



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Notebook

Test Model: X1450E

Environmental Conditions

Temperature:	22.5° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan





B.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.648	2401.668	2402.316	0.5	PASS
		2440	0.704	2439.632	2440.336	0.5	PASS
		2480	0.696	2479.640	2480.336	0.5	PASS
BLE_2M	Ant1	2402	1.136	2401.432	2402.568	0.5	PASS
		2440	1.136	2439.432	2440.568	0.5	PASS
		2480	1.136	2479.436	2480.572	0.5	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.

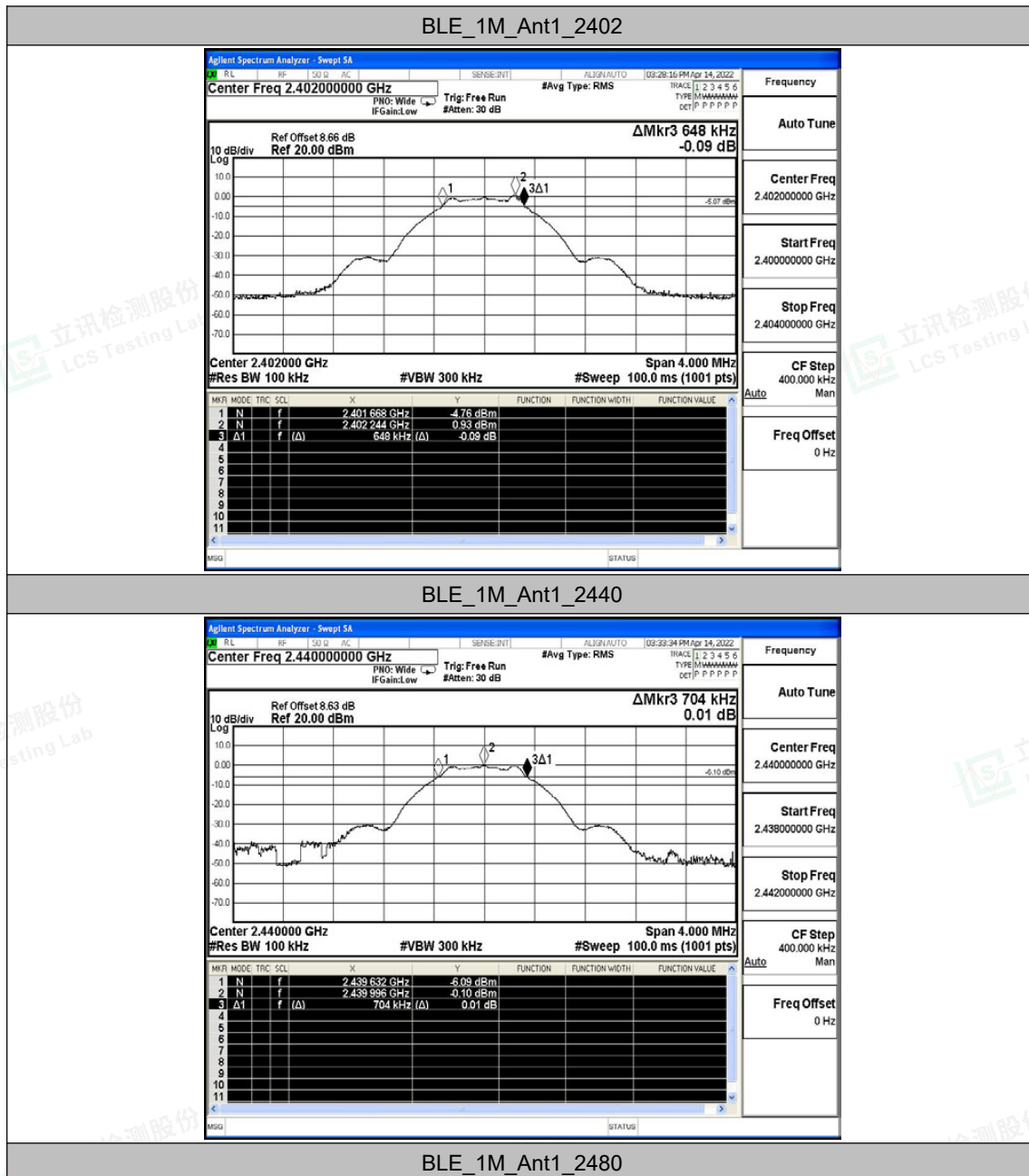
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

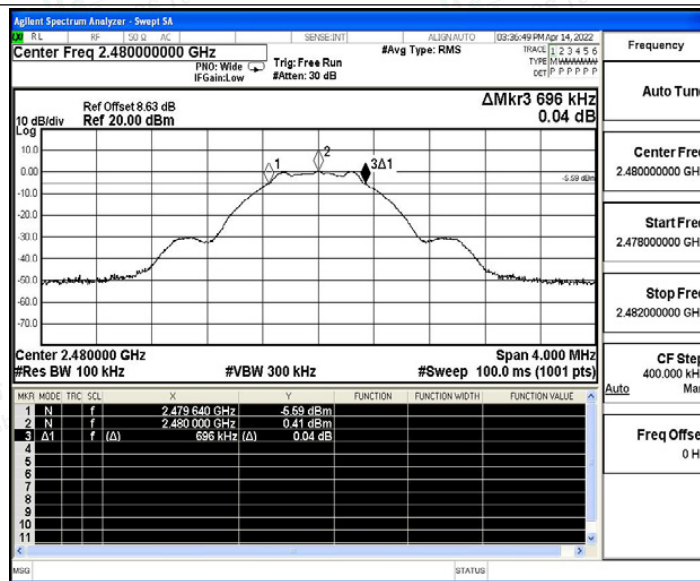
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

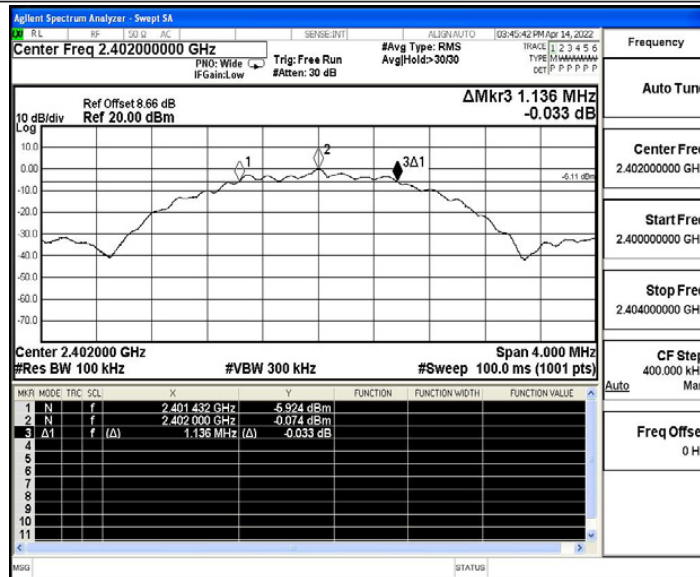


Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

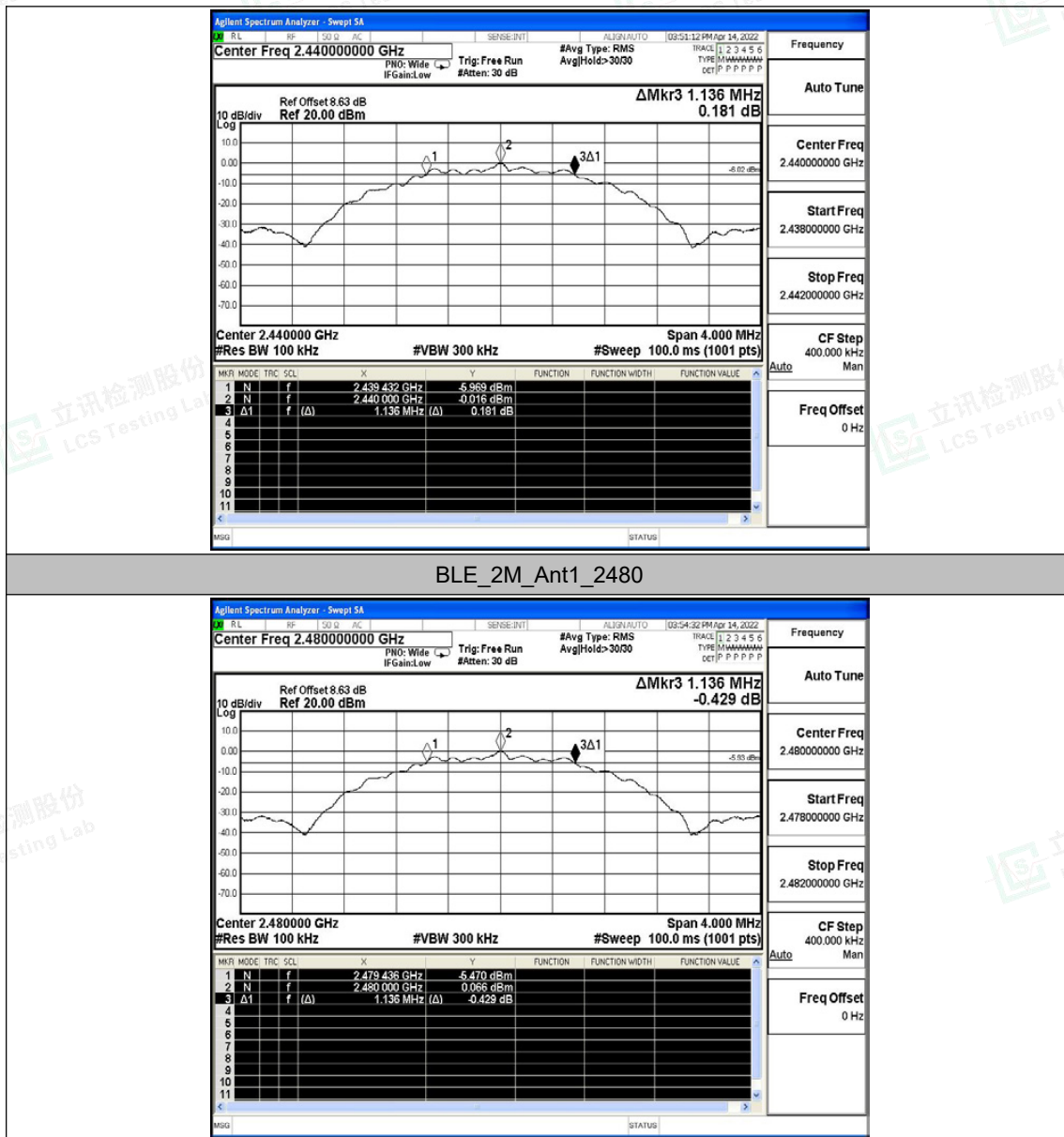


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.2 Maximum conducted output power

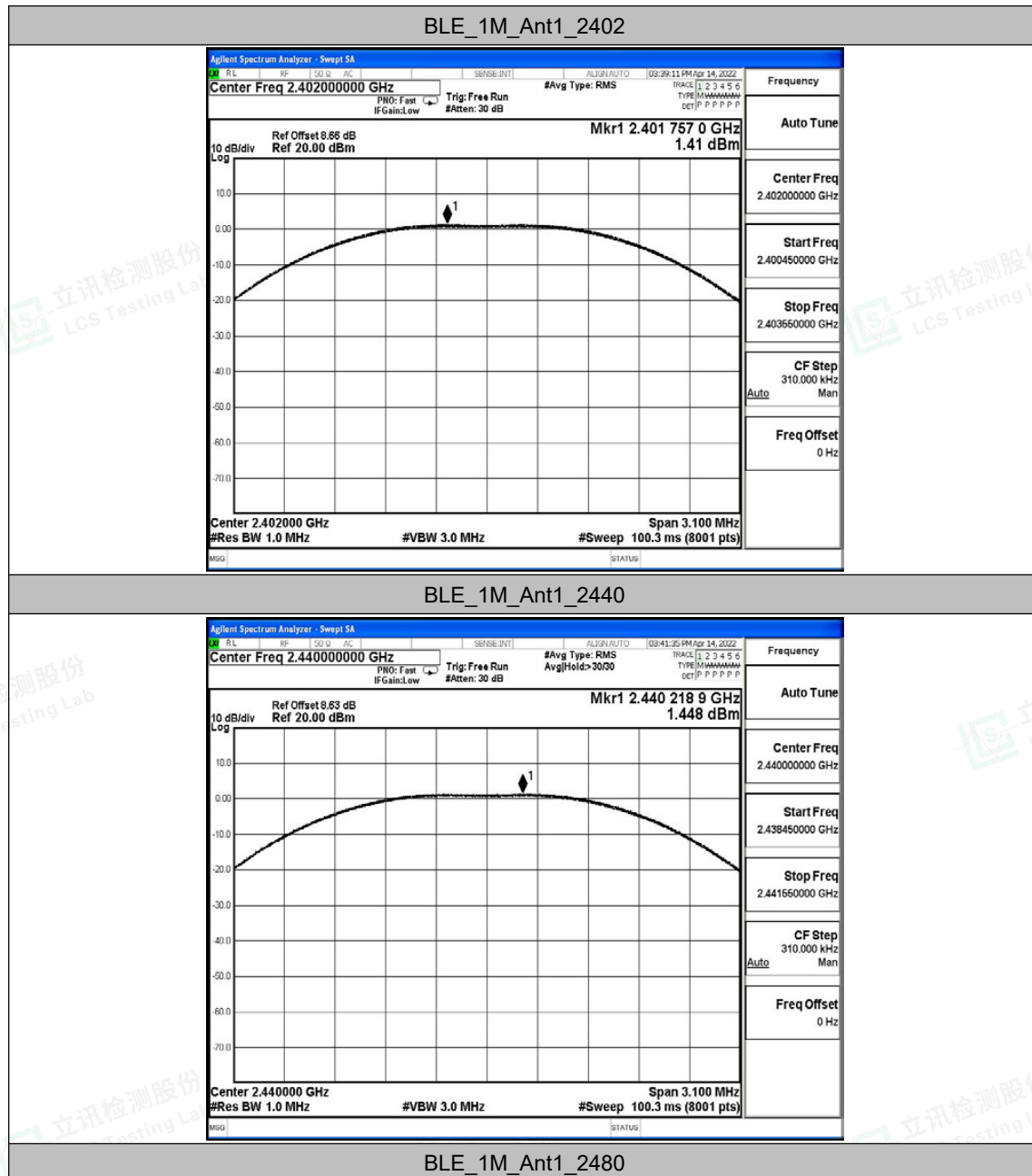
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.41	≤30	PASS
		2440	1.45	≤30	PASS
		2480	1.83	≤30	PASS
BLE_2M	Ant1	2402	1.38	≤30	PASS
		2440	1.41	≤30	PASS
		2480	1.38	≤30	PASS





Test Graphs

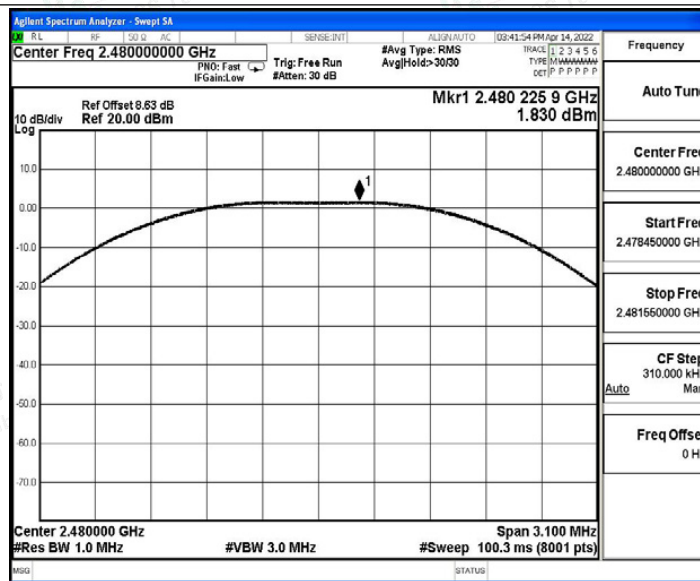


Shenzhen LCS Compliance Testing Laboratory Ltd.

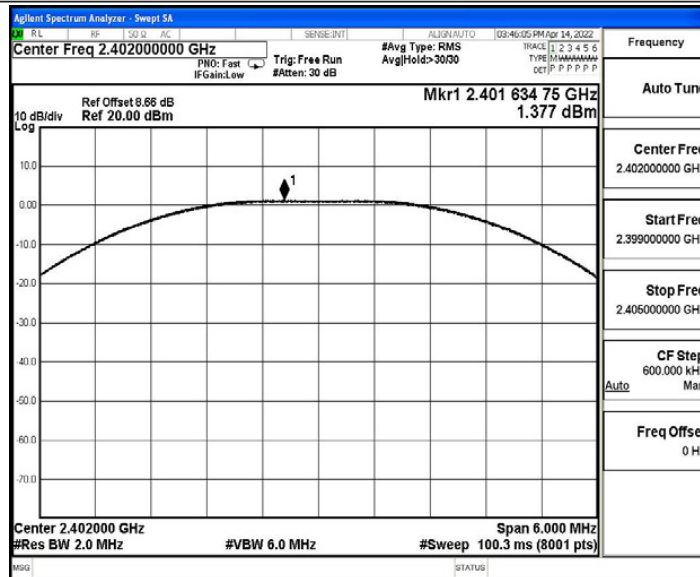
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

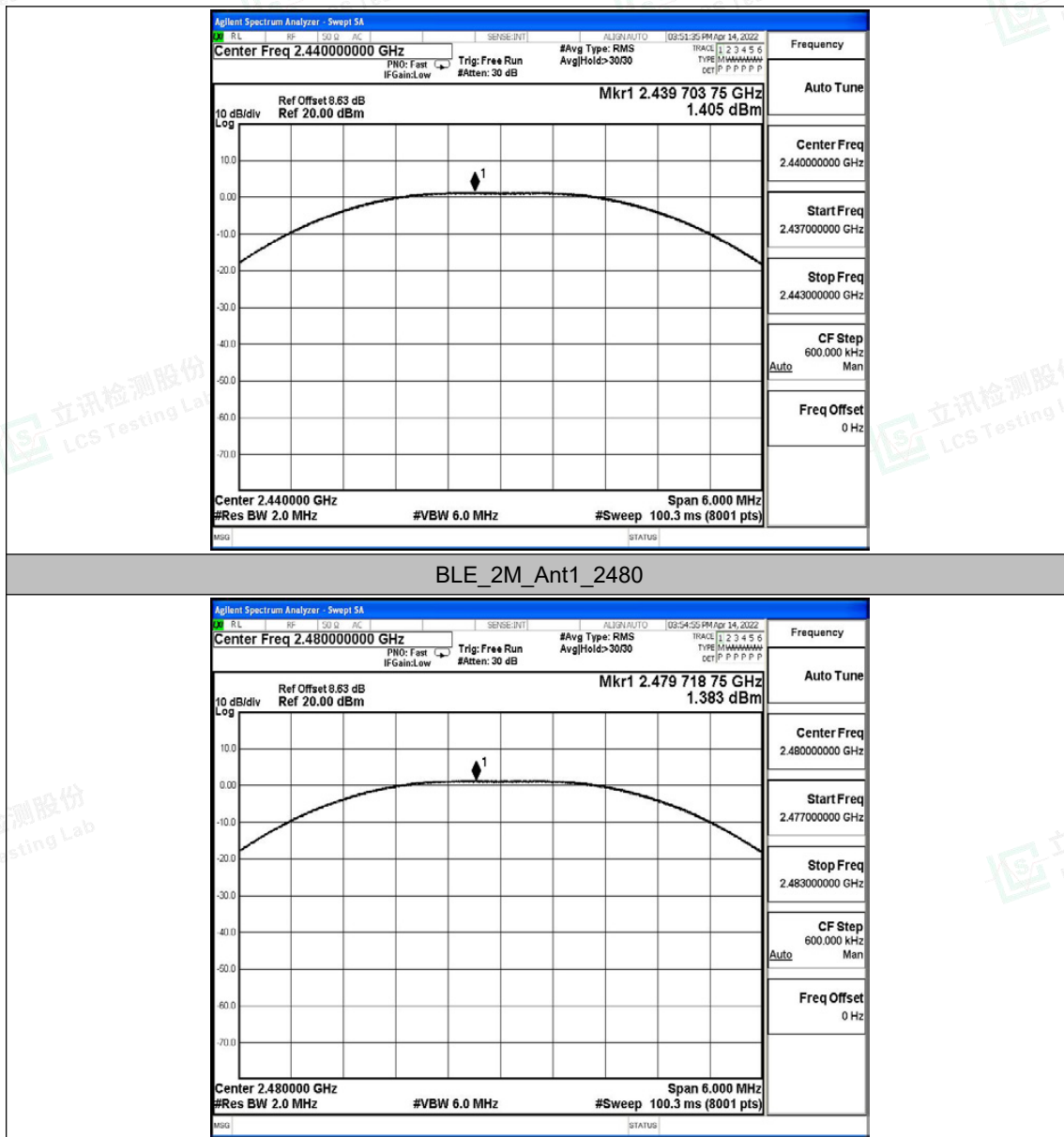


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.3 Maximum power spectral density

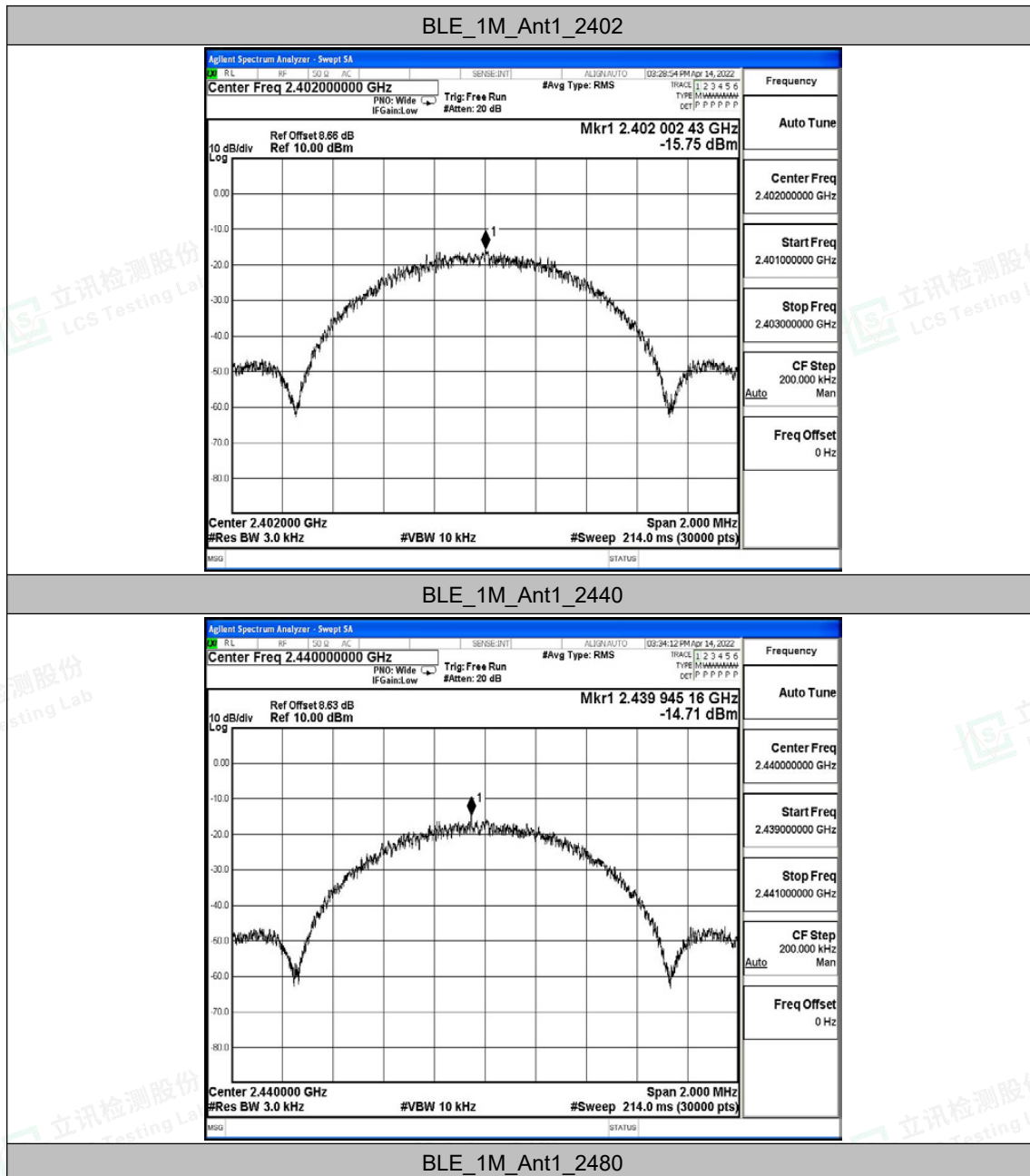
Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.75	≤8.00	PASS
		2440	-14.71	≤8.00	PASS
		2480	-13.53	≤8.00	PASS
BLE_2M	Ant1	2402	-16.66	≤8.00	PASS
		2440	-17.6	≤8.00	PASS
		2480	-16.96	≤8.00	PASS





Test Graphs

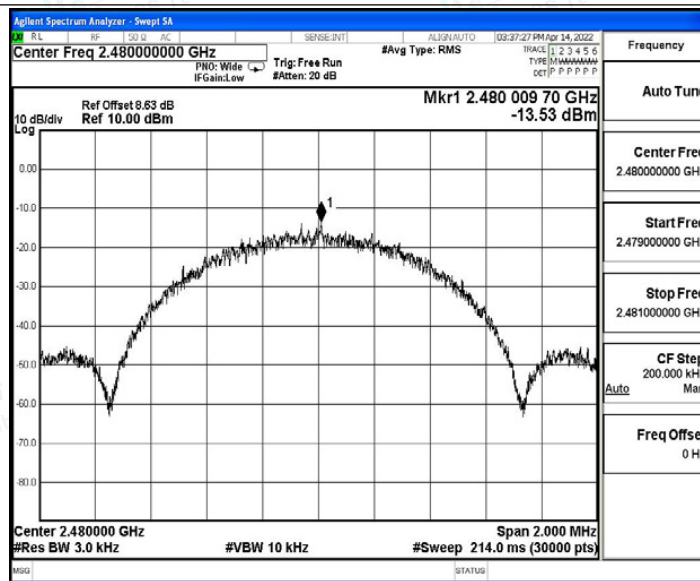


Shenzhen LCS Compliance Testing Laboratory Ltd.

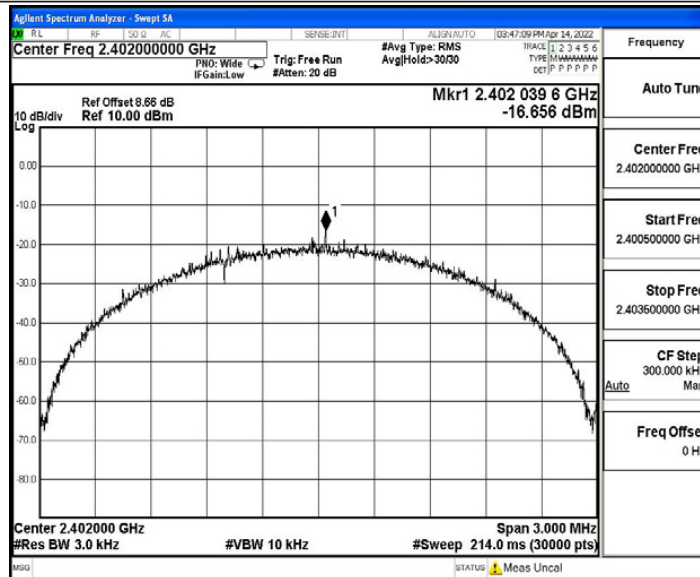
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

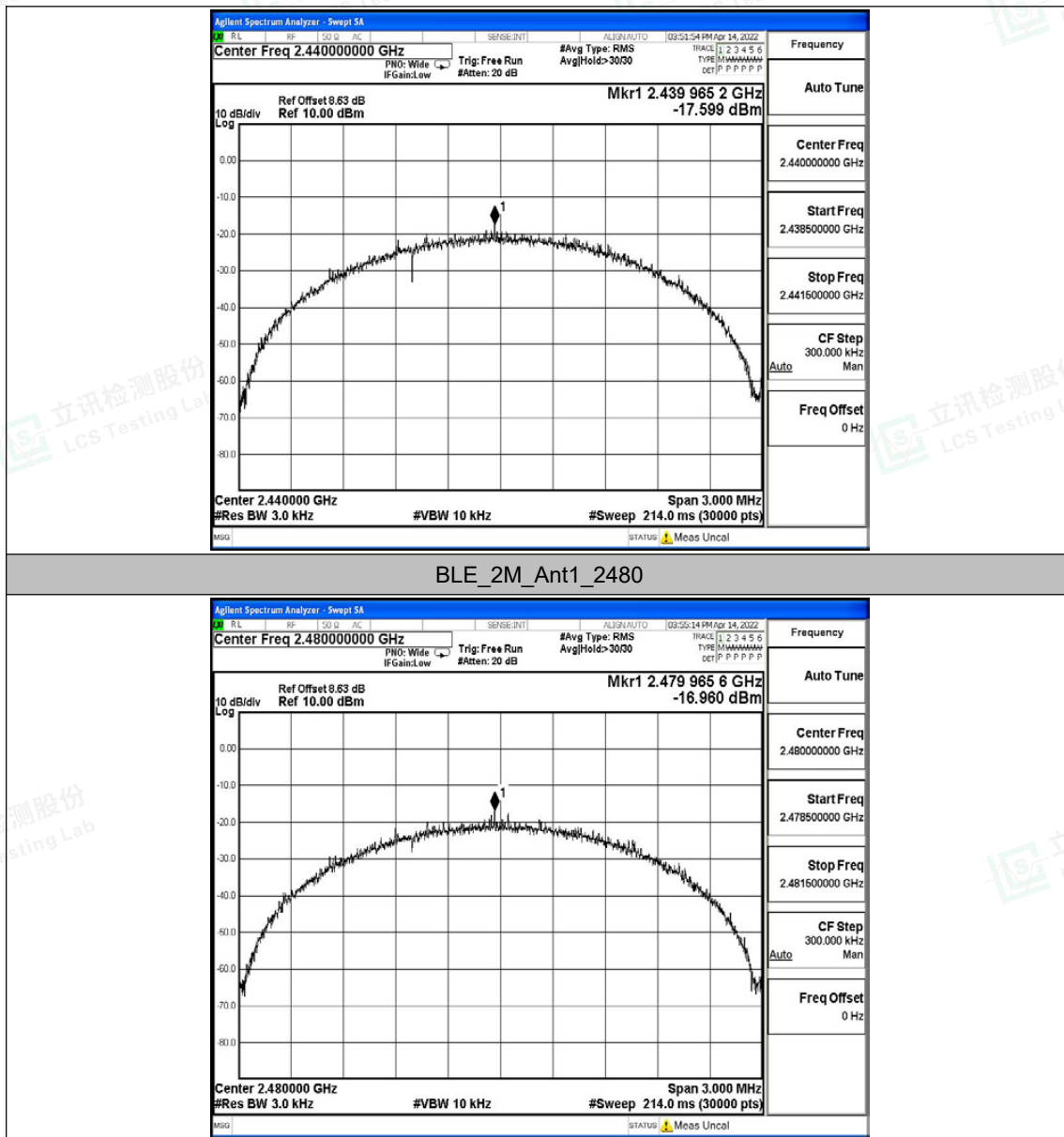


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.39	-56.98	≤ -20.39	PASS
		High	2480	0.31	-54.48	≤ -19.69	PASS
BLE_2M	Ant1	Low	2402	-1.81	-34.09	≤ -21.81	PASS
		High	2480	0.01	-57.46	≤ -19.99	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.

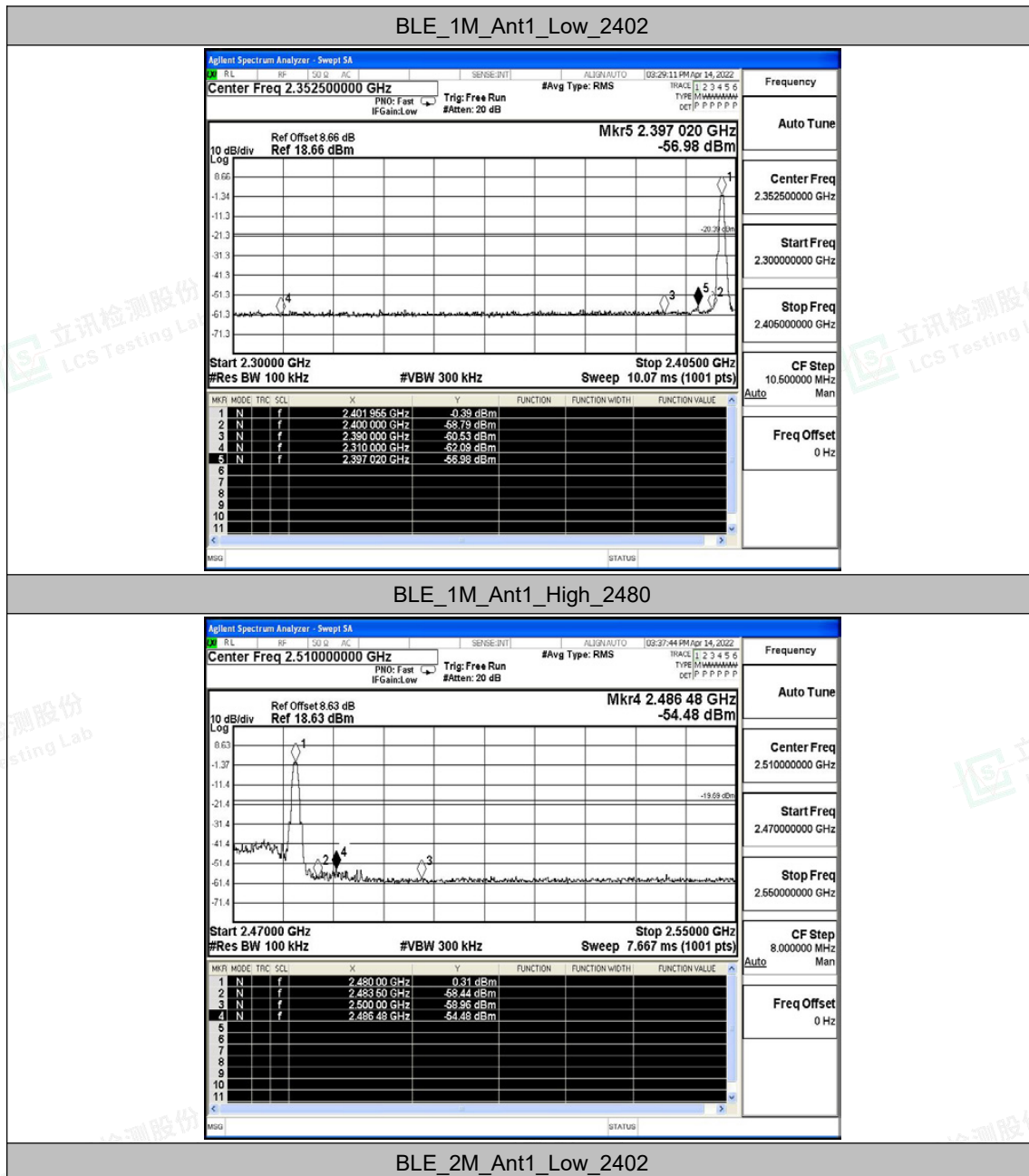
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Test Graphs

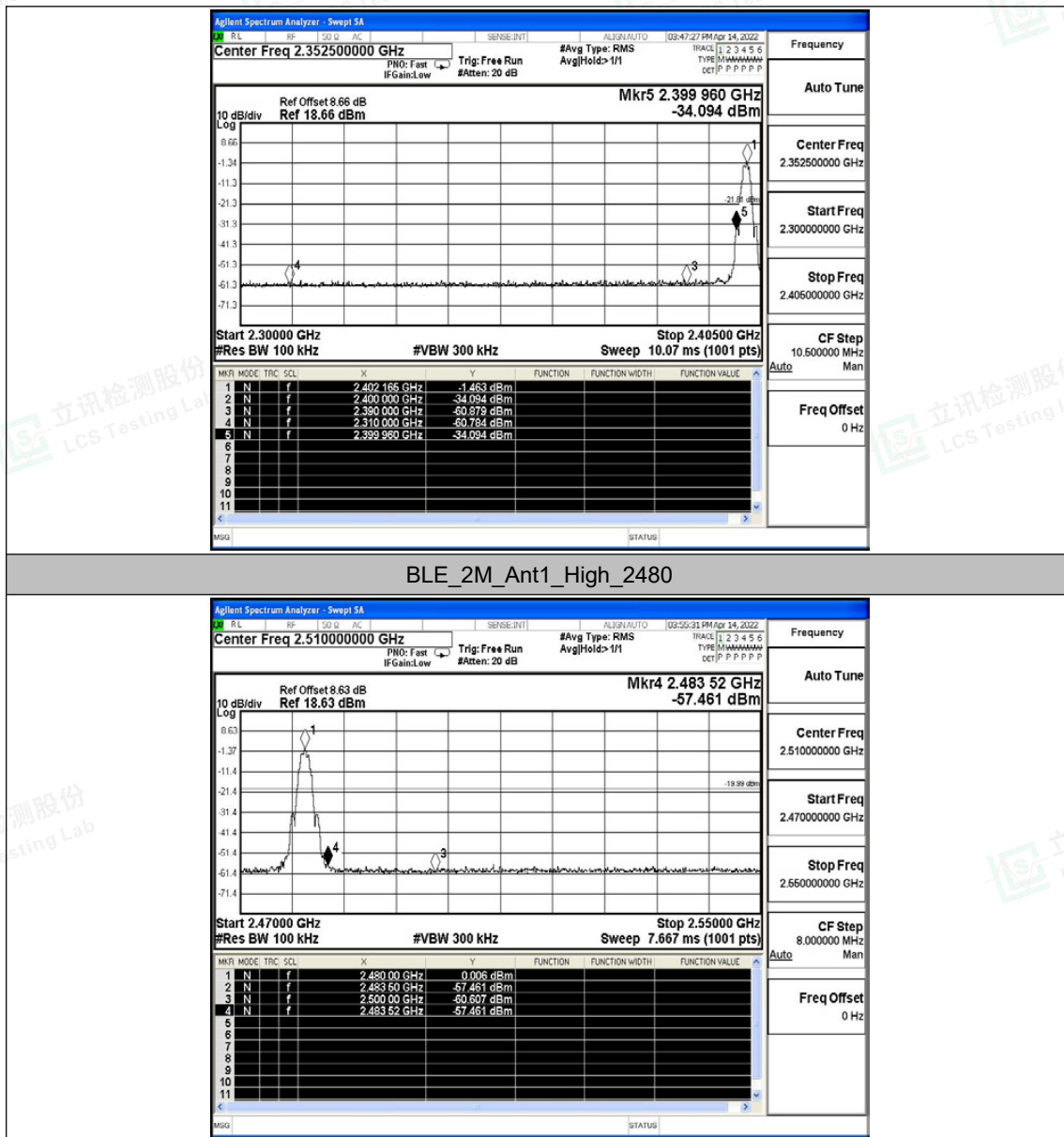


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.95	0.95	---	PASS
			30~1000	0.95	-60.49	≤-19.05	PASS
			1000~26500	0.95	-45.49	≤-19.05	PASS
		2440	Reference	-0.37	-0.37	---	PASS
			30~1000	-0.37	-35.96	≤-20.37	PASS
			1000~26500	-0.37	-42.84	≤-20.37	PASS
		2480	Reference	1.01	1.01	---	PASS
			30~1000	1.01	-61	≤-18.99	PASS
			1000~26500	1.01	-46.05	≤-18.99	PASS
BLE_2M	Ant1	2402	Reference	-0.08	-0.08	---	PASS
			30~1000	-0.08	-60.12	≤-20.08	PASS
			1000~26500	-0.08	-31.41	≤-20.08	PASS
		2440	Reference	-0.08	-0.08	---	PASS
			30~1000	-0.08	-60.49	≤-20.08	PASS
			1000~26500	-0.08	-34.36	≤-20.08	PASS
		2480	Reference	0.02	0.02	---	PASS
			30~1000	0.02	-60.9	≤-19.98	PASS
			1000~26500	0.02	-44.17	≤-19.98	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.

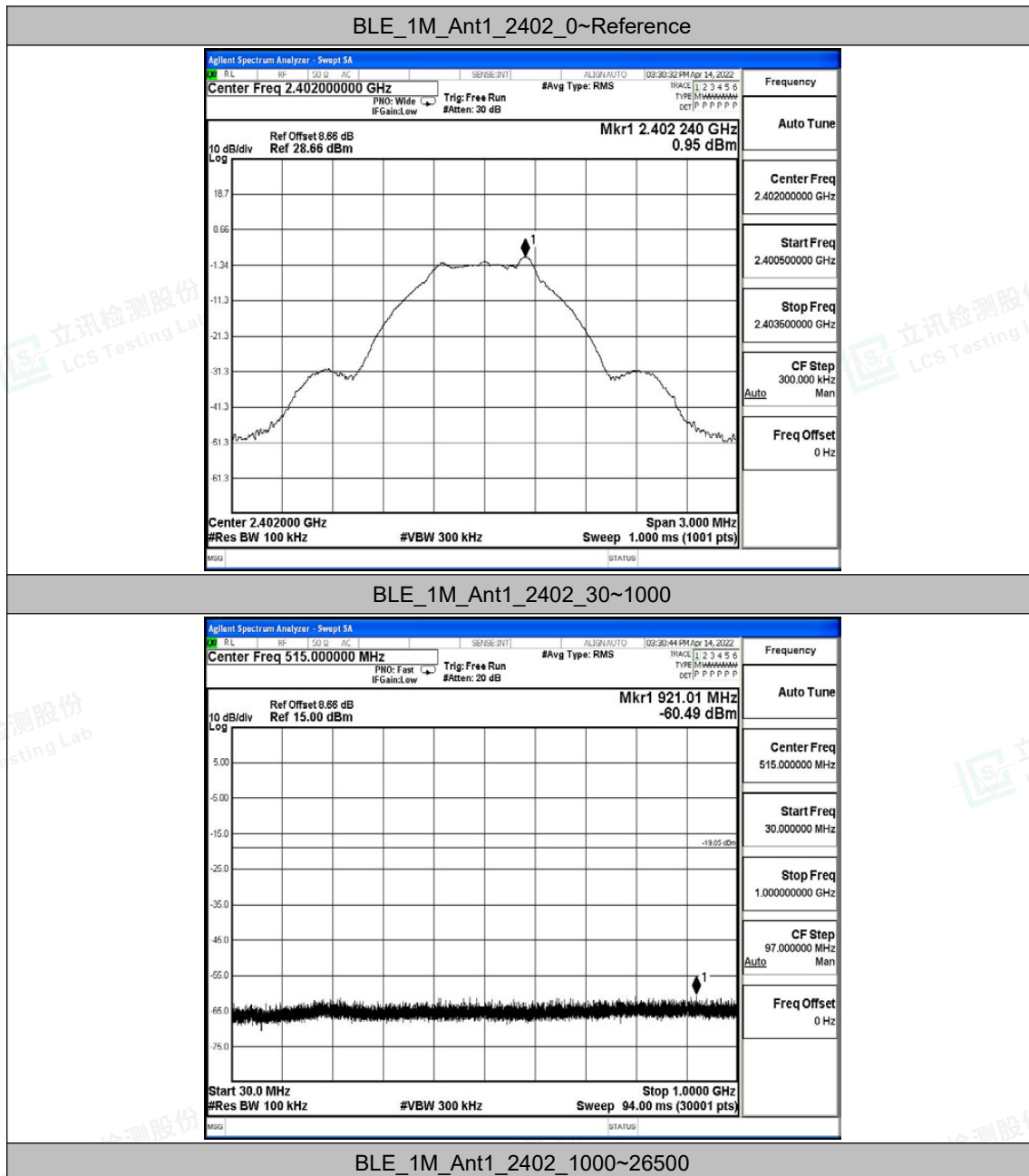
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Test Graphs

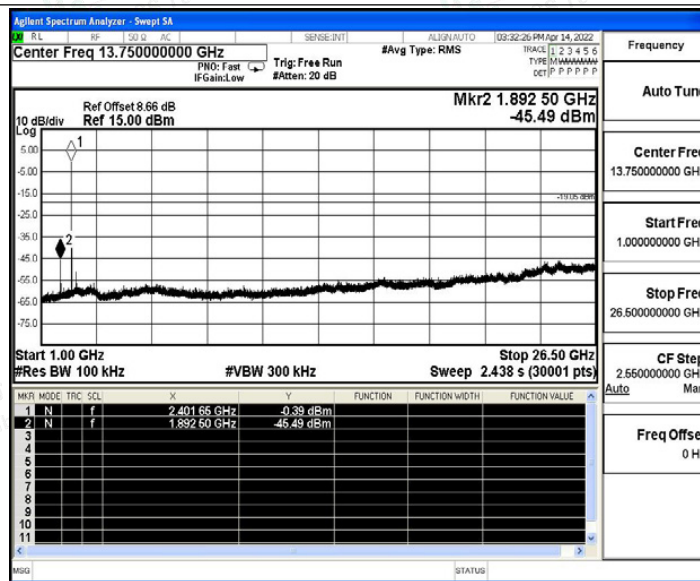


Shenzhen LCS Compliance Testing Laboratory Ltd.

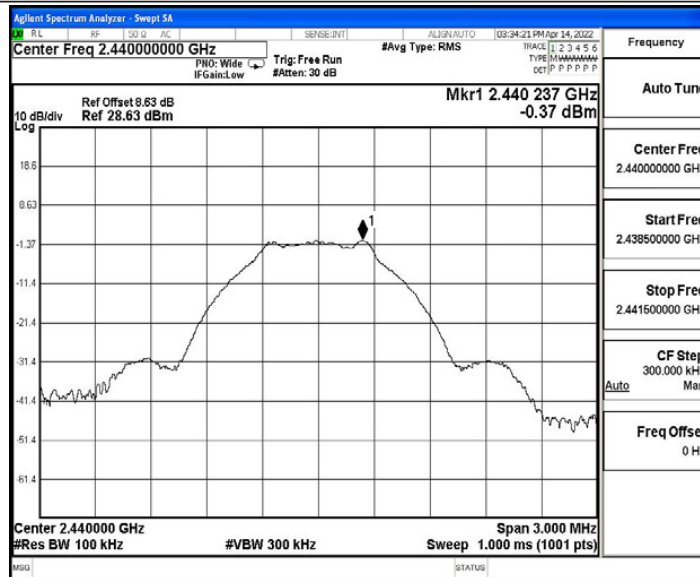
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

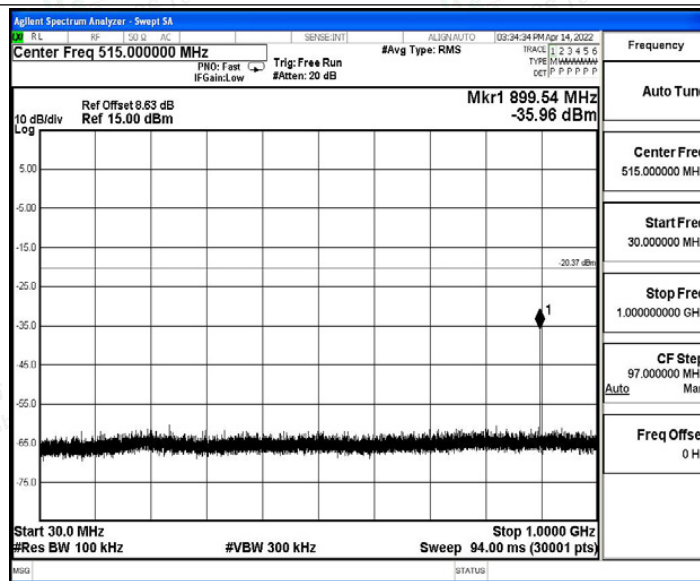


Shenzhen LCS Compliance Testing Laboratory Ltd.

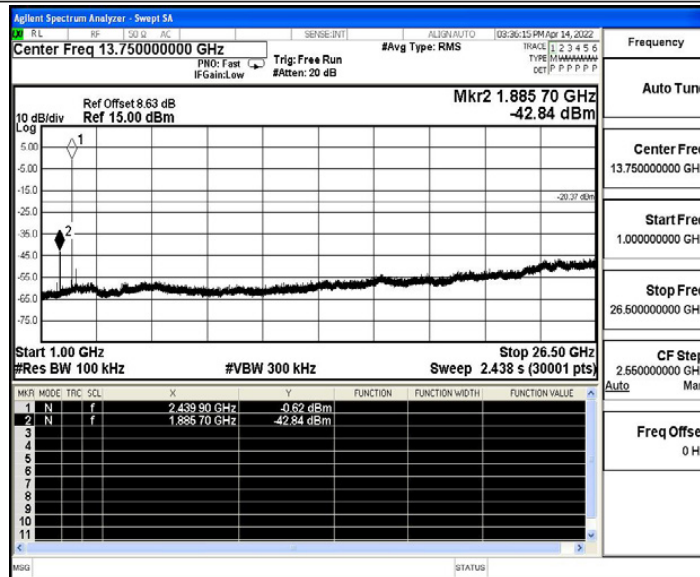
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

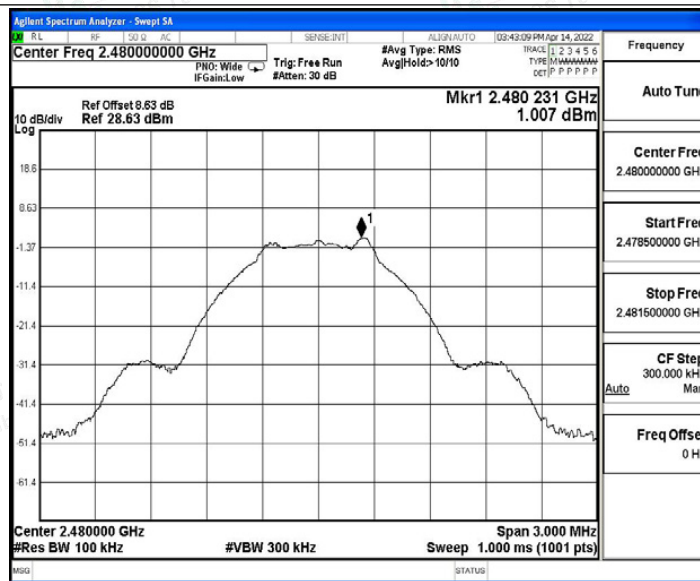


Shenzhen LCS Compliance Testing Laboratory Ltd.

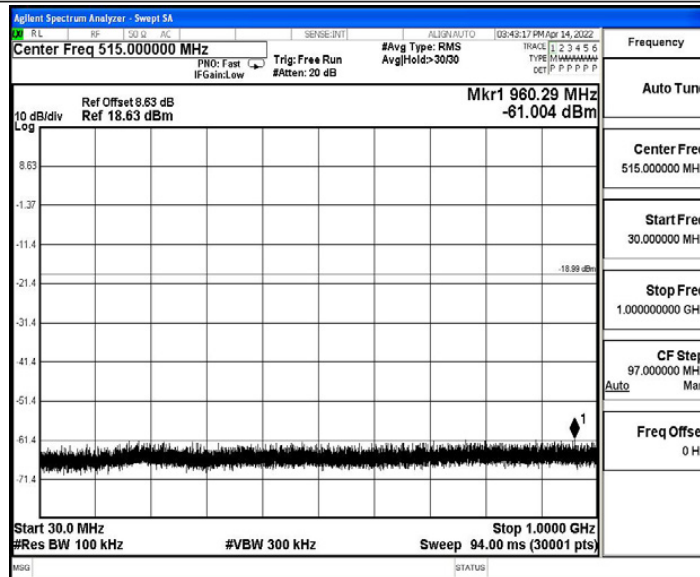
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

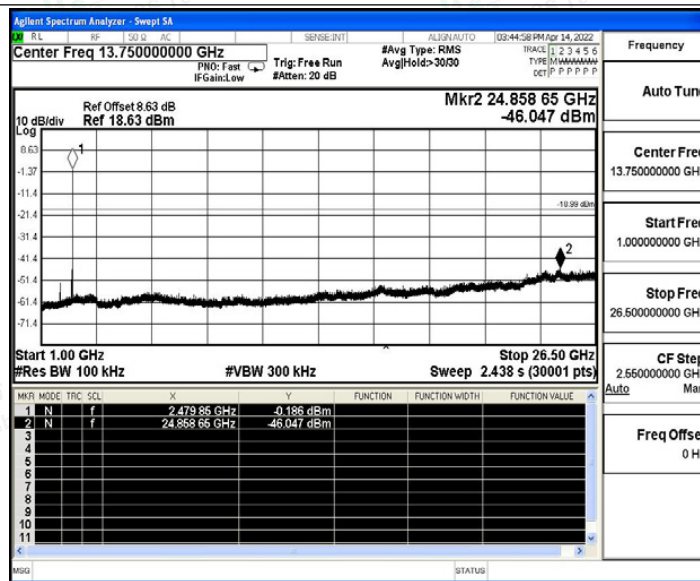


Shenzhen LCS Compliance Testing Laboratory Ltd.

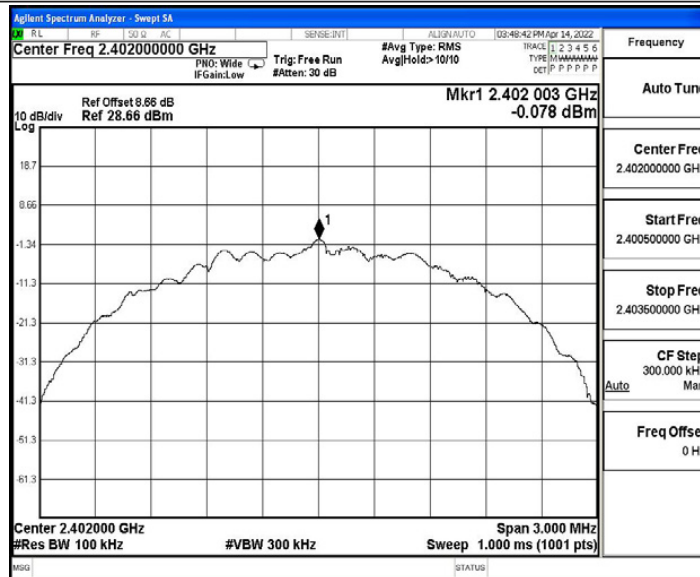
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000

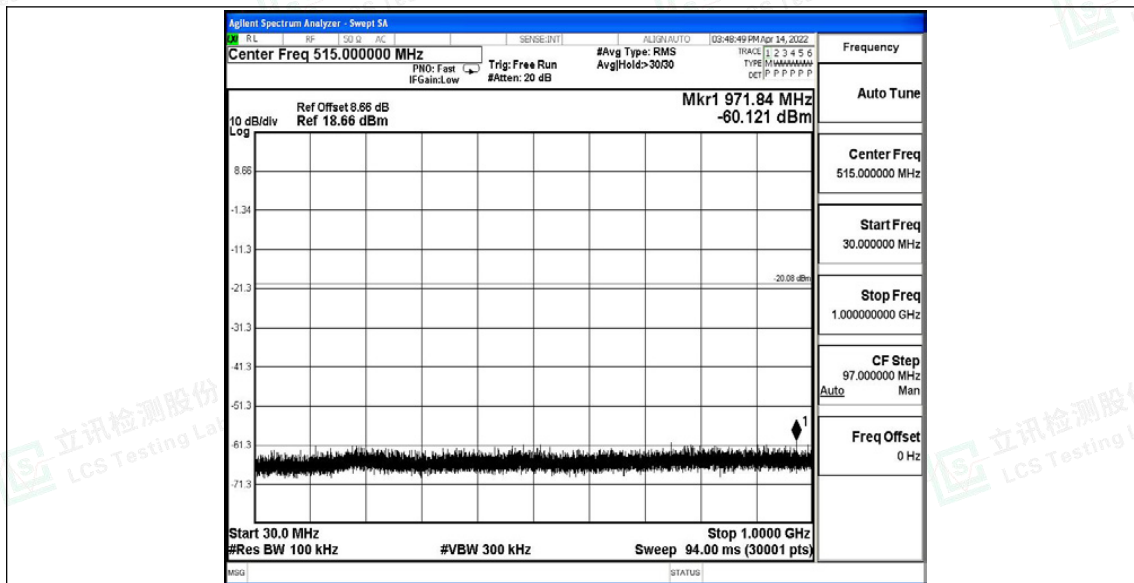


Shenzhen LCS Compliance Testing Laboratory Ltd.

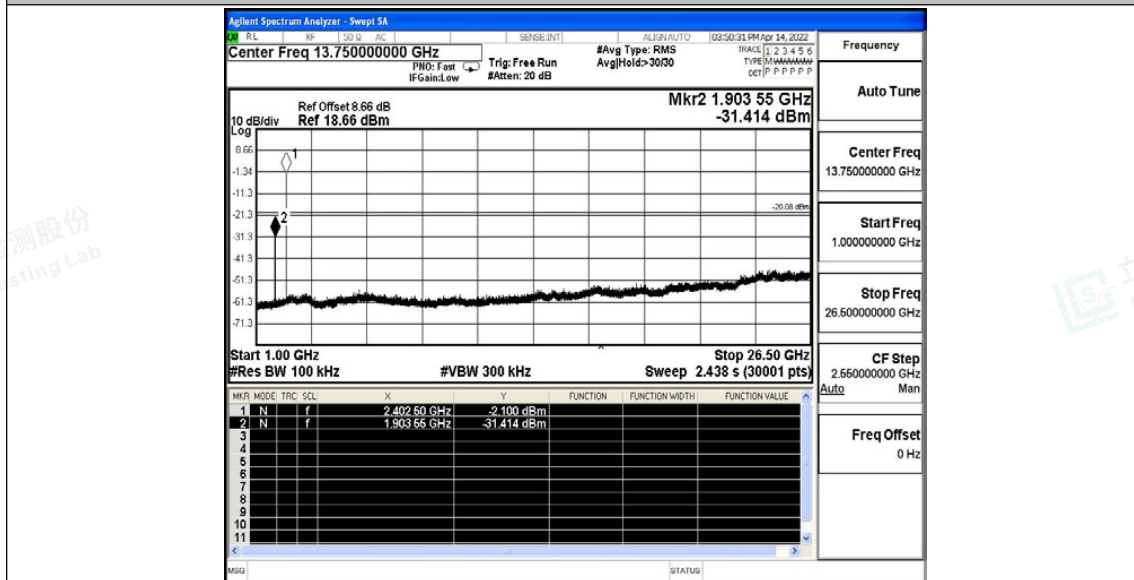
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_0~Reference

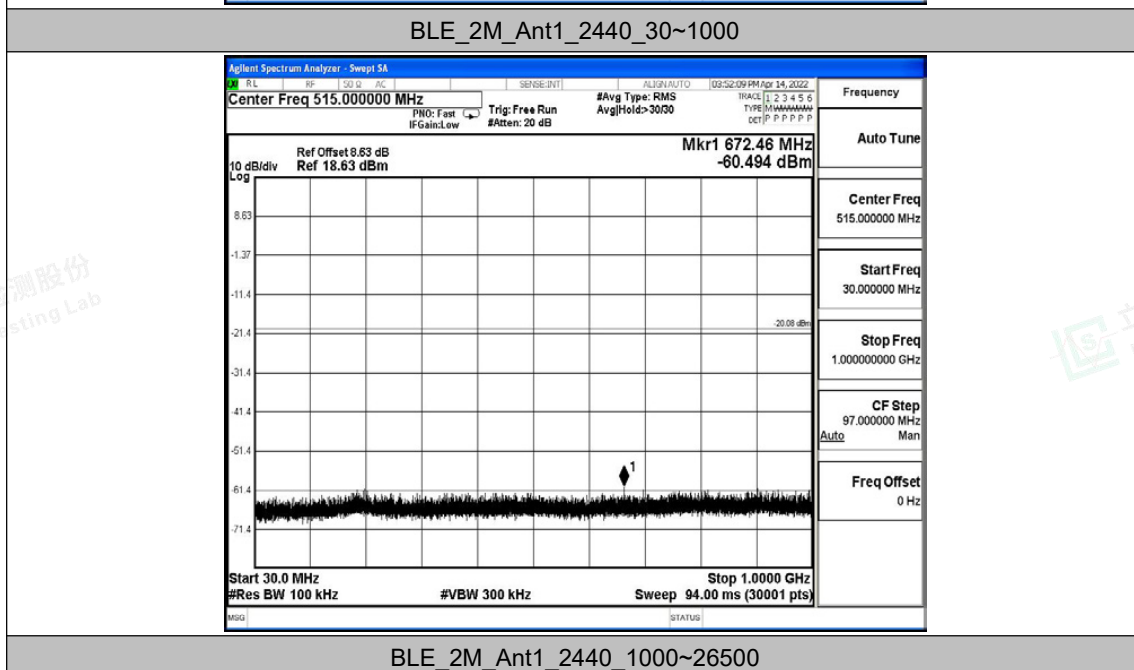
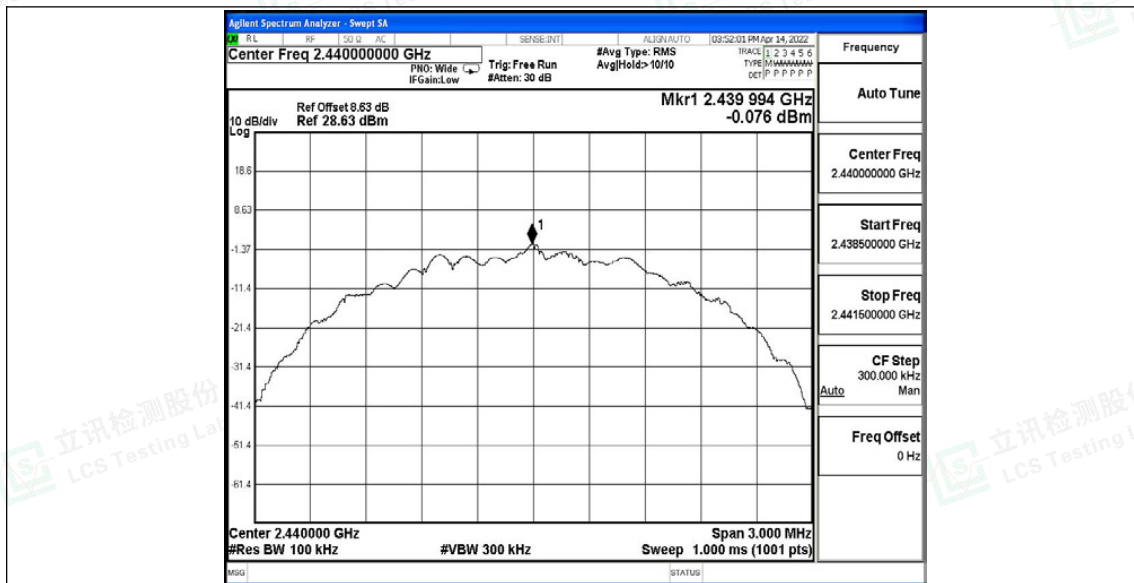


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

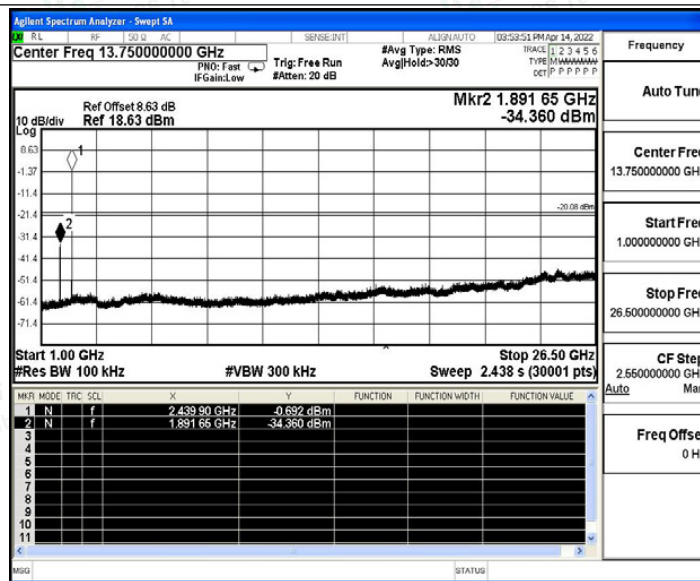


Shenzhen LCS Compliance Testing Laboratory Ltd.

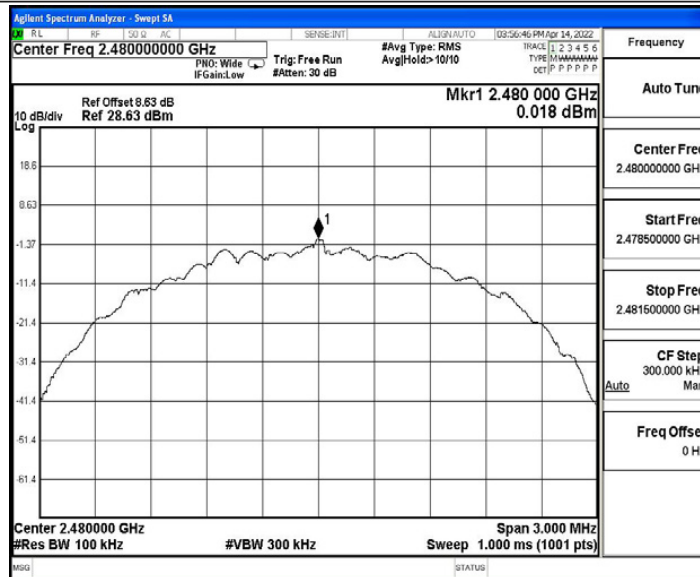
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000

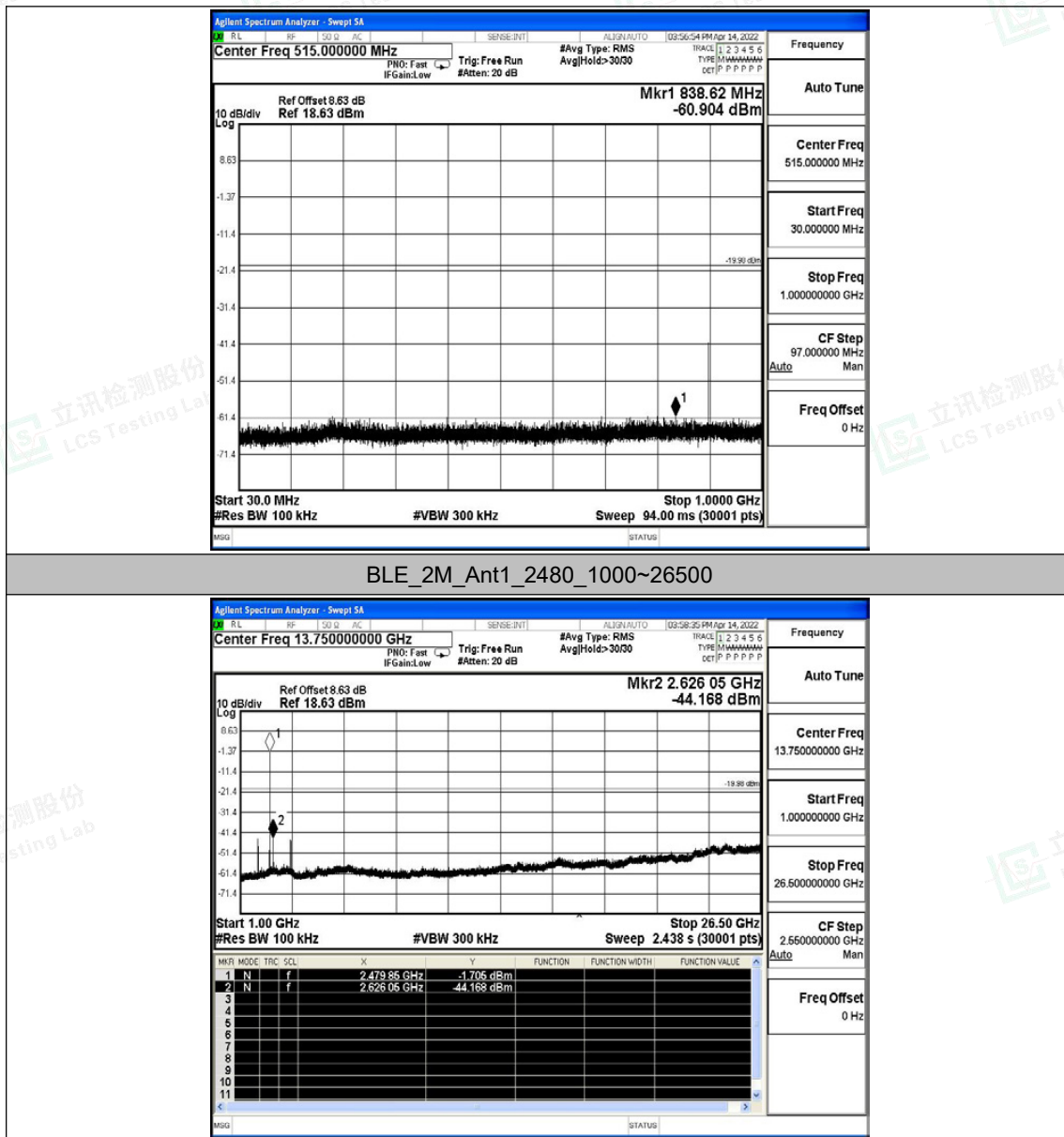


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.6 Duty Cycle

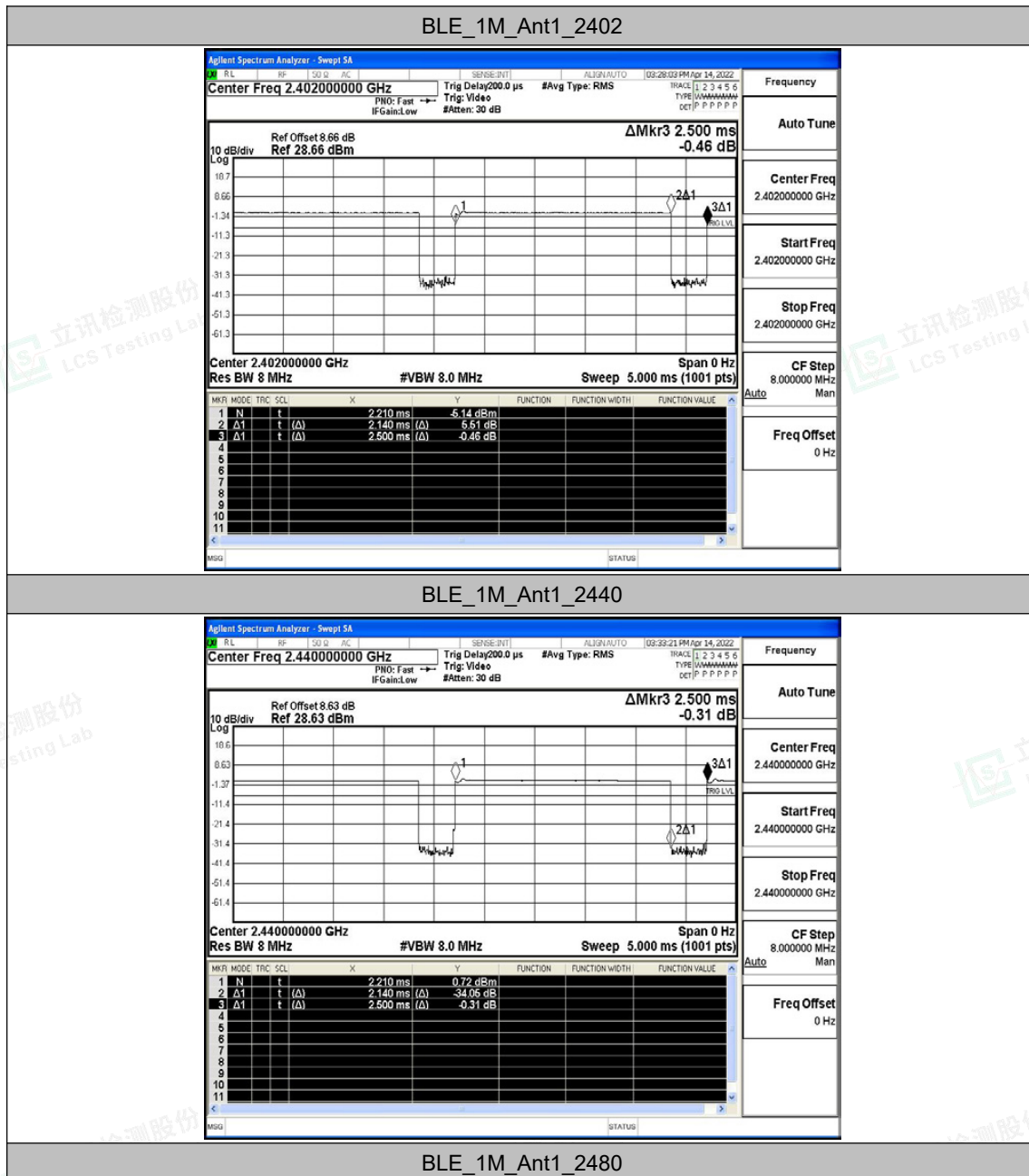
Test Result

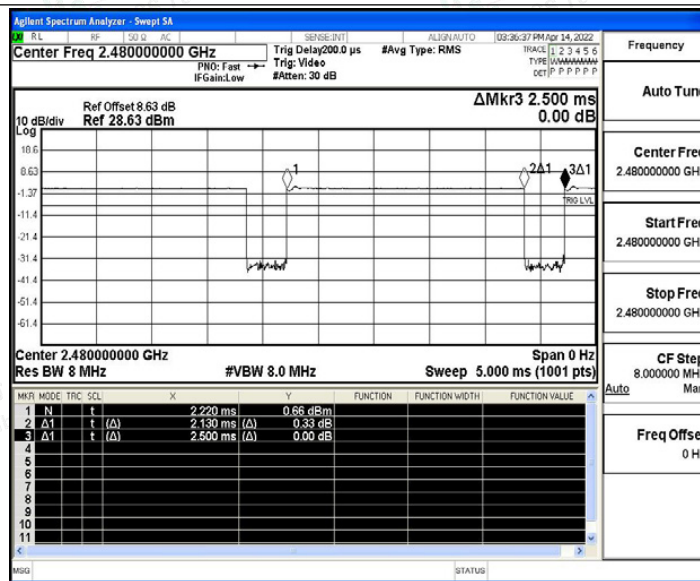
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit
BLE_1M	Ant1	2402	2.14	2.50	0.8560	85.60	0.68	0.47	---
		2440	2.14	2.50	0.8560	85.60	0.68	0.47	---
		2480	2.13	2.50	0.8520	85.20	0.70	0.47	---
BLE_2M	Ant1	2402	1.08	1.88	0.5745	57.45	2.41	0.93	---
		2440	1.08	1.88	0.5745	57.45	2.41	0.93	---
		2480	1.08	1.87	0.5775	57.75	2.38	0.93	---



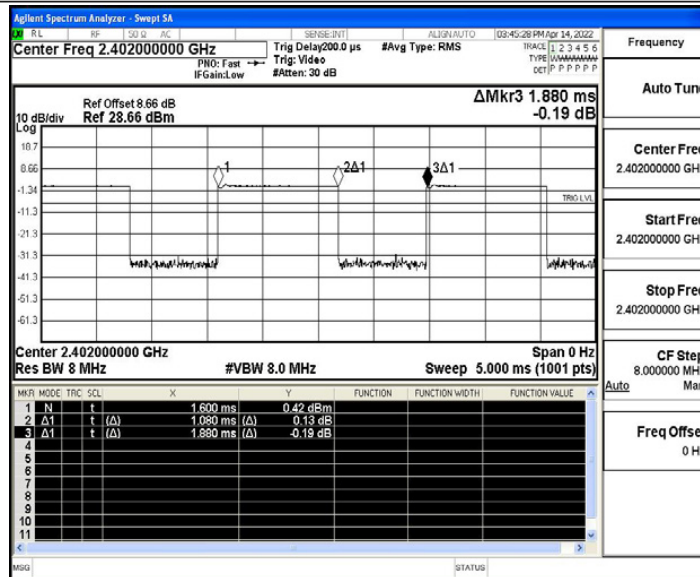


Test Graphs





BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

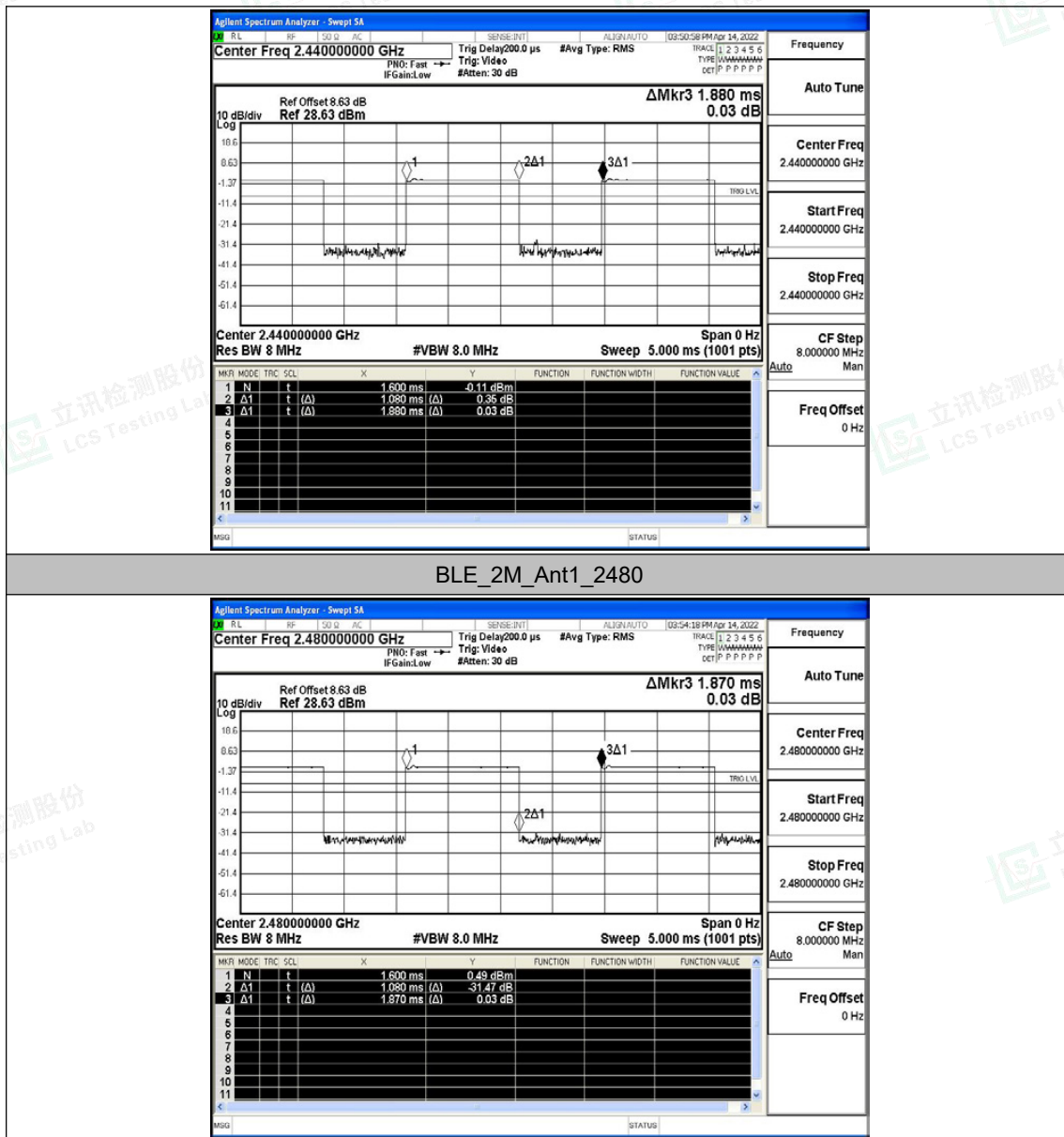


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-57.86	≤-41.20	37.34	≤54	PASS
				AV	2389.355	-57.13	≤-41.20	38.07	≤54	PASS
				AV	2390.000	-57.25	≤-41.20	37.95	≤54	PASS
				Peak	2310.000	-48.81	≤-21.20	46.39	≤74	PASS
				Peak	2374.340	-45.66	≤-21.20	49.54	≤74	PASS
				Peak	2390.000	-47.72	≤-21.20	47.48	≤74	PASS
		High	2480	AV	2483.500	-53.39	≤-41.20	41.81	≤54	PASS
				AV	2483.520	-53.39	≤-41.20	41.81	≤54	PASS
				AV	2500.000	-56.93	≤-41.20	38.27	≤54	PASS
				Peak	2483.500	-46.6	≤-21.20	48.60	≤74	PASS
				Peak	2483.760	-44.44	≤-21.20	50.76	≤74	PASS
				Peak	2500.000	-47.36	≤-21.20	47.84	≤74	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-57.74	≤-41.20	37.46	≤54	PASS
				AV	2389.565	-56.97	≤-41.20	38.23	≤54	PASS
				AV	2390.000	-57	≤-41.20	38.20	≤54	PASS
				Peak	2310.000	-49.08	≤-21.20	46.12	≤74	PASS
				Peak	2386.205	-46.47	≤-21.20	48.73	≤74	PASS
				Peak	2390.000	-48.34	≤-21.20	46.86	≤74	PASS
		High	2480	AV	2483.500	-48.94	≤-41.20	46.26	≤54	PASS
				AV	2483.520	-48.94	≤-41.20	46.26	≤54	PASS
				AV	2500.000	-56.86	≤-41.20	38.34	≤54	PASS
				Peak	2483.500	-44.14	≤-21.20	51.06	≤74	PASS
				Peak	2483.840	-44.13	≤-21.20	51.07	≤74	PASS
				Peak	2500.000	-47.6	≤-21.20	47.60	≤74	PASS

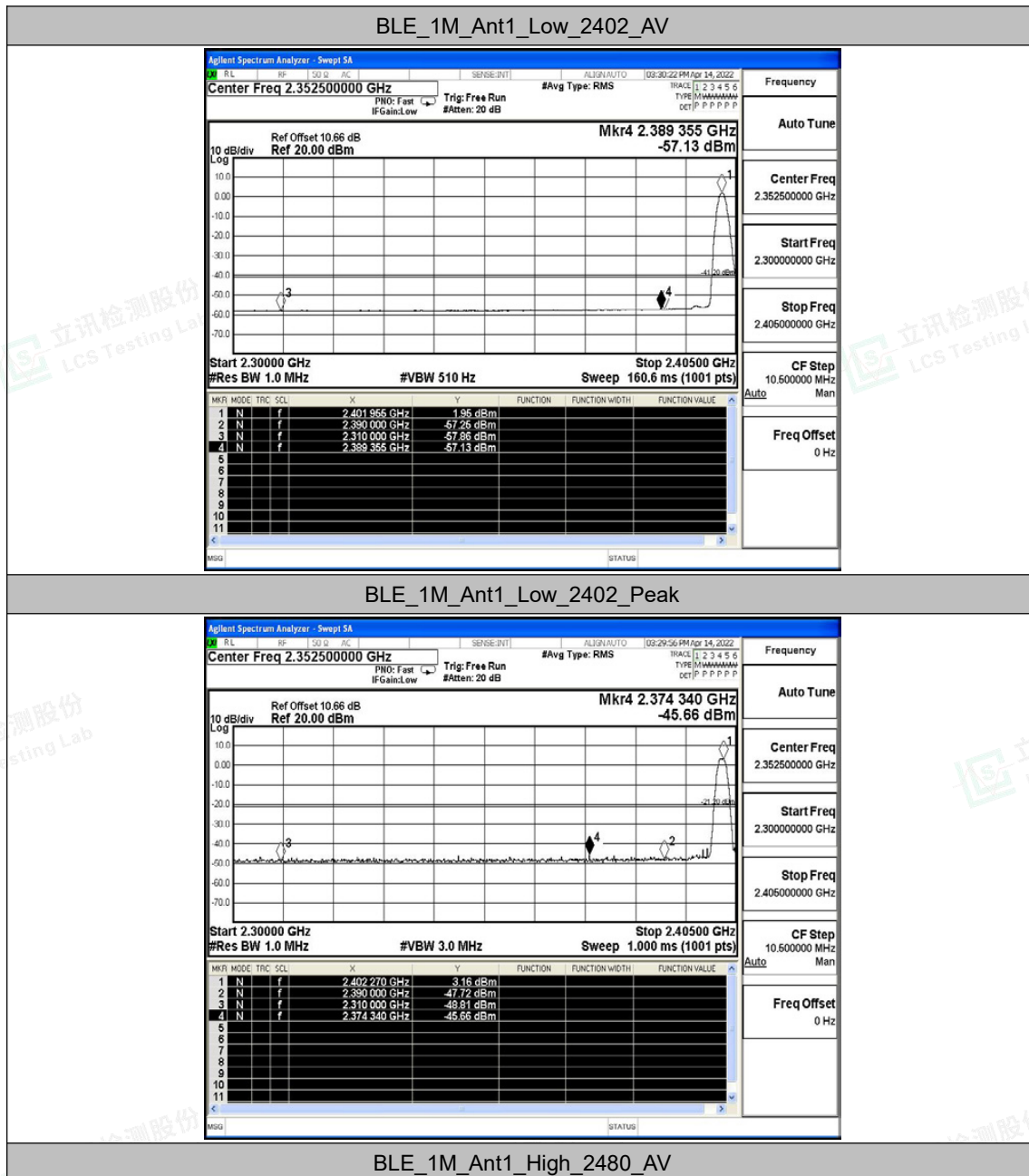
Note:

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

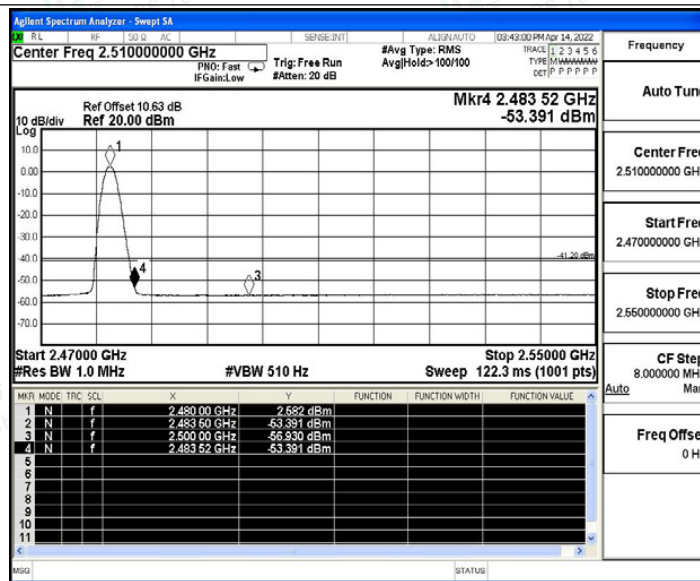


Shenzhen LCS Compliance Testing Laboratory Ltd.

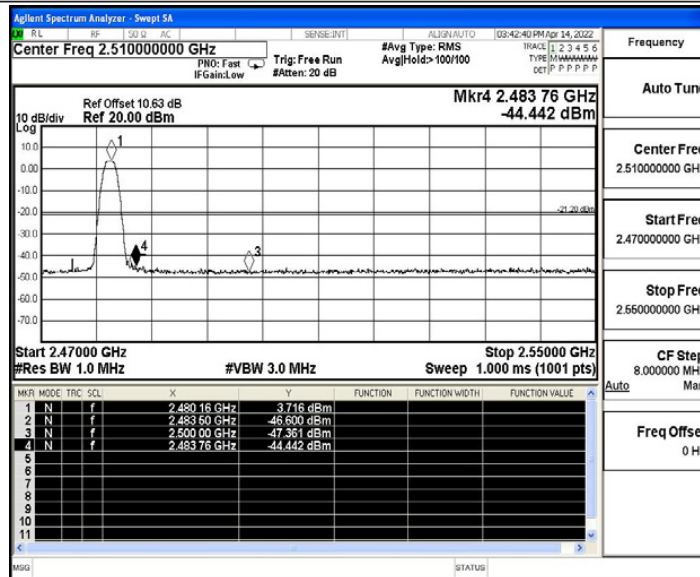
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_1M_Ant1_High_2480_Peak



BLE_2M_Ant1_Low_2402_AV

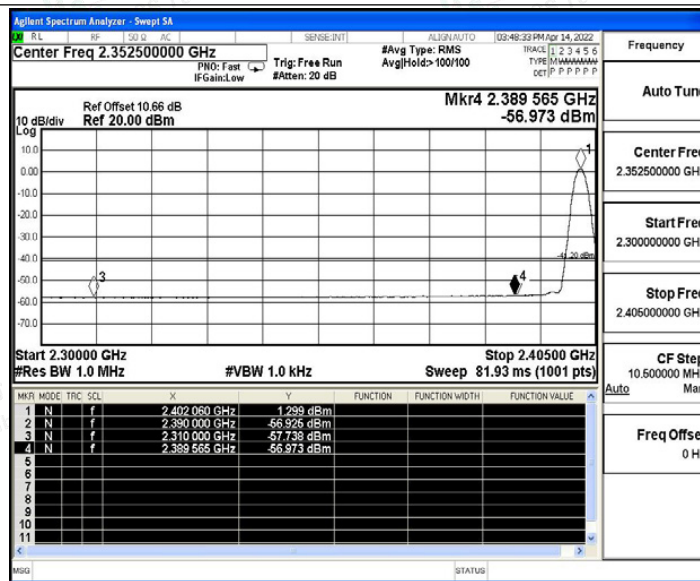


Shenzhen LCS Compliance Testing Laboratory Ltd.

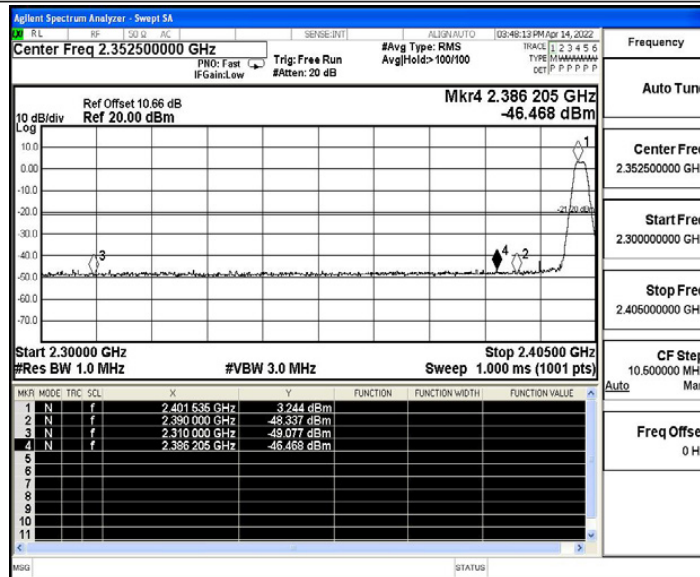
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV

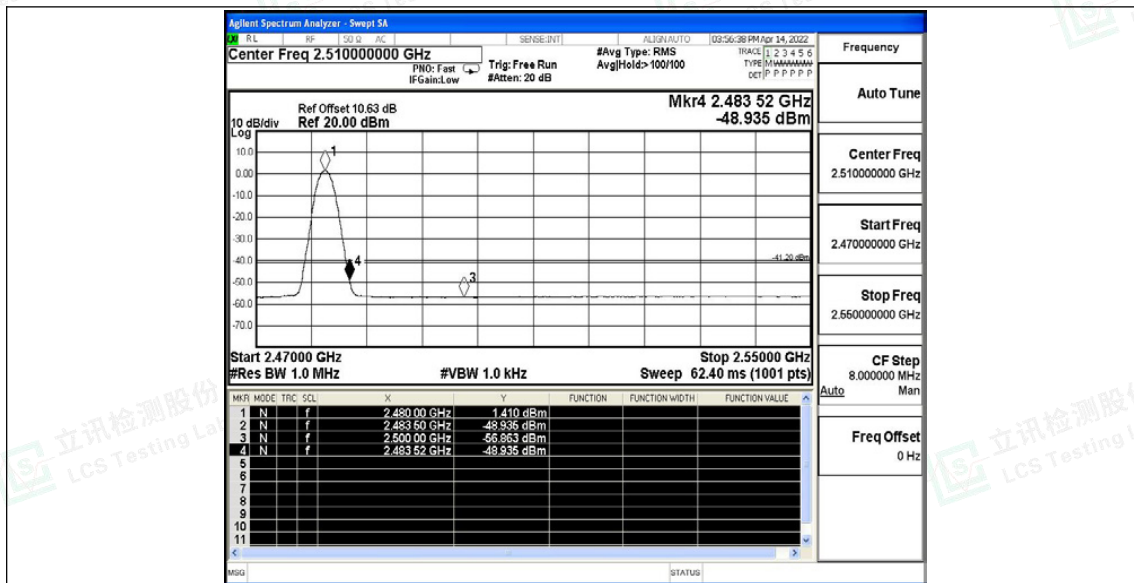


Shenzhen LCS Compliance Testing Laboratory Ltd.

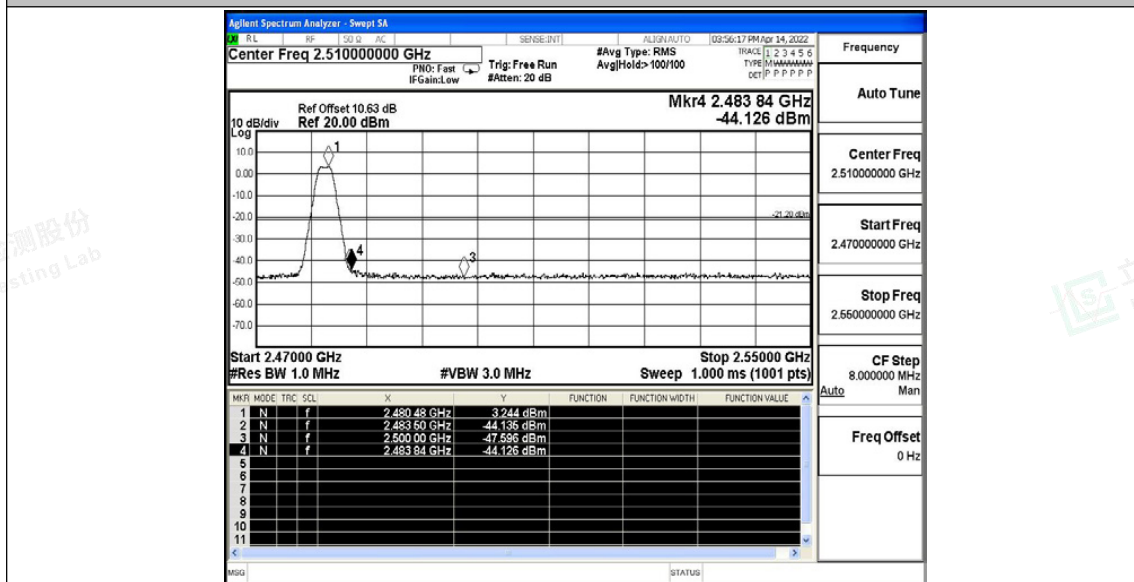
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



BLE_2M_Ant1_High_2480_Peak



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity