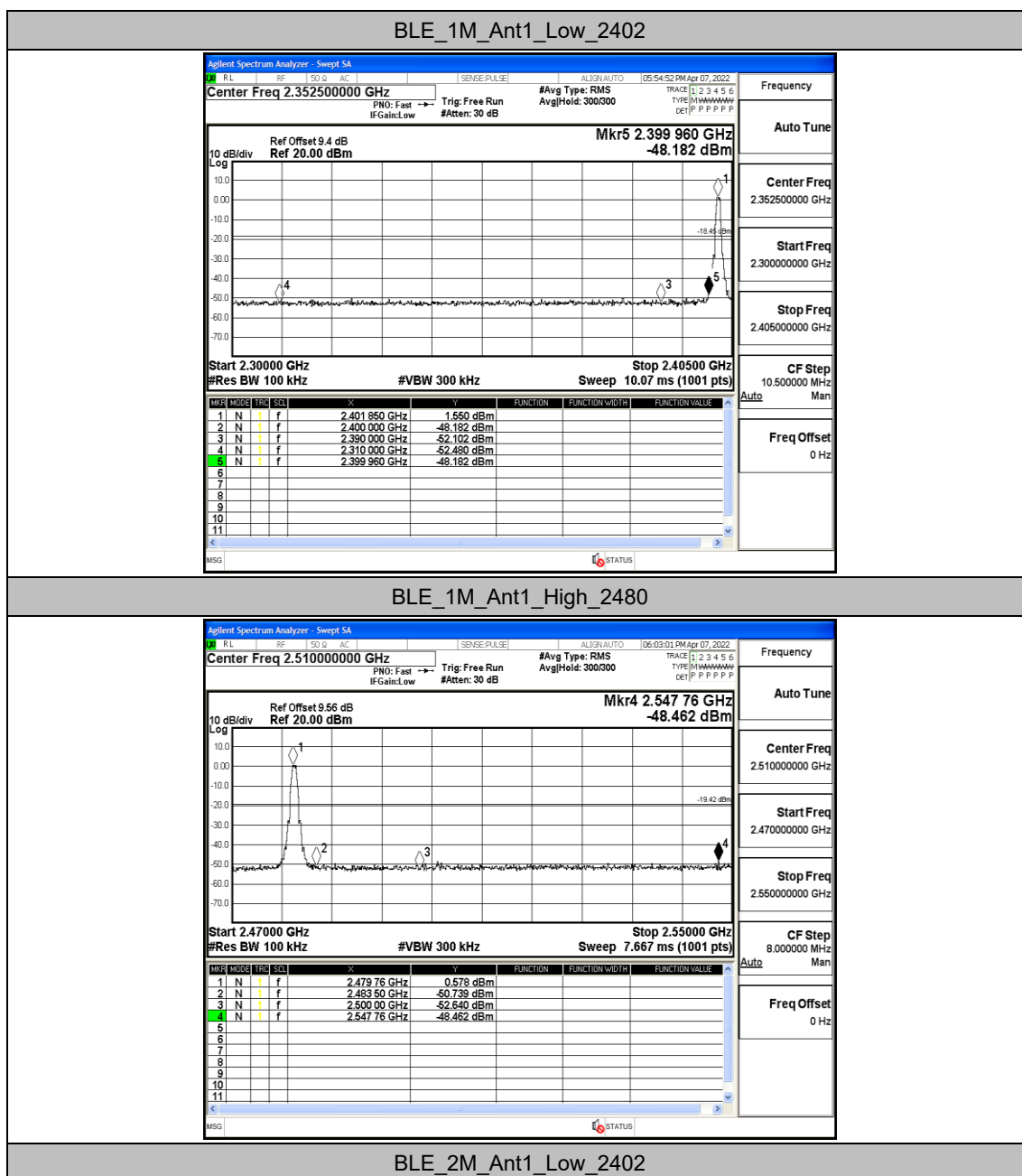


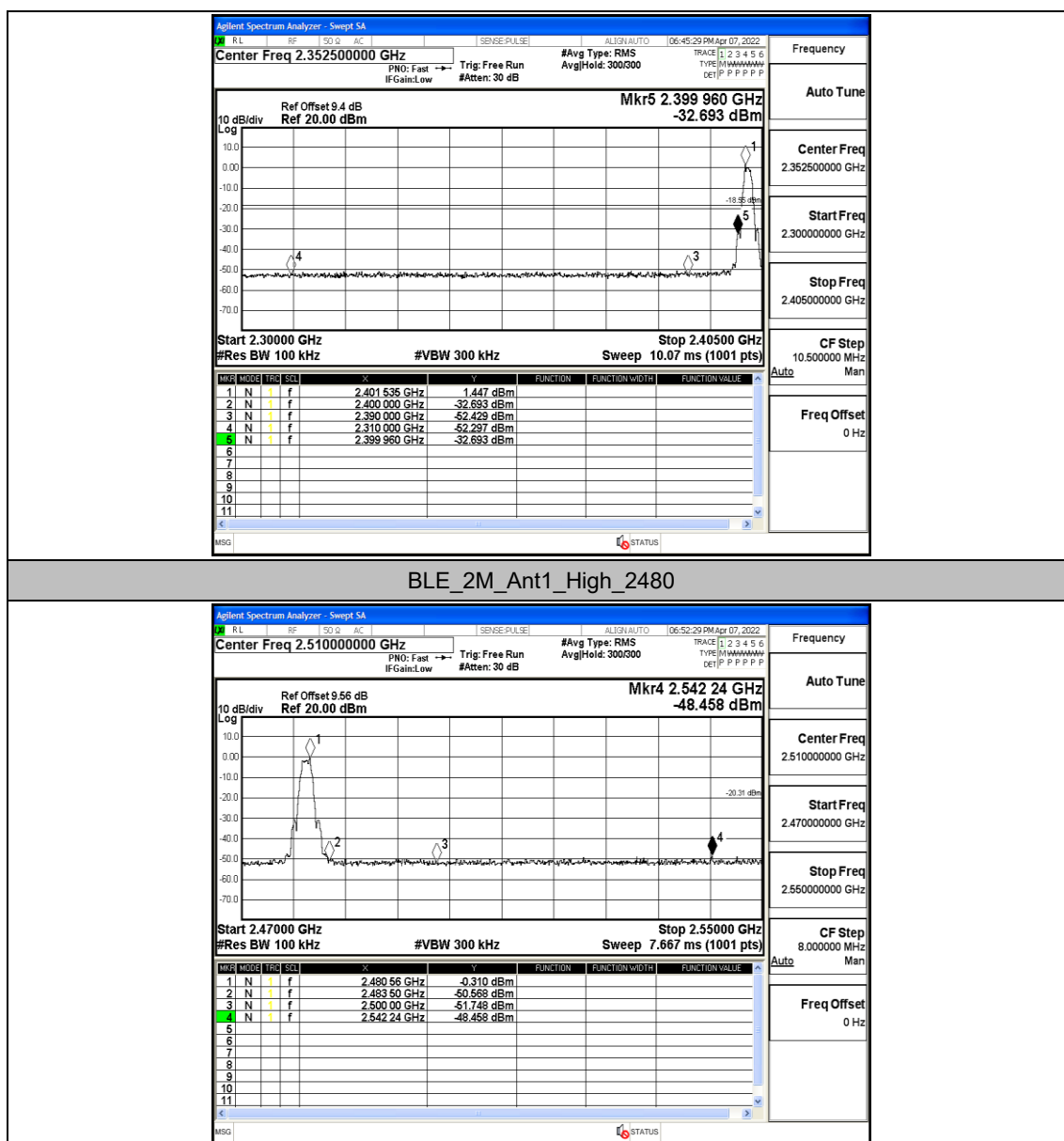
Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.55	-48.18	≤-18.45	PASS
		High	2480	0.58	-48.46	≤-19.42	PASS
BLE_2M	Ant1	Low	2402	1.45	-32.69	≤-18.55	PASS
		High	2480	-0.31	-48.46	≤-20.31	PASS

Test Graphs



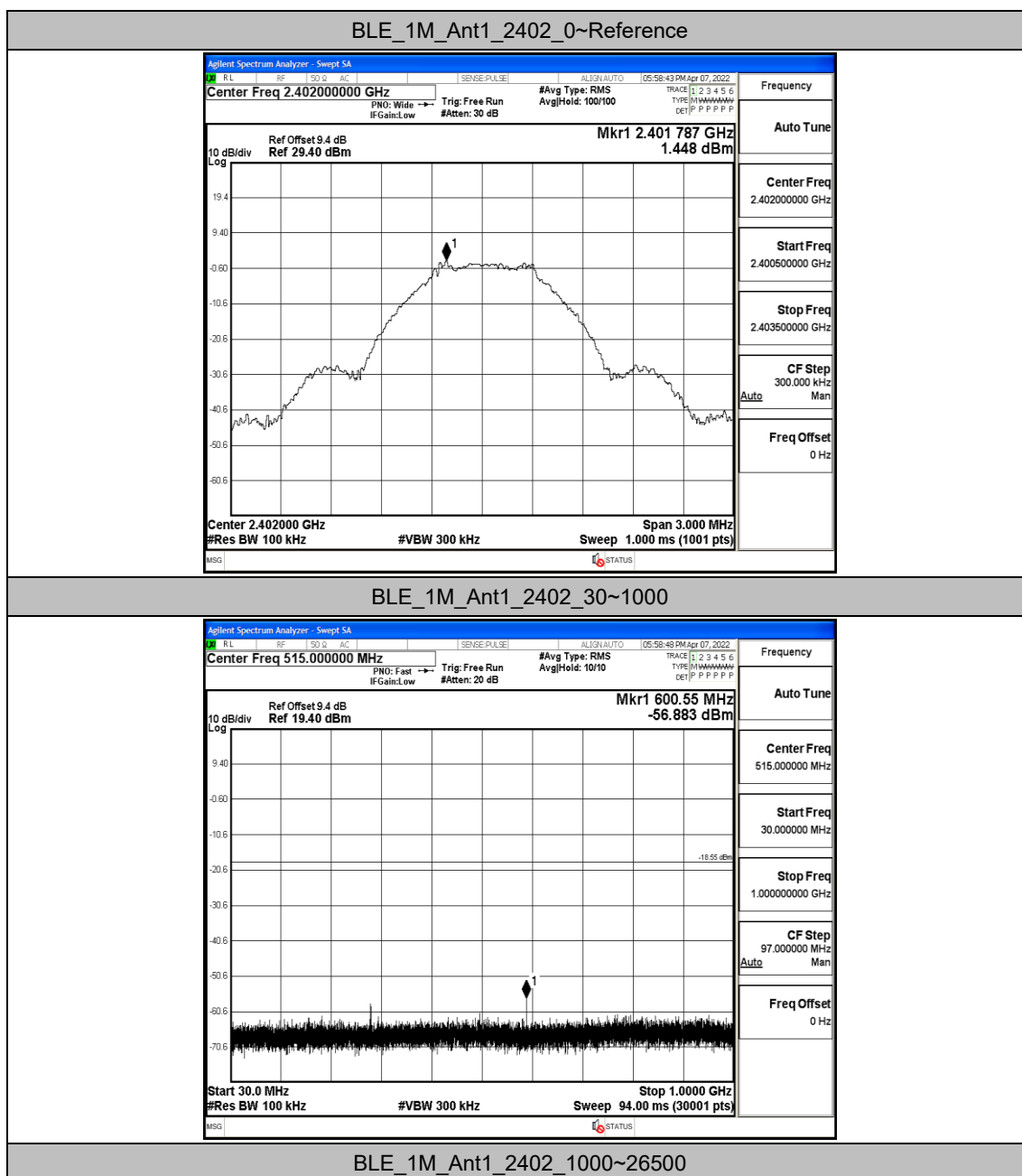


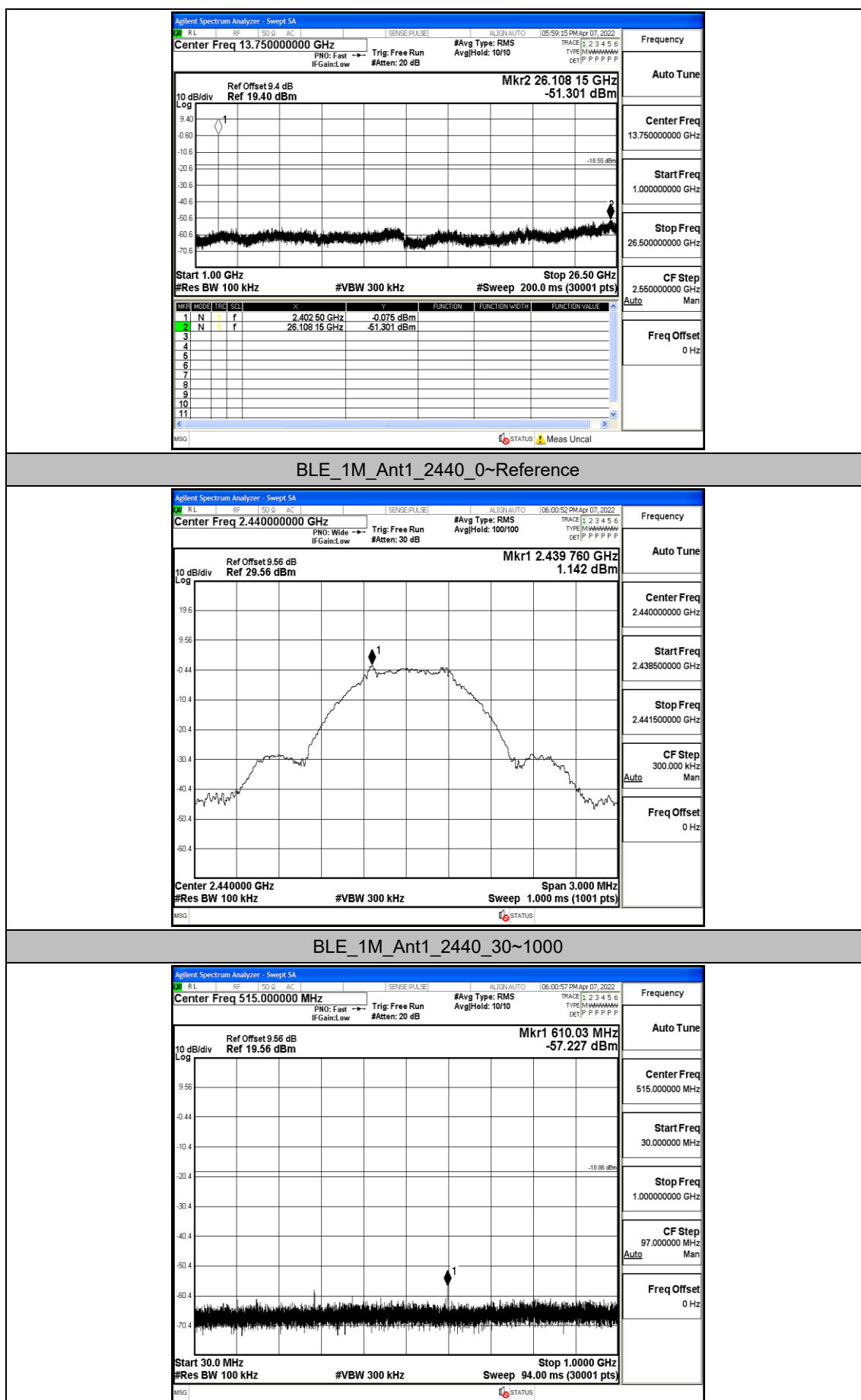
Appendix F: Conducted Spurious Emission

Test Result

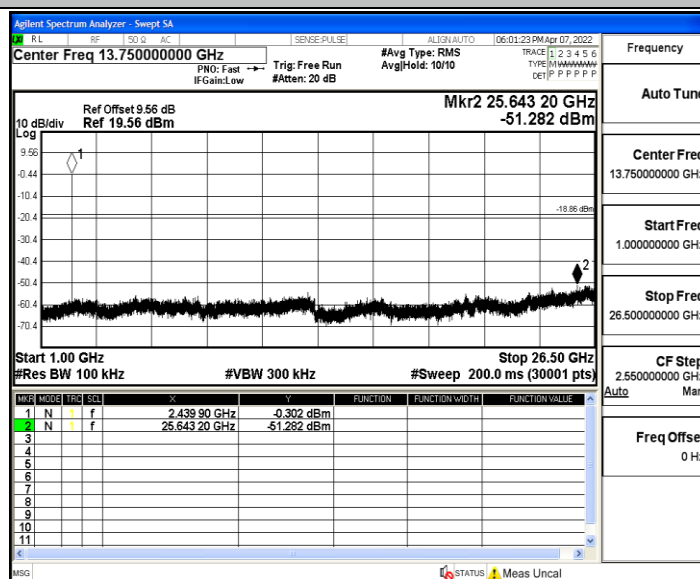
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.45	1.45	---	PASS
			30~1000	1.45	-56.88	≤-18.55	PASS
			1000~26500	1.45	-51.3	≤-18.55	PASS
		2440	Reference	1.14	1.14	---	PASS
			30~1000	1.14	-57.23	≤-18.86	PASS
			1000~26500	1.14	-51.28	≤-18.86	PASS
		2480	Reference	0.35	0.35	---	PASS
			30~1000	0.35	-56.04	≤-19.65	PASS
			1000~26500	0.35	-49.72	≤-19.65	PASS
BLE_2M	Ant1	2402	Reference	0.04	0.04	---	PASS
			30~1000	0.04	-57.15	≤-19.96	PASS
			1000~26500	0.04	-51.05	≤-19.96	PASS
		2440	Reference	-0.10	-0.10	---	PASS
			30~1000	-0.10	-57.03	≤-20.1	PASS
			1000~26500	-0.10	-50.38	≤-20.1	PASS
		2480	Reference	-1.40	-1.40	---	PASS
			30~1000	-1.40	-56.63	≤-21.4	PASS
			1000~26500	-1.40	-51.04	≤-21.4	PASS

Test Graphs

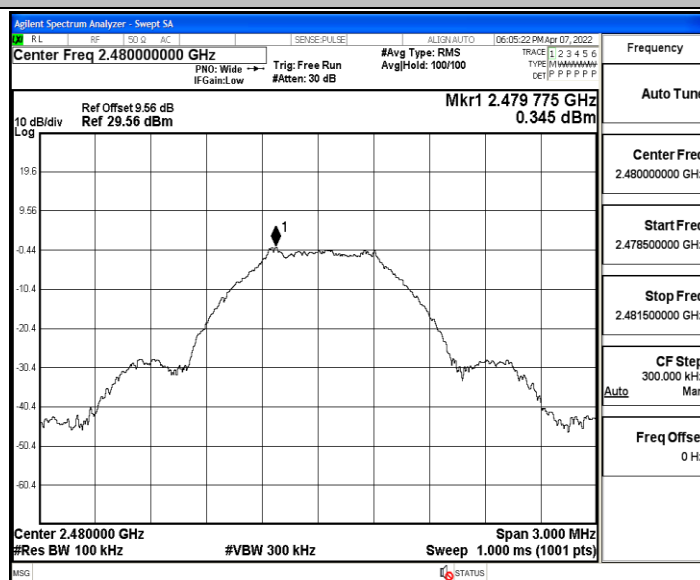




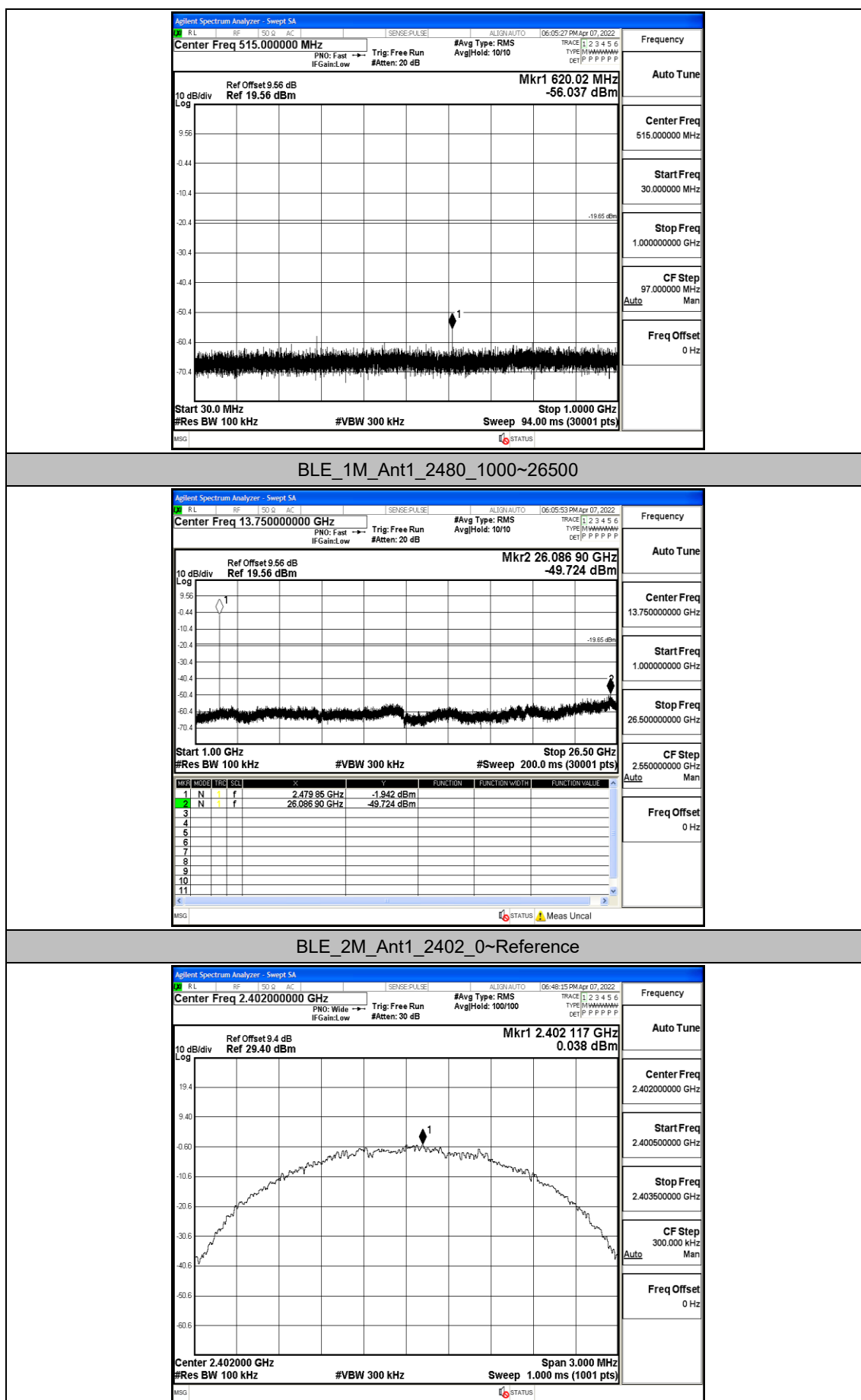
BLE_1M_Ant1_2440_1000~26500



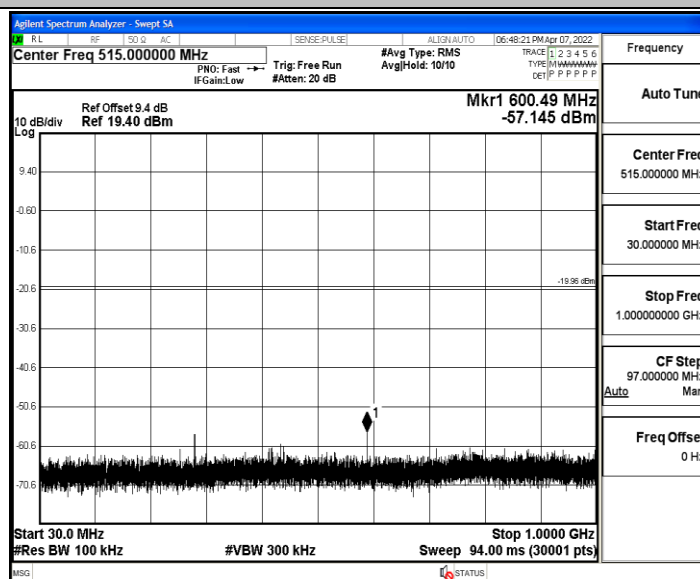
BLE_1M_Ant1_2480_0~Reference



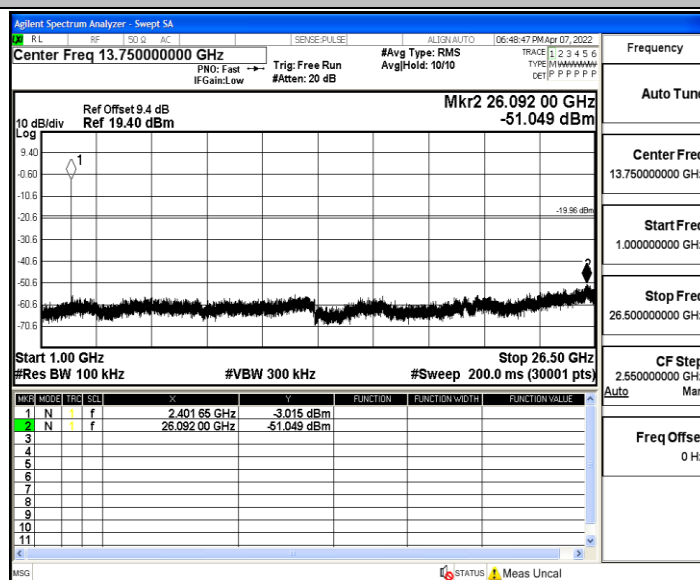
BLE_1M_Ant1_2480_30~1000



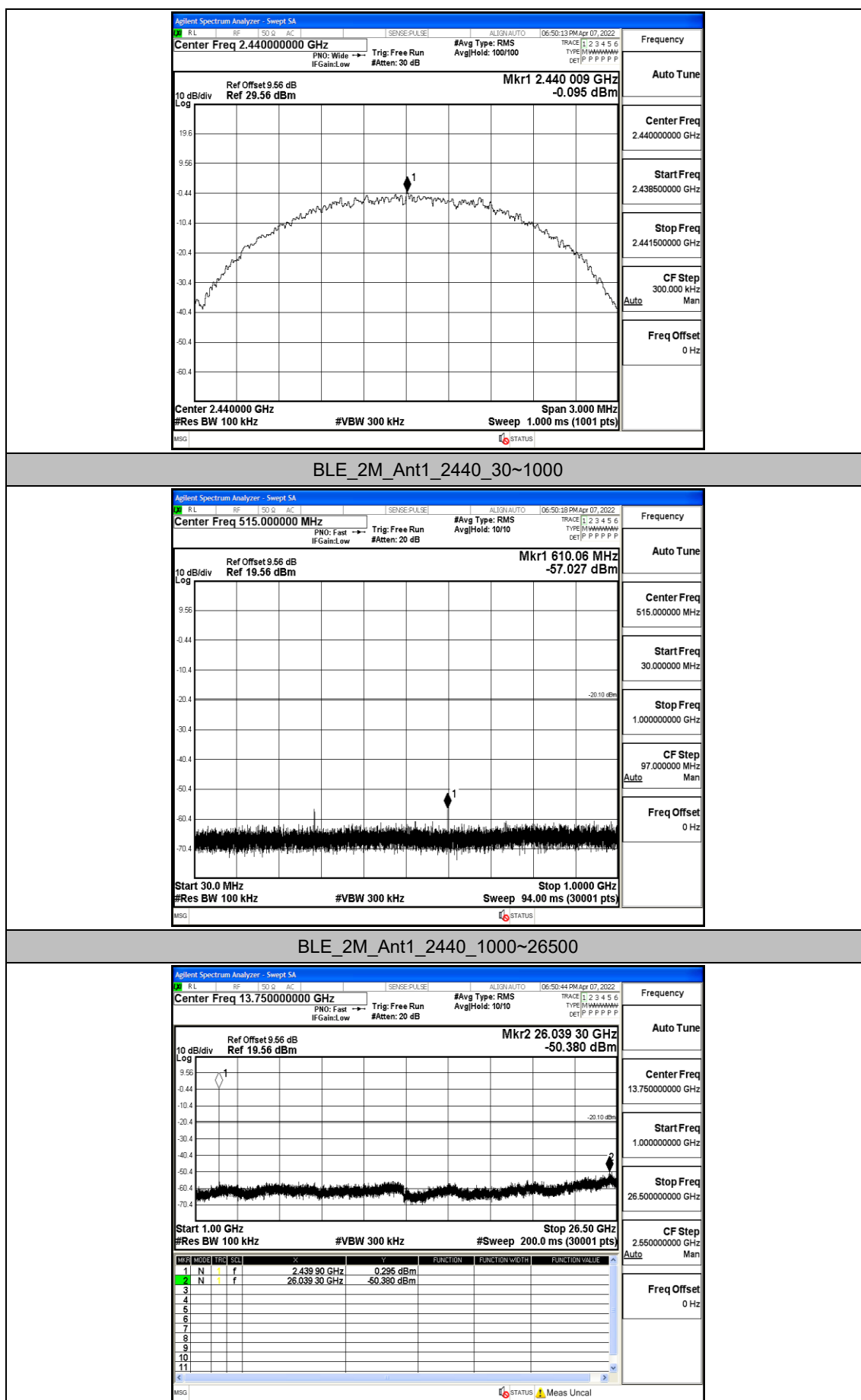
BLE_2M_Ant1_2402_30~1000



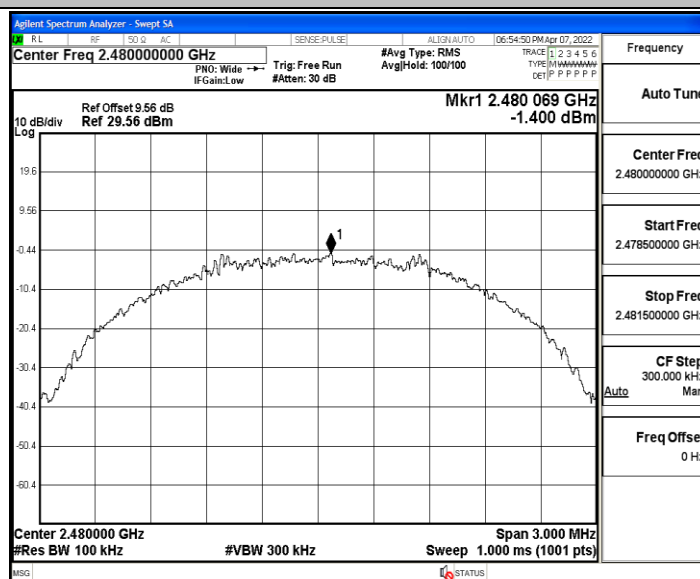
BLE_2M_Ant1_2402_1000~26500



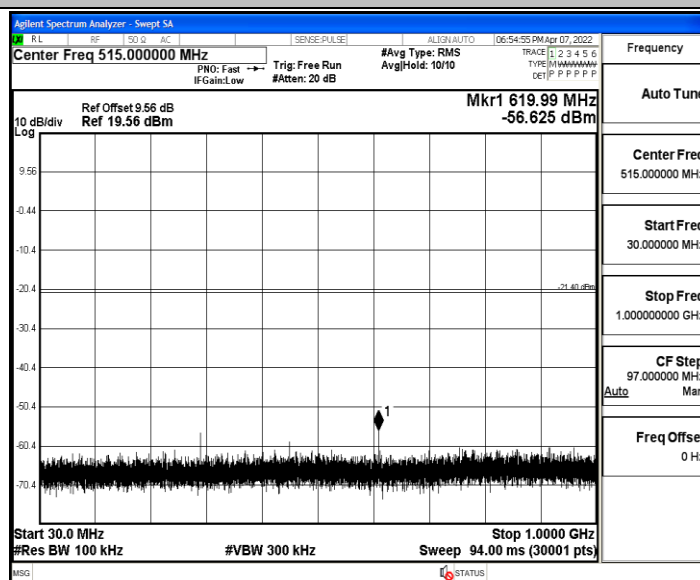
BLE_2M_Ant1_2440_0~Reference



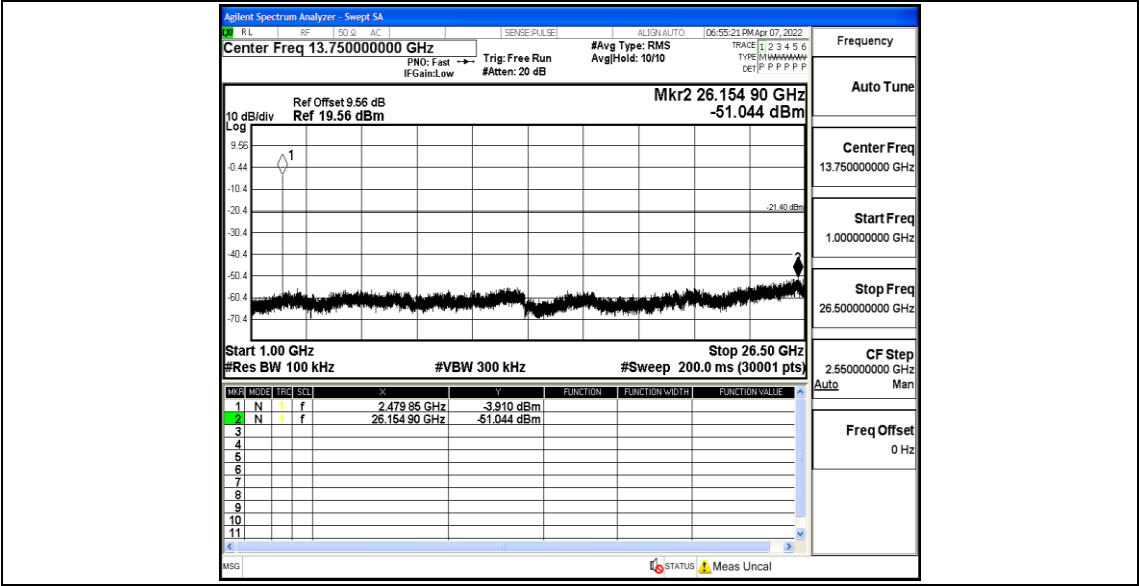
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500

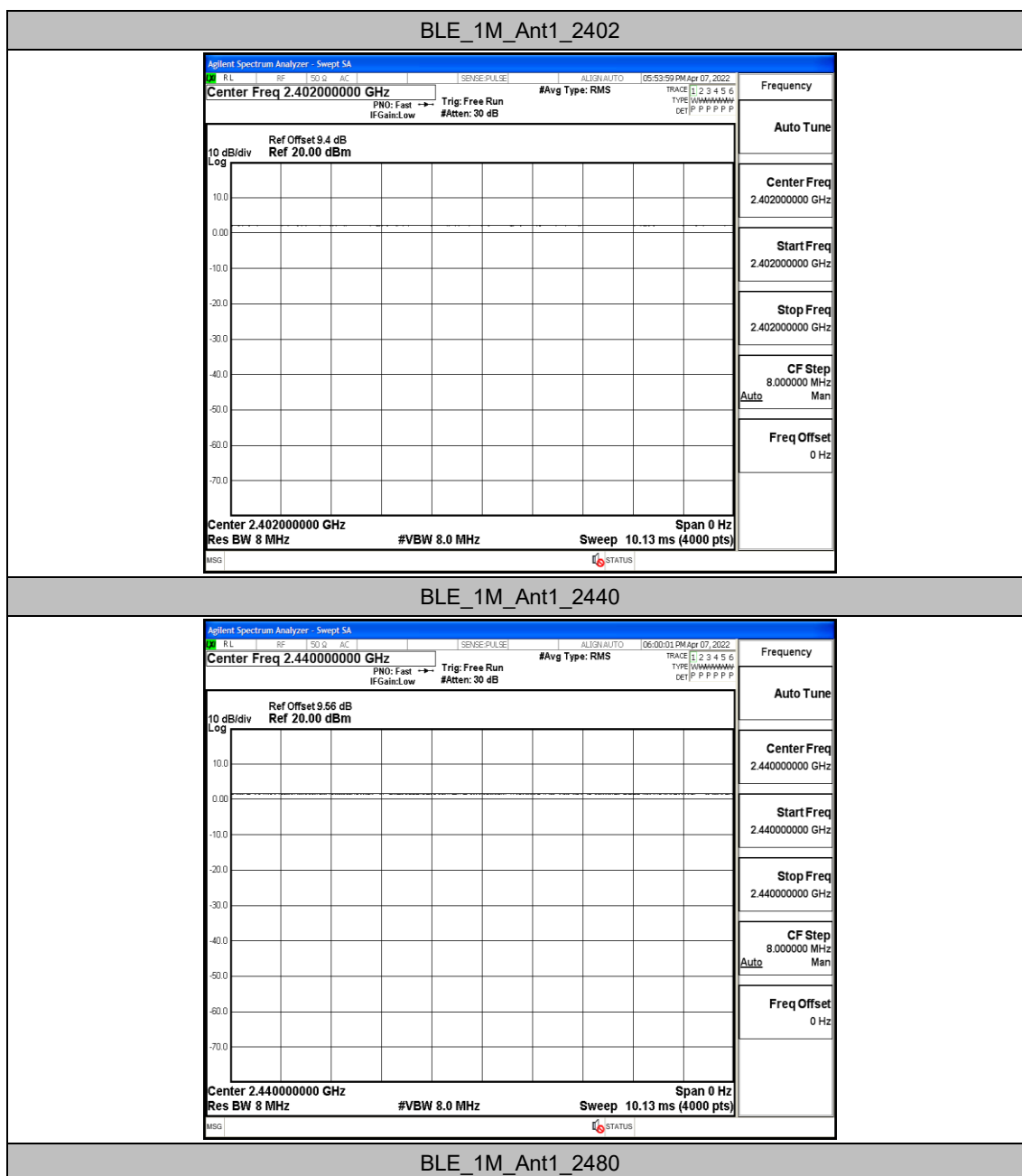


Appendix G: Duty Cycle

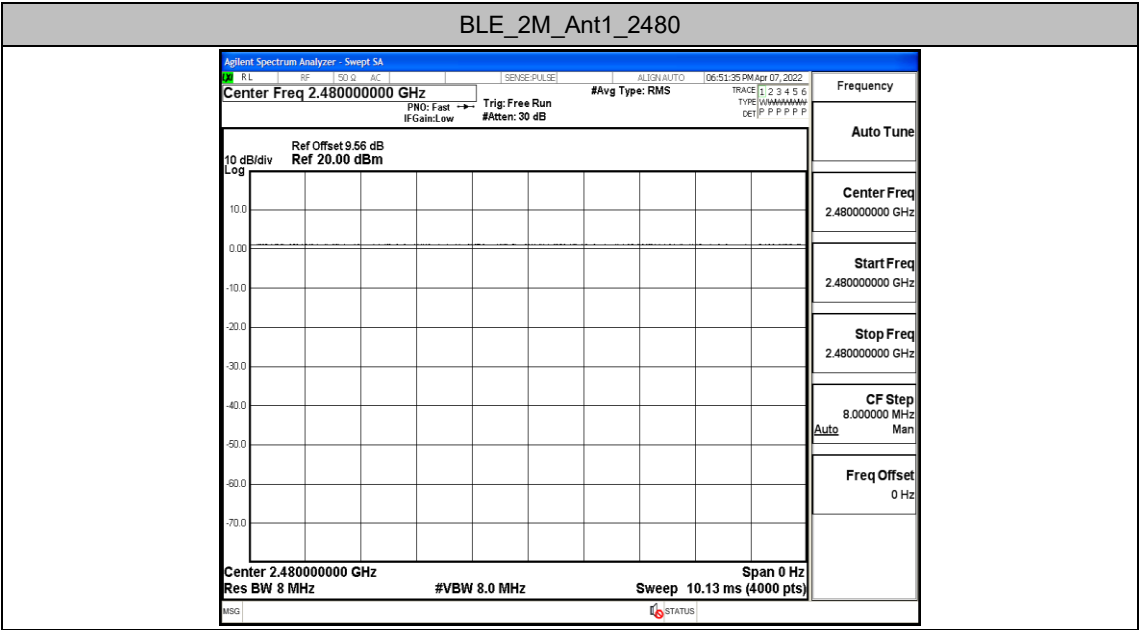
Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T
BLE_1M	Ant1	2402	0.00	0.00	100	∞
		2440	0.00	0.00	100	∞
		2480	0.00	0.00	100	∞
BLE_2M	Ant1	2402	0.00	0.00	100	∞
		2440	0.00	0.00	100	∞
		2480	0.00	0.00	100	∞

Test Graphs







Appendix H: Emissions in Restricted Bands

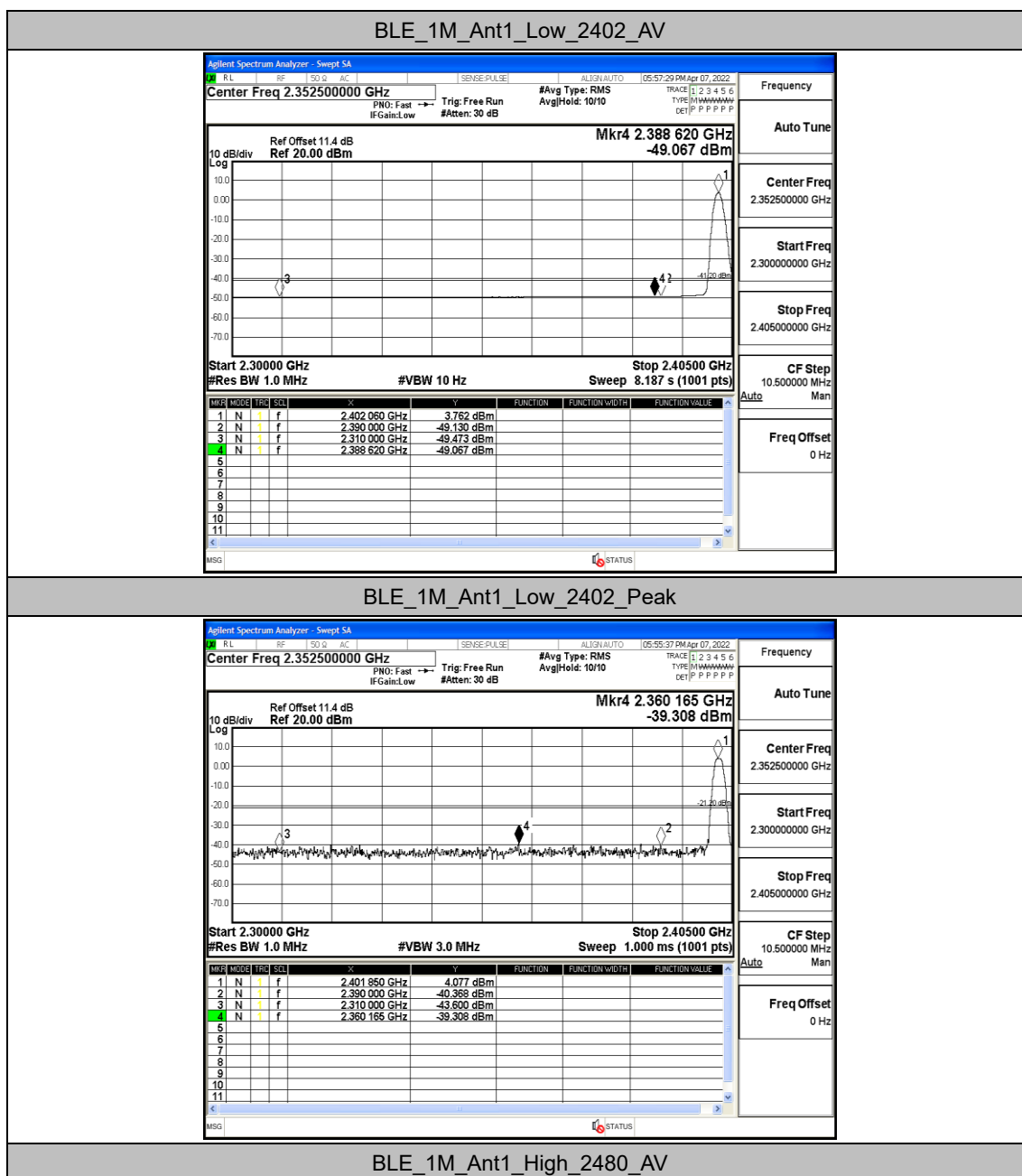
Test Result

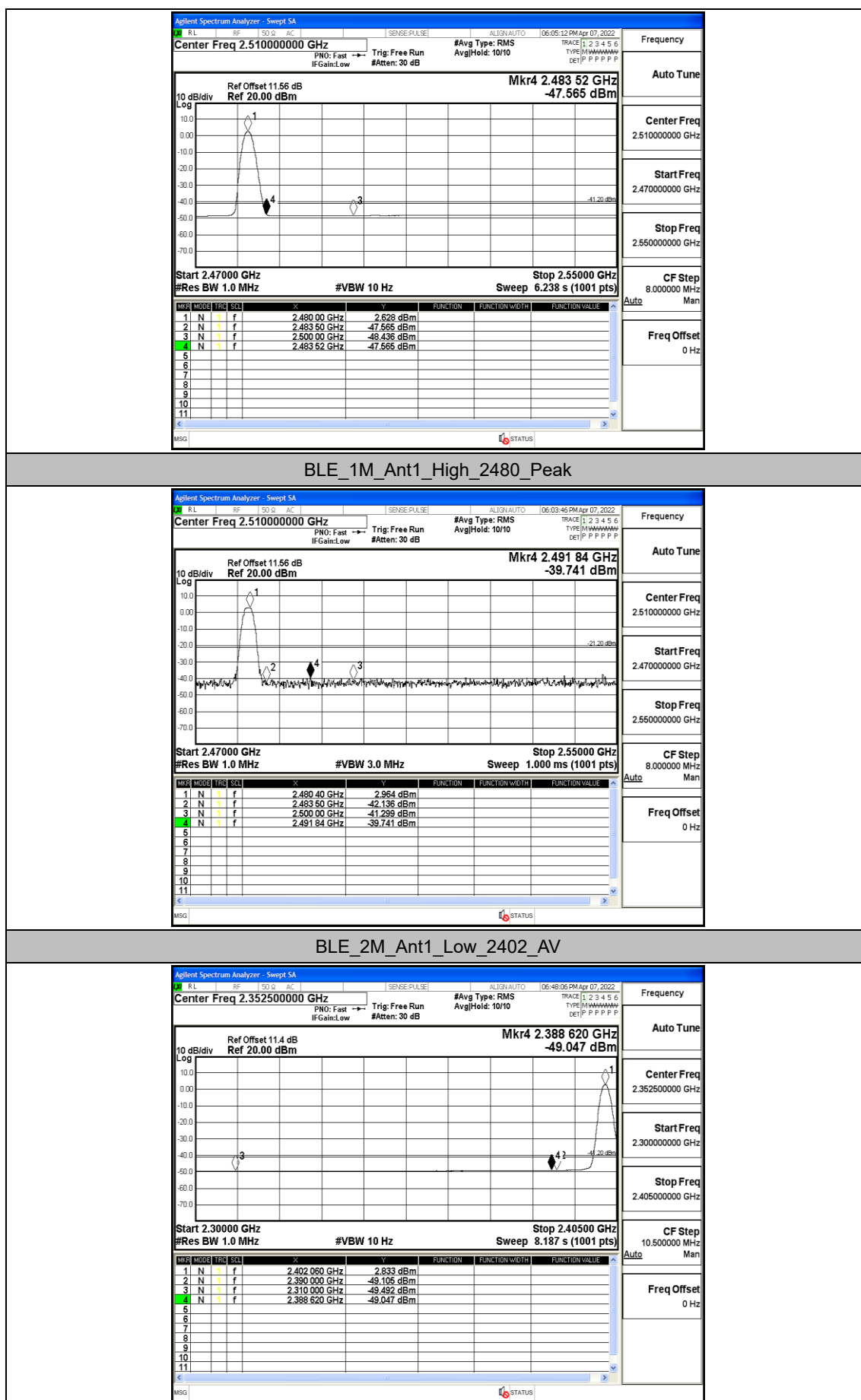
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.47	≤-41.20	PASS
				AV	2388.620	-49.07	≤-41.20	PASS
				AV	2390.000	-49.13	≤-41.20	PASS
				Peak	2310.000	-43.6	≤-21.20	PASS
				Peak	2360.165	-39.31	≤-21.20	PASS
				Peak	2390.000	-40.37	≤-21.20	PASS
		High	2480	AV	2483.500	-47.57	≤-41.20	PASS
				AV	2483.520	-47.57	≤-41.20	PASS
				AV	2500.000	-48.44	≤-41.20	PASS
				Peak	2483.500	-42.14	≤-21.20	PASS
				Peak	2491.840	-39.74	≤-21.20	PASS
				Peak	2500.000	-41.3	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-49.49	≤-41.20	PASS
				AV	2388.620	-49.05	≤-41.20	PASS
				AV	2390.000	-49.11	≤-41.20	PASS
				Peak	2310.000	-43.5	≤-21.20	PASS
				Peak	2347.775	-39.87	≤-21.20	PASS
				Peak	2390.000	-42.48	≤-21.20	PASS
		High	2480	AV	2483.500	-43.62	≤-41.20	PASS
				AV	2483.520	-43.62	≤-41.20	PASS
				AV	2500.000	-48.44	≤-41.20	PASS
				Peak	2483.500	-38.17	≤-21.20	PASS
				Peak	2483.520	-38.17	≤-21.20	PASS
				Peak	2500.000	-44	≤-21.20	PASS

Note:

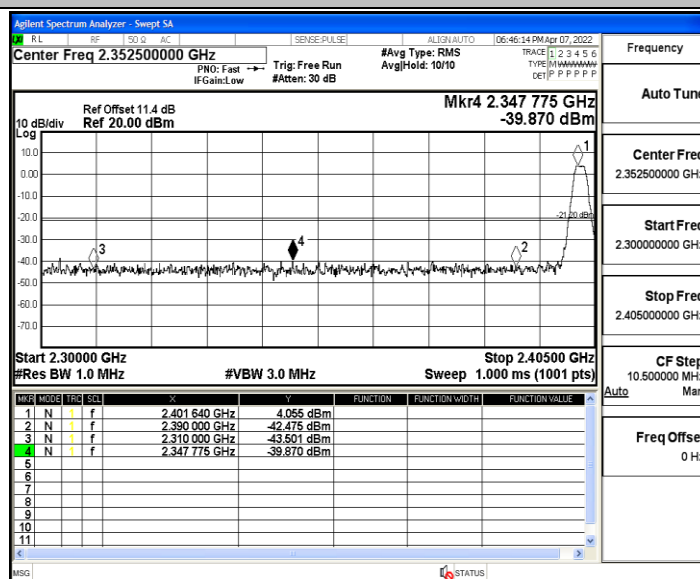
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

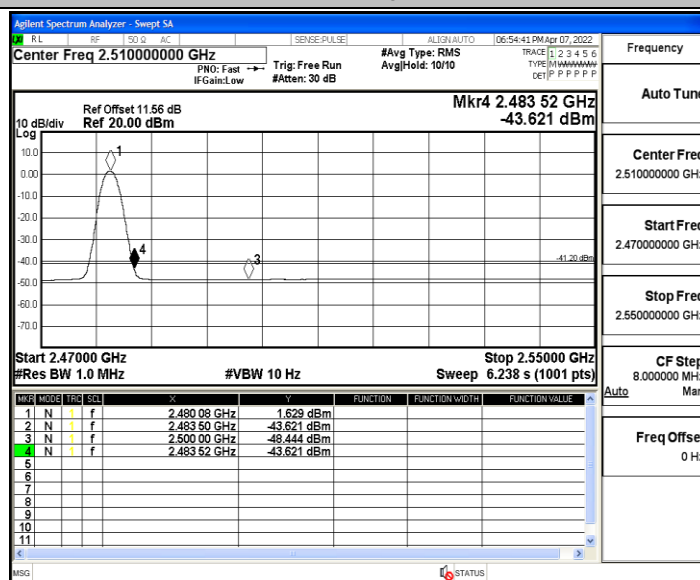




BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

