



## Appendix B

### RF Test Data for BLE (Conducted Measurement)

Product Name: Translator

Test Model: V12

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.5 °C   |
| Relative Humidity: | 52.2%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Ling Zhu  |
| Supervised by:     | Li huan   |





## B.1 6dB Bandwidth

| Condition | Mode   | Frequency (MHz) | Antenna | 6 dB Bandwidth (MHz) | Limit 6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|----------------------|----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.702                | 0.5                        | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.696                | 0.5                        | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.703                | 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

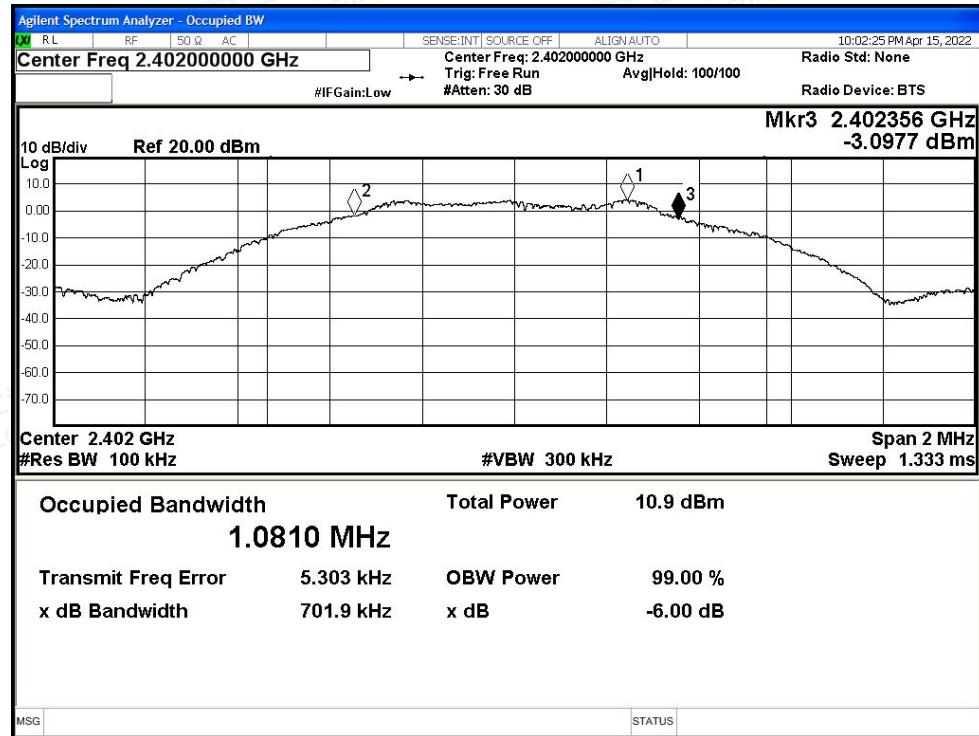
Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)

Scan code to check authenticity

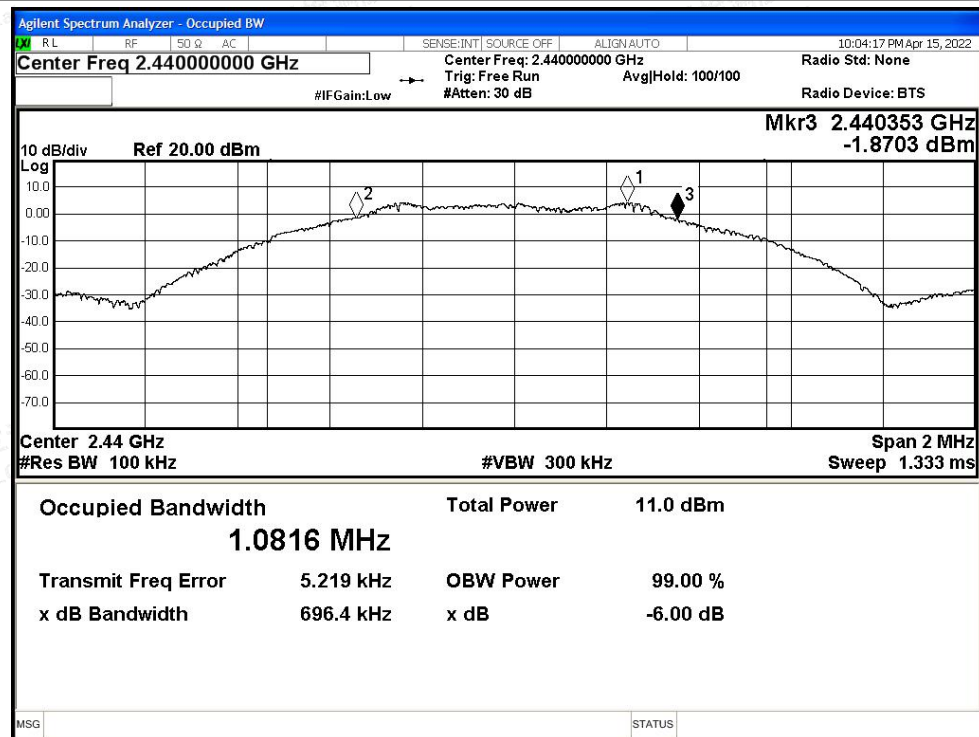


## Test Graphs

6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

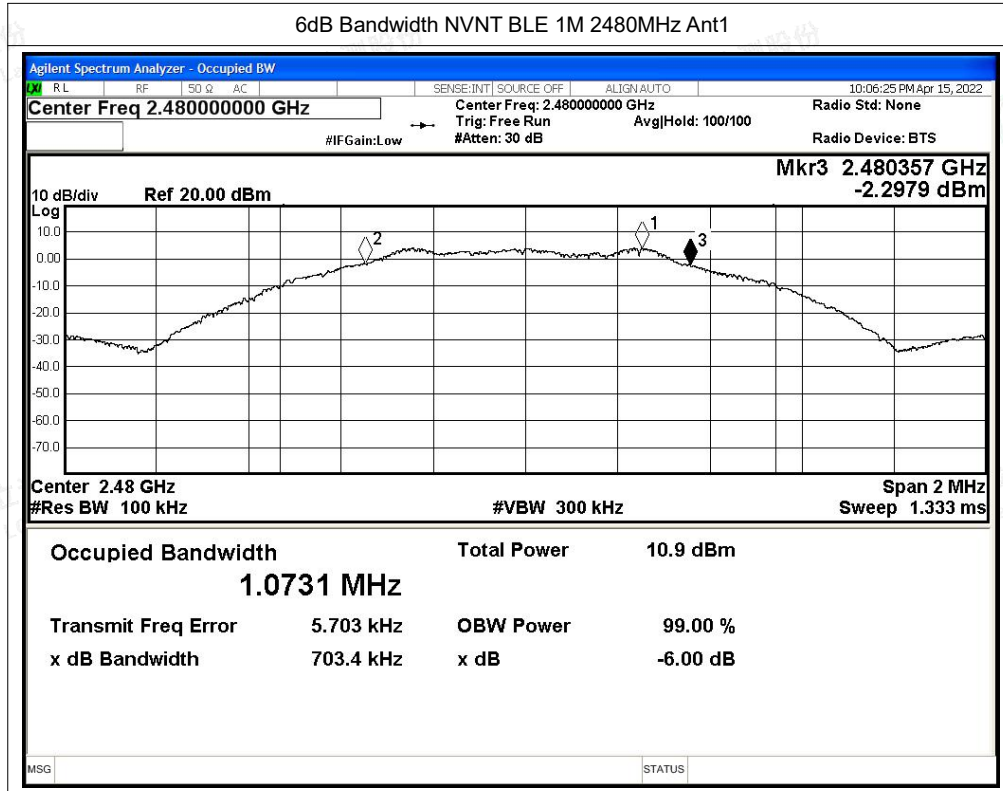


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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 &amp; 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

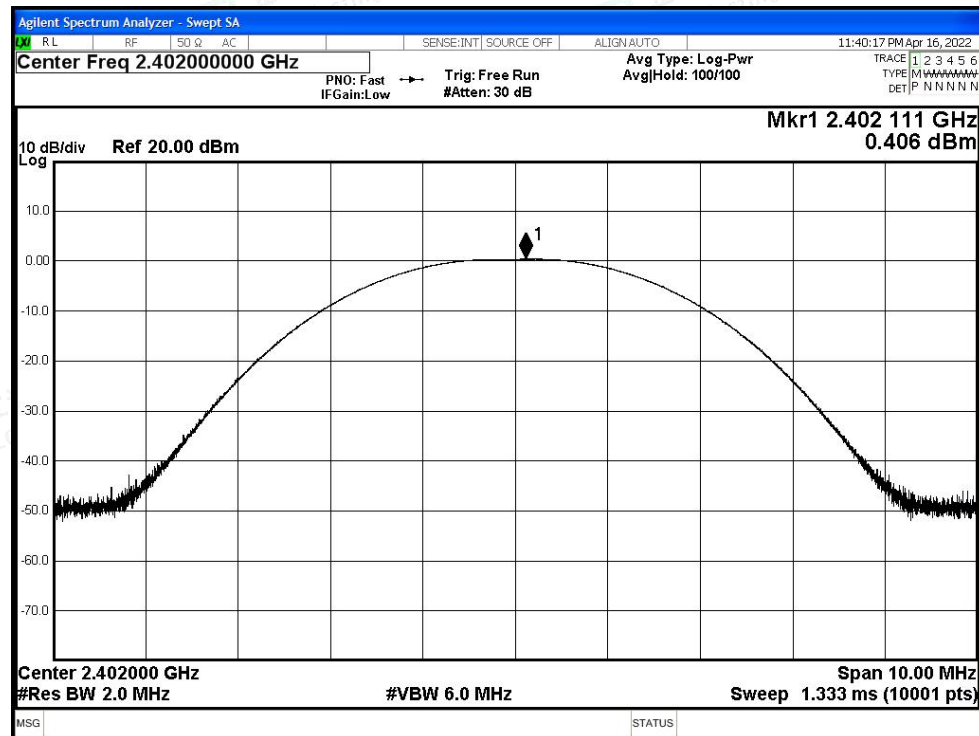
| Condition | Mode   | Frequency<br>(MHz) | Antenna | Conducted Power<br>(dBm) | Duty Factor<br>(dB) | Total Power<br>(dBm) | Limit<br>(dBm) | Verdict |
|-----------|--------|--------------------|---------|--------------------------|---------------------|----------------------|----------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | 0.41                     | 0                   | 0.41                 | 30             | Pass    |
| NVNT      | BLE 1M | 2440               | Ant1    | 1.75                     | 0                   | 1.75                 | 30             | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 0.59                     | 0                   | 0.59                 | 30             | Pass    |



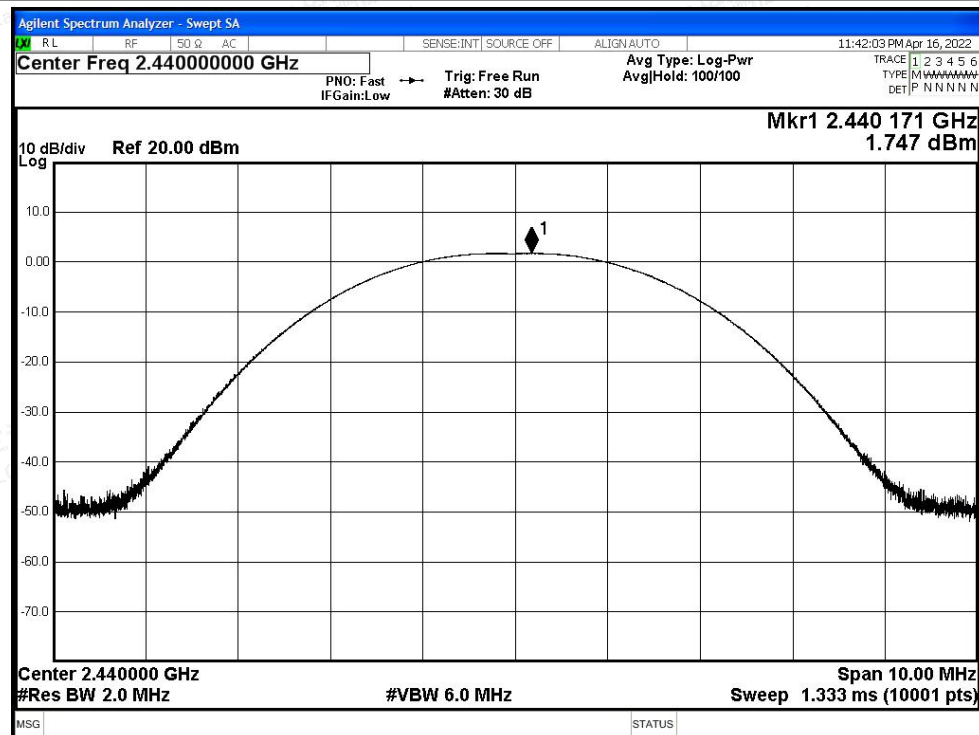


## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1

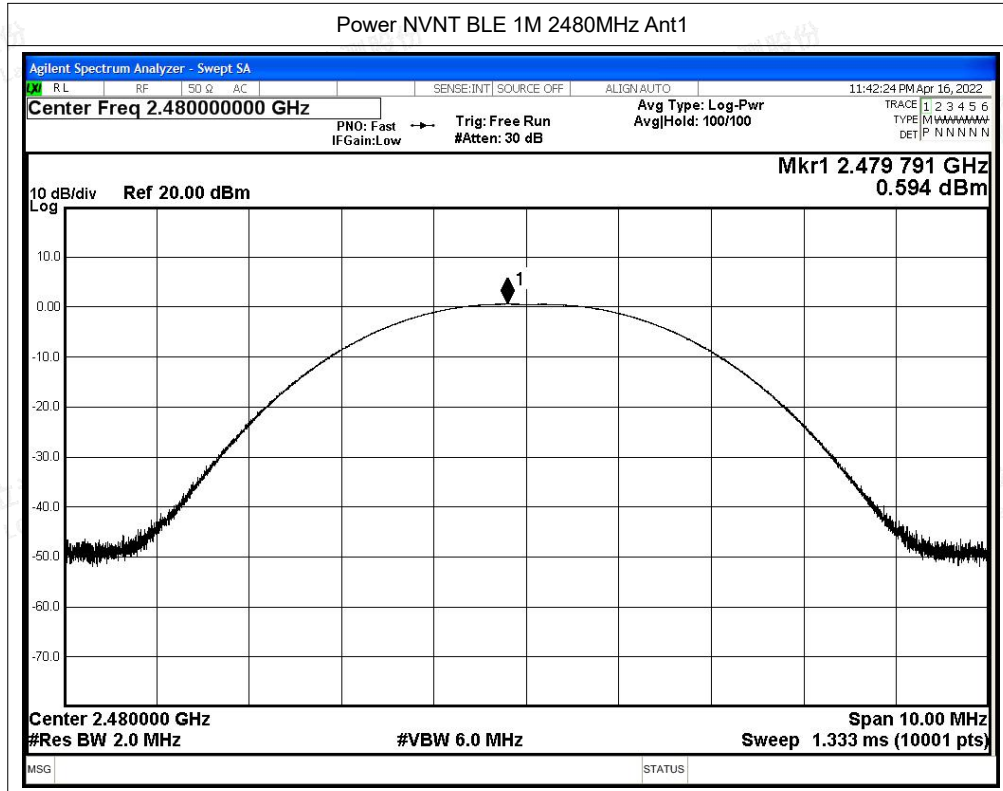


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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

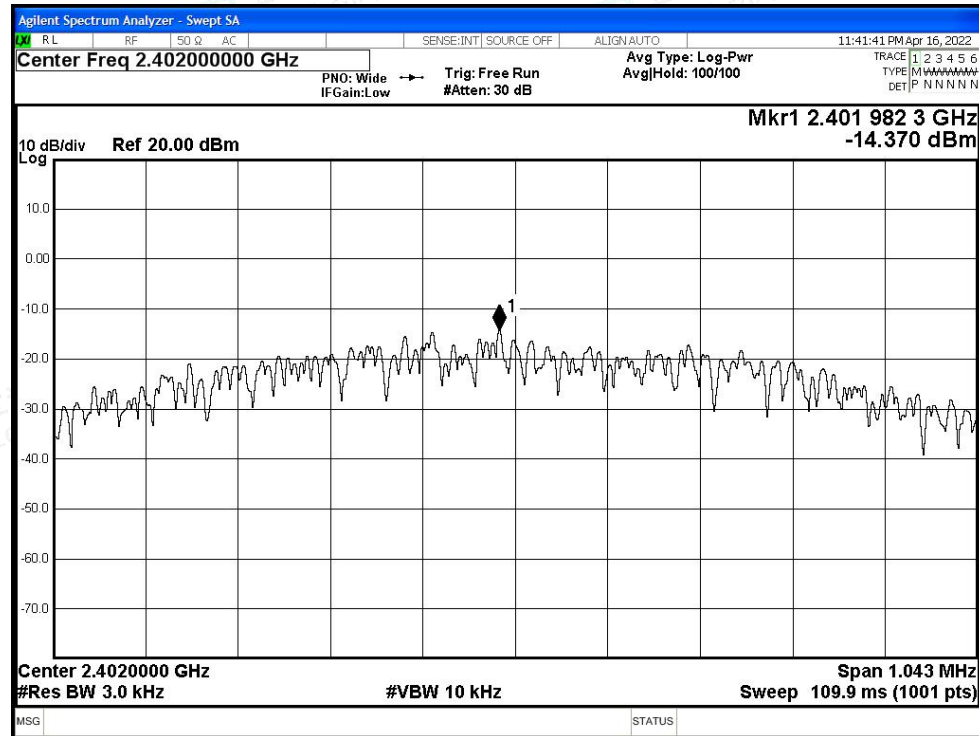
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Duty Factor (dB) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|----------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -14.37                   | 0                | -14.37               | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -13.15                   | 0                | -13.15               | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -14.21                   | 0                | -14.21               | 8                | Pass    |



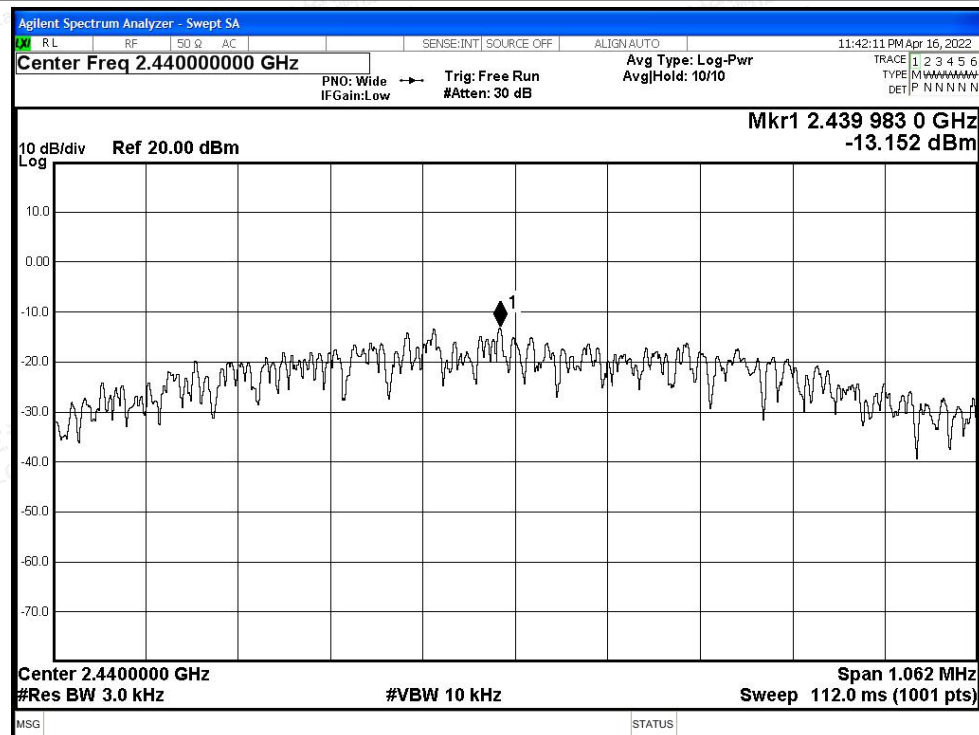


## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1

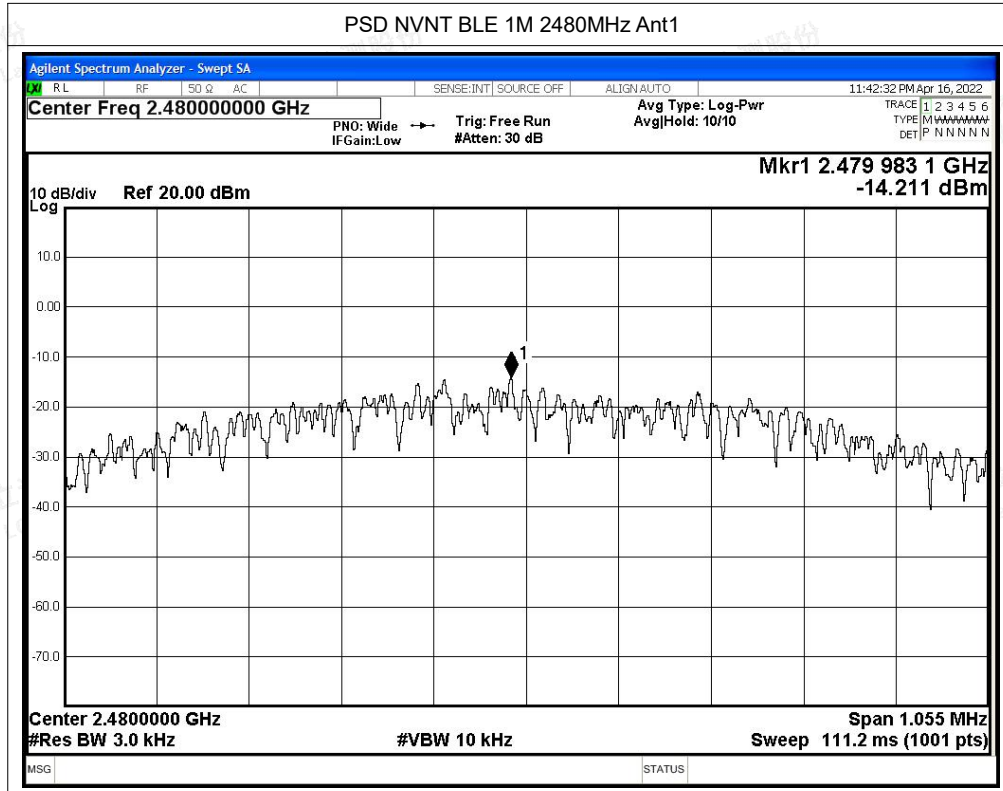


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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

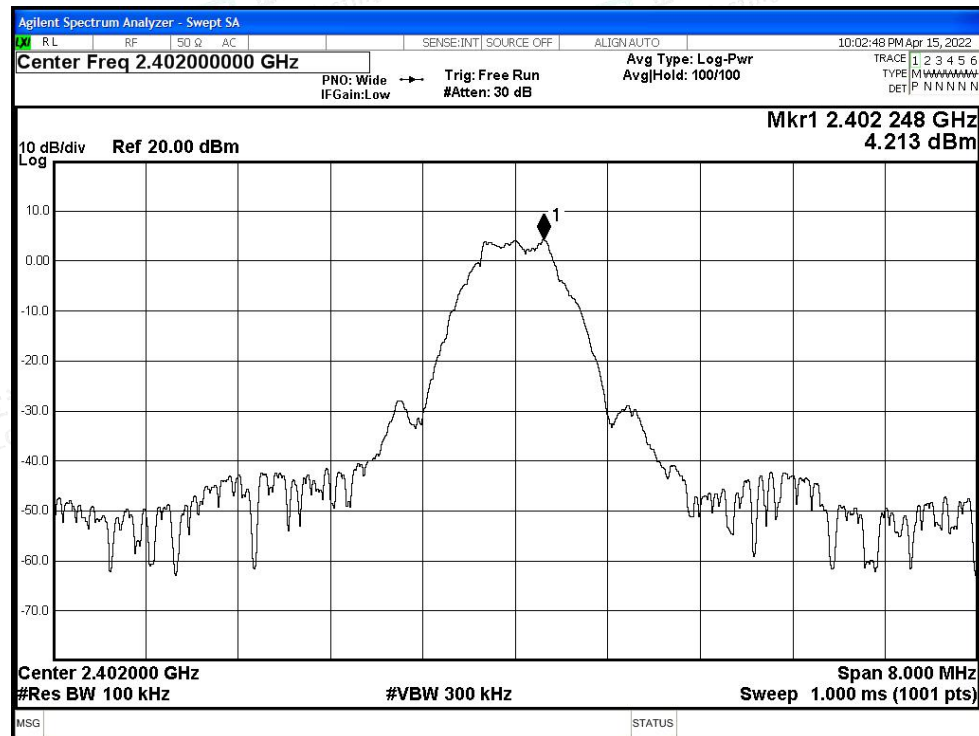
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -39.33          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -50.51          | -20         | Pass    |



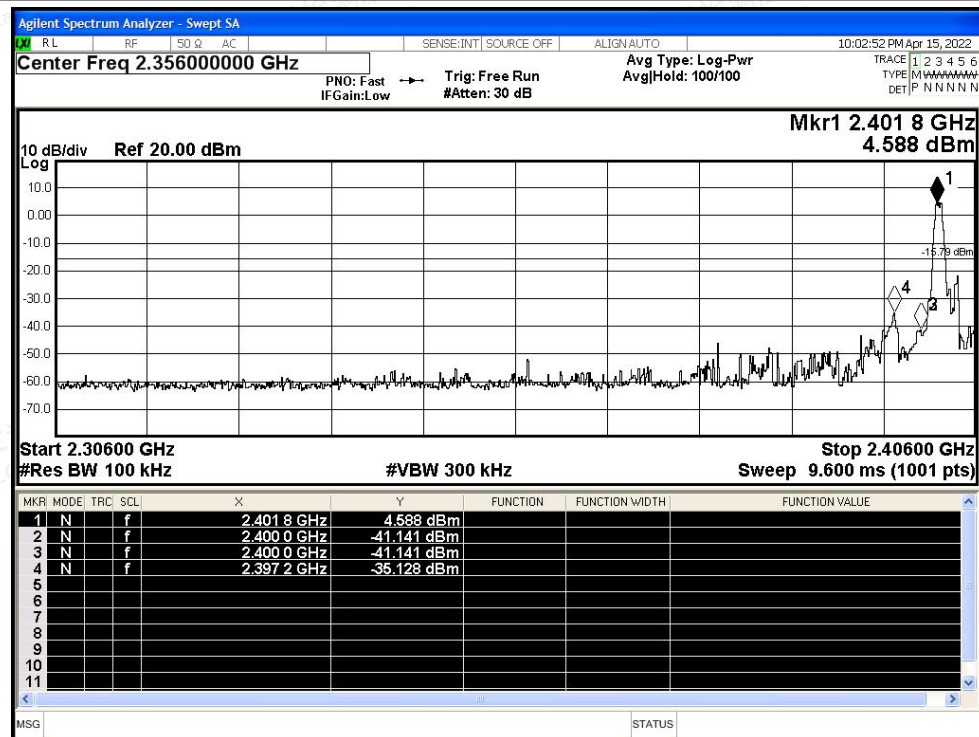


## Test Graphs

## Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



## Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

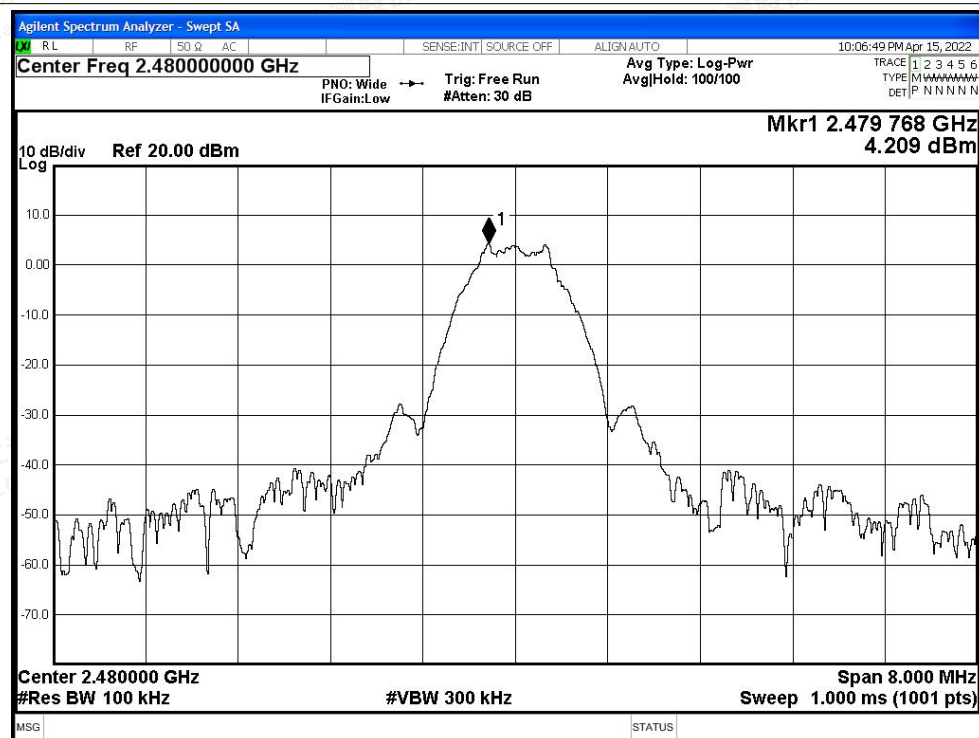
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

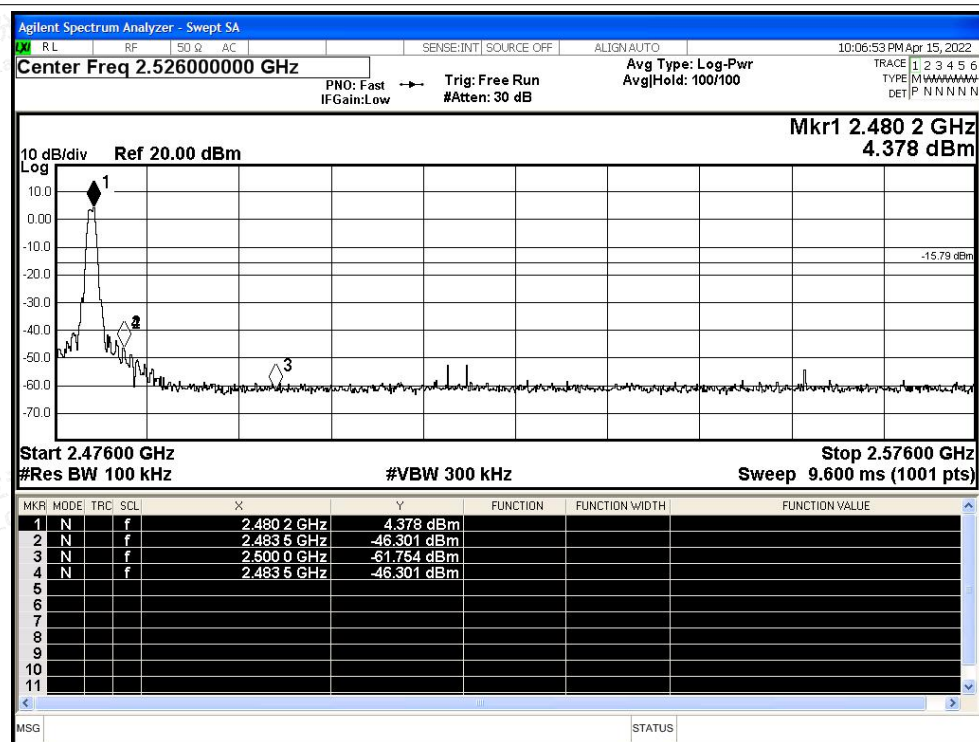
Scan code to check authenticity



## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



## Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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

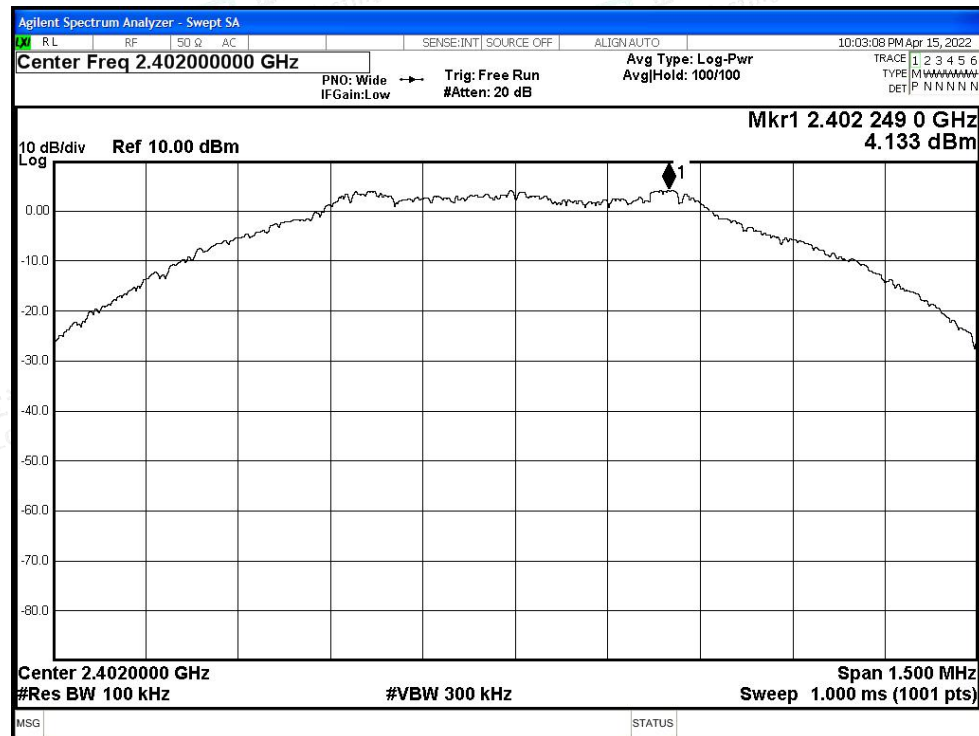
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -55.25          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -57.65          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -59.98          | -20         | Pass    |



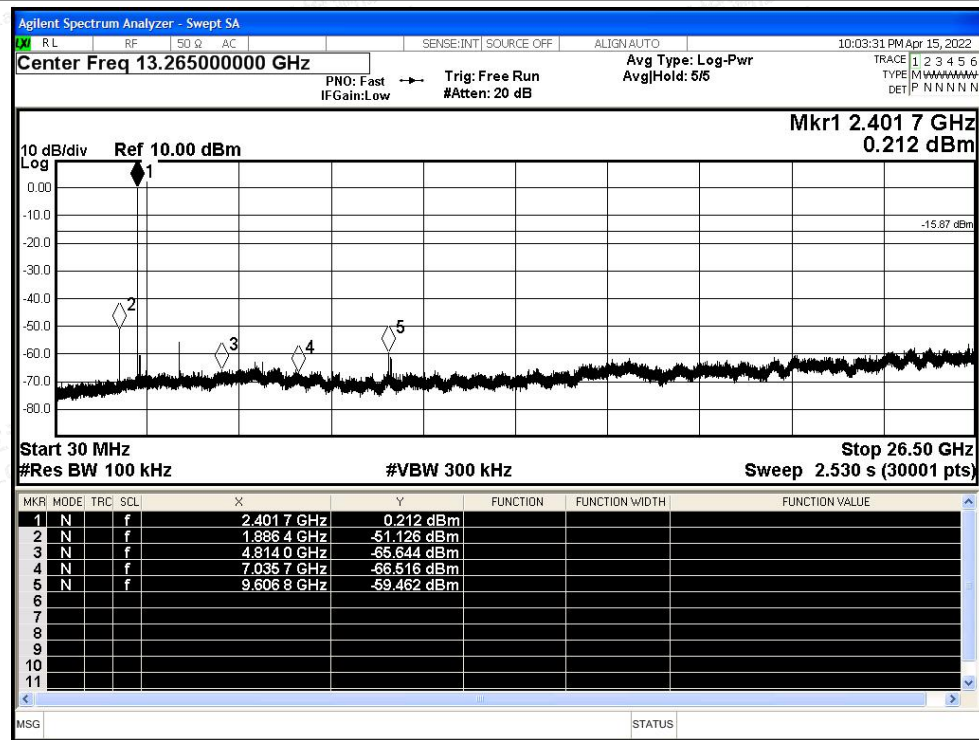


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

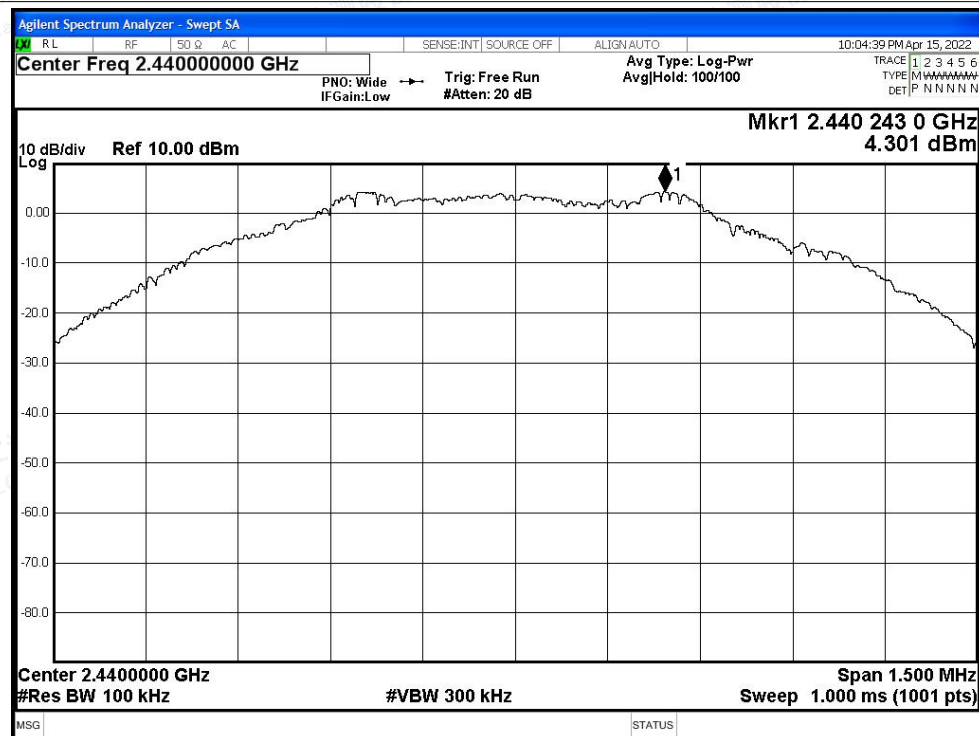
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

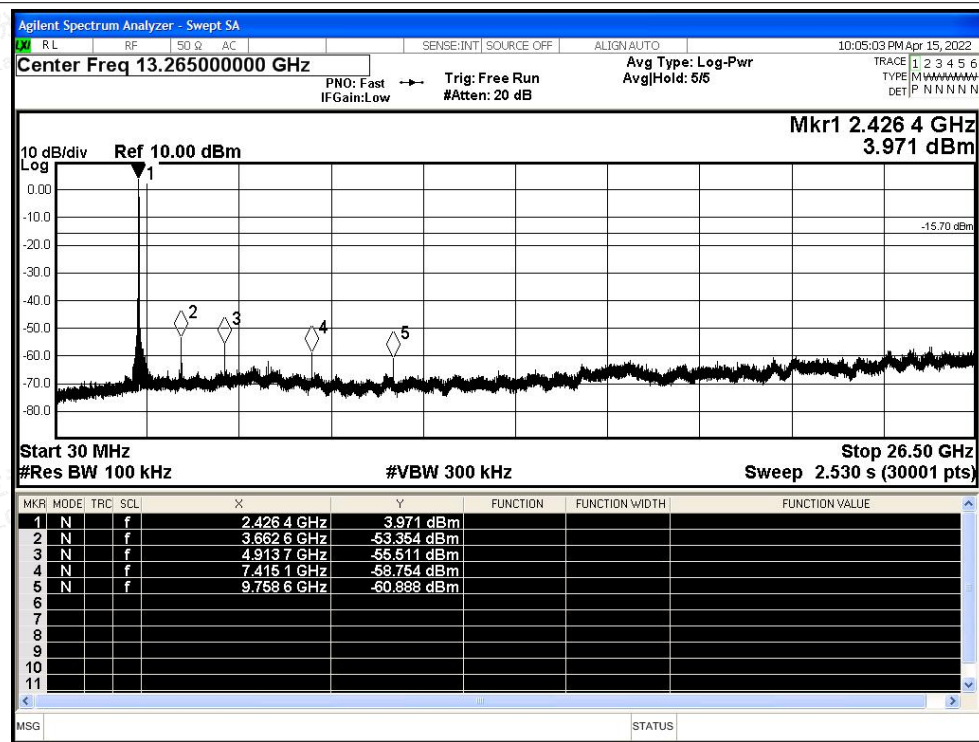
Scan code to check authenticity



## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

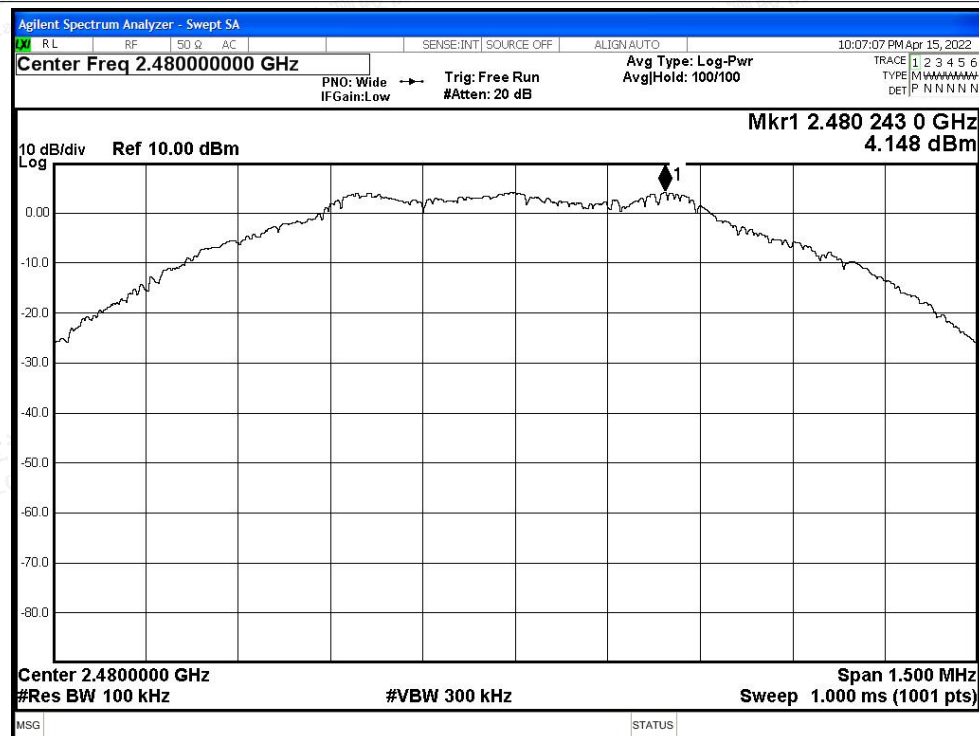
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

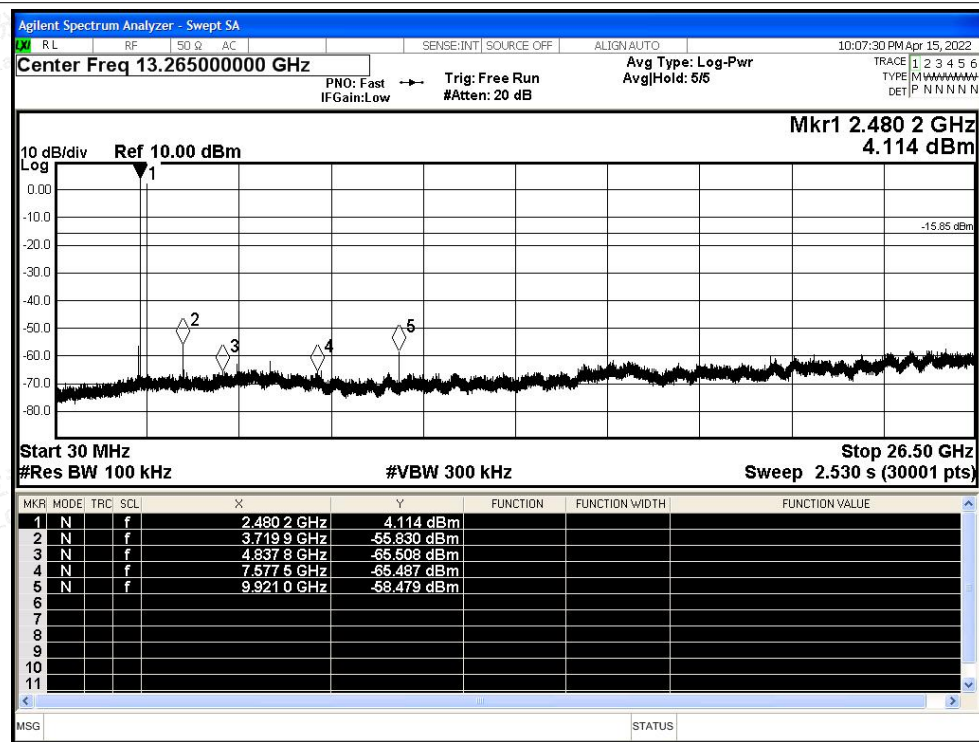
Scan code to check authenticity



## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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

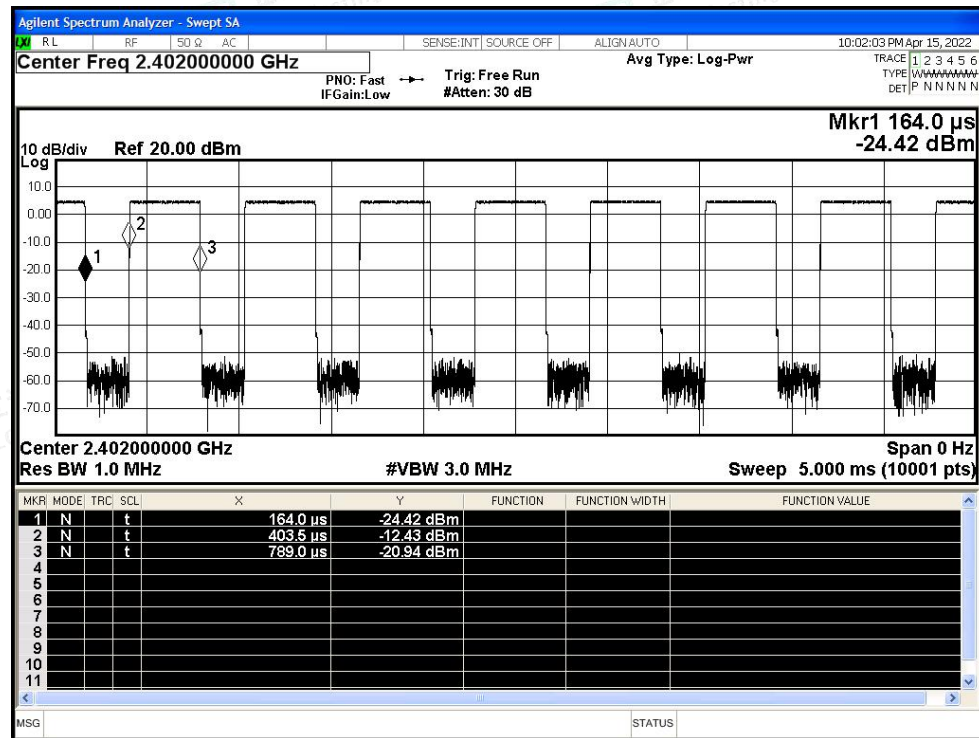
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 61.68          | 2.1                    | 2.59      |
| NVNT      | BLE 1M | 2440            | Ant1    | 61.76          | 2.09                   | 2.59      |
| NVNT      | BLE 1M | 2480            | Ant1    | 61.84          | 2.09                   | 2.59      |



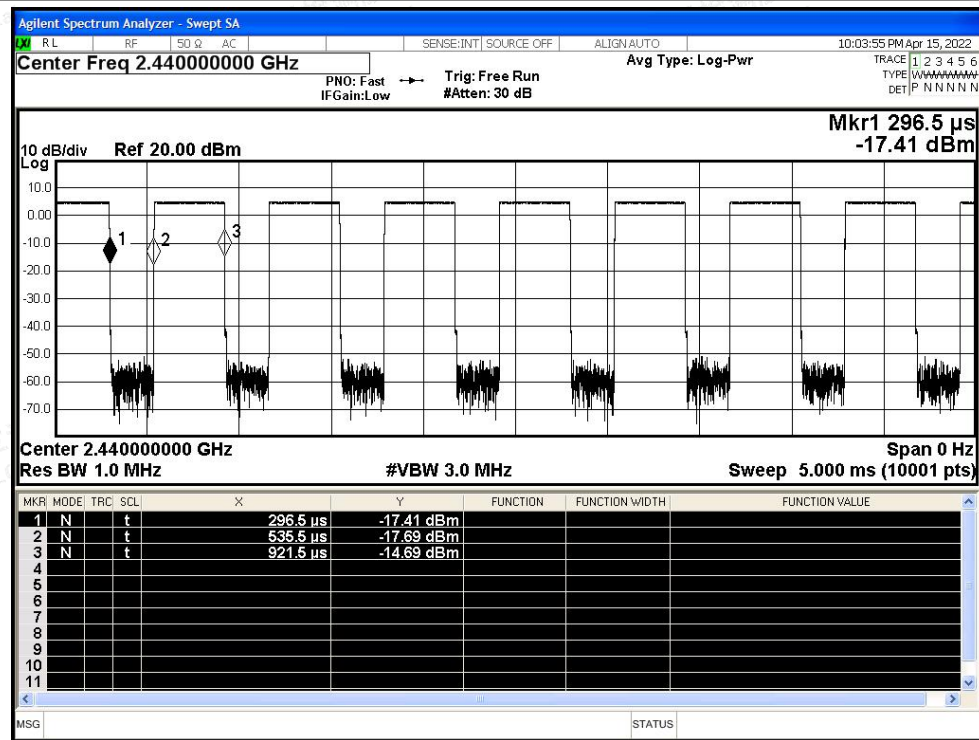


## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1

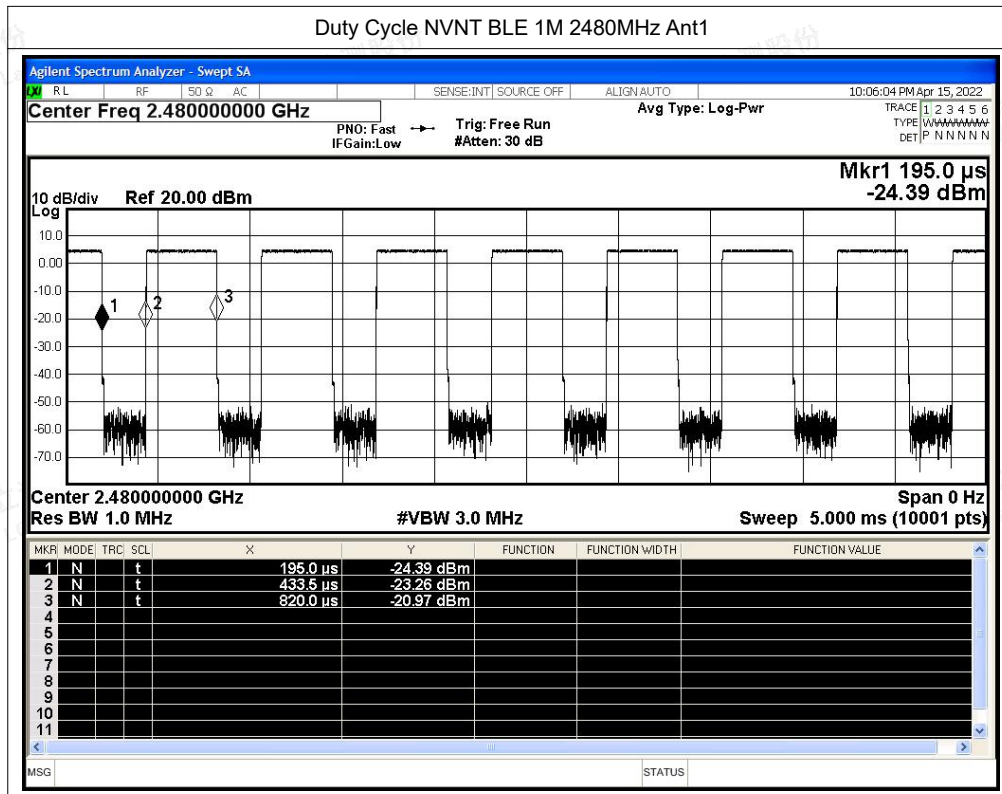


Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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 &amp; 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

| Condition | Mode   | Frequency<br>(MHz) | Antenna | Spur Freq<br>(MHz) | Power<br>(dBm) | Gain<br>(dBi) | E<br>(dBuV/m) | Detector | Limit<br>(dBuV/m) | Verdict |
|-----------|--------|--------------------|---------|--------------------|----------------|---------------|---------------|----------|-------------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | 2310               | -52.35         | 2             | 44.91         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2310               | -61.21         | 2             | 36.05         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2389.296           | -45.66         | 2             | 51.6          | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2388.432           | -60.28         | 2             | 36.98         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2390               | -51.33         | 2             | 45.93         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2390               | -60.51         | 2             | 36.75         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.5             | -50.14         | 2             | 47.12         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.5             | -58.95         | 2             | 38.31         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.536           | -31.4          | 2             | 65.86         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.512           | -58.95         | 2             | 38.31         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2500               | -51.6          | 2             | 45.66         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2500               | -60.44         | 2             | 36.82         | 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

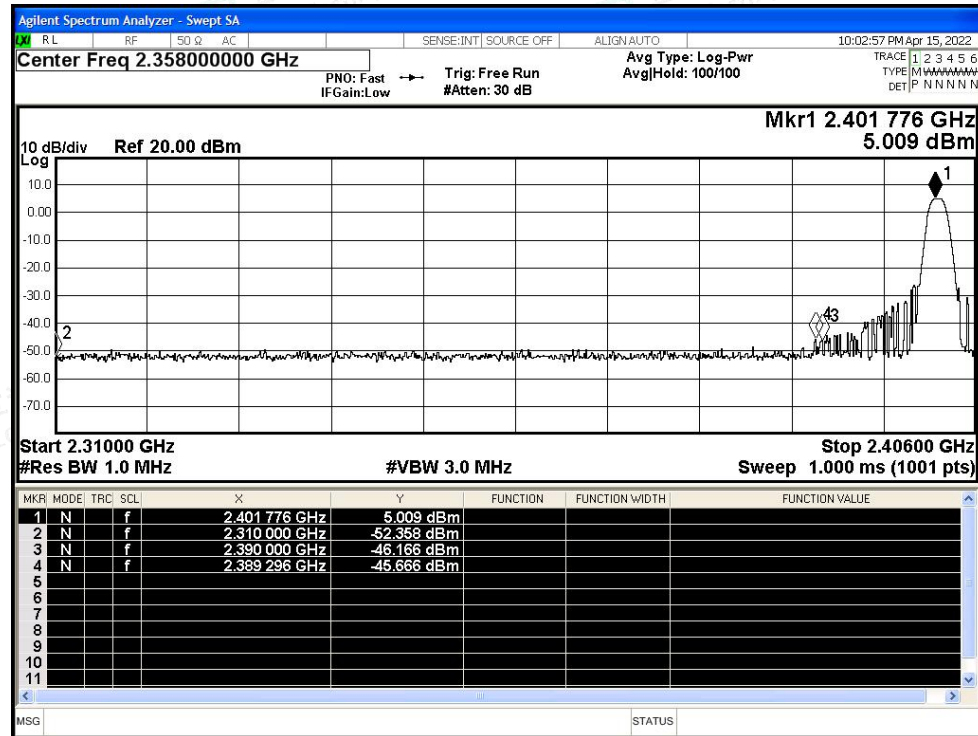
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

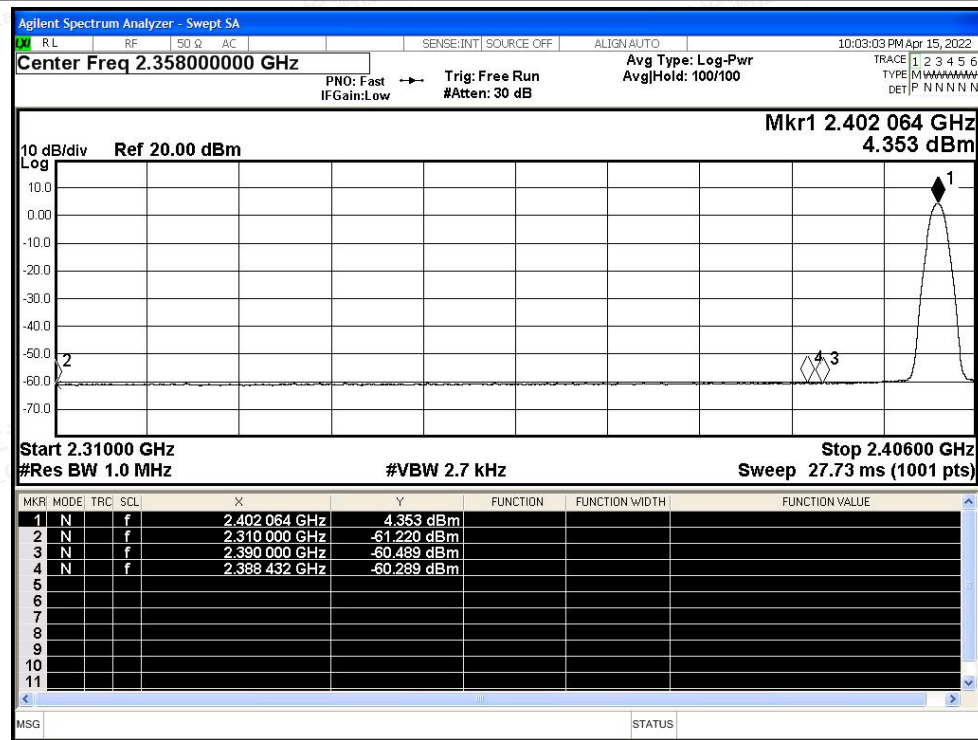


## Test Graphs

## Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



## Restrict Band NVNT BLE 1M 2402MHz Ant1 Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

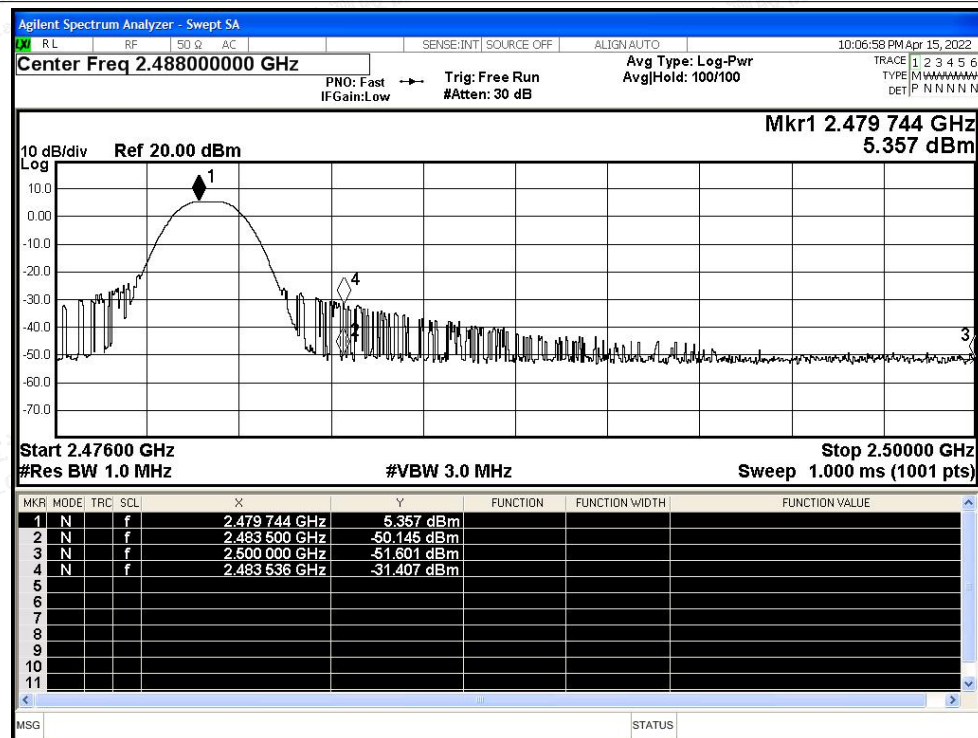
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

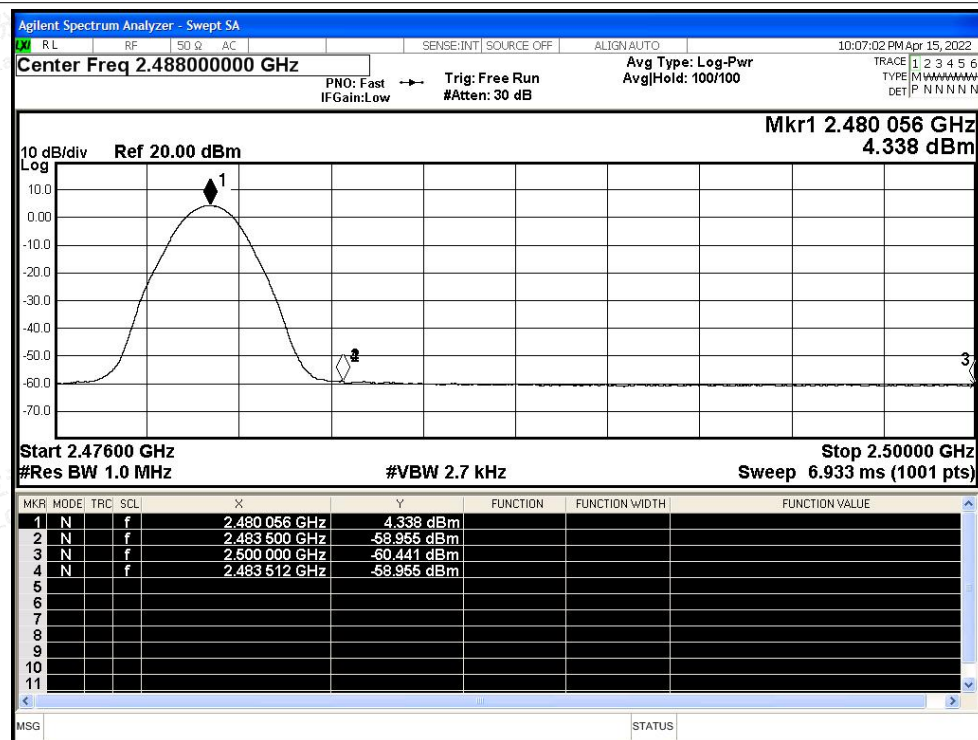
Scan code to check authenticity



## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



## Restrict Band NVNT BLE 1M 2480MHz Ant1 Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 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