



## Appendix B

### RF Test Data for BT LE (Conducted Measurement)

Product Name: SMART PROJECTOR

Test Model: L012H

#### Environmental Conditions

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





## B.1 -6dB Bandwidth

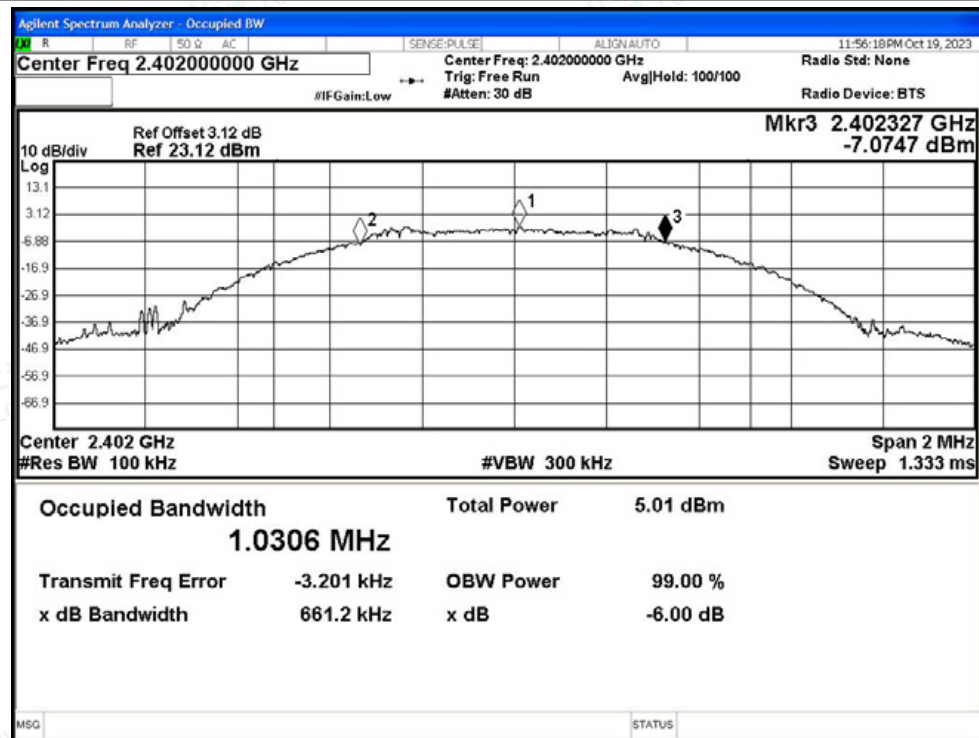
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.661                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.676                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.659                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 1.173                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | 1.124                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 1.11                  | $\geq 0.5$                  | Pass    |



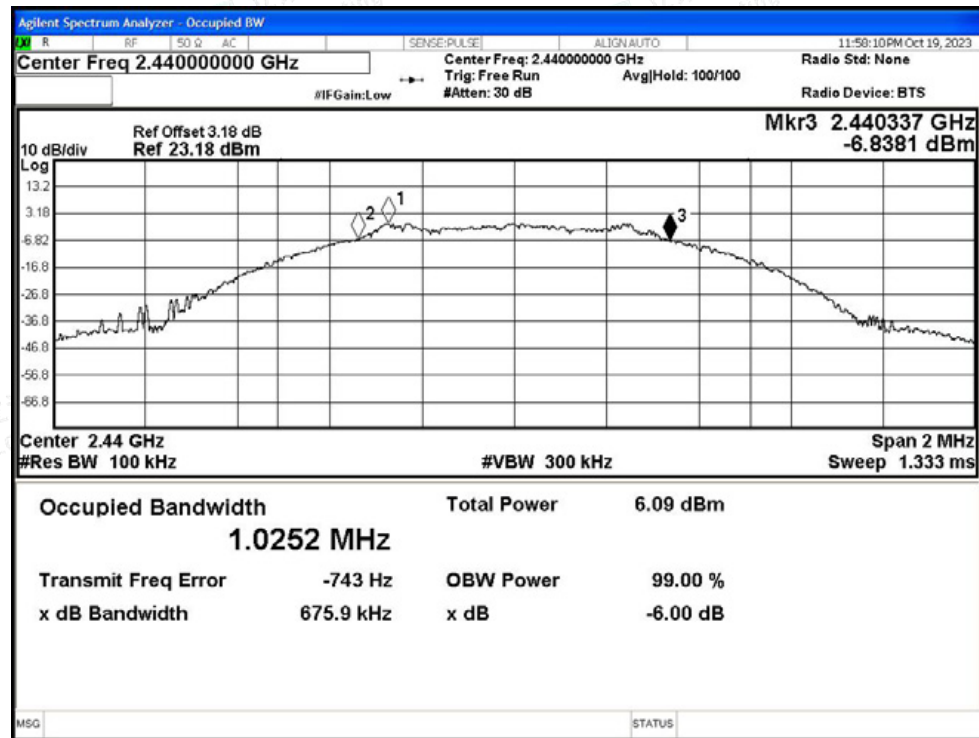


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1



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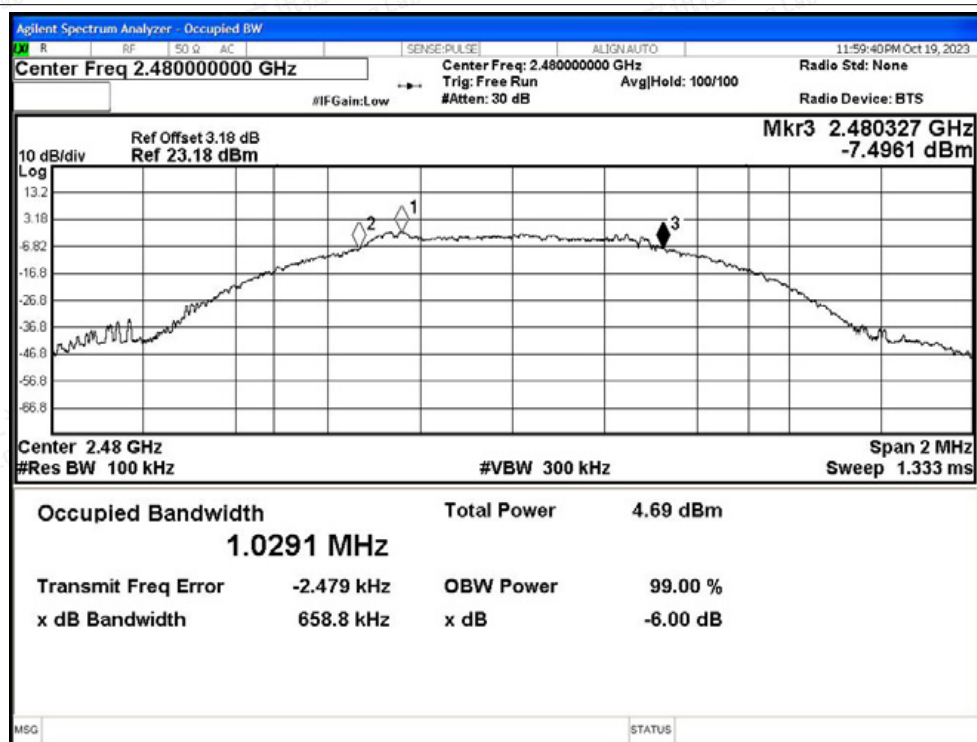
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

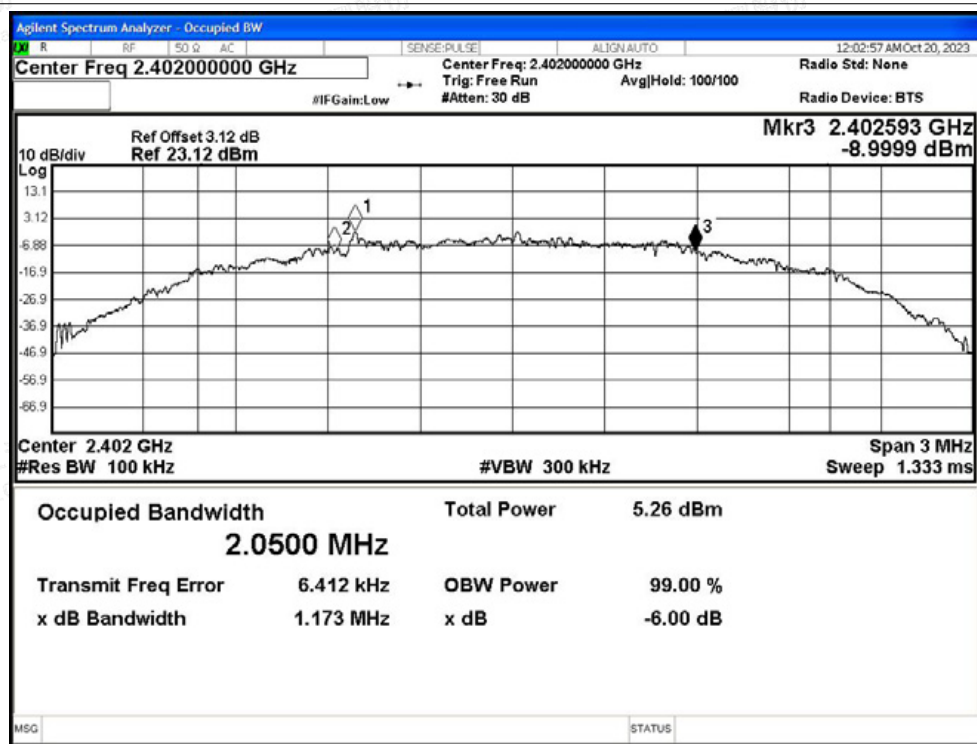
Scan code to check authenticity



-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1



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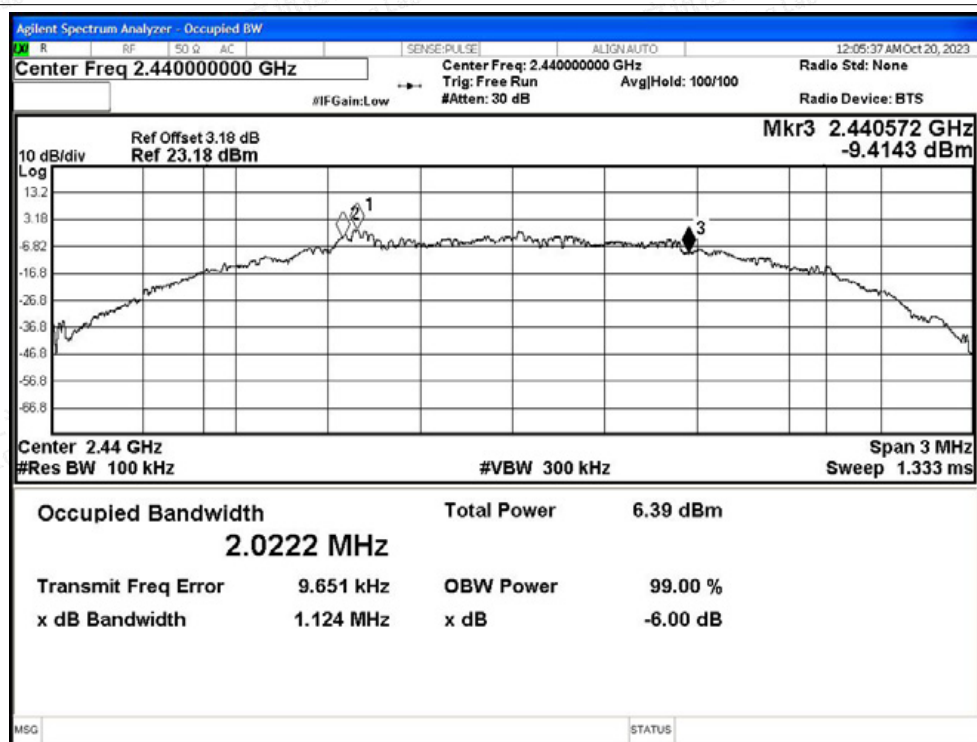
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

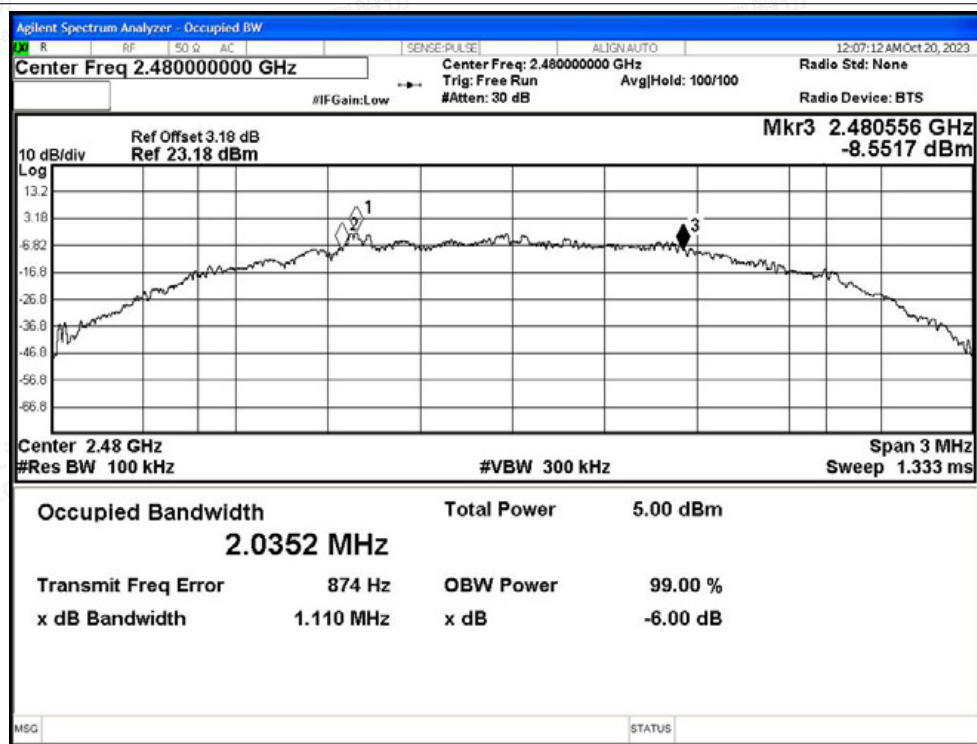
Scan code to check authenticity



-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1





## B.2 Maximum Conducted Output Power

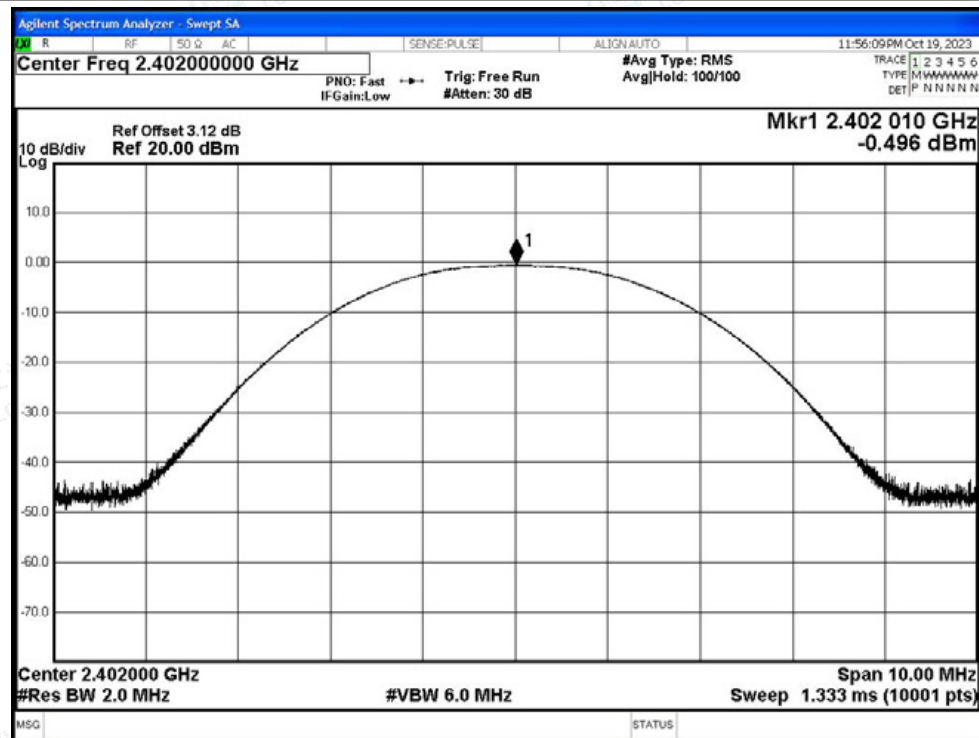
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -0.5                  | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.40                  | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -0.88                 | 30          | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -0.61                 | 30          | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | 0.26                  | 30          | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -1.04                 | 30          | Pass    |



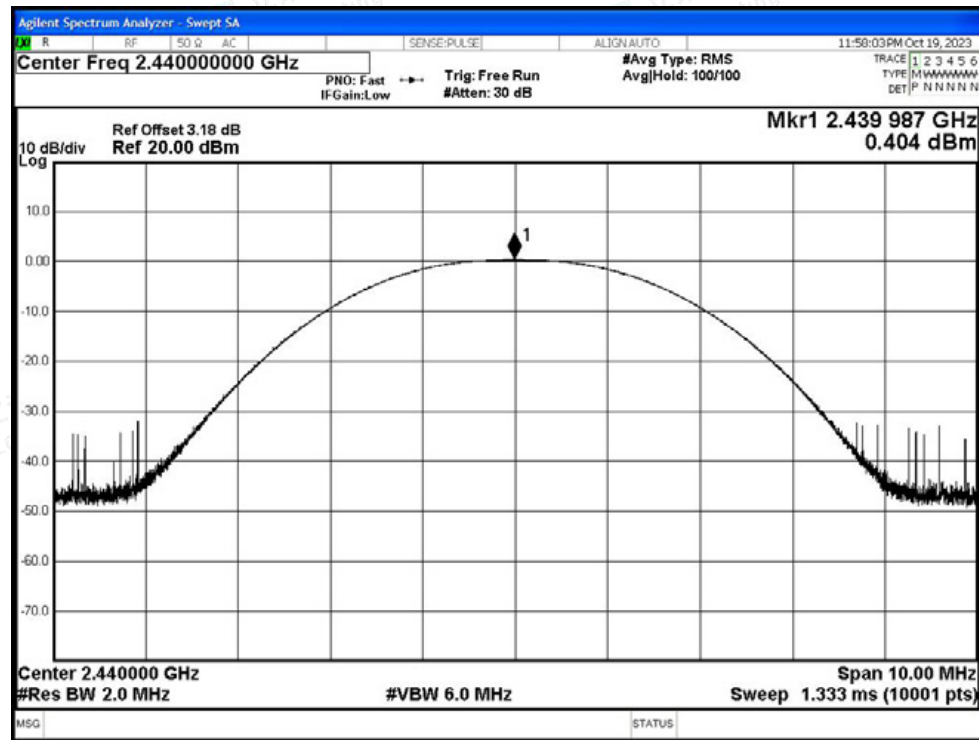


## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1

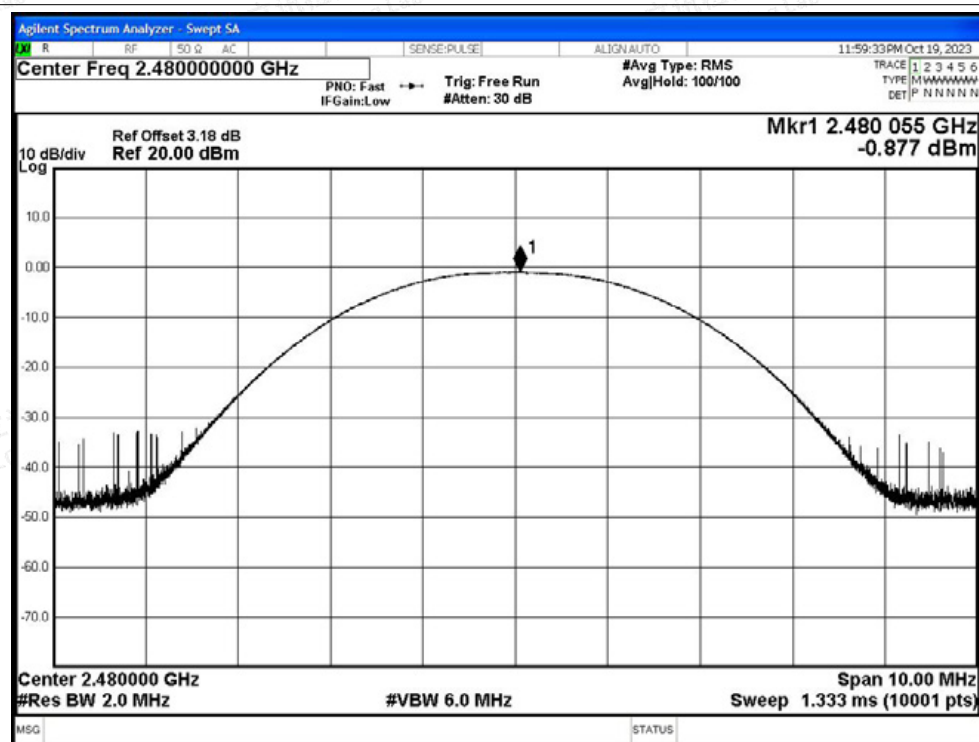


Power NVNT BLE 1M 2440MHz Ant1

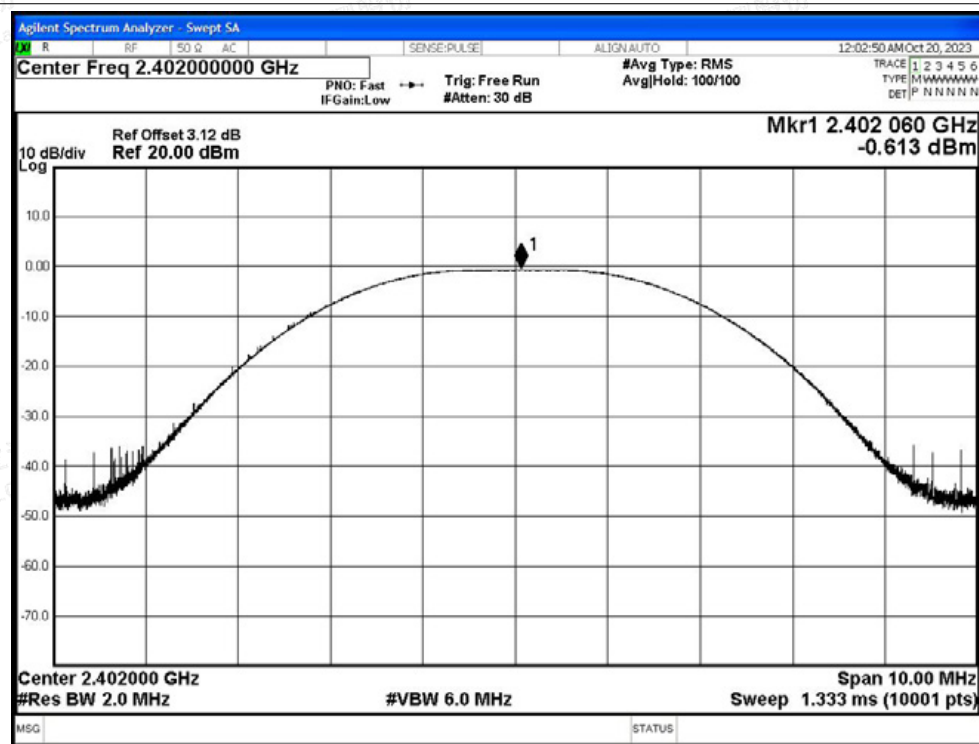




Power NVNT BLE 1M 2480MHz Ant1

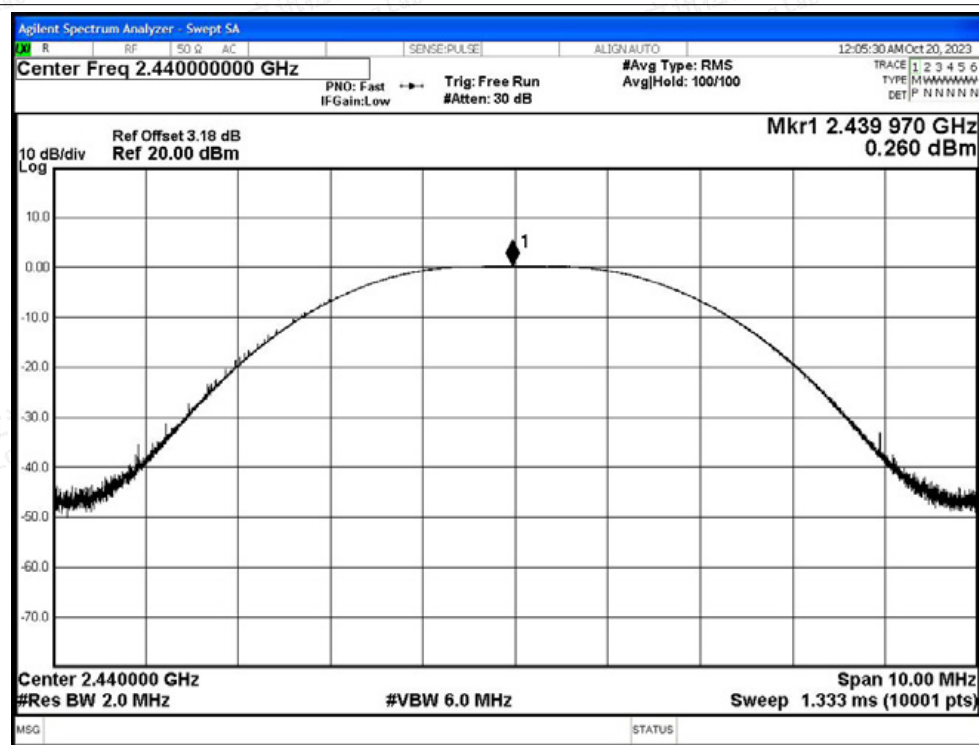


Power NVNT BLE 2M 2402MHz Ant1

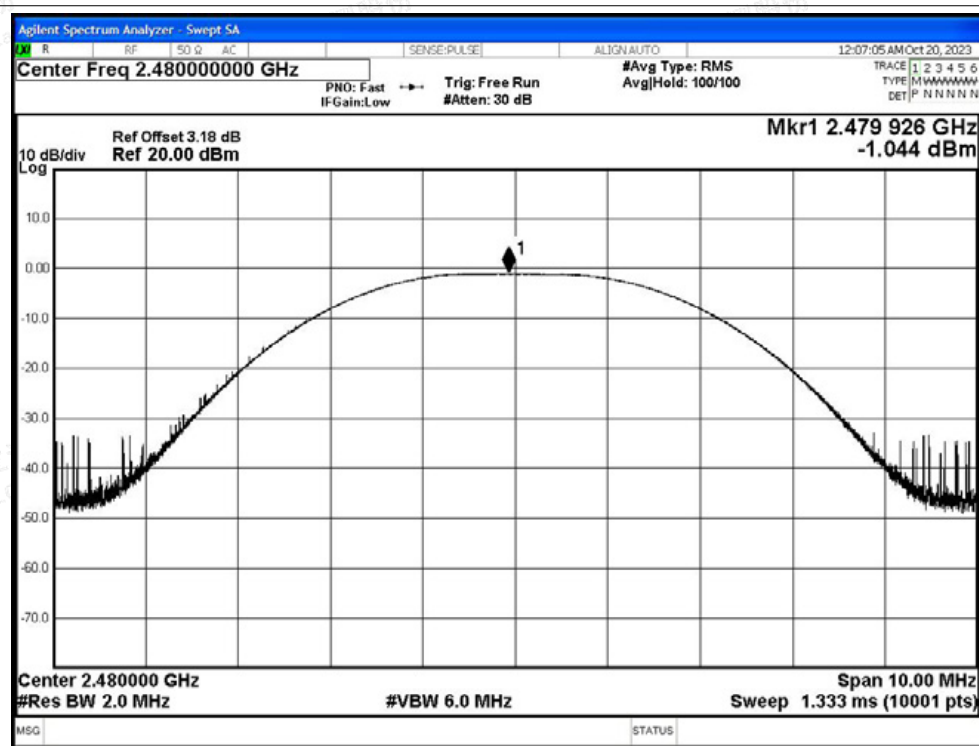




Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1





### B.3 Maximum Power Spectral Density Level

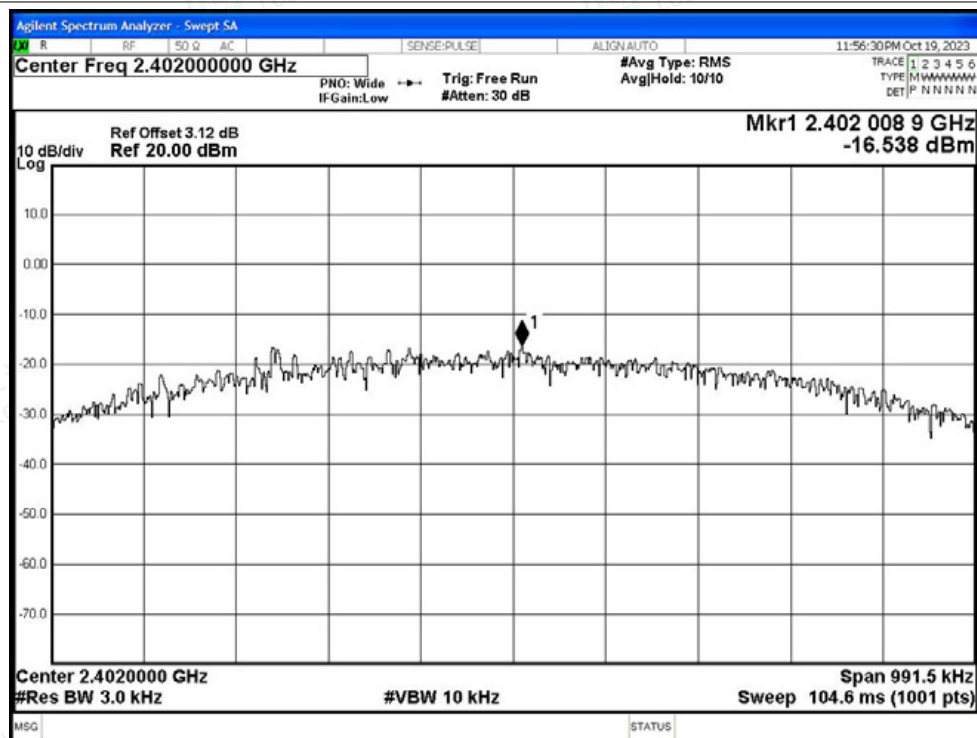
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -16.54                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -15.82                   | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -17.34                   | 8                | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -20.63                   | 8                | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | -19.71                   | 8                | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -20.86                   | 8                | Pass    |



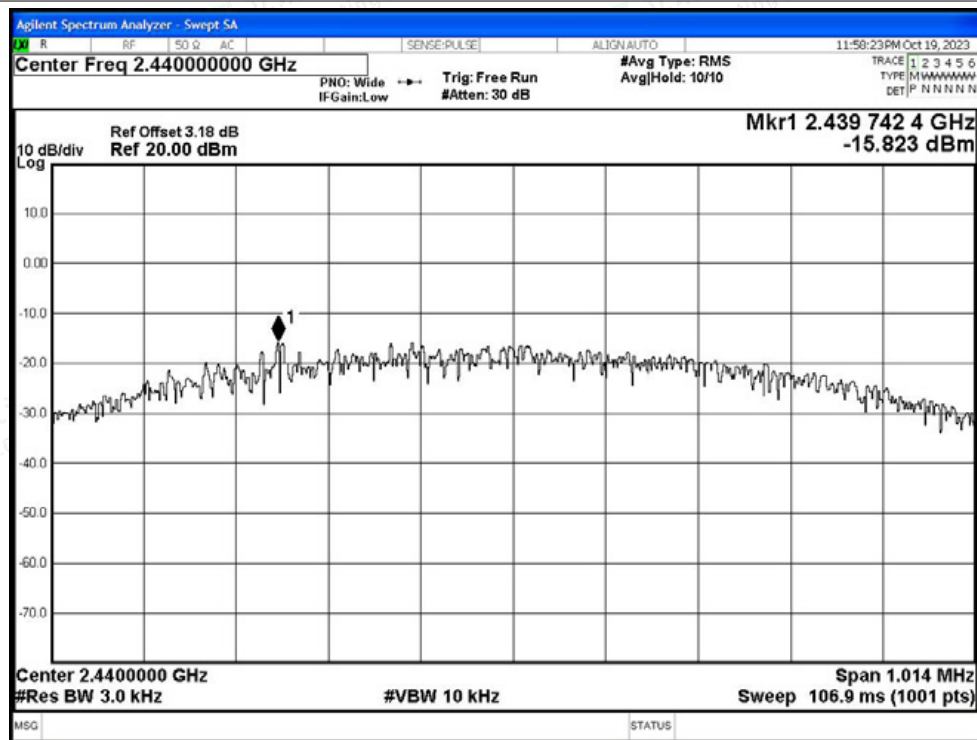


## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1

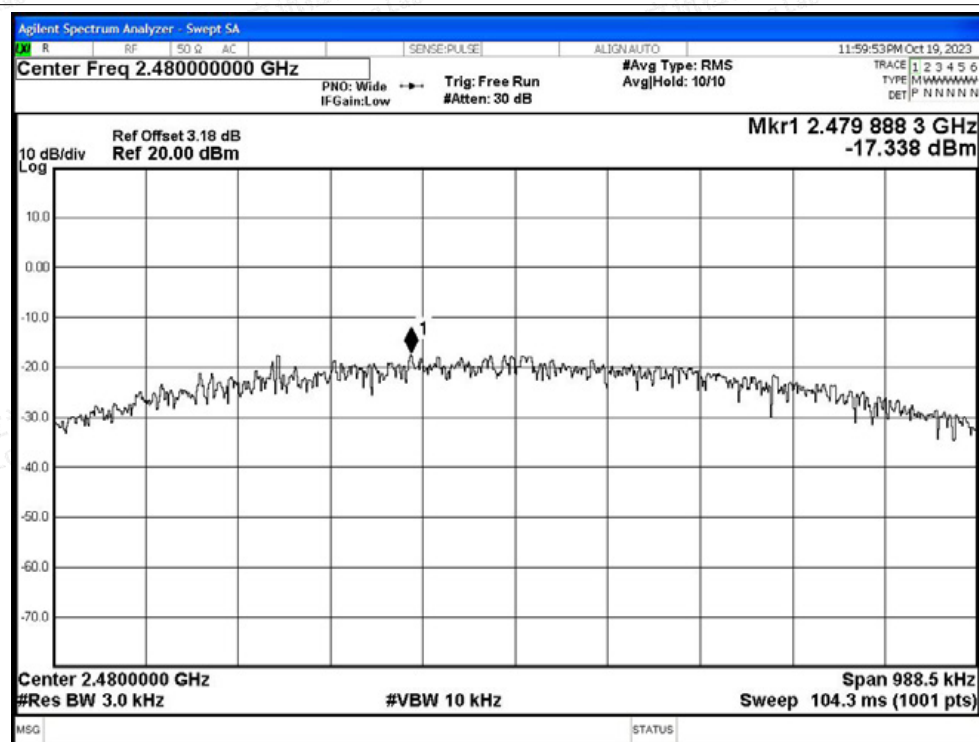


PSD NVNT BLE 1M 2440MHz Ant1

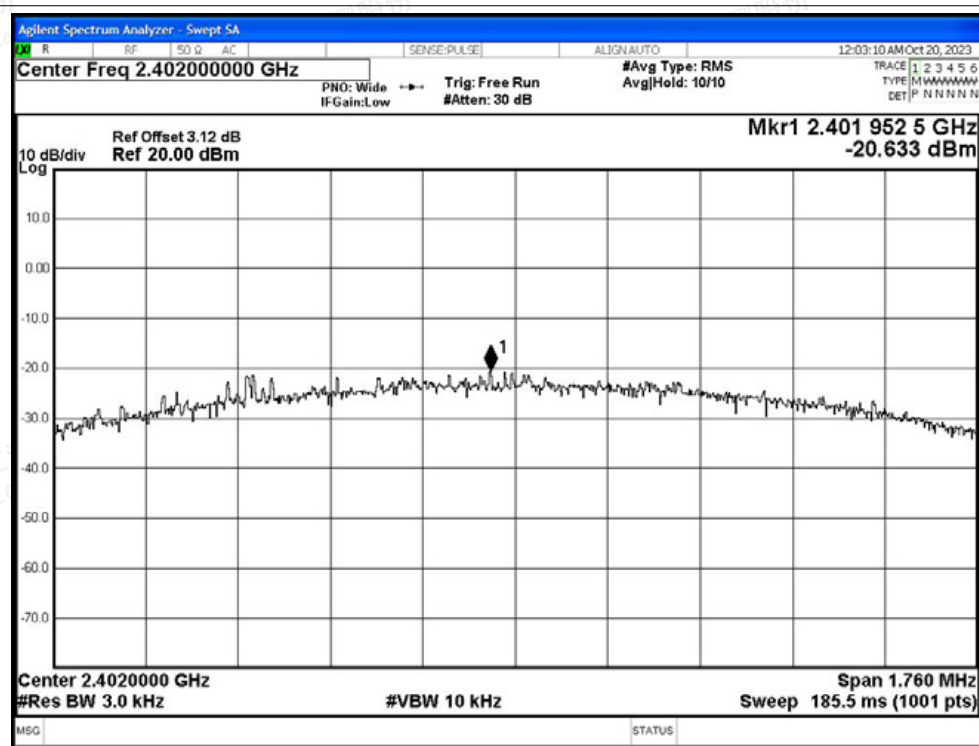




PSD NVNT BLE 1M 2480MHz Ant1

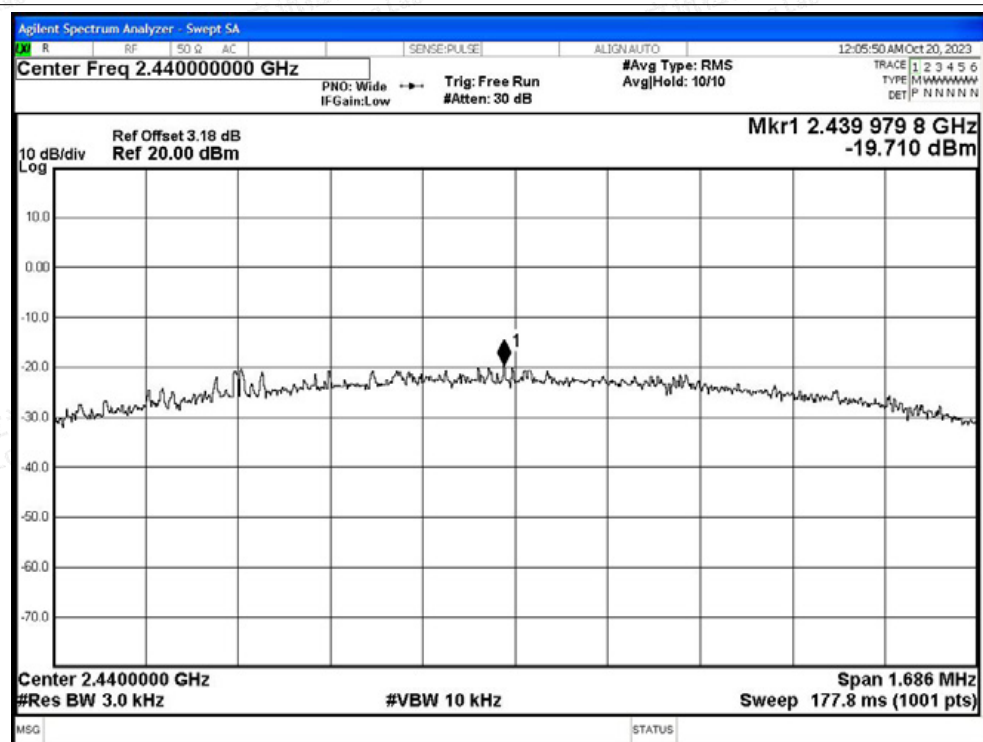


PSD NVNT BLE 2M 2402MHz Ant1

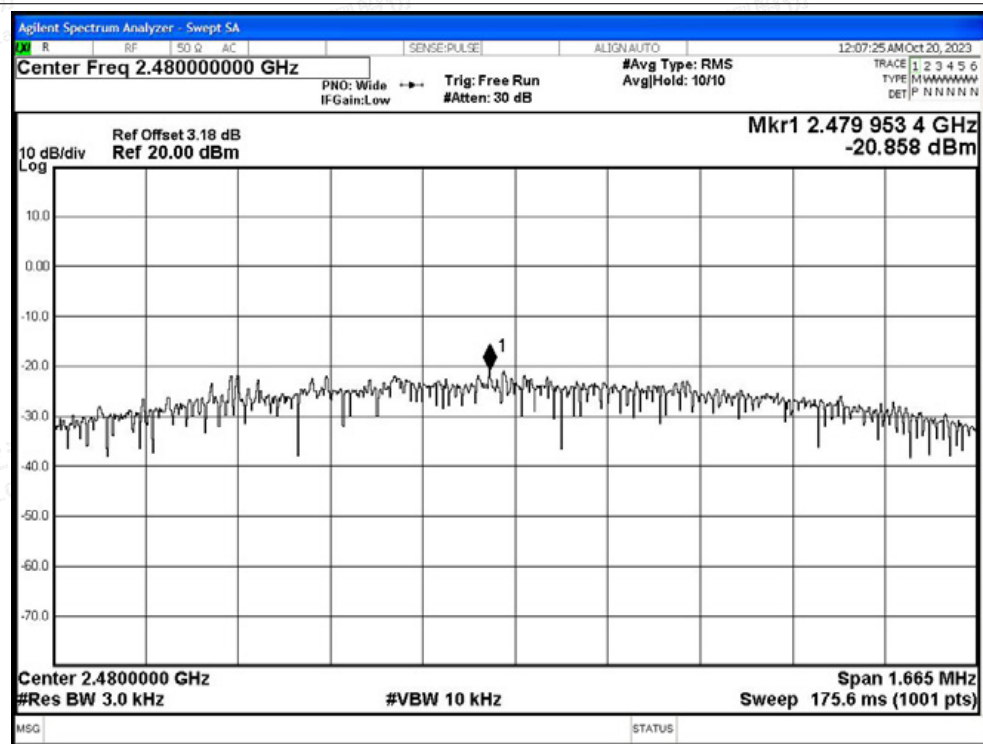




PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1





## B.4 Band Edge

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -54.7           | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -54.18          | -20         | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -44.84          | -20         | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -53.24          | -20         | Pass    |

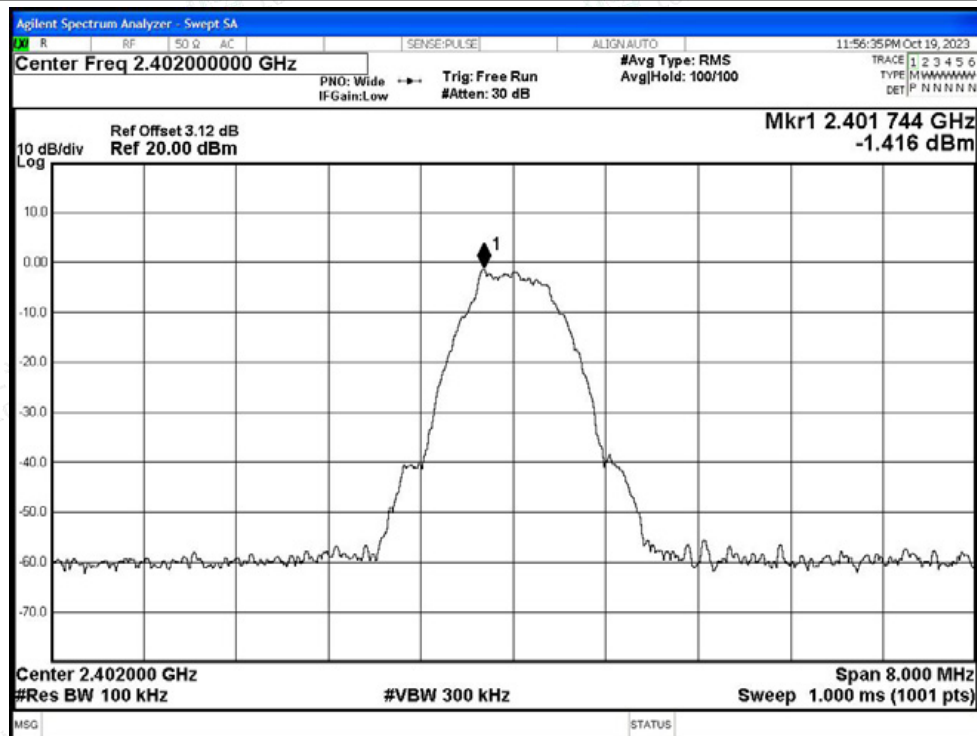


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Scan code to check authenticity

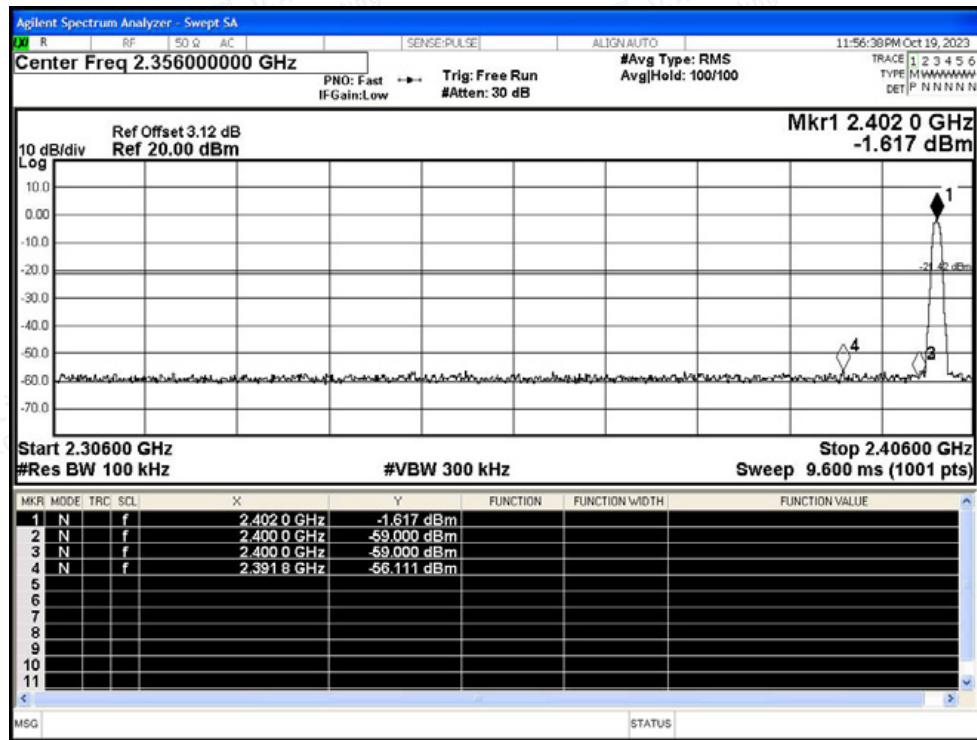


## Test Graphs

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

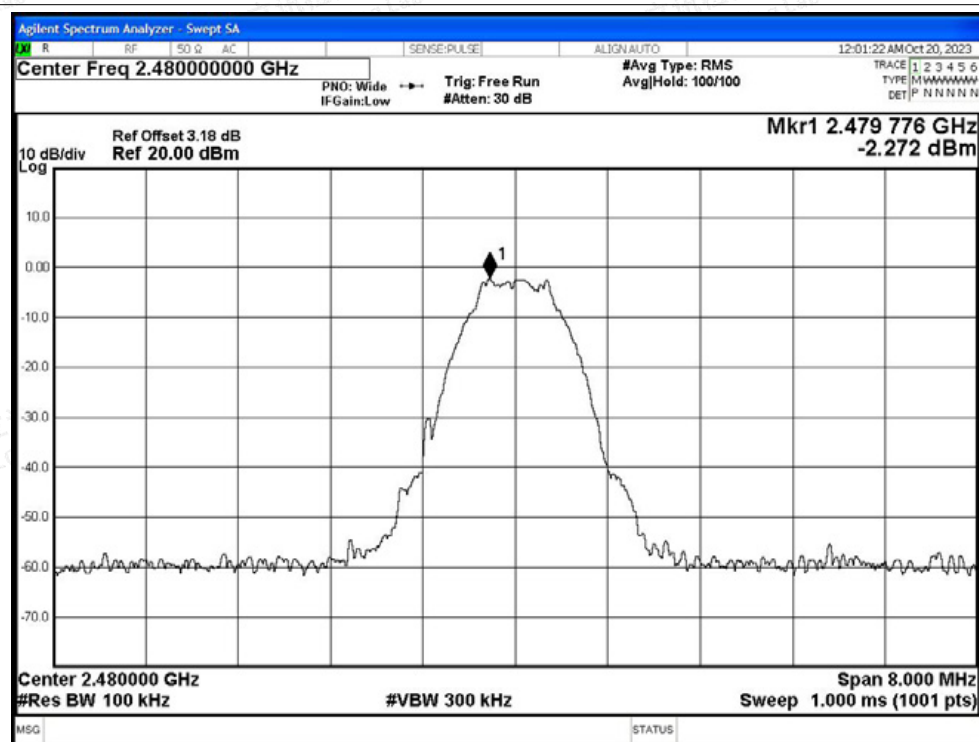


## Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

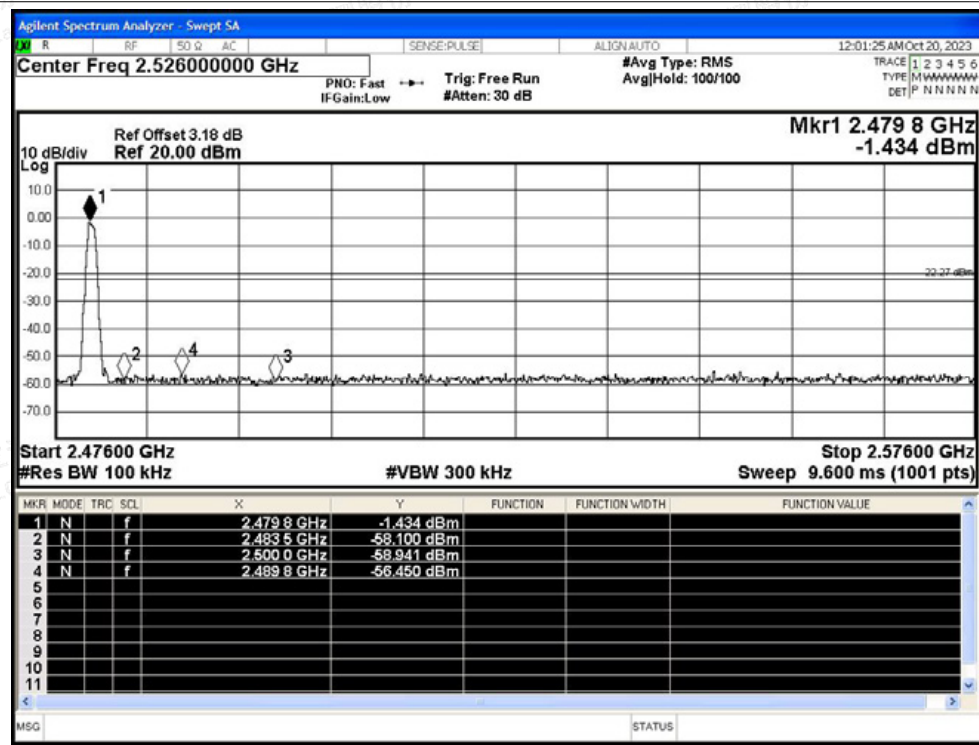




## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

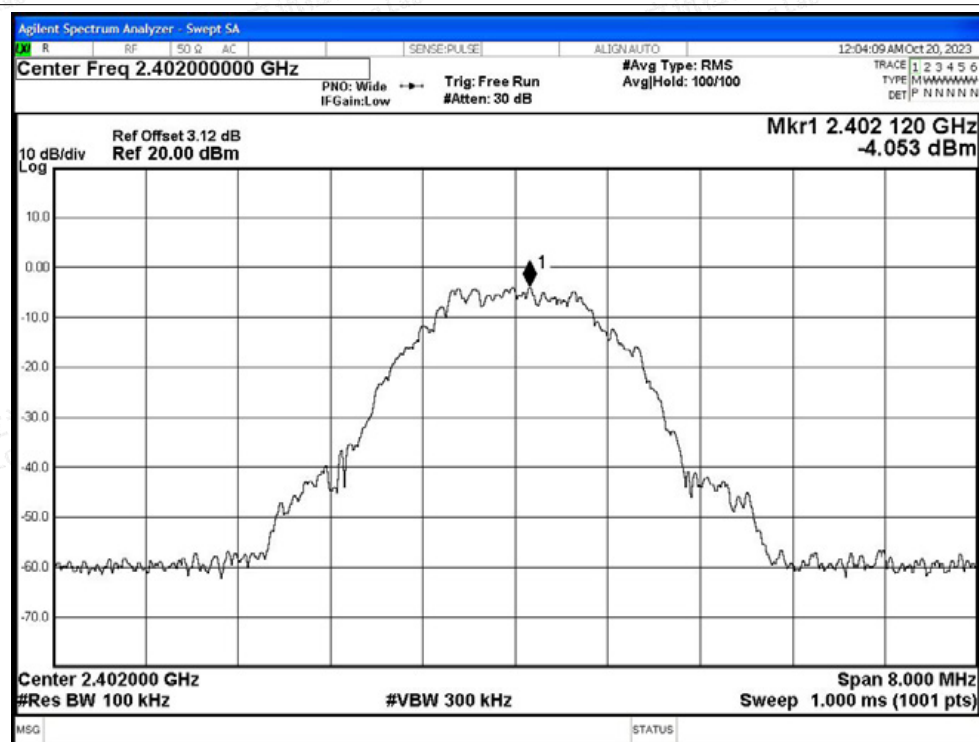


## Band Edge NVNT BLE 1M 2480MHz Ant1 Emission

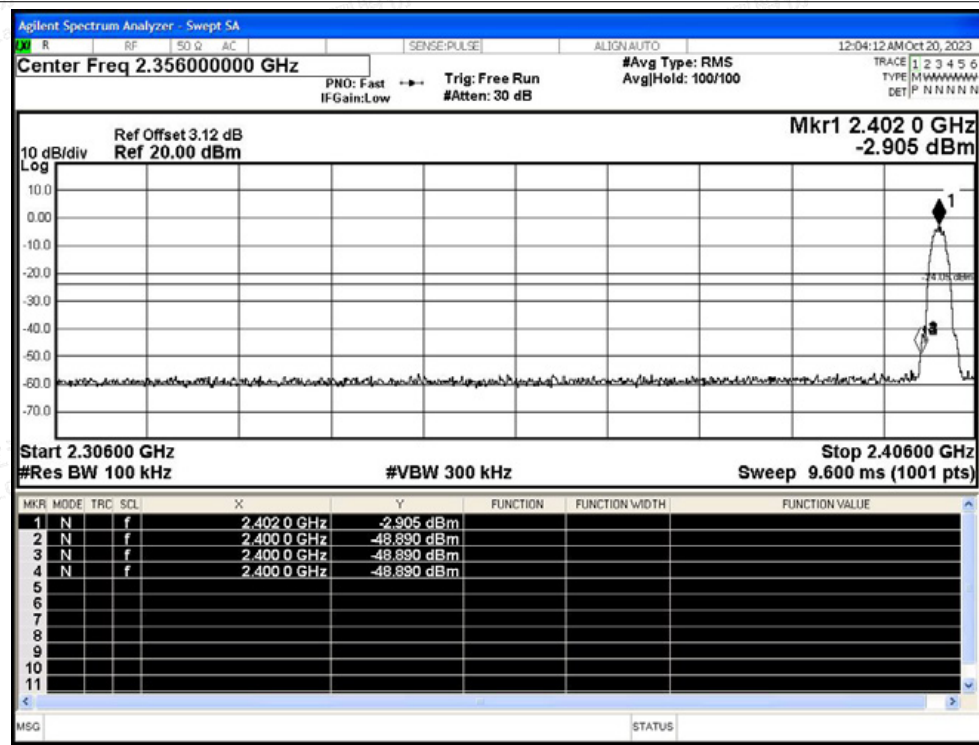




## Band Edge NVNT BLE 2M 2402MHz Ant1 Ref



## Band Edge NVNT BLE 2M 2402MHz Ant1 Emission



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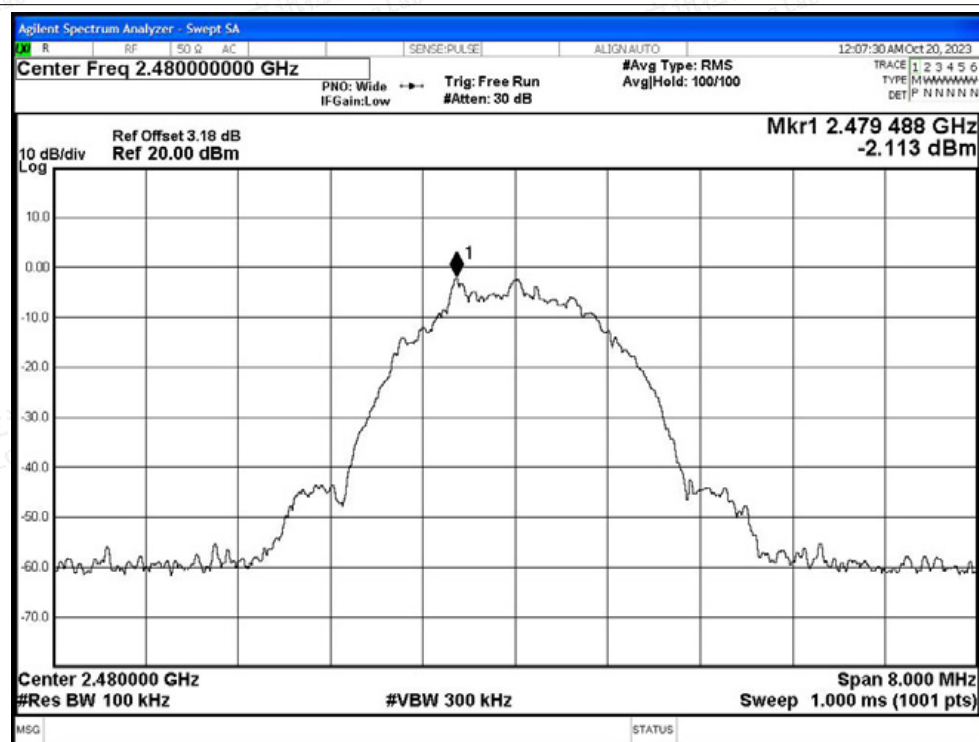
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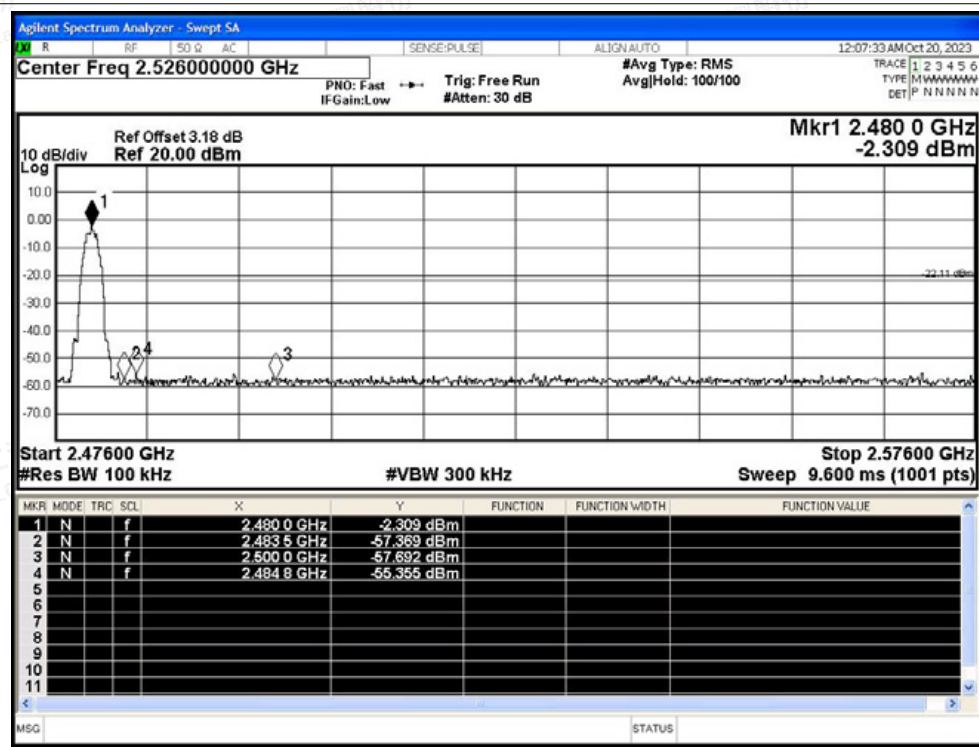
Scan code to check authenticity



## Band Edge NVNT BLE 2M 2480MHz Ant1 Ref



## Band Edge NVNT BLE 2M 2480MHz Ant1 Emission





## B.5 Conducted RF Spurious Emission

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -52.33          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -54.48          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -53.66          | -20         | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -53.12          | -20         | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | -53.63          | -20         | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -52.47          | -20         | Pass    |

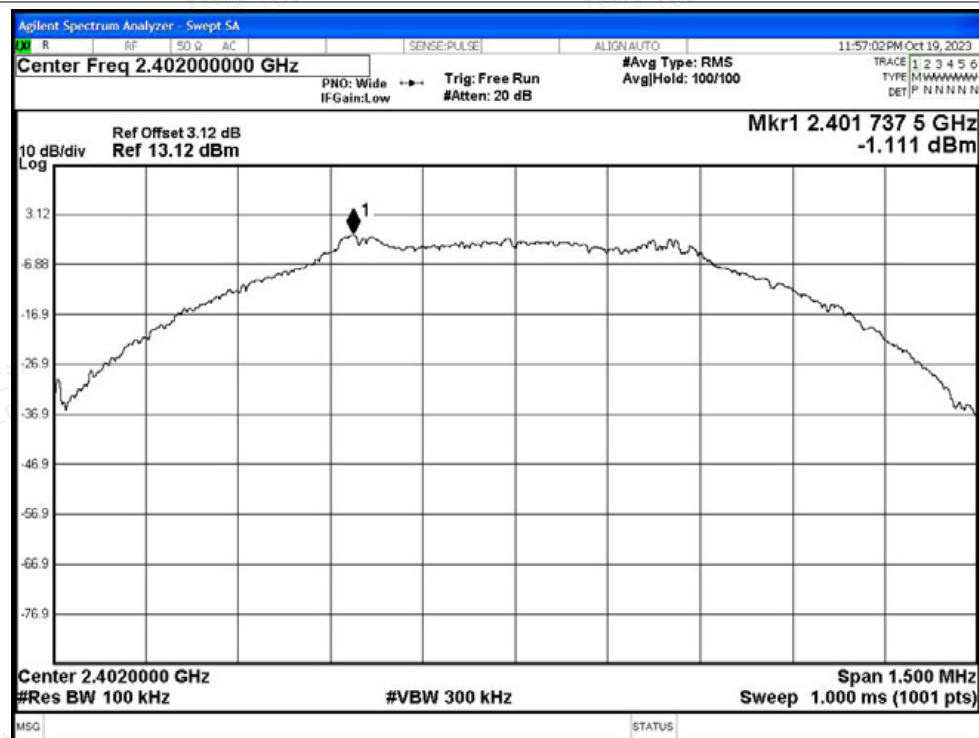


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Scan code to check authenticity

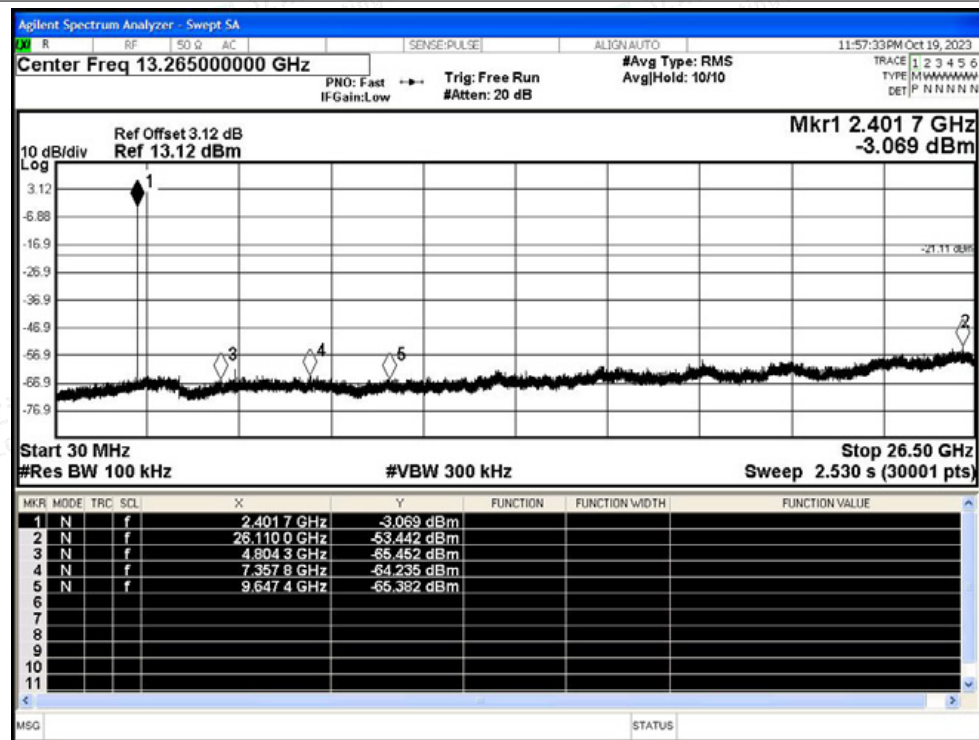


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

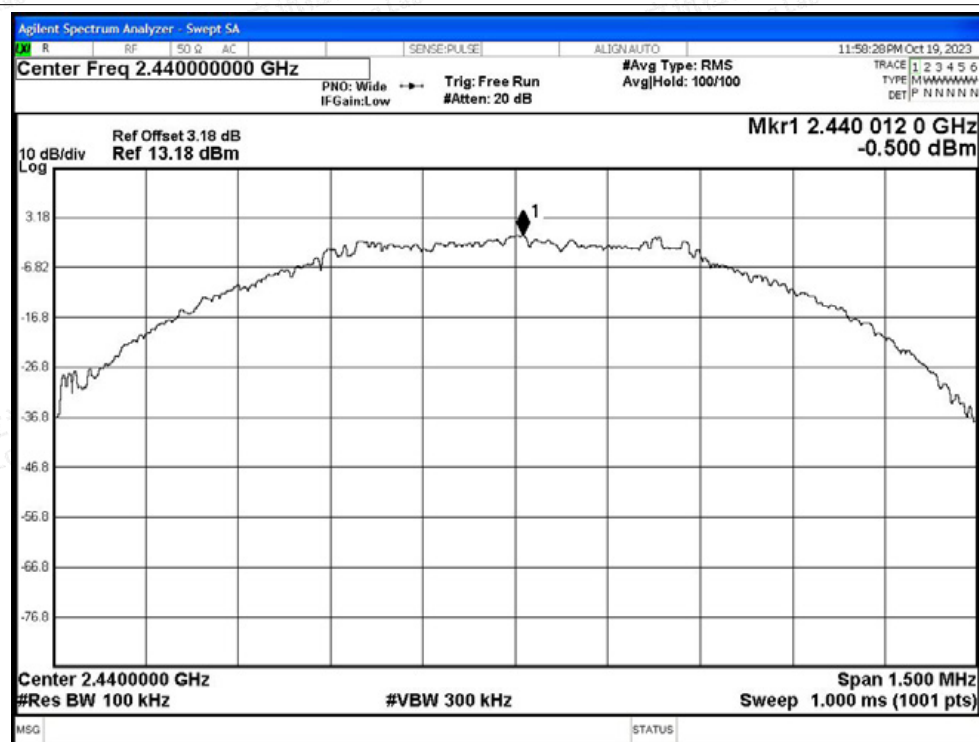
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

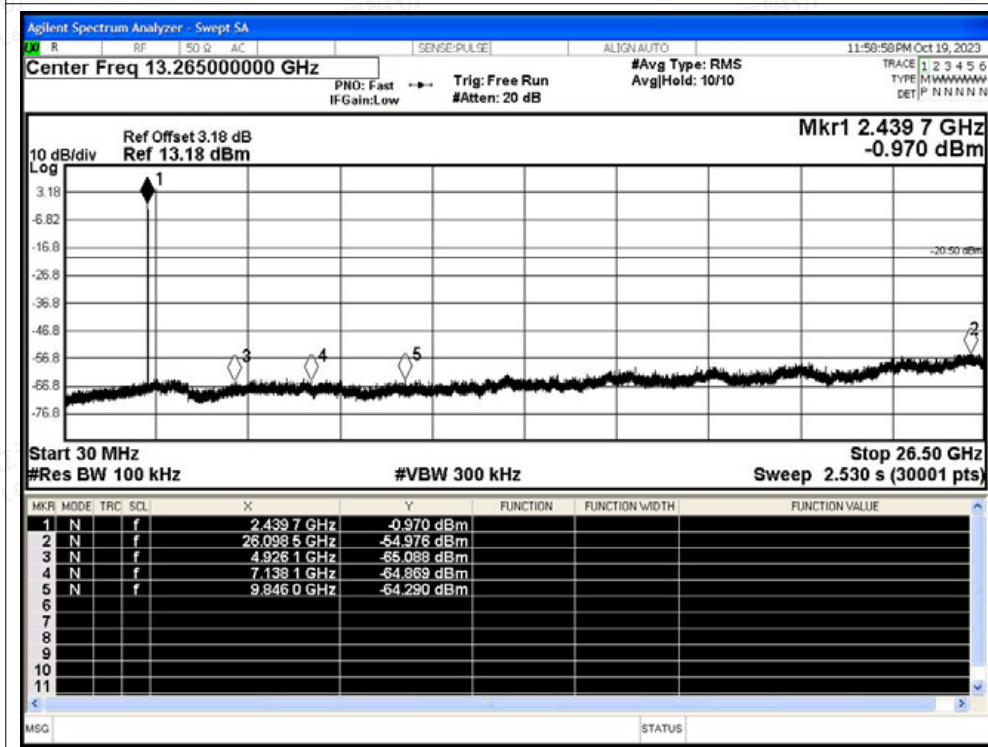
Scan code to check authenticity



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

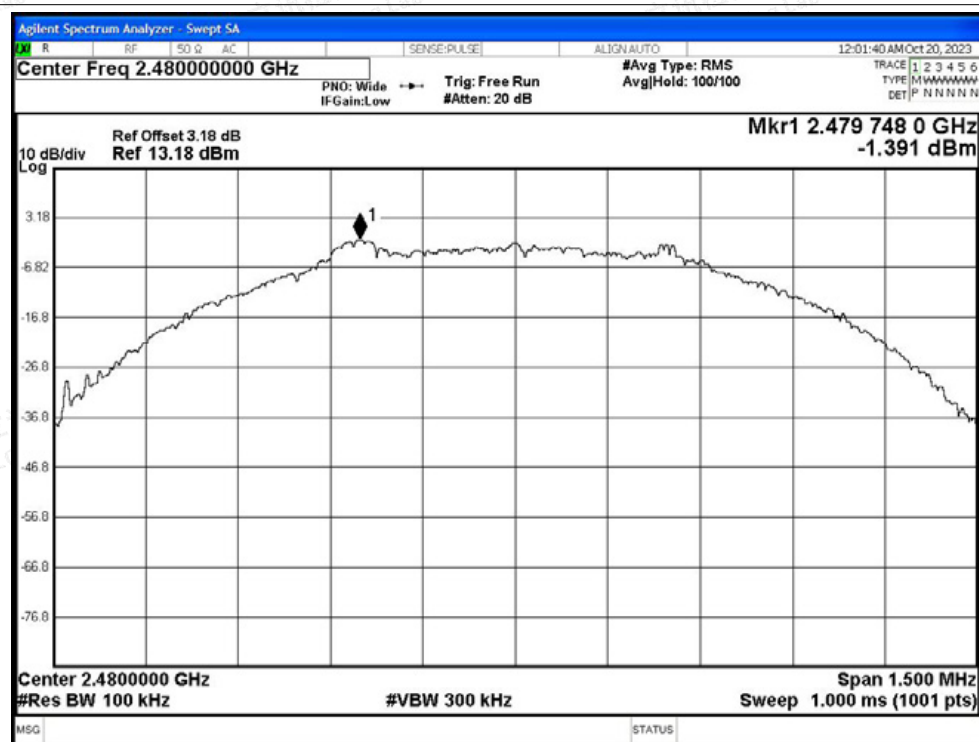


Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission

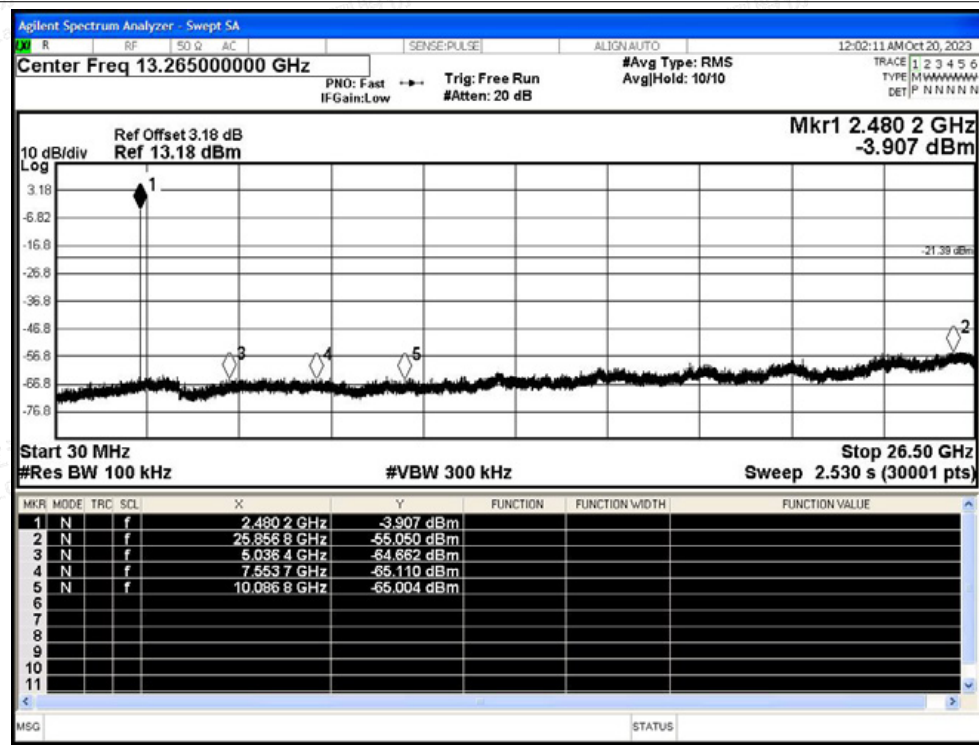




Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

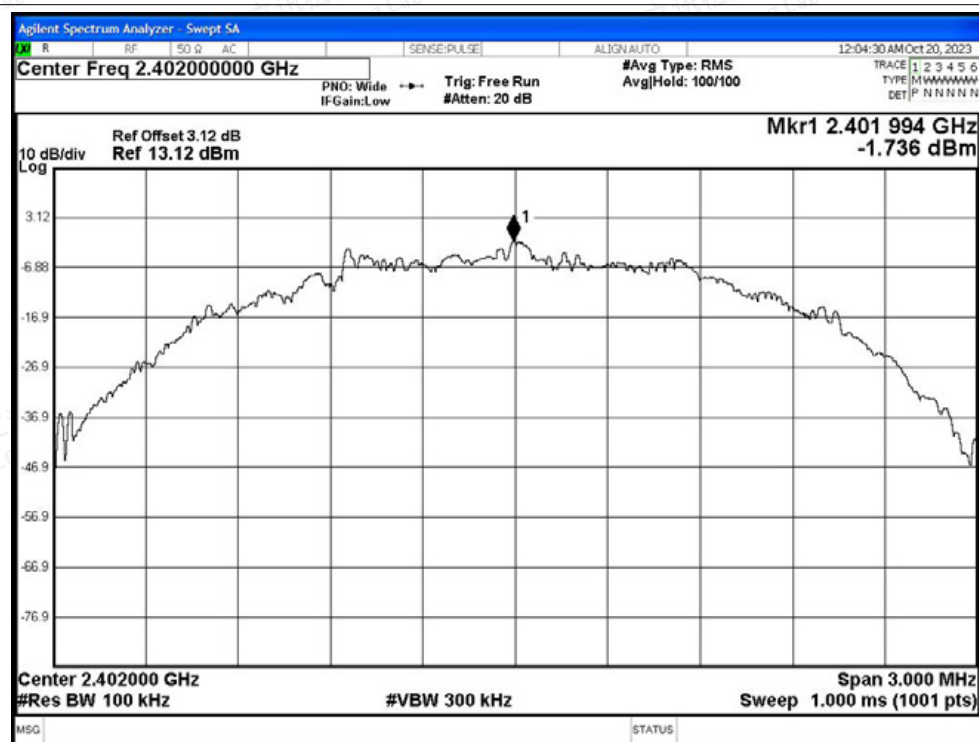


Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission

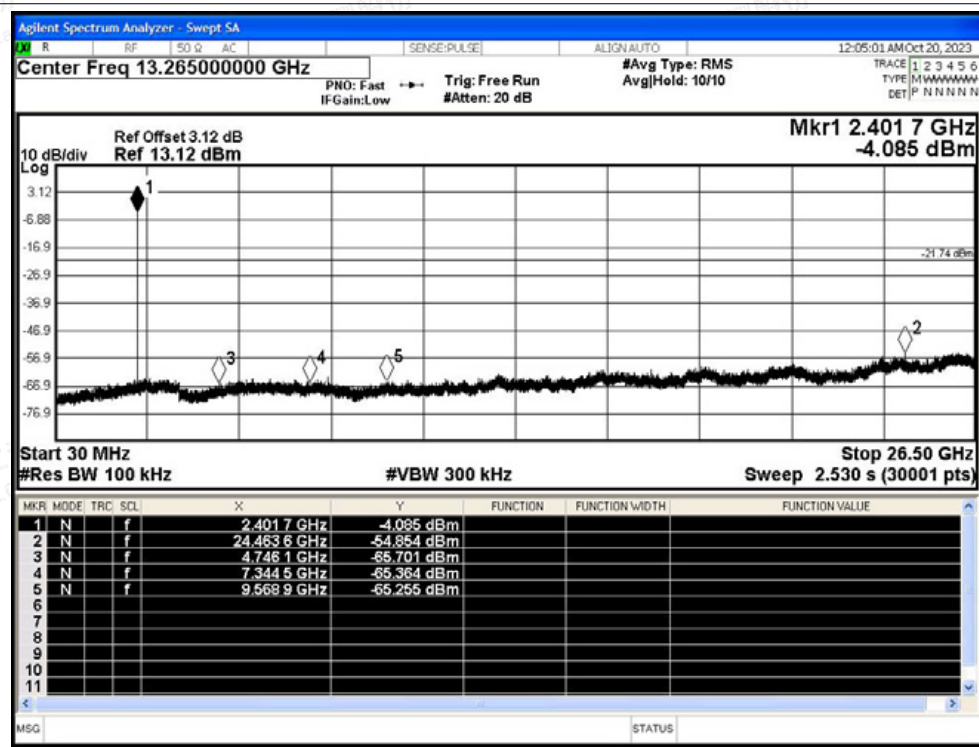




## Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref

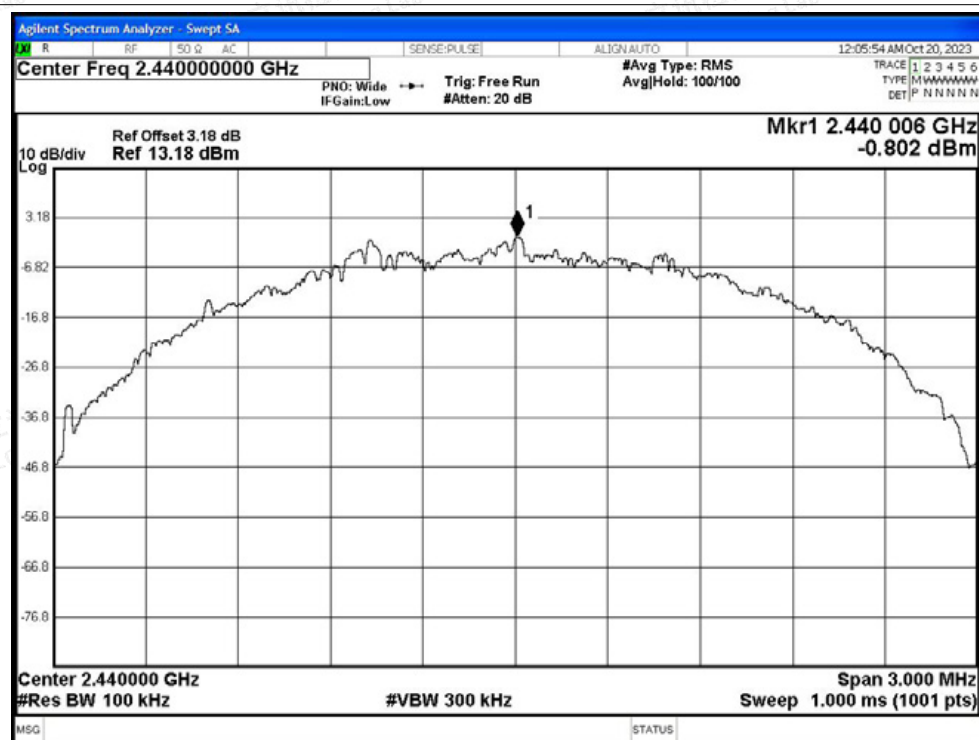


## Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission

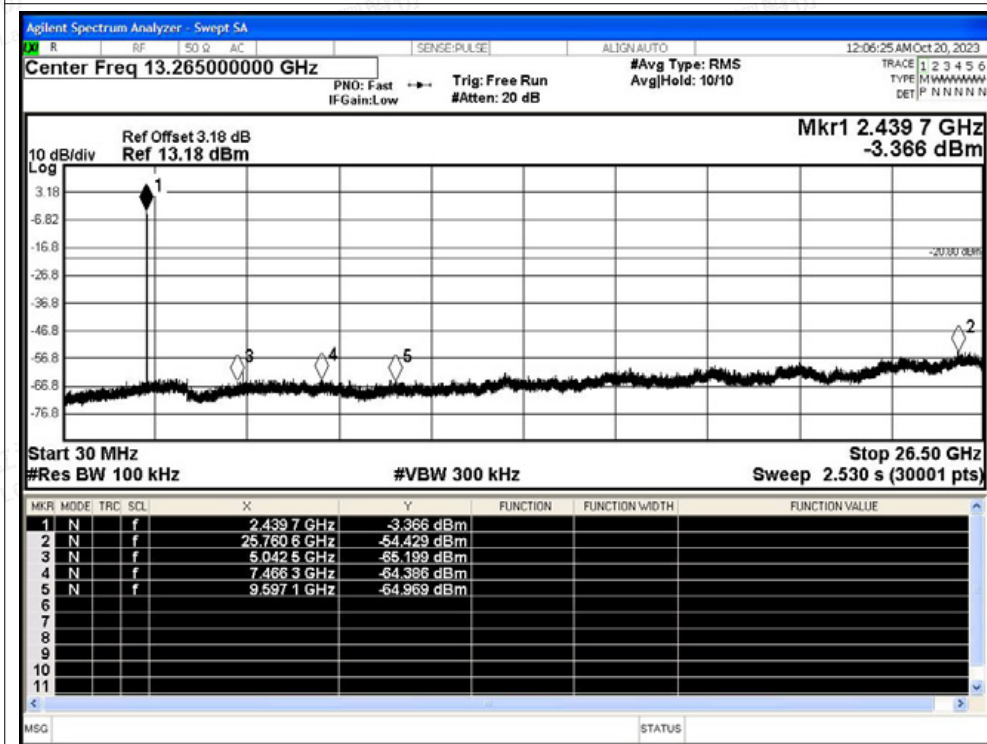




Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref

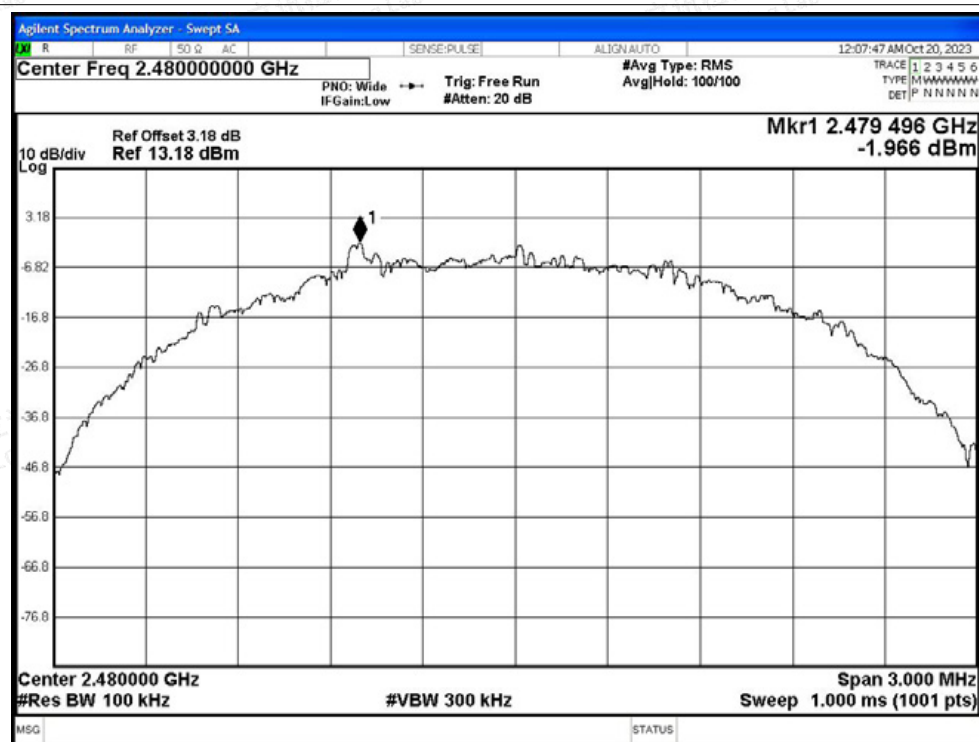


Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission

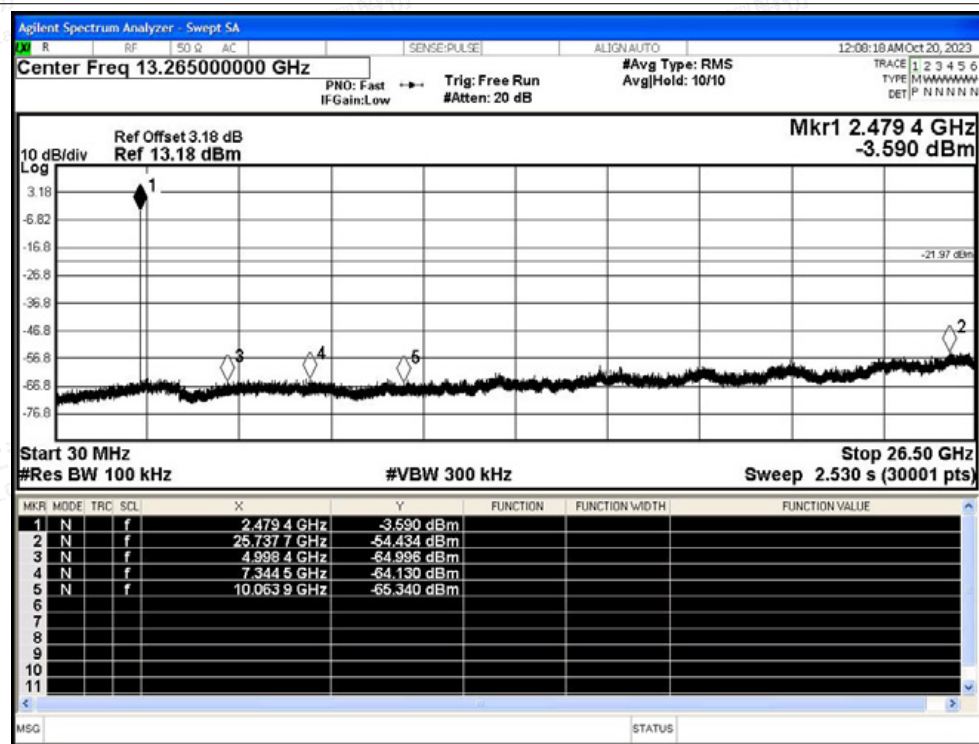




## Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref



## Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission





## B.6 Duty Cycle

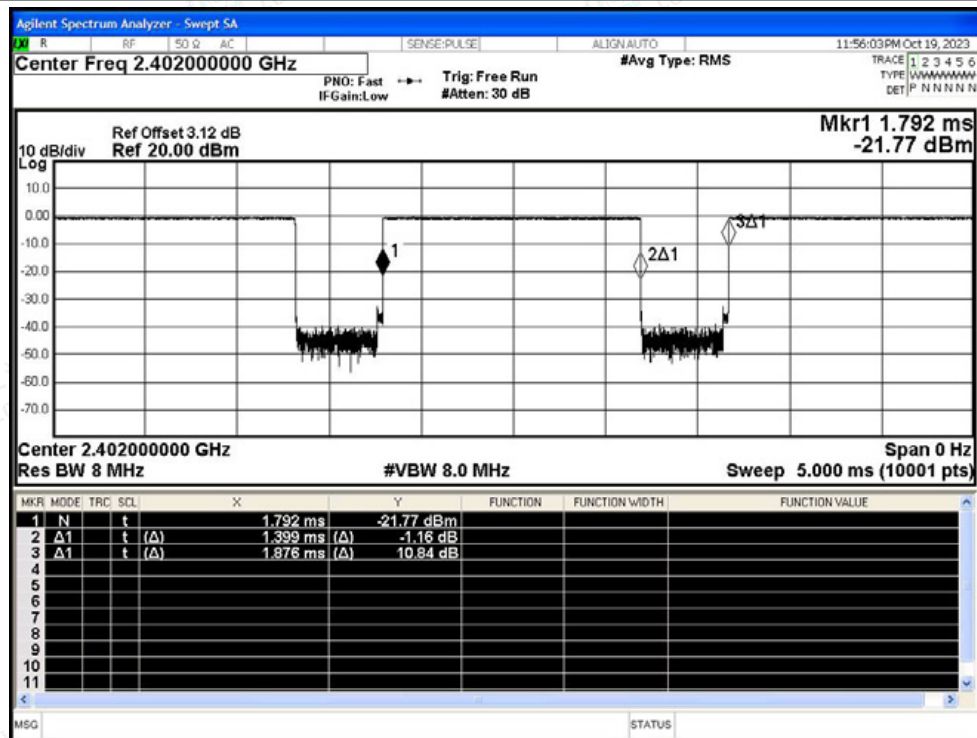
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 74.59          | 1.27                   | 0.71      |
| NVNT      | BLE 1M | 2440            | Ant1    | 74.59          | 1.27                   | 0.72      |
| NVNT      | BLE 1M | 2480            | Ant1    | 74.54          | 1.28                   | 0.72      |
| NVNT      | BLE 2M | 2402            | Ant1    | 56.32          | 2.49                   | 1.42      |
| NVNT      | BLE 2M | 2440            | Ant1    | 56.34          | 2.49                   | 1.42      |
| NVNT      | BLE 2M | 2480            | Ant1    | 56.36          | 2.49                   | 1.42      |



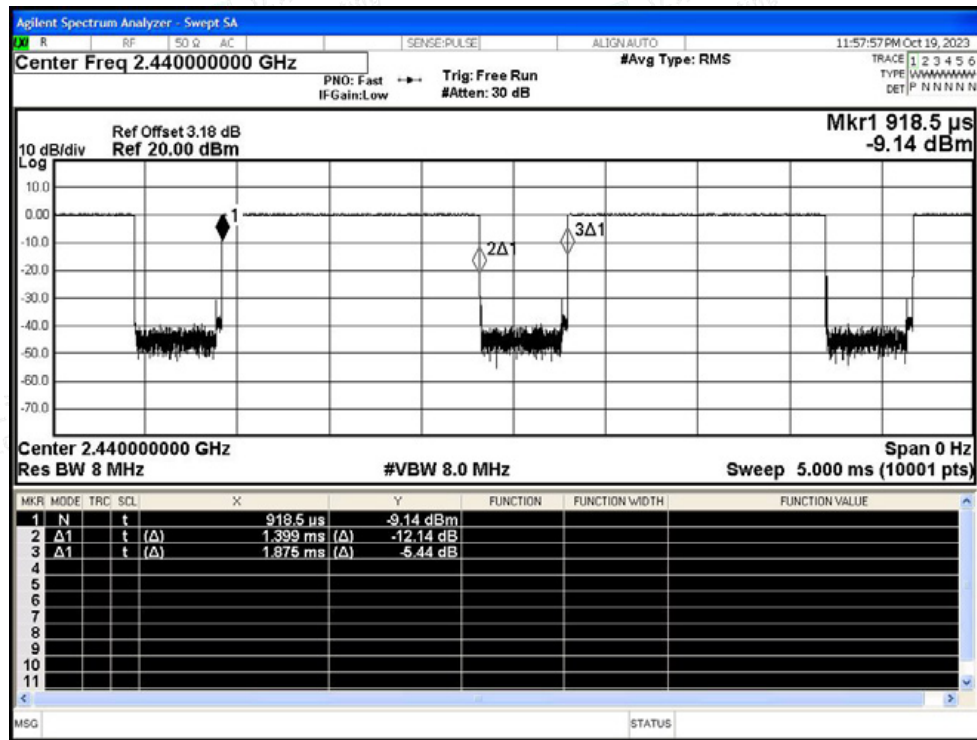


## Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1

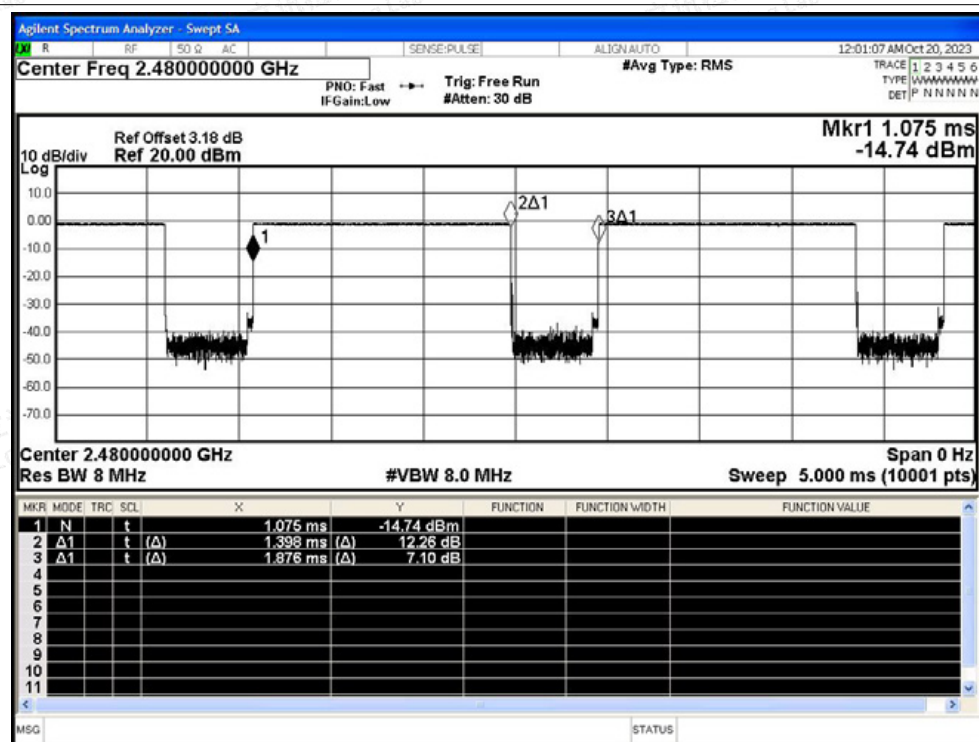


Duty Cycle NVNT BLE 1M 2440MHz Ant1

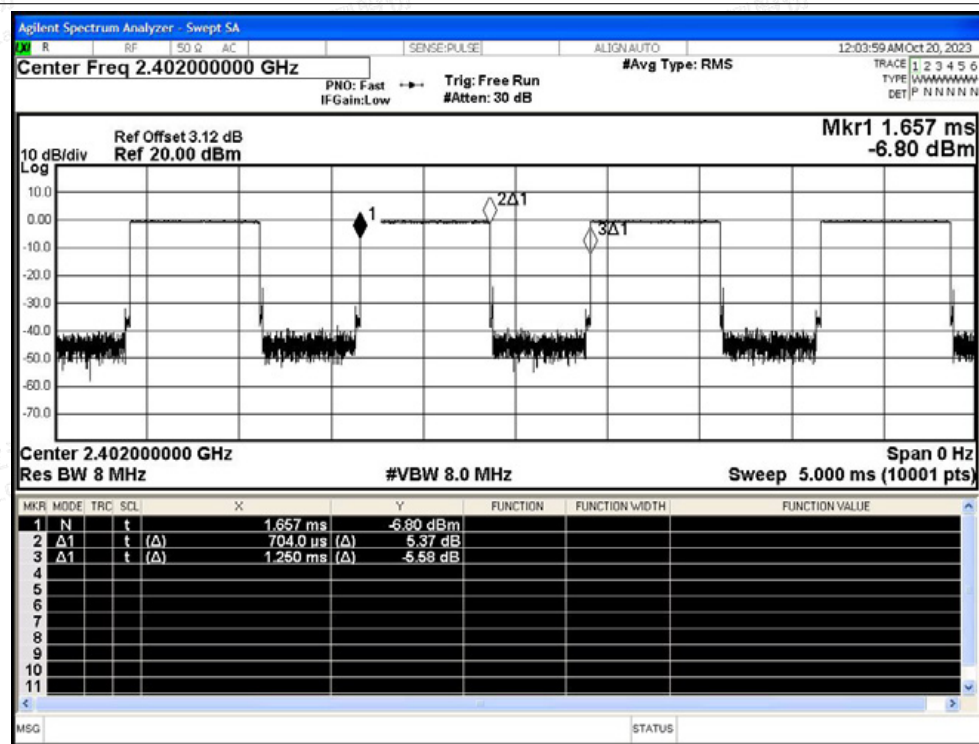




## Duty Cycle NVNT BLE 1M 2480MHz Ant1

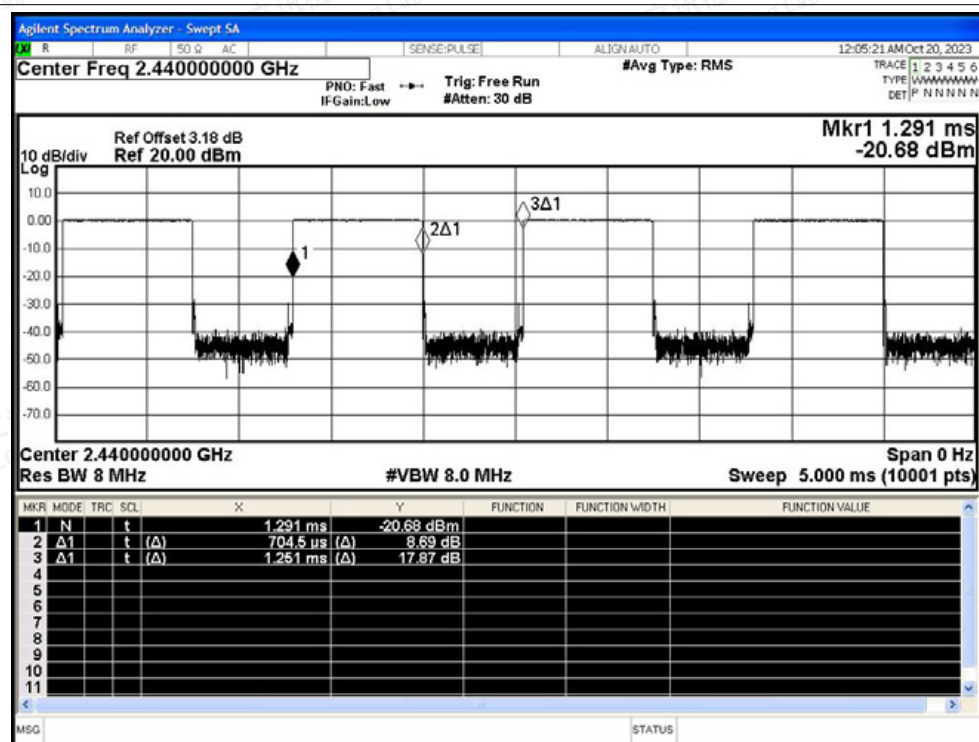


## Duty Cycle NVNT BLE 2M 2402MHz Ant1

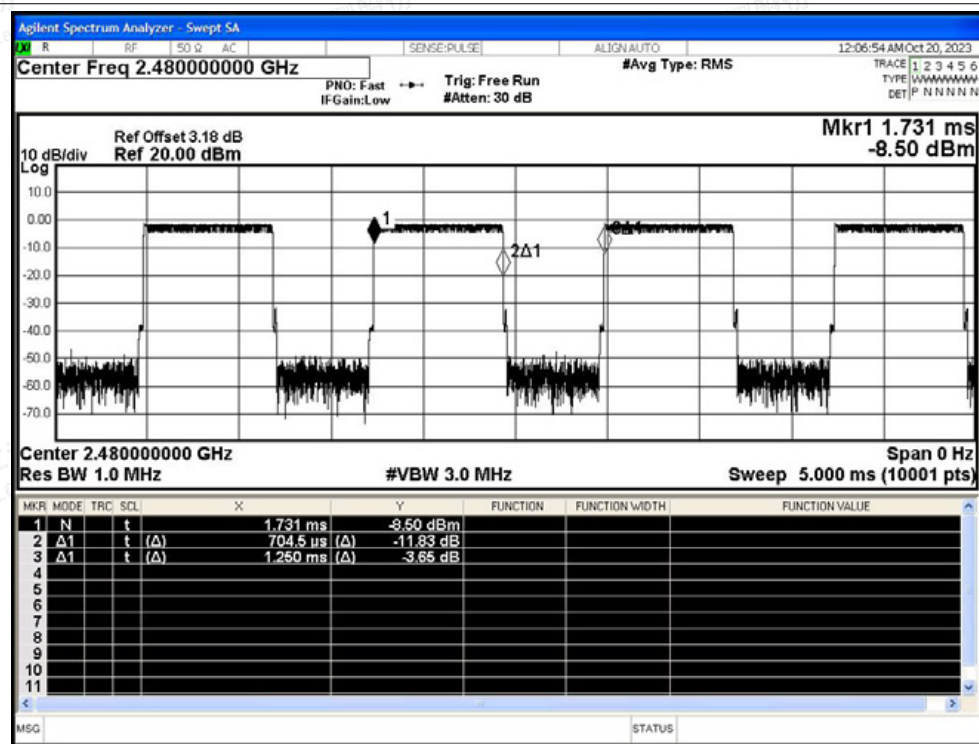




## Duty Cycle NVNT BLE 2M 2440MHz Ant1



## Duty Cycle NVNT BLE 2M 2480MHz Ant1





## B.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            | -47.17      | 4.62       | 52.68      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -56.72      | 4.62       | 43.13      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2385.744        | -46.61      | 4.62       | 53.24      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2375.28         | -56.16      | 4.62       | 43.69      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -46.86      | 4.62       | 52.99      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -56.32      | 4.62       | 43.53      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -48.8       | 4.62       | 51.05      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -54.44      | 4.62       | 45.41      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2485.888        | -43.54      | 4.62       | 56.31      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.512        | -54.44      | 4.62       | 45.41      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -49.17      | 4.62       | 50.68      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -56.05      | 4.62       | 43.80      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2310            | -50.01      | 4.62       | 49.84      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2310            | -56.56      | 4.62       | 43.29      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2382.864        | -45.65      | 4.62       | 54.20      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2376.528        | -55.88      | 4.62       | 43.97      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2390            | -49.27      | 4.62       | 50.58      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2390            | -55.95      | 4.62       | 43.90      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.5          | -48.14      | 4.62       | 51.71      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.5          | -52.23      | 4.62       | 47.62      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.872        | -39.62      | 4.62       | 60.23      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.512        | -52.23      | 4.62       | 47.62      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2500            | -49.61      | 4.62       | 50.24      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2500            | -55.83      | 4.62       | 44.02      | Average  | 54             | Pass    |

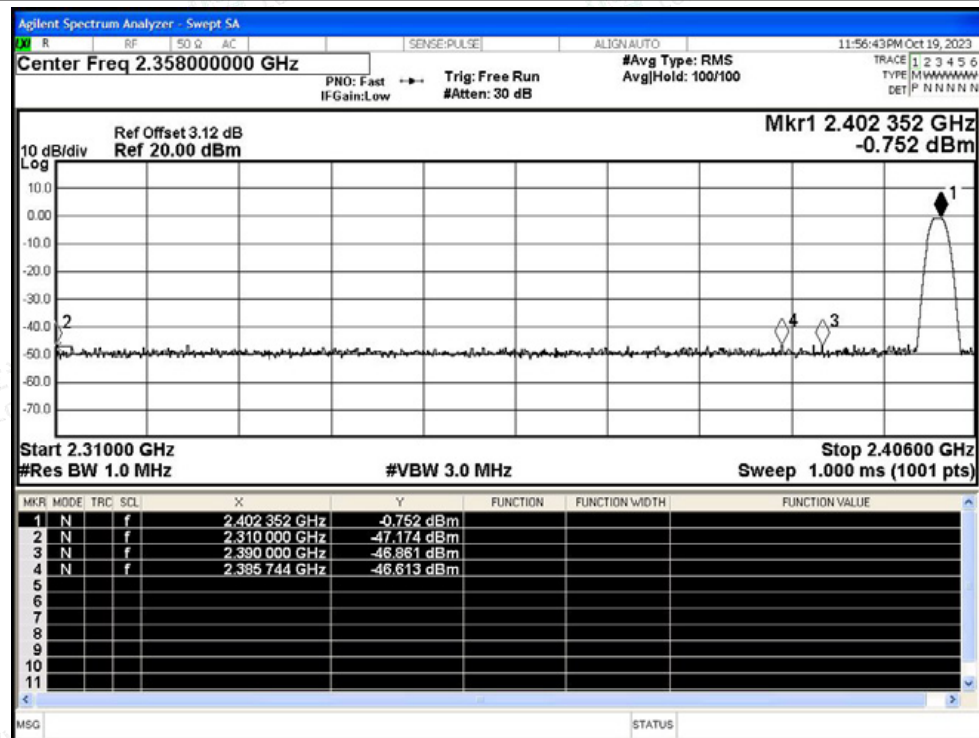


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
Scan code to check authenticity

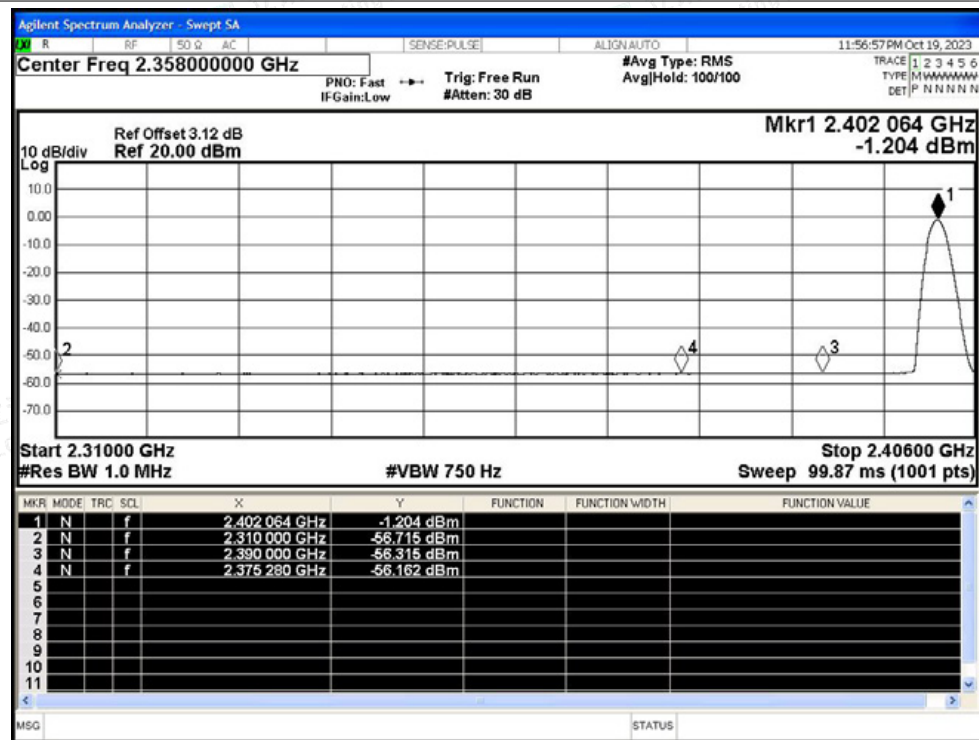


## Test Graphs

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

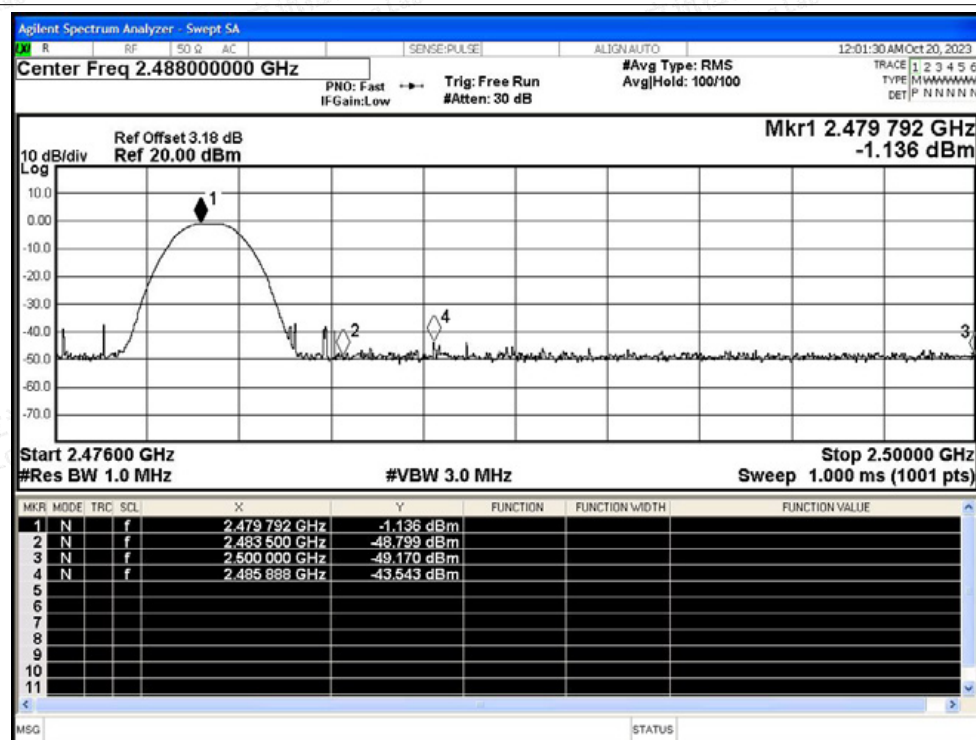


## Restrict Band NVNT BLE 1M 2402MHz Ant1 Average

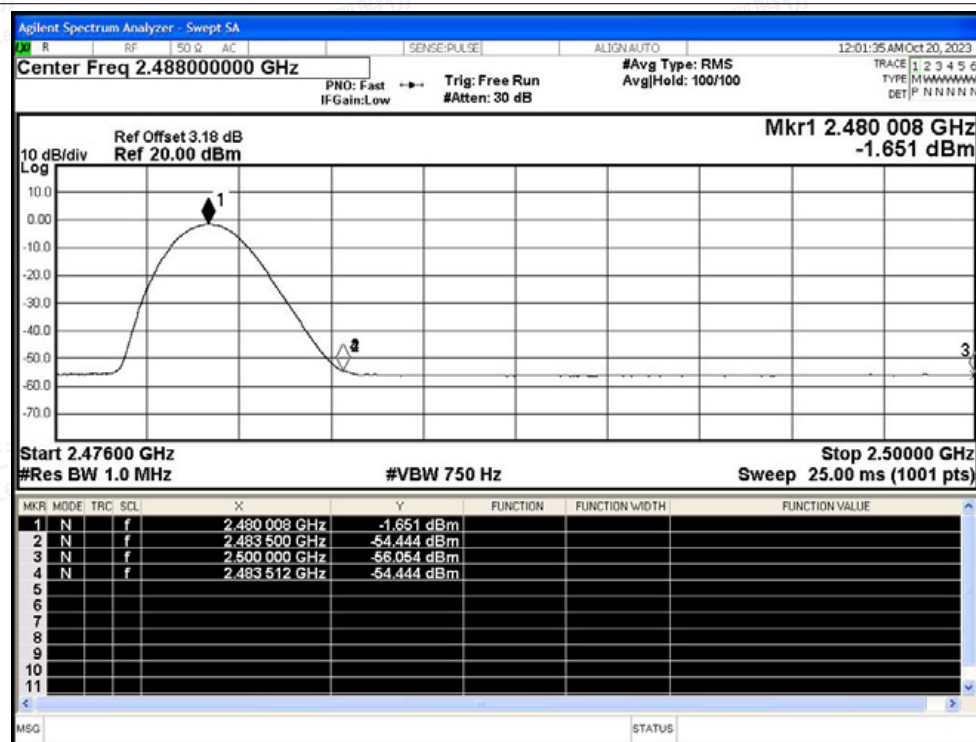




## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak

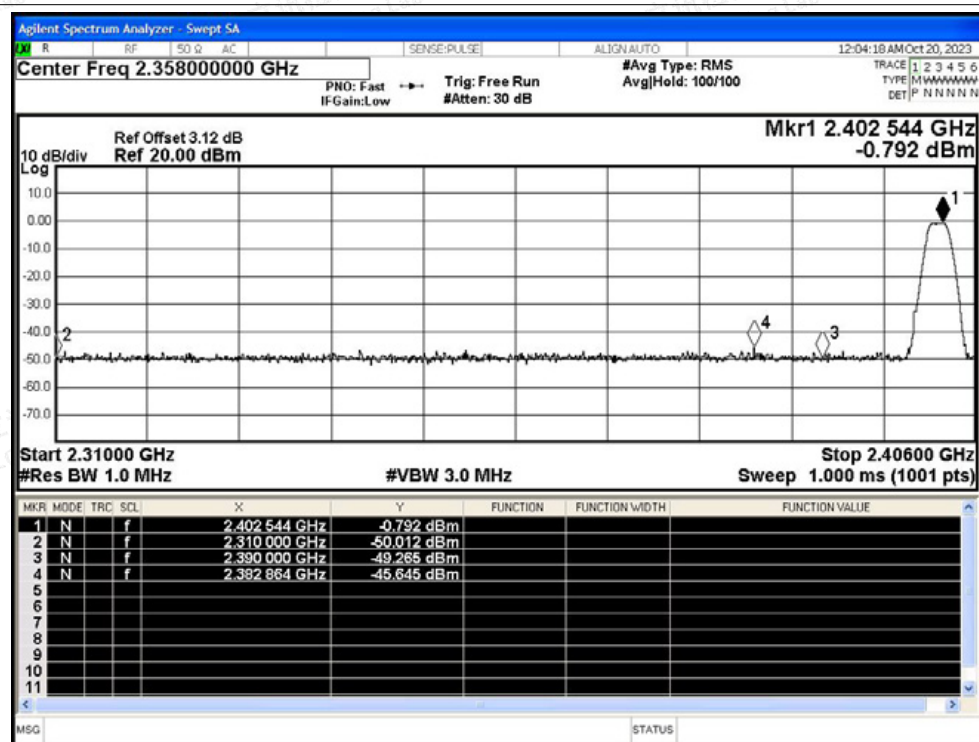


## Restrict Band NVNT BLE 1M 2480MHz Ant1 Average

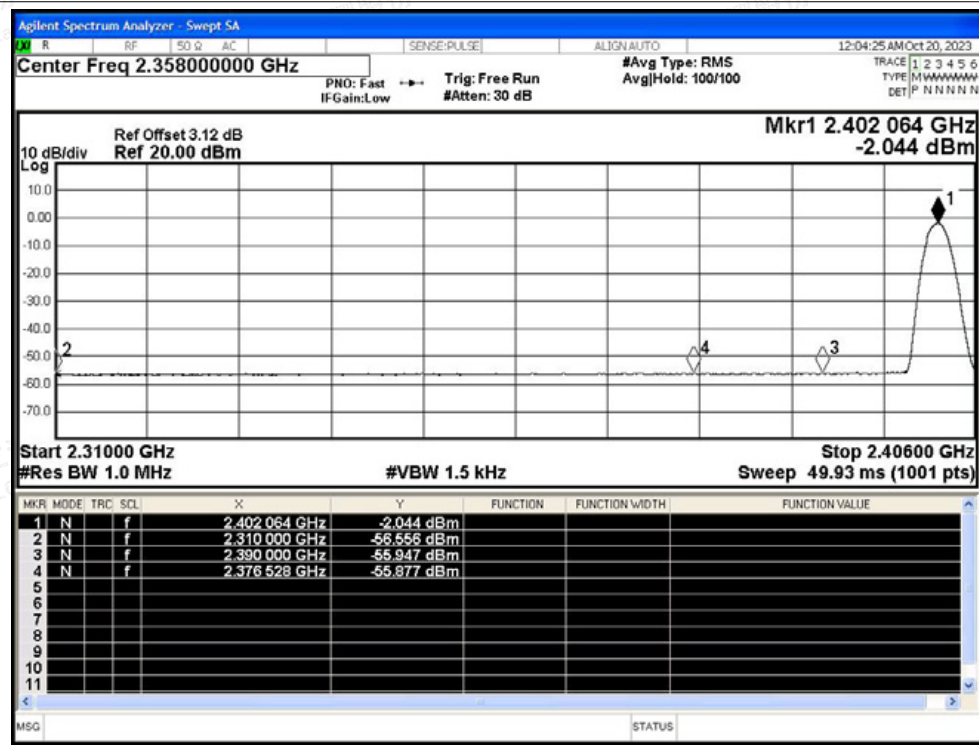




## Restrict Band NVNT BLE 2M 2402MHz Ant1 Peak

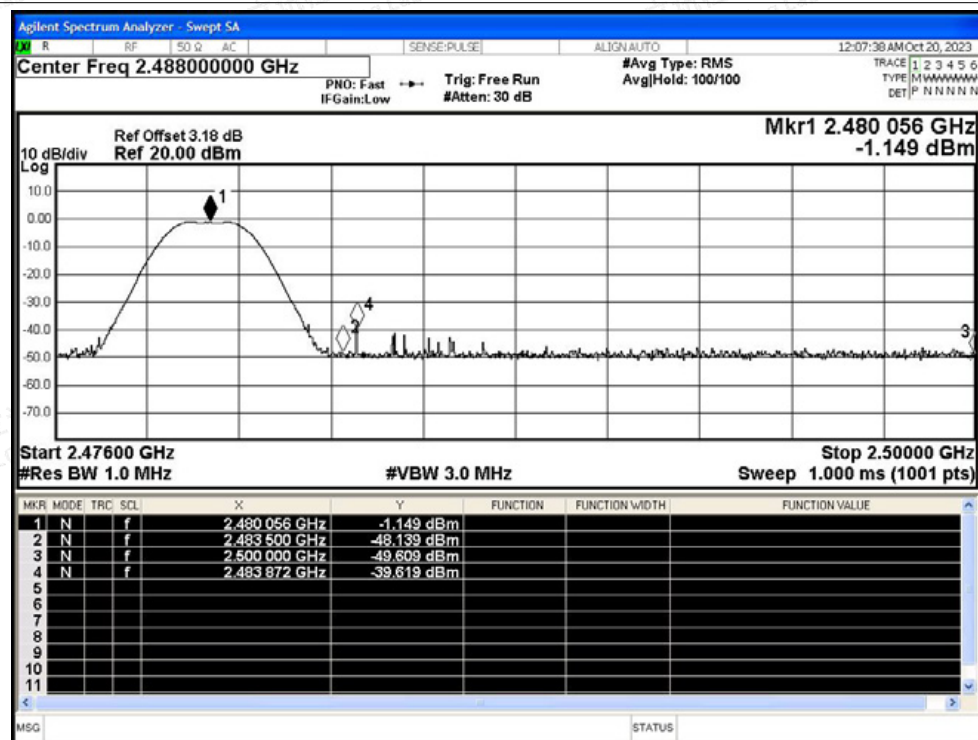


## Restrict Band NVNT BLE 2M 2402MHz Ant1 Average





## Restrict Band NVNT BLE 2M 2480MHz Ant1 Peak



## Restrict Band NVNT BLE 2M 2480MHz Ant1 Average

