

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: String light

Test Model: HCL-001

Environmental Conditions

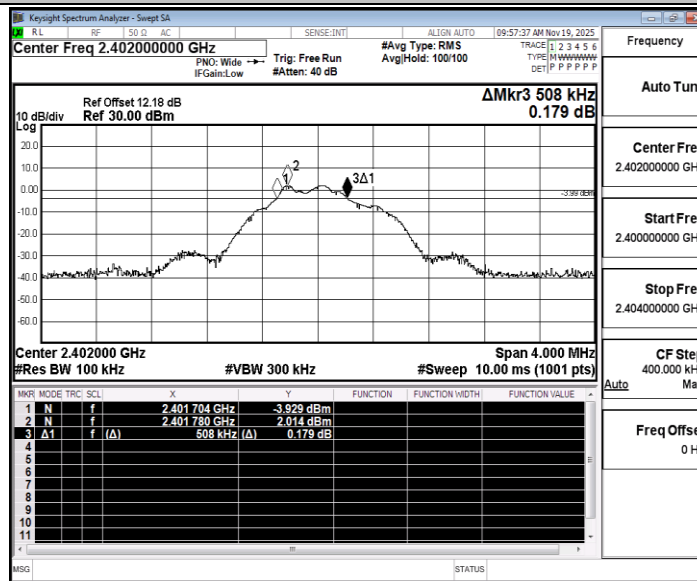
Temperature:	23.8 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jone.Lee
Supervised by:	Yan Chen

A.1 DTS Bandwidth

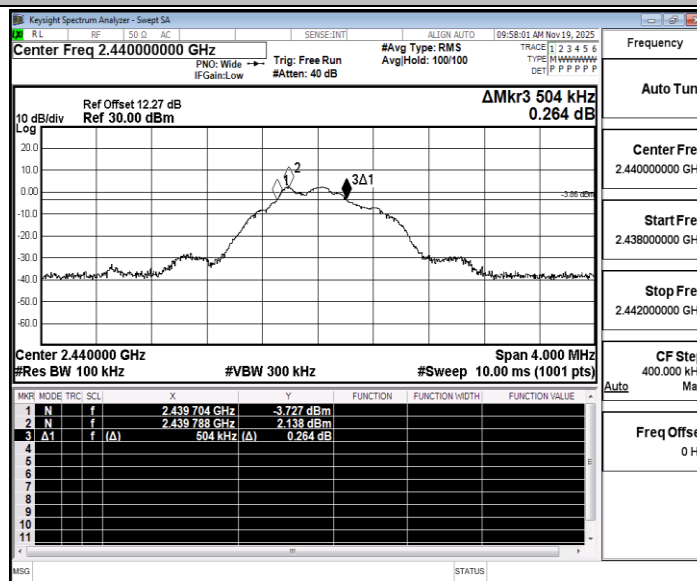
Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.508	2401.704	2402.212	0.5	PASS
		2440	0.504	2439.704	2440.208	0.5	PASS
		2480	0.504	2479.704	2480.208	0.5	PASS

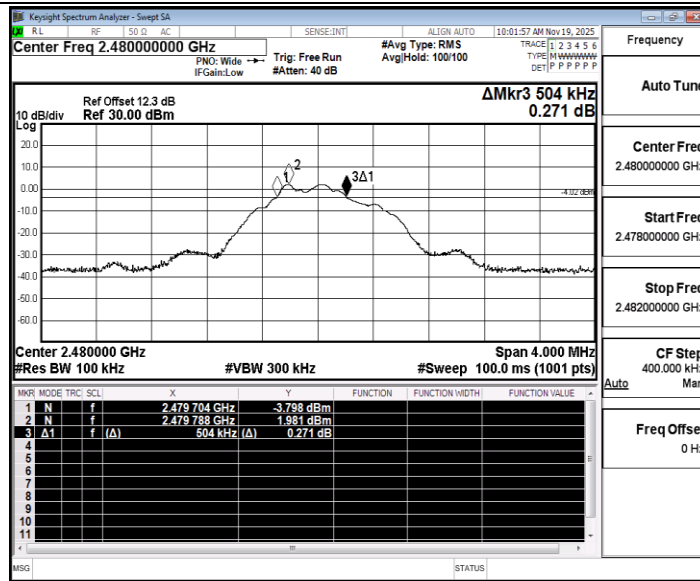
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

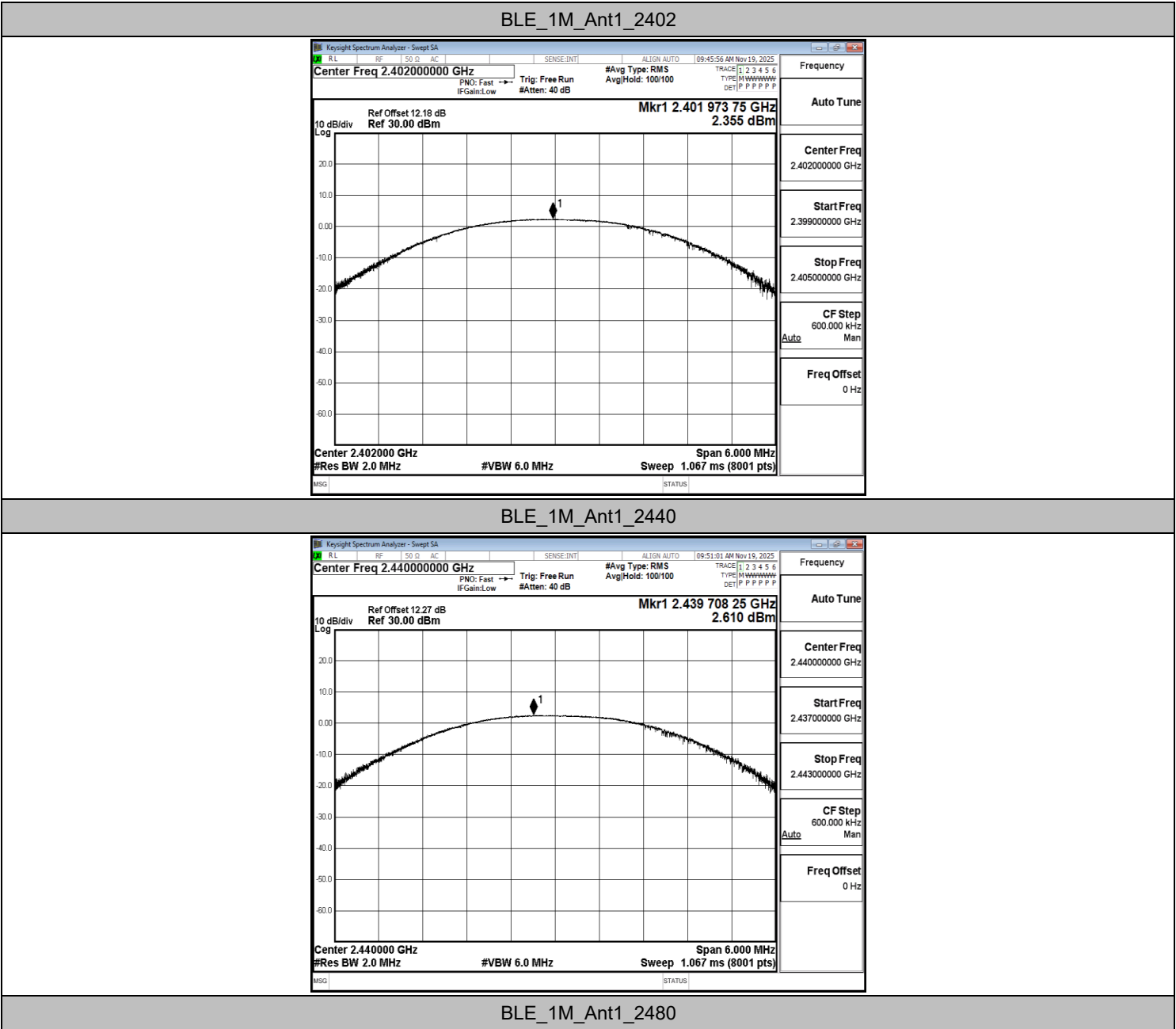


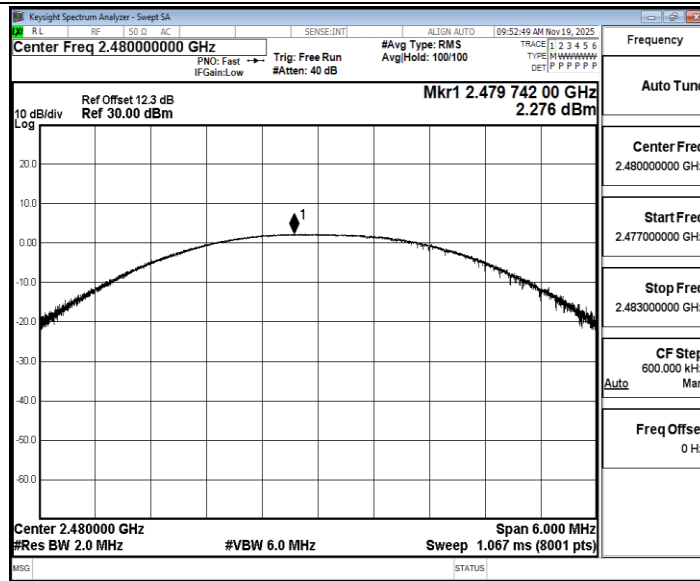
A.2 Maximum Peak conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.36	≤30	PASS
		2440	2.61	≤30	PASS
		2480	2.28	≤30	PASS

Test Graphs Peak



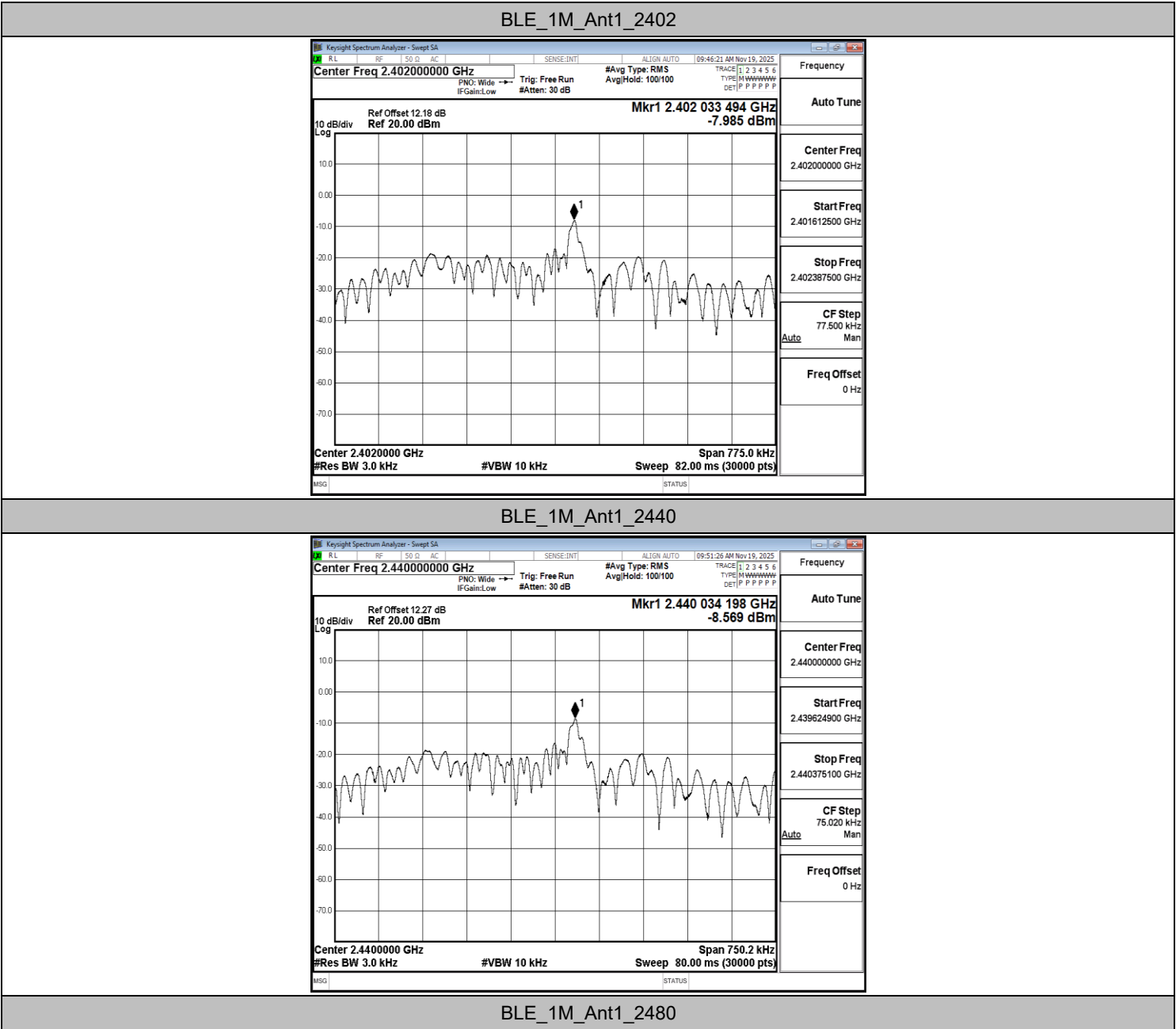


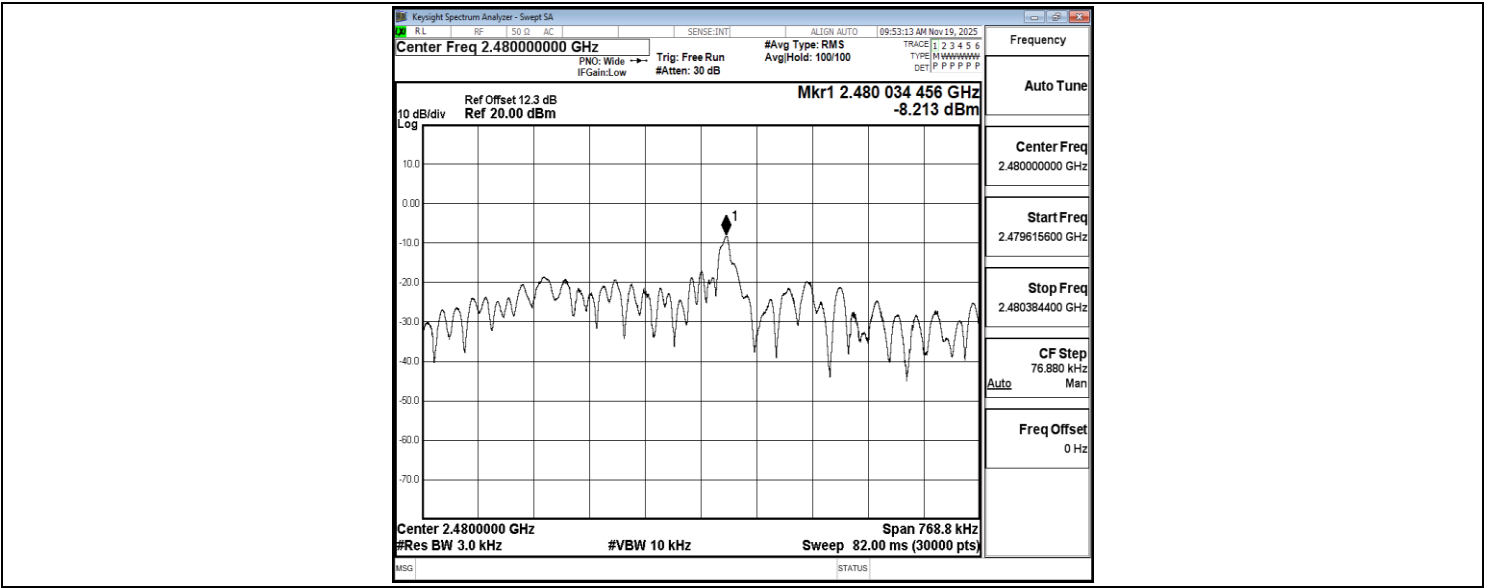
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-7.99	≤8.00	PASS
		2440	-8.57	≤8.00	PASS
		2480	-8.21	≤8.00	PASS

Test Graphs



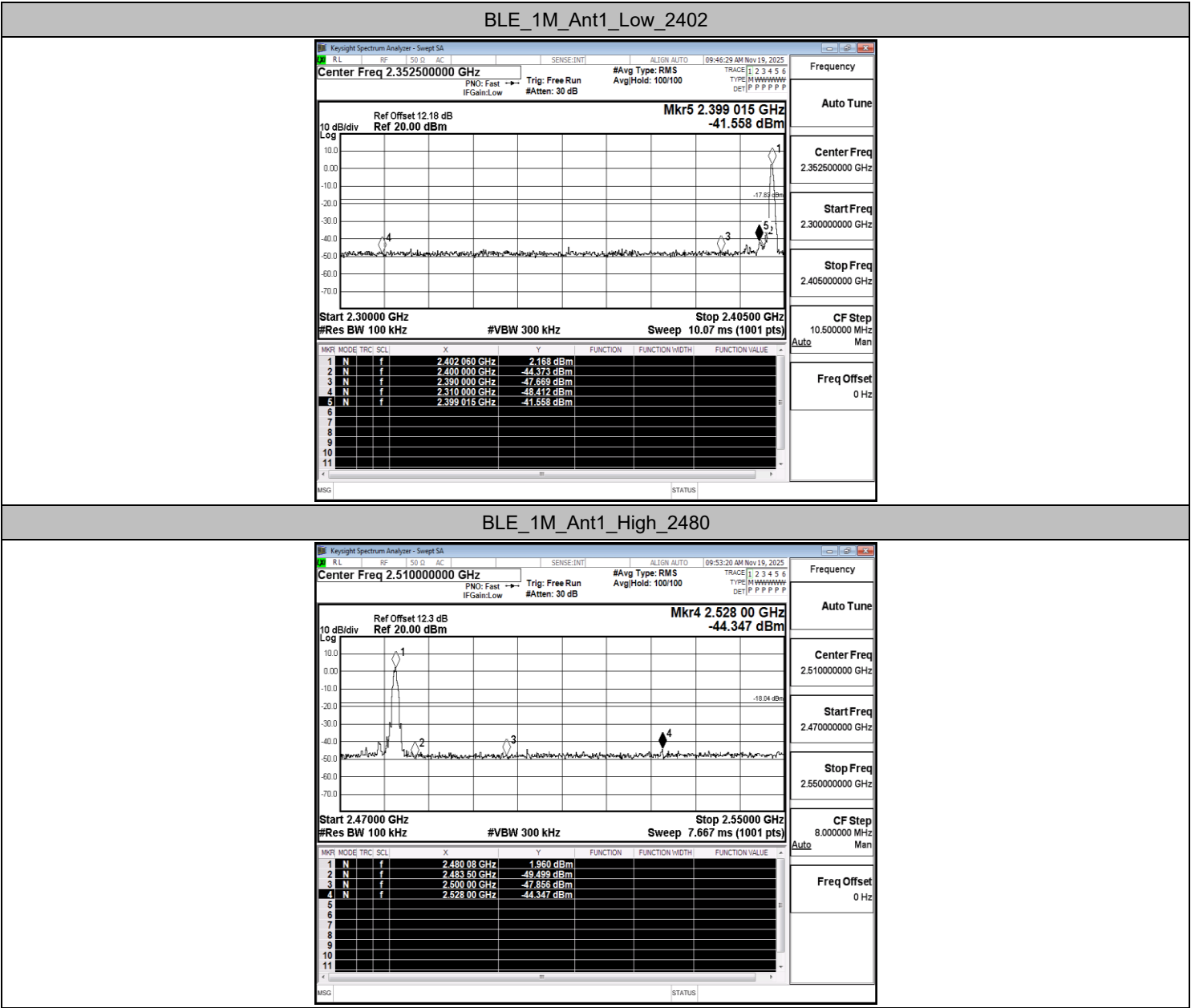


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.17	-41.56	≤-17.83	PASS
		High	2480	1.96	-44.35	≤-18.04	PASS

Test Graphs

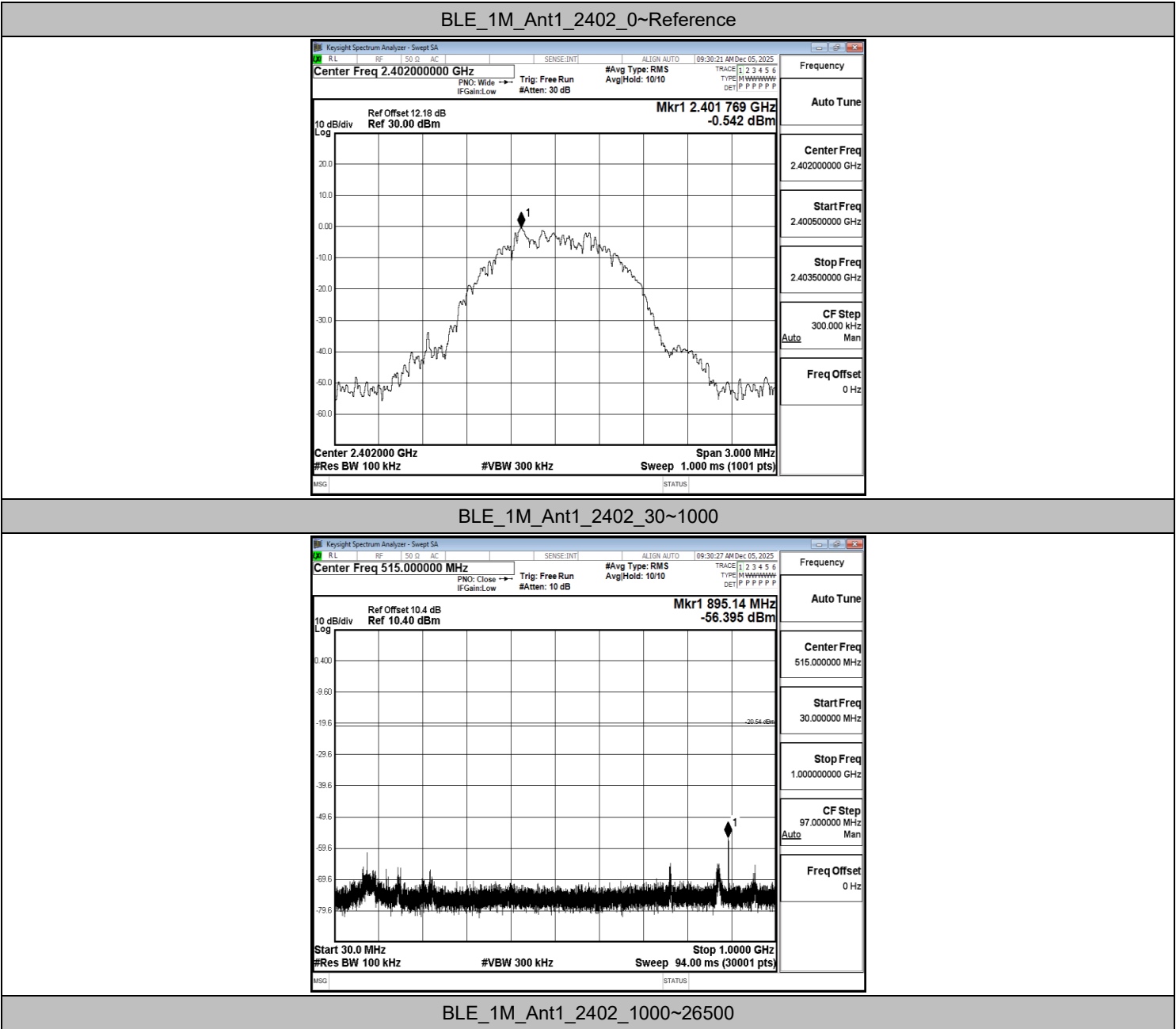


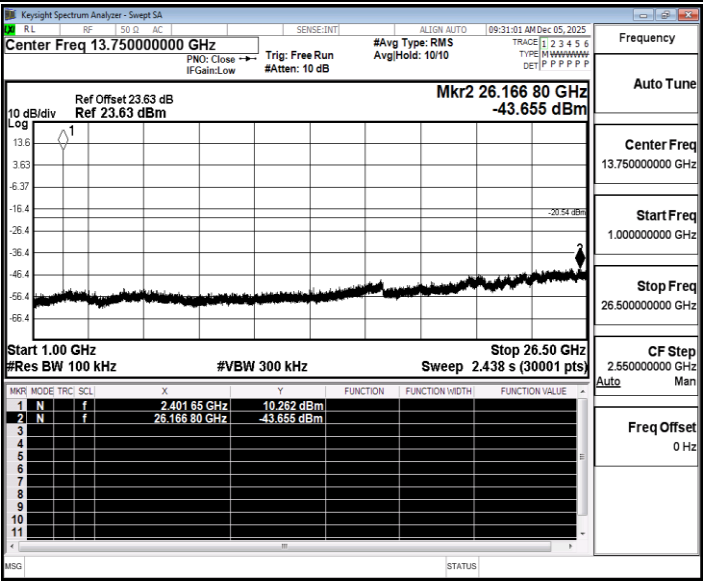
A.5 Conducted Spurious Emission

Test Result

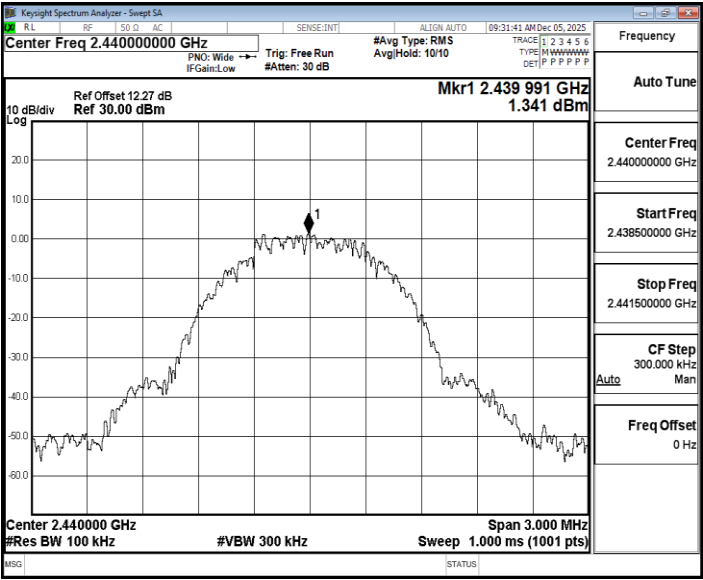
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.54	-0.54	---	PASS
			30~1000	-0.54	-56.4	≤-20.54	PASS
			1000~26500	-0.54	-43.66	≤-20.54	PASS
		2440	Reference	1.34	1.34	---	PASS
			30~1000	1.34	-61.2	≤-18.66	PASS
			1000~26500	1.34	-43.18	≤-18.66	PASS
		2480	Reference	-0.83	-0.83	---	PASS
			30~1000	-0.83	-56.83	≤-20.83	PASS
			1000~26500	-0.83	-43.54	≤-20.83	PASS

Test Graphs

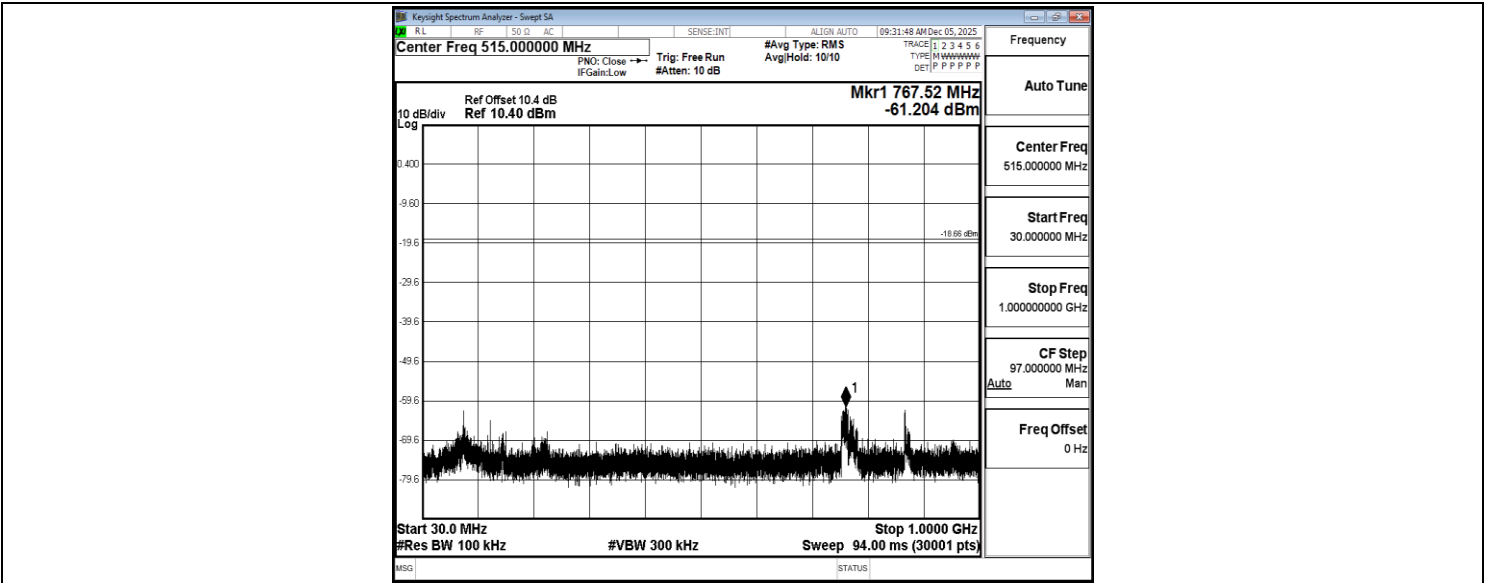




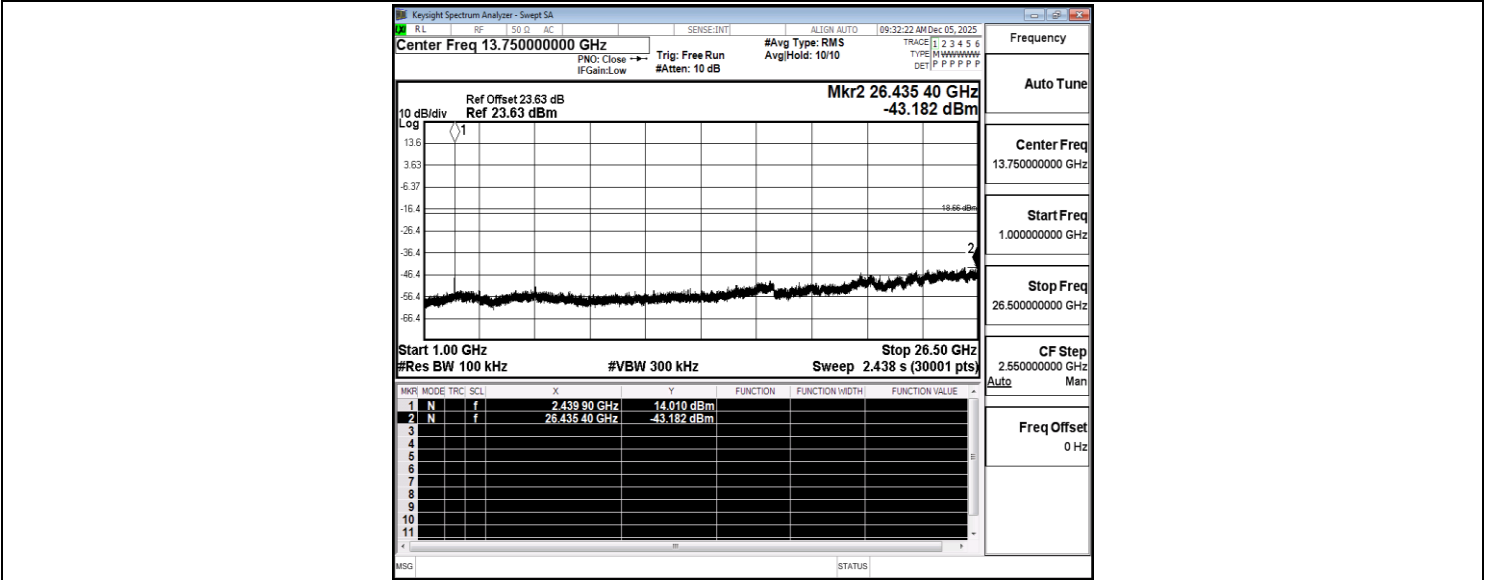
BLE_1M_Ant1_2440_0~Reference



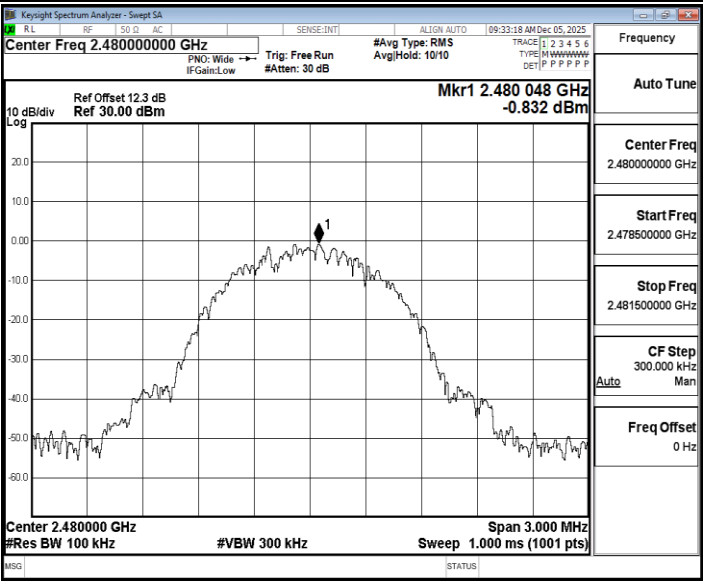
BLE_1M_Ant1_2440_30~1000



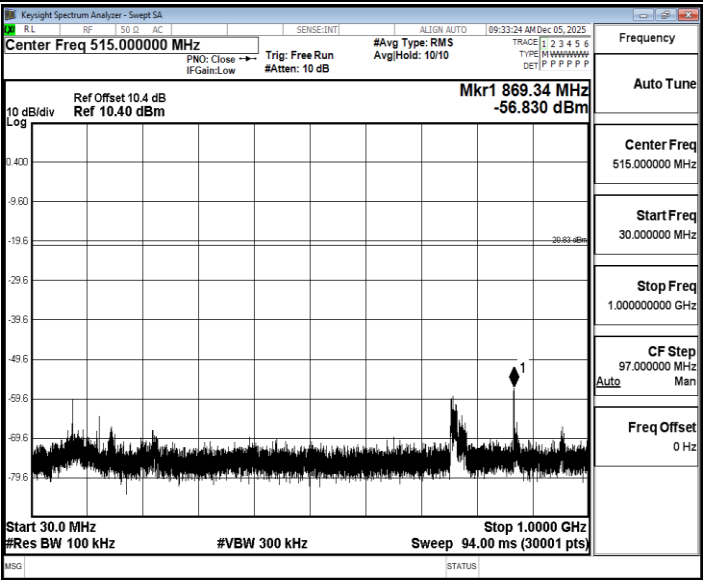
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



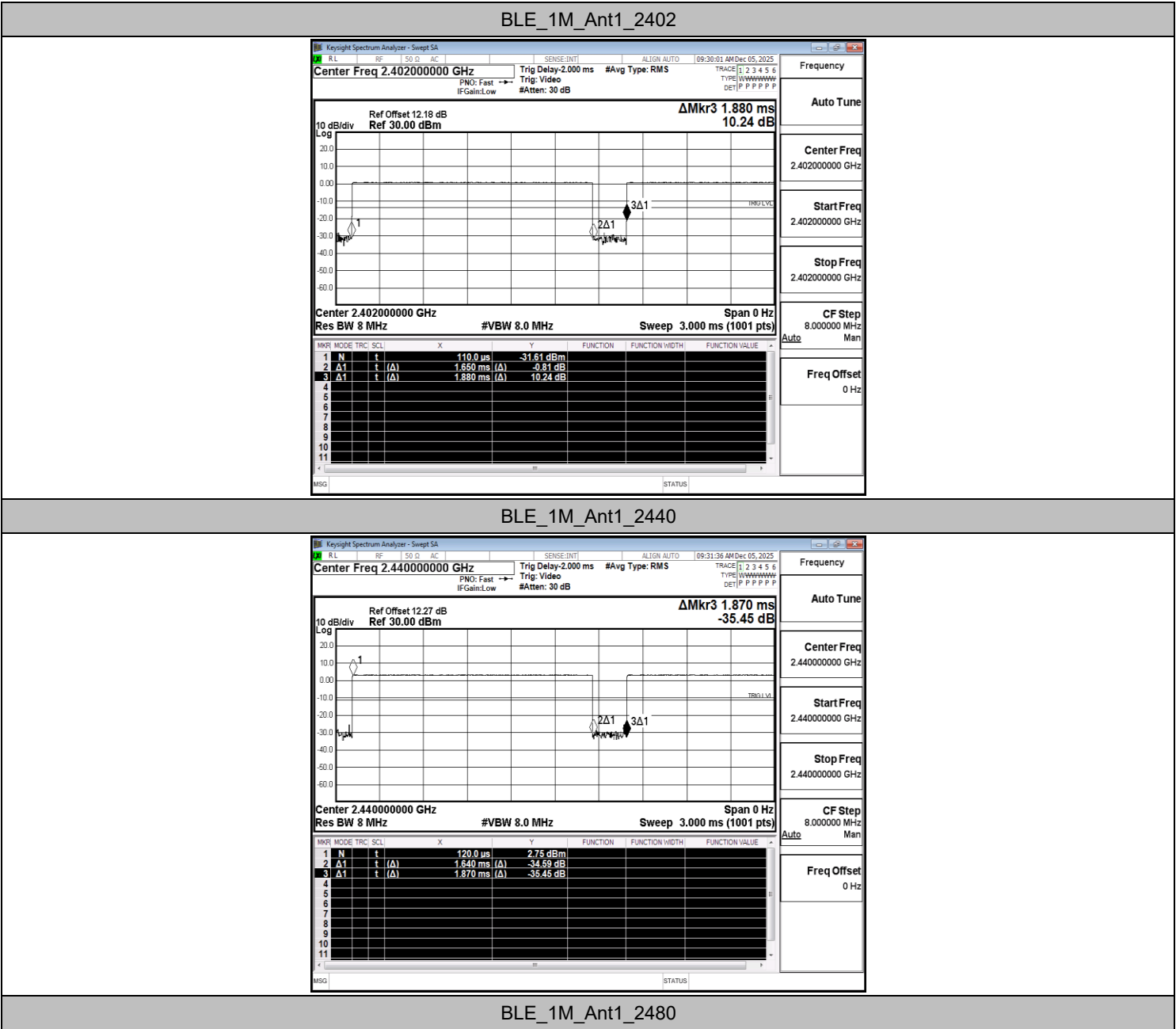
BLE_1M_Ant1_2480_1000~26500

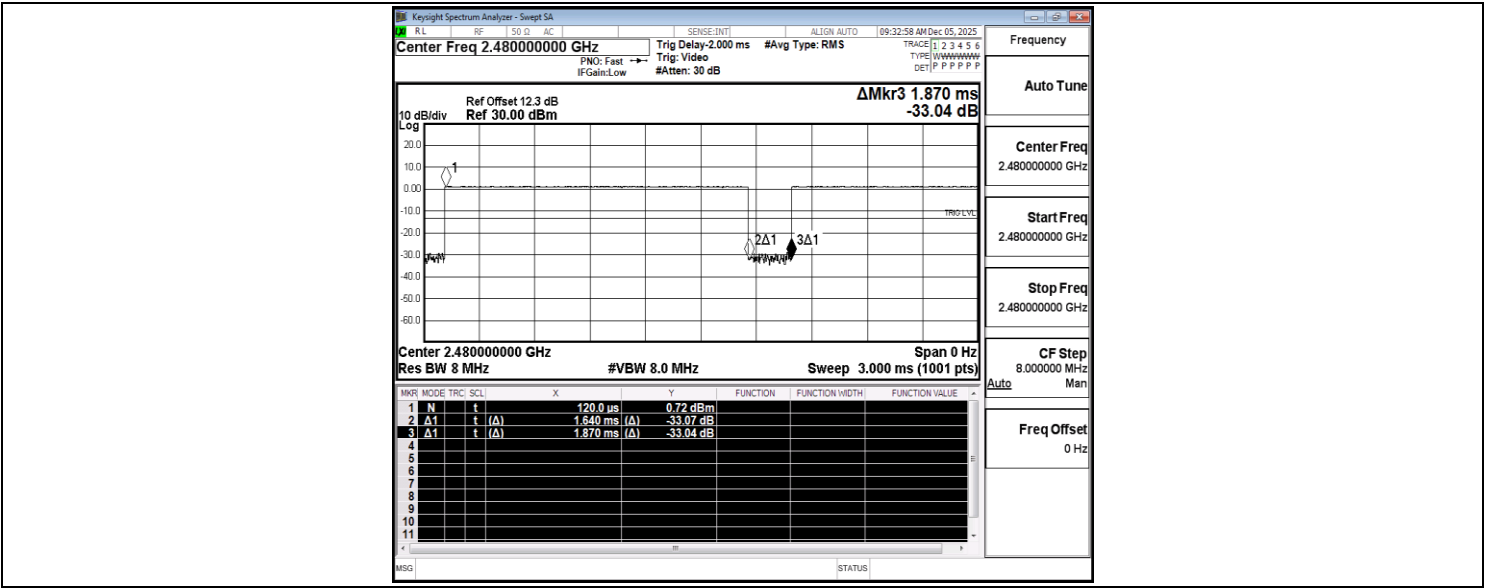
A.6 Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	1.65	1.88	0.8777	87.77	0.57	---	---
		2440	1.64	1.87	0.8770	87.70	0.57	---	---
		2480	1.64	1.87	0.8770	87.70	0.57	---	---

Test Graphs





A.7 Emissions in Restricted Bands

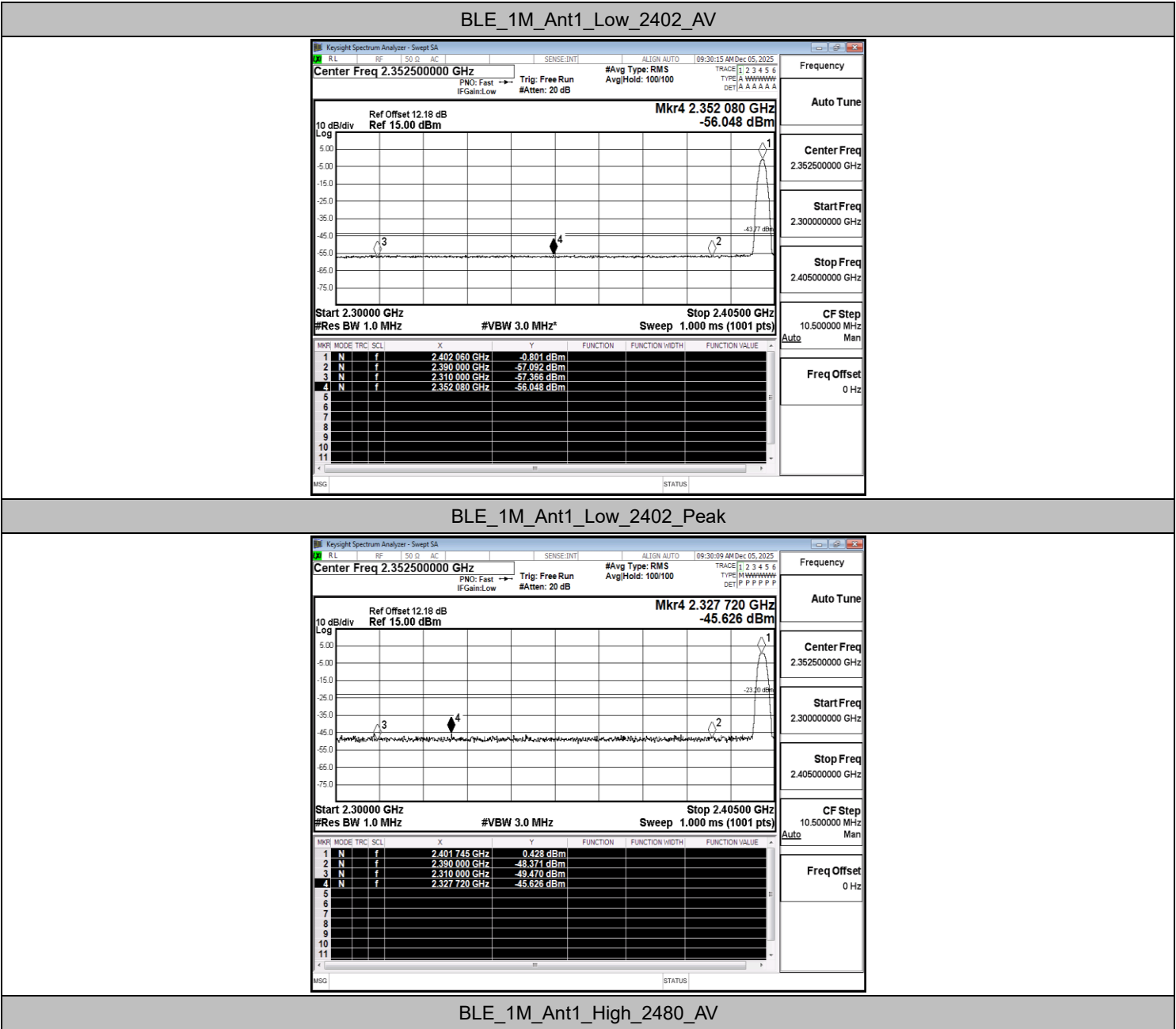
Test Result

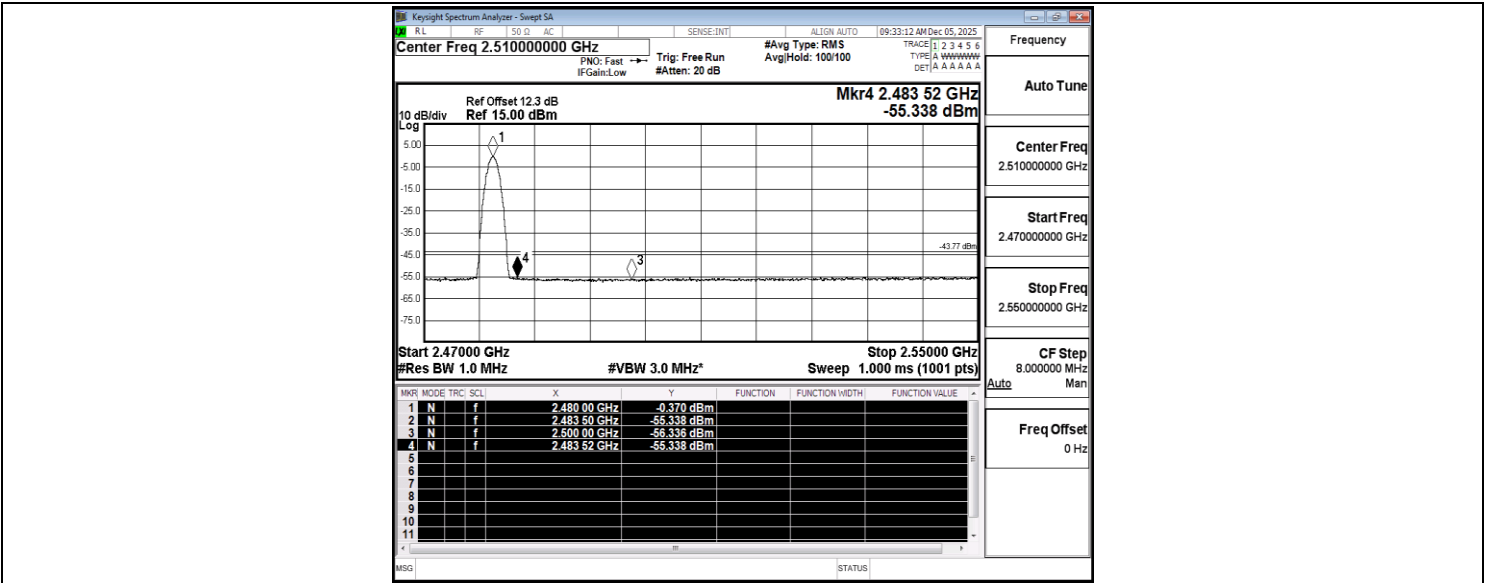
TestMode	Antenna	ChName	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.37	≤-43.77	2.00	0.57	40.40	≤54	PASS
				AV	2352.080	-56.05	≤-43.77	2.00	0.57	41.72	≤54	PASS
				AV	2390.000	-57.09	≤-43.77	2.00	0.57	40.68	≤54	PASS
				Peak	2310.000	-49.47	≤-23.20	2.00	0.00	47.73	≤74	PASS
				Peak	2327.720	-45.63	≤-23.20	2.00	0.00	51.57	≤74	PASS
				Peak	2390.000	-48.37	≤-23.20	2.00	0.00	48.83	≤74	PASS
		High	2480	AV	2483.500	-55.34	≤-43.77	2.00	0.57	42.43	≤54	PASS
				AV	2483.520	-55.34	≤-43.77	2.00	0.57	42.43	≤54	PASS
				AV	2500.000	-56.34	≤-43.77	2.00	0.57	41.43	≤54	PASS
				Peak	2483.500	-49.42	≤-23.20	2.00	0.00	47.78	≤74	PASS
				Peak	2489.200	-45.27	≤-23.20	2.00	0.00	51.93	≤74	PASS
				Peak	2500.000	-48.5	≤-23.20	2.00	0.00	48.70	≤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_High_2480_Peak

