

Appendix Test Data for BLE (Conducted Measurement)

Product Name: Wanbo Projector

Trade Mark: Wanbo

Test Model: WPA34

FCC ID: 2A7PIX5PRO

Environmental Conditions

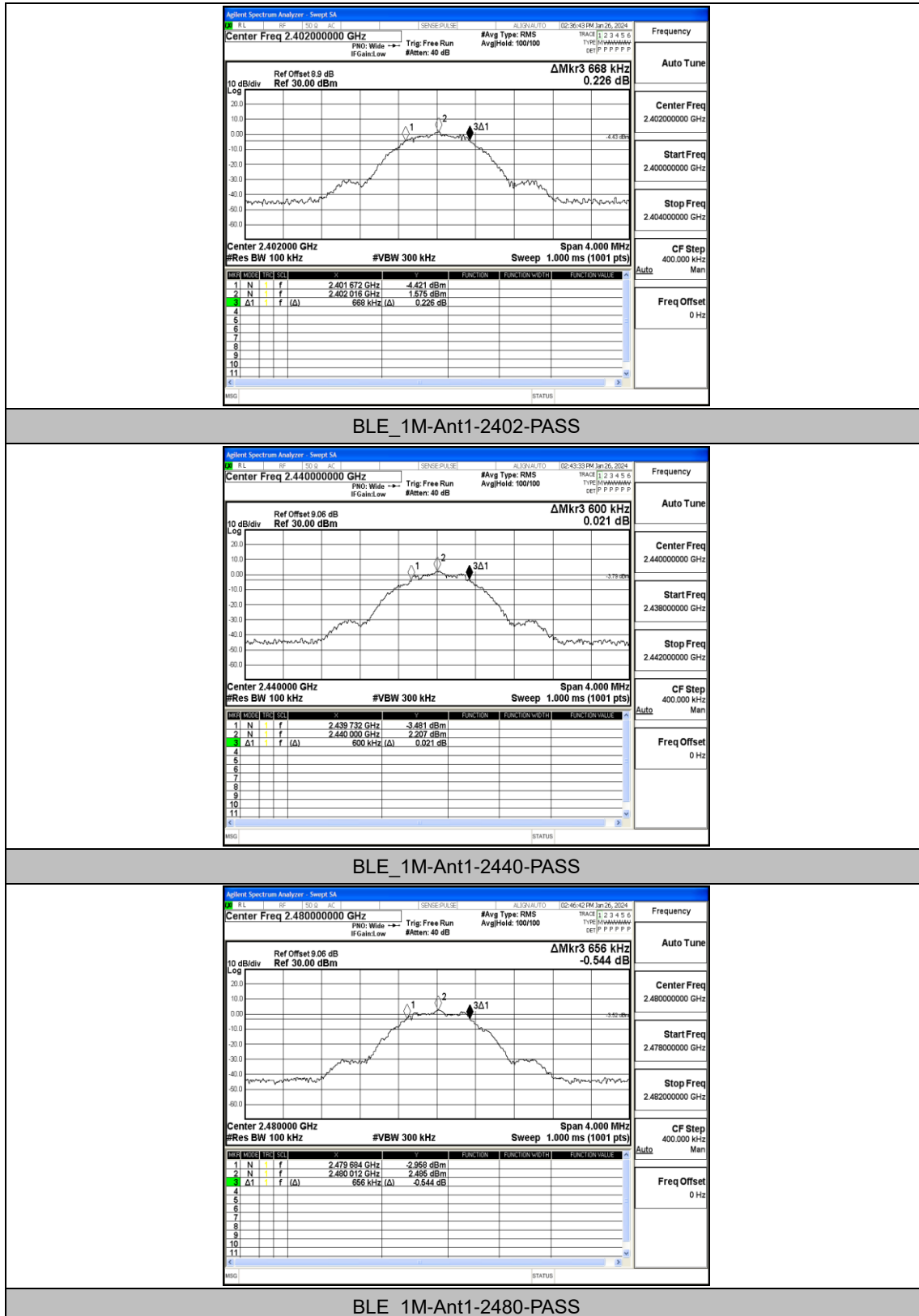
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.668	2401.672	2402.340	0.5	PASS
BLE_1M	Ant1	2440	0.600	2439.732	2440.332	0.5	PASS
BLE_1M	Ant1	2480	0.656	2479.684	2480.340	0.5	PASS

Test Graphs

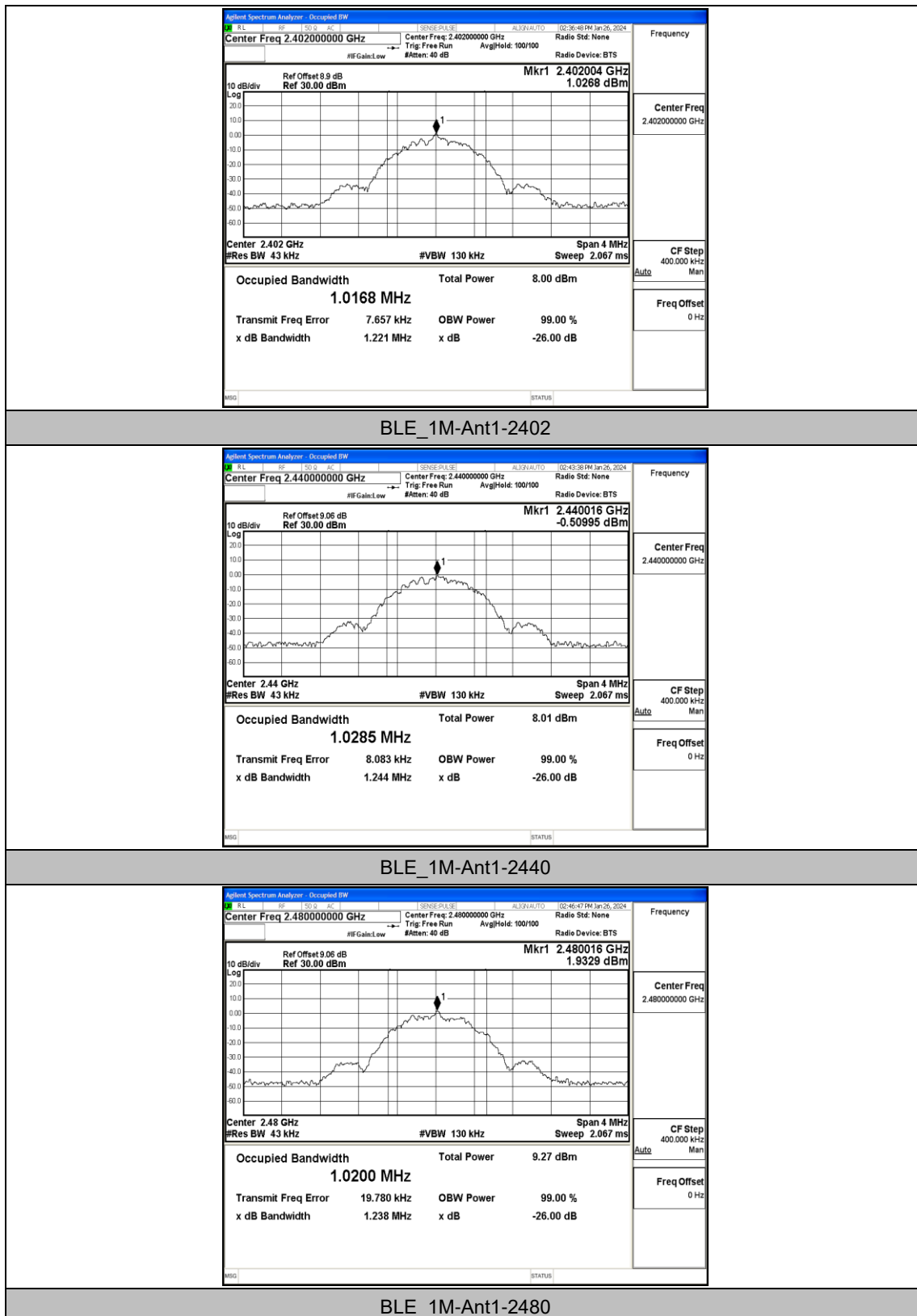


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0168	2401.4993	2402.5161	---	---
BLE_1M	Ant1	2440	1.0285	2439.4938	2440.5223	---	---
BLE_1M	Ant1	2480	1.0200	2479.5098	2480.5298	---	---

Test Graphs

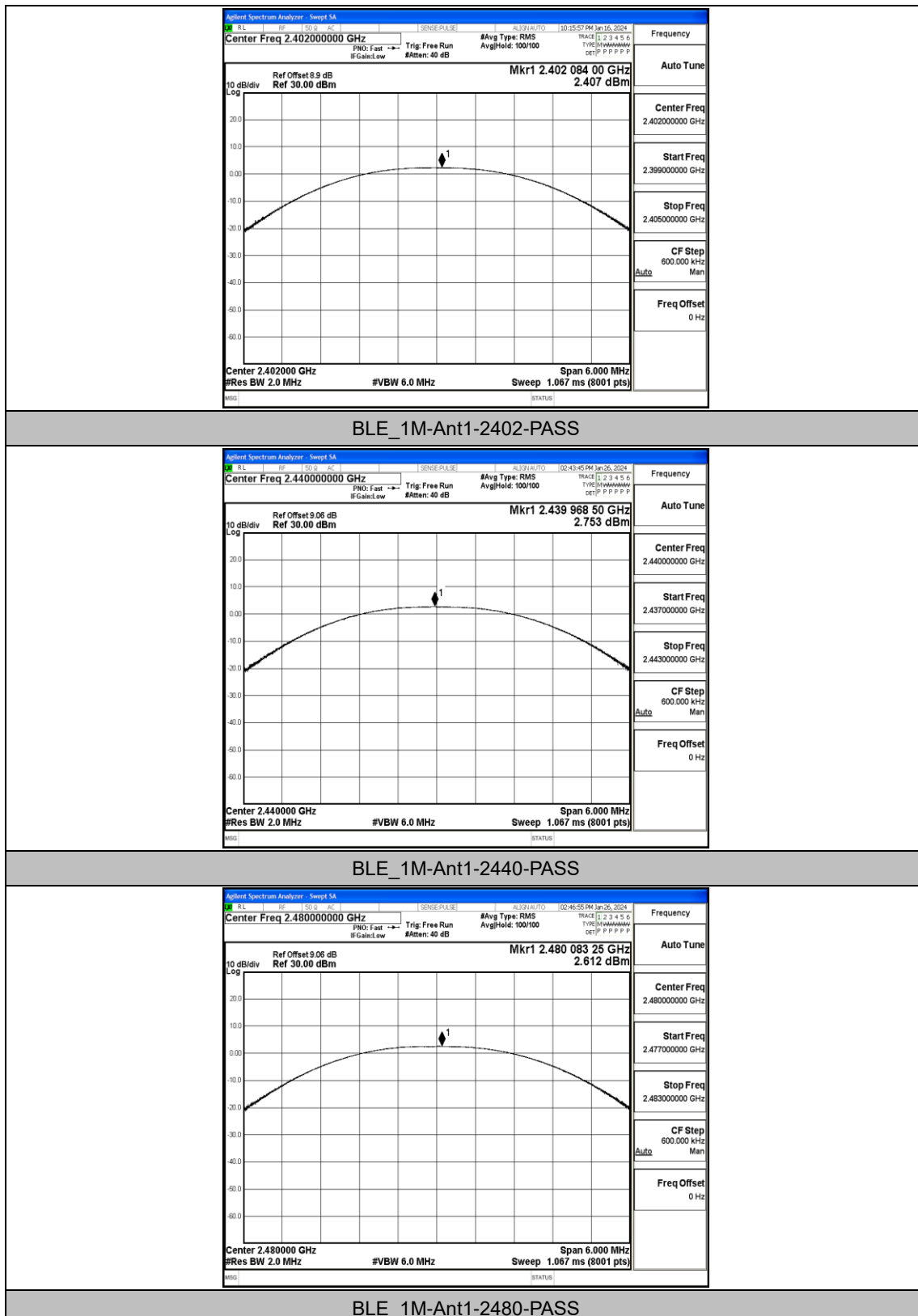


Appendix C: Maximum peak conducted output power

Test Result

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.41	≤30	PASS
BLE_1M	Ant1	2440	2.75	≤30	PASS
BLE_1M	Ant1	2480	2.61	≤30	PASS

Test Graphs

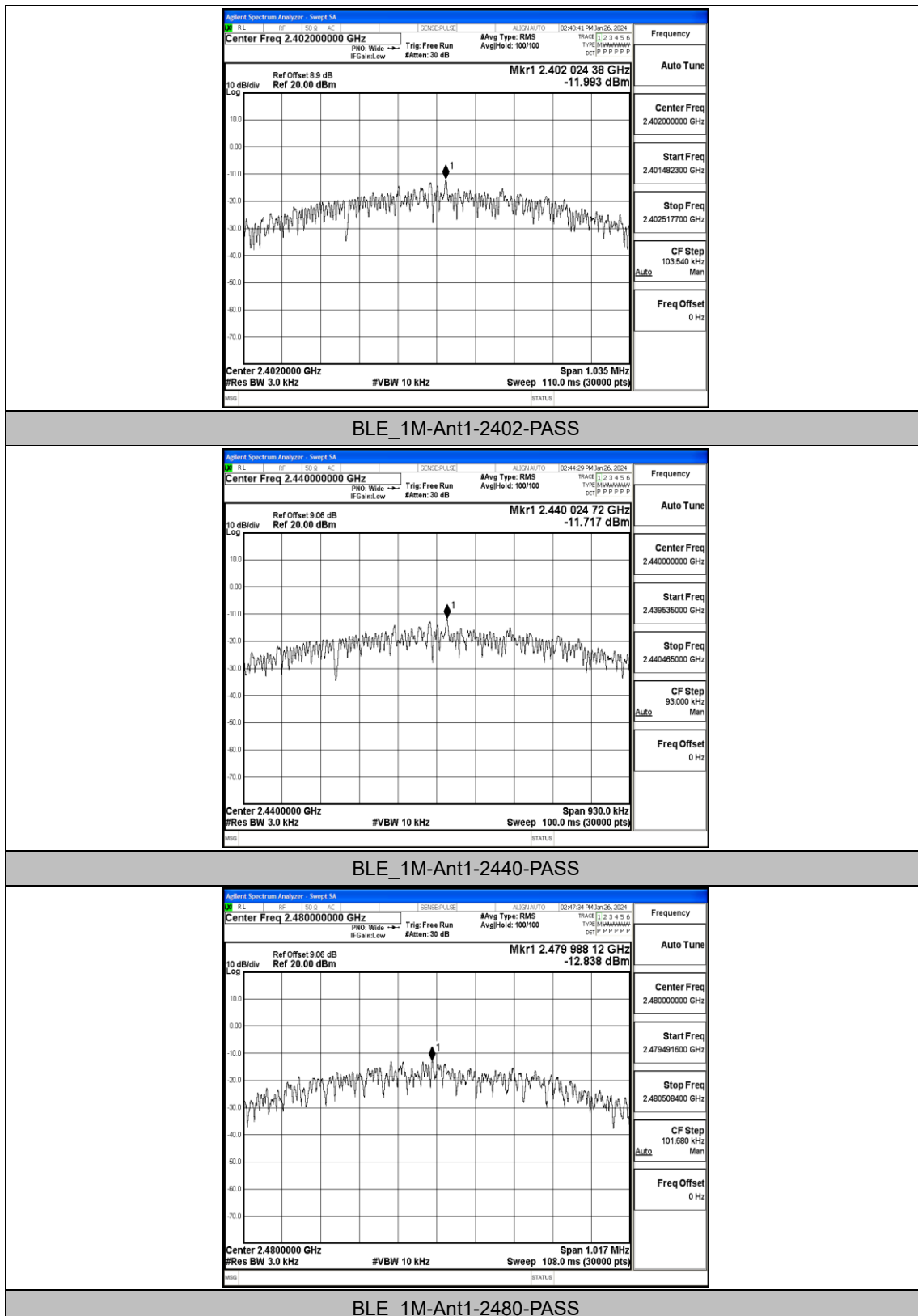


Appendix D: Maximum peak power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.99	≤8.00	PASS
BLE_1M	Ant1	2440	-11.72	≤8.00	PASS
BLE_1M	Ant1	2480	-12.84	≤8.00	PASS

Test Graphs

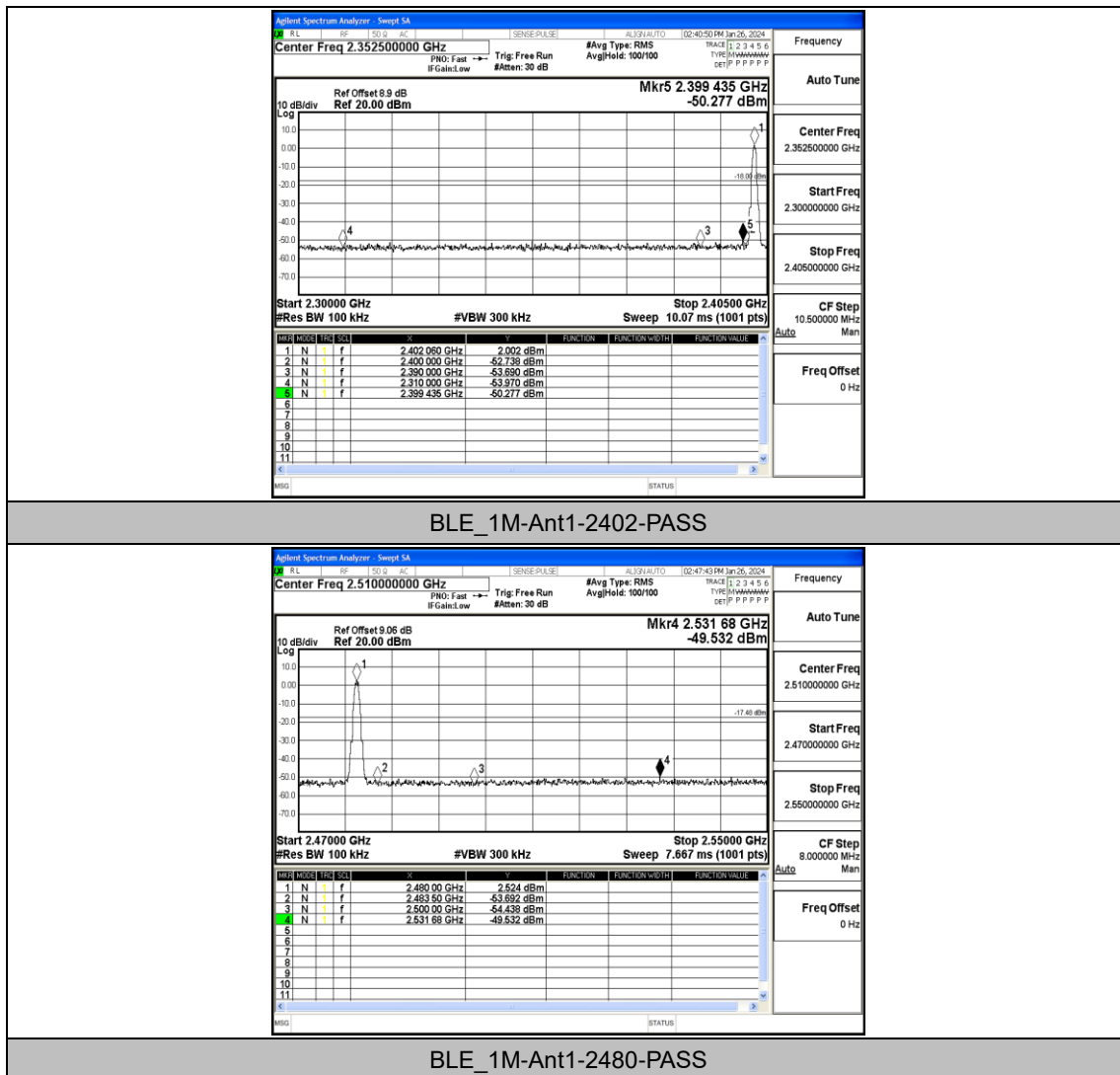


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	Channel	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.00	-50.28	≤-18	PASS
BLE_1M	Ant1	High	2480	2.52	-49.53	≤-17.48	PASS

Test Graphs

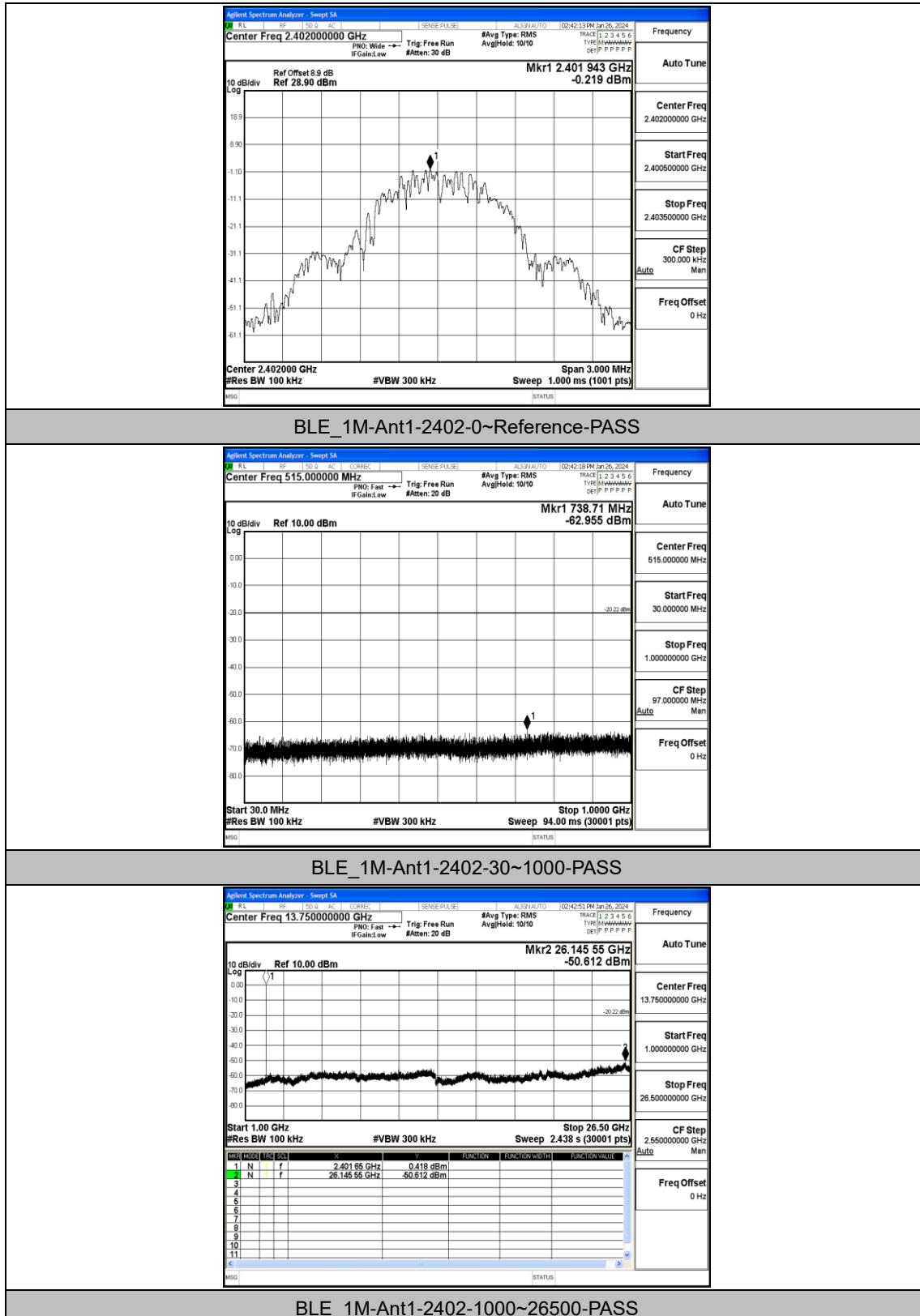


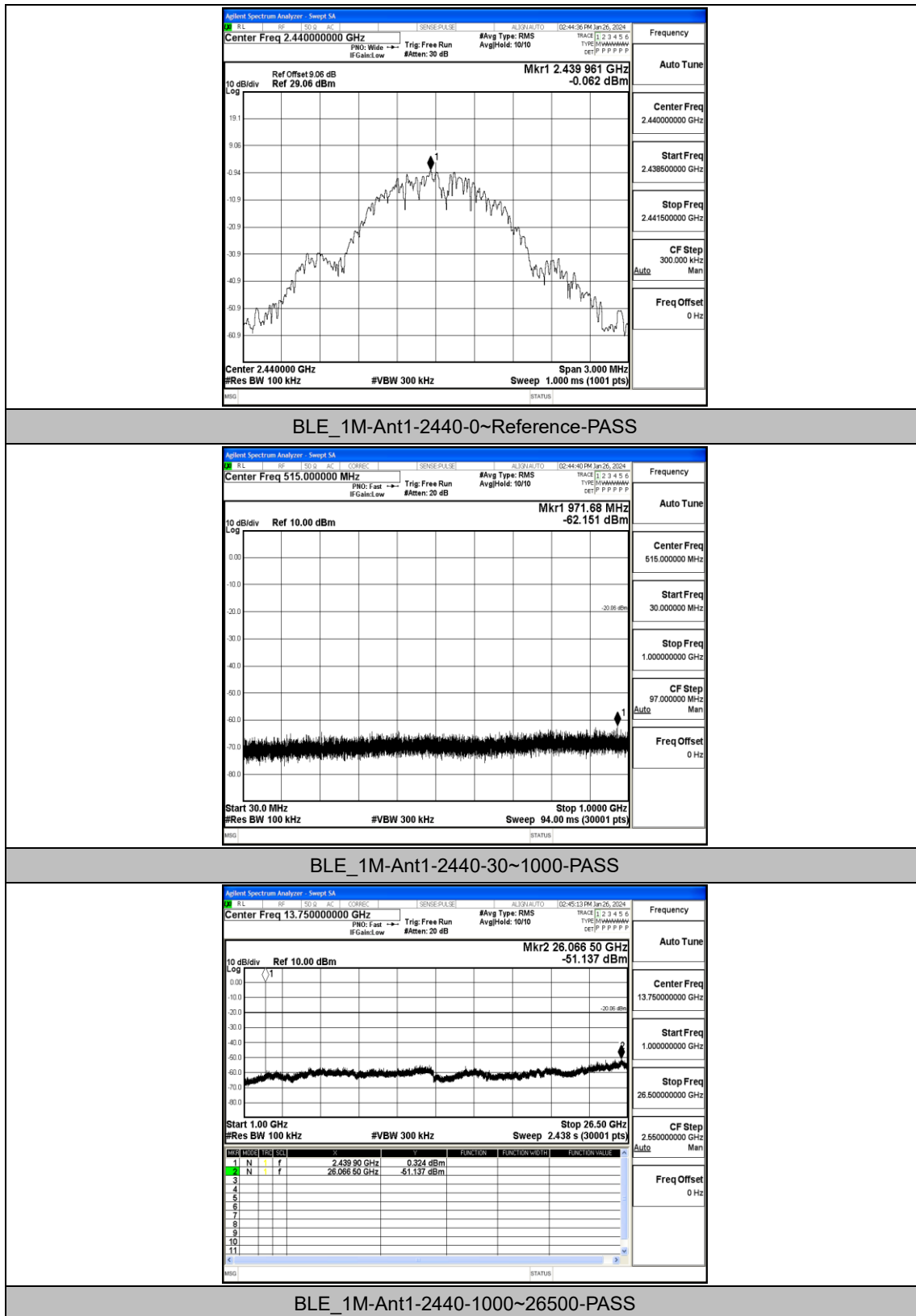
Appendix F: Conducted Spurious Emission

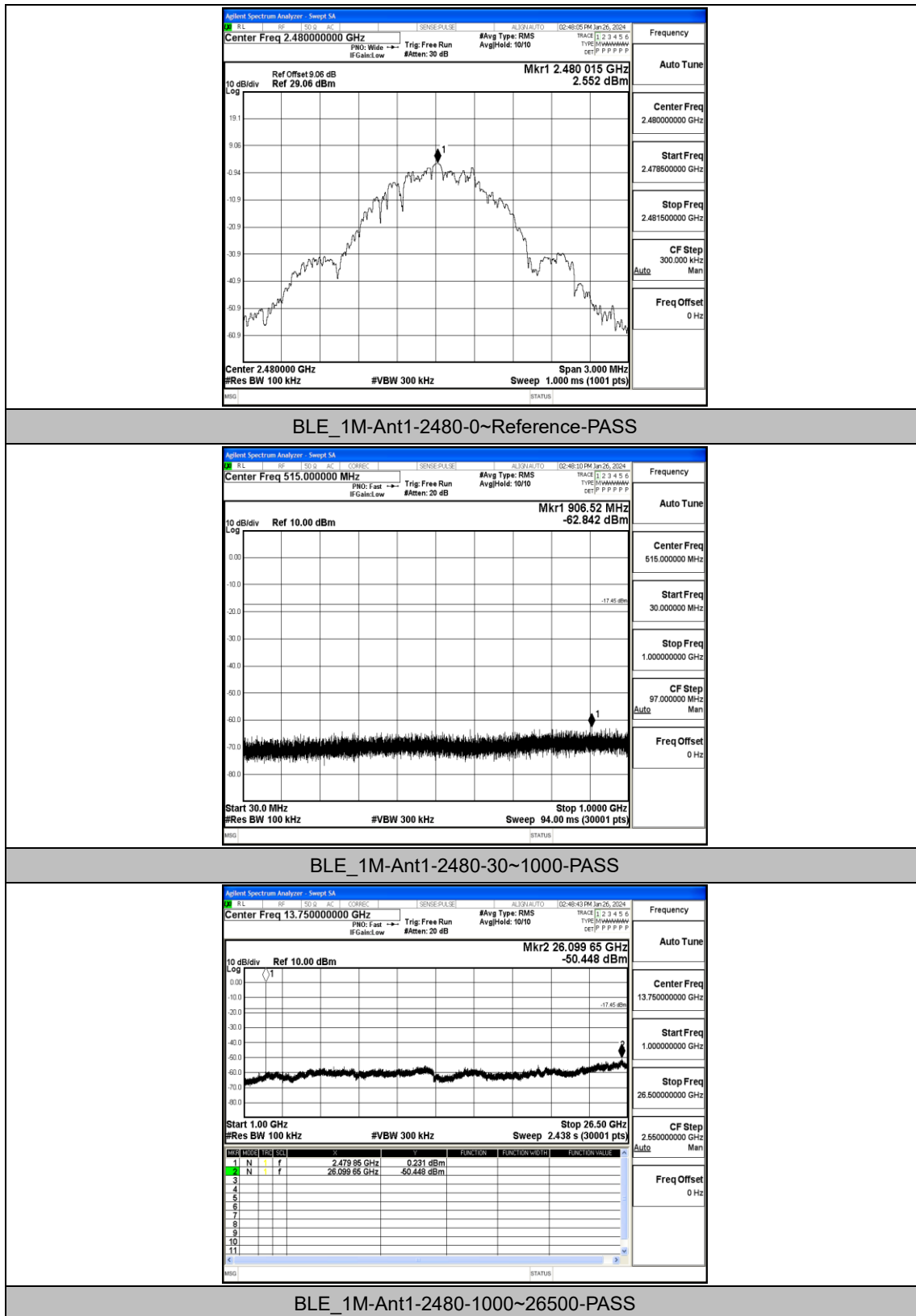
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-0.22	-0.22	---	PASS
BLE_1M	Ant1	2402	30~1000	-0.22	-62.96	≤-20.22	PASS
BLE_1M	Ant1	2402	1000~26500	-0.22	-50.61	≤-20.22	PASS
BLE_1M	Ant1	2440	0~Reference	-0.06	-0.06	---	PASS
BLE_1M	Ant1	2440	30~1000	-0.06	-62.15	≤-20.06	PASS
BLE_1M	Ant1	2440	1000~26500	-0.06	-51.14	≤-20.06	PASS
BLE_1M	Ant1	2480	0~Reference	2.55	2.55	---	PASS
BLE_1M	Ant1	2480	30~1000	2.55	-62.84	≤-17.45	PASS
BLE_1M	Ant1	2480	1000~26500	2.55	-50.45	≤-17.45	PASS

Test Graphs





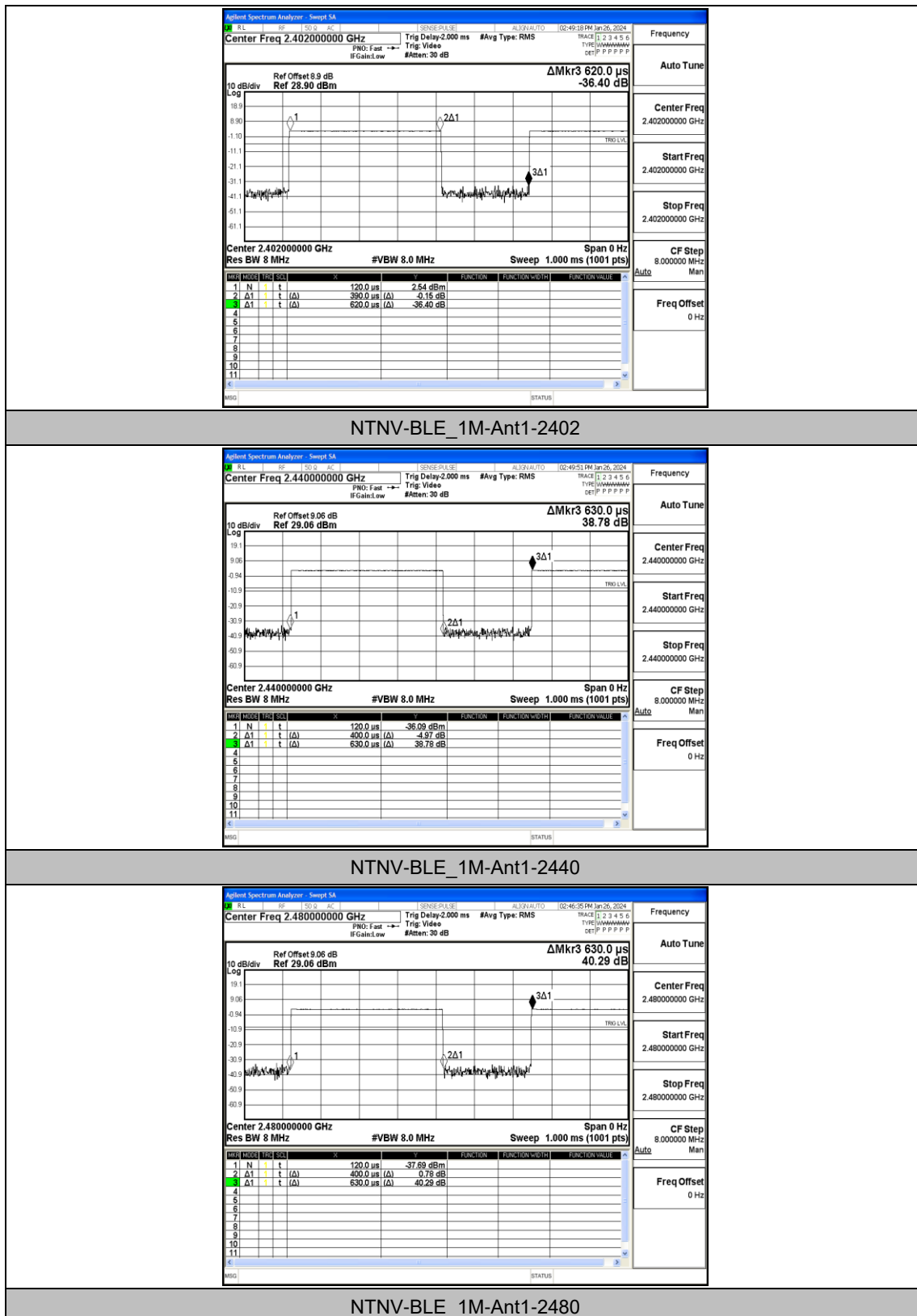


Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.39	0.62	62.90	2.01
BLE_1M	Ant1	2440	0.40	0.63	63.49	1.97
BLE_1M	Ant1	2480	0.40	0.63	63.49	1.97

Test Graphs



Appendix H: Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	Peak	2390.000	-39.41	≤-21.20	55.79	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2310.000	-40.15	≤-21.20	55.05	≤74	PASS
BLE_1M	Ant1	Low	2402	Peak	2333.810	-36.94	≤-21.20	58.26	≤74	PASS
BLE_1M	Ant1	Low	2402	AV	2390.000	-45.18	≤-41.20	50.02	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2310.000	-46.13	≤-41.20	49.07	≤54	PASS
BLE_1M	Ant1	Low	2402	AV	2385.680	-44.67	≤-41.20	50.53	≤54	PASS
BLE_1M	Ant1	High	2480	Peak	2483.500	-38.97	≤-21.20	56.23	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2500.000	-39.87	≤-21.20	55.33	≤74	PASS
BLE_1M	Ant1	High	2480	Peak	2487.280	-35.1	≤-21.20	60.10	≤74	PASS
BLE_1M	Ant1	High	2480	AV	2483.500	-45.24	≤-41.20	49.96	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2500.000	-44.54	≤-41.20	50.66	≤54	PASS
BLE_1M	Ant1	High	2480	AV	2495.520	-44.12	≤-41.20	51.08	≤54	PASS

Note:

1. The Antenna Gain is compensated in the graph.
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

