

FCC Appendix RF Test Data for BLE

FCC ID : 2BAQY-SVANAR1R

Company : HIFIMAN KUNSHAN TECHNOLOGY GROUP CO.,
LTD.

EUT : True Wireless Earbuds

Model Number : Svanar wireless 2-L

Report No. : CTA26071502001

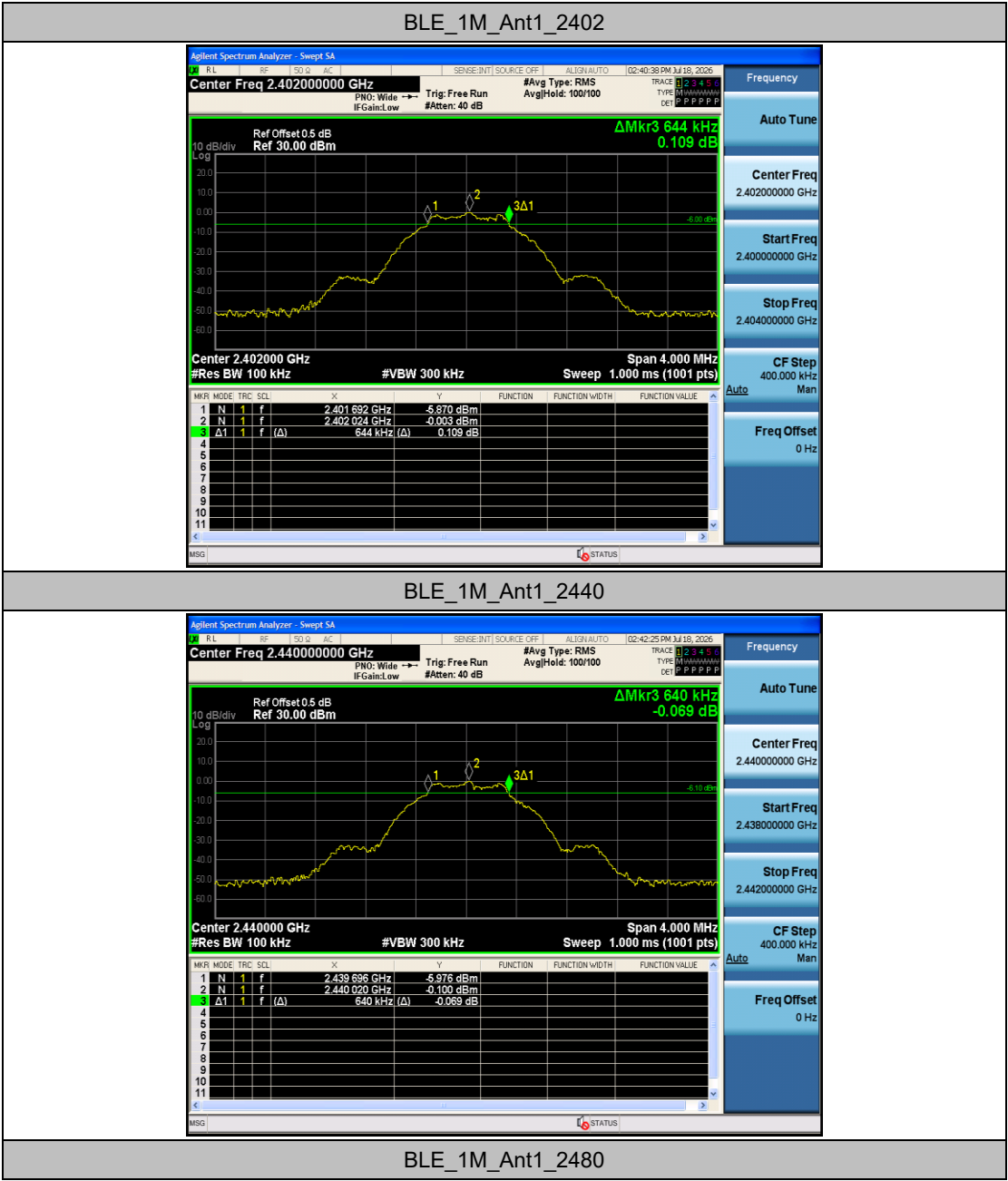
Reviewed By : Eric Wang

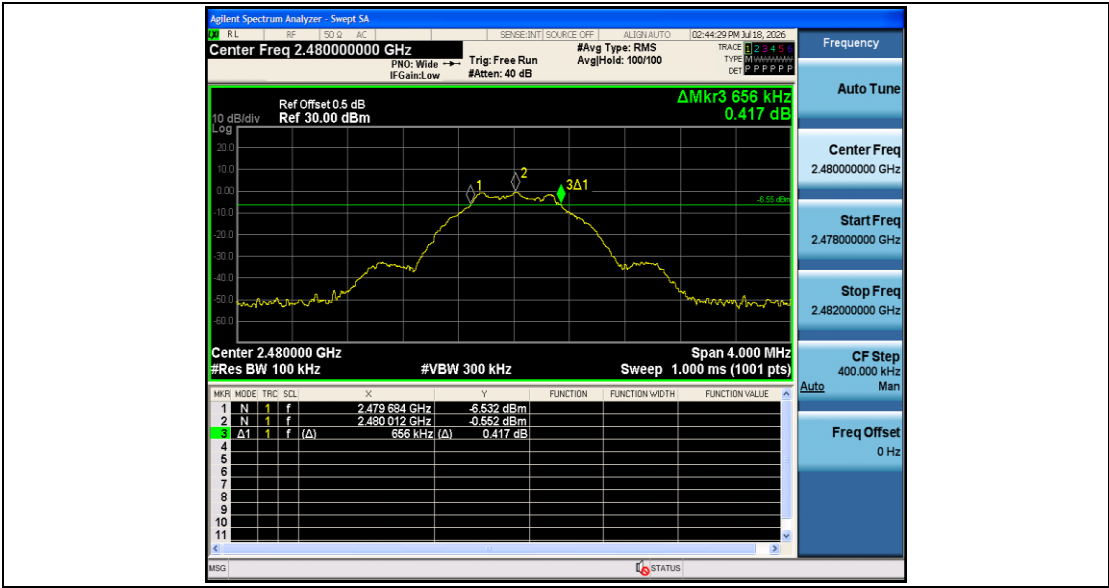
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.644	2401.692	2402.336	0.5	PASS
		2440	0.640	2439.696	2440.336	0.5	PASS
		2480	0.656	2479.684	2480.340	0.5	PASS

Test Graphs



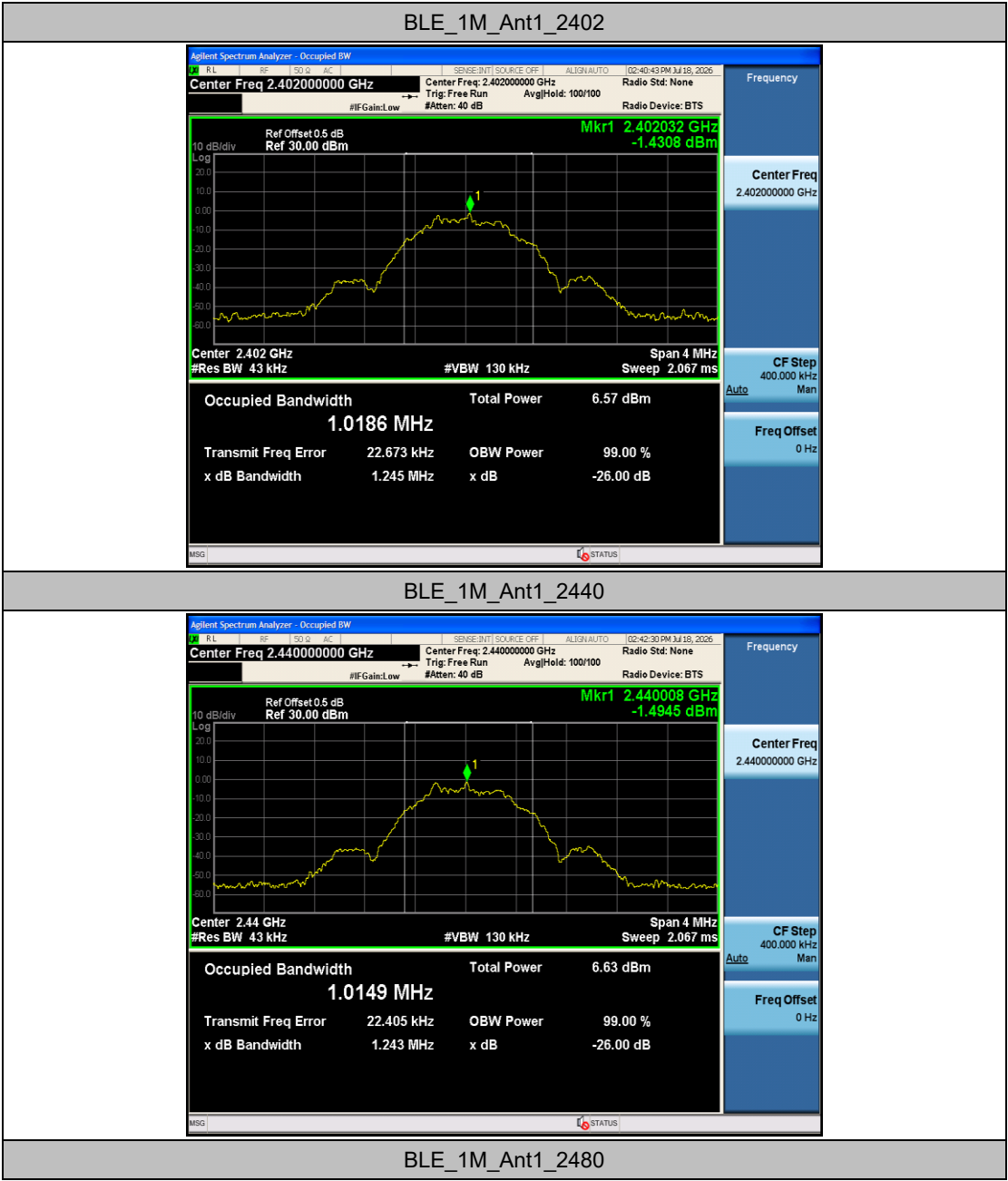


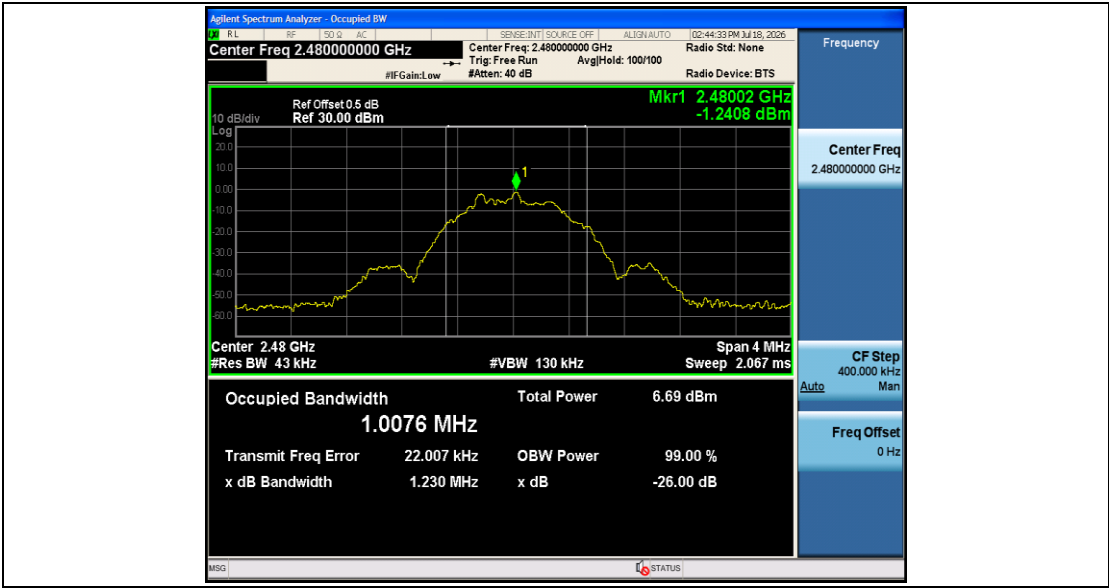
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0186	2401.5134	2402.5320	---	---
		2440	1.0149	2439.5150	2440.5299	---	---
		2480	1.0076	2479.5182	2480.5258	---	---

Test Graphs





Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.17	≤30	PASS
		2440	0.04	≤30	PASS
		2480	-0.23	≤30	PASS

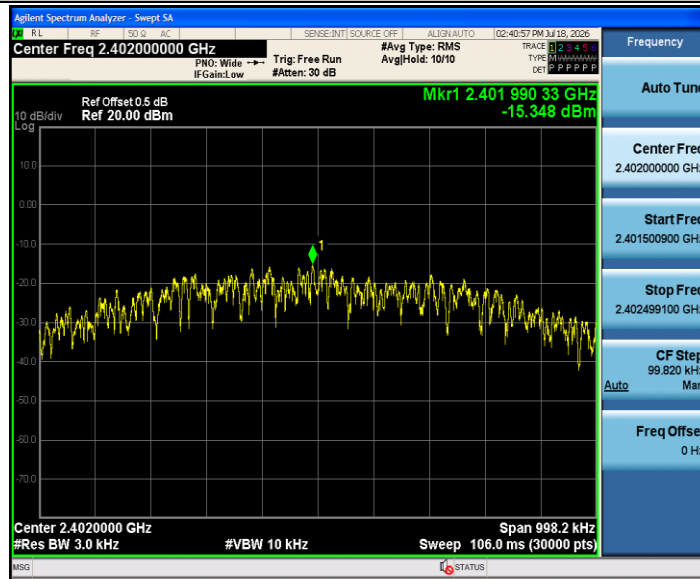
Appendix D: Maximum power spectral density

Test Result

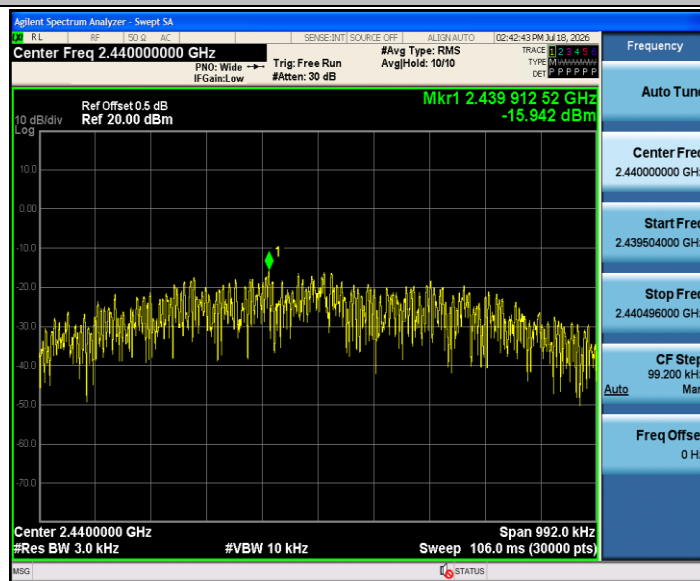
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.35	≤8.00	PASS
		2440	-15.94	≤8.00	PASS
		2480	-15.67	≤8.00	PASS

Test Graphs

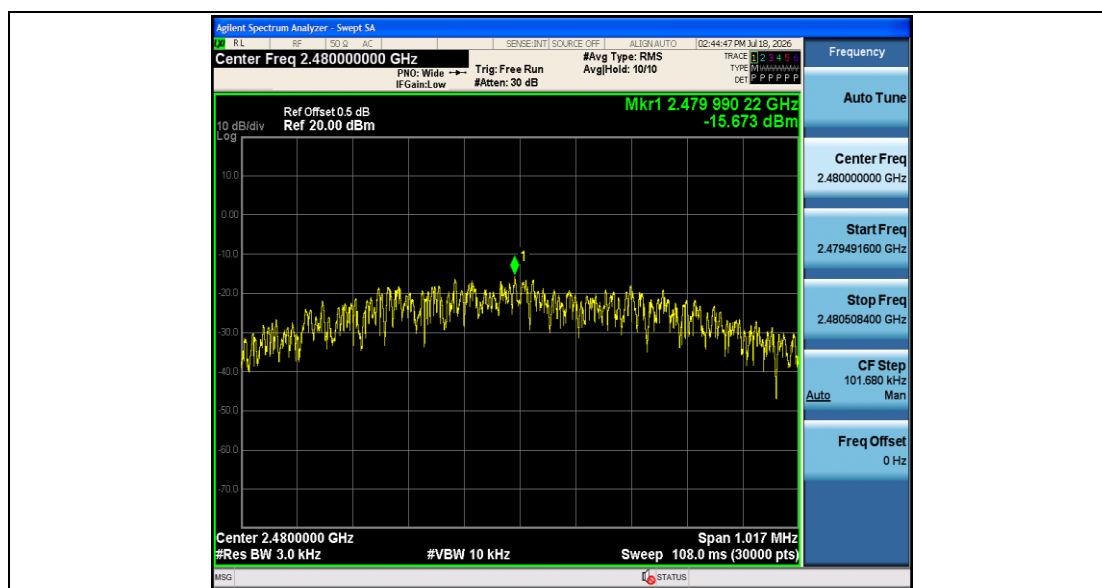
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

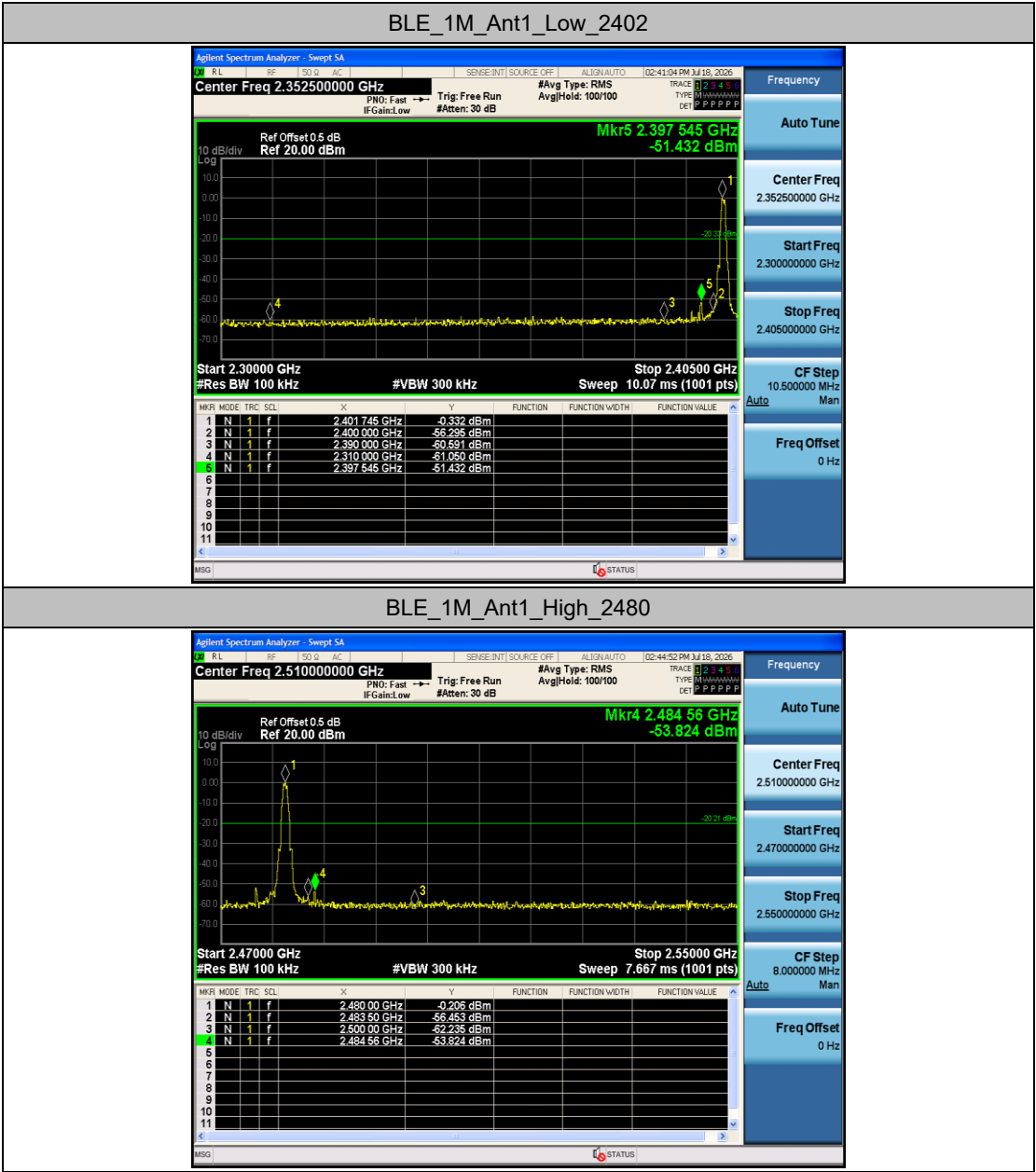


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.33	-51.43	≤ -20.33	PASS
		High	2480	-0.21	-53.82	≤ -20.21	PASS

Test Graphs

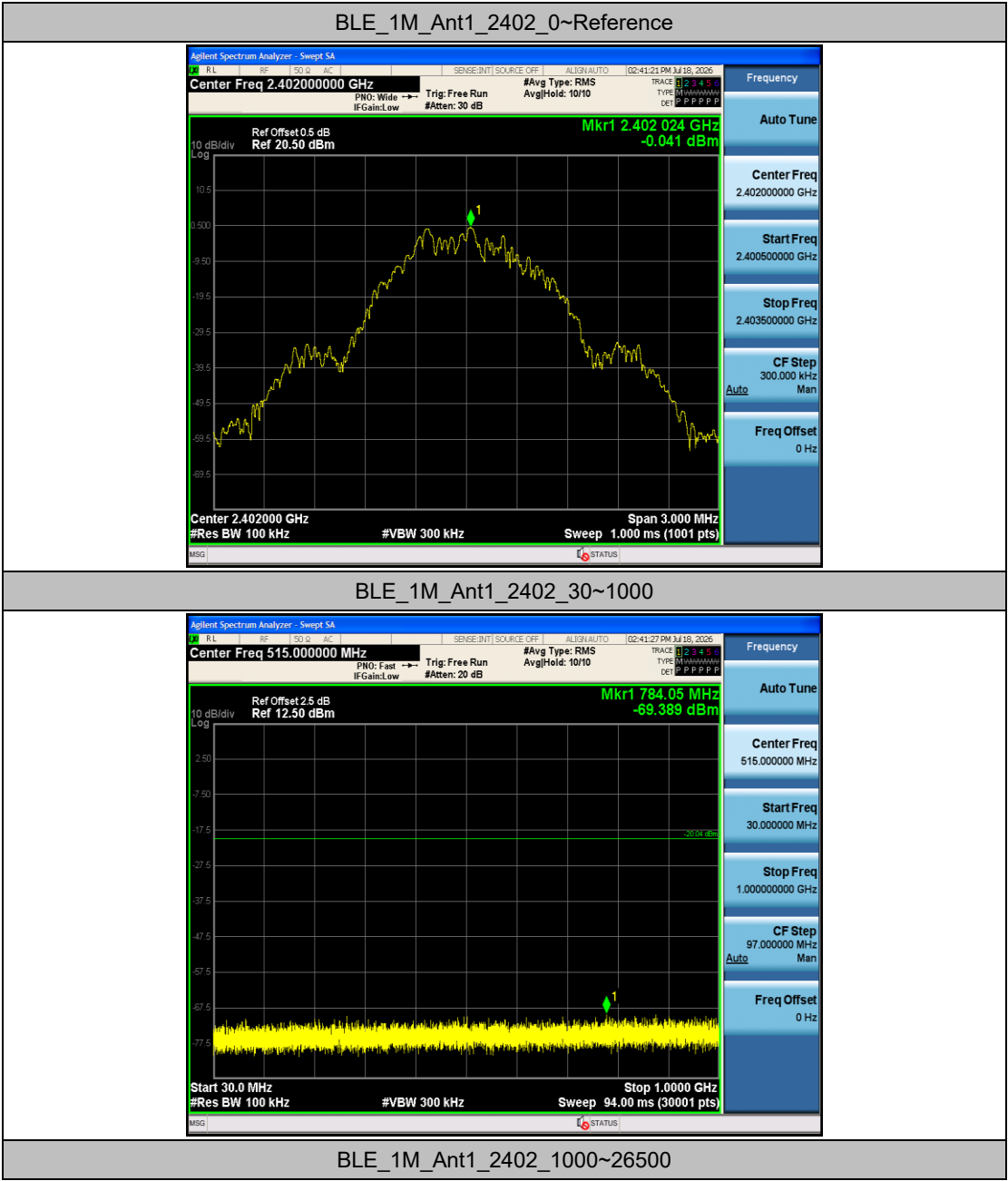


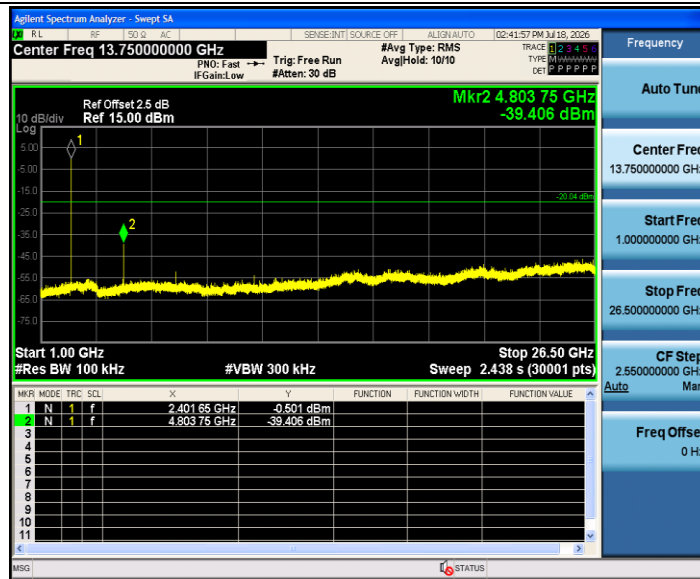
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.04	-0.04	---	PASS
			30~1000	-0.04	-69.39	≤-20.04	PASS
			1000~26500	-0.04	-39.41	≤-20.04	PASS
		2440	Reference	-1.33	-1.33	---	PASS
			30~1000	-1.33	-69.06	≤-21.33	PASS
			1000~26500	-1.33	-41.16	≤-21.33	PASS
		2480	Reference	-0.86	-0.86	---	PASS
			30~1000	-0.86	-69.27	≤-20.86	PASS
			1000~26500	-0.86	-42.14	≤-20.86	PASS

Test Graphs

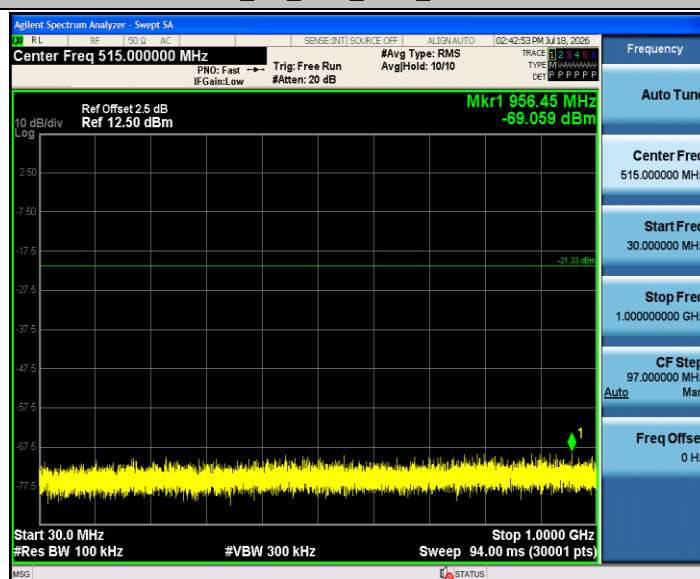




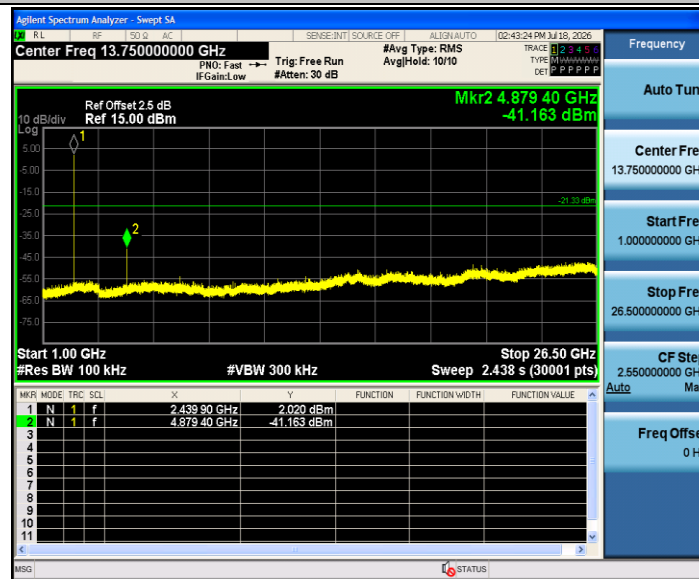
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



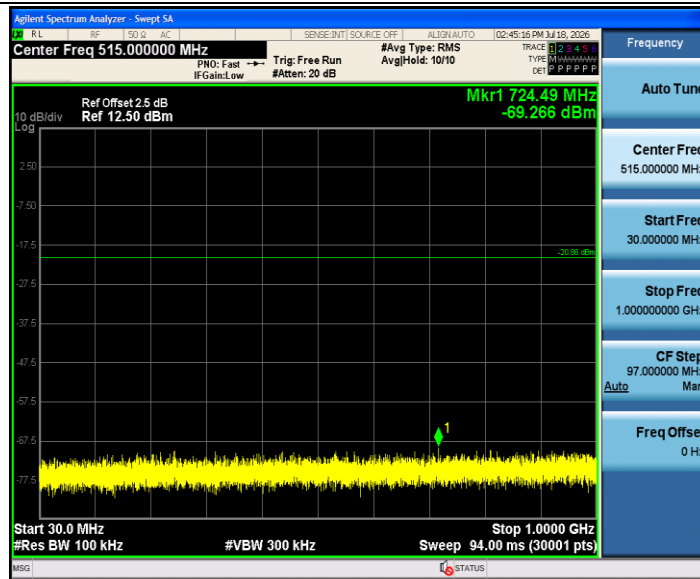
BLE_1M_Ant1_2440_1000~26500



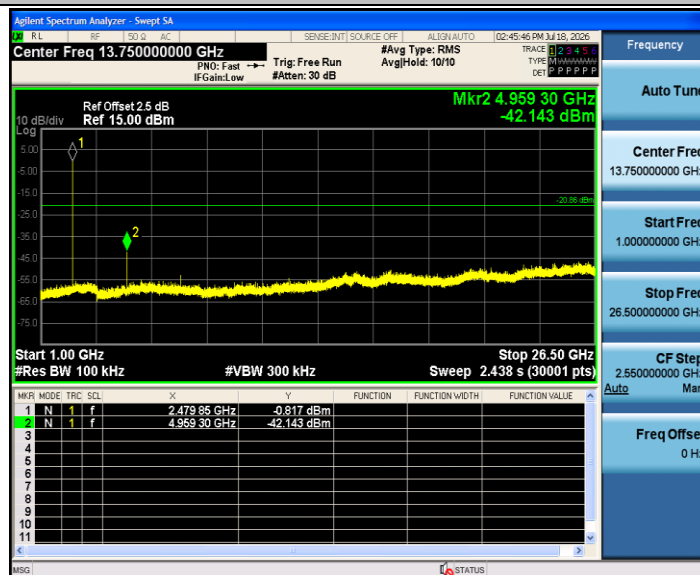
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

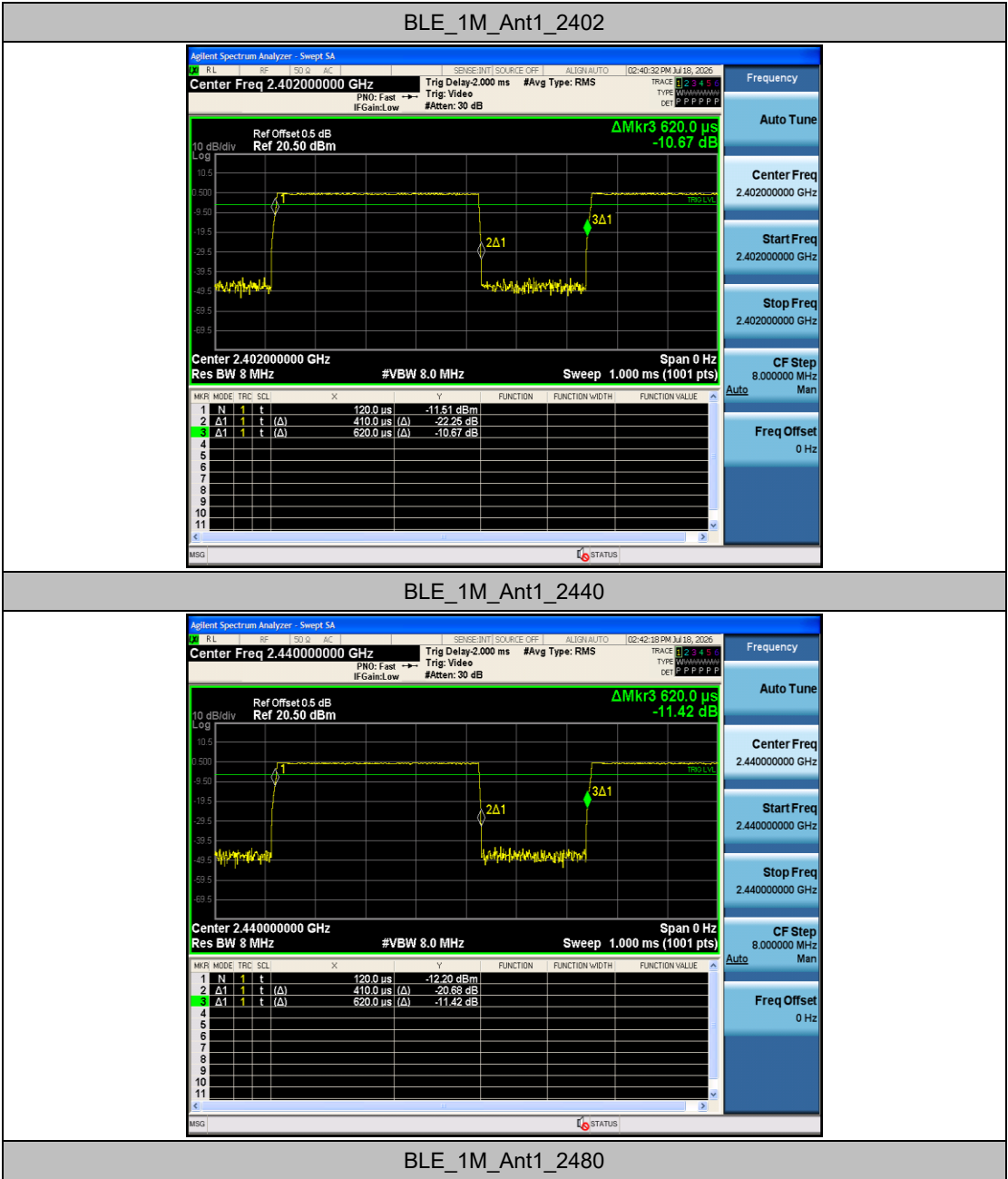


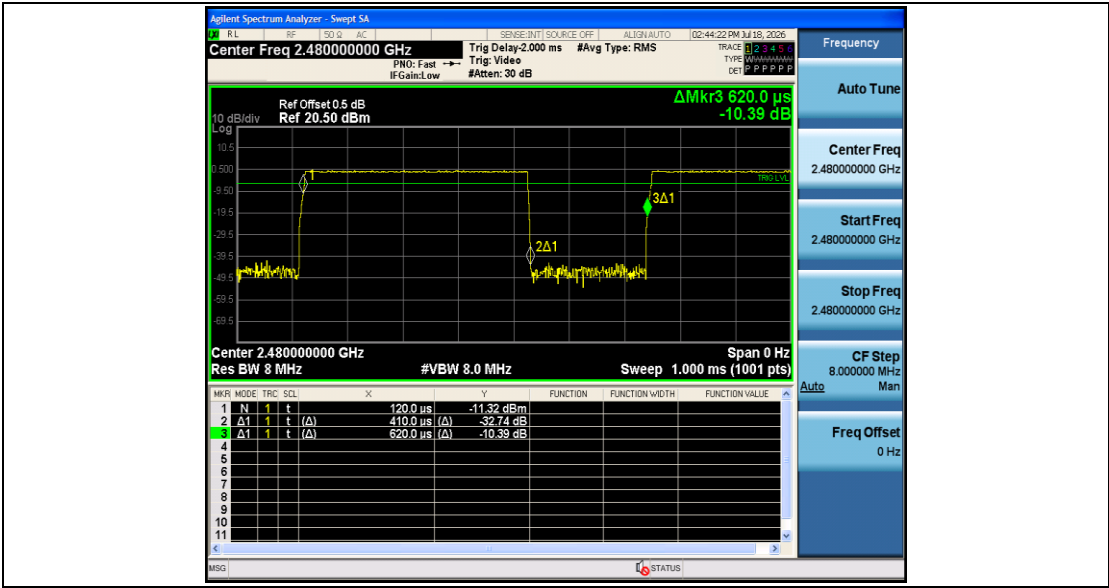
Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

Test Graphs





Appendix H: Emissions in Restricted Bands

Test Result

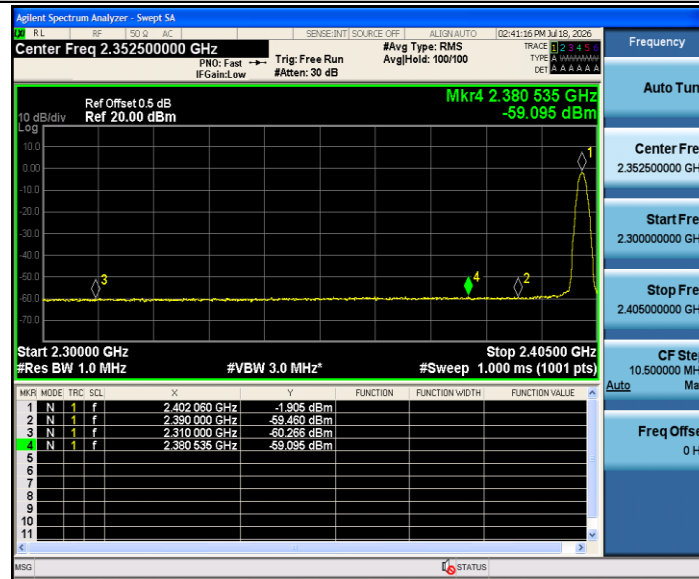
TestMode	Antenna	Channel Name	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.27	2.69	1.80	39.42	≤54	PASS
				AV	2380.535	-59.09	2.69	1.80	40.60	≤54	PASS
				AV	2390.000	-59.46	2.69	1.80	40.23	≤54	PASS
				Peak	2310.000	-52.09	2.69	0.00	45.80	≤74	PASS
				Peak	2382.110	-49.13	2.69	0.00	48.76	≤74	PASS
				Peak	2390.000	-52.13	2.69	0.00	45.76	≤74	PASS
		High	2480	AV	2483.500	-57.63	2.69	1.80	42.06	≤54	PASS
				AV	2483.520	-57.63	2.69	1.80	42.06	≤54	PASS
				AV	2500.000	-58.82	2.69	1.80	40.87	≤54	PASS
				Peak	2483.500	-49.71	2.69	0.00	48.18	≤74	PASS
				Peak	2484.320	-46.23	2.69	0.00	51.66	≤74	PASS
				Peak	2500.000	-51.75	2.69	0.00	46.14	≤74	PASS

Note:

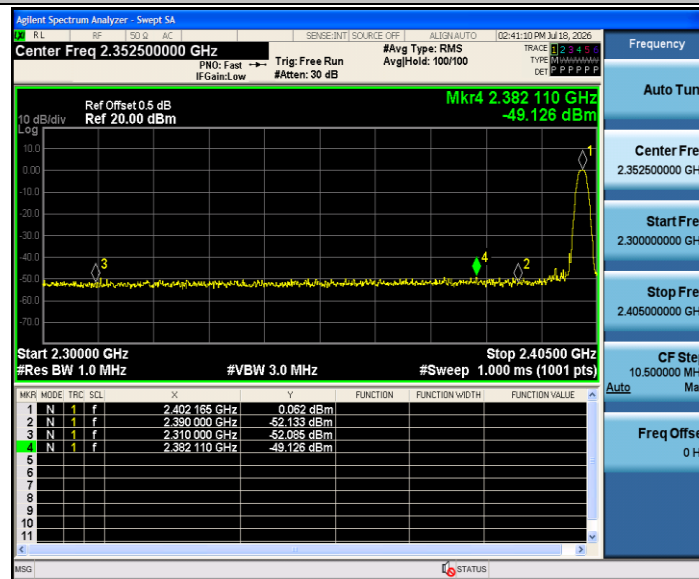
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

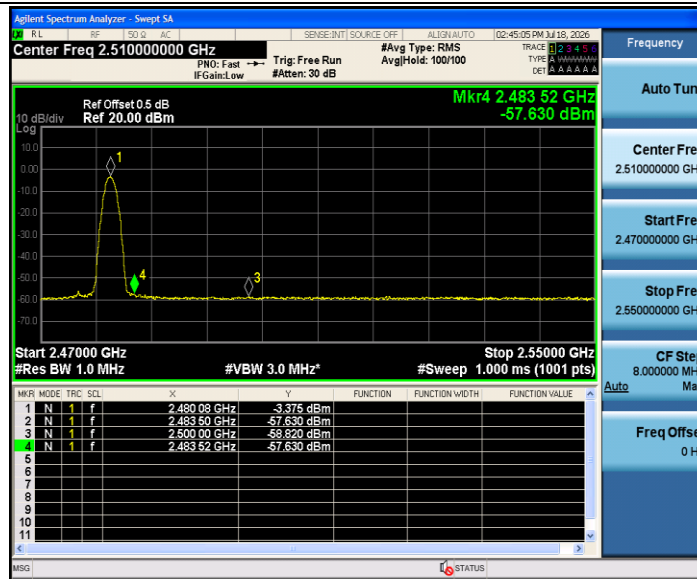
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

