

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

Product Name: Alpha Egg Dictionary Pen

Trade Mark: ALPHA EGG

Test Model: TYP-AIR10

FCC ID: 2A7P5TYP-AIR10

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

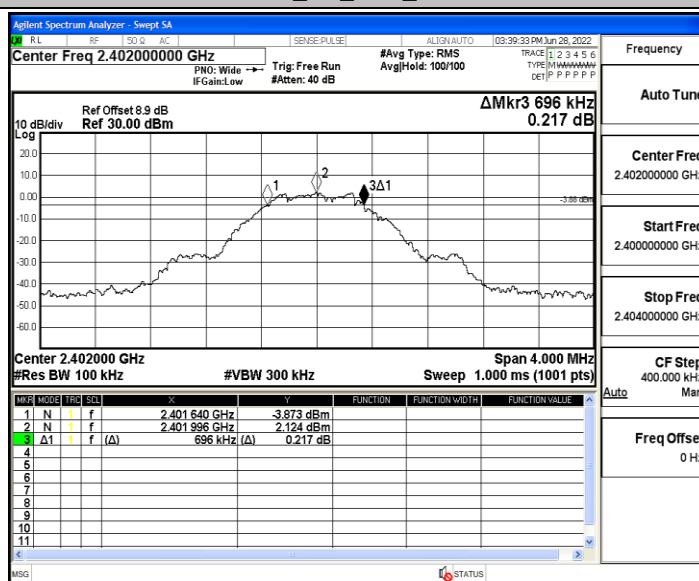
Appendix A: DTS Bandwidth

Test Result

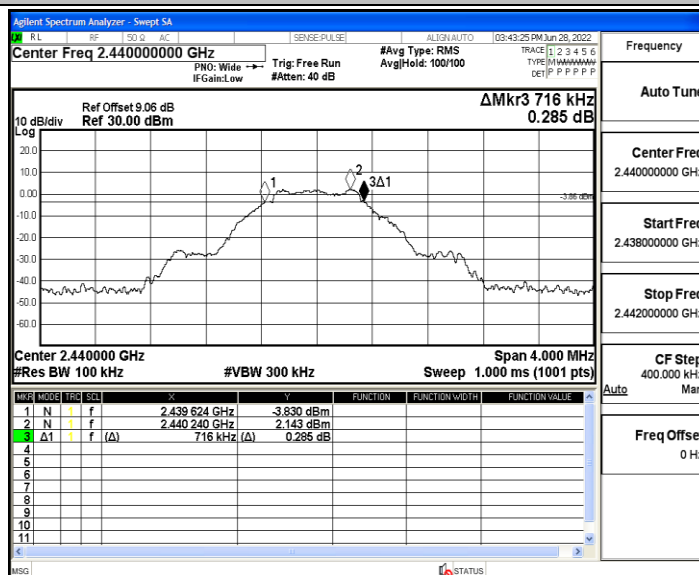
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.696	2401.640	2402.336	0.5	PASS
		2440	0.716	2439.624	2440.340	0.5	PASS
		2480	0.696	2479.652	2480.348	0.5	PASS

Test Graphs

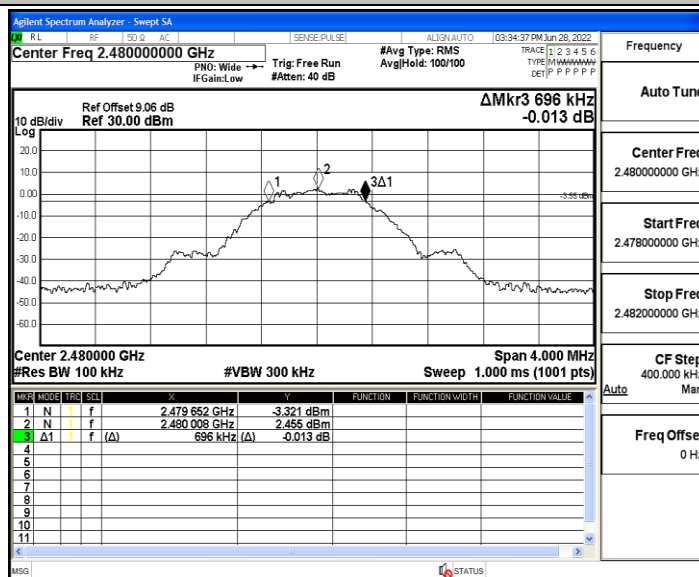
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



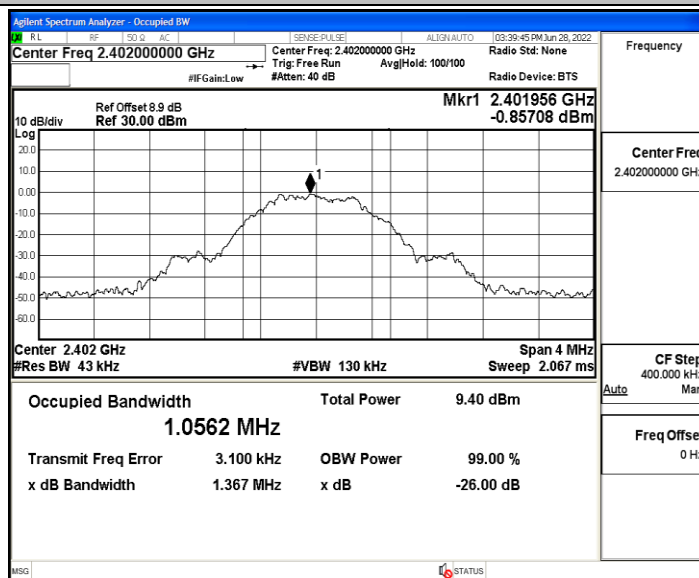
Appendix B: Occupied Channel Bandwidth

Test Result

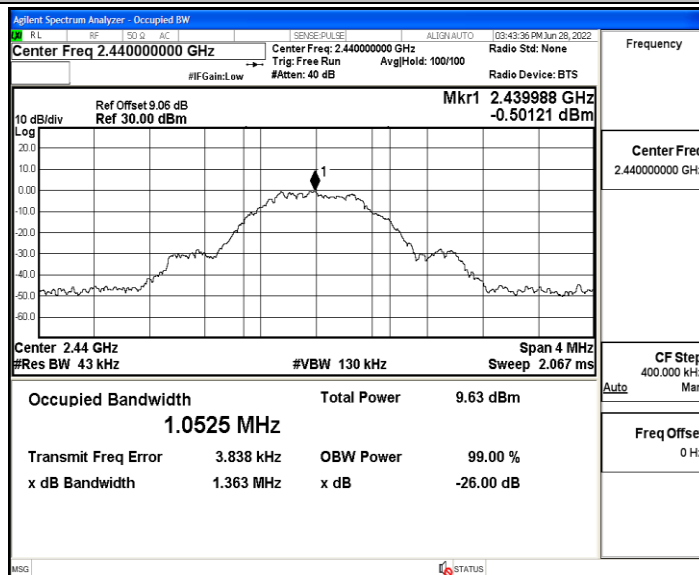
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0562	2401.475	2402.531	---	---
		2440	1.0525	2439.478	2440.530	---	---
		2480	1.0485	2479.481	2480.530	---	---

Test Graphs

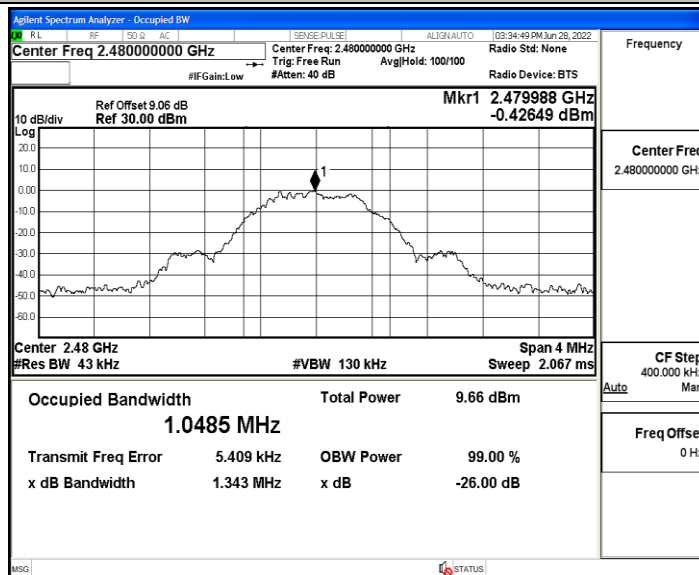
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



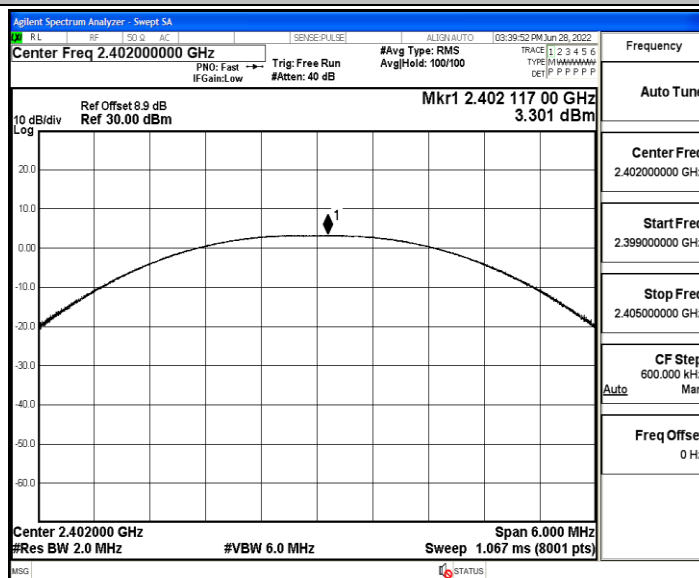
Appendix C: Maximum Peak conducted output power

Test Result

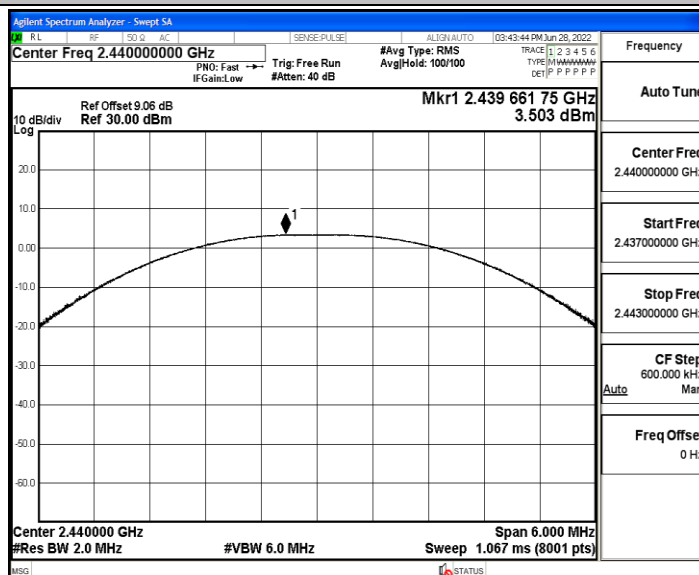
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.3	≤30	PASS
		2440	3.5	≤30	PASS
		2480	3.63	≤30	PASS

Test Graphs

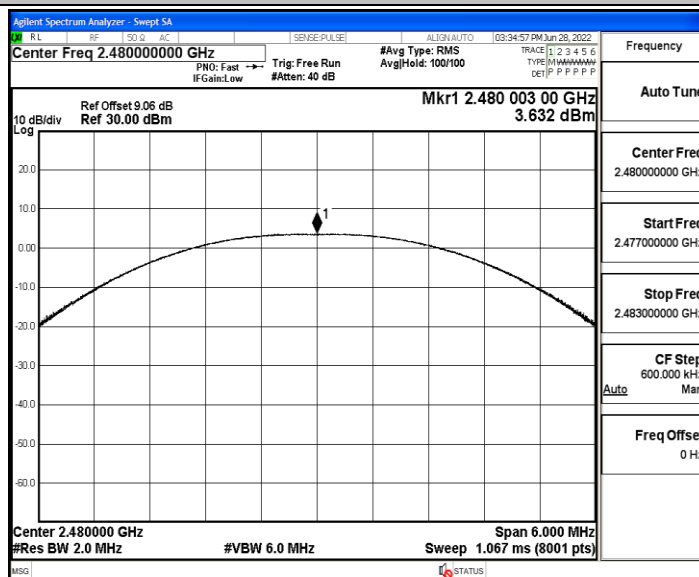
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



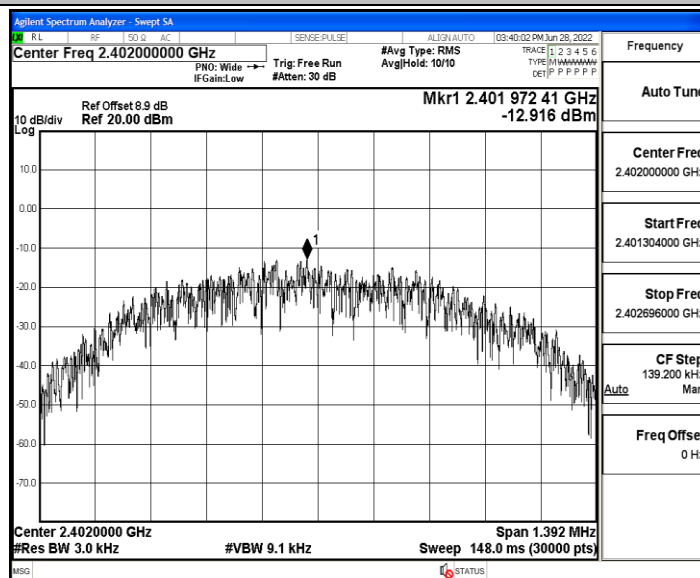
Appendix D: Maximum power spectral density

Test Result

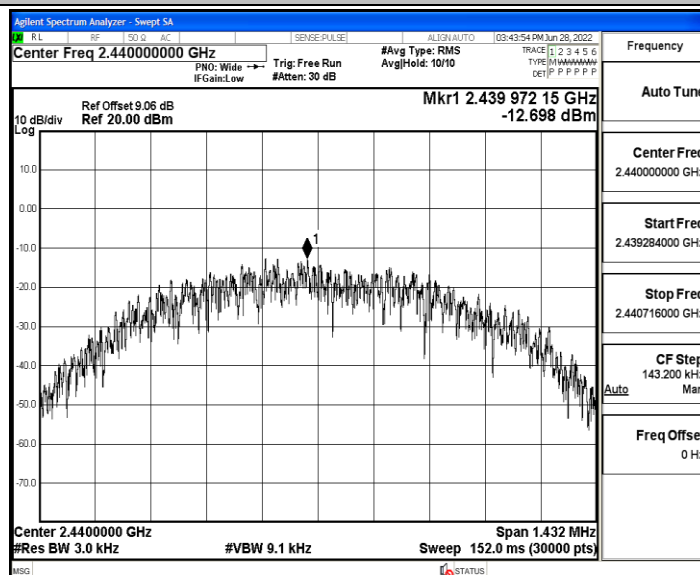
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.92	≤8.00	PASS
		2440	-12.7	≤8.00	PASS
		2480	-12.53	≤8.00	PASS

Test Graphs

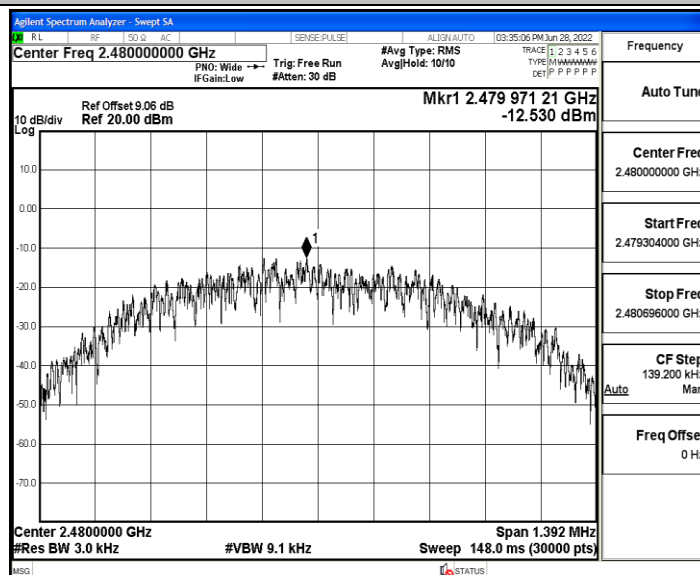
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

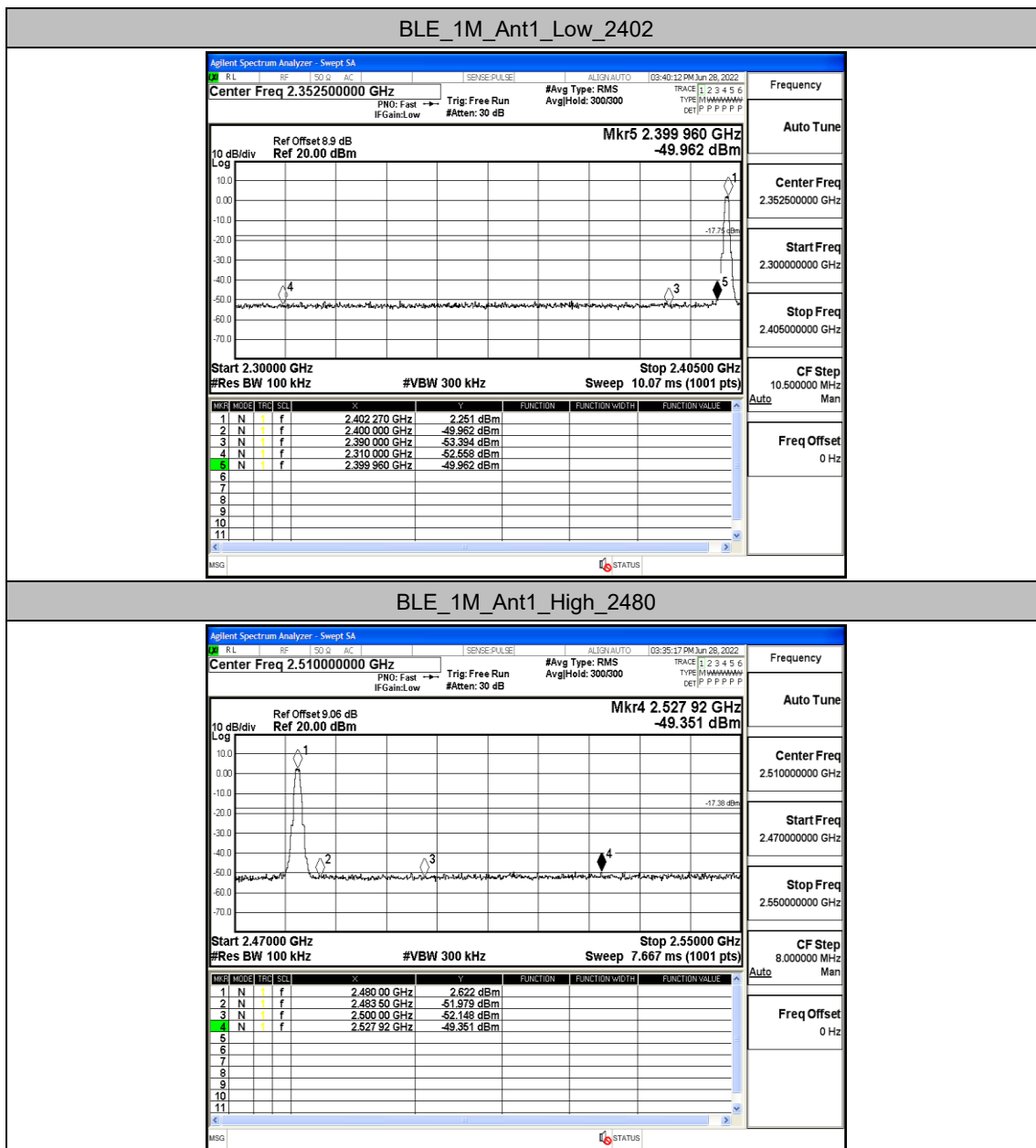


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.25	-49.96	≤-17.75	PASS
		High	2480	2.62	-49.35	≤-17.38	PASS

Test Graphs

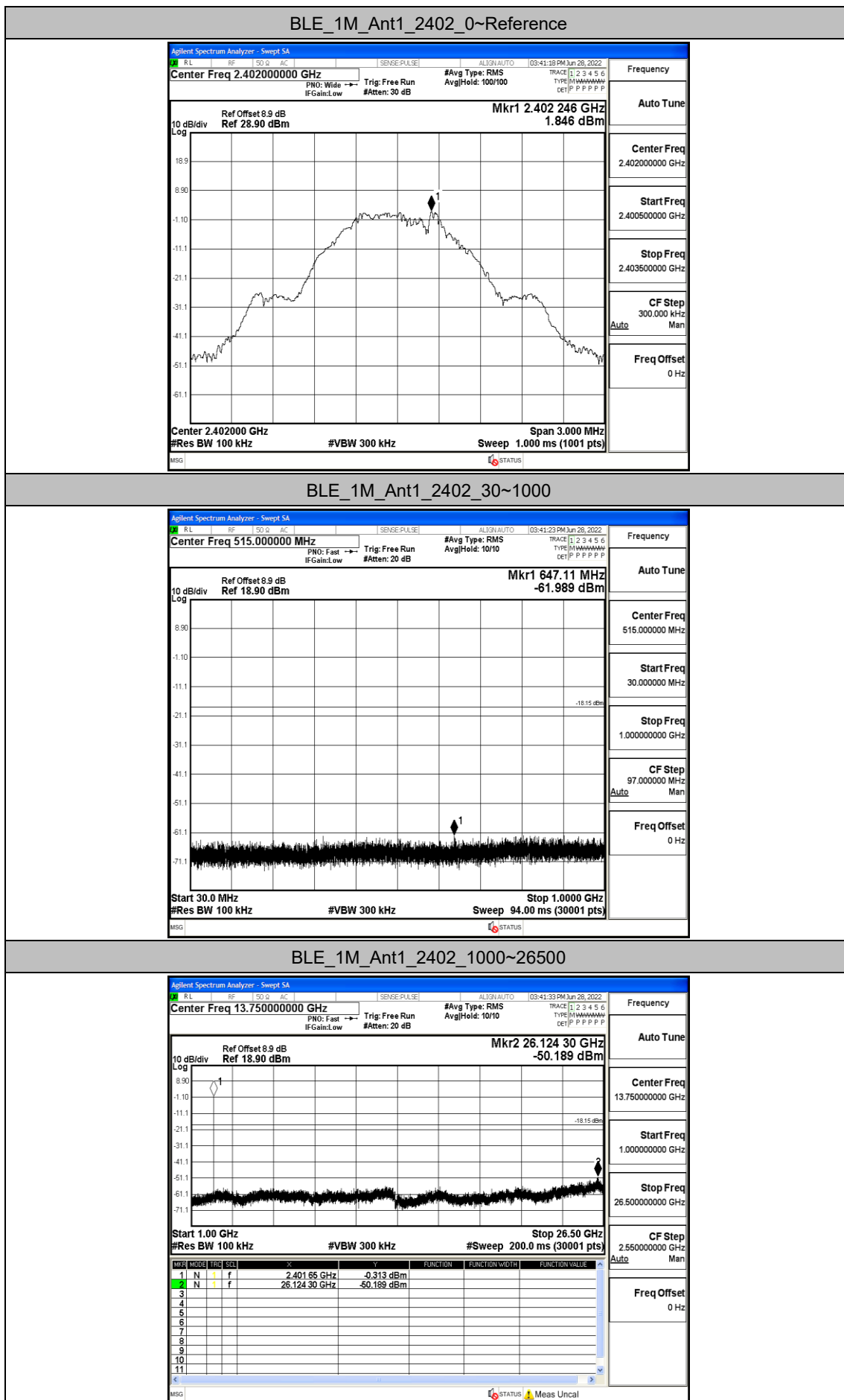


Appendix F: Conducted Spurious Emission

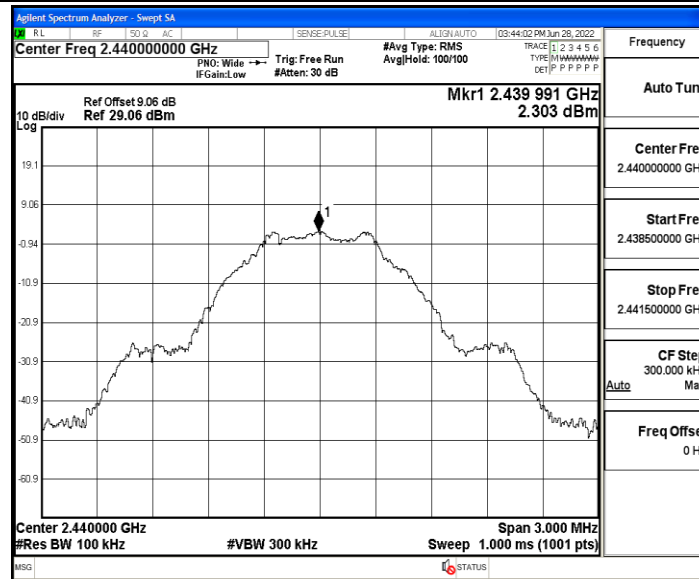
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.85	1.85	---	PASS
			30~1000	1.85	-61.99	≤-18.15	PASS
			1000~26500	1.85	-50.19	≤-18.15	PASS
		2440	Reference	2.30	2.30	---	PASS
			30~1000	2.30	-61.37	≤-17.7	PASS
			1000~26500	2.30	-51.48	≤-17.7	PASS
		2480	Reference	2.45	2.45	---	PASS
			30~1000	2.45	-61.69	≤-17.55	PASS
			1000~26500	2.45	-51.09	≤-17.55	PASS

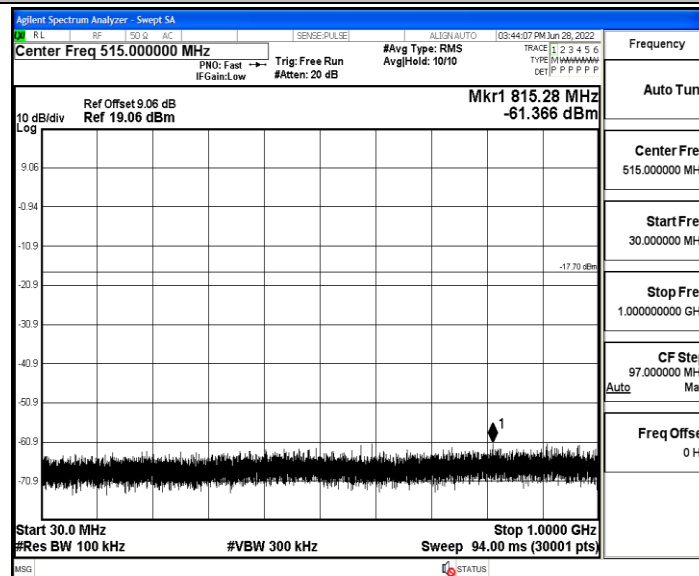
Test Graphs



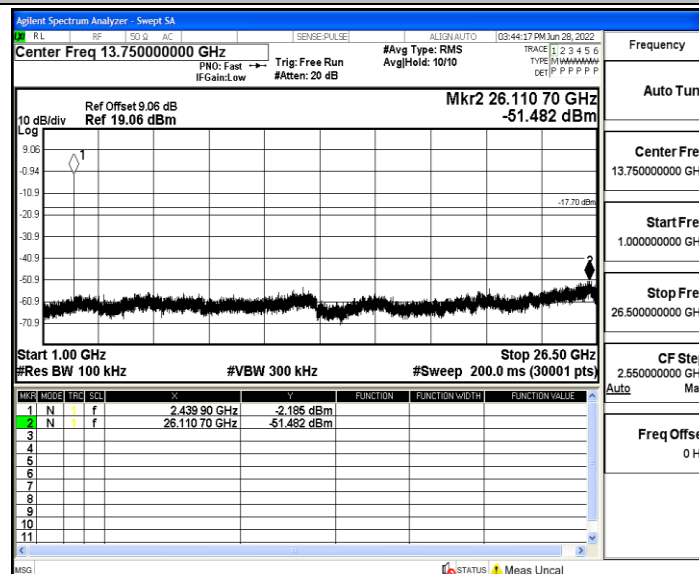
BLE_1M_Ant1_2440_0~Reference



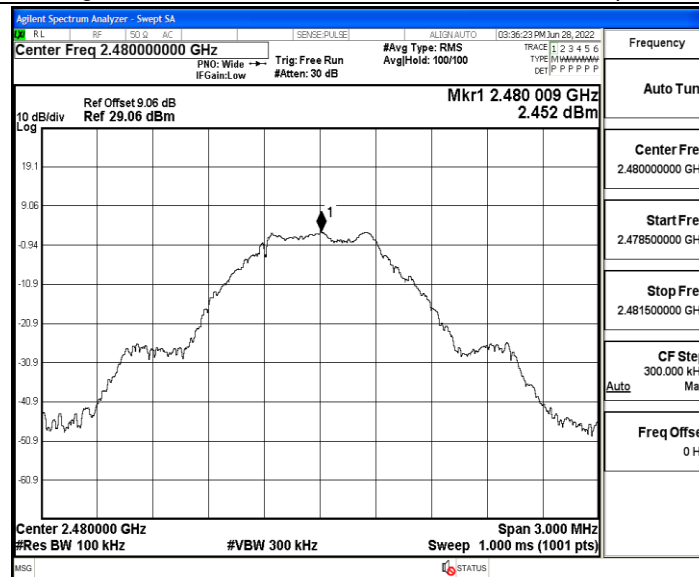
BLE_1M_Ant1_2440_30~1000



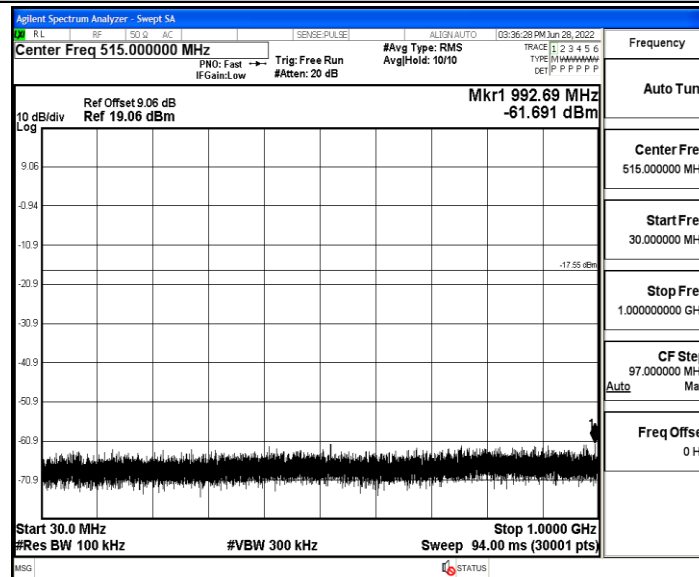
BLE_1M_Ant1_2440_1000~26500



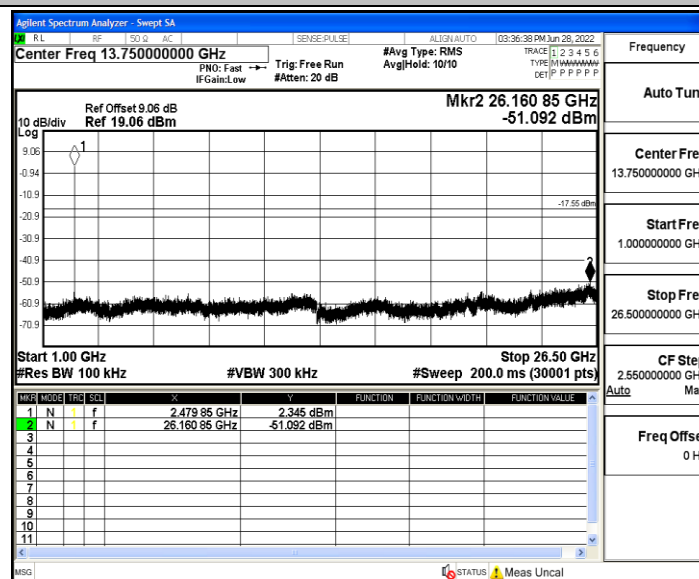
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

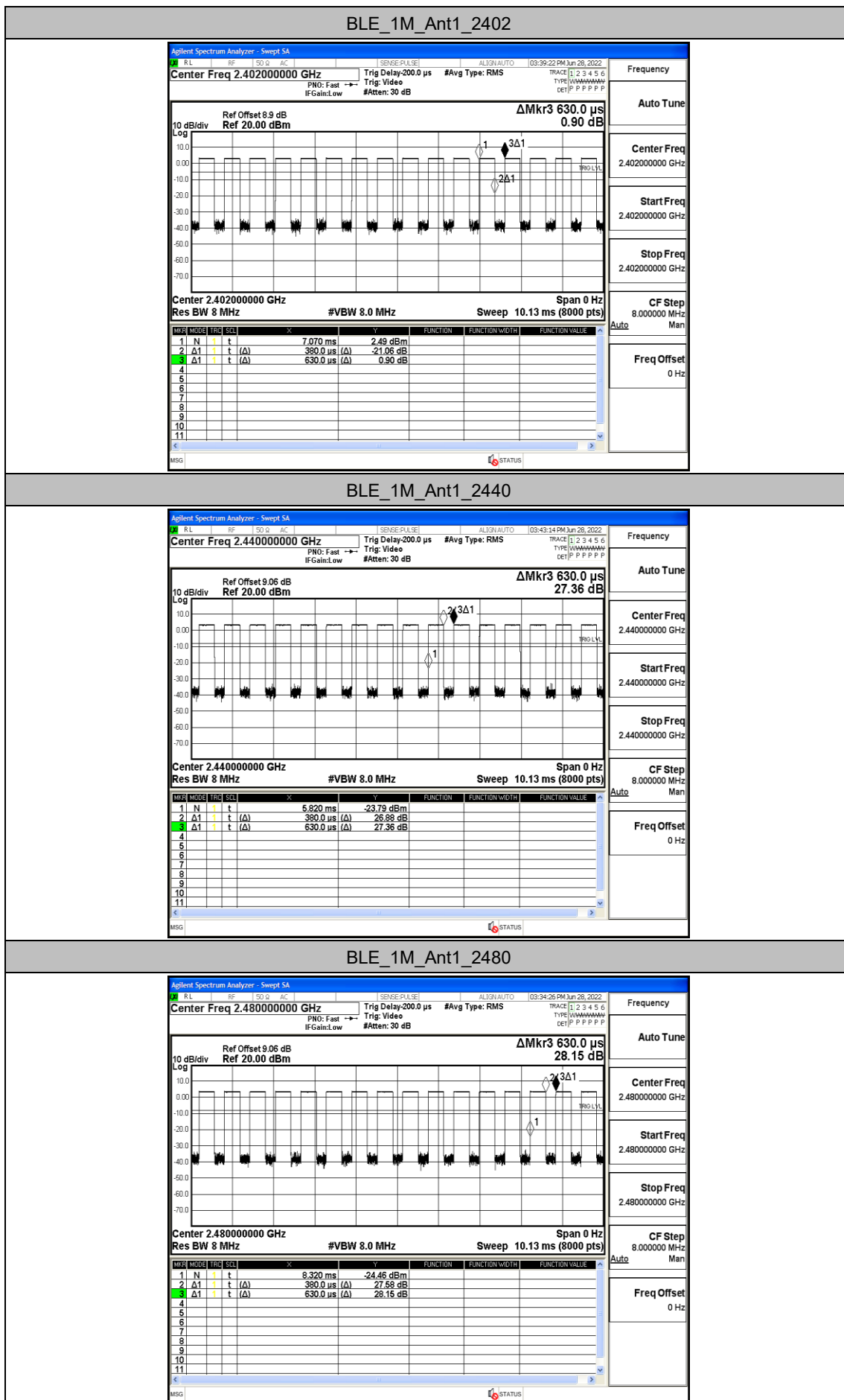


Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
BLE_1M	Ant1	2402	0.38	0.63	60.32	2.63
		2440	0.38	0.63	60.32	2.63
		2480	0.38	0.63	60.32	2.63

Test Graphs



Appendix H: Emissions in Restricted Bands

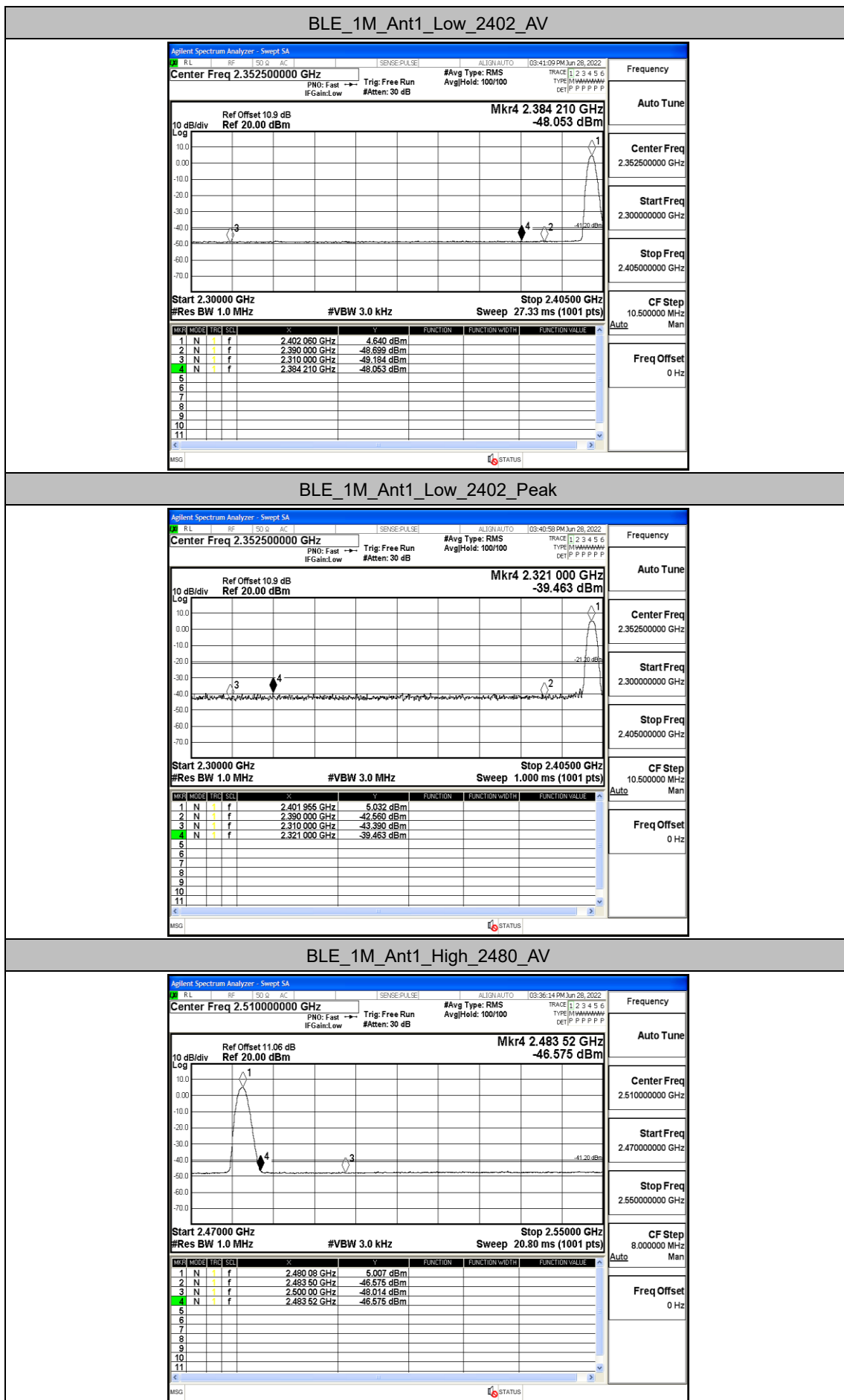
Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.18	≤-41.20	PASS
				AV	2384.210	-48.05	≤-41.20	PASS
				AV	2390.000	-48.7	≤-41.20	PASS
				Peak	2310.000	-43.39	≤-21.20	PASS
				Peak	2321.000	-39.46	≤-21.20	PASS
				Peak	2390.000	-42.56	≤-21.20	PASS
		High	2480	AV	2483.500	-46.58	≤-41.20	PASS
				AV	2483.520	-46.58	≤-41.20	PASS
				AV	2500.000	-48.01	≤-41.20	PASS
				Peak	2483.500	-40.36	≤-21.20	PASS
				Peak	2491.040	-38.47	≤-21.20	PASS
				Peak	2500.000	-41.38	≤-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_1M_Ant1_High_2480_Peak

