



## Appendix A

### RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Diagnostic Tool

Test Model: MD700

#### Environmental Conditions

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





## A.1 -6dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | b    | 2412            | Ant1    | 8.094                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2437            | Ant1    | 7.487                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2462            | Ant1    | 8.043                 | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 16.874                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 17.154                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 16.717                | $\geq 0.5$                  | Pass    |





## Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



-6dB Bandwidth NVNT b 2437MHz Ant1



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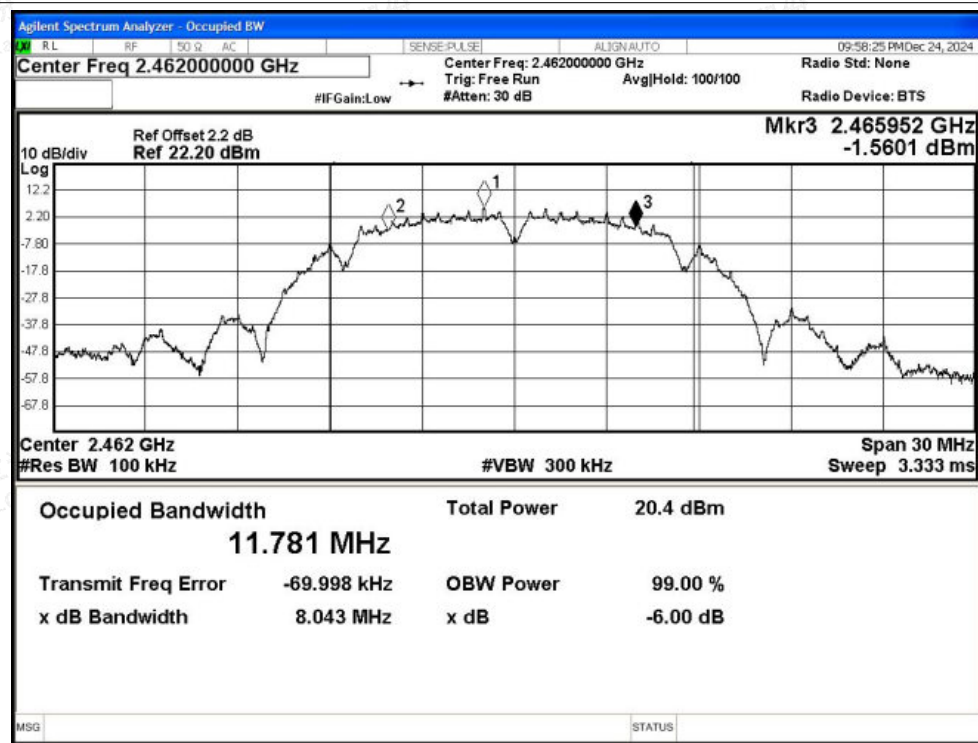
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

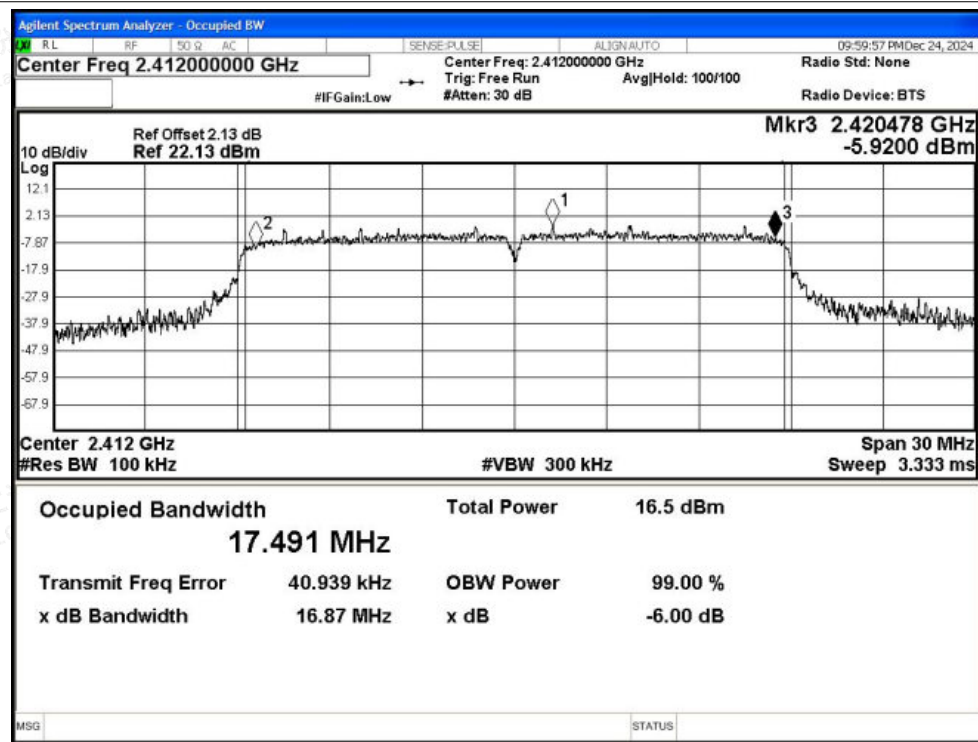
Scan code to check authenticity



## -6dB Bandwidth NVNT b 2462MHz Ant1



## -6dB Bandwidth NVNT n20 2412MHz Ant1



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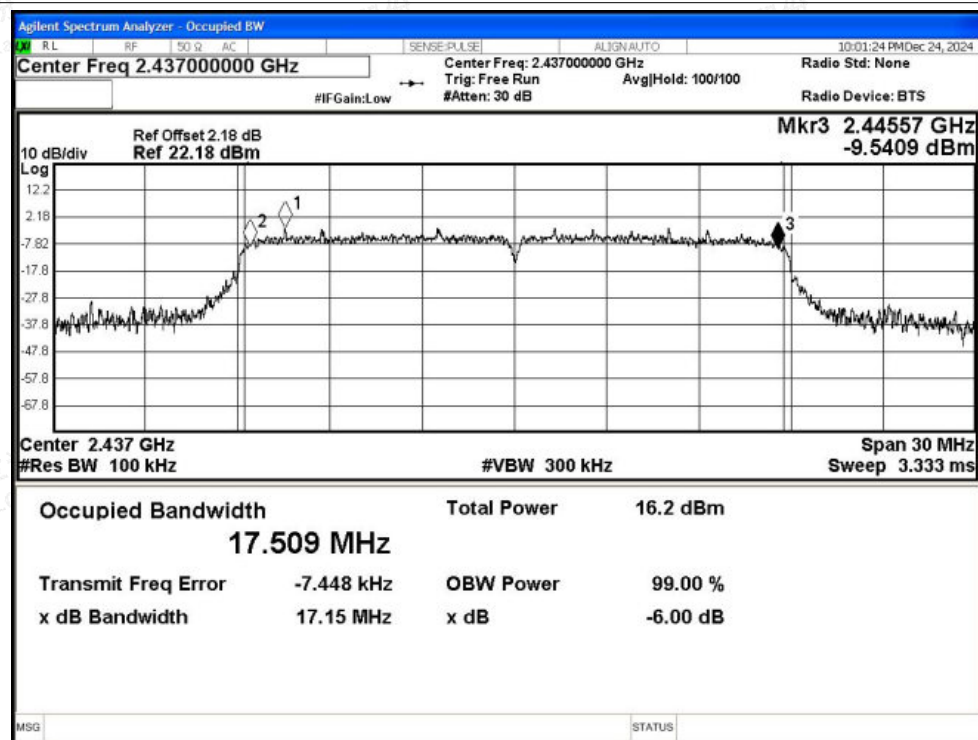
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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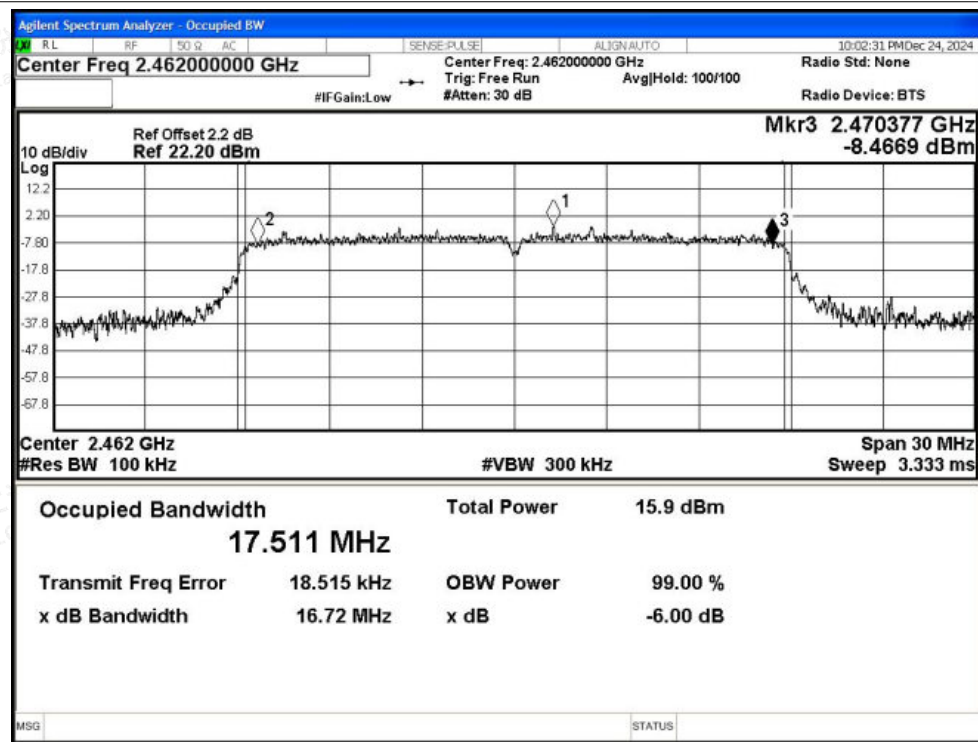
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## -6dB Bandwidth NVNT n20 2437MHz Ant1



## -6dB Bandwidth NVNT n20 2462MHz Ant1





## A.2 Maximum Peak Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | 15.86                 | 30          | Pass    |
| NVNT      | b    | 2437            | Ant1    | 15.84                 | 30          | Pass    |
| NVNT      | b    | 2462            | Ant1    | 15.37                 | 30          | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 14.92                 | 30          | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 14.76                 | 30          | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 14.49                 | 30          | Pass    |



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### A.3 Maximum Power Spectral Density Level

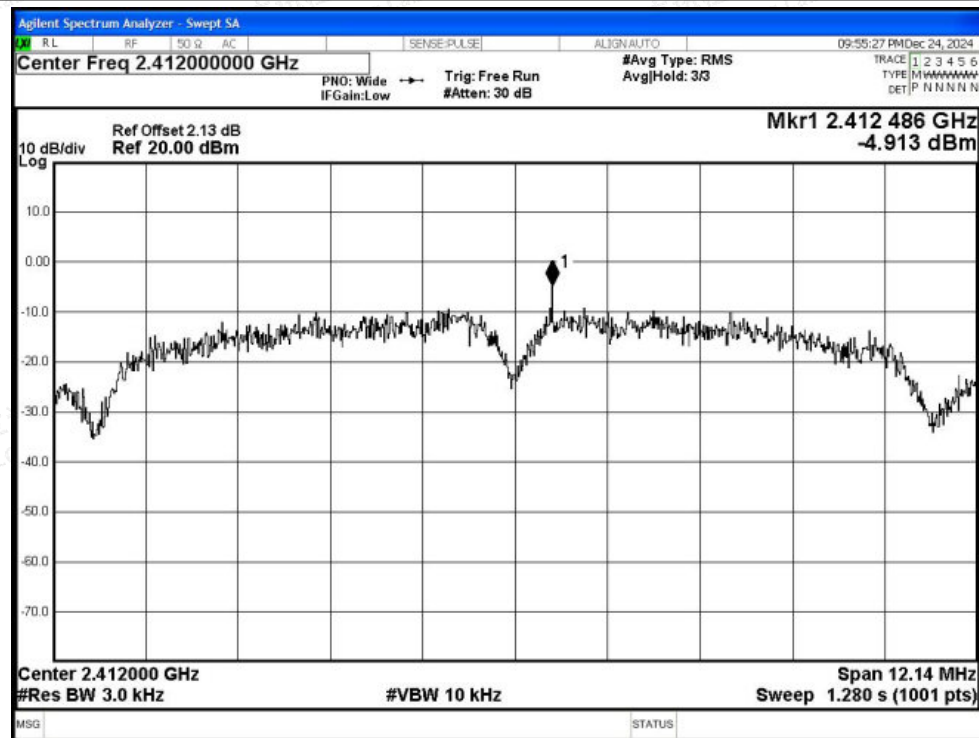
| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | b    | 2412            | Ant1    | -4.91                    | 8                | Pass    |
| NVNT      | b    | 2437            | Ant1    | -7.45                    | 8                | Pass    |
| NVNT      | b    | 2462            | Ant1    | -9.17                    | 8                | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -15.04                   | 8                | Pass    |
| NVNT      | n20  | 2437            | Ant1    | -15.65                   | 8                | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -16.37                   | 8                | Pass    |



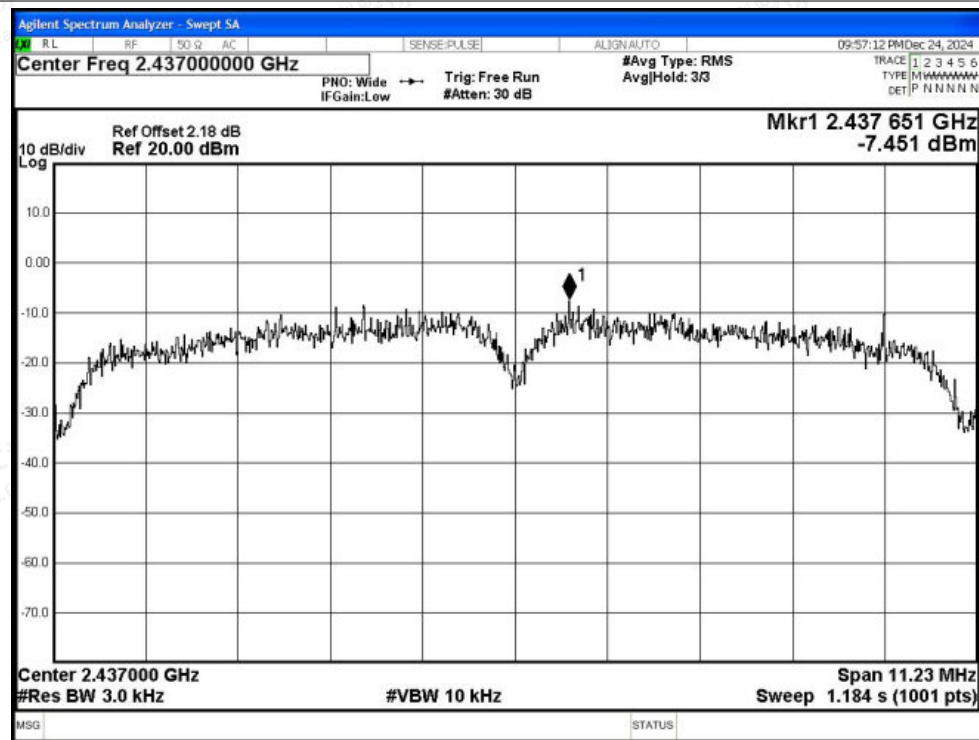


## Test Graphs

PSD NVNT b 2412MHz Ant1



PSD NVNT b 2437MHz Ant1



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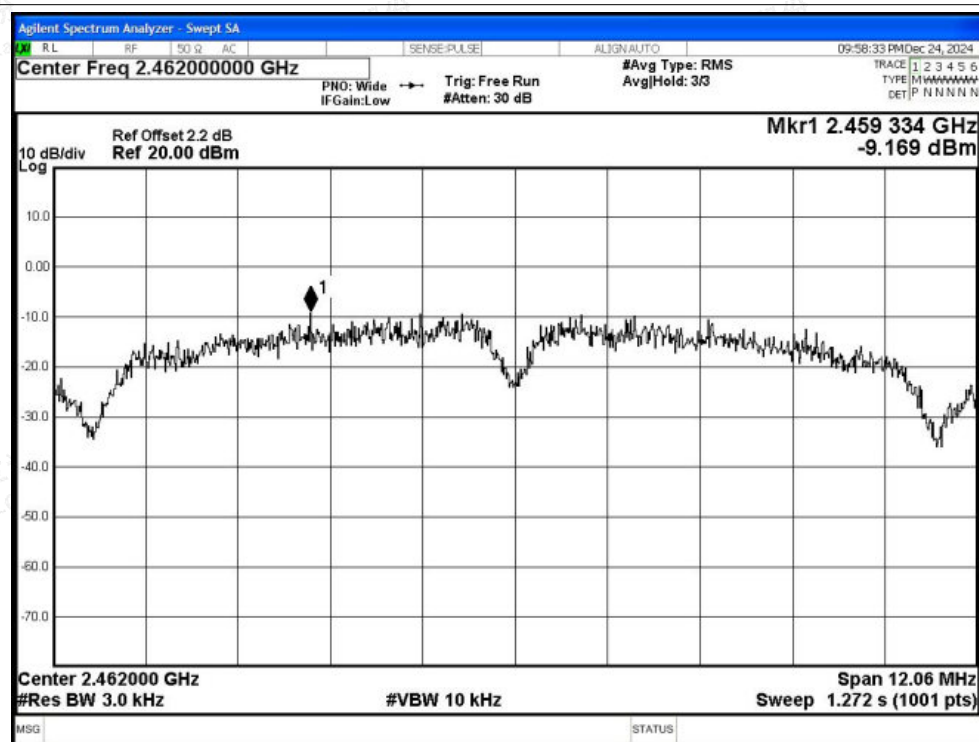
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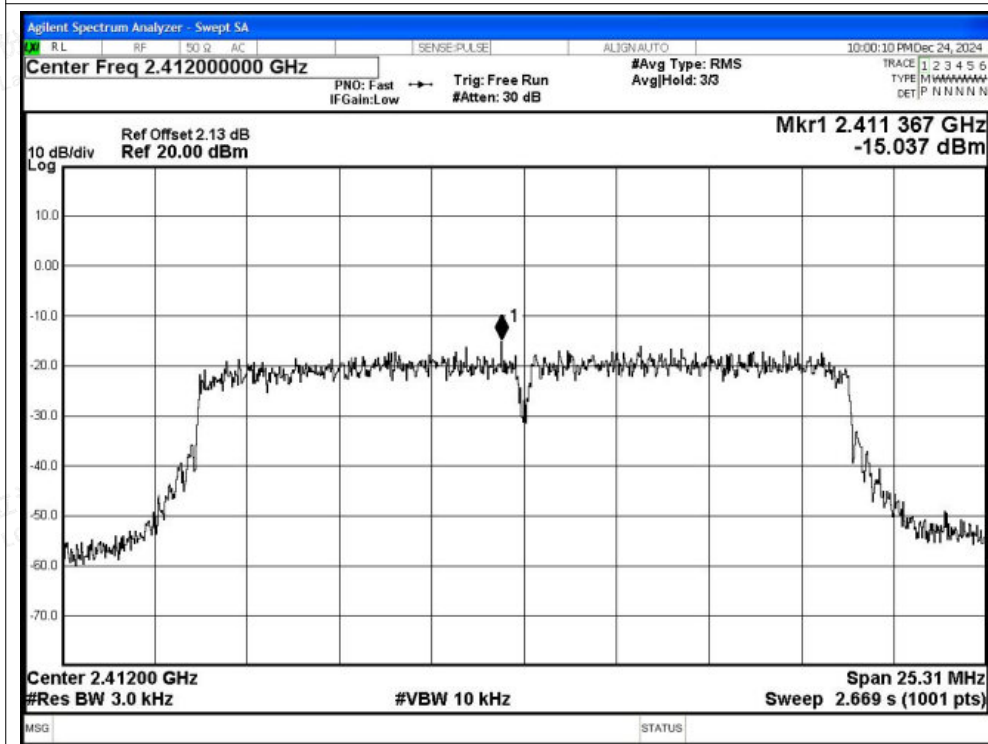




PSD NVNT b 2462MHz Ant1



PSD NVNT n20 2412MHz Ant1



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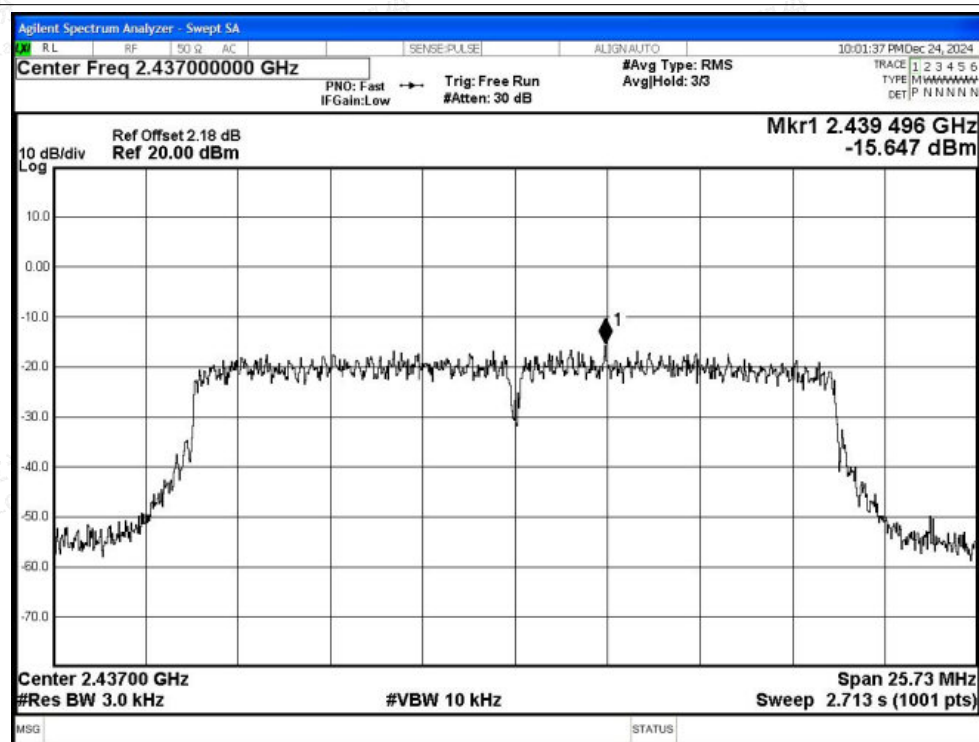
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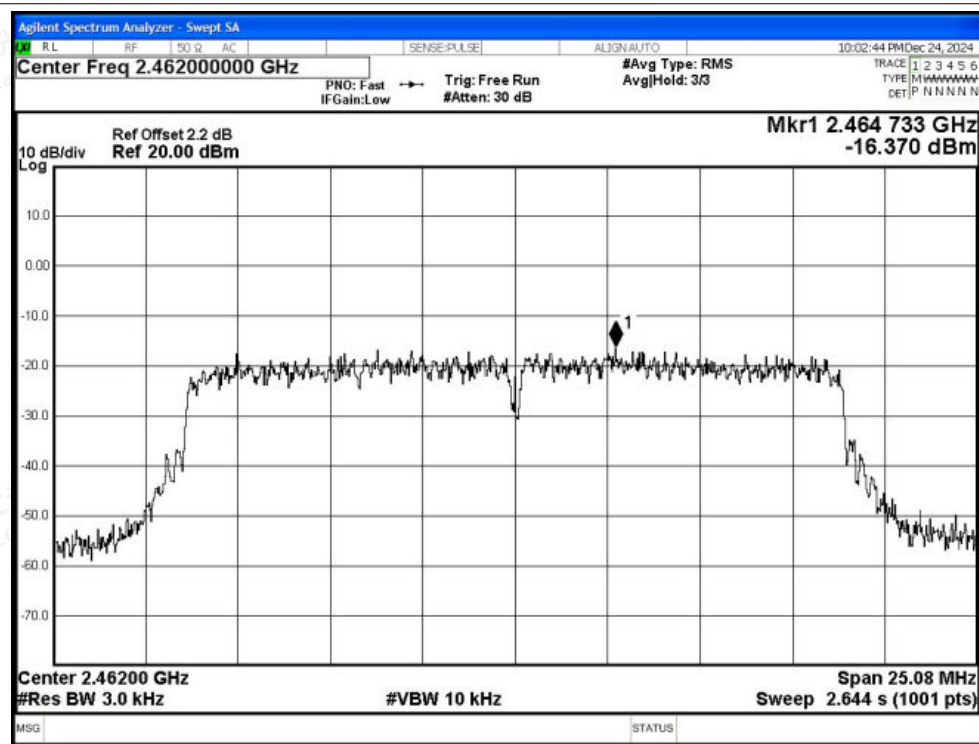
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PSD NVNT n20 2437MHz Ant1



PSD NVNT n20 2462MHz Ant1



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## A.4 Band Edge

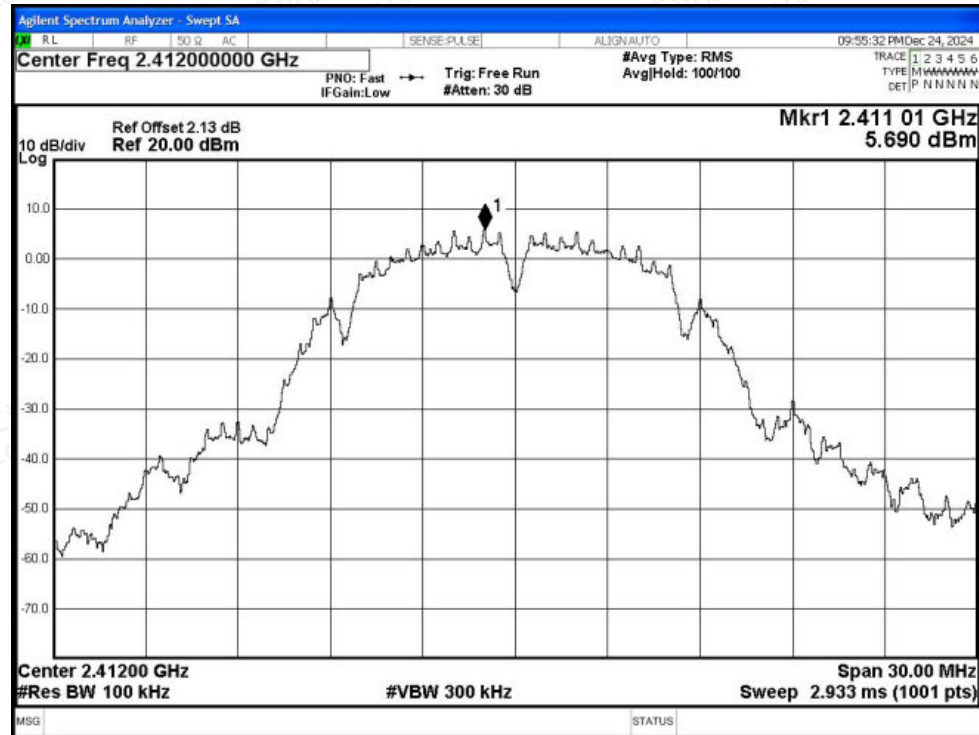
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | -46.72          | -20         | Pass    |
| NVNT      | b    | 2462            | Ant1    | -59.85          | -20         | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -29.14          | -20         | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -42.15          | -20         | Pass    |





## Test Graphs

## Band Edge NVNT b 2412MHz Ant1 Ref



## Band Edge NVNT b 2412MHz Ant1 Emission



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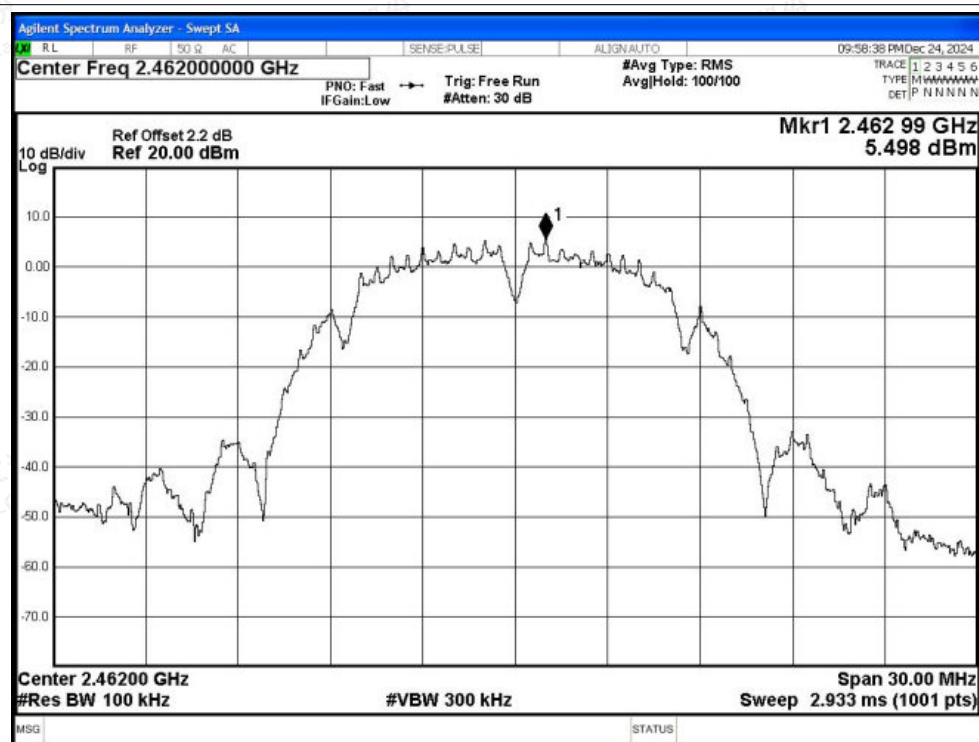
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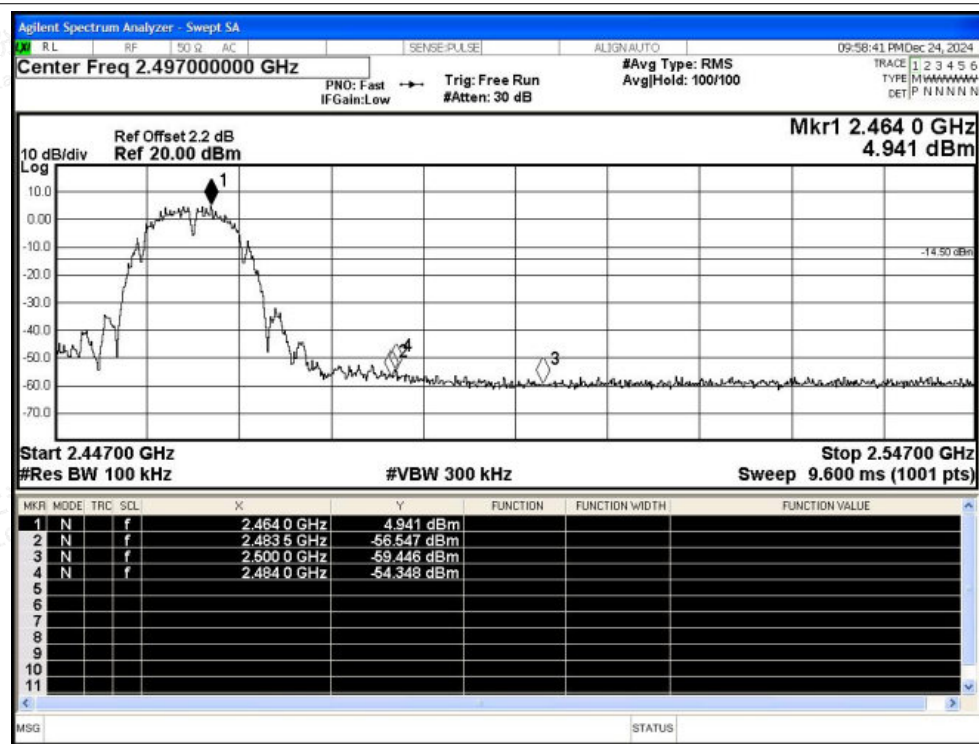
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## Band Edge NVNT b 2462MHz Ant1 Ref



## Band Edge NVNT b 2462MHz Ant1 Emission



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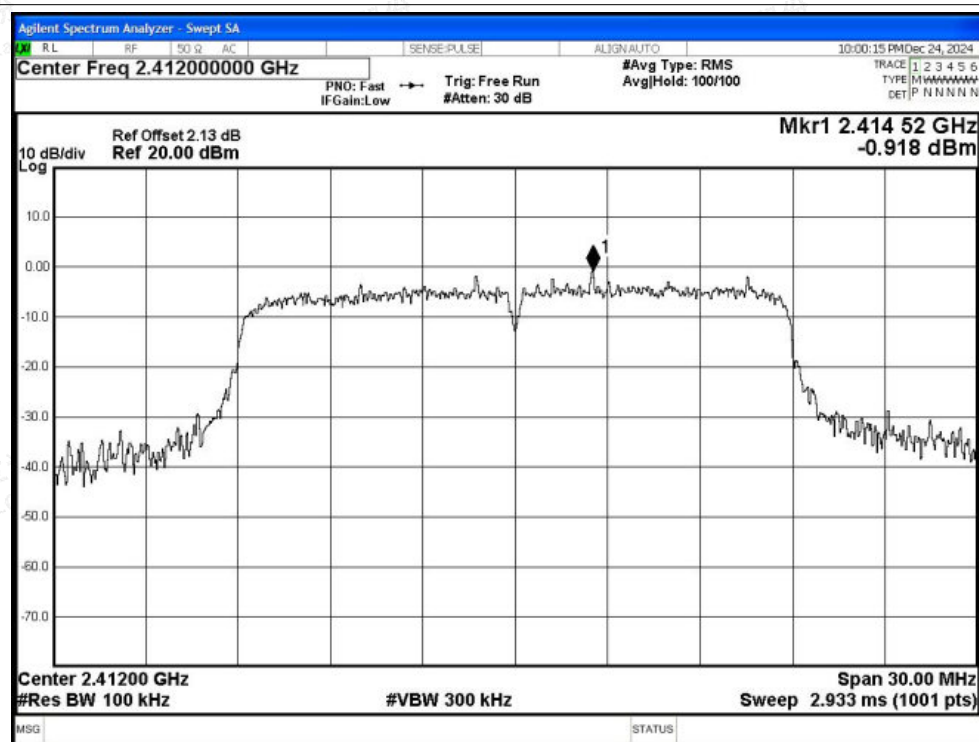
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## Band Edge NVNT n20 2412MHz Ant1 Ref



## Band Edge NVNT n20 2412MHz Ant1 Emission



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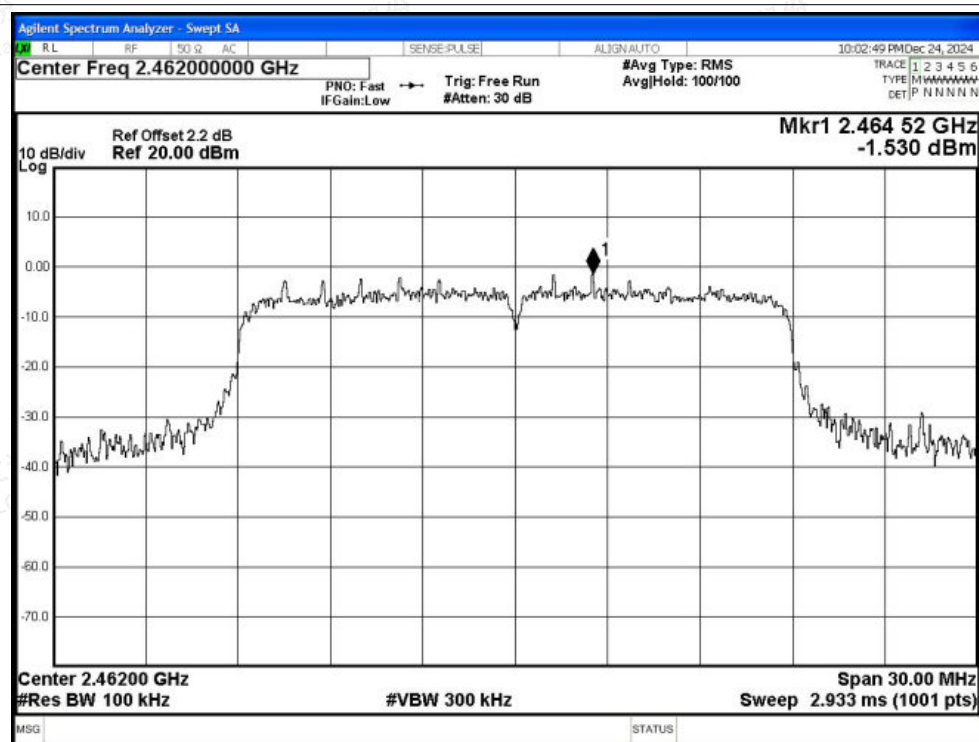
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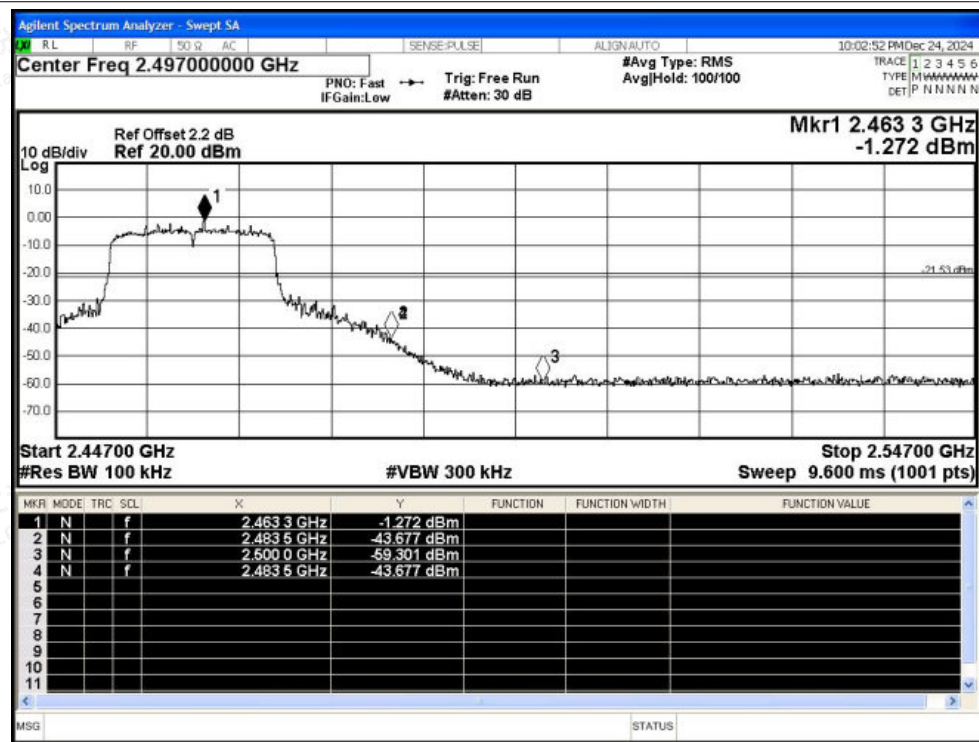




## Band Edge NVNT n20 2462MHz Ant1 Ref



## Band Edge NVNT n20 2462MHz Ant1 Emission





## A.5 Conducted RF Spurious Emission

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | -51.79          | -20         | Pass    |
| NVNT      | b    | 2437            | Ant1    | -52.37          | -20         | Pass    |
| NVNT      | b    | 2462            | Ant1    | -52.04          | -20         | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -45.2           | -20         | Pass    |
| NVNT      | n20  | 2437            | Ant1    | -43.97          | -20         | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -44.7           | -20         | Pass    |



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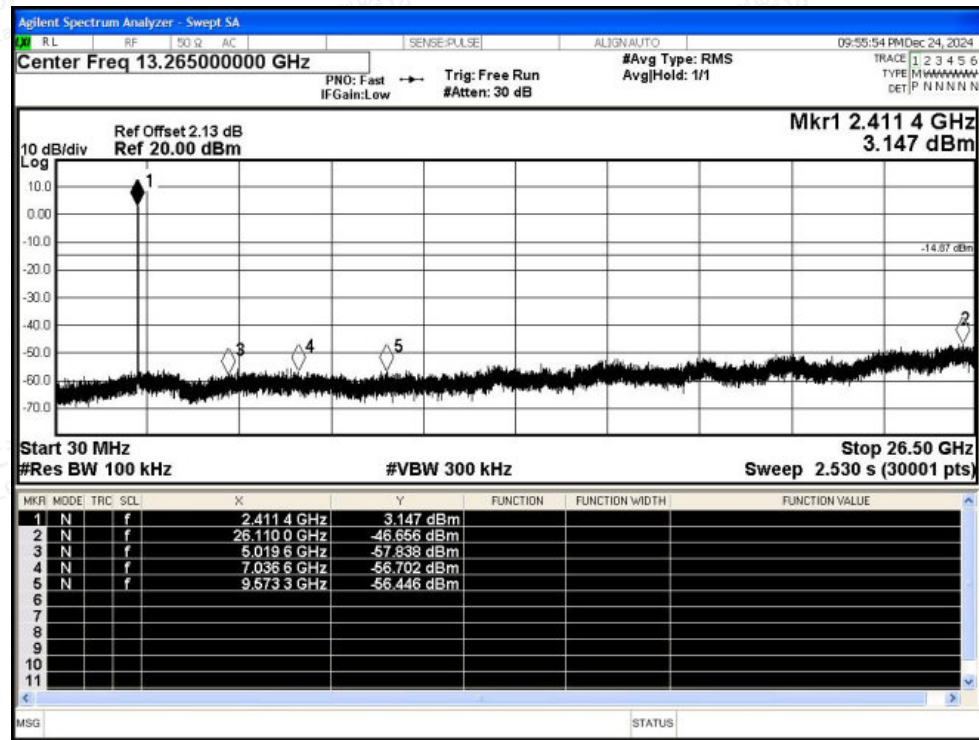


## Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission



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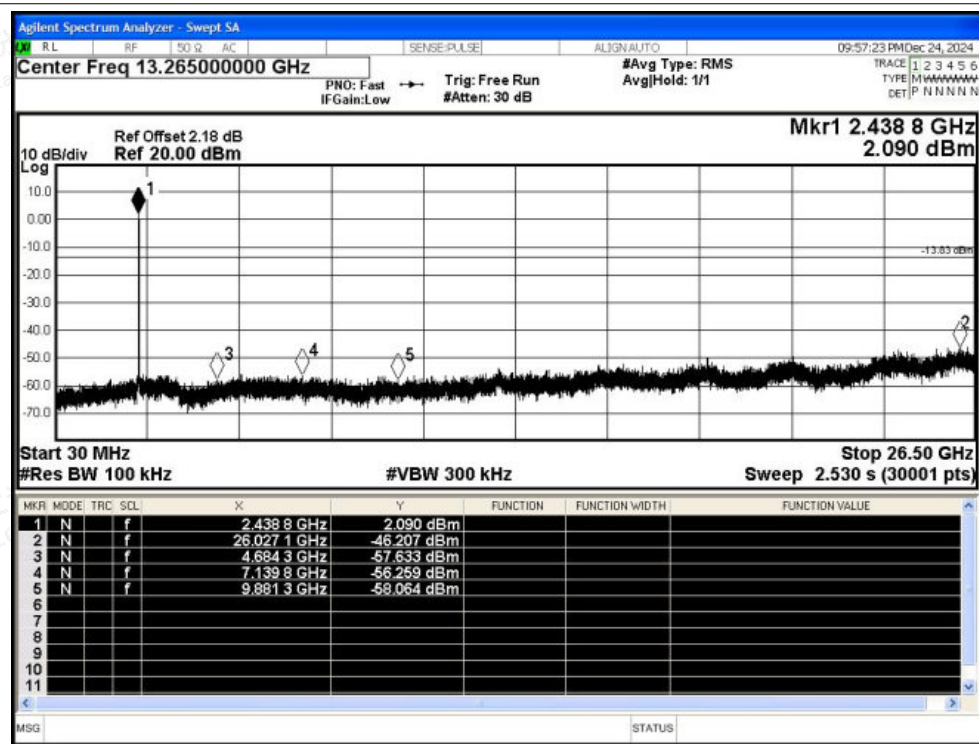
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## Tx. Spurious NVNT b 2437MHz Ant1 Ref



## Tx. Spurious NVNT b 2437MHz Ant1 Emission



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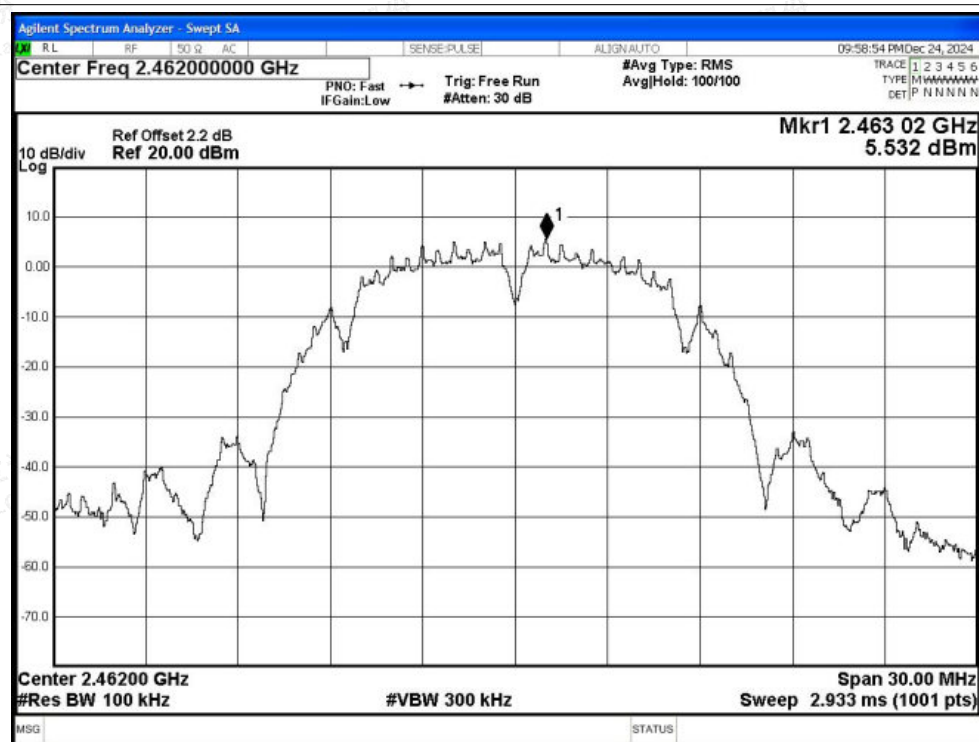
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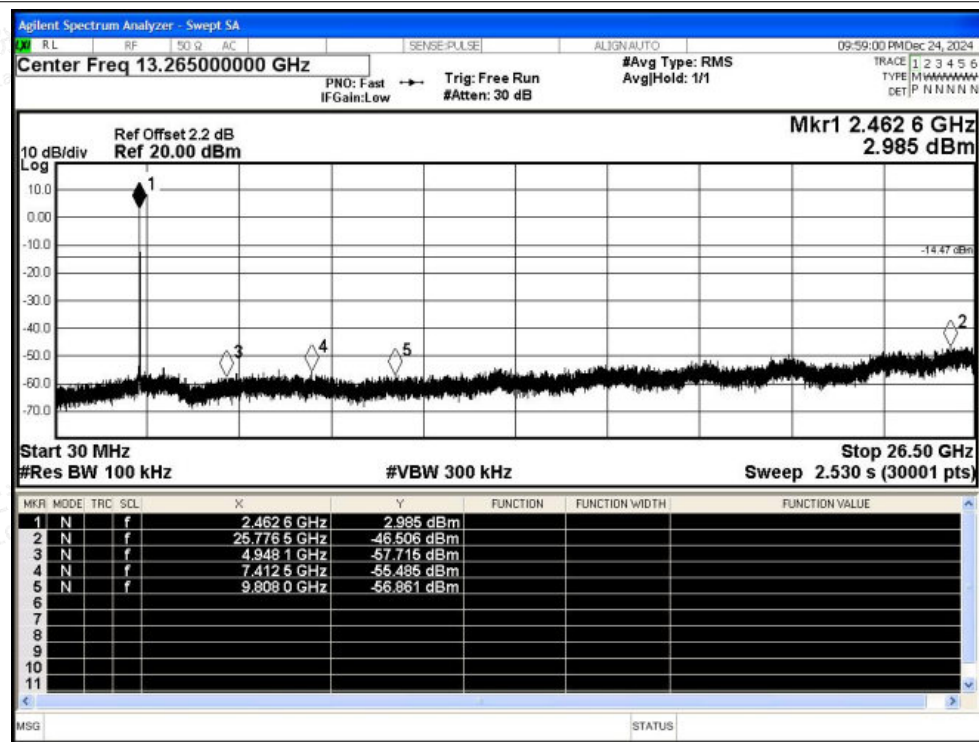
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## Tx. Spurious NVNT b 2462MHz Ant1 Ref



## Tx. Spurious NVNT b 2462MHz Ant1 Emission



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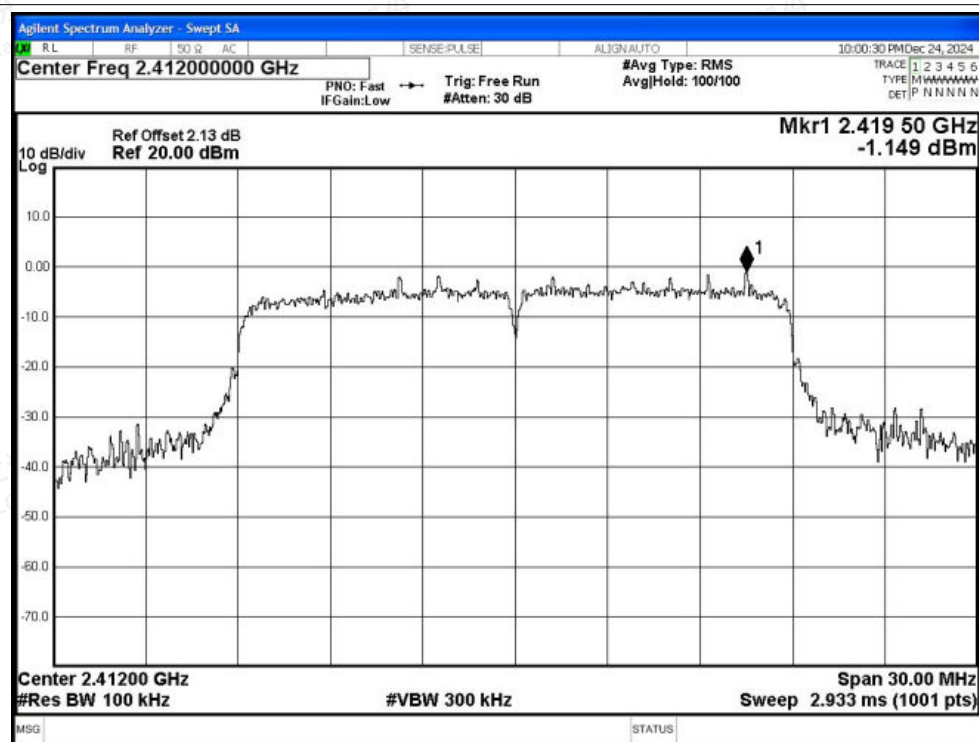
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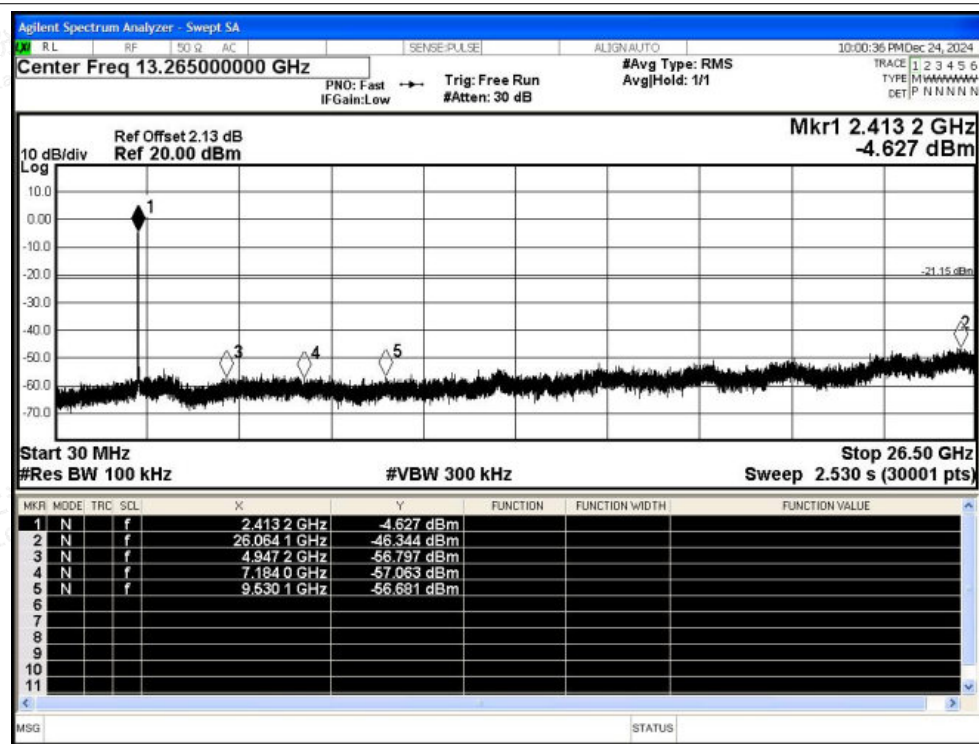




## Tx. Spurious NVNT n20 2412MHz Ant1 Ref



## Tx. Spurious NVNT n20 2412MHz Ant1 Emission



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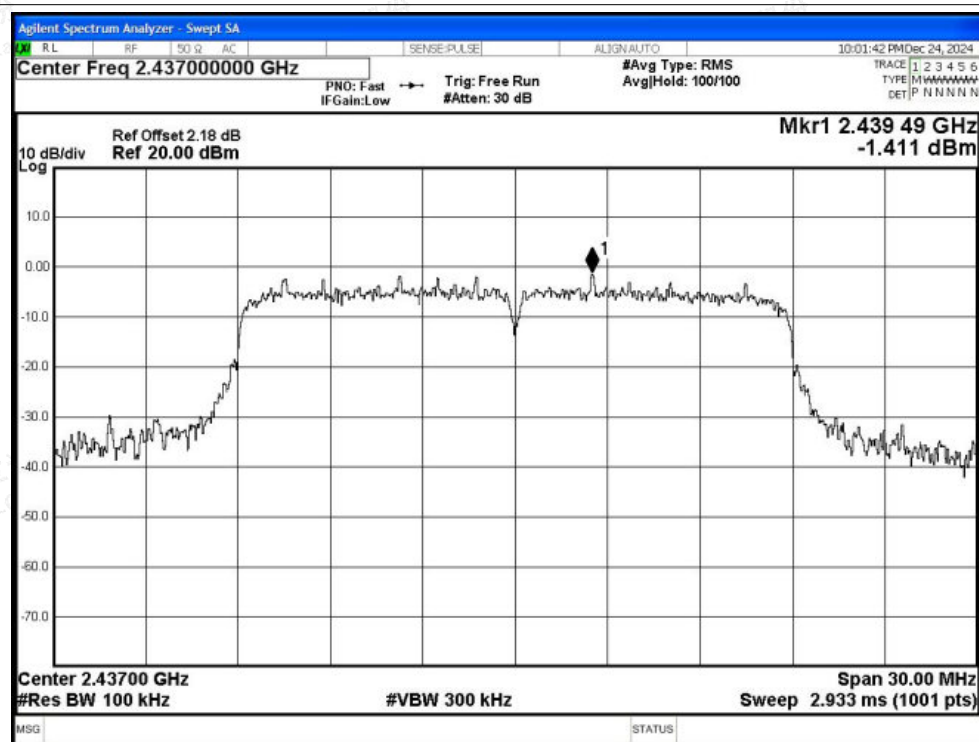
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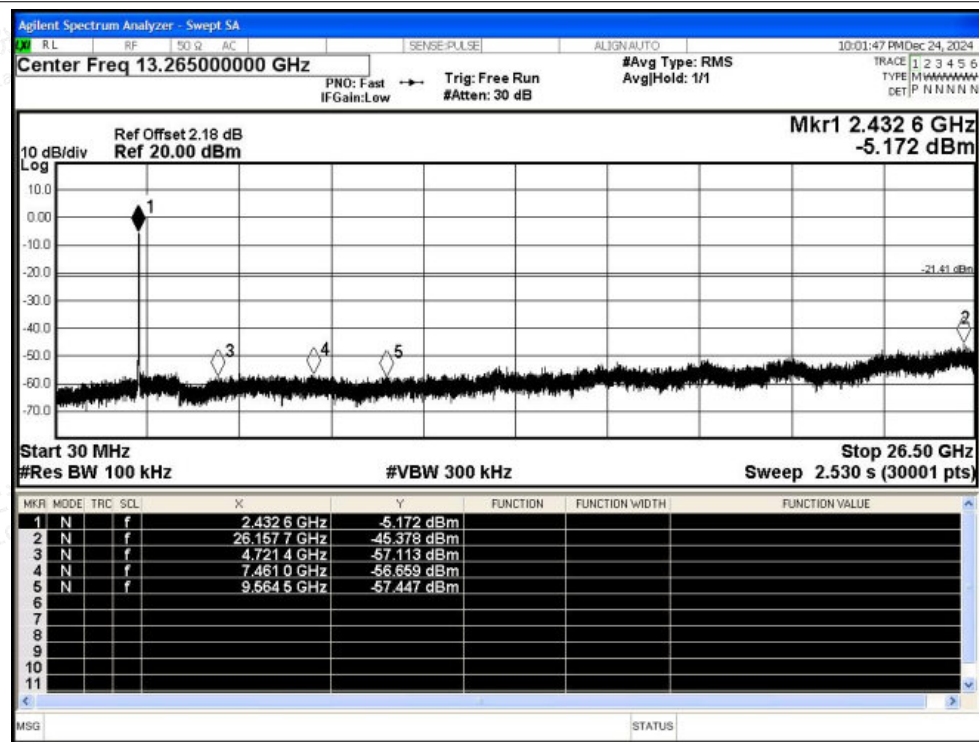
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## Tx. Spurious NVNT n20 2437MHz Ant1 Ref

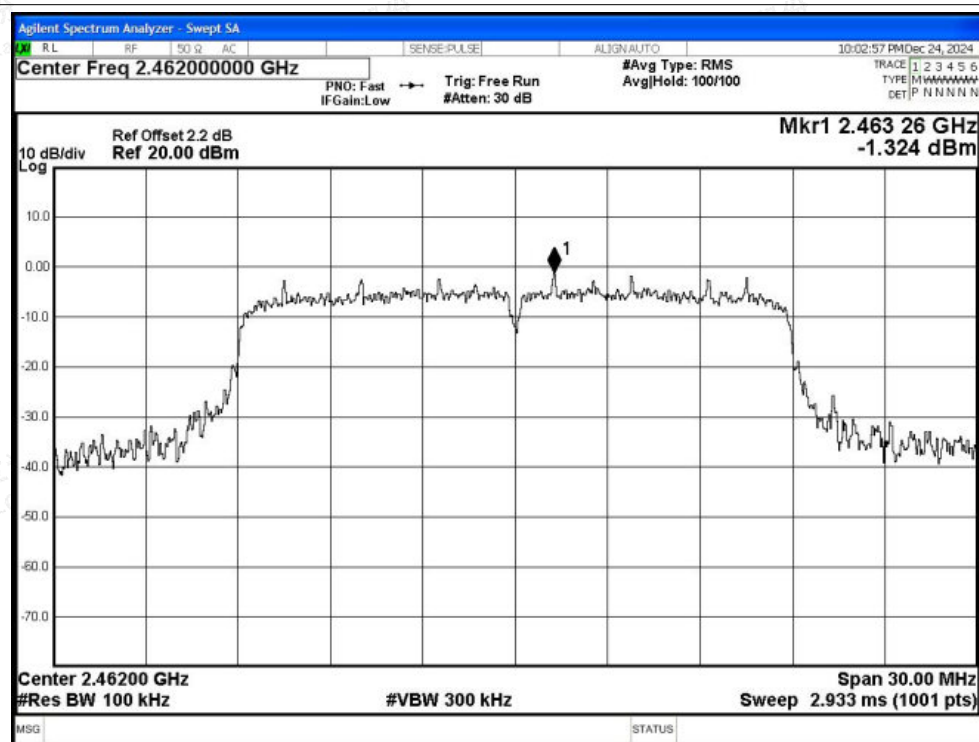


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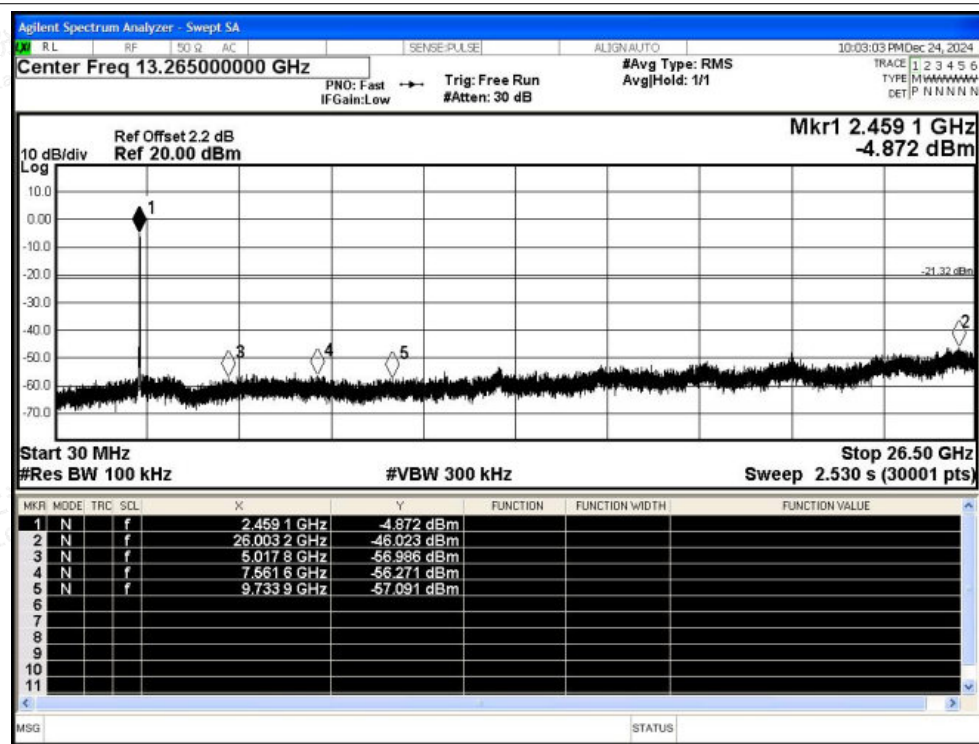




## Tx. Spurious NVNT n20 2462MHz Ant1 Ref



## Tx. Spurious NVNT n20 2462MHz Ant1 Emission



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## A.6 Duty Cycle

| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | b    | 2412            | Ant1    | 99.16          | 0                      | 0.15      |
| NVNT      | b    | 2437            | Ant1    | 99.13          | 0                      | 0.15      |
| NVNT      | b    | 2462            | Ant1    | 99.16          | 0                      | 0.15      |
| NVNT      | n20  | 2412            | Ant1    | 93.78          | 0.28                   | 1.07      |
| NVNT      | n20  | 2437            | Ant1    | 93.76          | 0.28                   | 1.07      |
| NVNT      | n20  | 2462            | Ant1    | 93.76          | 0.28                   | 1.07      |



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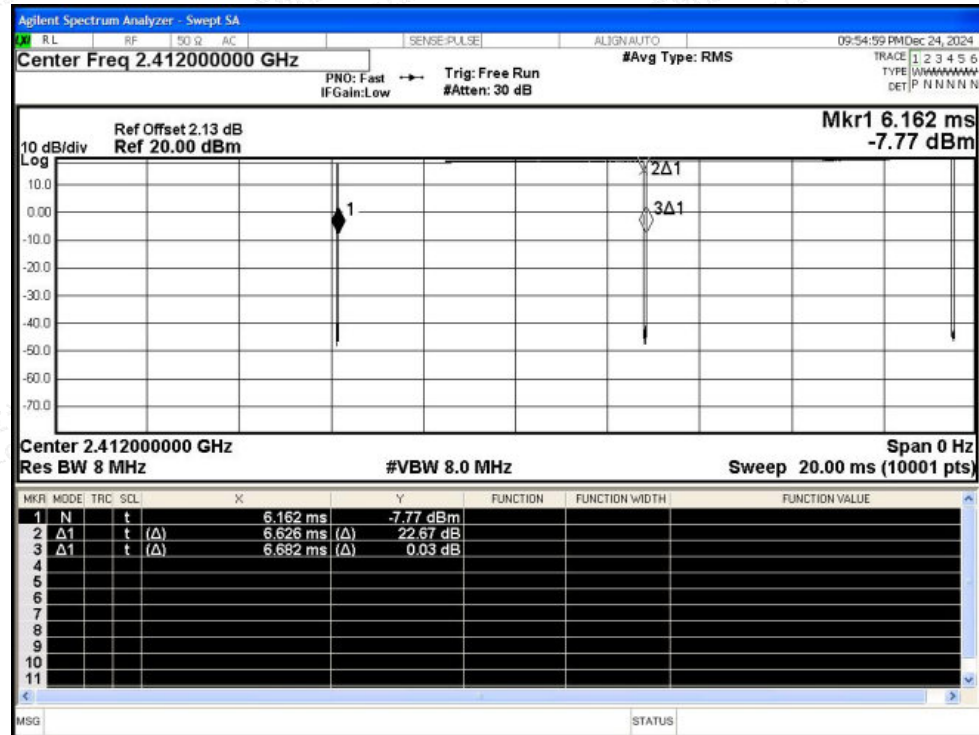
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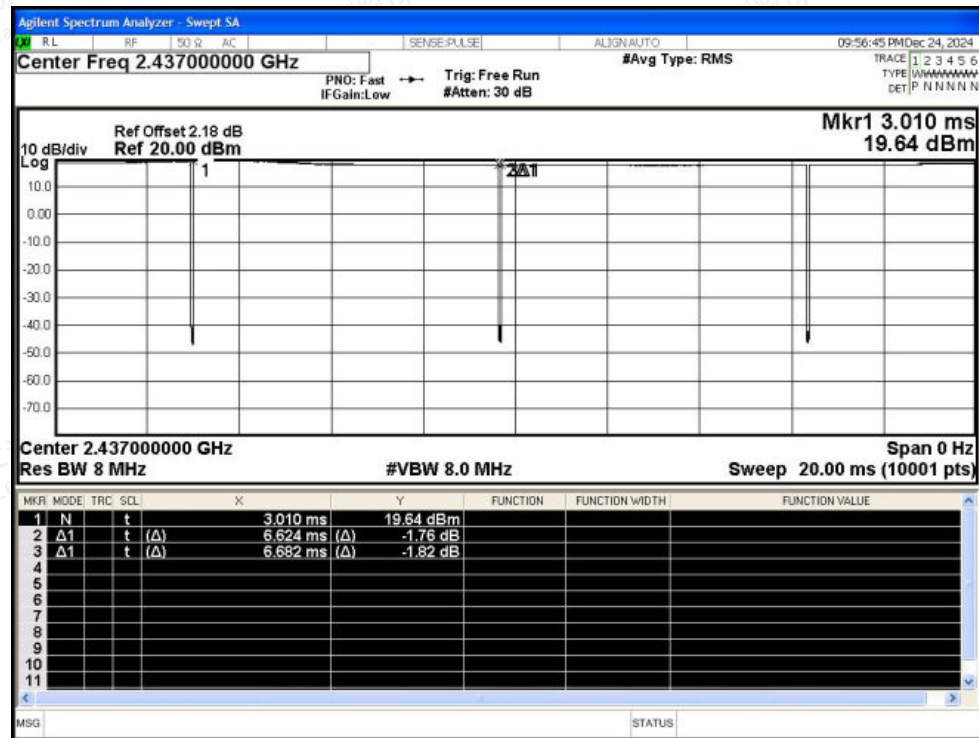


## Test Graphs

## Duty Cycle NVNT b 2412MHz Ant1



## Duty Cycle NVNT b 2437MHz Ant1



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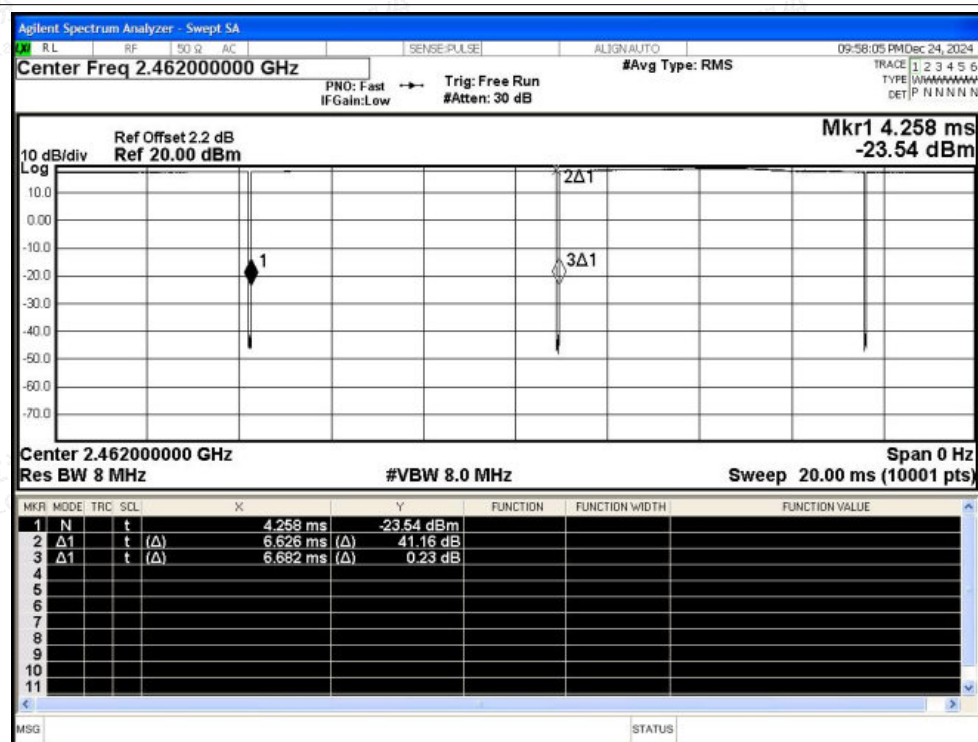
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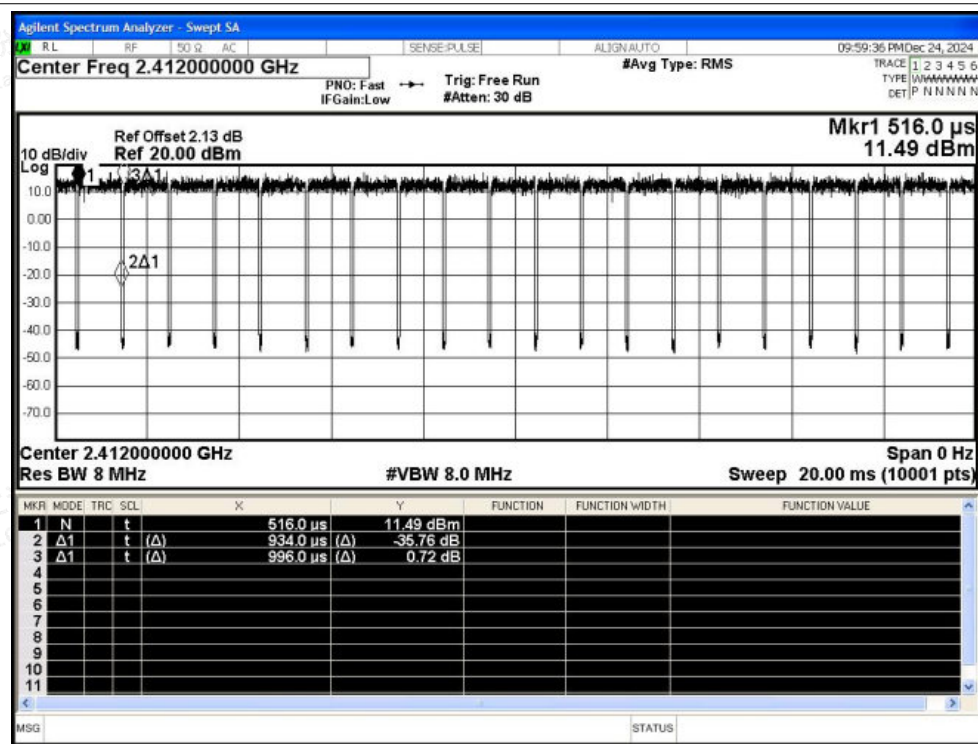




## Duty Cycle NVNT b 2462MHz Ant1



## Duty Cycle NVNT n20 2412MHz Ant1



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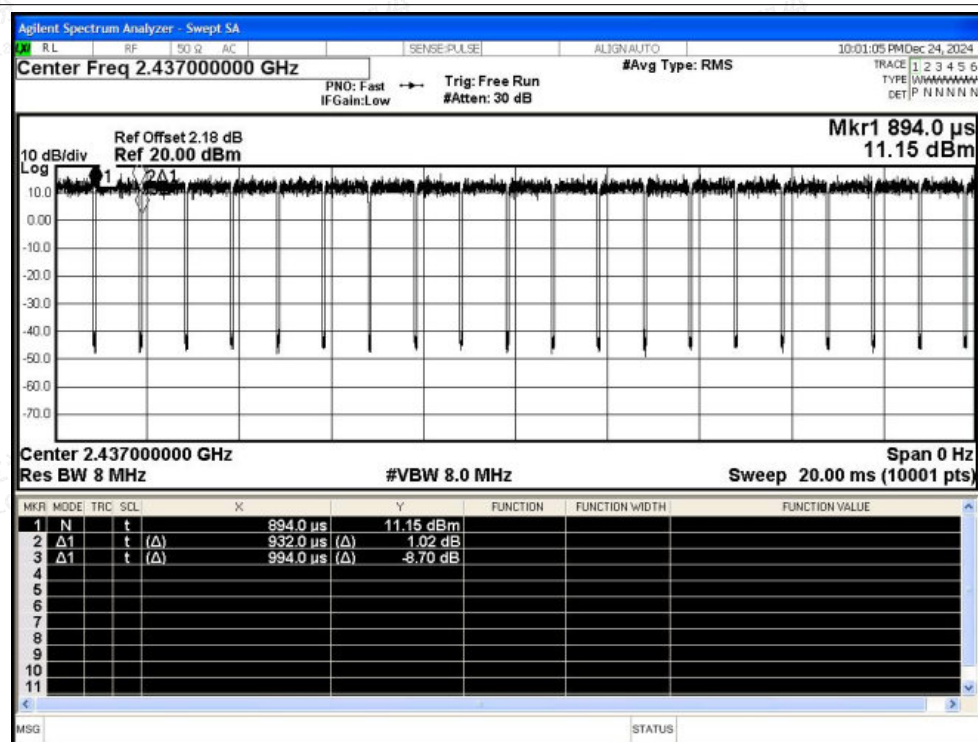
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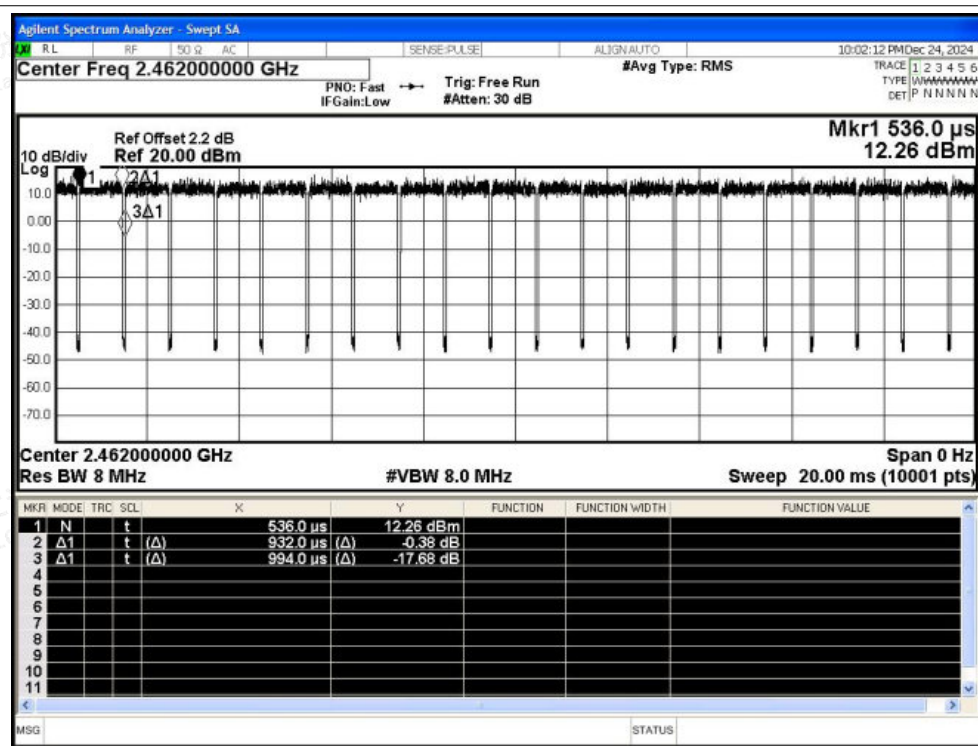
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## Duty Cycle NVNT n20 2437MHz Ant1



## Duty Cycle NVNT n20 2462MHz Ant1



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## 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      | b    | 2412            | Ant1    | 2310            | -49.9       | 2          | -                | 47.36      | Peak     | 74             | Pass    |
| NVNT      | b    | 2412            | Ant1    | 2310            | -58.69      | 2          | 0                | 38.57      | Average  | 54             | Pass    |
| NVNT      | b    | 2412            | Ant1    | 2388.975        | -45.53      | 2          | -                | 51.73      | Peak     | 74             | Pass    |
| NVNT      | b    | 2412            | Ant1    | 2389.794        | -55.82      | 2          | 0                | 41.44      | Average  | 54             | Pass    |
| NVNT      | b    | 2412            | Ant1    | 2390            | -46.96      | 2          | -                | 50.3       | Peak     | 74             | Pass    |
| NVNT      | b    | 2412            | Ant1    | 2390            | -55.51      | 2          | 0                | 41.75      | Average  | 54             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2483.5          | -47.03      | 2          | -                | 50.23      | Peak     | 74             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2483.5          | -54.33      | 2          | 0                | 42.93      | Average  | 54             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2484.259        | -45.11      | 2          | -                | 52.15      | Peak     | 74             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2483.729        | -53.73      | 2          | 0                | 43.53      | Average  | 54             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2500            | -49.39      | 2          | -                | 47.87      | Peak     | 74             | Pass    |
| NVNT      | b    | 2462            | Ant1    | 2500            | -57.81      | 2          | 0                | 39.45      | Average  | 54             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2310            | -50.95      | 2          | -                | 46.31      | Peak     | 74             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2310            | -59.51      | 2          | 0.28             | 38.03      | Average  | 54             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2389.56         | -35.99      | 2          | -                | 61.27      | Peak     | 74             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2389.56         | -49.63      | 2          | 0.28             | 47.91      | Average  | 54             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2390            | -37.13      | 2          | -                | 60.13      | Peak     | 74             | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 2390            | -51.63      | 2          | 0.28             | 45.91      | Average  | 54             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2483.5          | -36.8       | 2          | -                | 60.46      | Peak     | 74             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2483.5          | -51.56      | 2          | 0.28             | 45.98      | Average  | 54             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2484.63         | -35.69      | 2          | -                | 61.57      | Peak     | 74             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2483.729        | -51.28      | 2          | 0.28             | 46.26      | Average  | 54             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2500            | -50.56      | 2          | -                | 46.7       | Peak     | 74             | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 2500            | -57.93      | 2          | 0.28             | 39.61      | Average  | 54             | Pass    |



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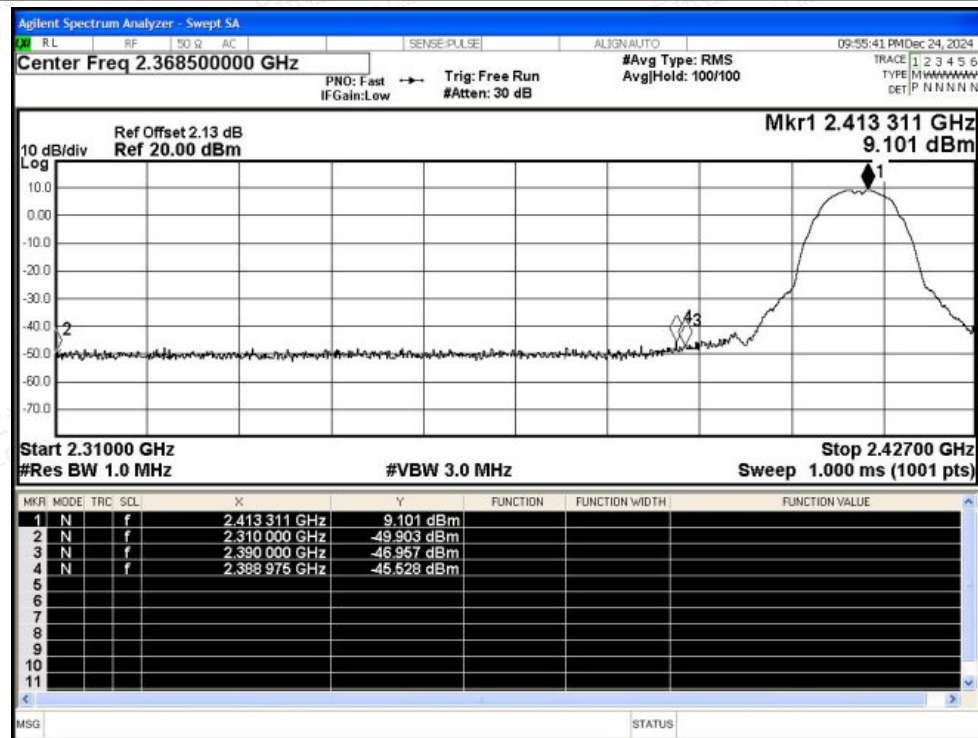
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

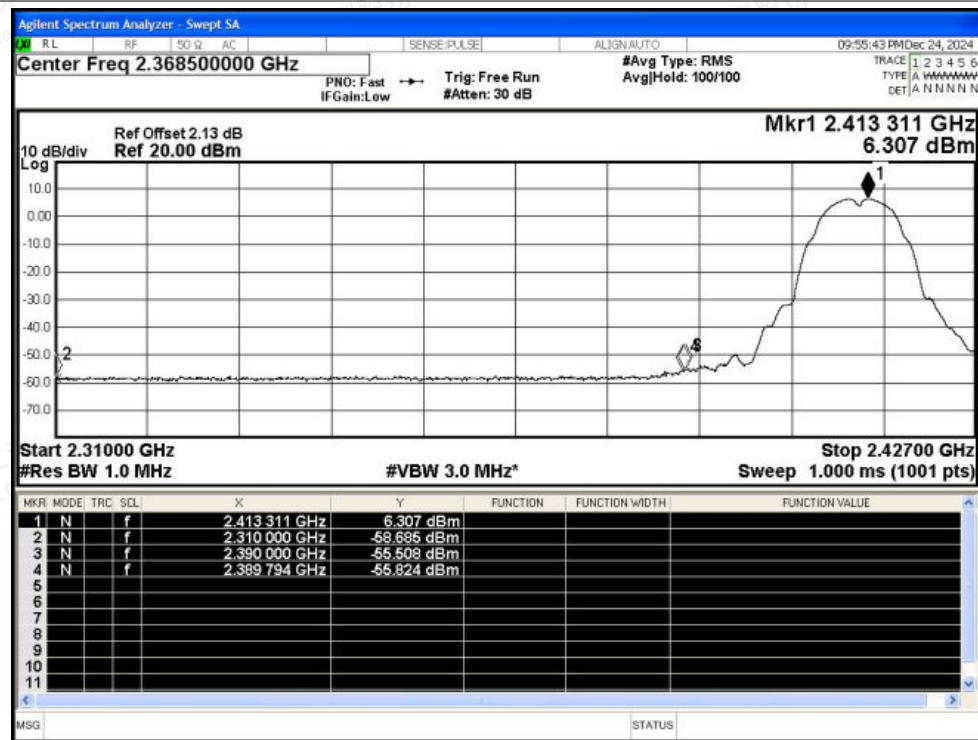


## Test Graphs

## Restrict Band NVNT b 2412MHz Ant1 Peak



## Restrict Band NVNT b 2412MHz Ant1 Average



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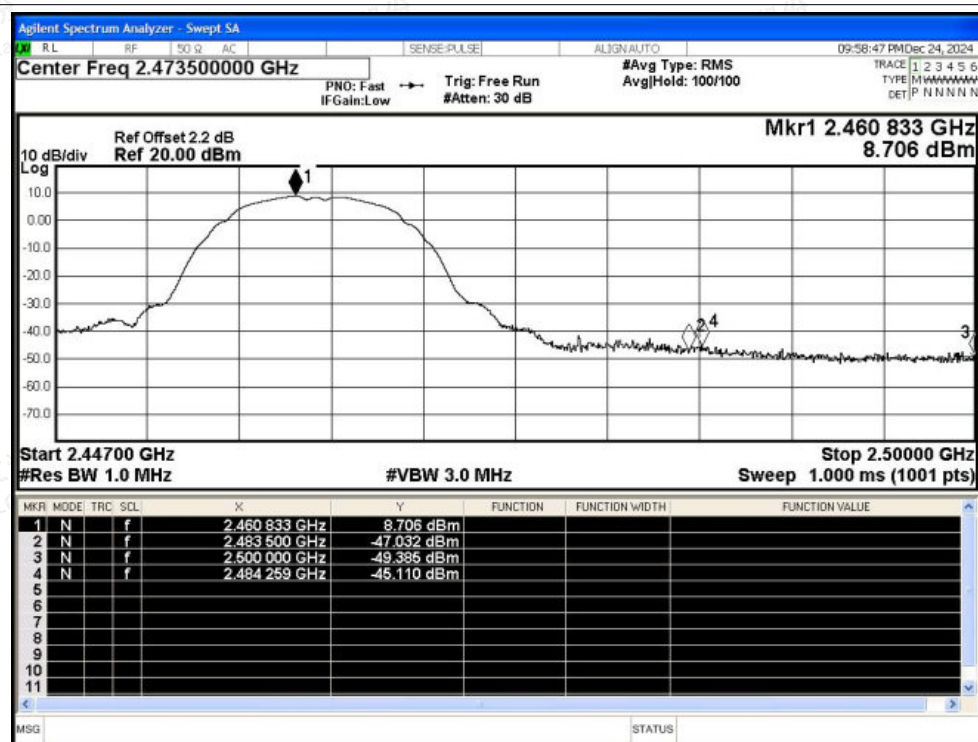
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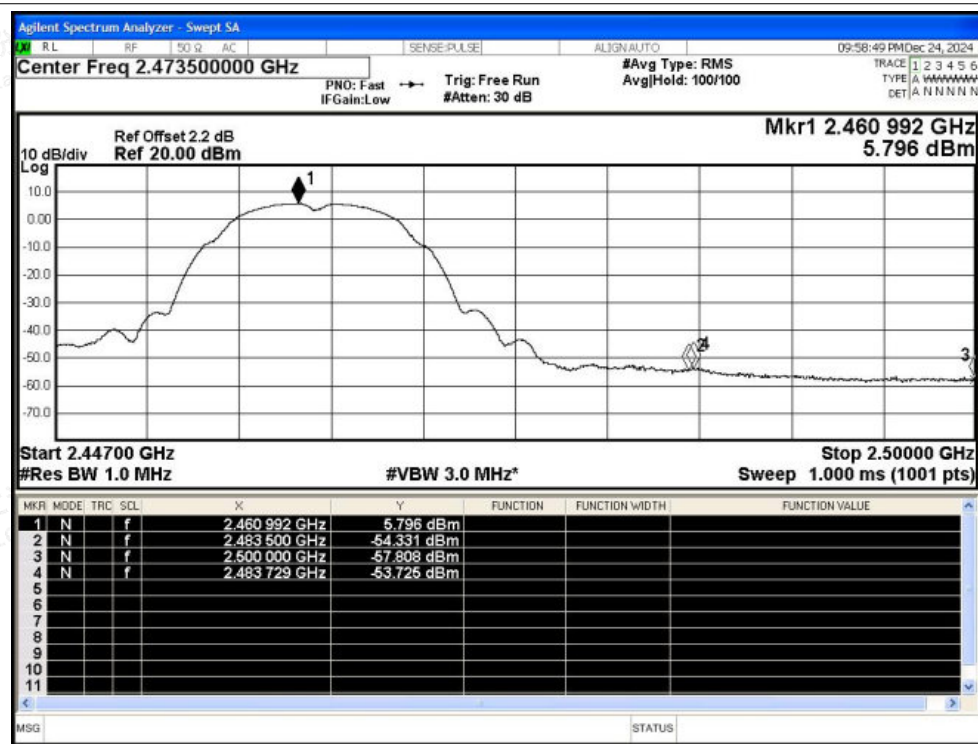




## Restrict Band NVNT b 2462MHz Ant1 Peak



## Restrict Band NVNT b 2462MHz Ant1 Average



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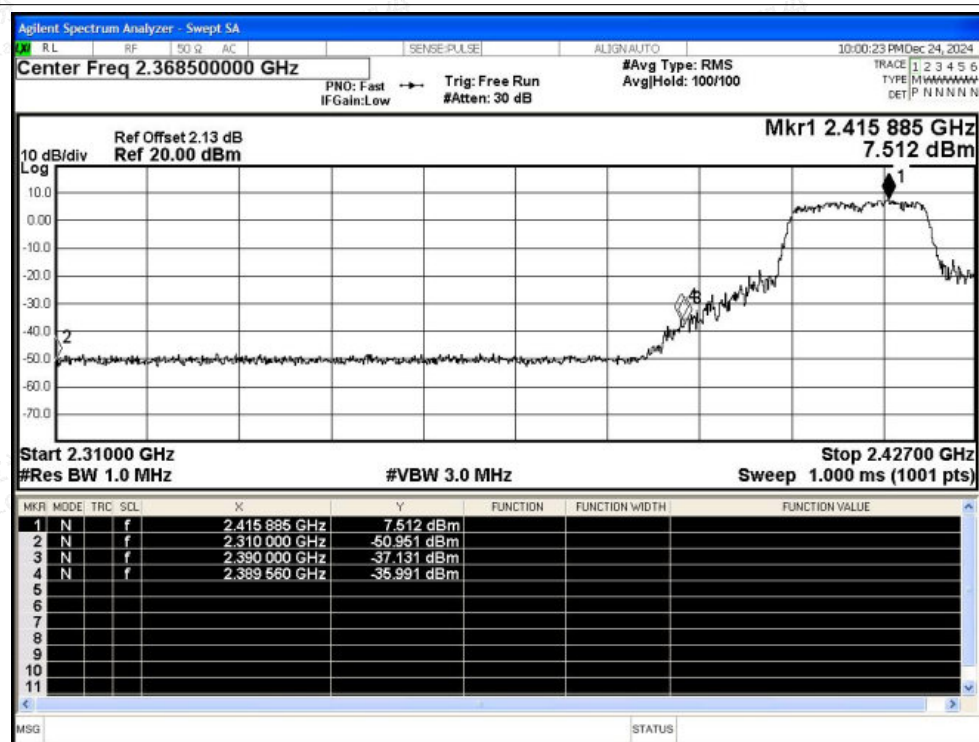
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

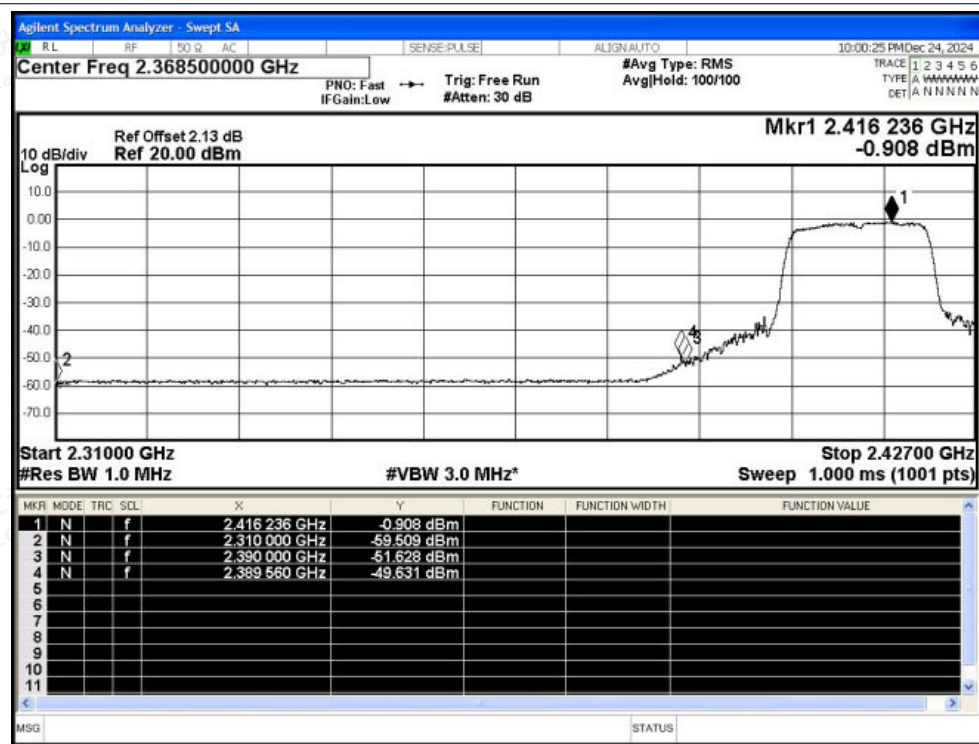




## Restrict Band NVNT n20 2412MHz Ant1 Peak



## Restrict Band NVNT n20 2412MHz Ant1 Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

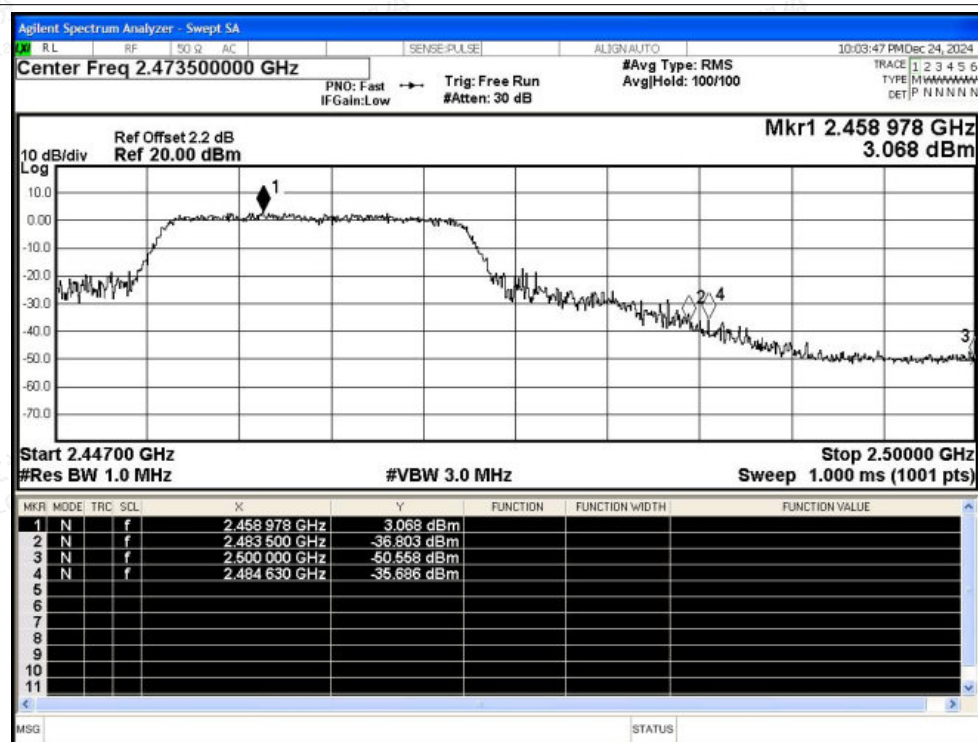
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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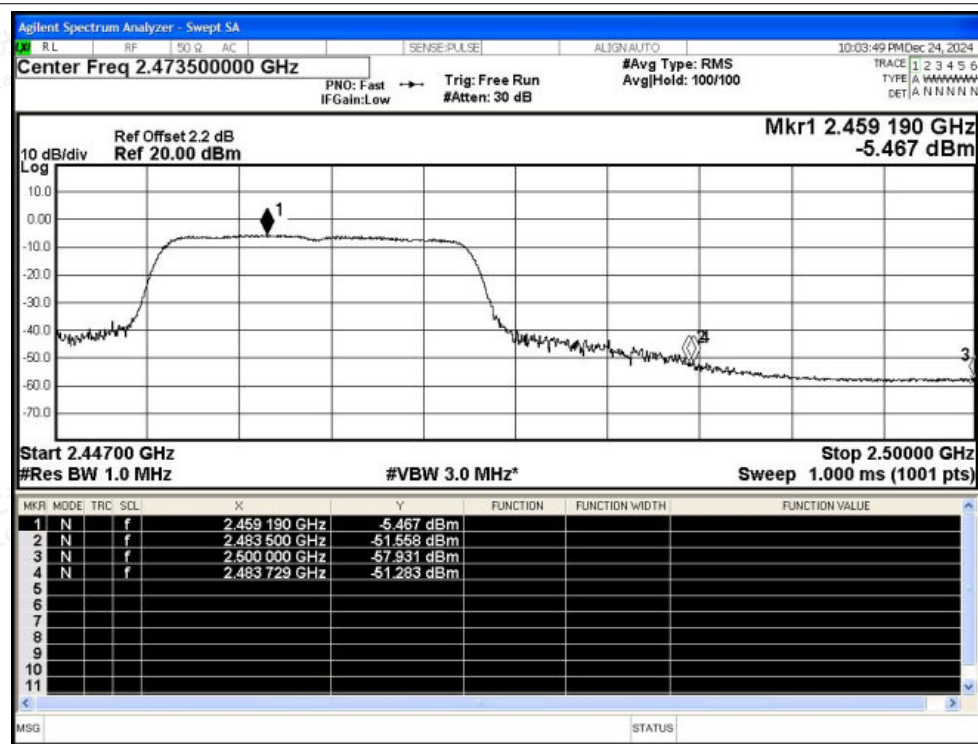
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## Restrict Band NVNT n20 2462MHz Ant1 Peak



## Restrict Band NVNT n20 2462MHz Ant1 Average



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