

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: VIEFONG Translation Power Bank

Test Model: VF16Z

Environmental Conditions

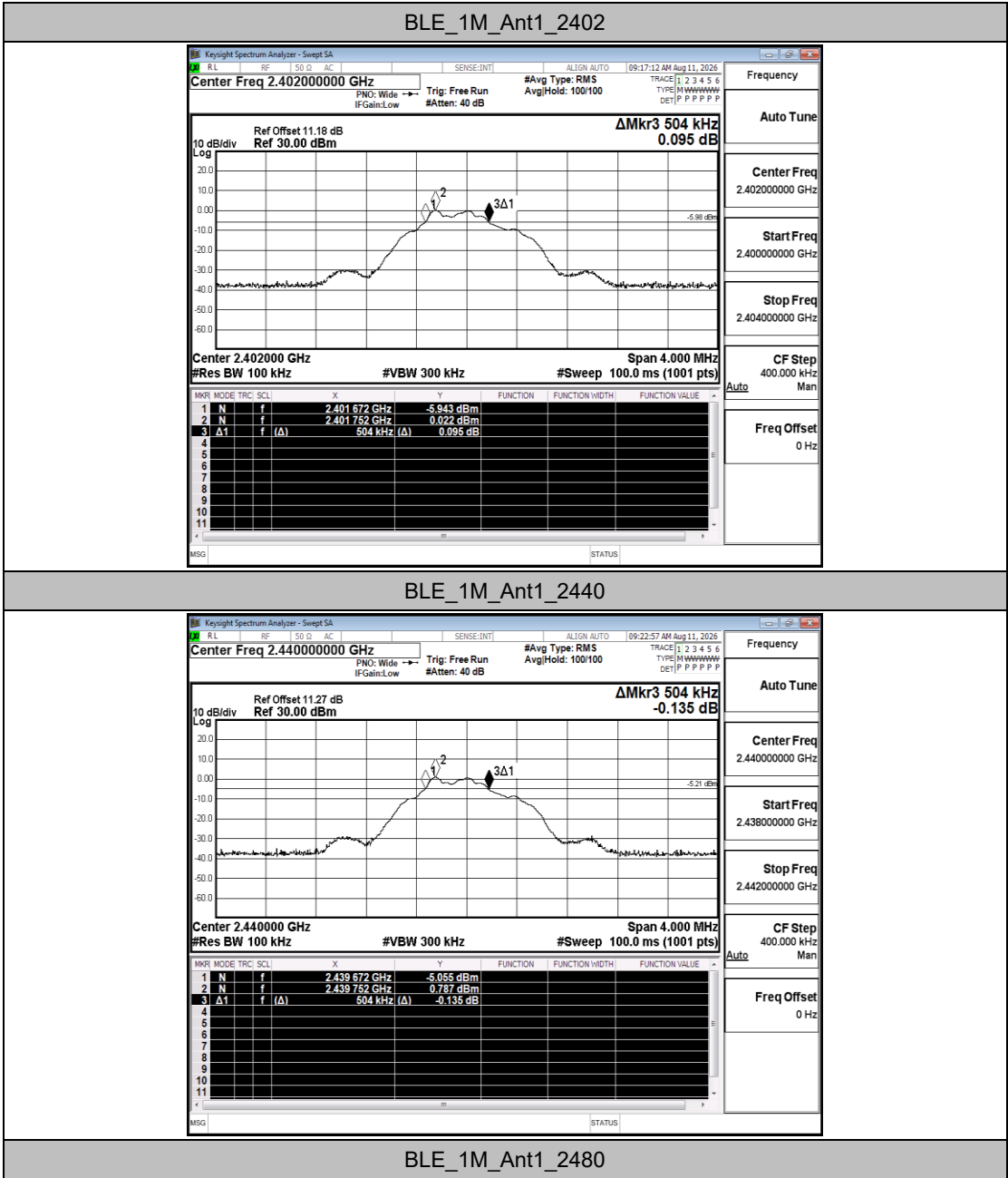
Temperature:	23.8 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

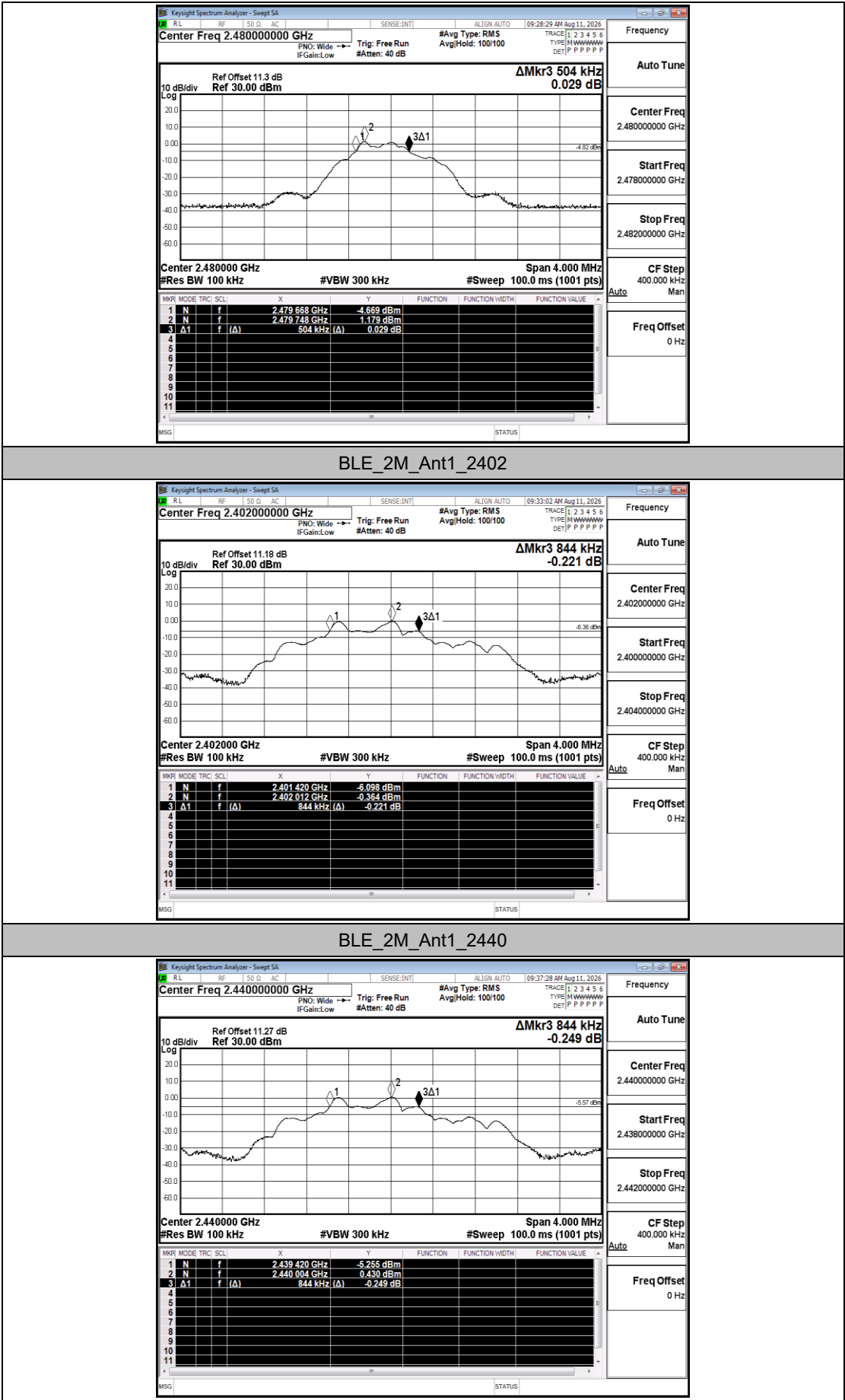
A.1 DTS Bandwidth

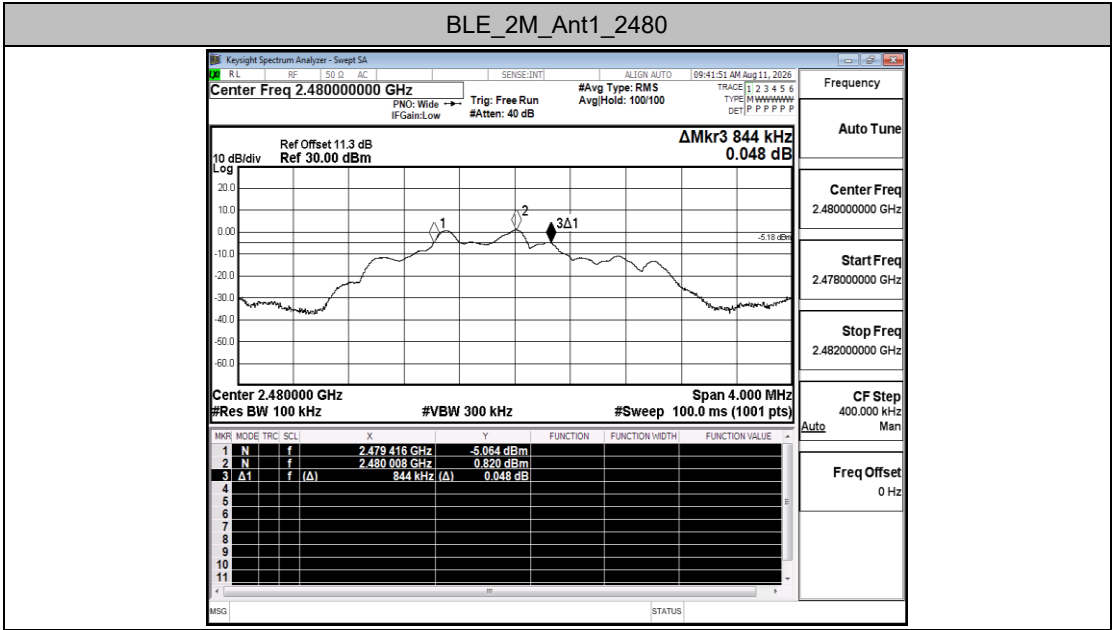
Test Result

TestMode	Antenna	Freq (MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.504	2401.672	2402.176	0.5	PASS
		2440	0.504	2439.672	2440.176	0.5	PASS
		2480	0.504	2479.668	2480.172	0.5	PASS
BLE_2M	Ant1	2402	0.844	2401.420	2402.264	0.5	PASS
		2440	0.844	2439.420	2440.264	0.5	PASS
		2480	0.844	2479.416	2480.260	0.5	PASS

Test Graphs



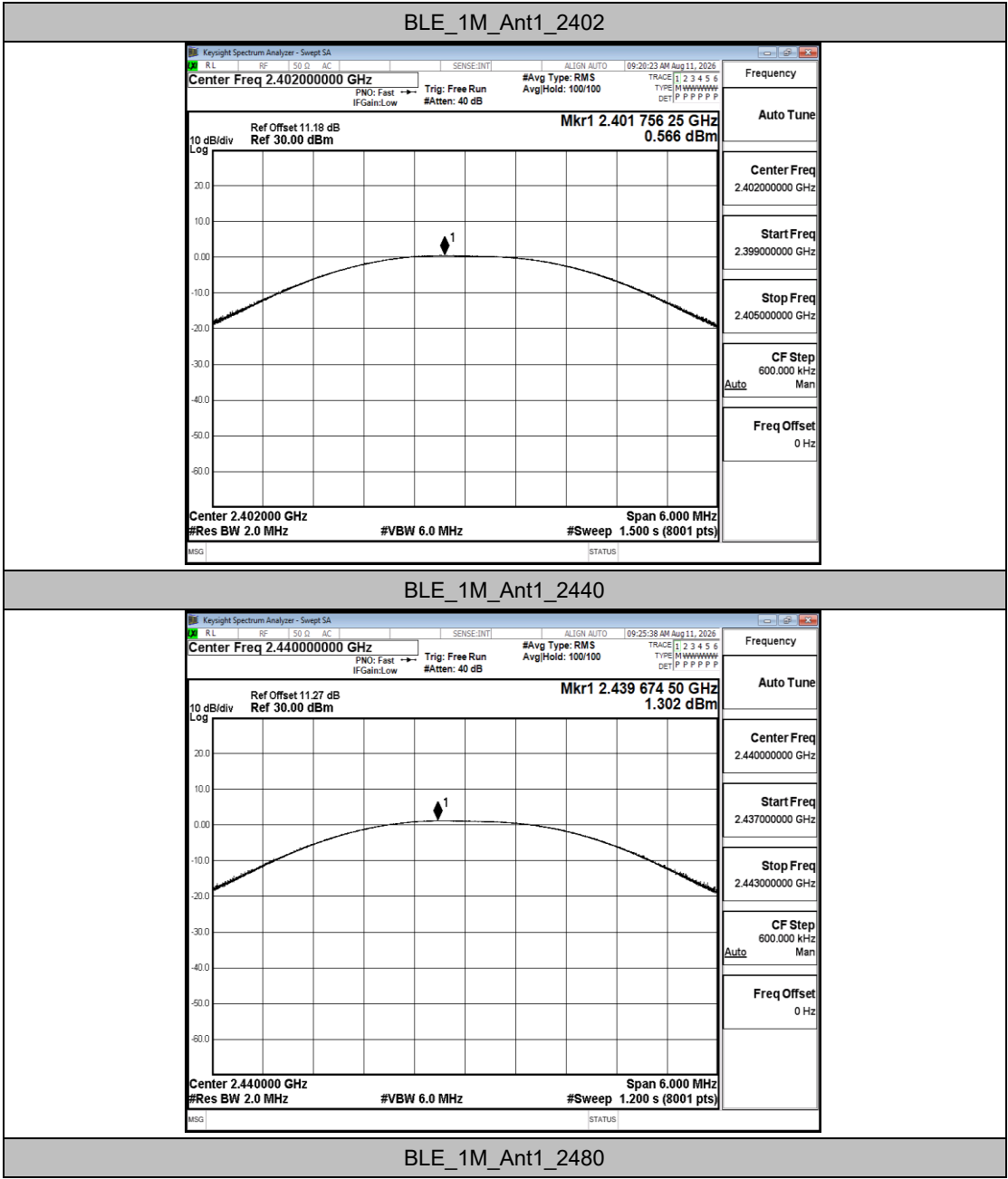


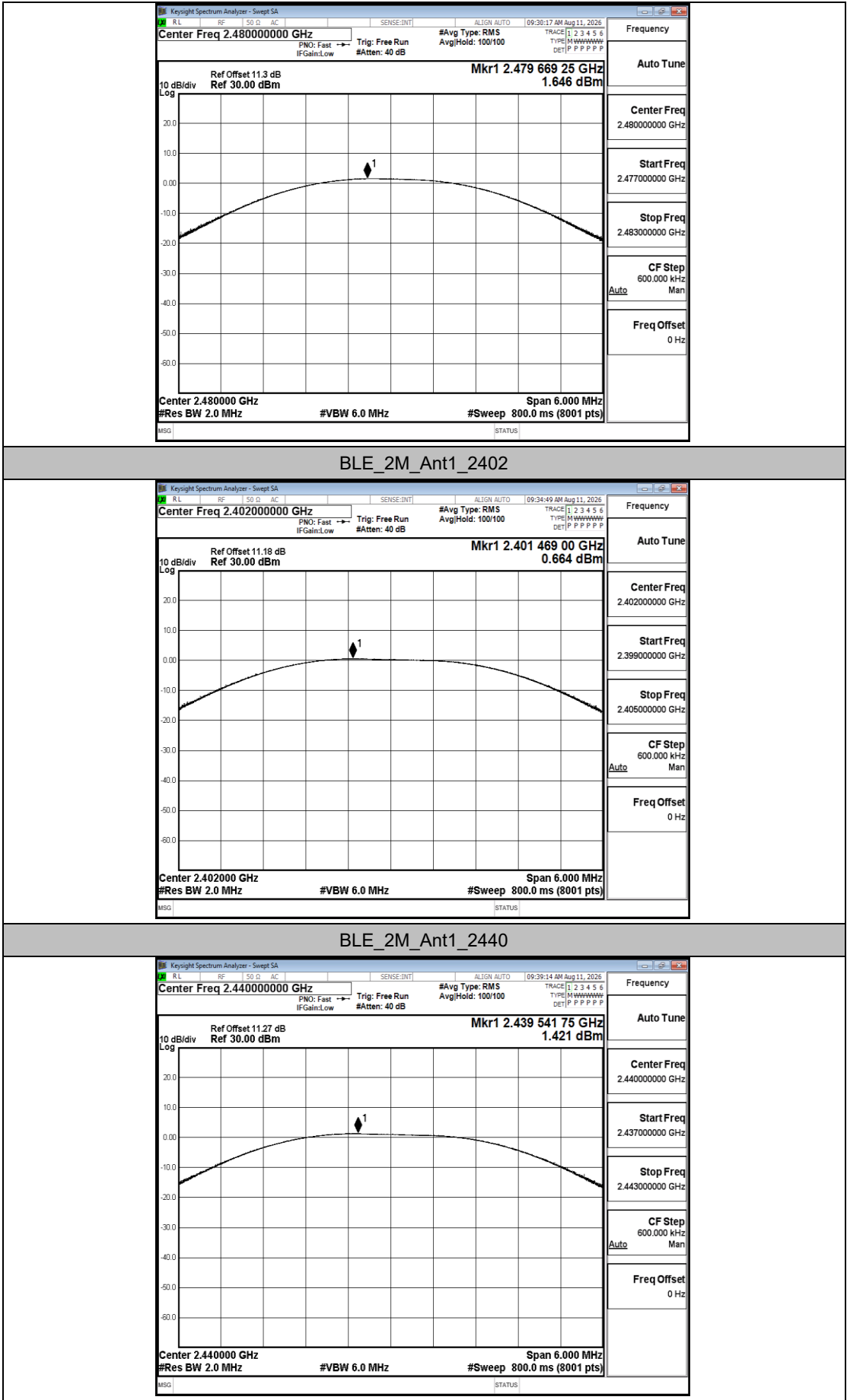


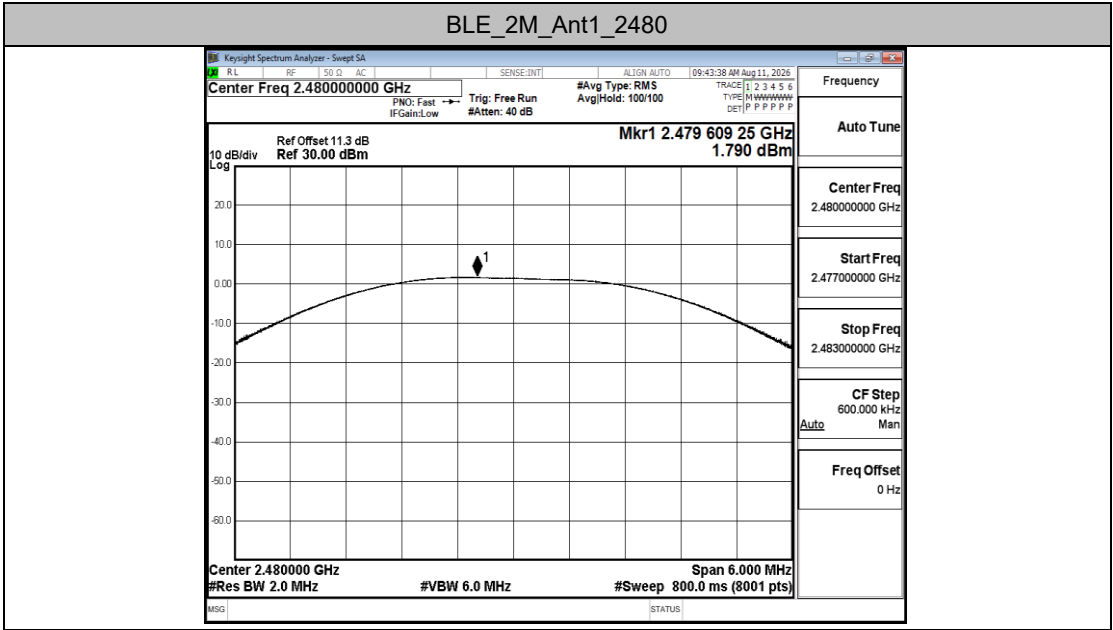
A.2 Maximum Peak conducted output power

TestMode	Antenna	Freq (MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.57	≤30	PASS
		2440	1.30	≤30	PASS
		2480	1.65	≤30	PASS
BLE_2M	Ant1	2402	0.66	≤30	PASS
		2440	1.42	≤30	PASS
		2480	1.79	≤30	PASS

Test Graphs Peak





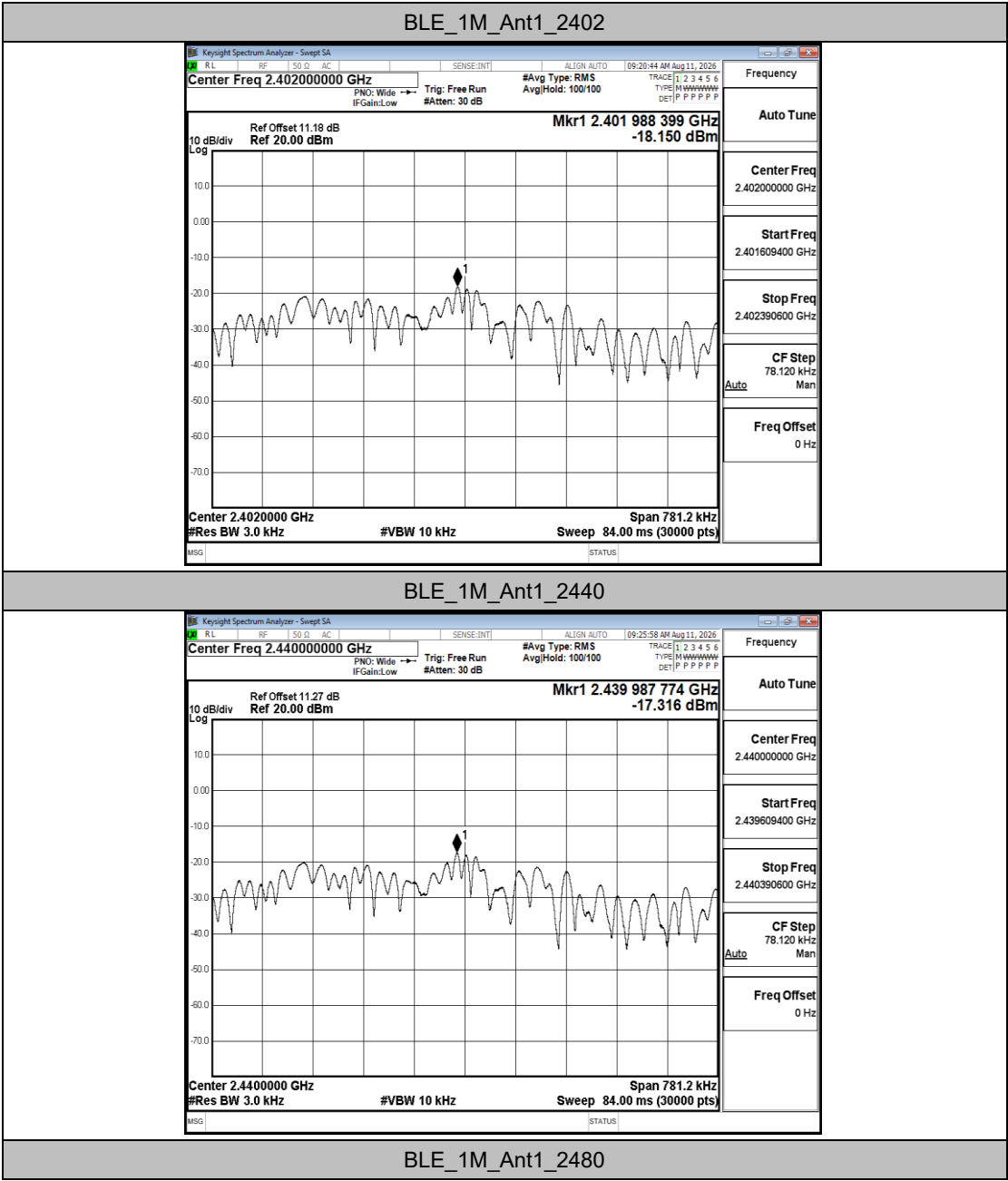


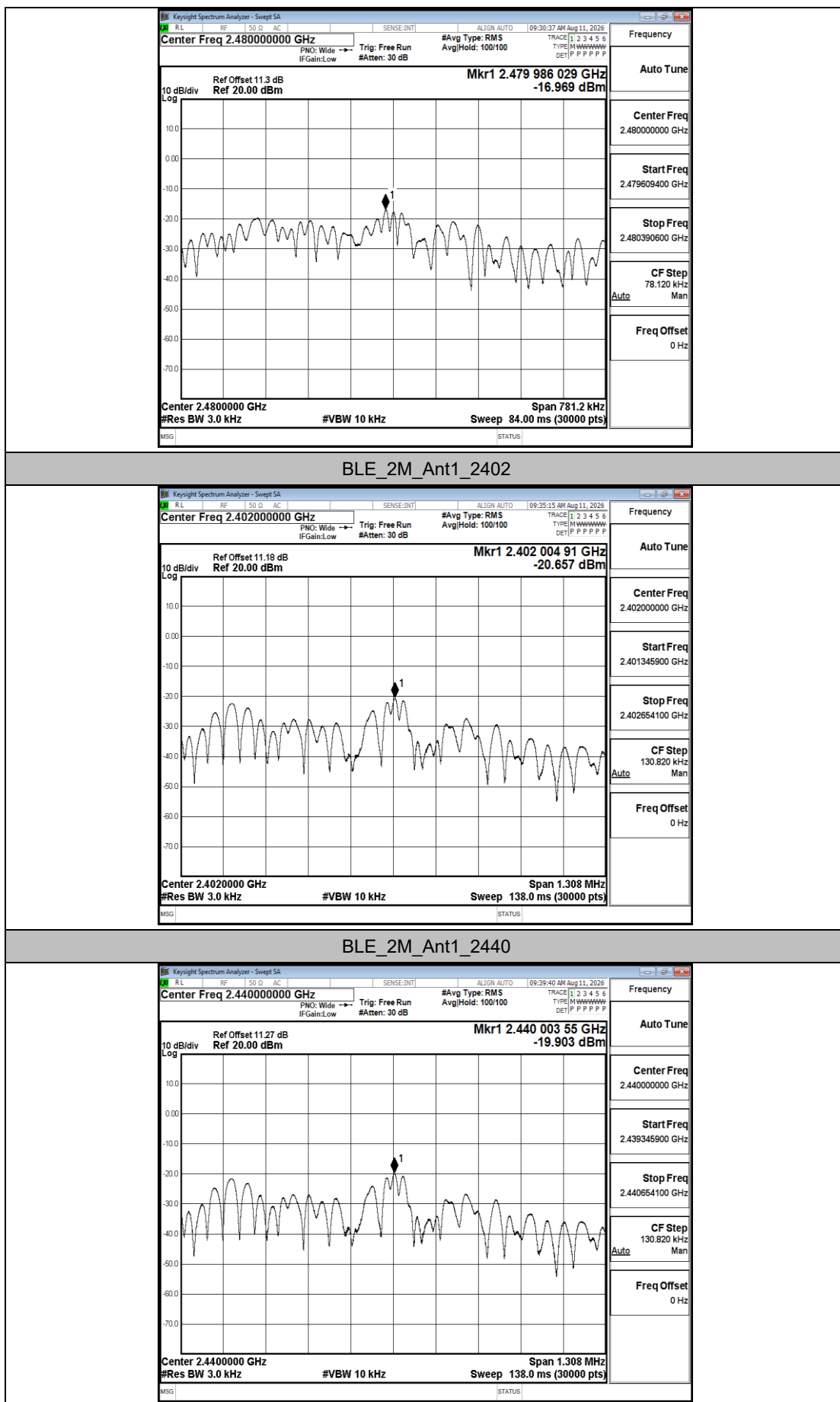
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq (MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.15	≤8.00	PASS
		2440	-17.32	≤8.00	PASS
		2480	-16.97	≤8.00	PASS
BLE_2M	Ant1	2402	-20.66	≤8.00	PASS
		2440	-19.90	≤8.00	PASS
		2480	-19.49	≤8.00	PASS

Test Graphs

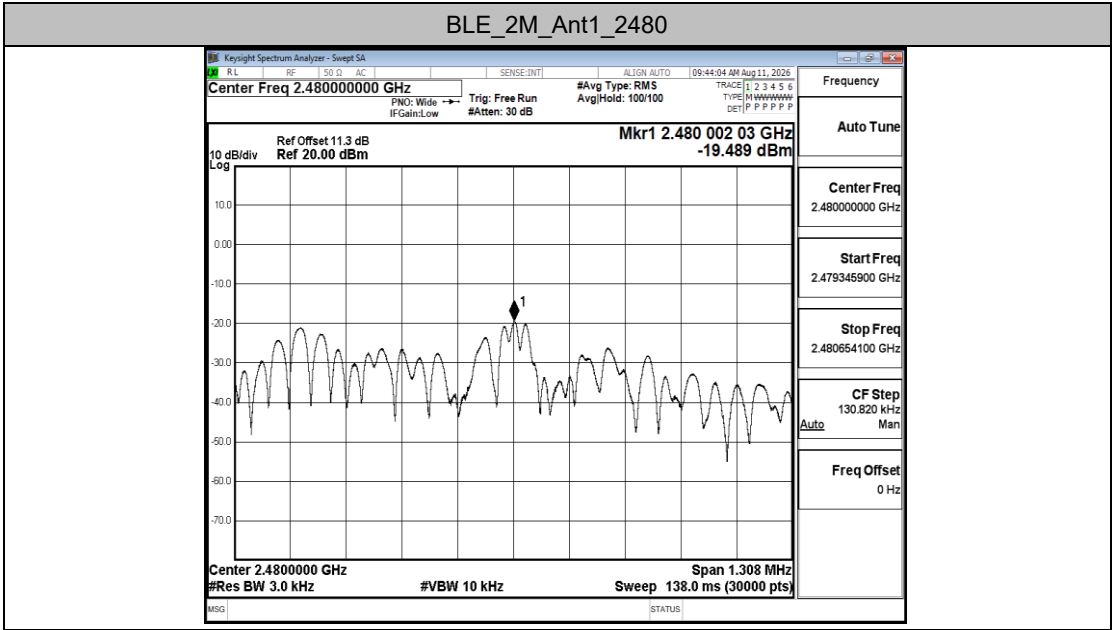




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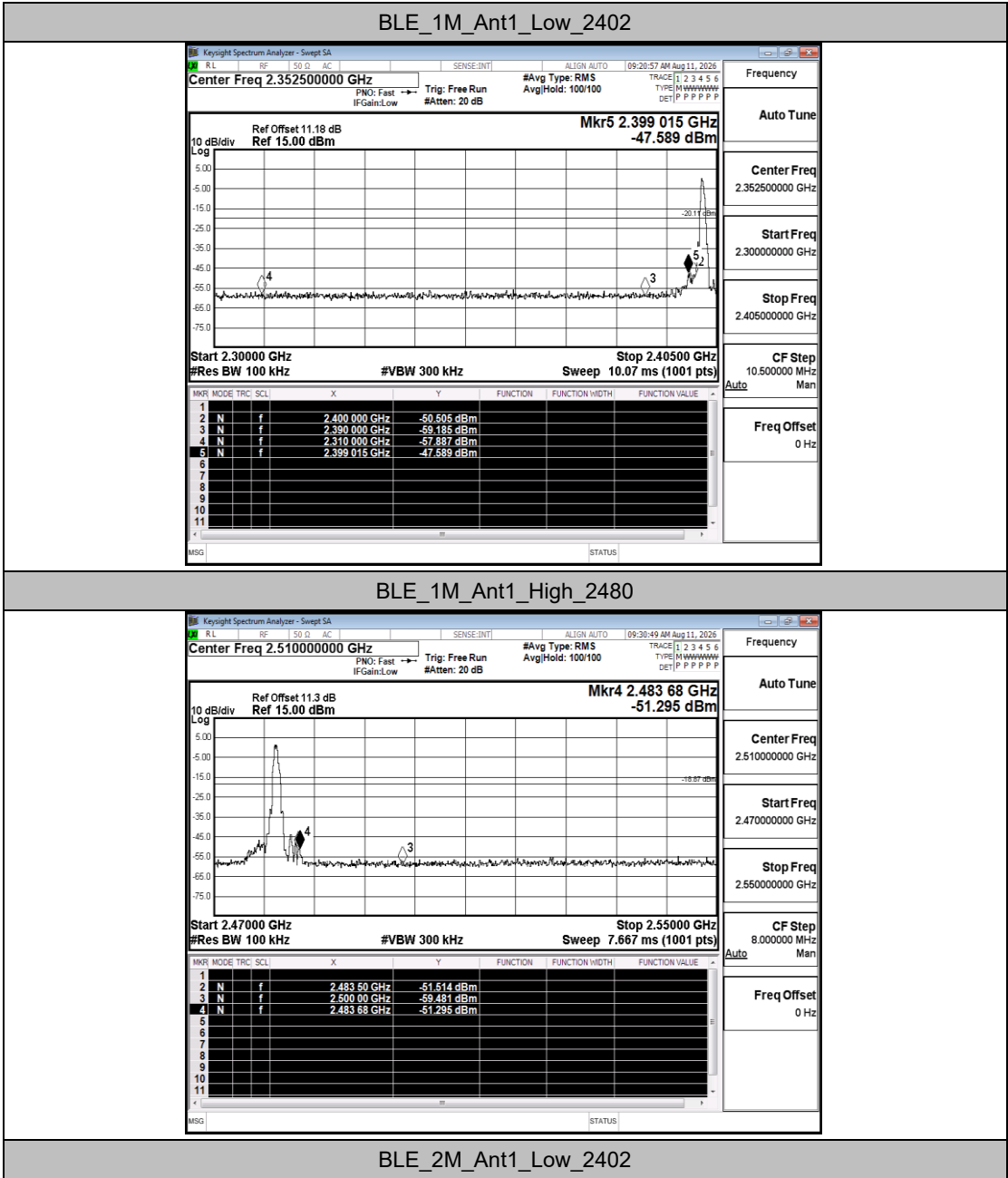


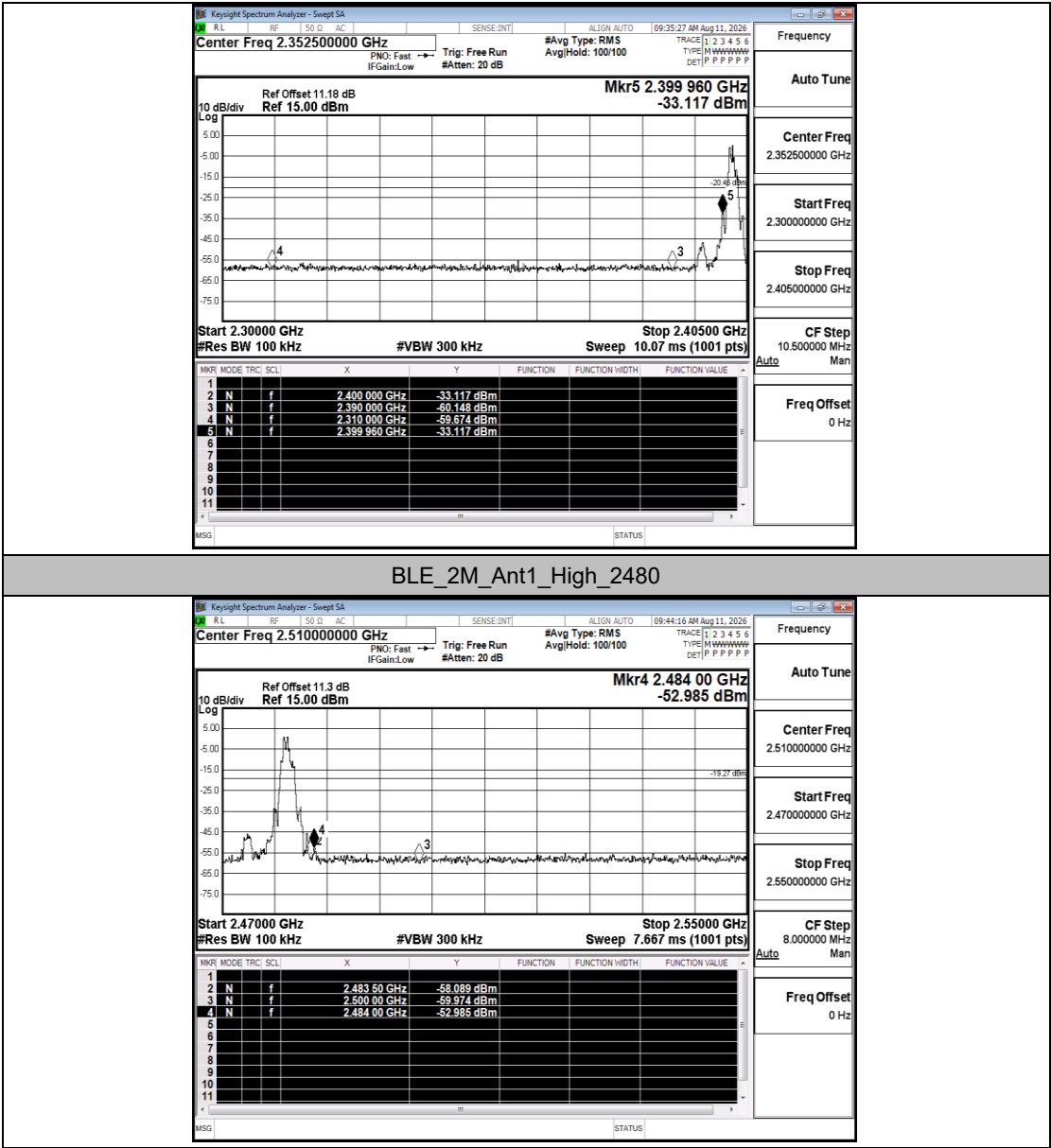
A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq (MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.11	-47.59	≤-20.11	PASS
		High	2480	1.13	-51.3	≤-18.87	PASS
BLE_2M	Ant1	Low	2402	-0.45	-33.12	≤-20.45	PASS
		High	2480	0.73	-52.99	≤-19.27	PASS

Test Graphs



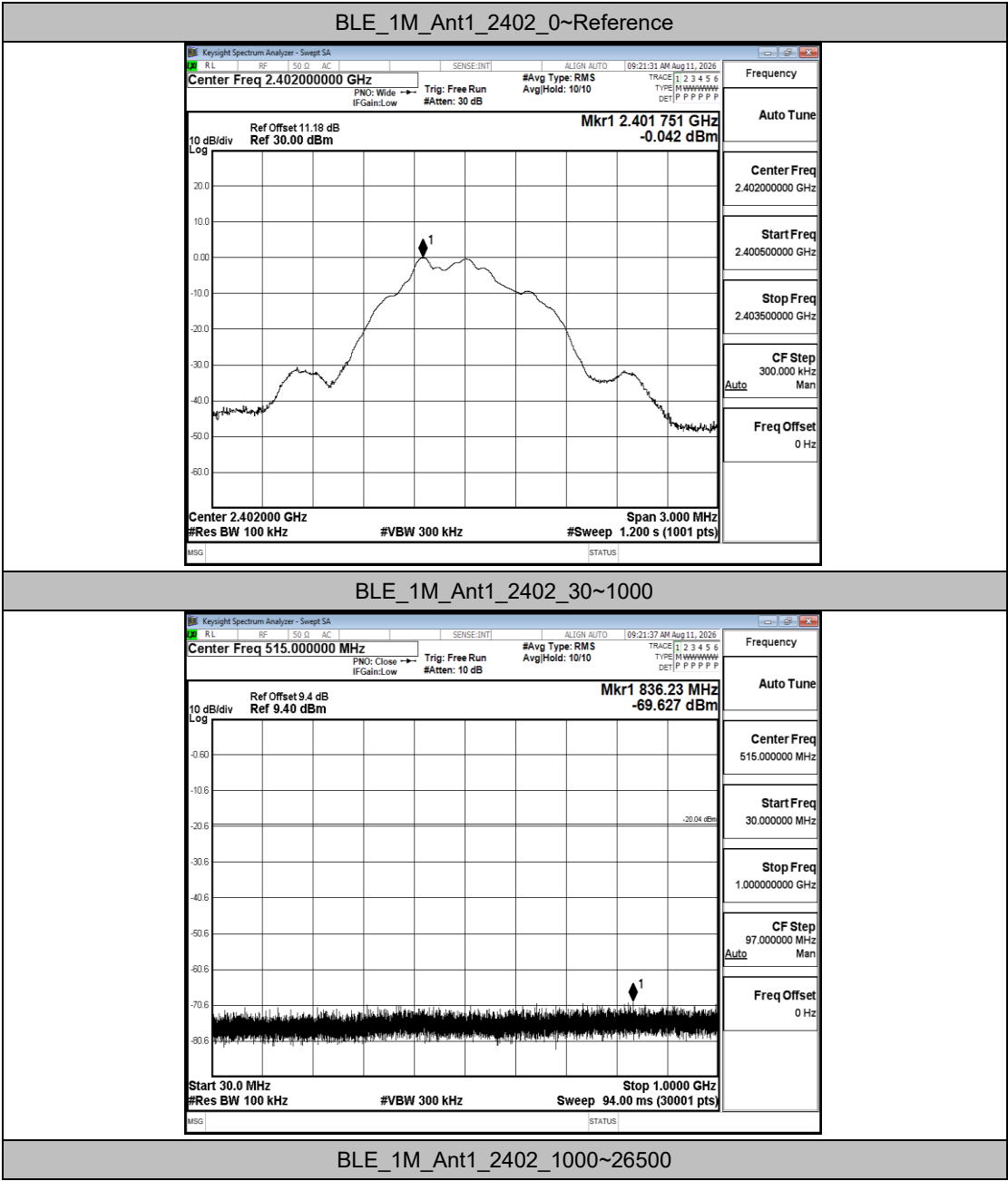


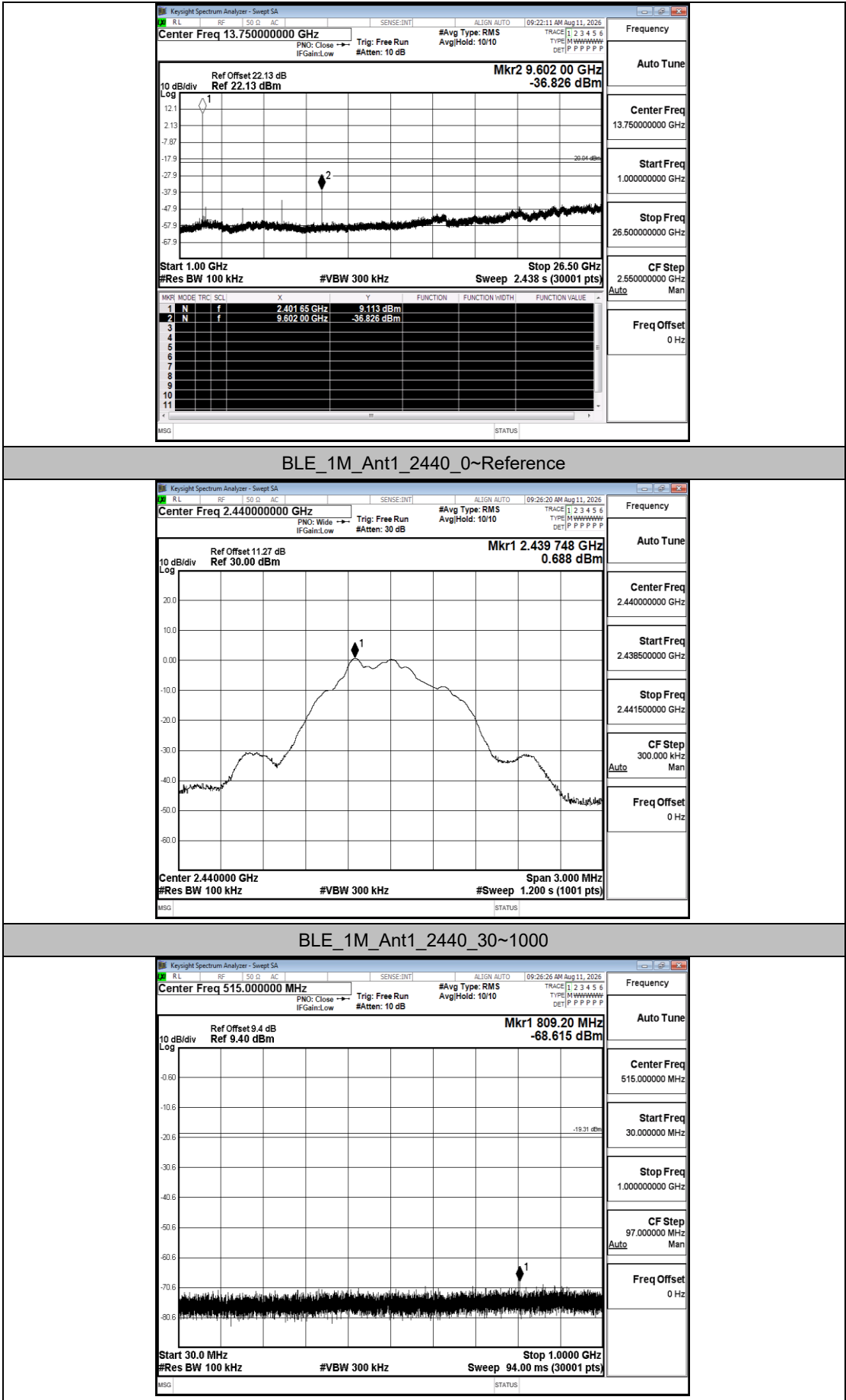
A.5 Conducted Spurious Emission

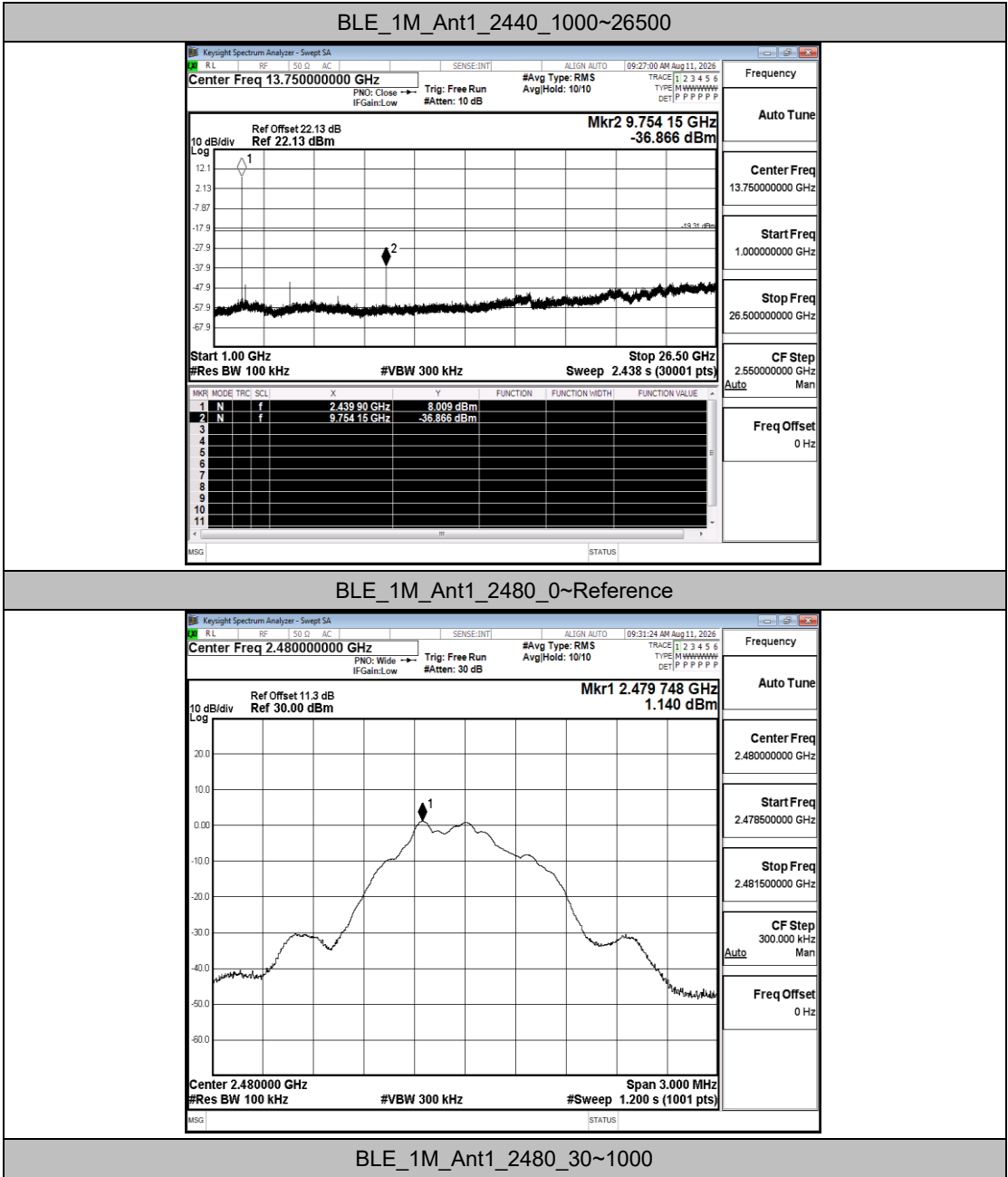
Test Result

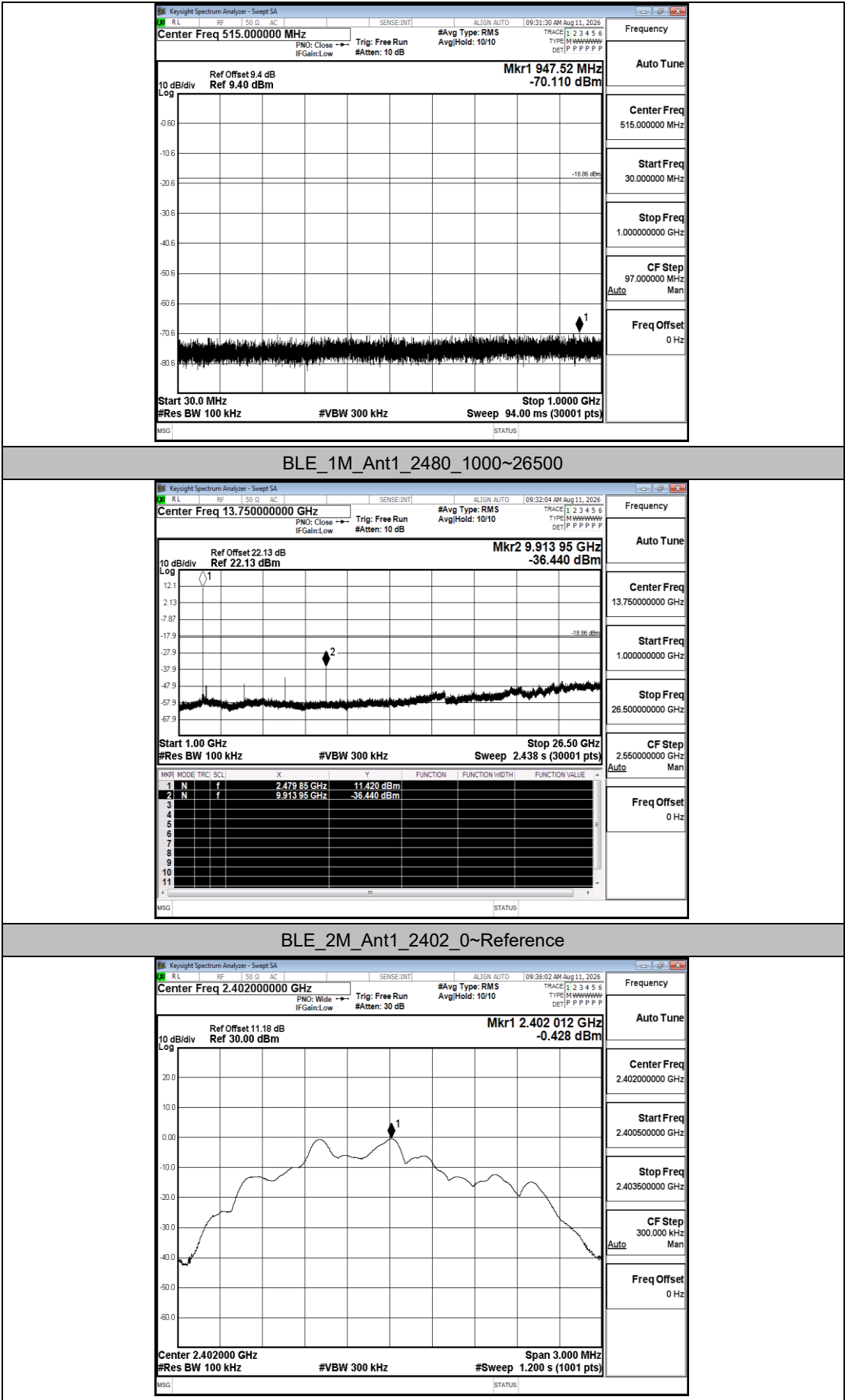
TestMode	Antenna	Freq (MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.04	-0.04	---	PASS
			30~1000	-0.04	-69.63	≤-20.04	PASS
			1000~26500	-0.04	-36.83	≤-20.04	PASS
		2440	Reference	0.69	0.69	---	PASS
			30~1000	0.69	-68.62	≤-19.31	PASS
			1000~26500	0.69	-36.87	≤-19.31	PASS
		2480	Reference	1.14	1.14	---	PASS
			30~1000	1.14	-70.11	≤-18.86	PASS
			1000~26500	1.14	-36.44	≤-18.86	PASS
BLE_2M	Ant1	2402	Reference	-0.43	-0.43	---	PASS
			30~1000	-0.43	-69.31	≤-20.43	PASS
			1000~26500	-0.43	-36.95	≤-20.43	PASS
		2440	Reference	0.31	0.31	---	PASS
			30~1000	0.31	-69.51	≤-19.69	PASS
			1000~26500	0.31	-36.81	≤-19.69	PASS
		2480	Reference	0.76	0.76	---	PASS
			30~1000	0.76	-69.17	≤-19.24	PASS
			1000~26500	0.76	-36.5	≤-19.24	PASS

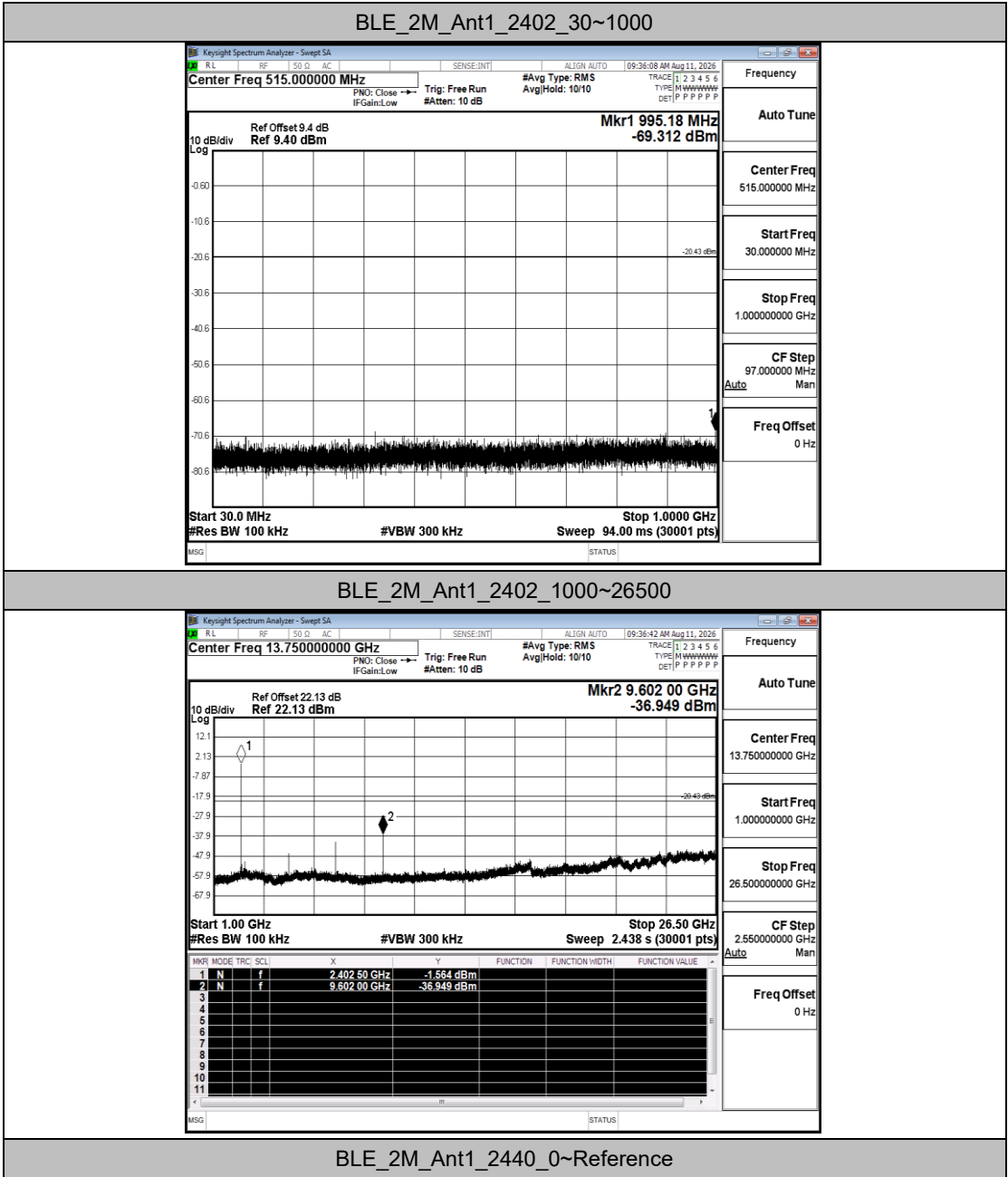
Test Graphs

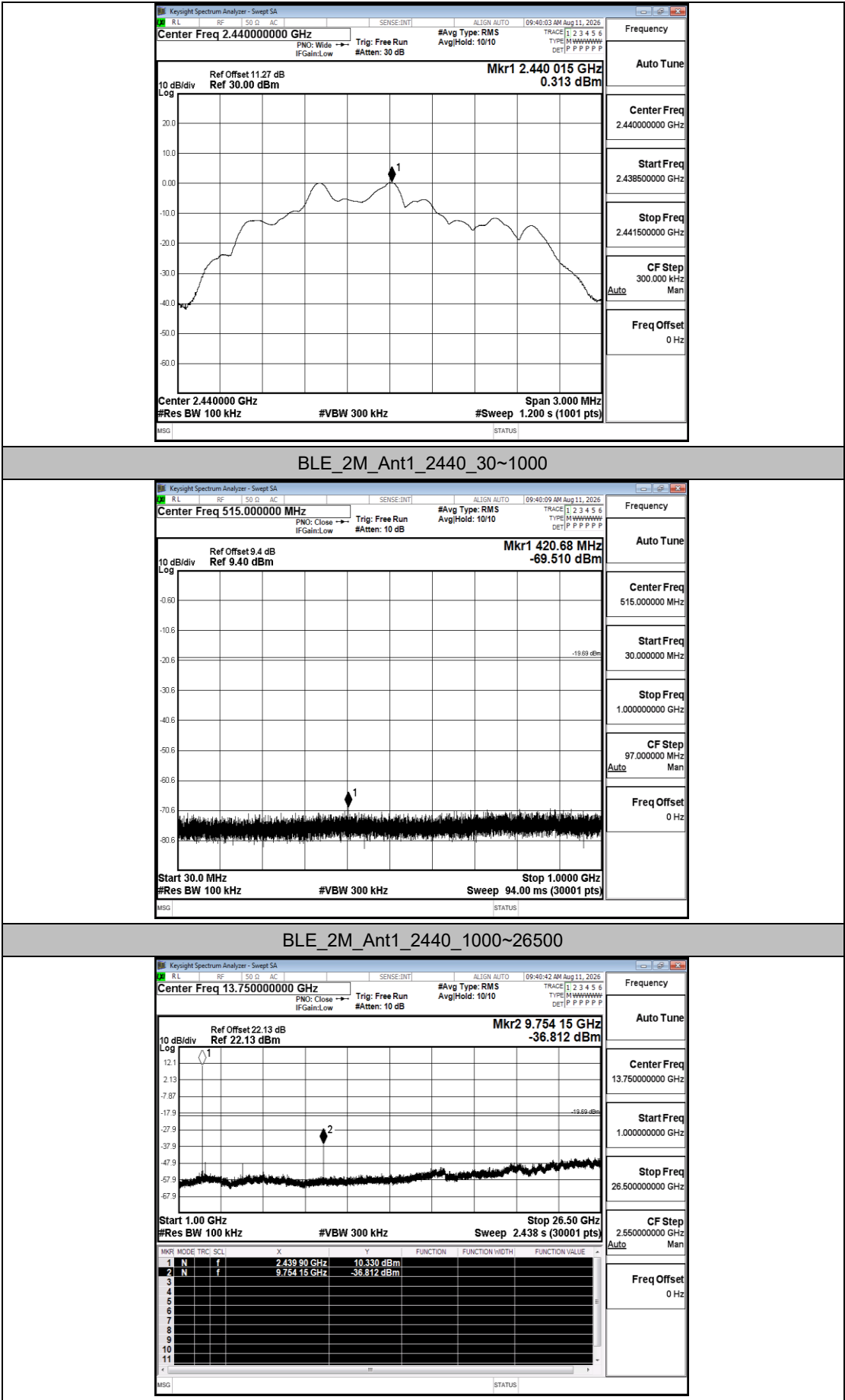


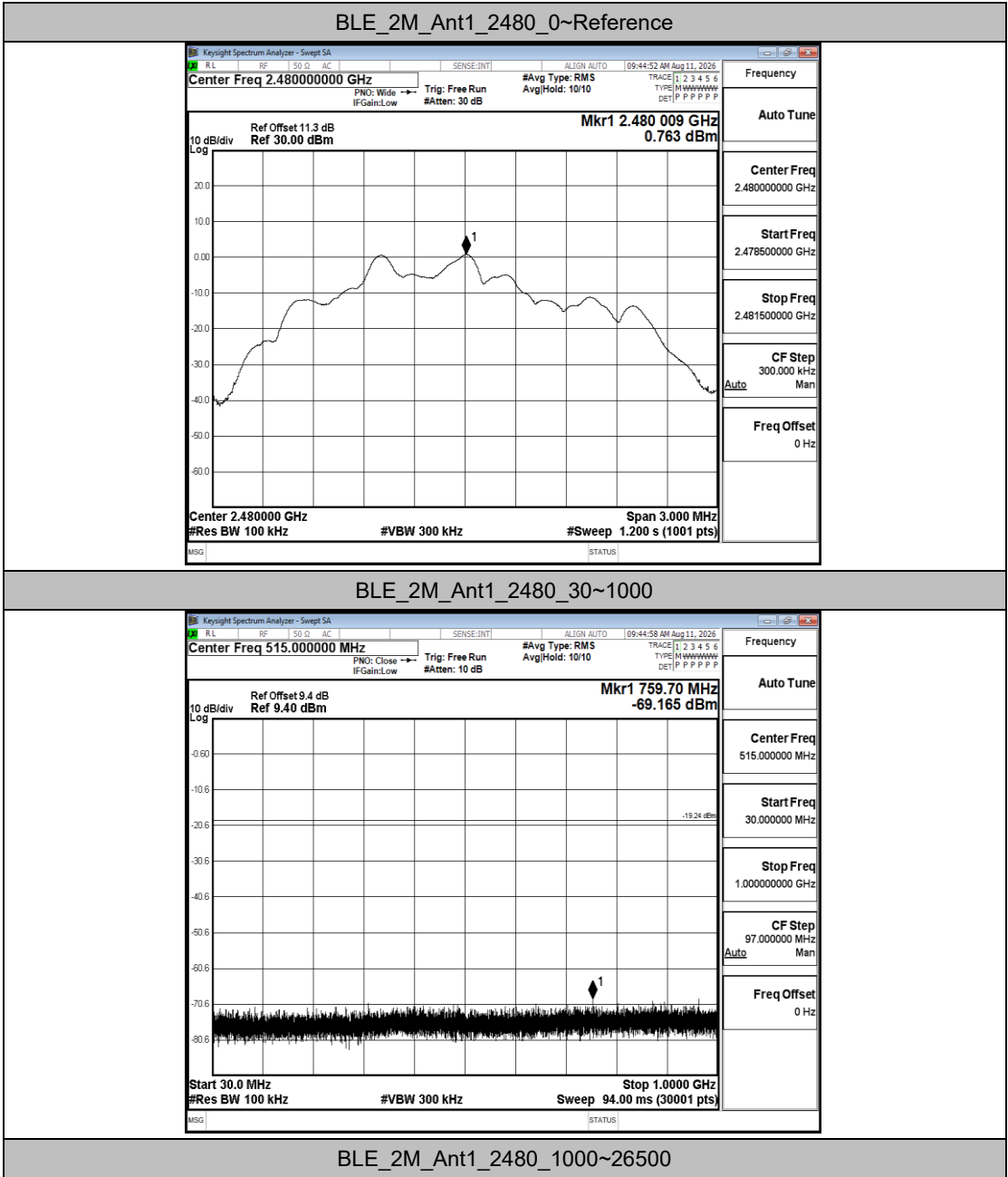


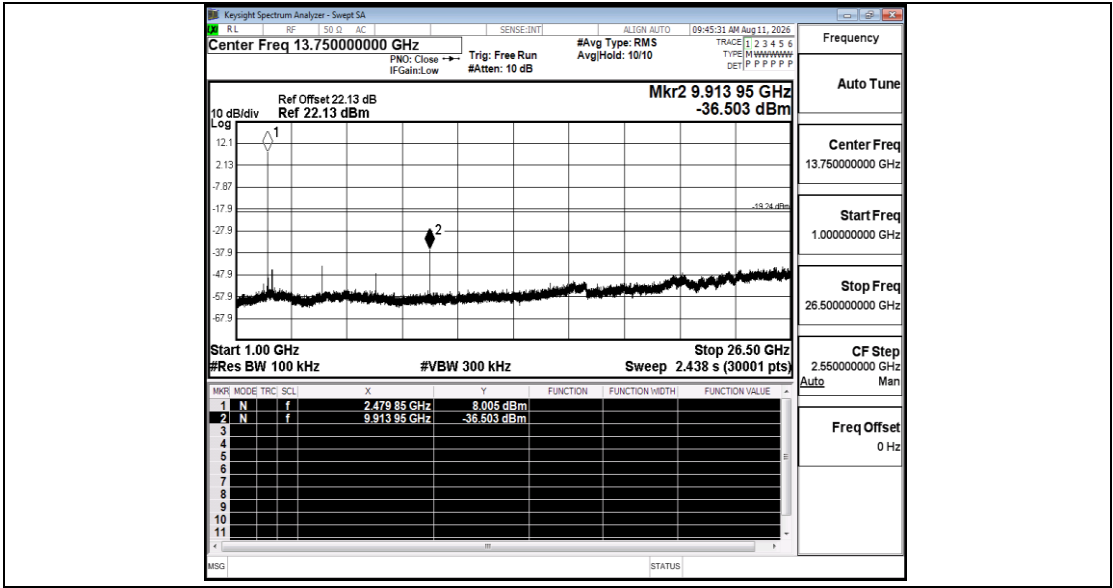










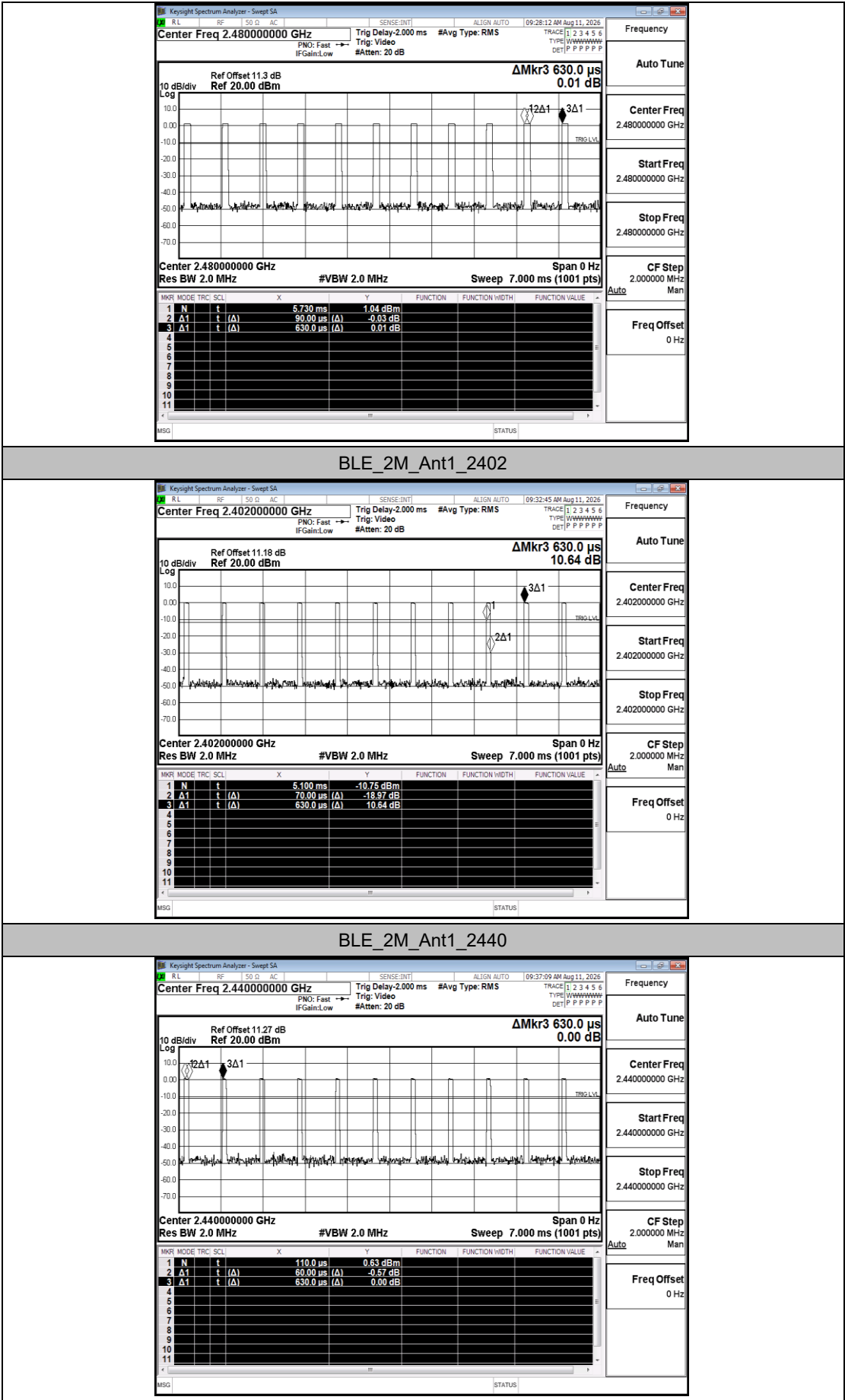


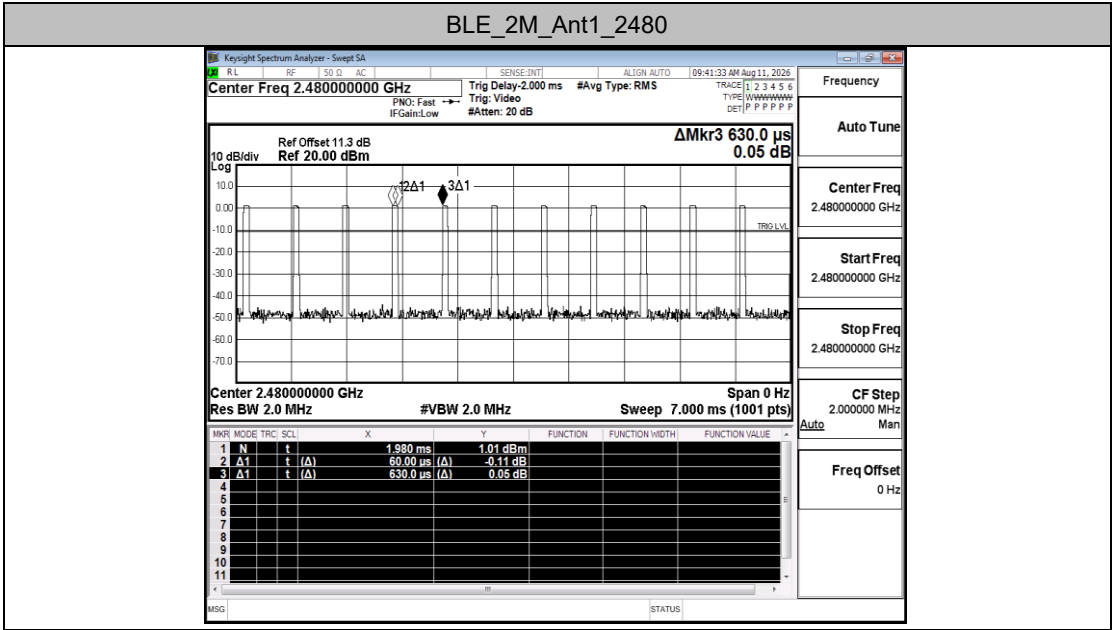
A.6 Duty Cycle

Test Result

TestMode	Antenna	Freq (MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.09	0.63	0.1429	14.29	8.45	---	---
		2440	0.10	0.63	0.1587	15.87	7.99	---	---
		2480	0.09	0.63	0.1429	14.29	8.45	---	---
BLE_2M	Ant1	2402	0.07	0.63	0.1111	11.11	9.54	---	---
		2440	0.06	0.63	0.0952	9.52	10.21	---	---
		2480	0.06	0.63	0.0952	9.52	10.21	---	---

Figure 10 shows two screenshots of a Keysight Spectrum Analyzer (Sweep SA) displaying the frequency spectrum of the BLE 1M_Ant1_2402 and BLE 1M_Ant1_2440. Both plots show a signal centered at 2.4 GHz with a span of 0 Hz and a resolution bandwidth (Res BW) of 2.0 MHz. The center frequency is 2.402000000 GHz for the first plot and 2.440000000 GHz for the second plot. The plots show a signal level of approximately -11 dBm and a bandwidth of 630.0 MHz. The first plot (BLE 1M_Ant1_2402) shows a signal level of -11.18 dBm and a bandwidth of 630.0 MHz. The second plot (BLE 1M_Ant1_2440) shows a signal level of -11.27 dBm and a bandwidth of 630.0 MHz. Both plots show a signal level of approximately -11 dBm and a bandwidth of 630.0 MHz. The plots show a signal level of approximately -11 dBm and a bandwidth of 630.0 MHz. The plots show a signal level of approximately -11 dBm and a bandwidth of 630.0 MHz.





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	-57.5	≤-51.65	2.00	8.45	48.15	≤54	PASS
				AV	2387.150	-56.91	≤-51.65	2.00	8.45	48.74	≤54	PASS
				AV	2390.000	-57.32	≤-51.65	2.00	8.45	48.33	≤54	PASS
				Peak	2310.000	-49.32	≤-23.20	2.00	0.00	47.88	≤74	PASS
				Peak	2363.420	-46.17	≤-23.20	2.00	0.00	51.03	≤74	PASS
				Peak	2390.000	-48.78	≤-23.20	2.00	0.00	48.42	≤74	PASS
		High	2480	AV	2483.500	-55.24	≤-51.65	2.00	8.45	50.41	≤54	PASS
				AV	2483.600	-54.79	≤-51.65	2.00	8.45	50.86	≤54	PASS
				AV	2500.000	-57.57	≤-51.65	2.00	8.45	48.08	≤54	PASS
				Peak	2483.500	-42.66	≤-23.20	2.00	0.00	54.54	≤74	PASS
				Peak	2483.520	-42.66	≤-23.20	2.00	0.00	54.54	≤74	PASS
				Peak	2500.000	-47.36	≤-23.20	2.00	0.00	49.84	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.79	≤-52.74	2.00	9.54	48.95	≤54	PASS
				AV	2360.270	-57.3	≤-52.74	2.00	9.54	49.44	≤54	PASS
				AV	2390.000	-57.85	≤-52.74	2.00	9.54	48.89	≤54	PASS
				Peak	2310.000	-48.88	≤-23.20	2.00	0.00	48.32	≤74	PASS
				Peak	2368.985	-45.95	≤-23.20	2.00	0.00	51.25	≤74	PASS
				Peak	2390.000	-47.68	≤-23.20	2.00	0.00	49.52	≤74	PASS
		High	2480	AV	2483.500	-56.01	≤-53.41	2.00	10.21	51.40	≤54	PASS
				AV	2483.600	-55.91	≤-53.41	2.00	10.21	51.50	≤54	PASS
				AV	2500.000	-57.04	≤-53.41	2.00	10.21	50.37	≤54	PASS
				Peak	2483.500	-42.13	≤-23.20	2.00	0.00	55.07	≤74	PASS
				Peak	2483.520	-42.13	≤-23.20	2.00	0.00	55.07	≤74	PASS
				Peak	2500.000	-48.88	≤-23.20	2.00	0.00	48.32	≤74	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

