



## Appendix A

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

Product Name: 68Key 3-mode (wired, 2.4G, Bluetooth) mechanical keyboard

Test Model: GK-68

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.8° C   |
| Relative Humidity: | 52.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Joker Hu  |
| Supervised by:     | Ling Zhu  |



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.1 -6dB Bandwidth

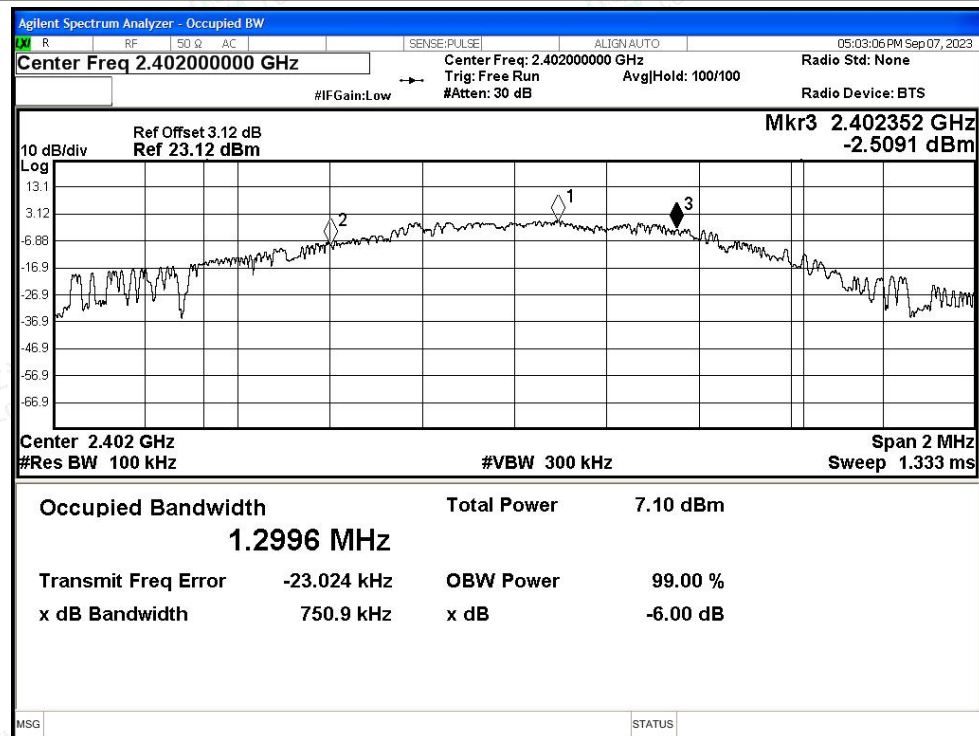
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.751                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.78                  | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.726                 | $\geq 0.5$                  | Pass    |



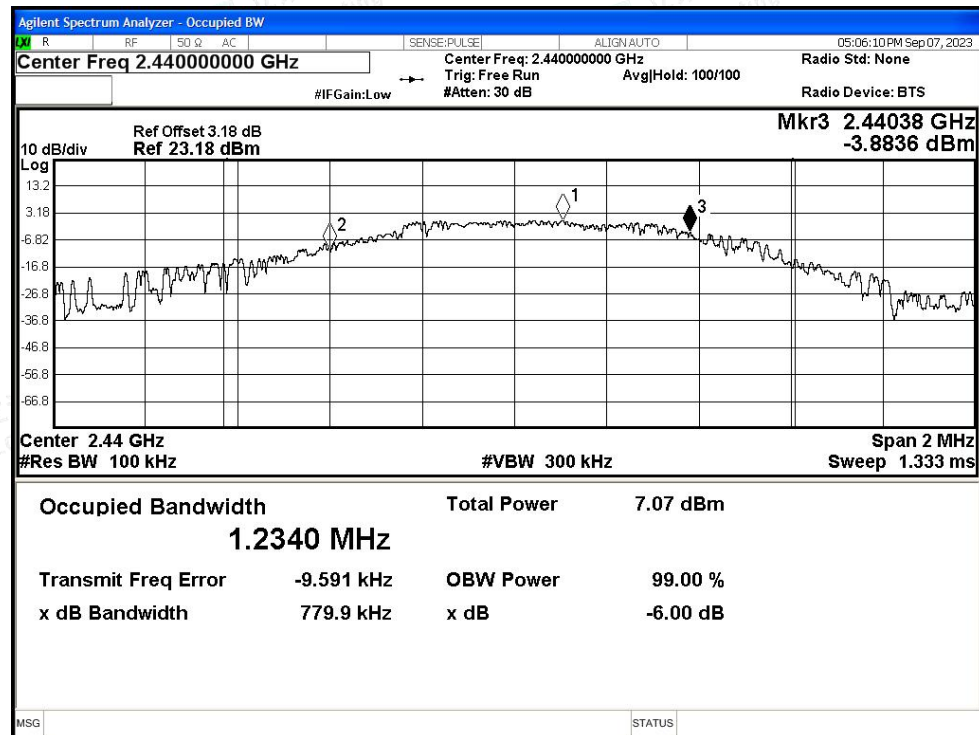


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

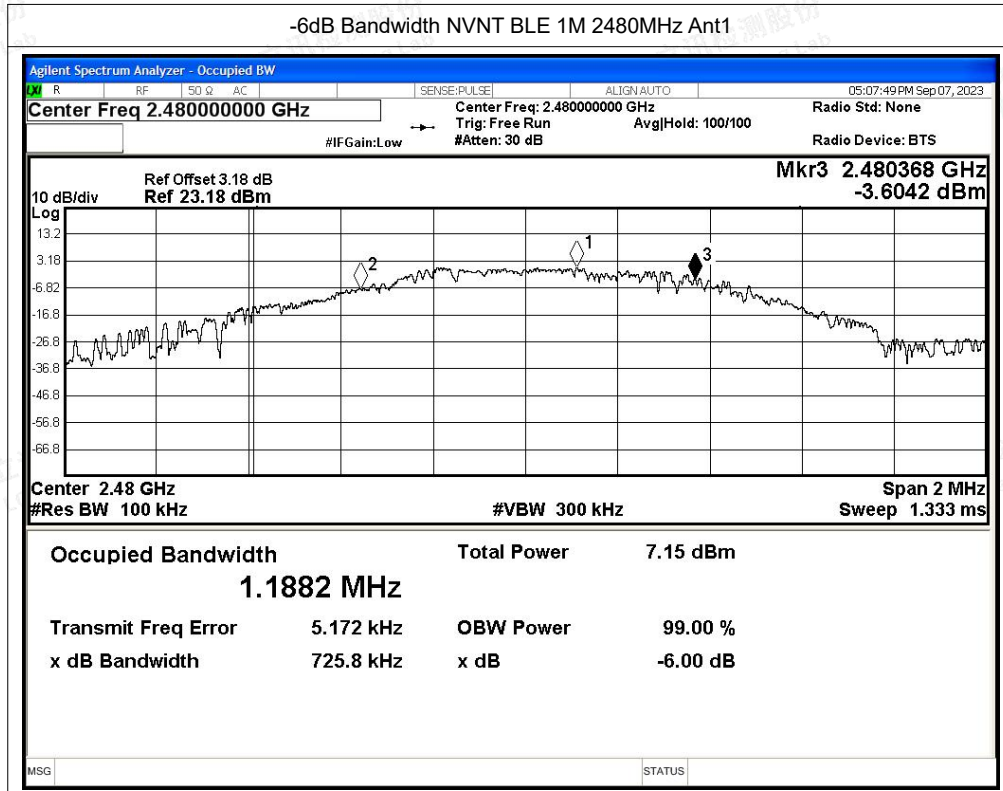


Shenzhen LCS Compliance Testing Laboratory Ltd.

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





## A.2 Maximum Conducted Output Power

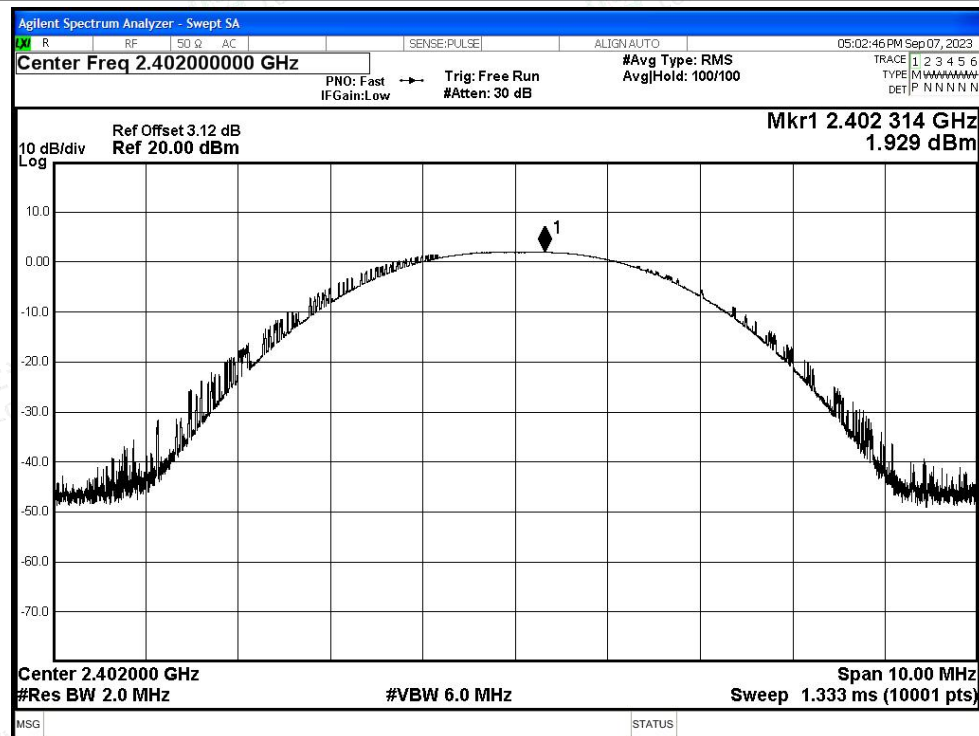
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 1.93                  | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 1.8                   | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2.19                  | 30          | Pass    |



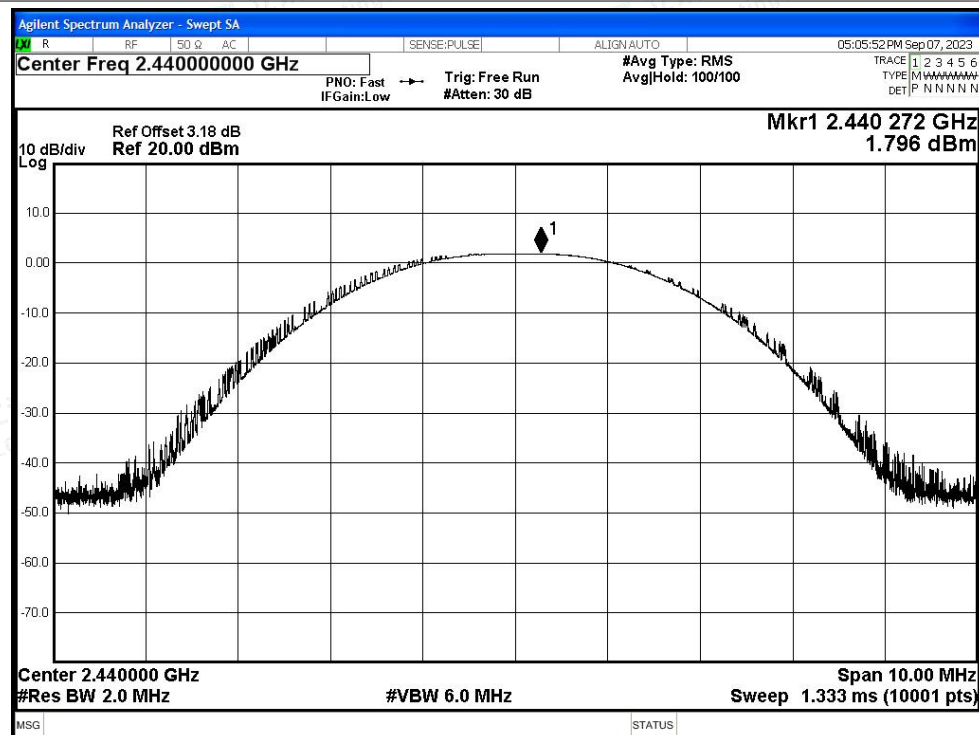


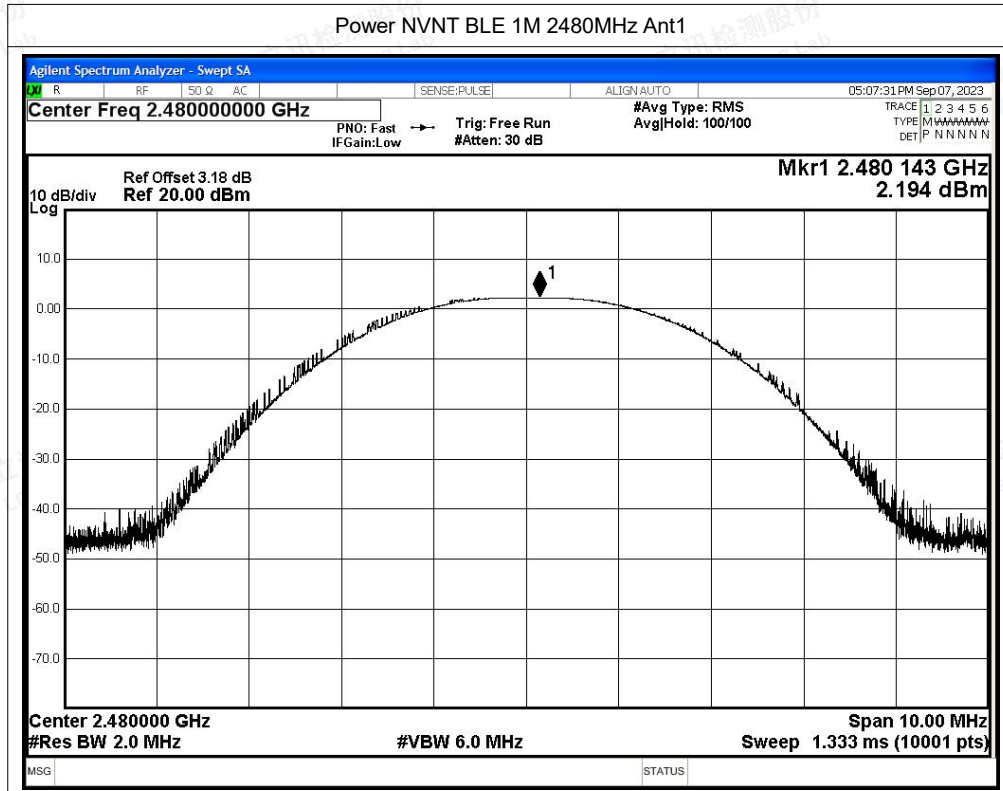
## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1







### A.3 Maximum Power Spectral Density Level

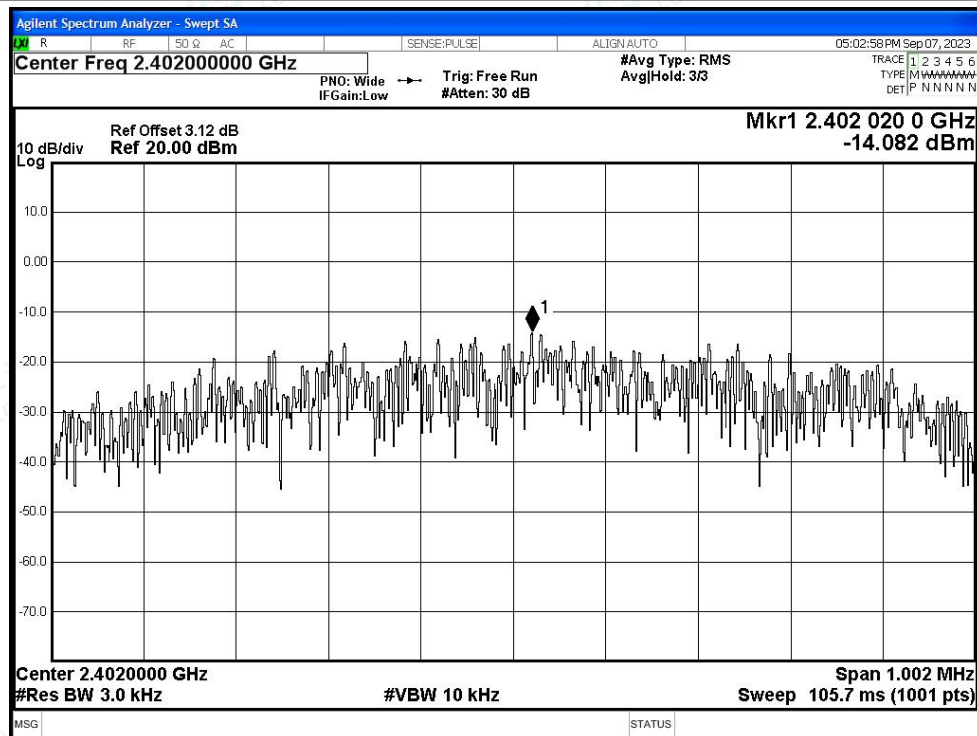
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -14.08                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -13.78                   | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -13.55                   | 8                | Pass    |



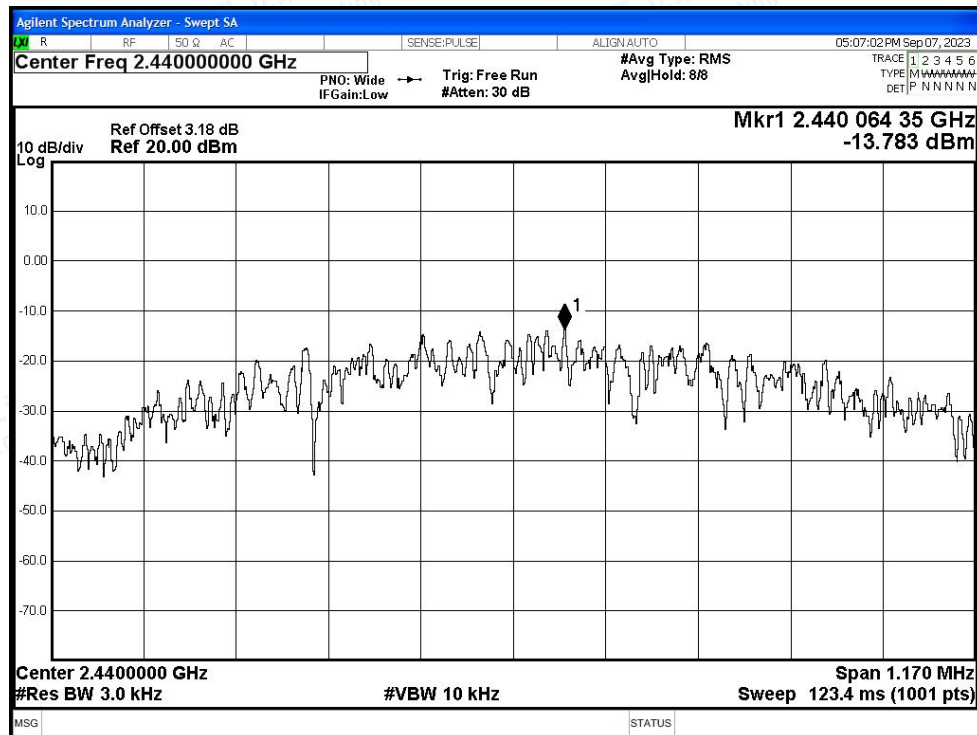


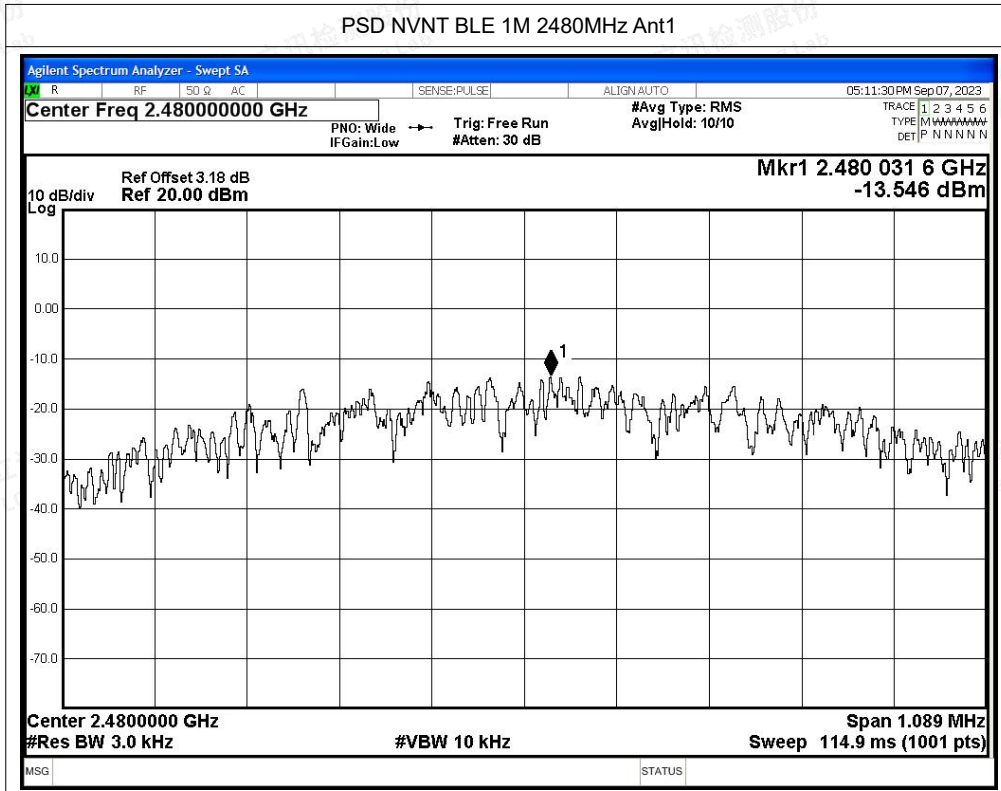
## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1







### A.4 Band Edge

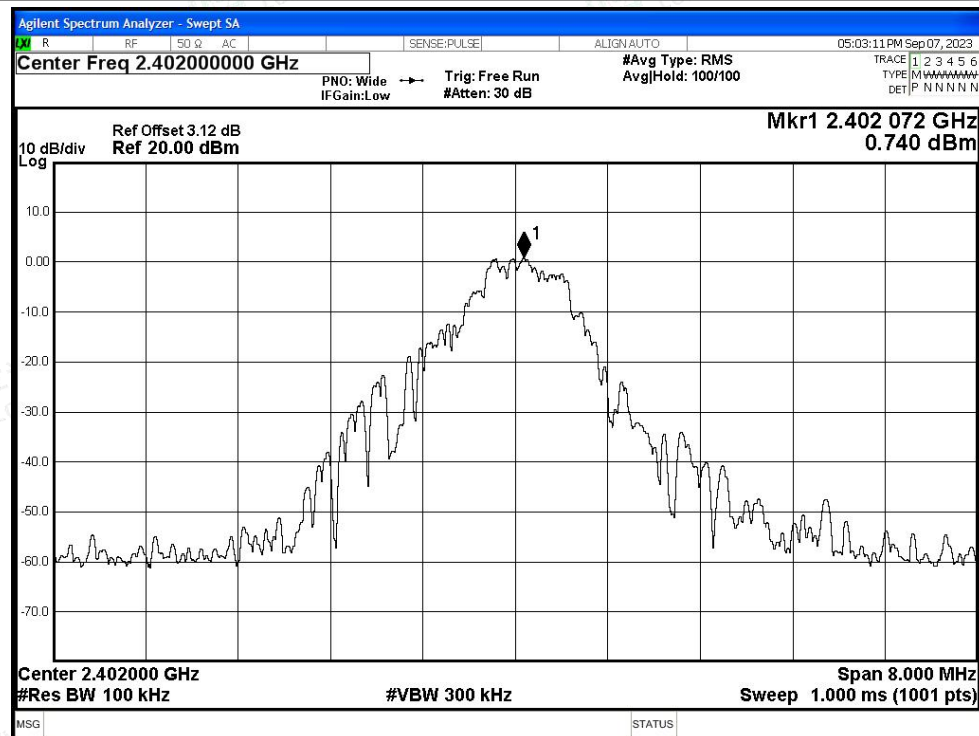
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -52.11          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -56.51          | -20         | Pass    |



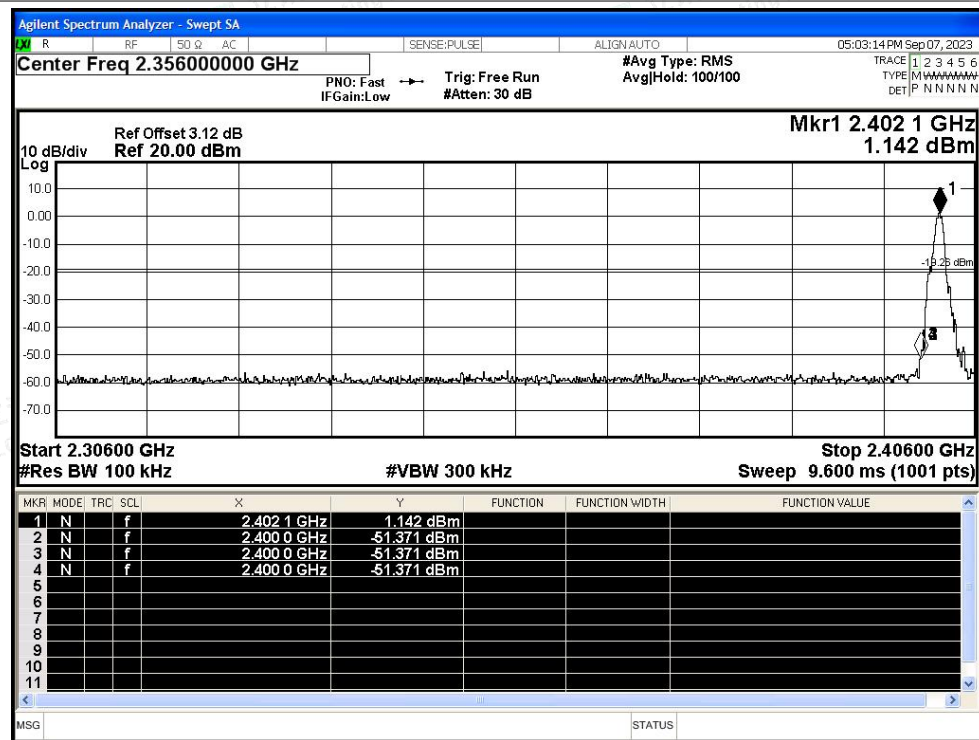


## Test Graphs

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



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

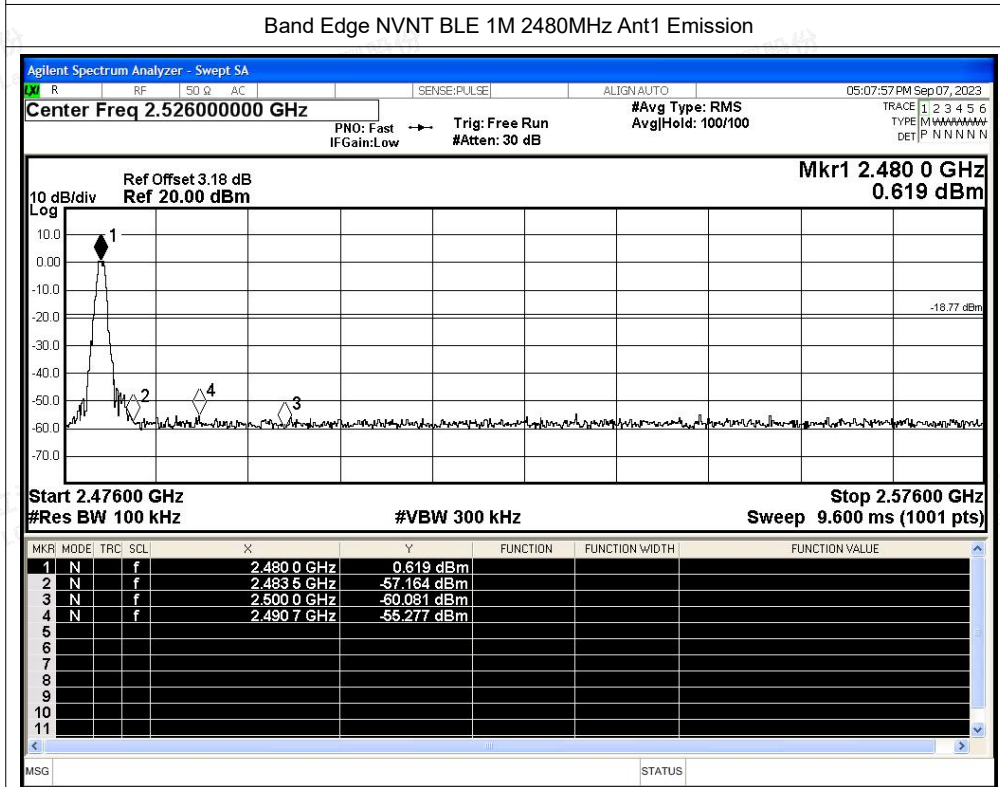
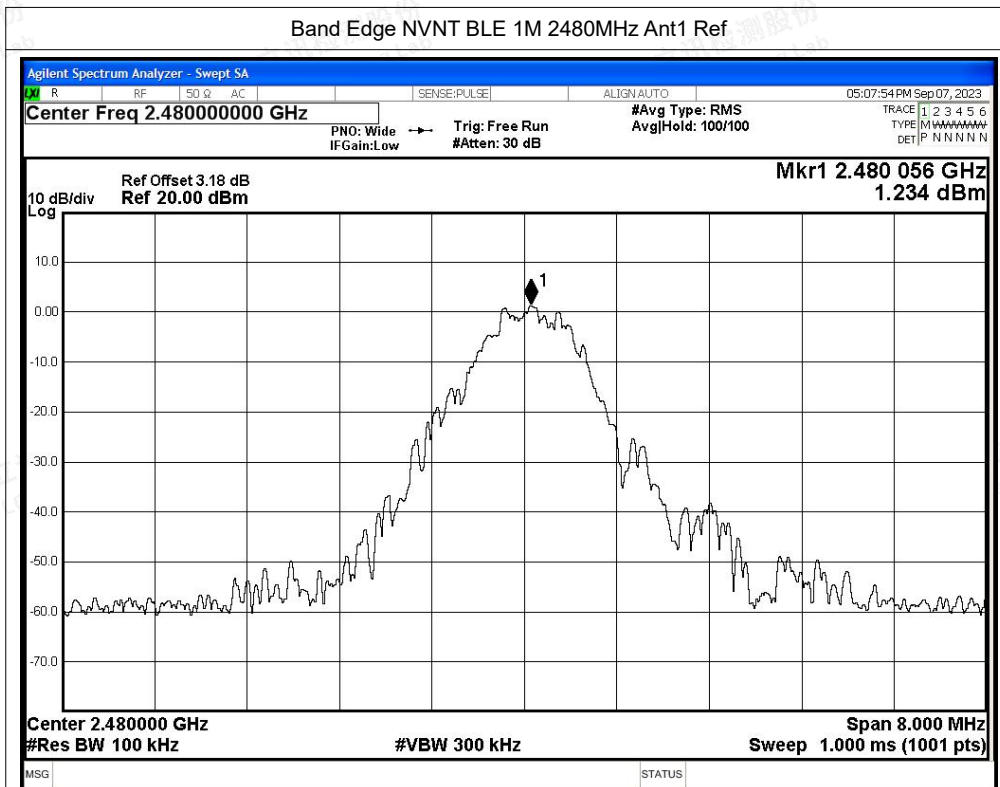


Shenzhen LCS Compliance Testing Laboratory Ltd.

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



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



### A.5 Conducted RF Spurious Emission

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -53.09          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -47.73          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -52.95          | -20         | Pass    |



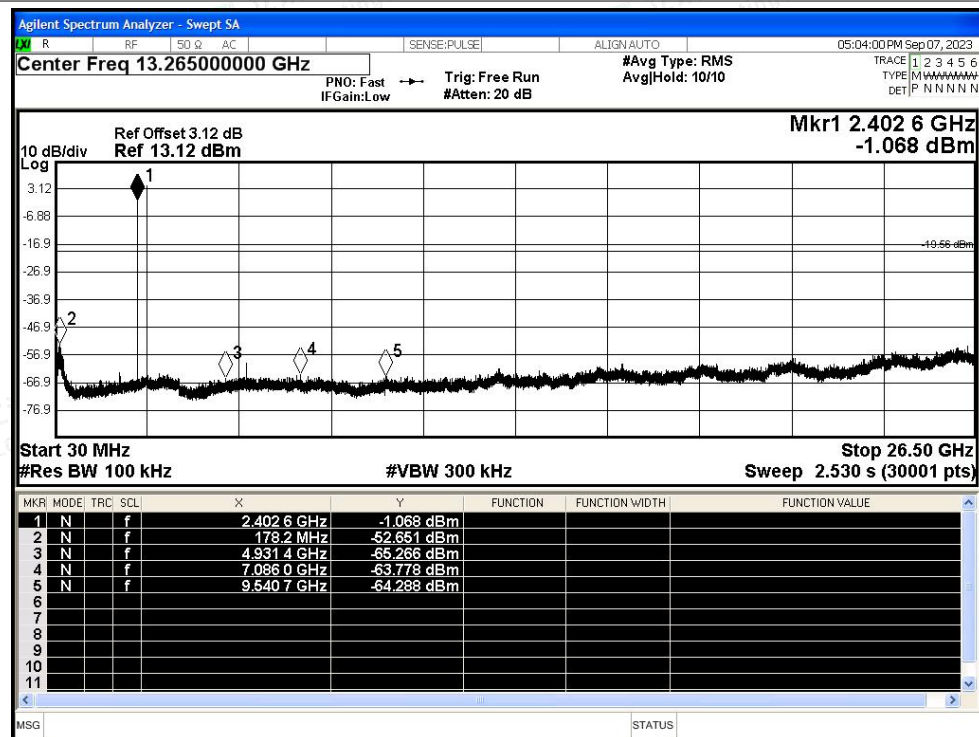


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

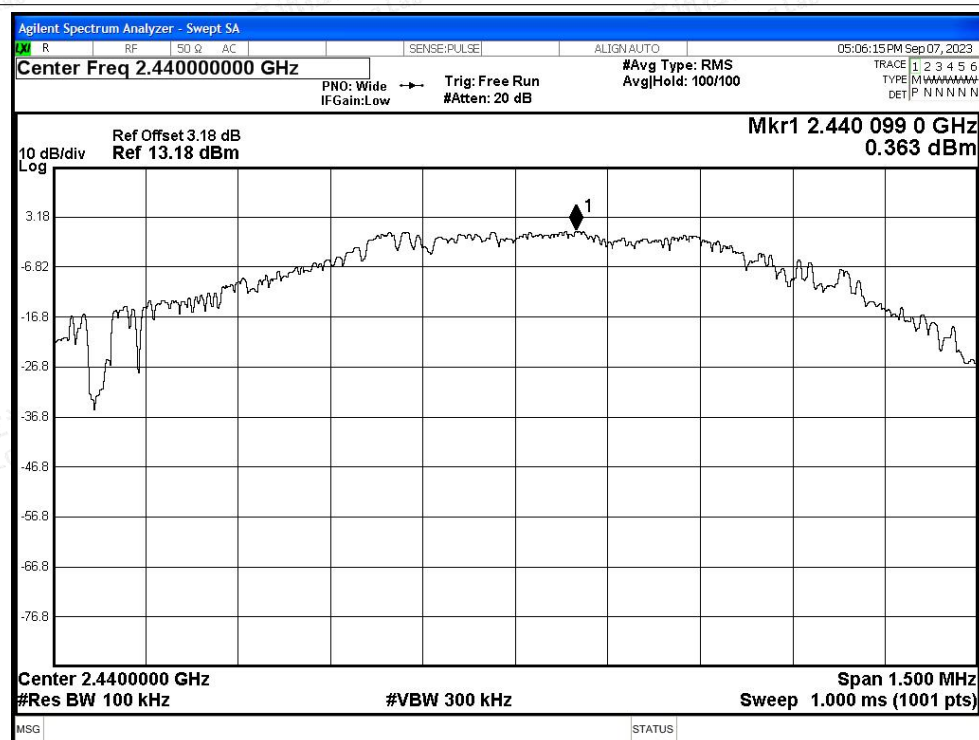
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

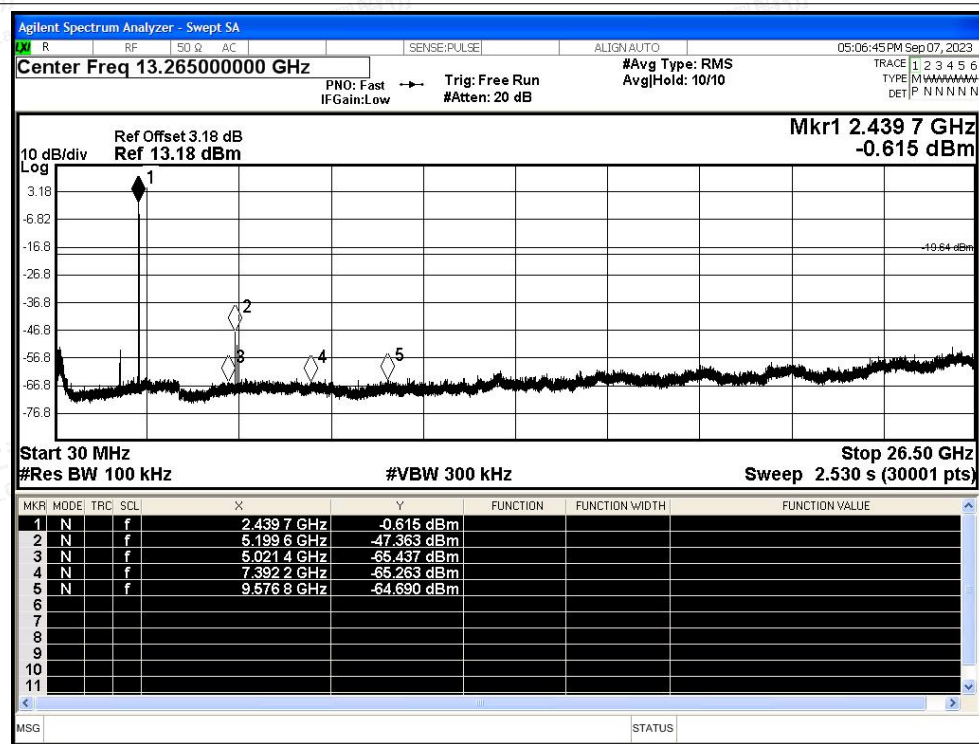
Scan code to check authenticity



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



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



Shenzhen LCS Compliance Testing Laboratory Ltd.

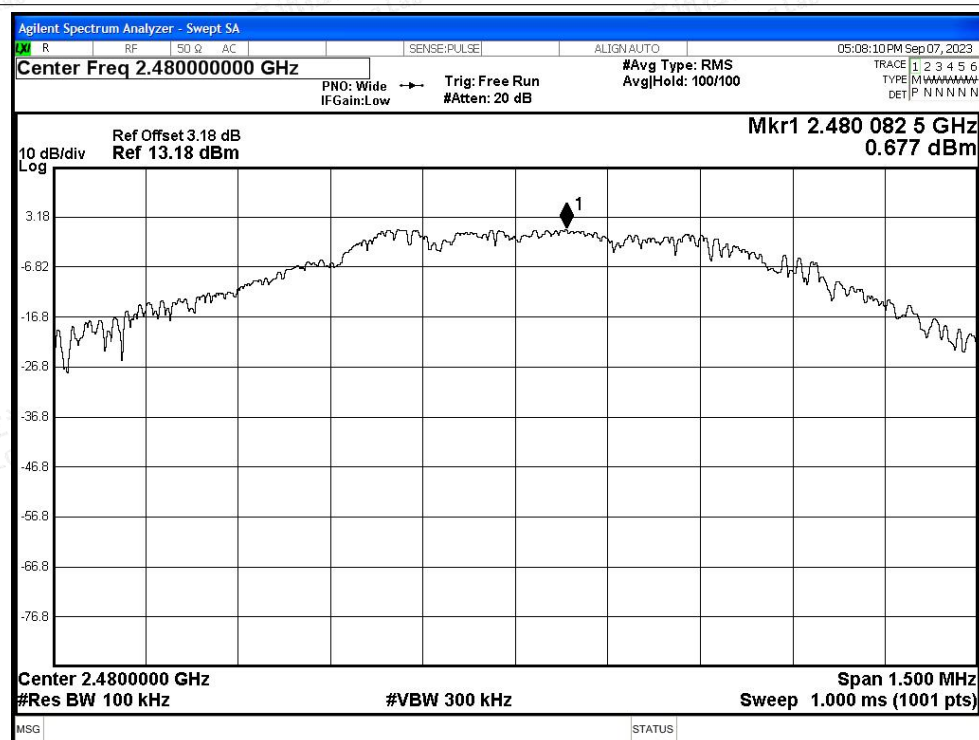
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

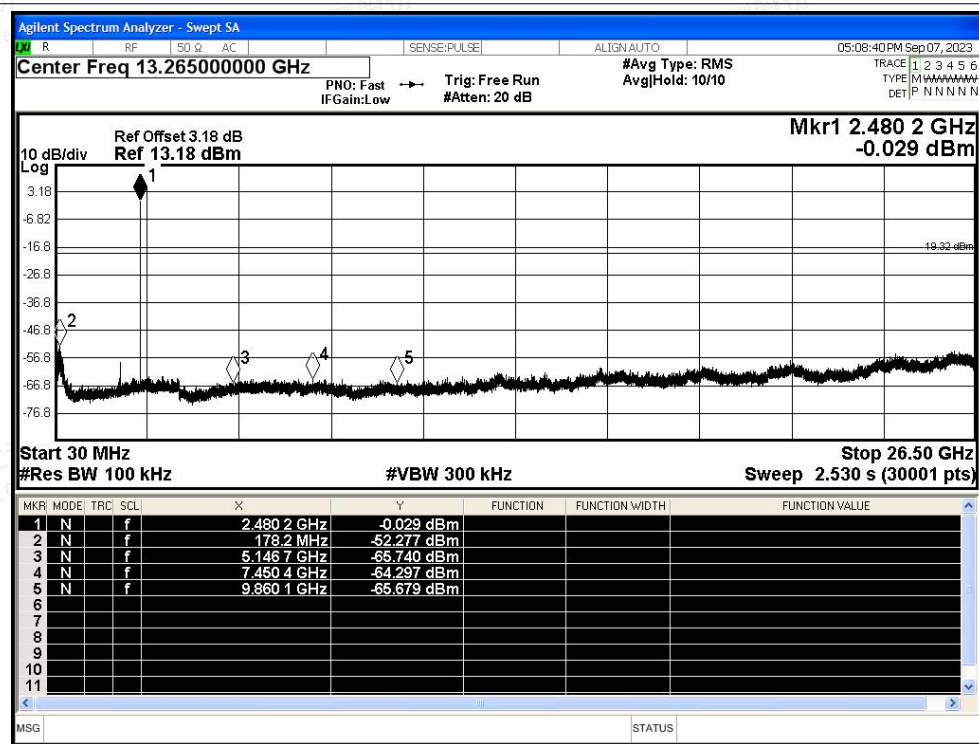
Scan code to check authenticity



## 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



A.6 Duty Cycle

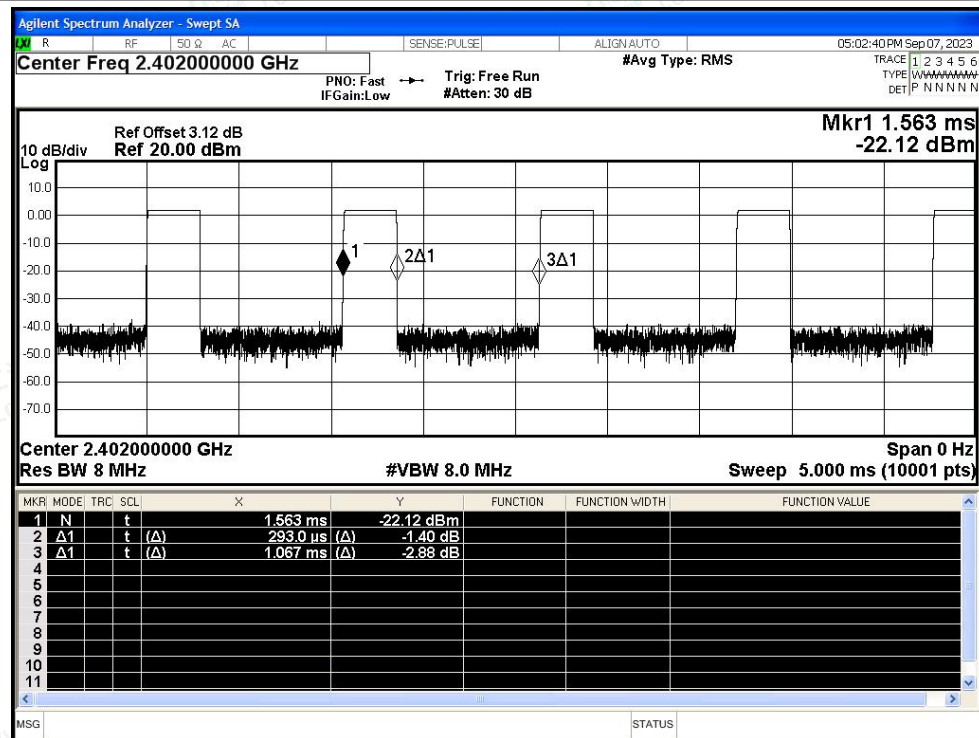
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 27.47          | 5.61                   | 3.41      |
| NVNT      | BLE 1M | 2440            | Ant1    | 27.45          | 5.61                   | 3.41      |
| NVNT      | BLE 1M | 2480            | Ant1    | 27.4           | 5.62                   | 3.42      |



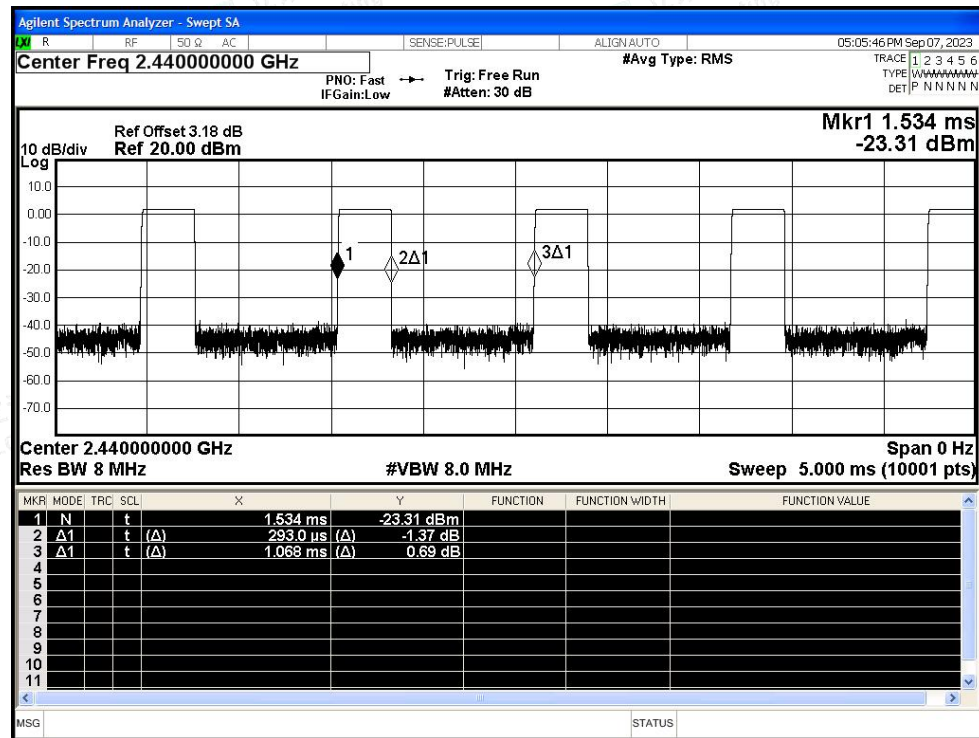


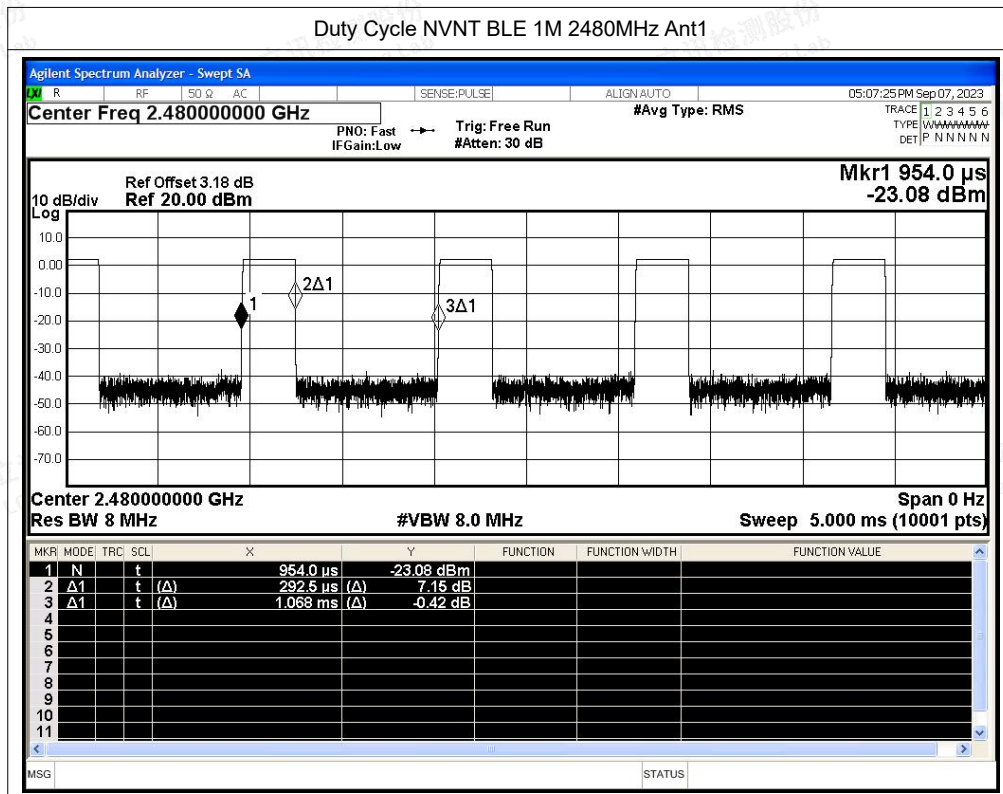
## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1







## A.7 Restrict Band

| Condition | Mode   | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -49.14      | 2          | 48.12      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -55.77      | 2          | 41.49      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2382.384        | -46.45      | 2          | 50.81      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2387.376        | -55.22      | 2          | 42.04      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -47.52      | 2          | 49.74      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -55.58      | 2          | 41.68      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -48.44      | 2          | 48.82      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -52.66      | 2          | 44.6       | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.608        | -42.86      | 2          | 54.4       | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.512        | -52.66      | 2          | 44.6       | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -49.55      | 2          | 47.71      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -55.05      | 2          | 42.21      | Average  | 54             | Pass    |

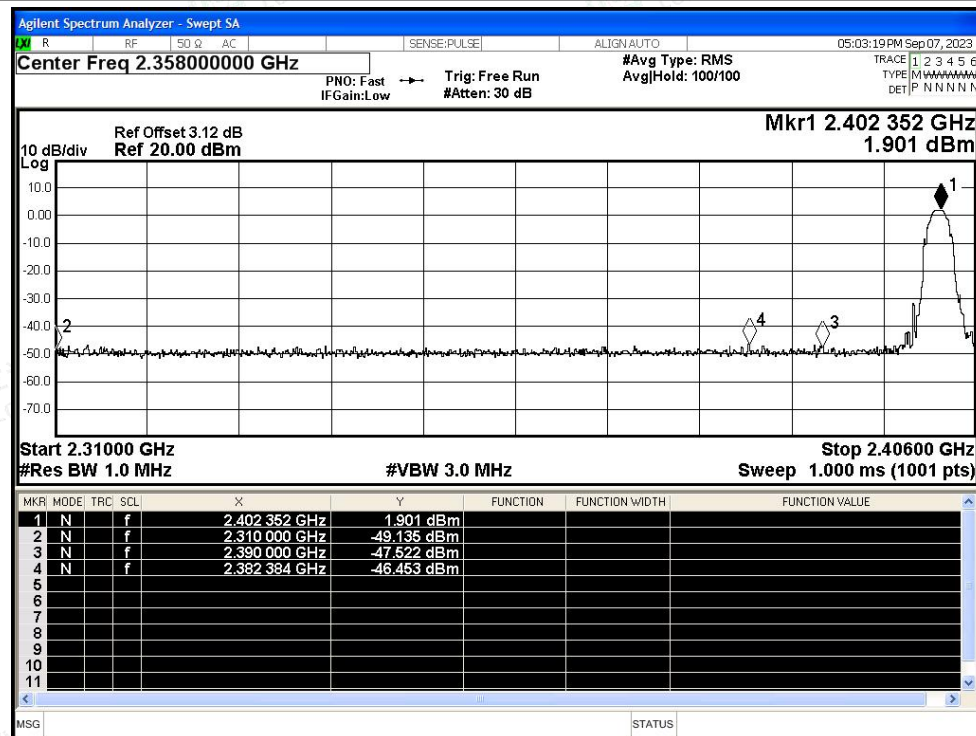


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
Scan code to check authenticity

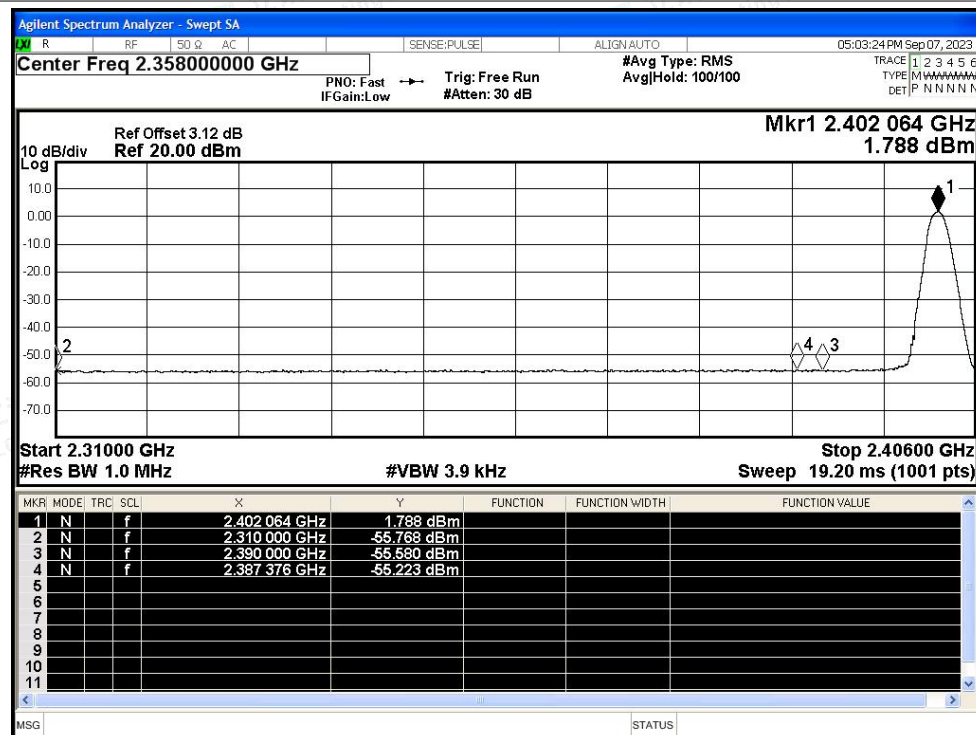


## Test Graphs

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



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



Shenzhen LCS Compliance Testing Laboratory Ltd.

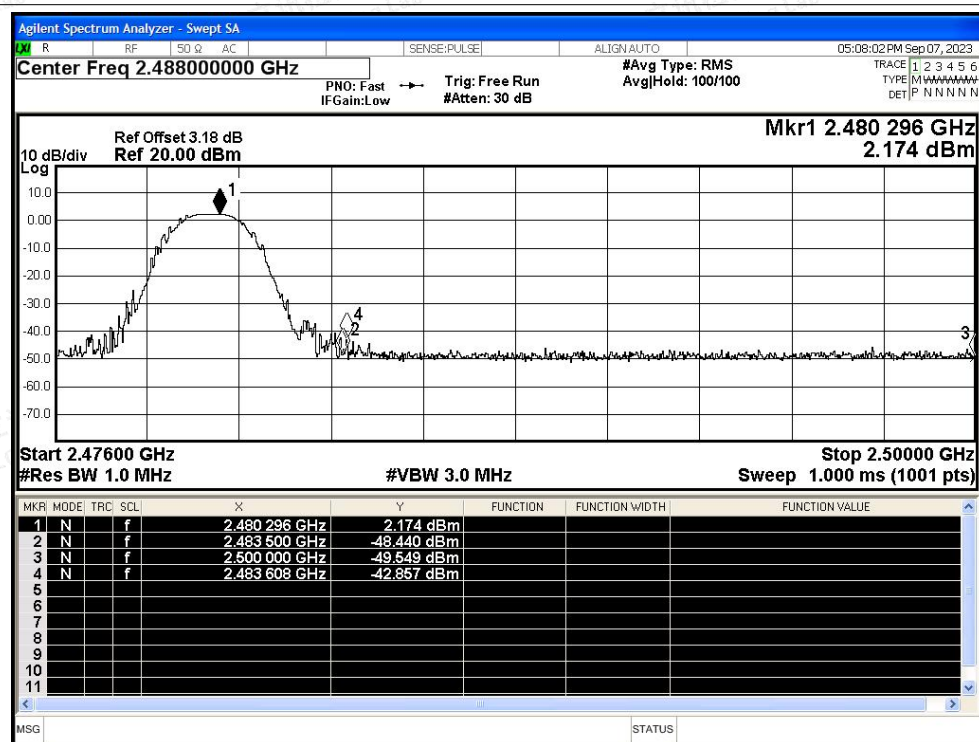
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

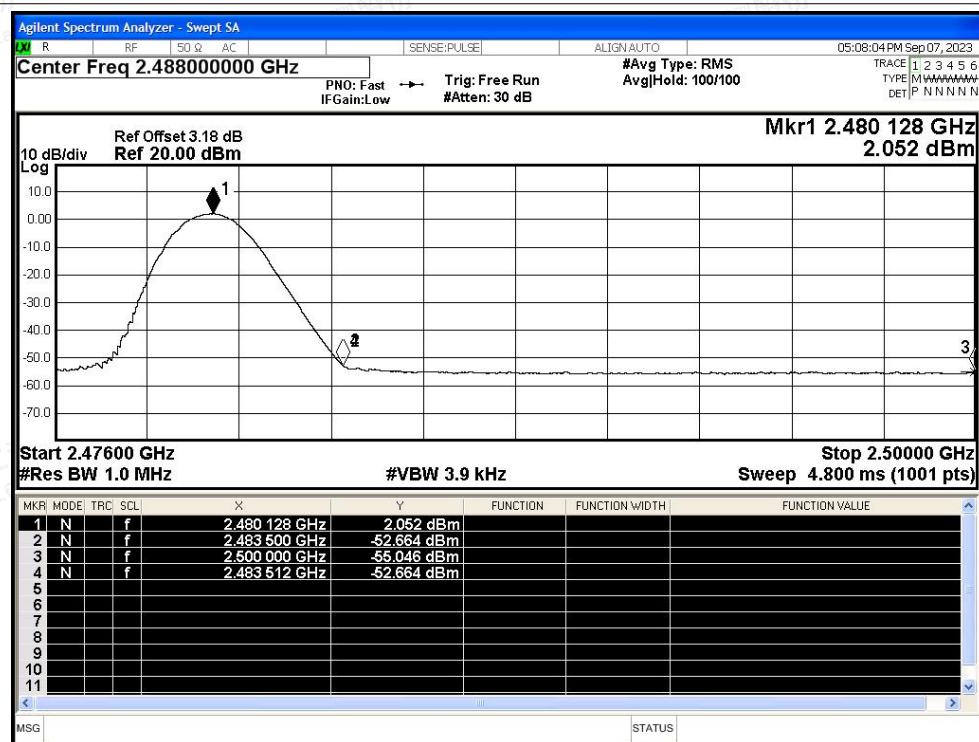
Scan code to check authenticity



## 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