

FCC Appendix RF Test Data for BLE

FCC ID : **HQXTT-05**

Company : **Sysgration Ltd.**

EUT : **TPMS Programming Tool**

Model Number : **TT-05**

Report No. : **CTA26060301101**

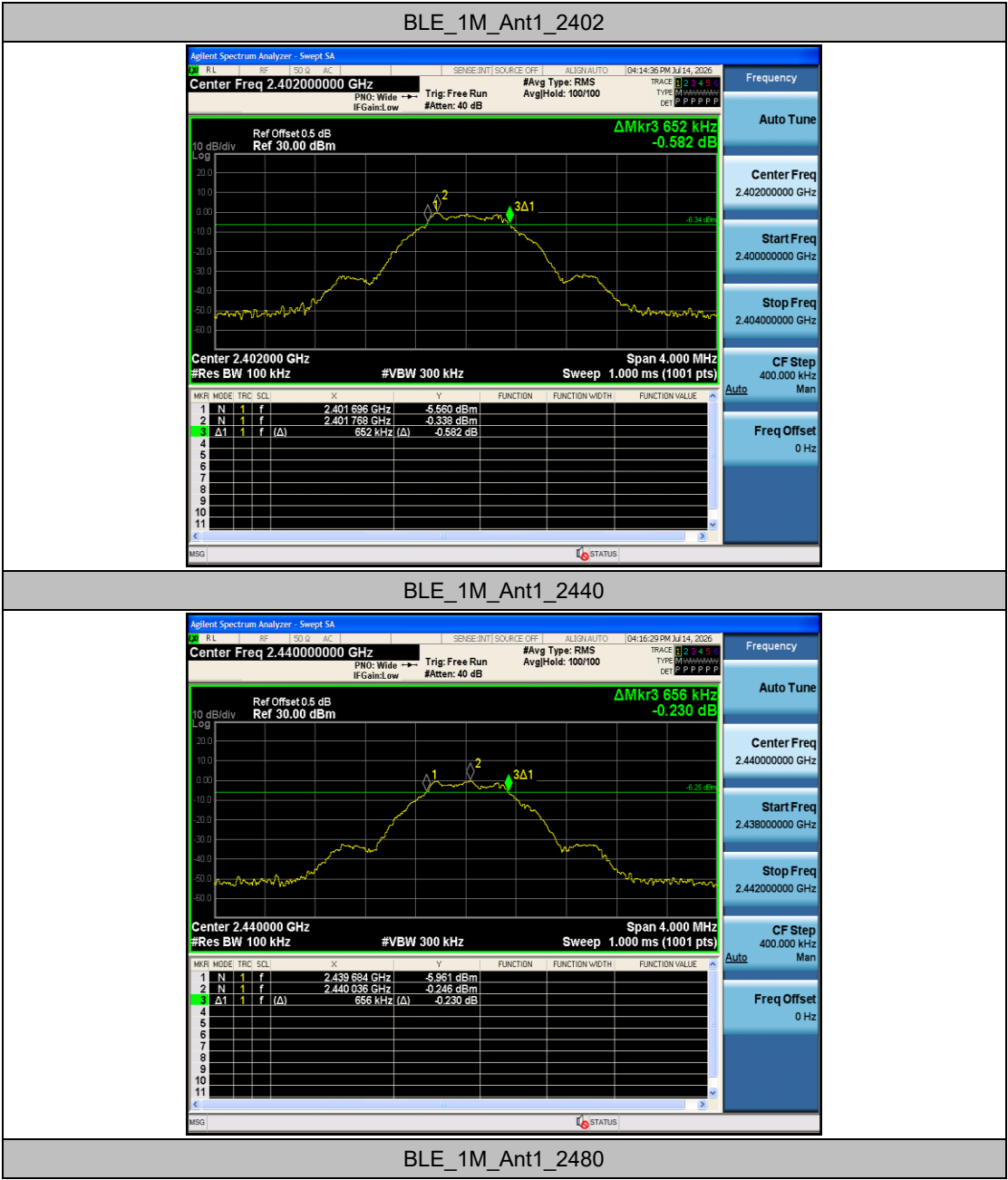
Reviewed By : **Eric Wang**

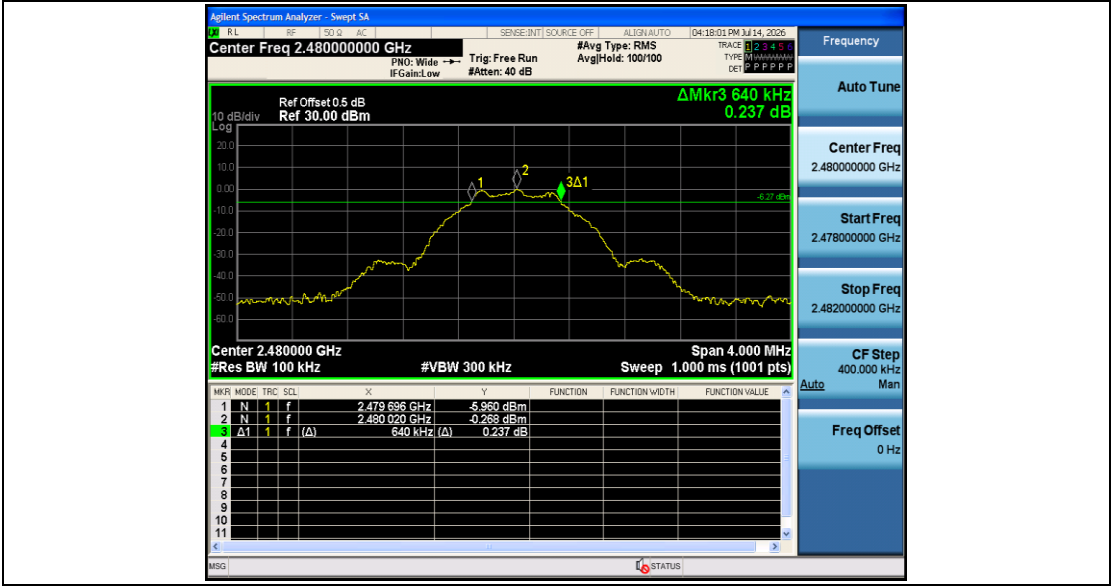
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.652	2401.696	2402.348	0.5	PASS
		2440	0.656	2439.684	2440.340	0.5	PASS
		2480	0.640	2479.696	2480.336	0.5	PASS

Test Graphs



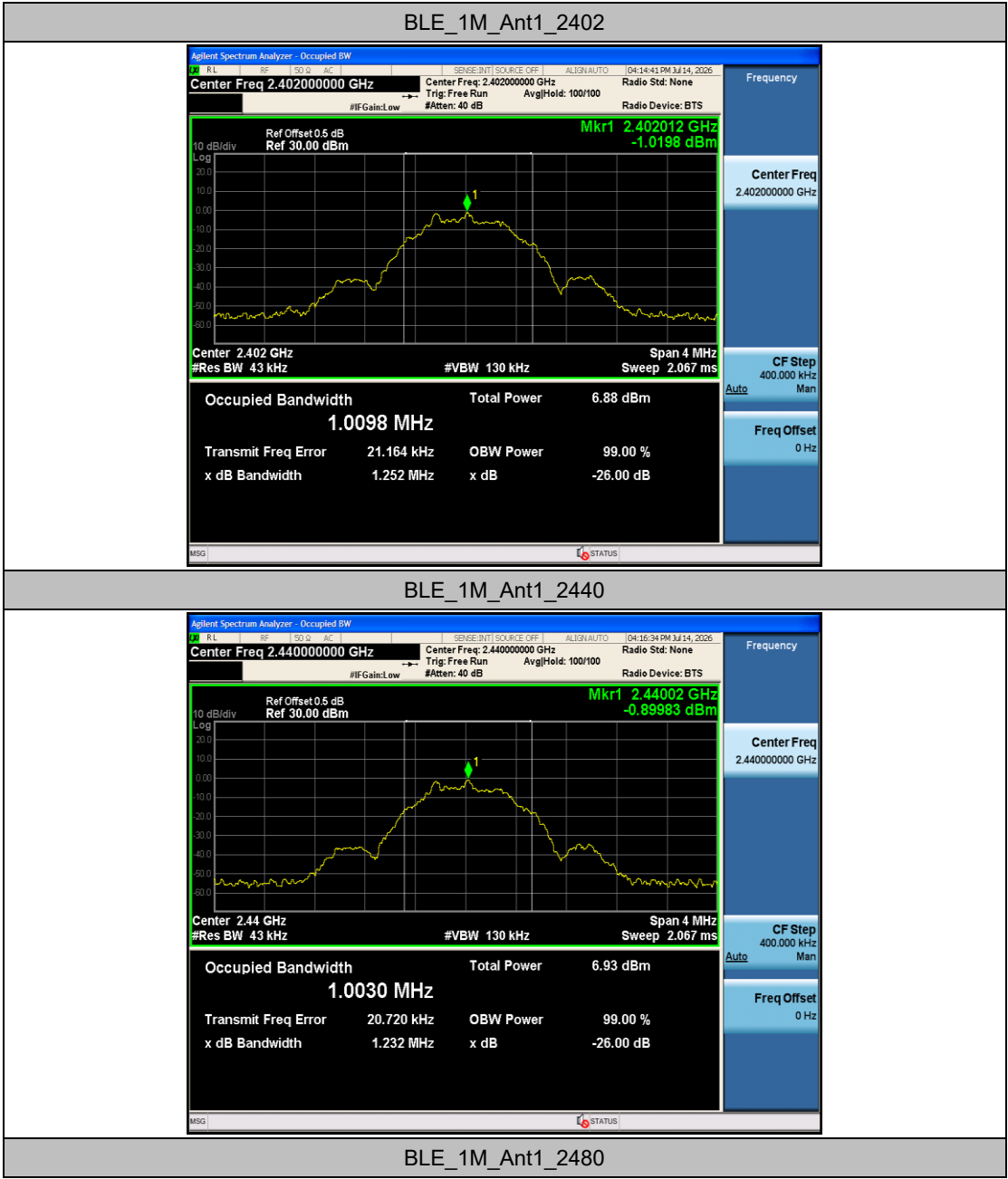


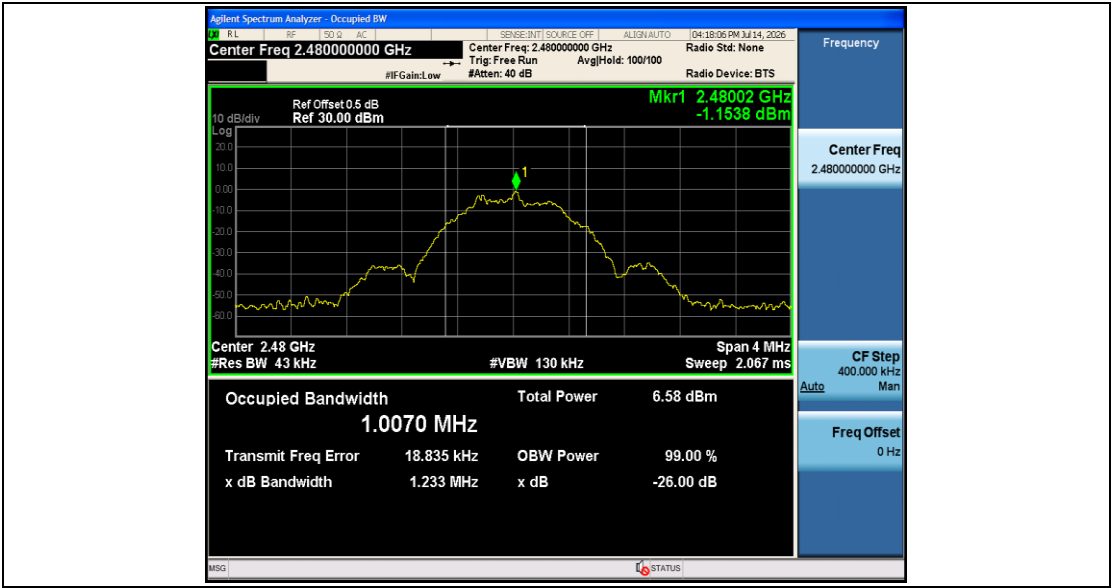
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0098	2401.5163	2402.5261	---	---
		2440	1.0030	2439.5192	2440.5222	---	---
		2480	1.0070	2479.5153	2480.5223	---	---

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	0.19	≤30	PASS
		2440	0.11	≤30	PASS
		2480	-0.11	≤30	PASS

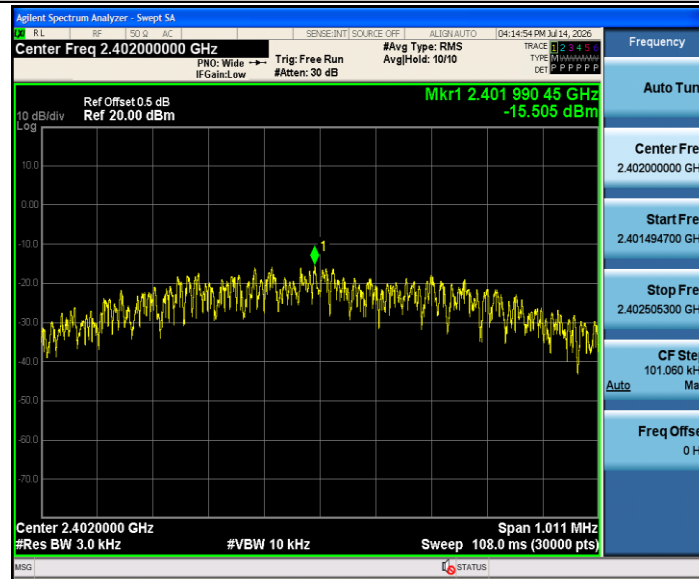
Appendix D: Maximum power spectral density

Test Result

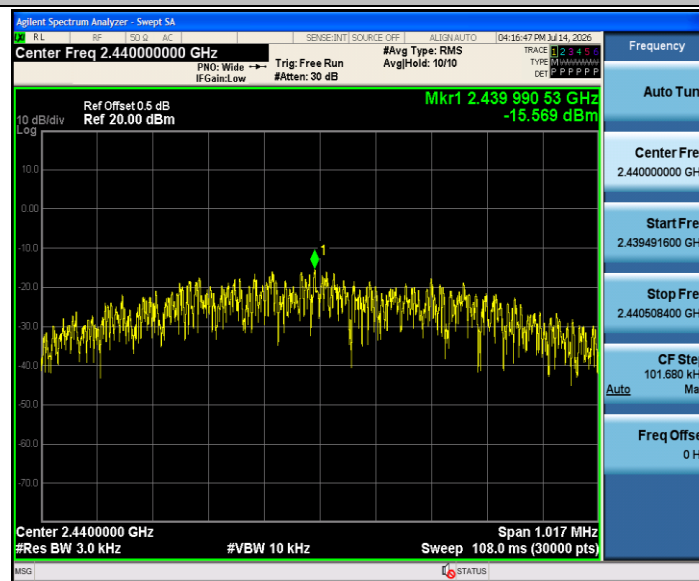
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.51	≤8.00	PASS
		2440	-15.57	≤8.00	PASS
		2480	-15.77	≤8.00	PASS

Test Graphs

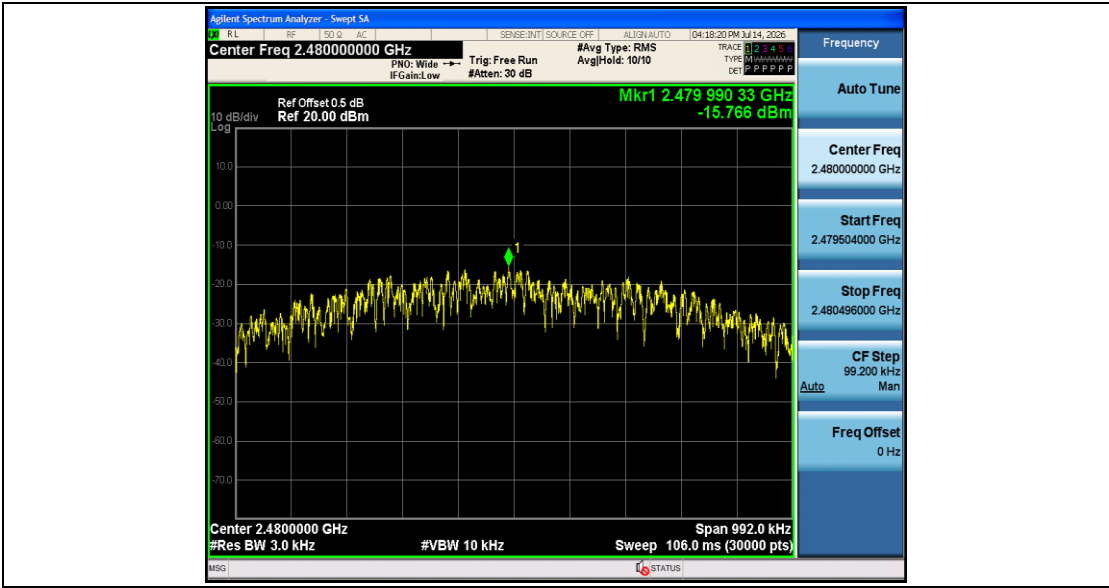
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

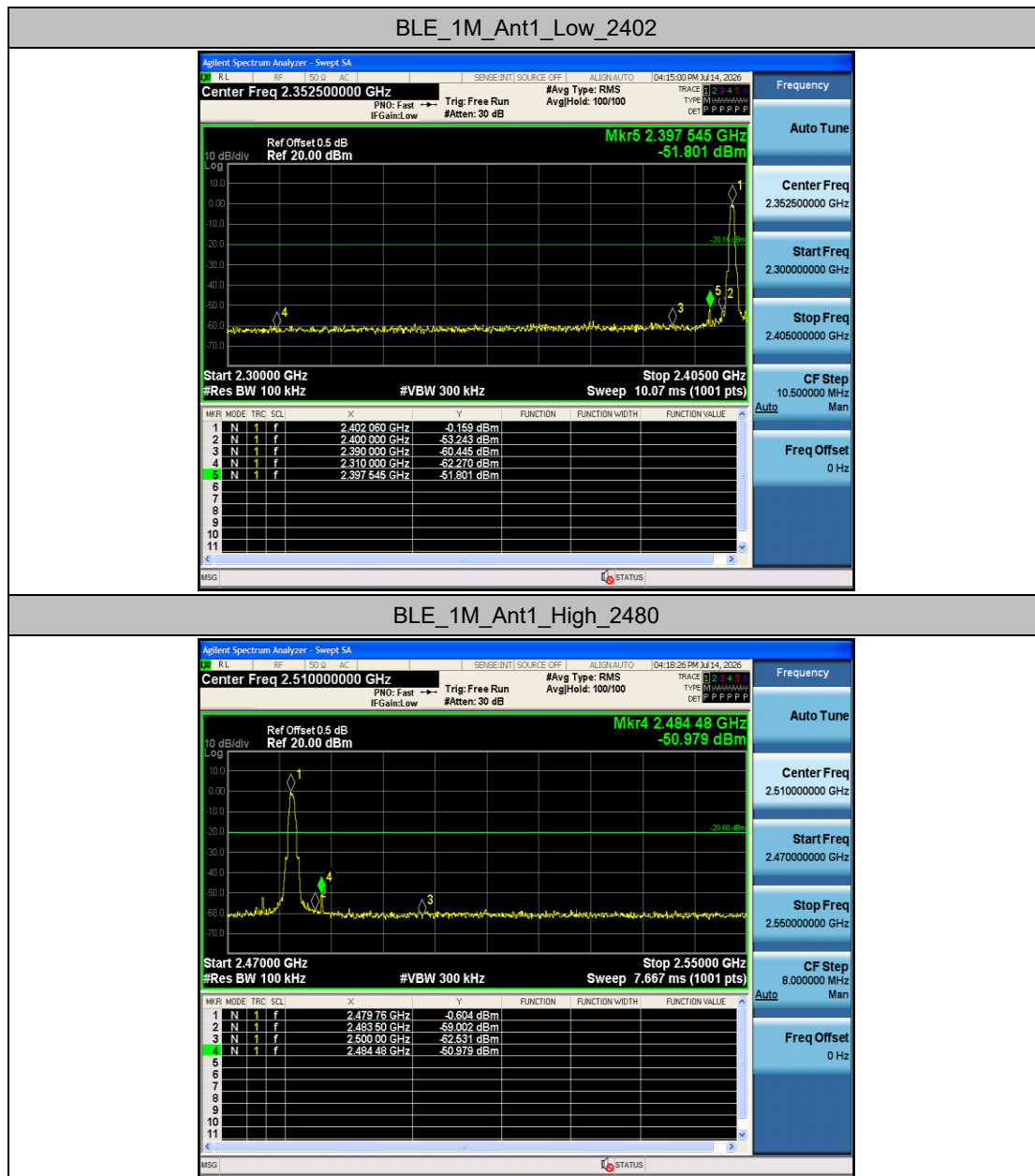


Appendix E Band edge measurements

Test Result

TestMode	Antenna	Channel	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.16	-51.8	≤-20.16	PASS
		High	2480	-0.60	-50.98	≤-20.6	PASS

Test Graphs

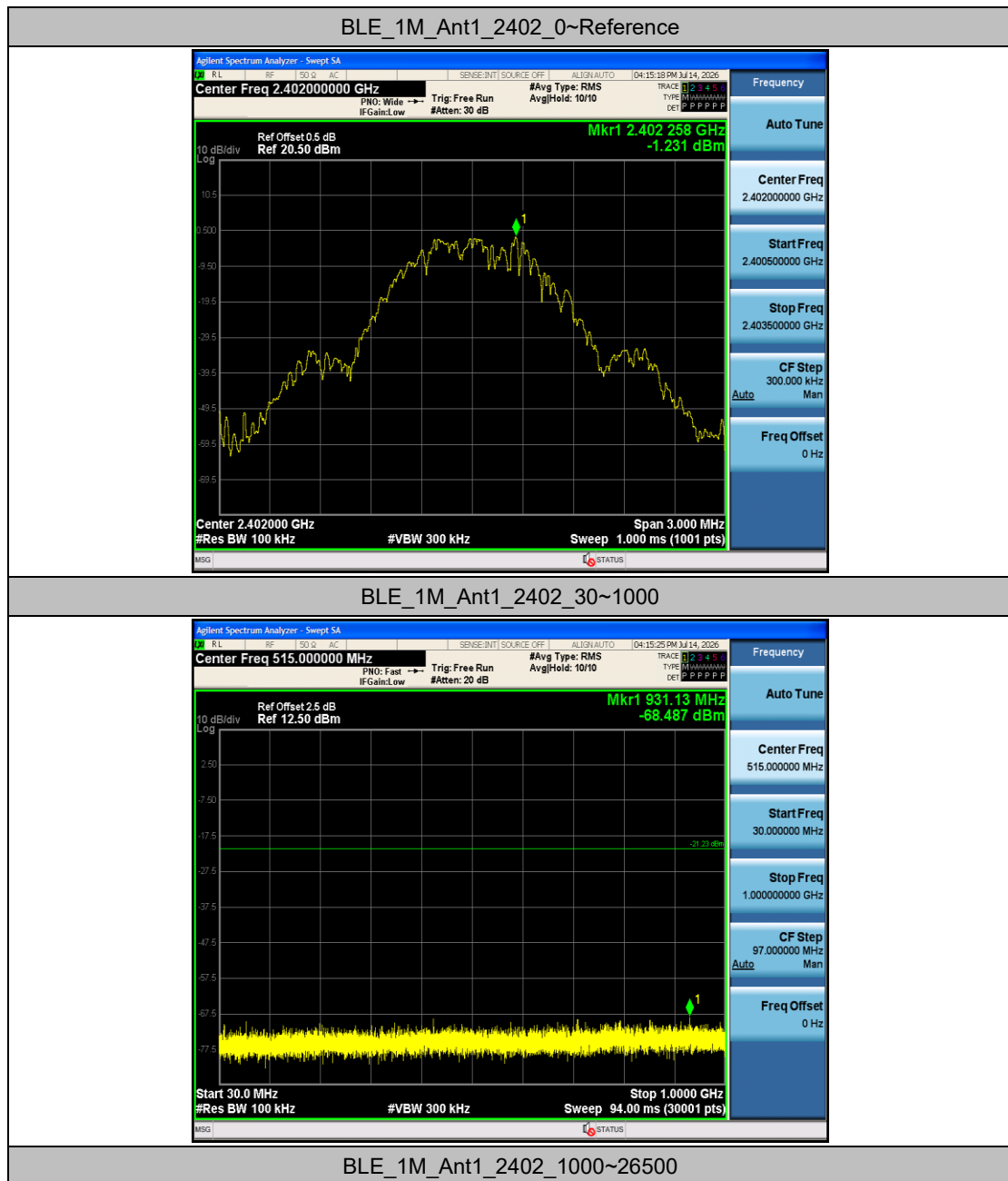


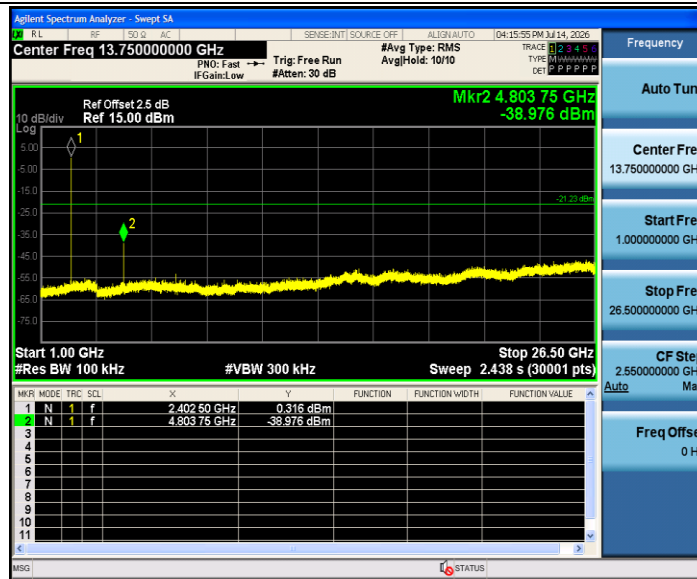
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-1.23	-1.23	---	PASS
			30~1000	-1.23	-68.49	≤-21.23	PASS
			1000~26500	-1.23	-38.98	≤-21.23	PASS
		2440	Reference	-0.22	-0.22	---	PASS
			30~1000	-0.22	-69.3	≤-20.22	PASS
			1000~26500	-0.22	-41.15	≤-20.22	PASS
		2480	Reference	-0.38	-0.38	---	PASS
			30~1000	-0.38	-69.14	≤-20.38	PASS
			1000~26500	-0.38	-41.5	≤-20.38	PASS

Test Graphs

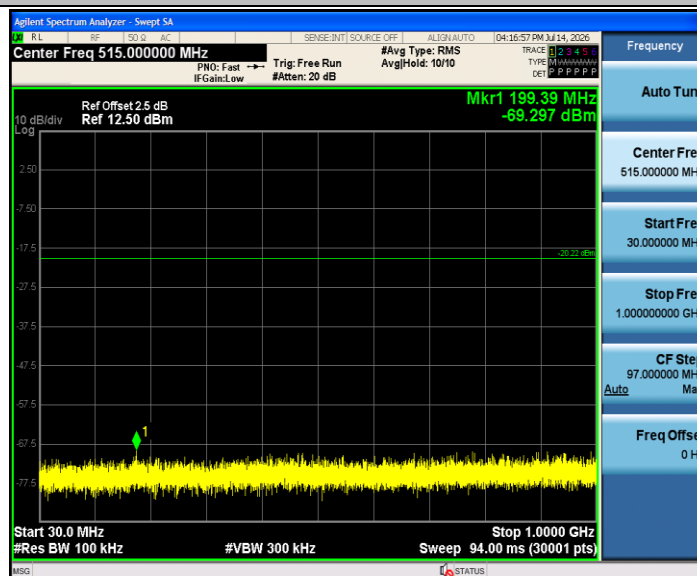




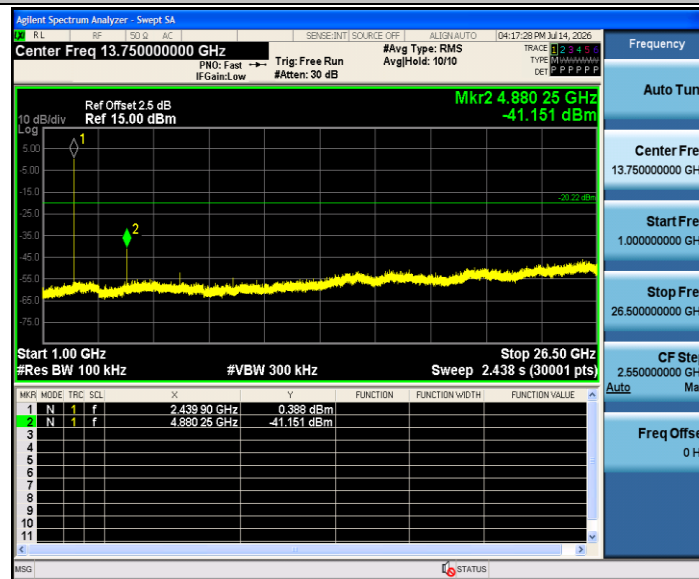
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



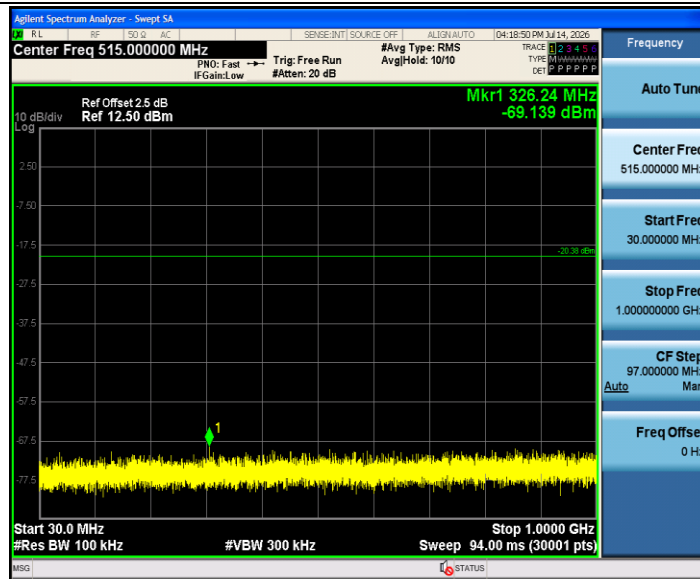
BLE_1M_Ant1_2440_1000~26500



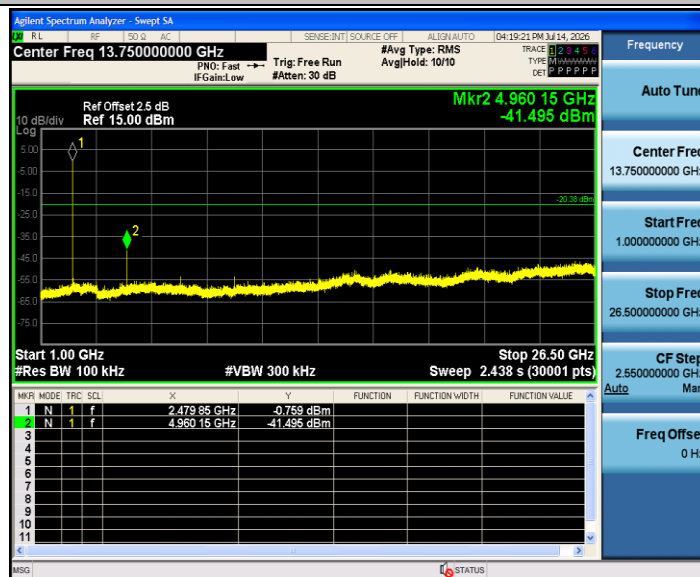
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



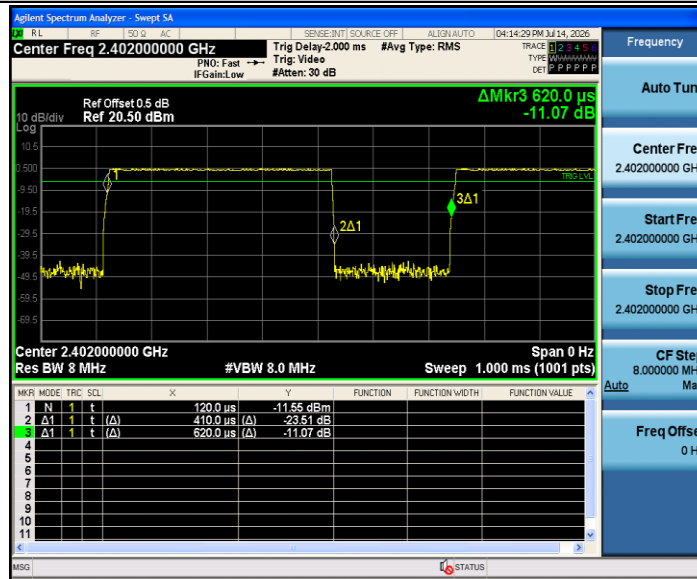
Appendix G: Duty Cycle

Test Result

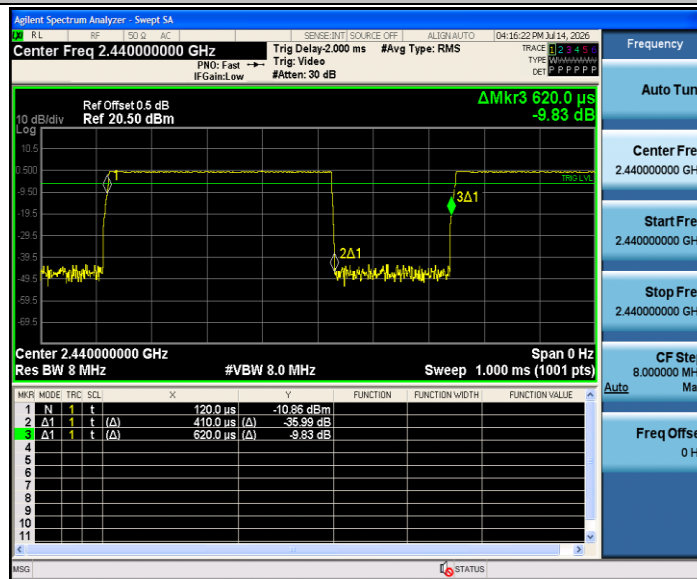
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

Test Graphs

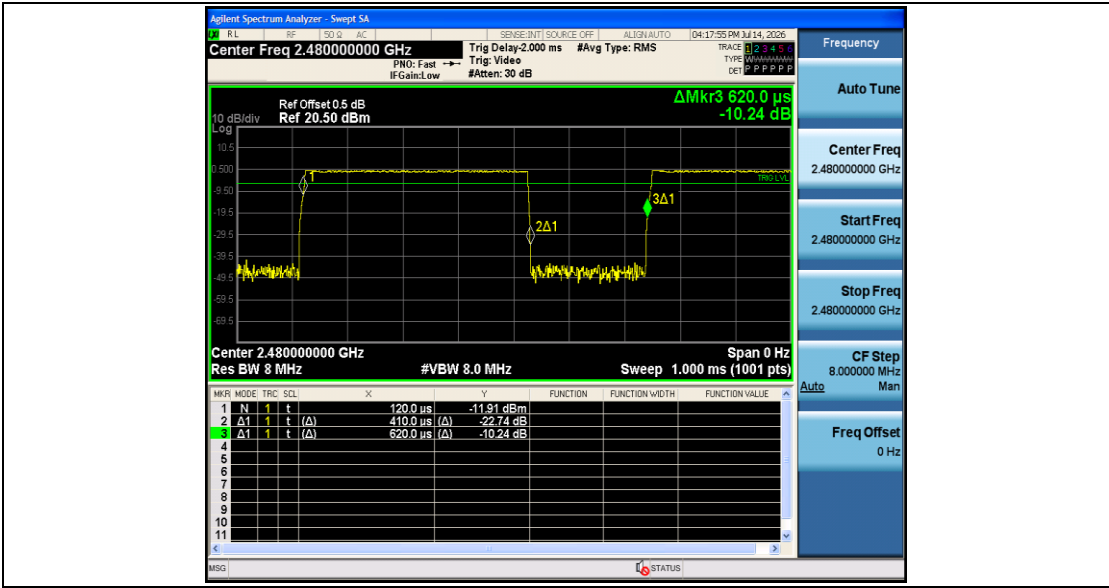
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



Appendix H: Emissions in Restricted Bands

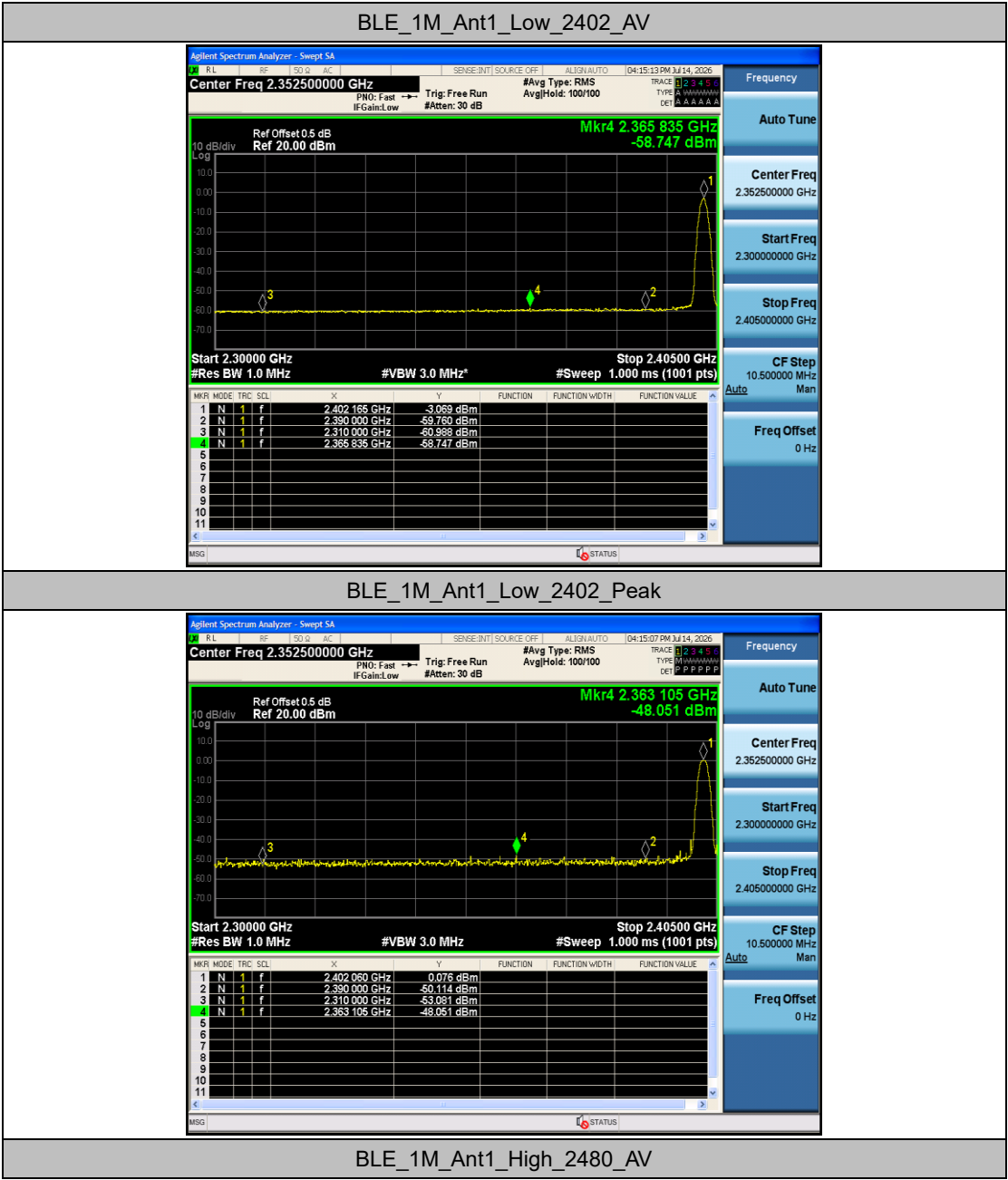
Test Result

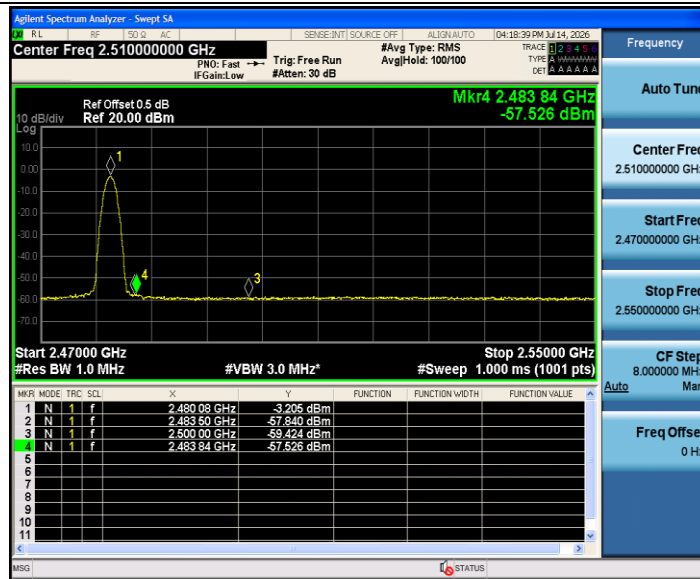
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.99	2.00	1.80	38.01	≤54	PASS
				AV	2365.835	-58.75	2.00	1.80	40.25	≤54	PASS
				AV	2390.000	-59.76	2.00	1.80	39.24	≤54	PASS
				Peak	2310.000	-53.08	2.00	0.00	44.12	≤74	PASS
				Peak	2363.105	-48.05	2.00	0.00	49.15	≤74	PASS
				Peak	2390.000	-50.11	2.00	0.00	47.09	≤74	PASS
		High	2480	AV	2483.500	-57.84	2.00	1.80	41.16	≤54	PASS
				AV	2483.840	-57.53	2.00	1.80	41.47	≤54	PASS
				AV	2500.000	-59.42	2.00	1.80	39.58	≤54	PASS
				Peak	2483.500	-48.97	2.00	0.00	48.23	≤74	PASS
				Peak	2484.640	-43.75	2.00	0.00	53.45	≤74	PASS
				Peak	2500.000	-51.19	2.00	0.00	46.01	≤74	PASS

Note:

1. 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

