



## Appendix A

### RF Test Data for 5.2GWIFI (Conducted Measurement)

**Product Name: AURORA**

**Test Model: 7120+3120**

**Environmental Conditions**

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.9°C    |
| Relative Humidity: | 52.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Ling Zhu  |
| Supervised by:     | Li Huan   |





### A.1 26dB Bandwidth

| TestMode   | Antenna | Channel | 26db EBW [MHz] | Frequency (MHz) | Limit[MHz] | Verdict |
|------------|---------|---------|----------------|-----------------|------------|---------|
| 11AC40SISO | Ant1    | 5190    | 52.51          | 5192.850        | ---        | PASS    |
|            |         | 5230    | 56.15          | 5228.914        | ---        | PASS    |
| 11AC40SISO | Ant2    | 5190    | 54.72          | 5192.382        | ---        | PASS    |
|            |         | 5230    | 55.09          | 5231.836        | ---        | PASS    |
| 11AC40SISO | Ant3    | 5190    | 53.87          | 5190.000        | ---        | PASS    |
|            |         | 5230    | 50.30          | 5234.116        | ---        | PASS    |
| 11AC40SISO | Ant4    | 5190    | 49.46          | 5188.818        | ---        | PASS    |
|            |         | 5230    | 58.86          | 5228.488        | ---        | PASS    |

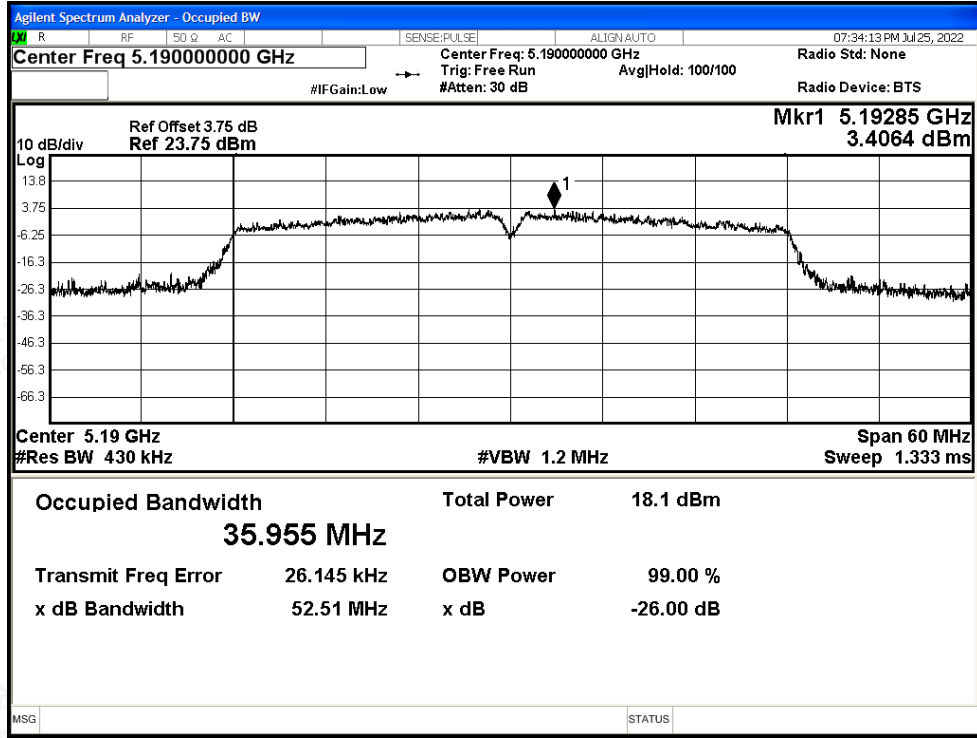


Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
Scan code to check authenticity

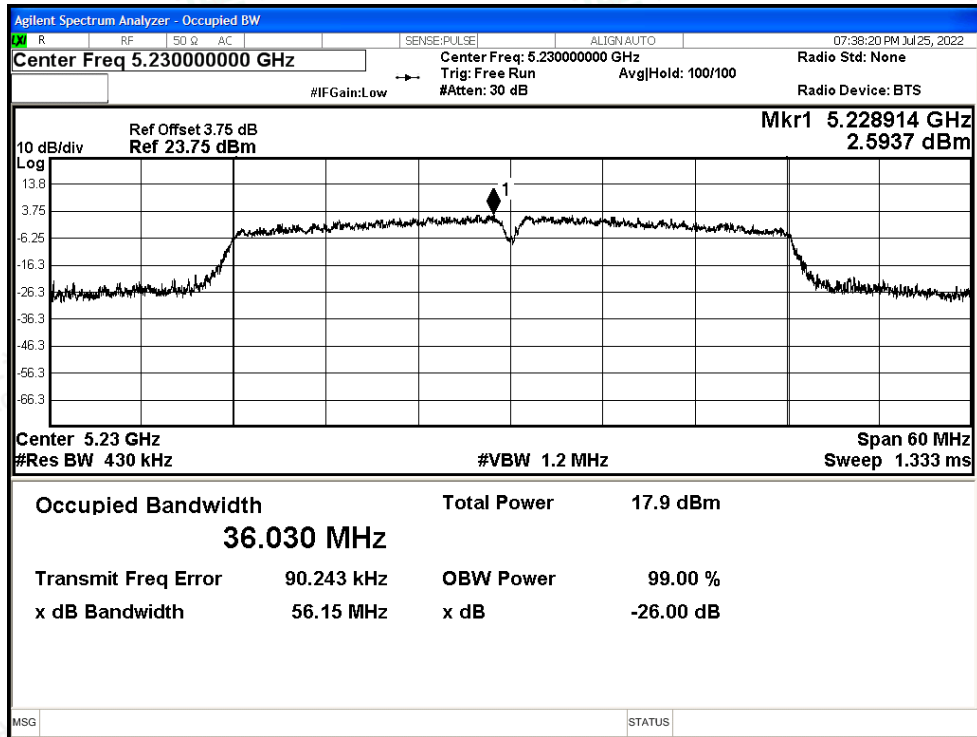


Test Graphs

OBW NVNT ac40 5190MHz Ant1



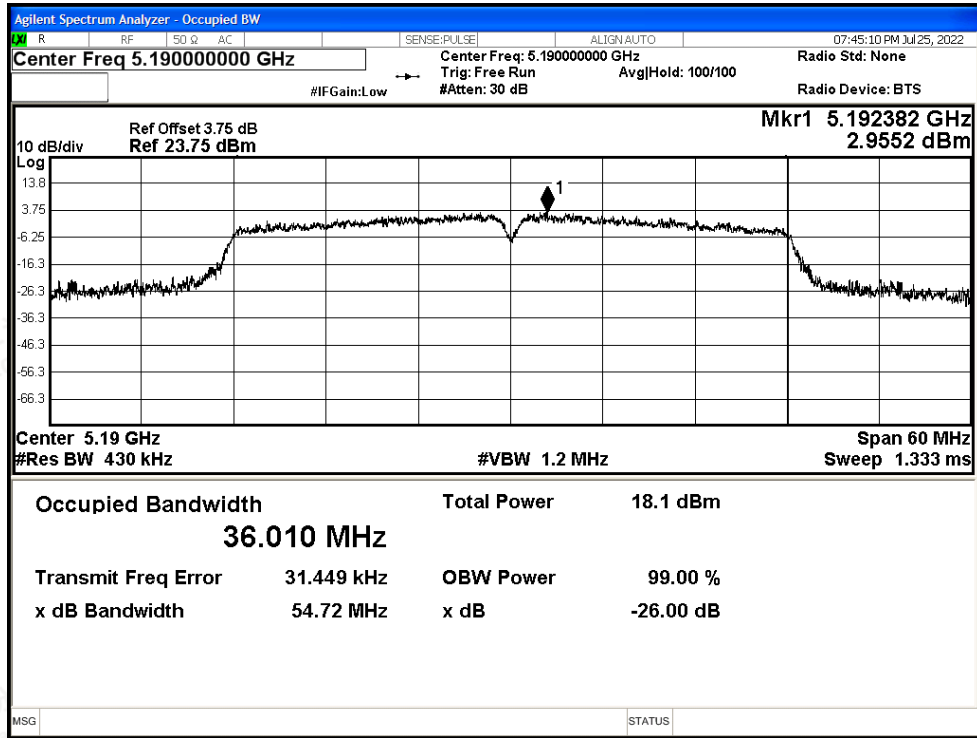
OBW NVNT ac40 5230MHz Ant1



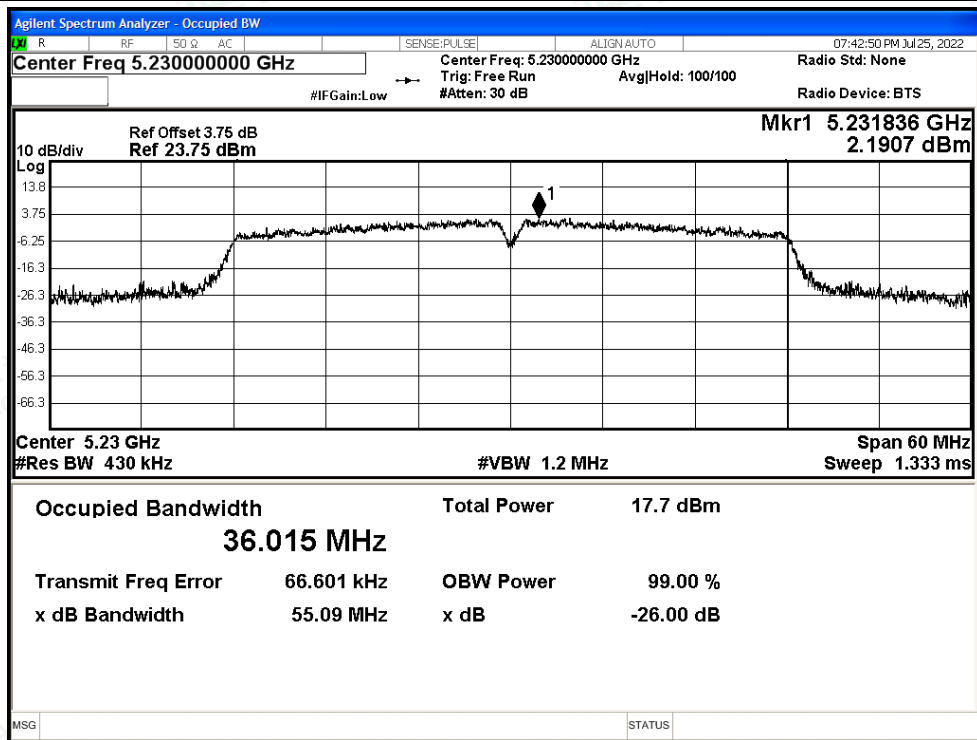


Test Graphs

OBW NVNT ac40 5190MHz Ant2



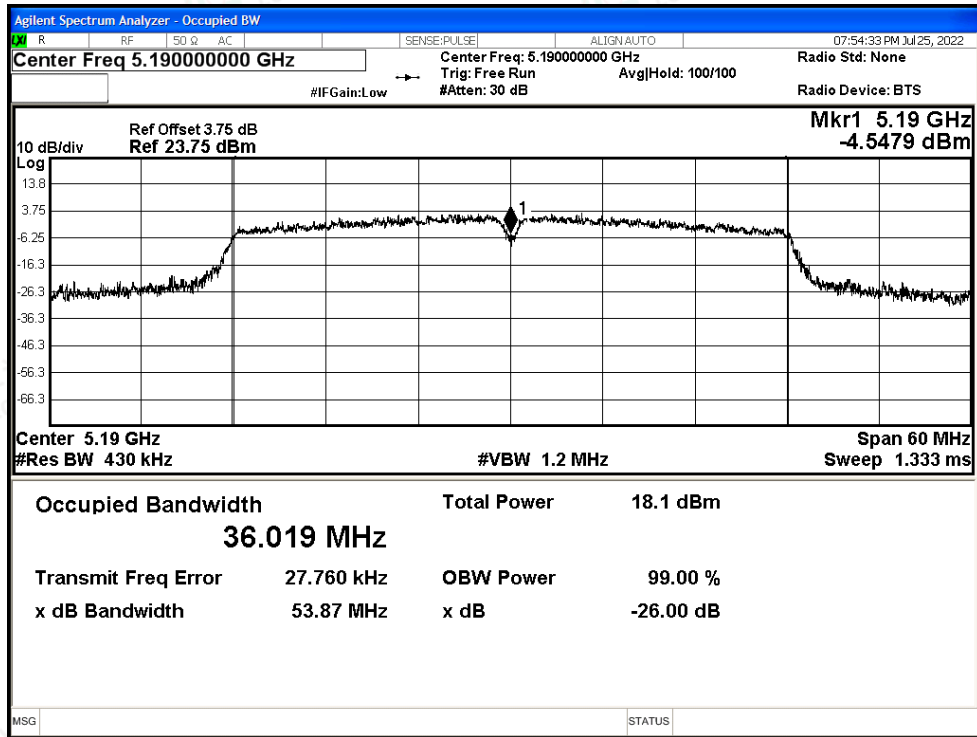
OBW NVNT ac40 5230MHz Ant2



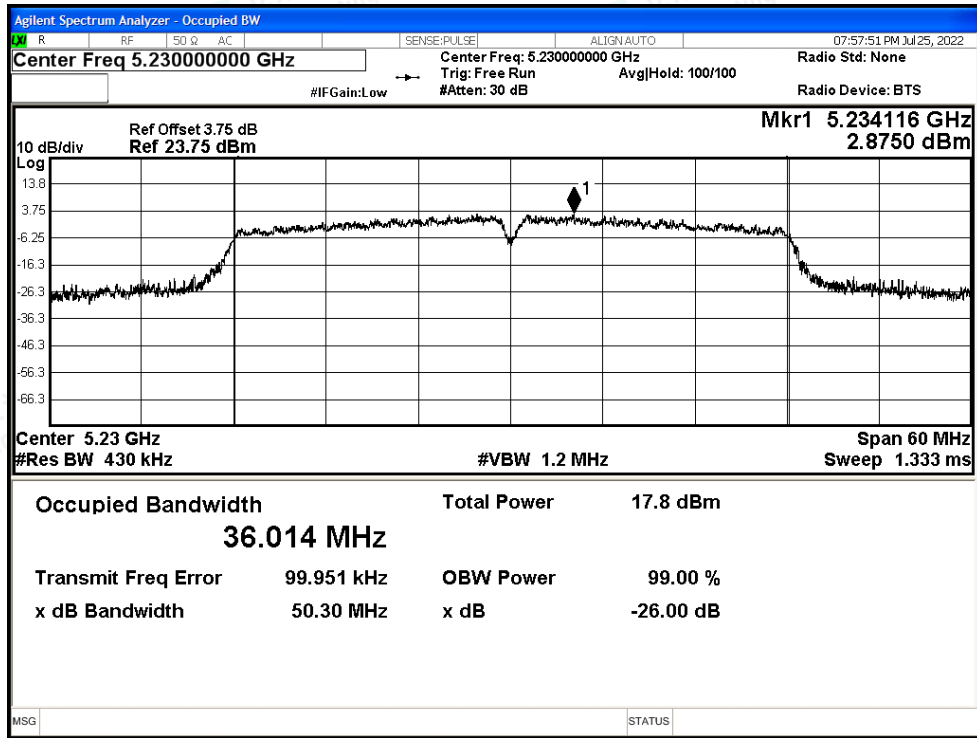


Test Graphs

OBW NVNT ac40 5190MHz Ant3



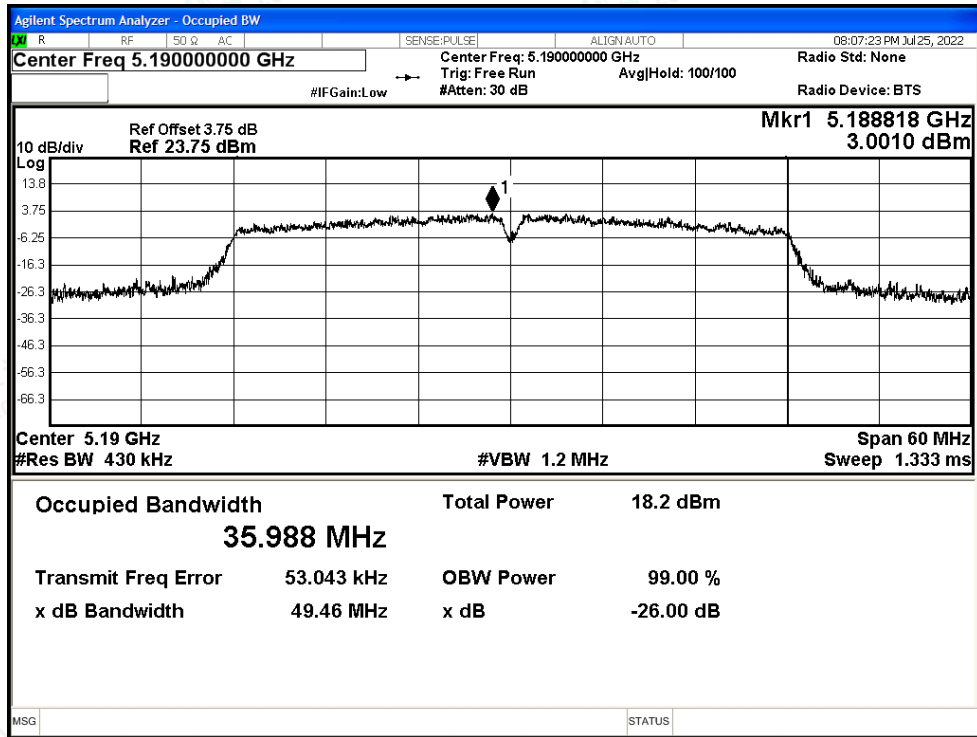
OBW NVNT ac40 5230MHz Ant3



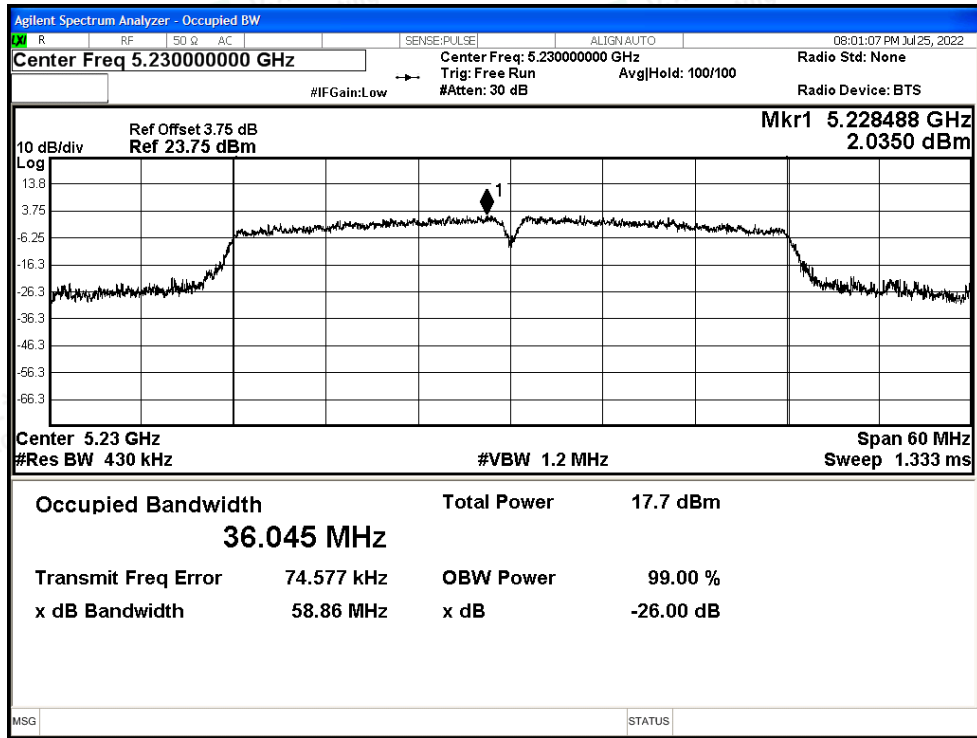


Test Graphs

OBW NVNT ac40 5190MHz Ant4



OBW NVNT ac40 5230MHz Ant4





## A.2 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|------------------|-------------------|-------------|---------|
| NVNT      | ac40 | 5190            | Ant1    | 12.36                 | 0.23             | 12.59             | 30          | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 12.02                 | 0.23             | 12.25             | 30          | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 12.29                 | 0.23             | 12.52             | 30          | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 11.77                 | 0.22             | 11.99             | 30          | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 12.4                  | 0.22             | 12.62             | 30          | Pass    |
| NVNT      | ac40 | 5230            | Ant3    | 11.97                 | 0.22             | 12.19             | 30          | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 12.42                 | 0.23             | 12.65             | 30          | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 11.94                 | 0.23             | 12.17             | 30          | Pass    |

### MIMO

| TestMode | Channel | Ant 1 [Dbm] | Ant 2 [Dbm] | Ant 3 [Dbm] | Ant 4 [Dbm] | MIMO [dBm] | Limit [dBm] | Verdict |
|----------|---------|-------------|-------------|-------------|-------------|------------|-------------|---------|
| 11AC40   | 5190    | 12.59       | 12.52       | 12.62       | 12.65       | 18.62      | 24.98       | PASS    |
|          | 5230    | 12.25       | 11.99       | 12.19       | 12.17       | 18.17      | 24.98       | PASS    |



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 Scan code to check authenticity



### A.3 Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------------|------------------|-----------------|-------------|---------|
| NVNT      | ac40 | 5190            | Ant1    | -1.96               | 0.23             | -1.73           | 17.00       | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | -4.14               | 0.23             | -3.91           | 17.00       | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | -3.38               | 0.23             | -3.15           | 17.00       | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | -4.23               | 0.22             | -4.01           | 17.00       | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | -3.1                | 0.22             | -2.88           | 17.00       | Pass    |
| NVNT      | ac40 | 5230            | Ant3    | -4.54               | 0.22             | -4.32           | 17.00       | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | -3.85               | 0.23             | -3.62           | 17.00       | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | -2.9                | 0.23             | -2.67           | 17.00       | Pass    |

#### MIMO

| Test Mode | Channel | Frequency (MHz) | Ant 1 Power Density (Dbm /Mhz) | Ant 2 Power Density (Dbm /Mhz) | Ant 3 Power Density (Dbm /Mhz) | Ant 4 Power Density (Dbm /Mhz) | MIMO Power Density (dBm /MHz) | Limit (dBm /MHz) | Verdict |
|-----------|---------|-----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|------------------|---------|
| 11AC40    | 38      | 5190            | -1.73                          | -3.15                          | -2.88                          | -3.62                          | 3.23                          | 11.98            | Pass    |
|           | 46      | 5230            | -3.91                          | -4.01                          | -4.32                          | -2.67                          | 2.34                          |                  | Pass    |

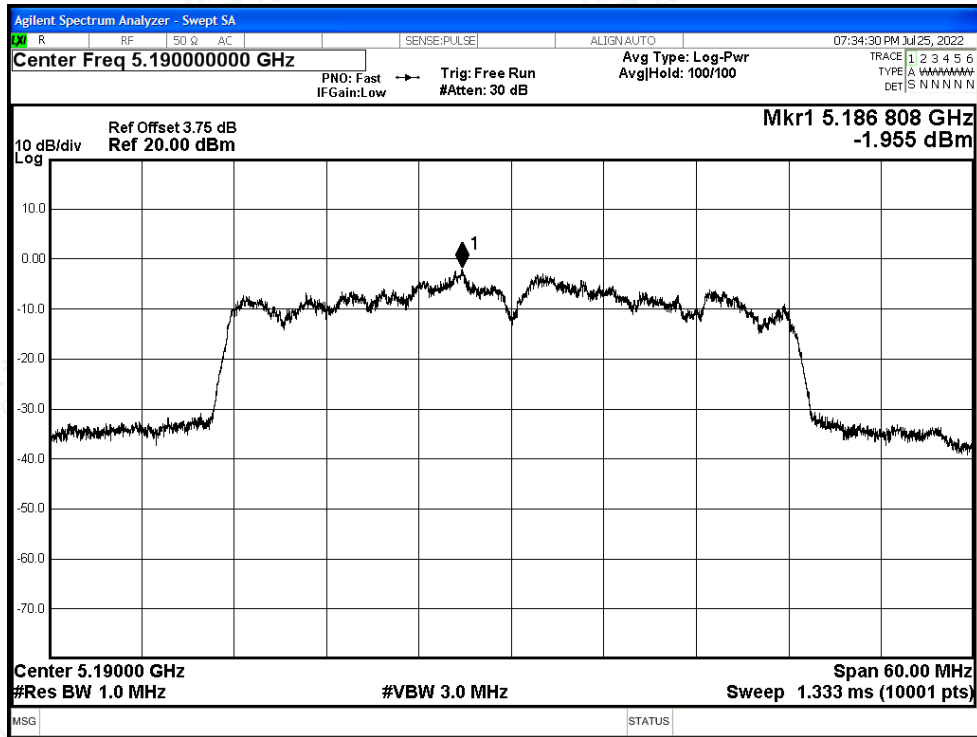




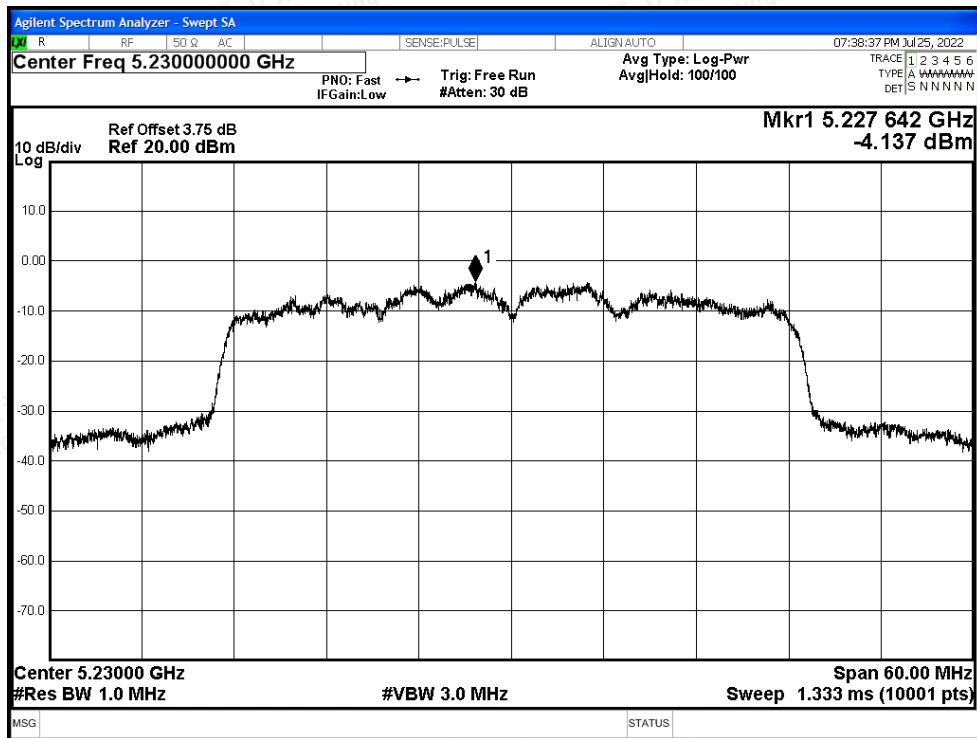


Test Graphs

PSD NVNT ac40 5190MHz Ant1



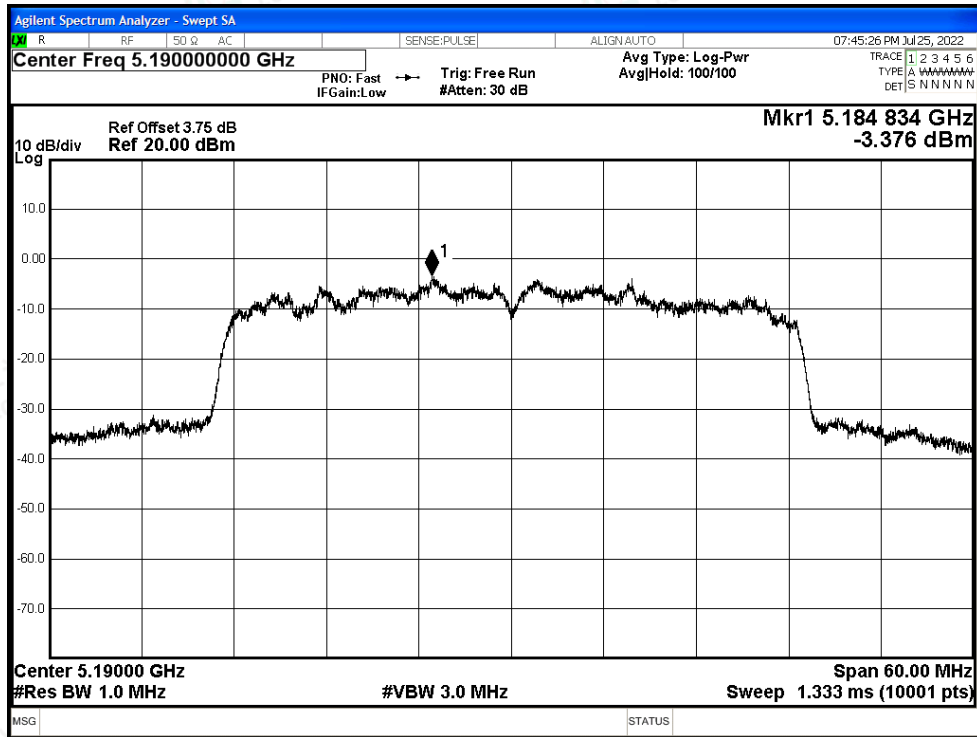
PSD NVNT ac40 5230MHz Ant1



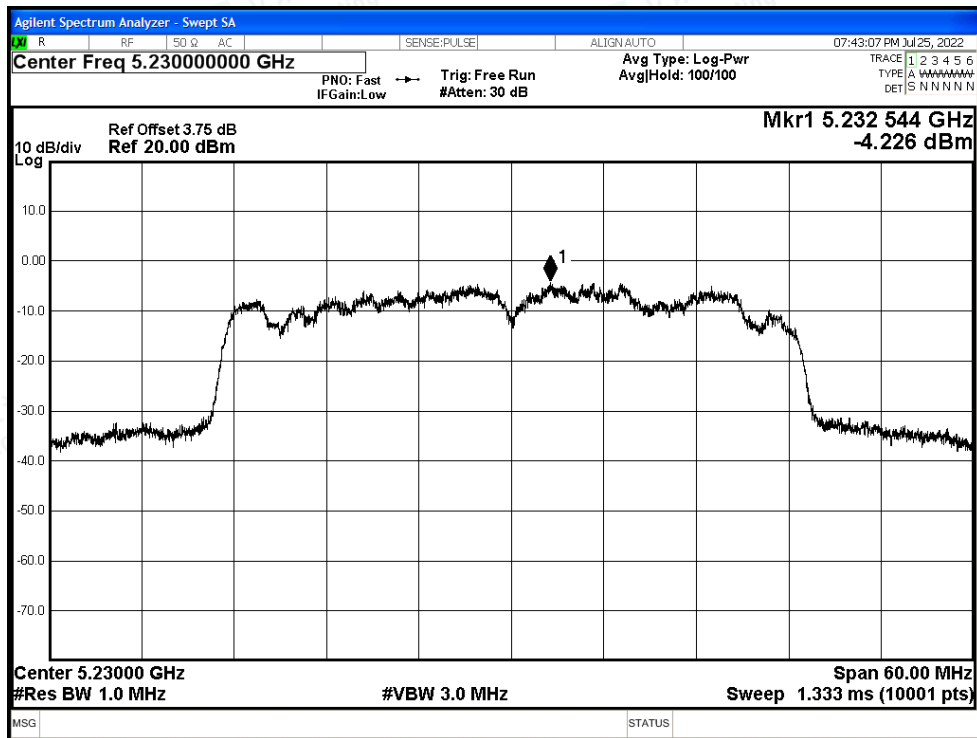


Test Graphs

PSD NVNT ac40 5190MHz Ant2



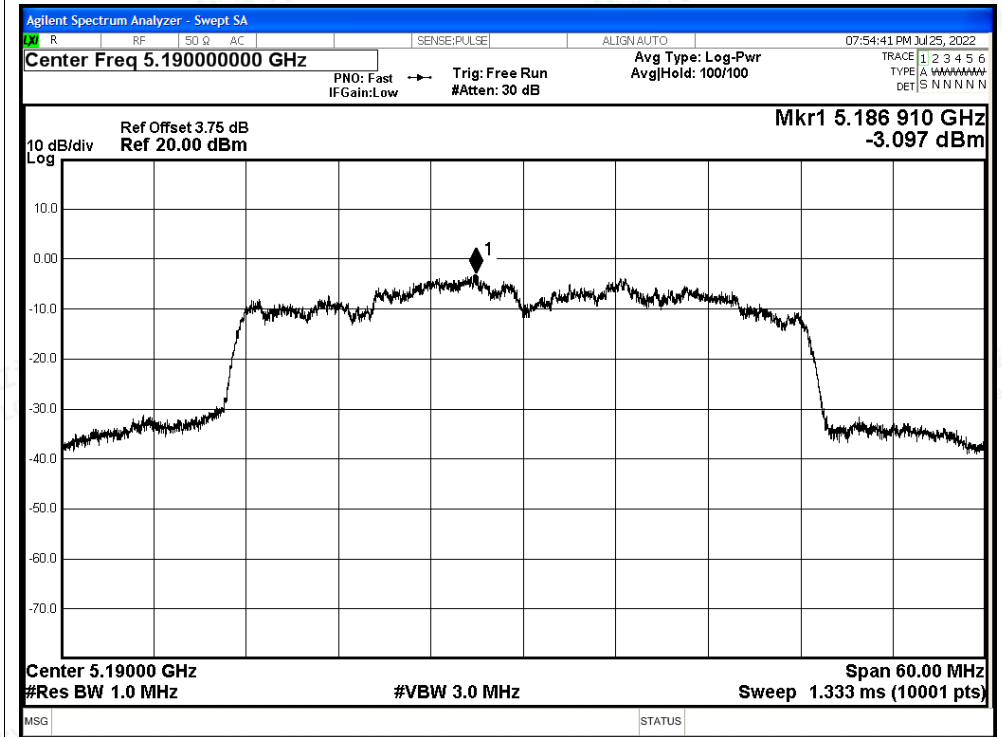
PSD NVNT ac40 5230MHz Ant2



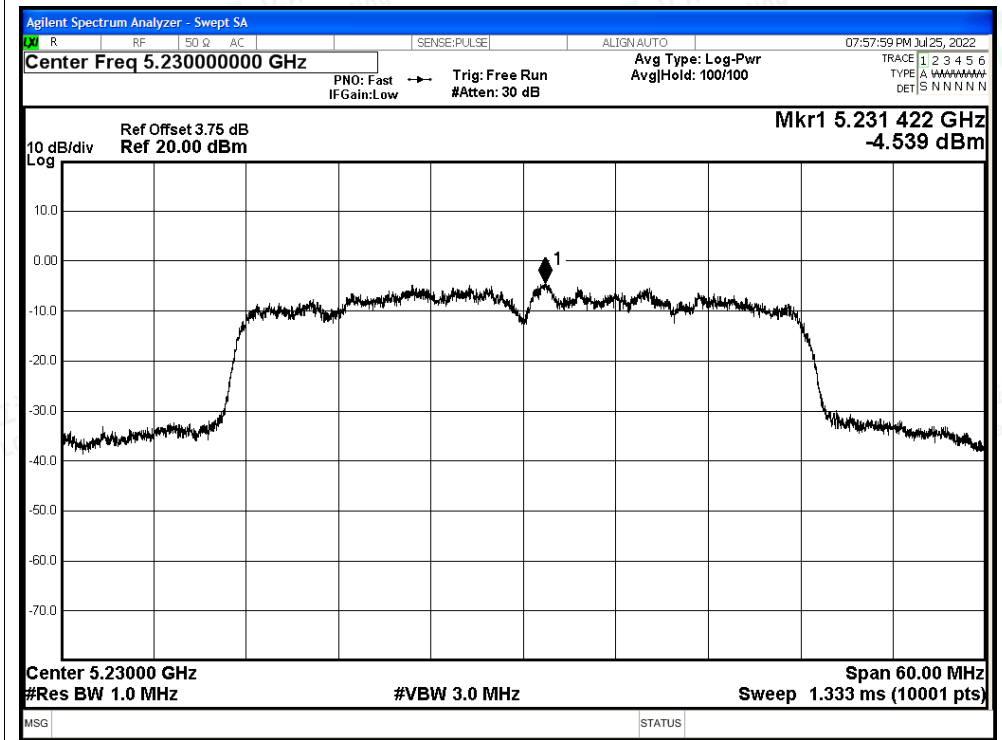


Test Graphs

PSD NVNT ac40 5190MHz Ant3



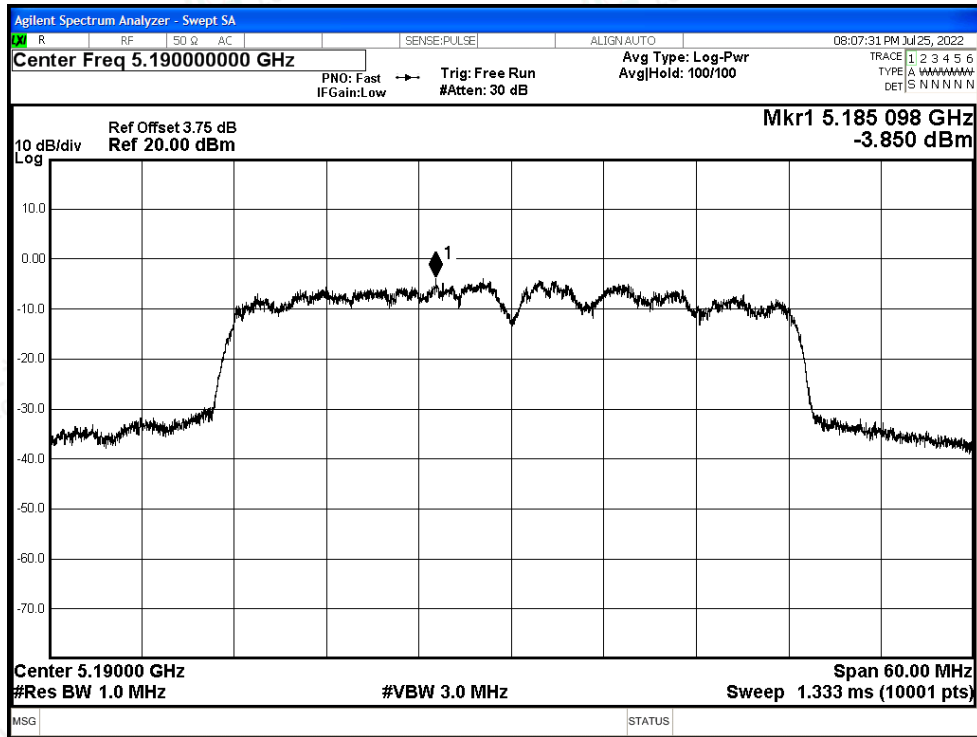
PSD NVNT ac40 5230MHz Ant3



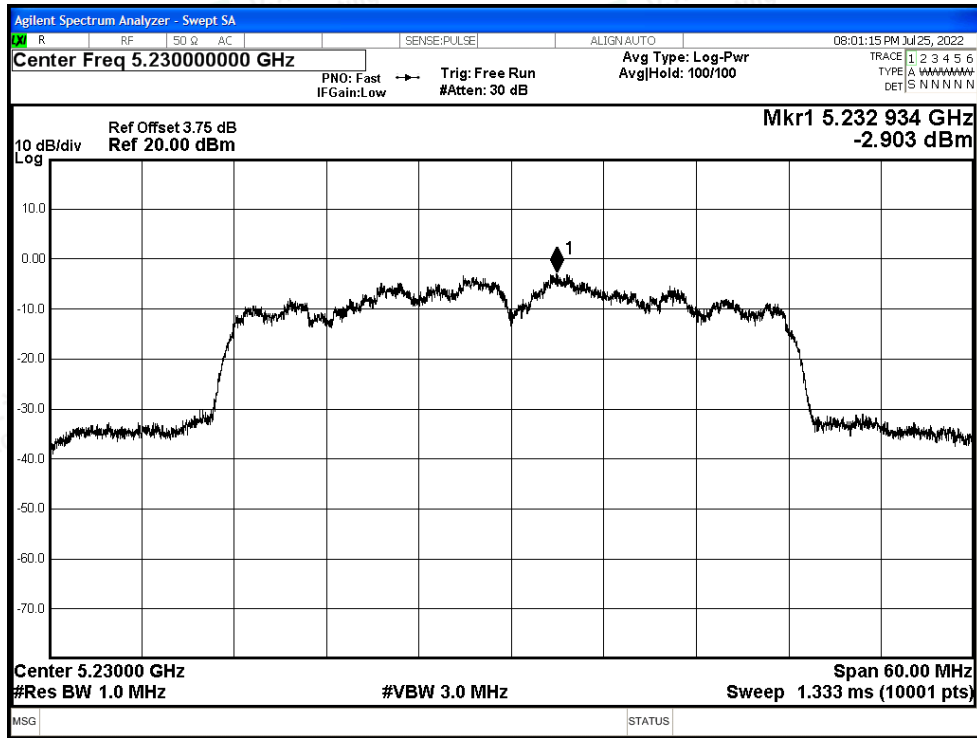


Test Graphs

PSD NVNT ac40 5190MHz Ant4



PSD NVNT ac40 5230MHz Ant4





## A.4 Restrict Band

| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | ac40 | 5190            | Ant1    | 4500            | -63.13      | 5          | 37.10      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant1    | 4500            | -73.97      | 5          | 26.26      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant1    | 5149.7          | -42.14      | 5          | 58.09      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant1    | 5149.7          | -61.08      | 5          | 39.15      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant1    | 5150            | -42.14      | 5          | 58.09      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant1    | 5150            | -61.08      | 5          | 39.15      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5350            | -54.74      | 5          | 45.49      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5350            | -64.39      | 5          | 35.84      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5366.85         | -53.1       | 5          | 47.13      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5350.11         | -64.39      | 5          | 35.84      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5460            | -57.34      | 5          | 42.89      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5460            | -68.1       | 5          | 32.13      | Average  | 54             | Pass    |

| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | ac40 | 5190            | Ant2    | 4500            | -64.13      | 5          | 36.10      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 4500            | -73.22      | 5          | 27.01      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 5146.78         | -49.73      | 5          | 50.50      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 5149.7          | -63.54      | 5          | 36.69      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 5150            | -54.42      | 5          | 45.81      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 5150            | -63.54      | 5          | 36.69      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5350            | -54.61      | 5          | 45.62      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5350            | -64.84      | 5          | 35.39      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5360.64         | -54.3       | 5          | 45.93      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5350.11         | -64.84      | 5          | 35.39      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5460            | -58.24      | 5          | 41.99      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5460            | -68.65      | 5          | 31.58      | Average  | 54             | Pass    |

| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | ac40 | 5190            | Ant3    | 4500            | -63.81      | 5          | 36.42      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 4500            | -73.68      | 5          | 26.55      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 5149.7          | -53.07      | 5          | 47.16      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 5148.97         | -64.19      | 5          | 36.04      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 5150            | -53.07      | 5          | 47.16      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 5150            | -64.24      | 5          | 35.99      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant3    | 5350            | -54.35      | 5          | 45.88      | Peak     | 68.2           | Pass    |





|      |      |      |      |         |        |   |       |         |      |      |
|------|------|------|------|---------|--------|---|-------|---------|------|------|
| NVNT | ac40 | 5230 | Ant3 | 5350    | -64.26 | 5 | 35.97 | Average | 54   | Pass |
| NVNT | ac40 | 5230 | Ant3 | 5358.75 | -52.63 | 5 | 47.60 | Peak    | 68.2 | Pass |
| NVNT | ac40 | 5230 | Ant3 | 5350.11 | -64.26 | 5 | 35.97 | Average | 54   | Pass |
| NVNT | ac40 | 5230 | Ant3 | 5460    | -59.05 | 5 | 41.18 | Peak    | 68.2 | Pass |
| NVNT | ac40 | 5230 | Ant3 | 5460    | -67.95 | 5 | 32.28 | Average | 54   | Pass |

| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | ac40 | 5190            | Ant4    | 4500            | -63.98      | 5          | 36.25      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 4500            | -73.39      | 5          | 26.84      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 5146.05         | -52         | 5          | 48.23      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 5149.7          | -63.66      | 5          | 36.57      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 5150            | -53.16      | 5          | 47.07      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 5150            | -63.66      | 5          | 36.57      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5350            | -56.14      | 5          | 44.09      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5350            | -64.26      | 5          | 35.97      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5374.41         | -54.42      | 5          | 45.81      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5350.11         | -64.26      | 5          | 35.97      | Average  | 54             | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5460            | -59.31      | 5          | 40.92      | Peak     | 68.2           | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5460            | -67.93      | 5          | 32.30      | Average  | 54             | Pass    |

**MIMO-11AC40-5190**

| Spur Freq (MHz) | Ant 1 [Dbm] | Ant 2 [Dbm] | Ant 3 [Dbm] | Ant 4 [Dbm] | MIMO [dBm] | Gain (dBi) | MIMO (dBuV/m) | Limit (dBuV/m) | Detector | Verdict |
|-----------------|-------------|-------------|-------------|-------------|------------|------------|---------------|----------------|----------|---------|
| 4500            | -63.13      | -64.13      | -63.81      | -63.98      | -57.72     | 11.02      | 48.53         | 68.2           | Peak     | Pass    |
| 4500            | -73.97      | -73.22      | -73.68      | -73.39      | -67.54     | 11.02      | 38.71         | 54             | Average  | Pass    |
| 5150            | -42.14      | -54.42      | -53.07      | -53.16      | -41.28     | 11.02      | 64.97         | 68.2           | Peak     | Pass    |
| 5150            | -61.08      | -63.54      | -64.24      | -63.66      | -56.93     | 11.02      | 49.32         | 54             | Average  | Pass    |

**MIMO-11AC40-5230**

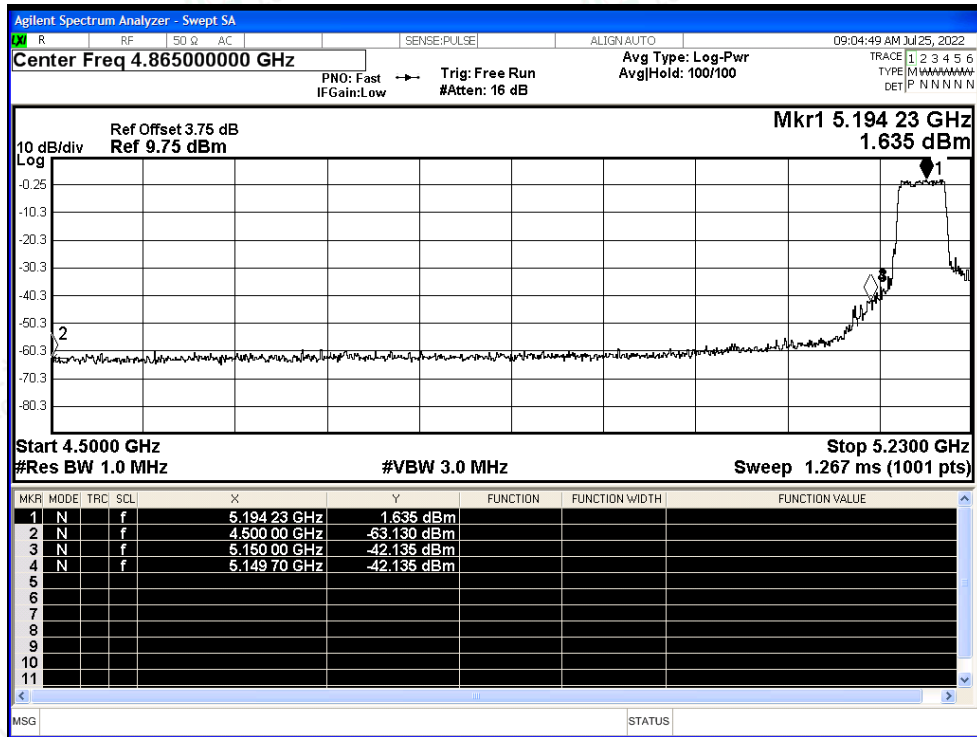
| Spur Freq (MHz) | Ant 1 [Dbm] | Ant 2 [Dbm] | Ant 3 [Dbm] | Ant 4 [Dbm] | MIMO [dBm] | Gain (dBi) | MIMO (dBuV/m) | Limit (dBuV/m) | Detector | Verdict |
|-----------------|-------------|-------------|-------------|-------------|------------|------------|---------------|----------------|----------|---------|
| 5350            | -54.74      | -54.61      | -54.35      | -56.14      | -48.89     | 11.02      | 57.36         | 68.2           | Peak     | Pass    |
| 5350            | -64.39      | -64.84      | -64.26      | -64.26      | -58.41     | 11.02      | 47.84         | 54             | Average  | Pass    |
| 5460            | -57.34      | -58.24      | -59.05      | -59.31      | -52.39     | 11.02      | 53.86         | 68.2           | Peak     | Pass    |
| 5460            | -68.1       | -68.65      | -67.95      | -67.93      | -62.13     | 11.02      | 44.12         | 54             | Average  | Pass    |



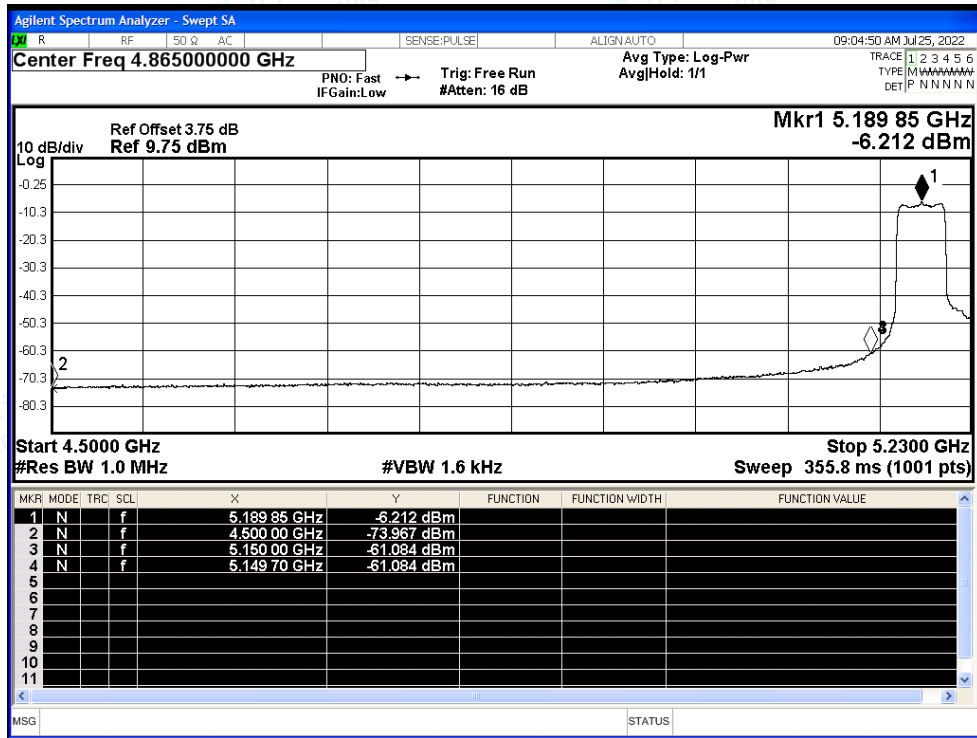


Test Graphs

Restrict Band NVNT ac40 5190MHz Ant1 Peak



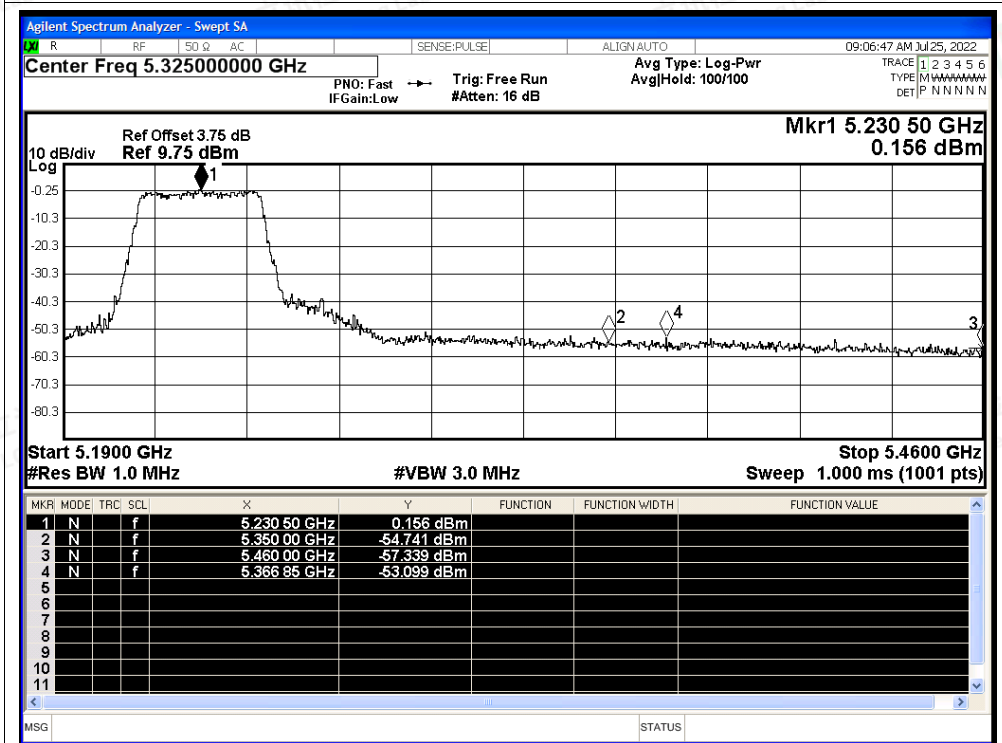
Restrict Band NVNT ac40 5190MHz Ant1 Average



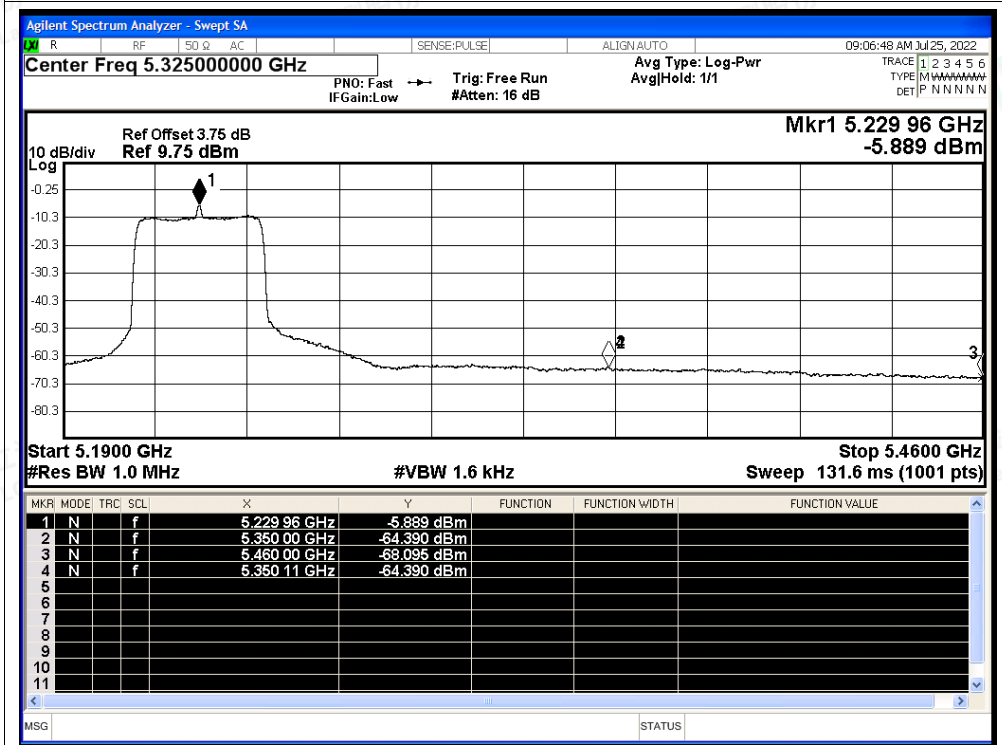




Restrict Band NVNT ac40 5230MHz Ant1 Peak



Restrict Band NVNT ac40 5230MHz Ant1 Average

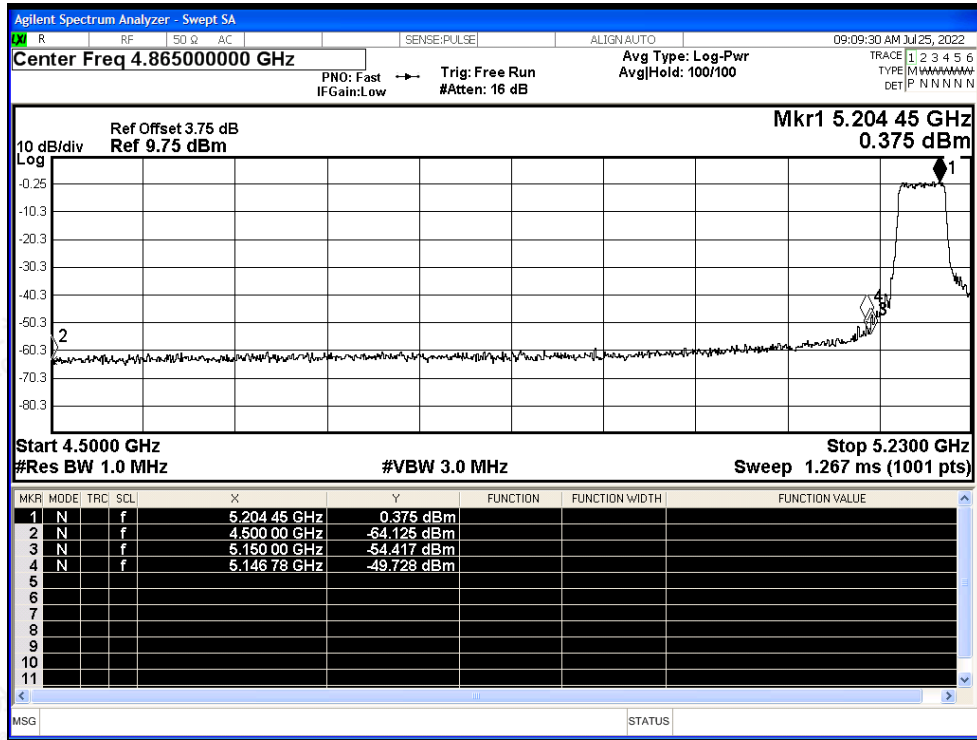




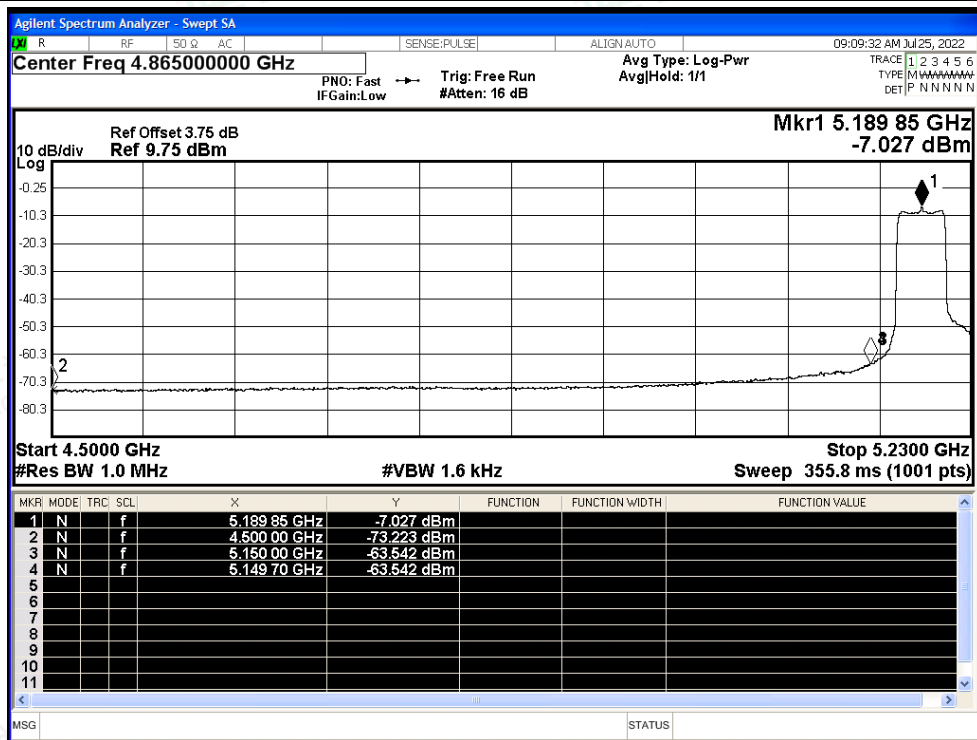


Test Graphs

Restrict Band NVNT ac40 5190MHz Ant2 Peak

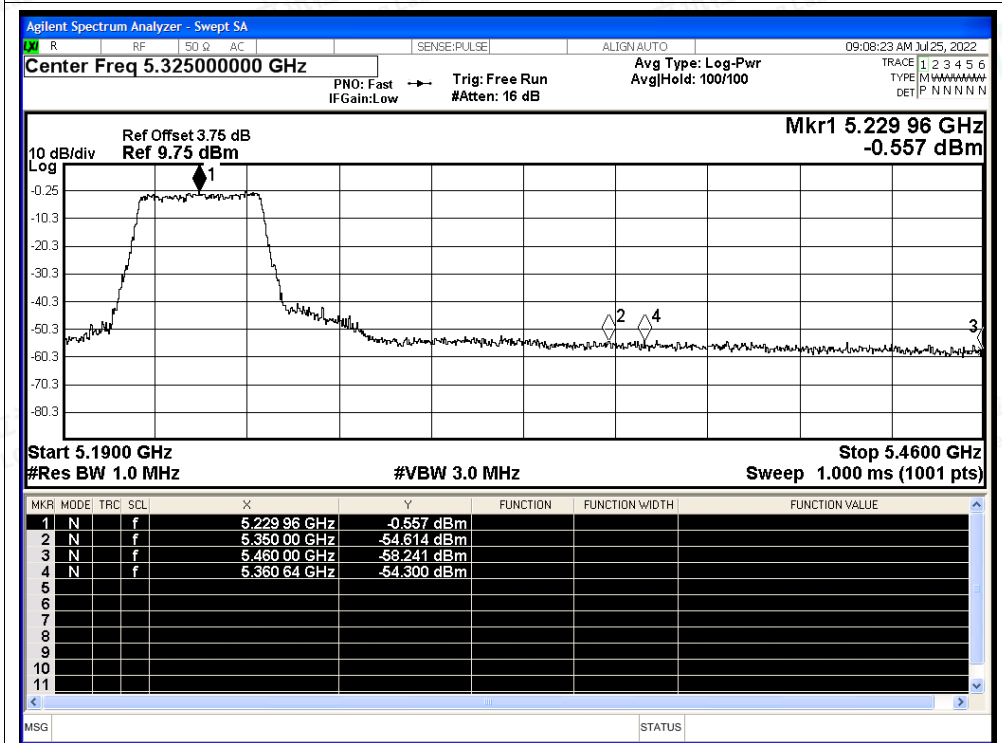


Restrict Band NVNT ac40 5190MHz Ant2 Average

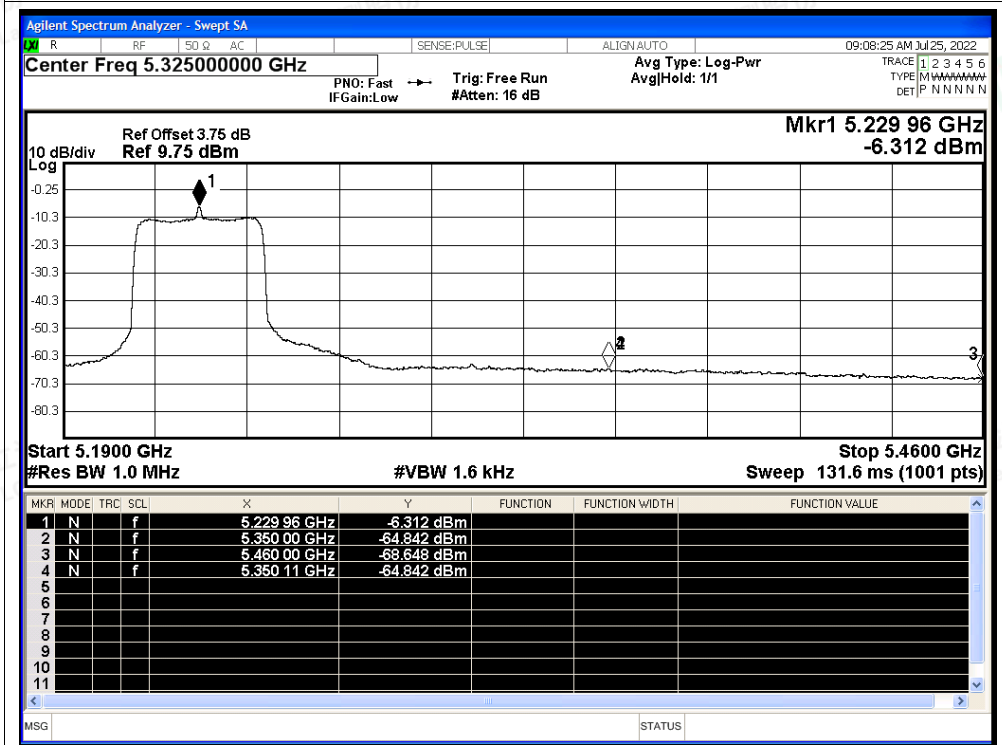




Restrict Band NVNT ac40 5230MHz Ant2 Peak



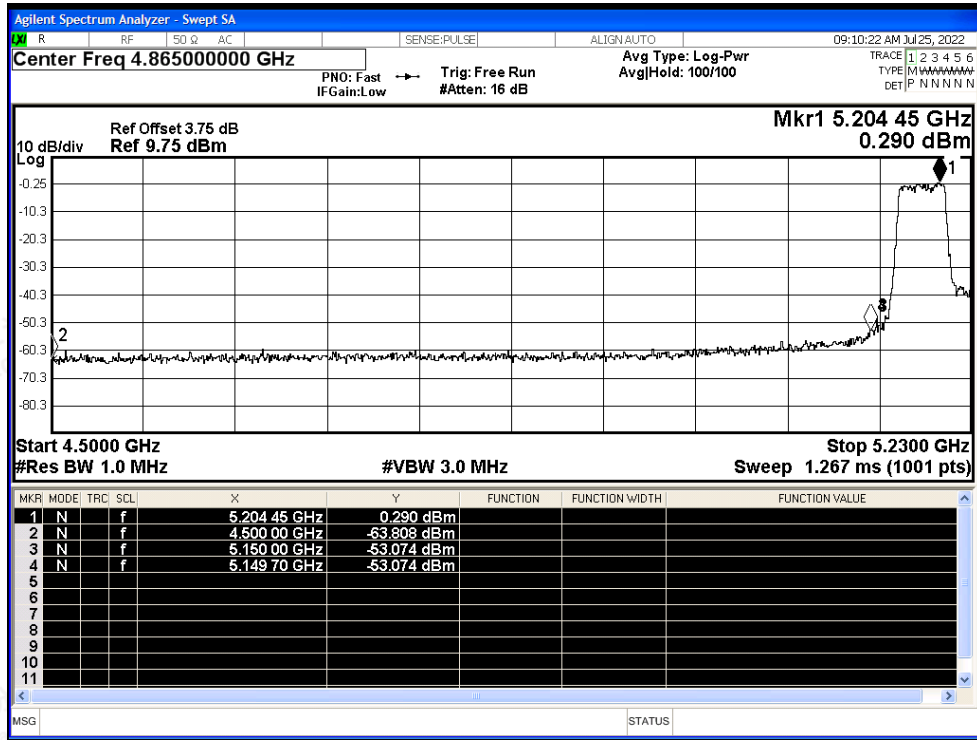
Restrict Band NVNT ac40 5230MHz Ant2 Average



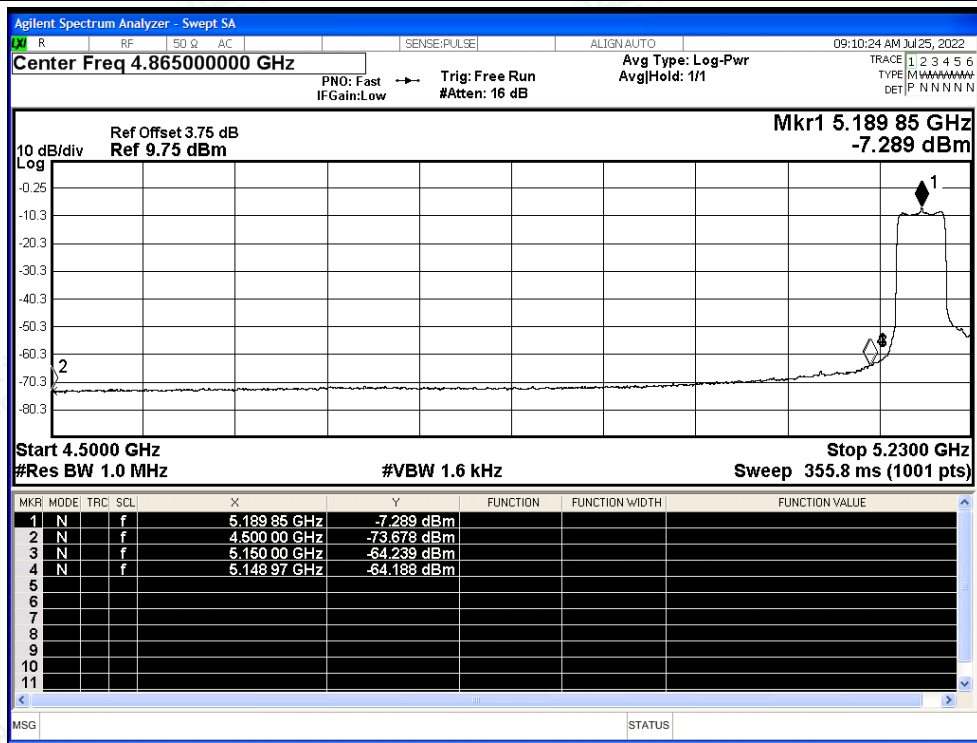


Test Graphs

Restrict Band NVNT ac40 5190MHz Ant3 Peak

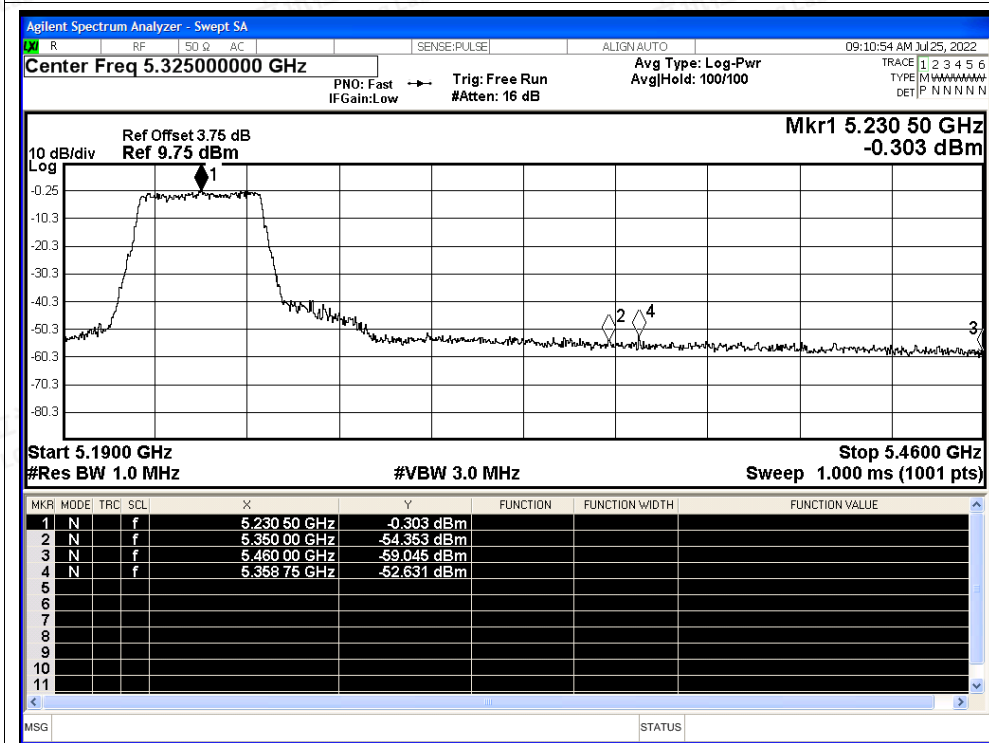


Restrict Band NVNT ac40 5190MHz Ant3 Average

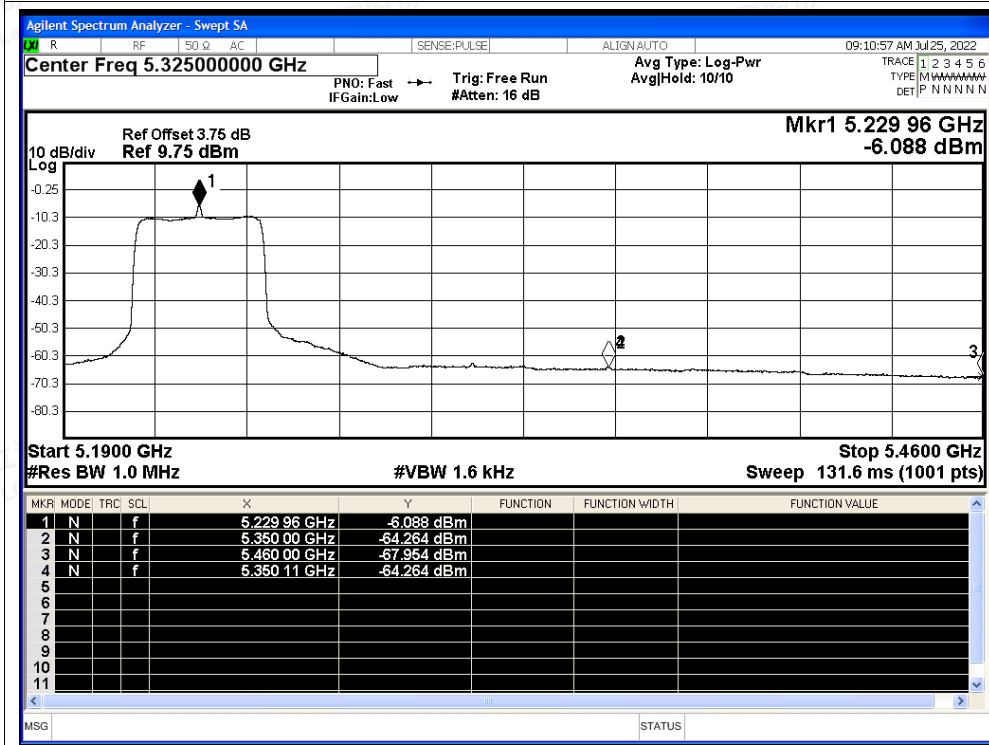




Restrict Band NVNT ac40 5230MHz Ant3 Peak



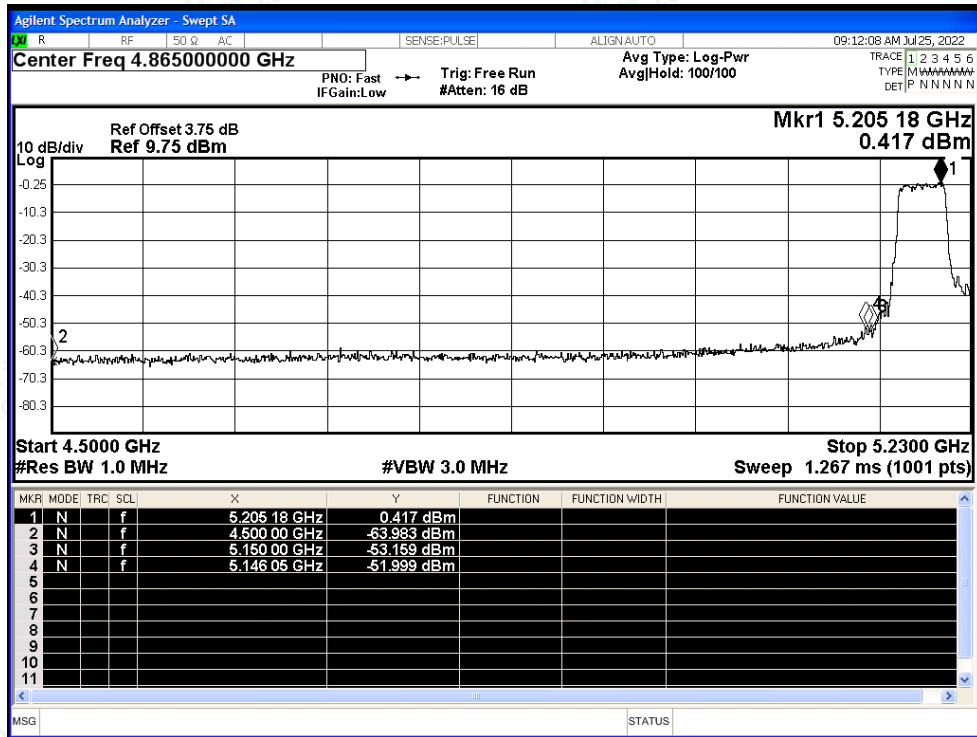
Restrict Band NVNT ac40 5230MHz Ant3 Average



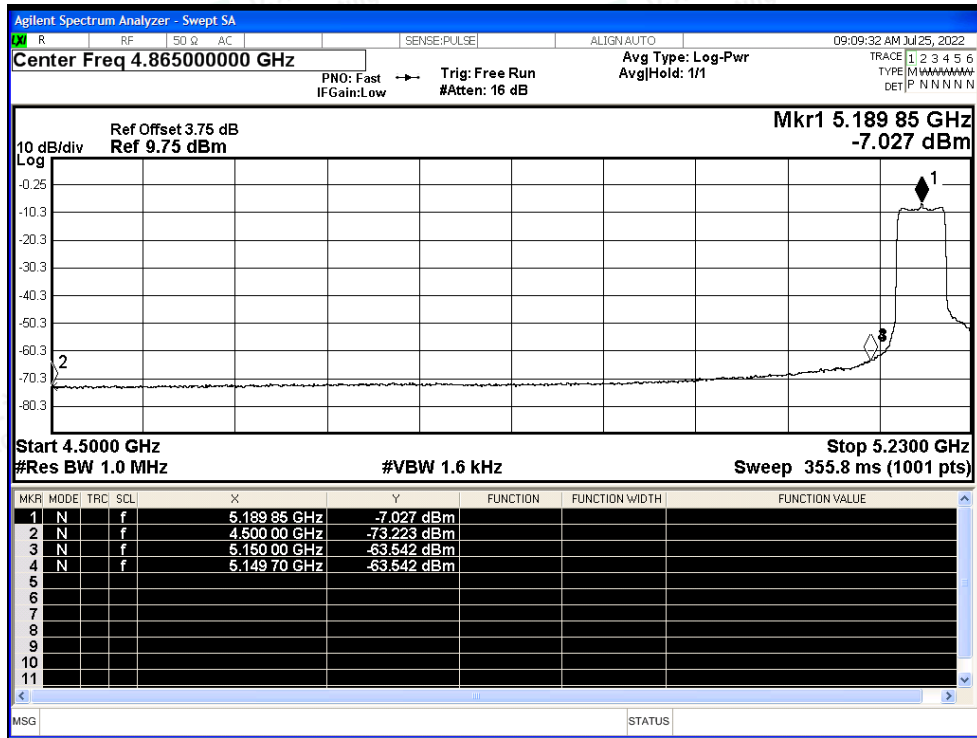


Test Graphs

Restrict Band NVNT ac40 5190MHz Ant4 Peak

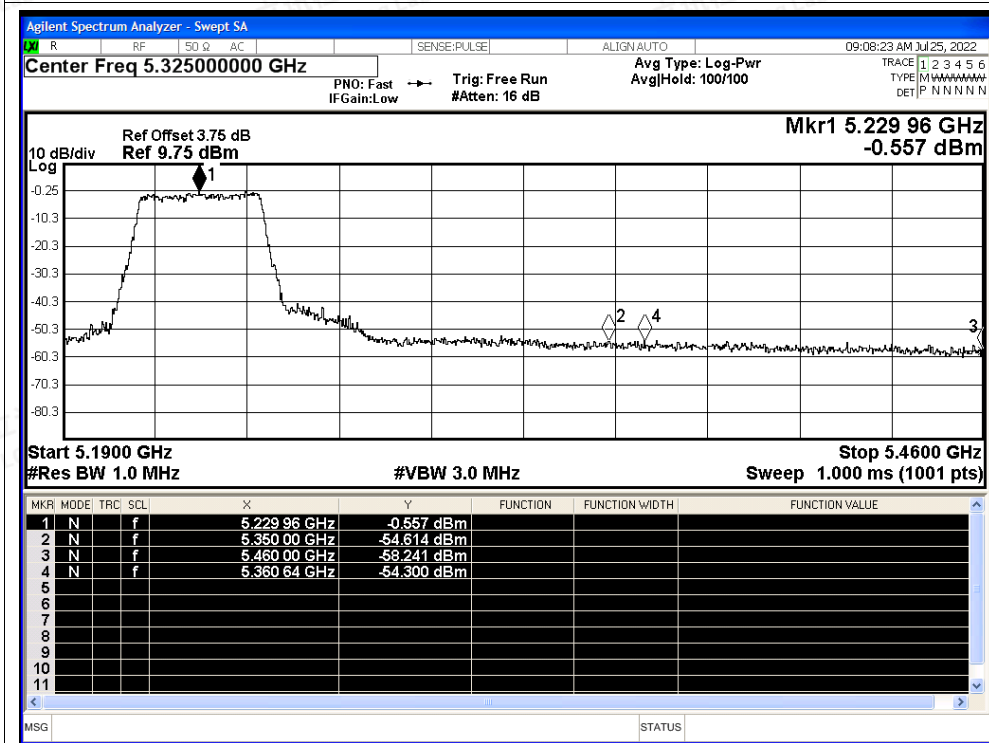


Restrict Band NVNT ac40 5190MHz Ant4 Average

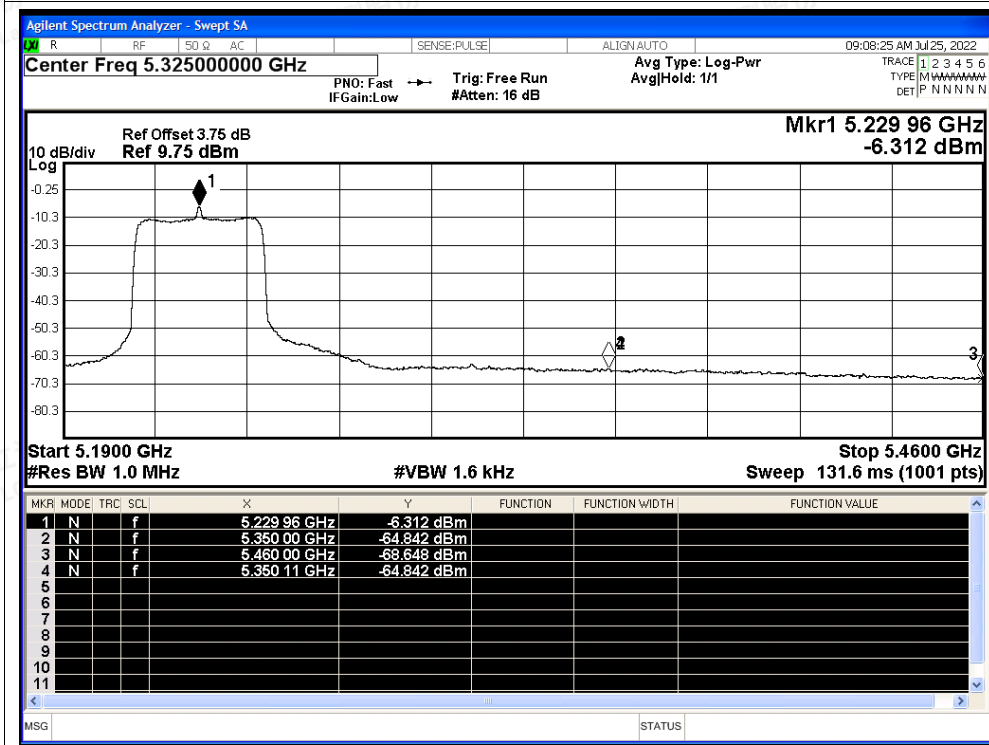




Restrict Band NVNT ac40 5230MHz Ant4 Peak



Restrict Band NVNT ac40 5230MHz Ant4 Average





### A.5 Frequency Stability

| Condition | Mode | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|-----------|------|-----------------|---------|--------------------------|----------------------|-----------------|-------------|---------|
| NVNT      | ac40 | 5190            | Ant1    | 5190                     | 0                    | 0               | 25          | Pass    |
| NVNT      | ac40 | 5230            | Ant1    | 5230                     | 0                    | 0               | 25          | Pass    |
| NVNT      | ac40 | 5190            | Ant2    | 5189.96                  | -40000               | -7.71           | 25          | Pass    |
| NVNT      | ac40 | 5230            | Ant2    | 5230.04                  | 40000                | 7.65            | 25          | Pass    |
| NVNT      | ac40 | 5190            | Ant3    | 5190                     | 0                    | 0               | 25          | Pass    |
| NVNT      | ac40 | 5230            | Ant3    | 5230.04                  | 40000                | 7.65            | 25          | Pass    |
| NVNT      | ac40 | 5190            | Ant4    | 5190                     | 0                    | 0               | 25          | Pass    |
| NVNT      | ac40 | 5230            | Ant4    | 5230                     | 0                    | 0               | 25          | Pass    |



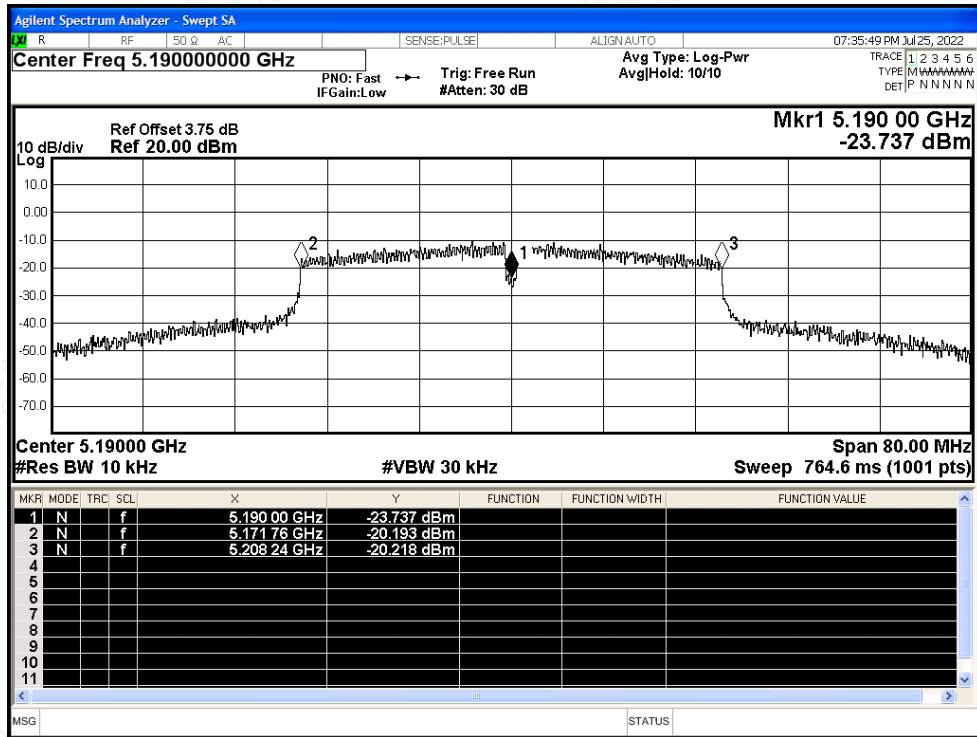
Shenzhen LCS Compliance Testing Laboratory Ltd.  
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
Scan code to check authenticity



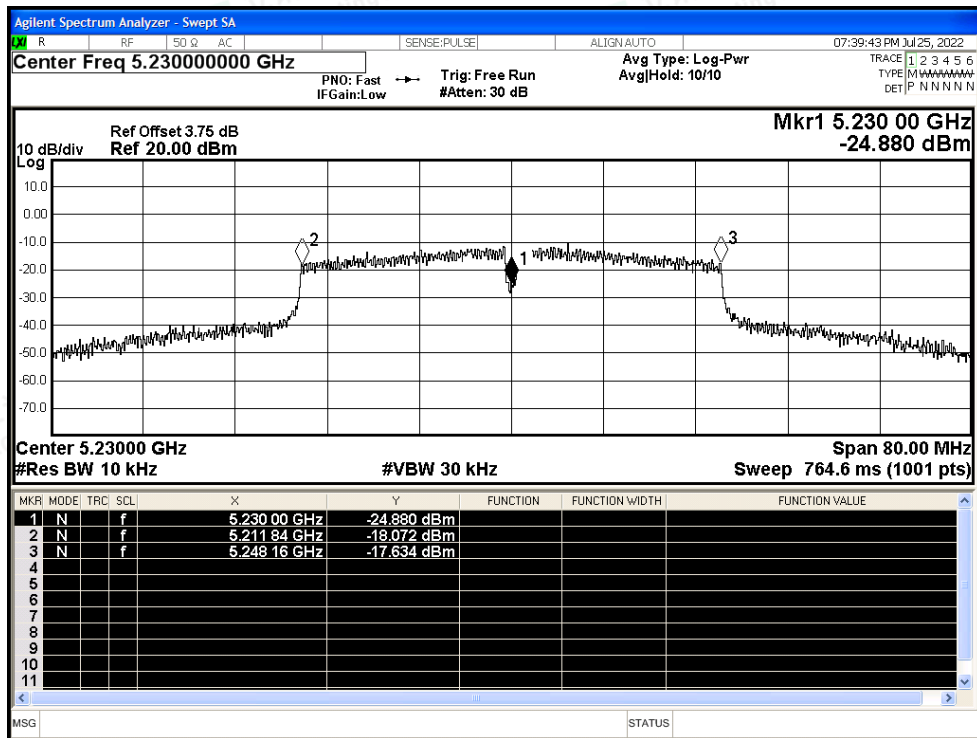


Test Graphs

Freq. Stability NVNT ac40 5190MHz Ant1



Freq. Stability NVNT ac40 5230MHz Ant1

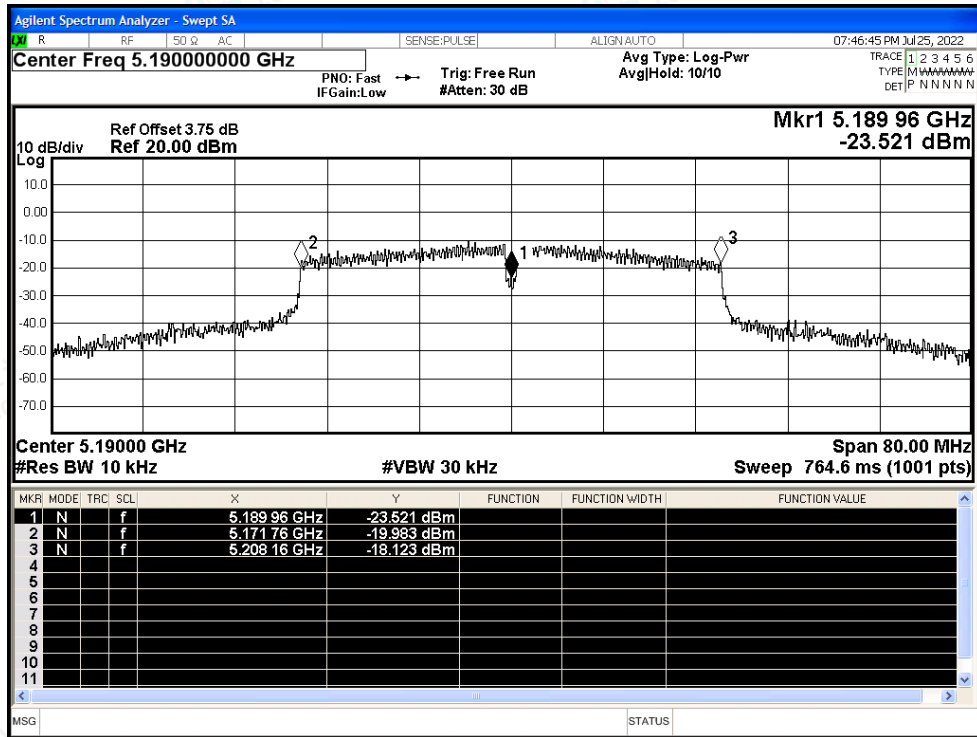




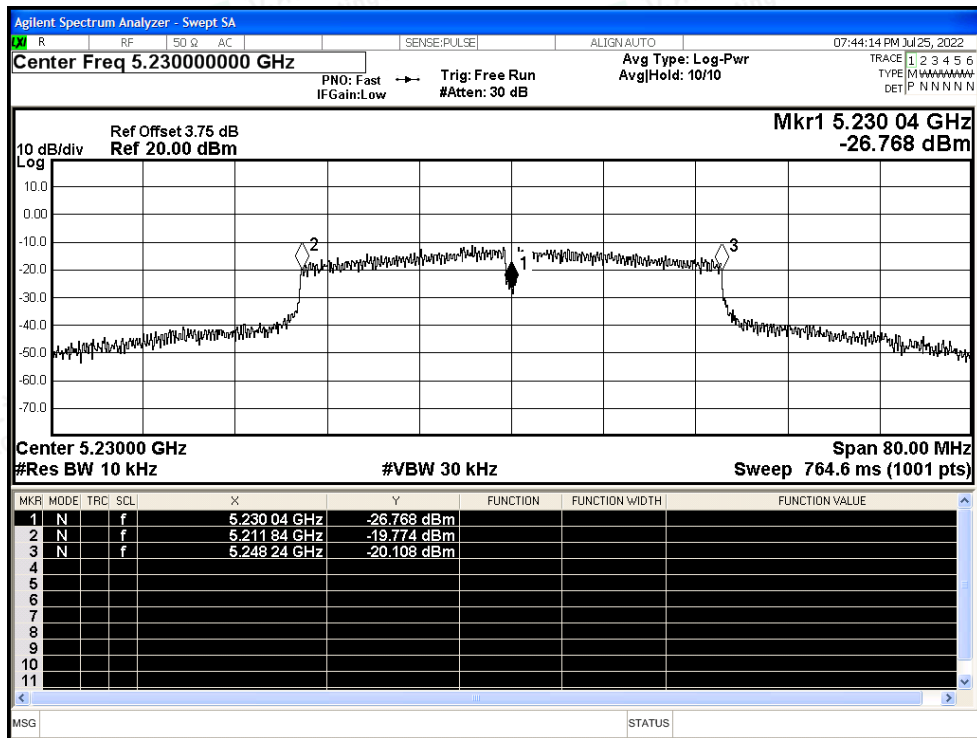


Test Graphs

Freq. Stability NVNT ac40 5190MHz Ant2



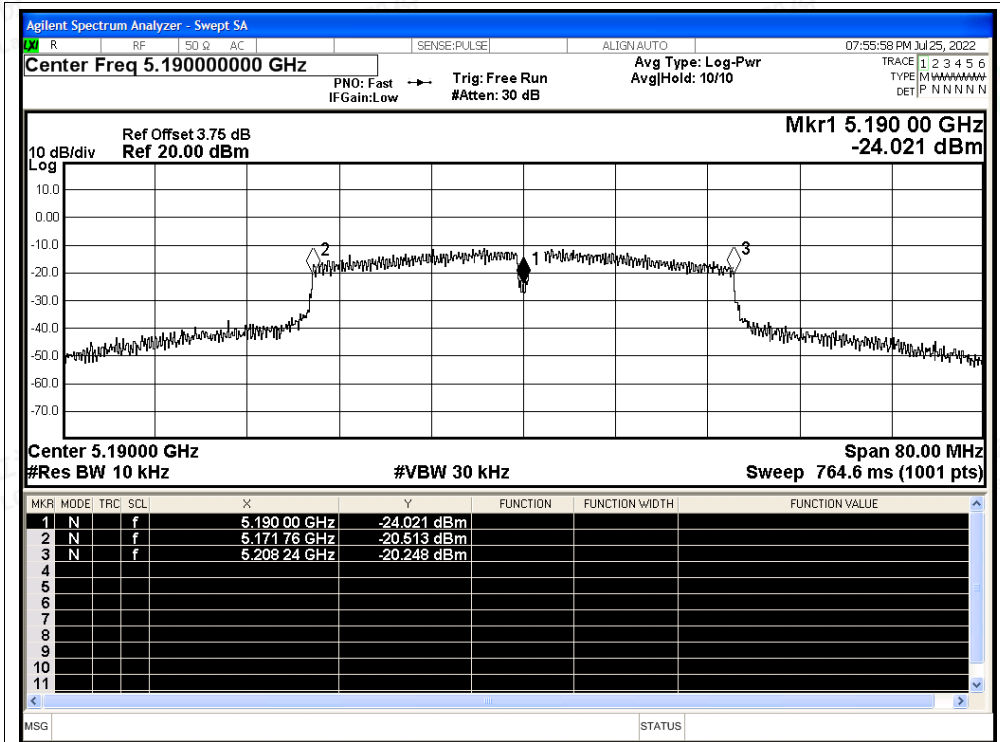
Freq. Stability NVNT ac40 5230MHz Ant2



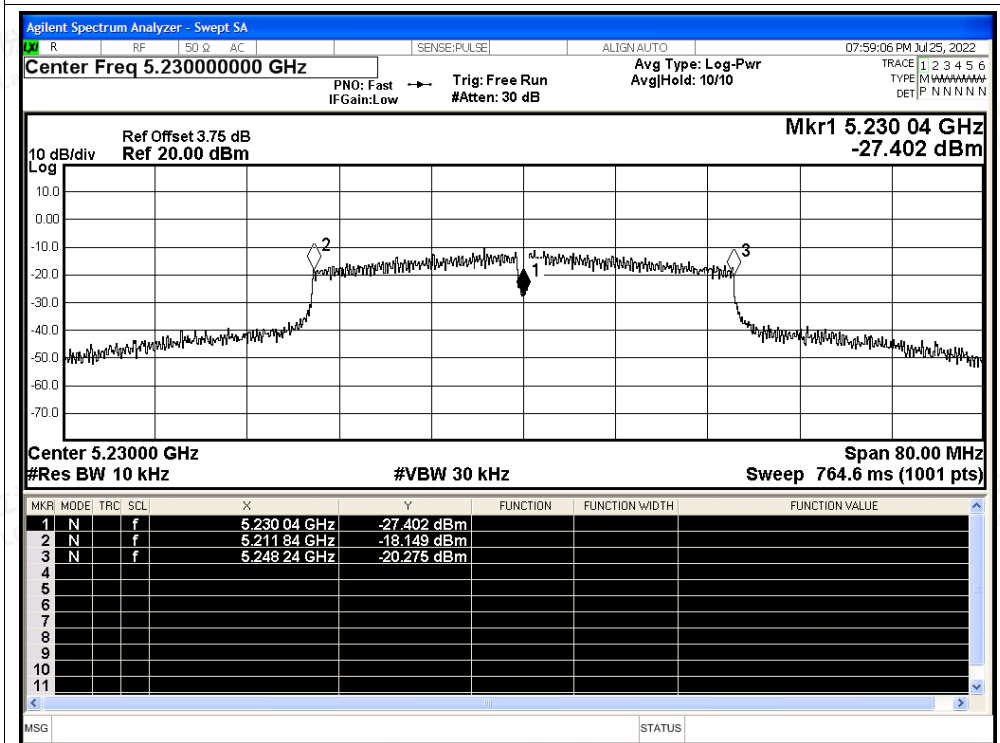
Test Graphs

Freq. Stability NVNT ac40 5190MHz Ant3





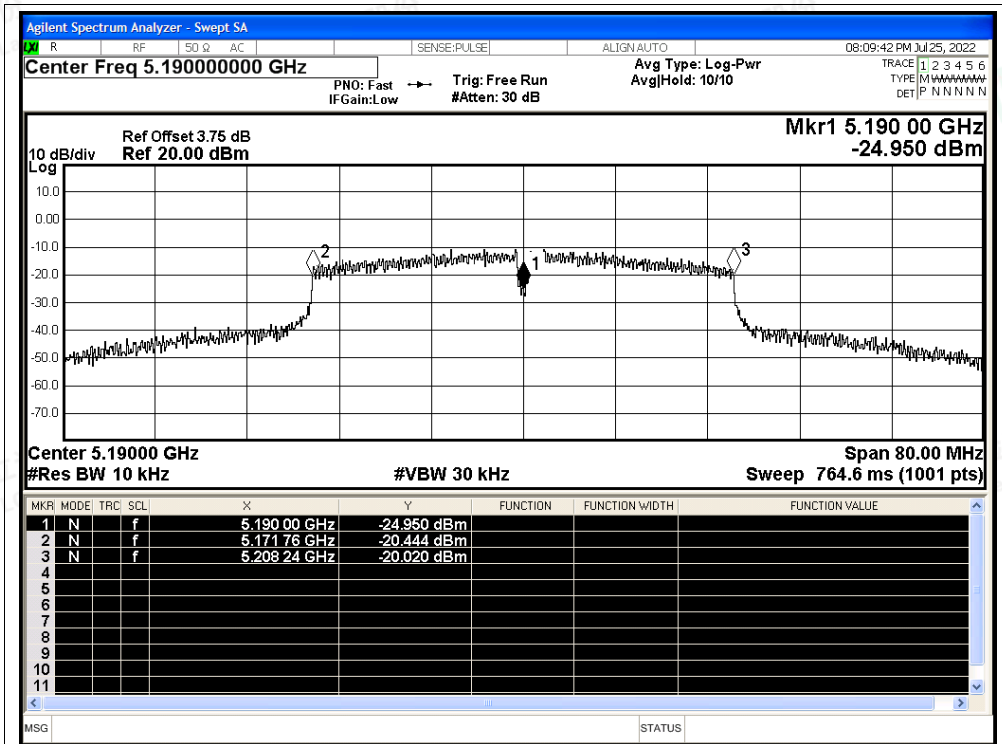
Freq. Stability NVNT ac40 5230MHz Ant3



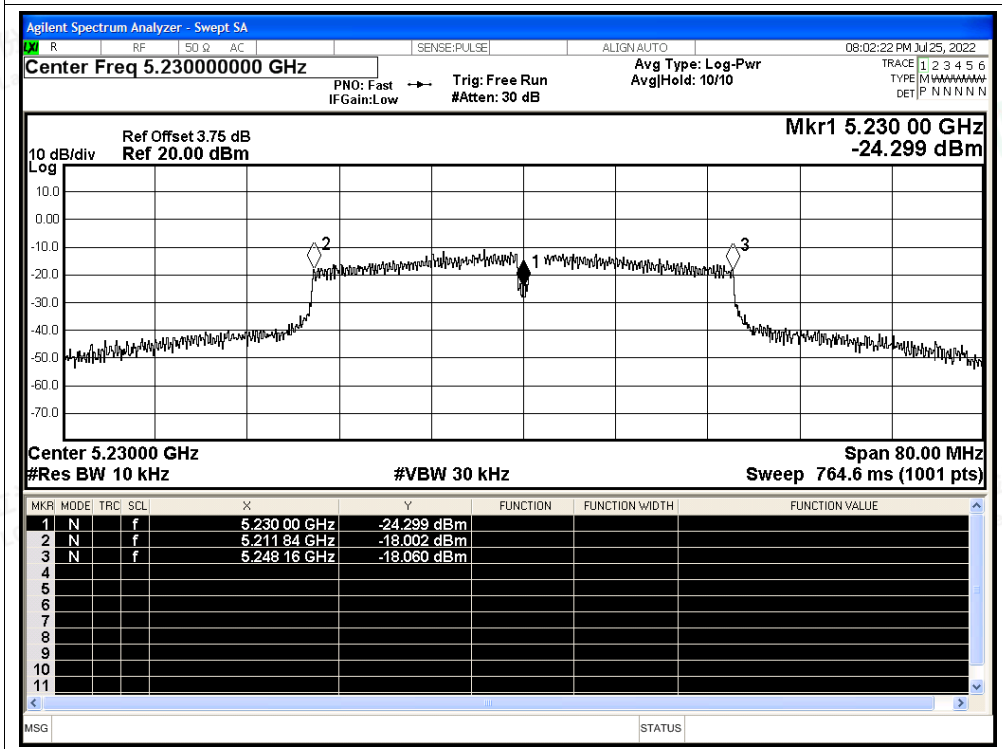
Test Graphs

Freq. Stability NVNT ac40 5190MHz Ant4





Freq. Stability NVNT ac40 5230MHz Ant4





## A.6 Duty Cycle

| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | ac40 | 5190            | Ant1    | 94.91          | 0.23                   | 1.53      |
| NVNT      | ac40 | 5230            | Ant1    | 94.91          | 0.23                   | 1.53      |
| NVNT      | ac40 | 5190            | Ant2    | 94.91          | 0.23                   | 1.53      |
| NVNT      | ac40 | 5230            | Ant2    | 95.06          | 0.22                   | 1.53      |
| NVNT      | ac40 | 5190            | Ant3    | 95.06          | 0.22                   | 1.53      |
| NVNT      | ac40 | 5230            | Ant3    | 95.06          | 0.22                   | 1.53      |
| NVNT      | ac40 | 5190            | Ant4    | 94.91          | 0.23                   | 1.53      |
| NVNT      | ac40 | 5230            | Ant4    | 94.91          | 0.23                   | 1.53      |

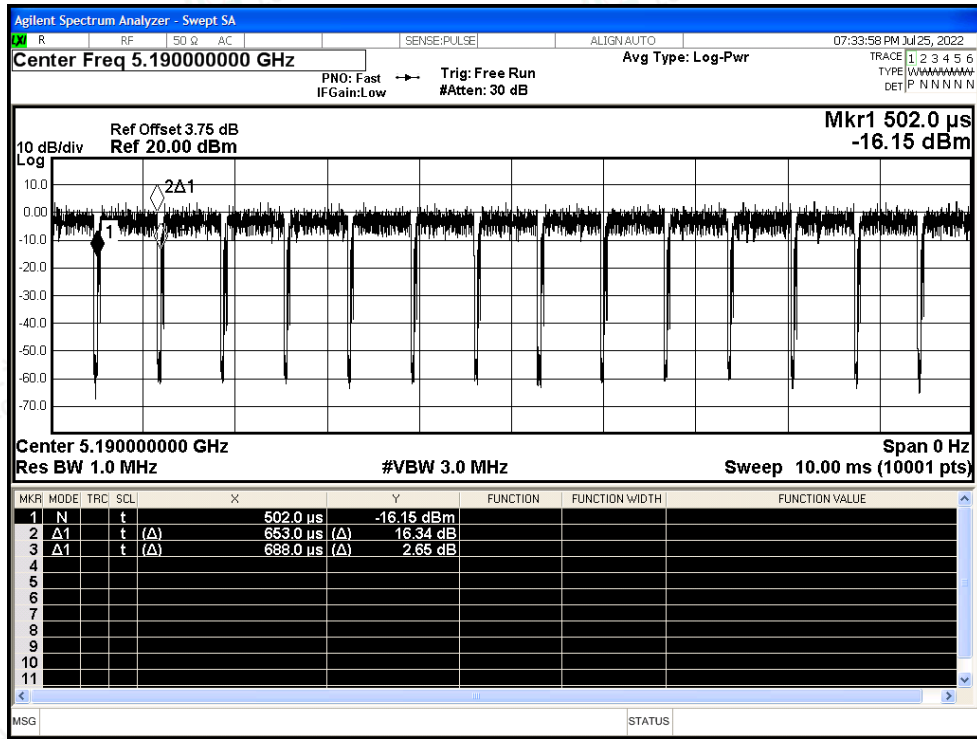


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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
Scan code to check authenticity

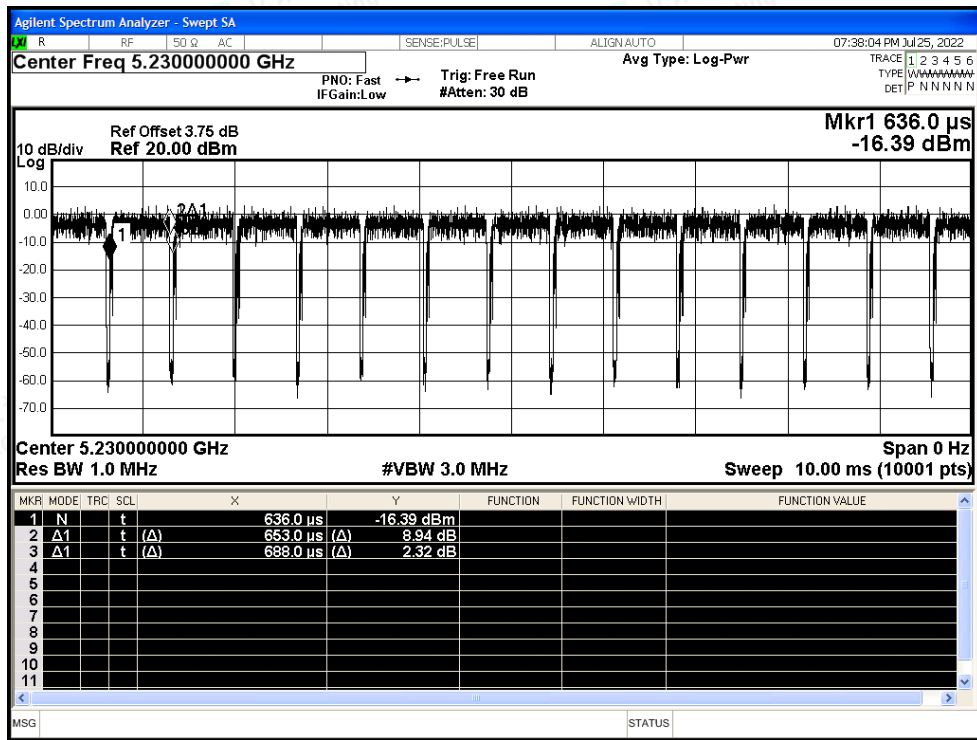


Test Graphs

Duty Cycle NVNT ac40 5190MHz Ant1



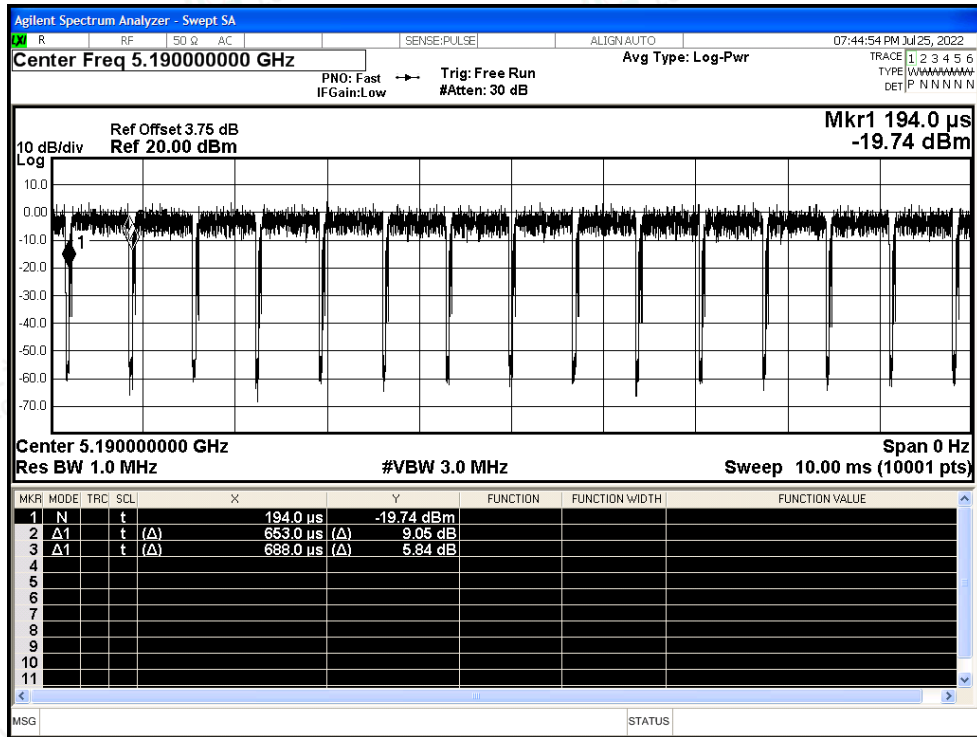
Duty Cycle NVNT ac40 5230MHz Ant1



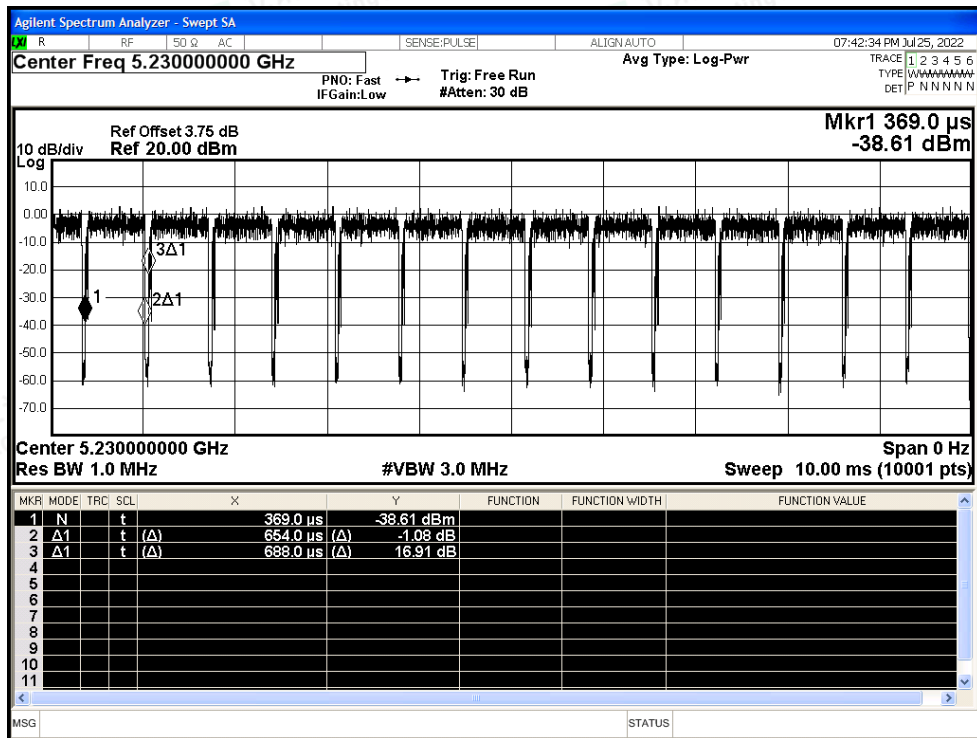


Test Graphs

Duty Cycle NVNT ac40 5190MHz Ant2



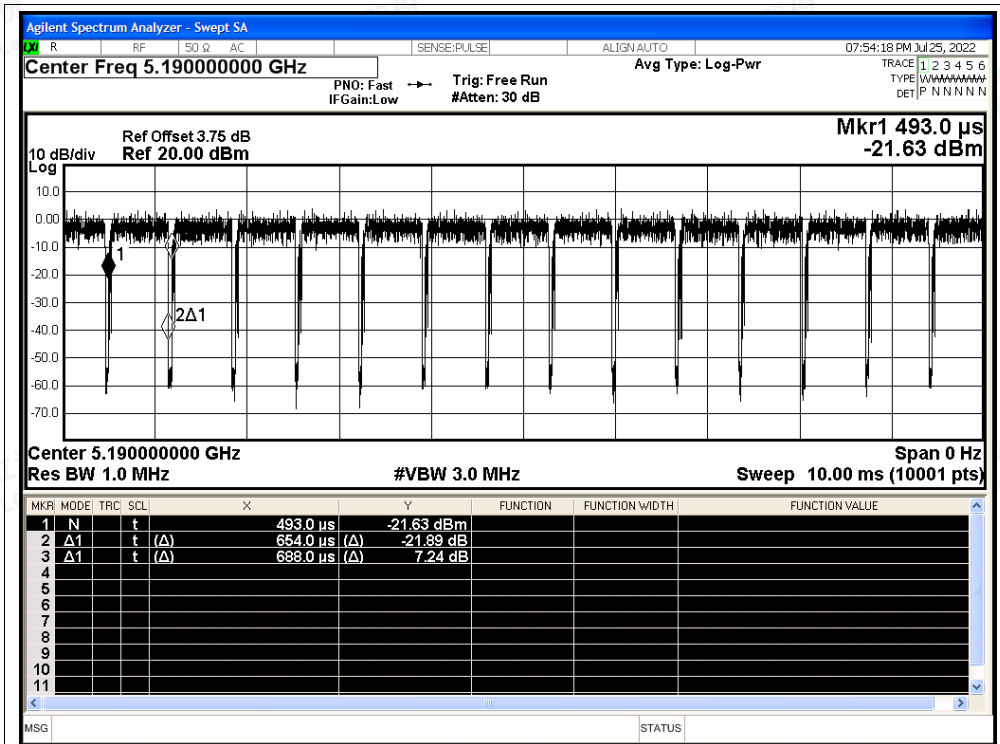
Duty Cycle NVNT ac40 5230MHz Ant2



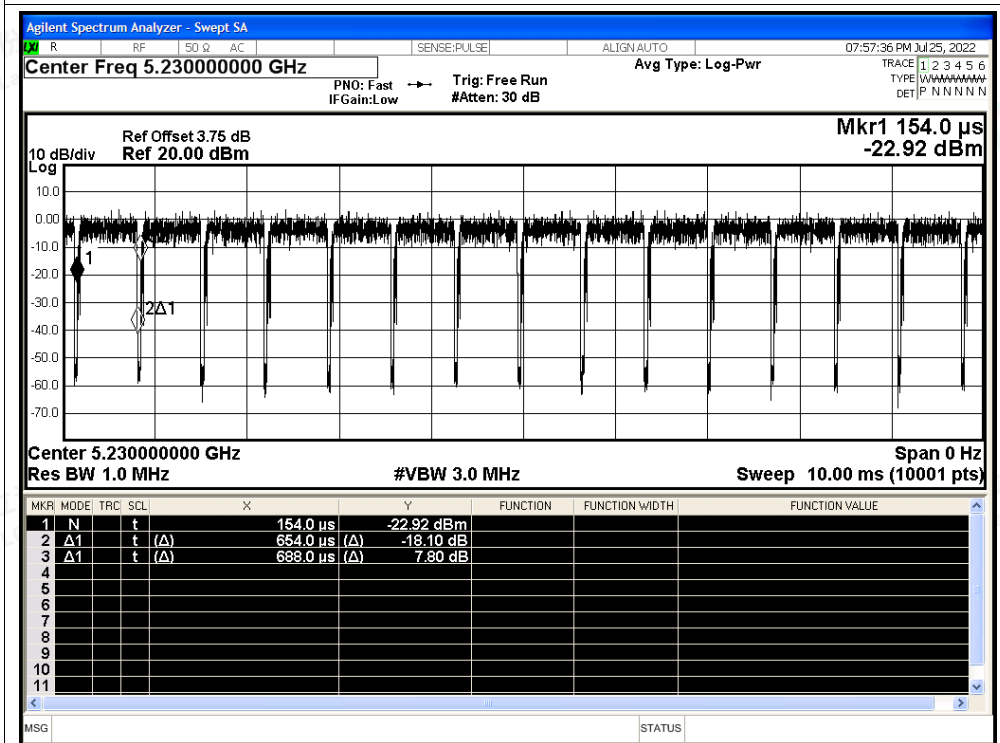
Test Graphs

Duty Cycle NVNT ac40 5190MHz Ant3





Duty Cycle NVNT ac40 5230MHz Ant3

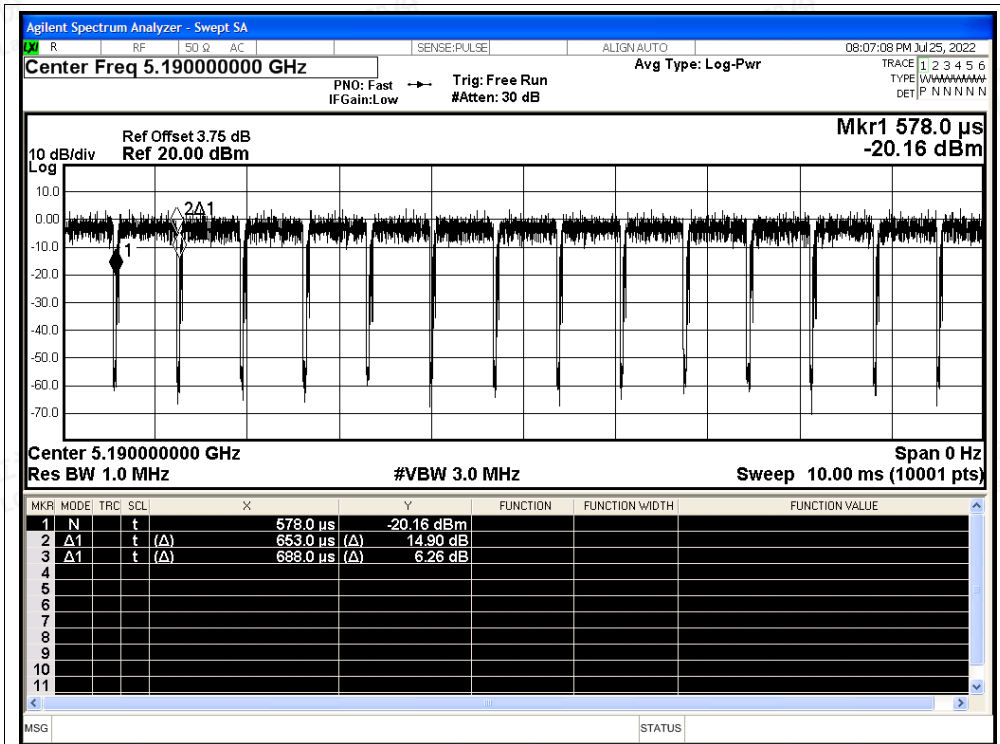


Test Graphs

Duty Cycle NVNT ac40 5190MHz Ant4







Duty Cycle NVNT ac40 5230MHz Ant4

