



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Smart Projector

Test Model: Y01

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng





B.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant2	0.653	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant2	0.653	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant2	0.653	≥ 0.5	Pass
NVNT	BLE 2M	2402	Ant2	1.131	≥ 0.5	Pass
NVNT	BLE 2M	2440	Ant2	1.155	≥ 0.5	Pass
NVNT	BLE 2M	2480	Ant2	1.167	≥ 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

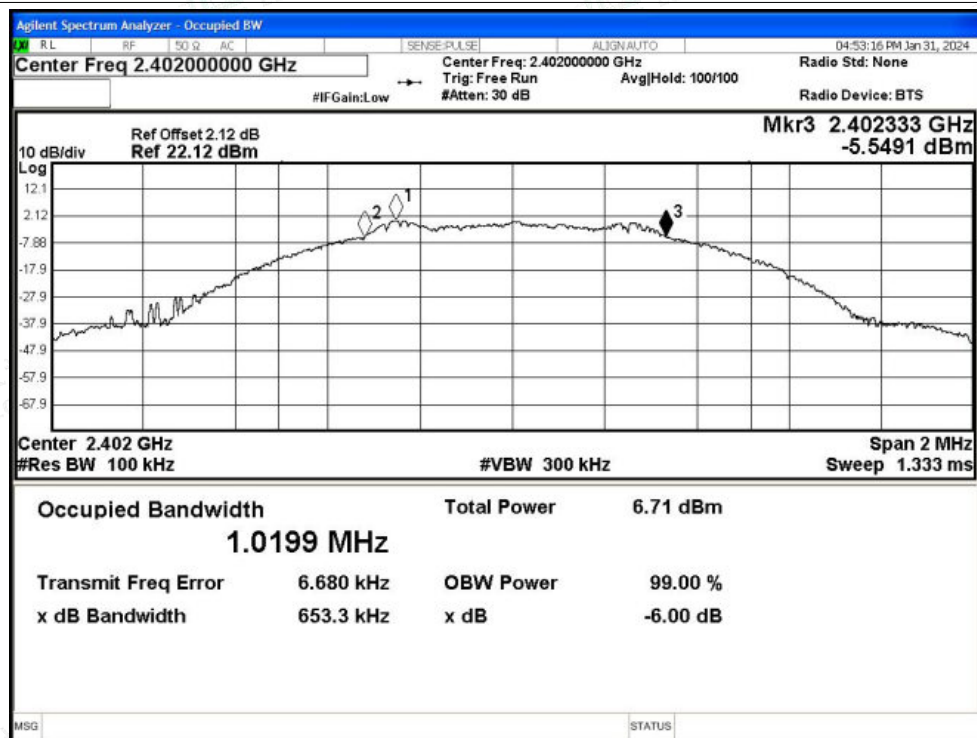
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

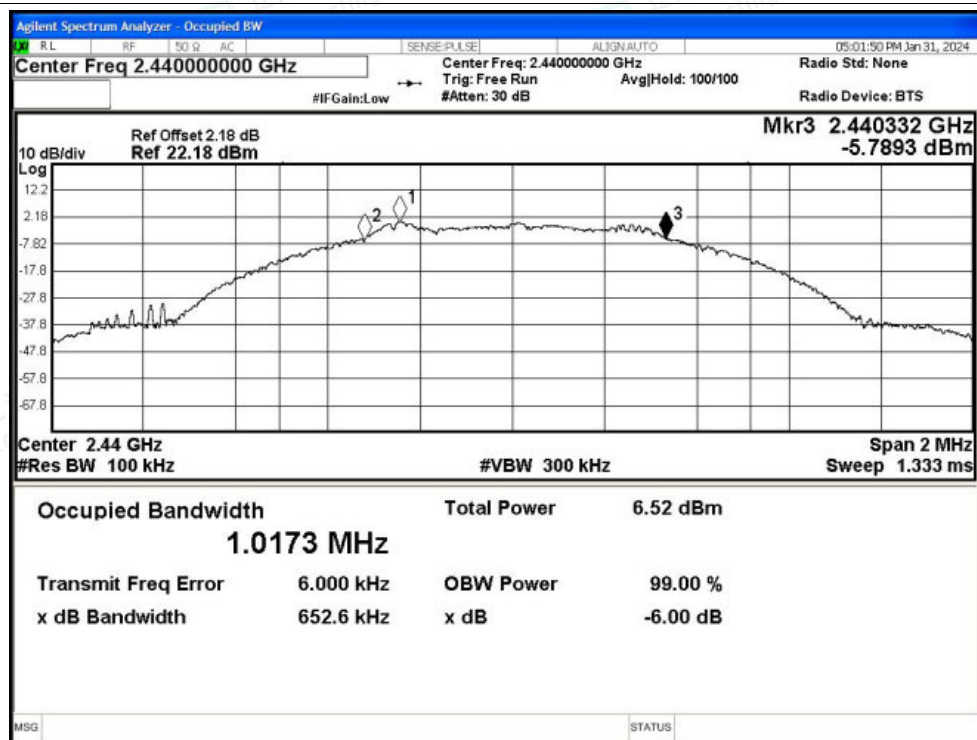


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant2



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

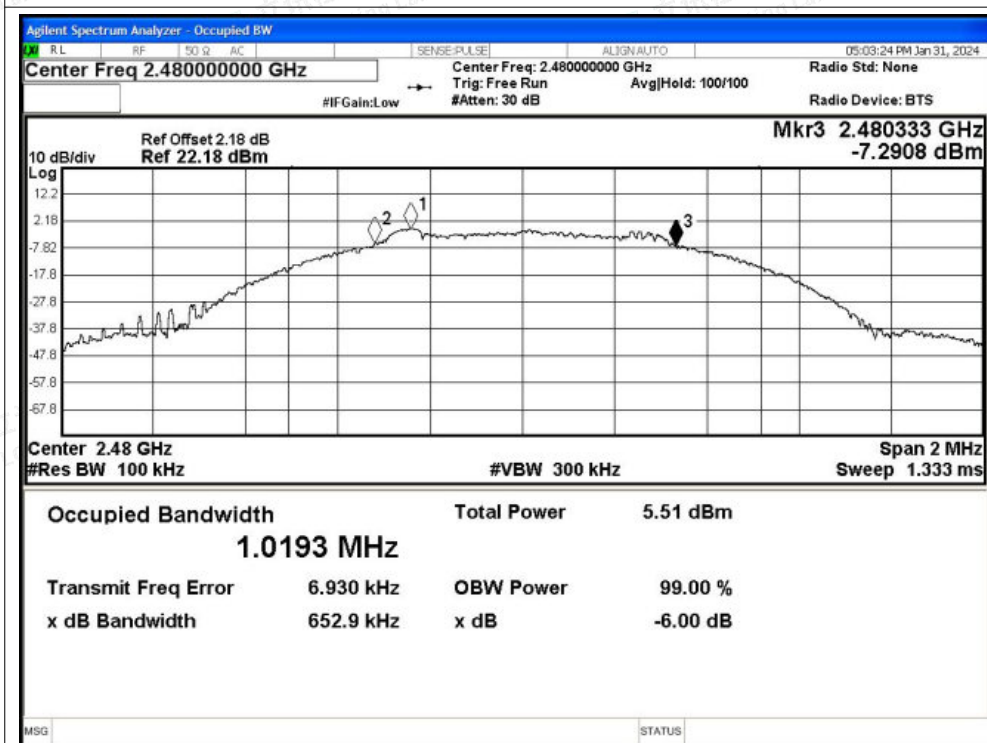
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

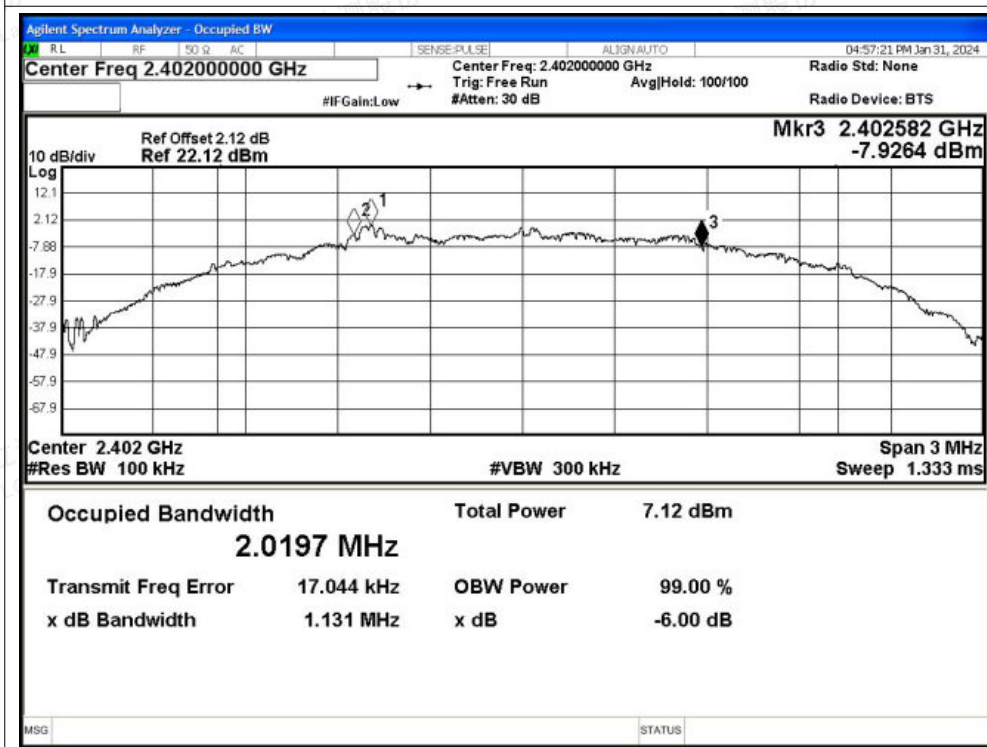
Scan code to check authenticity



-6dB Bandwidth NVNT BLE 1M 2480MHz Ant2



-6dB Bandwidth NVNT BLE 2M 2402MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

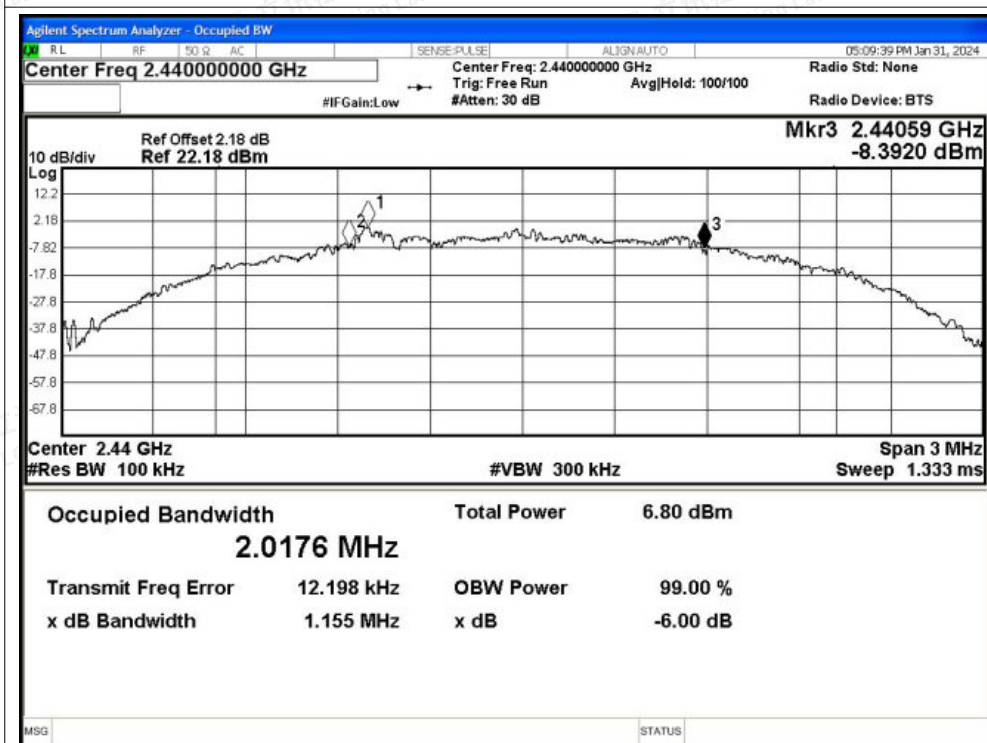
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

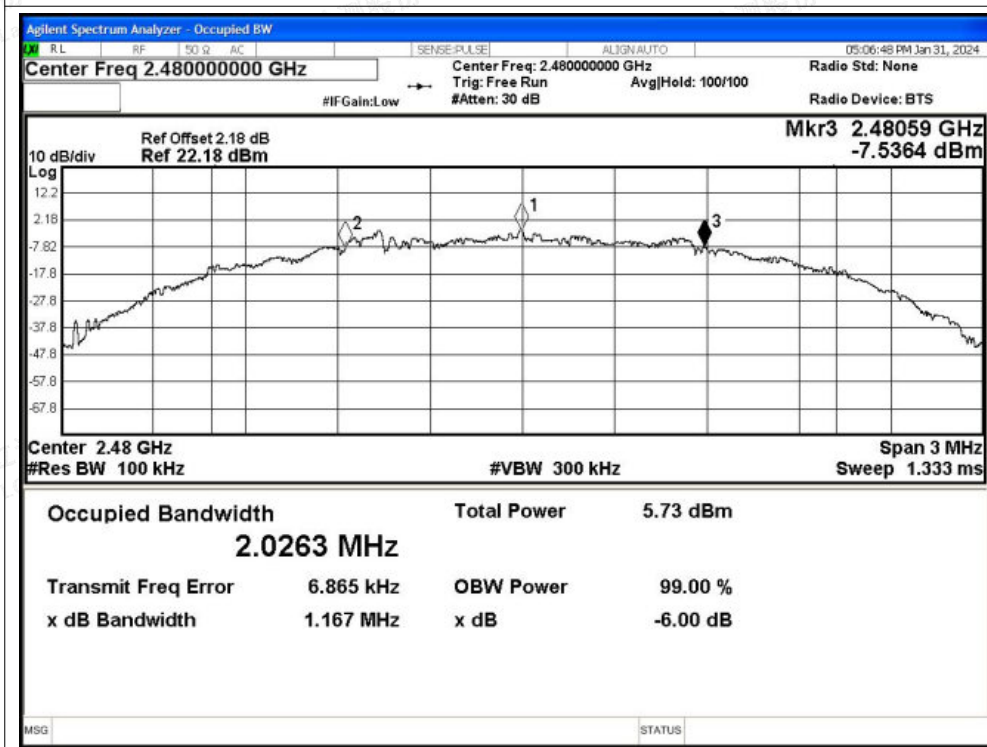
Scan code to check authenticity



-6dB Bandwidth NVNT BLE 2M 2440MHz Ant2



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant2



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

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant2	0.83	30	Pass
NVNT	BLE 1M	2440	Ant2	0.62	30	Pass
NVNT	BLE 1M	2480	Ant2	-0.36	30	Pass
NVNT	BLE 2M	2402	Ant2	0.71	30	Pass
NVNT	BLE 2M	2440	Ant2	0.49	30	Pass
NVNT	BLE 2M	2480	Ant2	-0.54	30	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

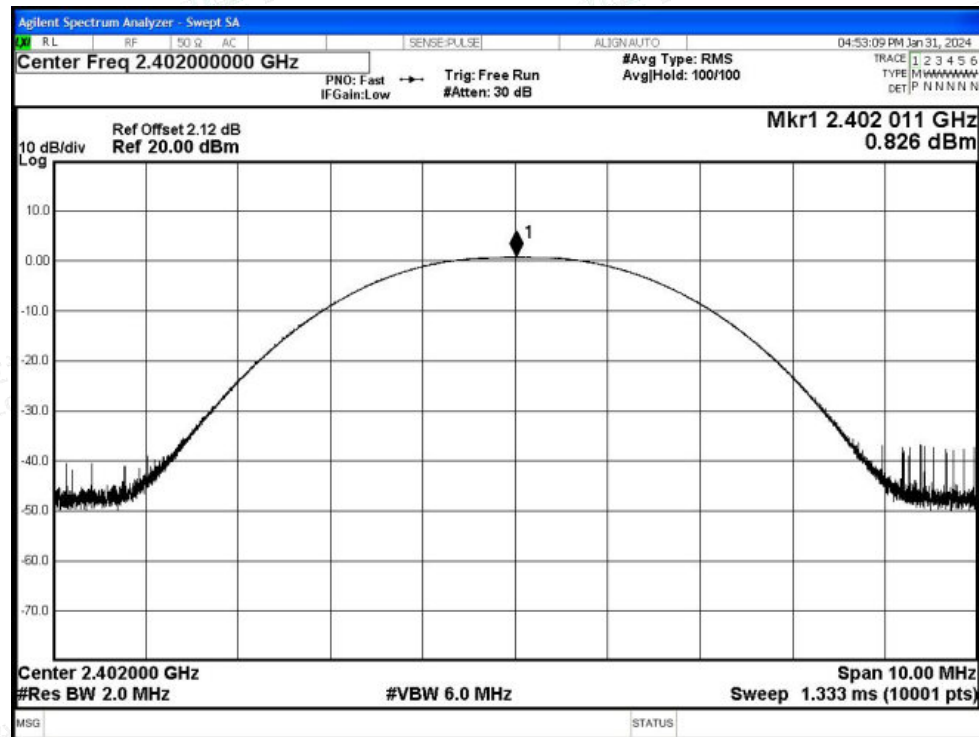
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

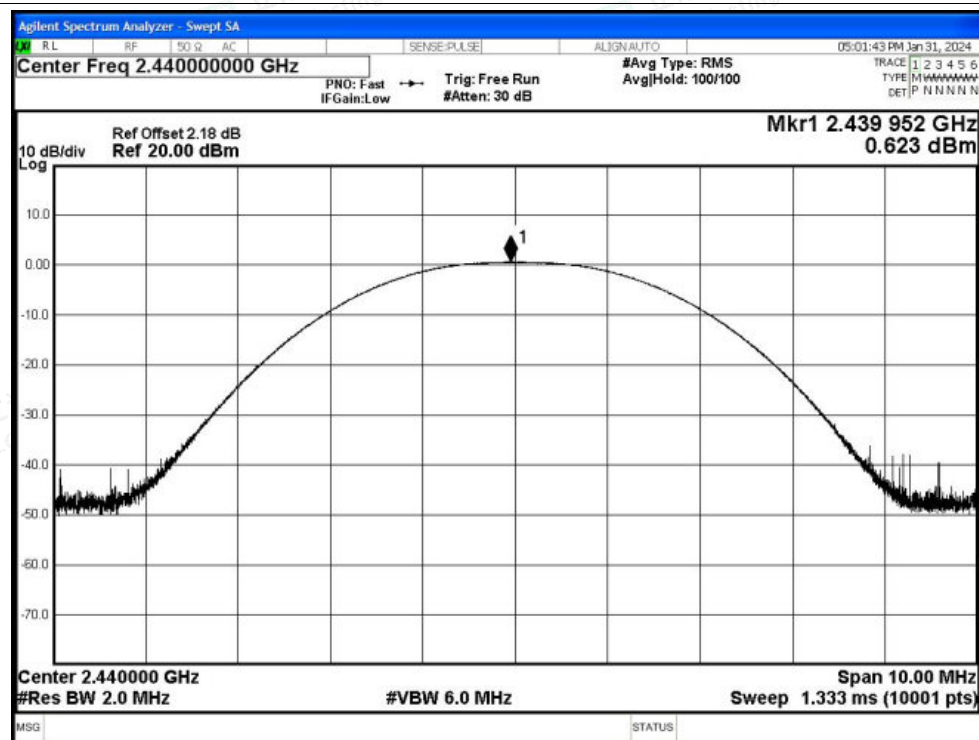


Test Graphs

Power NVNT BLE 1M 2402MHz Ant2

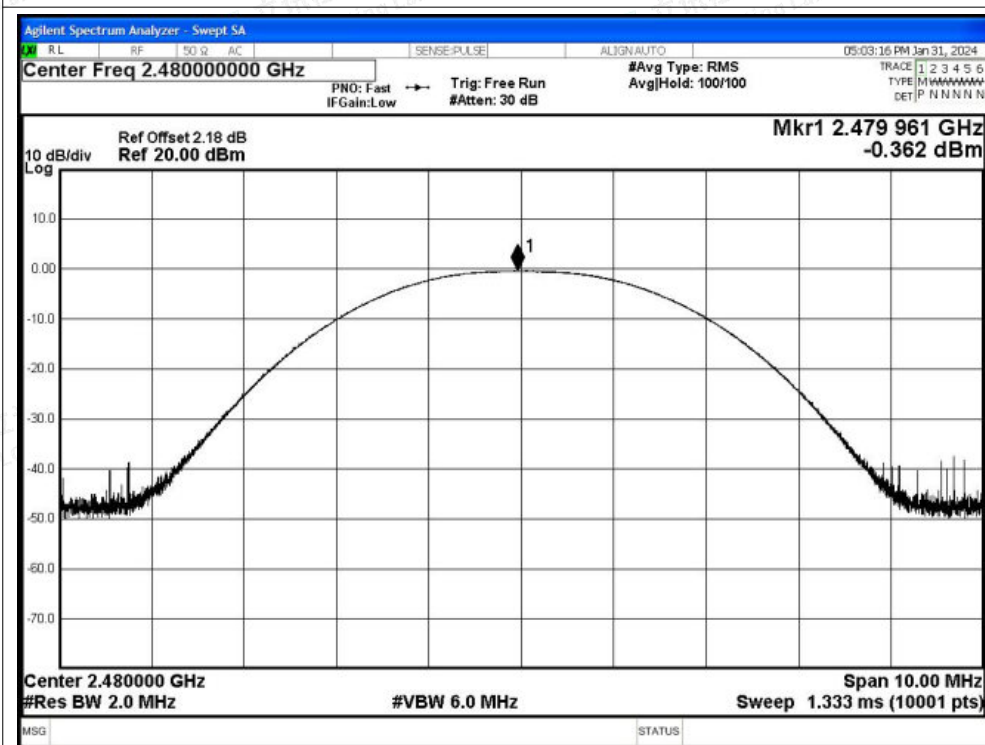


Power NVNT BLE 1M 2440MHz Ant2

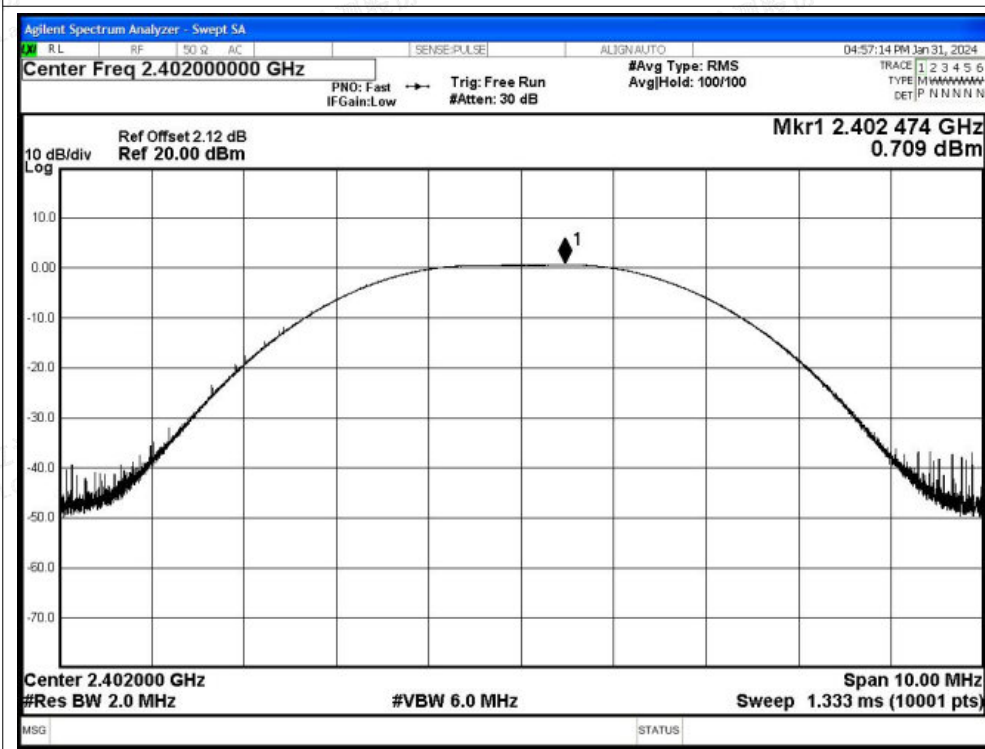




Power NVNT BLE 1M 2480MHz Ant2



Power NVNT BLE 2M 2402MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

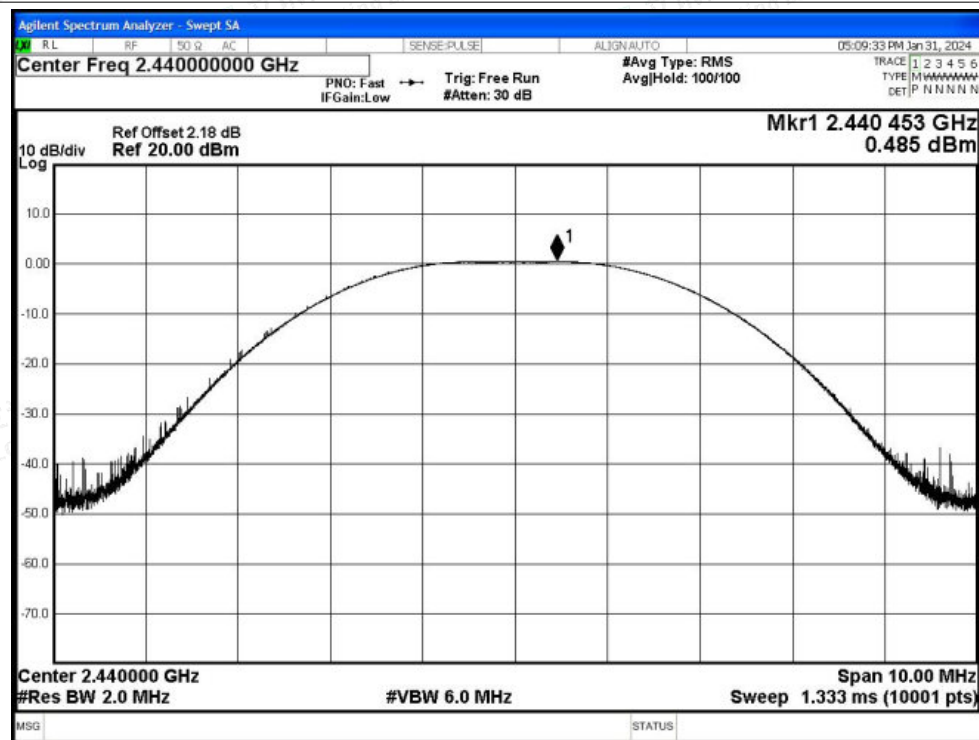
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

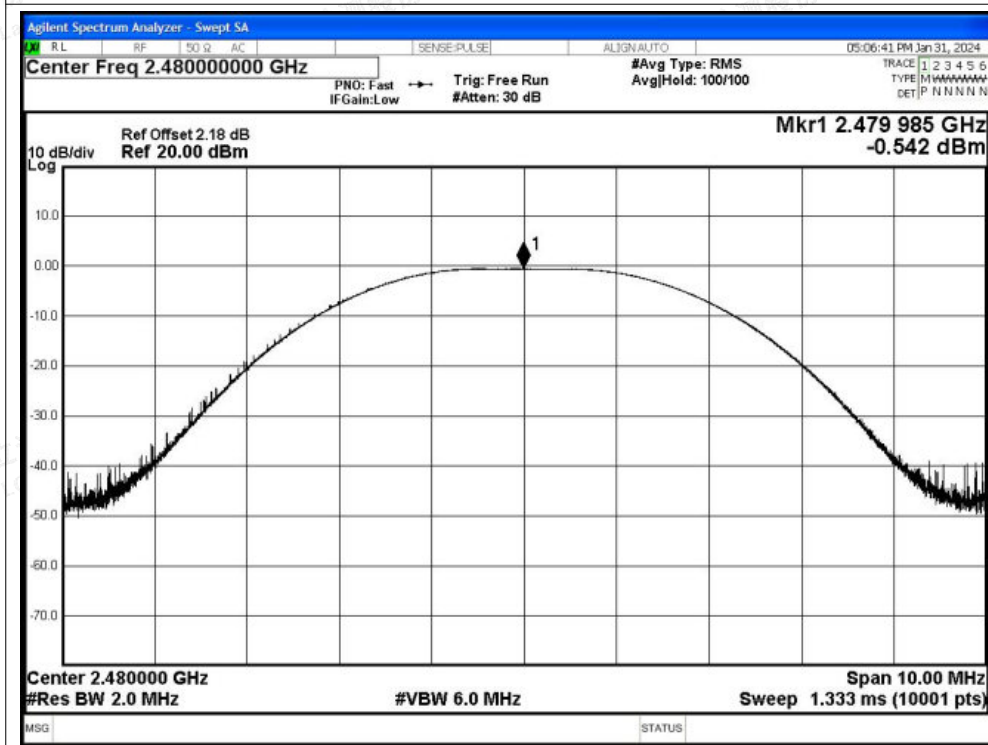
Scan code to check authenticity



Power NVNT BLE 2M 2440MHz Ant2



Power NVNT BLE 2M 2480MHz Ant2





B.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant2	-15.73	8	Pass
NVNT	BLE 1M	2440	Ant2	-15.91	8	Pass
NVNT	BLE 1M	2480	Ant2	-16.97	8	Pass
NVNT	BLE 2M	2402	Ant2	-19.38	8	Pass
NVNT	BLE 2M	2440	Ant2	-19.31	8	Pass
NVNT	BLE 2M	2480	Ant2	-20.03	8	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

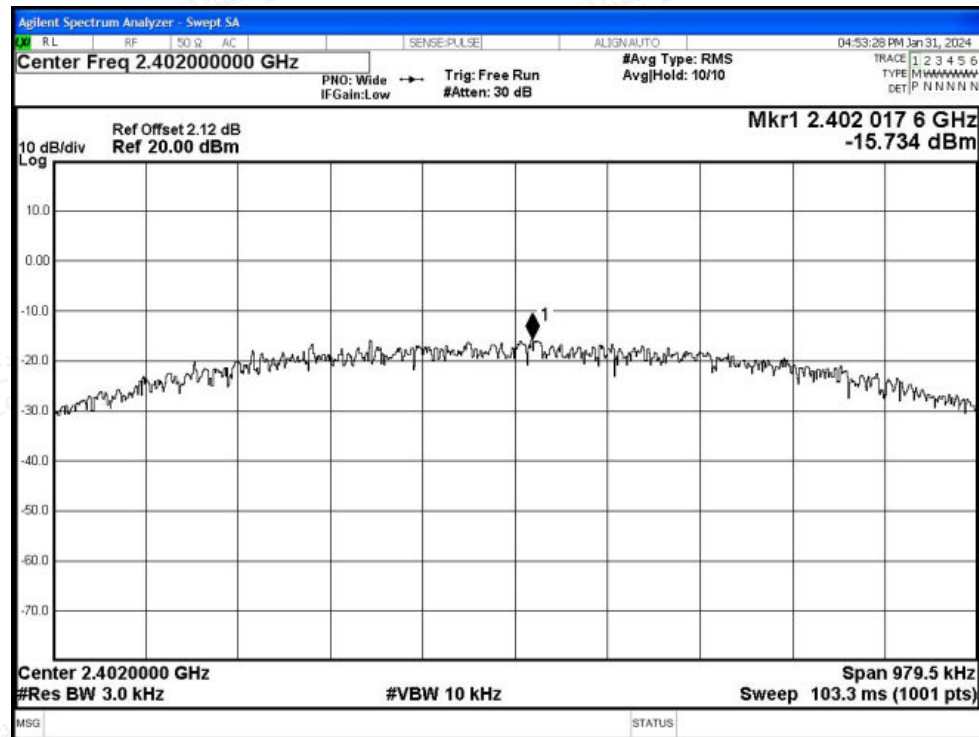
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

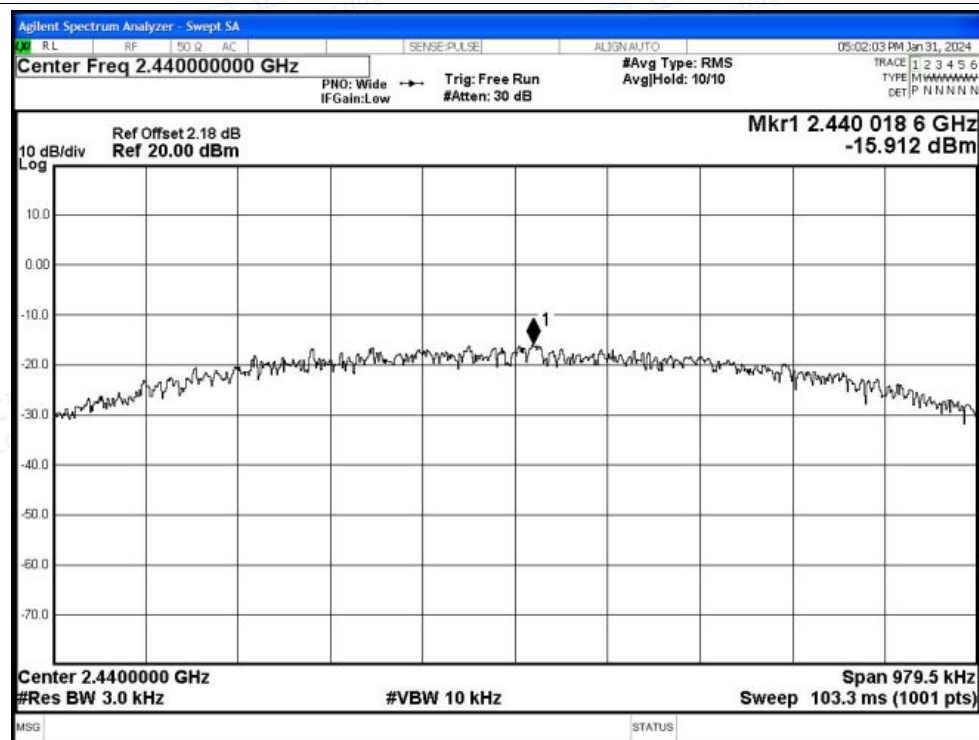


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant2

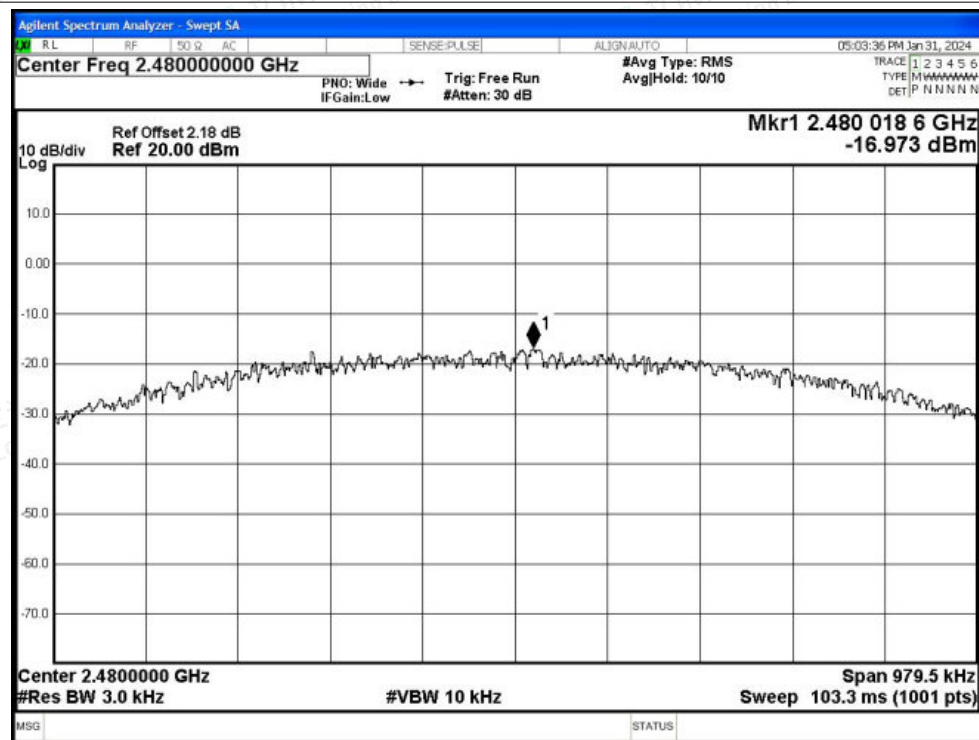


PSD NVNT BLE 1M 2440MHz Ant2

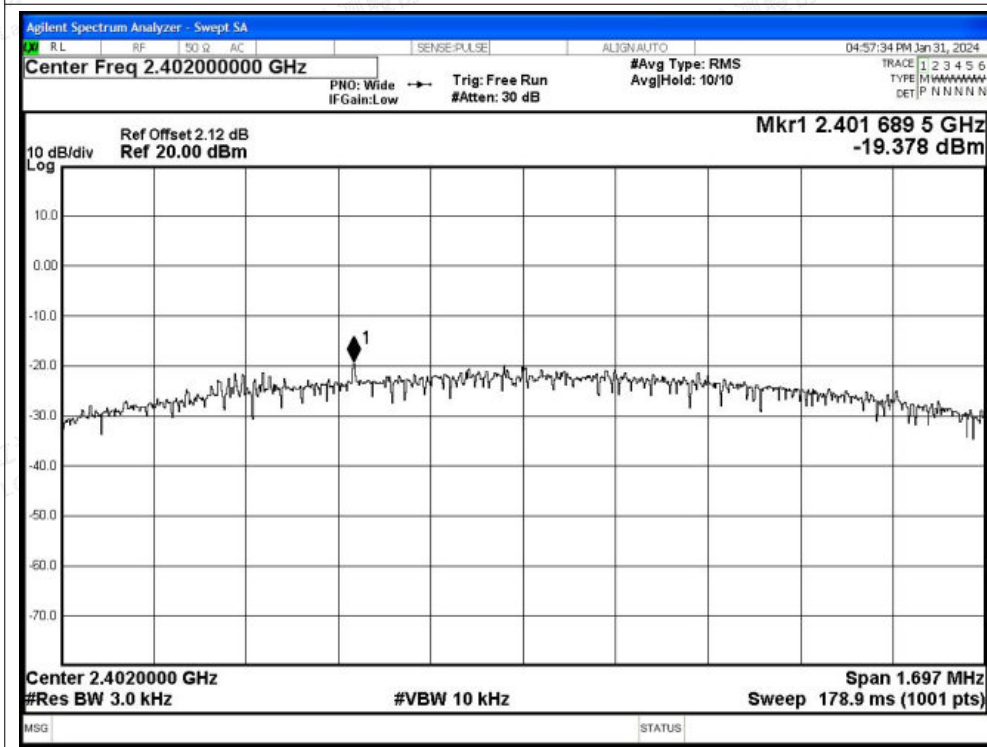




PSD NVNT BLE 1M 2480MHz Ant2

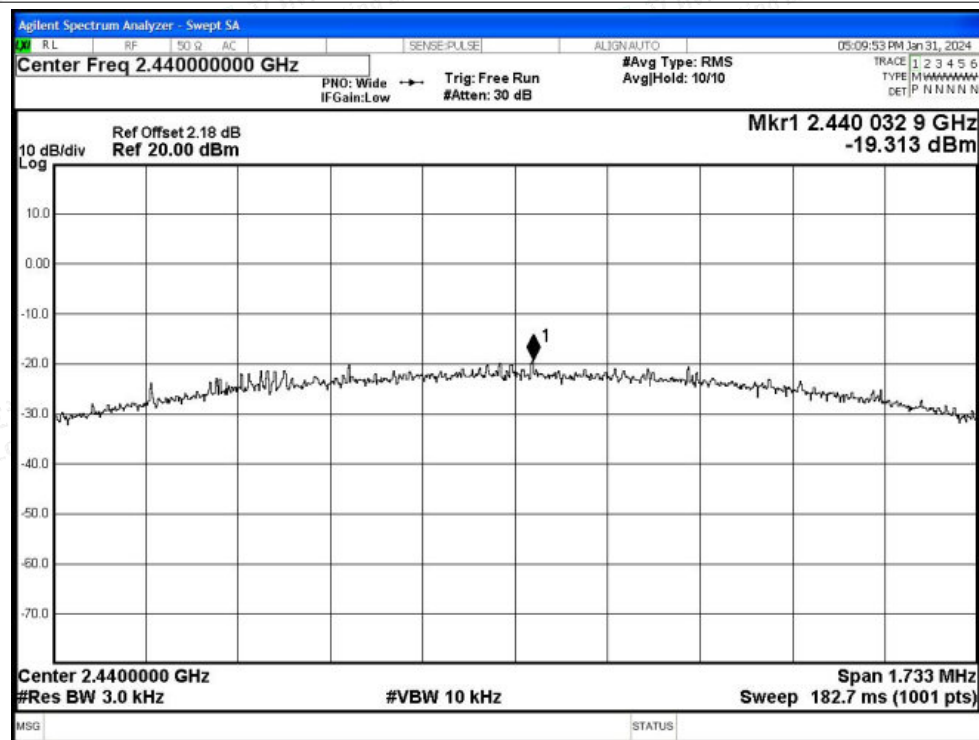


PSD NVNT BLE 2M 2402MHz Ant2

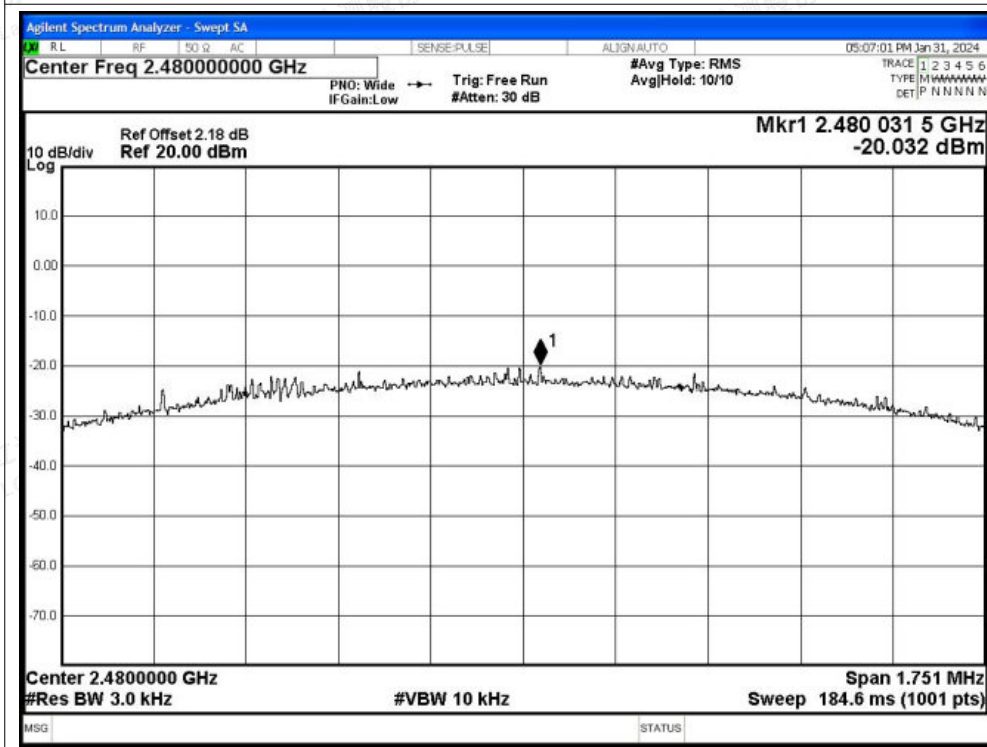




PSD NVNT BLE 2M 2440MHz Ant2



PSD NVNT BLE 2M 2480MHz Ant2





B.4 Band Edge

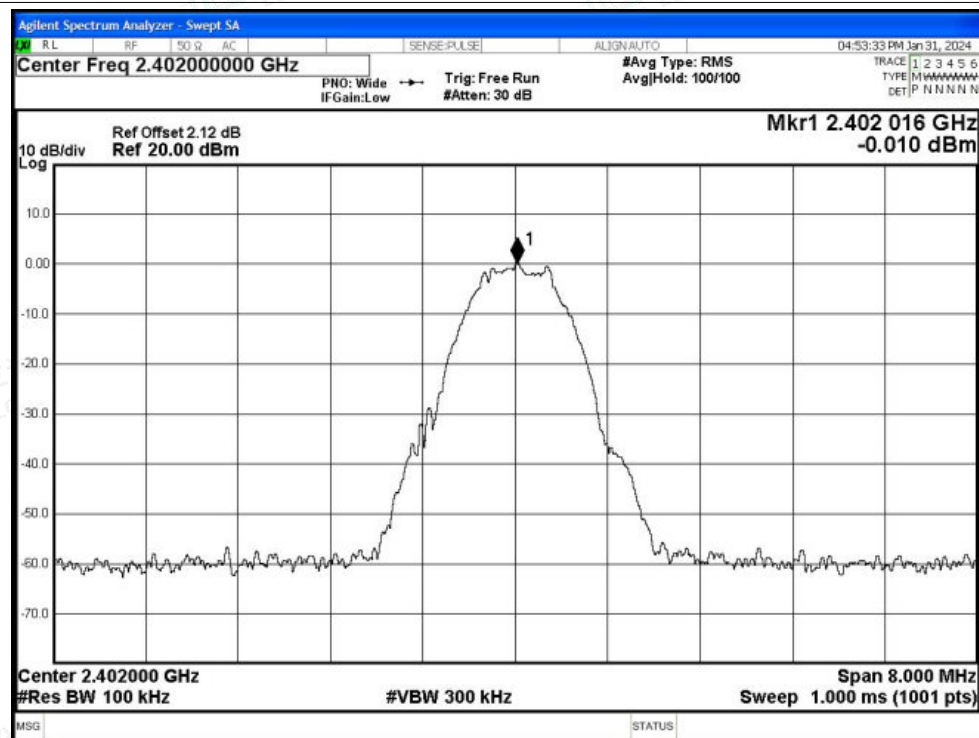
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant2	-56.75	-20	Pass
NVNT	BLE 1M	2480	Ant2	-56.14	-20	Pass
NVNT	BLE 2M	2402	Ant2	-46.32	-20	Pass
NVNT	BLE 2M	2480	Ant2	-55.07	-20	Pass



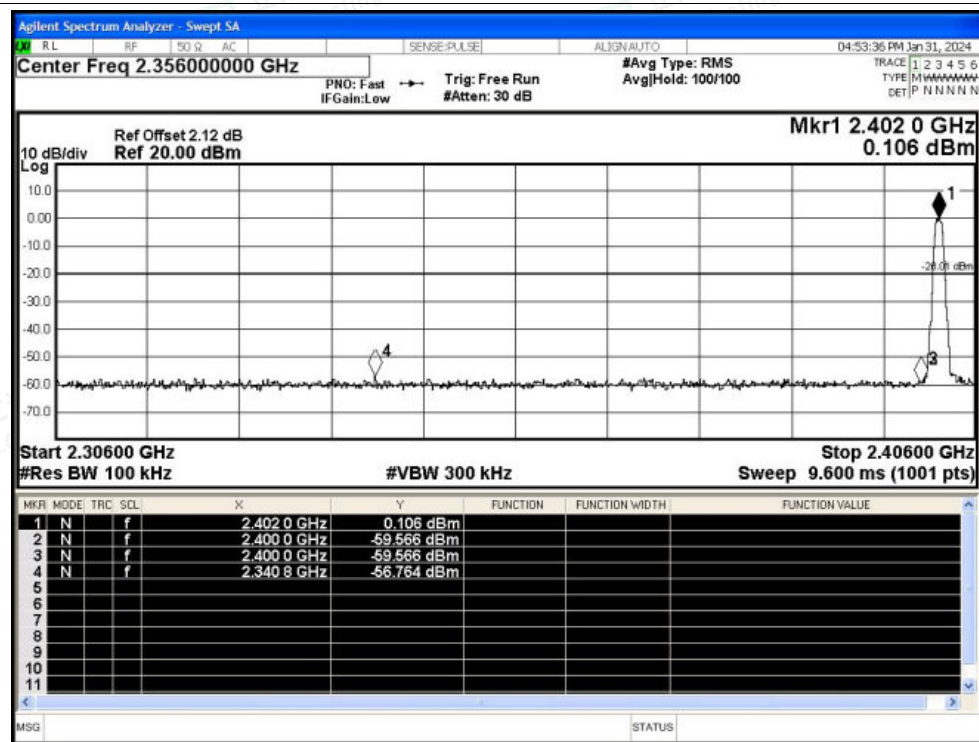


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant2 Ref



Band Edge NVNT BLE 1M 2402MHz Ant2 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

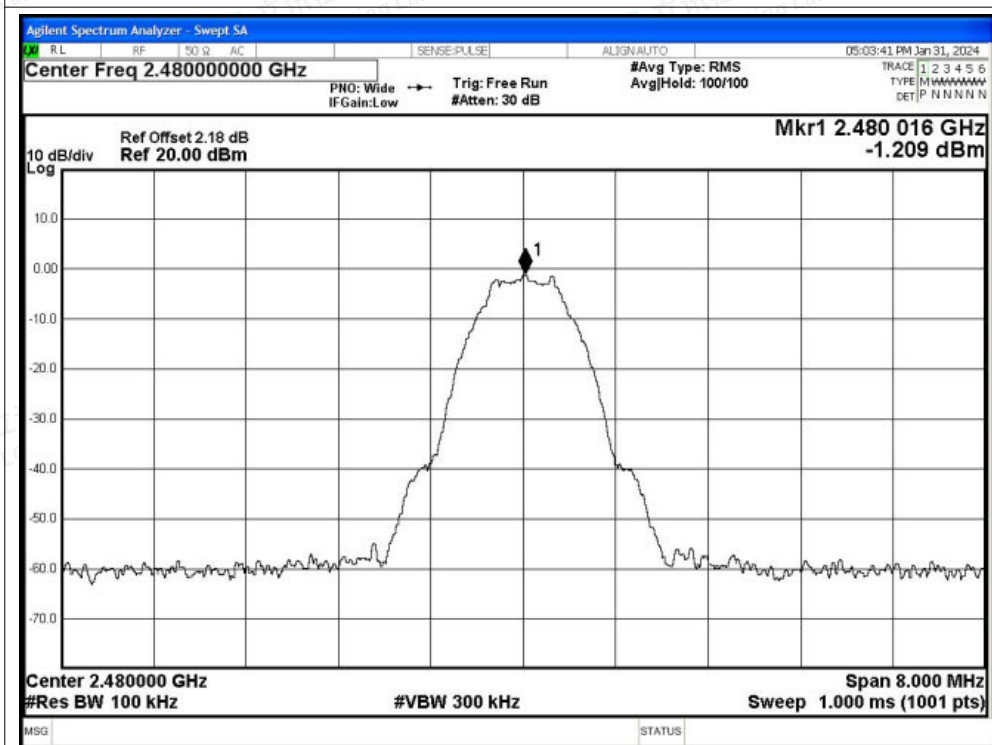
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

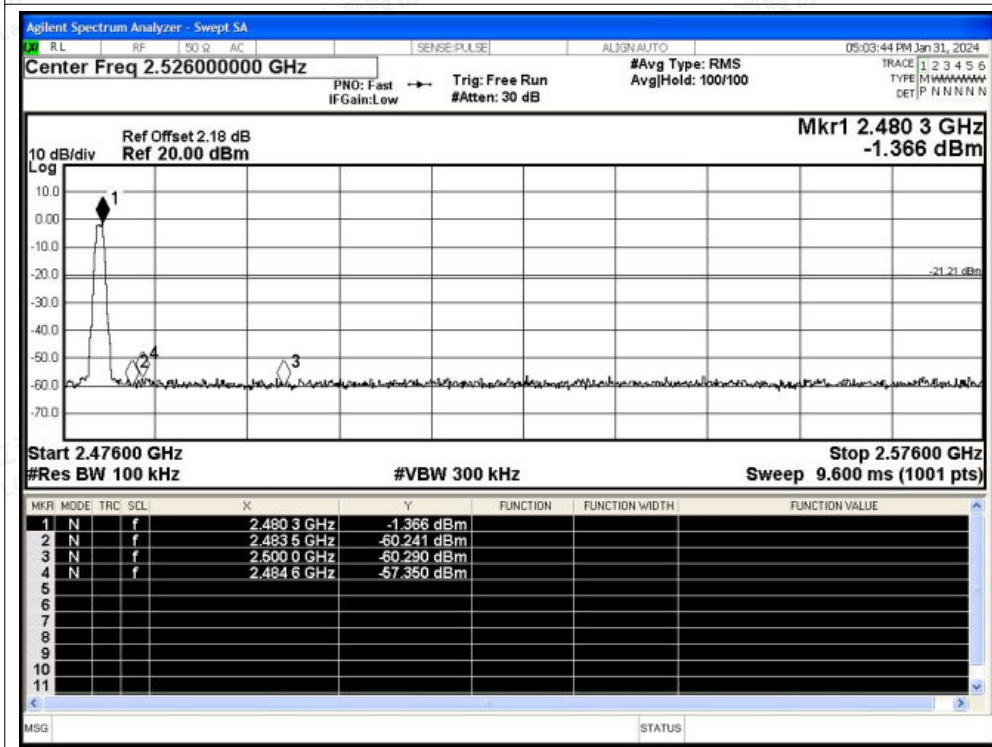
Scan code to check authenticity



Band Edge NVNT BLE 1M 2480MHz Ant2 Ref



Band Edge NVNT BLE 1M 2480MHz Ant2 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

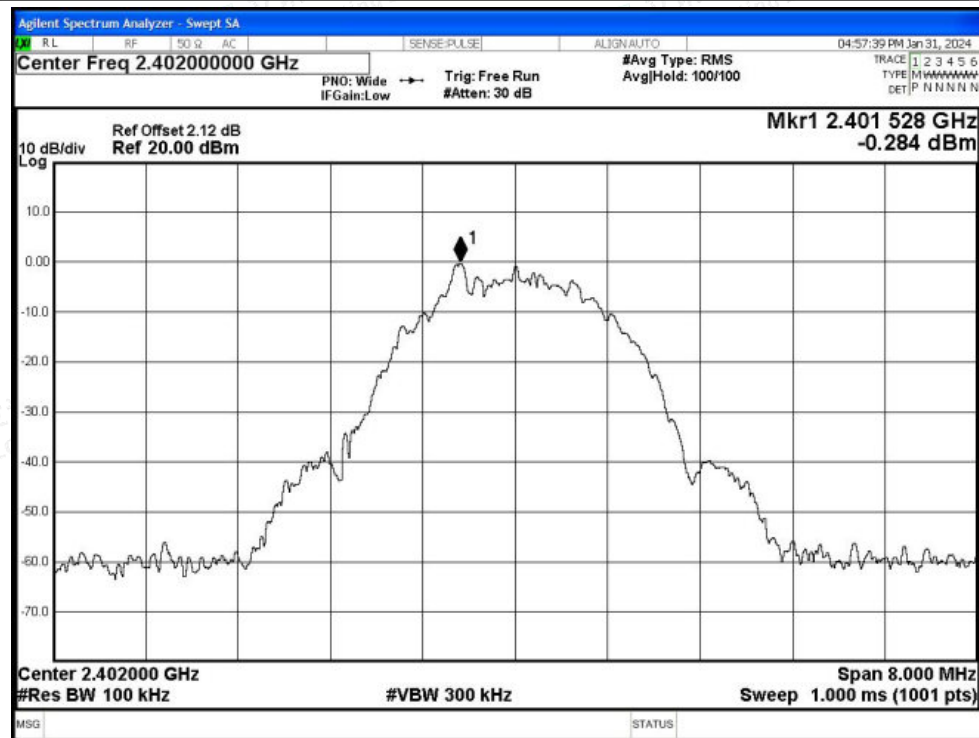
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

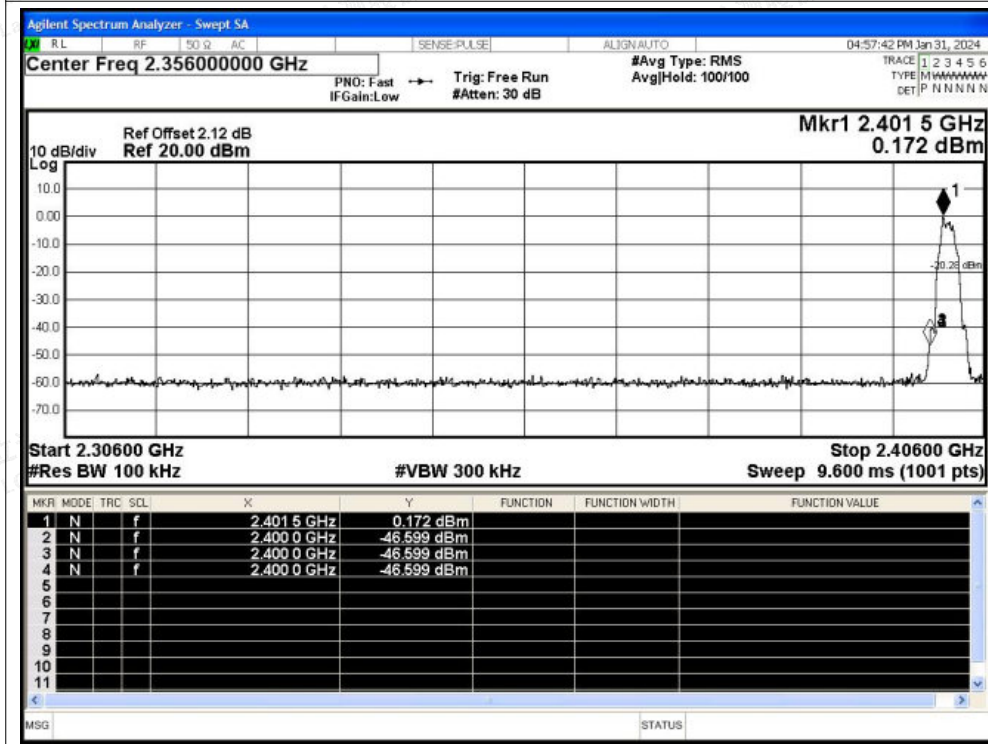
Scan code to check authenticity



Band Edge NVNT BLE 2M 2402MHz Ant2 Ref



Band Edge NVNT BLE 2M 2402MHz Ant2 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

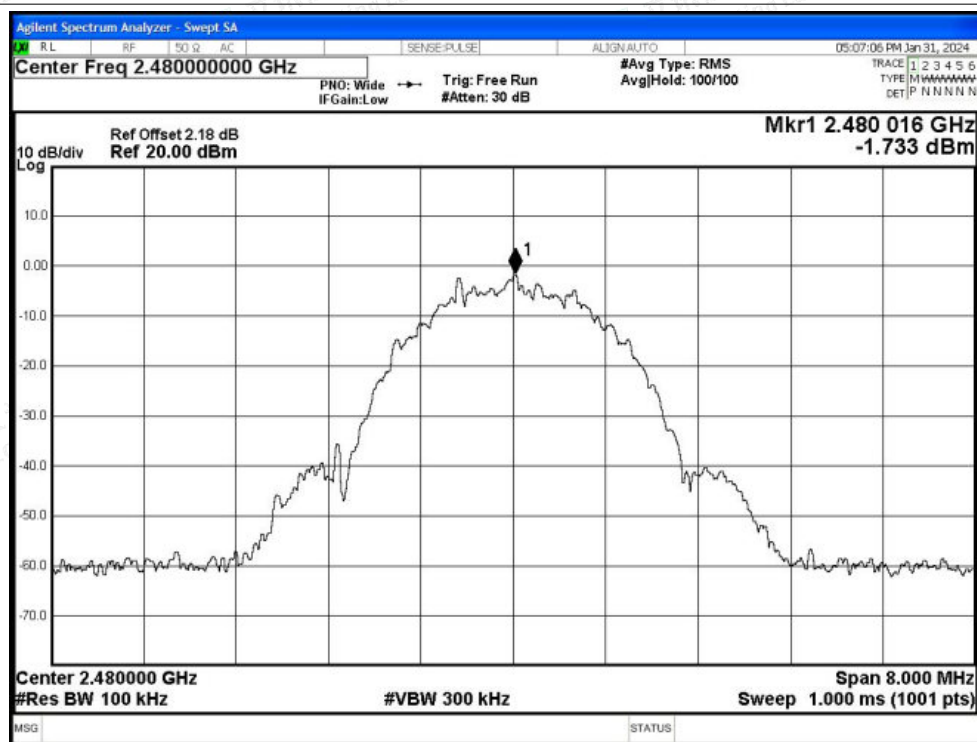
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

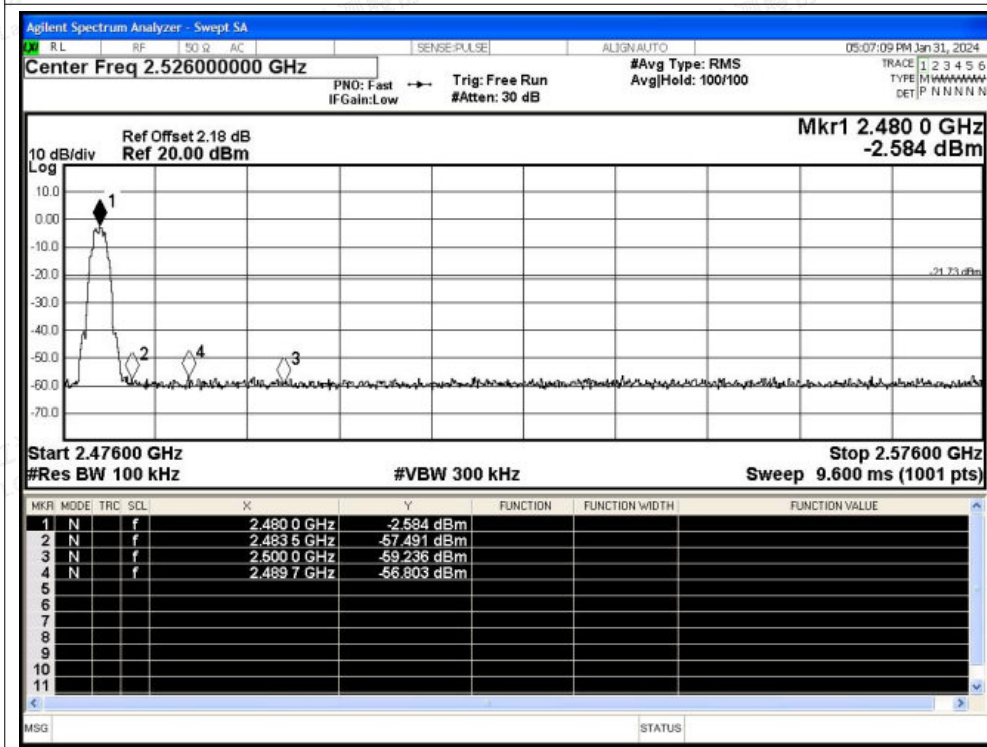
Scan code to check authenticity



Band Edge NVNT BLE 2M 2480MHz Ant2 Ref



Band Edge NVNT BLE 2M 2480MHz Ant2 Emission



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 RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant2	-55.57	-20	Pass
NVNT	BLE 1M	2440	Ant2	-54.45	-20	Pass
NVNT	BLE 1M	2480	Ant2	-54.13	-20	Pass
NVNT	BLE 2M	2402	Ant2	-55.46	-20	Pass
NVNT	BLE 2M	2440	Ant2	-54.3	-20	Pass
NVNT	BLE 2M	2480	Ant2	-53.42	-20	Pass

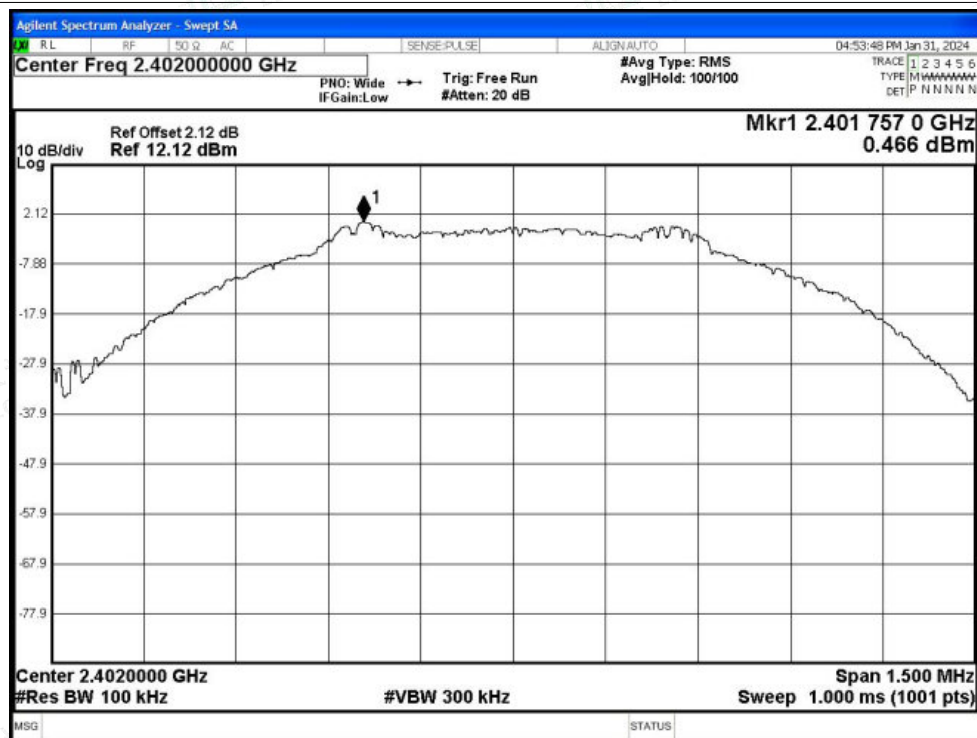


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

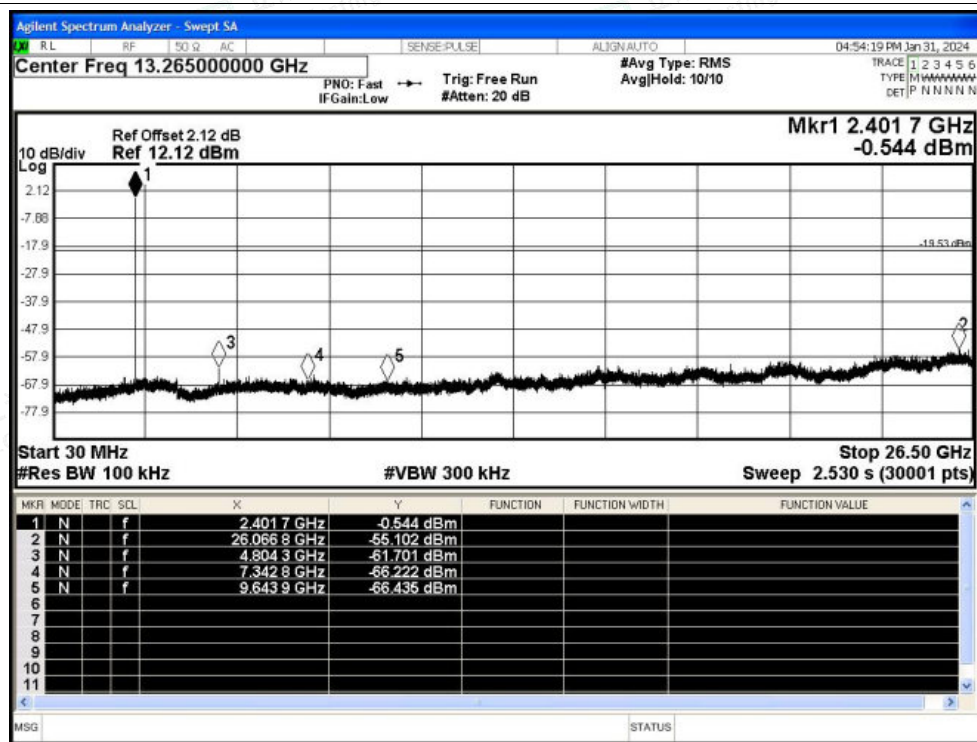


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant2 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant2 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

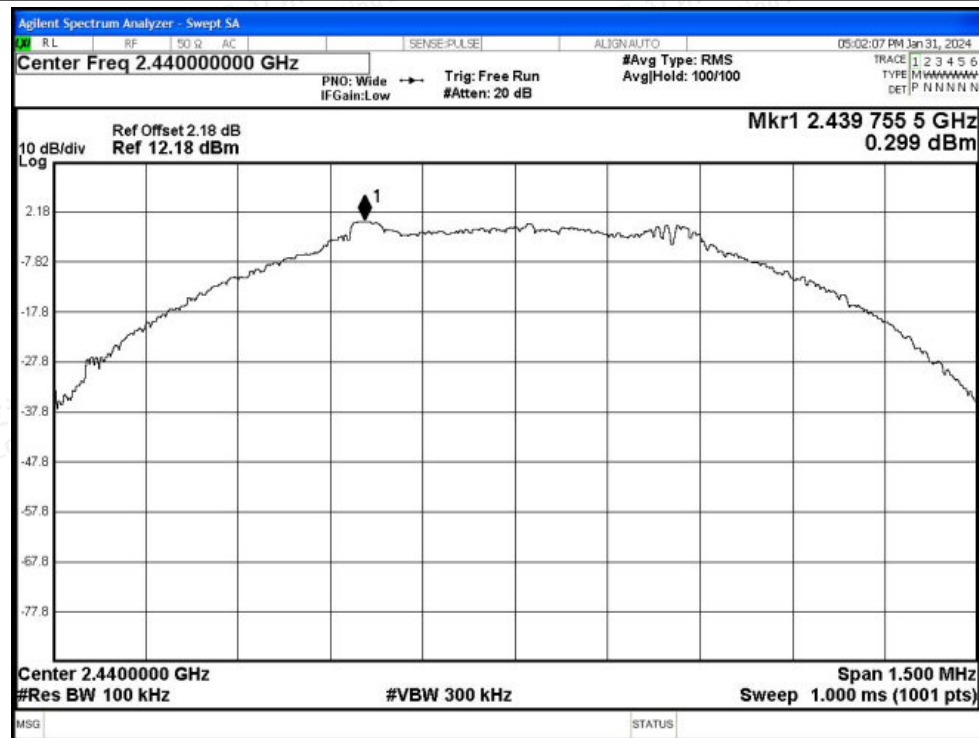
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

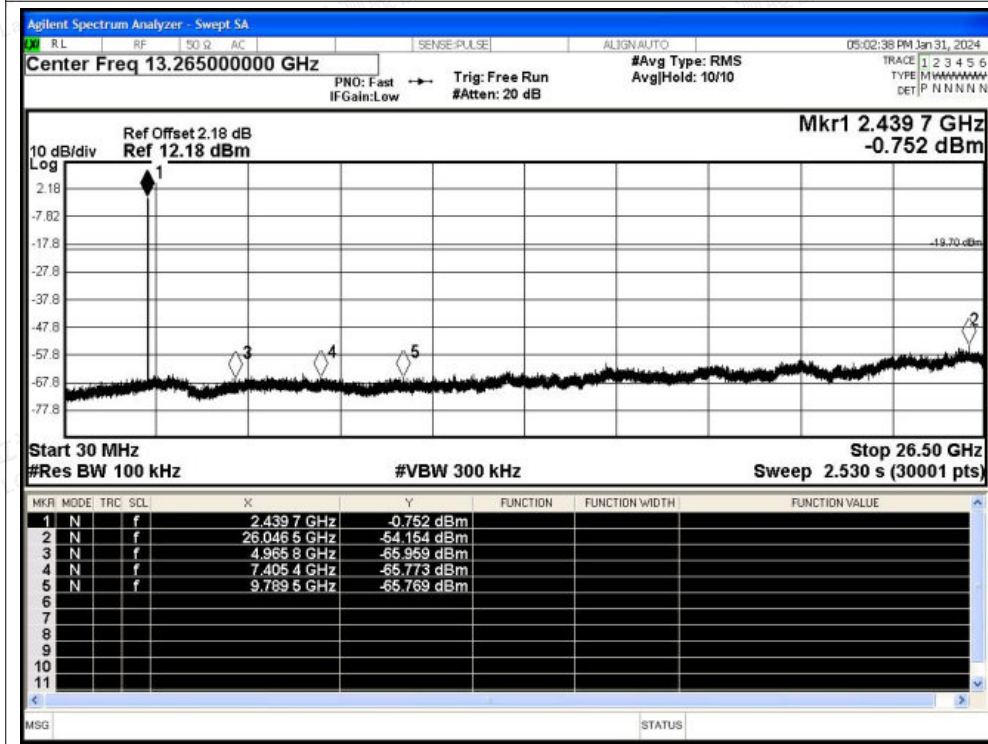
Scan code to check authenticity



Tx. Spurious NVNT BLE 1M 2440MHz Ant2 Ref

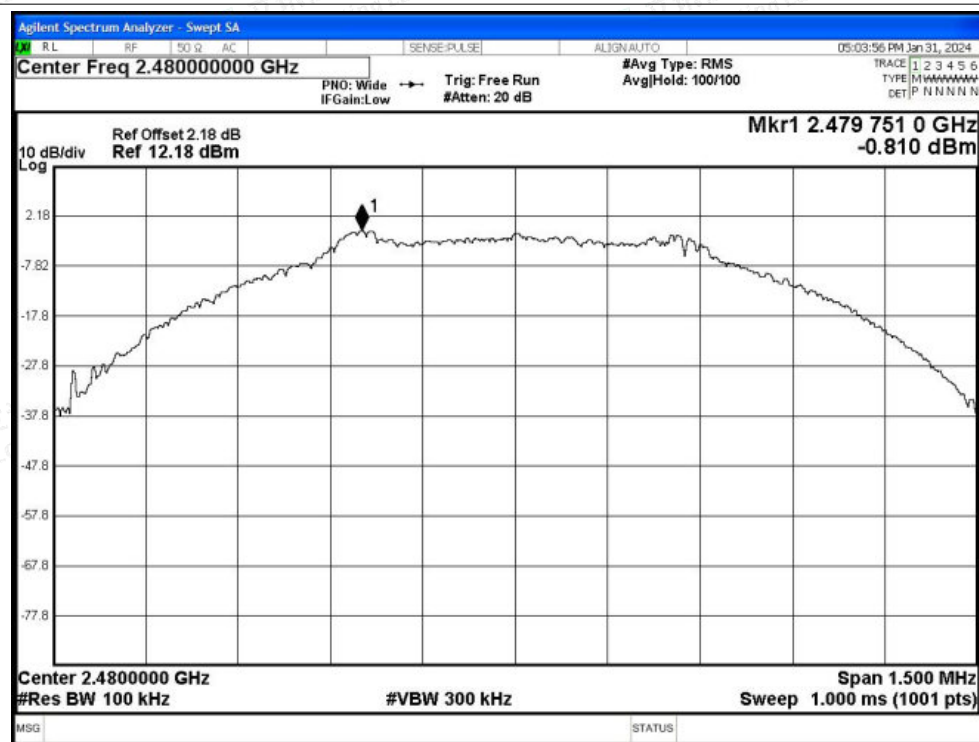


Tx. Spurious NVNT BLE 1M 2440MHz Ant2 Emission

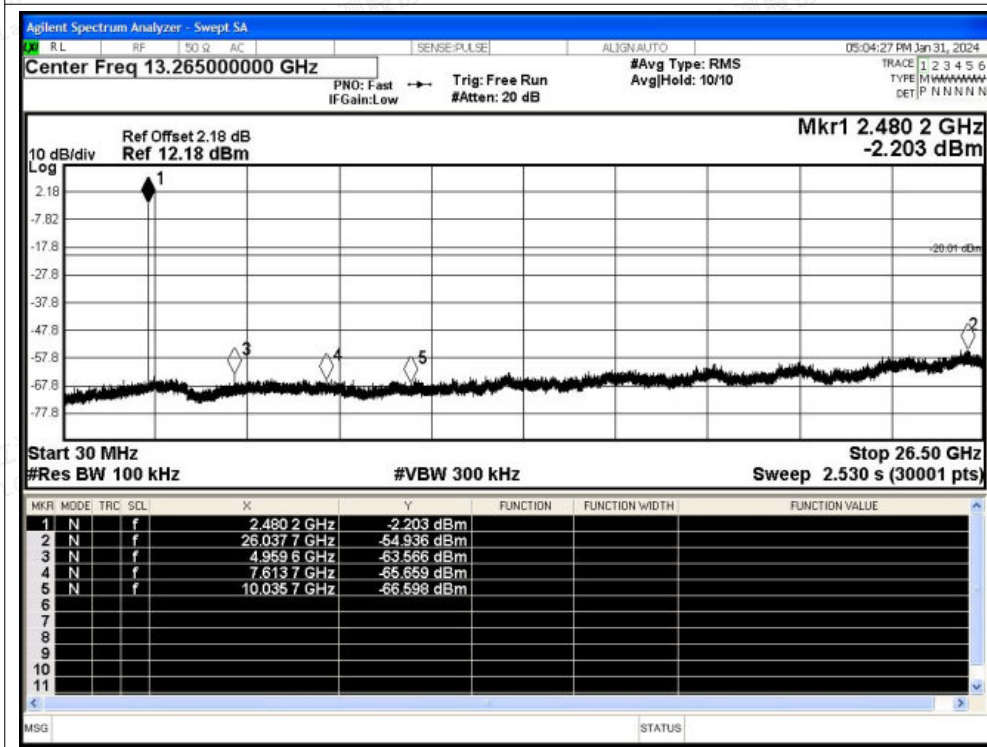




Tx. Spurious NVNT BLE 1M 2480MHz Ant2 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant2 Emission



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

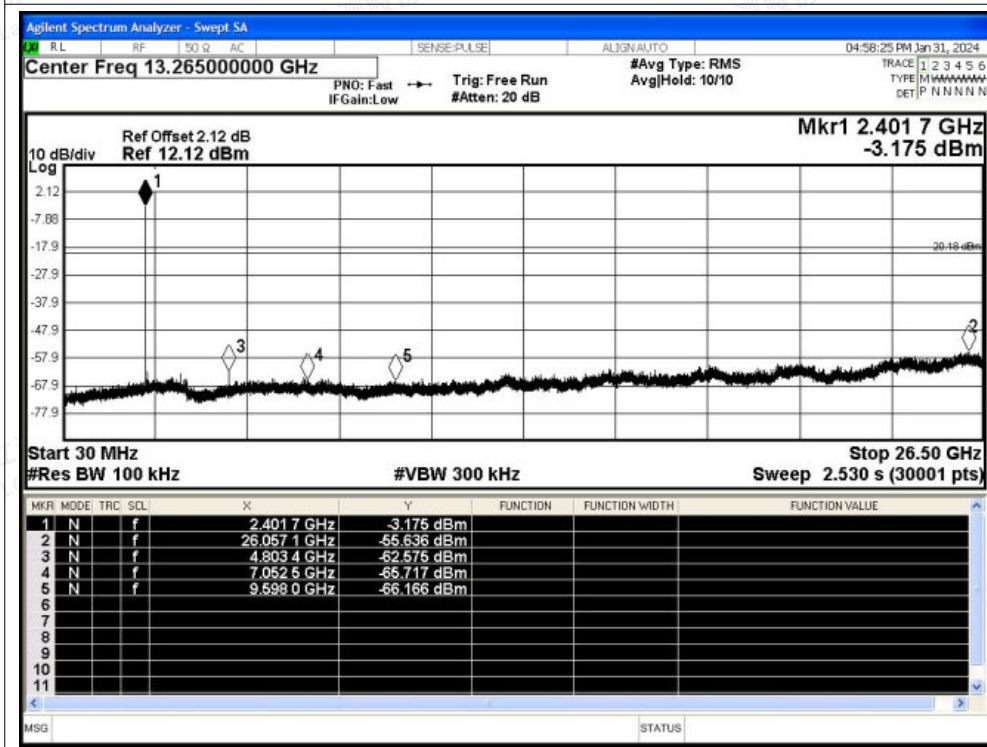
Scan code to check authenticity



Tx. Spurious NVNT BLE 2M 2402MHz Ant2 Ref



Tx. Spurious NVNT BLE 2M 2402MHz Ant2 Emission



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

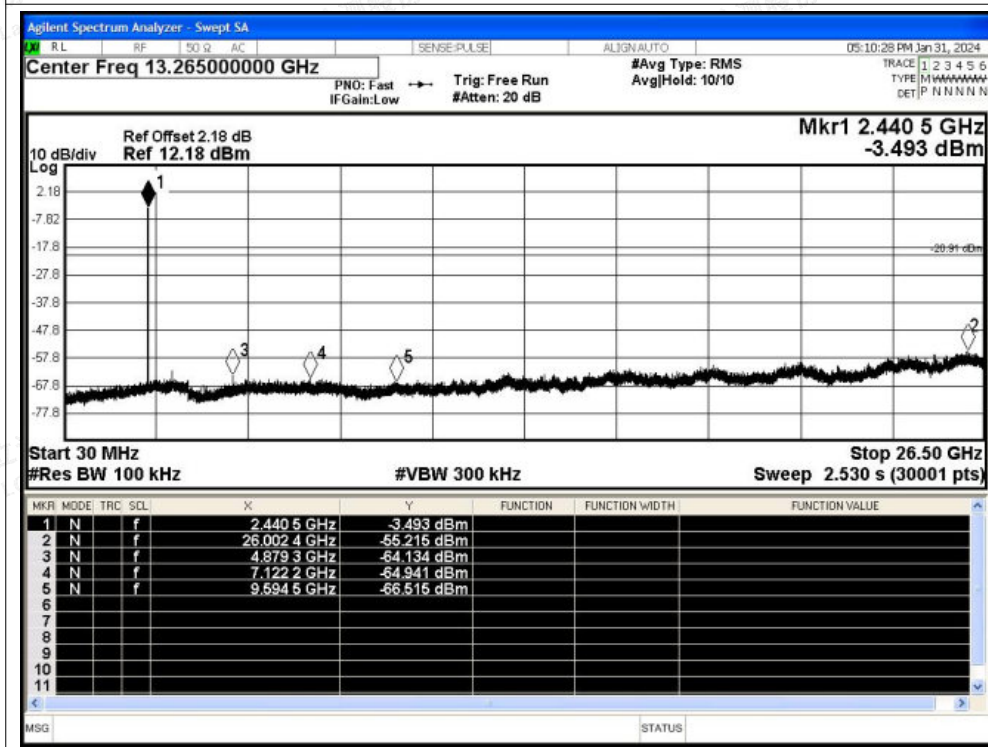
Scan code to check authenticity



Tx. Spurious NVNT BLE 2M 2440MHz Ant2 Ref



Tx. Spurious NVNT BLE 2M 2440MHz Ant2 Emission



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

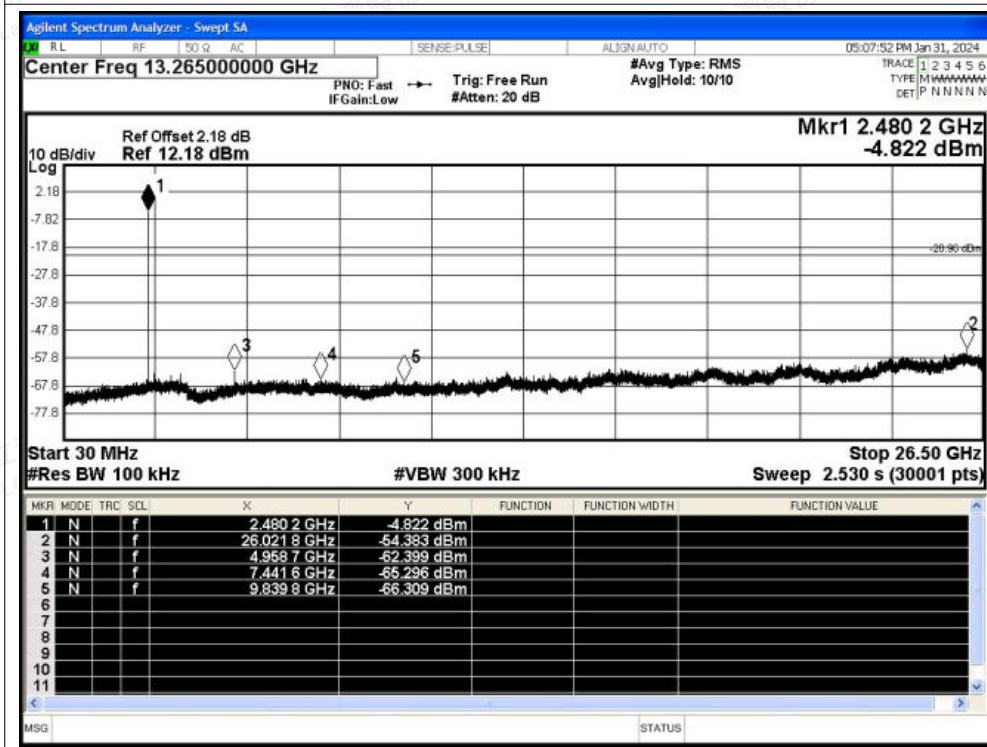
Scan code to check authenticity



Tx. Spurious NVNT BLE 2M 2480MHz Ant2 Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant2 Emission



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

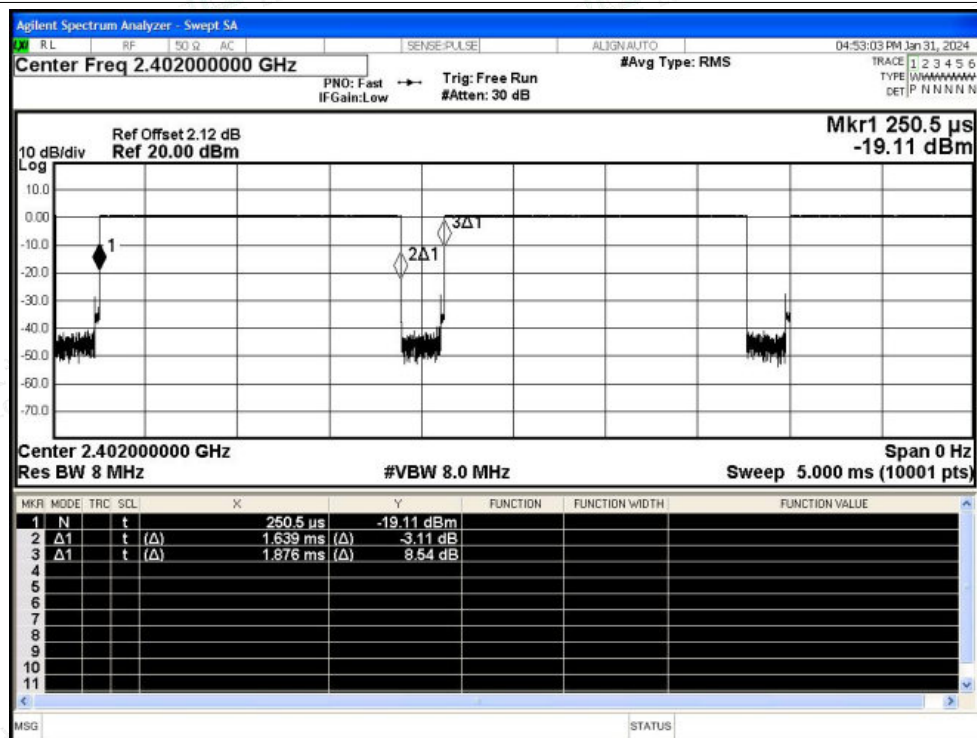
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant2	87.39	0.59	0.61
NVNT	BLE 1M	2440	Ant2	87.41	0.58	0.61
NVNT	BLE 1M	2480	Ant2	87.39	0.59	0.61
NVNT	BLE 2M	2402	Ant2	65.96	1.81	1.21
NVNT	BLE 2M	2440	Ant2	65.93	1.81	1.21
NVNT	BLE 2M	2480	Ant2	65.93	1.81	1.21



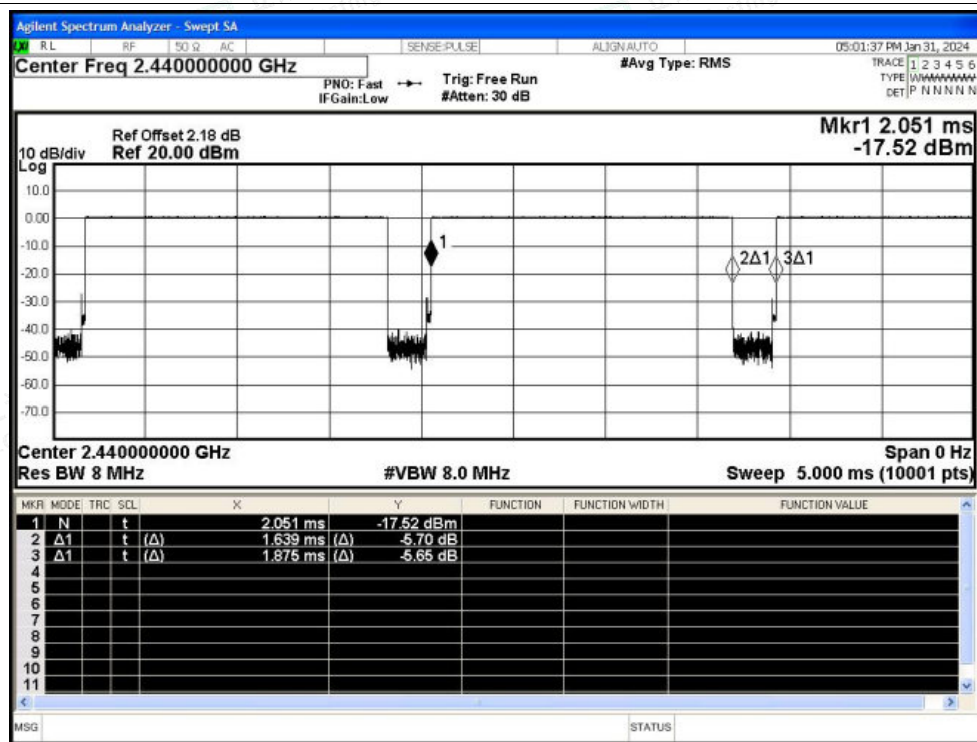


Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant2



Duty Cycle NVNT BLE 1M 2440MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

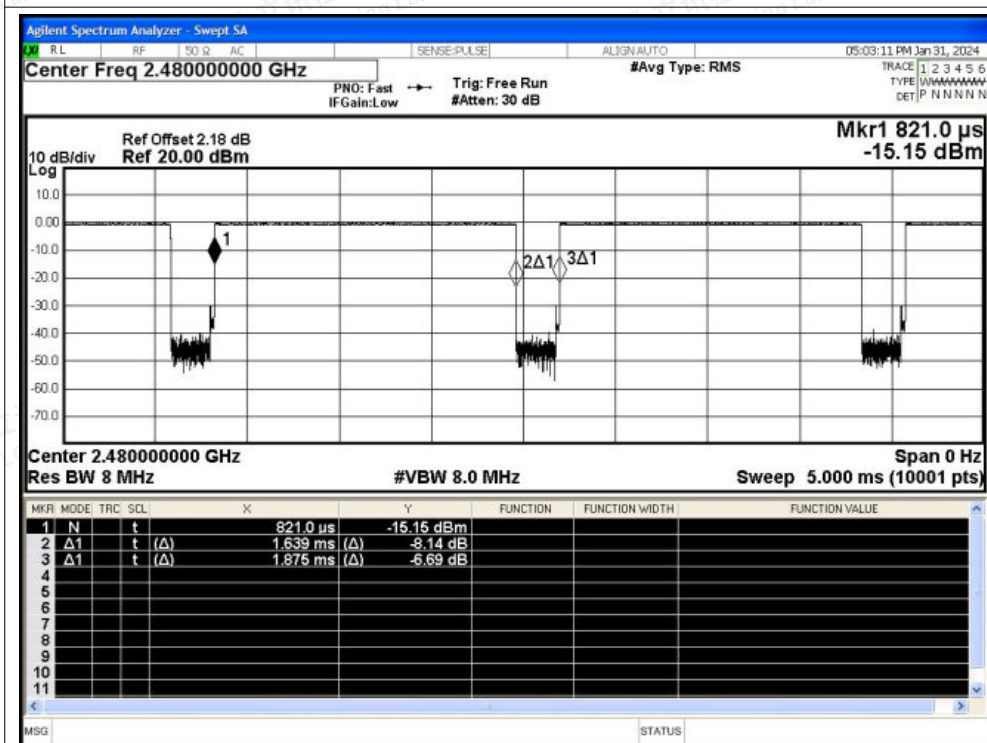
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

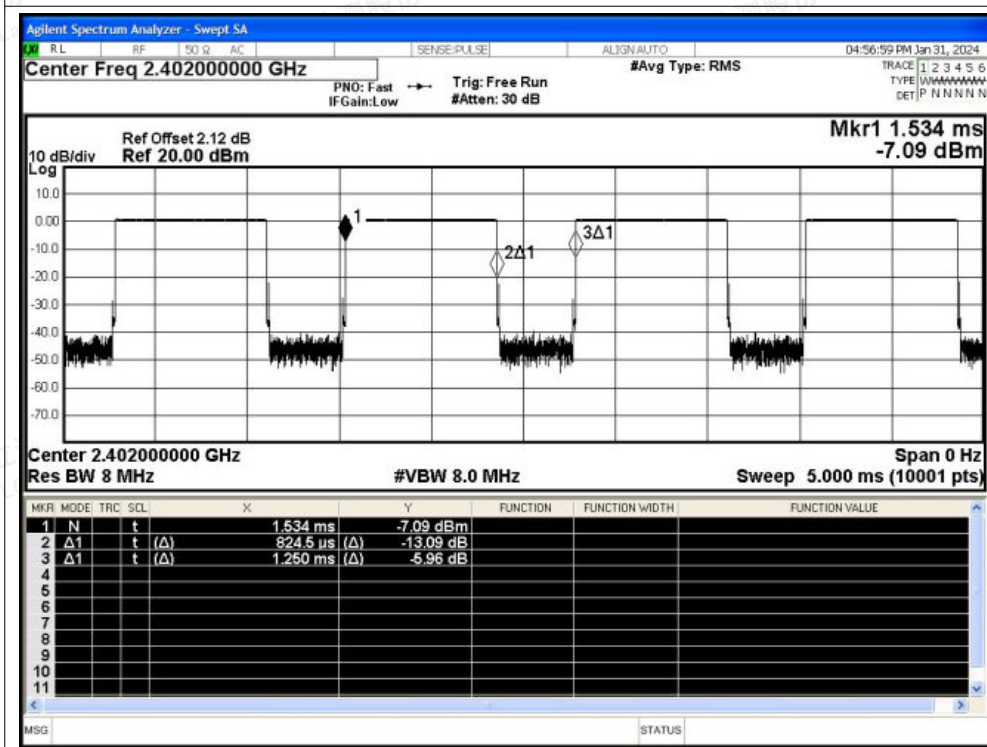
Scan code to check authenticity



Duty Cycle NVNT BLE 1M 2480MHz Ant2



Duty Cycle NVNT BLE 2M 2402MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

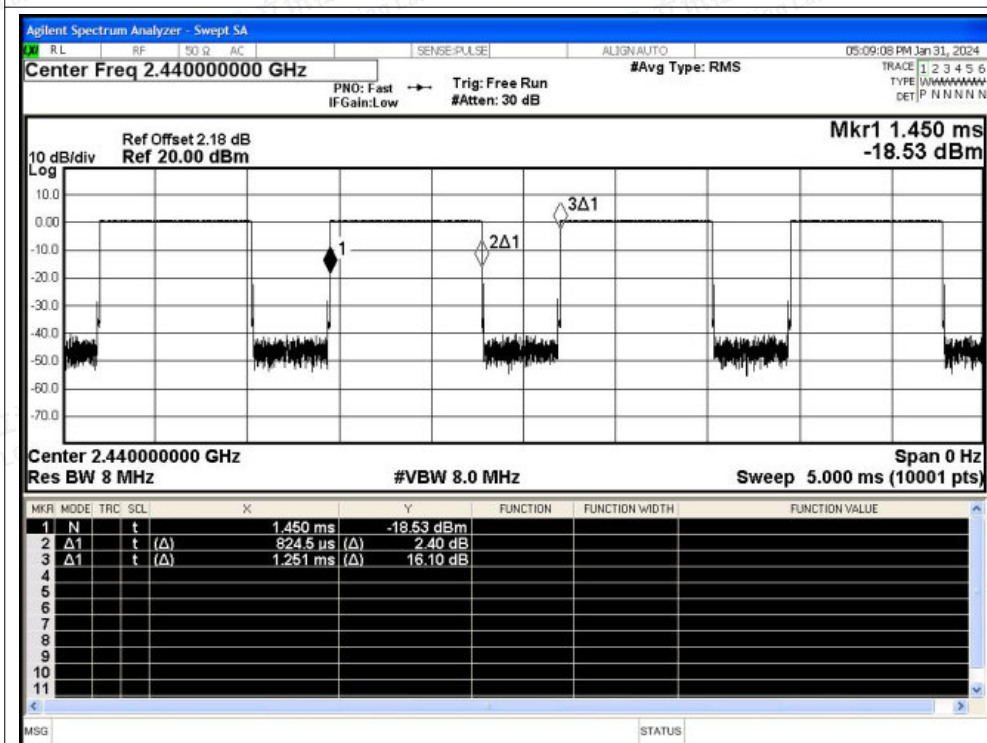
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

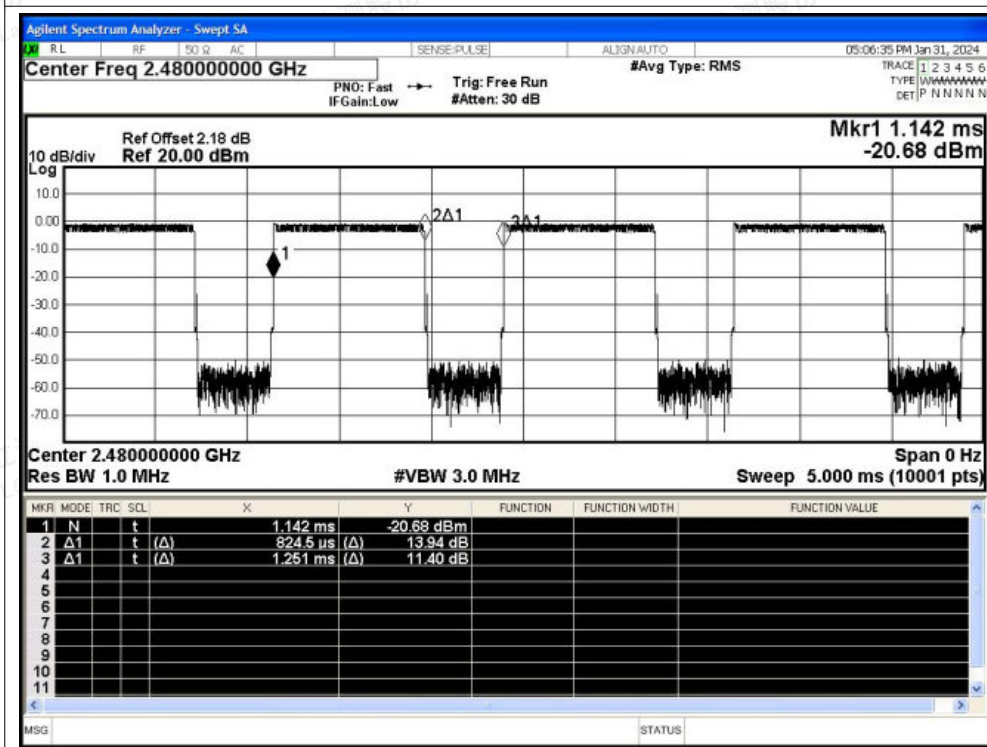
Scan code to check authenticity



Duty Cycle NVNT BLE 2M 2440MHz Ant2



Duty Cycle NVNT BLE 2M 2480MHz Ant2



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 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant2	2310	-50.8	2	-	46.46	Peak	74	Pass
NVNT	BLE 1M	2402	Ant2	2310	-58.72	2	0.59	39.13	Average	54	Pass
NVNT	BLE 1M	2402	Ant2	2335.248	-47.2	2	-	50.06	Peak	74	Pass
NVNT	BLE 1M	2402	Ant2	2388.048	-57.74	2	0.59	40.11	Average	54	Pass
NVNT	BLE 1M	2402	Ant2	2390	-49.98	2	-	47.28	Peak	74	Pass
NVNT	BLE 1M	2402	Ant2	2390	-58.33	2	0.59	39.52	Average	54	Pass
NVNT	BLE 1M	2480	Ant2	2483.5	-48.5	2	-	48.76	Peak	74	Pass
NVNT	BLE 1M	2480	Ant2	2483.5	-57.32	2	0.59	40.53	Average	54	Pass
NVNT	BLE 1M	2480	Ant2	2484.52	-43.86	2	-	53.4	Peak	74	Pass
NVNT	BLE 1M	2480	Ant2	2499.208	-57.2	2	0.59	40.65	Average	54	Pass
NVNT	BLE 1M	2480	Ant2	2500	-50.91	2	-	46.35	Peak	74	Pass
NVNT	BLE 1M	2480	Ant2	2500	-57.85	2	0.59	40	Average	54	Pass
NVNT	BLE 2M	2402	Ant2	2310	-51.42	2	-	45.84	Peak	74	Pass
NVNT	BLE 2M	2402	Ant2	2310	-59.17	2	1.81	39.9	Average	54	Pass
NVNT	BLE 2M	2402	Ant2	2359.92	-47.23	2	-	50.03	Peak	74	Pass
NVNT	BLE 2M	2402	Ant2	2371.632	-57.73	2	1.81	41.34	Average	54	Pass
NVNT	BLE 2M	2402	Ant2	2390	-50.05	2	-	47.21	Peak	74	Pass
NVNT	BLE 2M	2402	Ant2	2390	-57.83	2	1.81	41.24	Average	54	Pass
NVNT	BLE 2M	2480	Ant2	2483.5	-49.57	2	-	47.69	Peak	74	Pass
NVNT	BLE 2M	2480	Ant2	2483.5	-57.71	2	1.81	41.36	Average	54	Pass
NVNT	BLE 2M	2480	Ant2	2484.016	-43.58	2	-	53.68	Peak	74	Pass
NVNT	BLE 2M	2480	Ant2	2497.12	-57.12	2	1.81	41.95	Average	54	Pass
NVNT	BLE 2M	2480	Ant2	2500	-50.35	2	-	46.91	Peak	74	Pass
NVNT	BLE 2M	2480	Ant2	2500	-58.51	2	1.81	40.56	Average	54	Pass

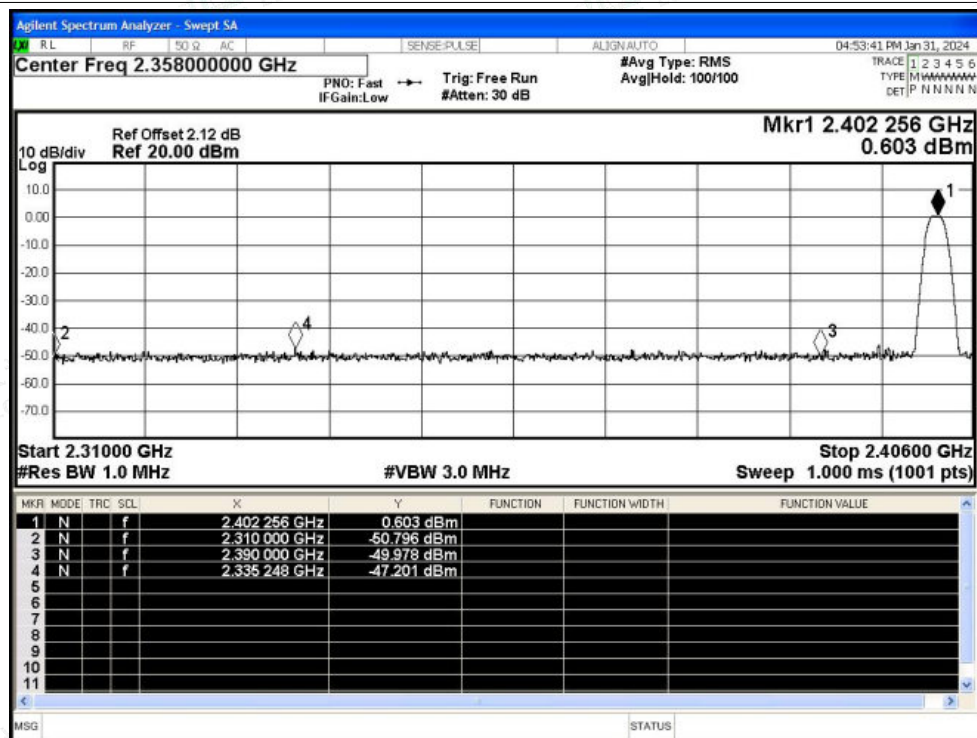


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

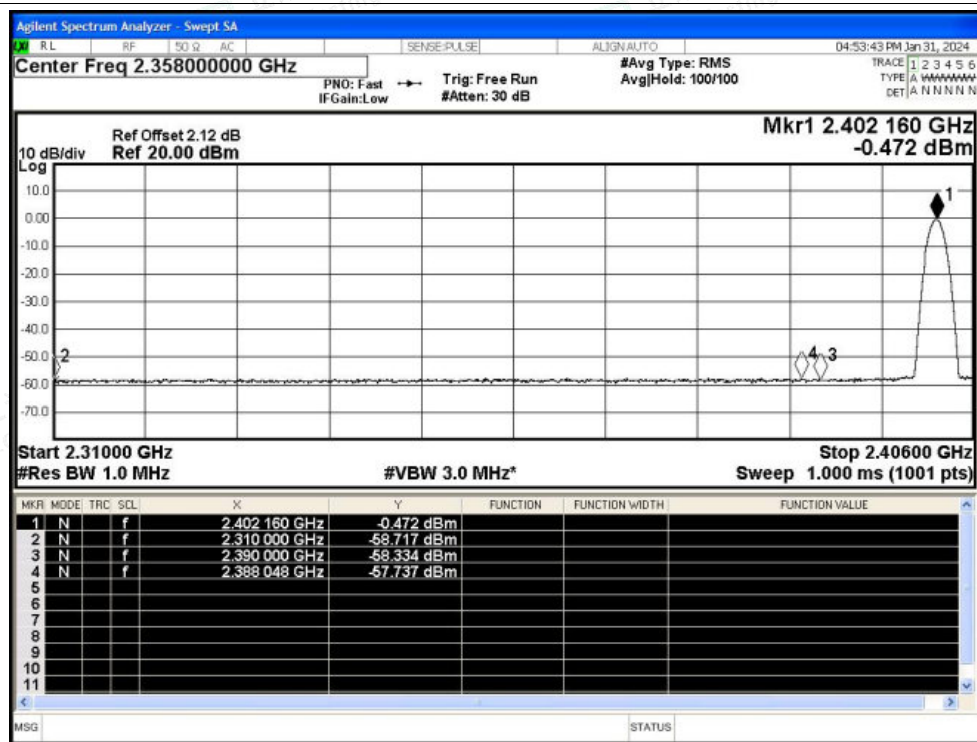


Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant2 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant2 Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

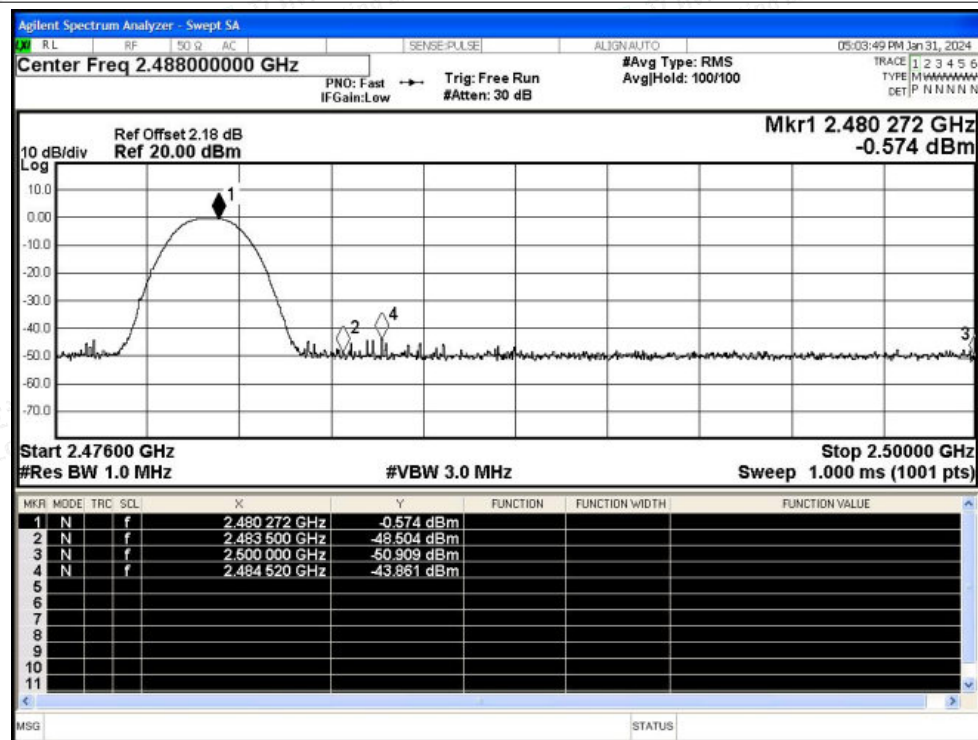
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

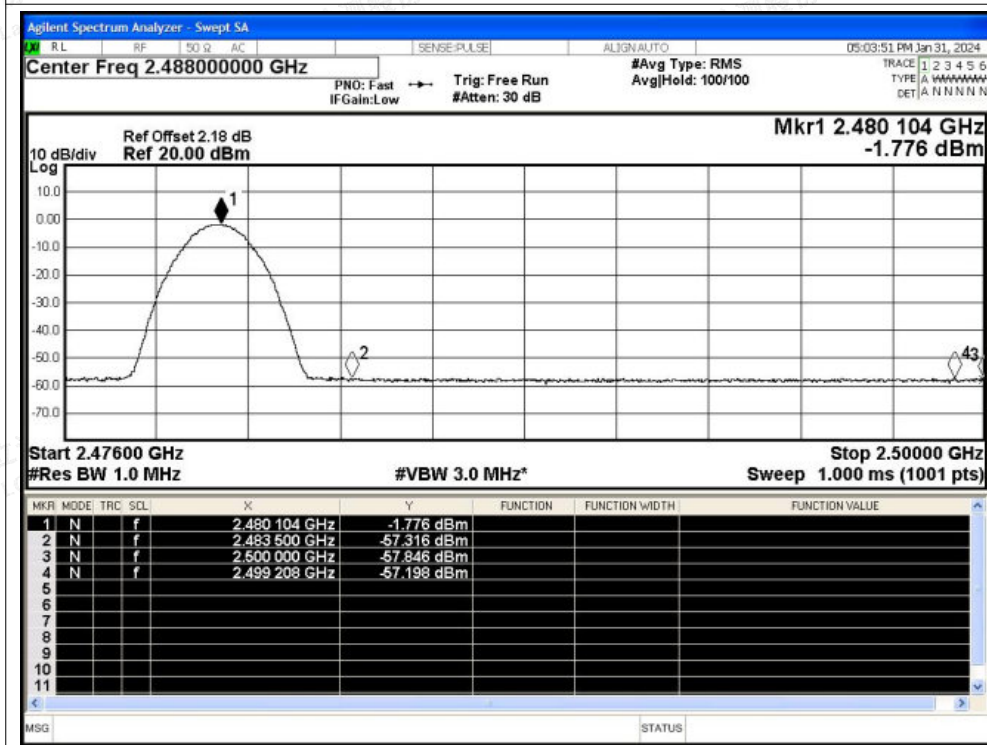
Scan code to check authenticity



Restrict Band NVNT BLE 1M 2480MHz Ant2 Peak

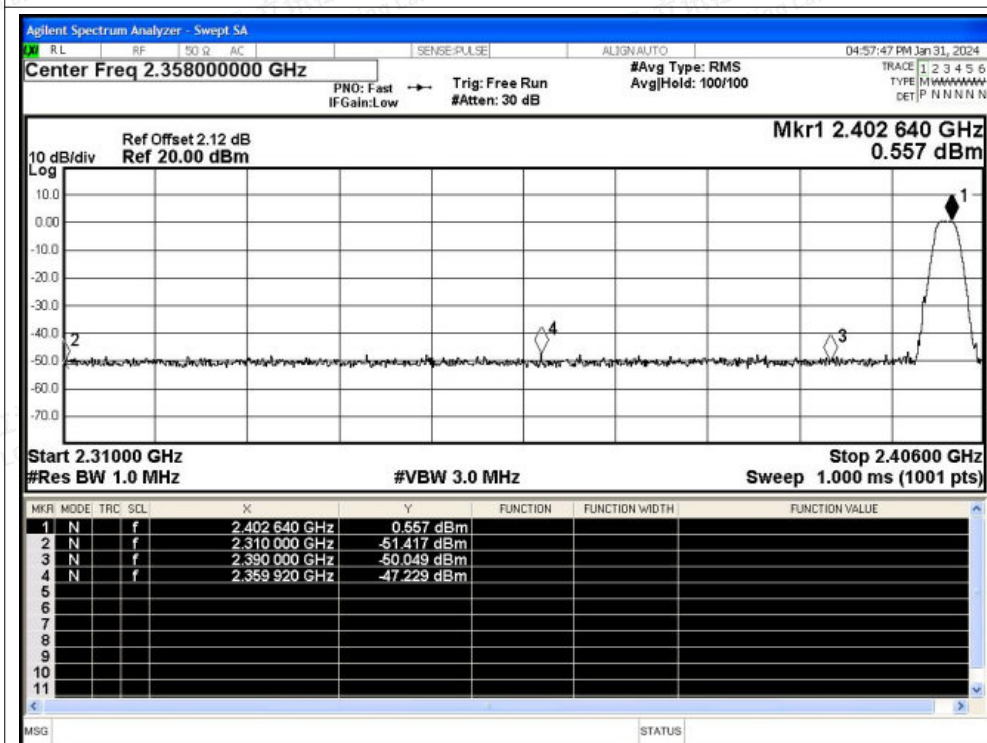


Restrict Band NVNT BLE 1M 2480MHz Ant2 Average

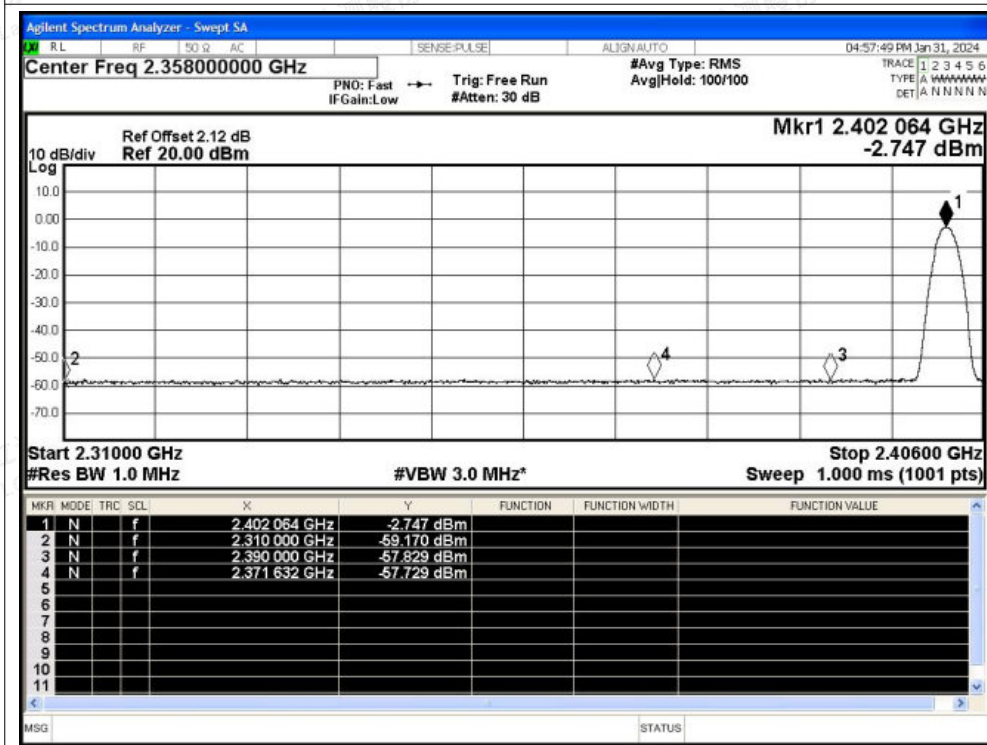




Restrict Band NVNT BLE 2M 2402MHz Ant2 Peak



Restrict Band NVNT BLE 2M 2402MHz Ant2 Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

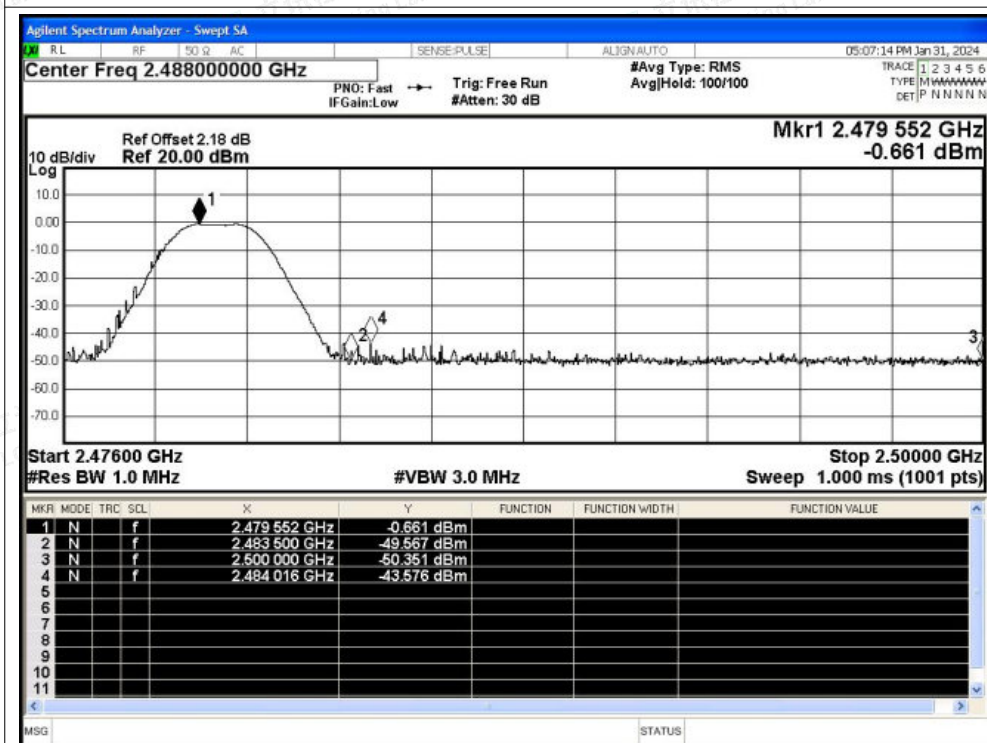
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

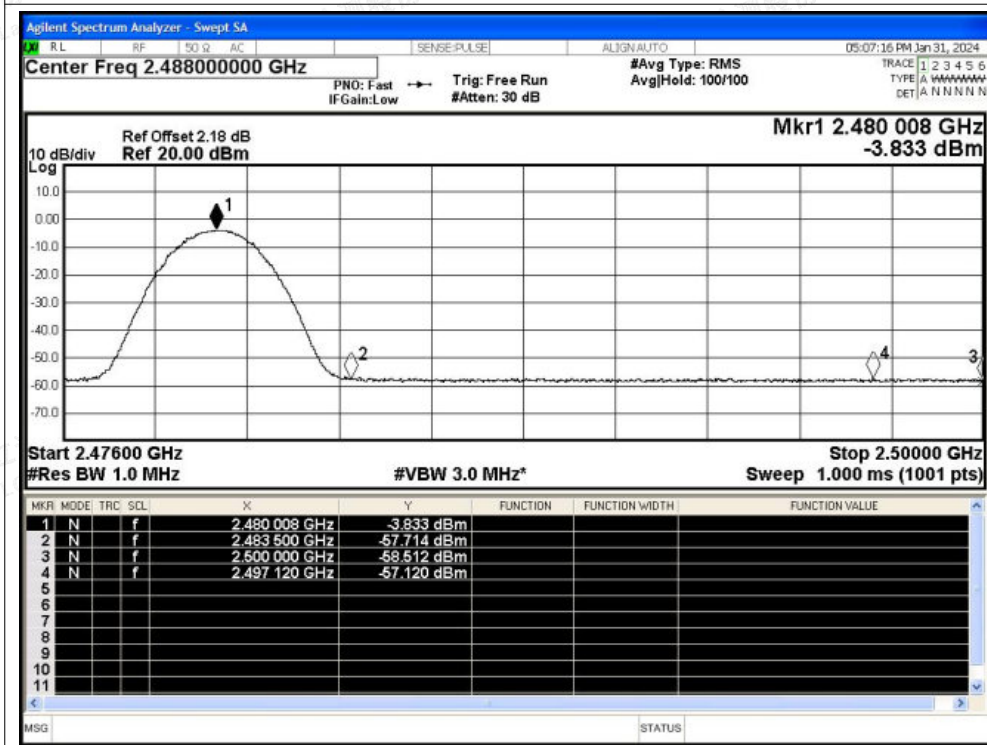
Scan code to check authenticity



Restrict Band NVNT BLE 2M 2480MHz Ant2 Peak



Restrict Band NVNT BLE 2M 2480MHz Ant2 Average



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