



## Appendix A

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

Product Name: SMPS07

Test Model: SMPS07

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.1°C    |
| Relative Humidity: | 52.3%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Jay Luo   |
| Supervised by:     | Nick Peng |



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

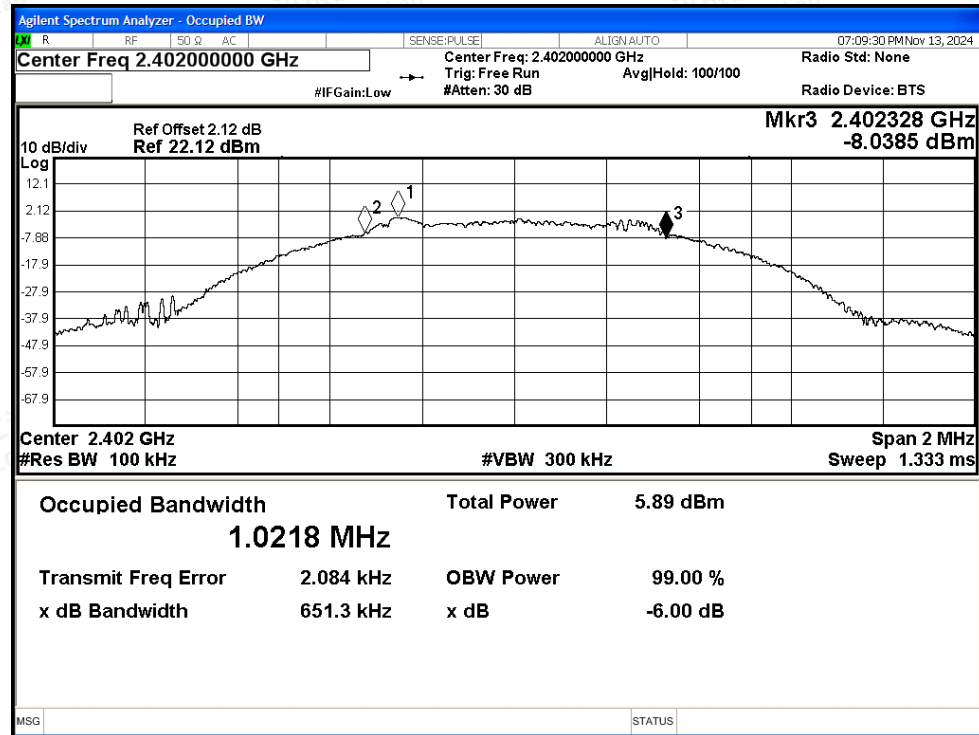
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.651                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.657                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.656                 | $\geq 0.5$                  | Pass    |



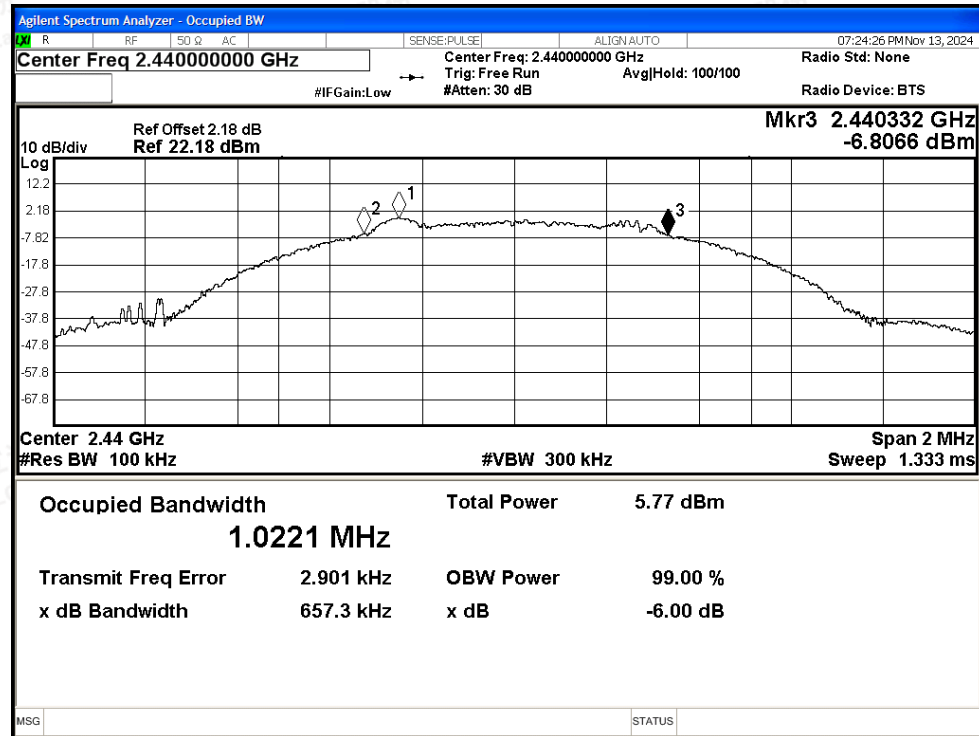


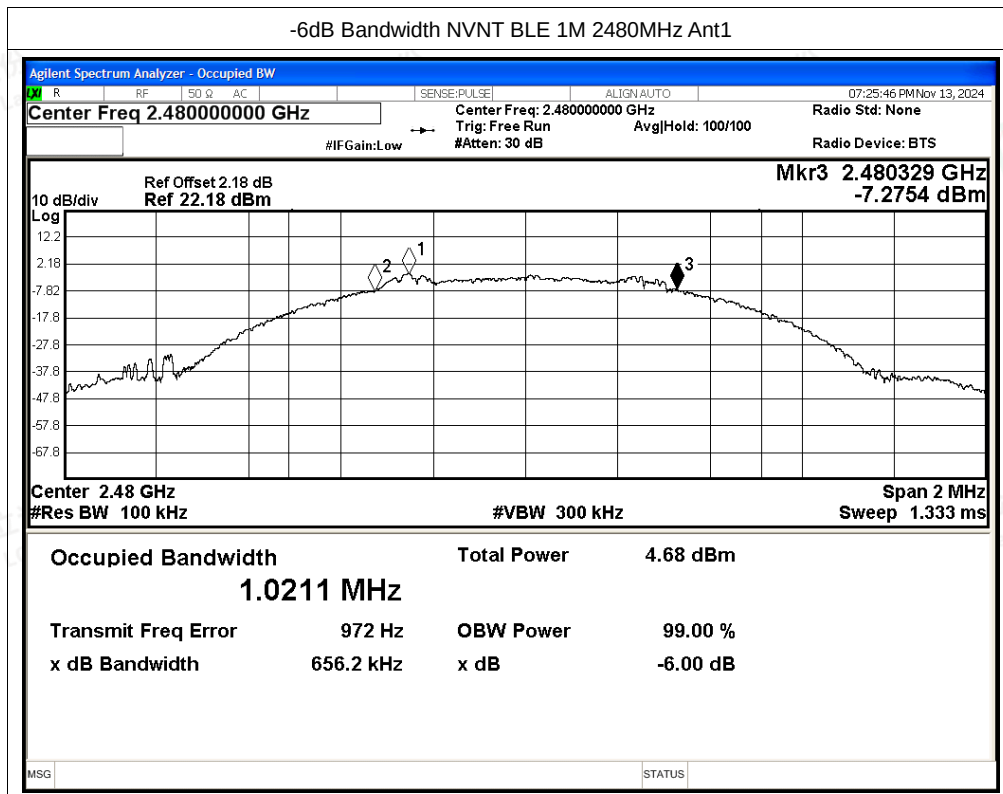
## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1







## A.2 Maximum Conducted Output Power

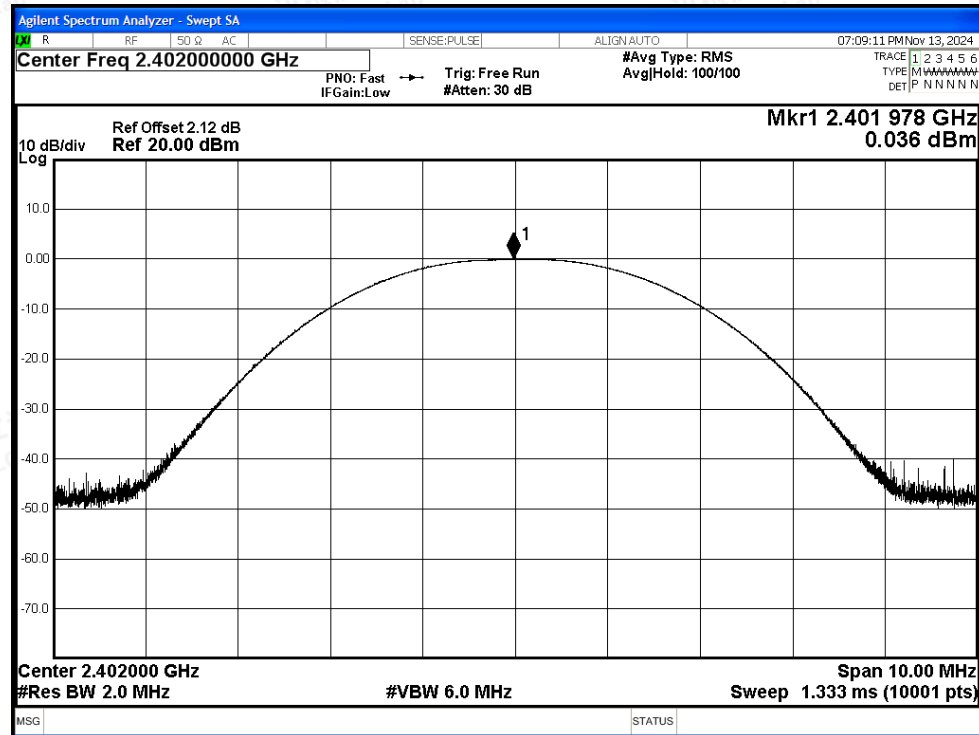
| Condition | Mode   | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.04              | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -0.08             | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -1.16             | 30          | Pass    |



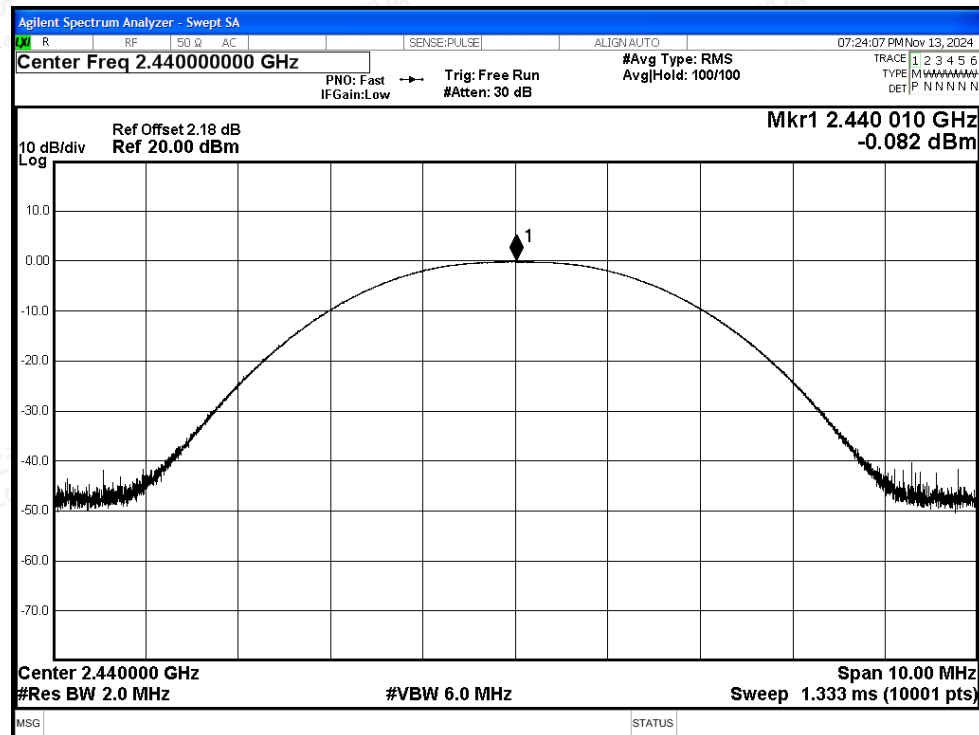


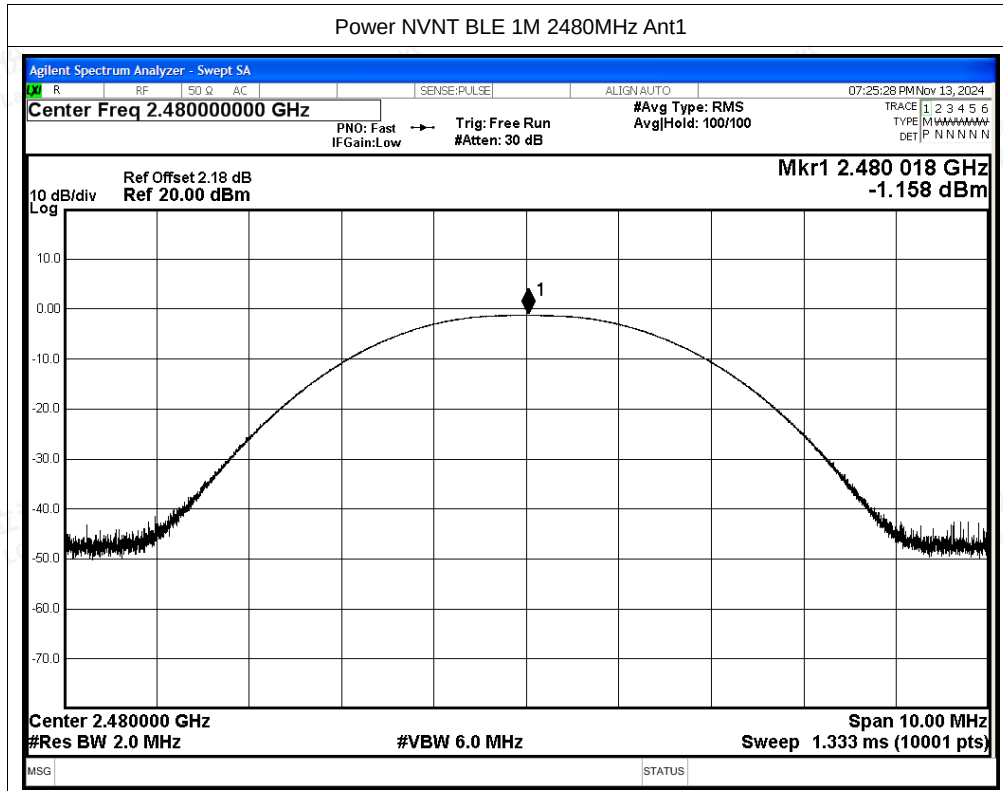
## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1







### A.3 Maximum Power Spectral Density Level

| Condition | Mode   | Frequency<br>(MHz) | Antenna | Total PSD<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Verdict |
|-----------|--------|--------------------|---------|-------------------------|---------------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | -16.45                  | 8                   | Pass    |
| NVNT      | BLE 1M | 2440               | Ant1    | -16.89                  | 8                   | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | -17.82                  | 8                   | Pass    |

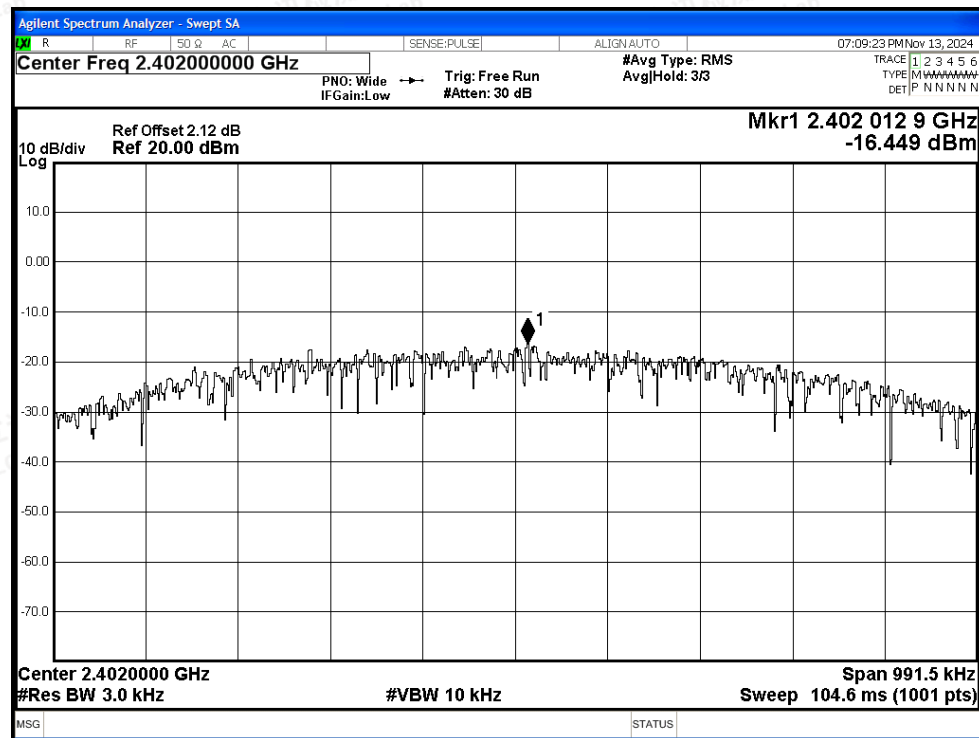




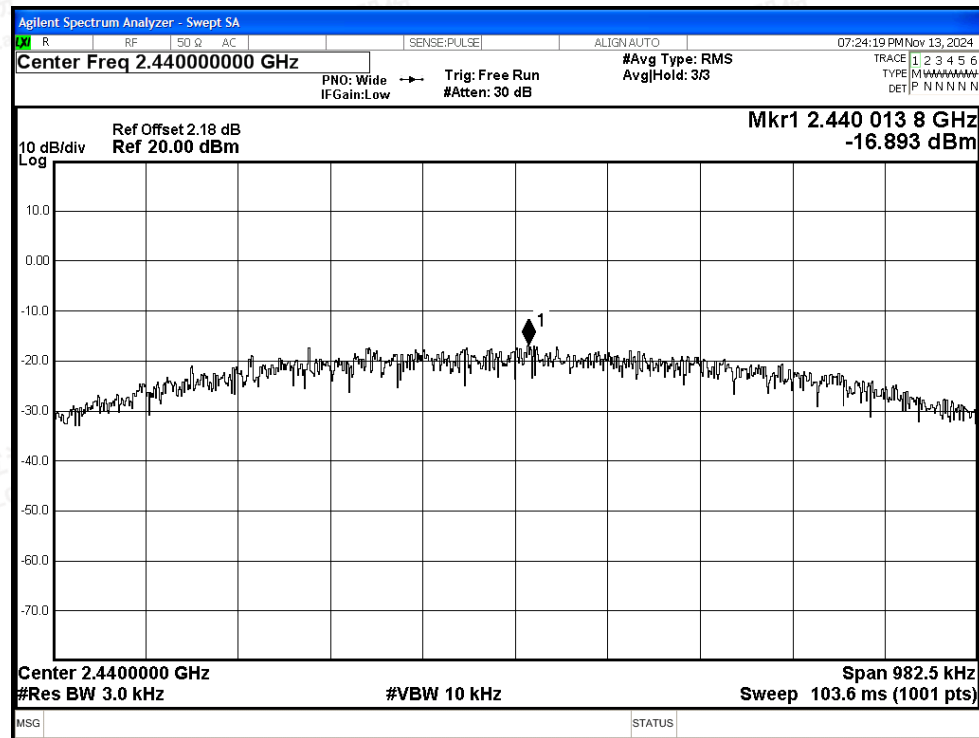


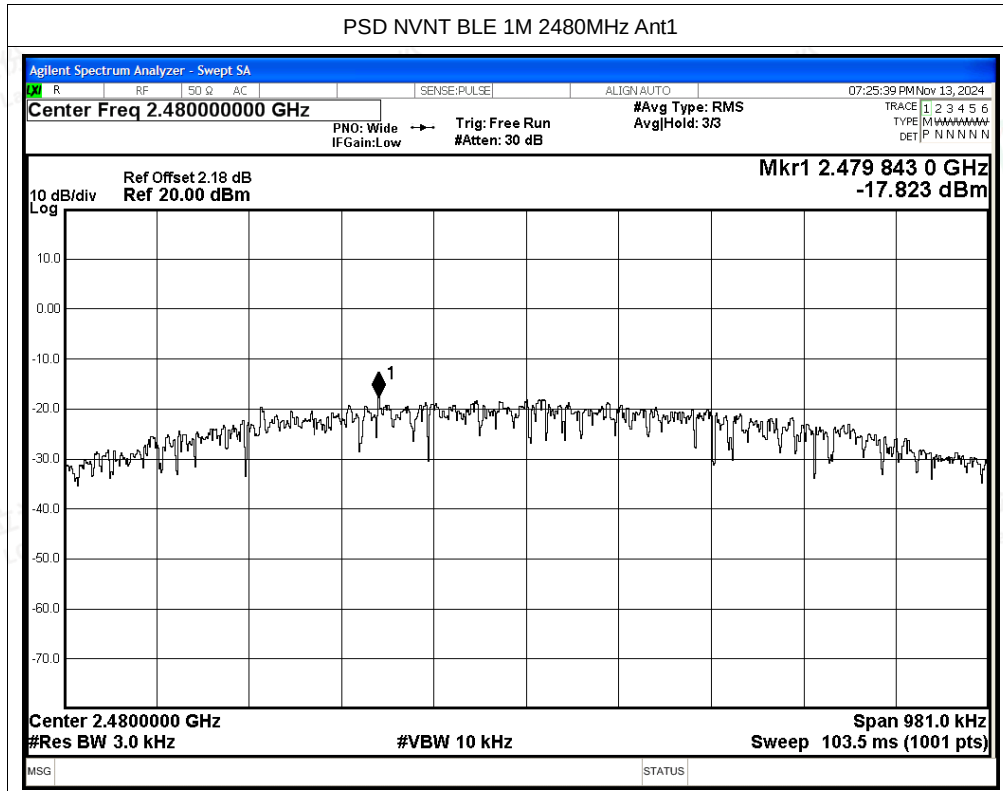
## Test Graphs

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    | -55.7           | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -55.79          | -20         | Pass    |

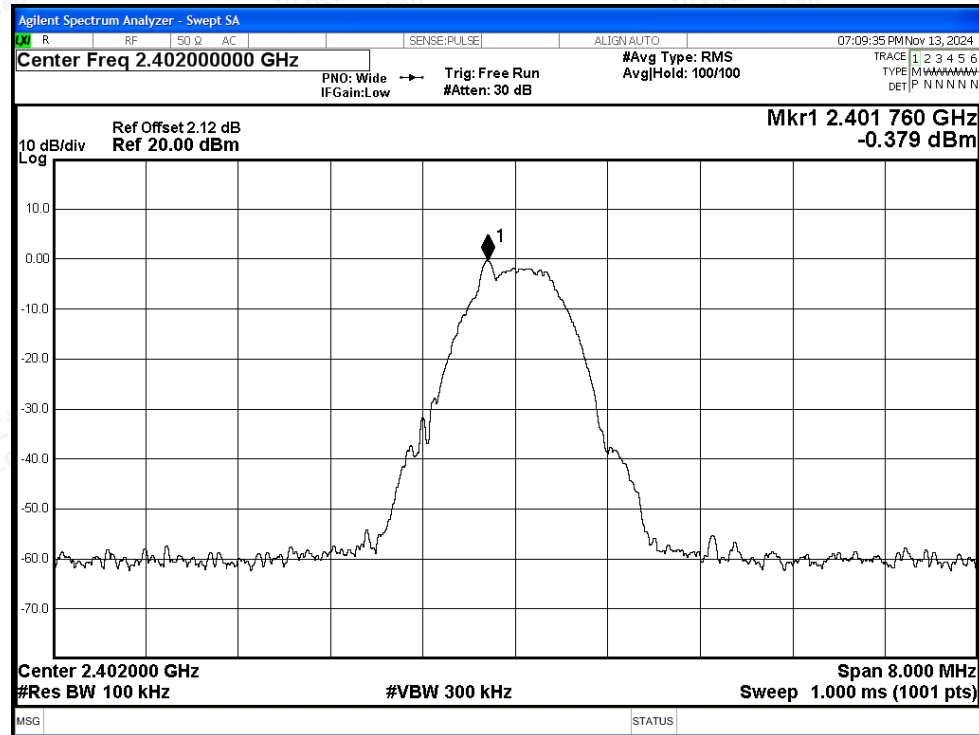


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)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

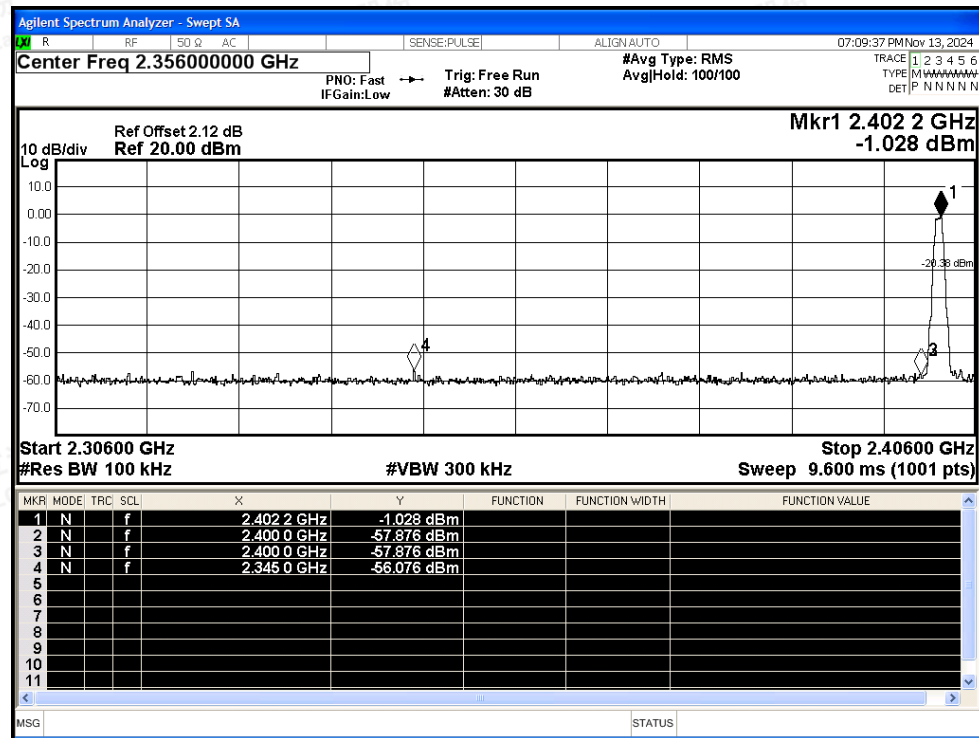


## Test Graphs

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

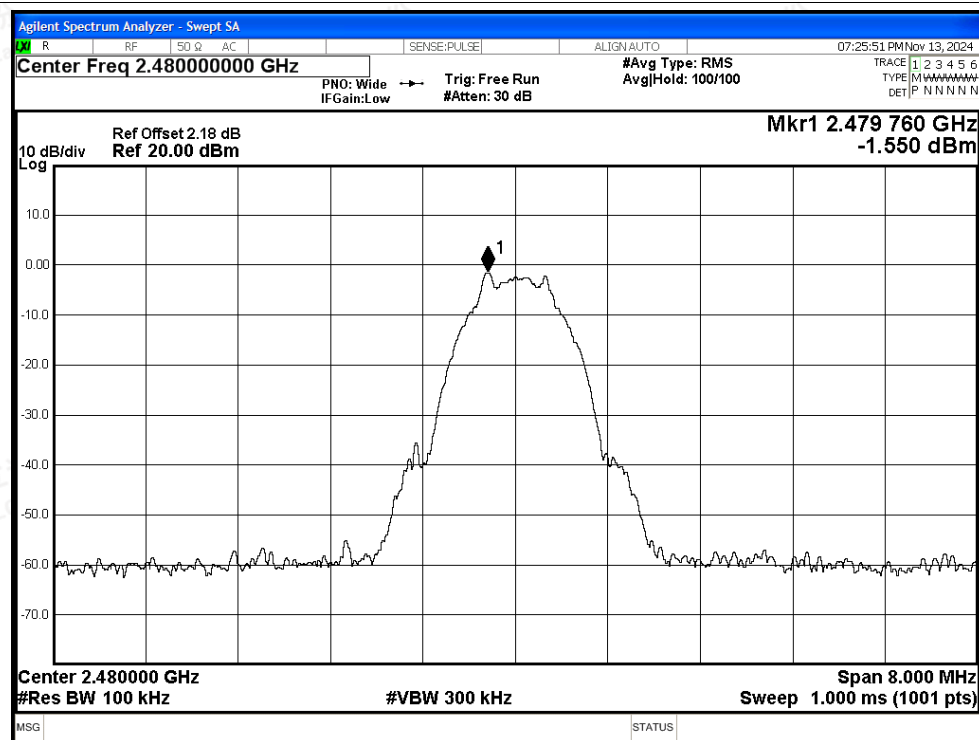


## Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

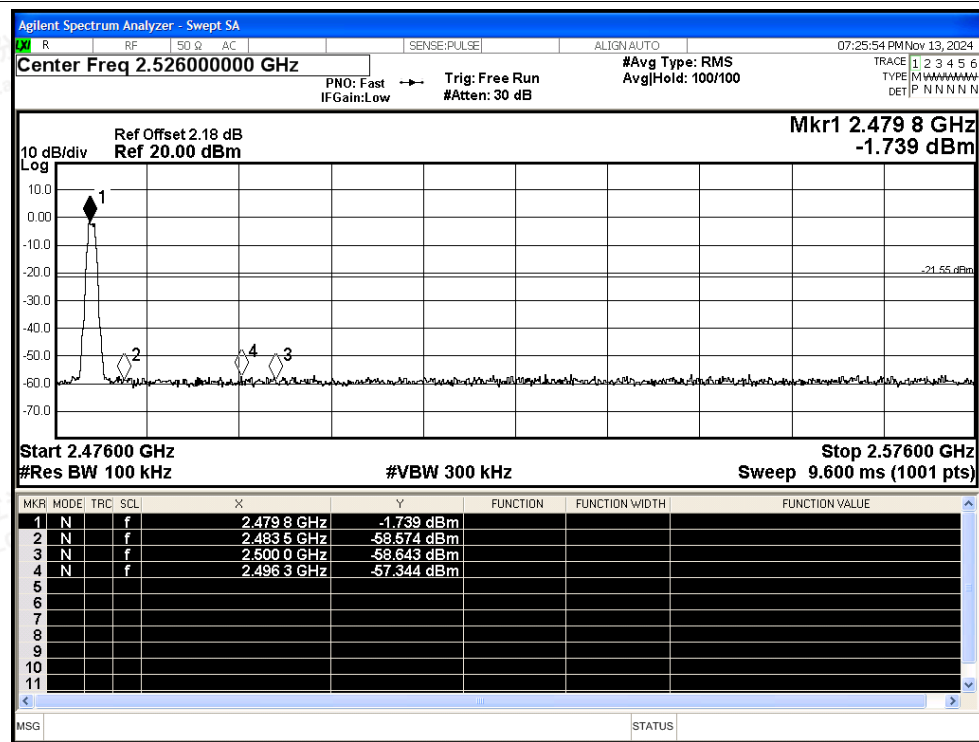




## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



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





### A.5 Conducted RF Spurious Emission

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -54.34          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -54.89          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -52.64          | -20         | Pass    |

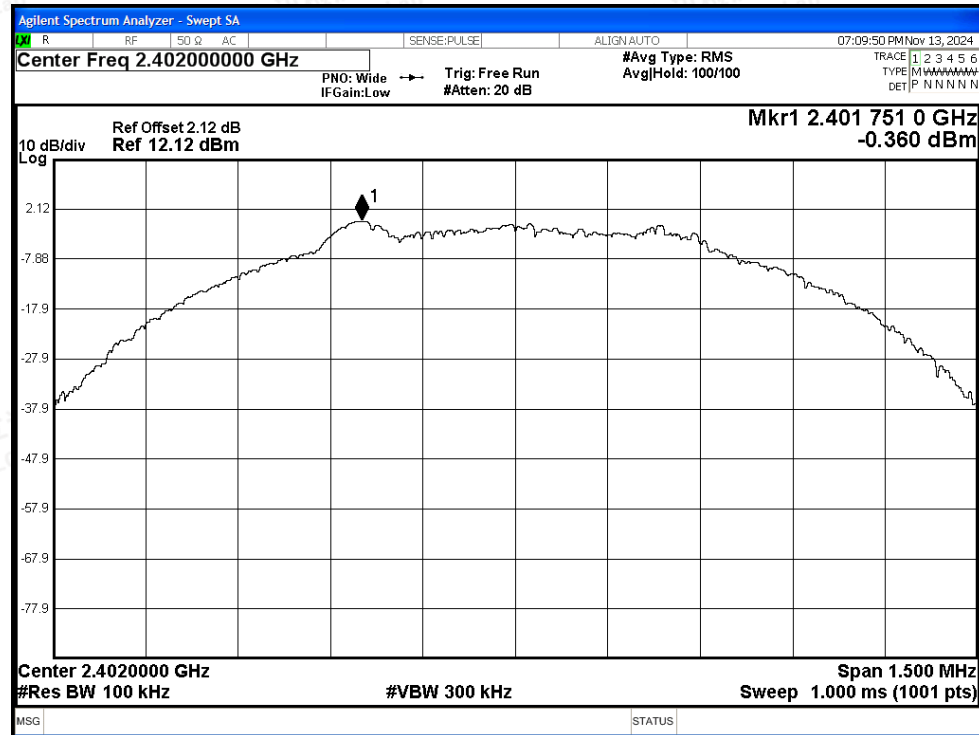


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)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

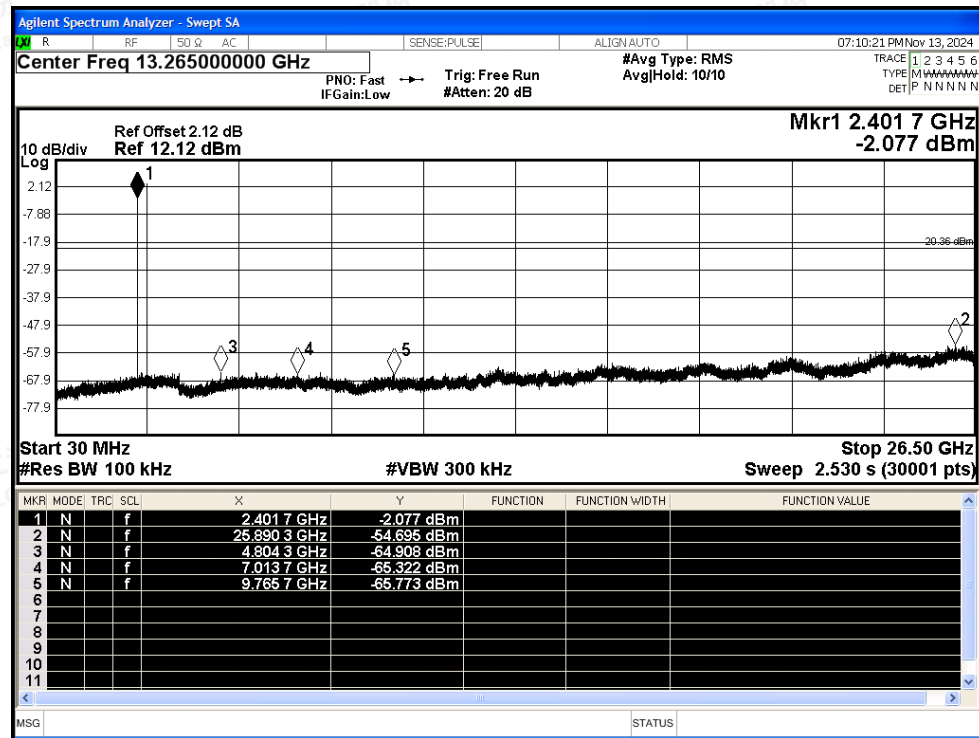


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

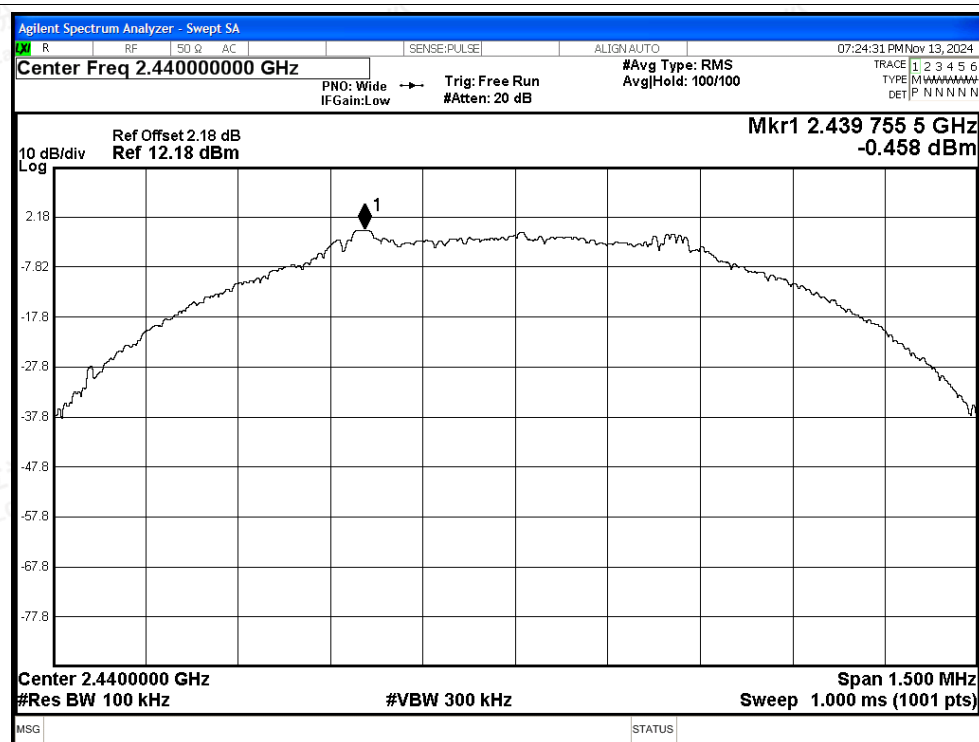


Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

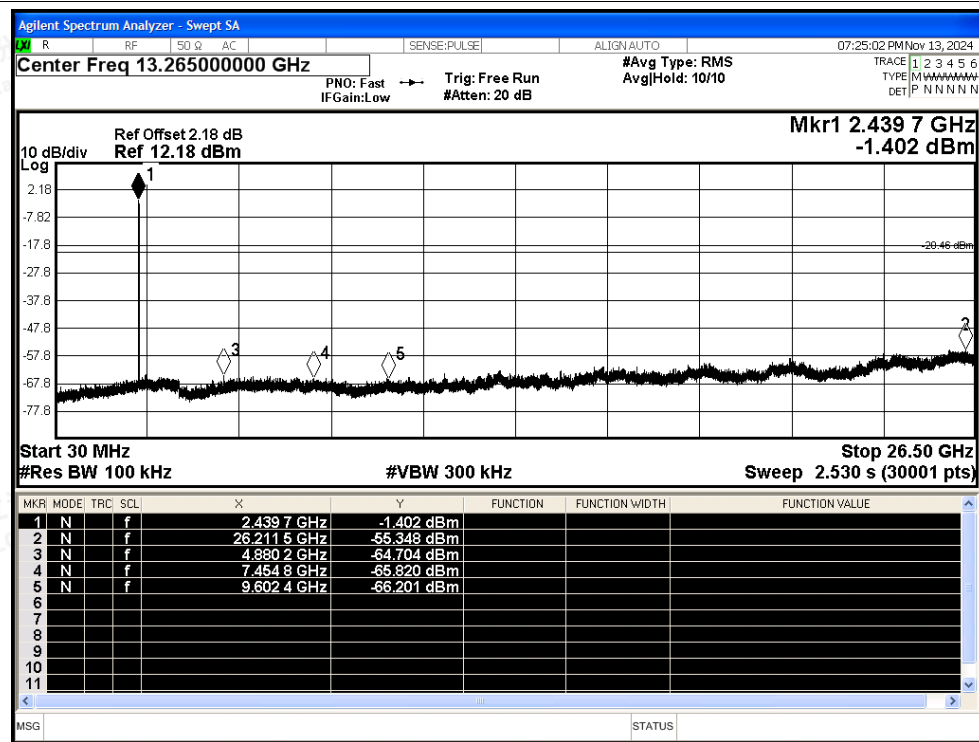




## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



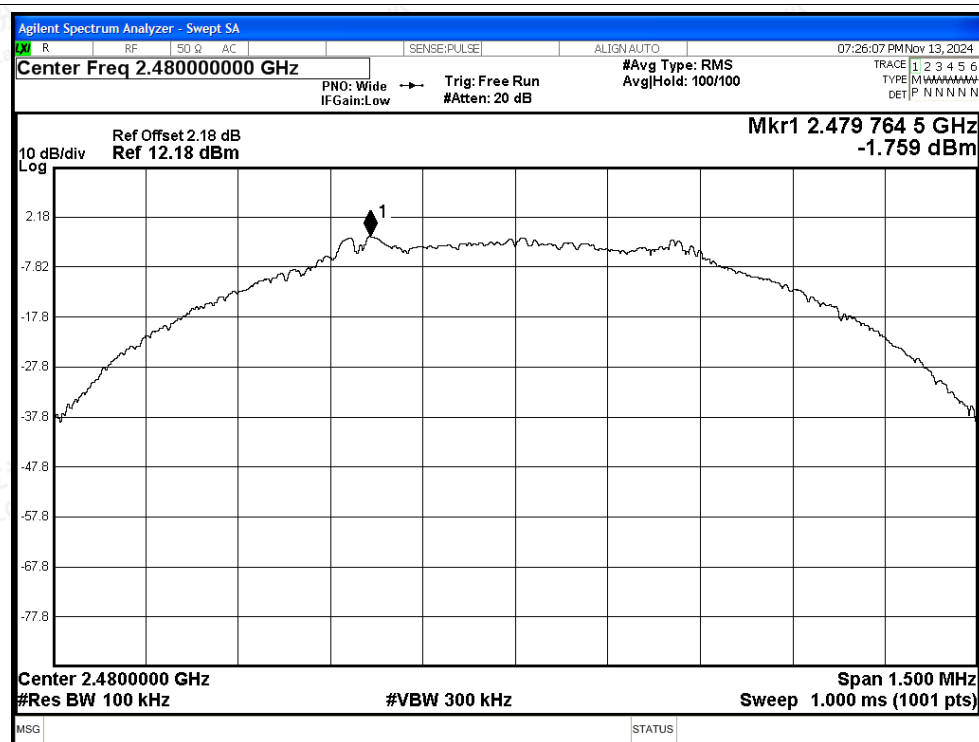
## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



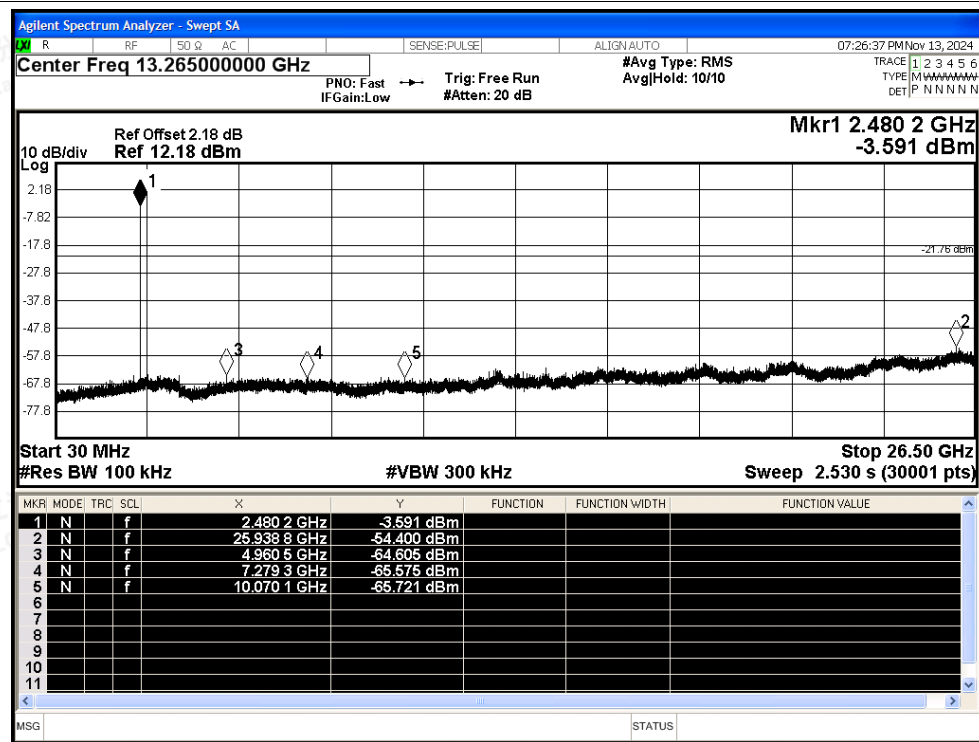




## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



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





## A.6 Duty Cycle

| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 87.39          | 0.59                   | 0.61      |
| NVNT      | BLE 1M | 2440            | Ant1    | 87.39          | 0.59                   | 0.61      |
| NVNT      | BLE 1M | 2480            | Ant1    | 87.39          | 0.59                   | 0.61      |

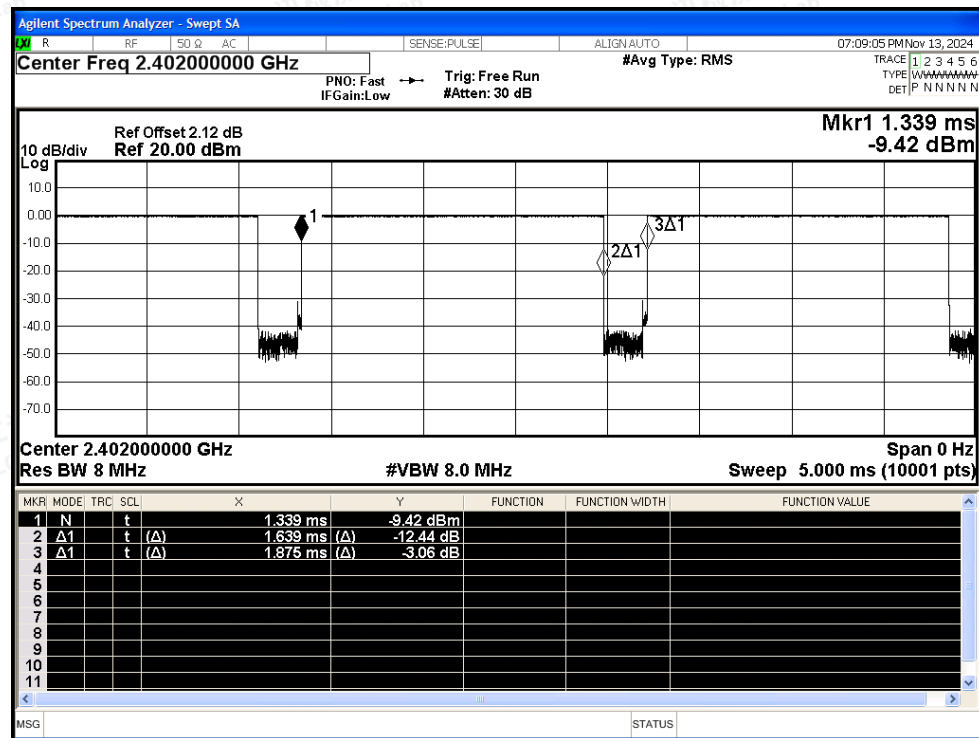


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)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

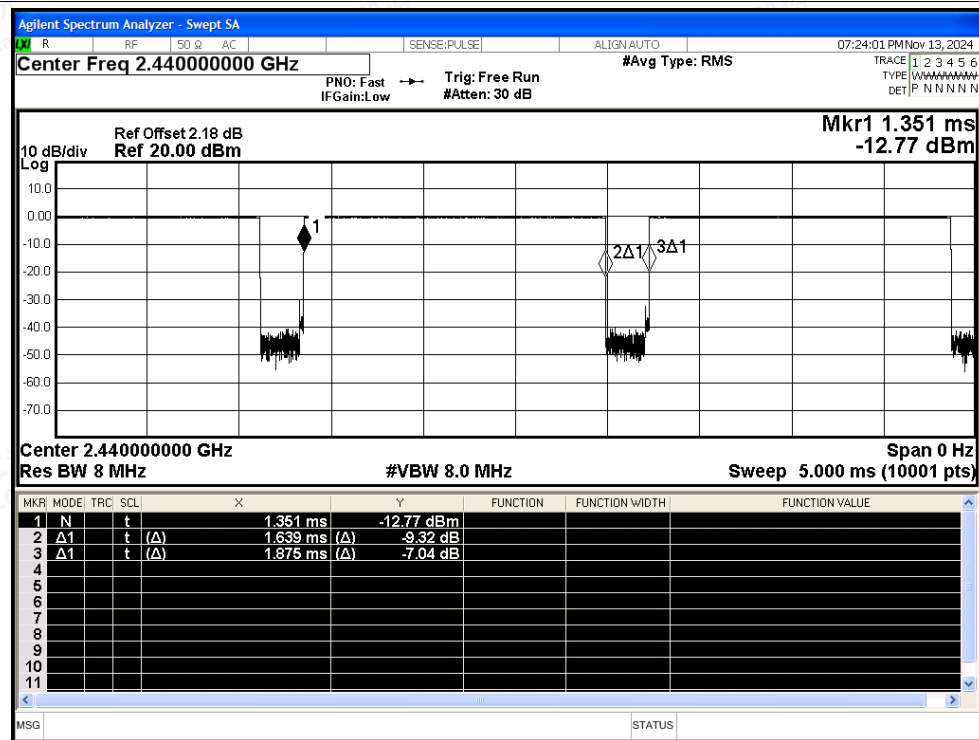


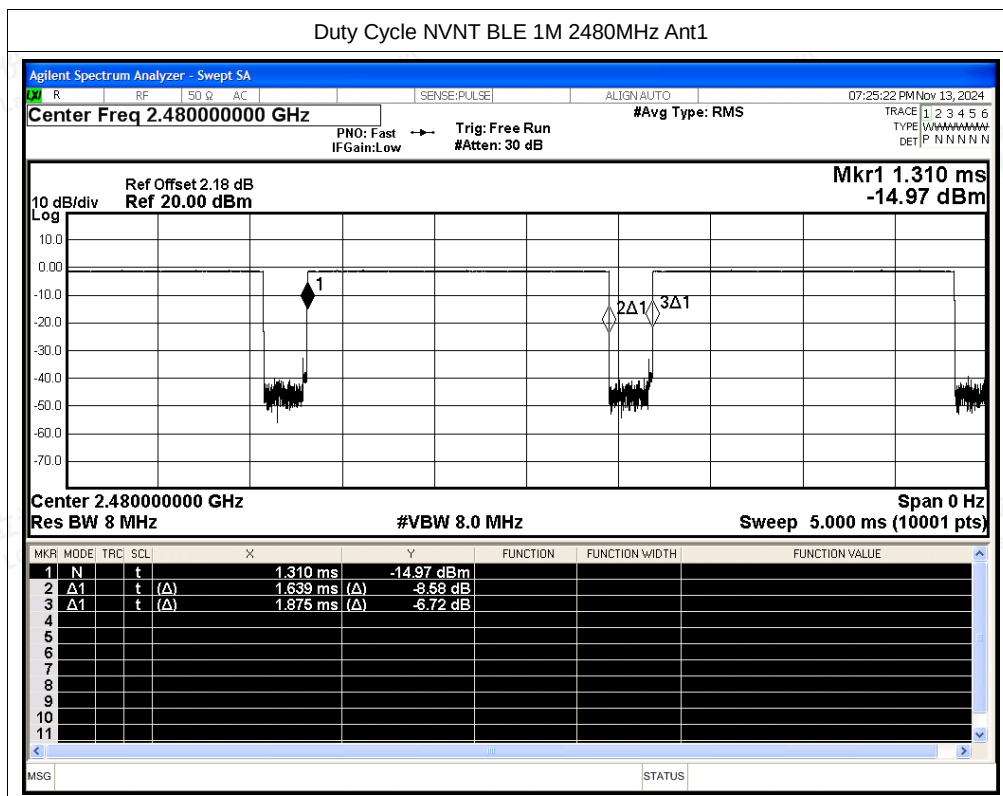
## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1







## A.7 Restrict Band

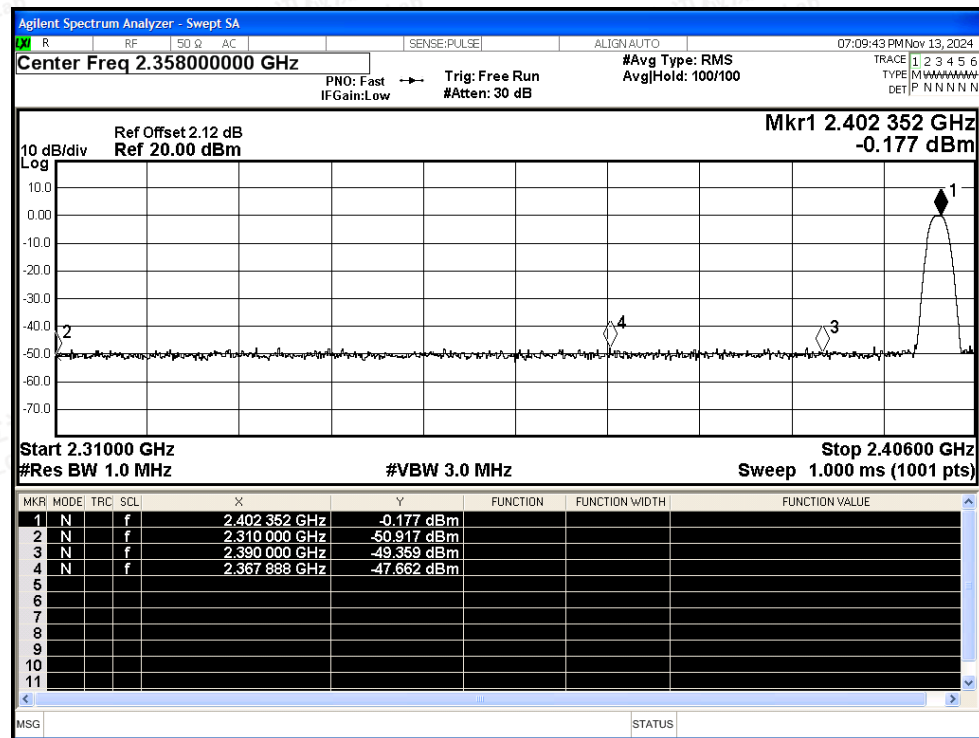
| Condition | Mode   | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -50.92      | 2          | -                | 46.34      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -58.53      | 2          | 0.59             | 39.32      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2367.888        | -47.66      | 2          | -                | 49.6       | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2389.776        | -57.49      | 2          | 0.59             | 40.36      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -49.36      | 2          | -                | 47.9       | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -58.25      | 2          | 0.59             | 39.6       | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -50.35      | 2          | -                | 46.91      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -57.78      | 2          | 0.59             | 40.07      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2488.72         | -46.61      | 2          | -                | 50.65      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2486.416        | -56.87      | 2          | 0.59             | 40.98      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -50.92      | 2          | -                | 46.34      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -58.18      | 2          | 0.59             | 39.67      | Average  | 54             | Pass    |



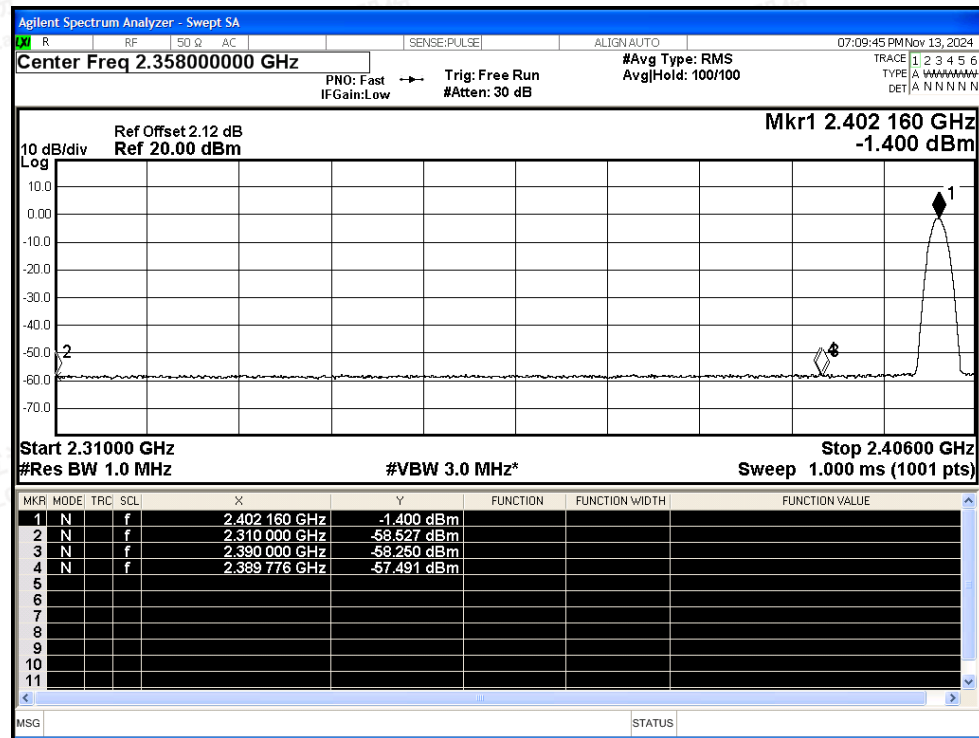


## Test Graphs

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

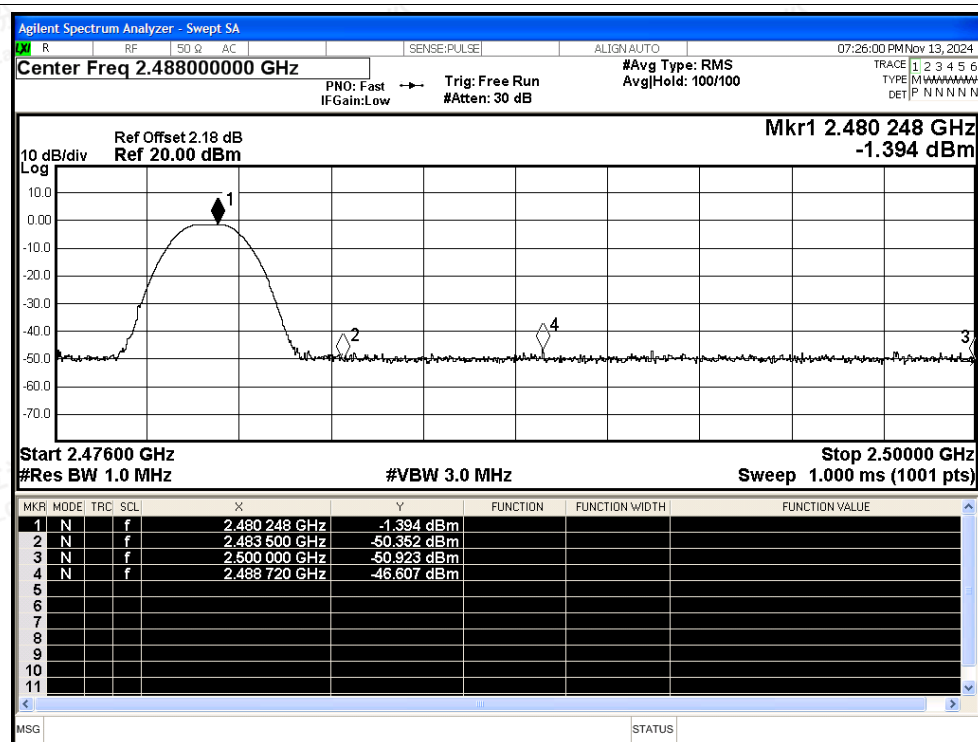


## Restrict Band NVNT BLE 1M 2402MHz Ant1 Average





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



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

