



Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: 2.4G Module

Test Model: G01-SPIPX-N

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jack Cheng
Supervised by:	Li huan





A.1 DTS Bandwidth

Test Result

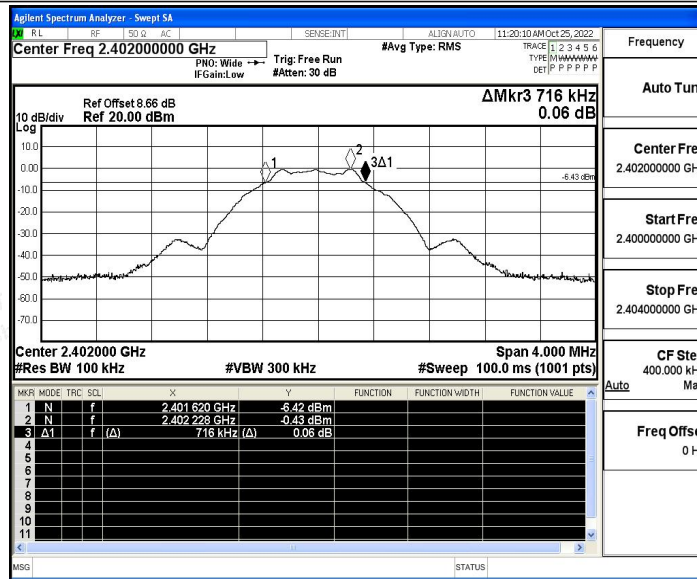
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4G	Ant1	2402	0.716	2401.620	2402.336	0.5	PASS
		2440	0.712	2439.624	2440.336	0.5	PASS
		2480	0.716	2479.624	2480.340	0.5	PASS



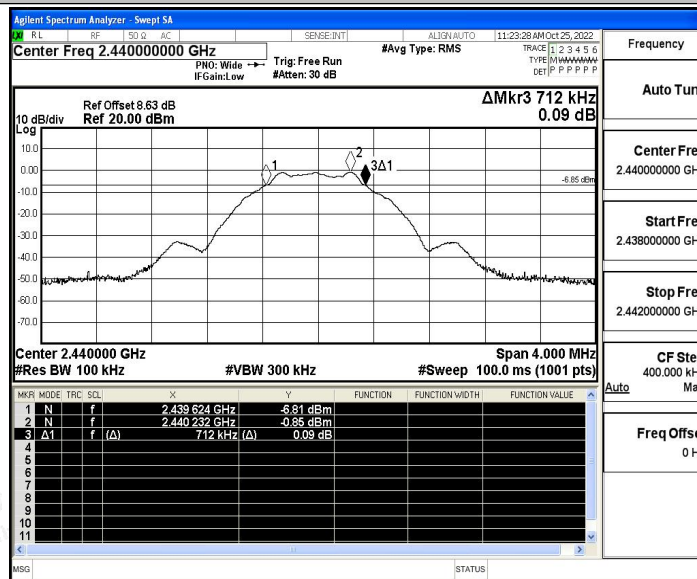


Test Graphs

2.4G_Ant1_2402



2.4G_Ant1_2440



2.4G_Ant1_2480

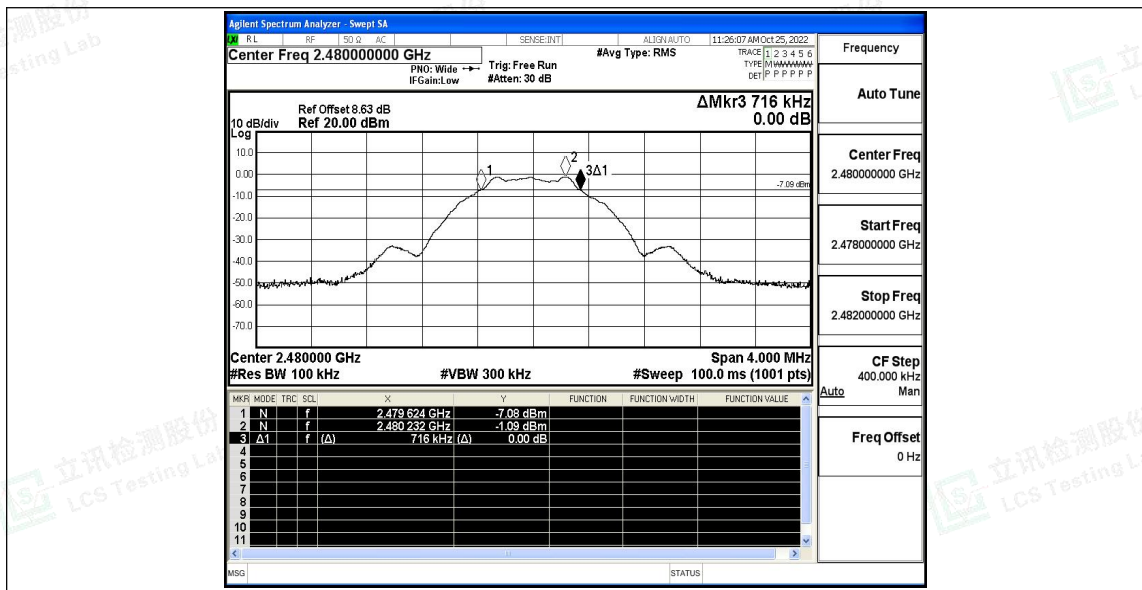


Shenzhen LCS Compliance Testing Laboratory Ltd.

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





A.2 Occupied Channel Bandwidth

Test Result

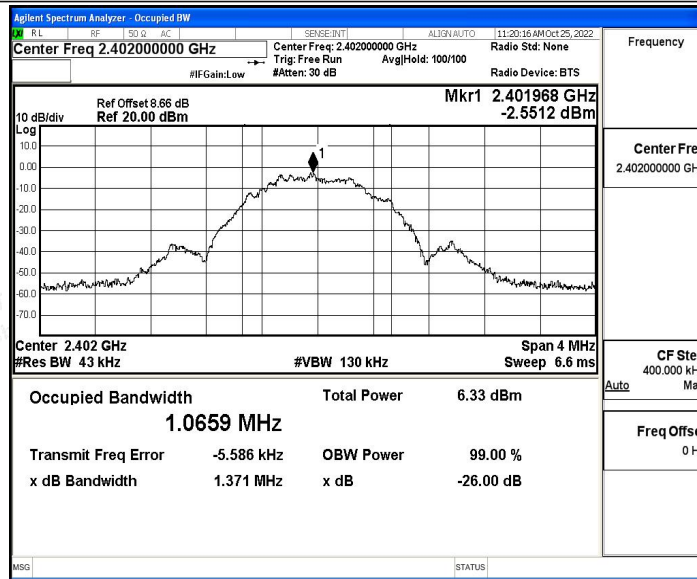
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4G	Ant1	2402	1.0659	2401.4615	2402.5274	---	---
		2440	1.0561	2439.4664	2440.5225	---	---
		2480	1.0593	2479.4652	2480.5245	---	---



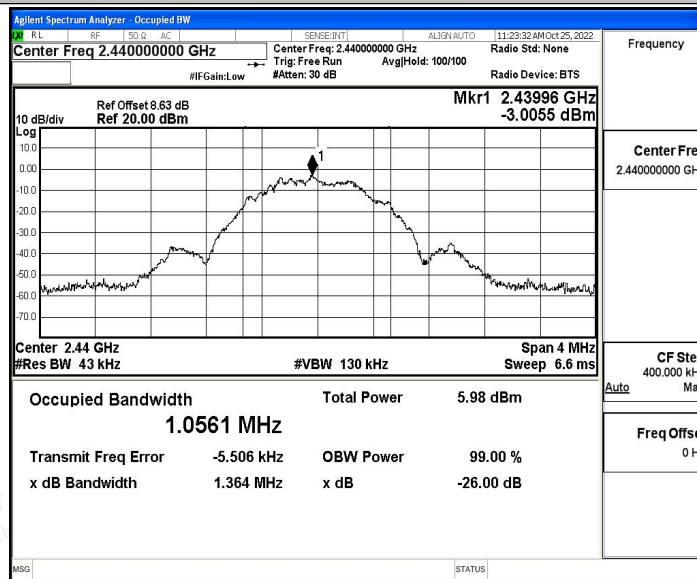


Test Graphs

2.4G_Ant1_2402



2.4G_Ant1_2440



2.4G_Ant1_2480

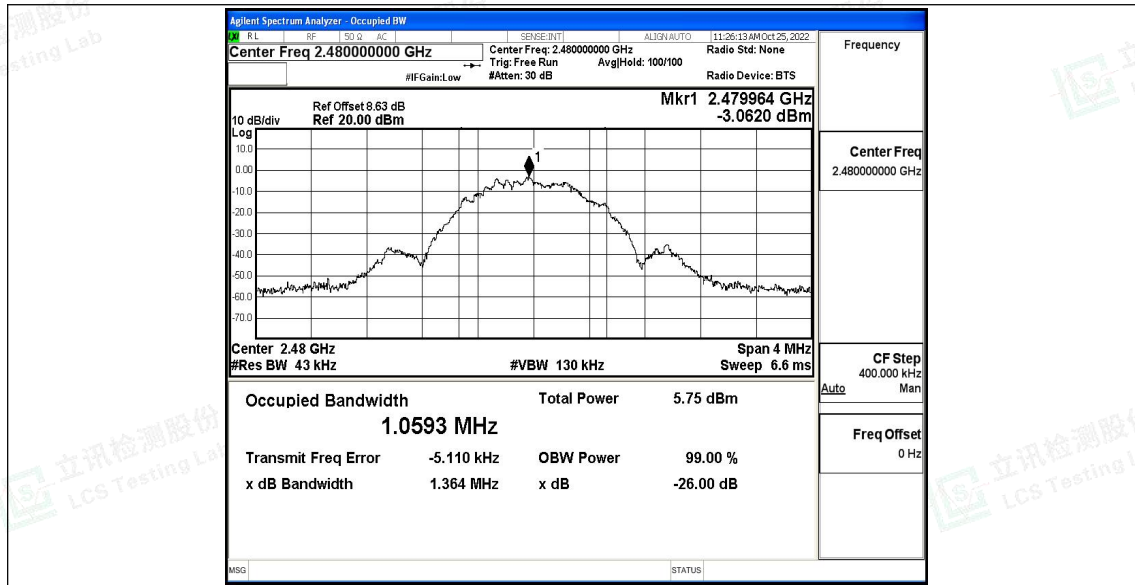


Shenzhen LCS Compliance Testing Laboratory Ltd.

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





A.3 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
2.4G	Ant1	2402	0.52	≤30	PASS
		2440	0.09	≤30	PASS
		2480	-0.14	≤30	PASS

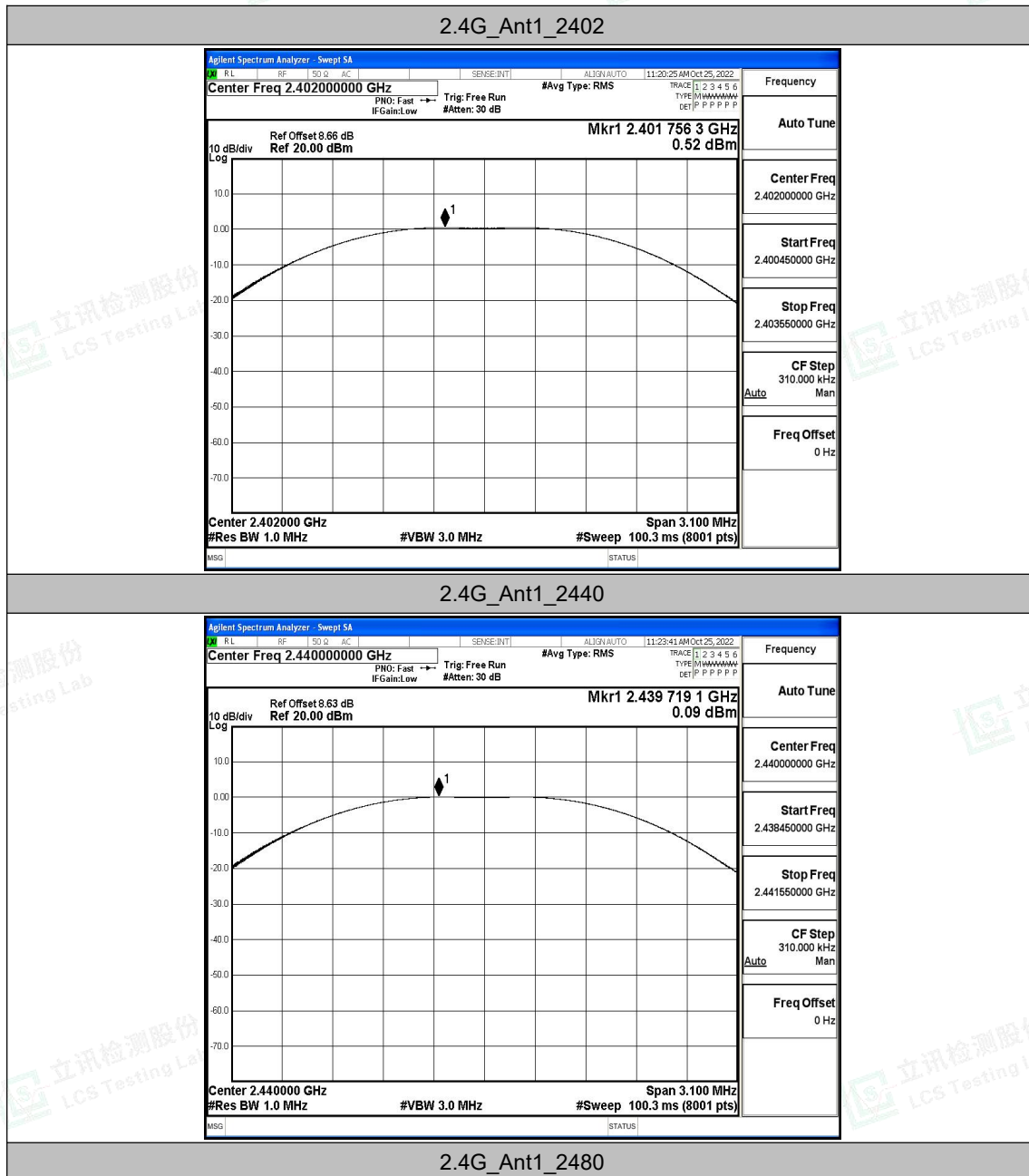
EIRP

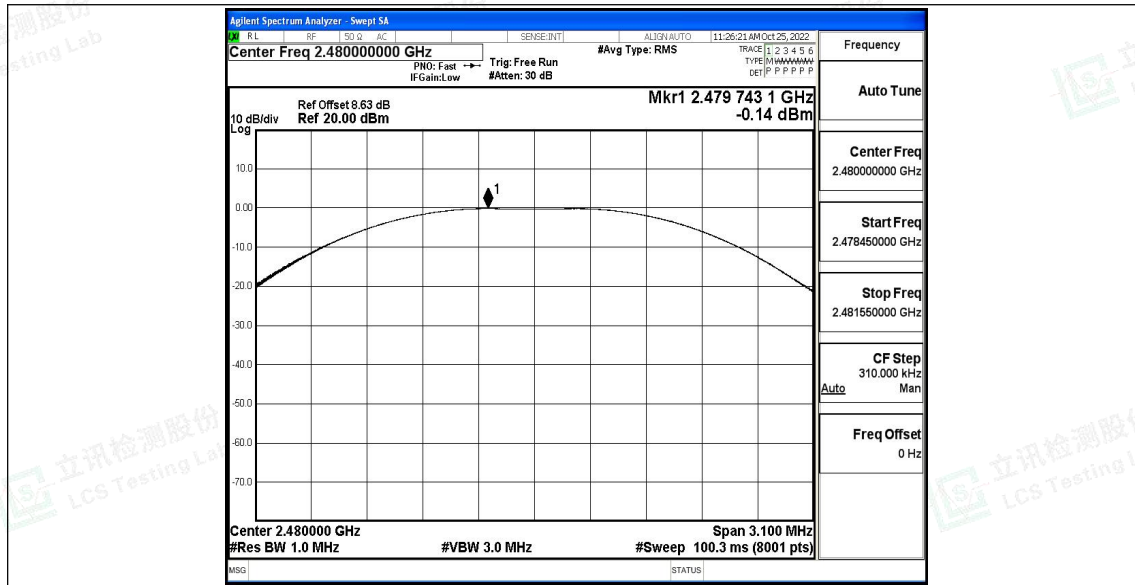
TestMode	Antenna	Channel	Maximum Peak Output Power [dBm]	Antenna Gain	Report EIRP Power(dBm)	Limit[dBm]	Verdict
2.4G	Ant1	2402	0.52	0.71	1.23	≤36	PASS
		2440	0.09	0.71	0.80	≤36	PASS
		2480	-0.14	0.71	0.57	≤36	PASS





Test Graphs







A.4 Maximum power spectral density

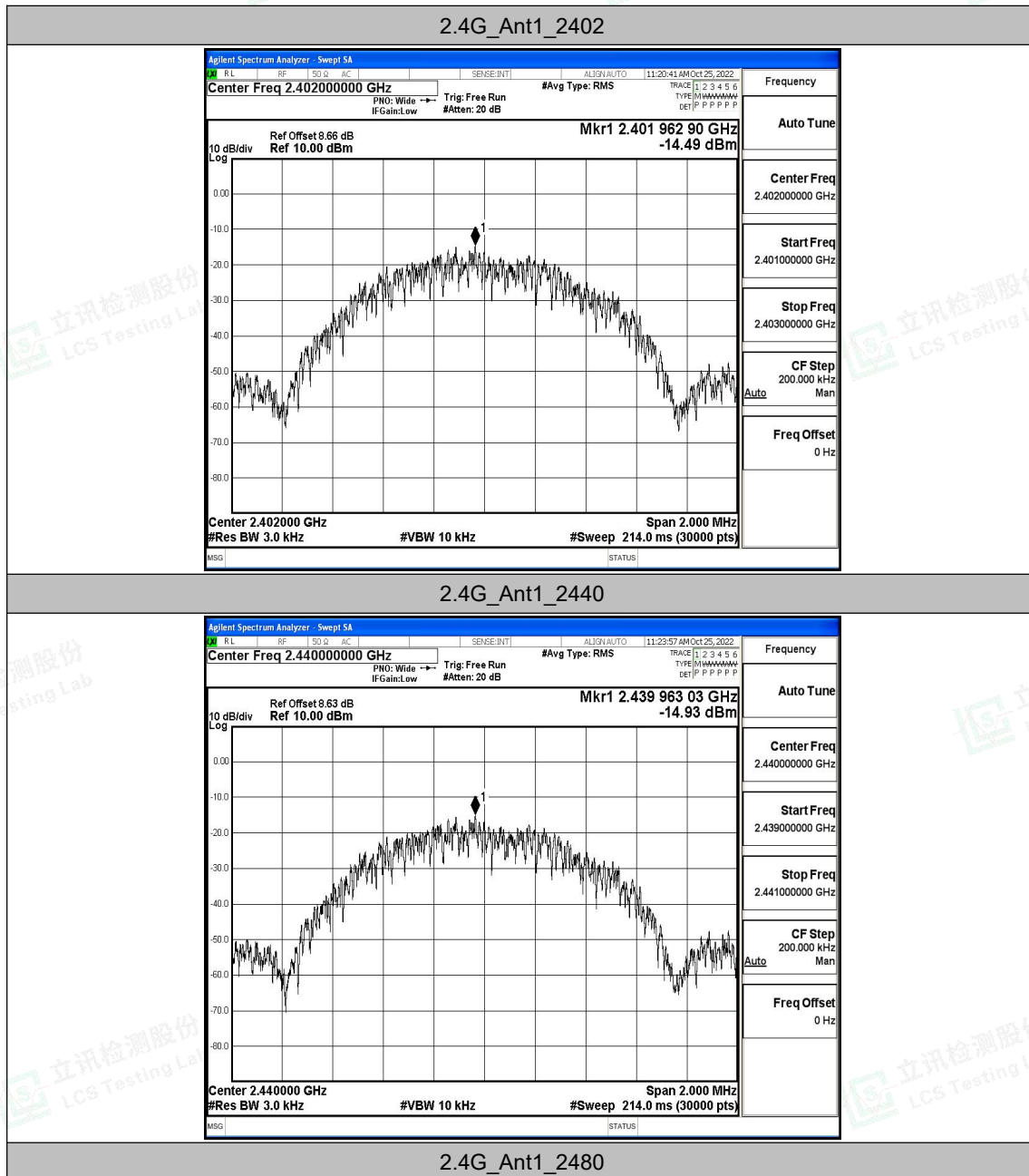
Test Result

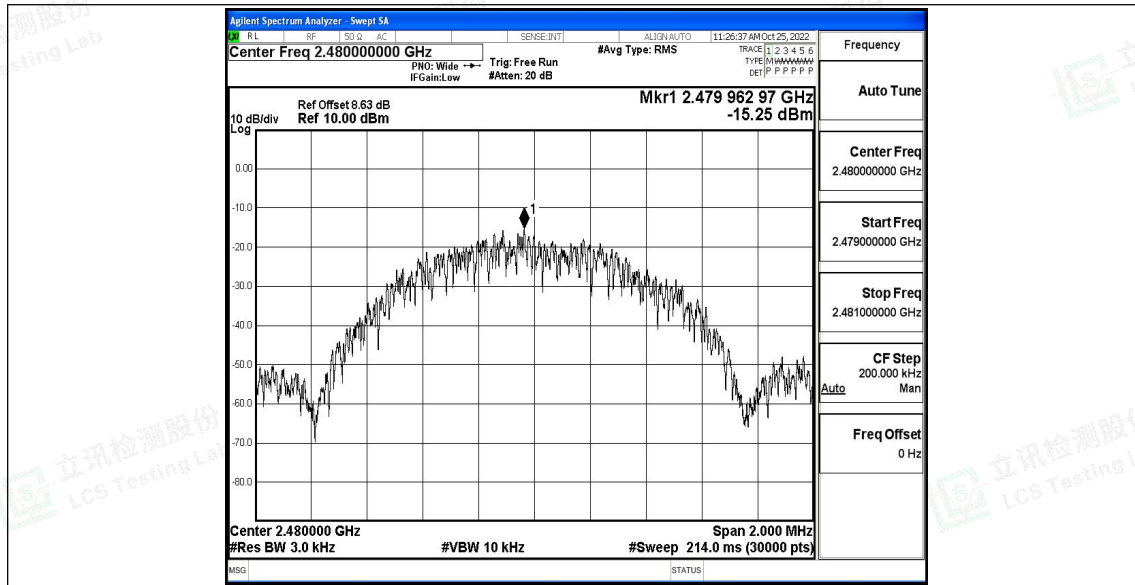
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2.4G	Ant1	2402	-14.49	≤8.00	PASS
		2440	-14.93	≤8.00	PASS
		2480	-15.25	≤8.00	PASS





Test Graphs







A.5 Band edge measurements

Test Result

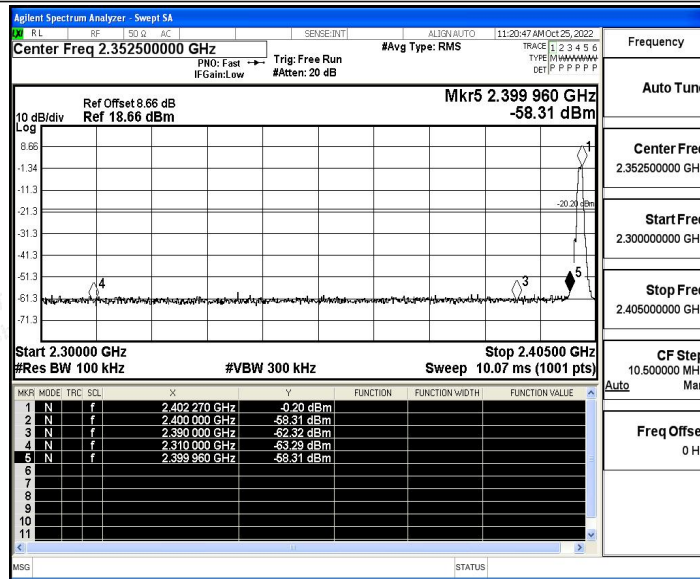
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G	Ant1	Low	2402	-0.20	-58.31	≤ -20.2	PASS
		High	2480	-0.94	-58.74	≤ -20.94	PASS



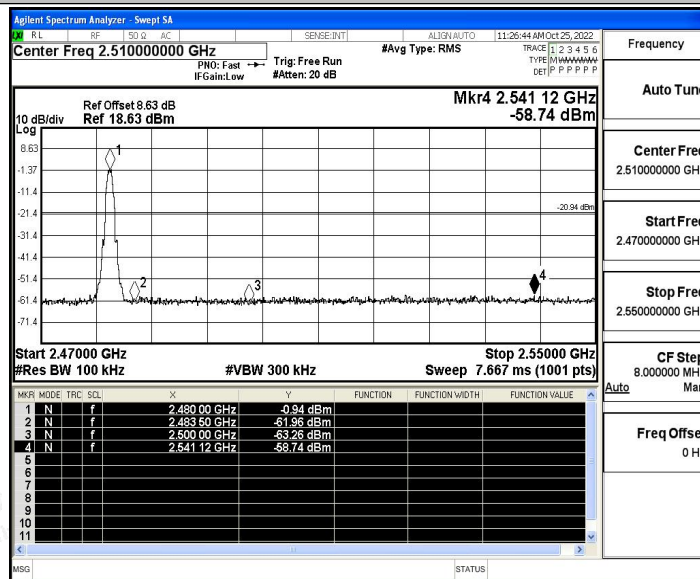


Test Graphs

2.4G_Ant1_Low_2402



2.4G_Ant1_High_2480



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



A.6 Conducted Spurious Emission

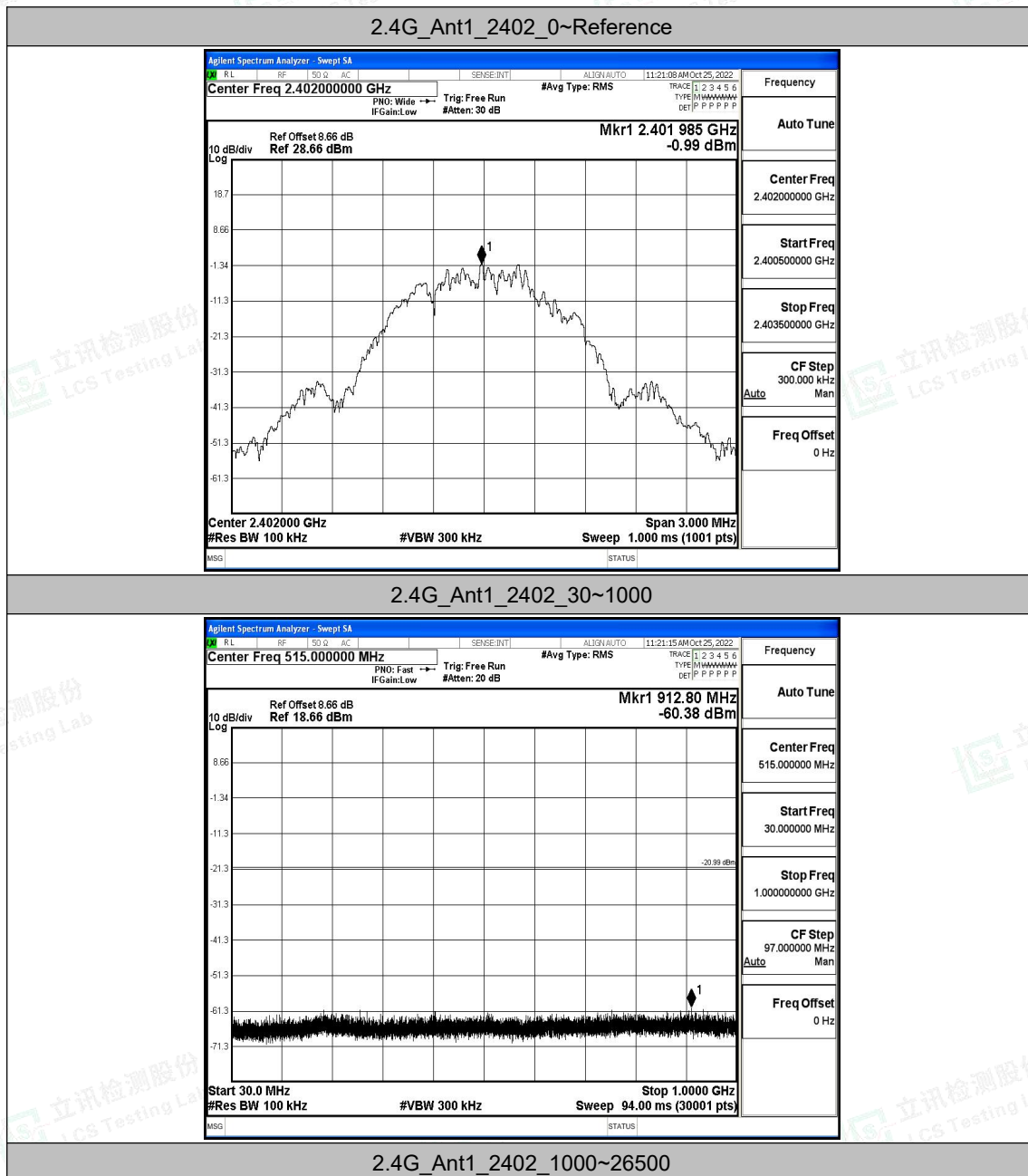
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G	Ant1	2402	Reference	-0.99	-0.99	---	PASS
			30~1000	-0.99	-60.38	≤-20.99	PASS
			1000~26500	-0.99	-45.64	≤-20.99	PASS
		2440	Reference	-1.61	-1.61	---	PASS
			30~1000	-1.61	-60.4	≤-21.61	PASS
			1000~26500	-1.61	-45.93	≤-21.61	PASS
		2480	Reference	-1.50	-1.50	---	PASS
			30~1000	-1.50	-61.2	≤-21.5	PASS
			1000~26500	-1.50	-45.58	≤-21.5	PASS





Test Graphs

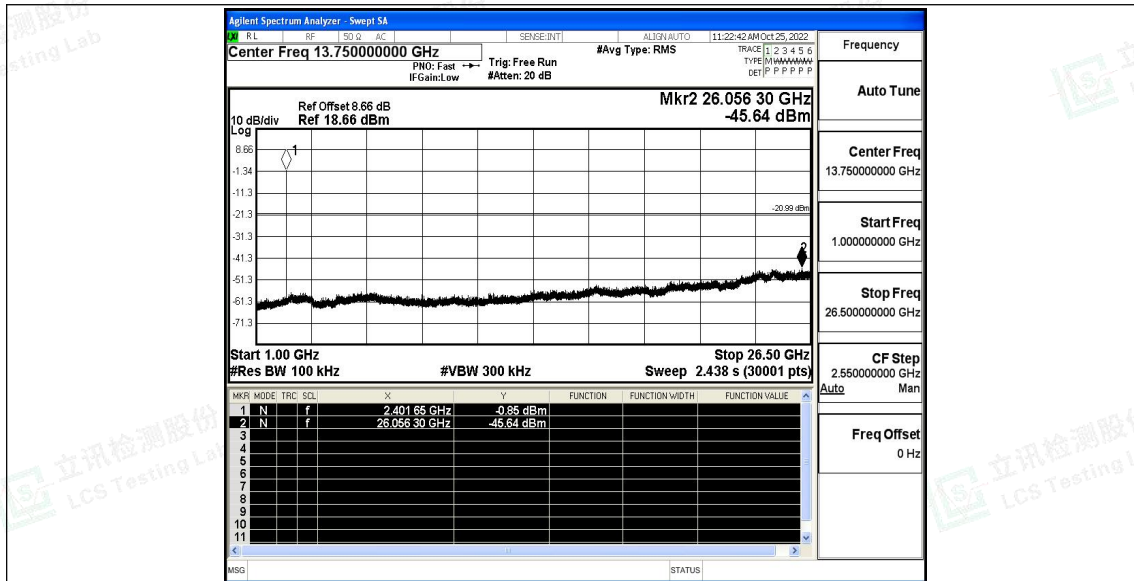


Shenzhen LCS Compliance Testing Laboratory Ltd.

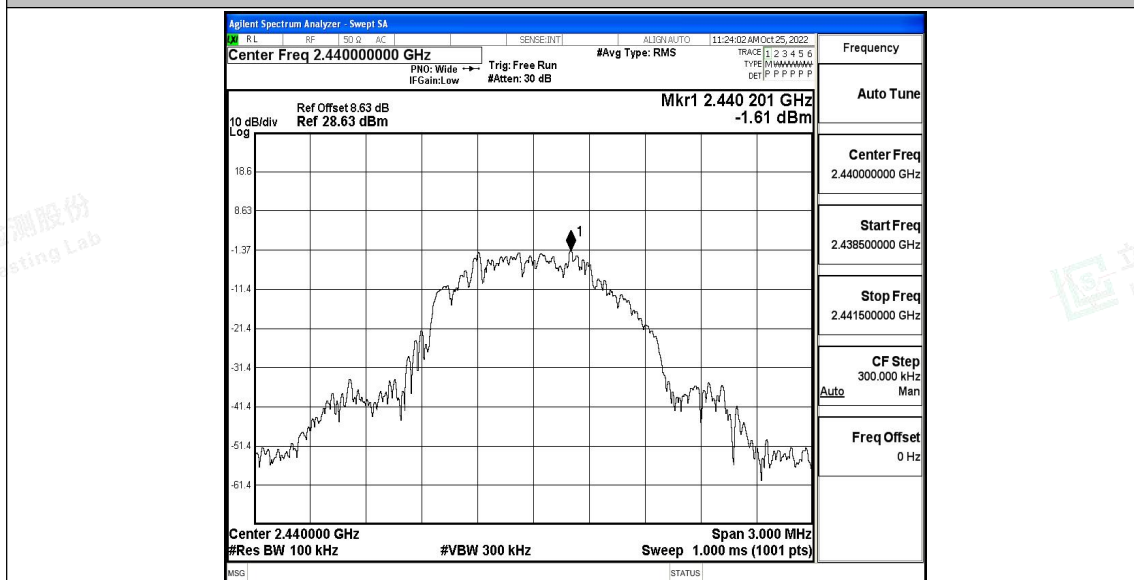
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

Scan code to check authenticity



2.4G_Ant1_2440_0~Reference



2.4G_Ant1_2440_30~1000

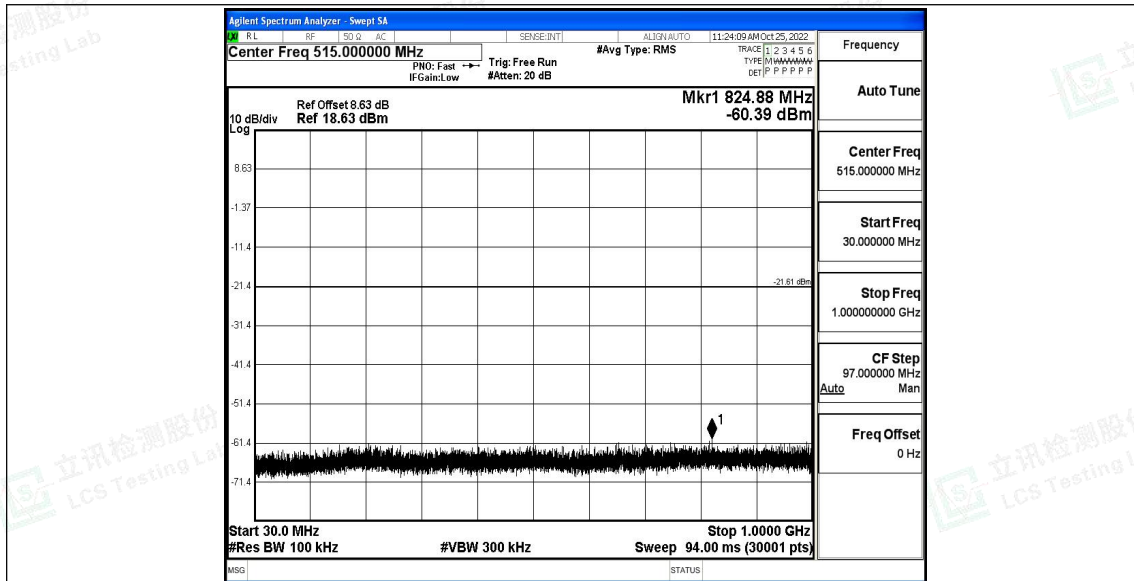


Shenzhen LCS Compliance Testing Laboratory Ltd.

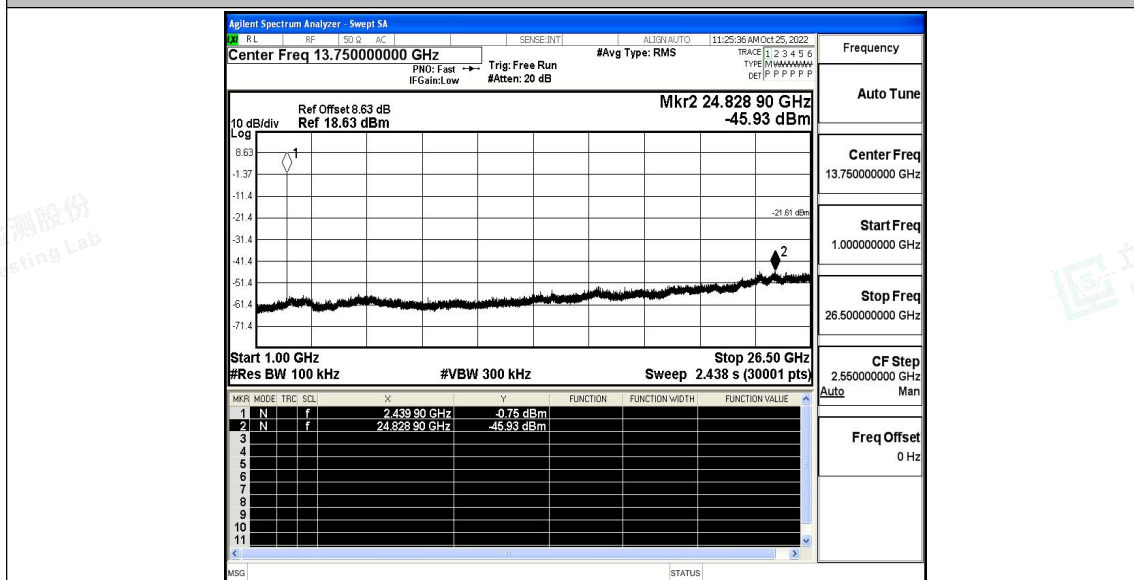
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

Scan code to check authenticity

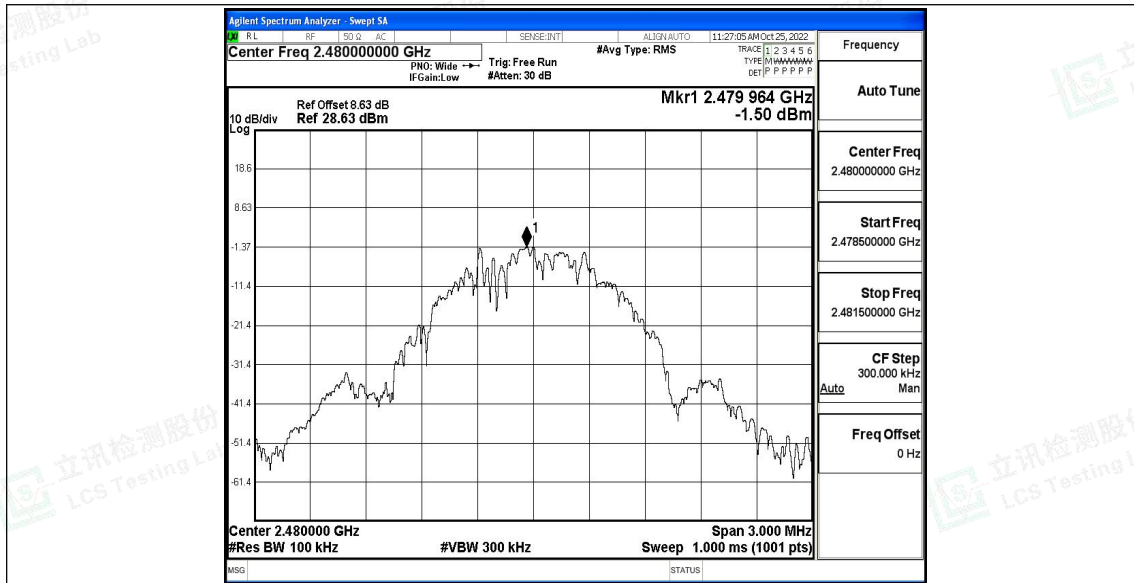


2.4G_Ant1_2440_1000~26500

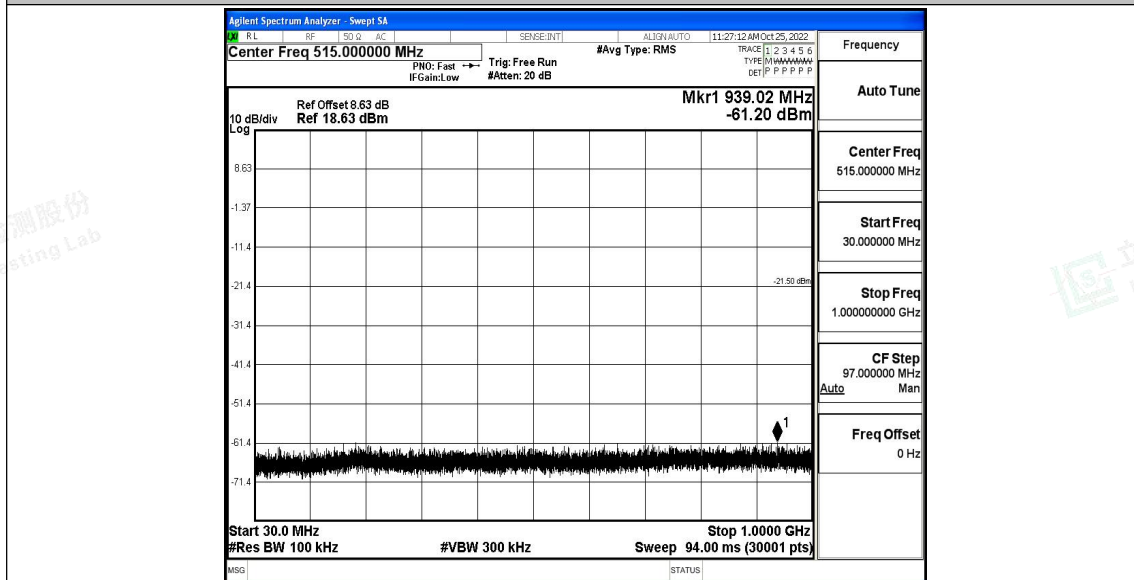


2.4G_Ant1_2480_0~Reference



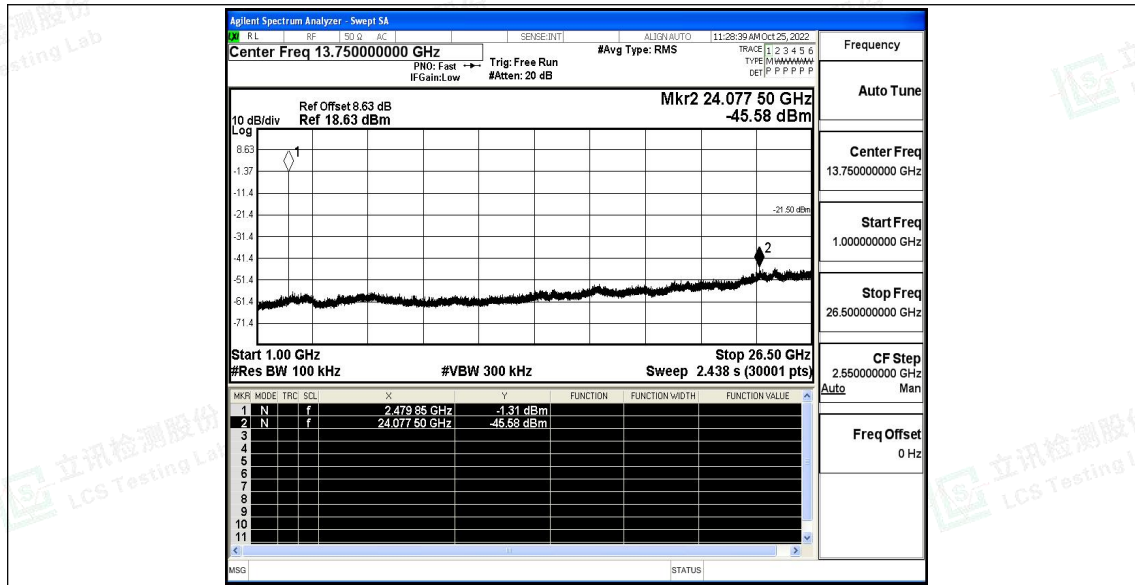


2.4G_Ant1_2480_30~1000



2.4G_Ant1_2480_1000~26500







A.7 Duty Cycle

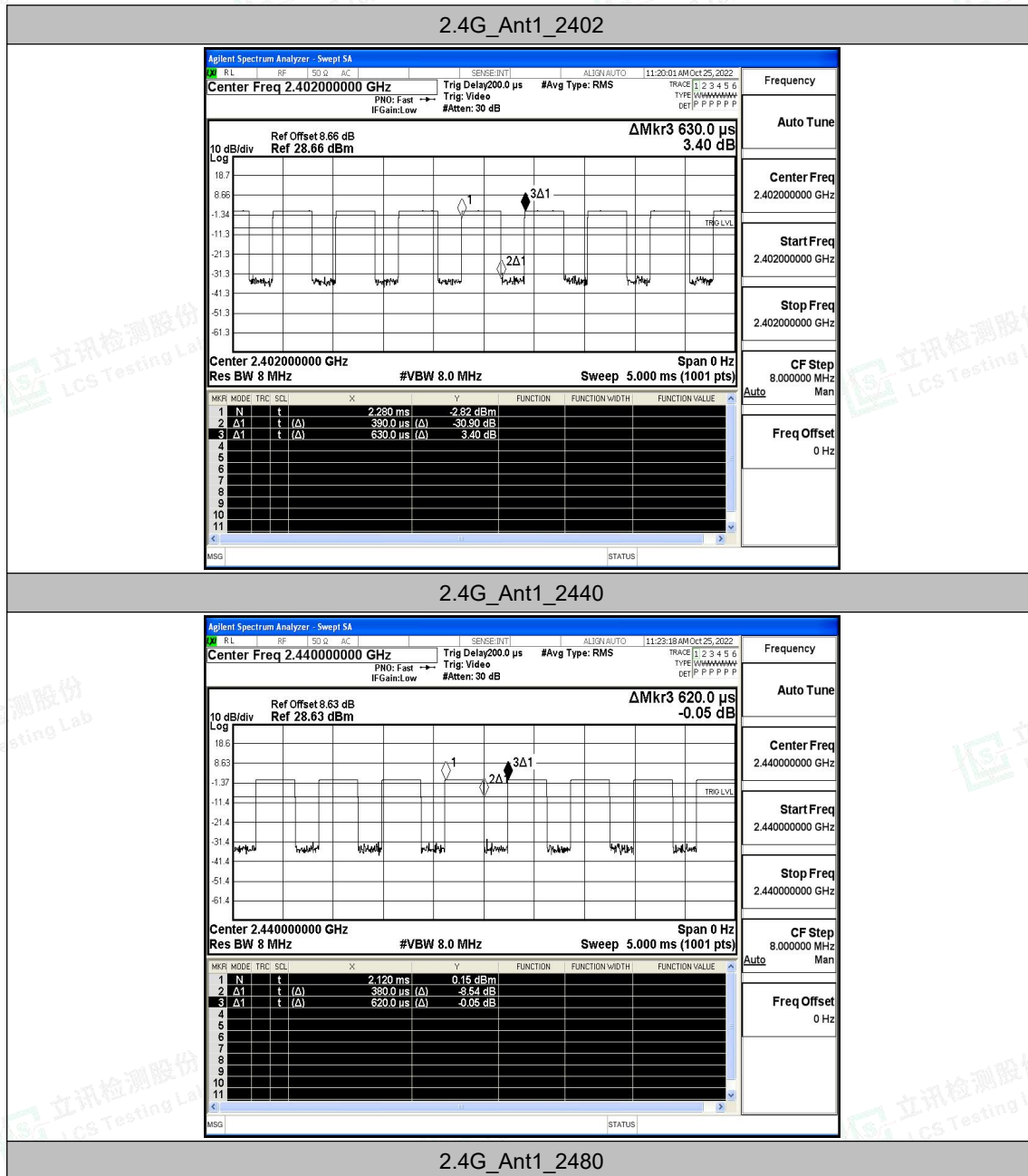
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
2.4G	Ant1	2402	0.39	0.63	0.6190	61.90	2.08	2.56	---	---
		2440	0.38	0.62	0.6129	61.29	2.13	2.63	---	---
		2480	0.39	0.63	0.6190	61.90	2.08	2.56	---	---





Test Graphs

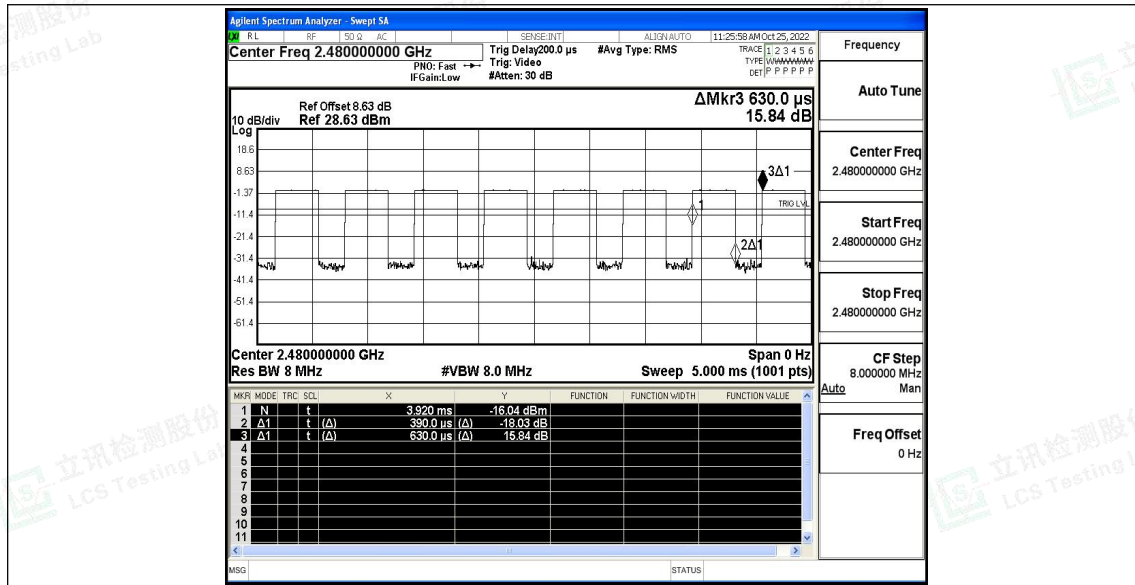


Shenzhen LCS Compliance Testing Laboratory Ltd.

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





A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
2.4G	Ant1	Low	2402	AV	2310.000	-57.4	≤-41.20	37.80	≤54	PASS
				AV	2388.830	-56.65	≤-41.20	38.55	≤54	PASS
				AV	2390.000	-57.06	≤-41.20	38.14	≤54	PASS
				Peak	2310.000	-50.39	≤-21.20	44.81	≤74	PASS
				Peak	2364.365	-47.4	≤-21.20	47.80	≤74	PASS
				Peak	2390.000	-49.64	≤-21.20	45.56	≤74	PASS
		High	2480	AV	2483.500	-53.61	≤-41.20	41.59	≤54	PASS
				AV	2483.520	-53.61	≤-41.20	41.59	≤54	PASS
				AV	2500.000	-56.55	≤-41.20	38.65	≤54	PASS
				Peak	2483.500	-50.58	≤-21.20	44.62	≤74	PASS
				Peak	2490.080	-47.11	≤-21.20	48.09	≤74	PASS
				Peak	2500.000	-49.67	≤-21.20	45.53	≤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.



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

