



## Appendix B

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

Product Name: VIDEO PROJECTOR

Test Model: HY-300A

#### Environmental Conditions

|                    |            |
|--------------------|------------|
| Temperature:       | 23.8°C     |
| Relative Humidity: | 52.1%      |
| ATM Pressure:      | 100.0 kPa  |
| Test Engineer:     | Paddi Chen |
| Supervised by:     | Nick Peng  |



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## B.1 -6dB Bandwidth

| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.658                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.657                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.651                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 1.146                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | 1.163                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 1.145                 | $\geq 0.5$                  | Pass    |



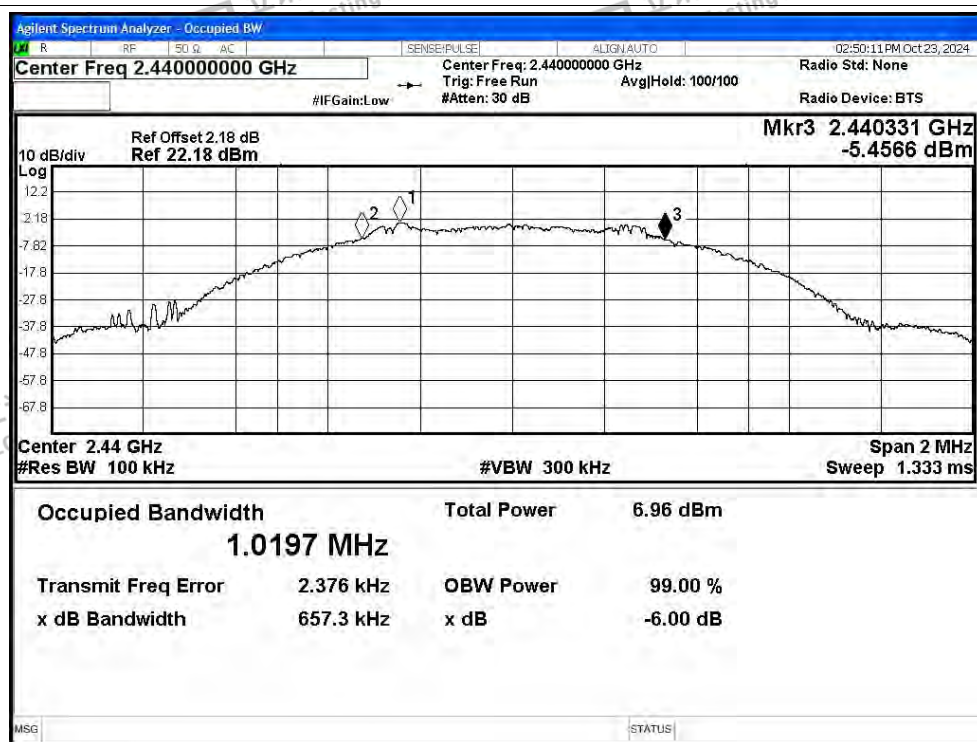


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1



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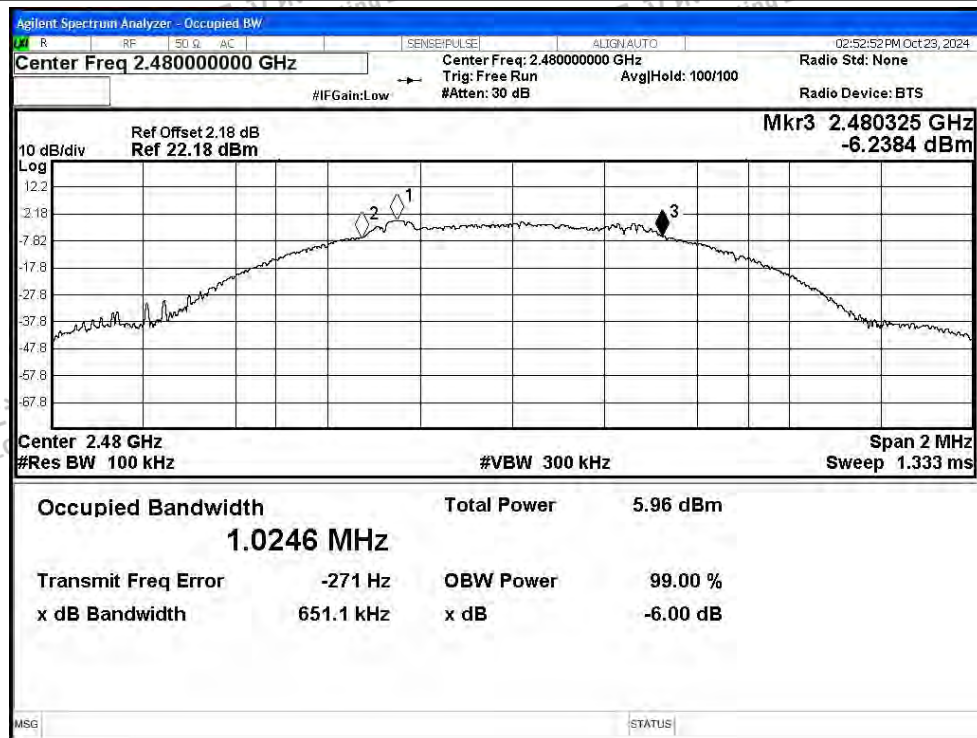
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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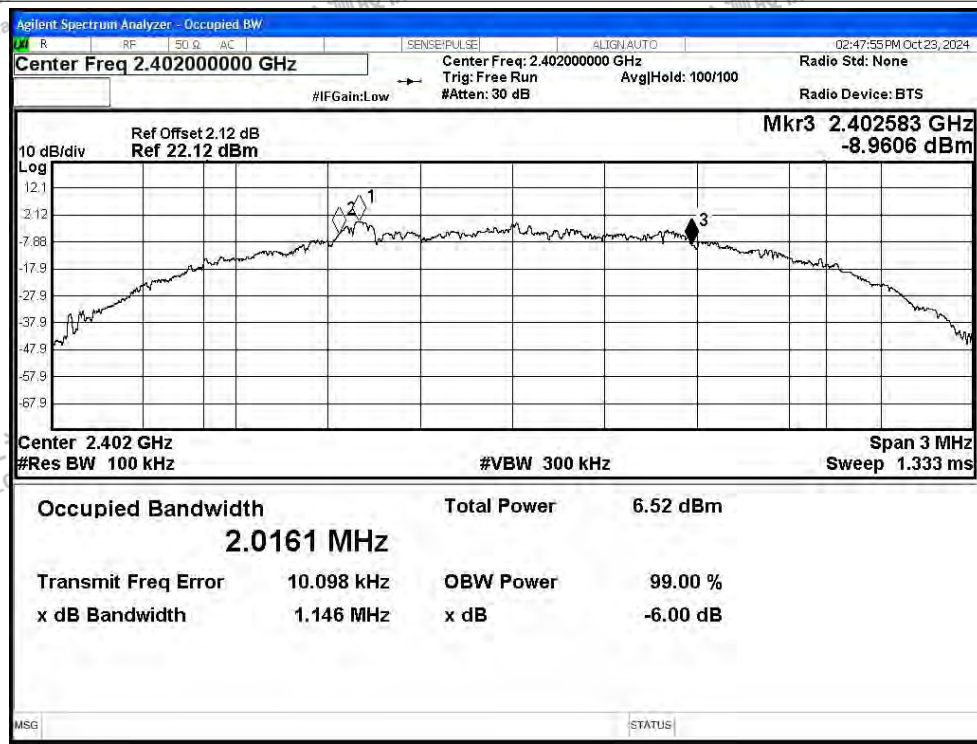
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-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1



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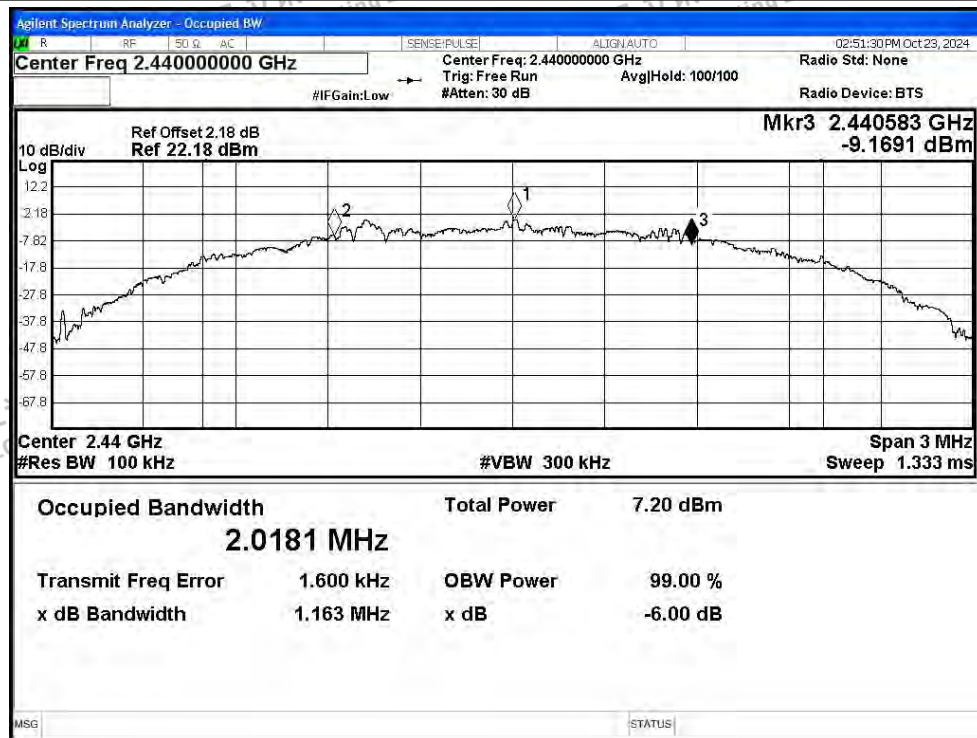
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-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1



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## B.2 Maximum Peak Conducted Output Power

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.31                  | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 1.16                  | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.16                  | 30          | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 0.22                  | 30          | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | 0.96                  | 30          | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 0                     | 30          | Pass    |

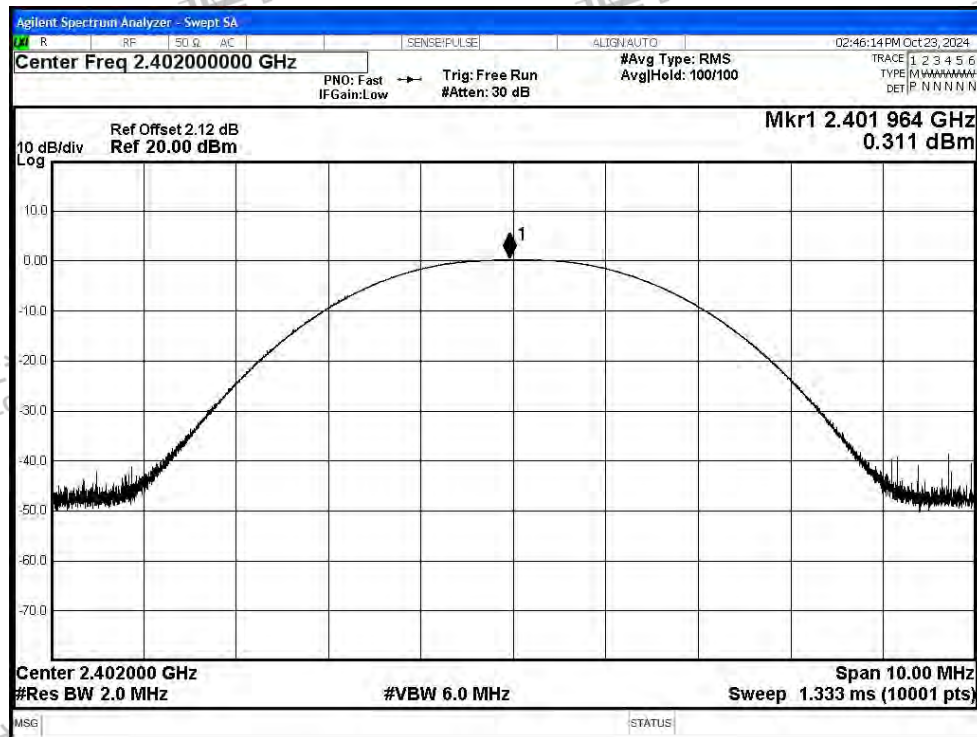


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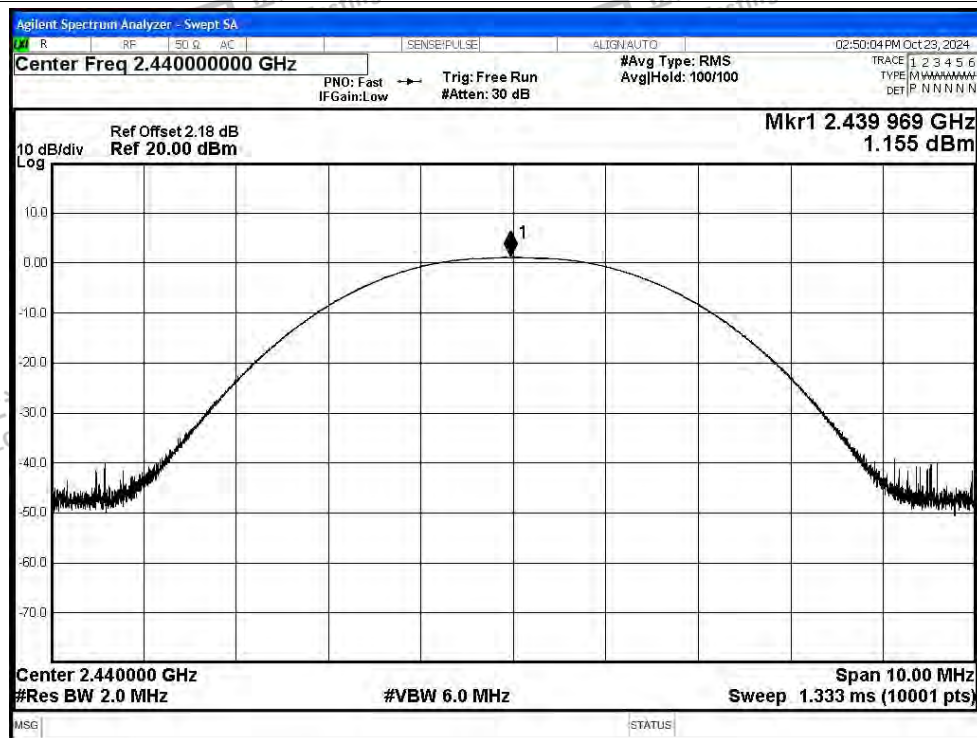


## Test Graphs

## Power NVNT BLE 1M 2402MHz Ant1

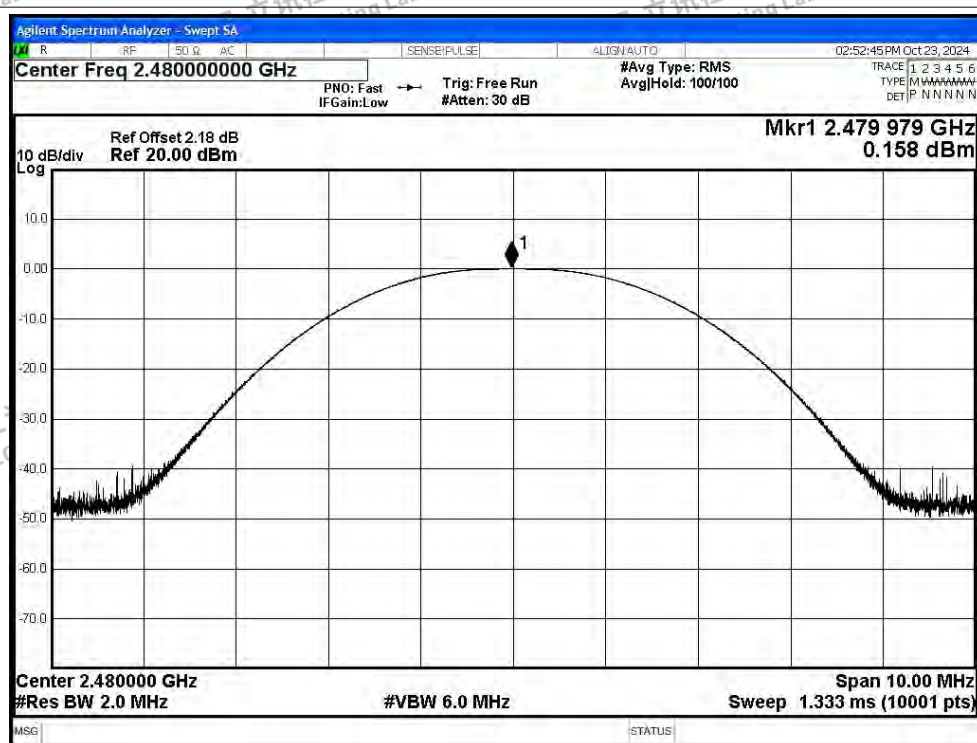


## Power NVNT BLE 1M 2440MHz Ant1

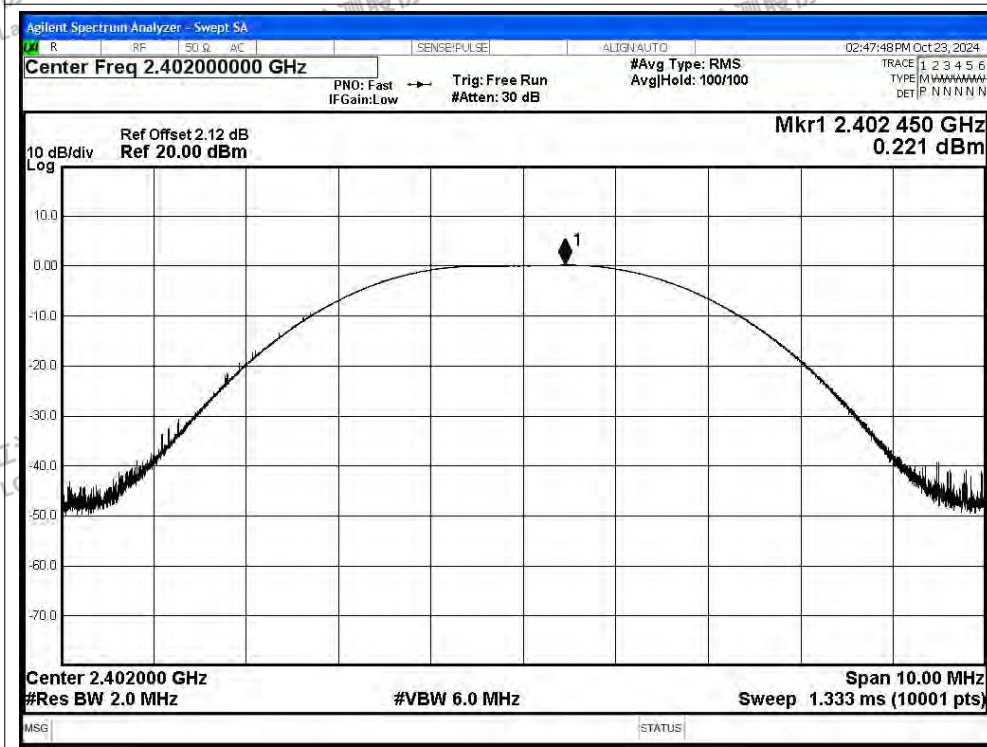




Power NVNT BLE 1M 2480MHz Ant1



Power NVNT BLE 2M 2402MHz Ant1



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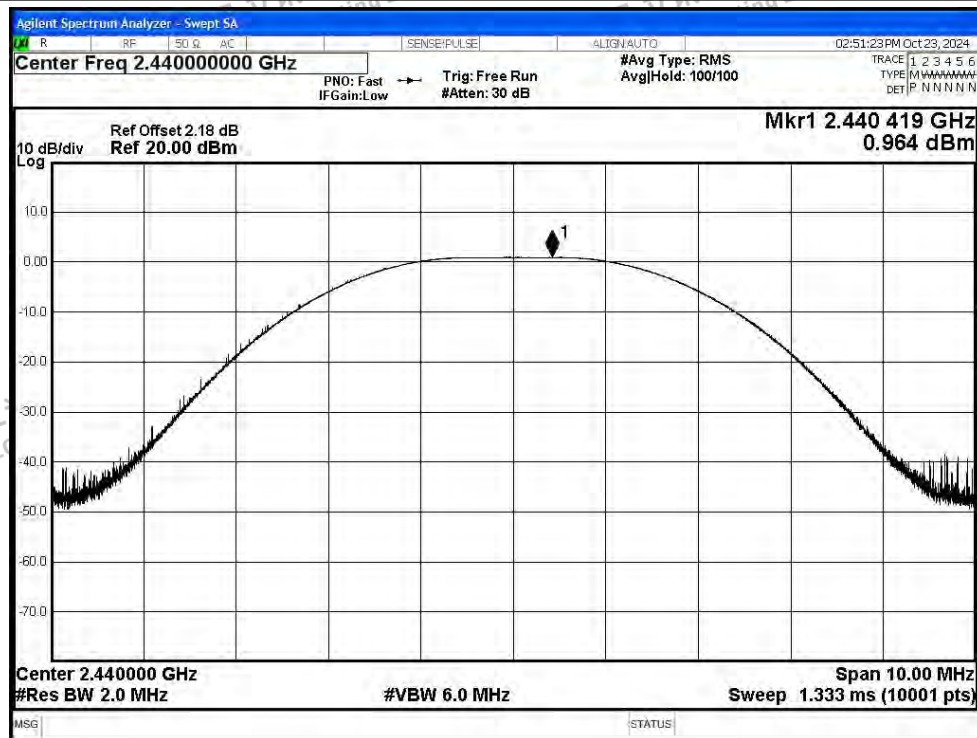
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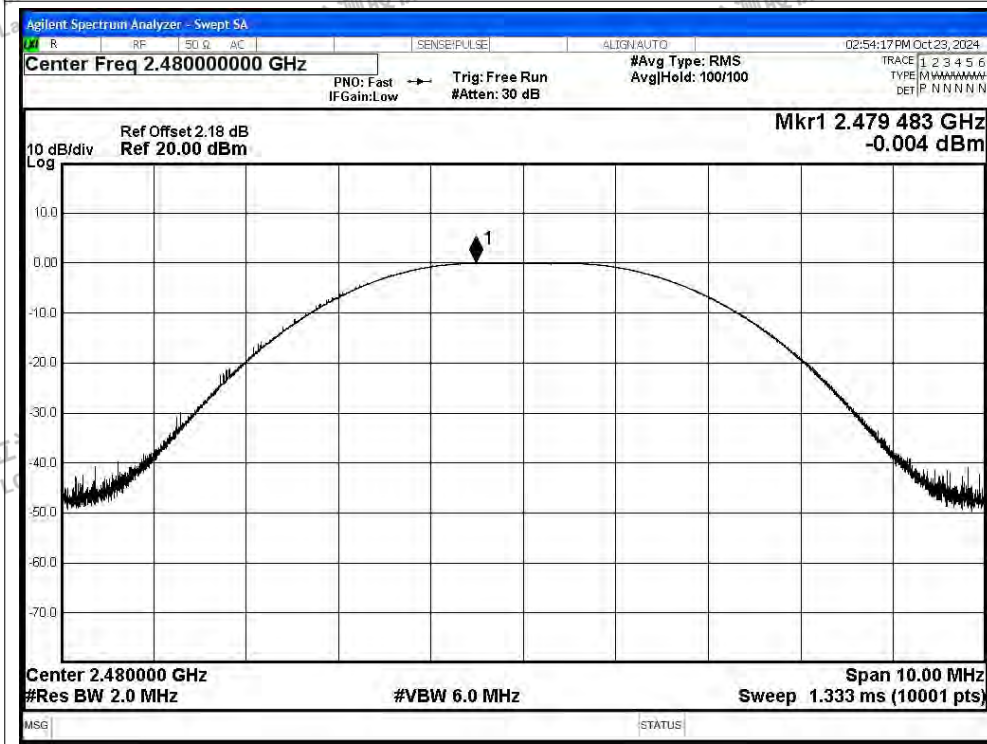




Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1





### B.3 Maximum Peak Power Spectral Density Level

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -16.26                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -15.32                   | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -16.47                   | 8                | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -19.96                   | 8                | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | -18.53                   | 8                | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -19.91                   | 8                | Pass    |

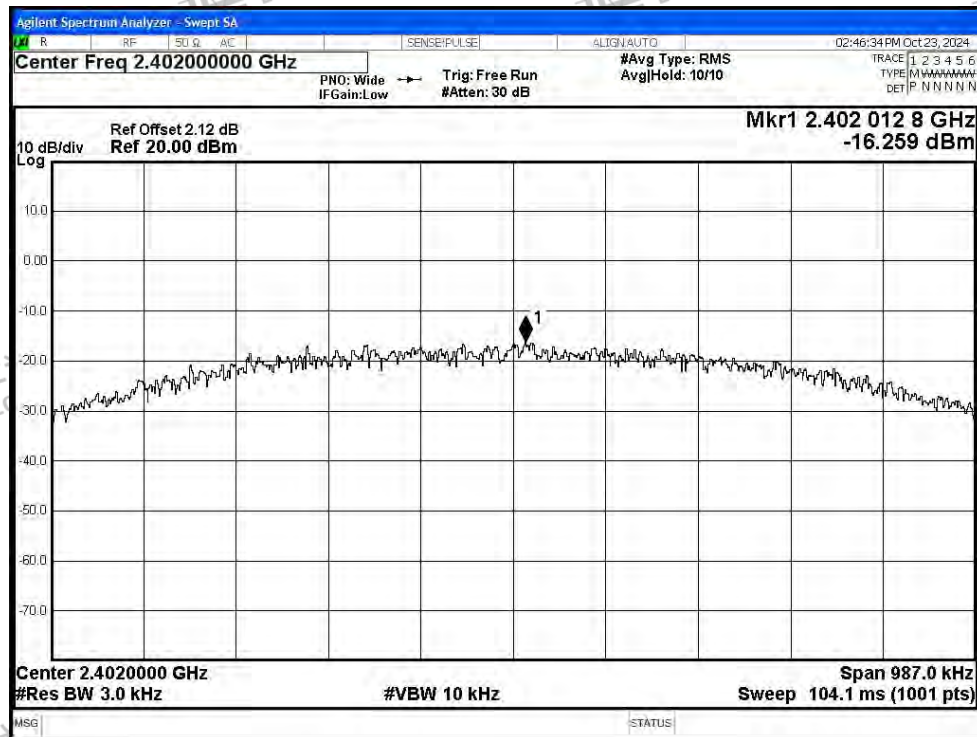


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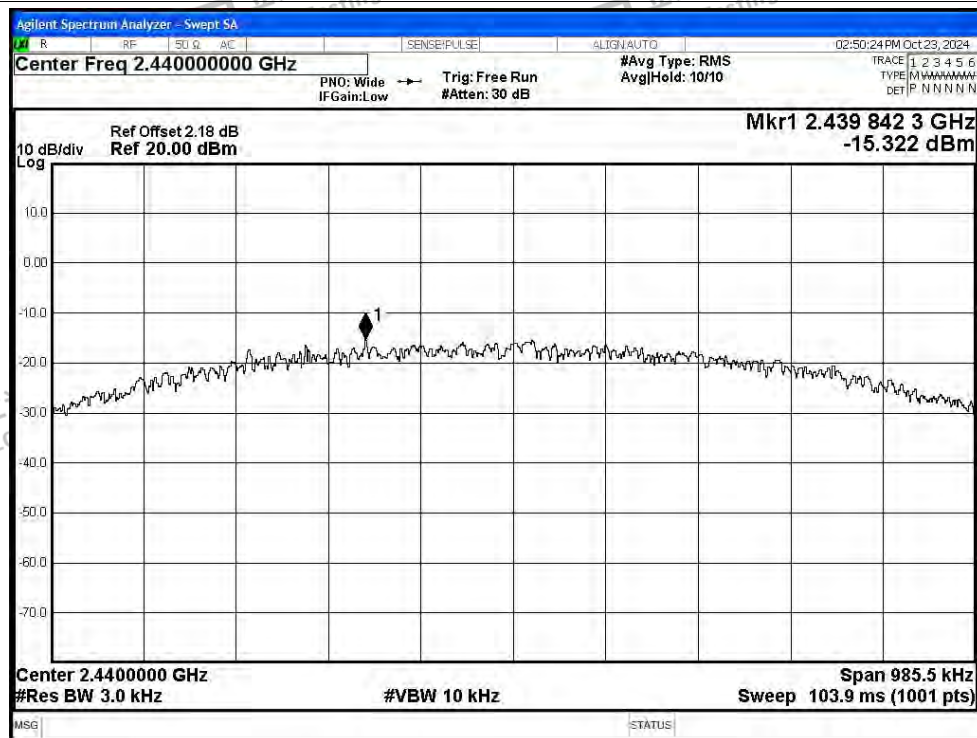


## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1

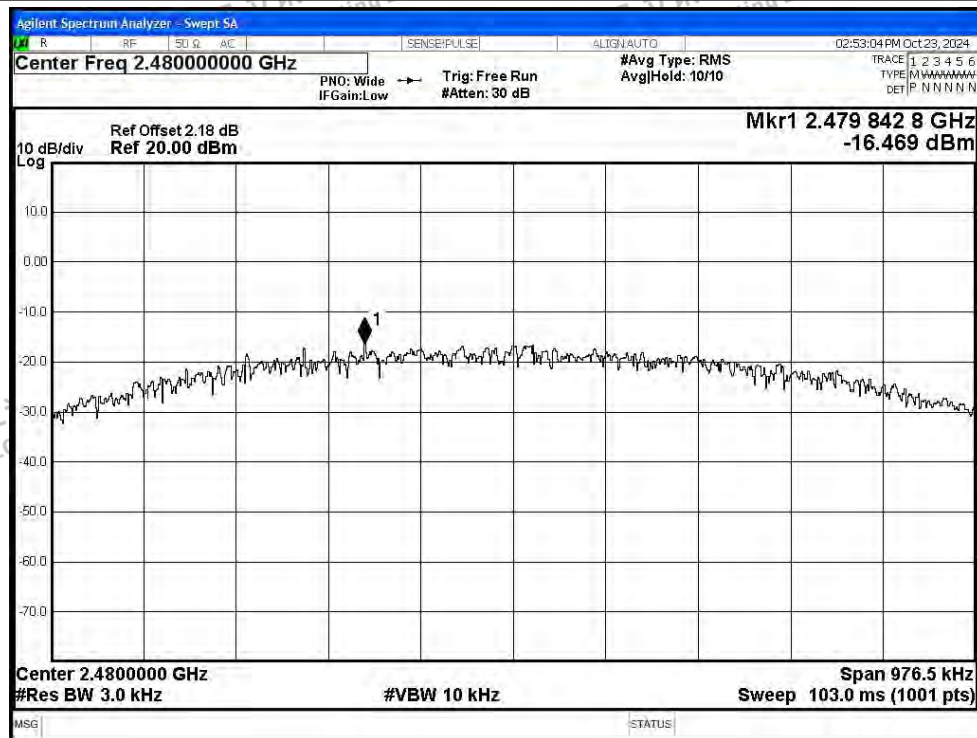


PSD NVNT BLE 1M 2440MHz Ant1

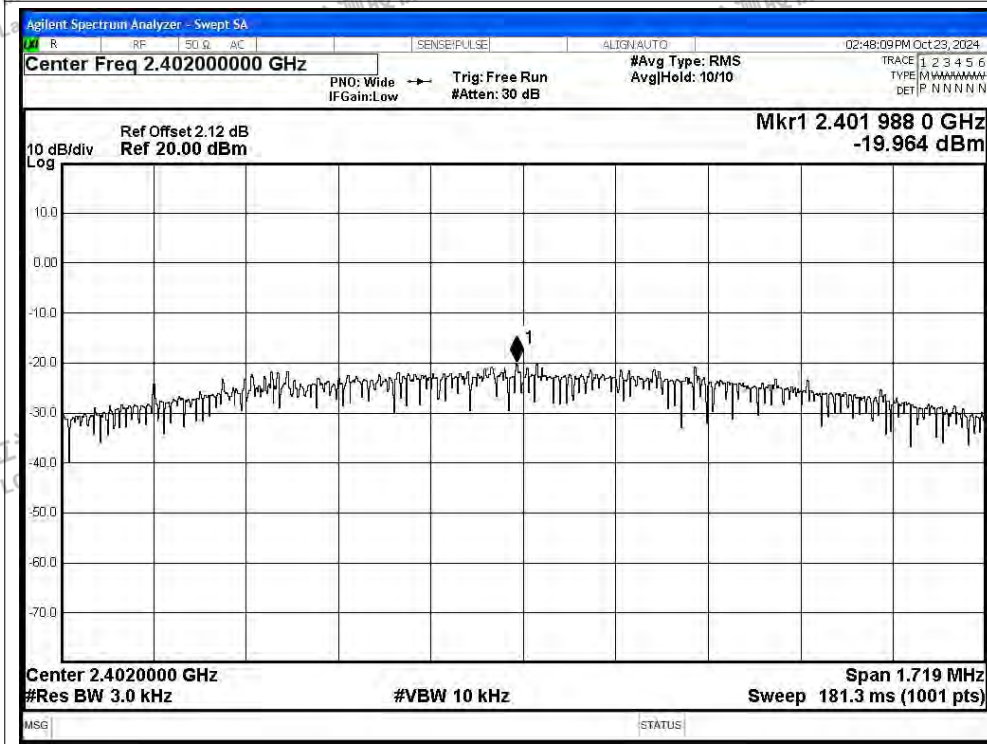




## PSD NVNT BLE 1M 2480MHz Ant1



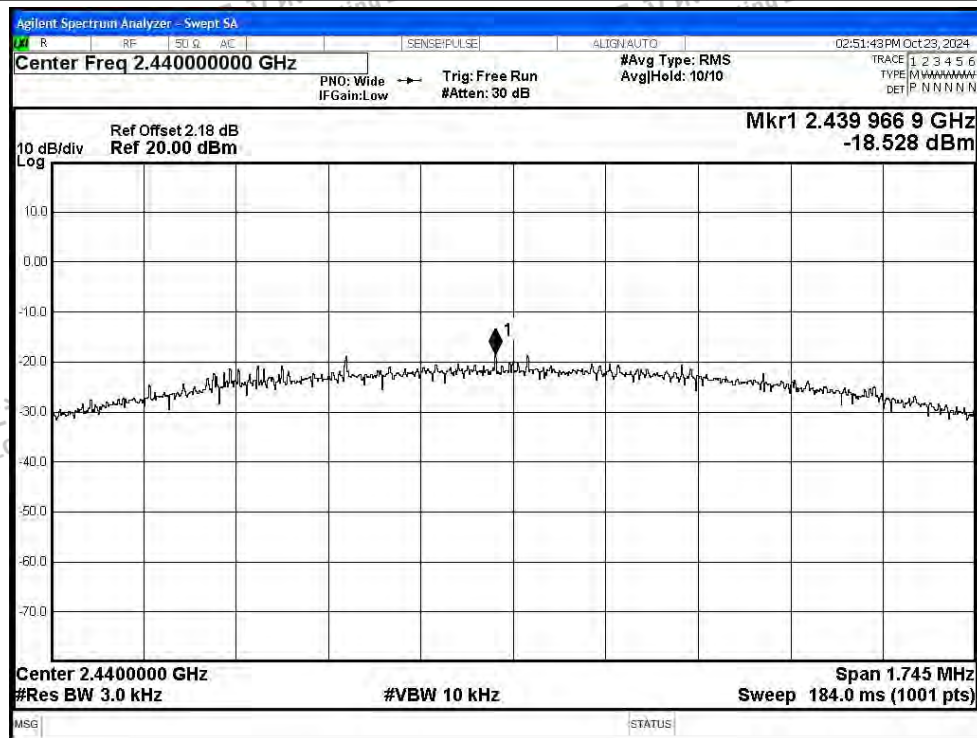
## PSD NVNT BLE 2M 2402MHz Ant1



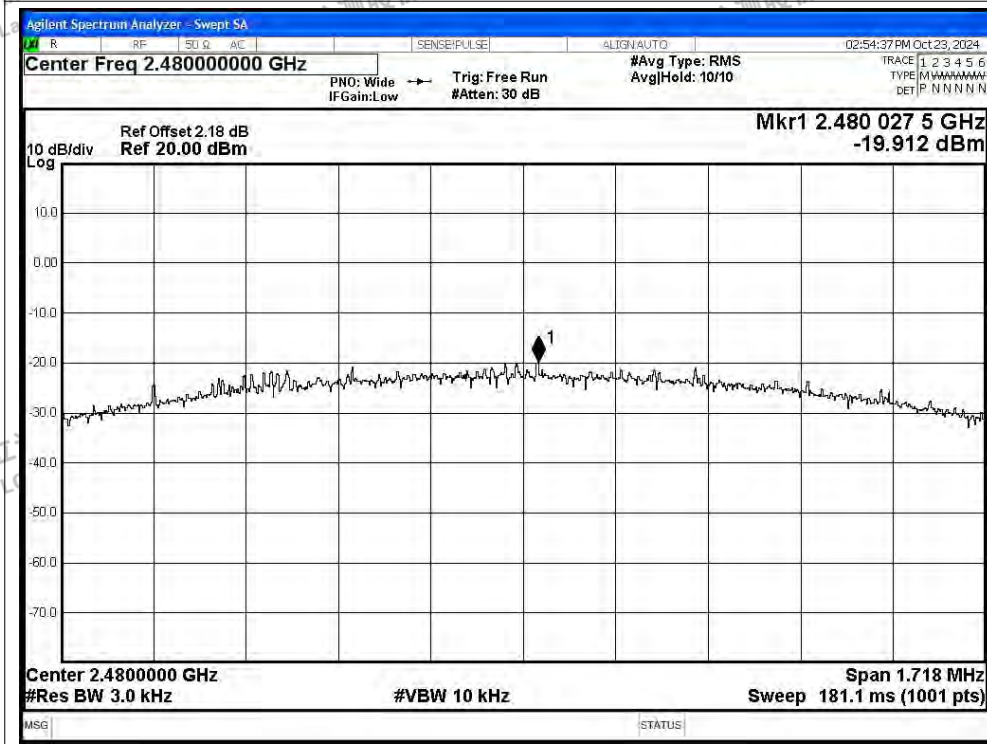




## PSD NVNT BLE 2M 2440MHz Ant1



## 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    | -55.52          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -56.9           | -20         | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -43.62          | -20         | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -55.62          | -20         | Pass    |



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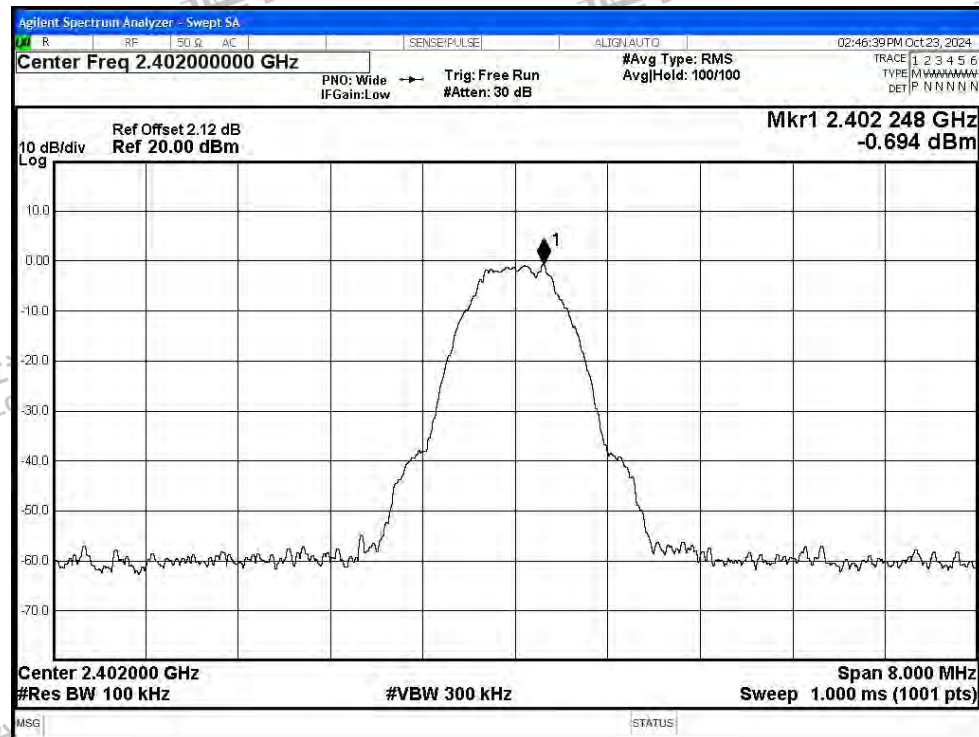
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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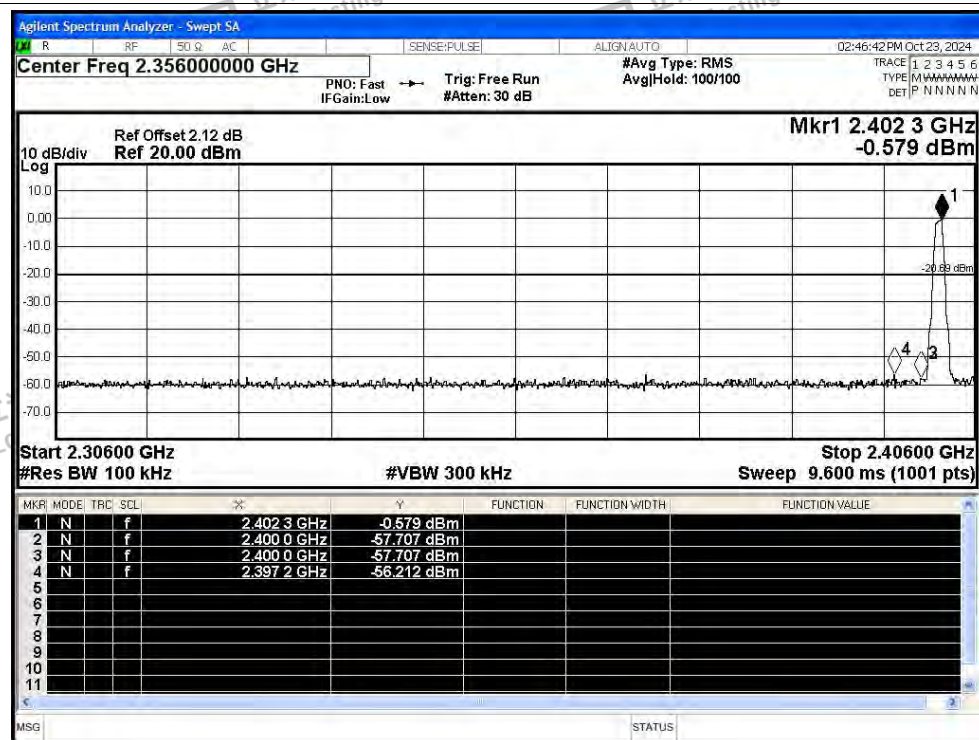


## Test Graphs

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



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



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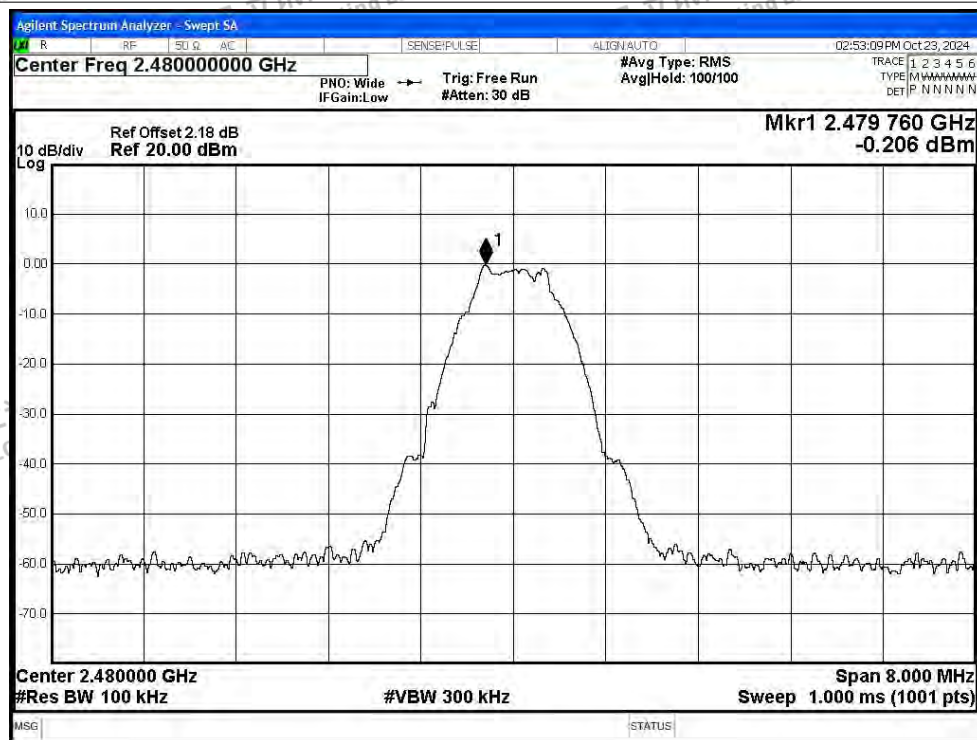
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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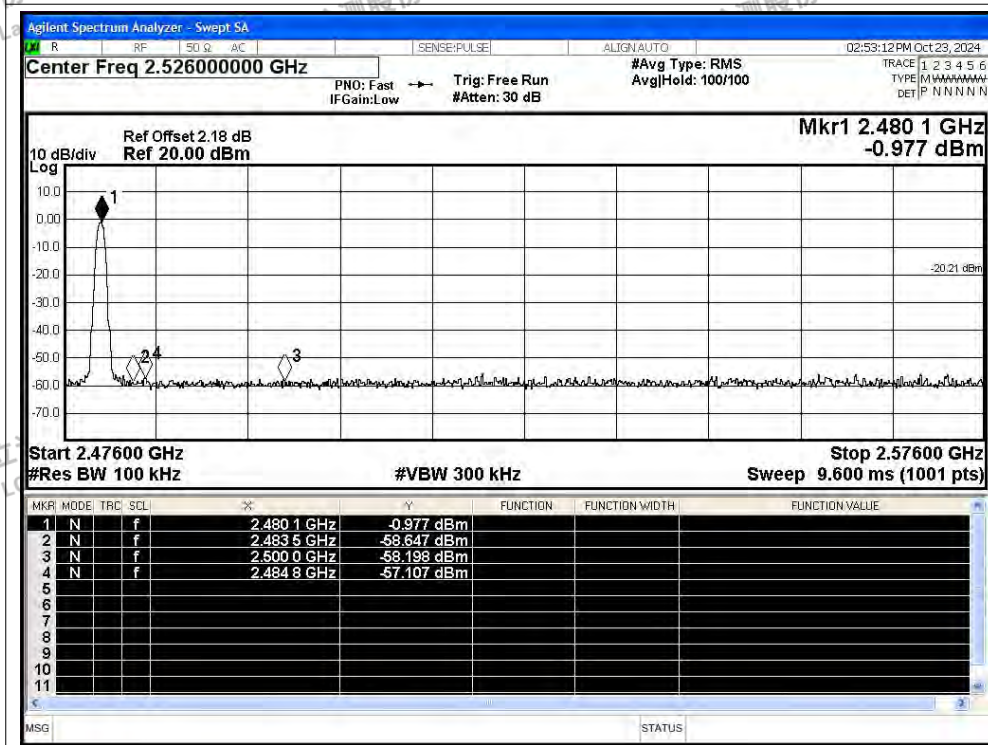
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## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



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



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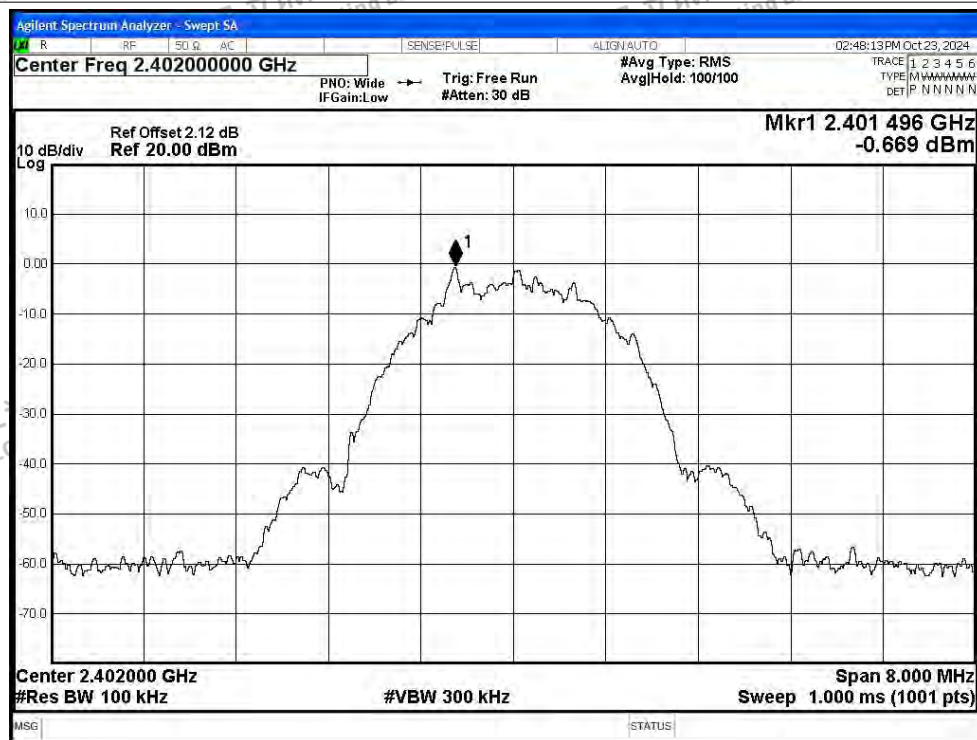
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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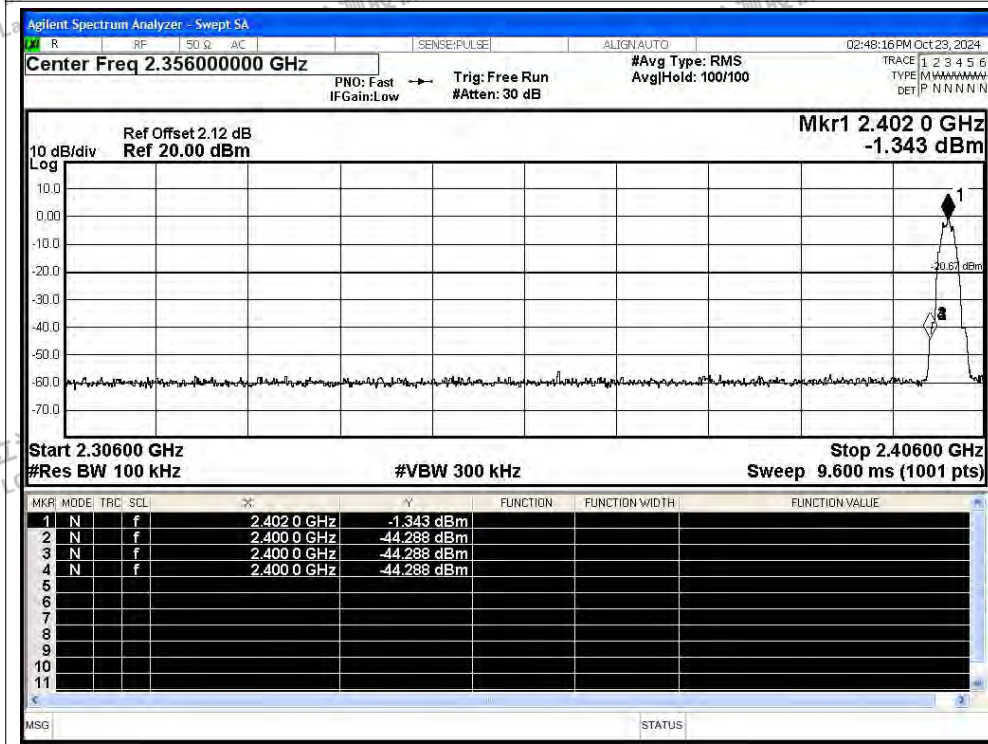




## Band Edge NVNT BLE 2M 2402MHz Ant1 Ref



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



Shenzhen LCS Compliance Testing Laboratory Ltd.

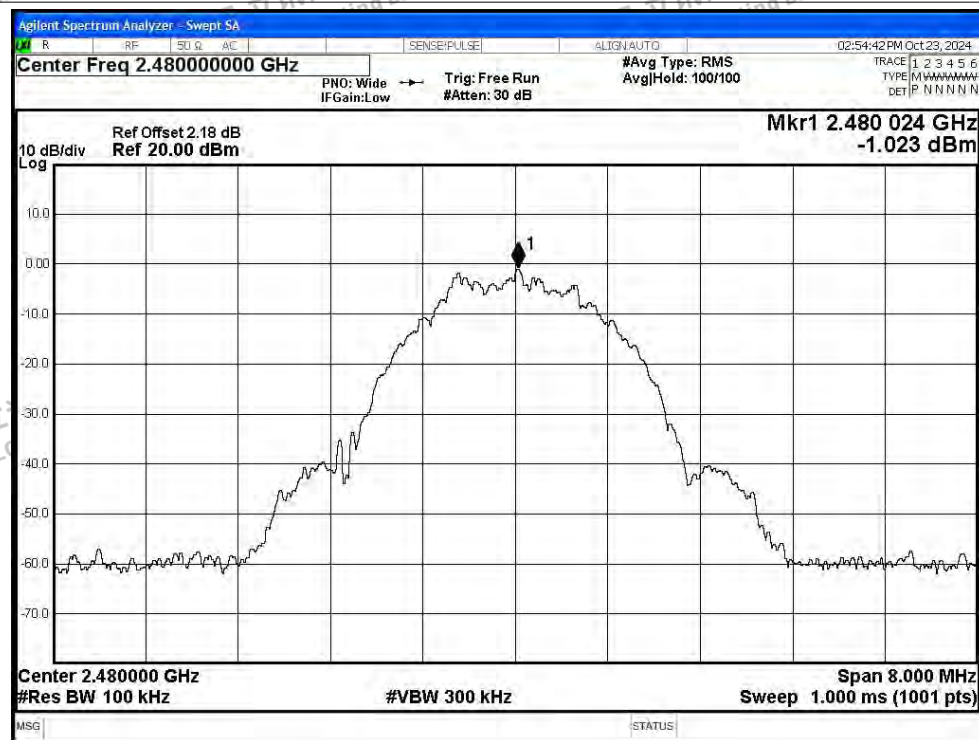
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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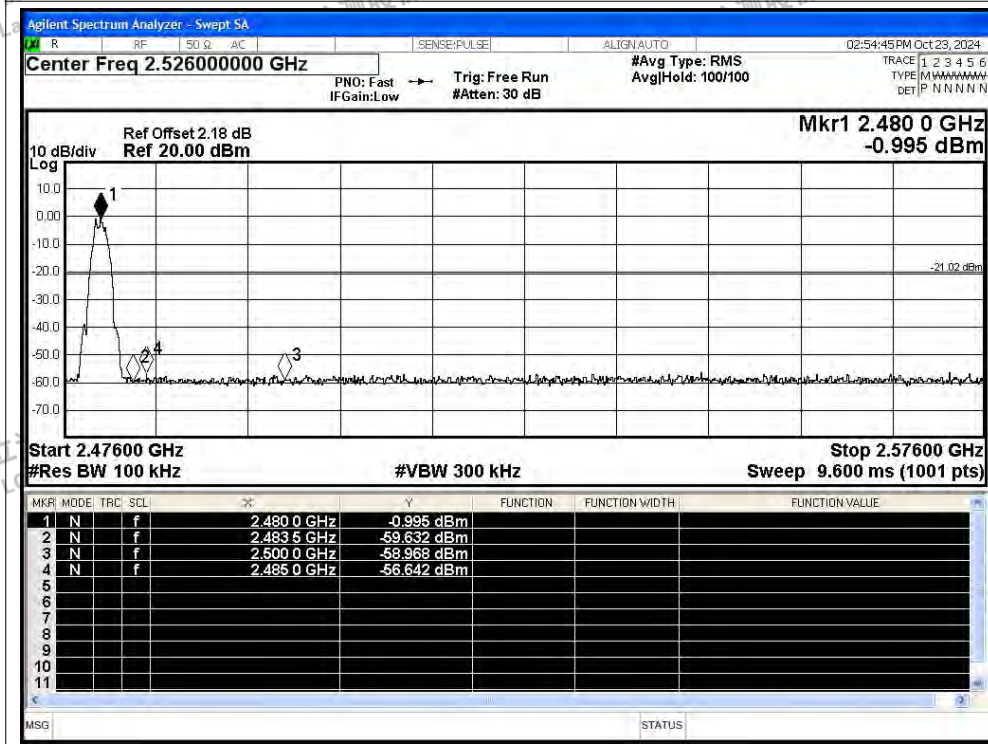
Scan code to check authenticity



## 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    | -55.33          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -55.94          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -54.35          | -20         | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | -55.05          | -20         | Pass    |
| NVNT      | BLE 2M | 2440            | Ant1    | -55.3           | -20         | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | -54.1           | -20         | Pass    |



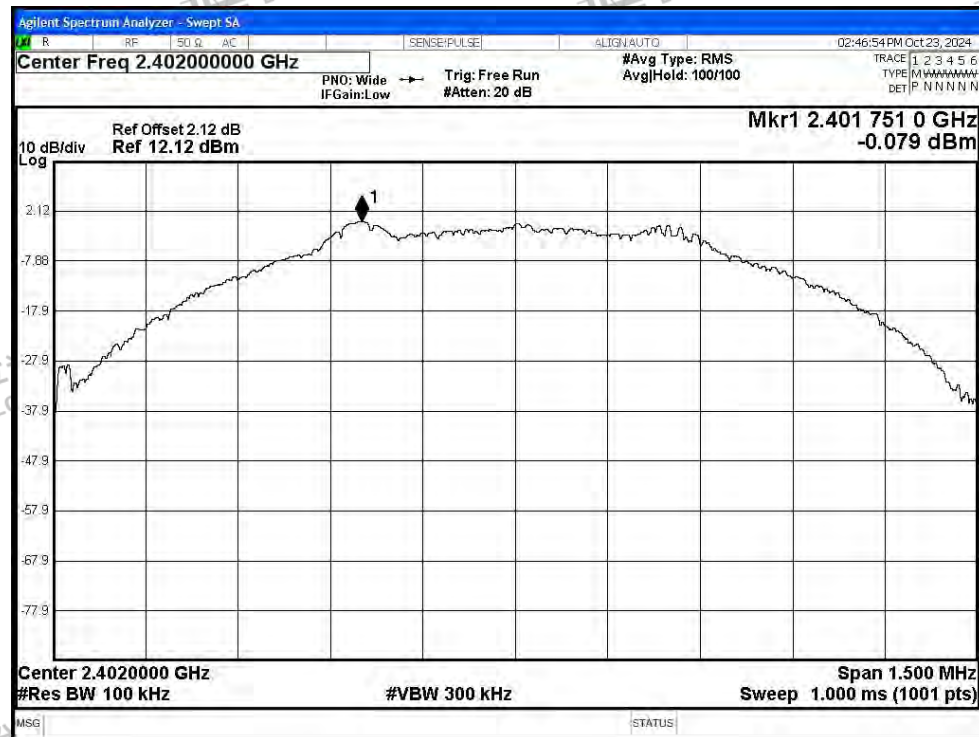
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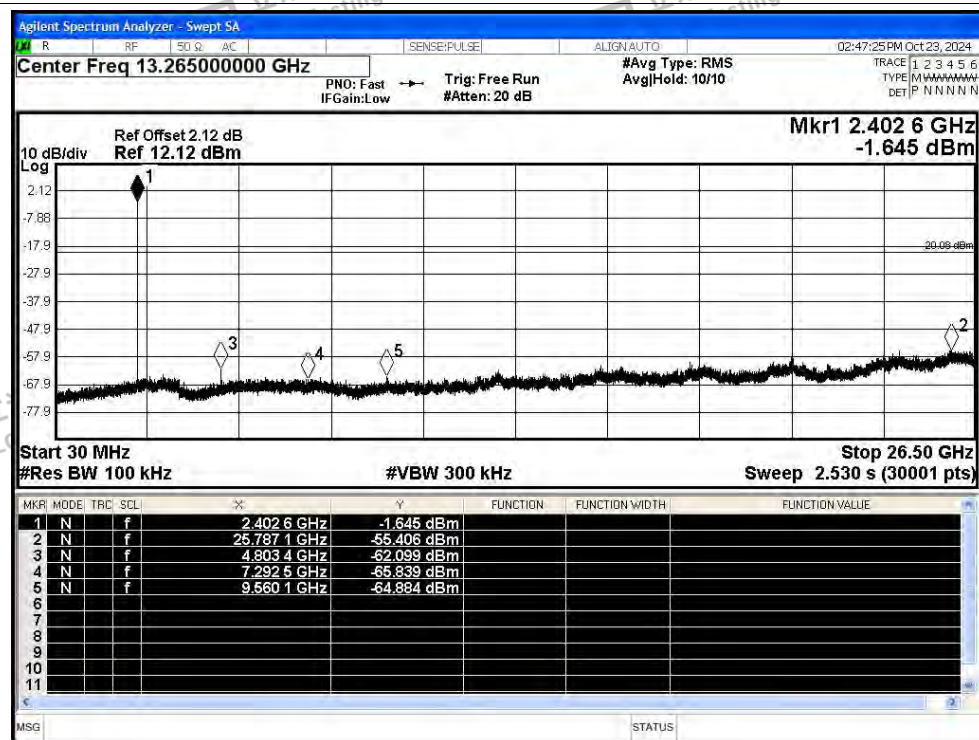


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



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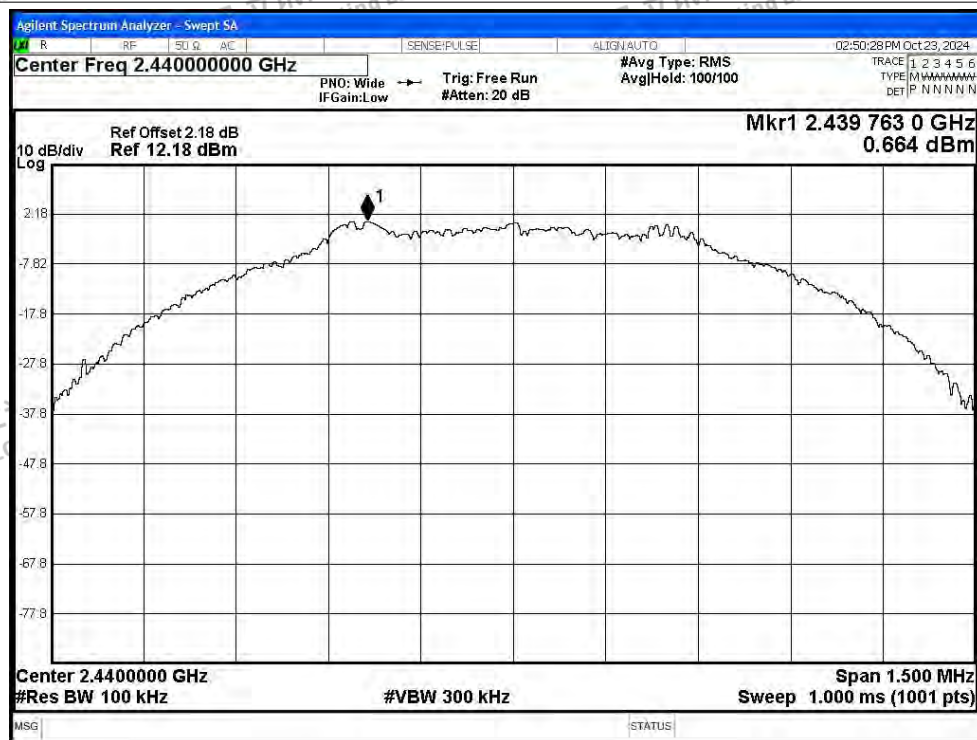
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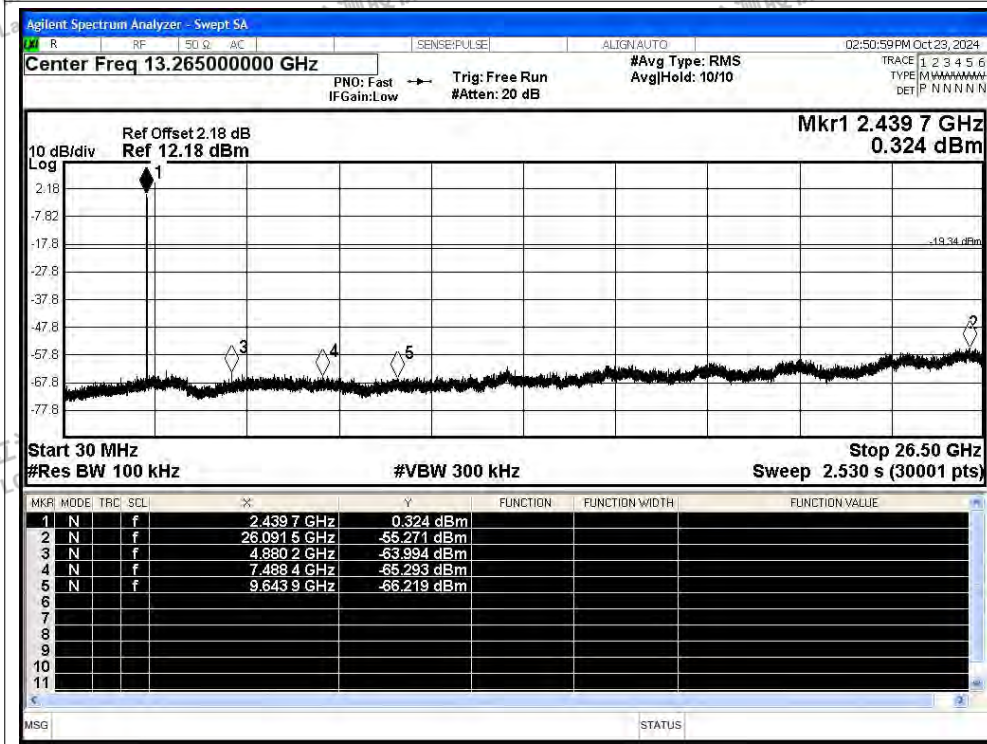




Tx: Spurious NVNT BLE 1M 2440MHz Ant1 Ref

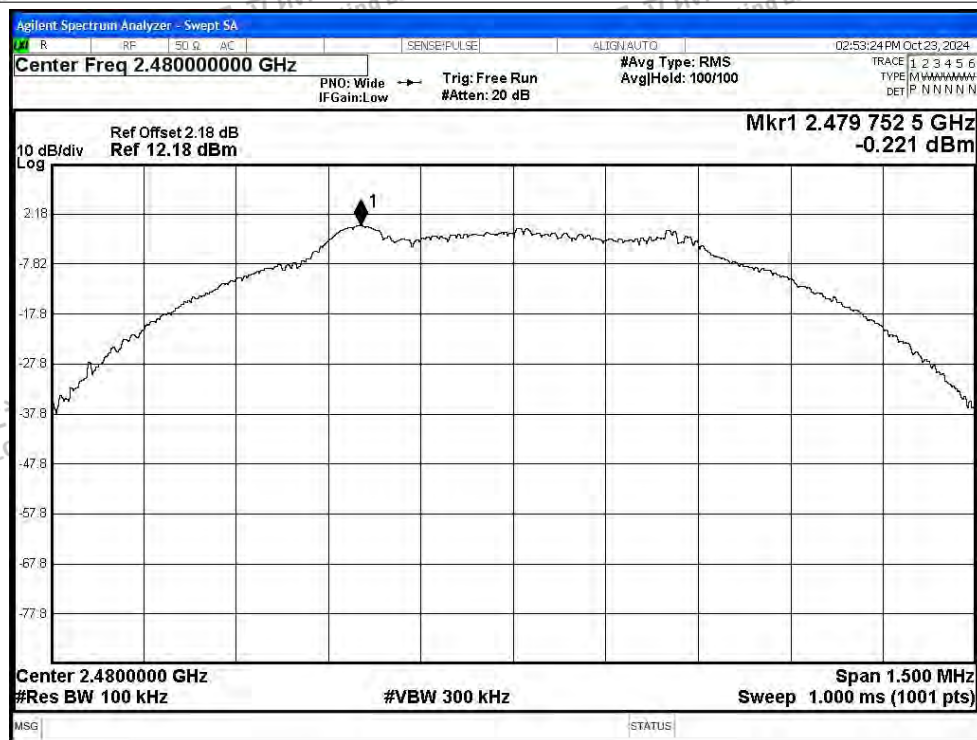


Tx: Spurious NVNT BLE 1M 2440MHz Ant1 Emission

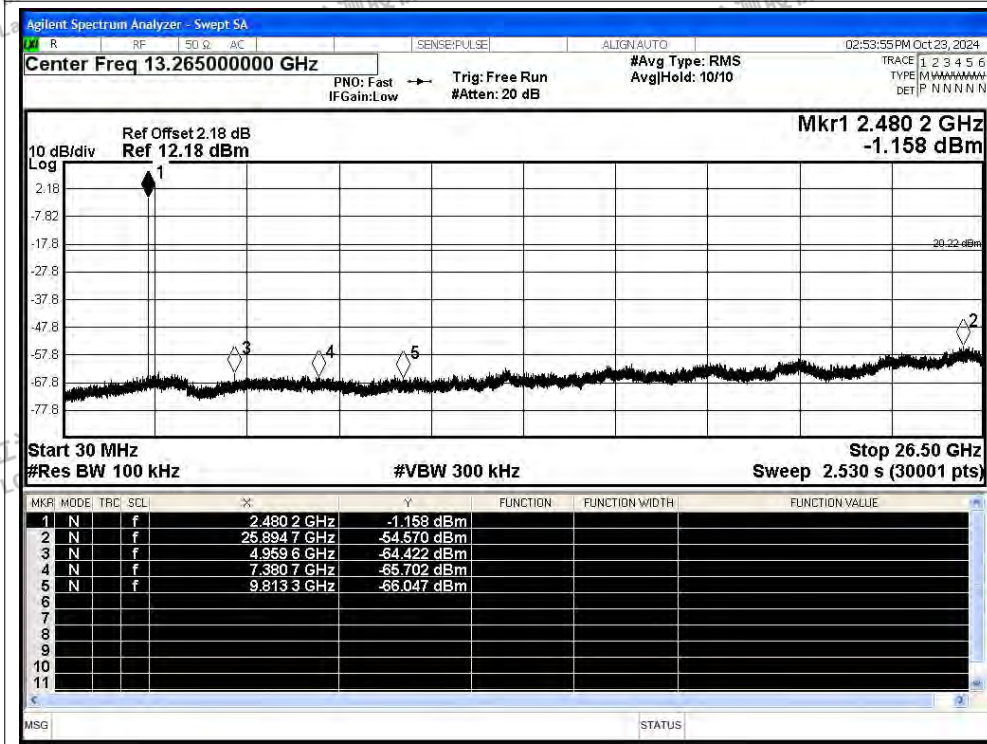




Tx: Spurious NVNT BLE 1M 2480MHz Ant1 Ref

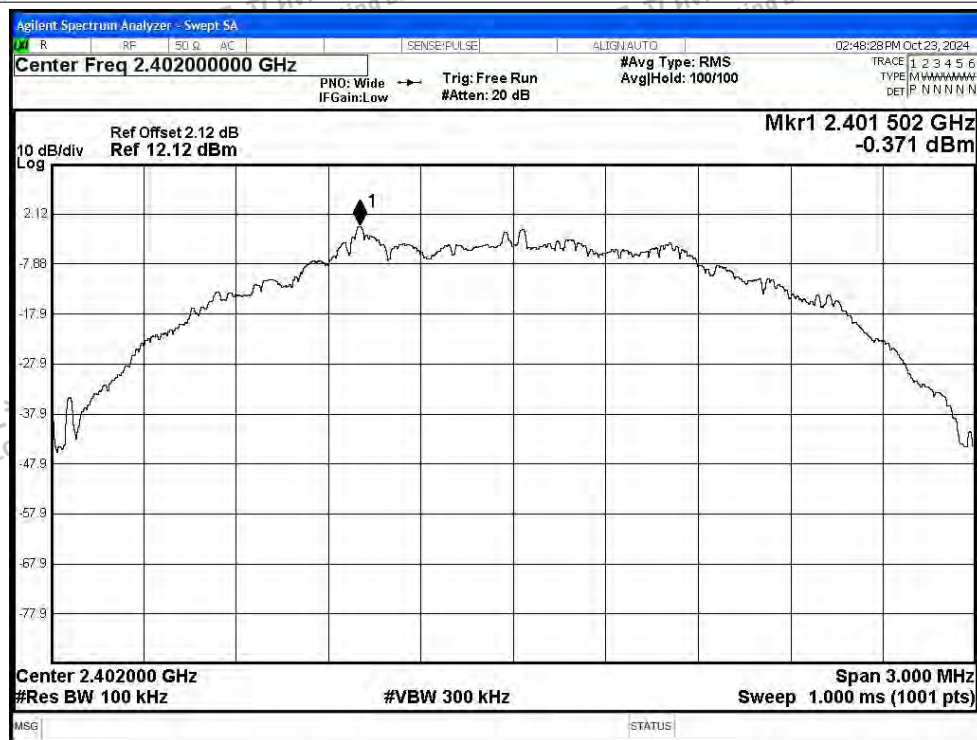


Tx: Spurious NVNT BLE 1M 2480MHz Ant1 Emission

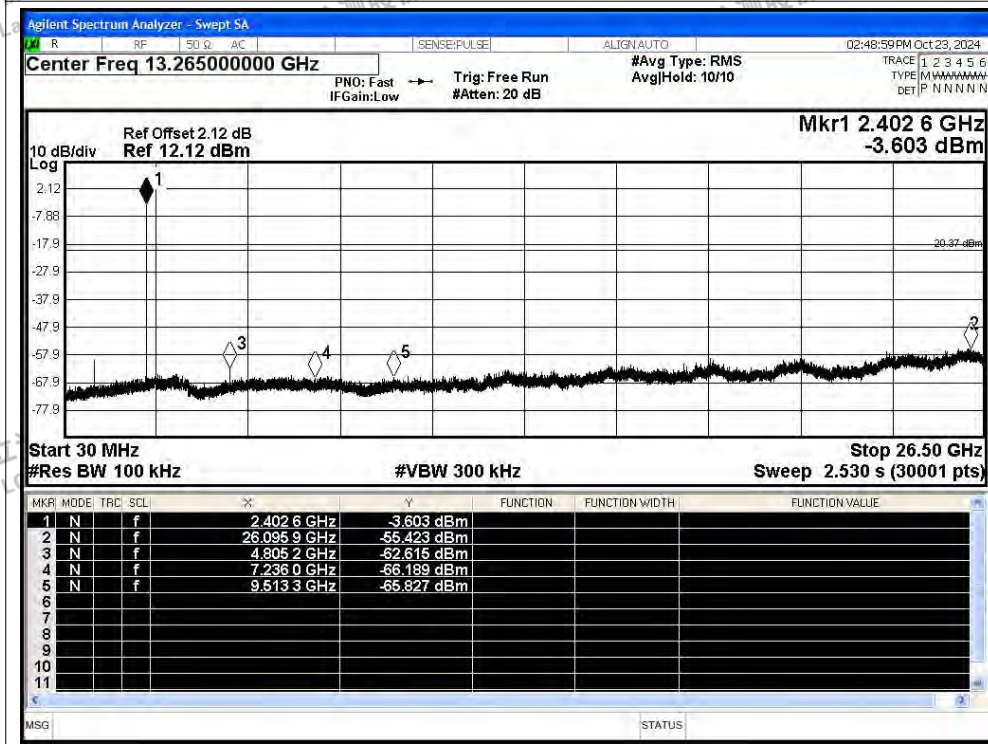




## Tx: Spurious NVNT BLE 2M 2402MHz Ant1 Ref



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



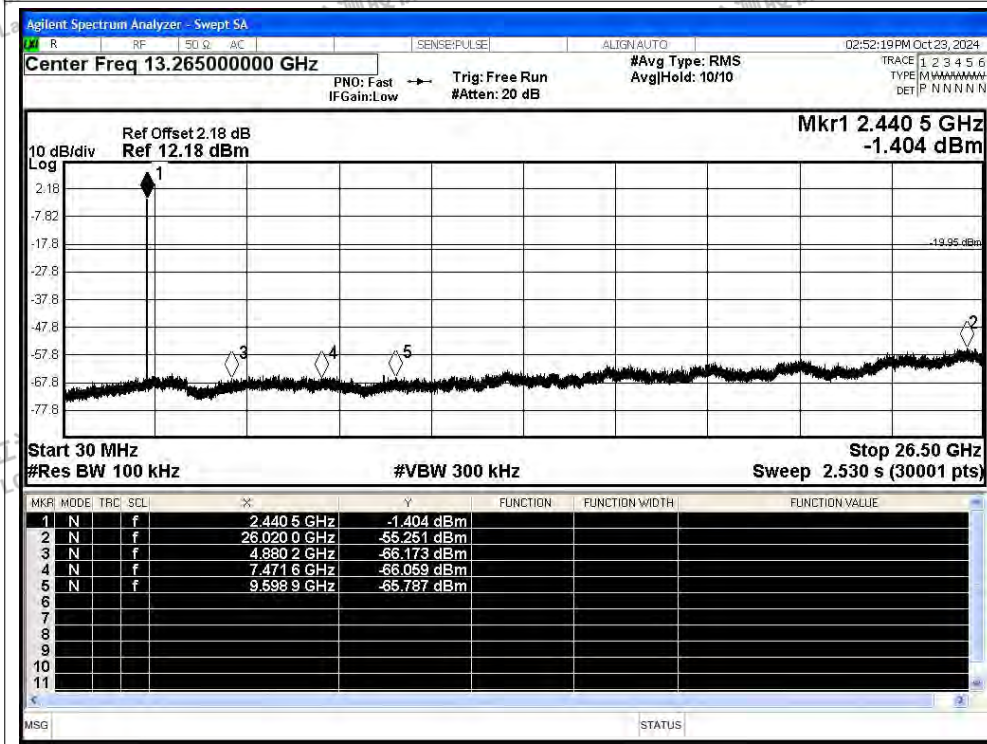




Tx: Spurious NVNT BLE 2M 2440MHz Ant1 Ref



Tx: Spurious NVNT BLE 2M 2440MHz Ant1 Emission



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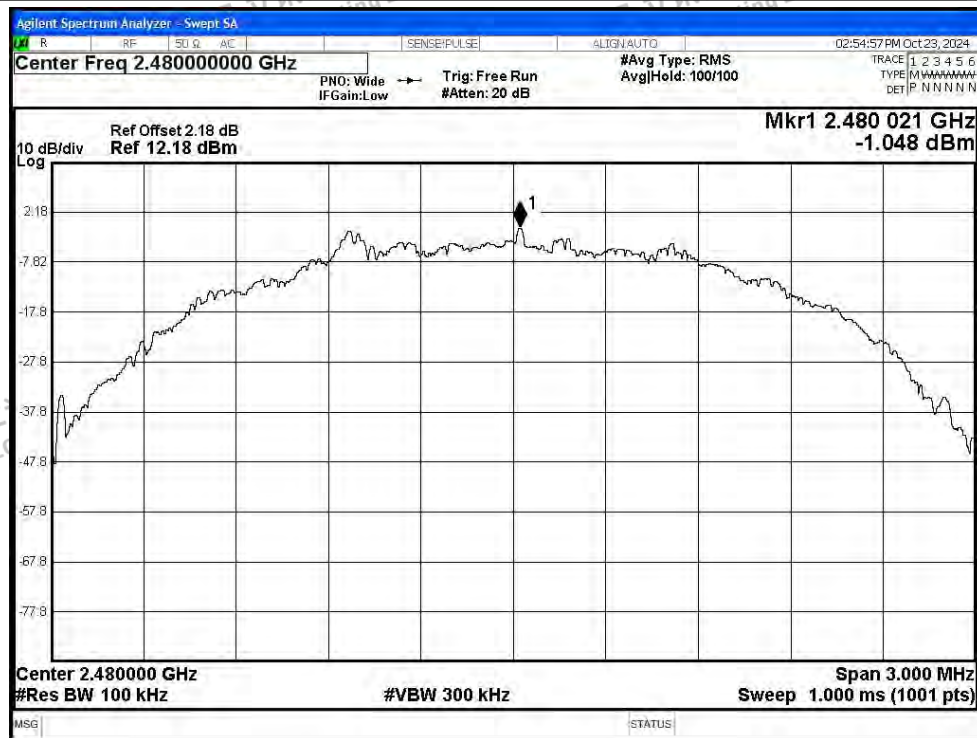
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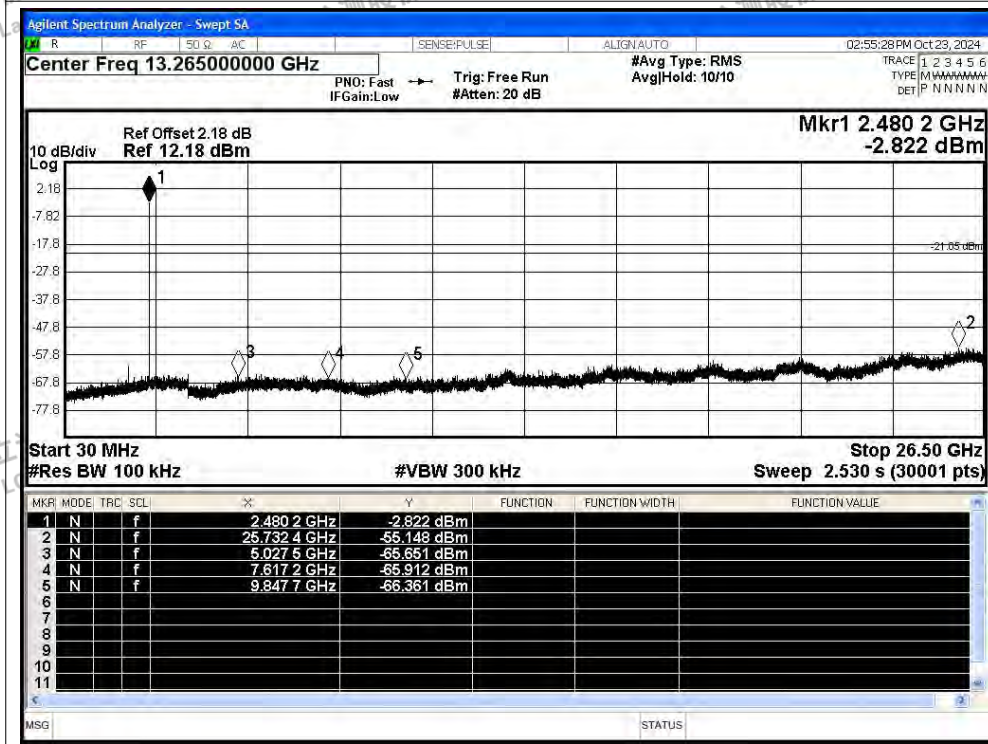




Tx: Spurious NVNT BLE 2M 2480MHz Ant1 Ref



Tx: Spurious NVNT BLE 2M 2480MHz Ant1 Emission



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## B.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    | 87.41          | 0.58                   | 0.61      |
| NVNT      | BLE 1M | 2480            | Ant1    | 87.39          | 0.59                   | 0.61      |
| NVNT      | BLE 2M | 2402            | Ant1    | 65.96          | 1.81                   | 1.21      |
| NVNT      | BLE 2M | 2440            | Ant1    | 65.96          | 1.81                   | 1.21      |
| NVNT      | BLE 2M | 2480            | Ant1    | 65.92          | 1.81                   | 1.21      |



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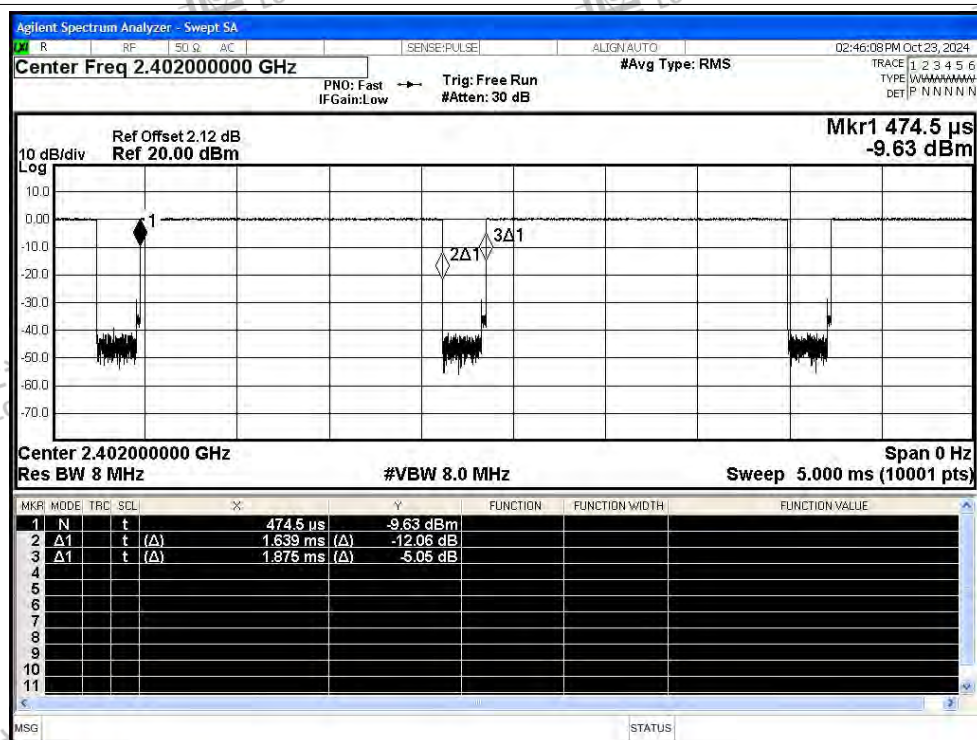
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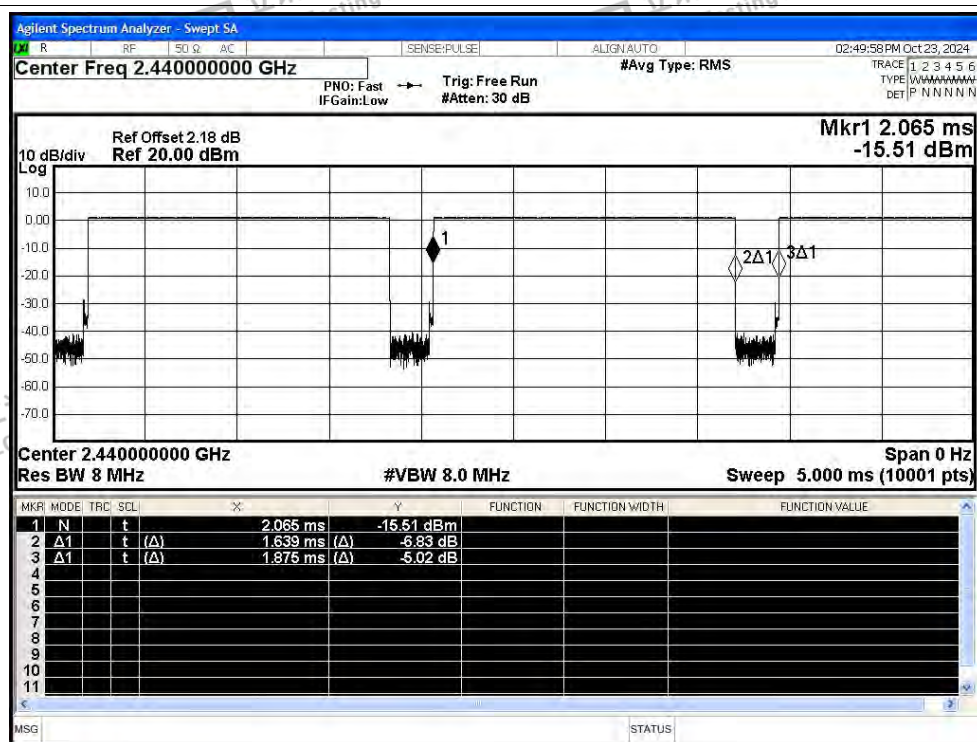


## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1



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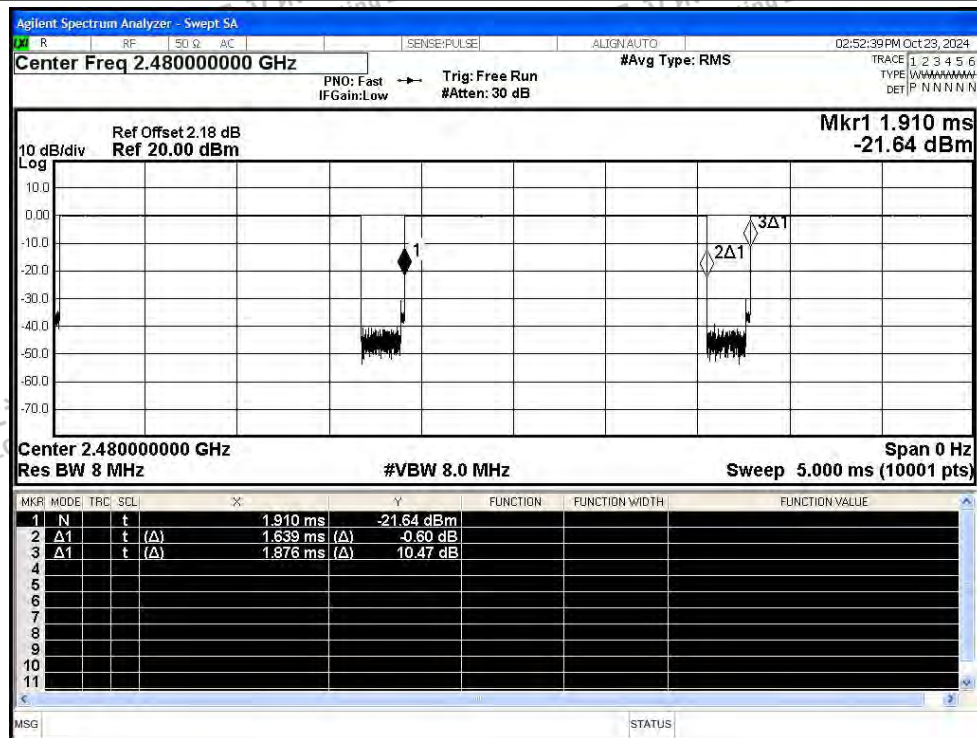
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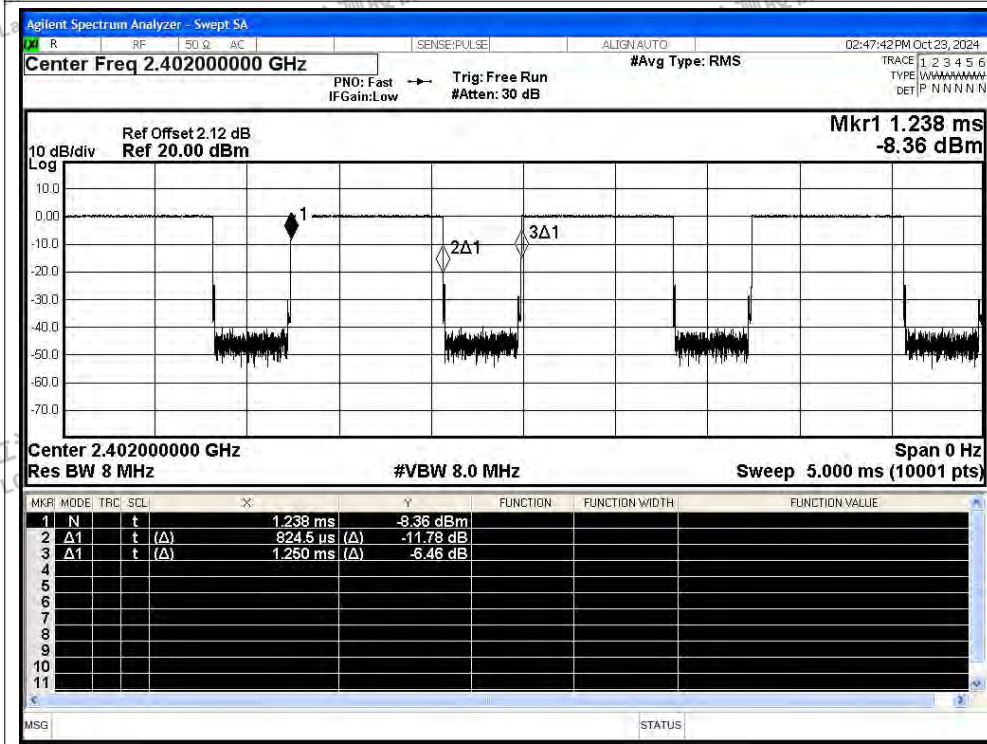




## Duty Cycle NVNT BLE 1M 2480MHz Ant1



## Duty Cycle NVNT BLE 2M 2402MHz Ant1



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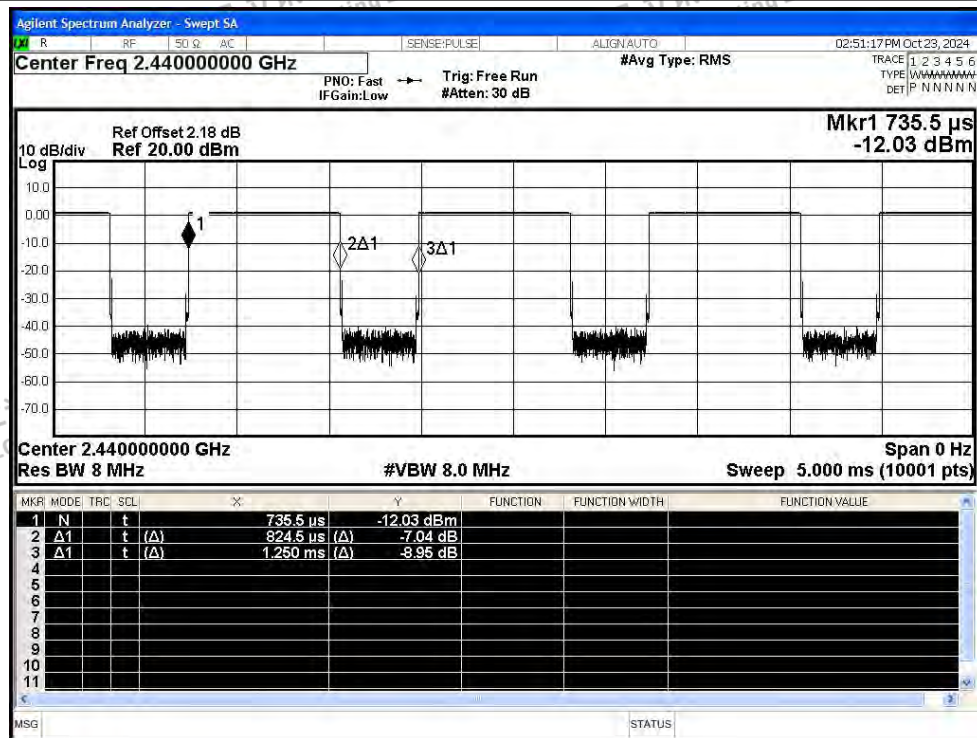
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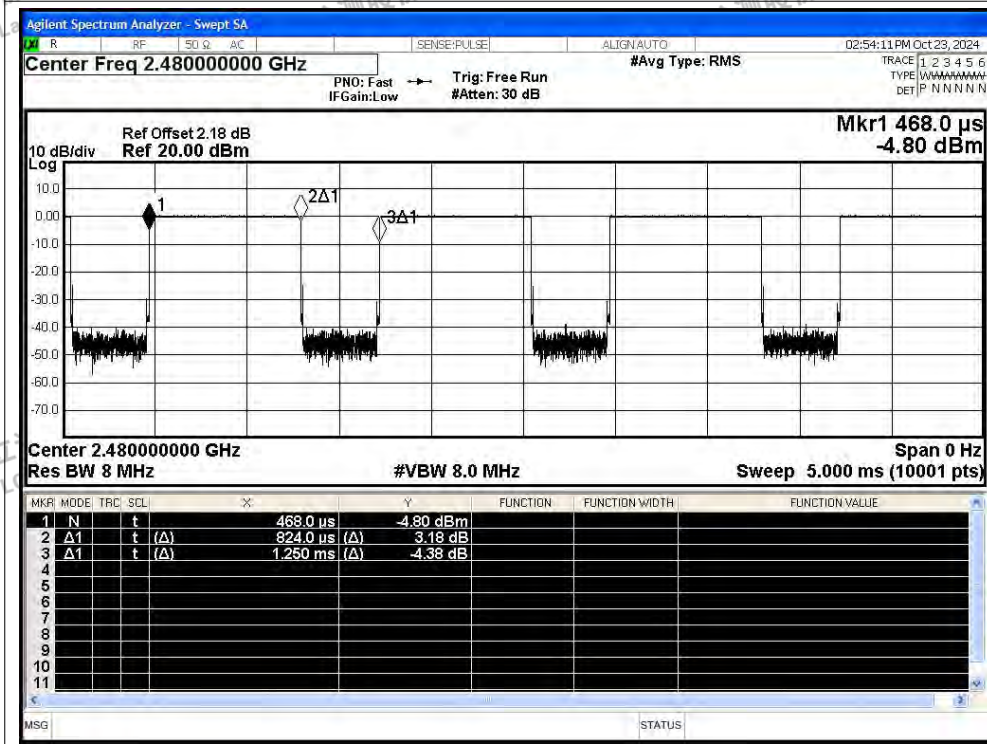




## Duty Cycle NVNT BLE 2M 2440MHz Ant1



## Duty Cycle NVNT BLE 2M 2480MHz Ant1



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## B.7 Restrict Band

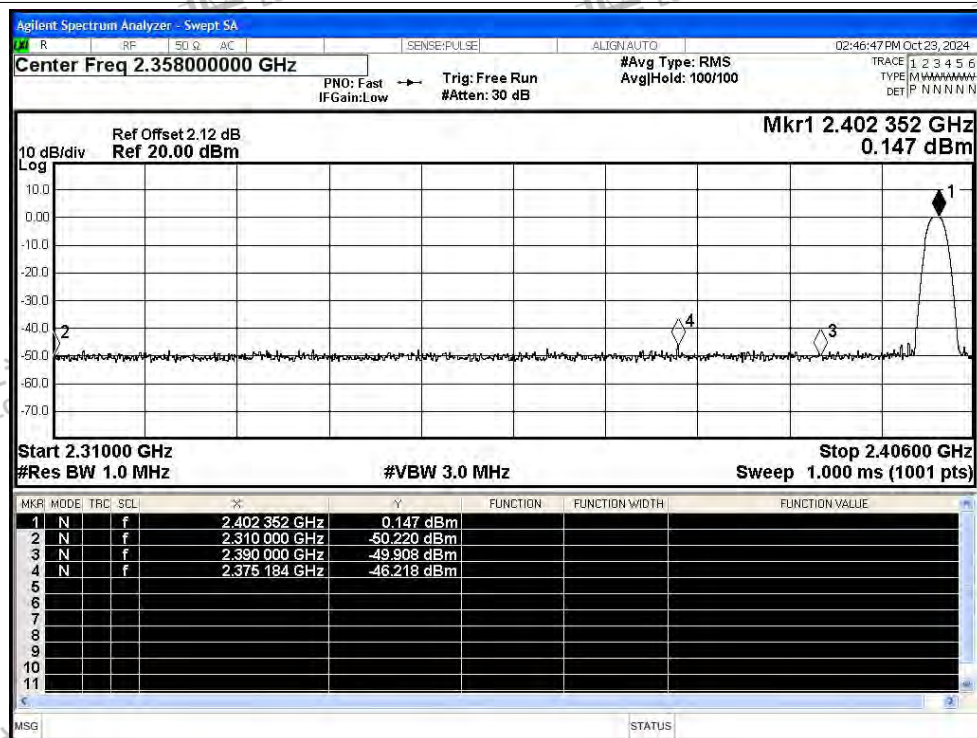
| Condition | Mode   | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -50.22      | 2          | -                | 47.04      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -58.6       | 2          | 0.59             | 39.25      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2375.184        | -46.22      | 2          | -                | 51.04      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2379.408        | -57.59      | 2          | 0.59             | 40.26      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -49.91      | 2          | -                | 47.35      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -58.3       | 2          | 0.59             | 39.55      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -48.37      | 2          | -                | 48.89      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -57.46      | 2          | 0.59             | 40.39      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2487.256        | -46.75      | 2          | -                | 50.51      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2484.04         | -56.92      | 2          | 0.59             | 40.93      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -48.56      | 2          | -                | 48.7       | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -57.79      | 2          | 0.59             | 40.06      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2310            | -50.64      | 2          | -                | 46.62      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2310            | -58.49      | 2          | 1.81             | 40.58      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2356.176        | -46.75      | 2          | -                | 50.51      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2356.656        | -57.26      | 2          | 1.81             | 41.81      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2390            | -50.58      | 2          | -                | 46.68      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2402            | Ant1    | 2390            | -58.44      | 2          | 1.81             | 40.63      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.5          | -49.26      | 2          | -                | 48         | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2483.5          | -57.63      | 2          | 1.81             | 41.44      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2491.72         | -46.33      | 2          | -                | 50.93      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2484.784        | -56.83      | 2          | 1.81             | 42.24      | Average  | 54             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2500            | -50         | 2          | -                | 47.26      | Peak     | 74             | Pass    |
| NVNT      | BLE 2M | 2480            | Ant1    | 2500            | -57.65      | 2          | 1.81             | 41.42      | Average  | 54             | Pass    |



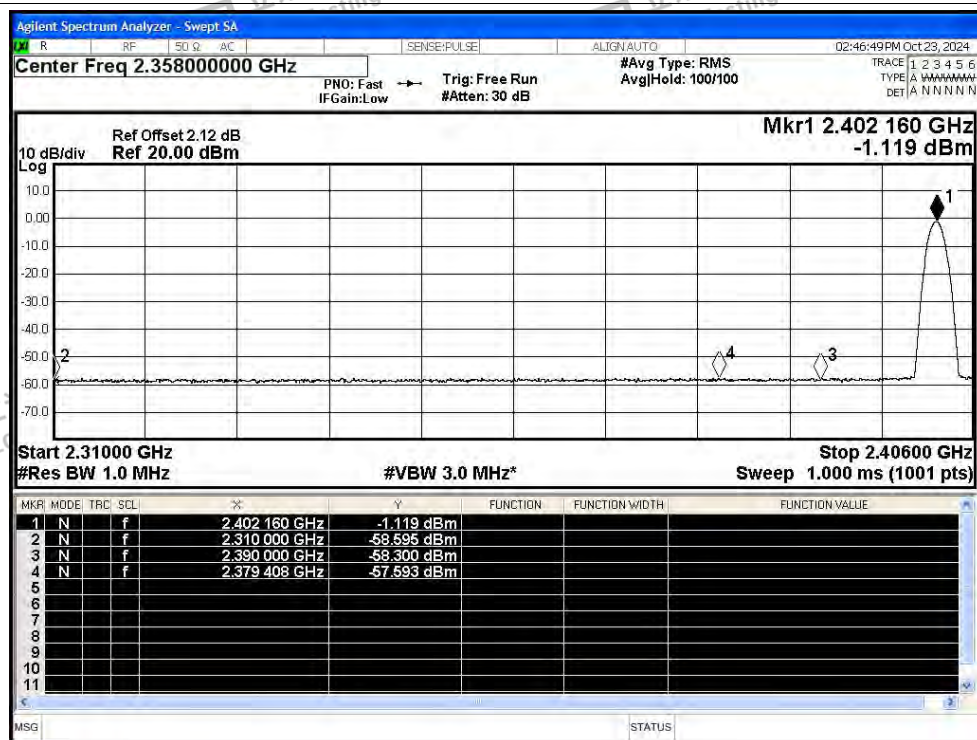


## Test Graphs

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



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



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

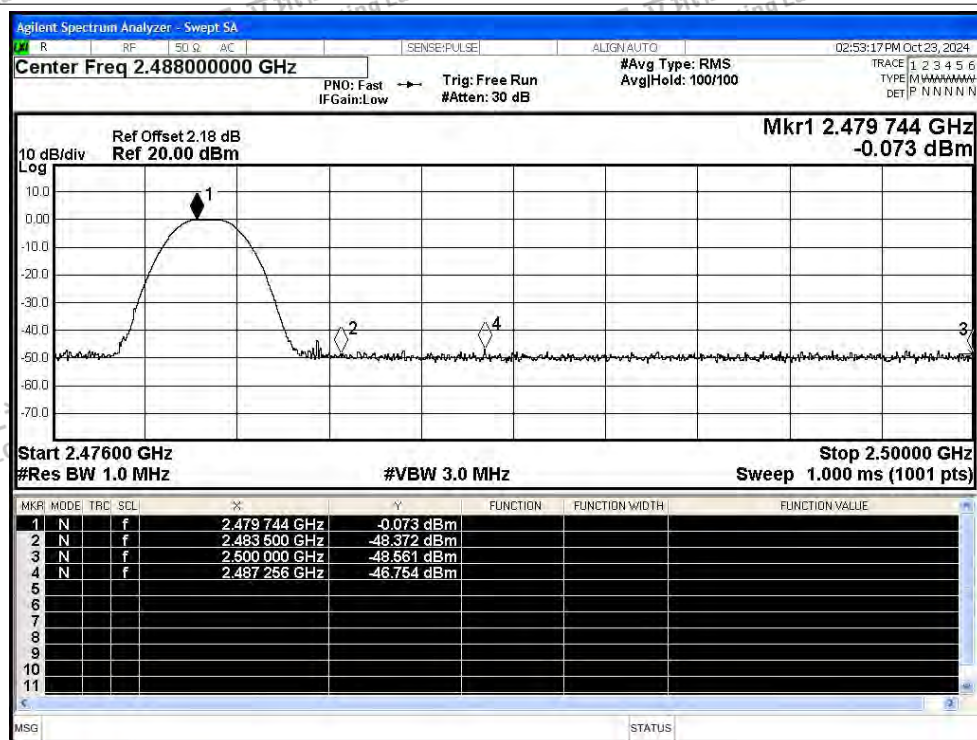
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

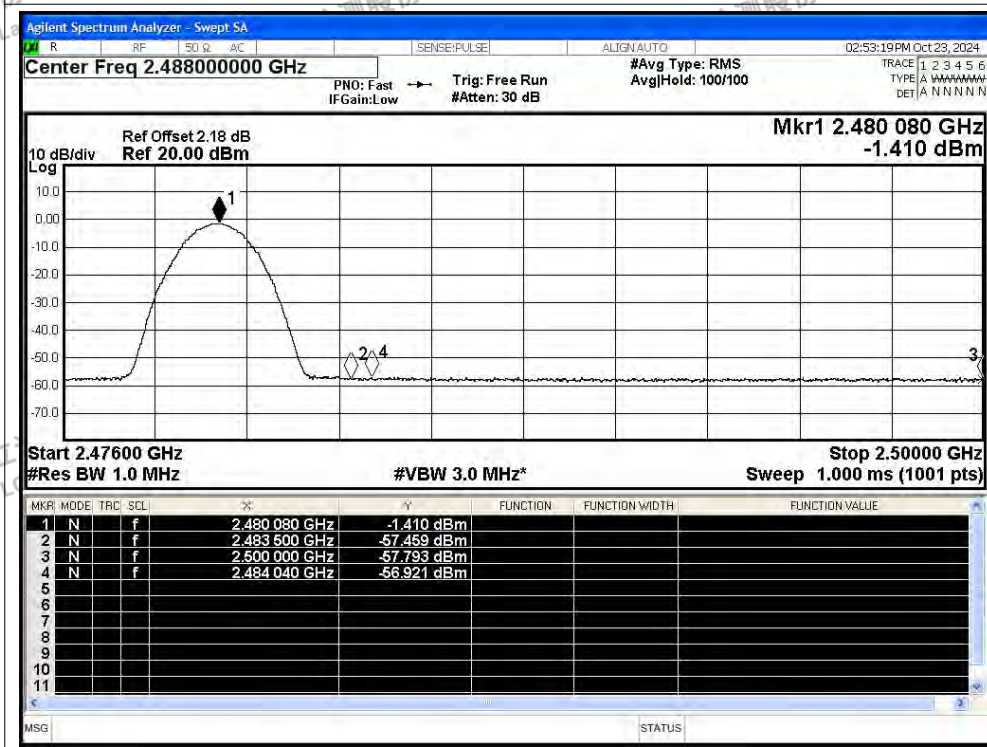




## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



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



Shenzhen LCS Compliance Testing Laboratory Ltd.

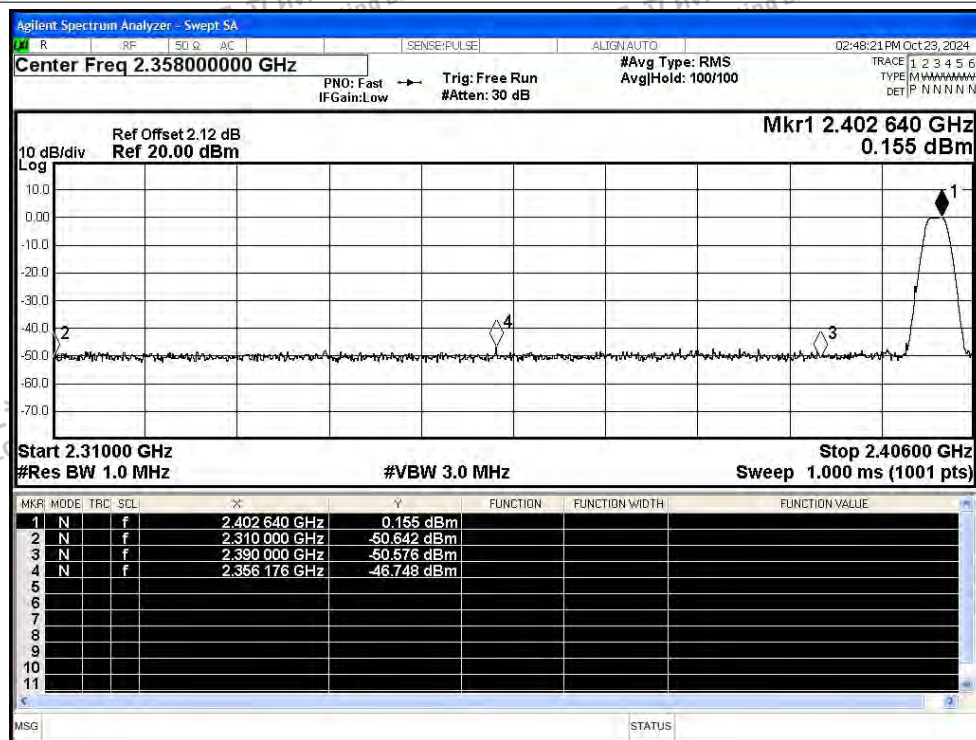
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

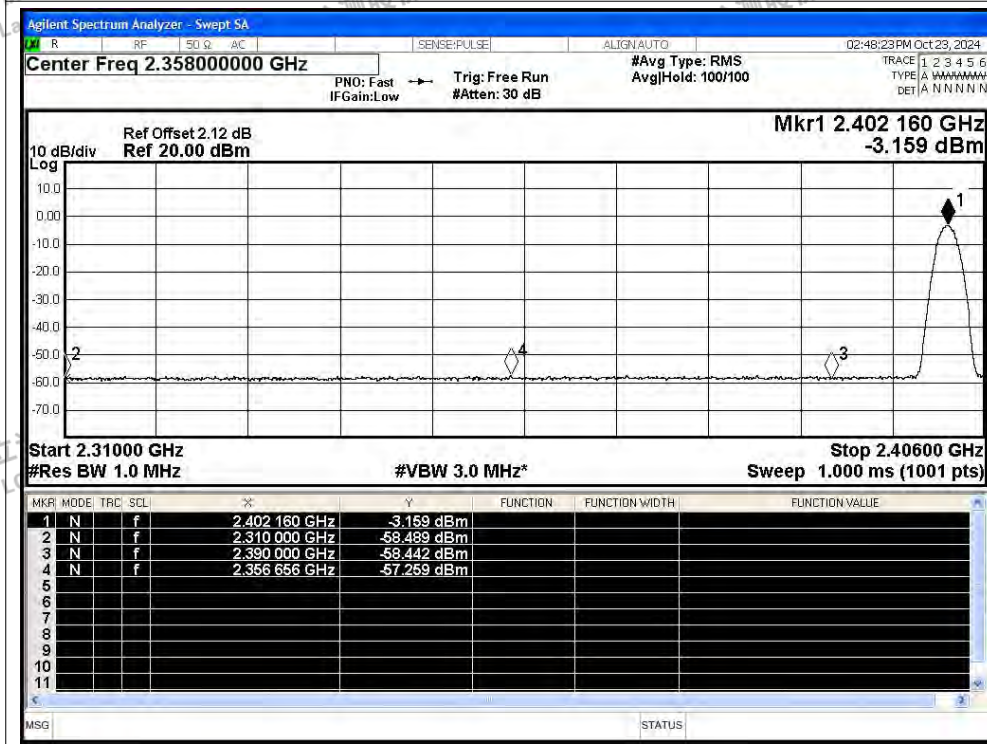
Scan code to check authenticity



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

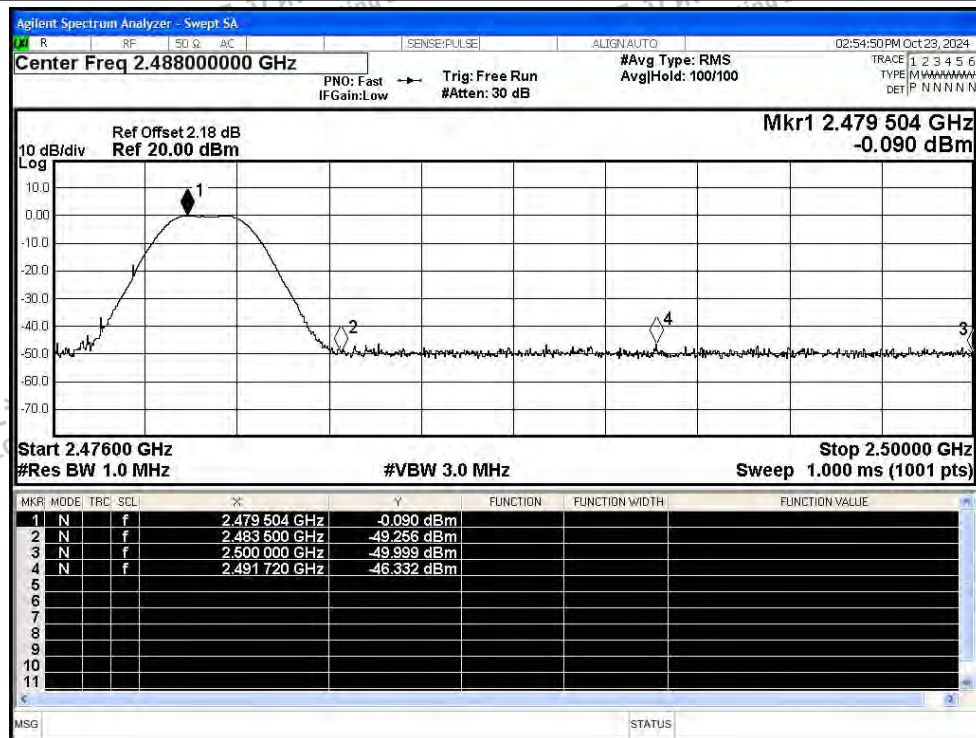


## Restrict Band NVNT BLE 2M 2402MHz Ant1 Average

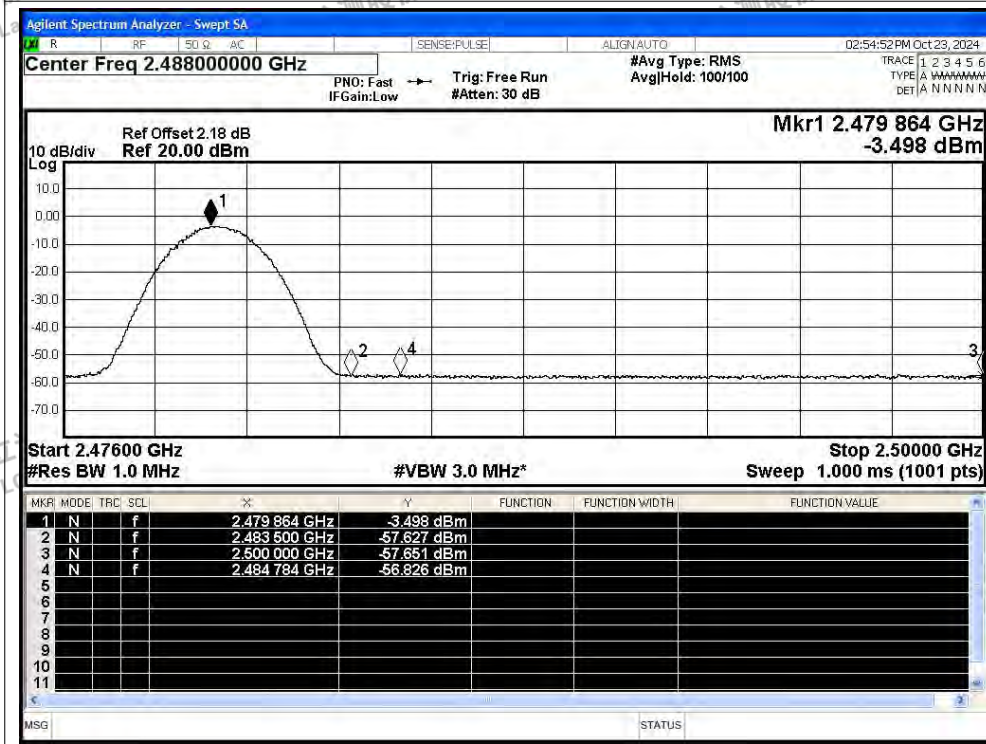




## Restrict Band NVNT BLE 2M 2480MHz Ant1 Peak



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



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