

Appendix B

RF Test Data for BT LE(Conducted Measurement)

Product Name: Smart Ear Care Device

Test Model: Earsight Ultra

Environmental Conditions

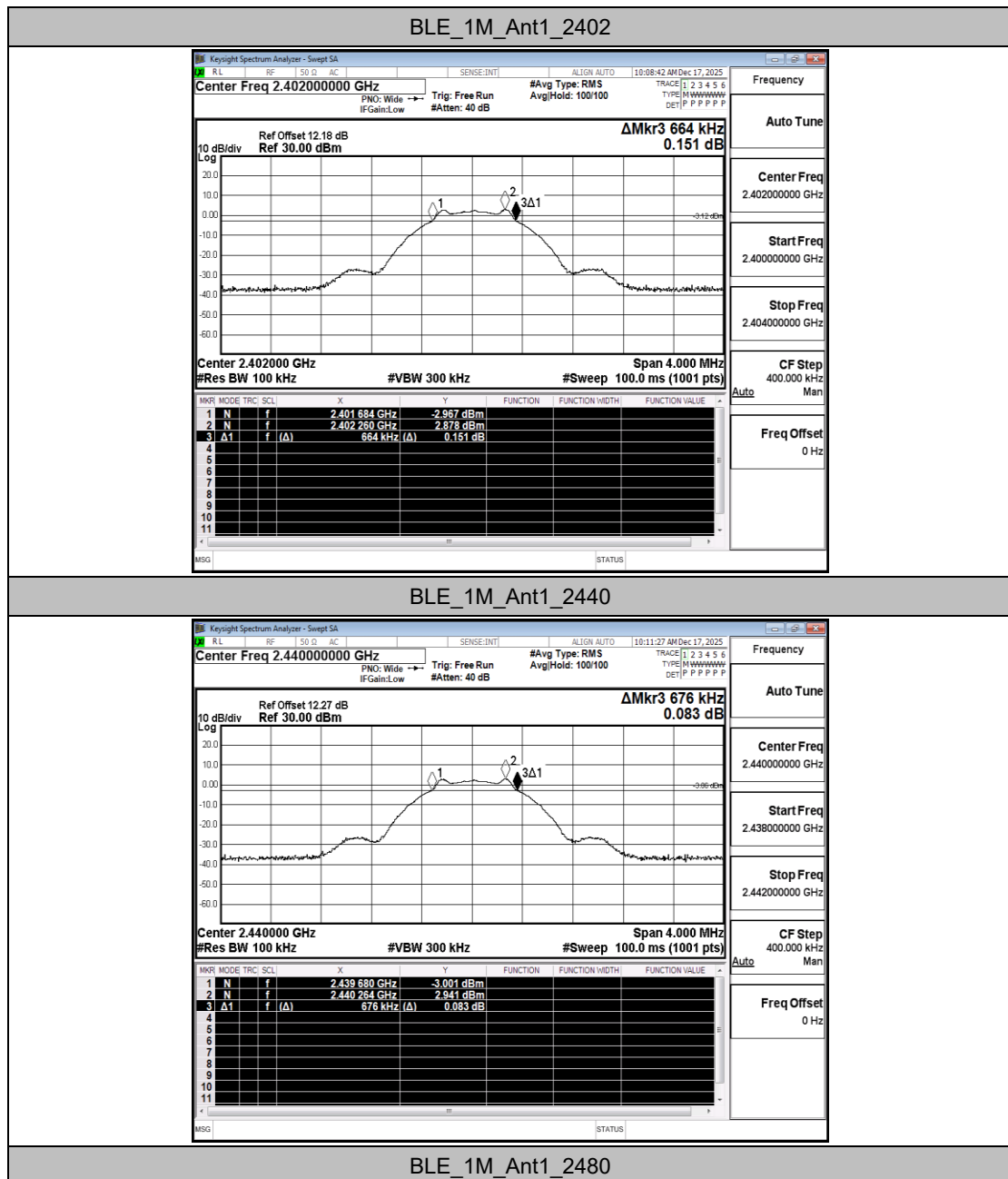
Temperature:	23.4°C
Relative Humidity:	52.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Fengliu Tang

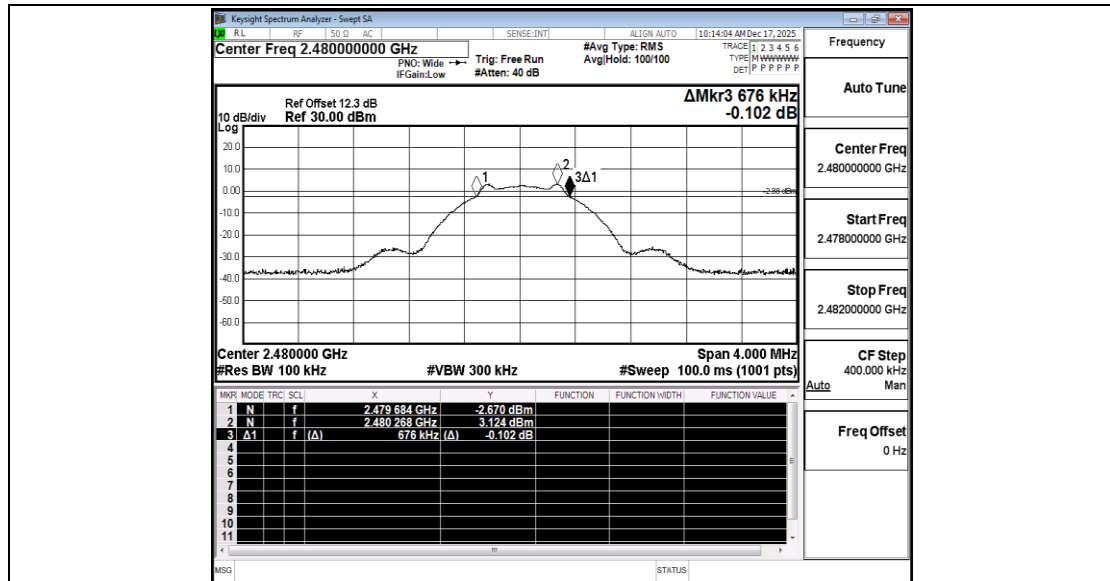
B.1 DTS Bandwidth

Test Result

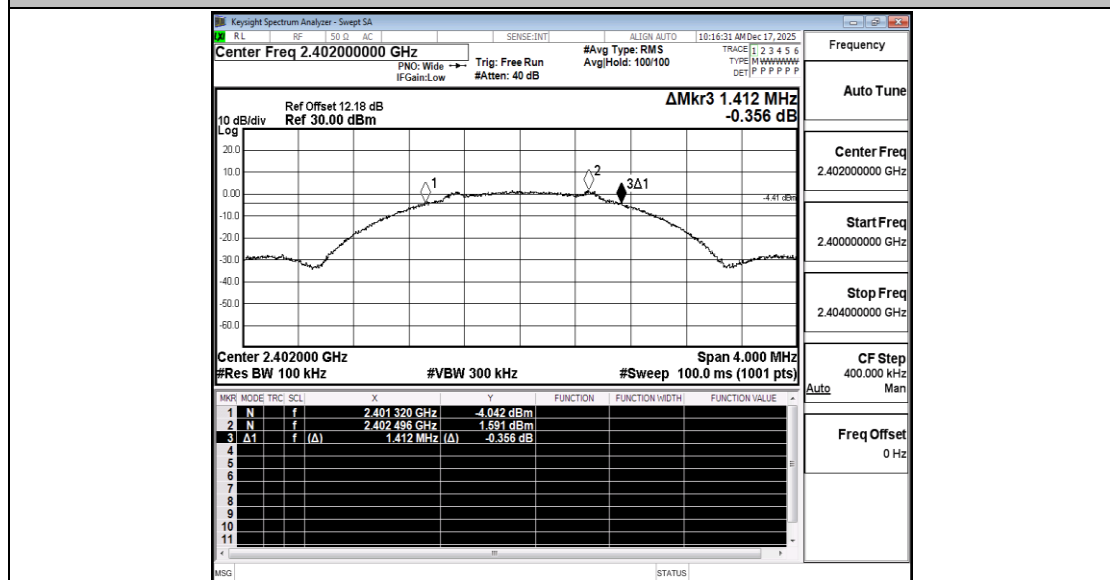
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.664	2401.684	2402.348	0.5	PASS
		2440	0.676	2439.680	2440.356	0.5	PASS
		2480	0.676	2479.684	2480.360	0.5	PASS
BLE_2M	Ant1	2402	1.412	2401.320	2402.732	0.5	PASS
		2440	1.448	2439.284	2440.732	0.5	PASS
		2480	1.308	2479.380	2480.688	0.5	PASS

Test Graphs

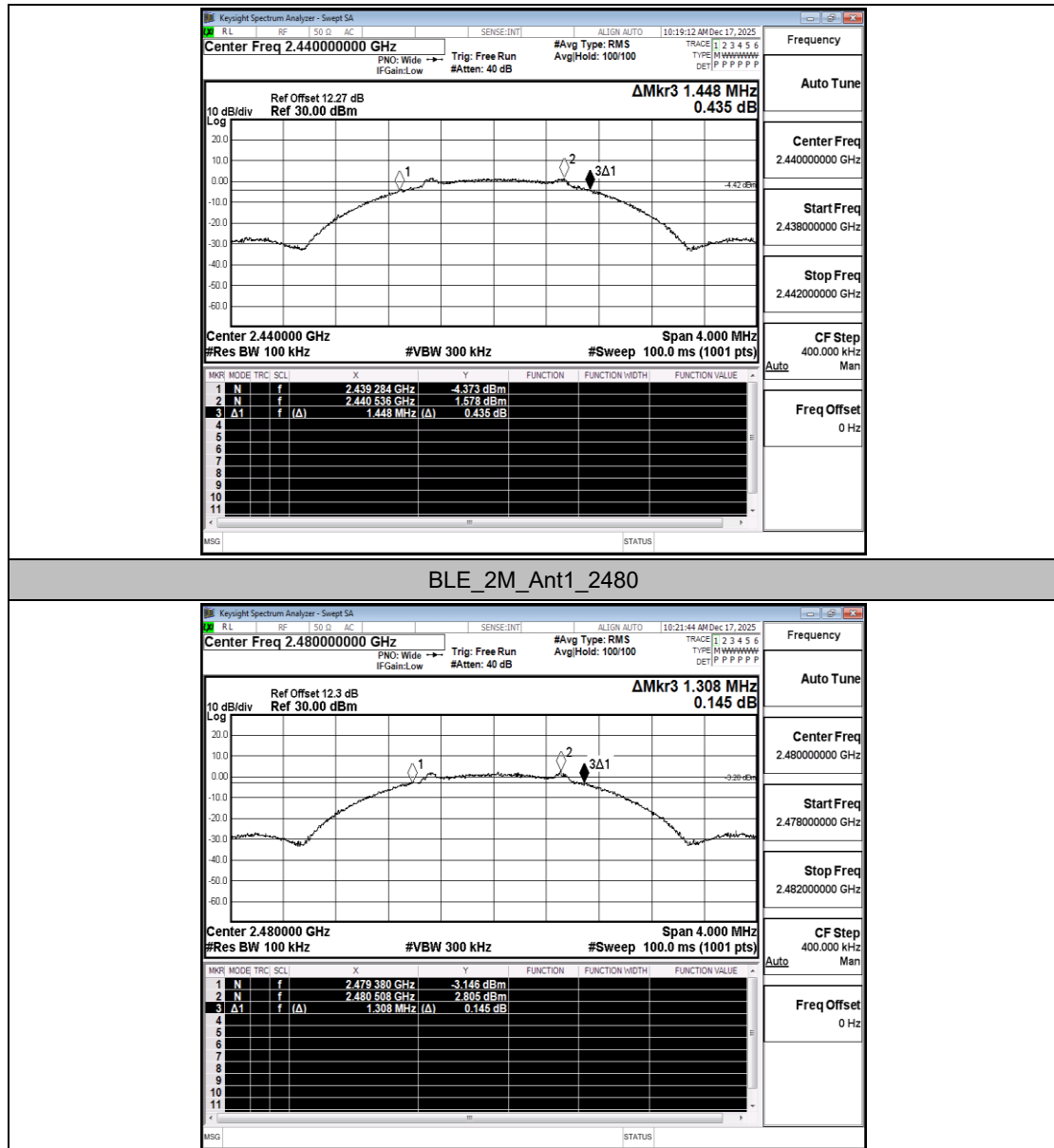




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

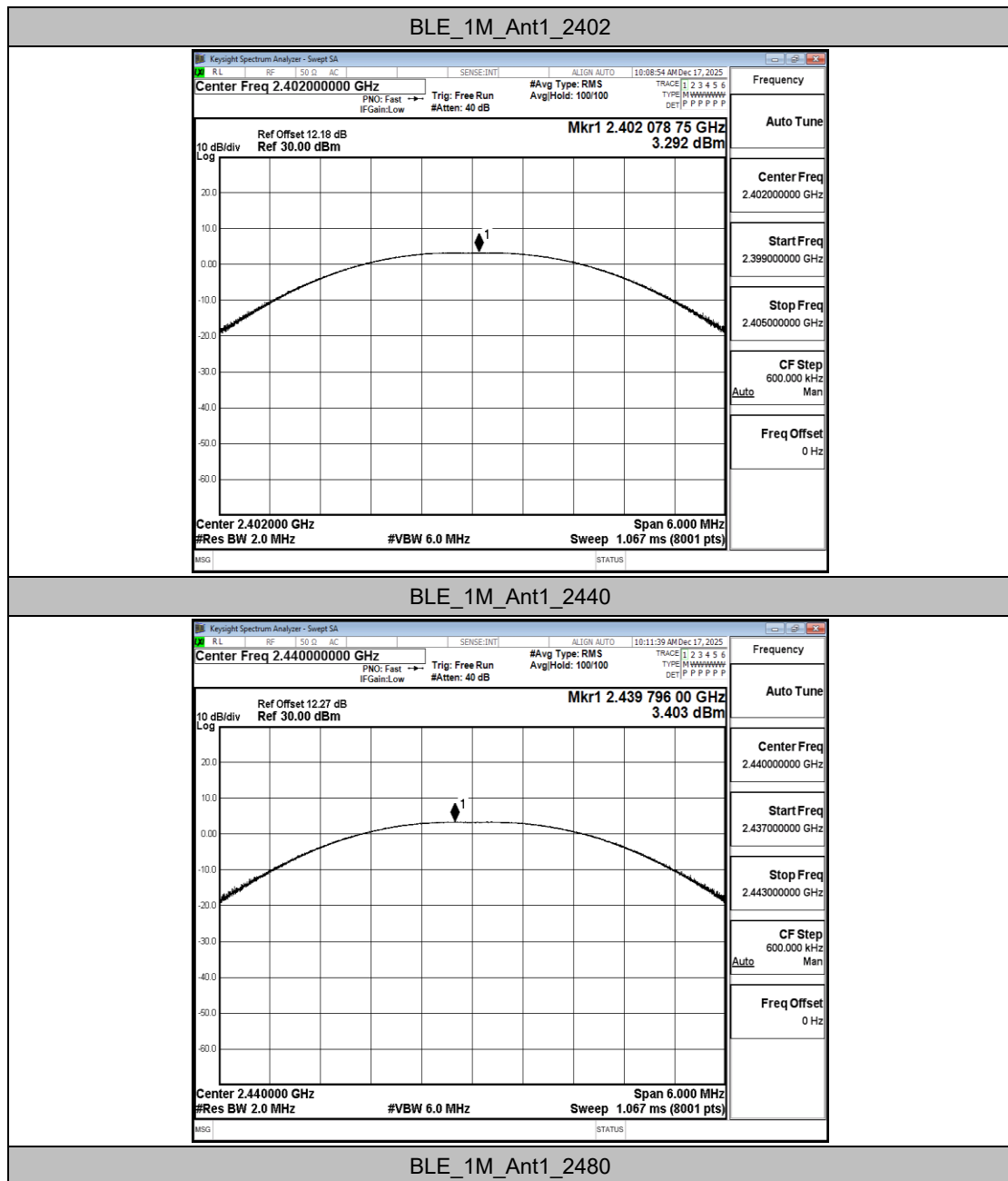


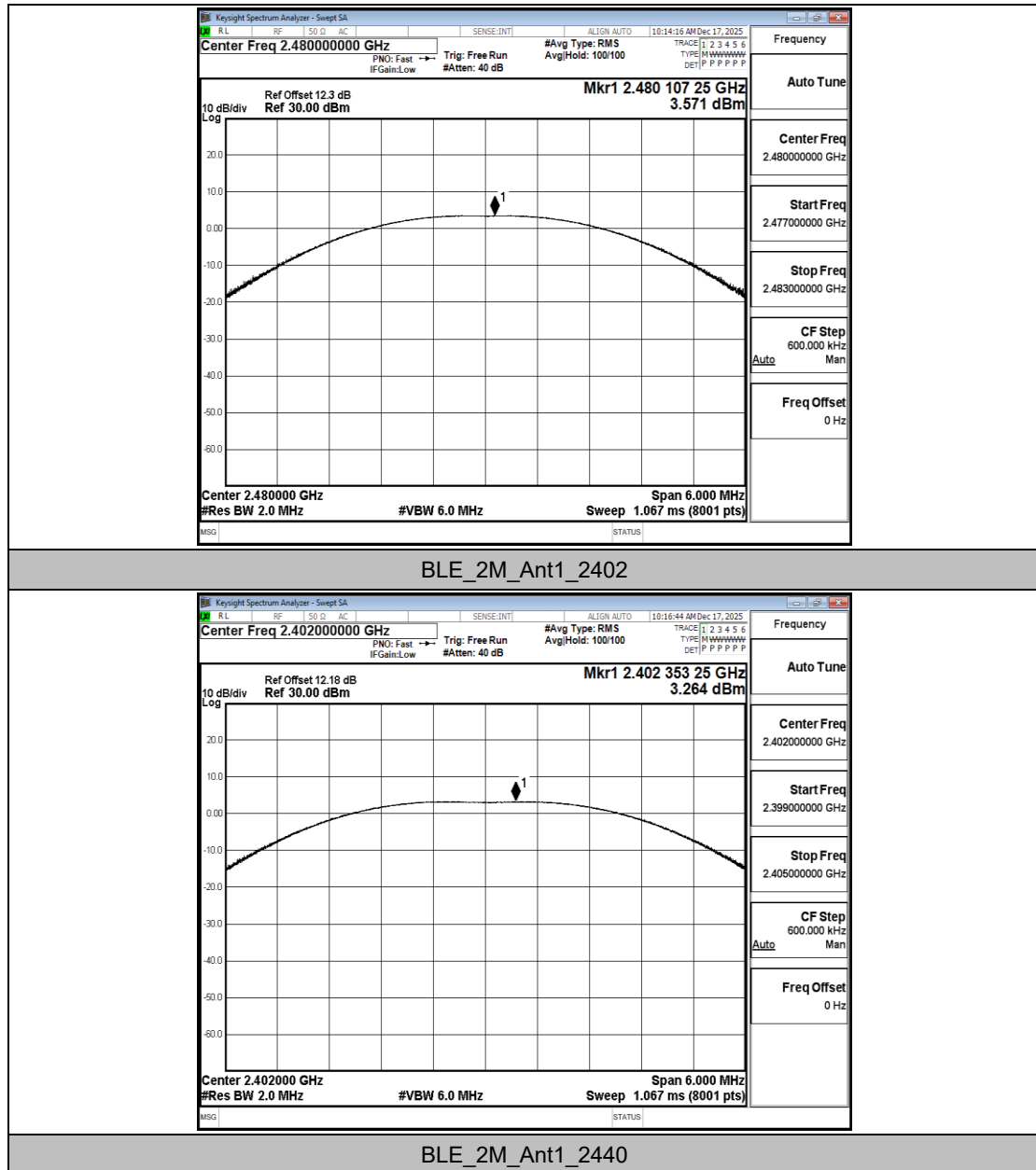
B.2 Maximum Peak conducted output power

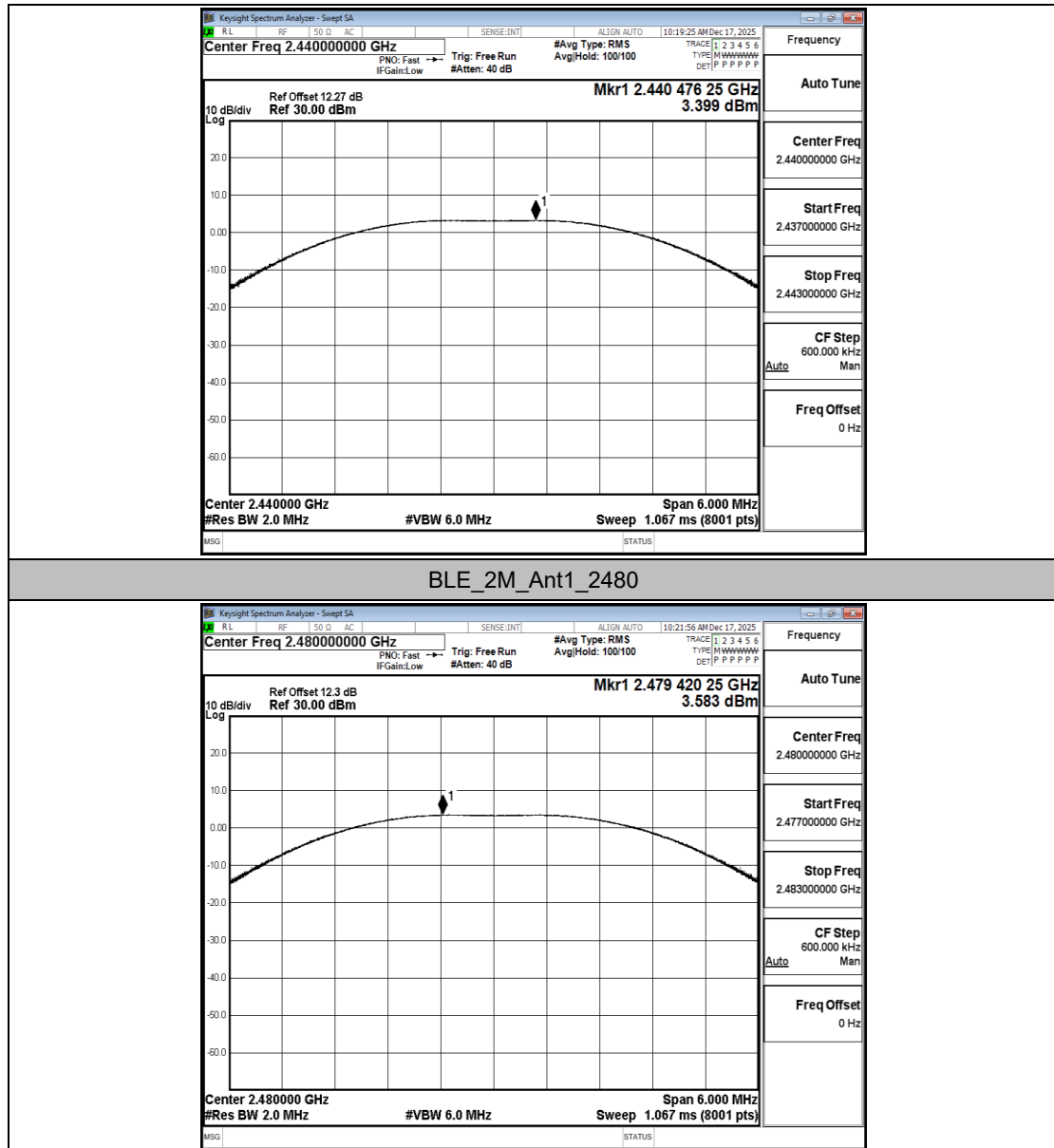
Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.29	≤30	PASS
		2440	3.40	≤30	PASS
		2480	3.57	≤30	PASS
BLE_2M	Ant1	2402	3.26	≤30	PASS
		2440	3.40	≤30	PASS
		2480	3.58	≤30	PASS

Test Graphs Peak





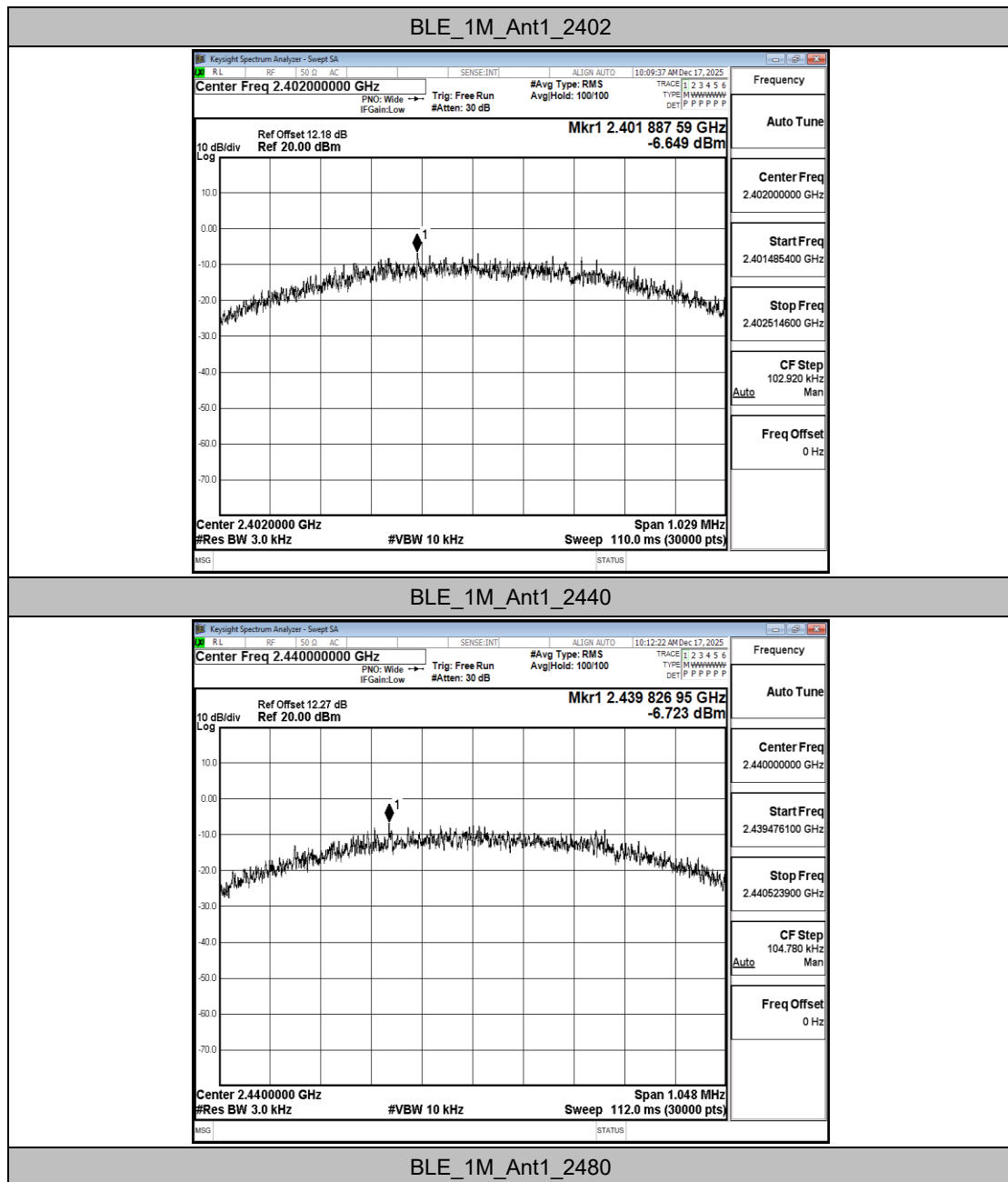


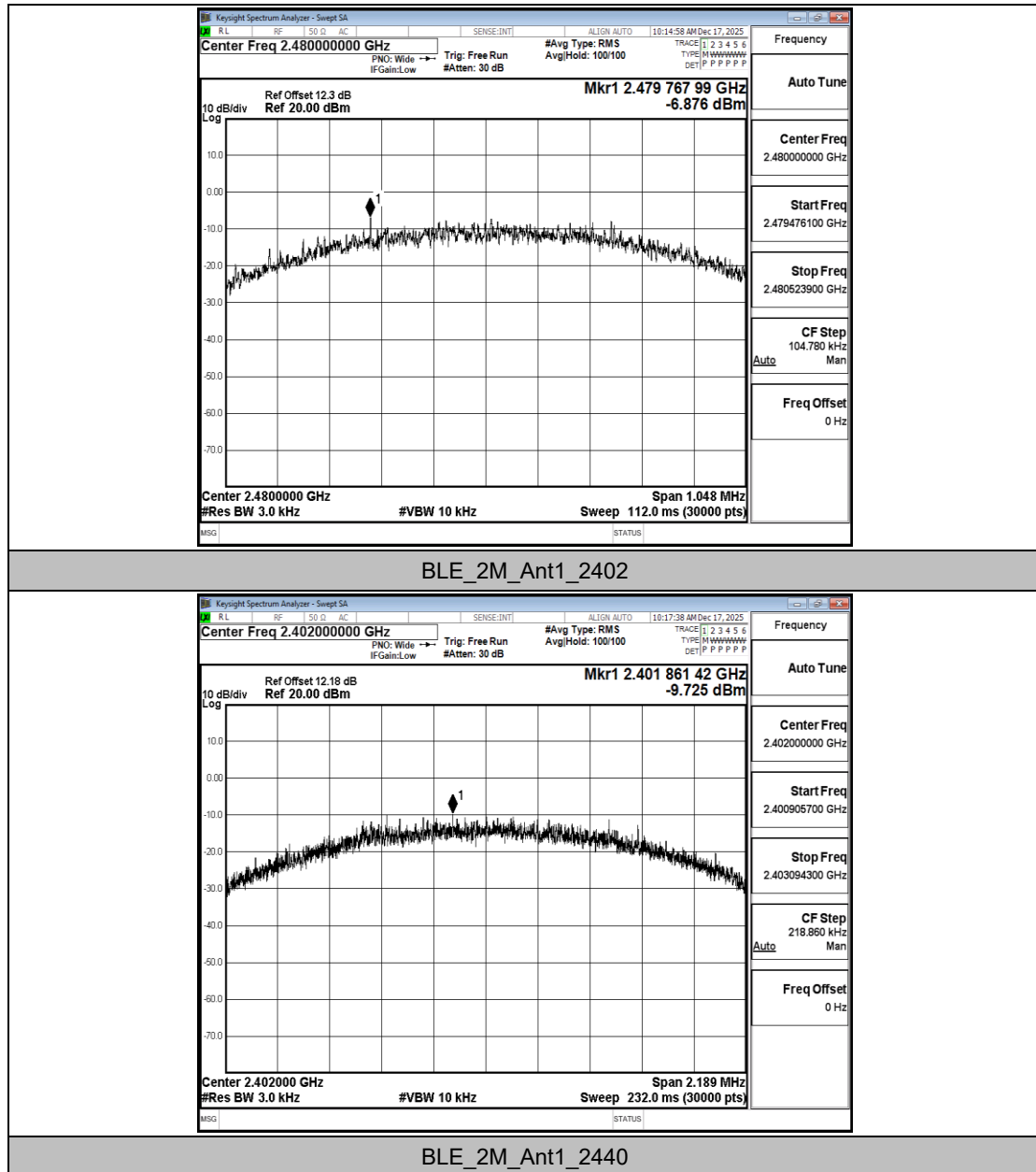
B.3 Maximum power spectral density

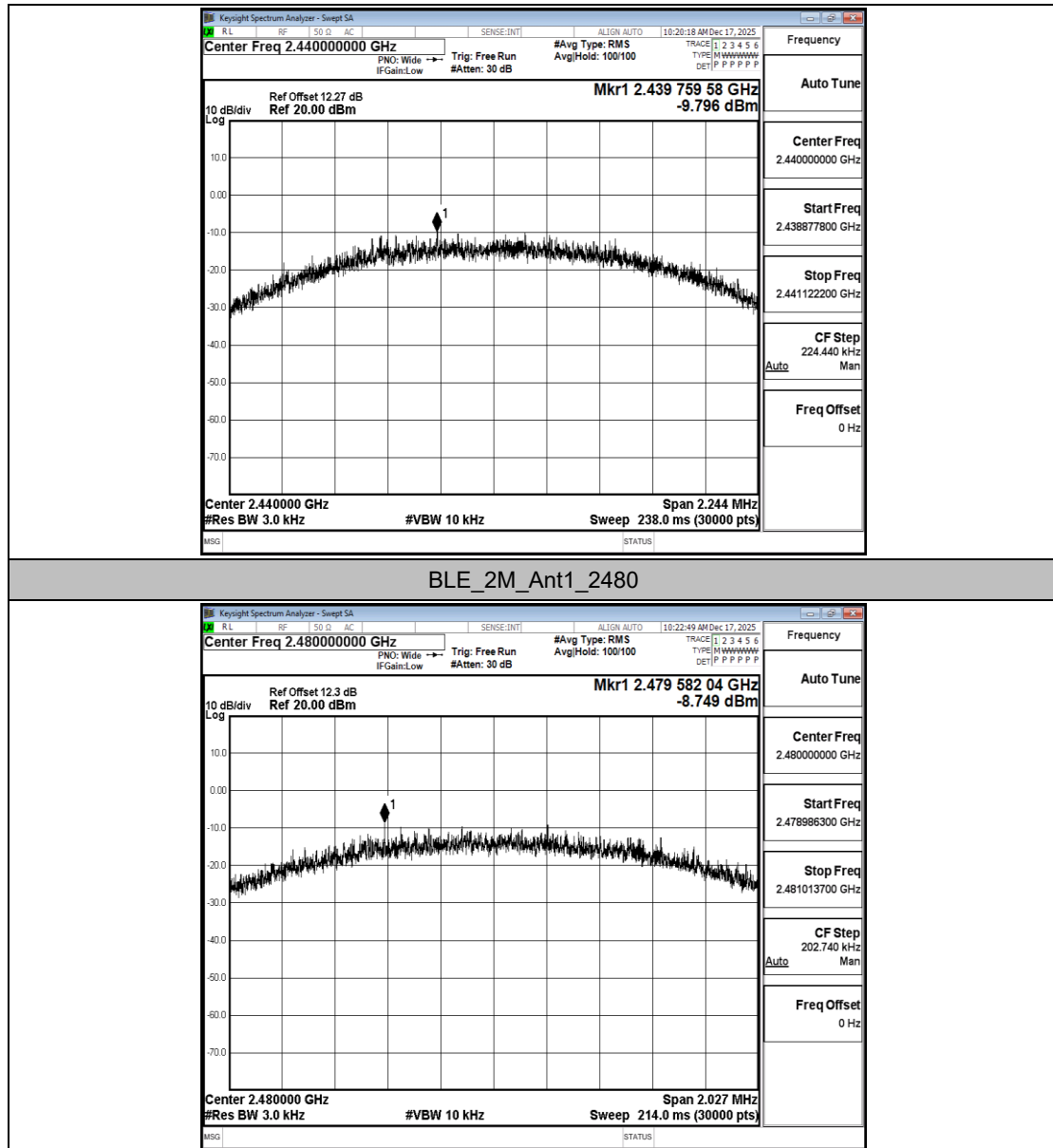
Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.65	≤8.00	PASS
		2440	-6.72	≤8.00	PASS
		2480	-6.88	≤8.00	PASS
BLE_2M	Ant1	2402	-9.73	≤8.00	PASS
		2440	-9.80	≤8.00	PASS
		2480	-8.75	≤8.00	PASS

Test Graphs





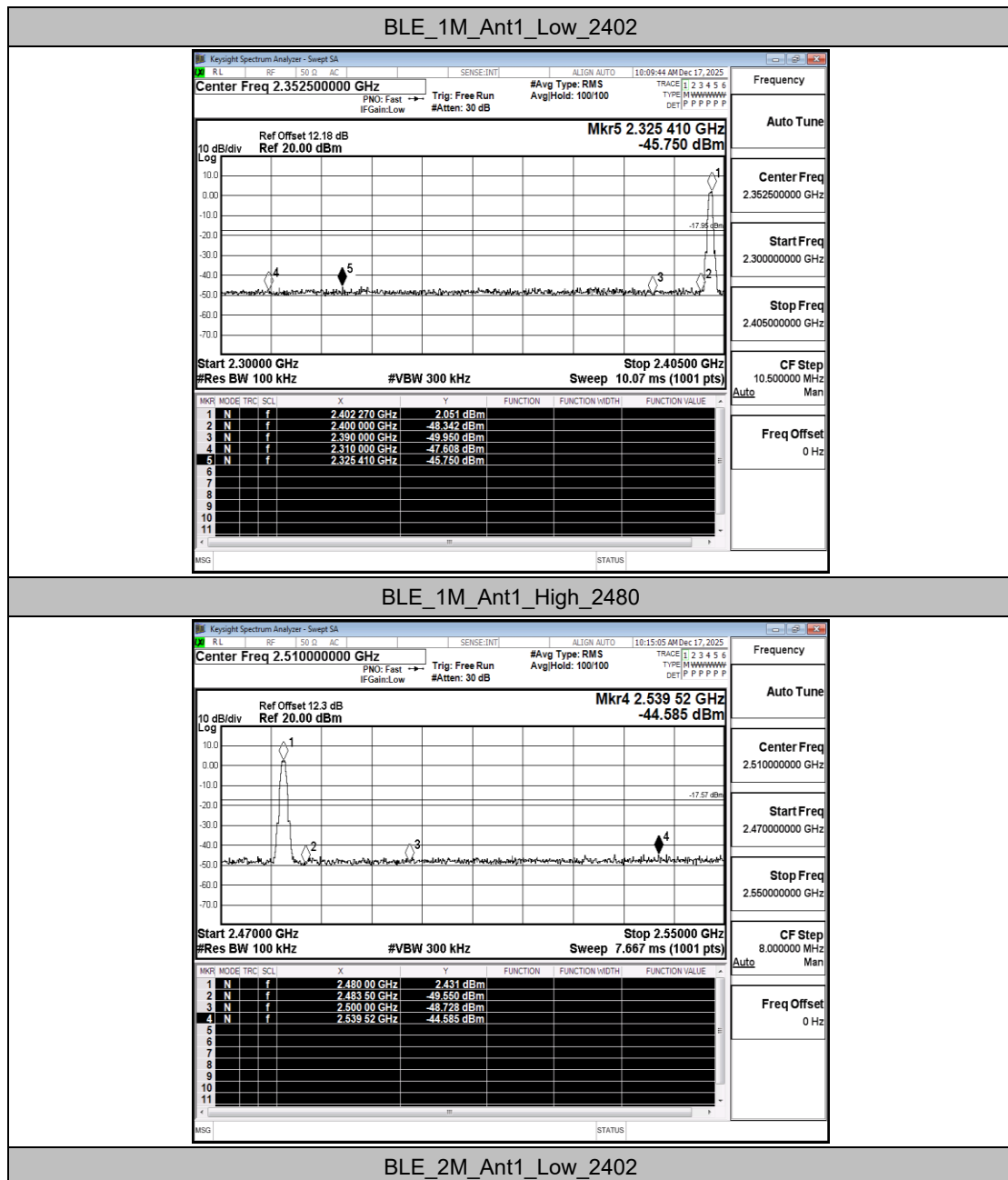


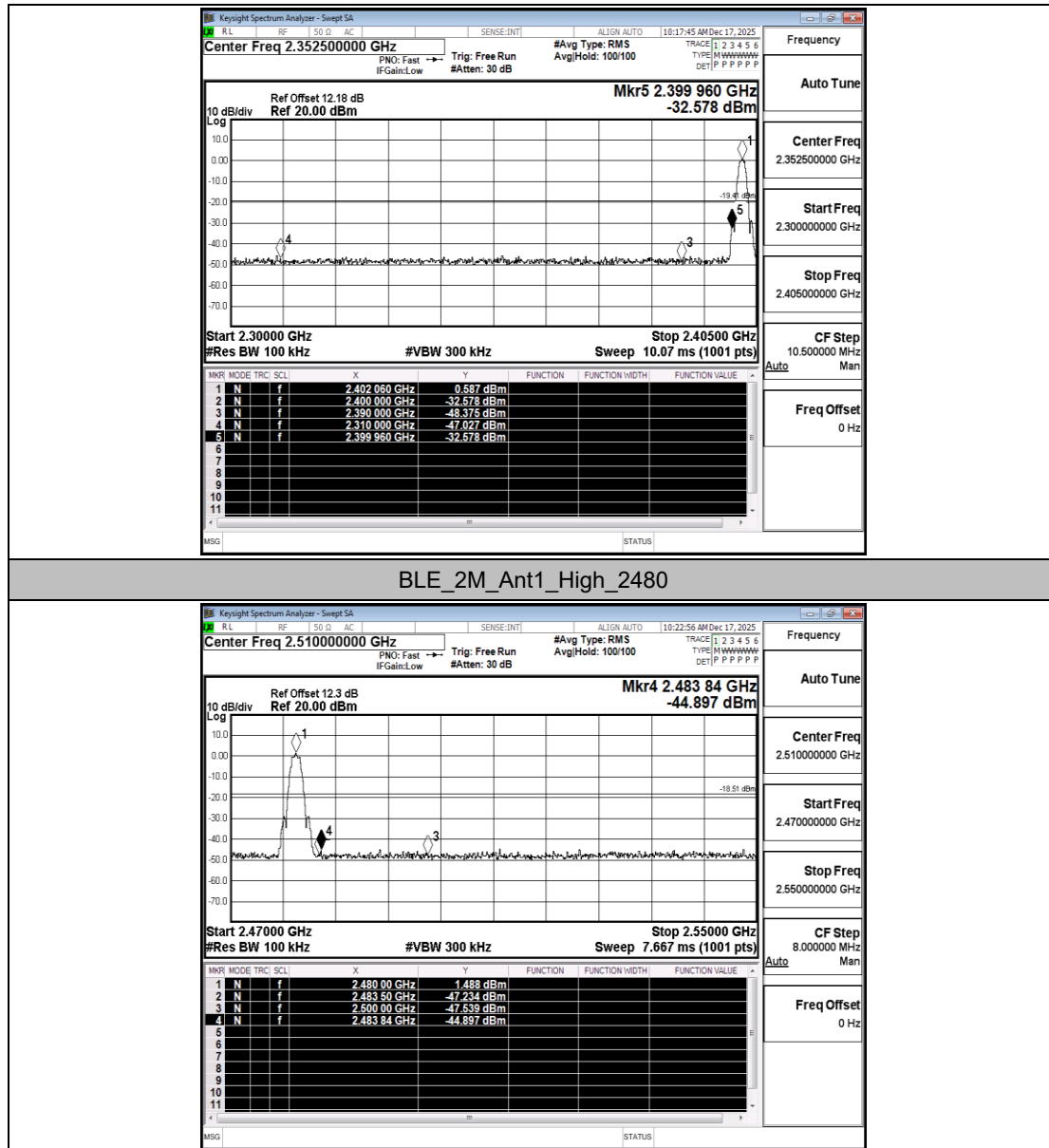
B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.05	-45.75	≤-17.95	PASS
		High	2480	2.43	-44.59	≤-17.57	PASS
BLE_2M	Ant1	Low	2402	0.59	-32.58	≤-19.41	PASS
		High	2480	1.49	-44.9	≤-18.51	PASS

Test Graphs



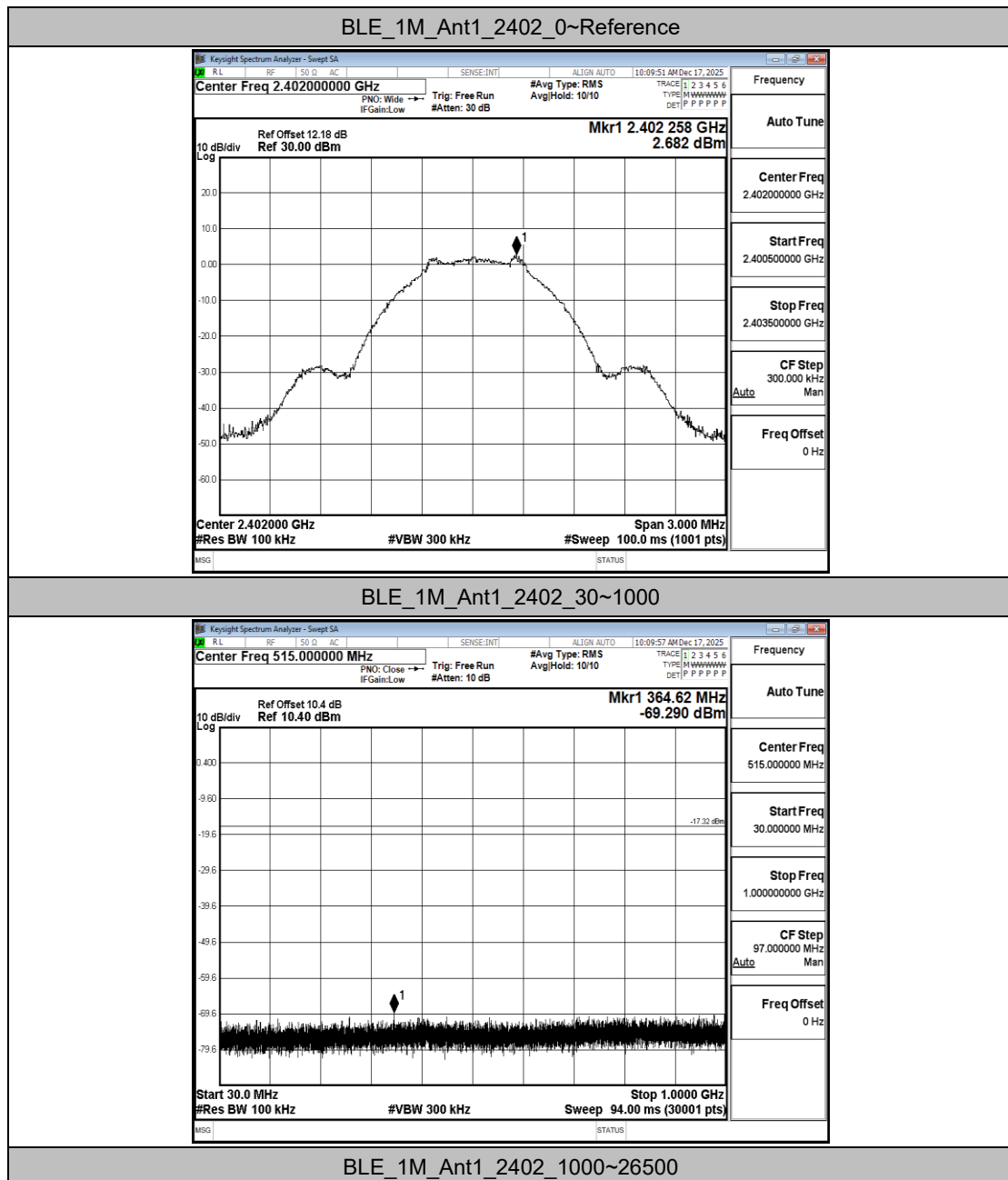


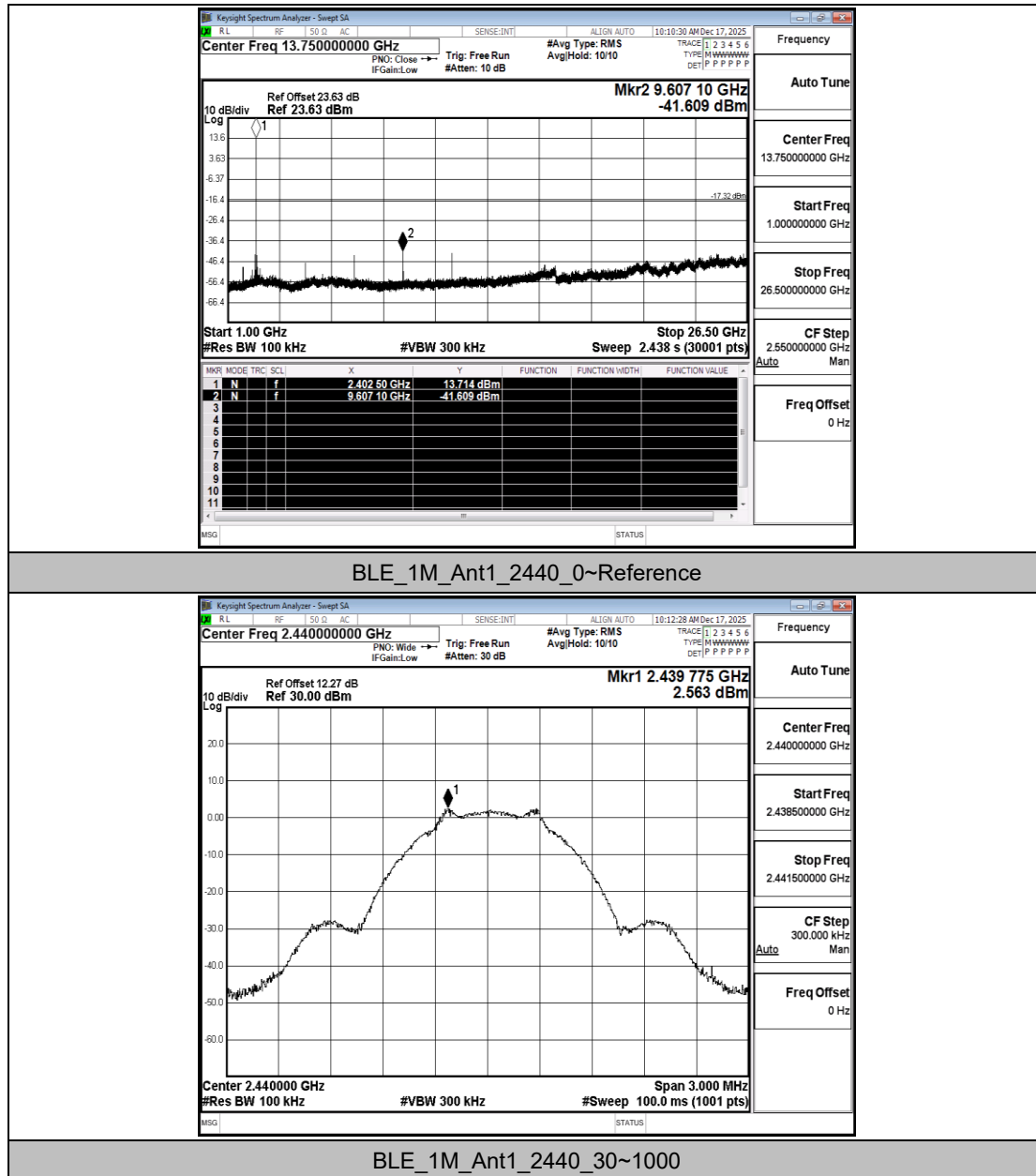
B.5 Conducted Spurious Emission

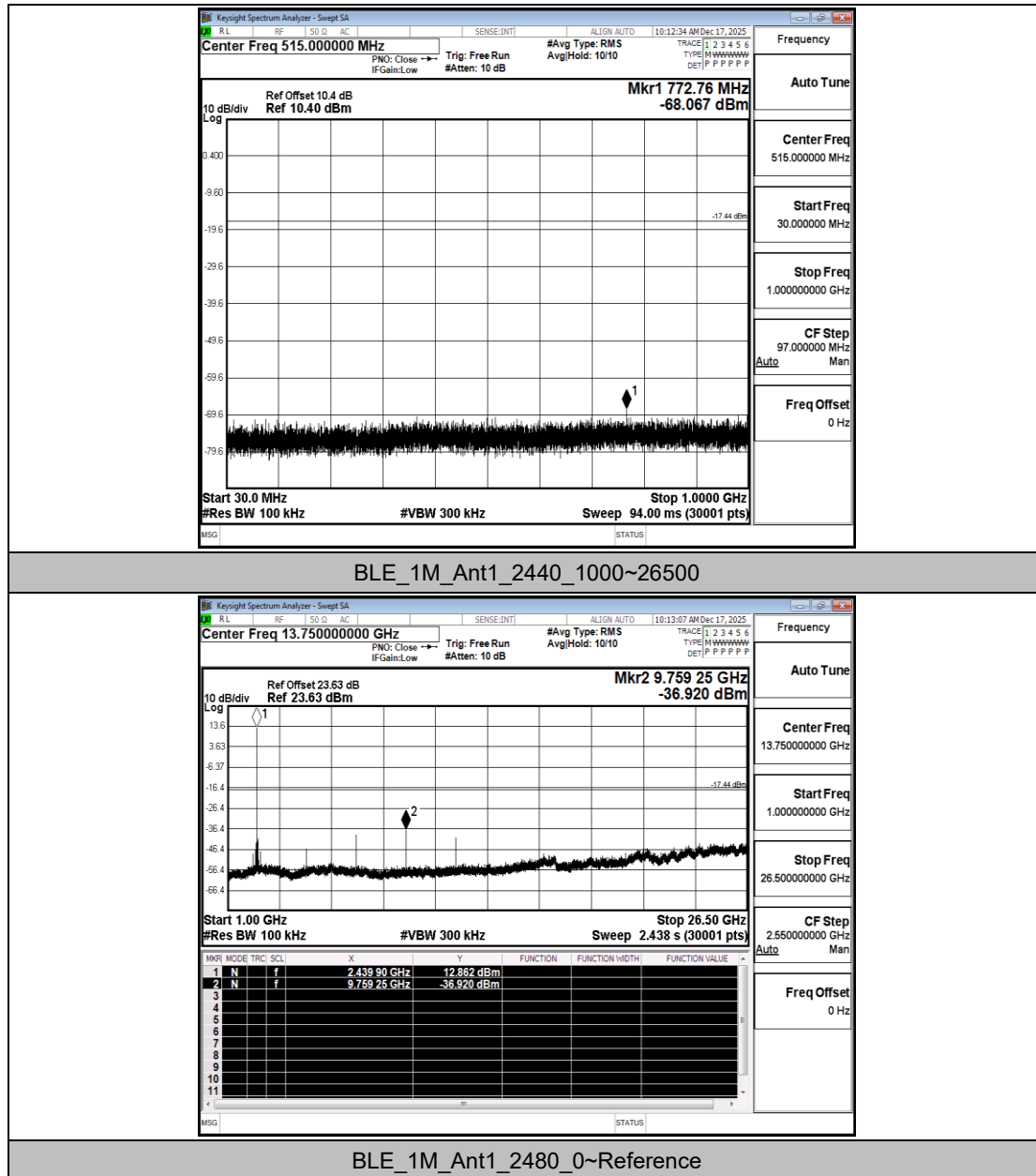
Test Result

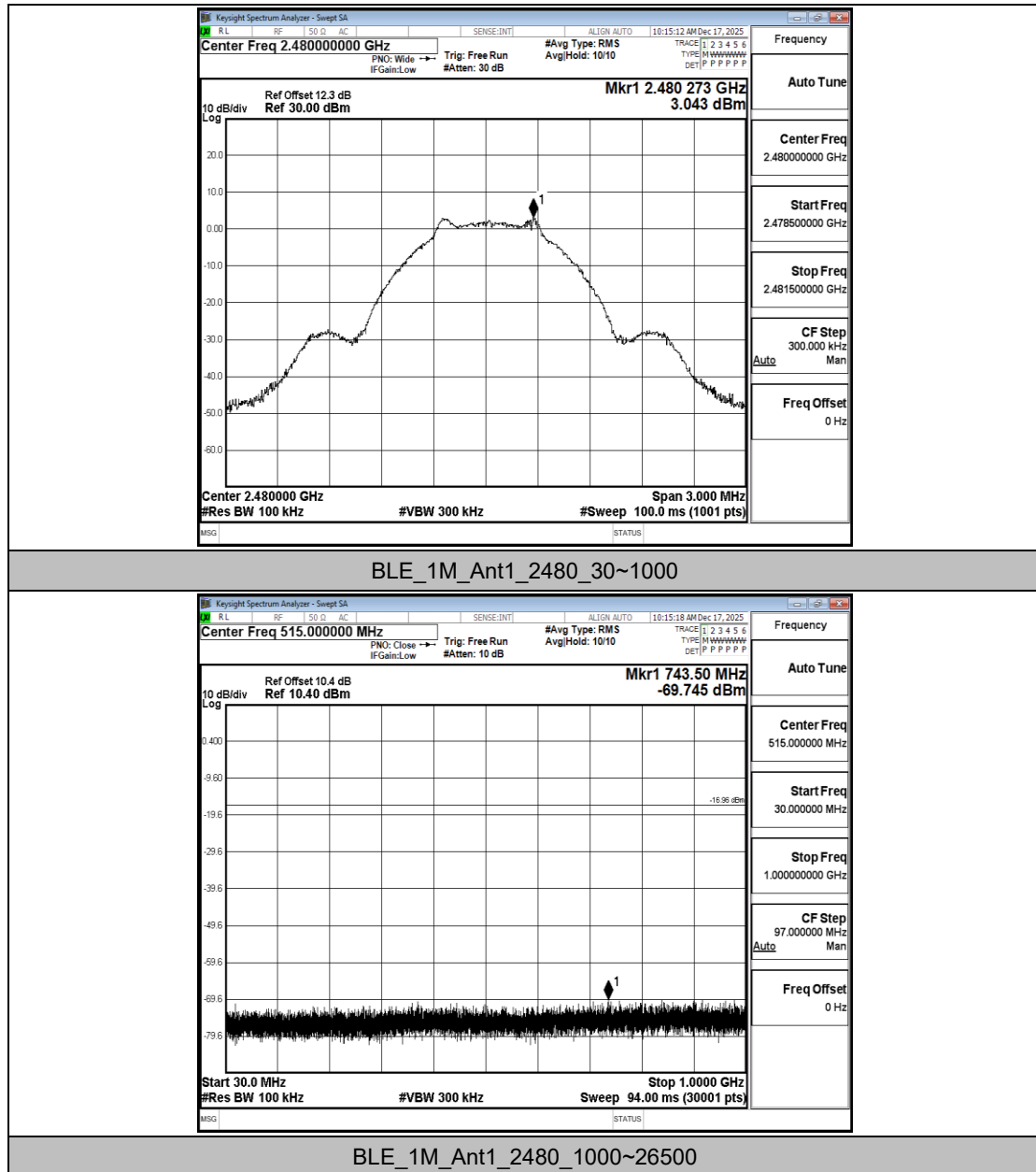
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.68	2.68	---	PASS
			30~1000	2.68	-69.29	≤-17.32	PASS
			1000~26500	2.68	-41.61	≤-17.32	PASS
		2440	Reference	2.56	2.56	---	PASS
			30~1000	2.56	-68.07	≤-17.44	PASS
			1000~26500	2.56	-36.92	≤-17.44	PASS
		2480	Reference	3.04	3.04	---	PASS
			30~1000	3.04	-69.75	≤-16.96	PASS
			1000~26500	3.04	-33.45	≤-16.96	PASS
BLE_2M	Ant1	2402	Reference	0.92	0.92	---	PASS
			30~1000	0.92	-69.48	≤-19.08	PASS
			1000~26500	0.92	-42.56	≤-19.08	PASS
		2440	Reference	1.49	1.49	---	PASS
			30~1000	1.49	-69.22	≤-18.51	PASS
			1000~26500	1.49	-40.68	≤-18.51	PASS
		2480	Reference	2.56	2.56	---	PASS
			30~1000	2.56	-69.38	≤-17.44	PASS
			1000~26500	2.56	-37.05	≤-17.44	PASS

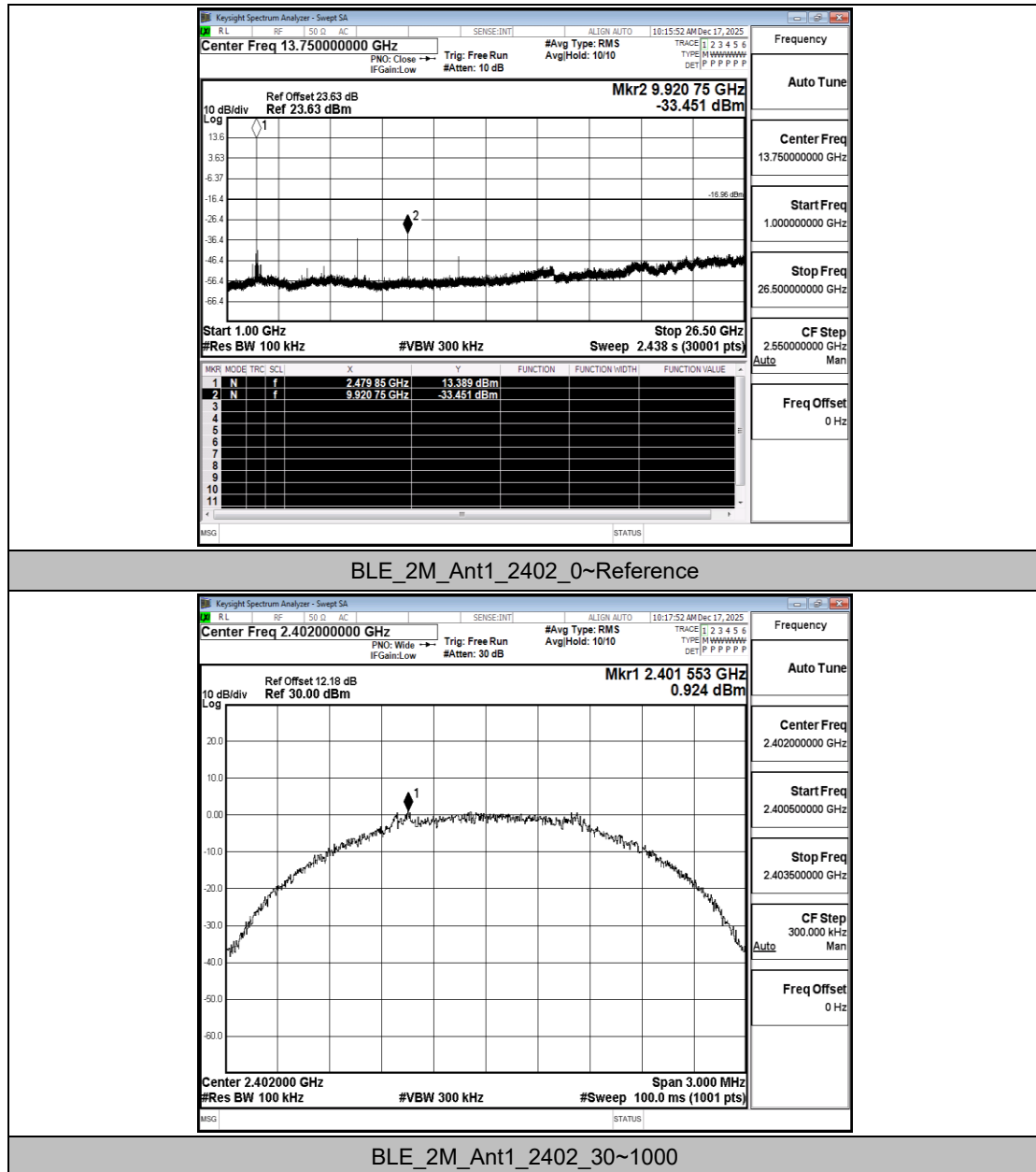
Test Graphs

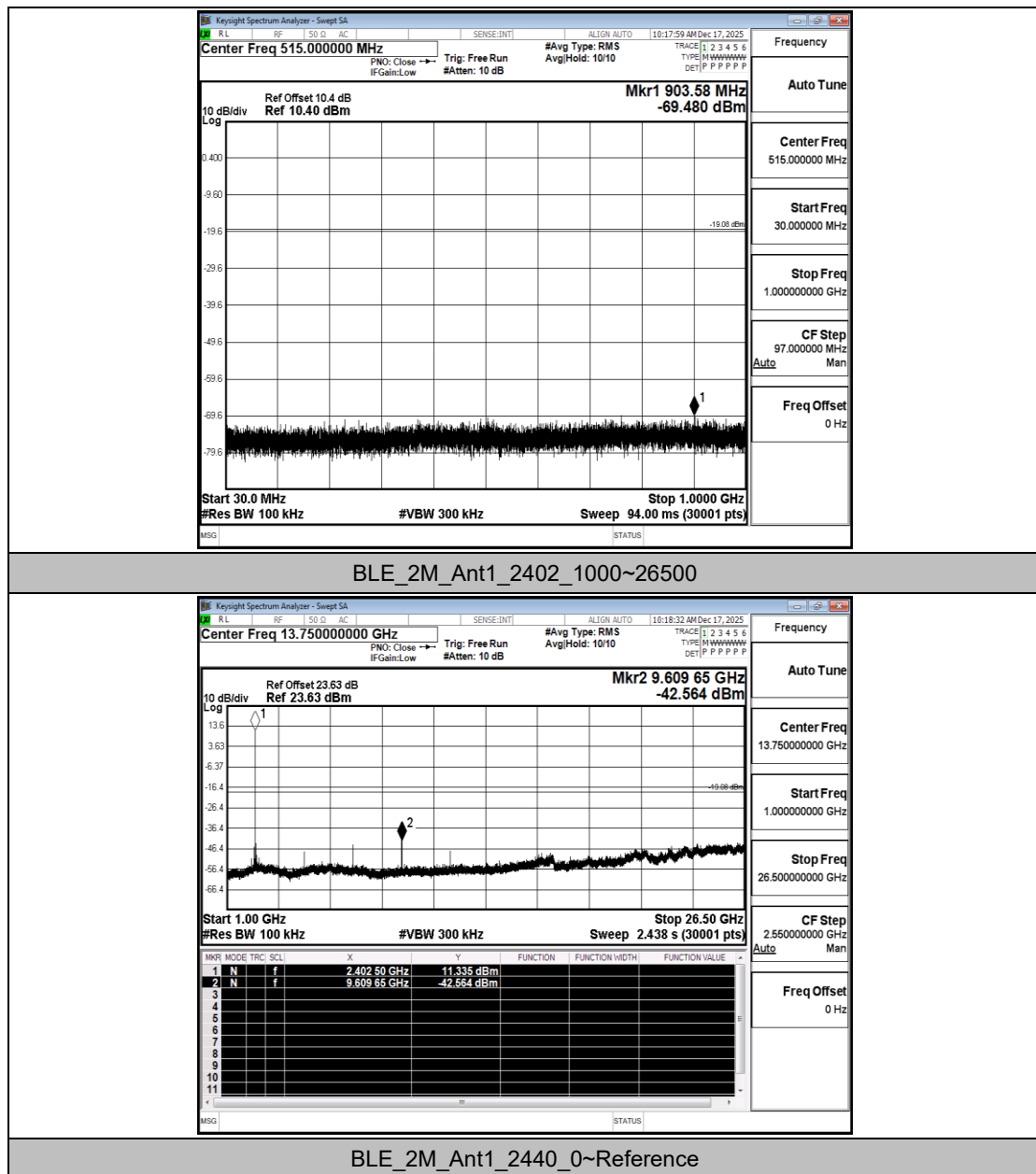


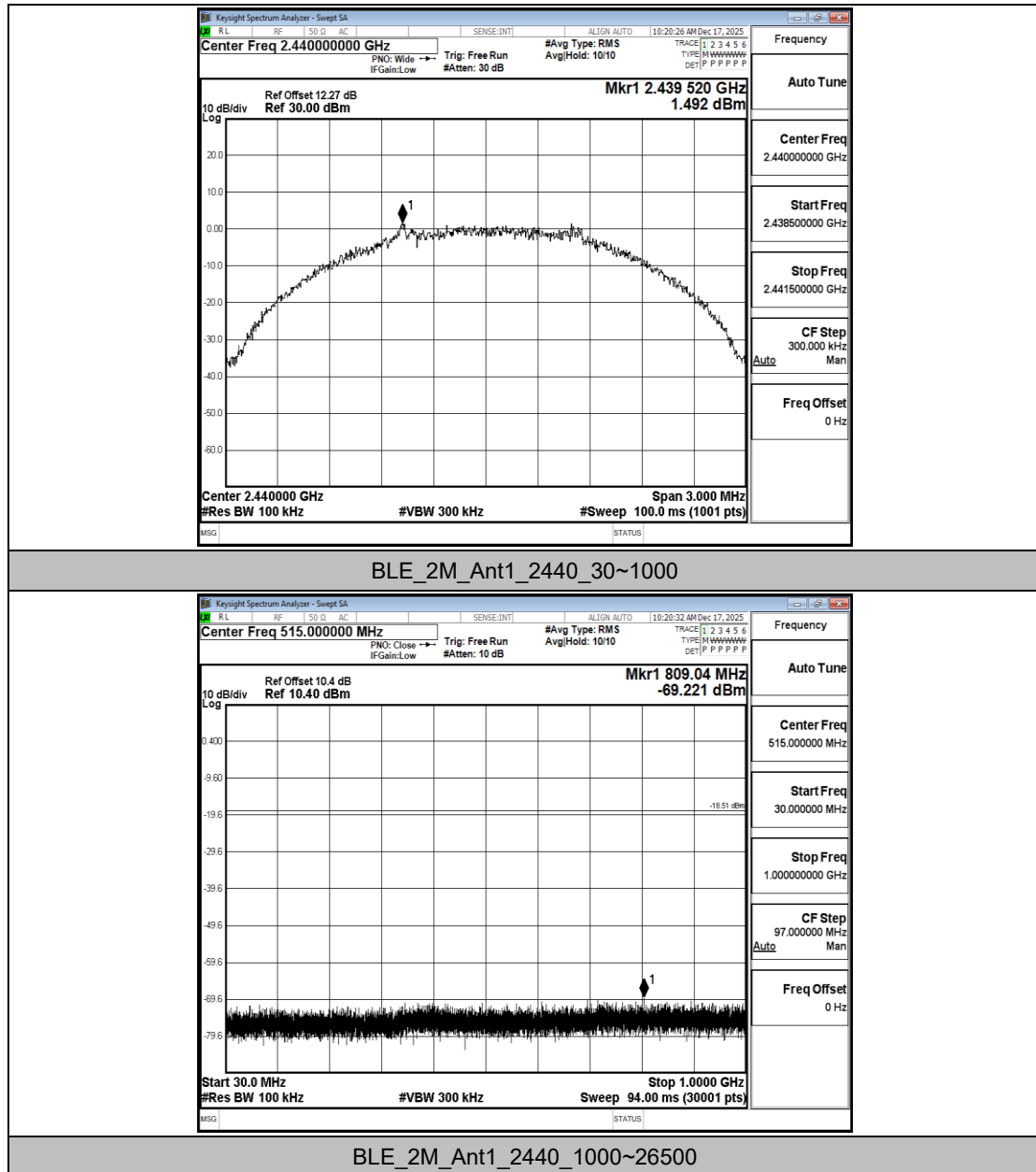


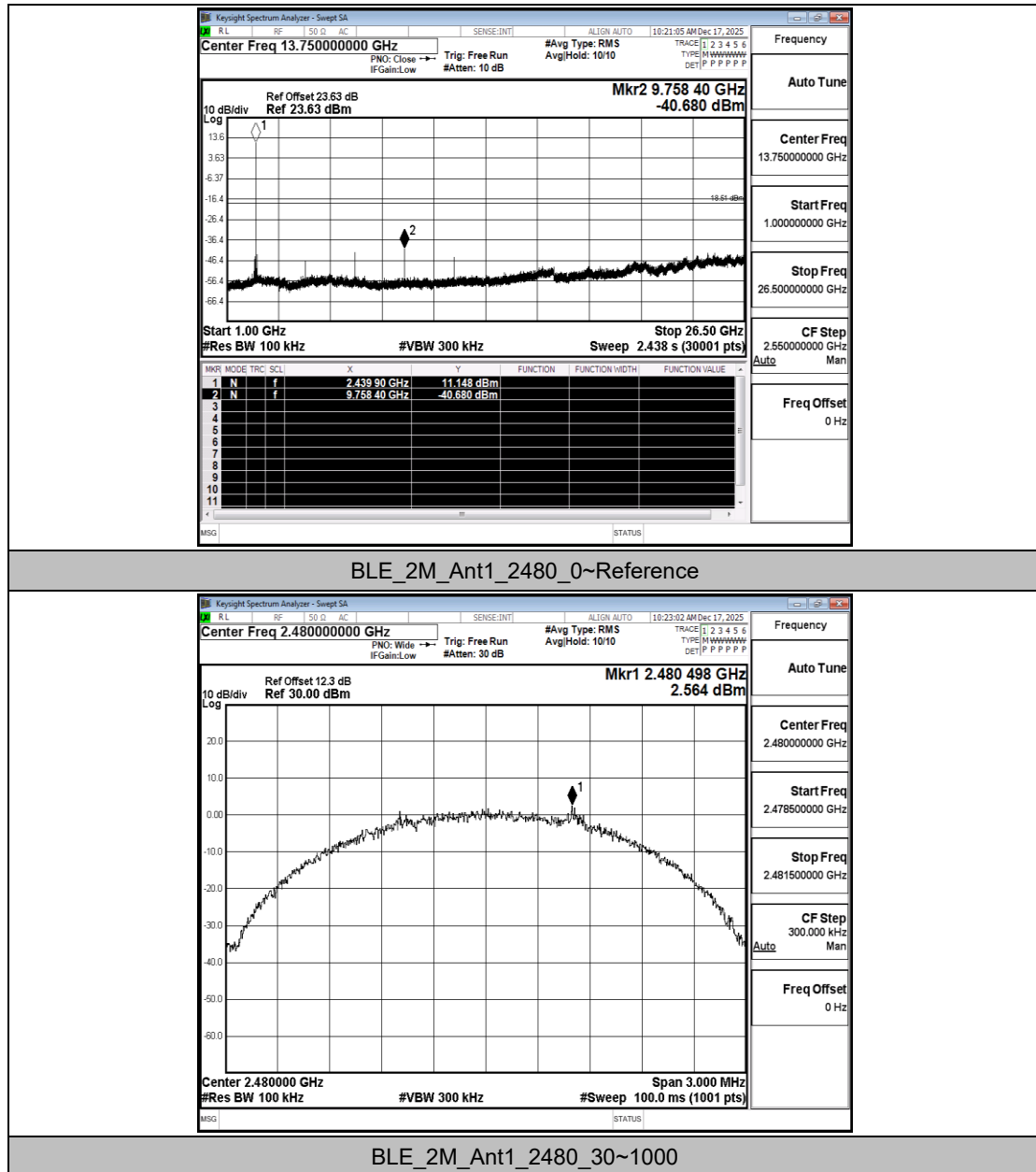


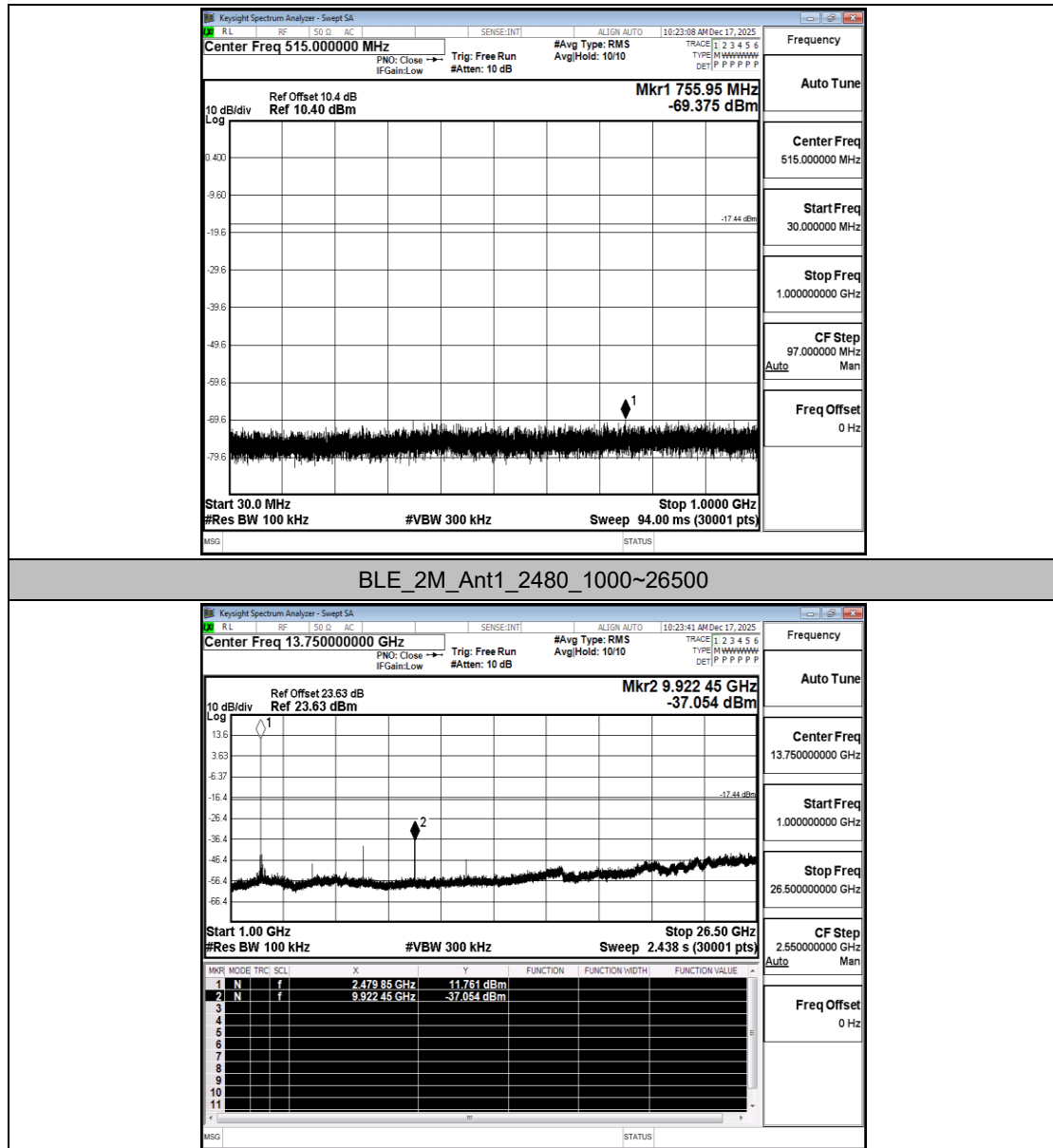










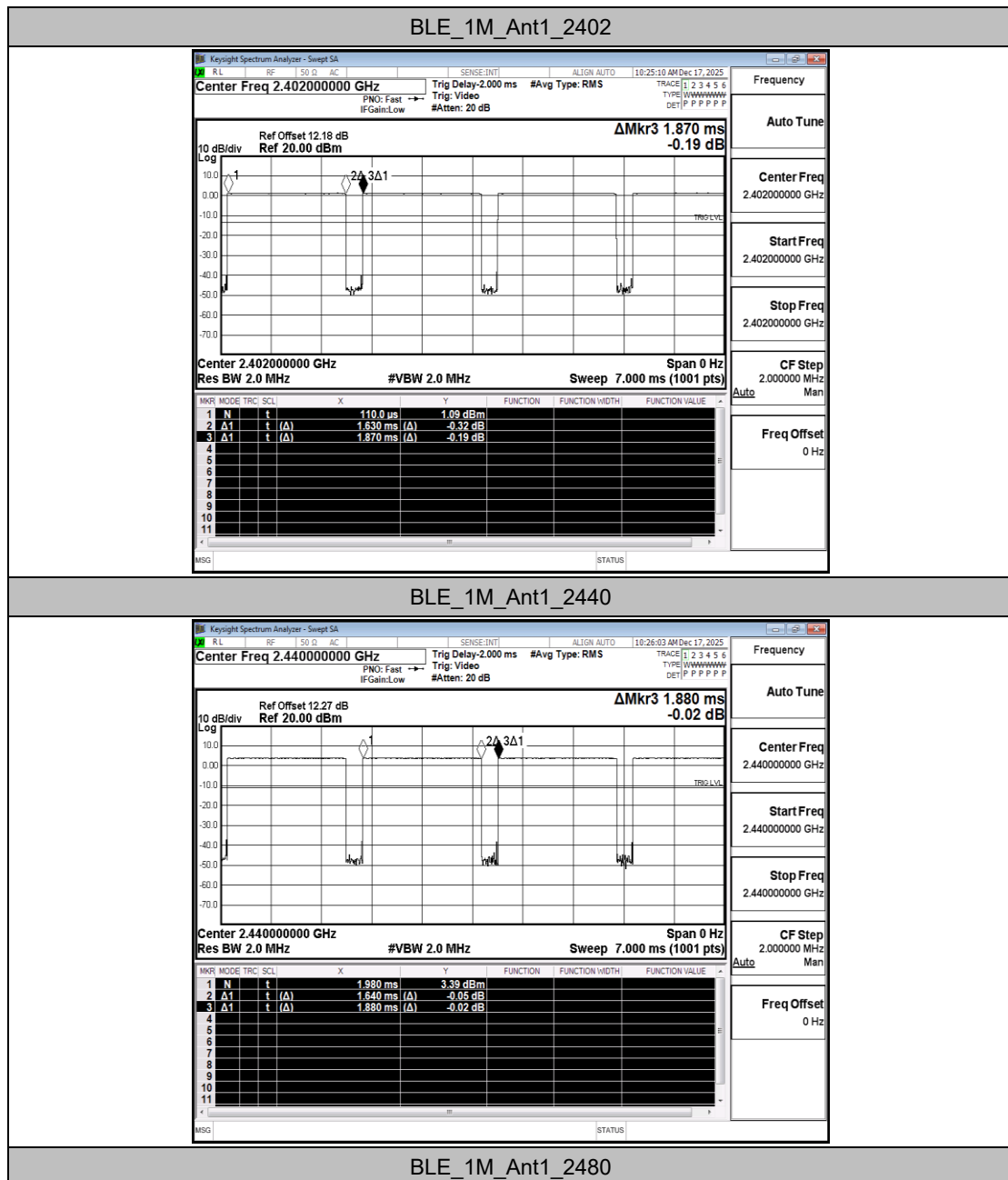


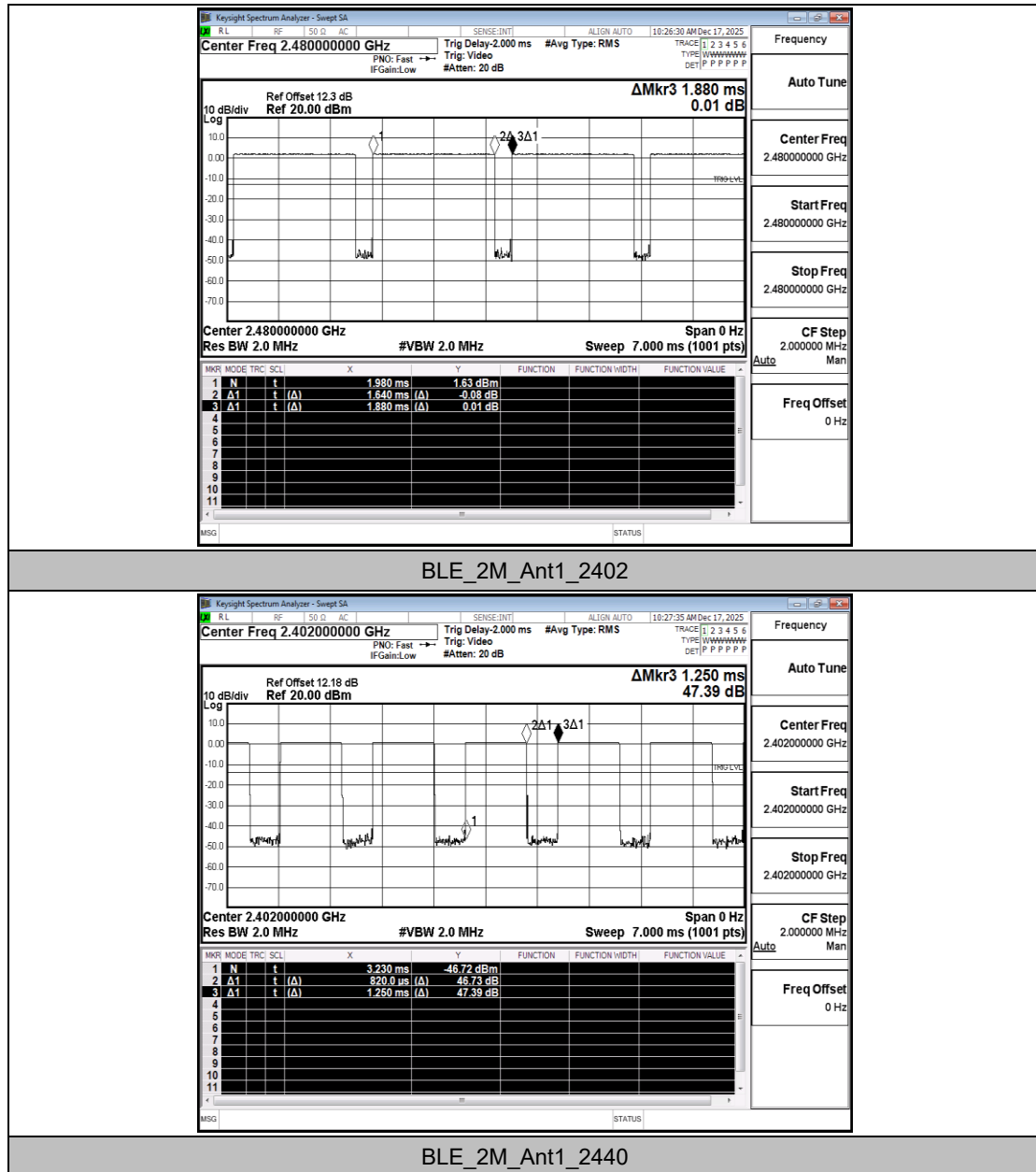
B.6 Duty Cycle

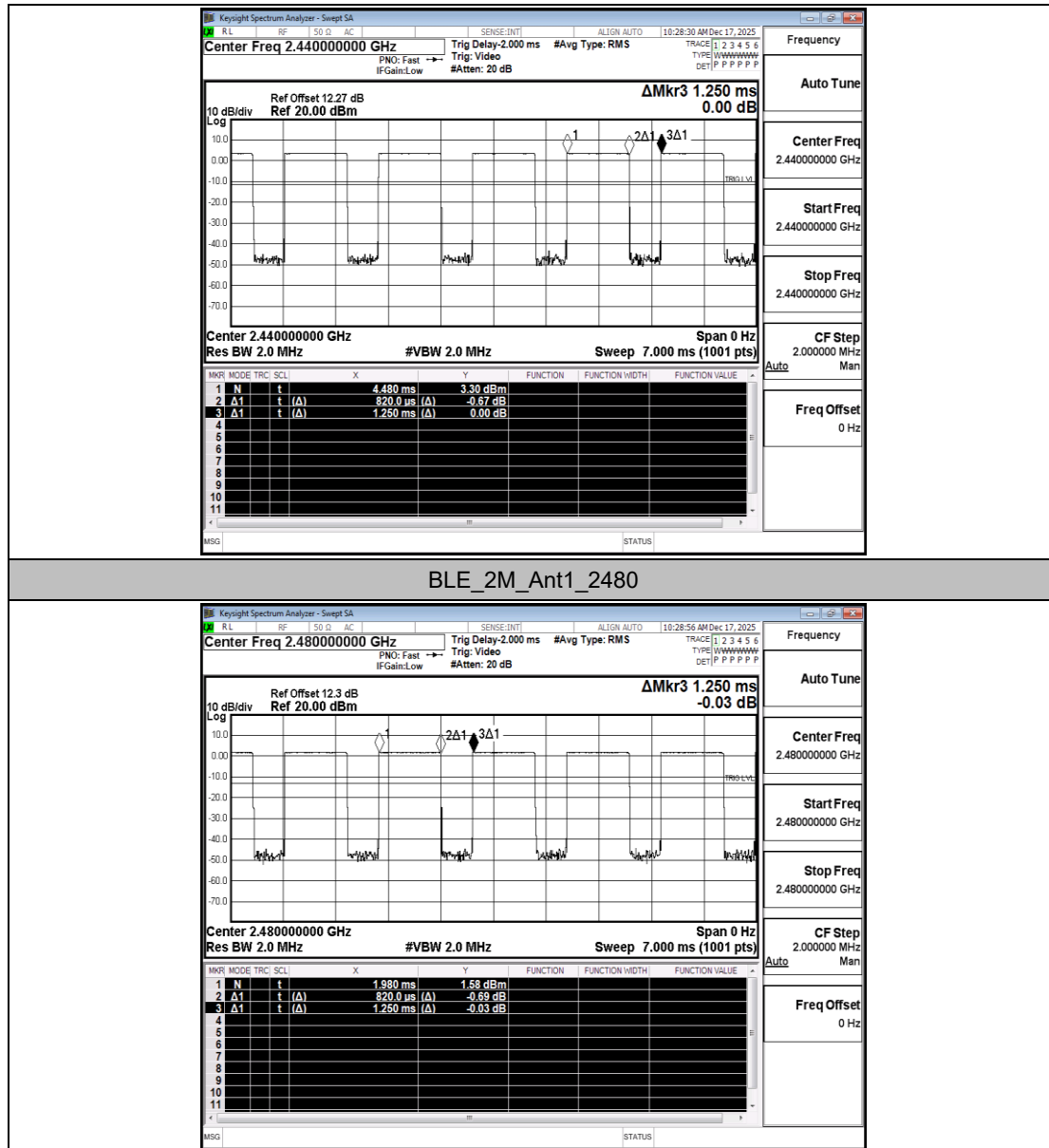
Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	1.63	1.87	0.8717	87.17	0.60	---	---
		2440	1.64	1.88	0.8723	87.23	0.59	---	---
		2480	1.64	1.88	0.8723	87.23	0.59	---	---
BLE_2M	Ant1	2402	0.82	1.25	0.6560	65.60	1.83	---	---
		2440	0.82	1.25	0.6560	65.60	1.83	---	---
		2480	0.82	1.25	0.6560	65.60	1.83	---	---

Test Graphs







B.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	-56.94	≤-43.80	2.00	0.60	40.86	≤54	PASS
				AV	2376.335	-56.05	≤-43.80	2.00	0.60	41.75	≤54	PASS
				AV	2390.000	-56.67	≤-43.80	2.00	0.60	41.13	≤54	PASS
				Peak	2310.000	-50.26	≤-23.20	2.00	0.00	46.94	≤74	PASS
				Peak	2330.450	-45.3	≤-23.20	2.00	0.00	51.90	≤74	PASS
				Peak	2390.000	-49.6	≤-23.20	2.00	0.00	47.60	≤74	PASS
		High	2480	AV	2483.500	-56.09	≤-43.79	2.00	0.59	41.70	≤54	PASS
				AV	2485.040	-55.74	≤-43.79	2.00	0.59	42.05	≤54	PASS
				AV	2500.000	-56.42	≤-43.79	2.00	0.59	41.37	≤54	PASS
				Peak	2483.500	-48.59	≤-23.20	2.00	0.00	48.61	≤74	PASS
				Peak	2486.320	-43.33	≤-23.20	2.00	0.00	53.87	≤74	PASS
				Peak	2500.000	-47.56	≤-23.20	2.00	0.00	49.64	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-56.91	≤-45.03	2.00	1.83	42.12	≤54	PASS
				AV	2389.985	-56.11	≤-45.03	2.00	1.83	42.92	≤54	PASS
				AV	2390.000	-56.11	≤-45.03	2.00	1.83	42.92	≤54	PASS
				Peak	2310.000	-50.17	≤-23.20	2.00	0.00	47.03	≤74	PASS
				Peak	2329.295	-45.14	≤-23.20	2.00	0.00	52.06	≤74	PASS
				Peak	2390.000	-47.85	≤-23.20	2.00	0.00	49.35	≤74	PASS
		High	2480	AV	2483.500	-55.43	≤-45.03	2.00	1.83	43.60	≤54	PASS
				AV	2483.520	-55.43	≤-45.03	2.00	1.83	43.60	≤54	PASS
				AV	2500.000	-57.01	≤-45.03	2.00	1.83	42.02	≤54	PASS
				Peak	2483.500	-47.6	≤-23.20	2.00	0.00	49.60	≤74	PASS
				Peak	2485.200	-44.81	≤-23.20	2.00	0.00	52.39	≤74	PASS
				Peak	2500.000	-48.27	≤-23.20	2.00	0.00	48.93	≤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

