



## Appendix A

### RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Permanent Outdoor lights

Test Model: S1040

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.1 ° C  |
| Relative Humidity: | 52.3%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Taylor Hu |
| Supervised by:     | Ling Zhu  |



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## A.1 -6dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | b    | 2412            | Ant1    | 7.389                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2437            | Ant1    | 8.504                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2462            | Ant1    | 8.036                 | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2412            | Ant1    | 13.345                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2437            | Ant1    | 15.437                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2462            | Ant1    | 15.429                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 15.693                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 14.764                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 16.523                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2422            | Ant1    | 19.152                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2437            | Ant1    | 26.373                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2452            | Ant1    | 29.44                 | $\geq 0.5$                  | Pass    |



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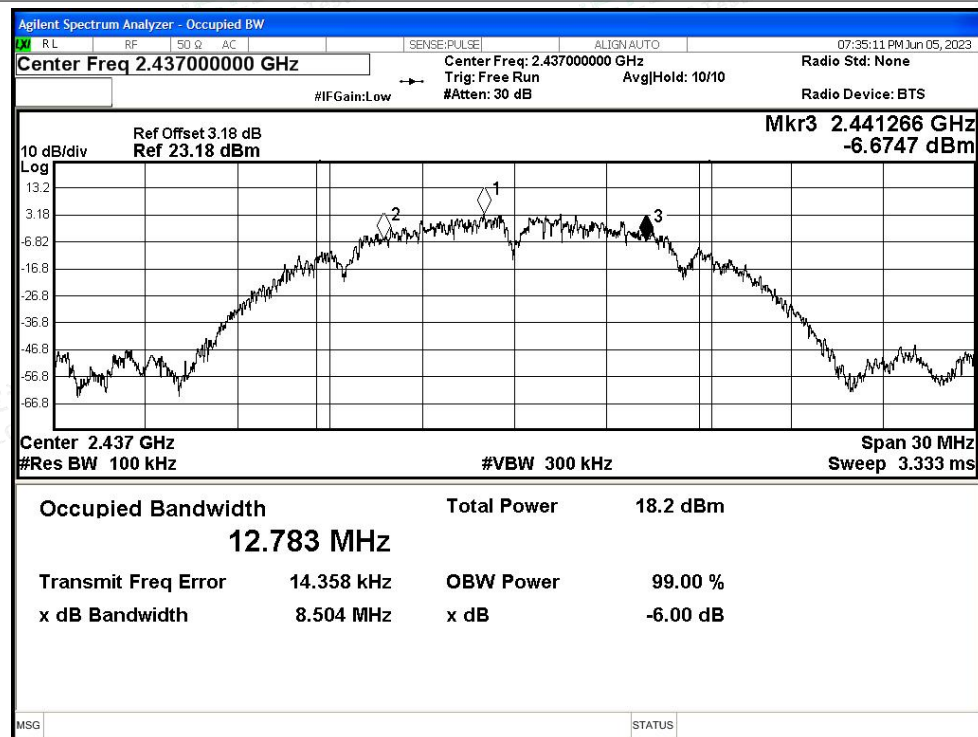


## Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



-6dB Bandwidth NVNT b 2437MHz Ant1



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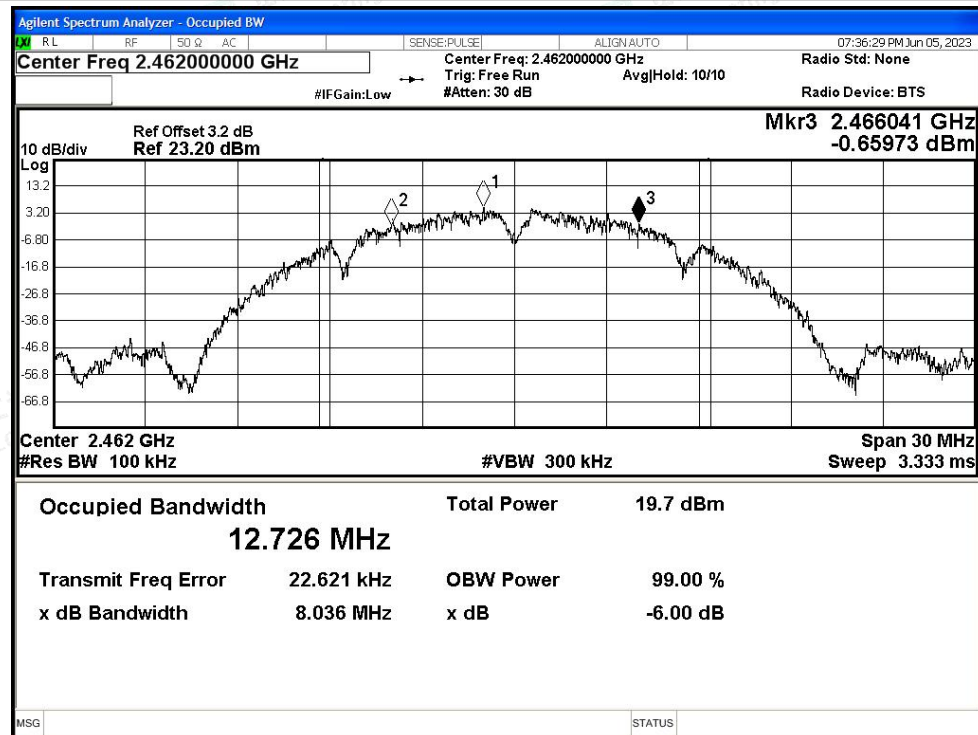
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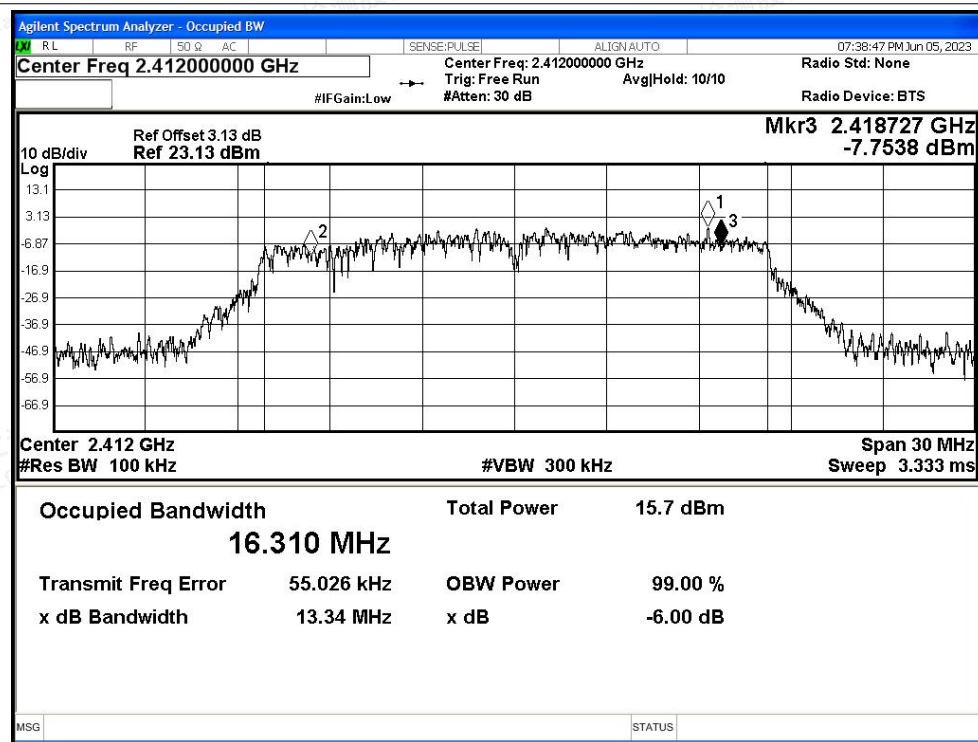
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## -6dB Bandwidth NVNT b 2462MHz Ant1



## -6dB Bandwidth NVNT g 2412MHz Ant1



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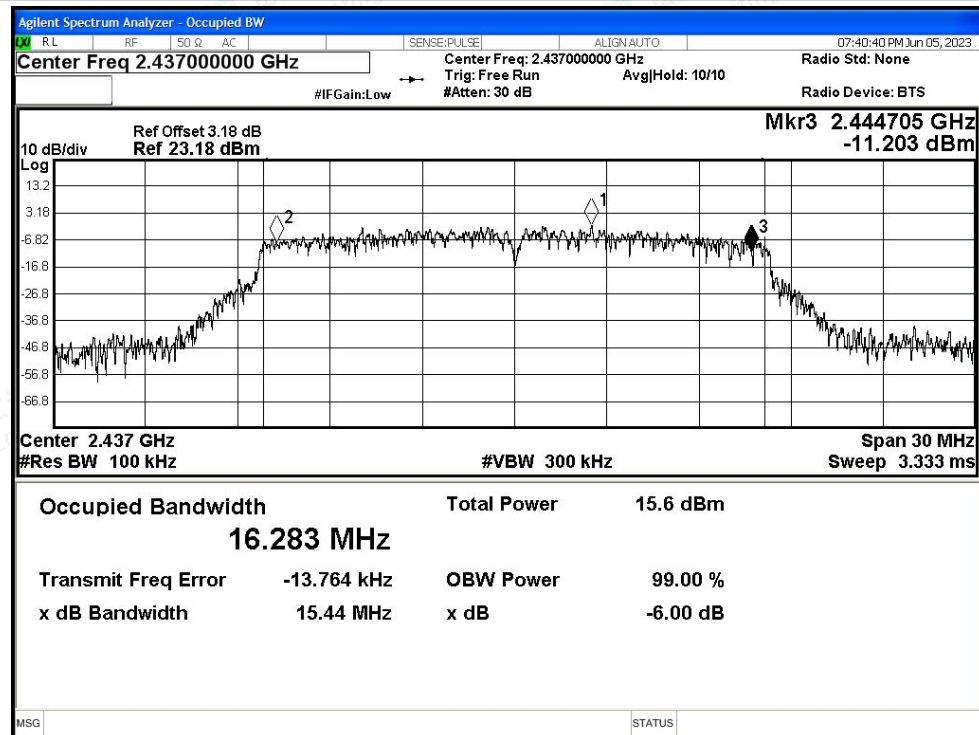
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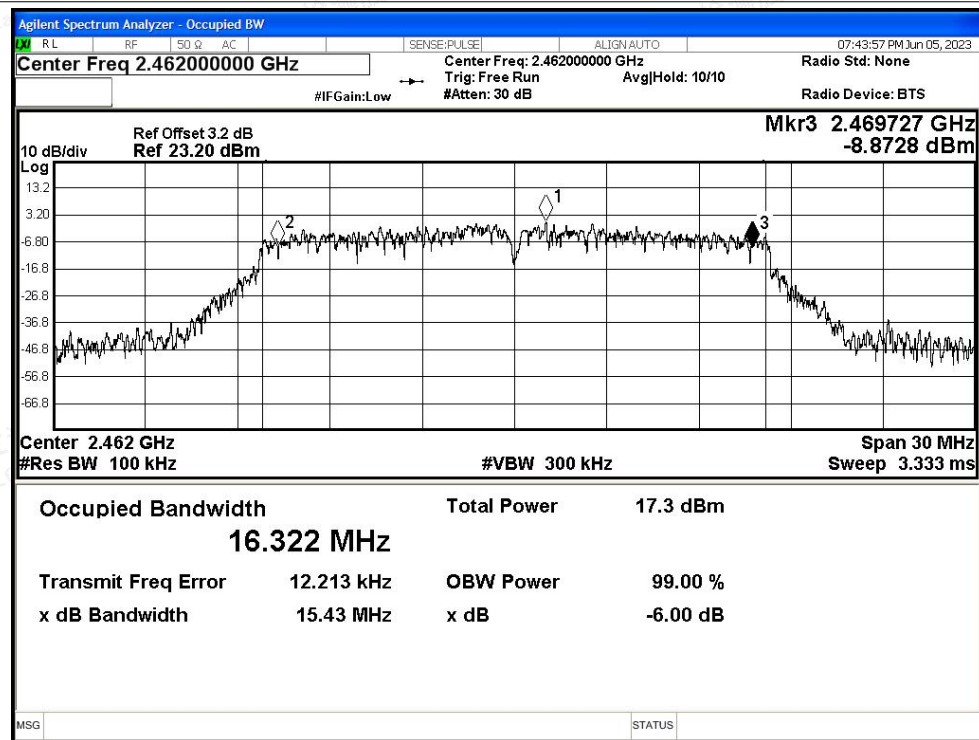
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## -6dB Bandwidth NVNT g 2437MHz Ant1



## -6dB Bandwidth NVNT g 2462MHz Ant1



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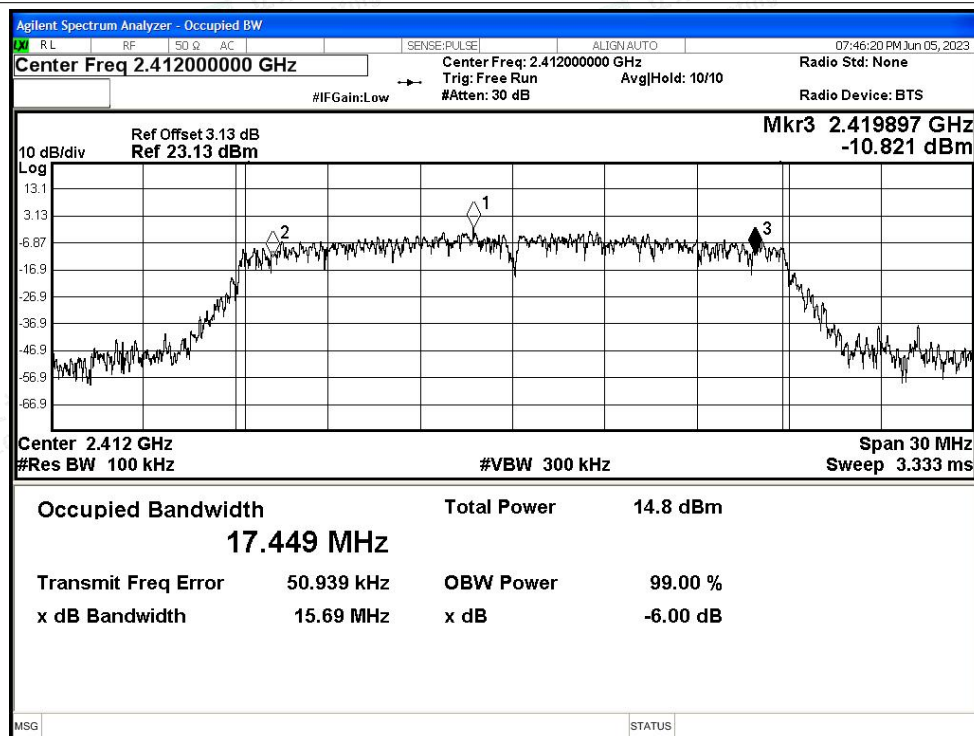
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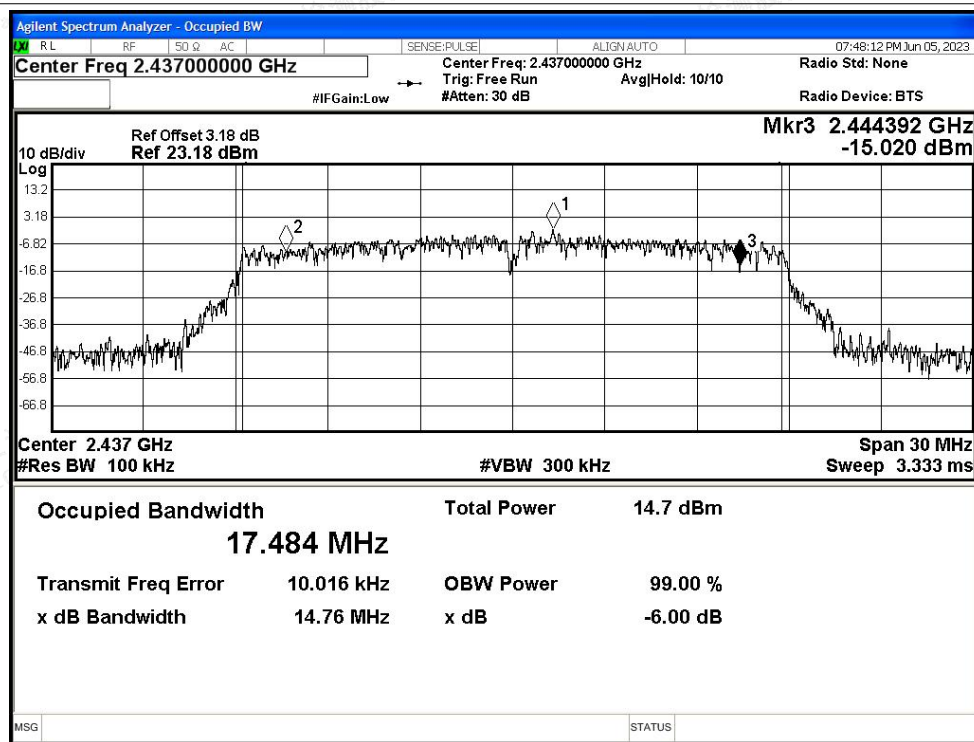
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## -6dB Bandwidth NVNT n20 2412MHz Ant1



## -6dB Bandwidth NVNT n20 2437MHz Ant1



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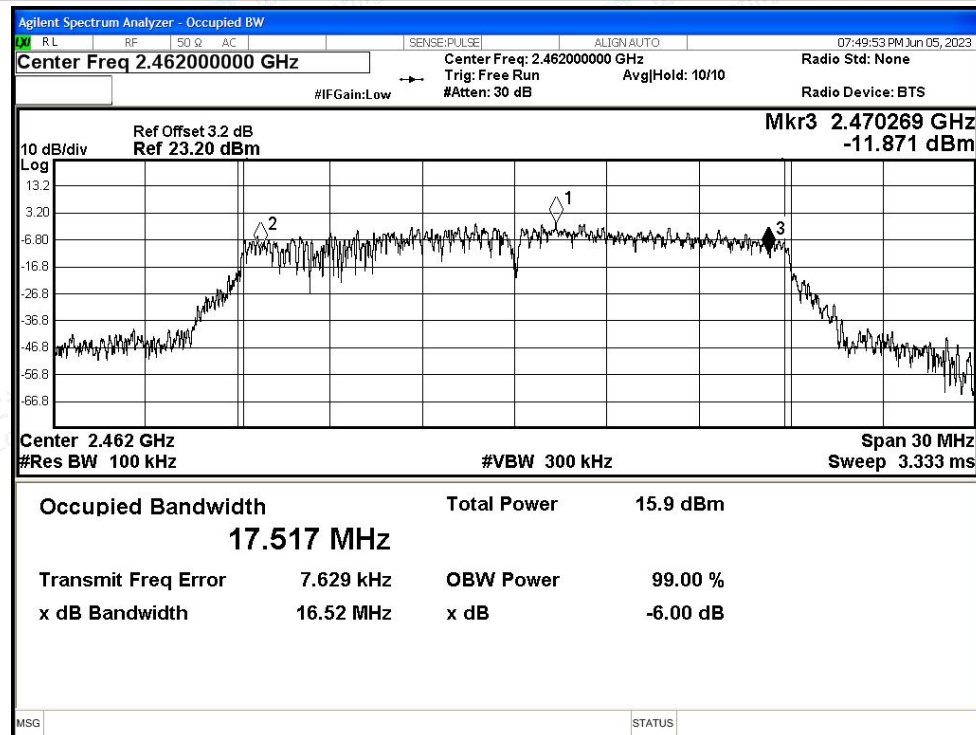
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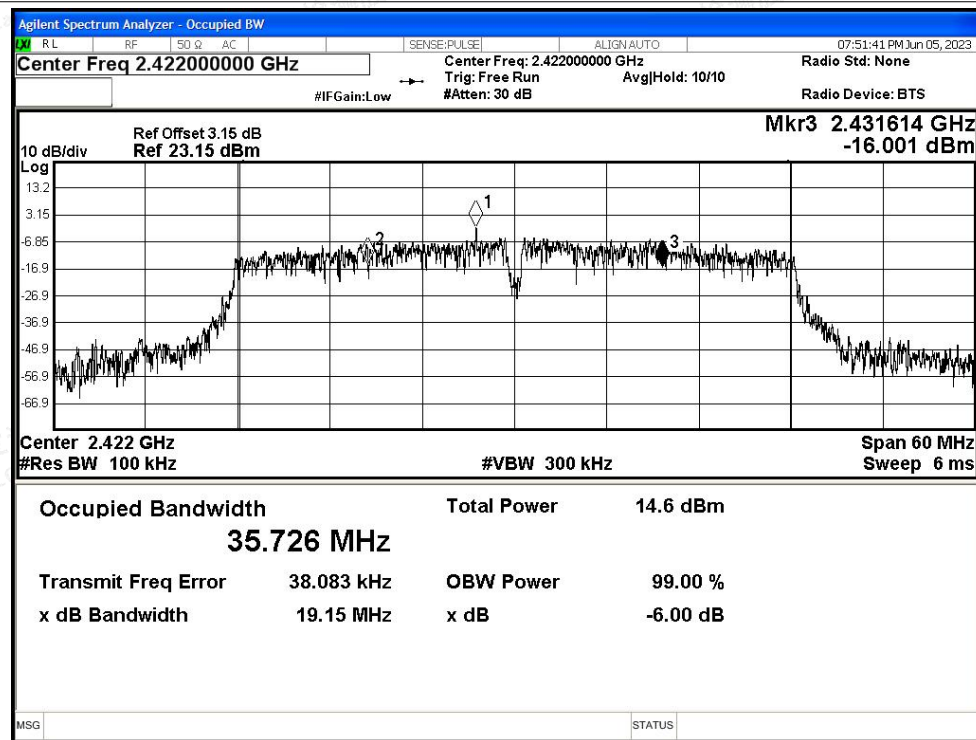
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## -6dB Bandwidth NVNT n20 2462MHz Ant1



## -6dB Bandwidth NVNT n40 2422MHz Ant1



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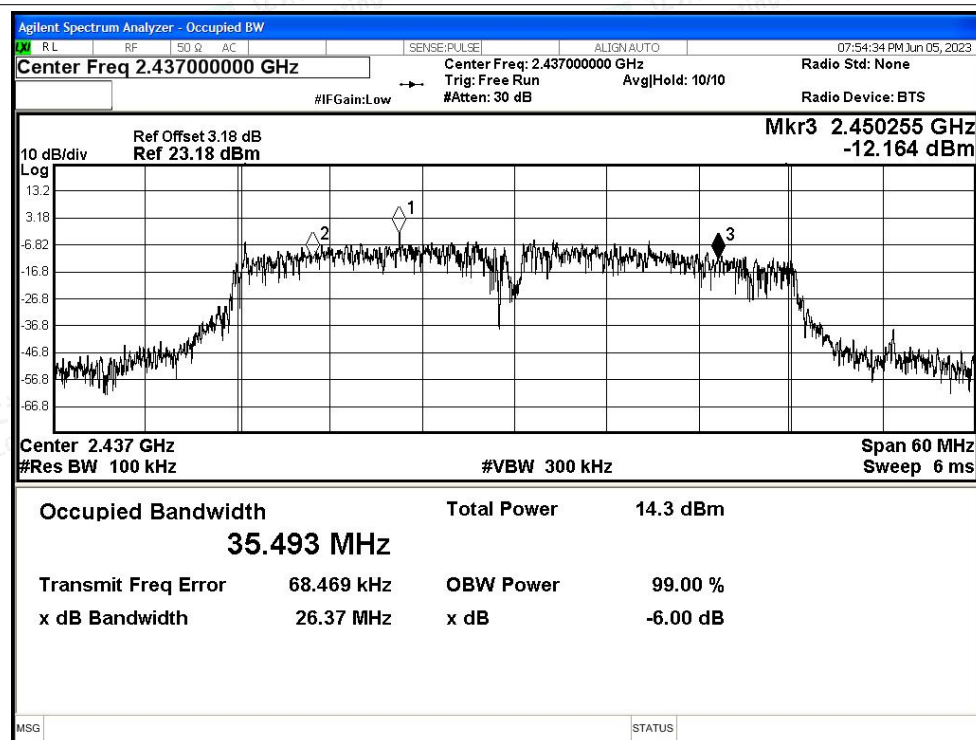
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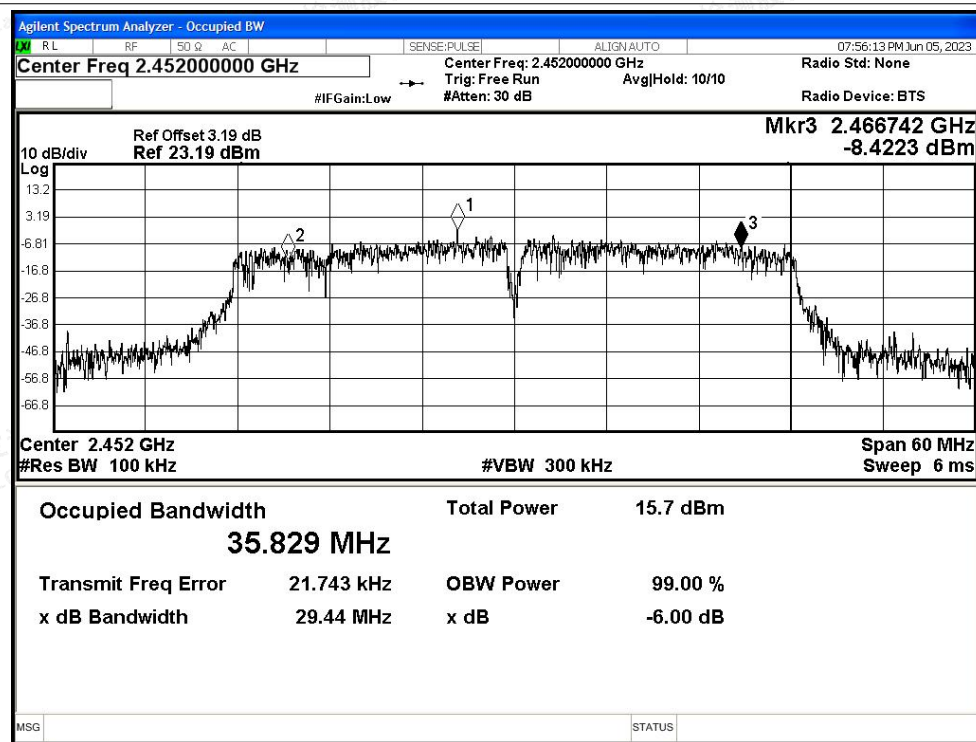
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## -6dB Bandwidth NVNT n40 2437MHz Ant1



## -6dB Bandwidth NVNT n40 2452MHz Ant1



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## A.2 Occupied Channel Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|------|-----------------|---------|---------------|
| NVNT      | b    | 2412            | Ant1    | 12.744        |
| NVNT      | b    | 2437            | Ant1    | 12.732        |
| NVNT      | b    | 2462            | Ant1    | 12.766        |
| NVNT      | g    | 2412            | Ant1    | 16.312        |
| NVNT      | g    | 2437            | Ant1    | 16.297        |
| NVNT      | g    | 2462            | Ant1    | 16.32         |
| NVNT      | n20  | 2412            | Ant1    | 17.377        |
| NVNT      | n20  | 2437            | Ant1    | 17.398        |
| NVNT      | n20  | 2462            | Ant1    | 17.402        |
| NVNT      | n40  | 2422            | Ant1    | 35.831        |
| NVNT      | n40  | 2437            | Ant1    | 35.653        |
| NVNT      | n40  | 2452            | Ant1    | 35.893        |



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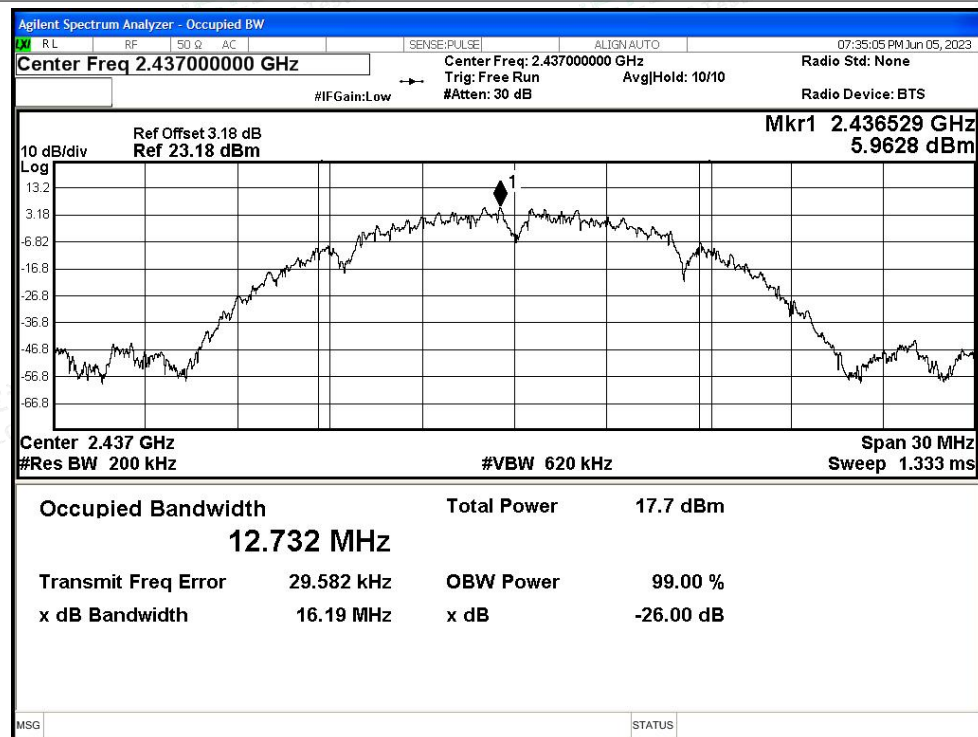


## Test Graphs

## OBW NVNT b 2412MHz Ant1



## OBW NVNT b 2437MHz Ant1



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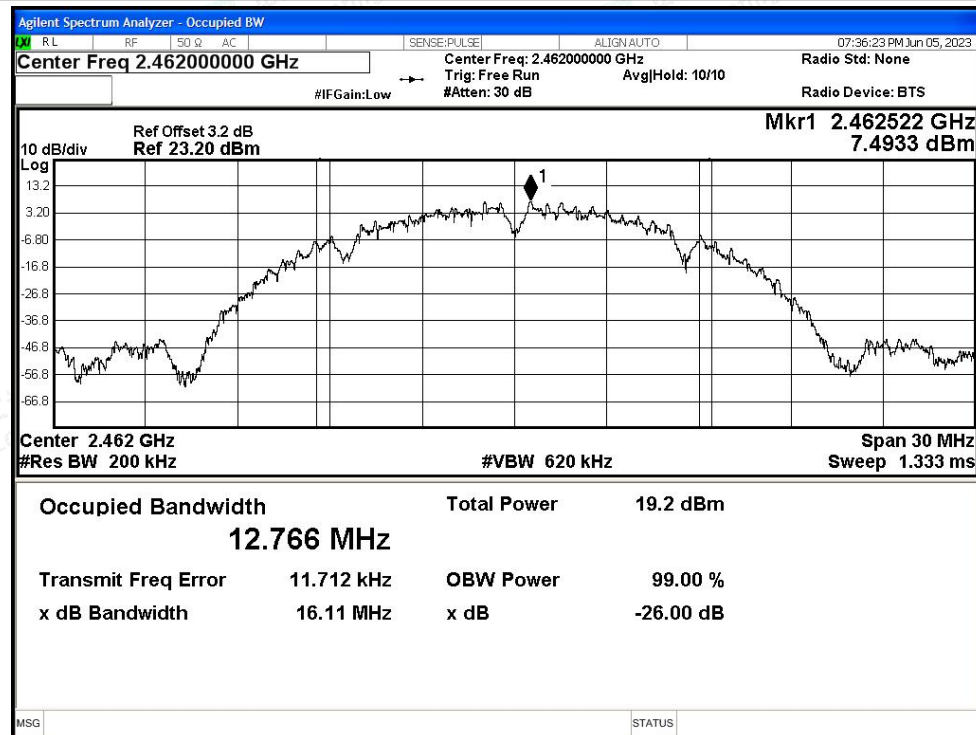
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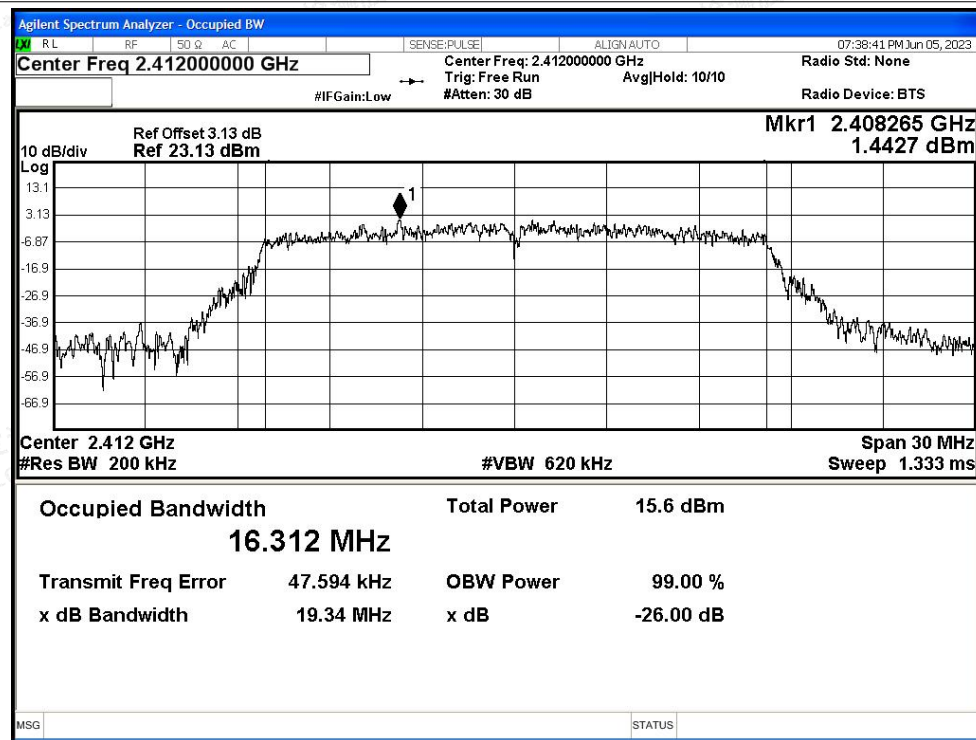
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## OBW NVNT b 2462MHz Ant1



## OBW NVNT g 2412MHz Ant1



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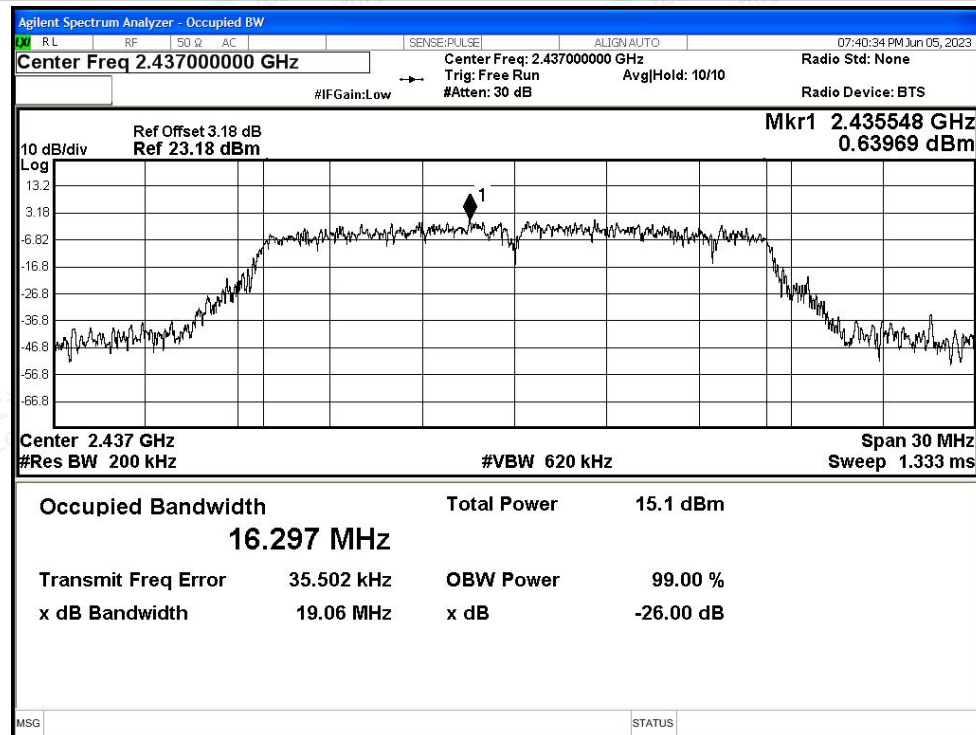
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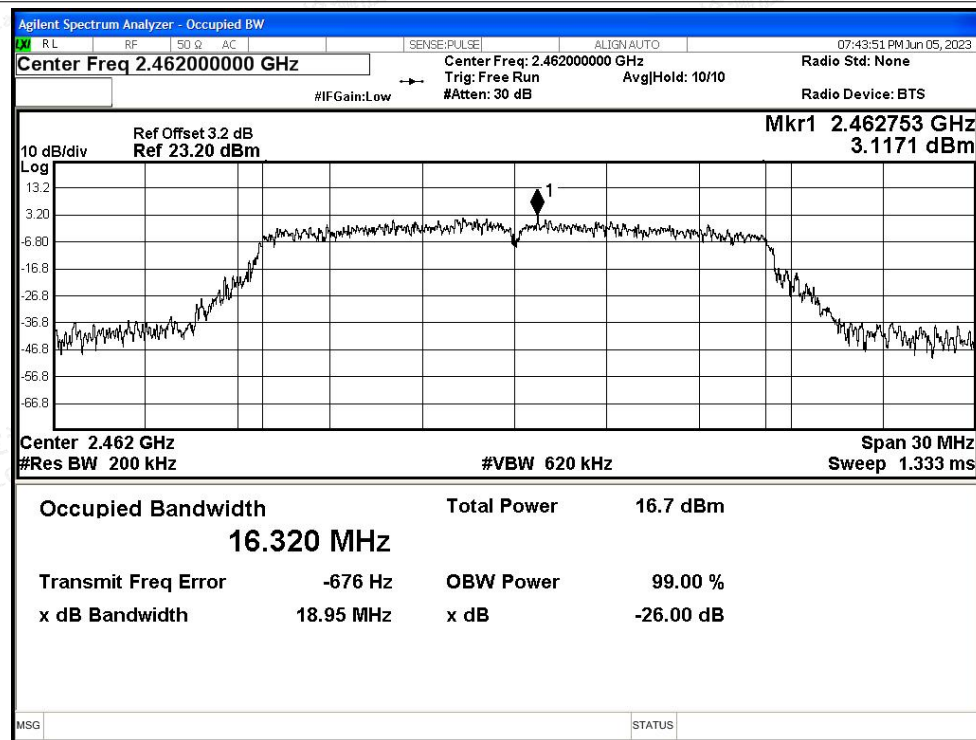
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## OBW NVNT g 2437MHz Ant1



## OBW NVNT g 2462MHz Ant1



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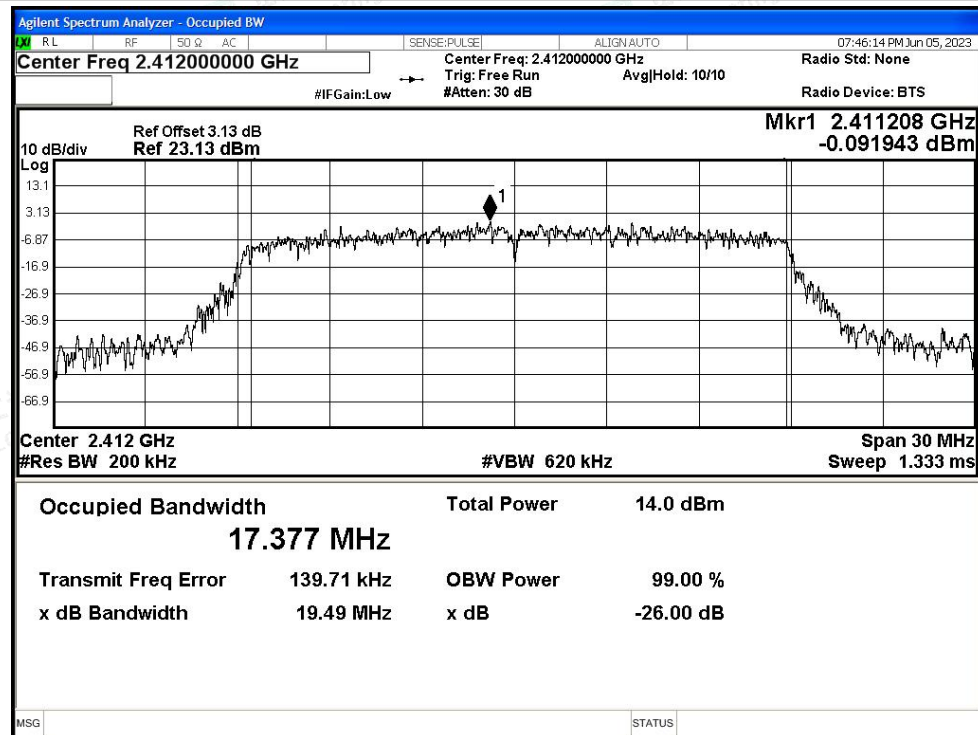
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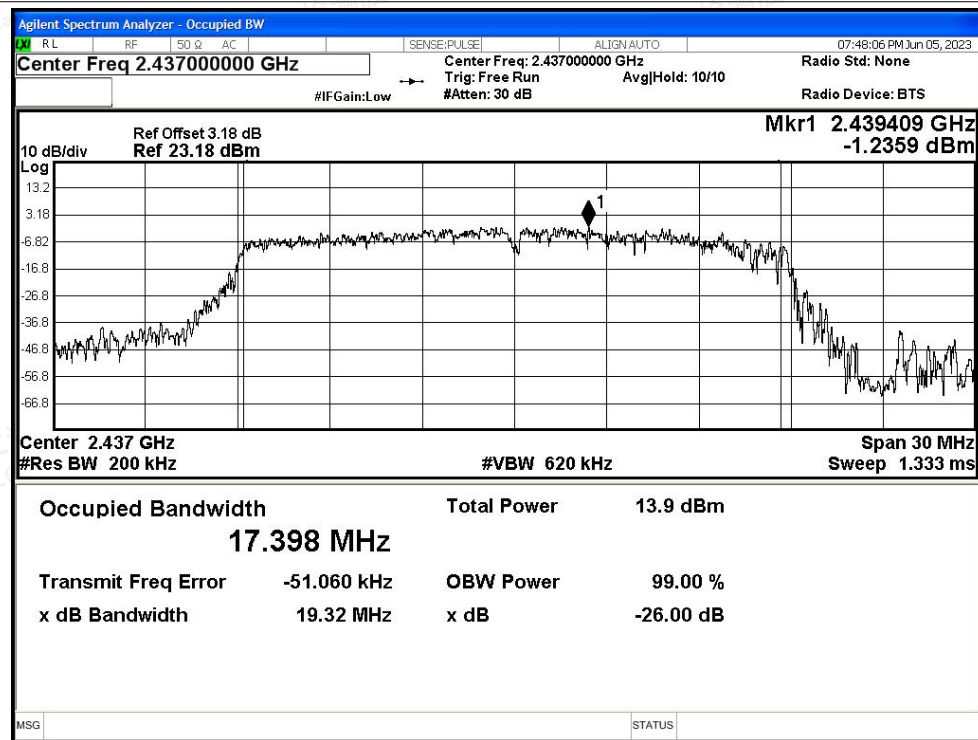
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## OBW NVNT n20 2412MHz Ant1



## OBW NVNT n20 2437MHz Ant1



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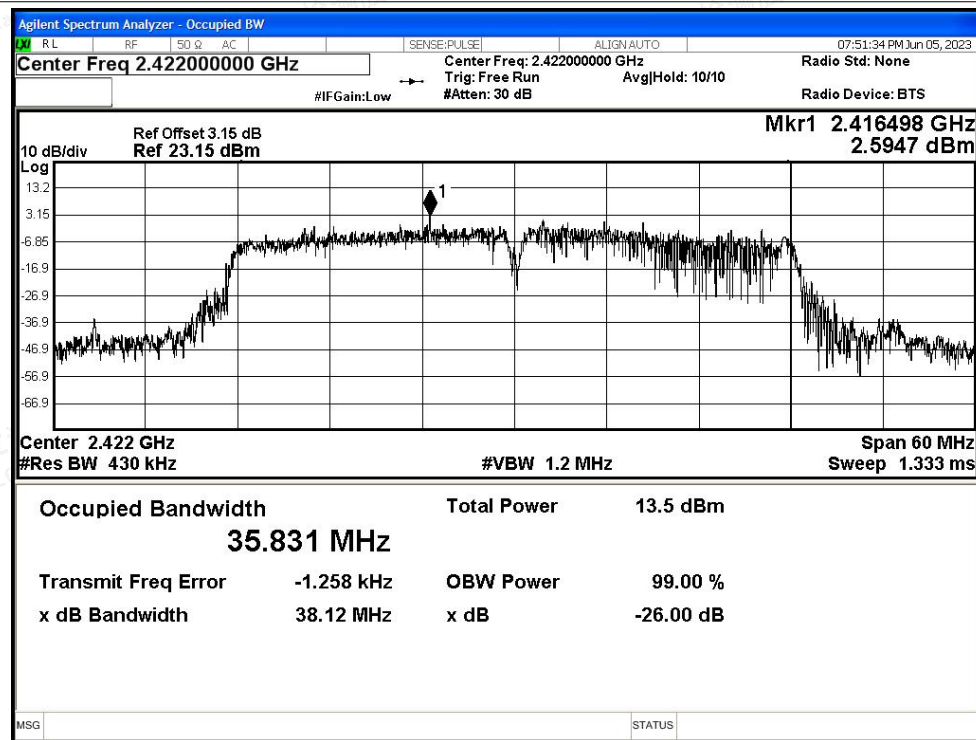
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## OBW NVNT n20 2462MHz Ant1



## OBW NVNT n40 2422MHz Ant1

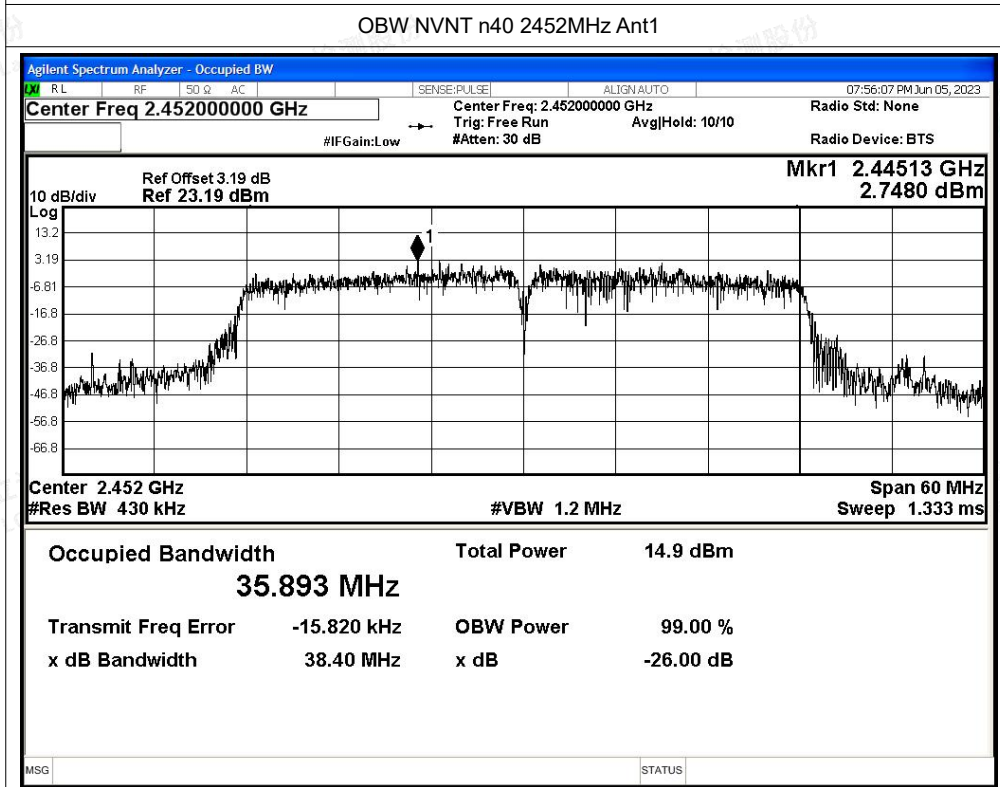
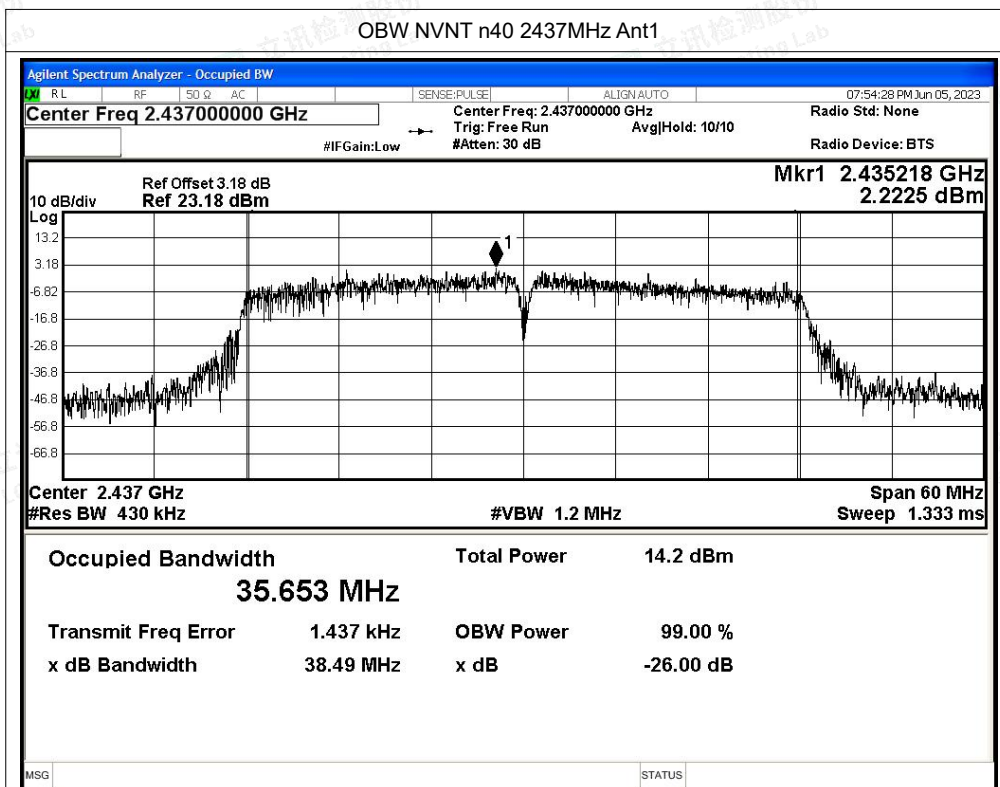


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### A.3 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Antenna Gain | Report EIRP Power(dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-------------------|-------------|--------------|------------------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | 15.12             | 30          | 2.4          | 17.52                  | 36          | Pass    |
| NVNT      | b    | 2437            | Ant1    | 14.95             | 30          | 2.4          | 17.35                  | 36          | Pass    |
| NVNT      | b    | 2462            | Ant1    | 16.48             | 30          | 2.4          | 18.88                  | 36          | Pass    |
| NVNT      | g    | 2412            | Ant1    | 14.24             | 30          | 2.4          | 16.64                  | 36          | Pass    |
| NVNT      | g    | 2437            | Ant1    | 14.40             | 30          | 2.4          | 16.80                  | 36          | Pass    |
| NVNT      | g    | 2462            | Ant1    | 15.61             | 30          | 2.4          | 18.01                  | 36          | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 13.53             | 30          | 2.4          | 15.93                  | 36          | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 13.11             | 30          | 2.4          | 15.51                  | 36          | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 17.21             | 30          | 2.4          | 19.61                  | 36          | Pass    |
| NVNT      | n40  | 2422            | Ant1    | 13.21             | 30          | 2.4          | 15.61                  | 36          | Pass    |
| NVNT      | n40  | 2437            | Ant1    | 13.19             | 30          | 2.4          | 15.59                  | 36          | Pass    |
| NVNT      | n40  | 2452            | Ant1    | 14.61             | 30          | 2.4          | 17.01                  | 36          | Pass    |



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## A.4 Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Total PSD<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Verdict |
|-----------|------|-----------------|---------|-------------------------|---------------------|---------|
| NVNT      | b    | 2412            | Ant1    | -7.76                   | 8                   | Pass    |
| NVNT      | b    | 2437            | Ant1    | -8.22                   | 8                   | Pass    |
| NVNT      | b    | 2462            | Ant1    | -5.81                   | 8                   | Pass    |
| NVNT      | g    | 2412            | Ant1    | -13.23                  | 8                   | Pass    |
| NVNT      | g    | 2437            | Ant1    | -12.3                   | 8                   | Pass    |
| NVNT      | g    | 2462            | Ant1    | -9.51                   | 8                   | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -13.97                  | 8                   | Pass    |
| NVNT      | n20  | 2437            | Ant1    | -13.07                  | 8                   | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -12.76                  | 8                   | Pass    |
| NVNT      | n40  | 2422            | Ant1    | -16.82                  | 8                   | Pass    |
| NVNT      | n40  | 2437            | Ant1    | -14.79                  | 8                   | Pass    |
| NVNT      | n40  | 2452            | Ant1    | -16.03                  | 8                   | Pass    |



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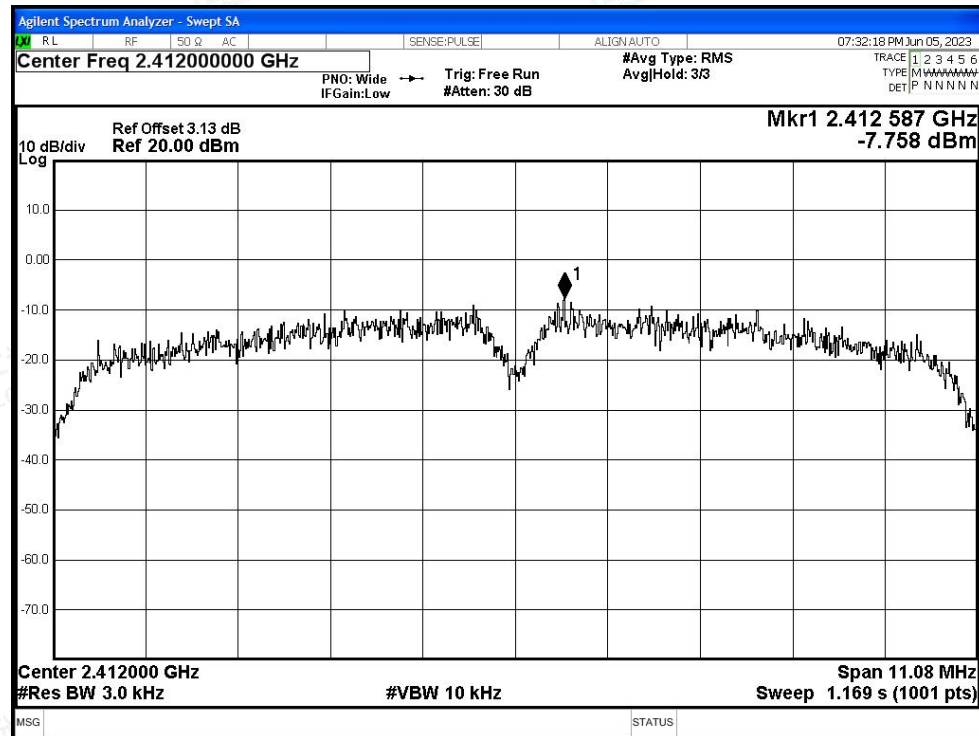
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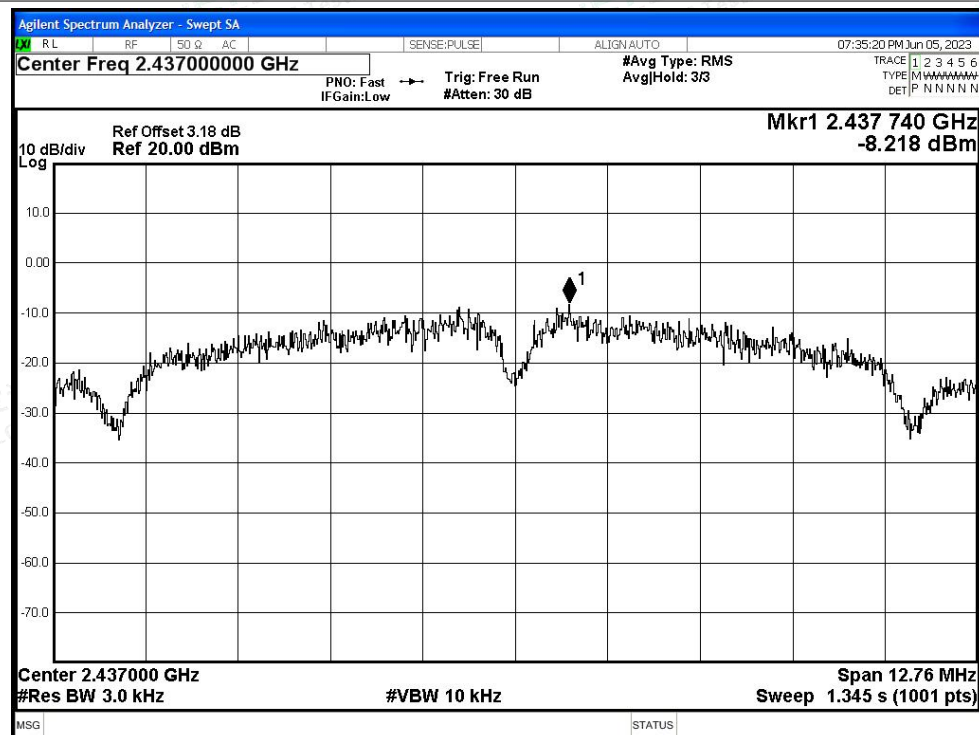


## Test Graphs

## PSD NVNT b 2412MHz Ant1



## PSD NVNT b 2437MHz Ant1



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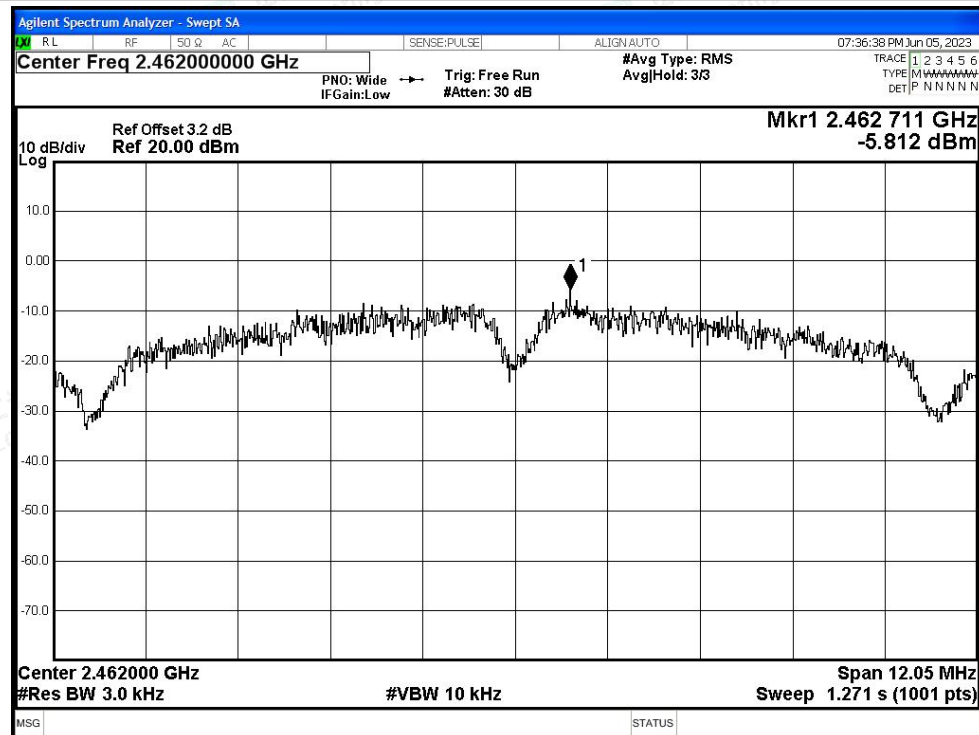
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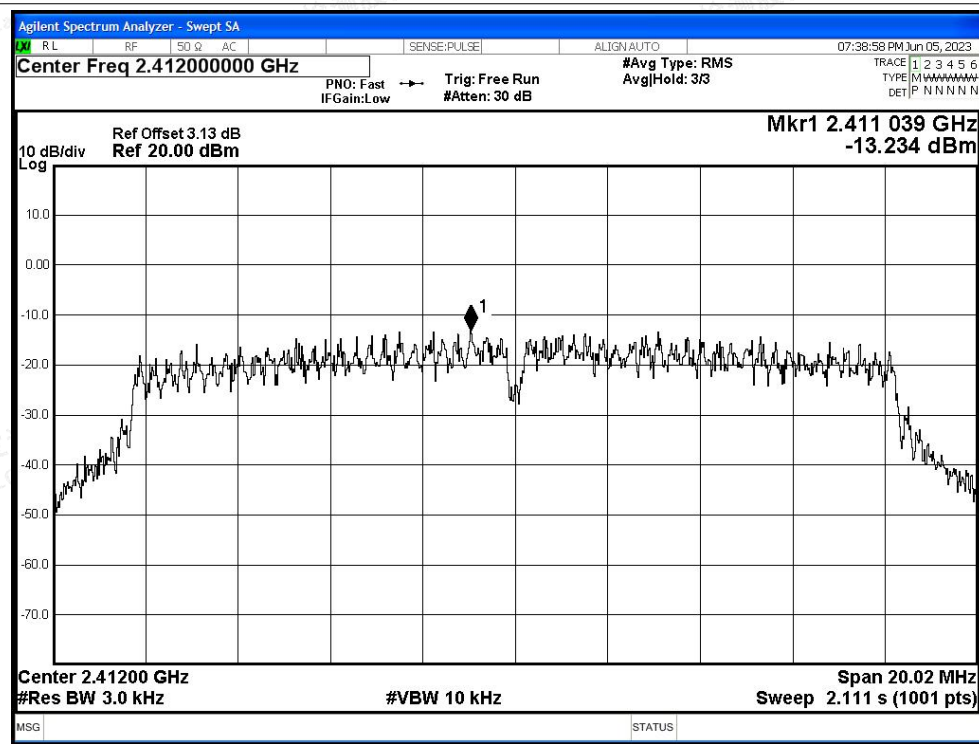
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PSD NVNT b 2462MHz Ant1



PSD NVNT g 2412MHz Ant1



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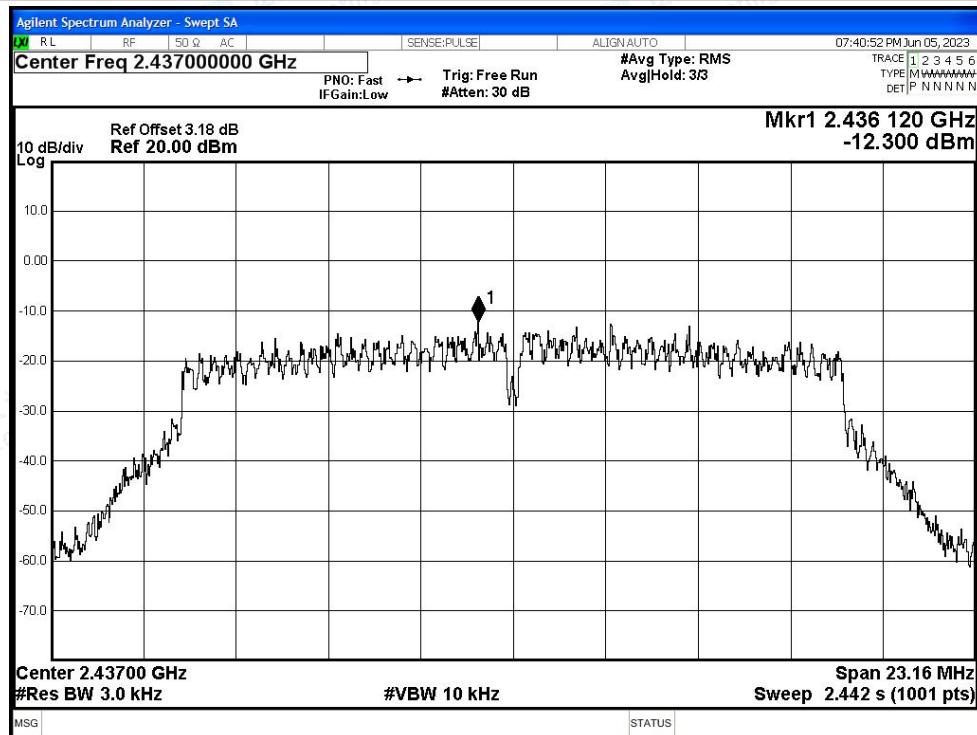
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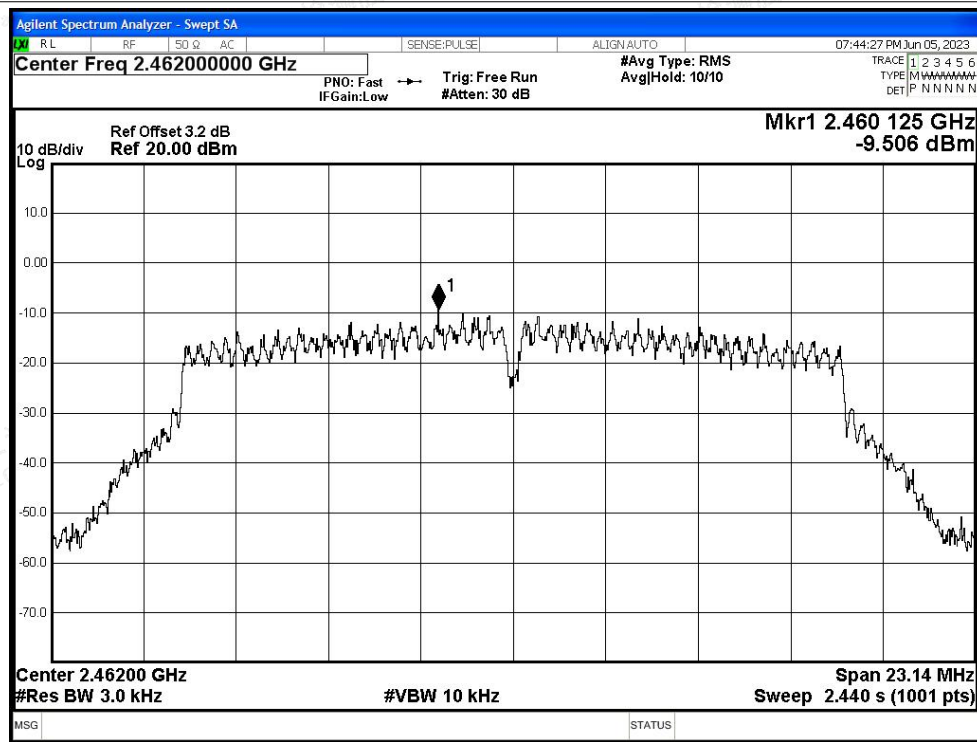
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## PSD NVNT g 2437MHz Ant1



## PSD NVNT g 2462MHz Ant1

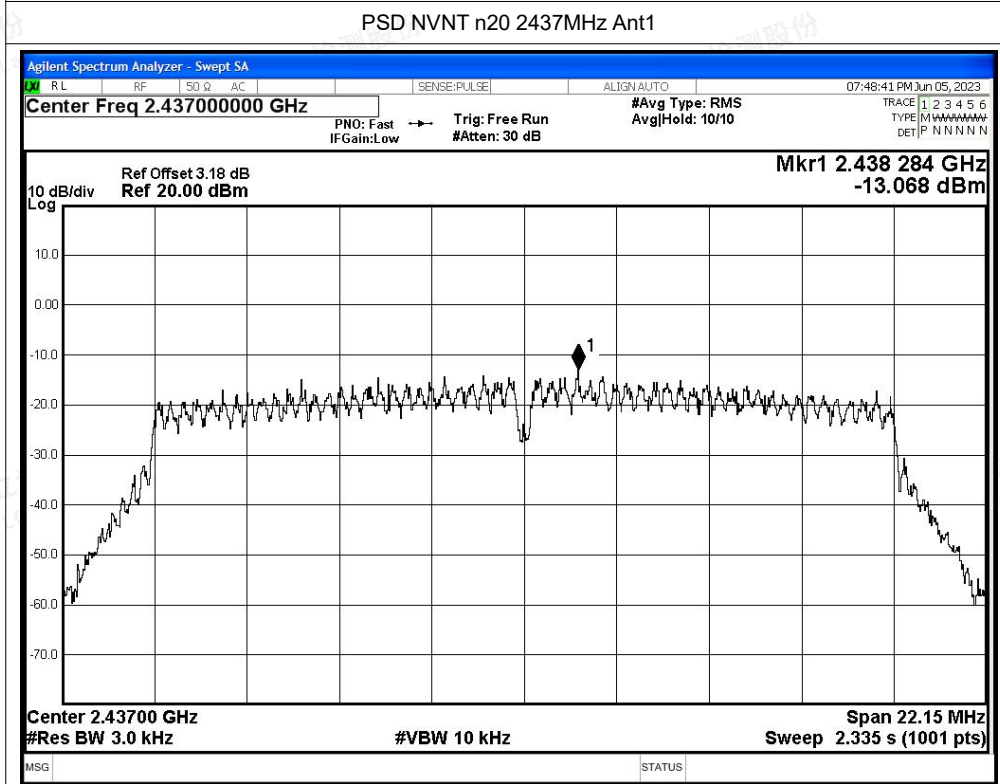
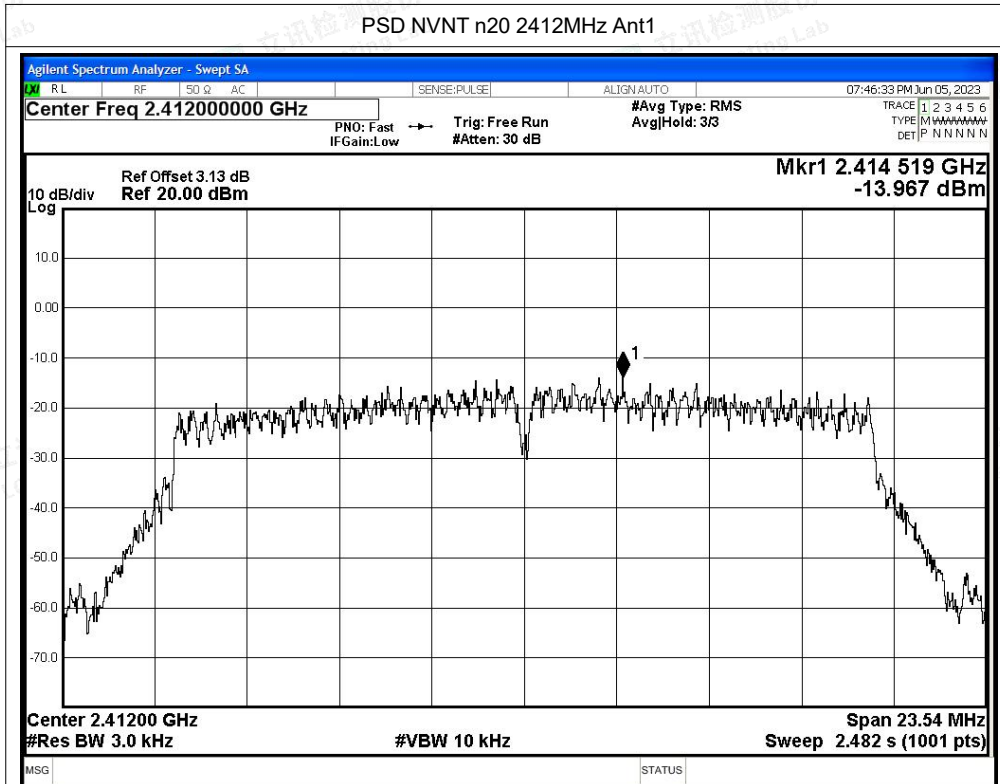


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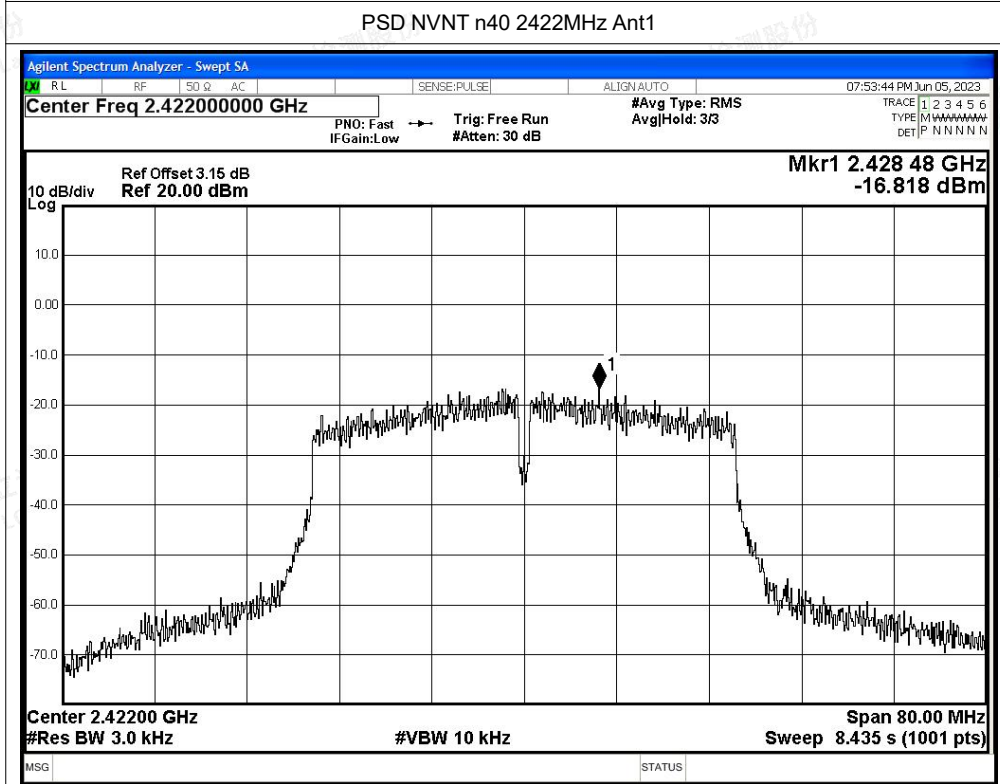
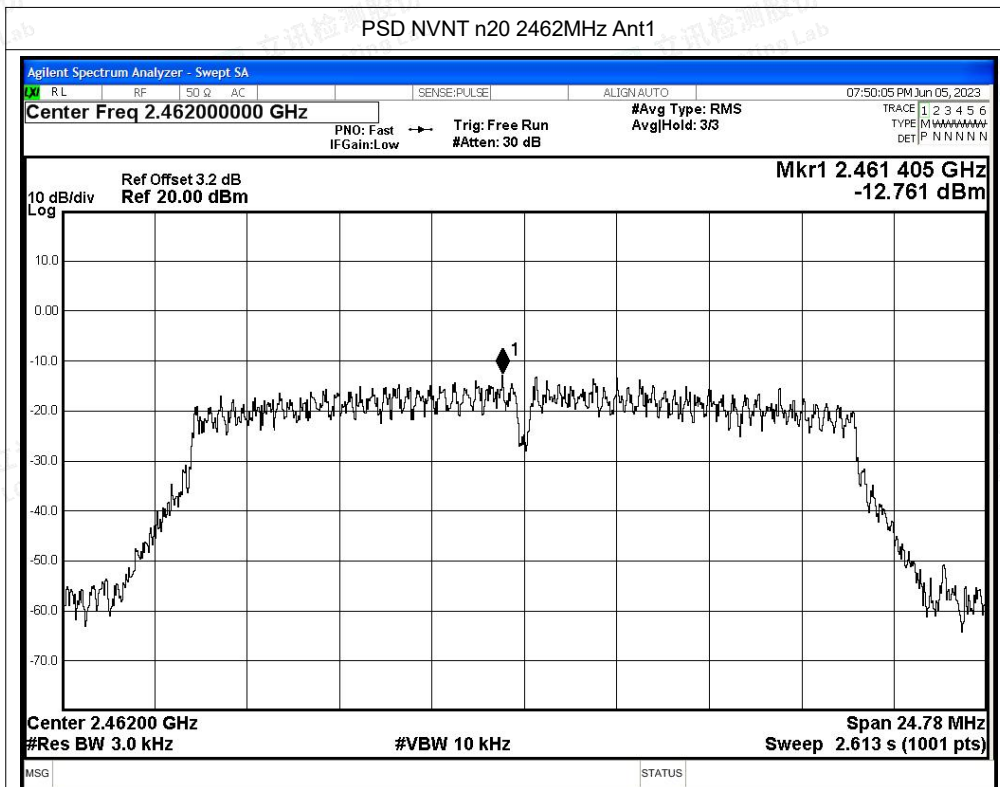


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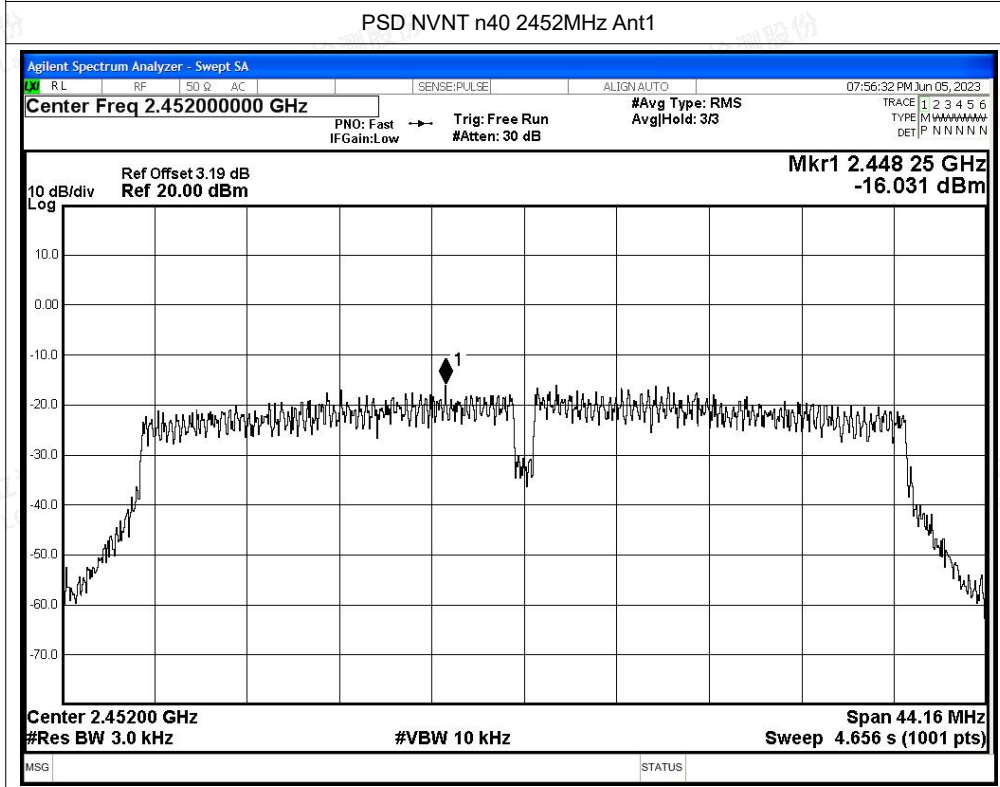
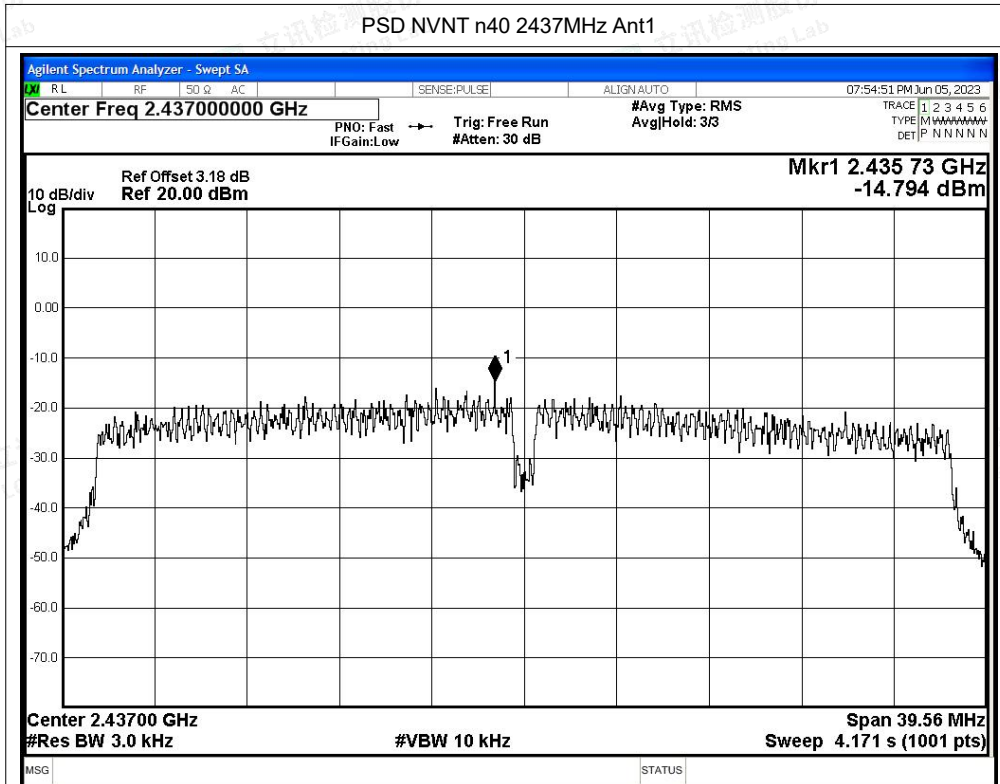


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## A.5 Band Edge

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | -51.73          | -20         | Pass    |
| NVNT      | b    | 2462            | Ant1    | -63.53          | -20         | Pass    |
| NVNT      | g    | 2412            | Ant1    | -43.72          | -20         | Pass    |
| NVNT      | g    | 2462            | Ant1    | -52.47          | -20         | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -39.92          | -20         | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -54.42          | -20         | Pass    |
| NVNT      | n40  | 2422            | Ant1    | -39.53          | -20         | Pass    |
| NVNT      | n40  | 2452            | Ant1    | -44.32          | -20         | Pass    |



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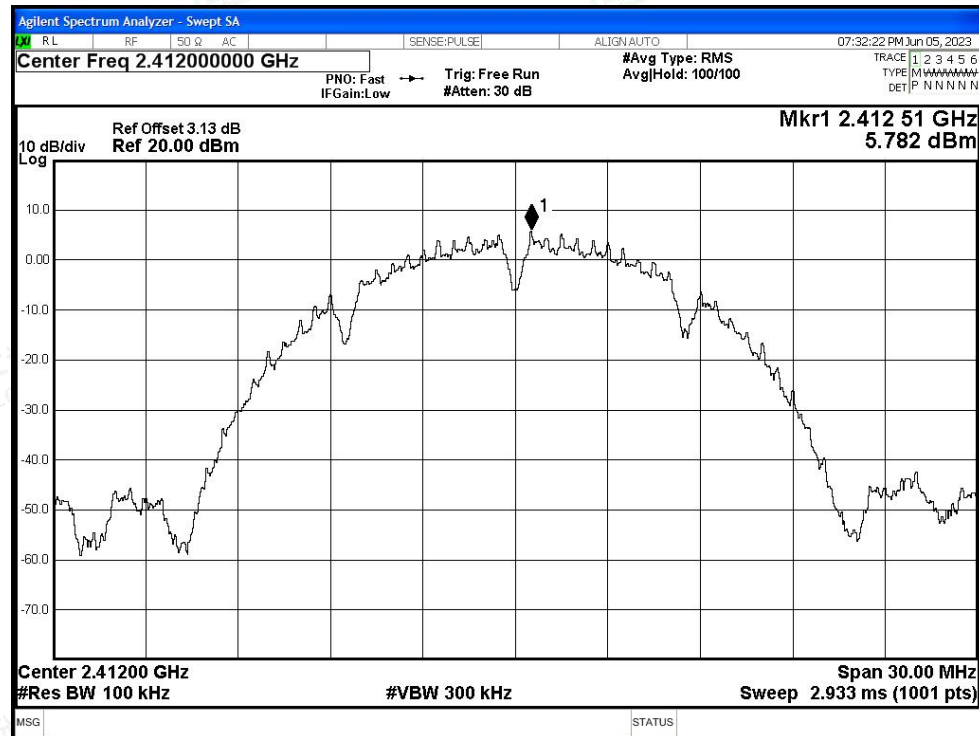
Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)

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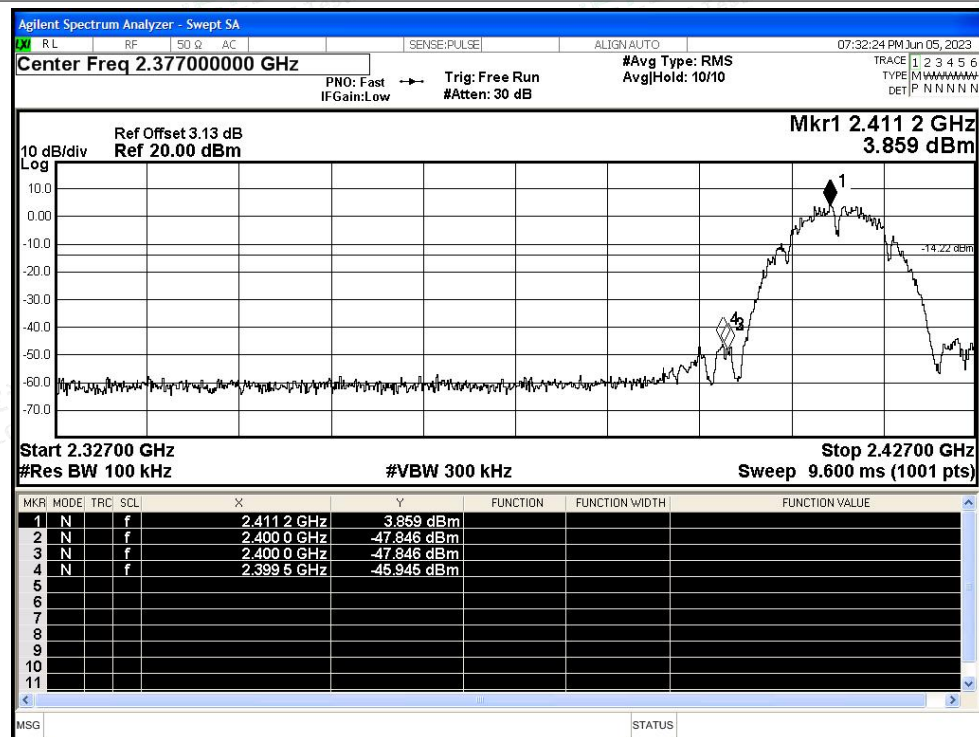


## Test Graphs

## Band Edge NVNT b 2412MHz Ant1 Ref



## Band Edge NVNT b 2412MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

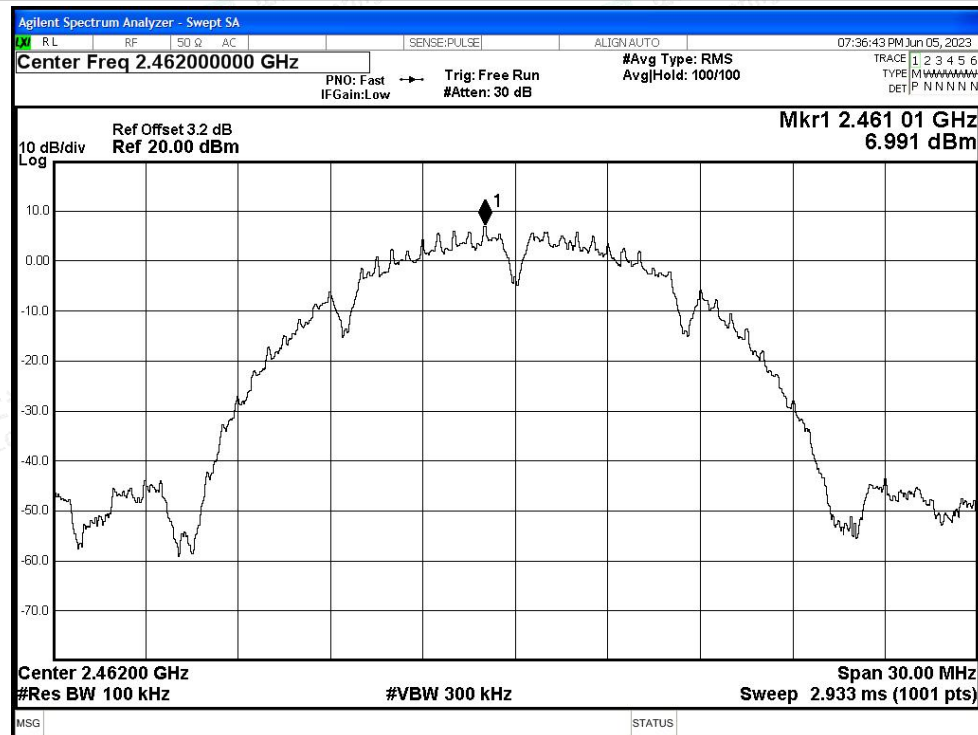
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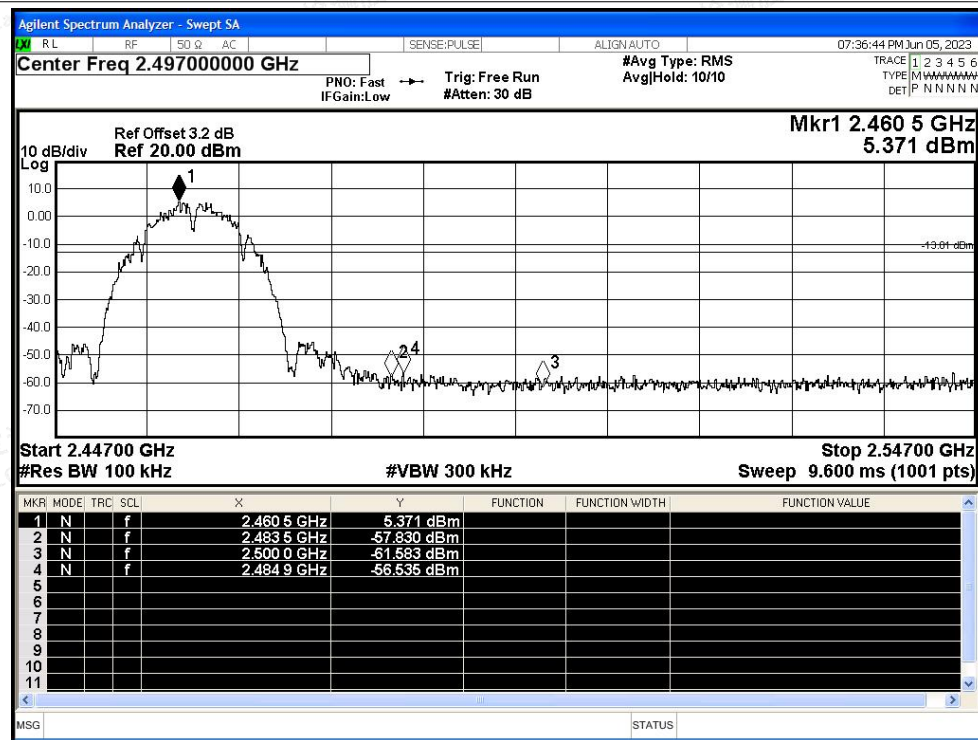
Scan code to check authenticity



## Band Edge NVNT b 2462MHz Ant1 Ref



## Band Edge NVNT b 2462MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

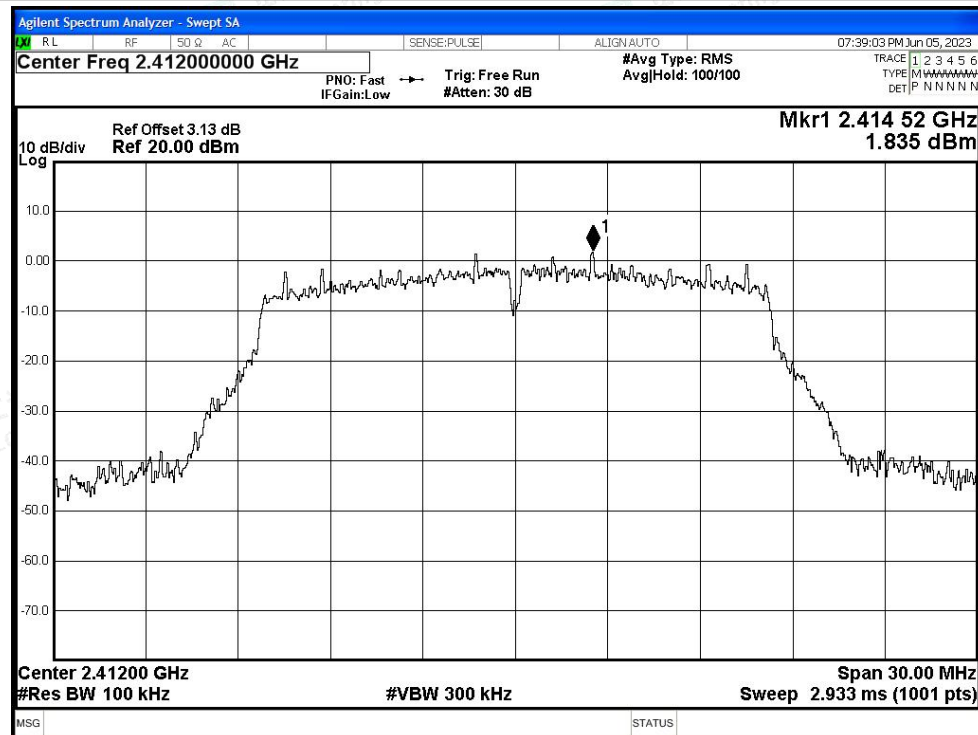
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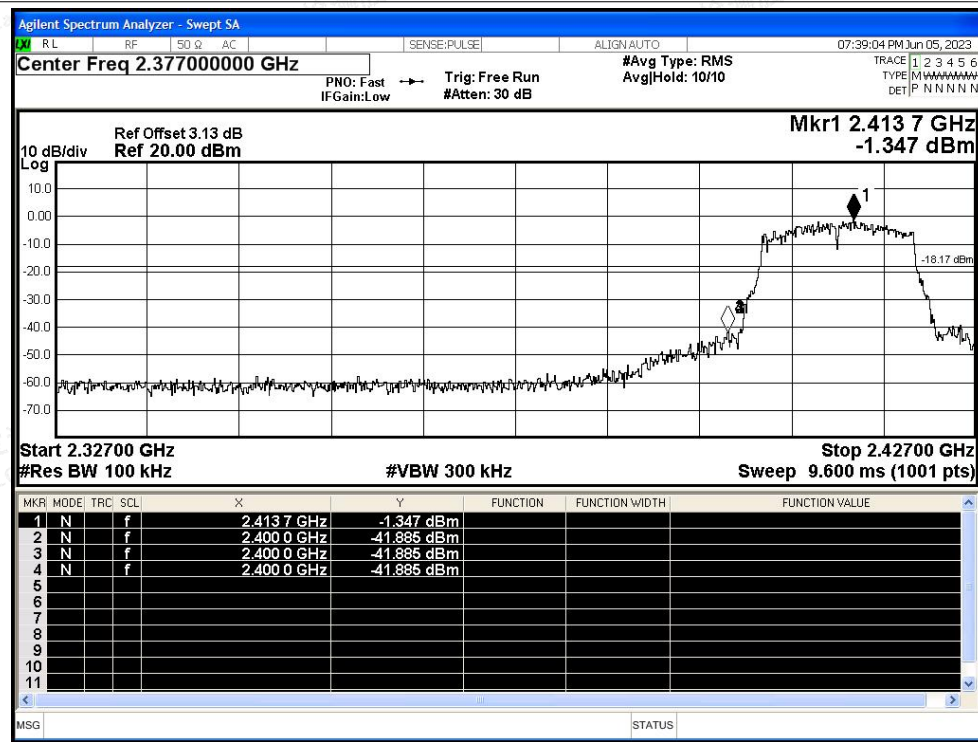
Scan code to check authenticity



## Band Edge NVNT g 2412MHz Ant1 Ref



## Band Edge NVNT g 2412MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

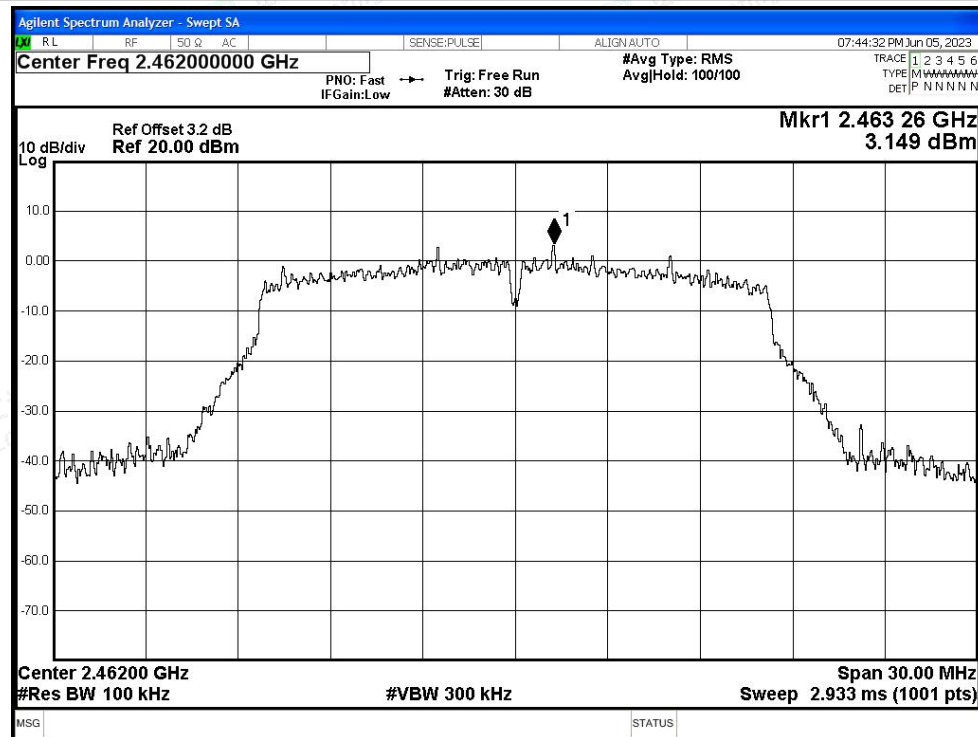
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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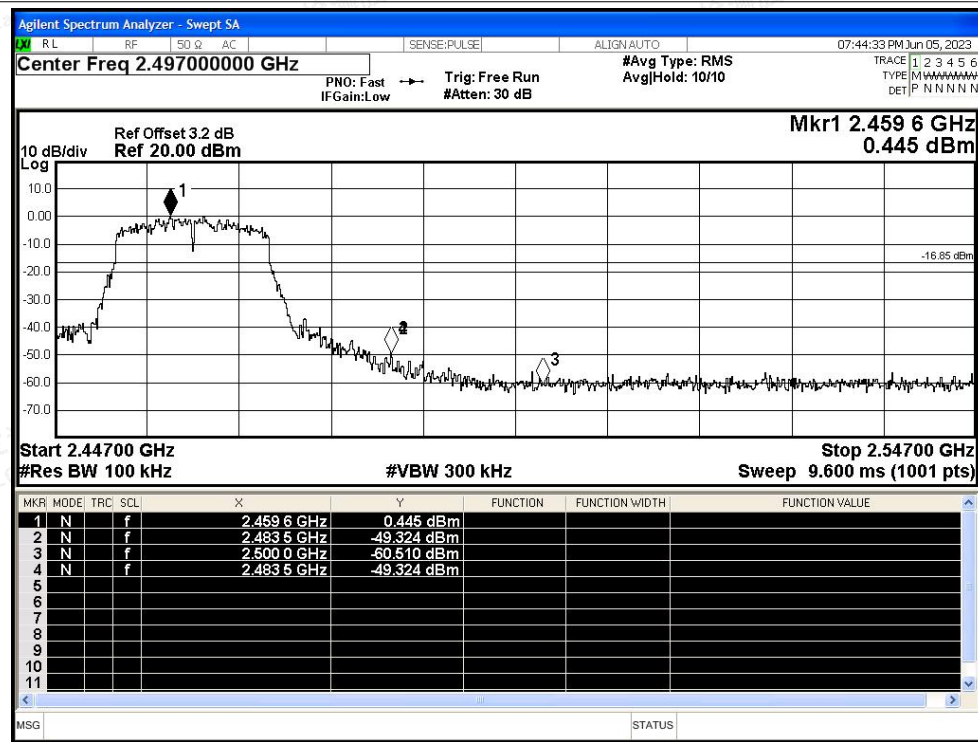
Scan code to check authenticity



## Band Edge NVNT g 2462MHz Ant1 Ref



## Band Edge NVNT g 2462MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

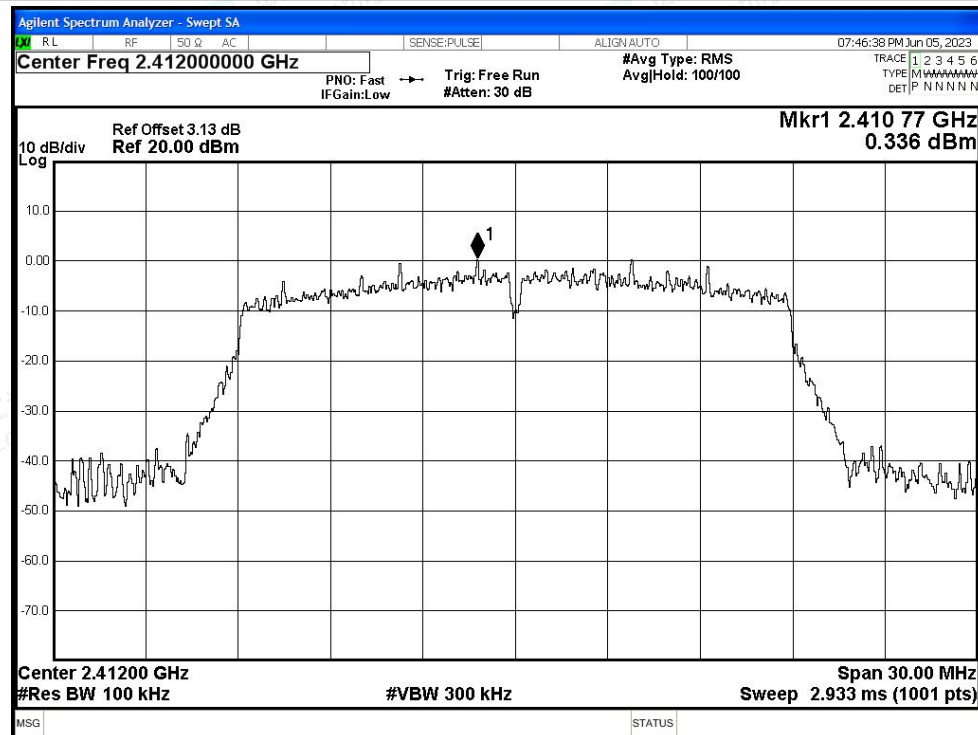
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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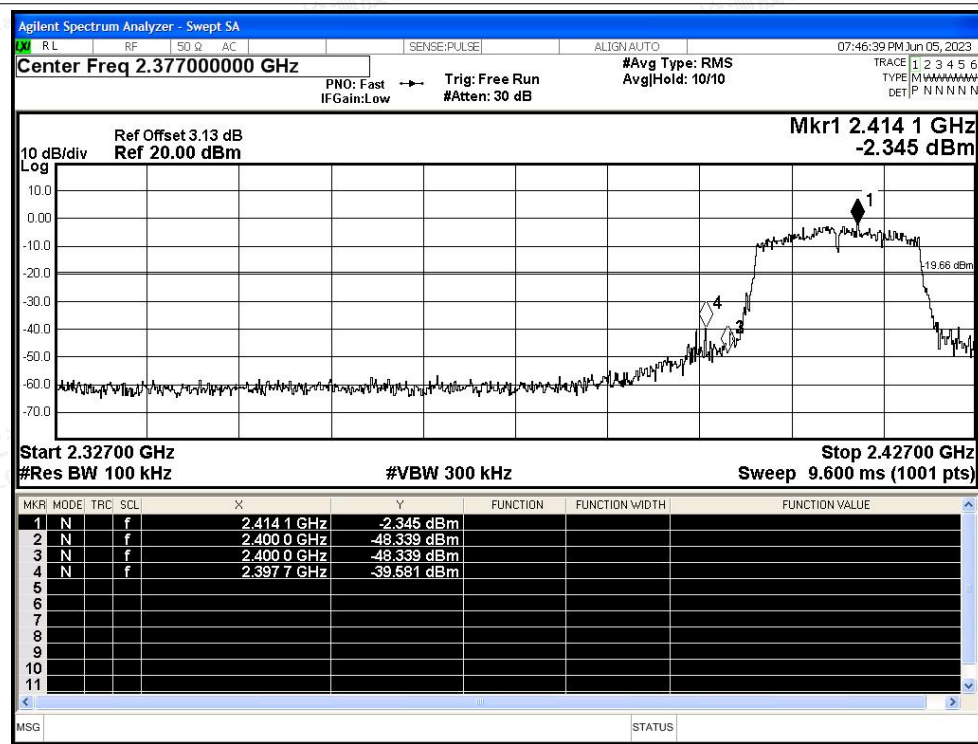
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## Band Edge NVNT n20 2412MHz Ant1 Ref



## Band Edge NVNT n20 2412MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

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