



## Appendix A

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

Product Name: Wifi Router

Test Model: xK Validator

#### Environmental Conditions

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



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Scan code to check authenticity



## A.1 -6dB Bandwidth

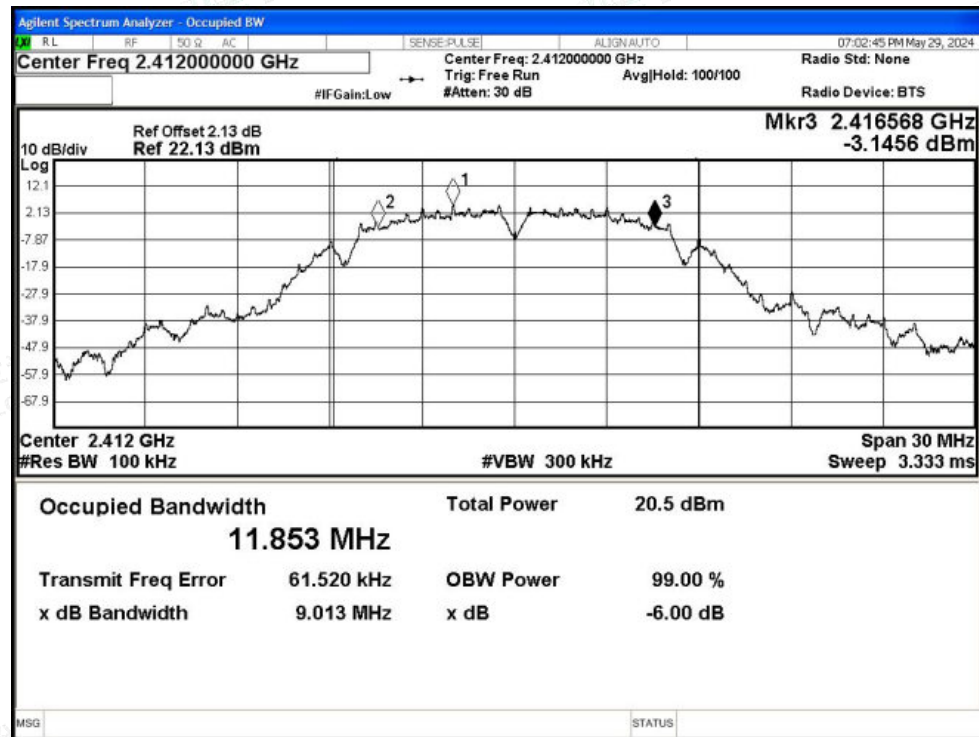
| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | b    | 2412            | Ant1    | 9.013                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2437            | Ant1    | 8.022                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2462            | Ant1    | 8.078                 | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2412            | Ant1    | 16.066                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2437            | Ant1    | 16.297                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2462            | Ant1    | 16.129                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 17.021                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 17.412                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 17.149                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2422            | Ant1    | 34.868                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2437            | Ant1    | 35.535                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2452            | Ant1    | 35.362                | $\geq 0.5$                  | Pass    |





## Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1

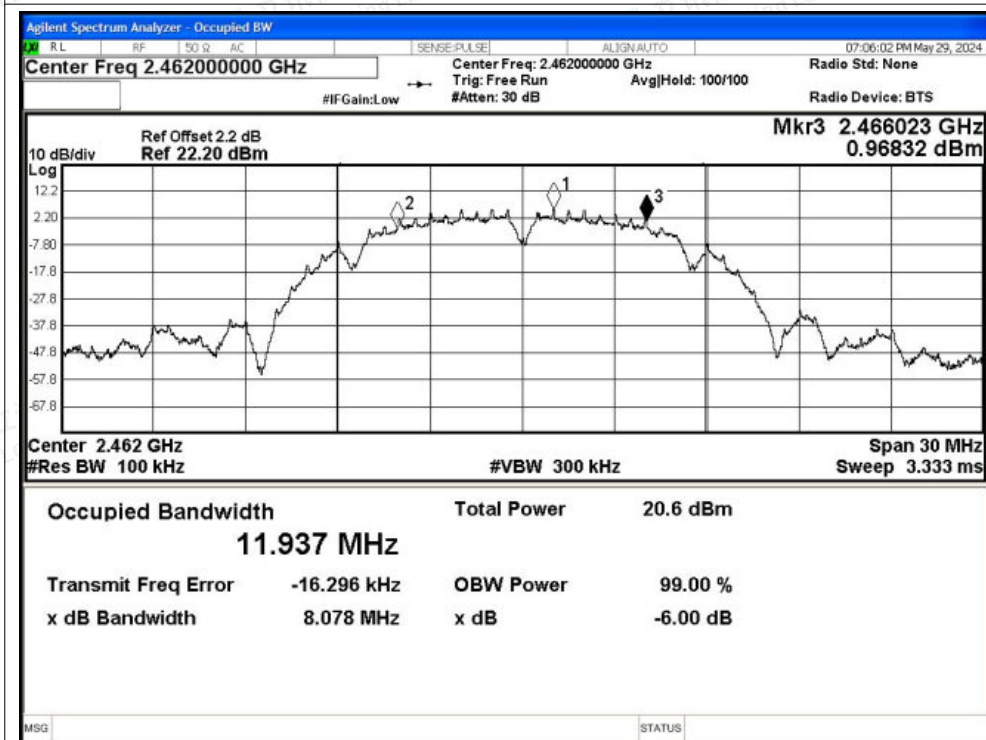


-6dB Bandwidth NVNT b 2437MHz Ant1

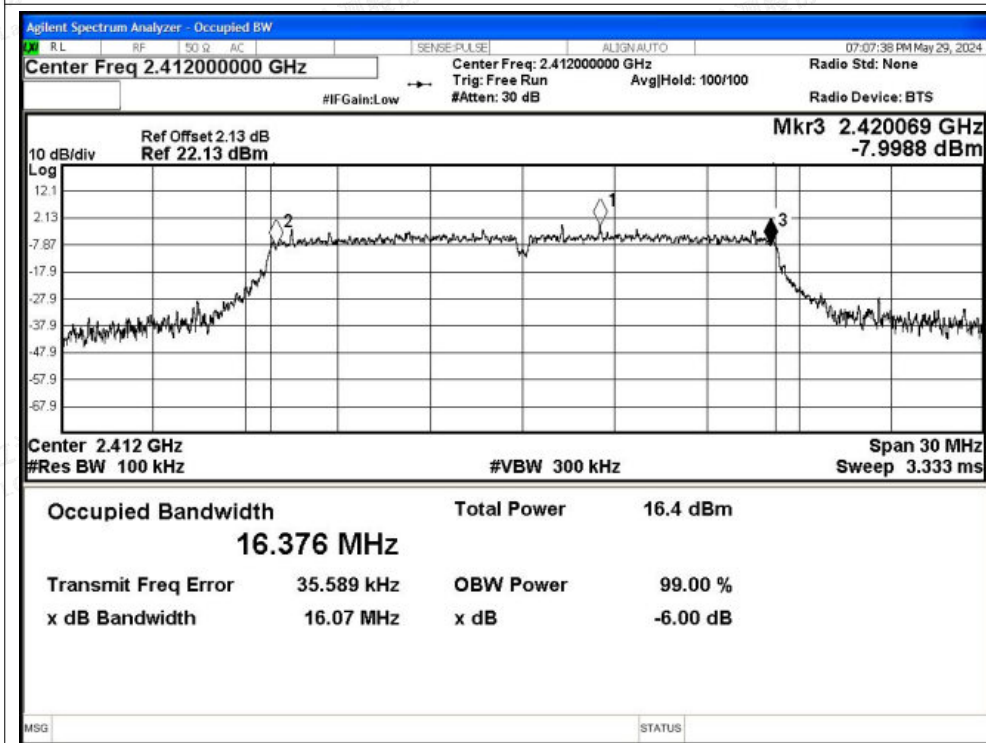




-6dB Bandwidth NVNT b 2462MHz Ant1

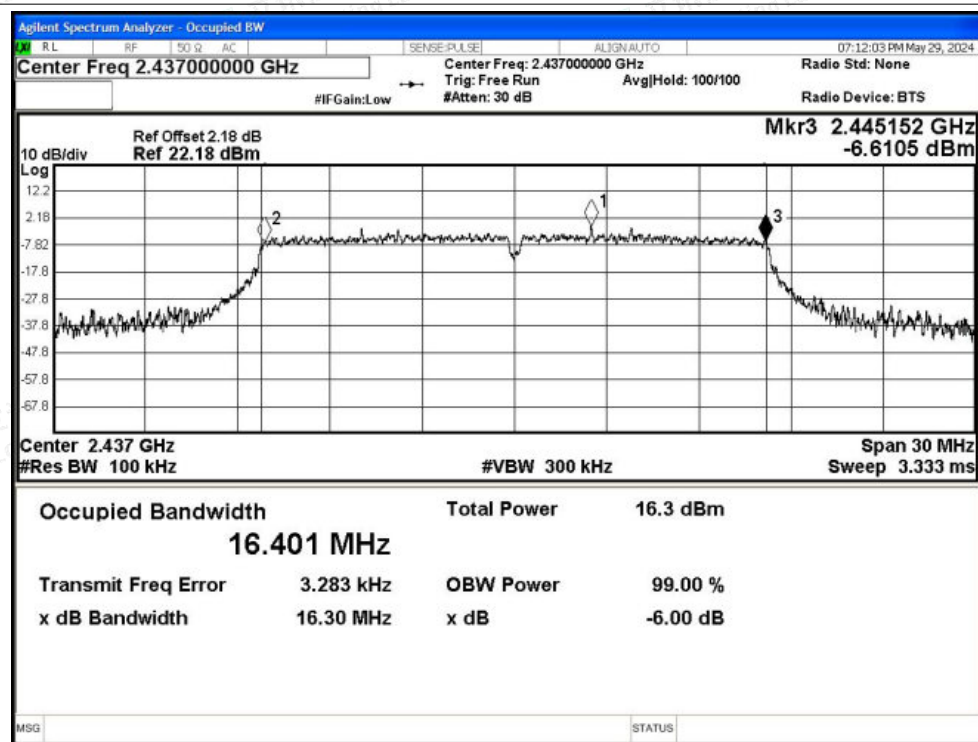


-6dB Bandwidth NVNT g 2412MHz Ant1

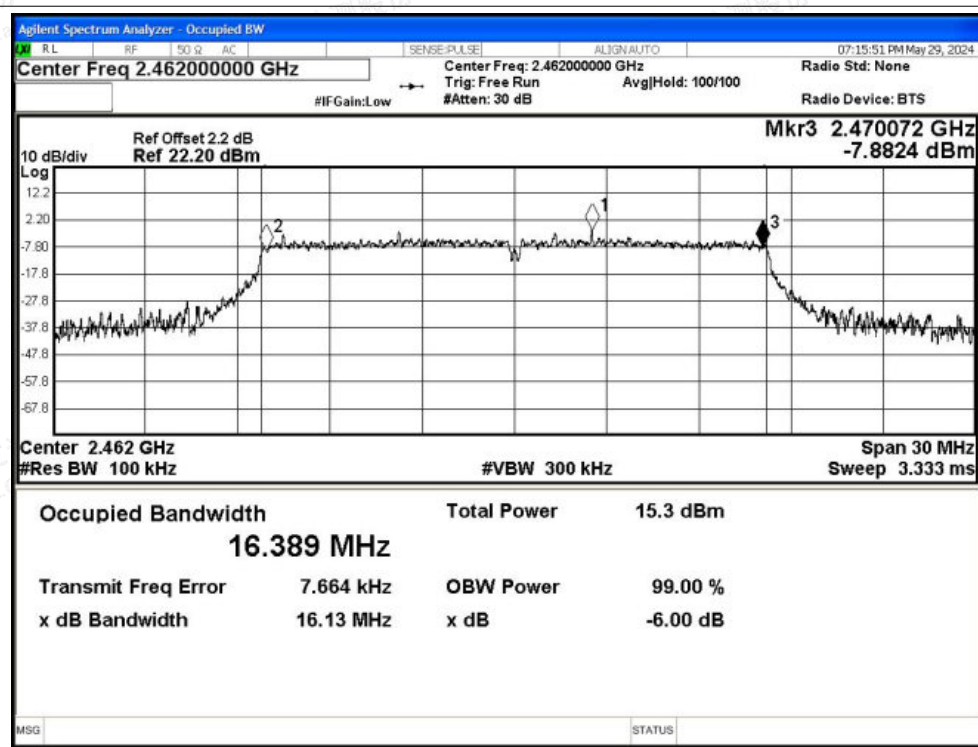




-6dB Bandwidth NVNT g 2437MHz Ant1

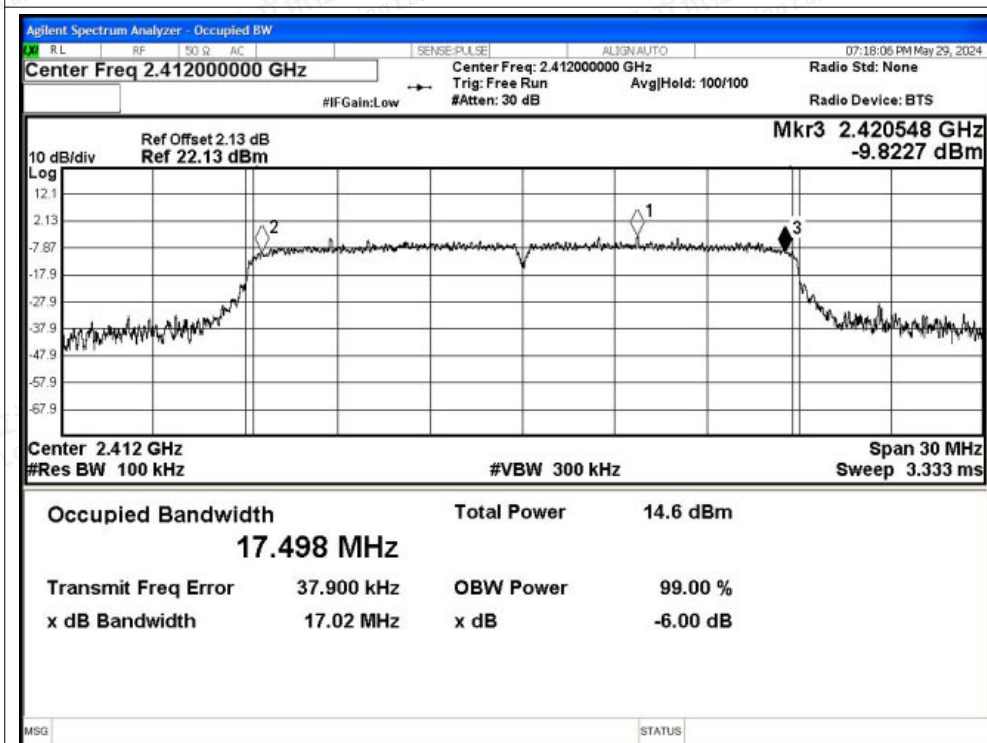


-6dB Bandwidth NVNT g 2462MHz Ant1

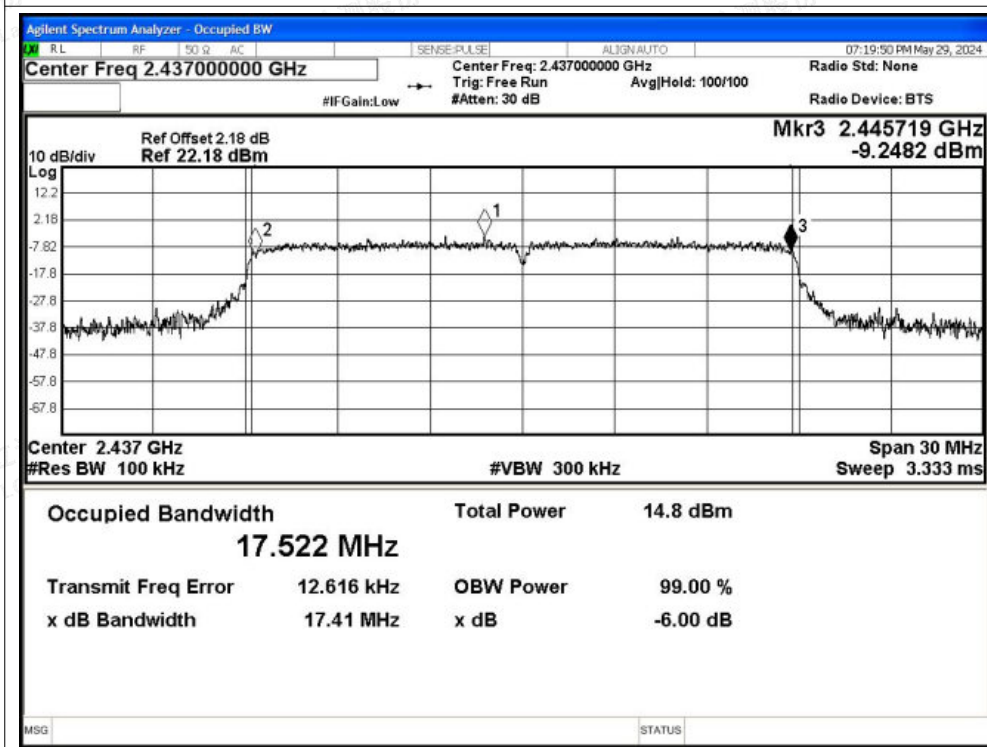




-6dB Bandwidth NVNT n20 2412MHz Ant1

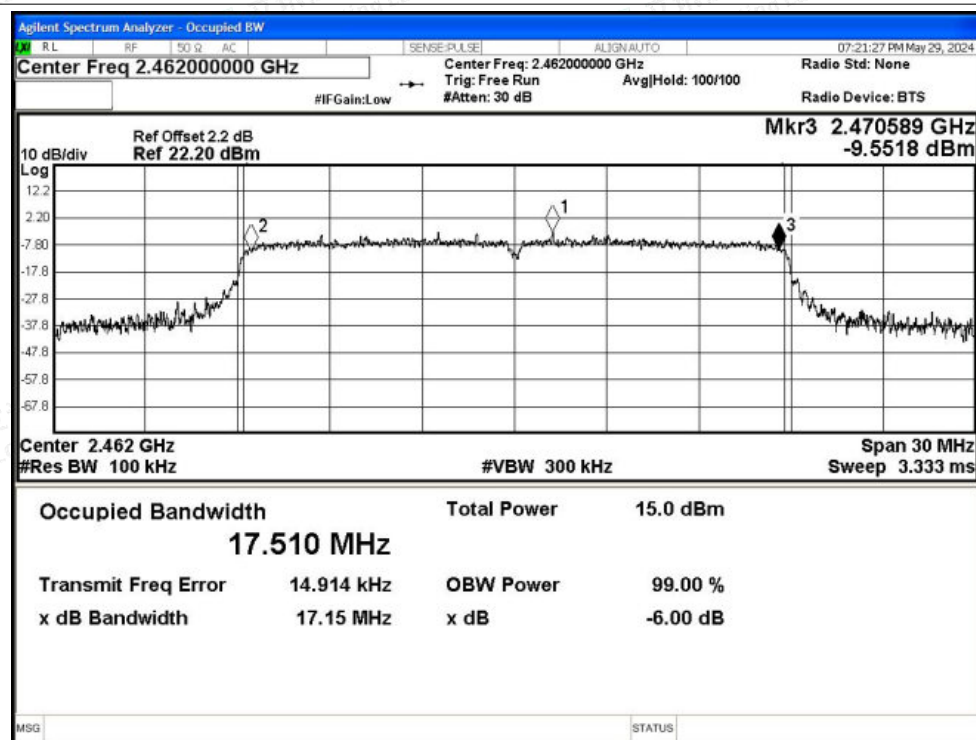


-6dB Bandwidth NVNT n20 2437MHz Ant1

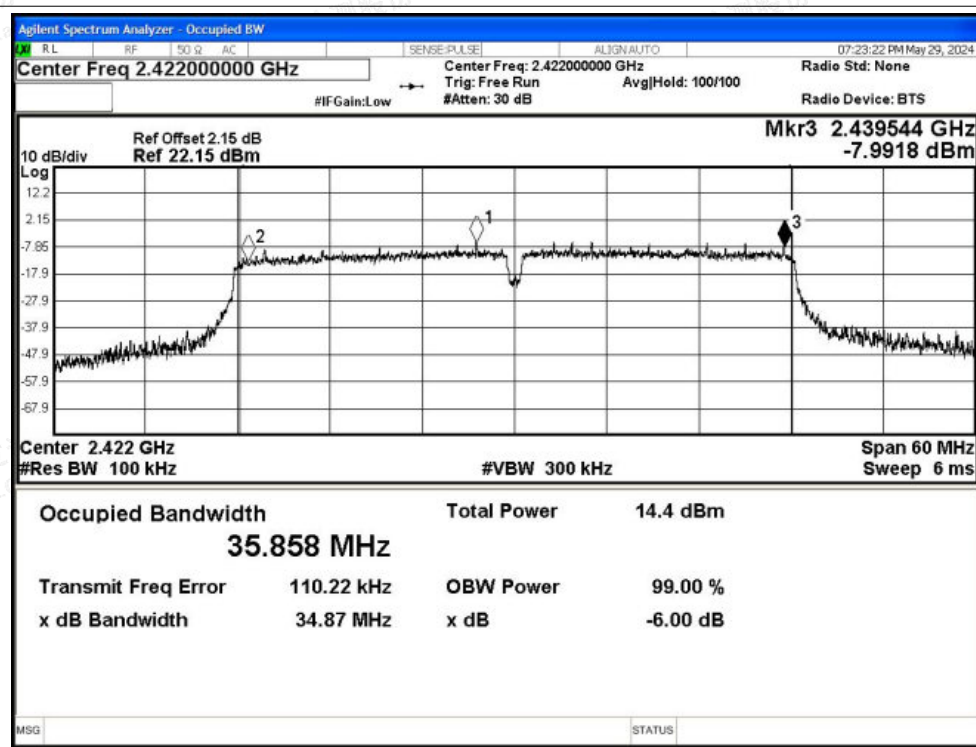




-6dB Bandwidth NVNT n20 2462MHz Ant1

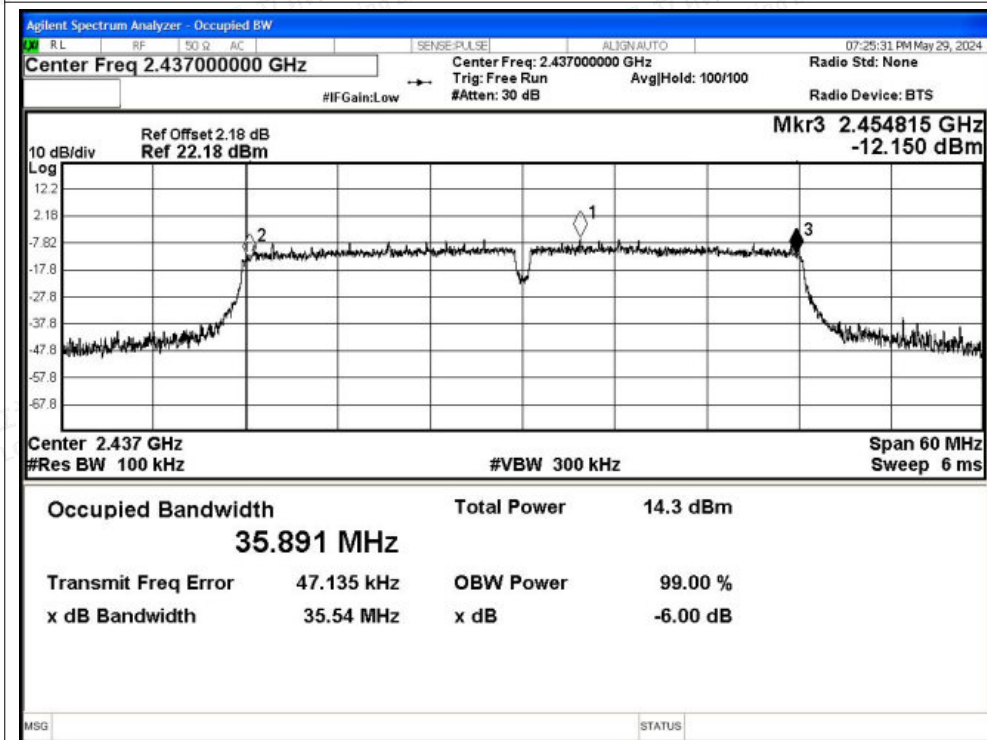


-6dB Bandwidth NVNT n40 2422MHz Ant1

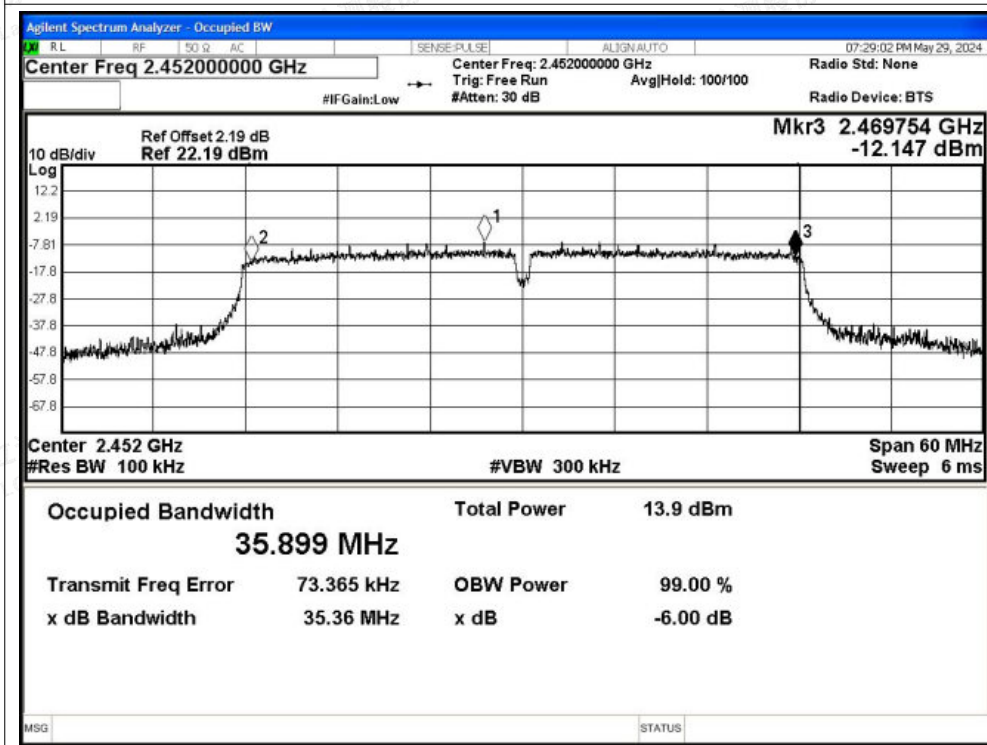




-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1





| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | b    | 2412            | Ant2    | 9.065                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2437            | Ant2    | 8.575                 | $\geq 0.5$                  | Pass    |
| NVNT      | b    | 2462            | Ant2    | 8.57                  | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2412            | Ant2    | 16.105                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2437            | Ant2    | 16.338                | $\geq 0.5$                  | Pass    |
| NVNT      | g    | 2462            | Ant2    | 16.356                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2412            | Ant2    | 16.826                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2437            | Ant2    | 17.426                | $\geq 0.5$                  | Pass    |
| NVNT      | n20  | 2462            | Ant2    | 17.102                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2422            | Ant2    | 35.481                | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2437            | Ant2    | 35.36                 | $\geq 0.5$                  | Pass    |
| NVNT      | n40  | 2452            | Ant2    | 35.492                | $\geq 0.5$                  | Pass    |





## Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant2



-6dB Bandwidth NVNT b 2437MHz Ant2



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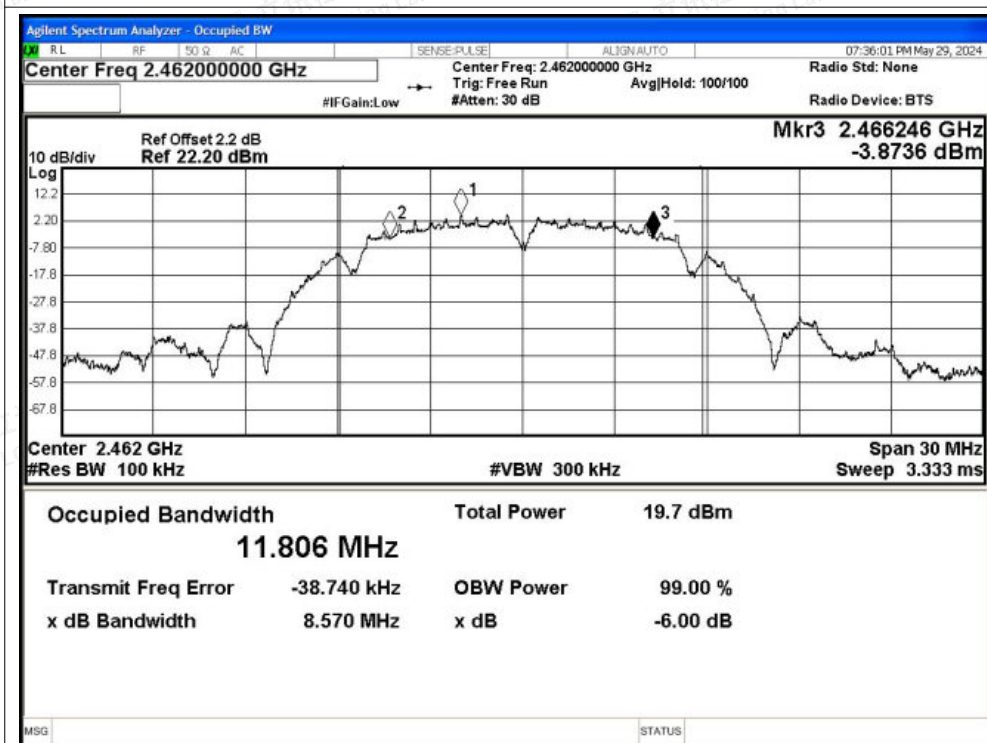
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

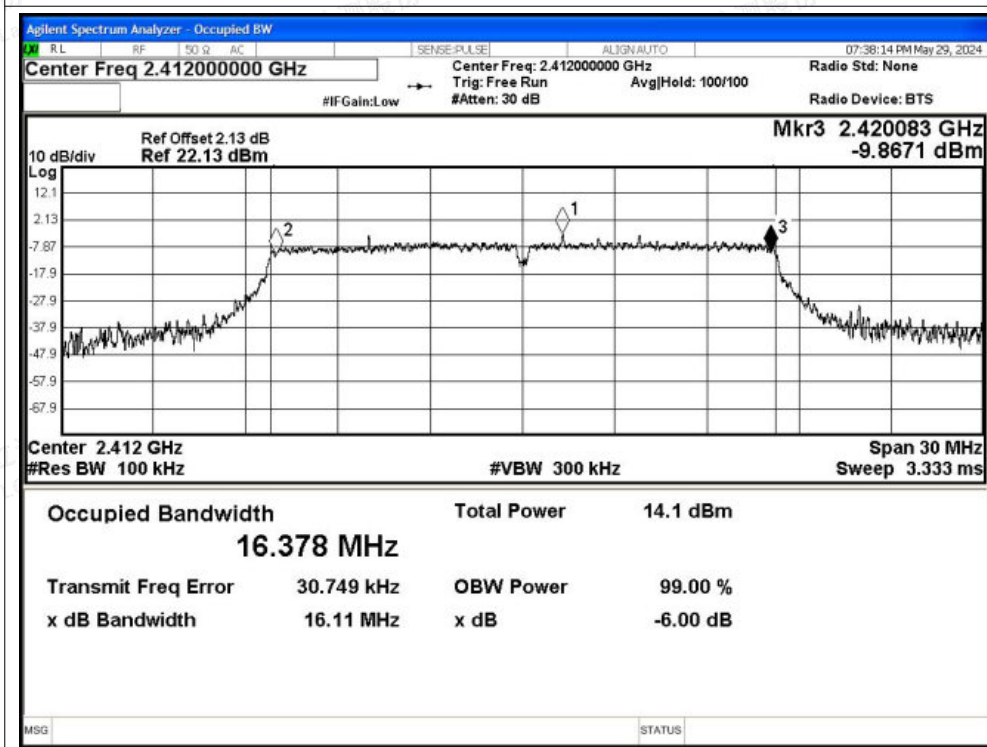
Scan code to check authenticity



-6dB Bandwidth NVNT b 2462MHz Ant2



-6dB Bandwidth NVNT g 2412MHz Ant2



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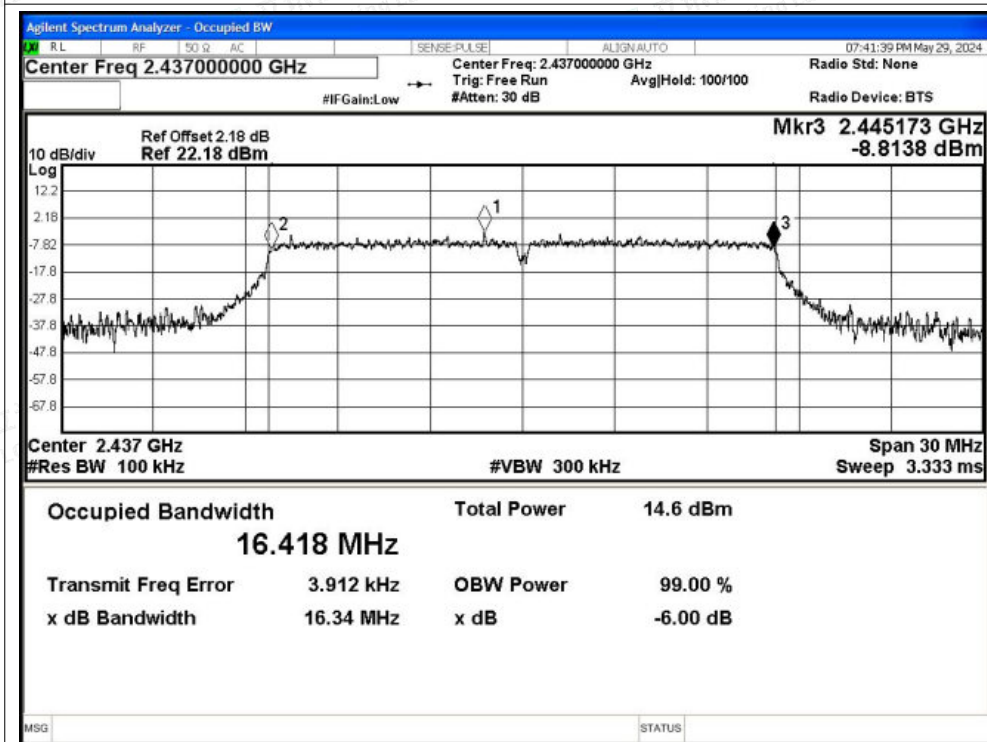
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

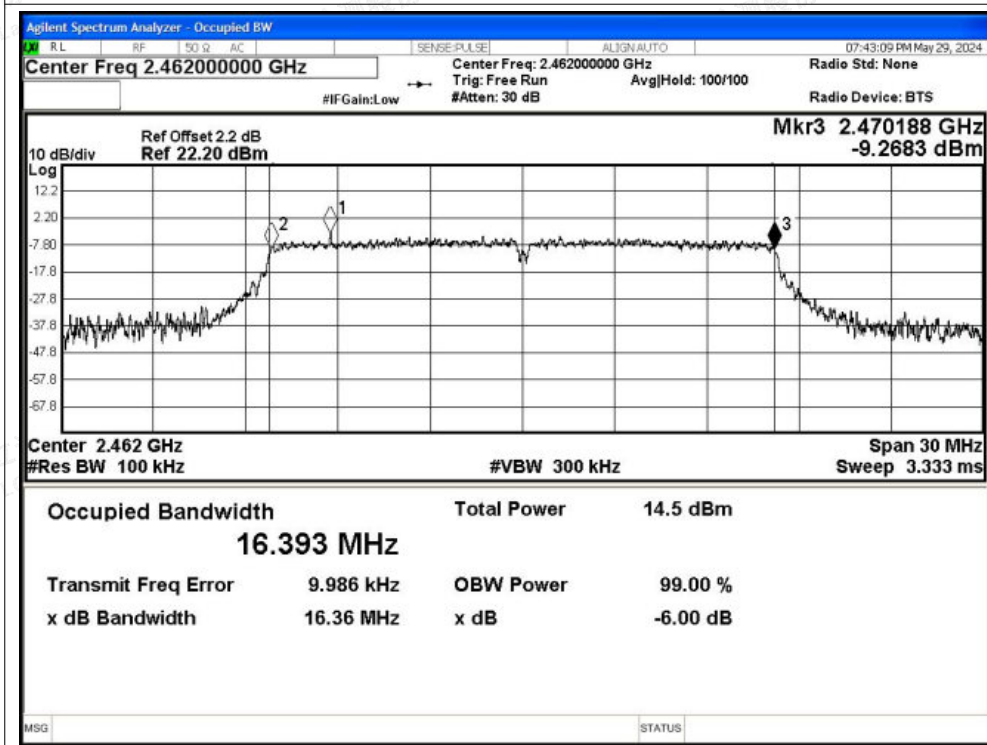
Scan code to check authenticity



-6dB Bandwidth NVNT g 2437MHz Ant2

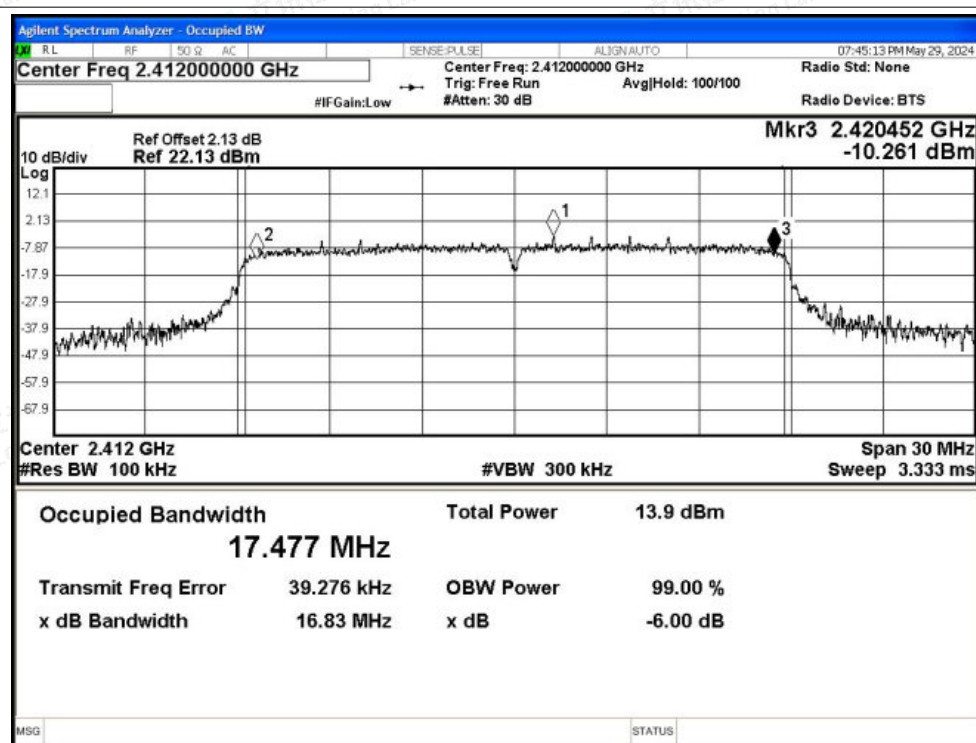


-6dB Bandwidth NVNT g 2462MHz Ant2

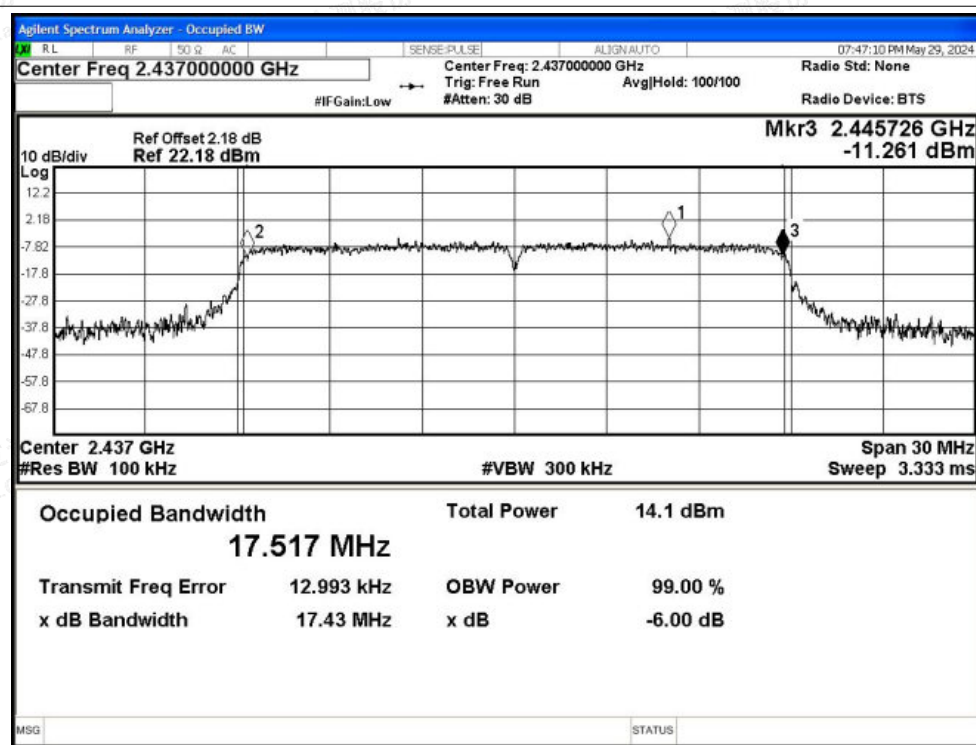




-6dB Bandwidth NVNT n20 2412MHz Ant2



-6dB Bandwidth NVNT n20 2437MHz Ant2



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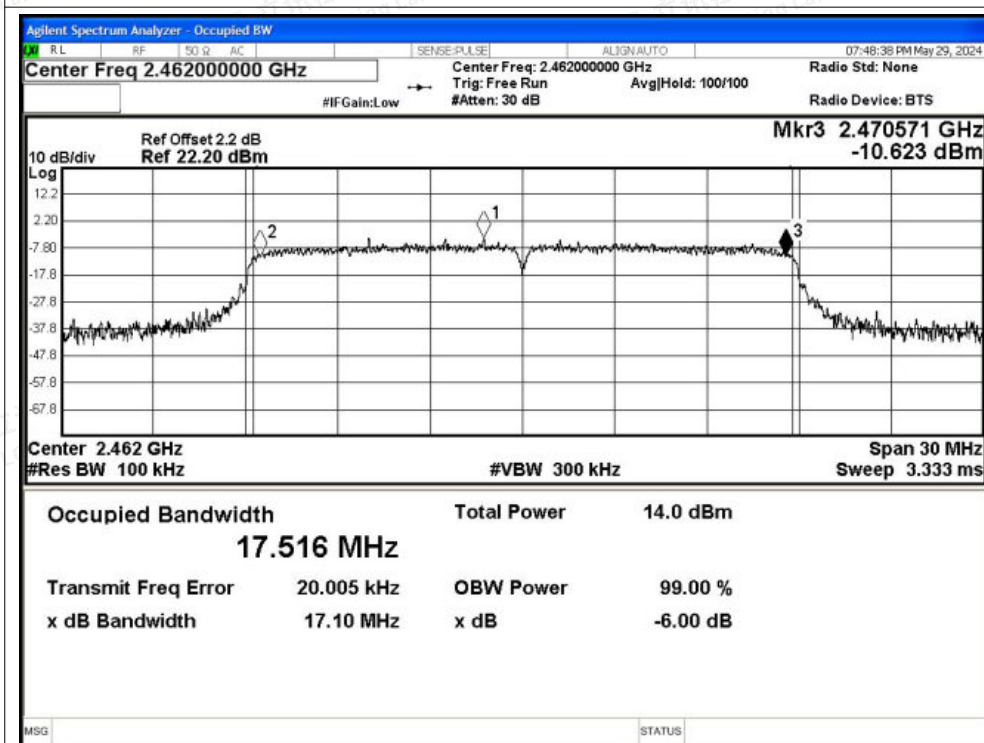
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

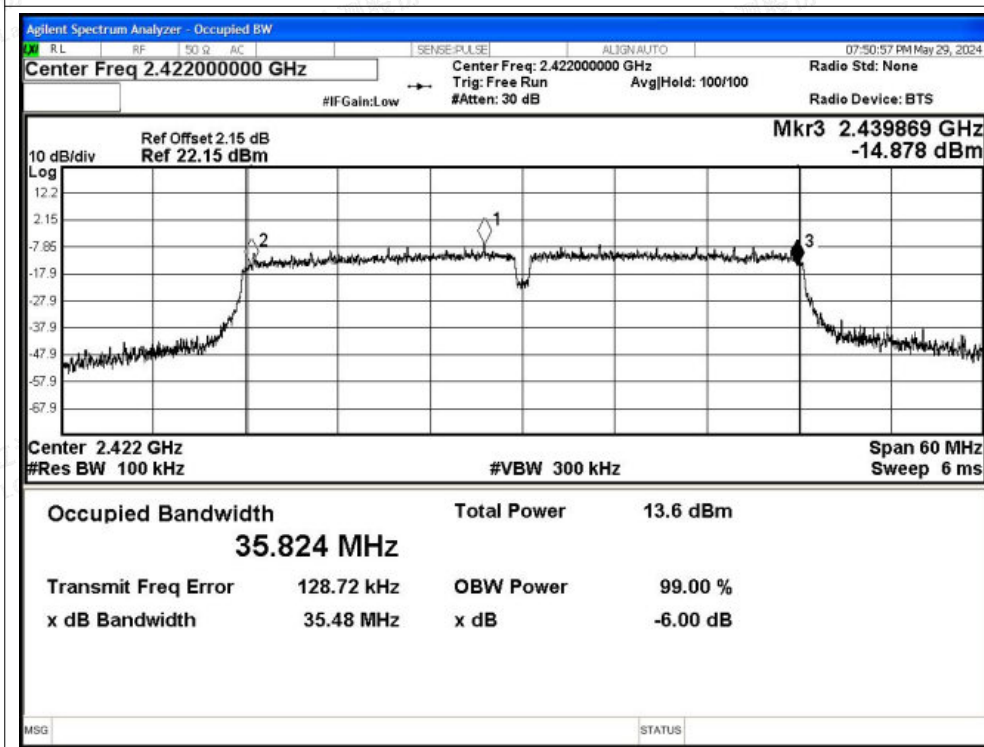
Scan code to check authenticity



-6dB Bandwidth NVNT n20 2462MHz Ant2



-6dB Bandwidth NVNT n40 2422MHz Ant2



Shenzhen LCS Compliance Testing Laboratory Ltd.

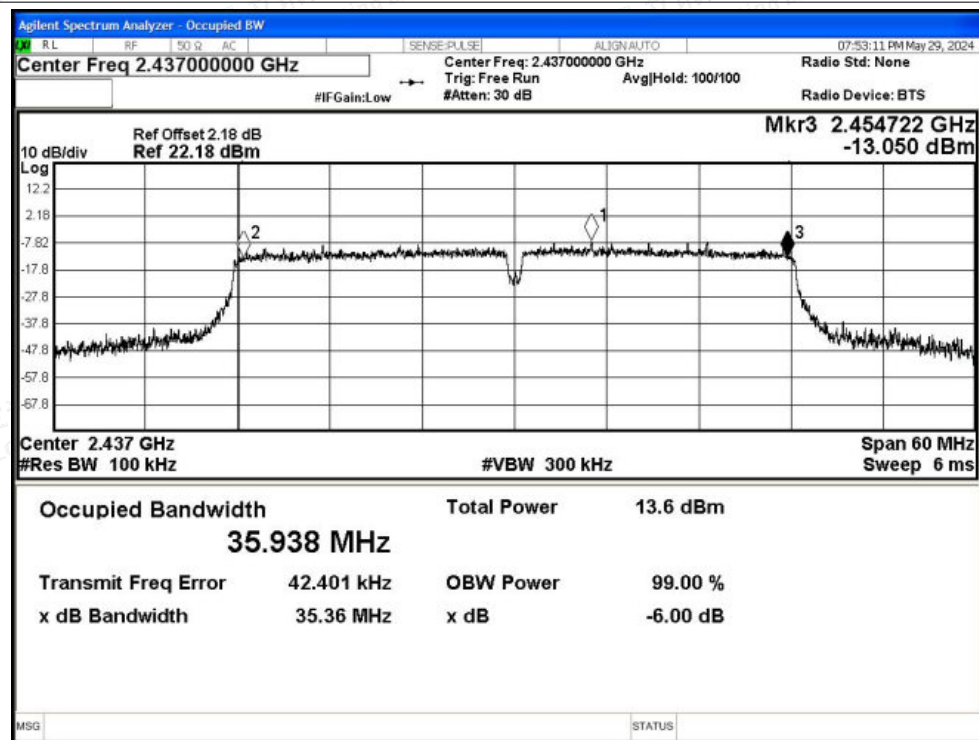
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

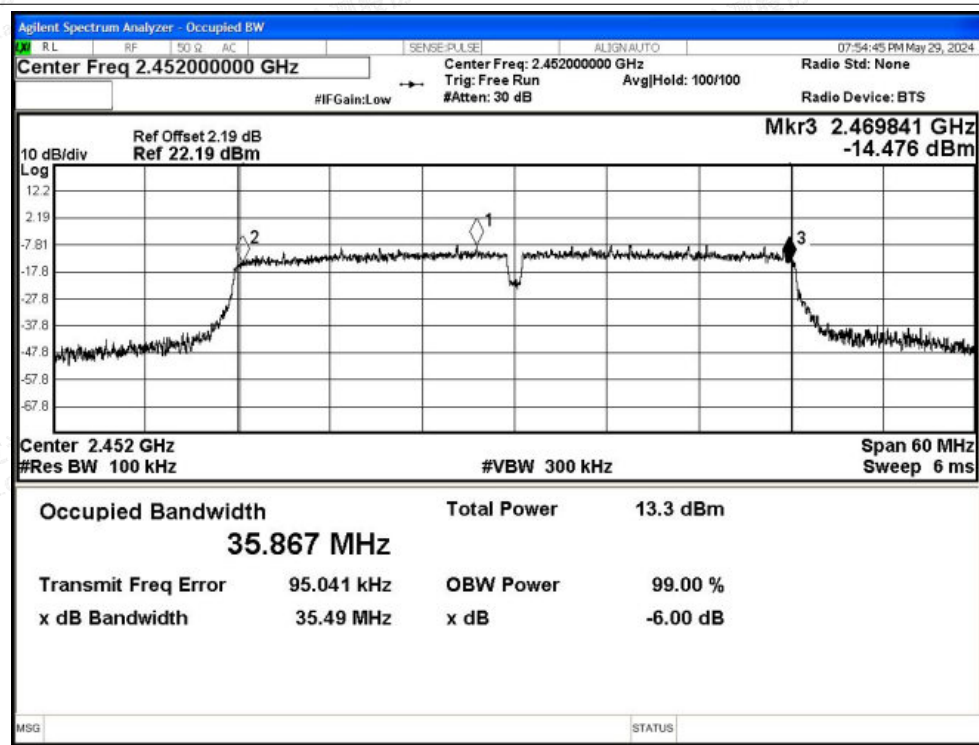
Scan code to check authenticity



-6dB Bandwidth NVNT n40 2437MHz Ant2



-6dB Bandwidth NVNT n40 2452MHz Ant2





## A.2 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | 15.44                 | 30          | Pass    |
| NVNT      | b    | 2437            | Ant1    | 15.7                  | 30          | Pass    |
| NVNT      | b    | 2462            | Ant1    | 15.67                 | 30          | Pass    |
| NVNT      | g    | 2412            | Ant1    | 14.73                 | 30          | Pass    |
| NVNT      | g    | 2437            | Ant1    | 14.9                  | 30          | Pass    |
| NVNT      | g    | 2462            | Ant1    | 14.15                 | 30          | Pass    |
| NVNT      | n20  | 2412            | Ant1    | 13.32                 | 30          | Pass    |
| NVNT      | n20  | 2437            | Ant1    | 13.48                 | 30          | Pass    |
| NVNT      | n20  | 2462            | Ant1    | 13.7                  | 30          | Pass    |
| NVNT      | n40  | 2422            | Ant1    | 12.77                 | 30          | Pass    |
| NVNT      | n40  | 2437            | Ant1    | 12.75                 | 30          | Pass    |
| NVNT      | n40  | 2452            | Ant1    | 12.36                 | 30          | Pass    |

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | b    | 2412            | Ant2    | 14.84                 | 30          | Pass    |
| NVNT      | b    | 2437            | Ant2    | 14.88                 | 30          | Pass    |
| NVNT      | b    | 2462            | Ant2    | 14.74                 | 30          | Pass    |
| NVNT      | g    | 2412            | Ant2    | 12.99                 | 30          | Pass    |
| NVNT      | g    | 2437            | Ant2    | 13.42                 | 30          | Pass    |
| NVNT      | g    | 2462            | Ant2    | 13.37                 | 30          | Pass    |
| NVNT      | n20  | 2412            | Ant2    | 12.58                 | 30          | Pass    |
| NVNT      | n20  | 2437            | Ant2    | 12.74                 | 30          | Pass    |
| NVNT      | n20  | 2462            | Ant2    | 12.55                 | 30          | Pass    |
| NVNT      | n40  | 2422            | Ant2    | 11.15                 | 30          | Pass    |
| NVNT      | n40  | 2437            | Ant2    | 11.88                 | 30          | Pass    |
| NVNT      | n40  | 2452            | Ant2    | 11.79                 | 30          | Pass    |

### Ant1+Ant2

| Condition | Mode | Frequency (MHz) | Total Power (dBm) |       |           | Limit (dBm) | Verdict |
|-----------|------|-----------------|-------------------|-------|-----------|-------------|---------|
|           |      |                 | Ant1              | Ant2  | Ant1+Ant2 |             |         |
| NVNT      | n20  | 2412            | 13.32             | 12.58 | 15.98     | 30          | Pass    |
| NVNT      | n20  | 2437            | 13.48             | 12.74 | 16.14     | 30          | Pass    |
| NVNT      | n20  | 2462            | 13.7              | 12.55 | 16.17     | 30          | Pass    |
| NVNT      | n40  | 2422            | 12.77             | 11.15 | 15.05     | 30          | Pass    |
| NVNT      | n40  | 2437            | 12.75             | 11.88 | 15.35     | 30          | Pass    |
| NVNT      | n40  | 2452            | 12.36             | 11.79 | 15.09     | 30          | Pass    |





### A.3 Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | b    | 2412            | Ant1    | -7.63                    | 8                | Pass    |
| NVNT      | b    | 2437            | Ant1    | -7.74                    | 8                | Pass    |
| NVNT      | b    | 2462            | Ant1    | -7.76                    | 8                | Pass    |
| NVNT      | g    | 2412            | Ant1    | -15.16                   | 8                | Pass    |
| NVNT      | g    | 2437            | Ant1    | -15.55                   | 8                | Pass    |
| NVNT      | g    | 2462            | Ant1    | -16.48                   | 8                | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -18.08                   | 8                | Pass    |
| NVNT      | n20  | 2437            | Ant1    | -17.58                   | 8                | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -17.29                   | 8                | Pass    |
| NVNT      | n40  | 2422            | Ant1    | -20.63                   | 8                | Pass    |
| NVNT      | n40  | 2437            | Ant1    | -20.89                   | 8                | Pass    |
| NVNT      | n40  | 2452            | Ant1    | -21.74                   | 8                | Pass    |

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | b    | 2412            | Ant2    | -8.34                    | 8                | Pass    |
| NVNT      | b    | 2437            | Ant2    | -8.85                    | 8                | Pass    |
| NVNT      | b    | 2462            | Ant2    | -6.34                    | 8                | Pass    |
| NVNT      | g    | 2412            | Ant2    | -17.56                   | 8                | Pass    |
| NVNT      | g    | 2437            | Ant2    | -17.81                   | 8                | Pass    |
| NVNT      | g    | 2462            | Ant2    | -17.29                   | 8                | Pass    |
| NVNT      | n20  | 2412            | Ant2    | -17.65                   | 8                | Pass    |
| NVNT      | n20  | 2437            | Ant2    | -17.59                   | 8                | Pass    |
| NVNT      | n20  | 2462            | Ant2    | -17.66                   | 8                | Pass    |
| NVNT      | n40  | 2422            | Ant2    | -22.13                   | 8                | Pass    |
| NVNT      | n40  | 2437            | Ant2    | -21.29                   | 8                | Pass    |
| NVNT      | n40  | 2452            | Ant2    | -21.78                   | 8                | Pass    |

#### Ant1+Ant2

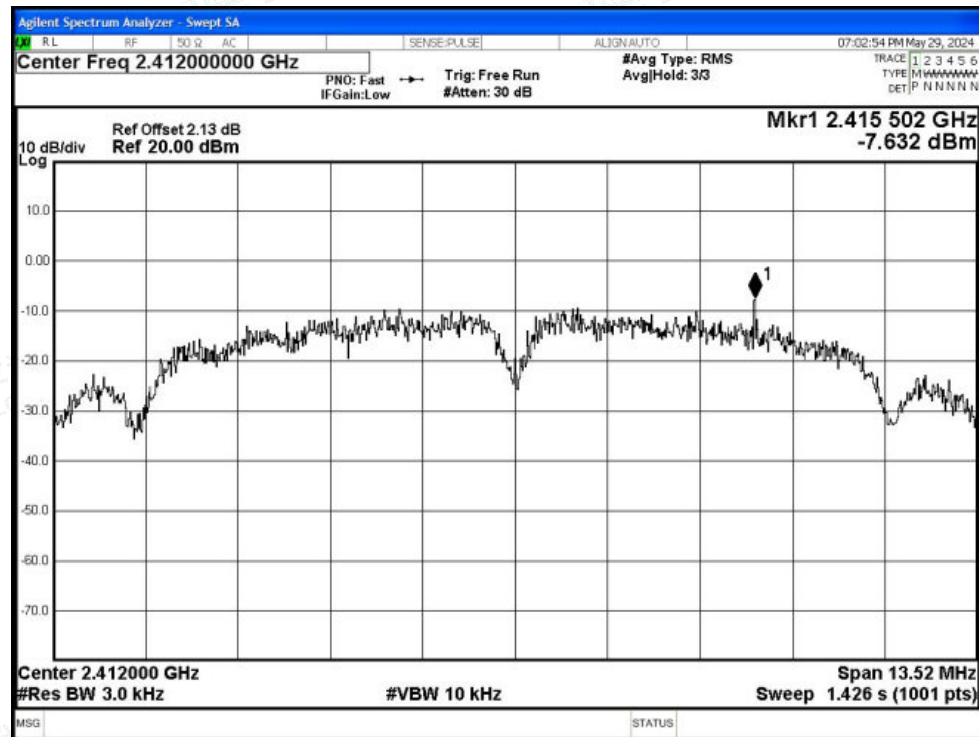
| Condition | Mode | Frequency (MHz) | Total PSD (dBm/3kHz) |        |           | Limit (dBm) | Verdict |
|-----------|------|-----------------|----------------------|--------|-----------|-------------|---------|
|           |      |                 | Ant1                 | Ant2   | Ant1+Ant2 |             |         |
| NVNT      | n20  | 2412            | -18.08               | -17.65 | -14.85    | 8           | Pass    |
| NVNT      | n20  | 2437            | -17.58               | -17.59 | -14.57    | 8           | Pass    |
| NVNT      | n20  | 2462            | -17.29               | -17.66 | -14.46    | 8           | Pass    |
| NVNT      | n40  | 2412            | -20.63               | -22.13 | -18.31    | 8           | Pass    |
| NVNT      | n40  | 2437            | -20.89               | -21.29 | -18.08    | 8           | Pass    |
| NVNT      | n40  | 2462            | -21.74               | -21.78 | -18.75    | 8           | Pass    |



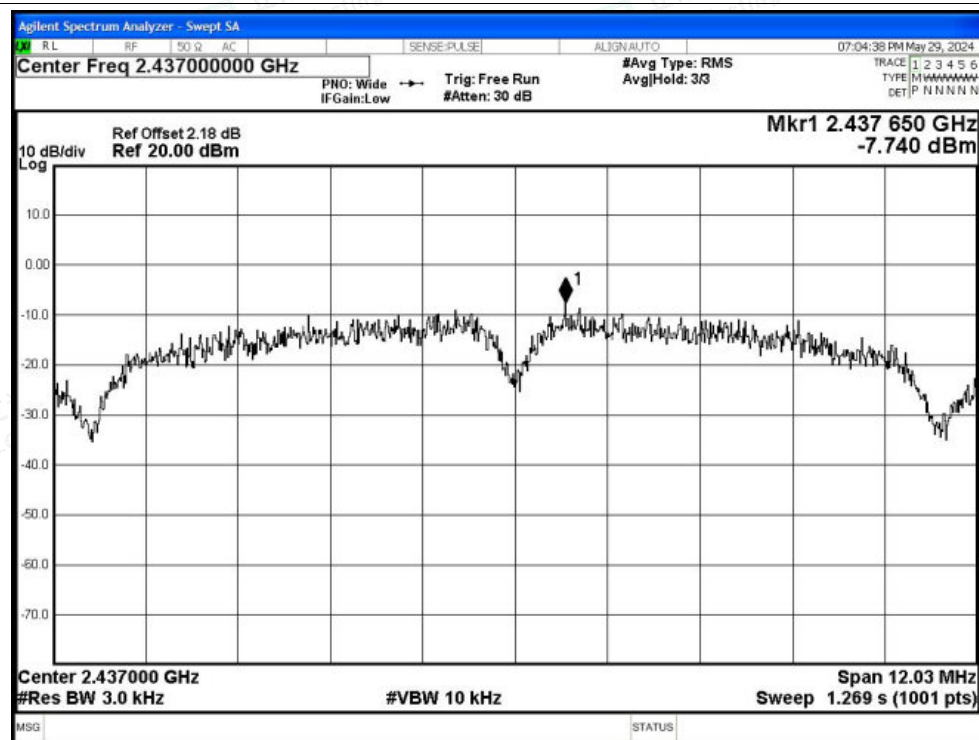


## Test Graphs

PSD NVNT b 2412MHz Ant1

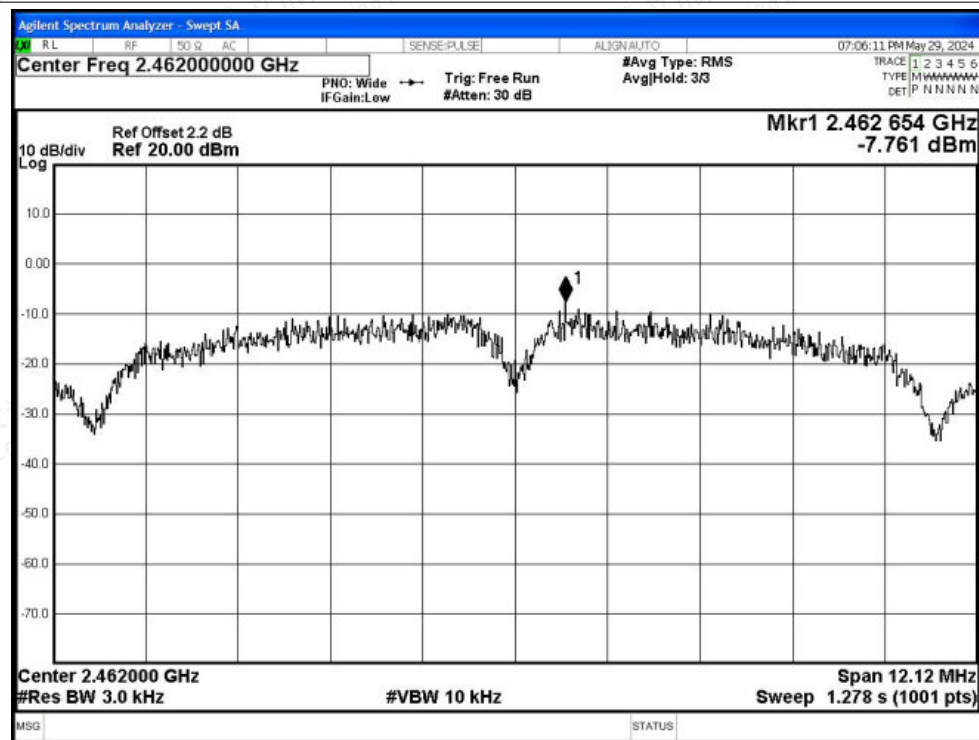


PSD NVNT b 2437MHz Ant1

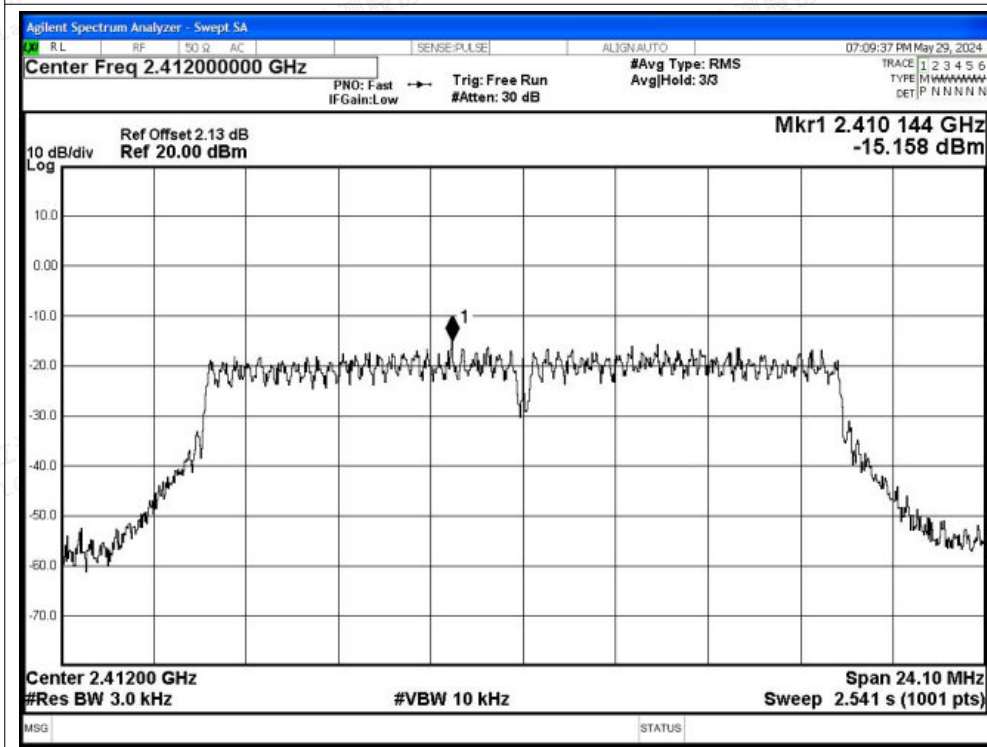




PSD NVNT b 2462MHz Ant1

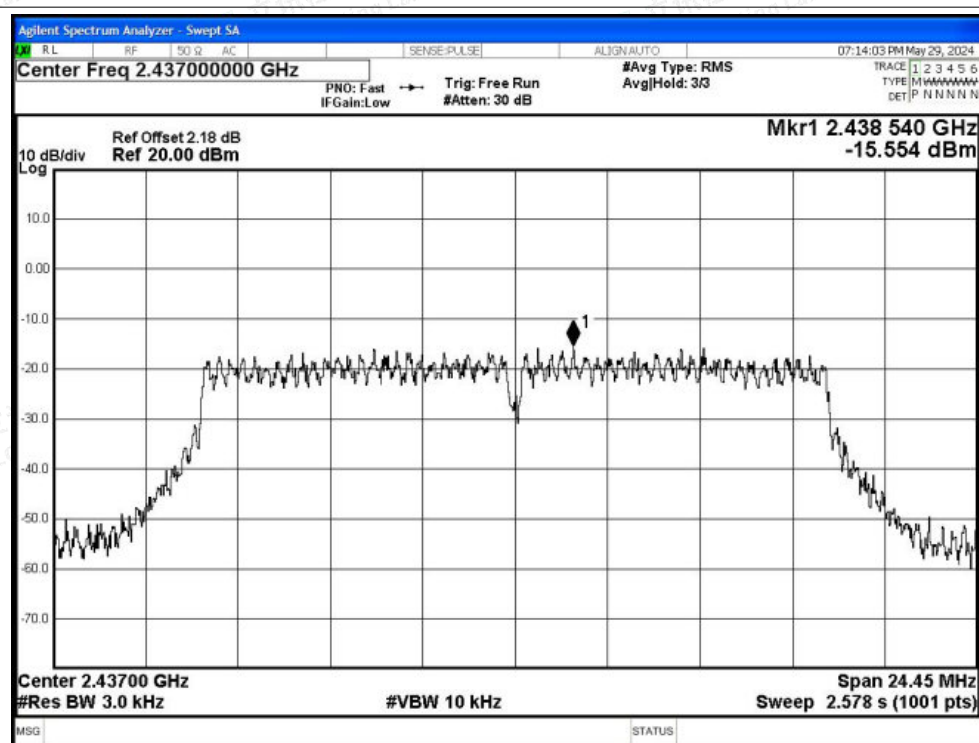


PSD NVNT g 2412MHz Ant1

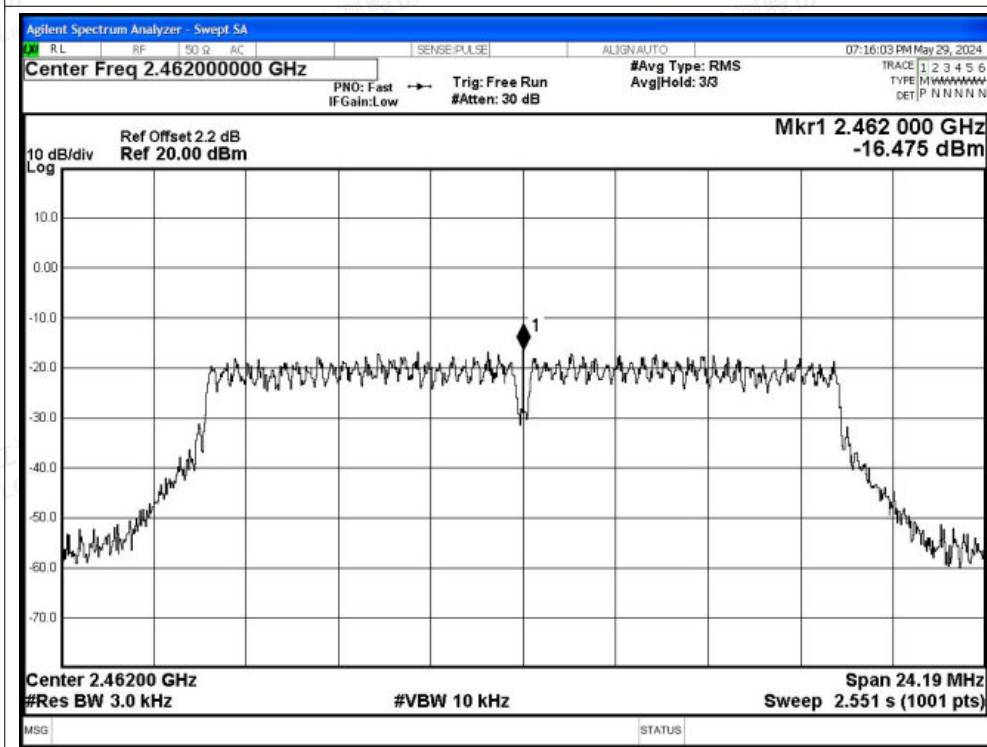




PSD NVNT g 2437MHz Ant1



PSD NVNT g 2462MHz Ant1



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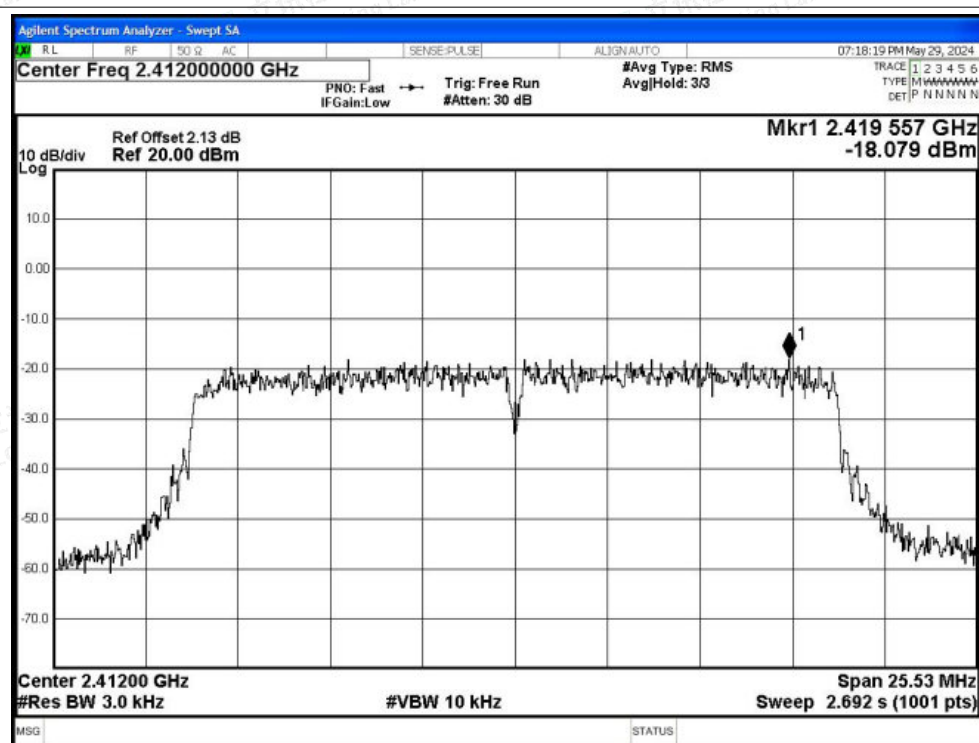
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

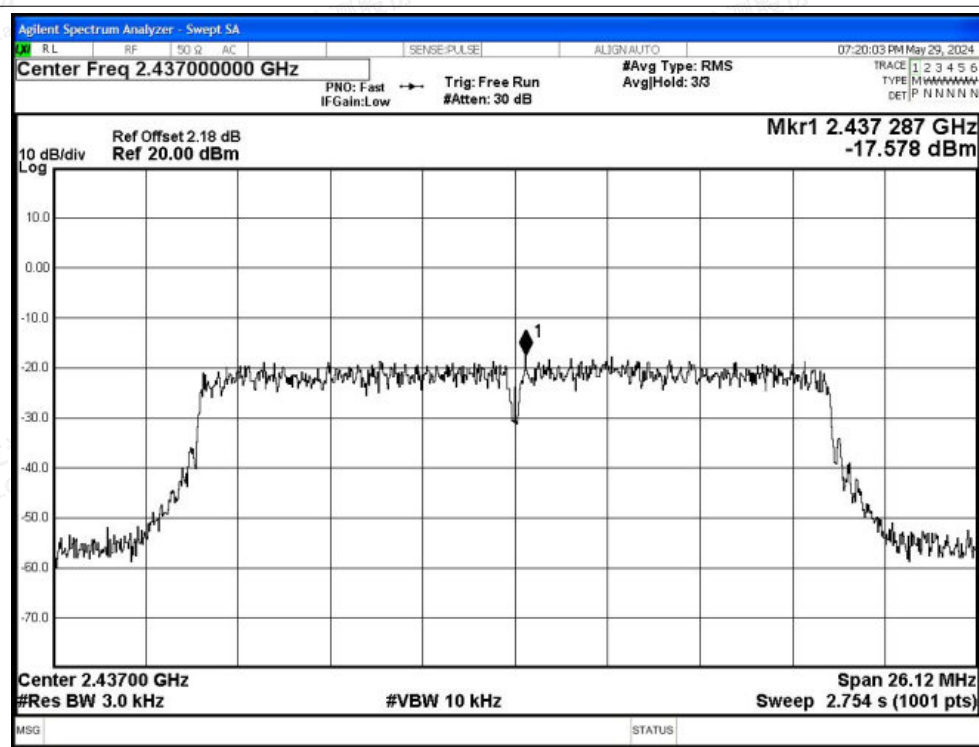
Scan code to check authenticity



PSD NVNT n20 2412MHz Ant1



PSD NVNT n20 2437MHz Ant1



Shenzhen LCS Compliance Testing Laboratory Ltd.

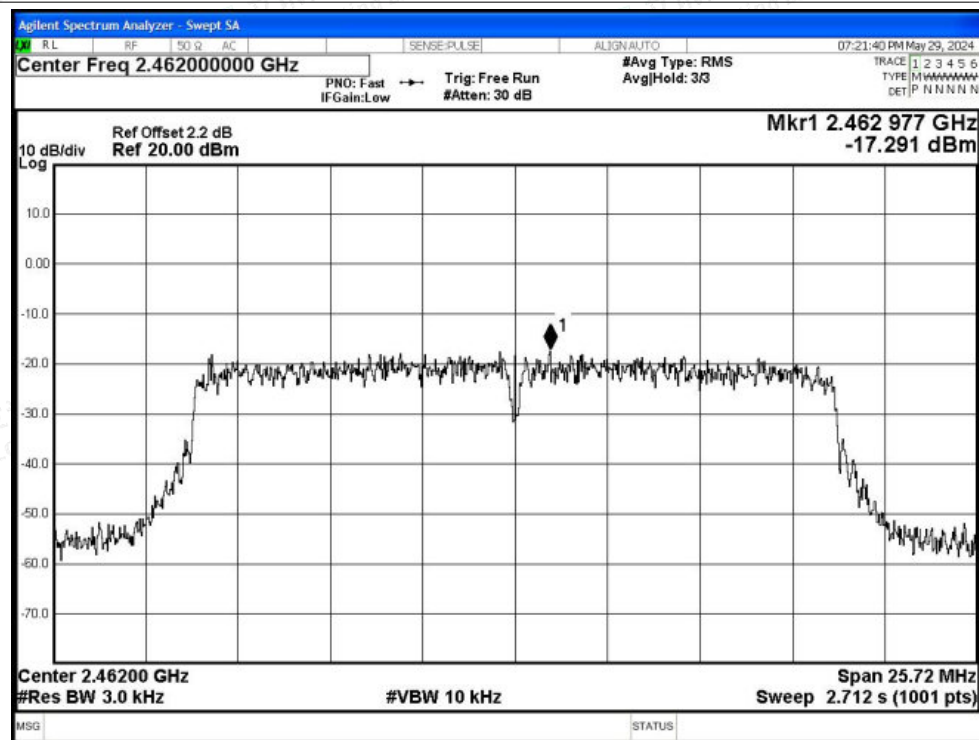
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

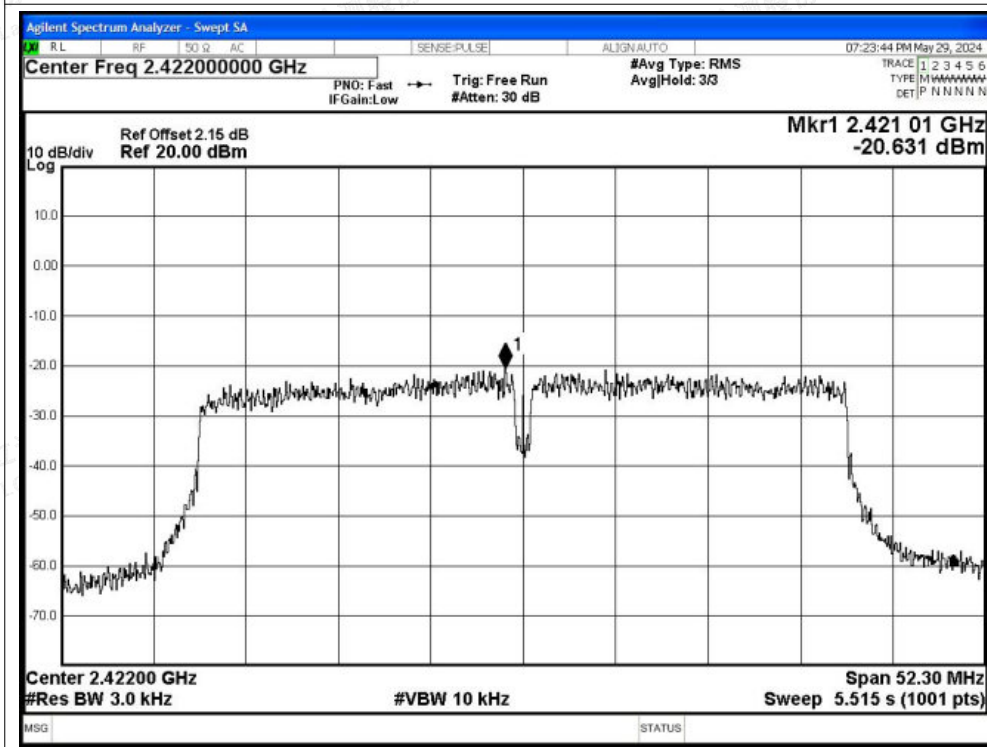
Scan code to check authenticity



PSD NVNT n20 2462MHz Ant1

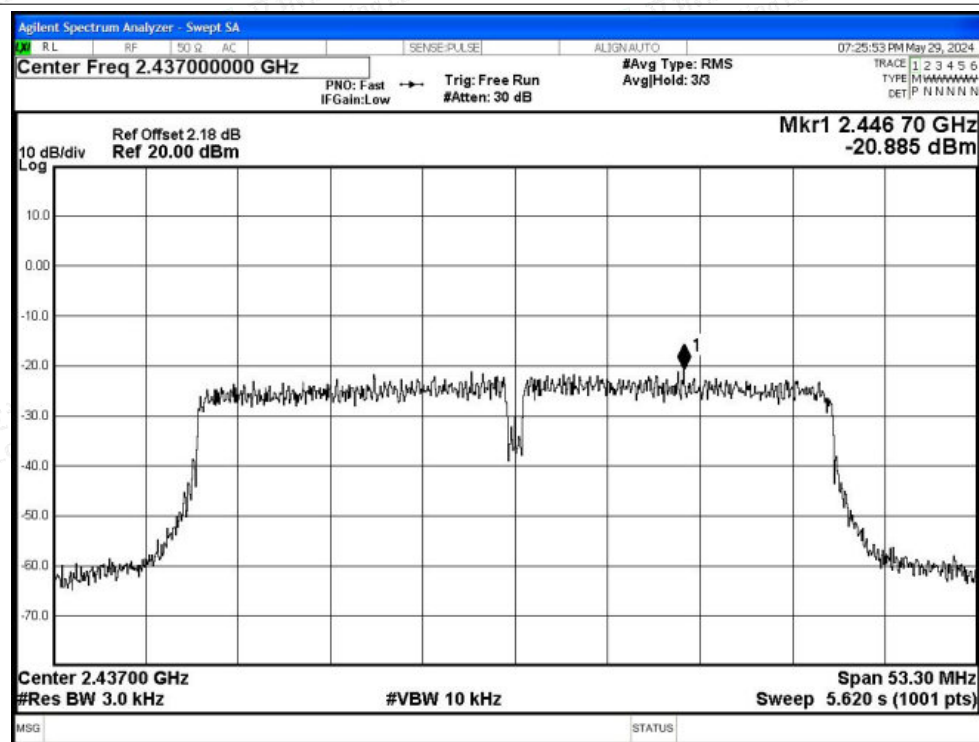


PSD NVNT n40 2422MHz Ant1

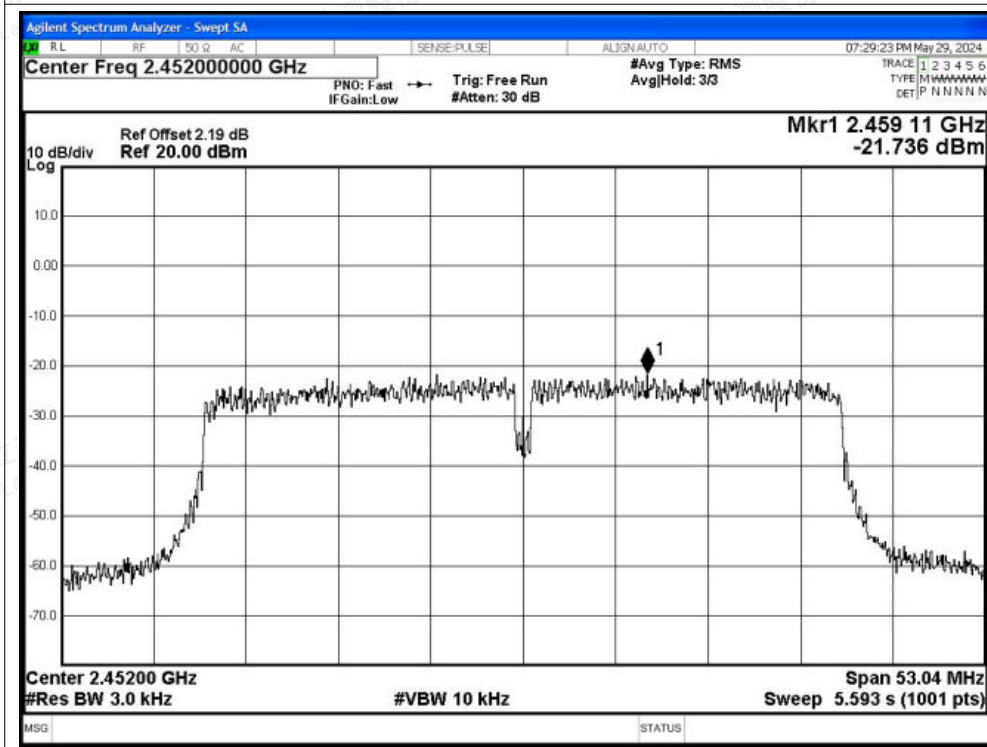




PSD NVNT n40 2437MHz Ant1



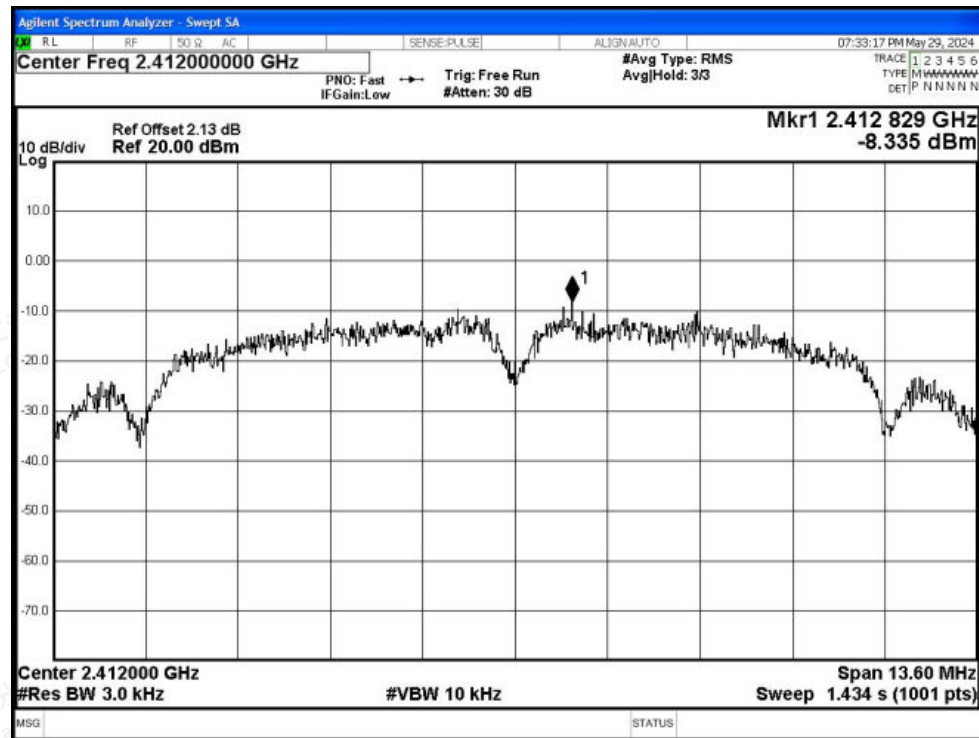
PSD NVNT n40 2452MHz Ant1



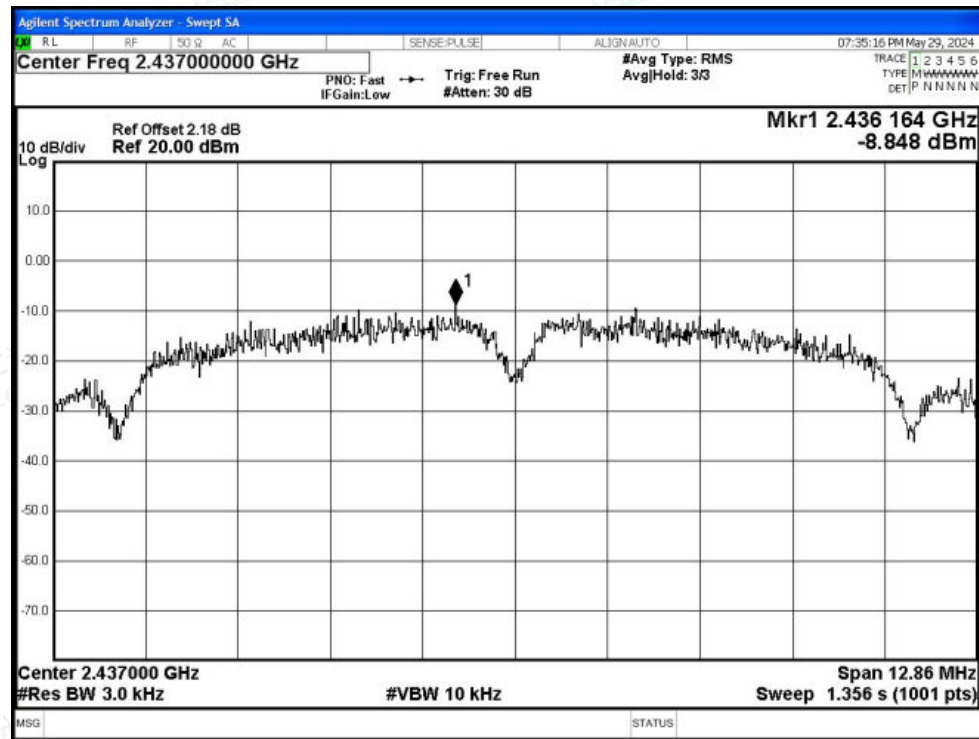


## Test Graphs

## PSD NVNT b 2412MHz Ant2

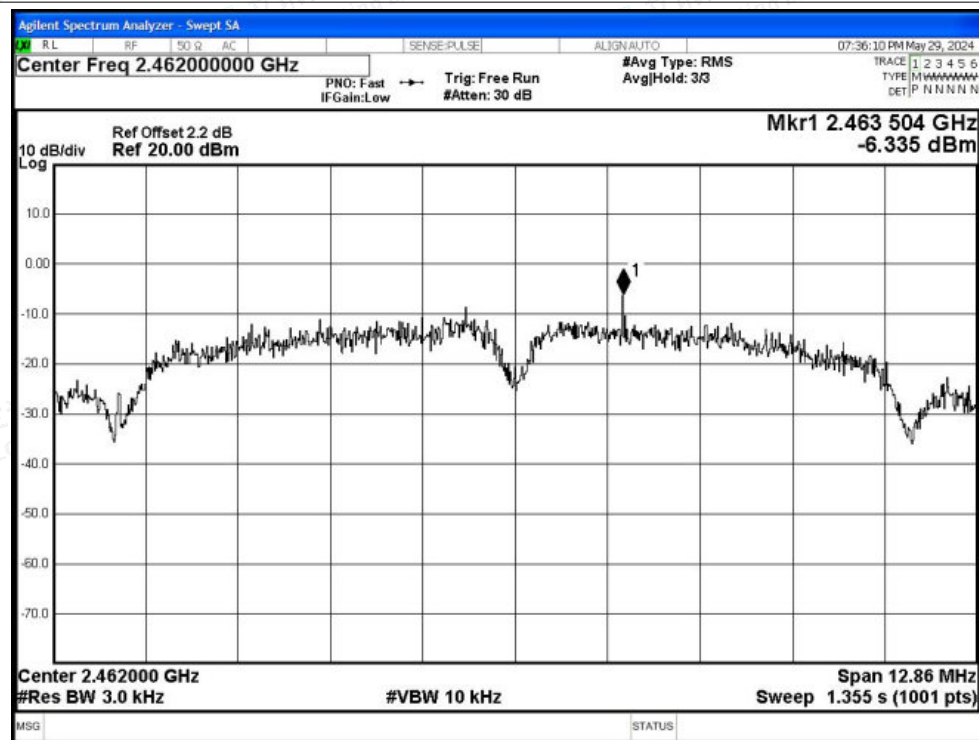


## PSD NVNT b 2437MHz Ant2

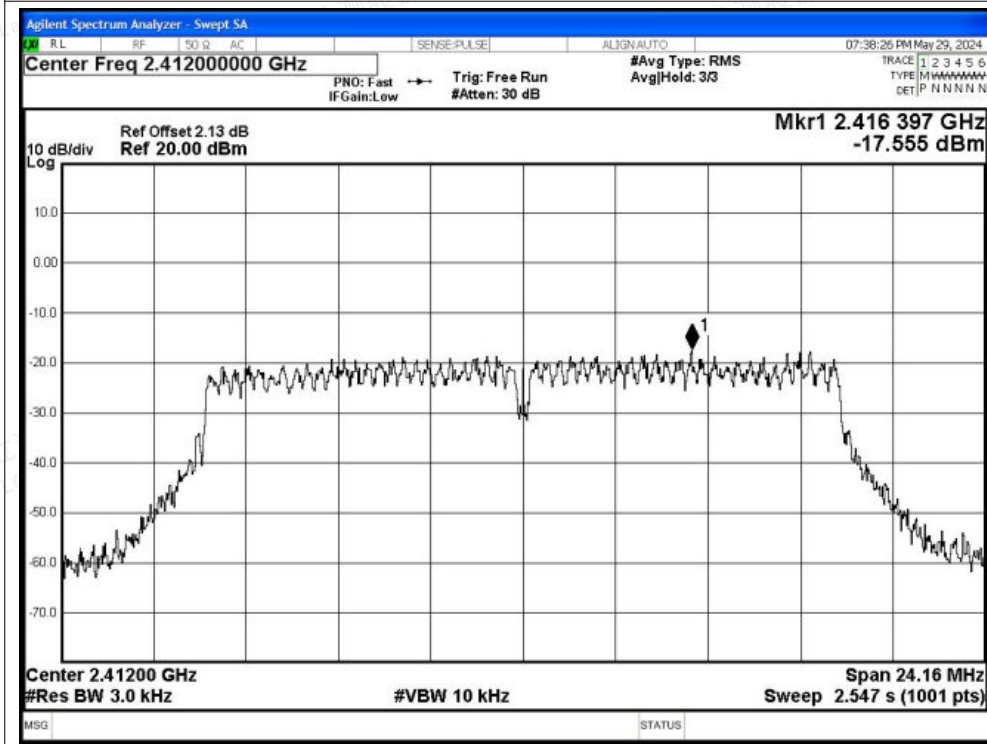




PSD NVNT b 2462MHz Ant2

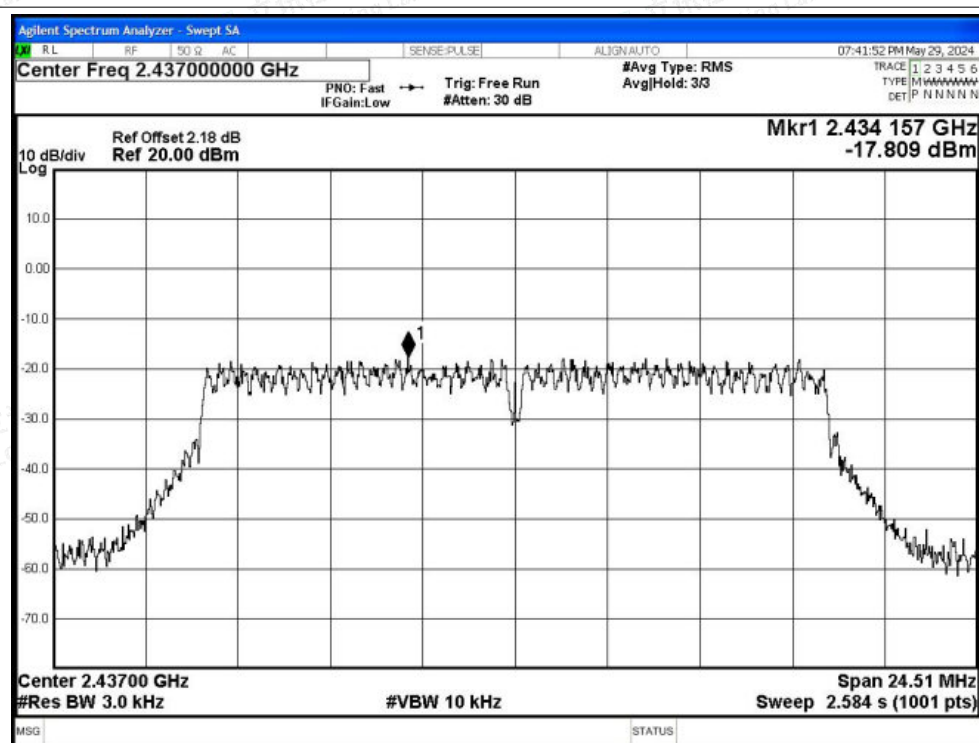


PSD NVNT g 2412MHz Ant2

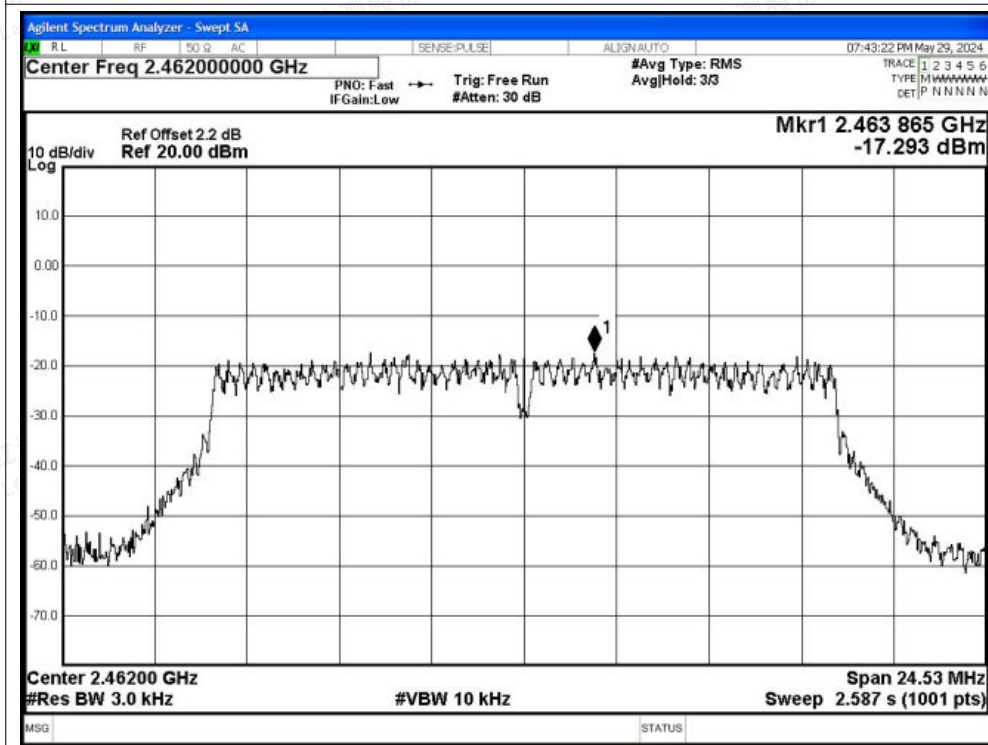




PSD NVNT g 2437MHz Ant2



PSD NVNT g 2462MHz Ant2



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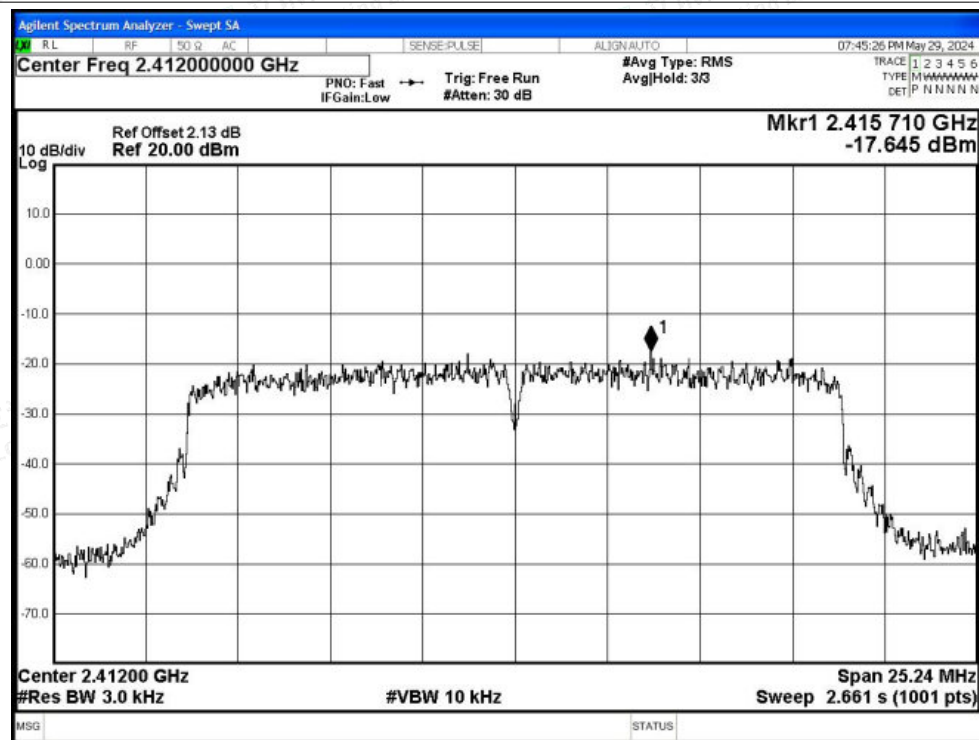
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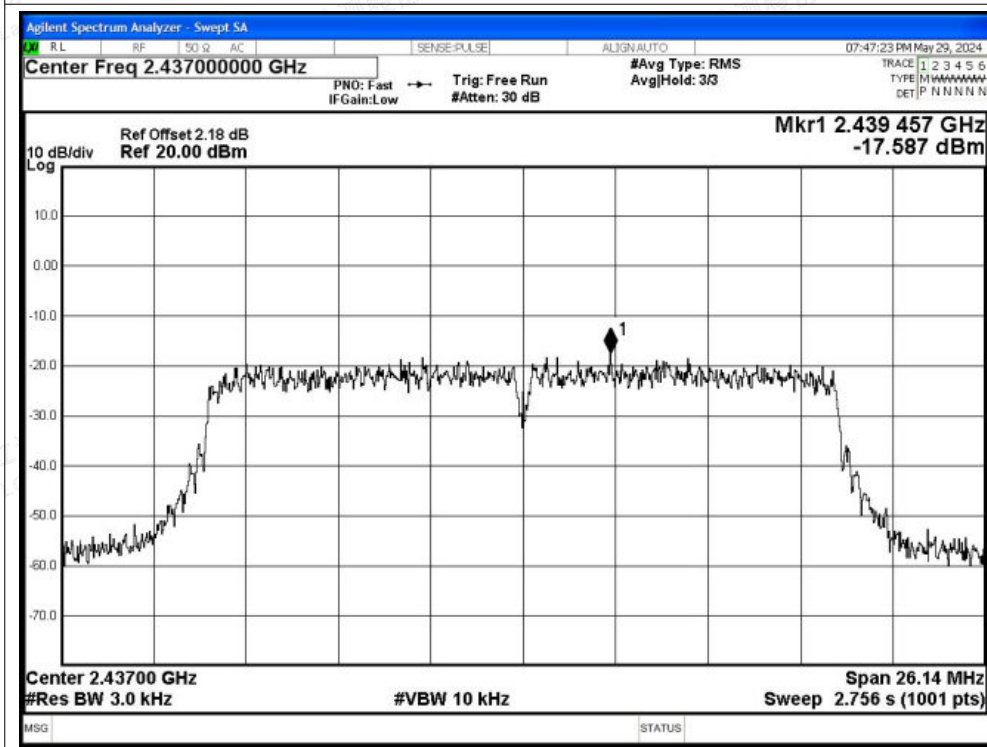
Scan code to check authenticity



PSD NVNT n20 2412MHz Ant2

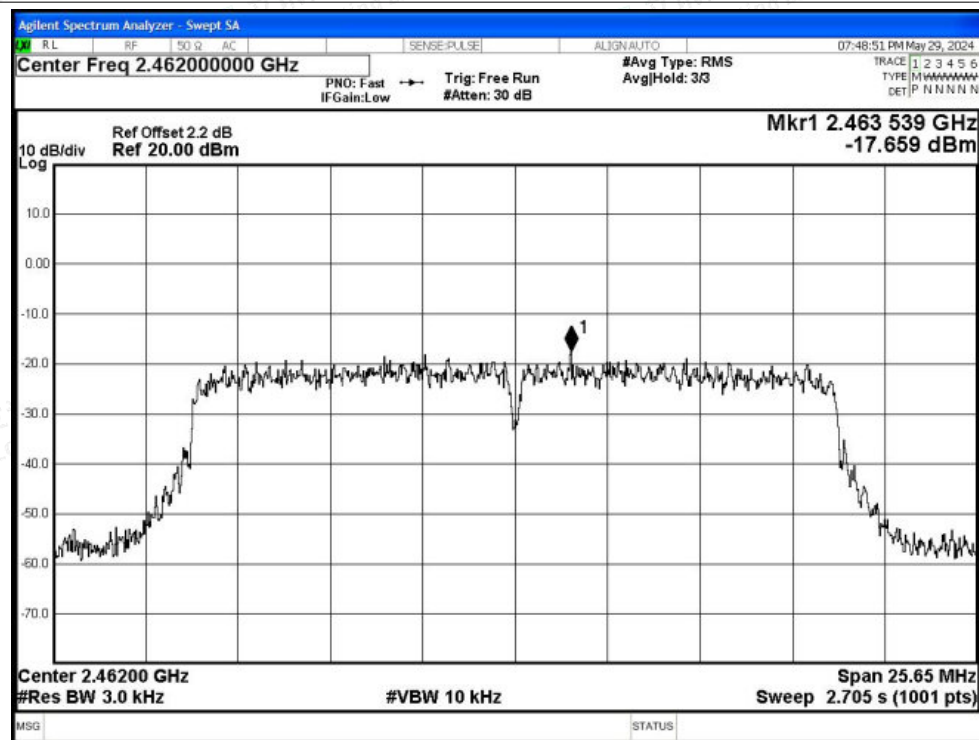


PSD NVNT n20 2437MHz Ant2

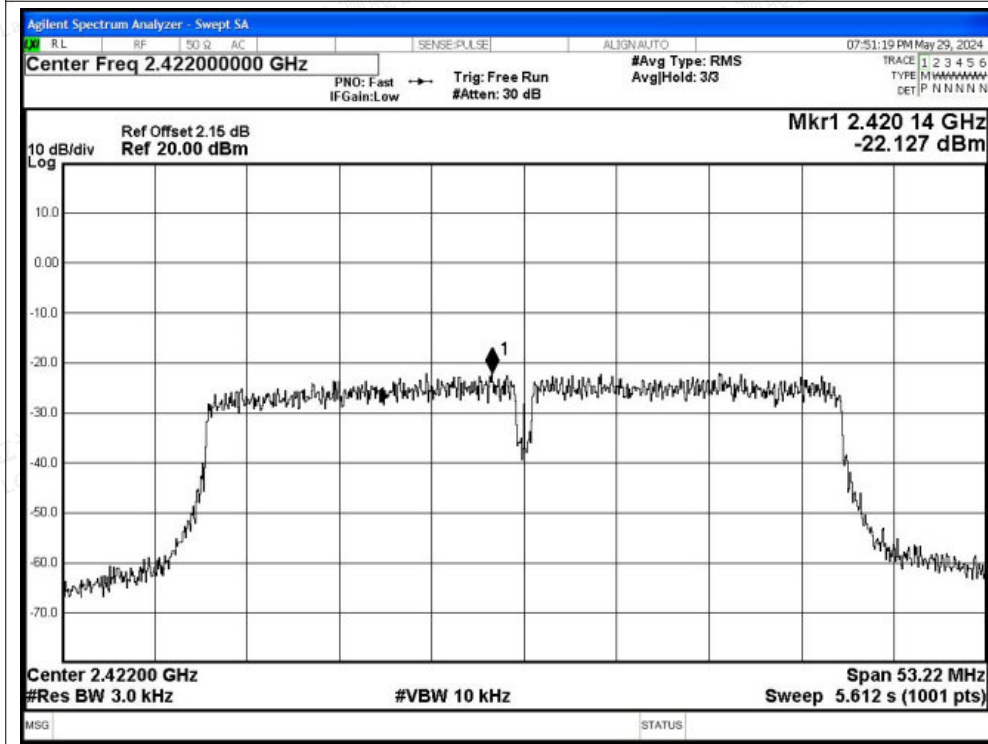




PSD NVNT n20 2462MHz Ant2

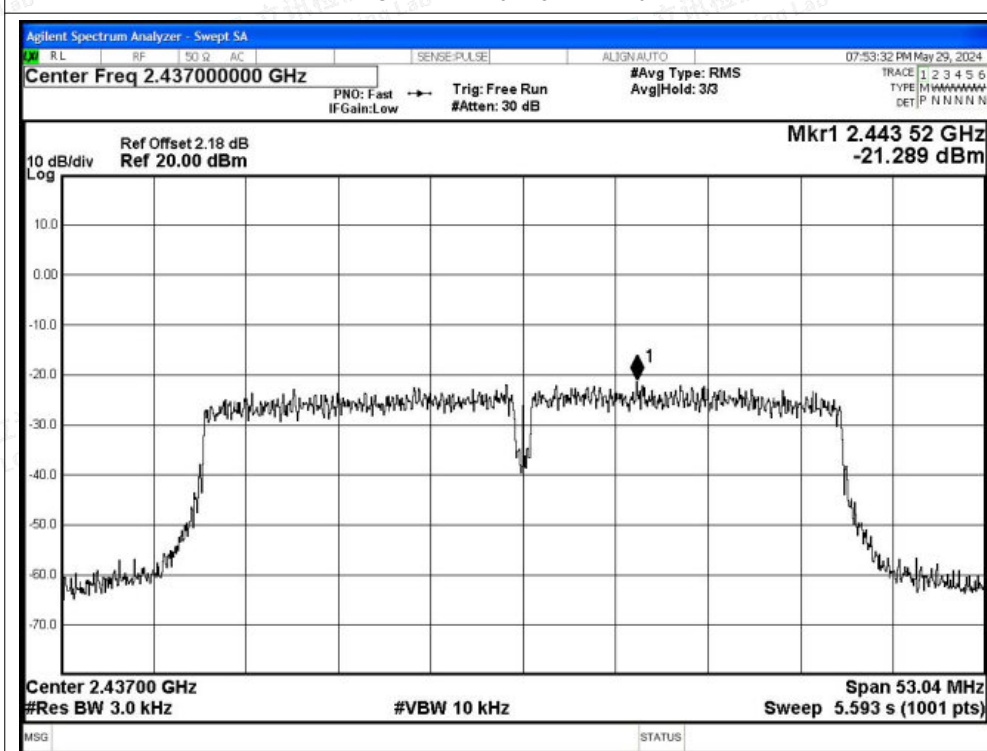


PSD NVNT n40 2422MHz Ant2

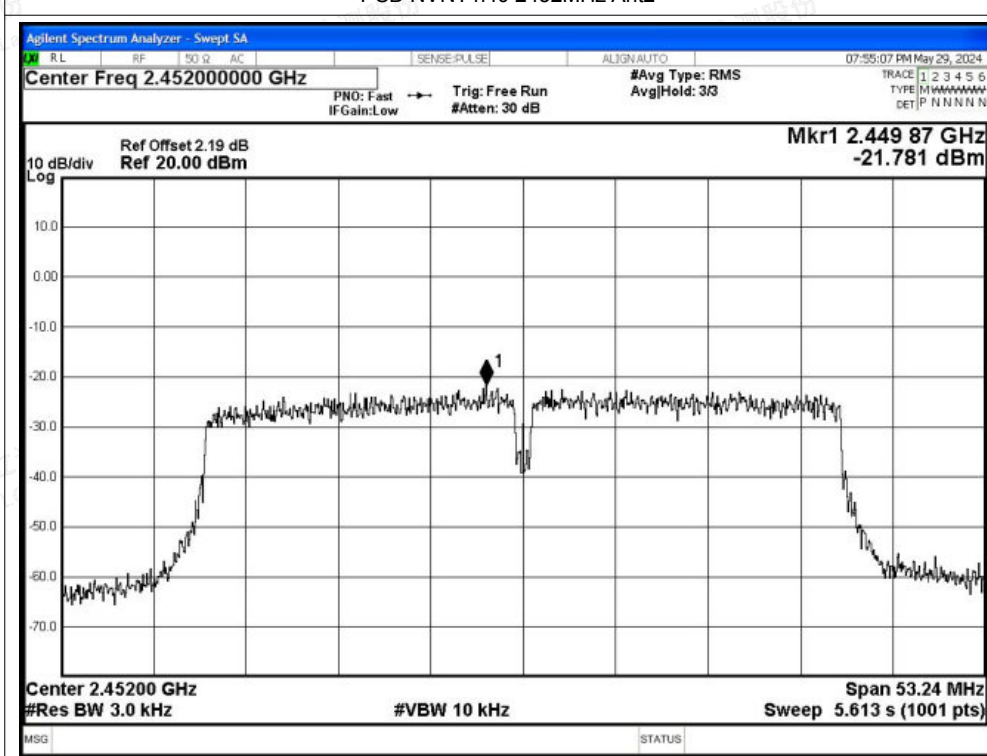




PSD NVNT n40 2437MHz Ant2



PSD NVNT n40 2452MHz Ant2



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## A.4 Band Edge

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | Ant1    | -44.4           | -20         | Pass    |
| NVNT      | b    | 2462            | Ant1    | -59.88          | -20         | Pass    |
| NVNT      | g    | 2412            | Ant1    | -30.57          | -20         | Pass    |
| NVNT      | g    | 2462            | Ant1    | -41.56          | -20         | Pass    |
| NVNT      | n20  | 2412            | Ant1    | -30.4           | -20         | Pass    |
| NVNT      | n20  | 2462            | Ant1    | -42.35          | -20         | Pass    |
| NVNT      | n40  | 2422            | Ant1    | -35.13          | -20         | Pass    |
| NVNT      | n40  | 2452            | Ant1    | -35.54          | -20         | Pass    |





## Test Graphs

## Band Edge NVNT b 2412MHz Ant1 Ref



## Band Edge NVNT b 2412MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

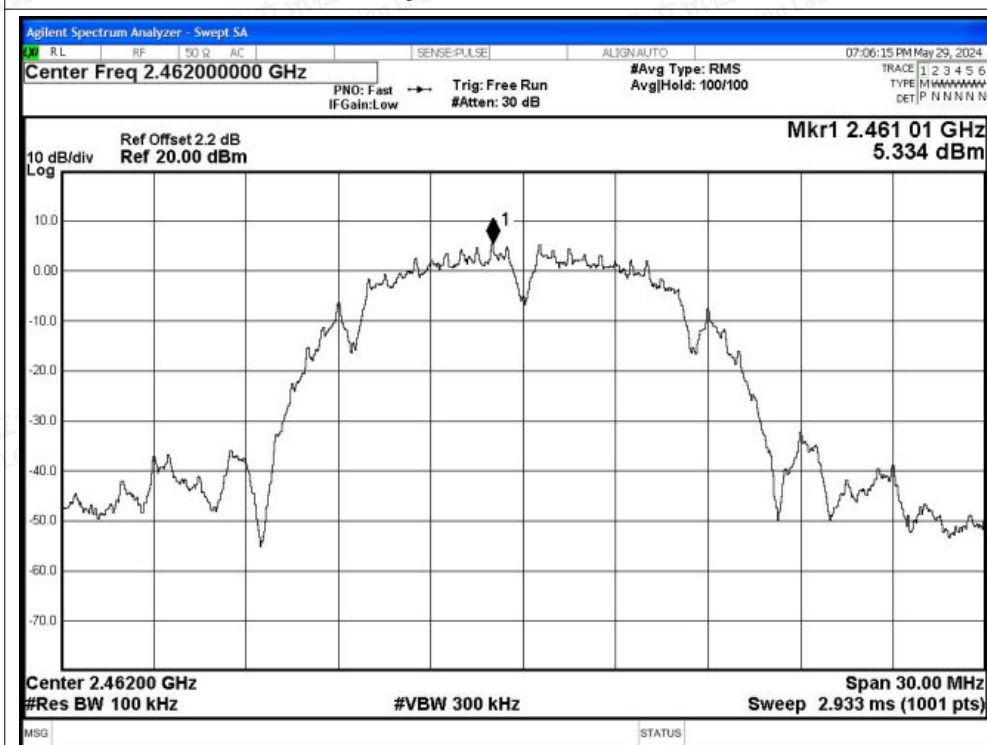
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

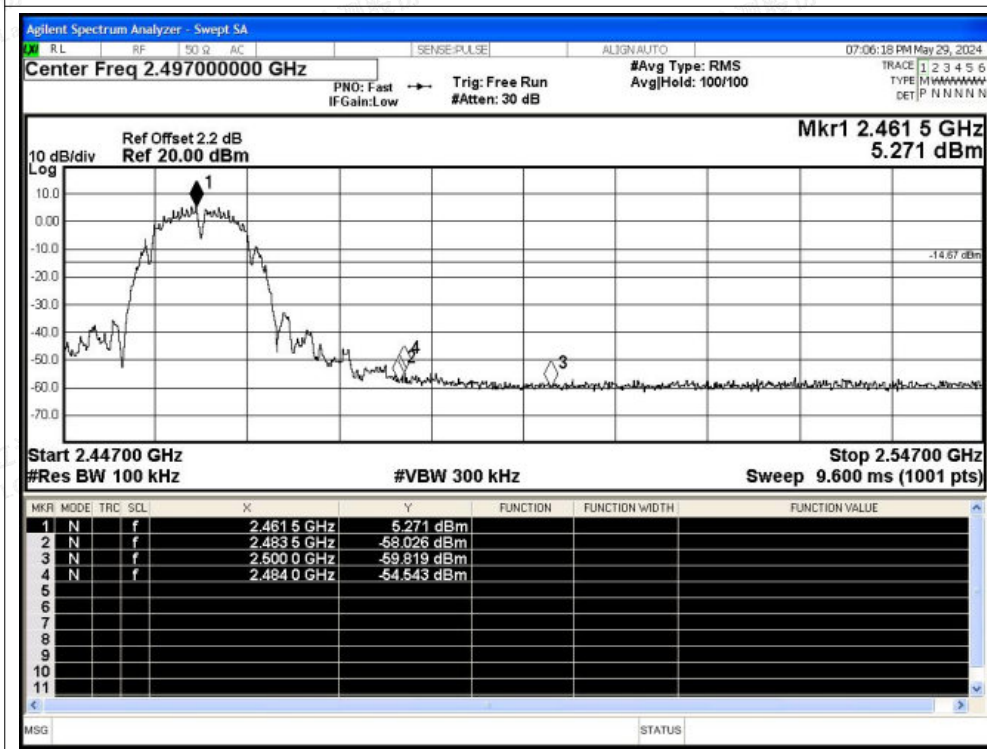
Scan code to check authenticity



## Band Edge NVNT b 2462MHz Ant1 Ref



## Band Edge NVNT b 2462MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

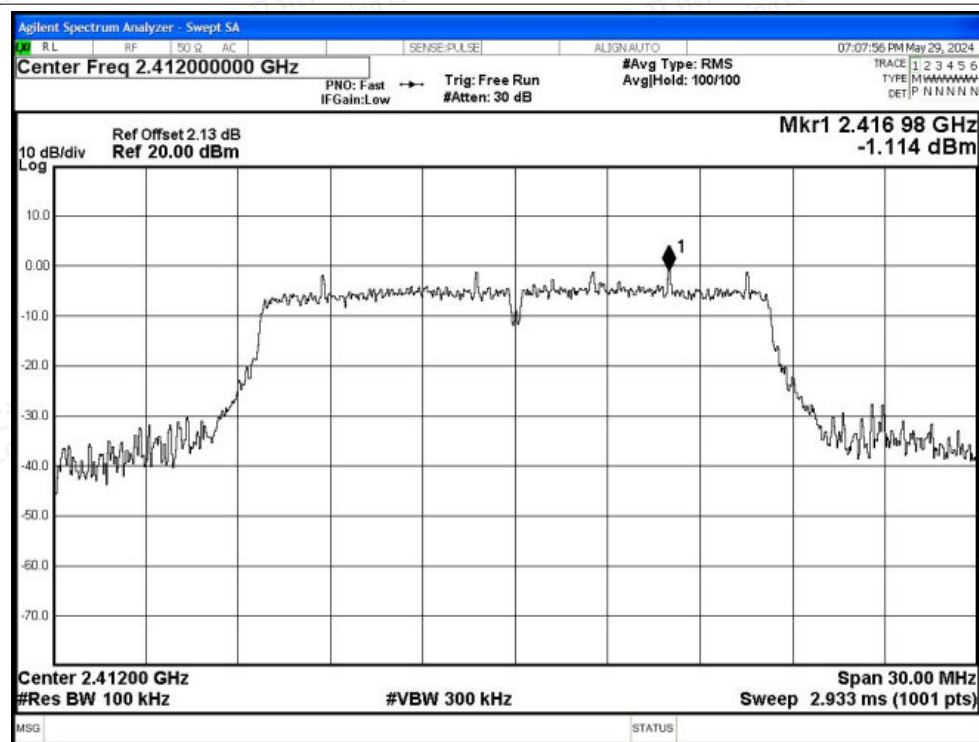
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

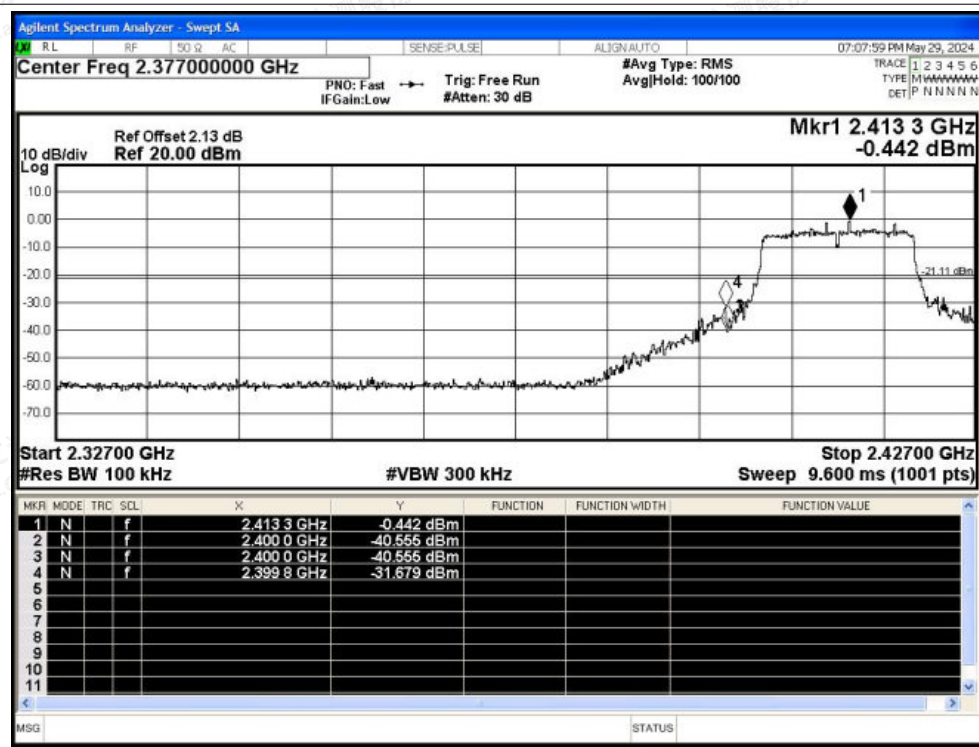
Scan code to check authenticity



## Band Edge NVNT g 2412MHz Ant1 Ref

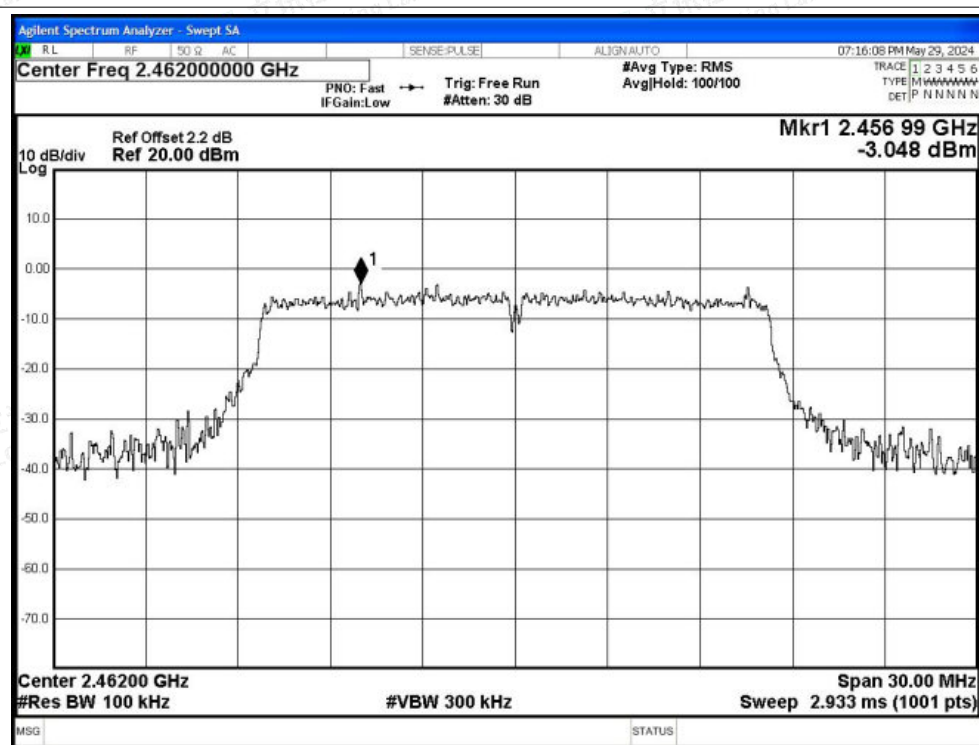


## Band Edge NVNT g 2412MHz Ant1 Emission

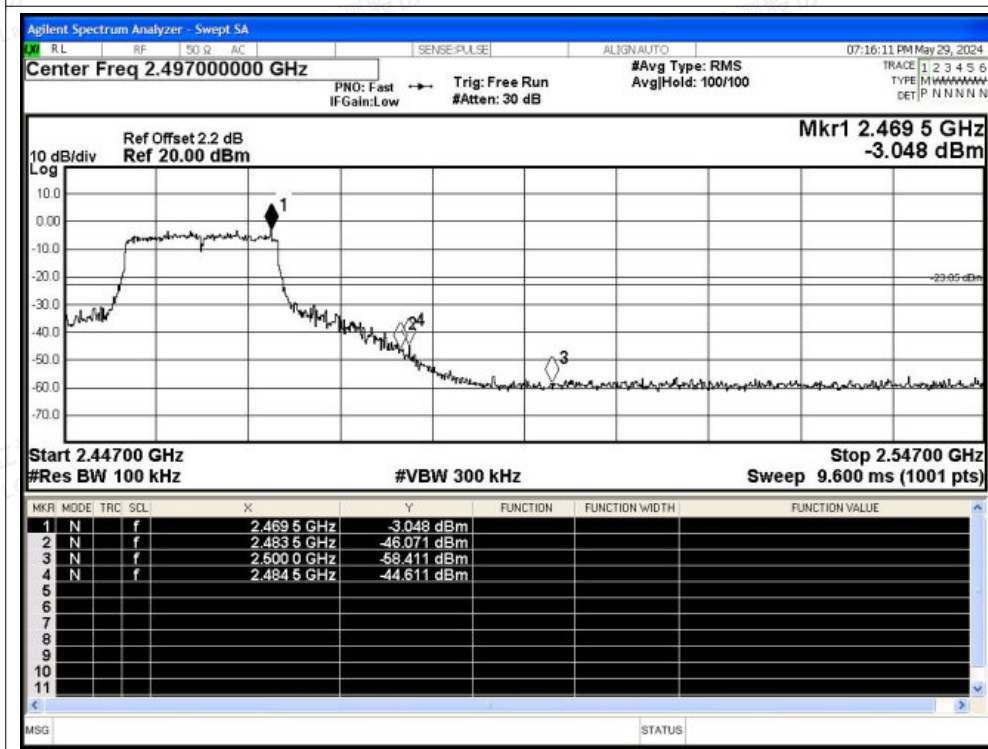




## Band Edge NVNT g 2462MHz Ant1 Ref



## Band Edge NVNT g 2462MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

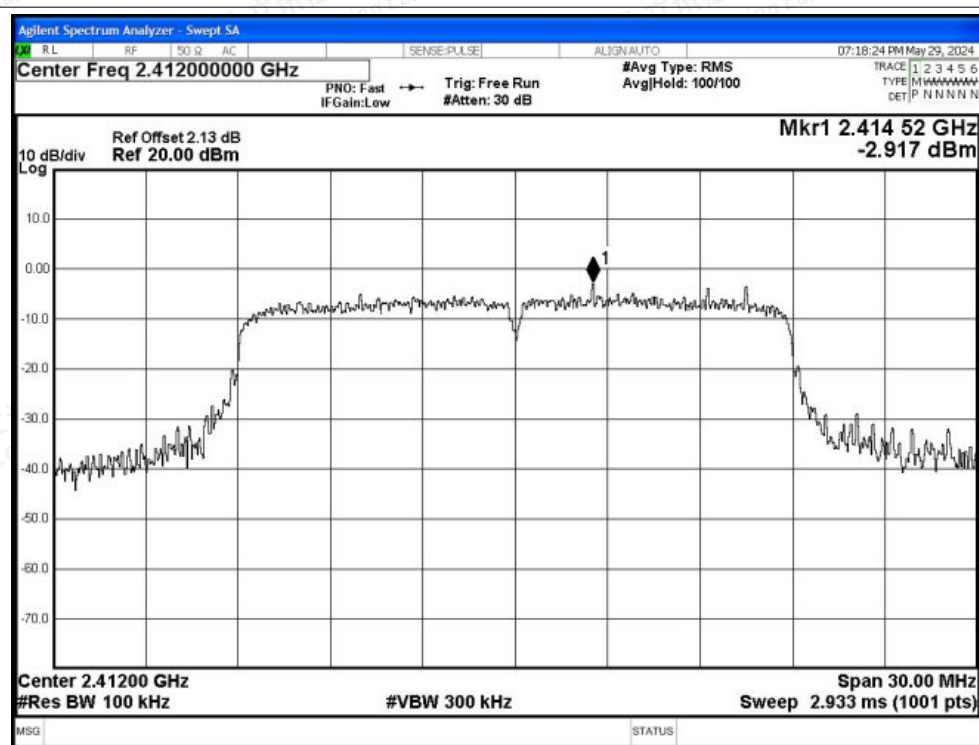
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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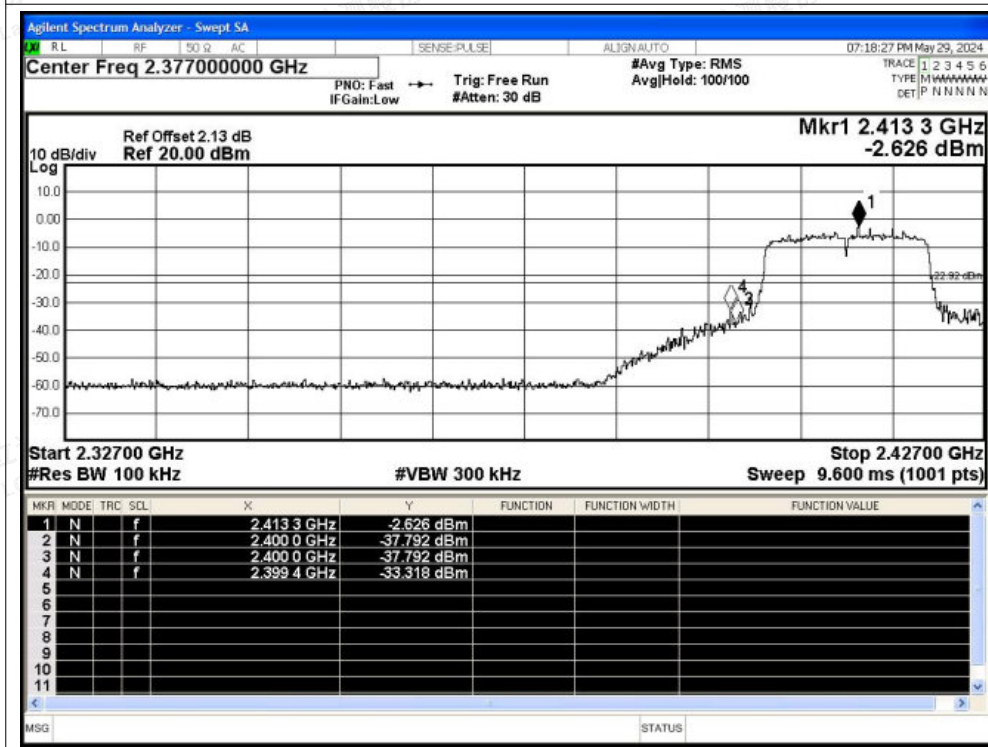
Scan code to check authenticity



## Band Edge NVNT n20 2412MHz Ant1 Ref



## Band Edge NVNT n20 2412MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

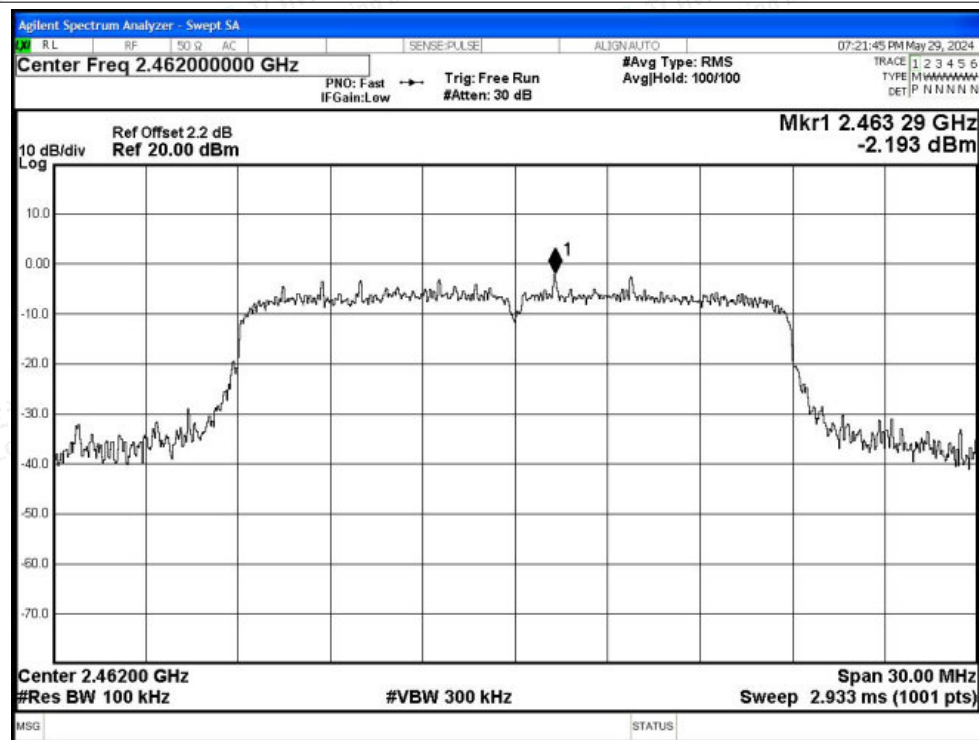
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

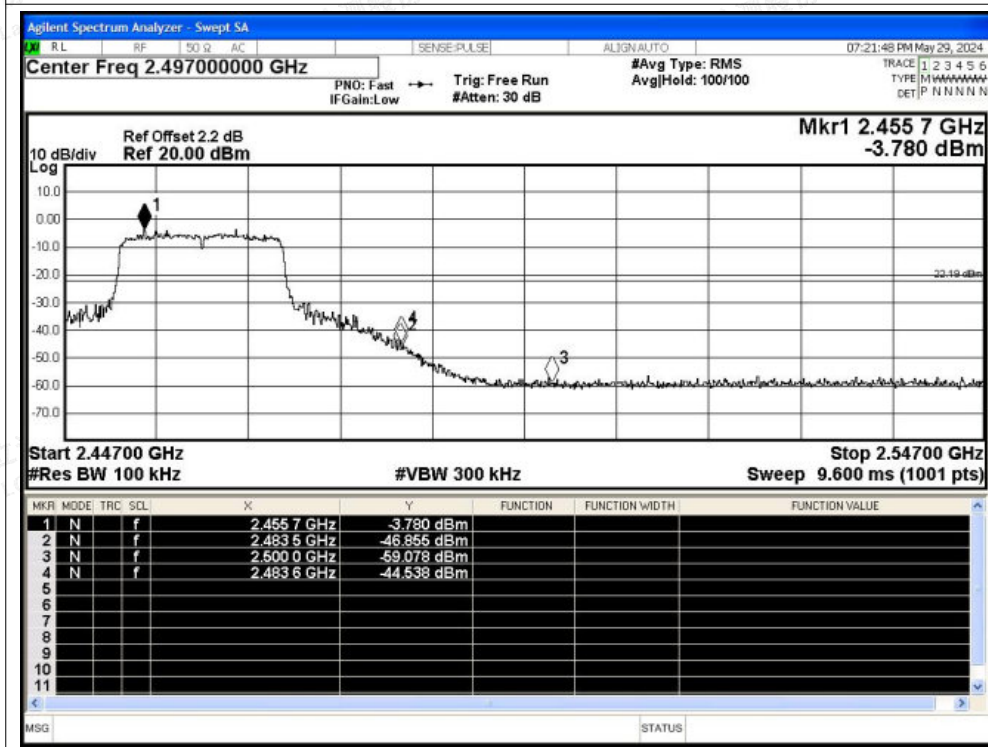
Scan code to check authenticity



## Band Edge NVNT n20 2462MHz Ant1 Ref

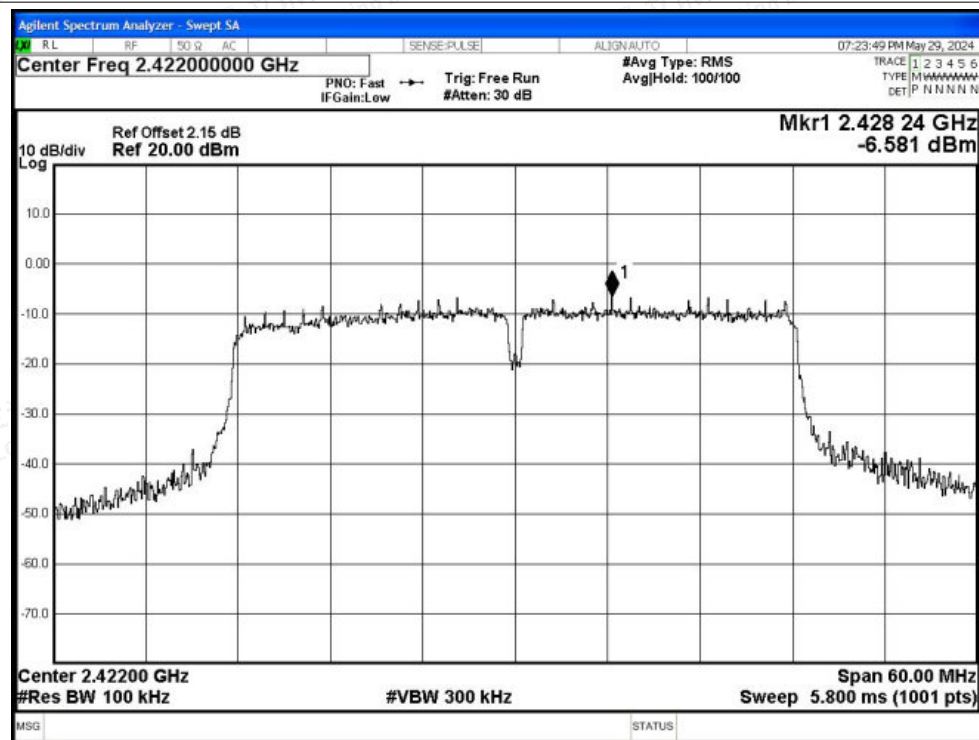


## Band Edge NVNT n20 2462MHz Ant1 Emission

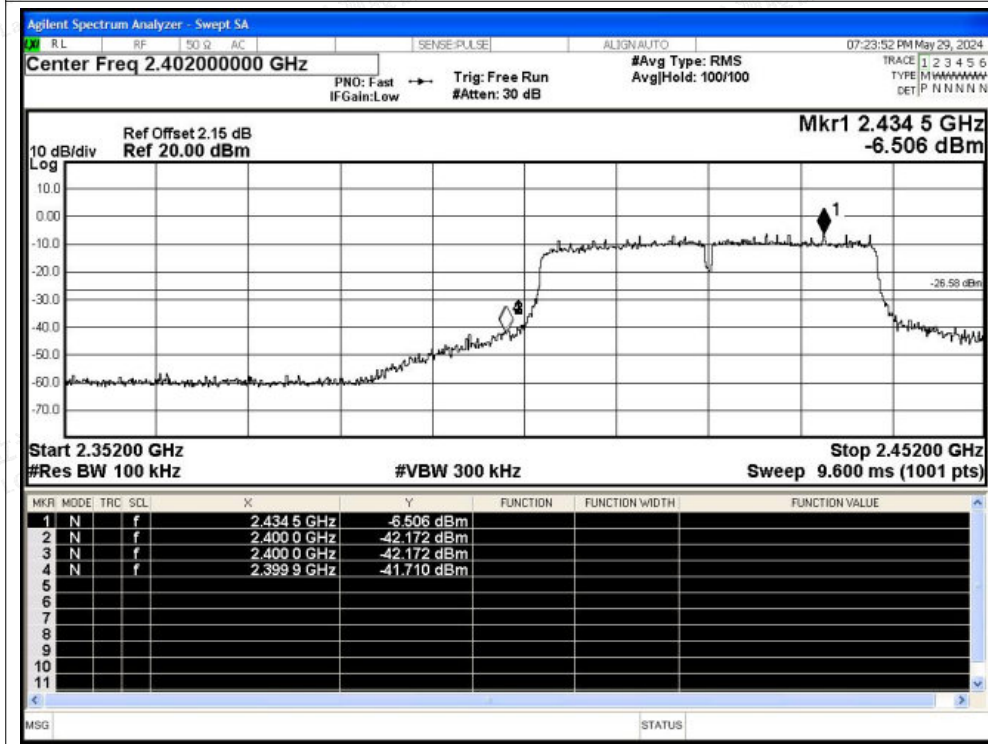




## Band Edge NVNT n40 2422MHz Ant1 Ref

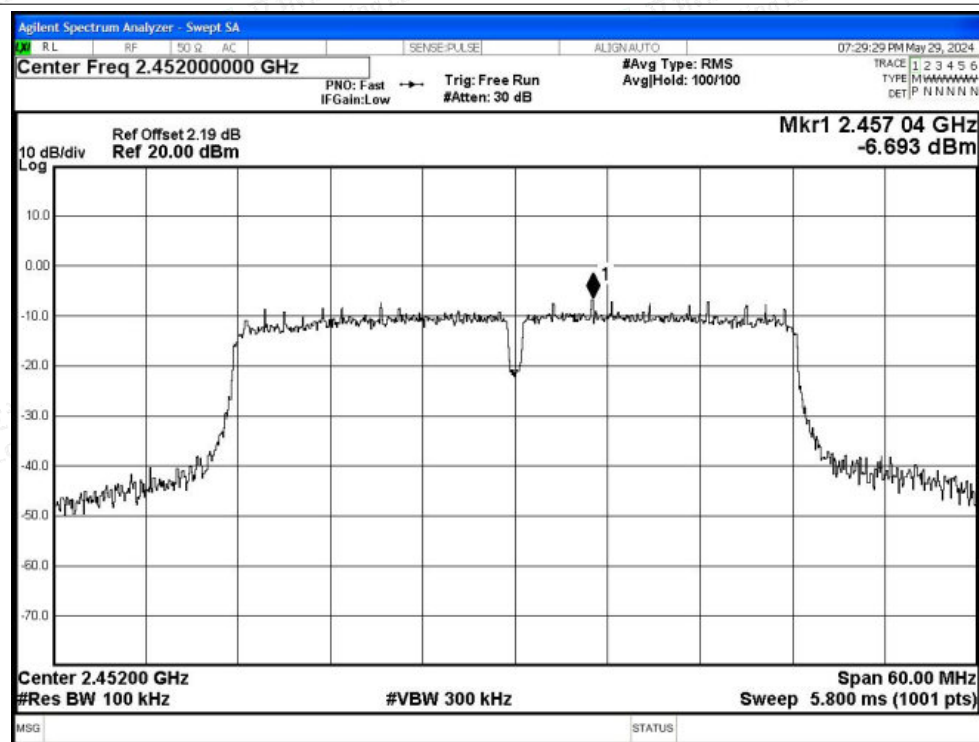


## Band Edge NVNT n40 2422MHz Ant1 Emission

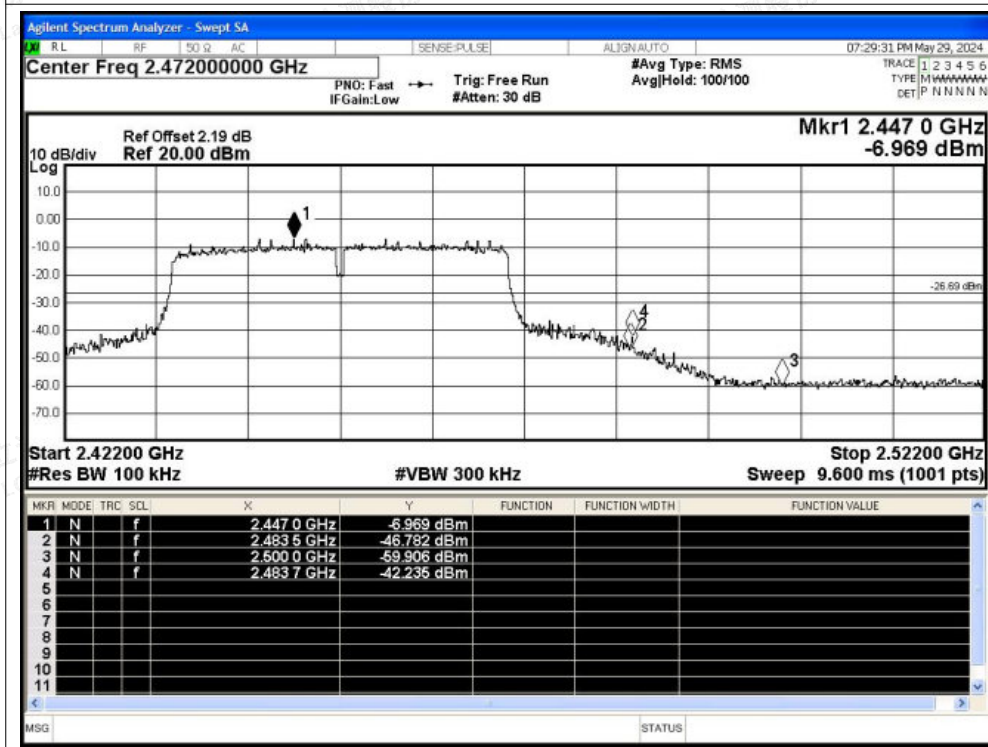




## Band Edge NVNT n40 2452MHz Ant1 Ref



## Band Edge NVNT n40 2452MHz Ant1 Emission





| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b    | 2412            | Ant2    | -45.57          | -20         | Pass    |
| NVNT      | b    | 2462            | Ant2    | -61.04          | -20         | Pass    |
| NVNT      | g    | 2412            | Ant2    | -31.64          | -20         | Pass    |
| NVNT      | g    | 2462            | Ant2    | -43.8           | -20         | Pass    |
| NVNT      | n20  | 2412            | Ant2    | -30.95          | -20         | Pass    |
| NVNT      | n20  | 2462            | Ant2    | -42.48          | -20         | Pass    |
| NVNT      | n40  | 2422            | Ant2    | -33.59          | -20         | Pass    |
| NVNT      | n40  | 2452            | Ant2    | -36.06          | -20         | Pass    |



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Scan code to check authenticity

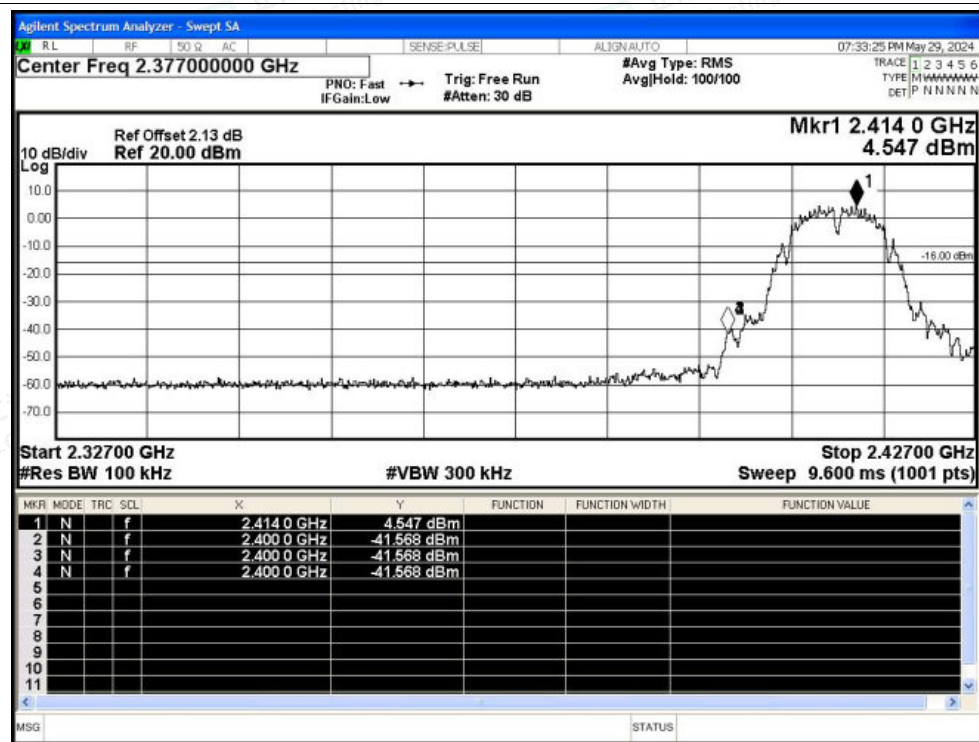


## Test Graphs

## Band Edge NVNT b 2412MHz Ant2 Ref



## Band Edge NVNT b 2412MHz Ant2 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

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