

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: NVR

Test Model: NVR-BTN8-8-V3

Environmental Conditions

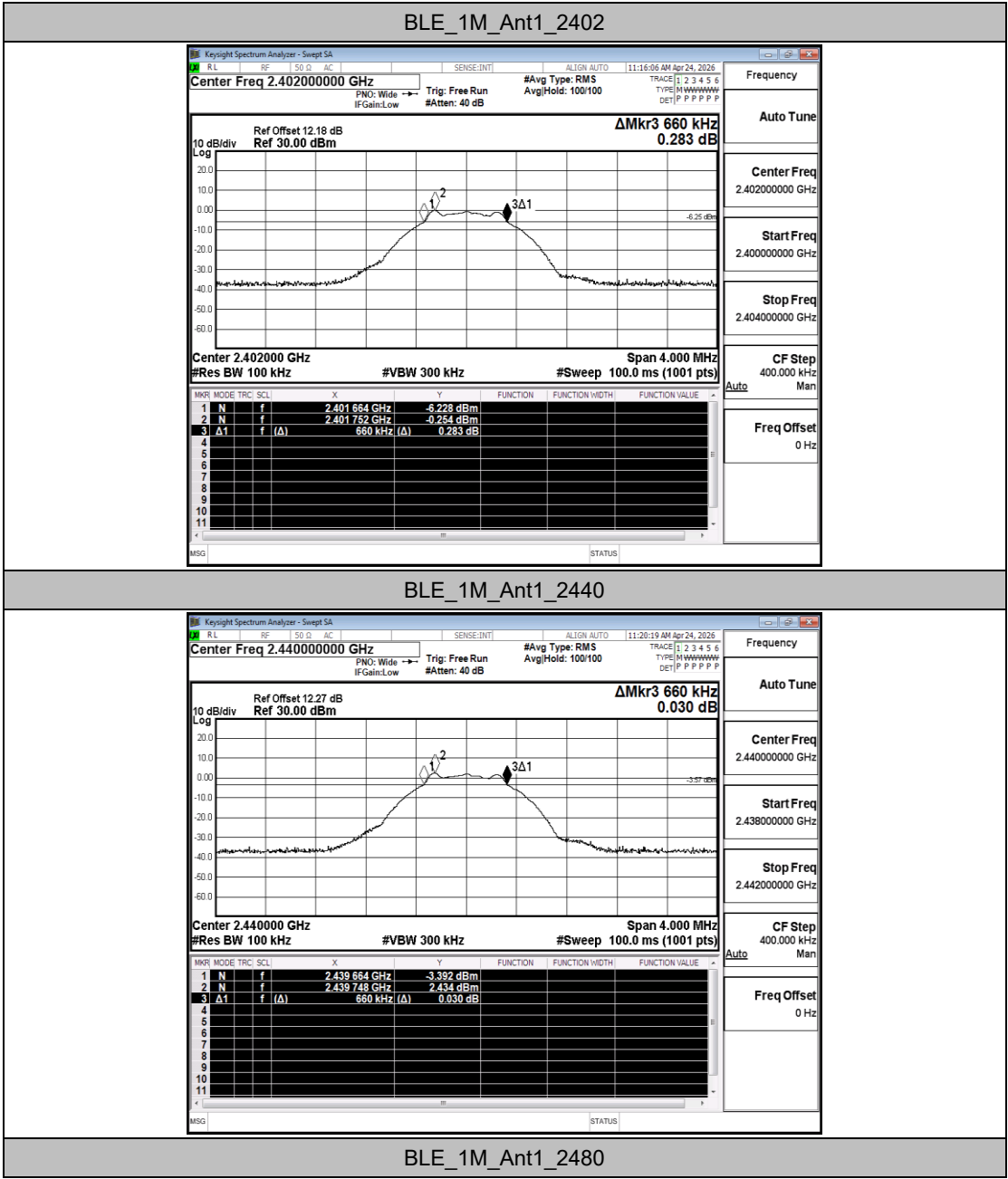
Temperature:	23.8°C
Relative Humidity:	54.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

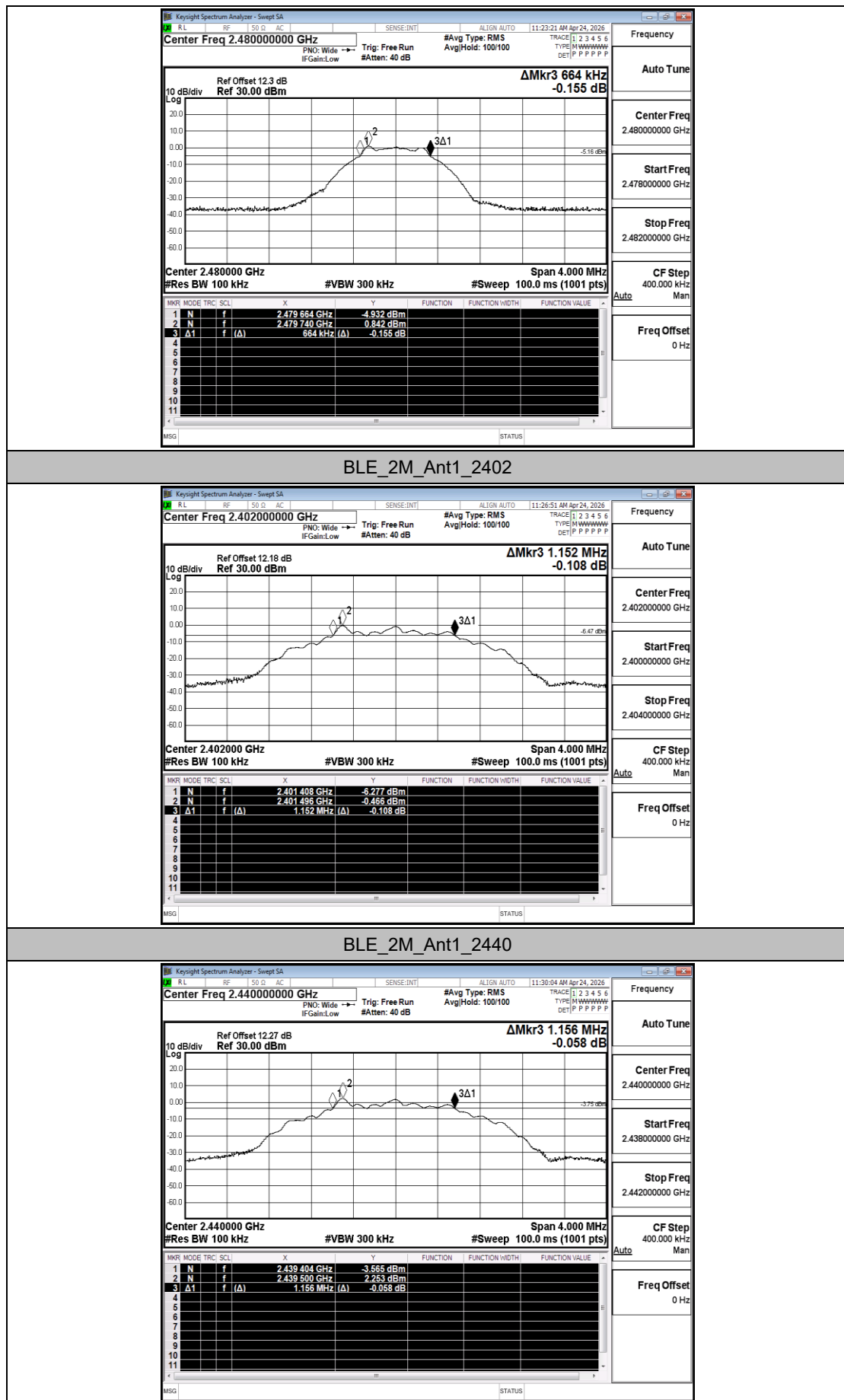
A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.664	2402.324	0.5	PASS
		2440	0.660	2439.664	2440.324	0.5	PASS
		2480	0.664	2479.664	2480.328	0.5	PASS
BLE_2M	Ant1	2402	1.152	2401.408	2402.560	0.5	PASS
		2440	1.156	2439.404	2440.560	0.5	PASS
		2480	1.148	2479.408	2480.556	0.5	PASS

Test Graphs

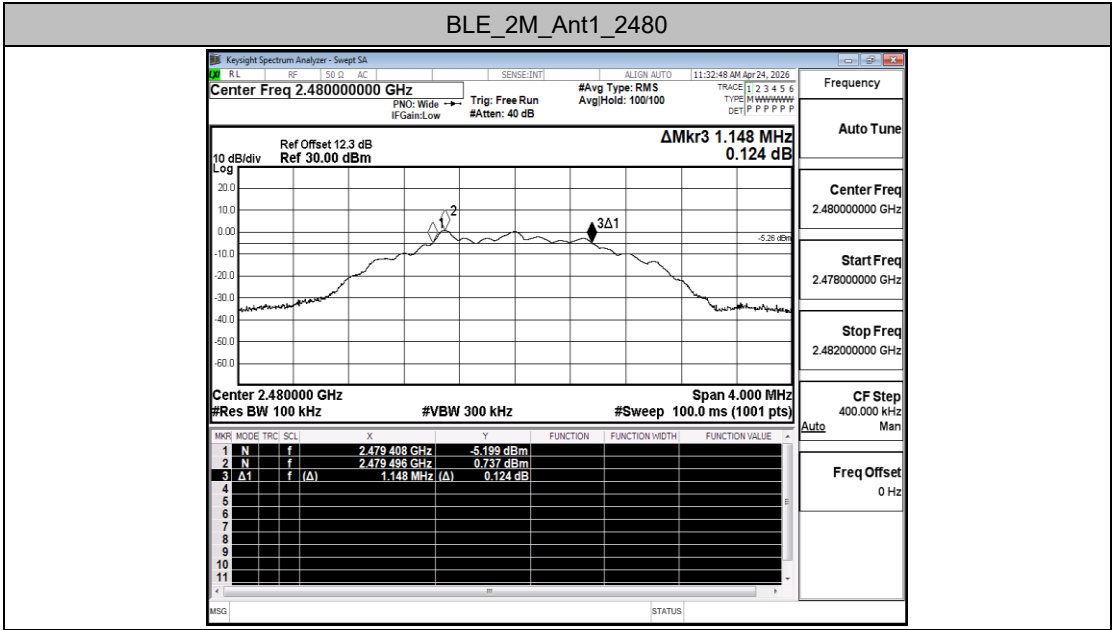




Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

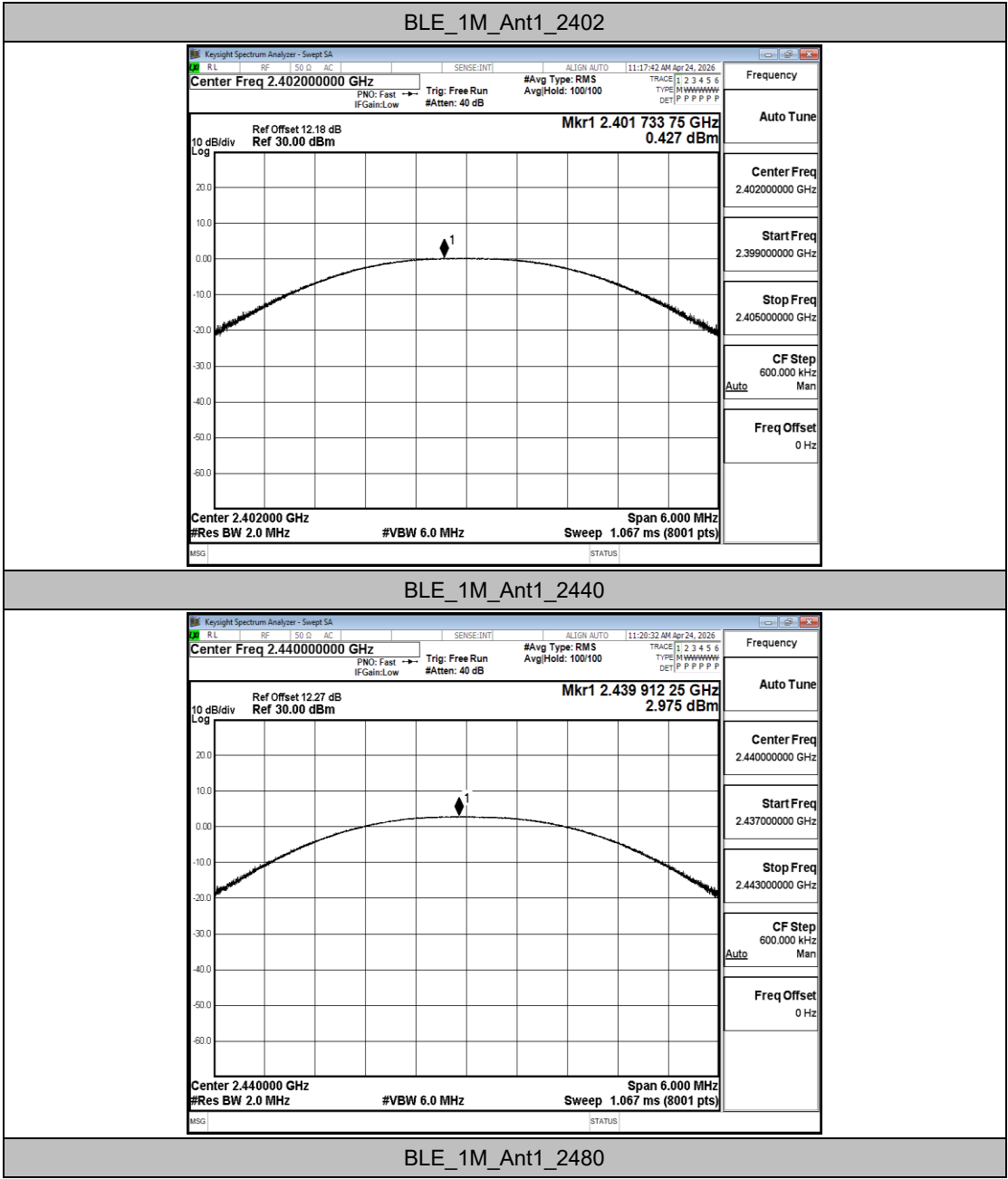


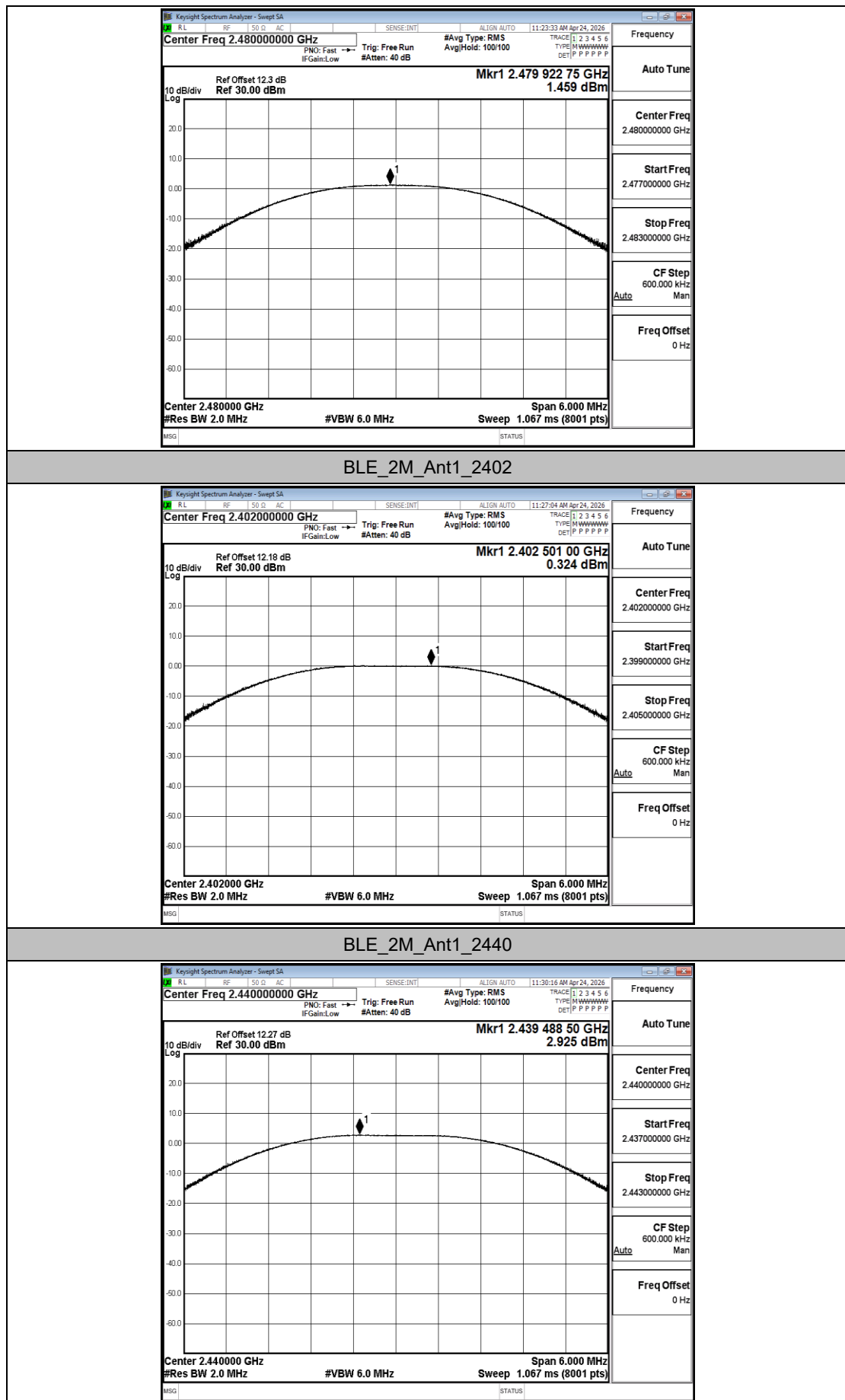
A.2 Maximum Peak conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.43	≤30	PASS
		2440	2.98	≤30	PASS
		2480	1.46	≤30	PASS
BLE_2M	Ant1	2402	0.32	≤30	PASS
		2440	2.93	≤30	PASS
		2480	1.34	≤30	PASS

Test Graphs Peak

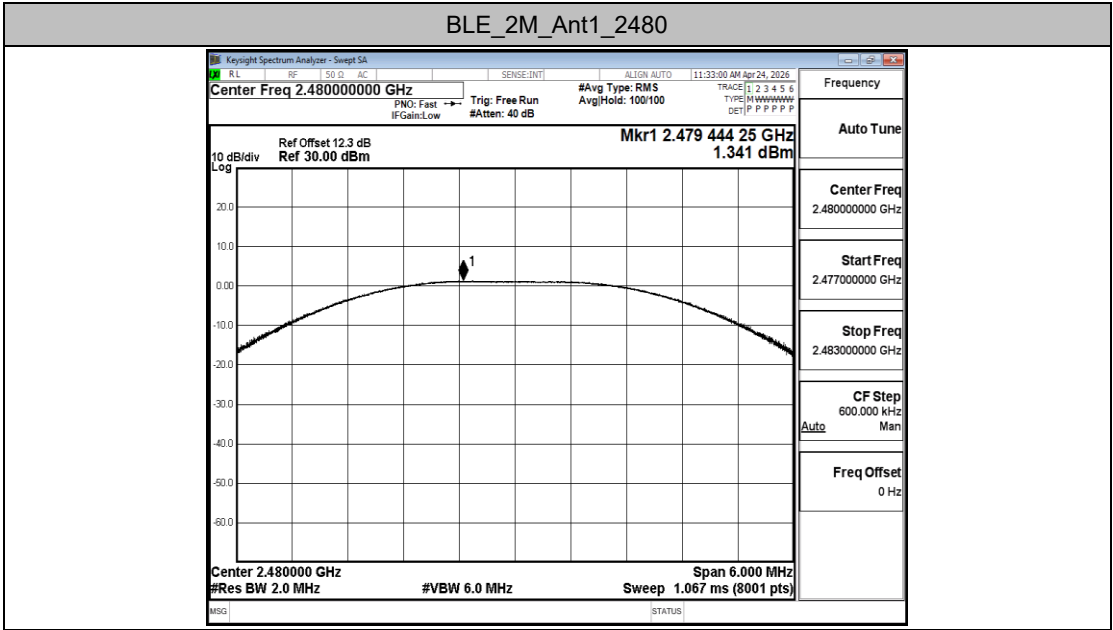




Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

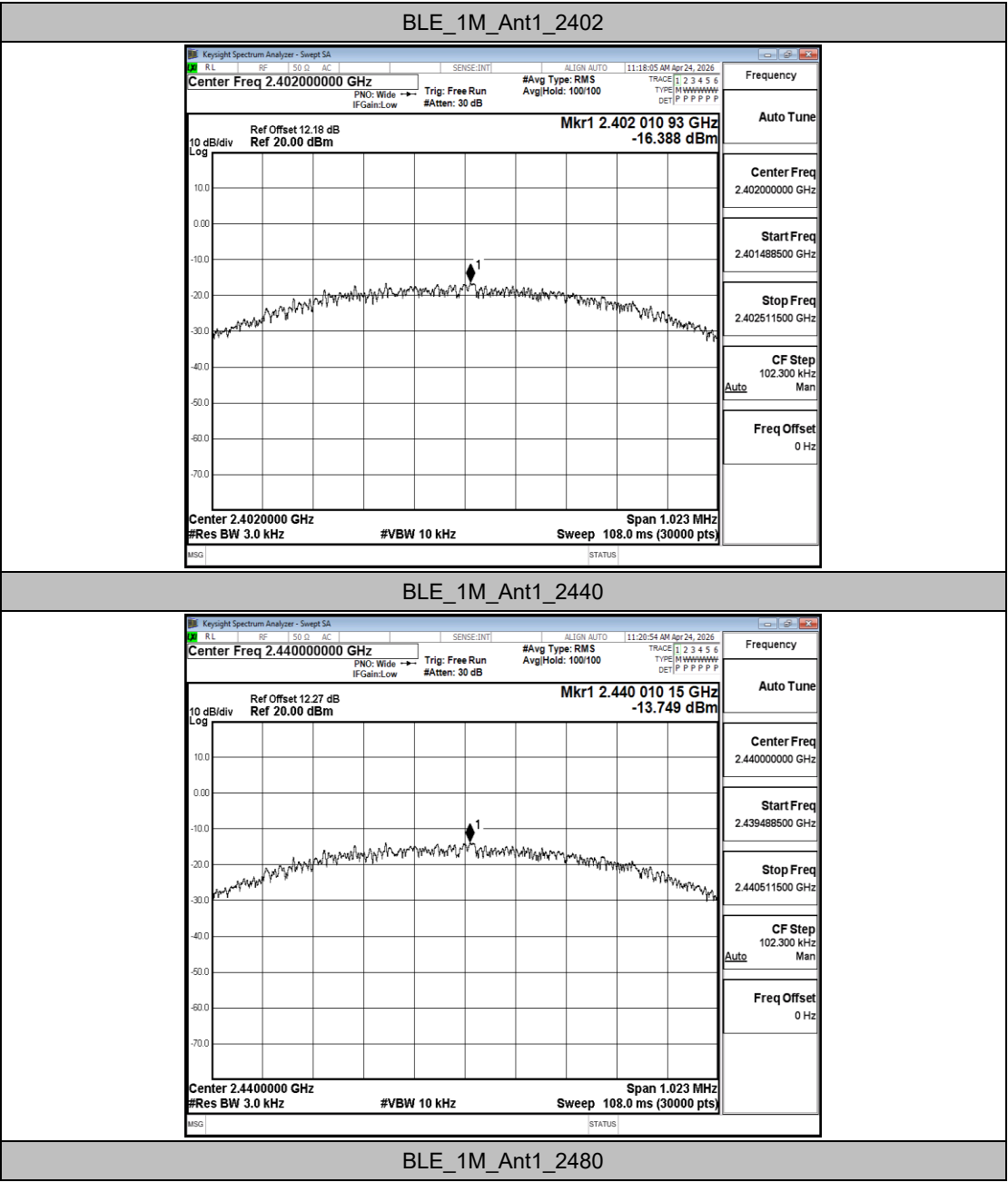


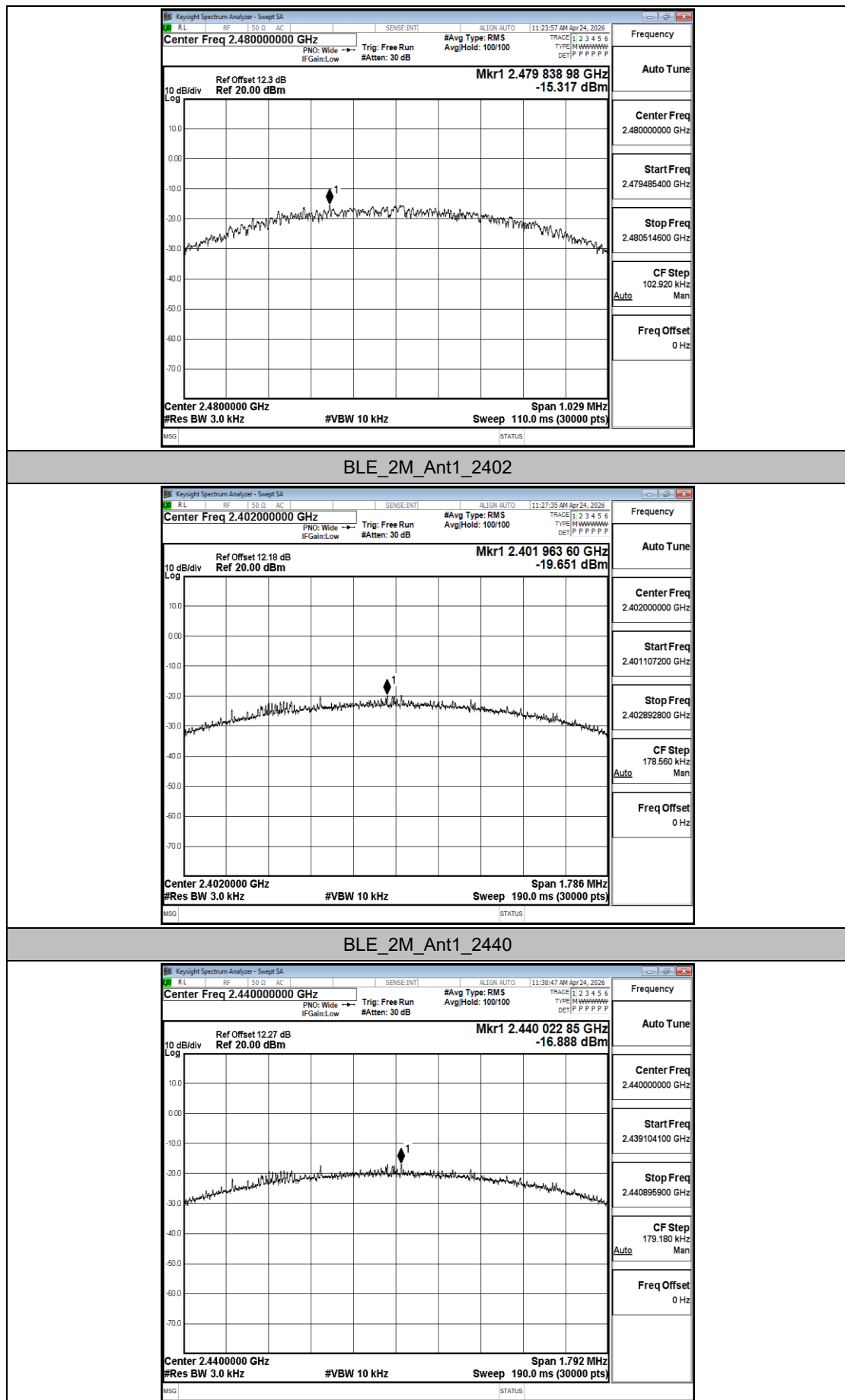
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.39	≤8.00	PASS
		2440	-13.75	≤8.00	PASS
		2480	-15.32	≤8.00	PASS
BLE_2M	Ant1	2402	-19.65	≤8.00	PASS
		2440	-16.89	≤8.00	PASS
		2480	-18.52	≤8.00	PASS

Test Graphs

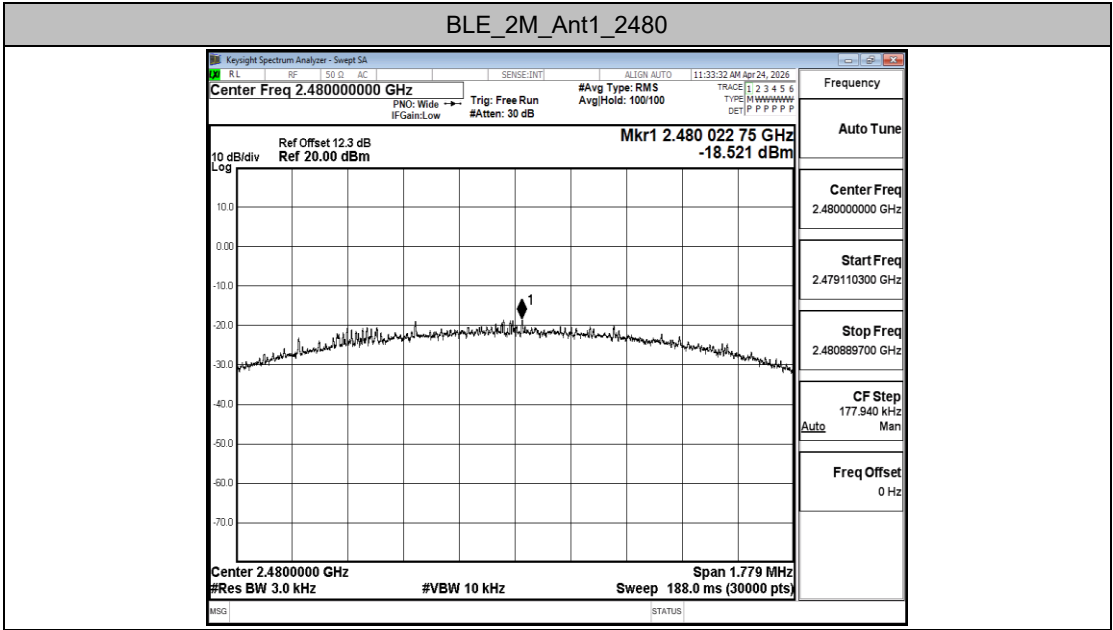




Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

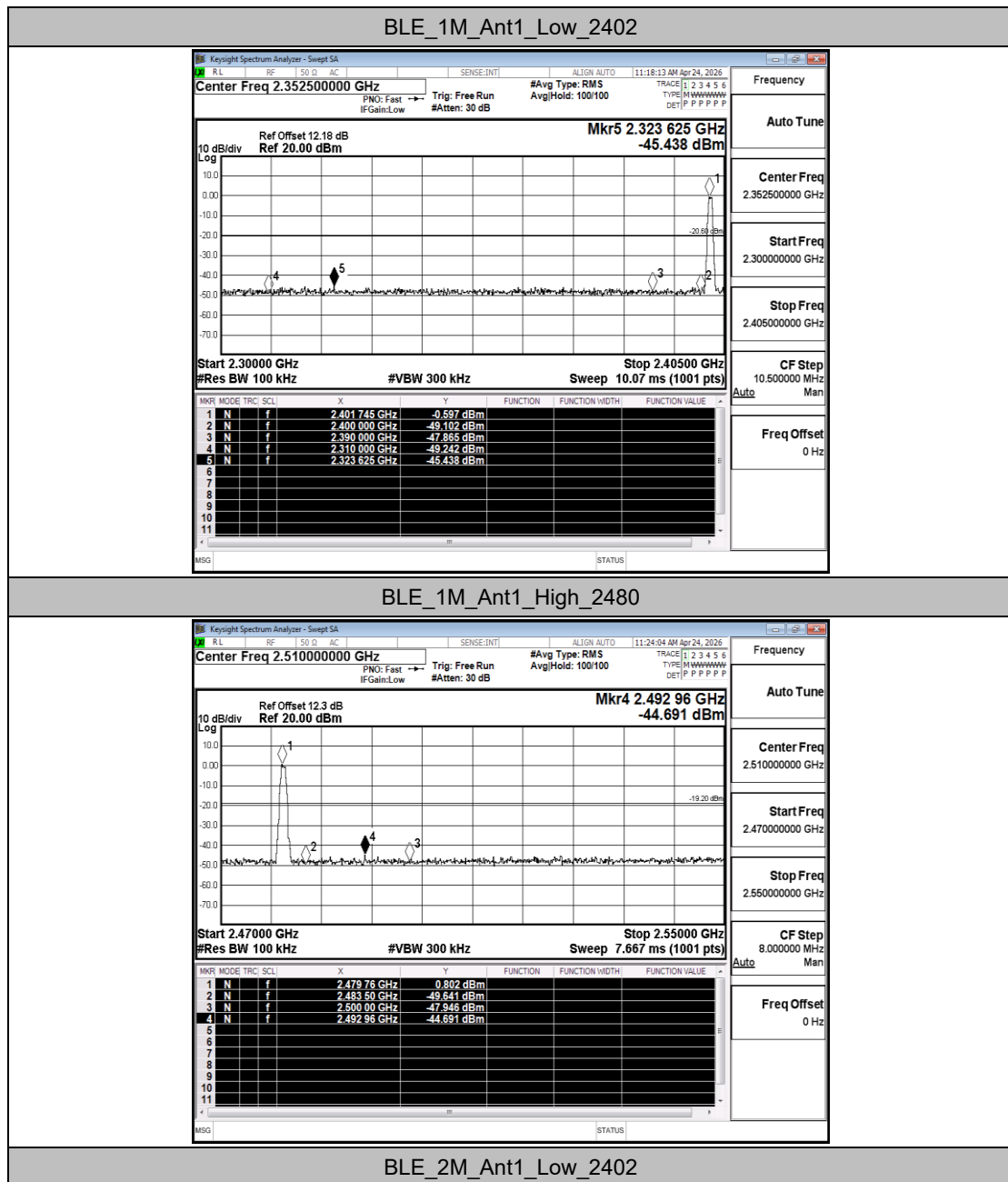


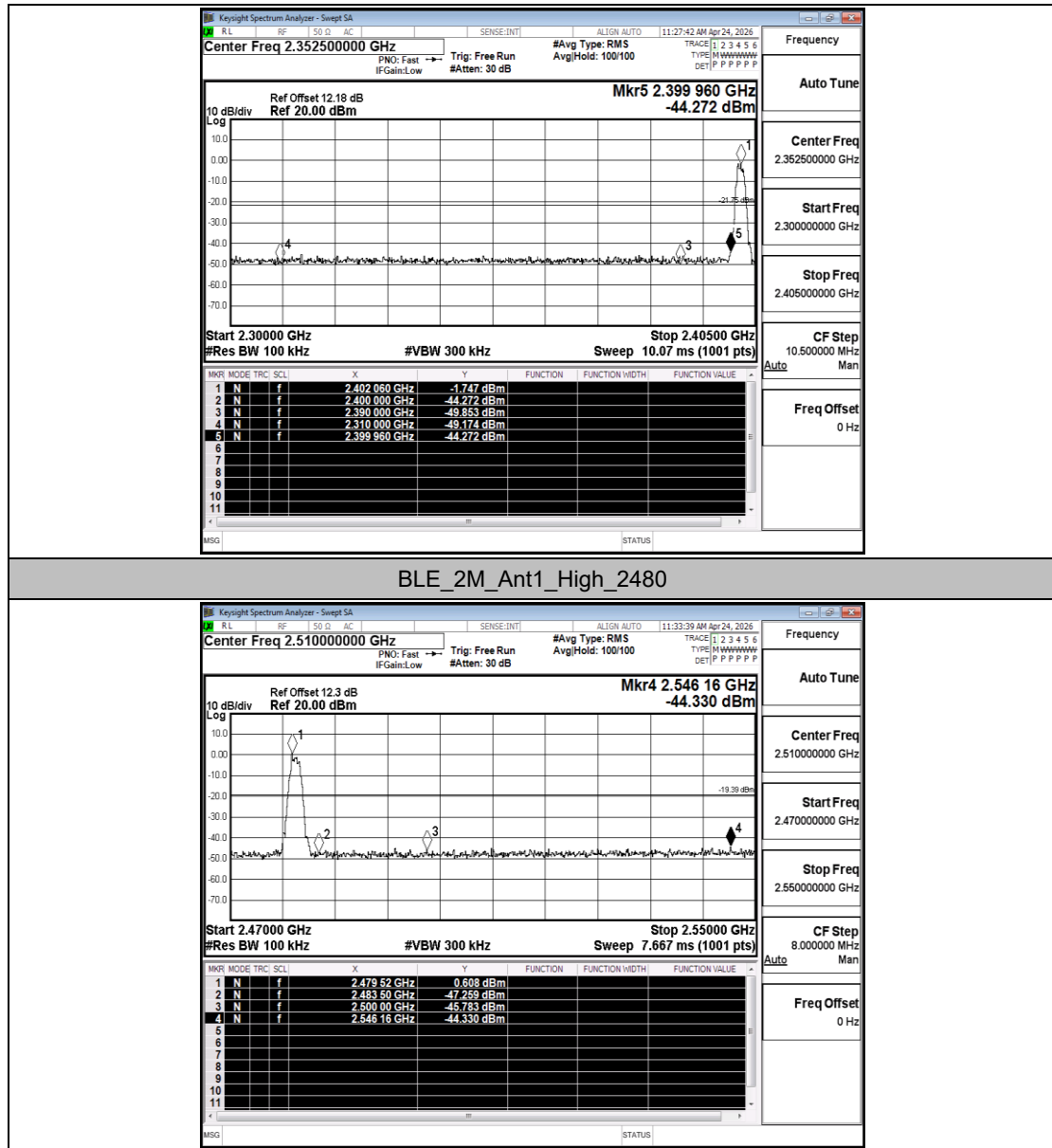
A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.60	-45.44	≤-20.6	PASS
		High	2480	0.80	-44.69	≤-19.2	PASS
BLE_2M	Ant1	Low	2402	-1.75	-44.27	≤-21.75	PASS
		High	2480	0.61	-44.33	≤-19.39	PASS

Test Graphs



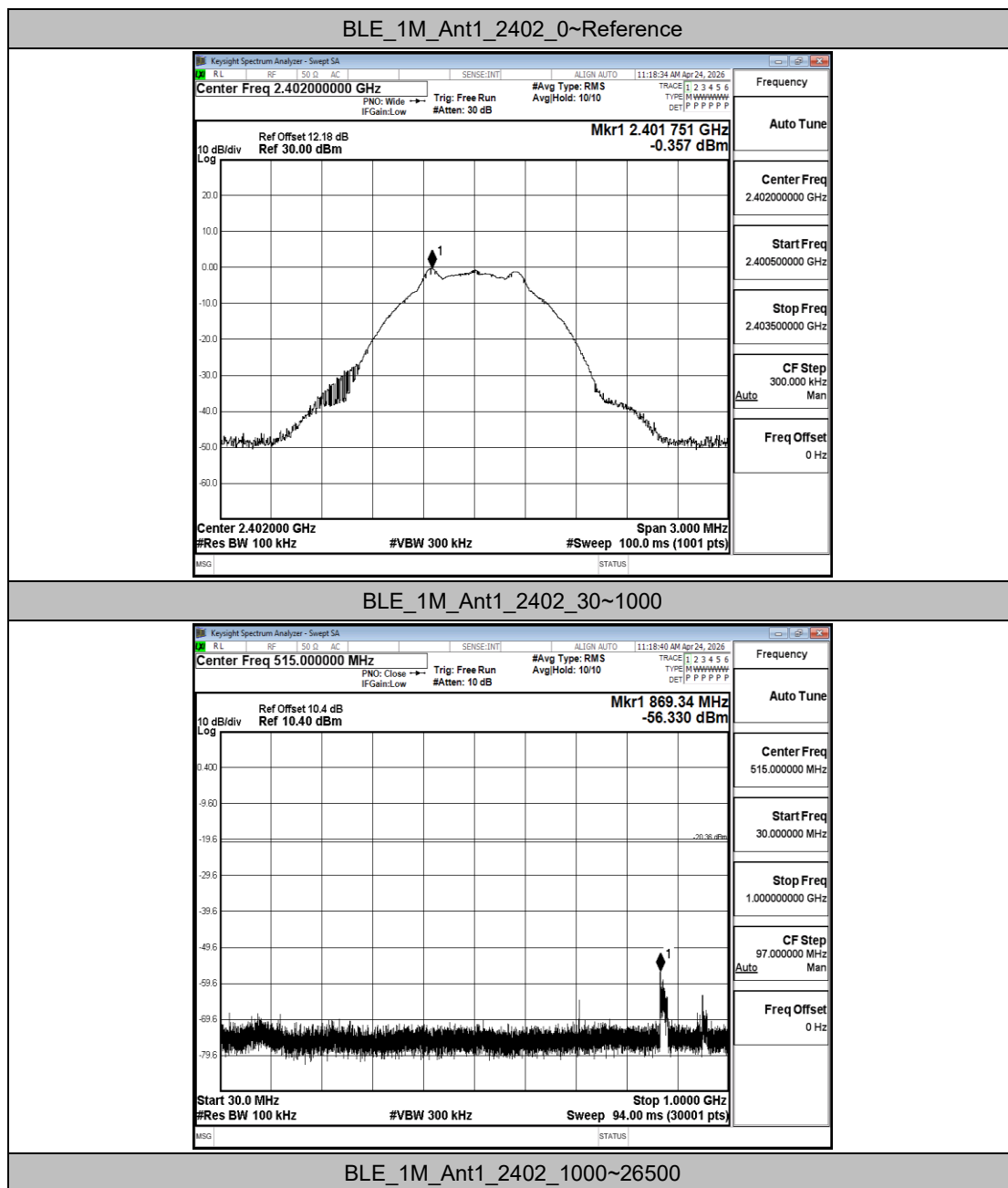


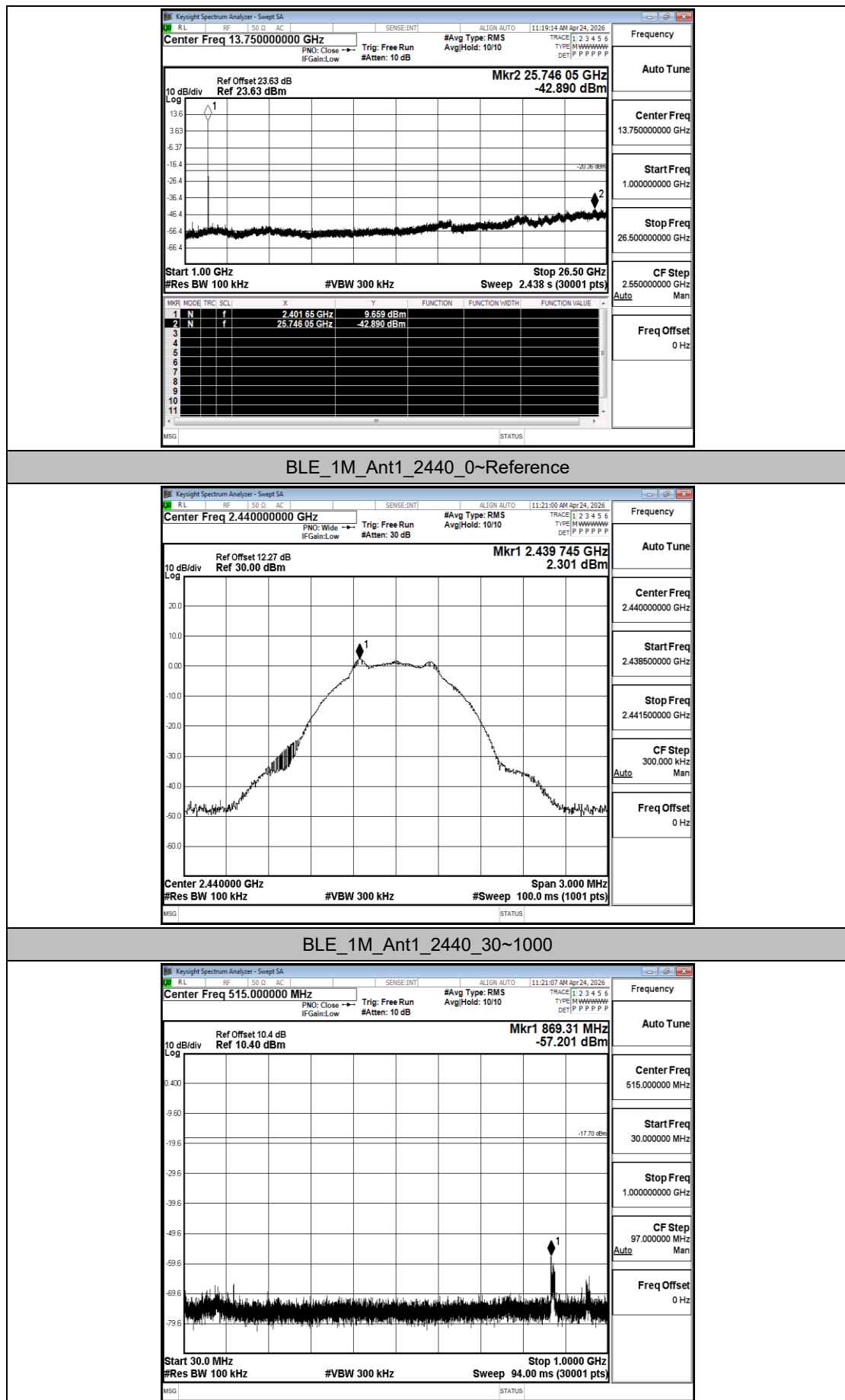
A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.36	-0.36	---	PASS
			30~1000	-0.36	-56.33	≤-20.36	PASS
			1000~26500	-0.36	-42.89	≤-20.36	PASS
		2440	Reference	2.30	2.30	---	PASS
			30~1000	2.30	-57.2	≤-17.7	PASS
			1000~26500	2.30	-41.83	≤-17.7	PASS
		2480	Reference	0.77	0.77	---	PASS
			30~1000	0.77	-56.56	≤-19.23	PASS
			1000~26500	0.77	-42.12	≤-19.23	PASS
BLE_2M	Ant1	2402	Reference	-0.54	-0.54	---	PASS
			30~1000	-0.54	-57.4	≤-20.54	PASS
			1000~26500	-0.54	-43.11	≤-20.54	PASS
		2440	Reference	2.18	2.18	---	PASS
			30~1000	2.18	-56.43	≤-17.82	PASS
			1000~26500	2.18	-43.01	≤-17.82	PASS
		2480	Reference	0.61	0.61	---	PASS
			30~1000	0.61	-59.3	≤-19.39	PASS
			1000~26500	0.61	-37.11	≤-19.39	PASS

Test Graphs

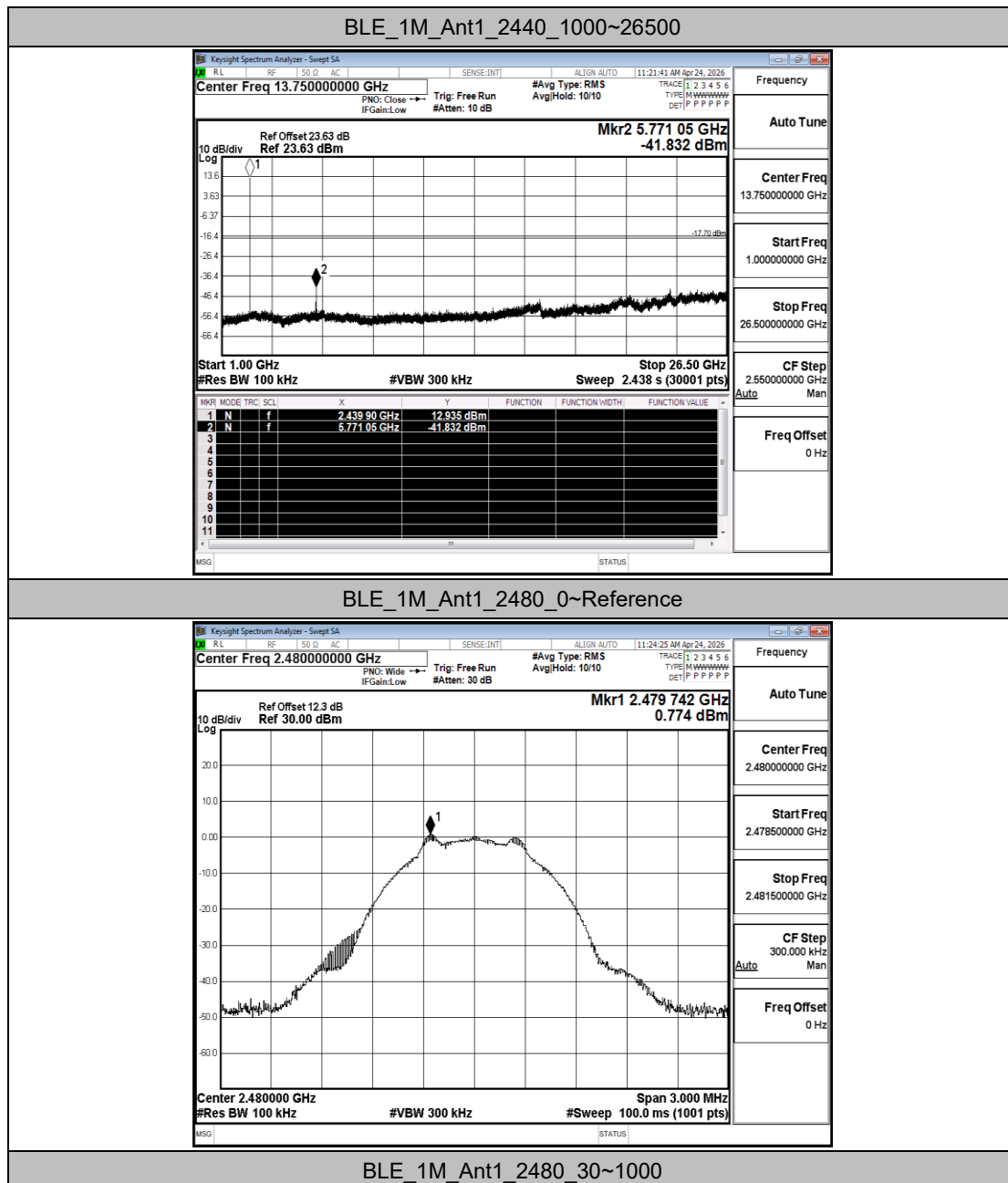


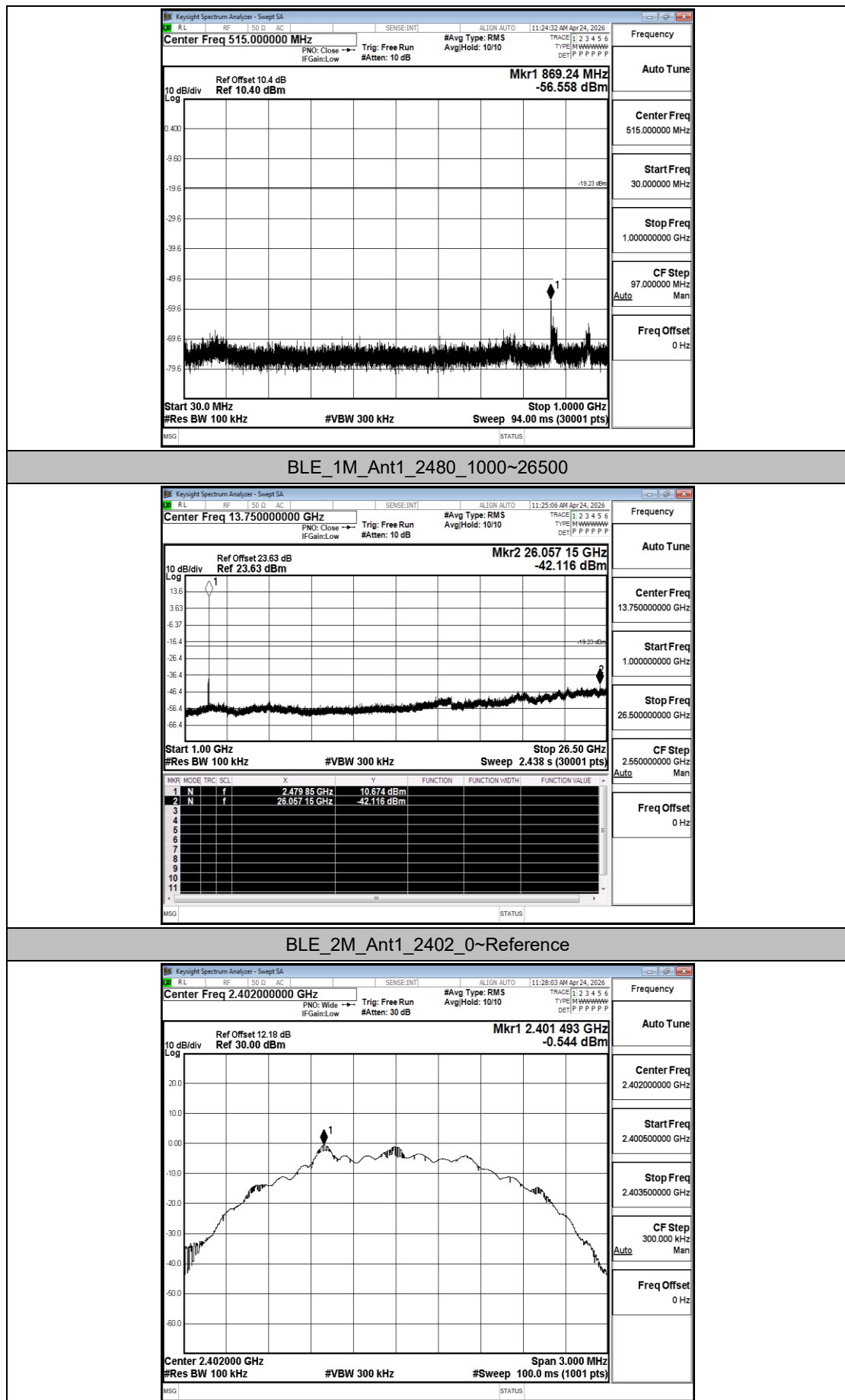


Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

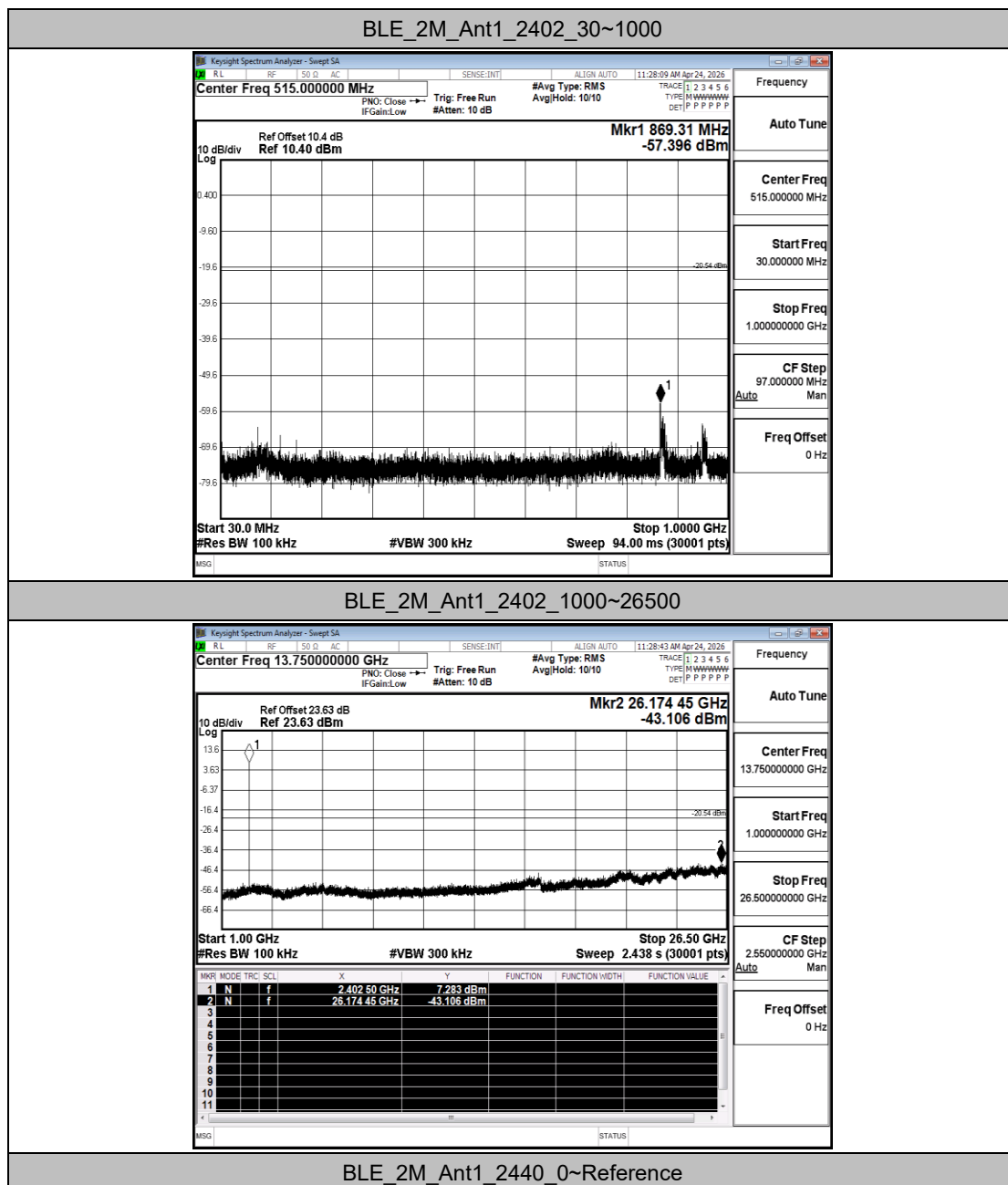


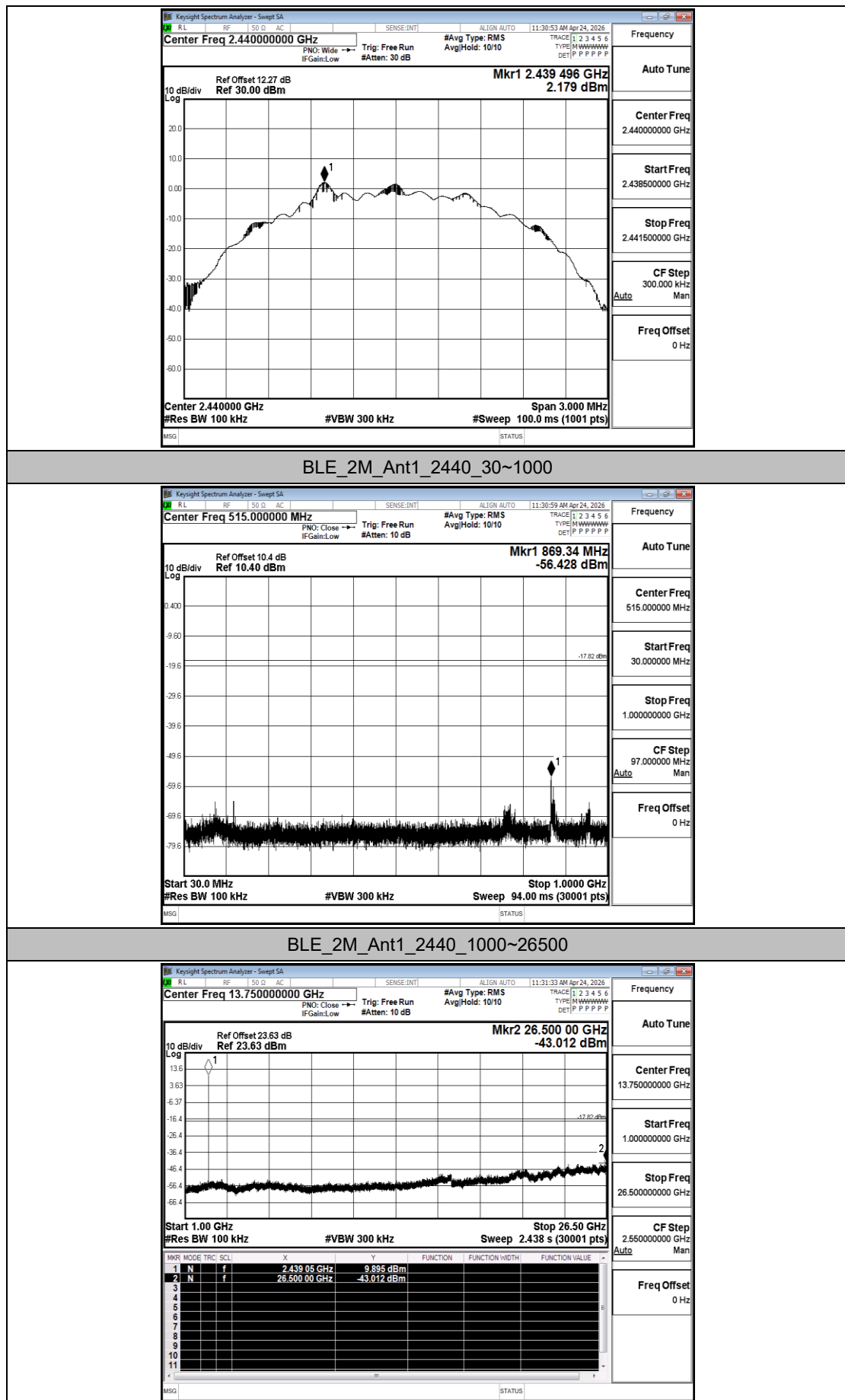


Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

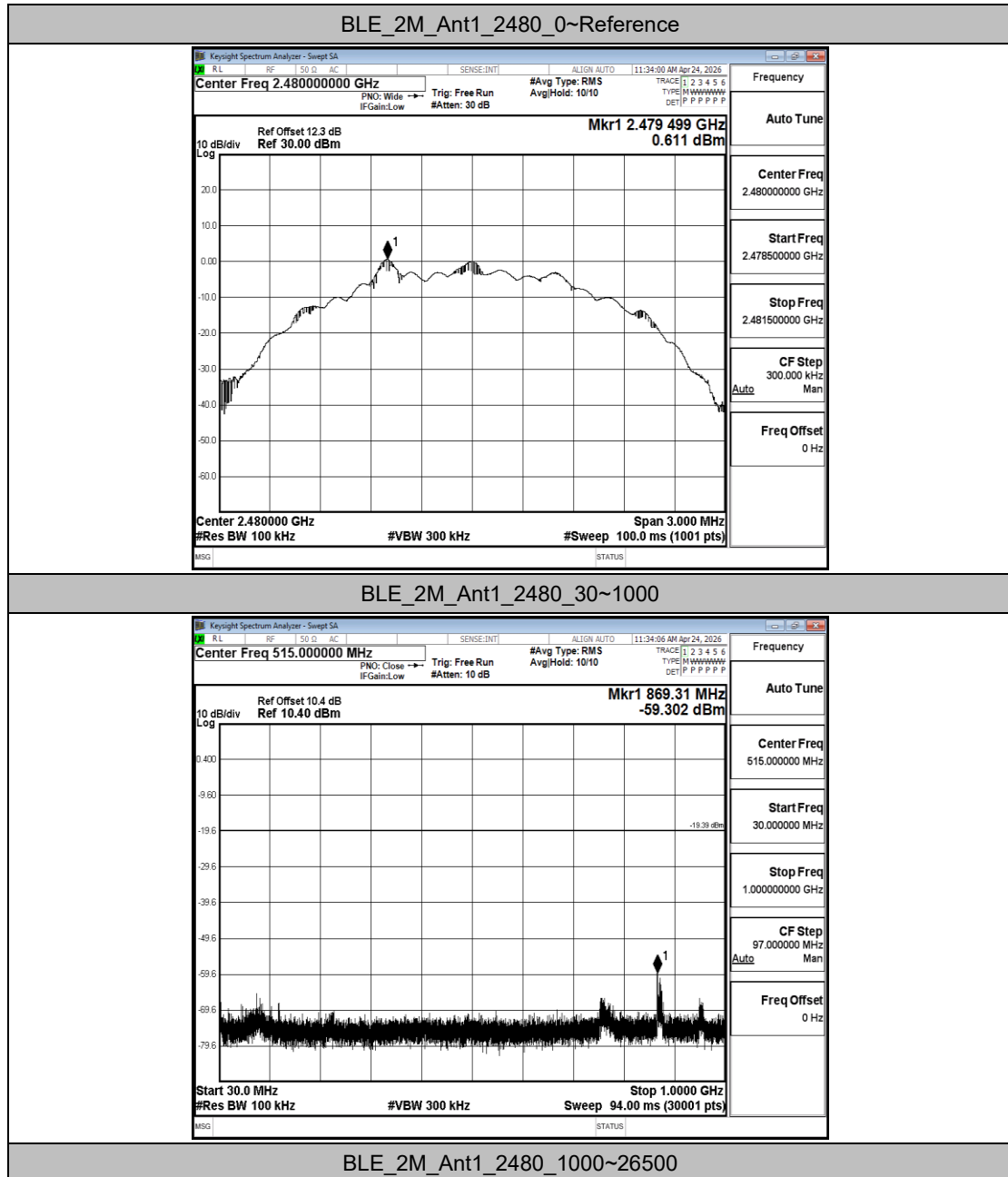


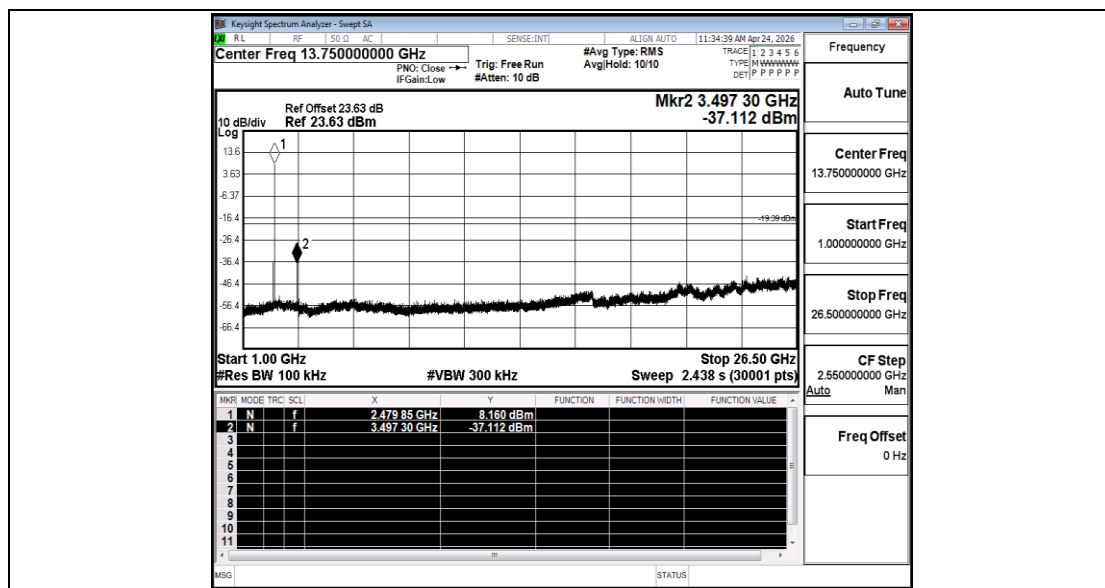


Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



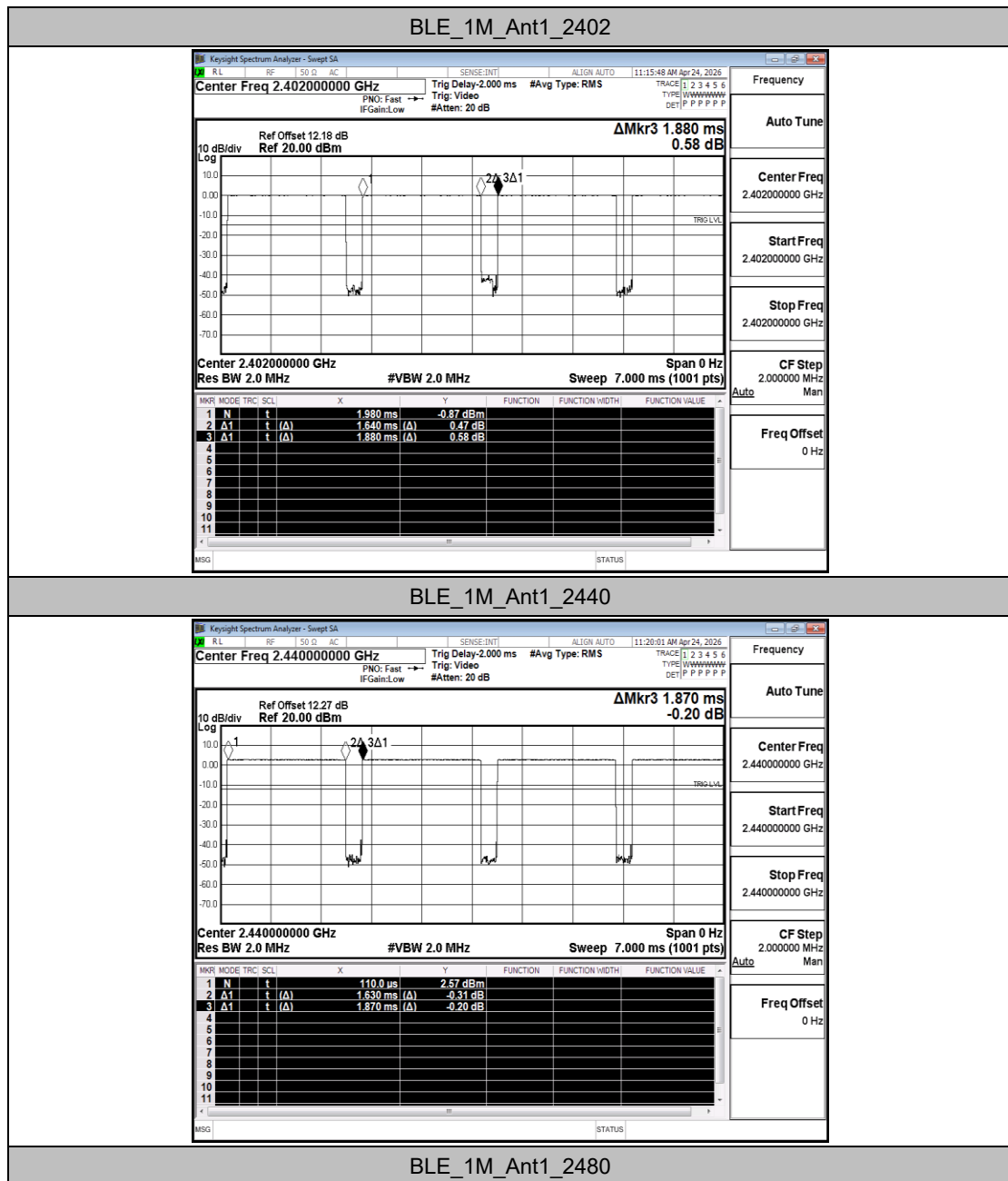


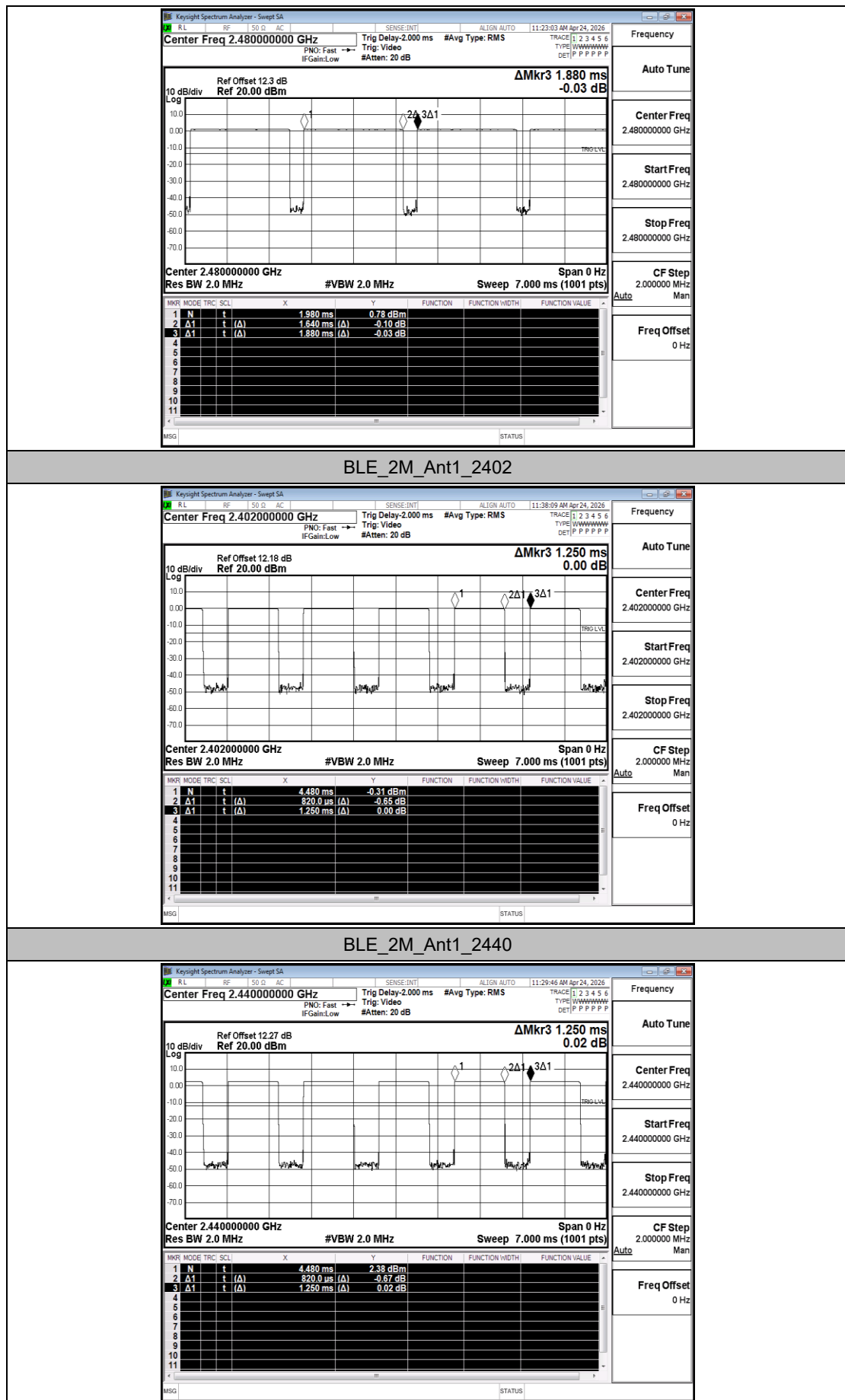
A.6 Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	1.64	1.88	0.8723	87.23	0.59	---	---
		2440	1.63	1.87	0.8717	87.17	0.60	---	---
		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	0.81	1.24	0.6532	65.32	1.85	---	---

Test Graphs

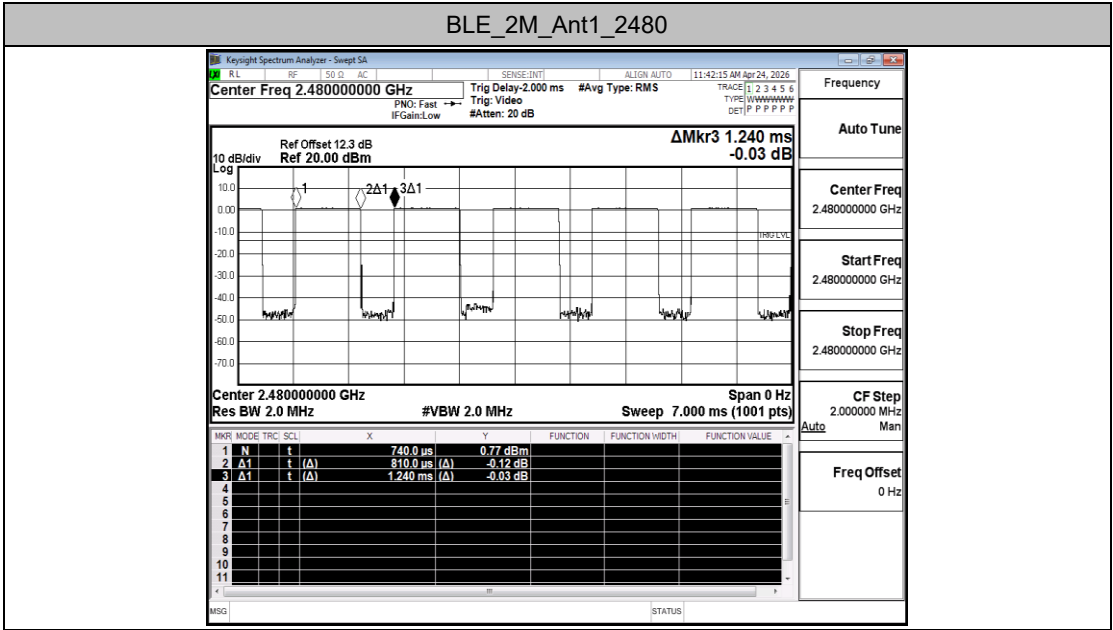




Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



A.7 Emissions in Restricted Bands

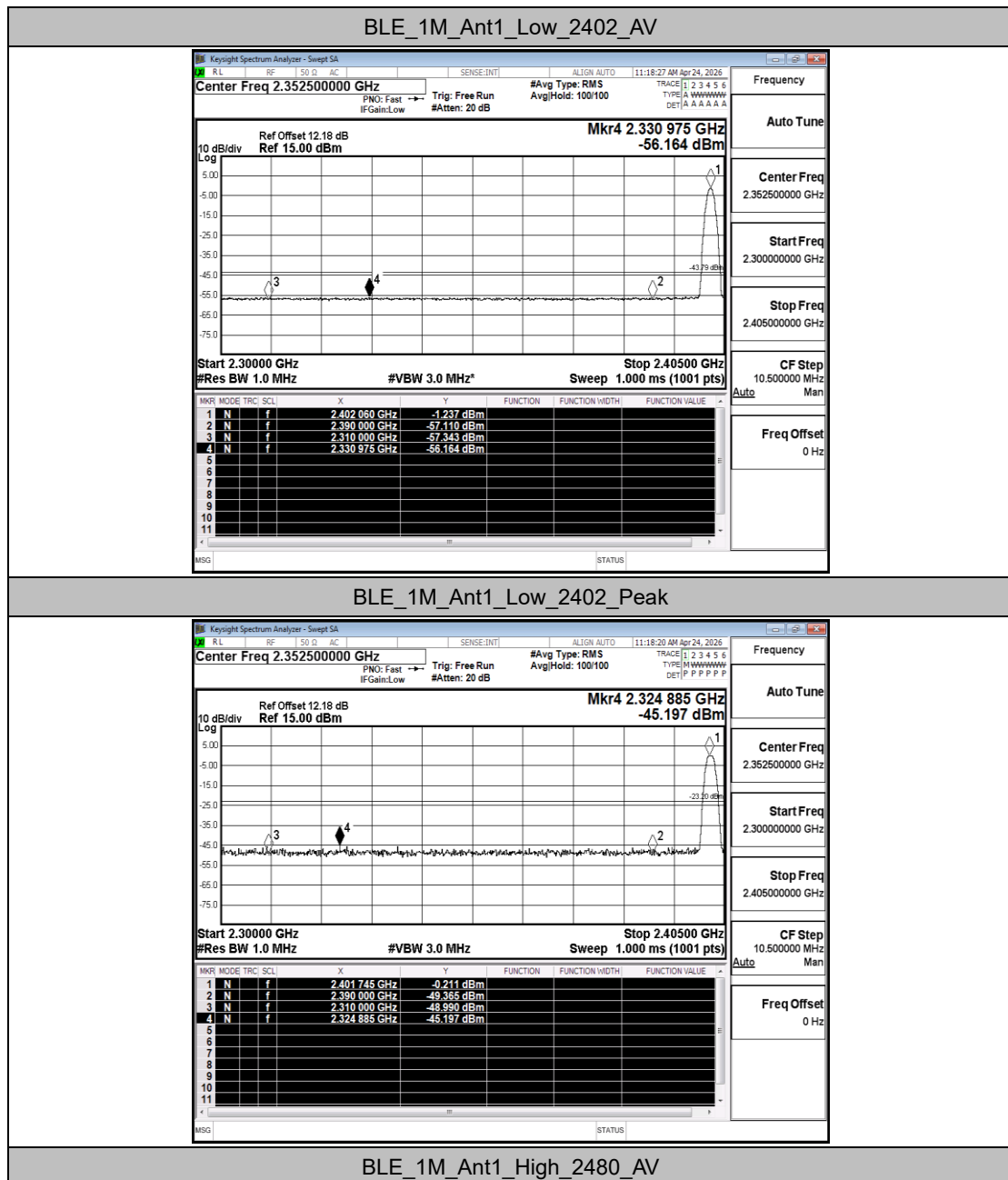
Test Result

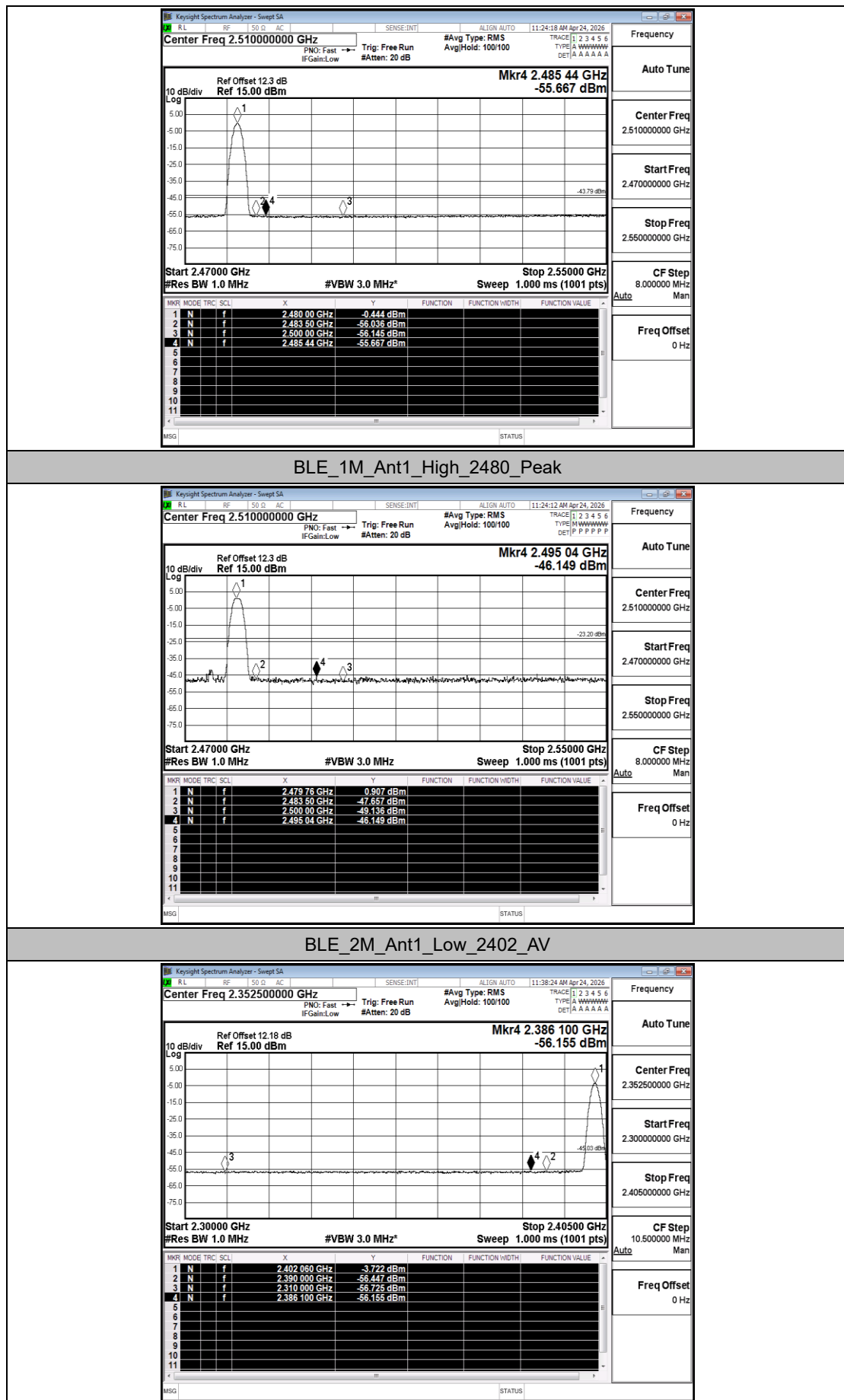
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.34	≤-43.79	2.00	0.59	40.45	≤54	PASS
				AV	2330.975	-56.16	≤-43.79	2.00	0.59	41.63	≤54	PASS
				AV	2390.000	-57.11	≤-43.79	2.00	0.59	40.68	≤54	PASS
				Peak	2310.000	-48.99	≤-23.20	2.00	0.00	48.21	≤74	PASS
				Peak	2324.885	-45.2	≤-23.20	2.00	0.00	52.00	≤74	PASS
				Peak	2390.000	-49.37	≤-23.20	2.00	0.00	47.83	≤74	PASS
		High	2480	AV	2483.500	-56.04	≤-43.79	2.00	0.59	41.75	≤54	PASS
				AV	2485.440	-55.67	≤-43.79	2.00	0.59	42.12	≤54	PASS
				AV	2500.000	-56.15	≤-43.79	2.00	0.59	41.64	≤54	PASS
				Peak	2483.500	-47.66	≤-23.20	2.00	0.00	49.54	≤74	PASS
				Peak	2495.040	-46.15	≤-23.20	2.00	0.00	51.05	≤74	PASS
				Peak	2500.000	-49.14	≤-23.20	2.00	0.00	48.06	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-56.73	≤-45.03	2.00	1.83	42.30	≤54	PASS
				AV	2386.100	-56.16	≤-45.03	2.00	1.83	42.87	≤54	PASS
				AV	2390.000	-56.45	≤-45.03	2.00	1.83	42.58	≤54	PASS
				Peak	2310.000	-47.77	≤-23.20	2.00	0.00	49.43	≤74	PASS
				Peak	2312.915	-45.33	≤-23.20	2.00	0.00	51.87	≤74	PASS
				Peak	2390.000	-49.18	≤-23.20	2.00	0.00	48.02	≤74	PASS
		High	2480	AV	2483.500	-56.07	≤-45.05	2.00	1.85	42.98	≤54	PASS
				AV	2483.840	-55.57	≤-45.05	2.00	1.85	43.48	≤54	PASS
				AV	2500.000	-56.63	≤-45.05	2.00	1.85	42.42	≤54	PASS
				Peak	2483.500	-48.08	≤-23.20	2.00	0.00	49.12	≤74	PASS
				Peak	2484.880	-46.18	≤-23.20	2.00	0.00	51.02	≤74	PASS
				Peak	2500.000	-48.1	≤-23.20	2.00	0.00	49.10	≤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





Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

