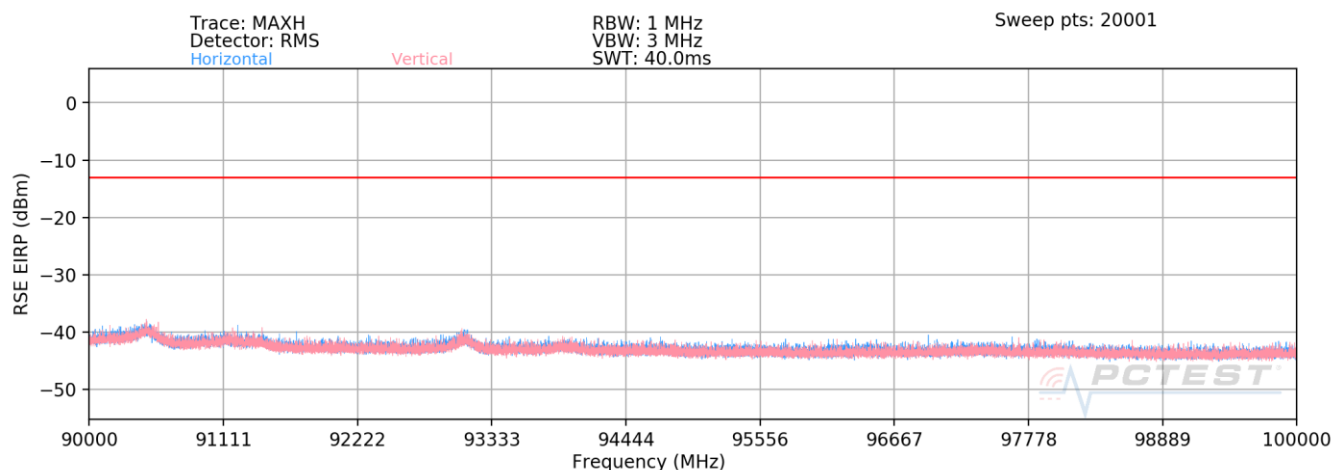




Plot 7-71. Radiated Spurious Plot 90-100 GHz (1CC QPSK Mid Channel)

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 90517.50        | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -37.58                        | -13.00      | -24.58      |
| 90531.49        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -37.39                        | -13.00      | -24.39      |
| 90492.89        | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -37.55                        | -13.00      | -24.55      |

Table 7-18. Spurious Emissions Table (90-100GHz)

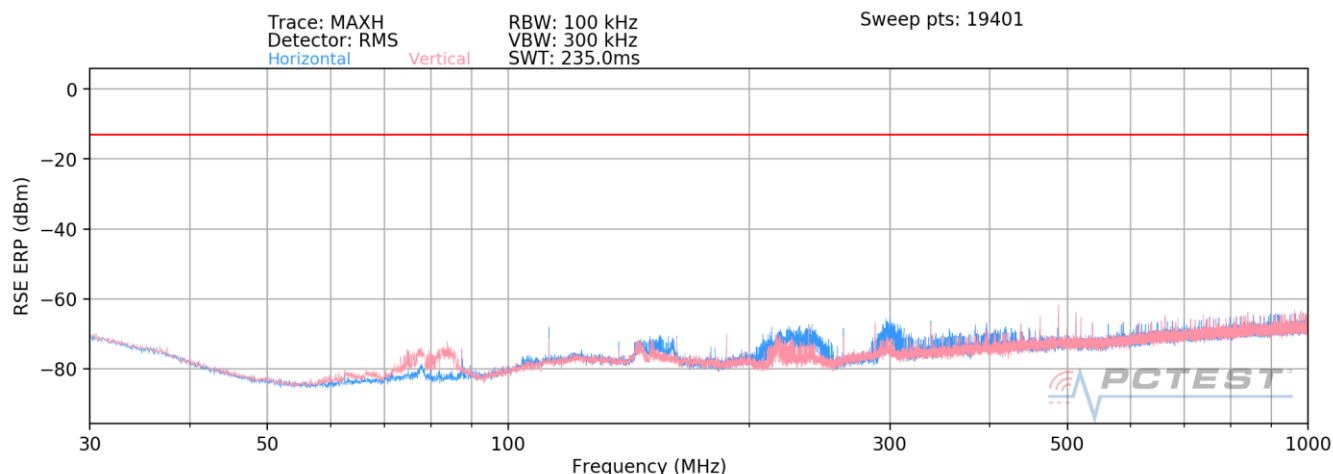
## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 61 of 136                    |

## n261 Relay Side RSE

30MHz – 1GHz



**Plot 7-72. Radiated Spurious Plot 30 MHz - 1 GHz (1CC QPSK Mid Channel)**

### Spurious Emissions ERP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8 - 2.15\text{dB}$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 137.54          | Low     | 50              | H             | QPSK       | H                          | 113                         | 149                 | -70.84                        | -13.00      | -57.84      |
| 295.29          | Low     | 50              | H             | QPSK       | H                          | 31                          | 112                 | -69.95                        | -13.00      | -56.95      |
| 228.46          | Mid     | 50              | H             | QPSK       | H                          | 350                         | 153                 | -71.68                        | -13.00      | -58.68      |
| 291.88          | Mid     | 50              | H             | QPSK       | H                          | 37                          | 115                 | -70.10                        | -13.00      | -57.10      |
| 187.69          | High    | 50              | H             | QPSK       | H                          | 89                          | 130                 | -69.75                        | -13.00      | -56.75      |
| 296.73          | High    | 50              | H             | QPSK       | H                          | 36                          | 113                 | -70.52                        | -13.00      | -57.52      |

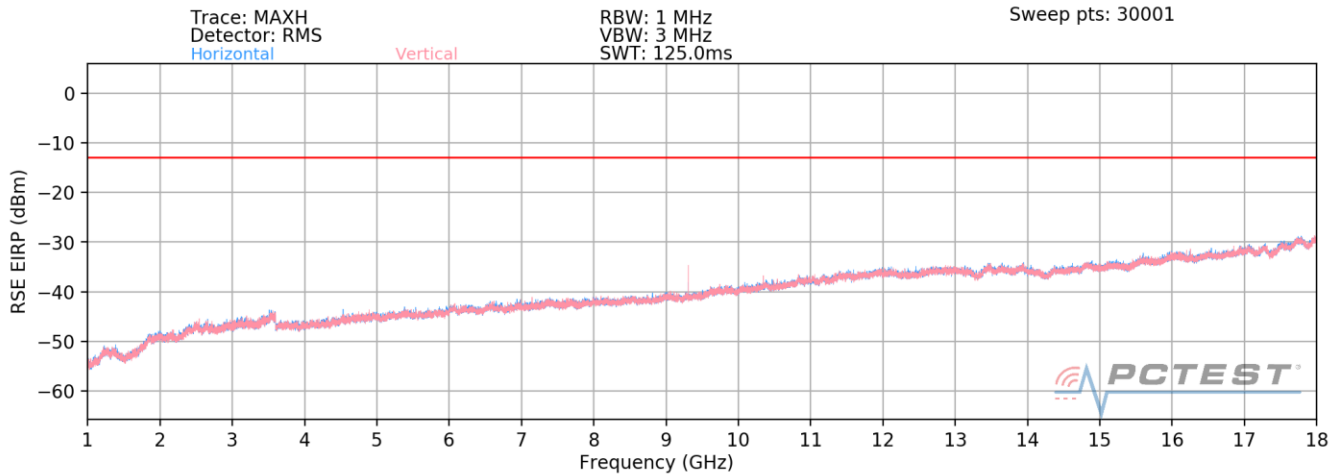
**Table 7-19. Spurious Emissions Table (30MHz-1GHz)**

### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 62 of 136                    |

## 1 – 18GHz



**Plot 7-73. Radiated Spurious Plot 1-18 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 9308.35         | Low     | 50              | H             | QPSK       | V                          | 193                         | 111                 | -35.71                        | -13.00      | -22.71      |
| 9308.03         | Mid     | 50              | H             | QPSK       | V                          | 191                         | 111                 | -35.46                        | -13.00      | -22.46      |
| 9308.30         | High    | 50              | H             | QPSK       | V                          | 191                         | 112                 | -35.54                        | -13.00      | -22.54      |

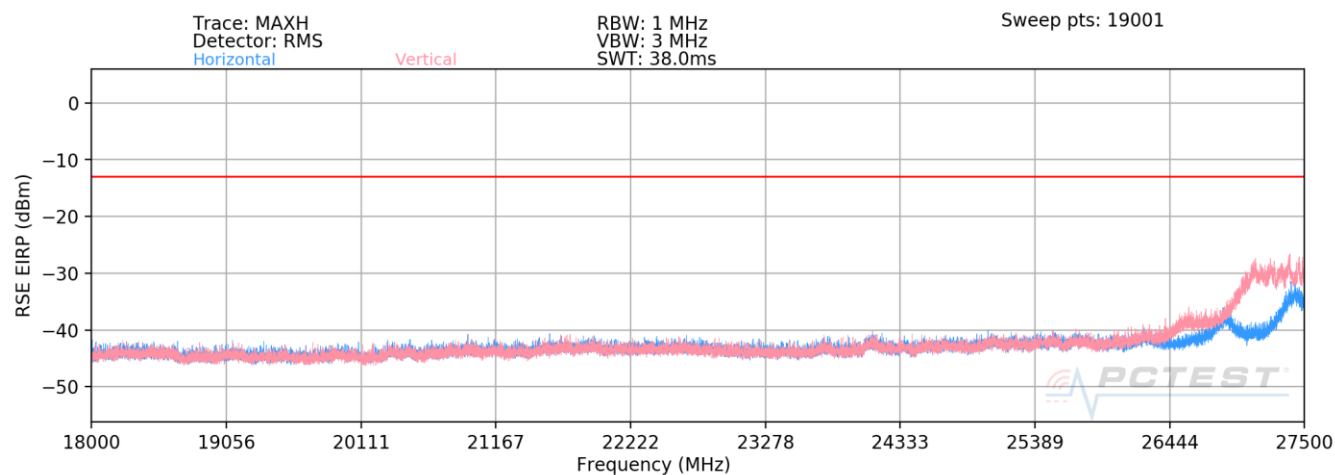
**Table 7-20. Spurious Emissions Table (1GHz-18GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 63 of 136                    |

## 18 – 27.5GHz



**Plot 7-74. Radiated Spurious Plot 18-27.5 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 27089.07        | Low     | 50              | H             | QPSK       | V                          | 1                           | 1                            | -26.35                        | -13.00      | -13.35      |
| 27449.75        | Mid     | 50              | H             | QPSK       | V                          | 2                           | 0                            | -26.96                        | -13.00      | -13.96      |
| 27168.79        | High    | 50              | H             | QPSK       | V                          | 2                           | 0                            | -26.87                        | -13.00      | -13.87      |

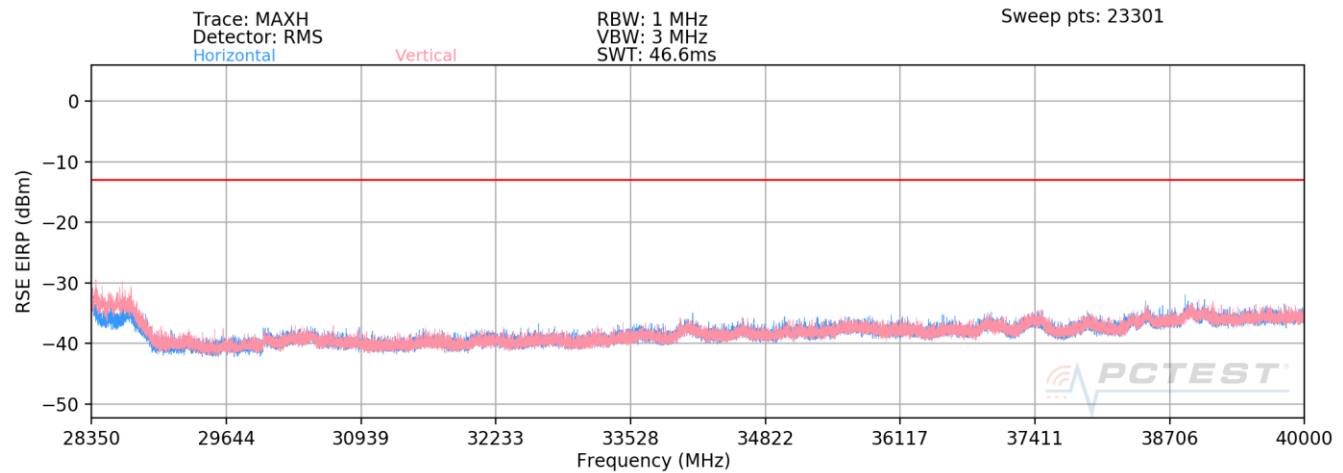
**Table 7-21. Spurious Emissions Table (18-27.5GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 64 of 136                    |

## 28.35 – 40GHz



**Plot 7-75. Radiated Spurious Plot 28.35-40 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 28395.89        | Low     | 50              | H             | QPSK       | V                          | 1                           | 1                            | -28.93                        | -13.00      | -15.93      |
| 28393.95        | Mid     | 50              | H             | QPSK       | V                          | 2                           | 0                            | -29.65                        | -13.00      | -16.65      |
| 28393.74        | High    | 50              | H             | QPSK       | V                          | 2                           | 0                            | -29.07                        | -13.00      | -16.07      |

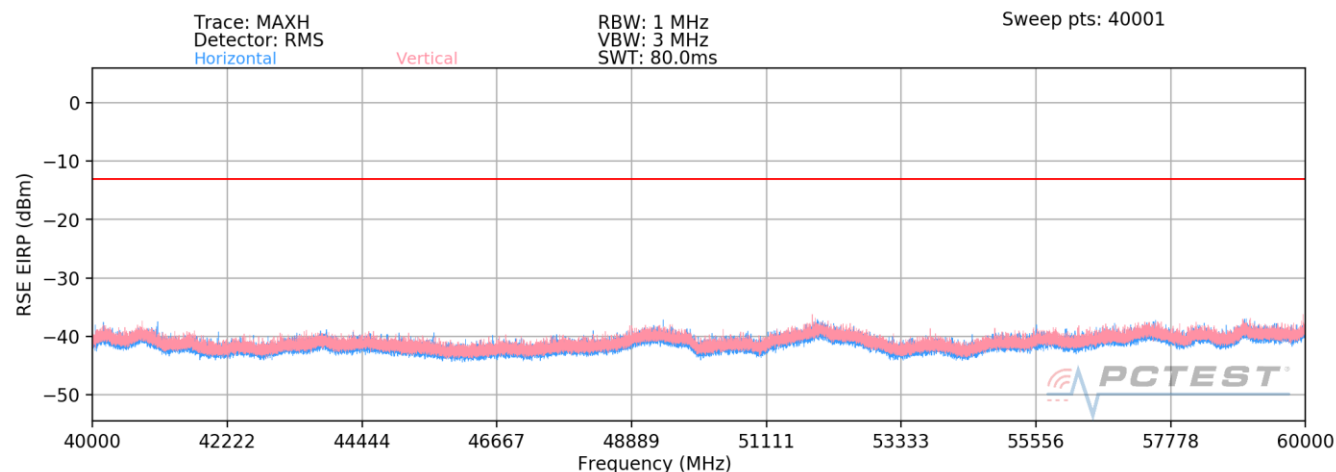
**Table 7-22. Spurious Emissions Table (28.35-40 GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 65 of 136                    |

## 40 – 60GHz



**Plot 7-76. Radiated Spurious Plot 40-60 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 55050.84        | Low     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -38.82                        | -13.00      | -25.82      |
| 55852.02        | Mid     | 50              | H             | QPSK       | H                          | 359                         | 0                            | -37.83                        | -13.00      | -24.83      |
| 56650.74        | High    | 50              | H             | QPSK       | H                          | 359                         | 0                            | -36.85                        | -13.00      | -23.85      |

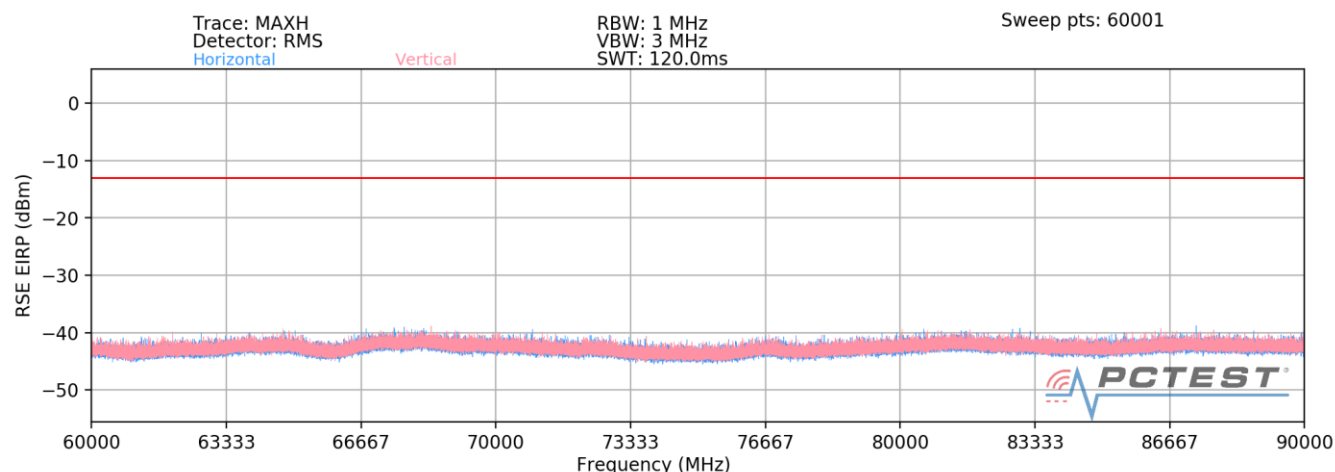
**Table 7-23. Spurious Emissions Table (40 - 60GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 66 of 136                    |

## 60 – 90GHz



**Plot 7-77. Radiated Spurious Plot 60-90 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 82563.01        | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -40.91                        | -13.00      | -27.91      |
| 83784.27        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -40.16                        | -13.00      | -27.16      |
| 84967.17        | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -40.54                        | -13.00      | -27.54      |

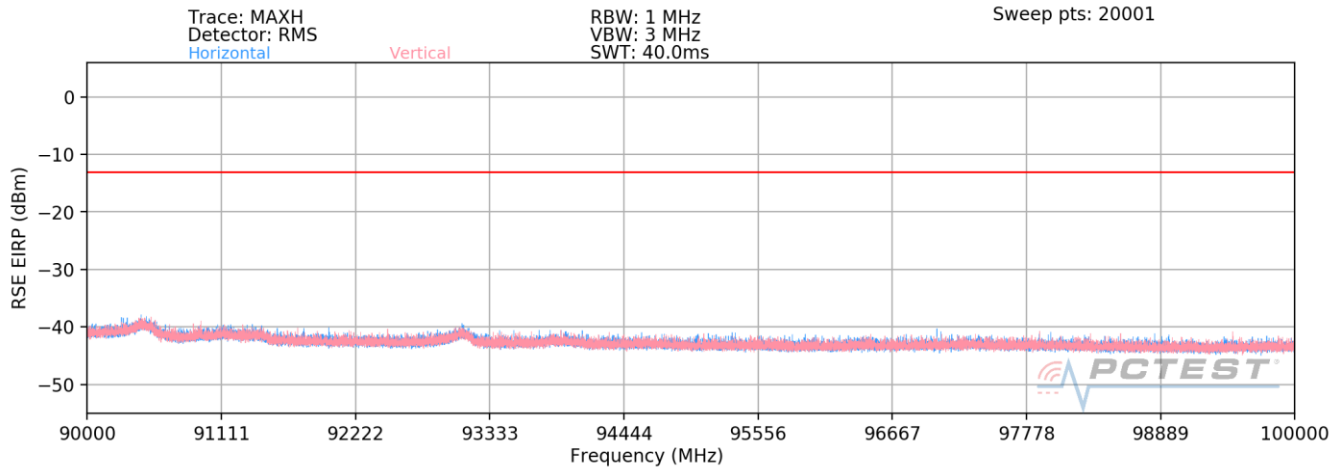
**Table 7-24. Spurious Emissions Table (60-90GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 67 of 136                    |

## 90 – 100GHz



**Plot 7-78. Radiated Spurious Plot 90-100 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 90500.03        | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -36.96                        | -13.00      | -23.96      |
| 90419.16        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -37.56                        | -13.00      | -24.56      |
| 90475.11        | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -37.40                        | -13.00      | -24.40      |

**Table 7-25. Spurious Emissions Table (90-100GHz)**

## Notes

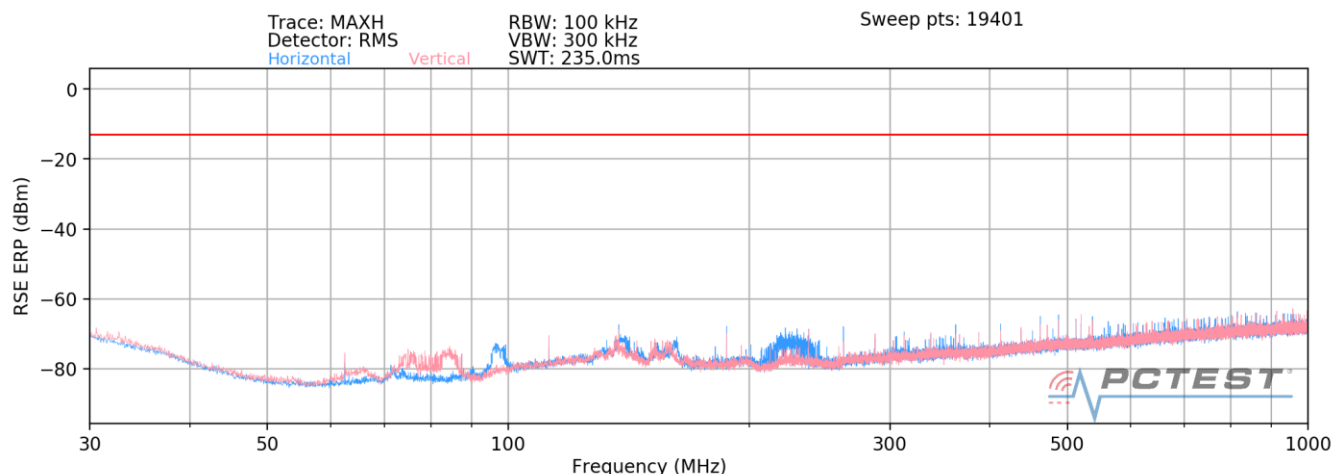
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 68 of 136                    |



## n260 Donor Side RSE

### 30MHz – 1GHz



**Plot 7-79. Radiated Spurious Plot 30 MHz - 1 GHz (1CC QPSK Mid Channel)**

### Spurious Emissions ERP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8 - 2.15\text{dB}$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 187.48          | Low     | 50              | H             | QPSK       | H                          | 111                         | 134                 | -65.88                        | -13.00      | -52.88      |
| 229.13          | Low     | 50              | H             | QPSK       | H                          | 141                         | 135                 | -69.71                        | -13.00      | -56.71      |
| 137.57          | Mid     | 50              | H             | QPSK       | H                          | 123                         | 148                 | -68.74                        | -13.00      | -55.74      |
| 228.27          | Mid     | 50              | H             | QPSK       | H                          | 139                         | 134                 | -69.54                        | -13.00      | -56.54      |
| 187.53          | High    | 50              | H             | QPSK       | H                          | 113                         | 133                 | -66.26                        | -13.00      | -53.26      |
| 487.38          | High    | 50              | H             | QPSK       | H                          | 65                          | 168                 | -66.50                        | -13.00      | -53.50      |

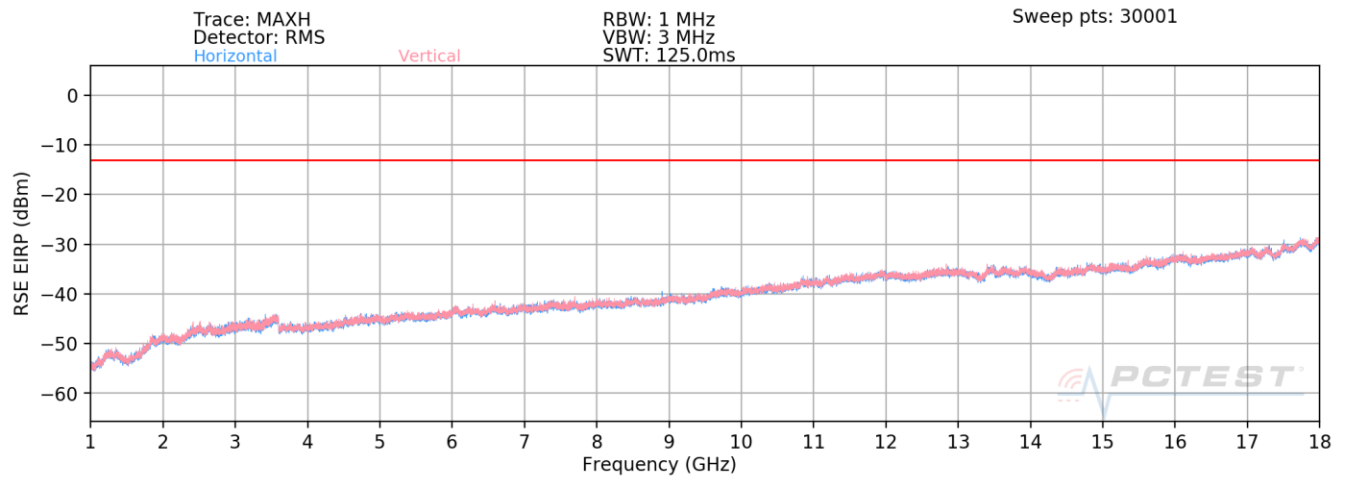
**Table 7-26. Spurious Emissions Table (30MHz-1GHz)**

### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 69 of 136                    |

## 1 – 18GHz



Plot 7-80. Radiated Spurious Plot 1-18 GHz (1CC QPSK Mid Channel H Beam)

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 17712.05        | Low     | 50              | H             | QPSK       | H                          | -                           | -                   | -29.27                        | -13.00      | -16.27      |
| 17694.87        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                   | -29.52                        | -13.00      | -16.52      |
| 17733.97        | High    | 50              | H             | QPSK       | H                          | -                           | -                   | -29.78                        | -13.00      | -16.78      |

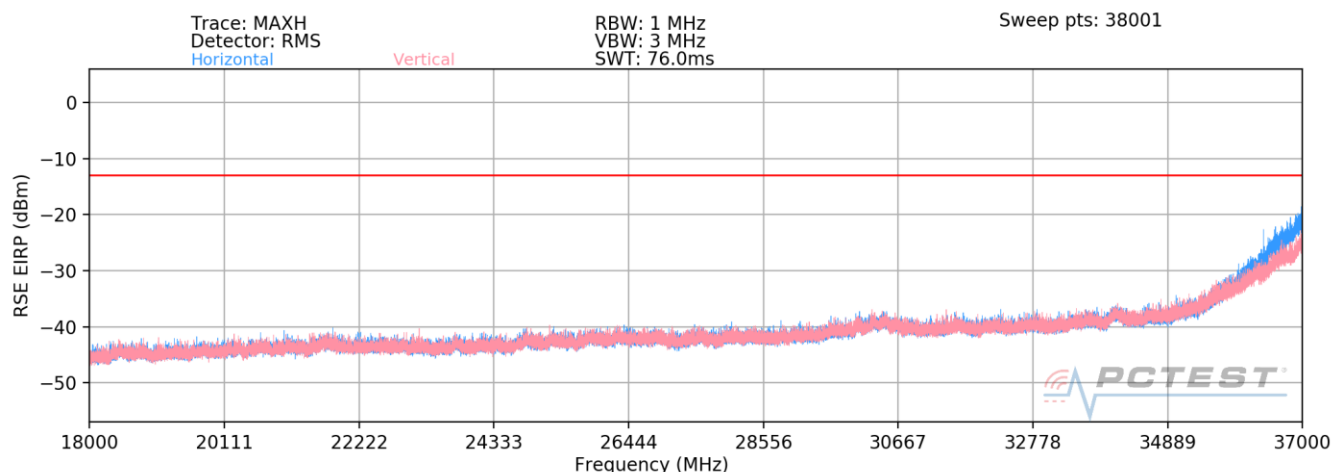
Table 7-27. Spurious Emissions Table (1GHz-18GHz)

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 70 of 136                    |

## 18 – 37GHz



**Plot 7-81. Radiated Spurious Plot 18-37 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 36960.34        | Low     | 50              | H             | QPSK       | H                          | 2                           | 0                            | -19.39                        | -13.00      | -6.39       |
| 36911.28        | Mid     | 50              | H             | QPSK       | H                          | 2                           | 0                            | -19.33                        | -13.00      | -6.33       |
| 36878.77        | High    | 50              | H             | QPSK       | H                          | 2                           | 0                            | -19.77                        | -13.00      | -6.77       |

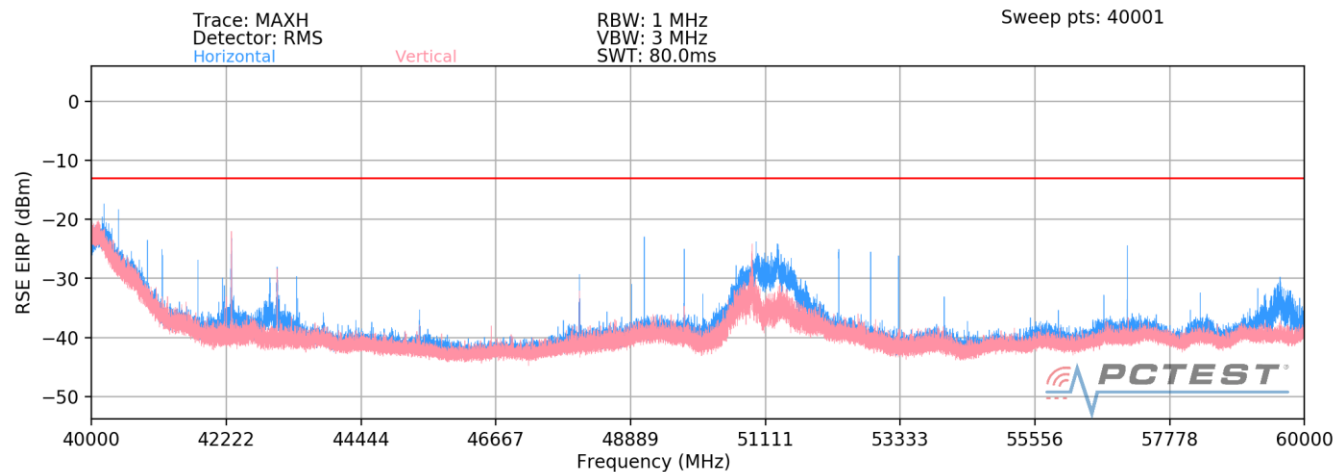
**Table 7-28. Spurious Emissions Table (18-37GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 71 of 136                    |

## 40 – 60GHz



**Plot 7-82. Radiated Spurious Plot 40-60 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 40245.90        | Low     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -18.42                        | -13.00      | -5.42       |
| 47269.79        | Low     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -27.33                        | -13.00      | -14.33      |
| 47928.89        | Low     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -26.97                        | -13.00      | -13.97      |
| 49621.88        | Low     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -28.36                        | -13.00      | -15.36      |
| 40308.00        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -18.37                        | -13.00      | -5.37       |
| 49113.21        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -25.12                        | -13.00      | -12.12      |
| 50629.50        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -26.90                        | -13.00      | -13.90      |
| 57078.79        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -25.92                        | -13.00      | -12.92      |
| 40214.52        | High    | 50              | H             | QPSK       | H                          | 1                           | 0                            | -19.04                        | -13.00      | -6.04       |
| 43993.69        | High    | 50              | H             | QPSK       | H                          | 1                           | 0                            | -29.68                        | -13.00      | -16.68      |
| 49814.40        | High    | 50              | H             | QPSK       | H                          | 1                           | 0                            | -25.68                        | -13.00      | -12.68      |
| 52844.22        | High    | 50              | H             | QPSK       | H                          | 1                           | 0                            | -26.46                        | -13.00      | -13.46      |

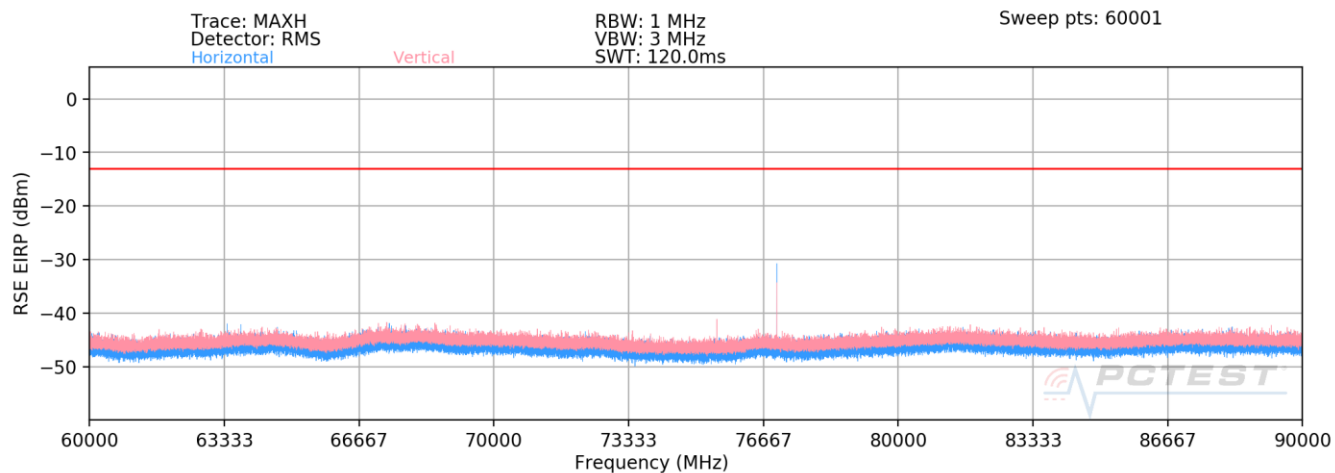
**Table 7-29. Spurious Emissions Table (40 - 60GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 72 of 136                    |

## 60 – 90GHz



**Plot 7-83. Radiated Spurious Plot 60-90 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 74051.39        | Low     | 50              | H             | QPSK       | H                          | 3                           | 0                            | -32.73                        | -13.00      | -19.73      |
| 77000.59        | Mid     | 50              | H             | QPSK       | H                          | 359                         | 0                            | -31.07                        | -13.00      | -18.07      |
| 79950.03        | High    | 50              | H             | QPSK       | H                          | 1                           | 0                            | -30.74                        | -13.00      | -17.74      |

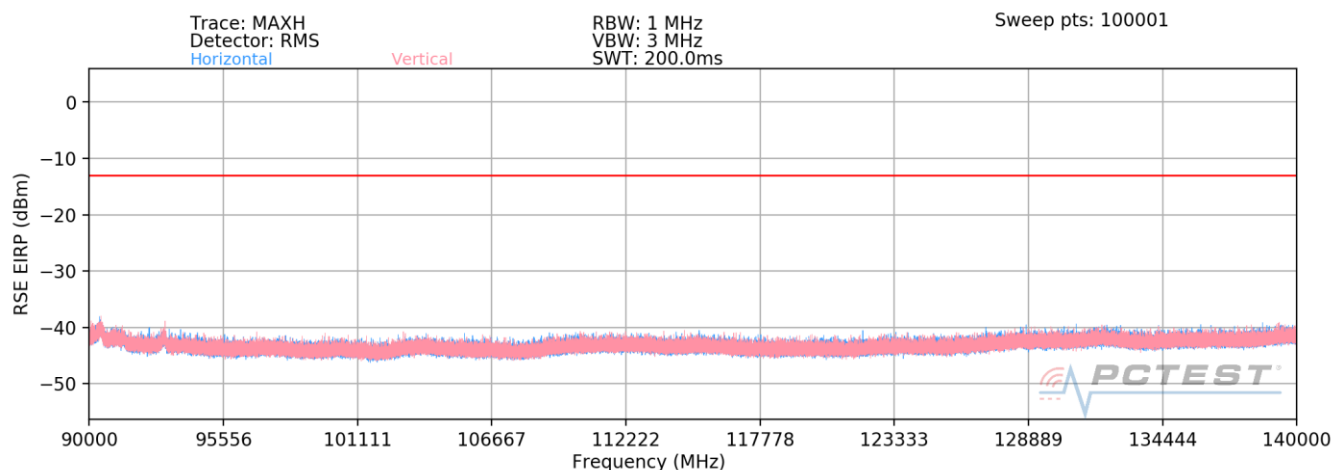
**Table 7-30. Spurious Emissions Table (60-90GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 73 of 136                    |

## 90 – 140GHz



**Plot 7-84. Radiated Spurious Plot 90-140 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 111106.89       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -39.51                        | -13.00      | -26.51      |
| 115506.87       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -39.75                        | -13.00      | -26.75      |
| 119926.10       | High    | 50              | H             | QPSK       | H                          | 4                           | 1                            | -36.74                        | -13.00      | -23.74      |

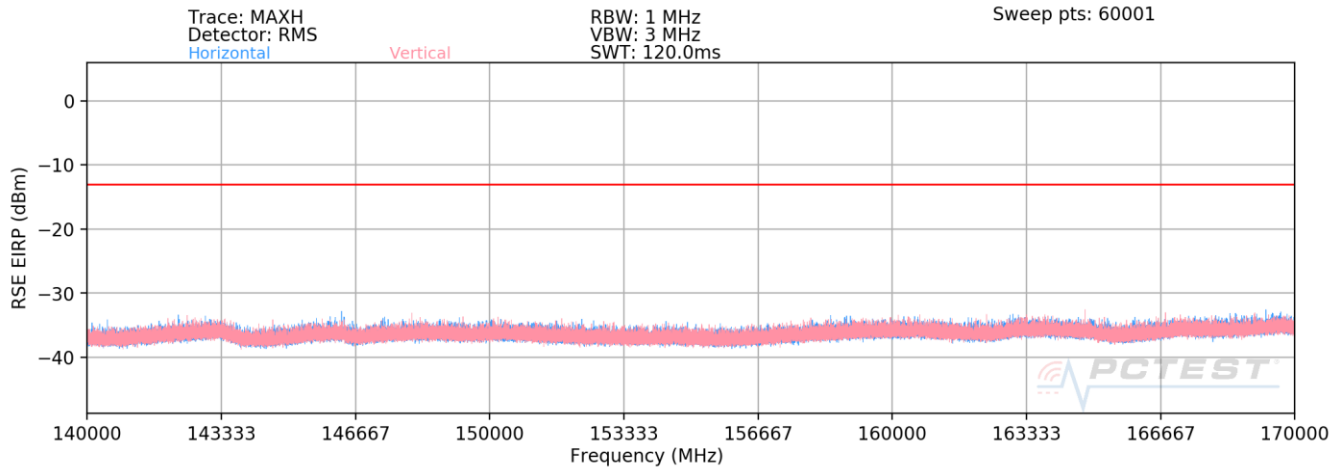
**Table 7-31. Spurious Emissions Table (90-140GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 74 of 136                    |

## 140 – 170GHz



**Plot 7-85. Radiated Spurious Plot 140-170 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 148084.78       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -34.47                        | -13.00      | -21.47      |
| 154022.37       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -34.55                        | -13.00      | -21.55      |
| 159923.28       | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -33.82                        | -13.00      | -20.82      |

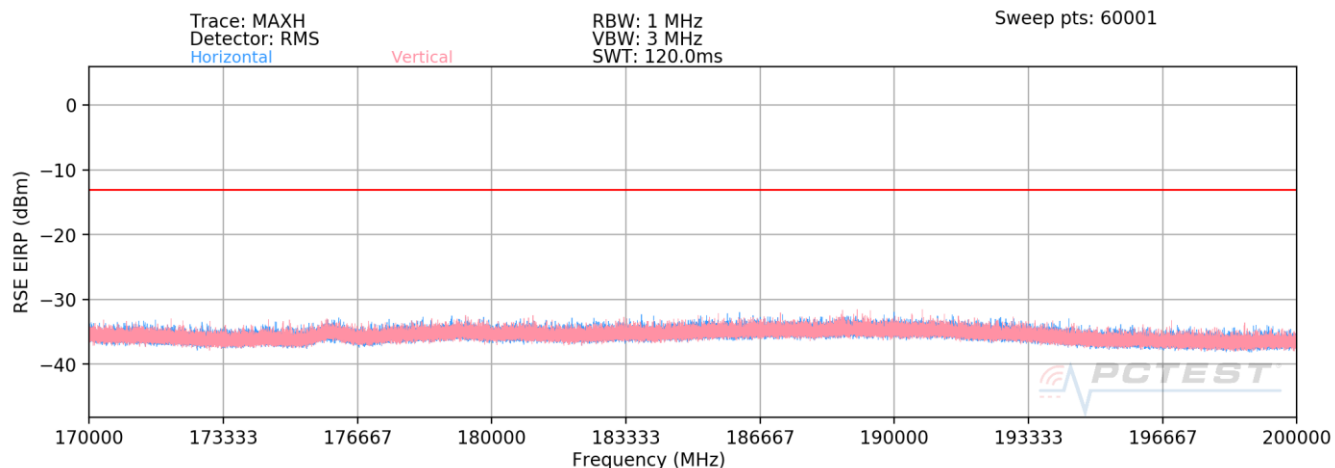
**Table 7-32. Spurious Emissions Table (140-170GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 75 of 136                    |

## 170 – 200GHz



**Plot 7-86. Radiated Spurious Plot 170-200 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 185109.32       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.07                        | -13.00      | -20.07      |
| 192519.18       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.29                        | -13.00      | -20.29      |
| 199870.95       | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -33.50                        | -13.00      | -20.50      |

**Table 7-33. Spurious Emissions Table (170-200GHz)**

## Notes

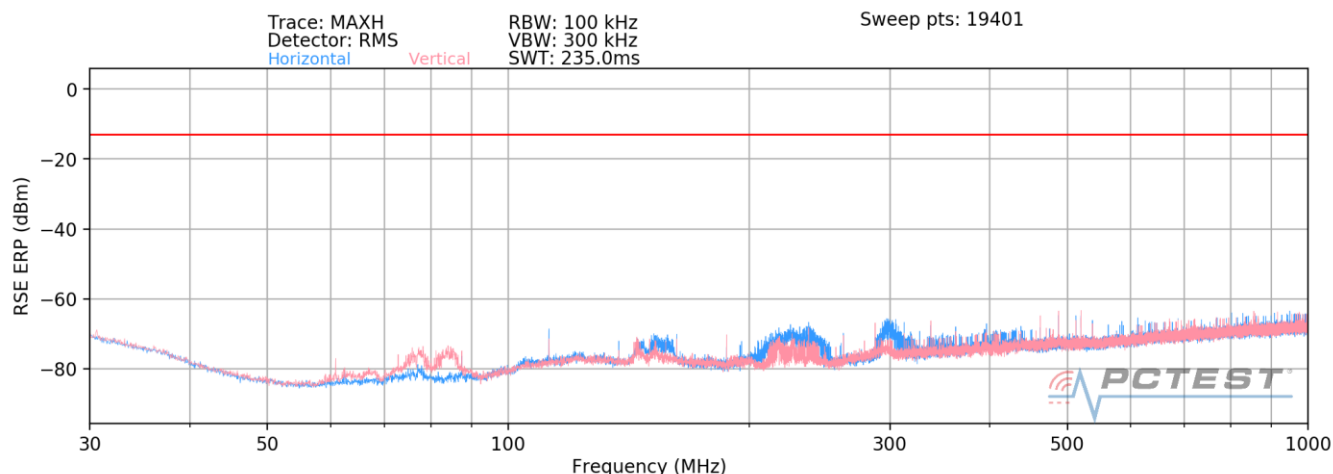
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 76 of 136                    |



## n260 Relay Side RSE

30MHz – 1GHz



**Plot 7-87. Radiated Spurious Plot 30 MHz - 1 GHz (1CC QPSK Mid Channel)**

### Spurious Emissions ERP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8 - 2.15\text{dB}$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 137.40          | Low     | 50              | H             | QPSK       | H                          | 115                         | 143                 | -71.69                        | -13.00      | -58.69      |
| 300.63          | Low     | 50              | H             | QPSK       | H                          | 32                          | 115                 | -68.99                        | -13.00      | -55.99      |
| 162.48          | Mid     | 50              | H             | QPSK       | H                          | 131                         | 137                 | -71.33                        | -13.00      | -58.33      |
| 229.18          | Mid     | 50              | H             | QPSK       | H                          | 319                         | 122                 | -70.71                        | -13.00      | -57.71      |
| 228.70          | High    | 50              | H             | QPSK       | H                          | 308                         | 117                 | -70.47                        | -13.00      | -57.47      |
| 293.32          | High    | 50              | H             | QPSK       | H                          | 38                          | 118                 | -69.75                        | -13.00      | -56.75      |

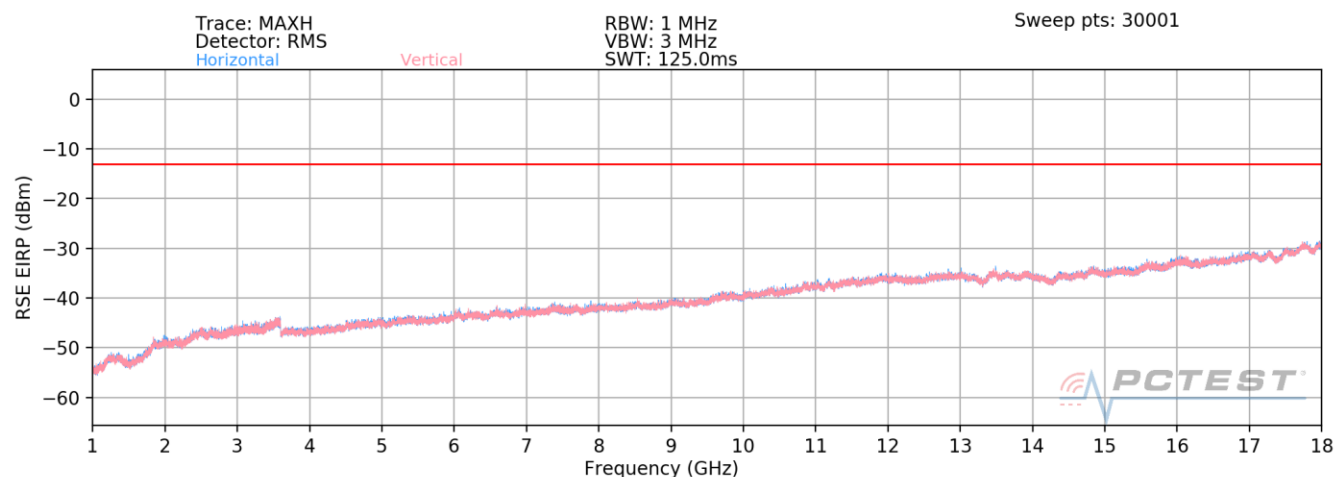
**Table 7-34. Spurious Emissions Table (30MHz-1GHz)**

### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 77 of 136                    |

## 1 – 18GHz



**Plot 7-88. Radiated Spurious Plot 1-18 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Antenna Height [cm] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|---------------------|-------------------------------|-------------|-------------|
| 17668.91        | Low     | 50              | H             | QPSK       | H                          | -                           | -                   | -29.14                        | -13.00      | -16.14      |
| 17708.49        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                   | -28.88                        | -13.00      | -15.88      |
| 17793.27        | High    | 50              | H             | QPSK       | H                          | -                           | -                   | -29.53                        | -13.00      | -16.53      |

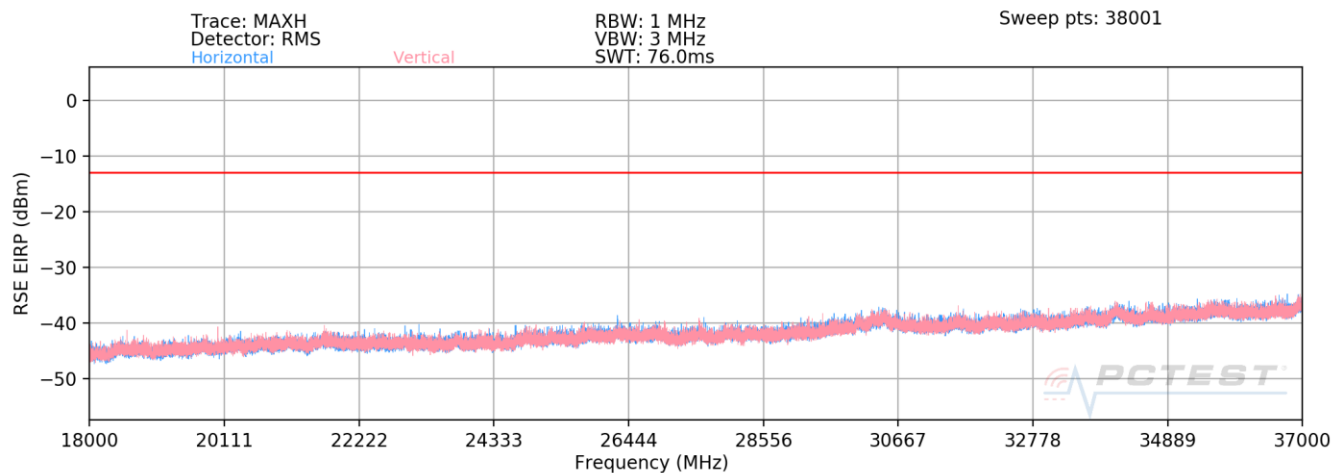
**Table 7-35. Spurious Emissions Table (1GHz-18GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 78 of 136                    |

## 18 – 37GHz



**Plot 7-89. Radiated Spurious Plot 18-37 GHz (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 36874.02        | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -36.53                        | -13.00      | -23.53      |
| 36908.64        | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -36.03                        | -13.00      | -23.03      |
| 36924.49        | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -36.18                        | -13.00      | -23.18      |

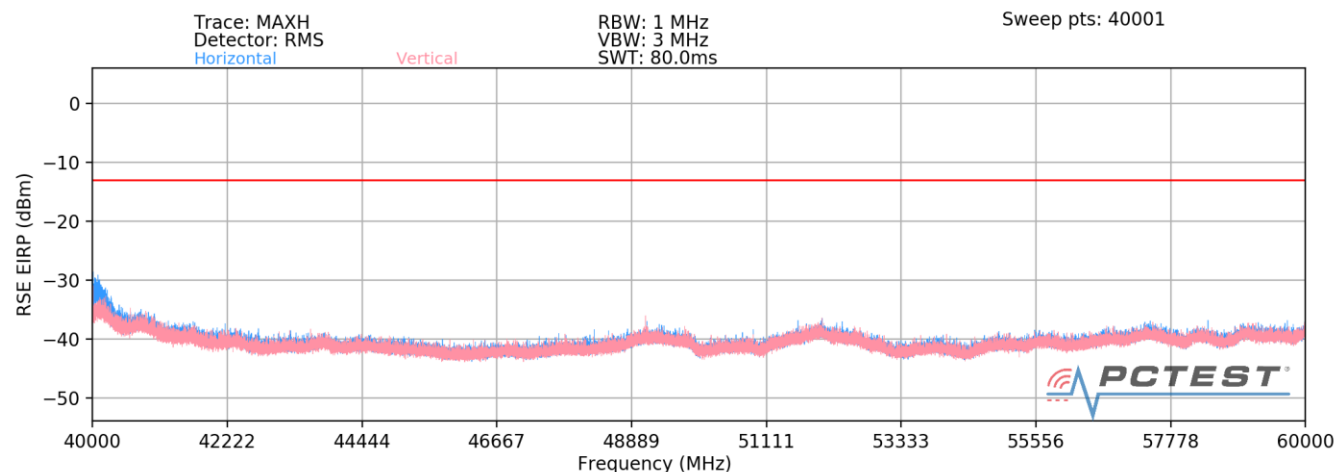
**Table 7-36. Spurious Emissions Table (18-37GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 79 of 136                    |

## 40 – 60GHz



**Plot 7-90. Radiated Spurious Plot 40-60 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 40105.92        | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -37.66                        | -13.00      | -24.66      |
| 40142.97        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -32.85                        | -13.00      | -19.85      |
| 40269.20        | High    | 50              | H             | QPSK       | H                          | 2                           | 0                            | -29.69                        | -13.00      | -16.69      |

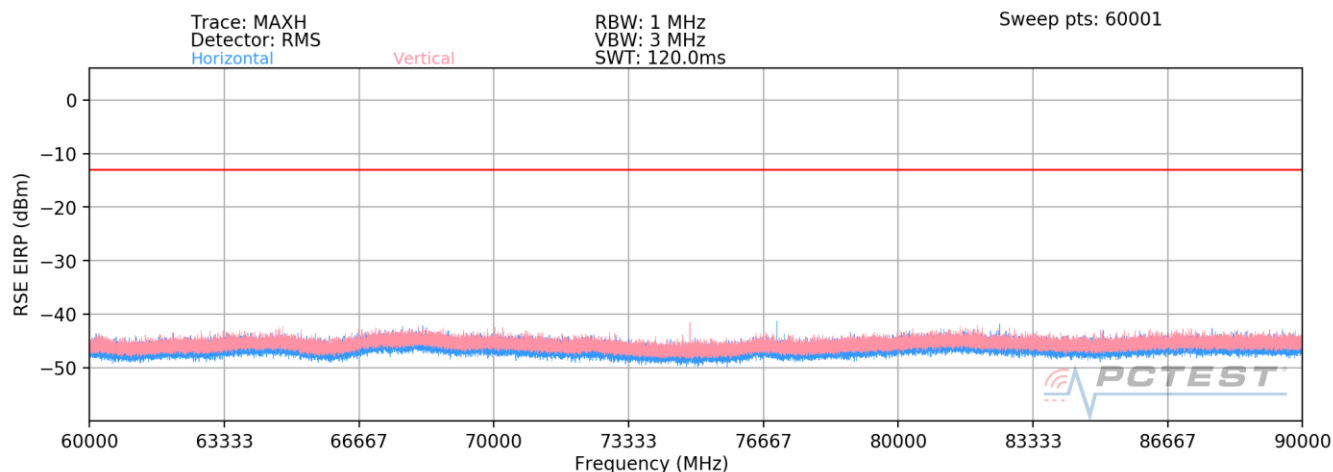
**Table 7-37. Spurious Emissions Table (40 - 60GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 80 of 136                    |

## 60 – 90GHz



**Plot 7-91. Radiated Spurious Plot 60-90 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL [dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 74051.62        | Low     | 50              | H             | QPSK       | H                          | 1                           | 1                            | -40.77                        | -13.00      | -27.77      |
| 77000.42        | Mid     | 50              | H             | QPSK       | H                          | 1                           | 0                            | -40.33                        | -13.00      | -27.33      |
| 79950.65        | High    | 50              | H             | QPSK       | H                          | 2                           | 1                            | -36.83                        | -13.00      | -23.83      |

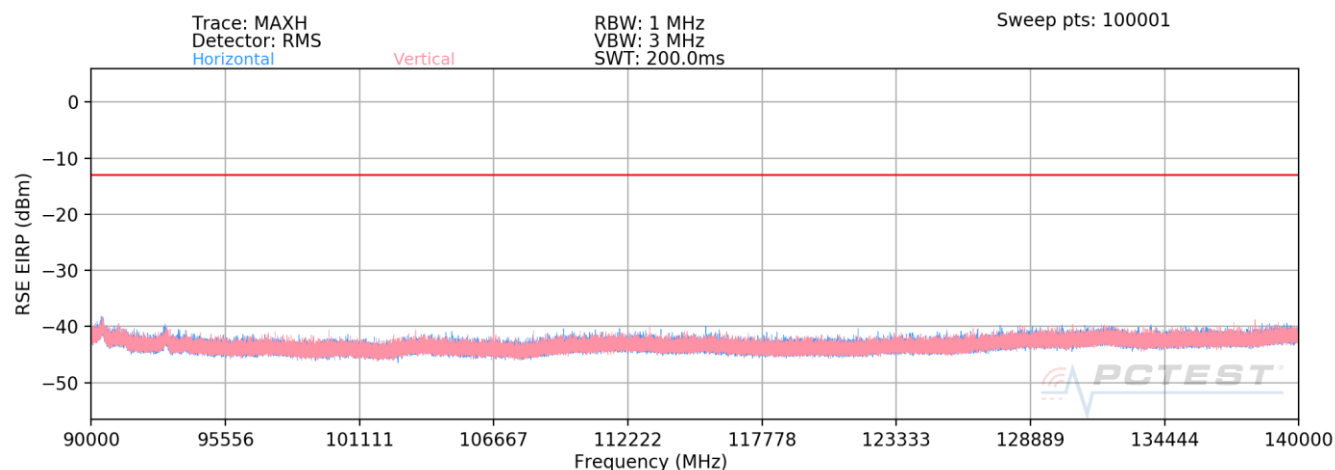
**Table 7-38. Spurious Emissions Table (60-90GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 81 of 136                    |

## 90 – 140GHz



**Plot 7-92. Radiated Spurious Plot 90-140 GHz (1CC QPSK Mid Channel)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 111102.49       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -39.37                        | -13.00      | -26.37      |
| 115505.47       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -39.62                        | -13.00      | -26.62      |
| 119964.76       | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -39.73                        | -13.00      | -26.73      |

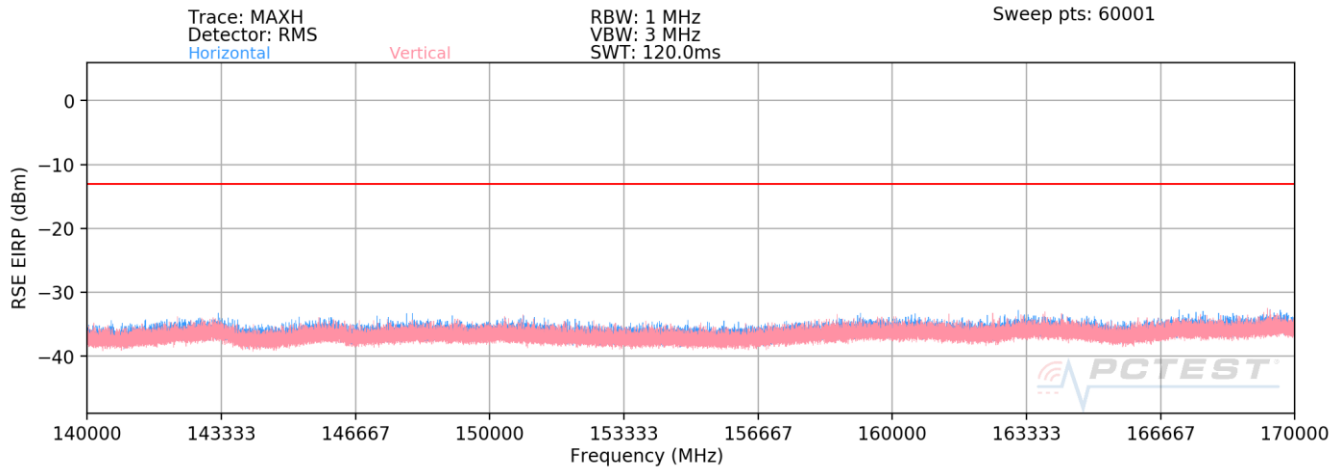
**Table 7-39. Spurious Emissions Table (90-140GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 82 of 136                    |

## 140 – 170GHz



**Plot 7-93. Radiated Spurious Plot 140-170 GHz (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 148104.76       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.52                        | -13.00      | -20.52      |
| 153983.16       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.92                        | -13.00      | -20.92      |
| 159924.43       | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -33.50                        | -13.00      | -20.50      |

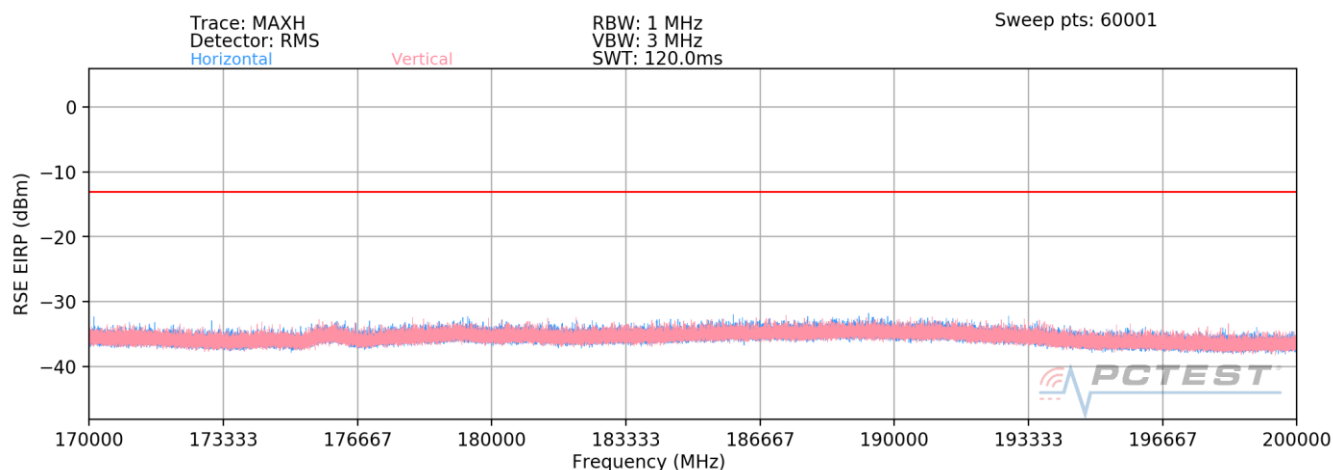
**Table 7-40. Spurious Emissions Table (140-170GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 83 of 136                    |

## 170 – 200GHz



**Plot 7-94. Radiated Spurious Plot 170-200 GHz (1CC QPSK Mid Channel H Beam)**

## Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBμV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP [dBm]} = \text{Analyzer Level [dBm]} + 107 + \text{AFCL[dB/m]} + 20\text{Log(Dm)} + \text{Harmonic Mixer Loss (dB)} - 104.8$$

| Frequency [MHz] | Channel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Turntable Azimuth [degrees] | Positioner Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|---------|-----------------|---------------|------------|----------------------------|-----------------------------|------------------------------|-------------------------------|-------------|-------------|
| 185143.78       | Low     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.61                        | -13.00      | -20.61      |
| 192476.92       | Mid     | 50              | H             | QPSK       | H                          | -                           | -                            | -33.49                        | -13.00      | -20.49      |
| 199856.37       | High    | 50              | H             | QPSK       | H                          | -                           | -                            | -34.34                        | -13.00      | -21.34      |

**Table 7-41. Spurious Emissions Table (170-200GHz)**

## Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 84 of 136                    |



## 7.5 Band Edge Emissions

§2.1051, §30.203

### Test Overview

The EUT was fed a 5G NR mmWave representative signal via a horn antenna connects to a signal generator. All out of band emissions are measured in a radiated setup while the EUT is operating at its maximum AGC level, at maximum power, and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

***The minimum permissible attenuation level of any spurious emission is -13dBm/1MHz. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.***

### Test Procedure Used

ANSI C63.26-2015 Section 5 and ANSI C63.26-2015 Section 6.4  
 KDB 842590 D01 v01r02 Section 4.4.2.2

### Test Settings

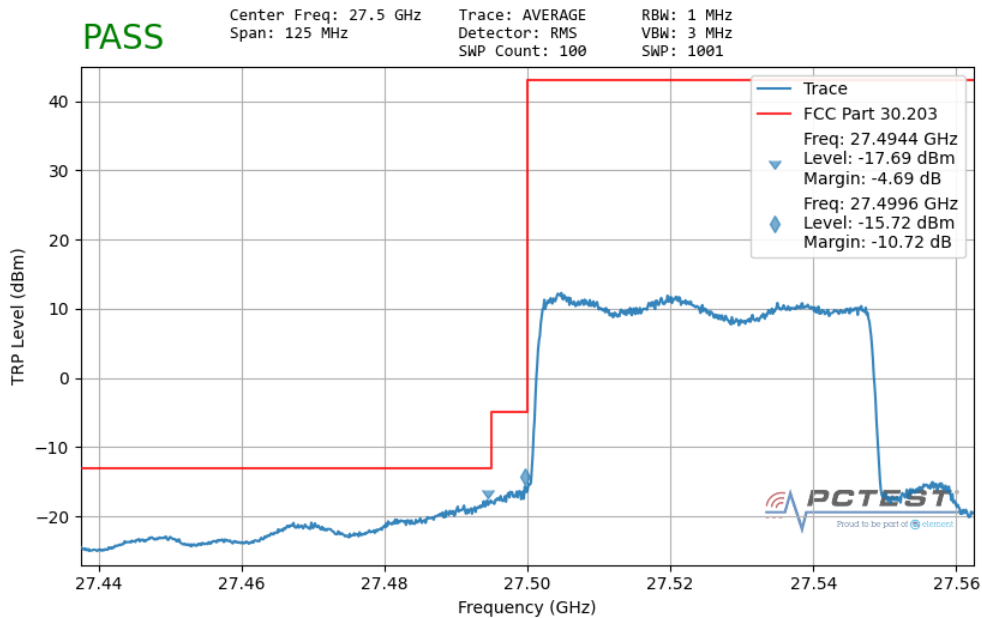
1. Start and stop frequency were set such that both upper and lower band edges are measured.
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 1MHz
4. VBW  $\geq 3 \times$  RBW
5. Detector = RMS
6. Number of sweep points  $\geq 2 \times$  Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Notes

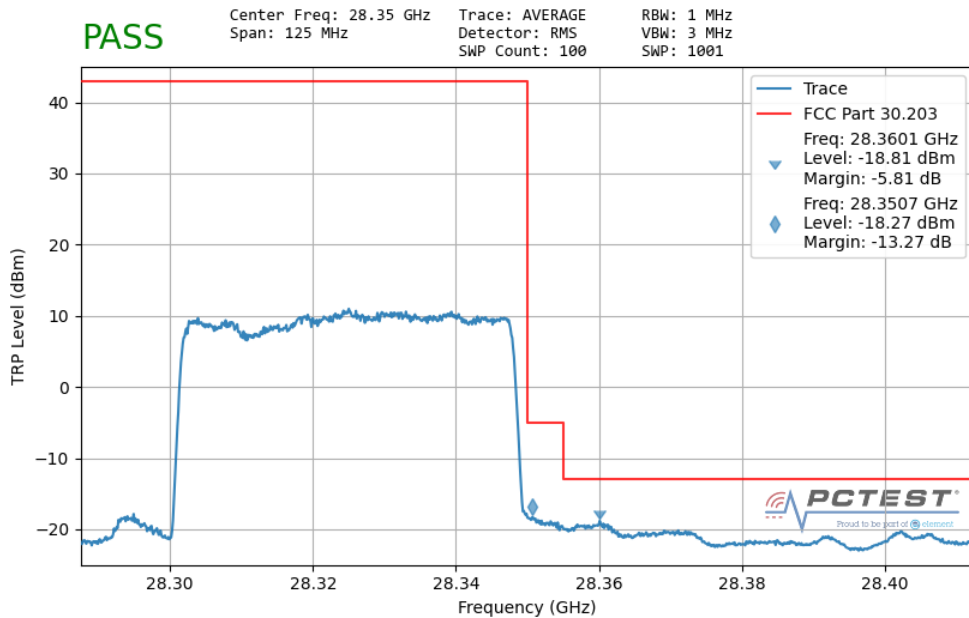
- 1) The spectrum plots in this section show measurement of some emissions that may be considered as part of the spurious domain, extending beyond the band edges by more than 10% of the occupied bandwidth of the test signal.
- 2) Since some of the Band Edge EIRP measurements exceed the emission limit, the TRP measurement was performed as the alternative method. The plots measured in TRP are labeled as "TRP" in the captions.

|                                            |                                                                                                                                                                                                                      |                                       |                                   |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                                 | EUT Type:<br>5G Extender Gen 2        | Page 85 of 136                    |

## n261 Donor Side

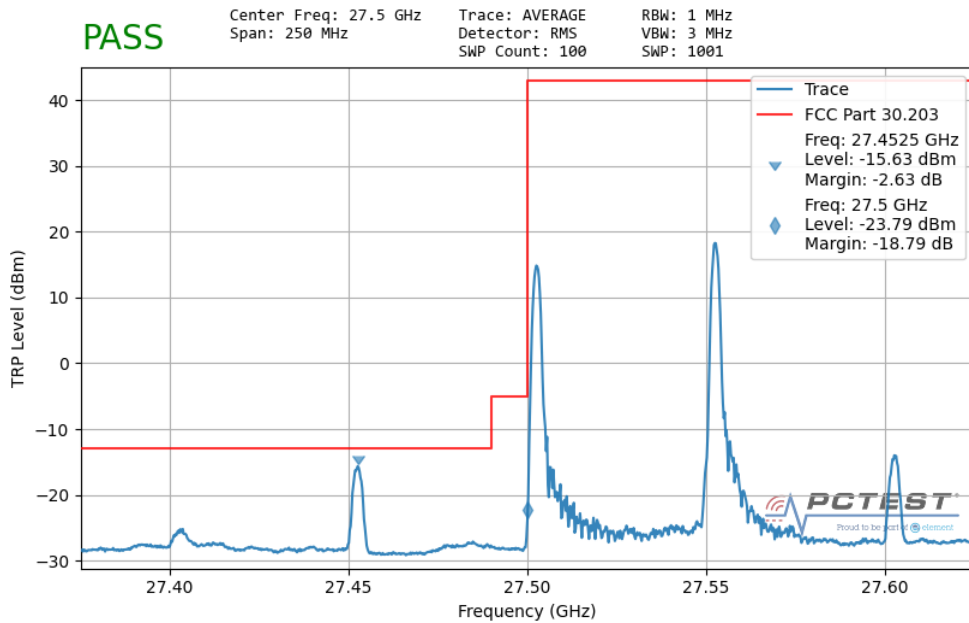


**Plot 7-95. Lower Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – H Beam**

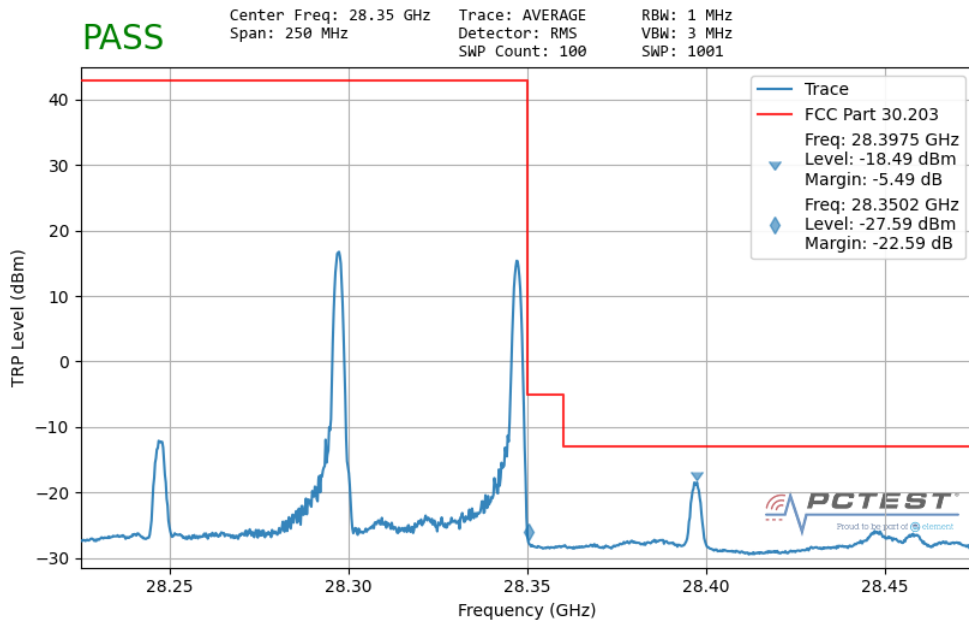


**Plot 7-96. Upper Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – H Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 86 of 136                    |

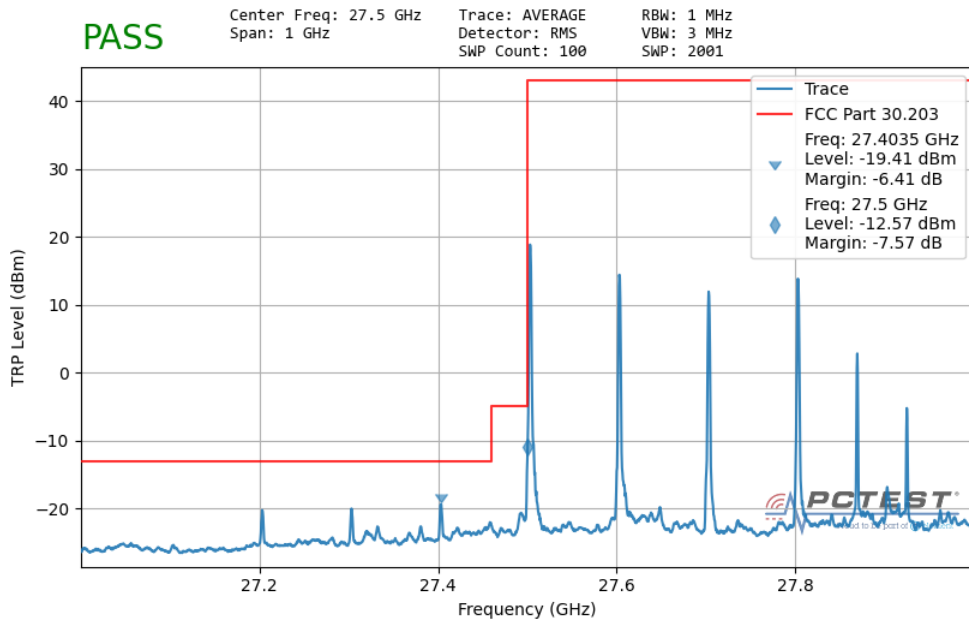


**Plot 7-97. Lower Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – H Beam**

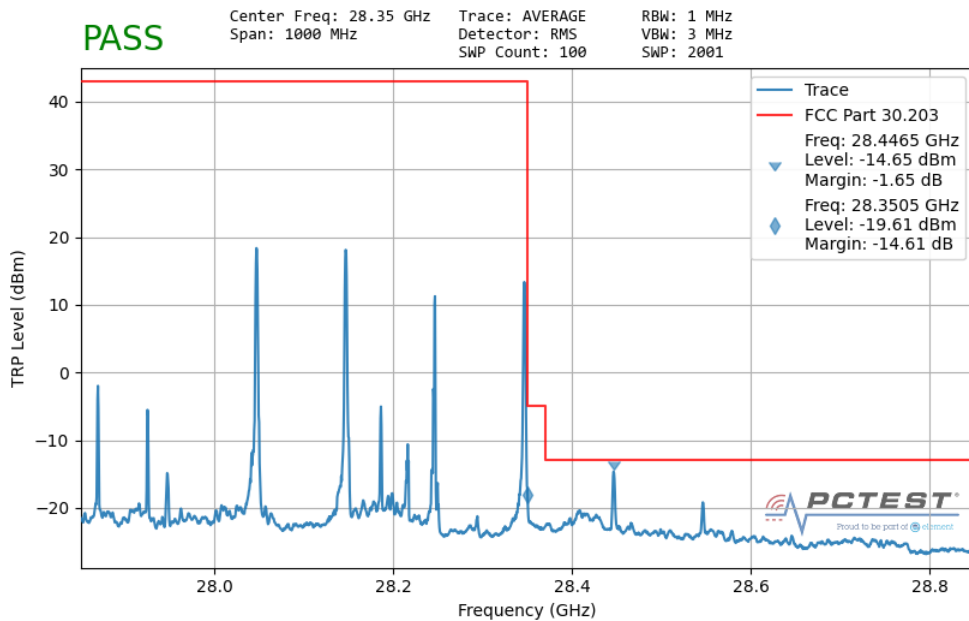


**Plot 7-98. Upper Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – H Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 87 of 136                    |

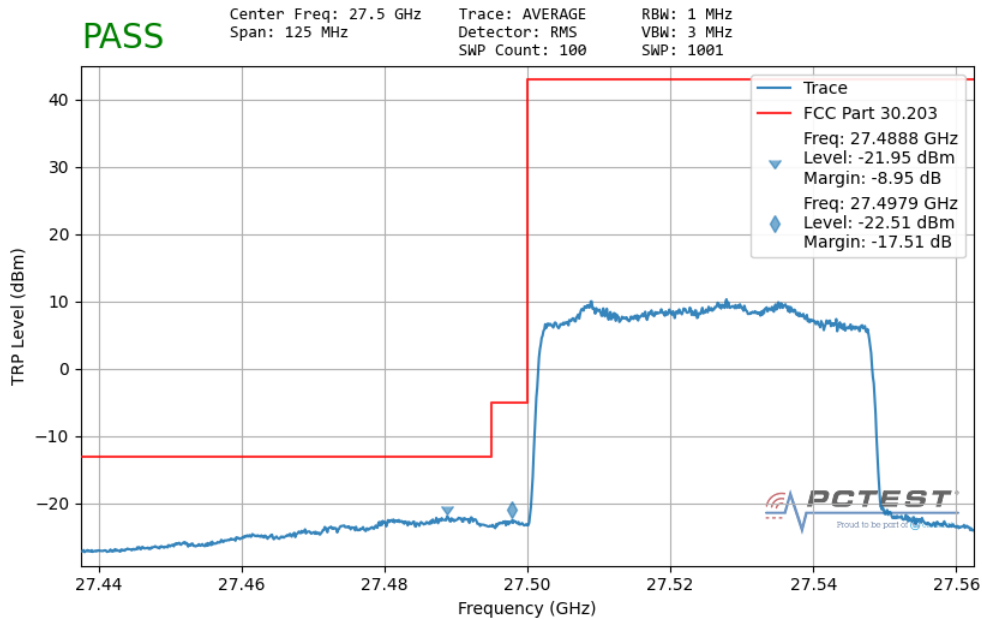


**Plot 7-99. Lower Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – H Beam**

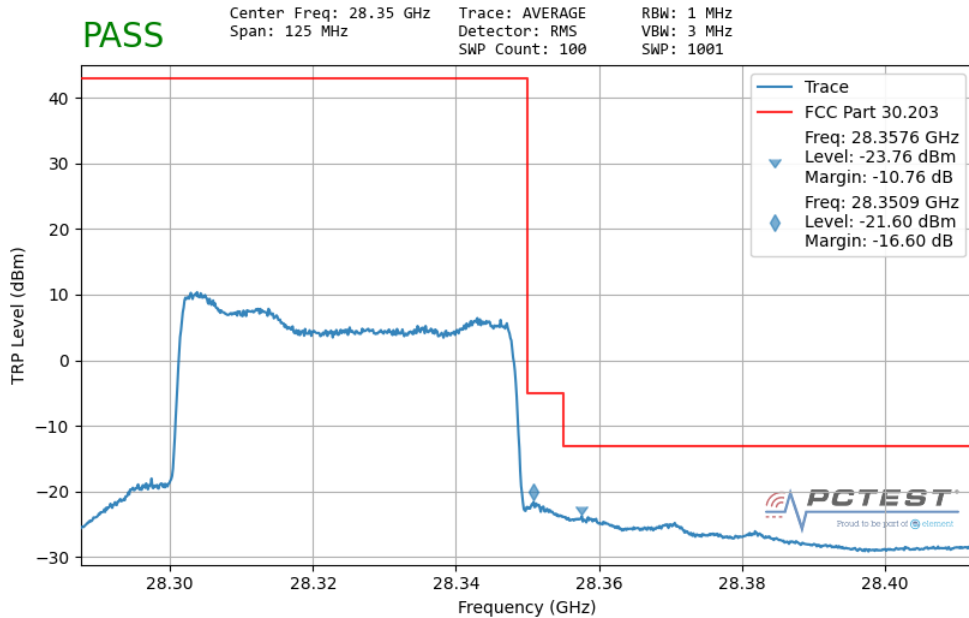


**Plot 7-100. Upper Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – H Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 88 of 136                    |

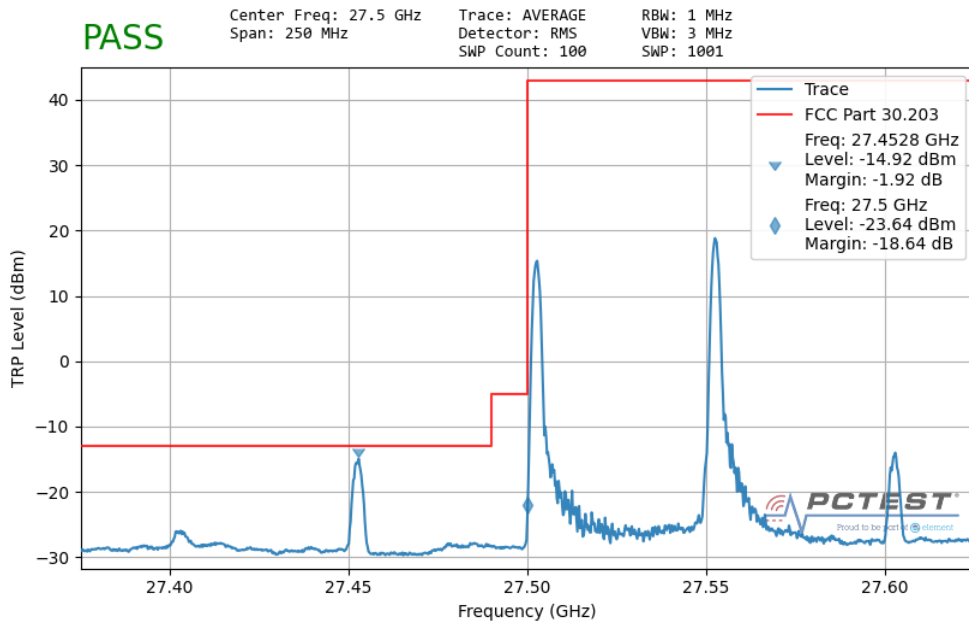


**Plot 7-101. Lower Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – V Beam**

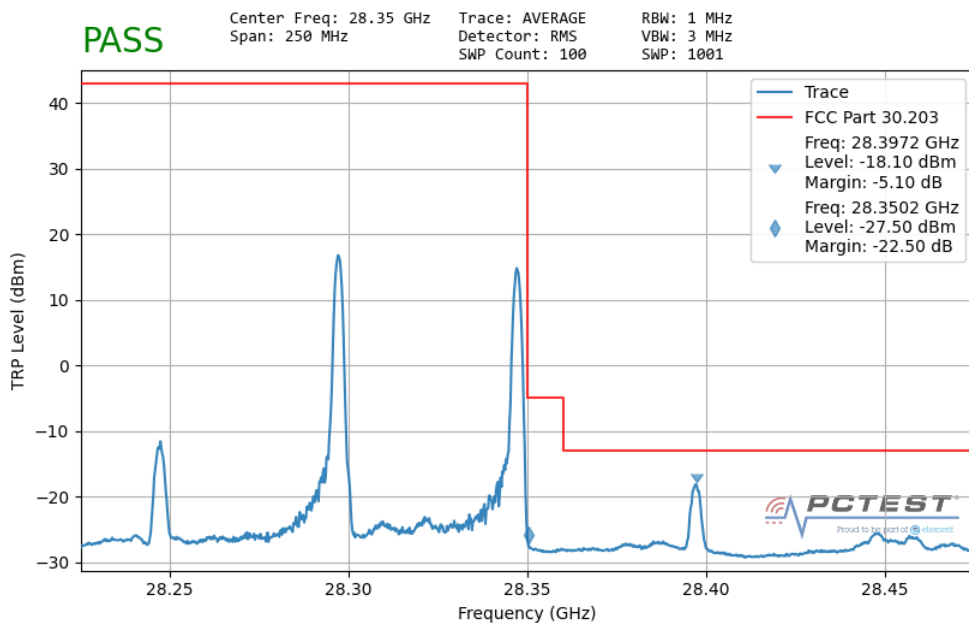


**Plot 7-102. Upper Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – V Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 89 of 136                    |

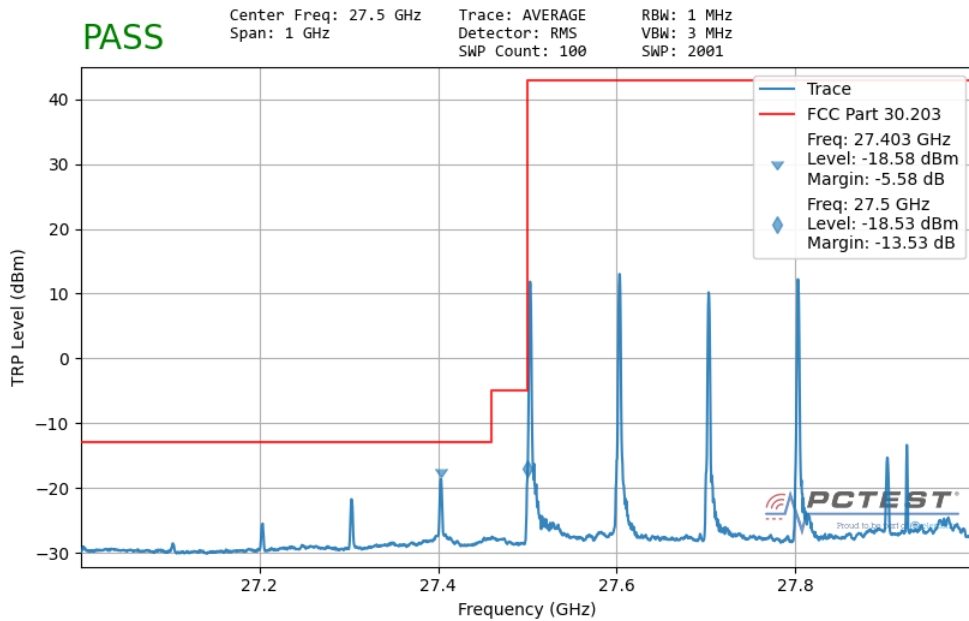


**Plot 7-103. Lower Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – V Beam**

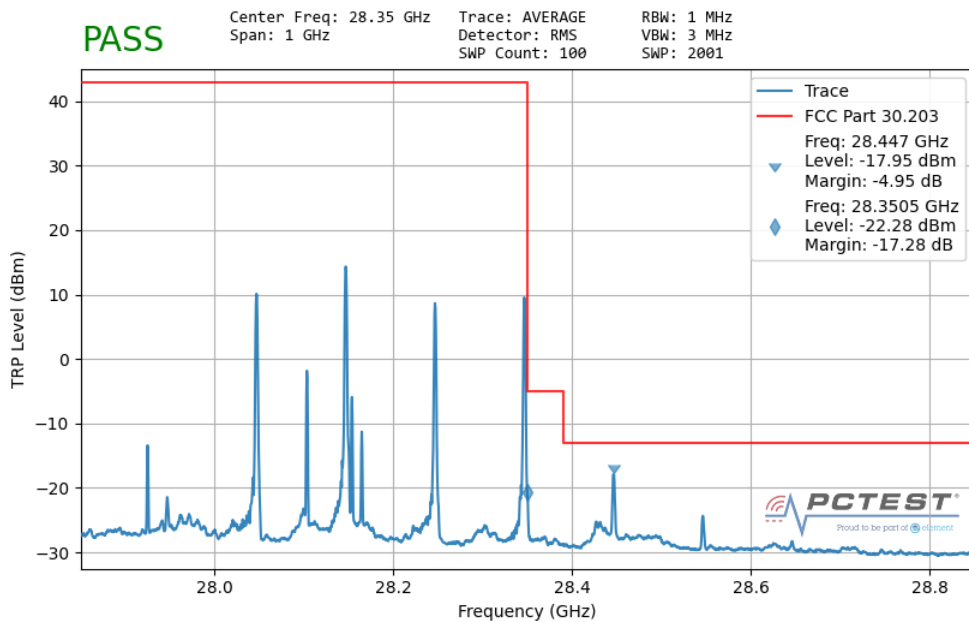


**Plot 7-104. Upper Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – V Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 90 of 136                    |

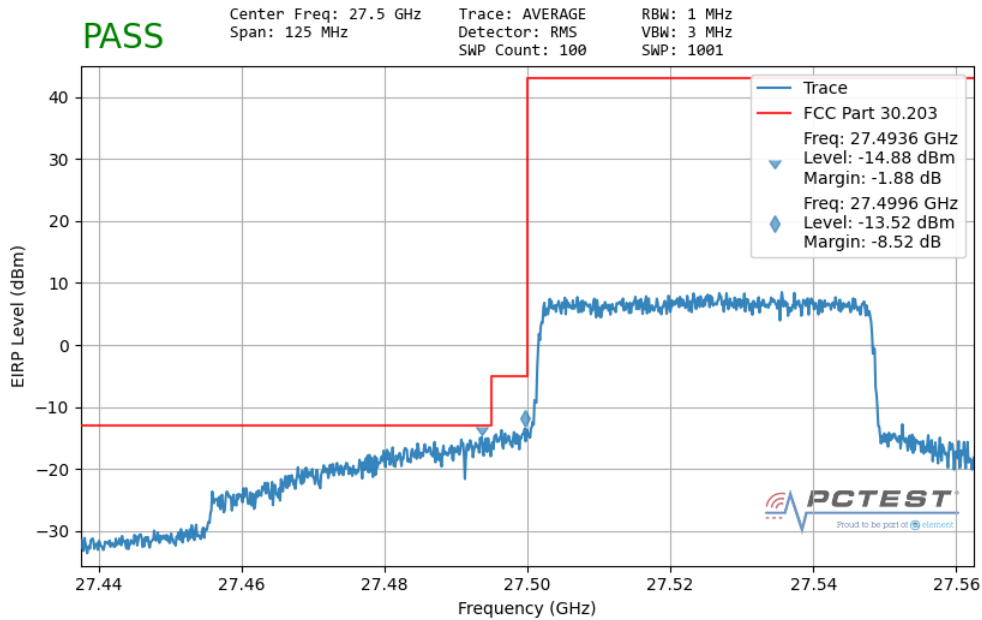


**Plot 7-105. Lower Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – V Beam**

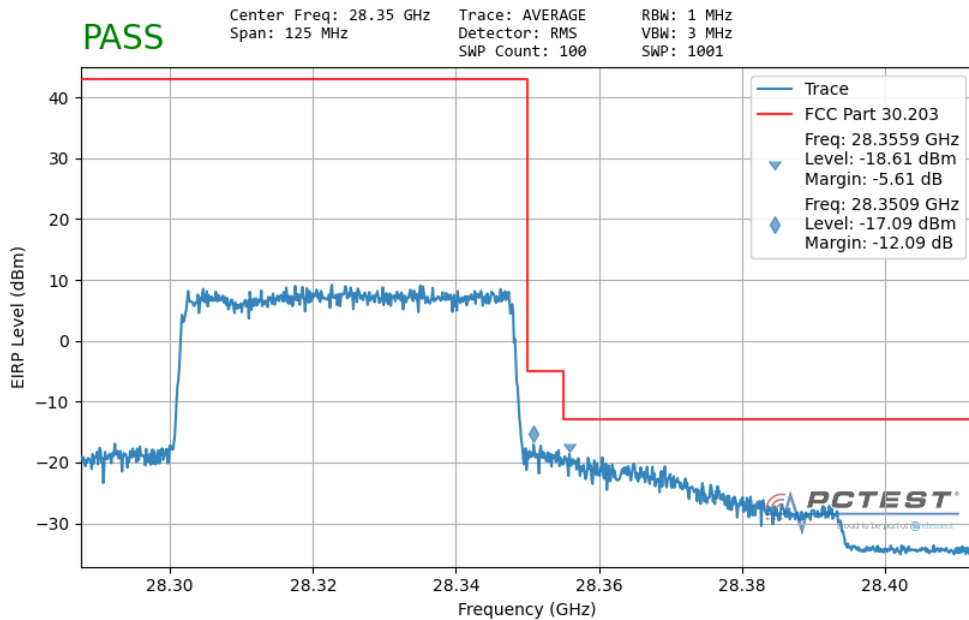


**Plot 7-106. Upper Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – V Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 91 of 136                    |



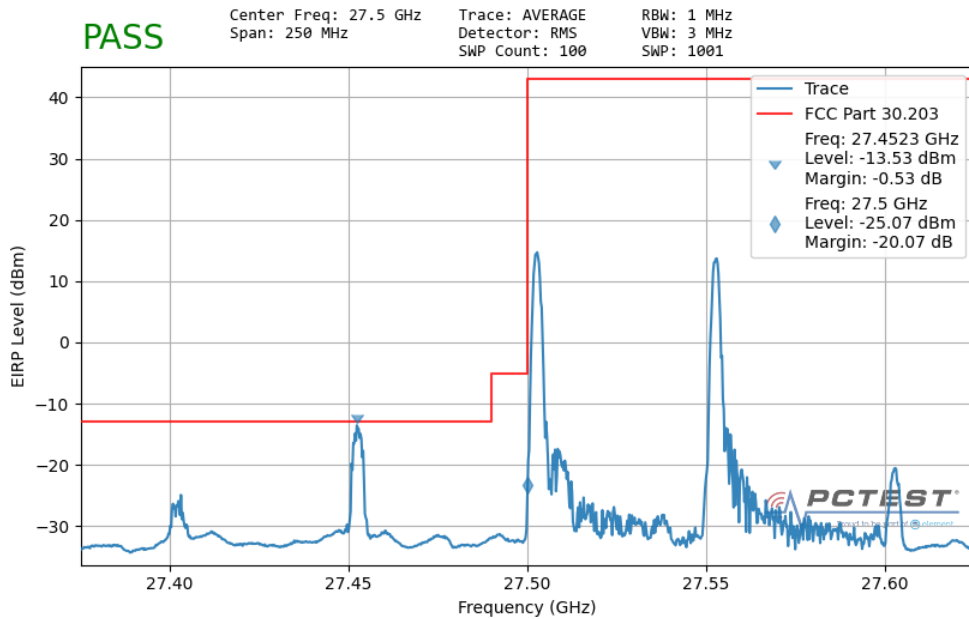
**Plot 7-107. Lower Band Edge Plot (50MHz QPSK Full RB) – Relay Side – H Beam**



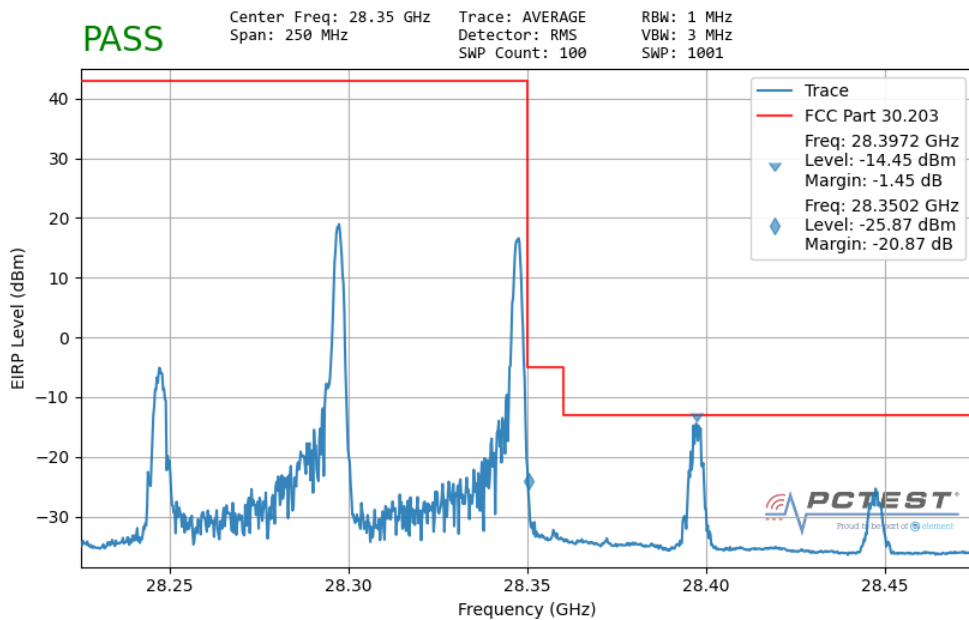
**Plot 7-108. Upper Band Edge Plot (50MHz QPSK Full RB) – Relay Side – H Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 92 of 136                    |



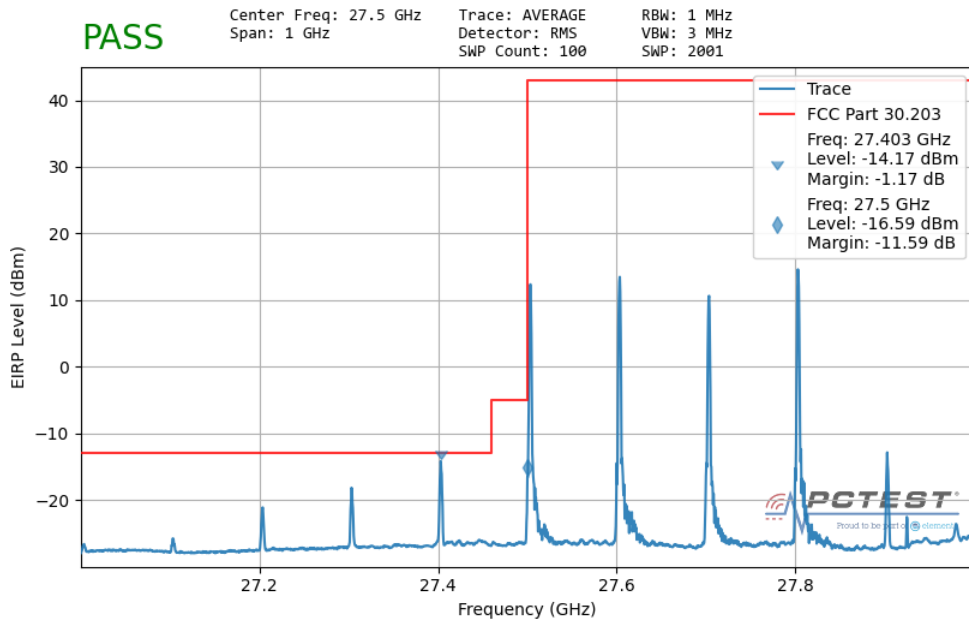


**Plot 7-109. Lower Band Edge Plot (50MHz 2CC QPSK 1 RB) – Relay Side – H Beam**

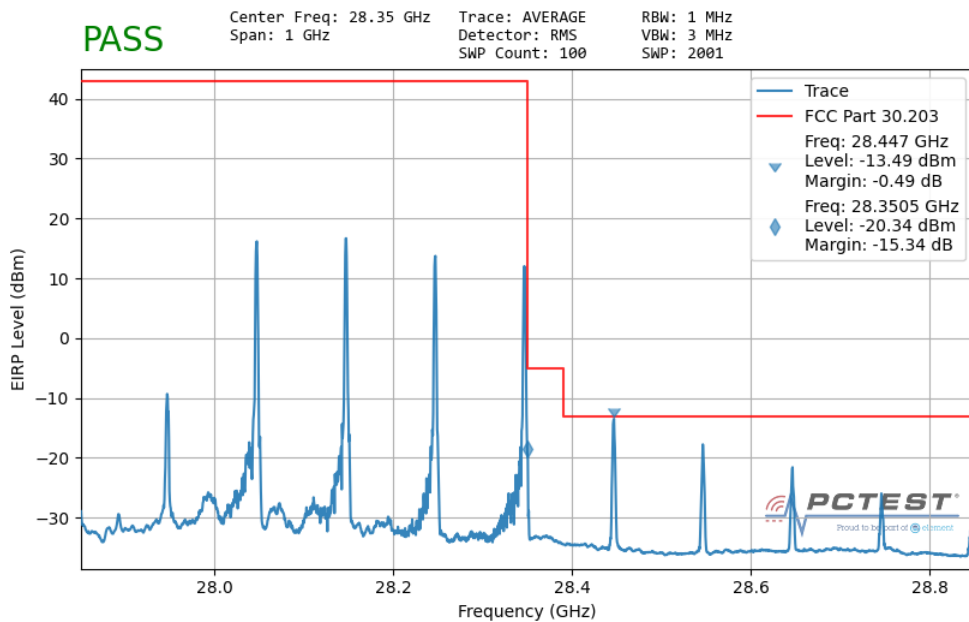


**Plot 7-110. Upper Band Edge Plot (50MHz 2CC QPSK 1 RB) – Relay Side – H Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 93 of 136                    |

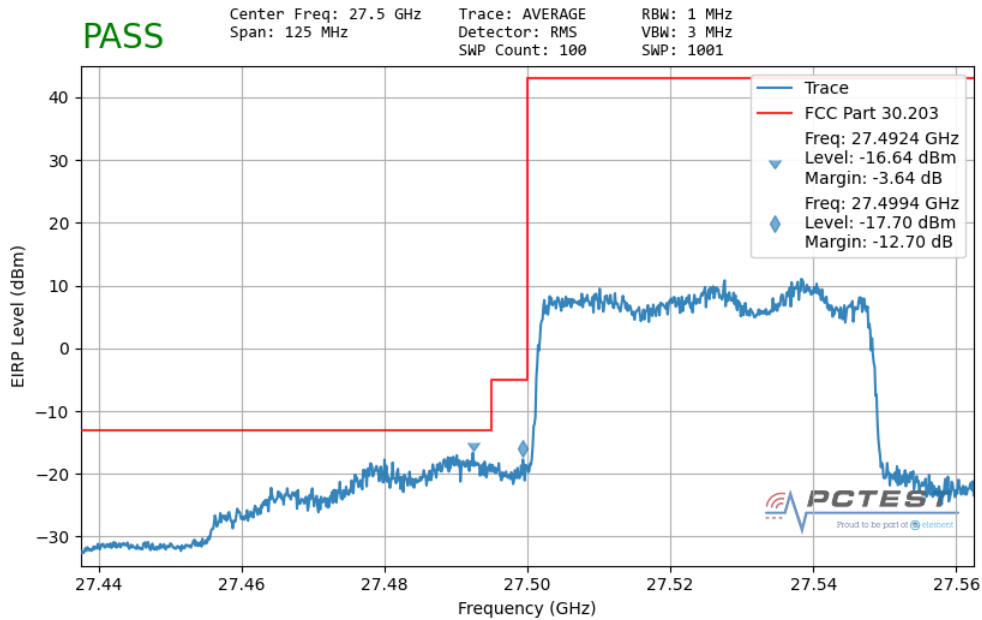


Plot 7-111. Lower Band Edge Plot (100MHz 4CC QPSK 1 RB) – Relay Side – H Beam

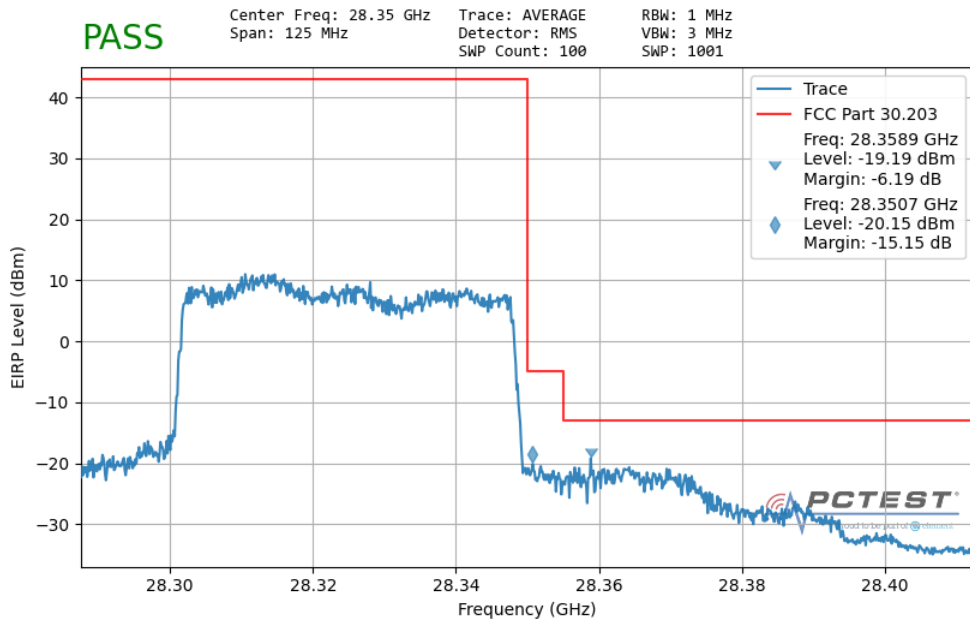


Plot 7-112. Upper Band Edge Plot (100MHz 4CC QPSK 1 RB) – Relay Side – H Beam

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 94 of 136                    |

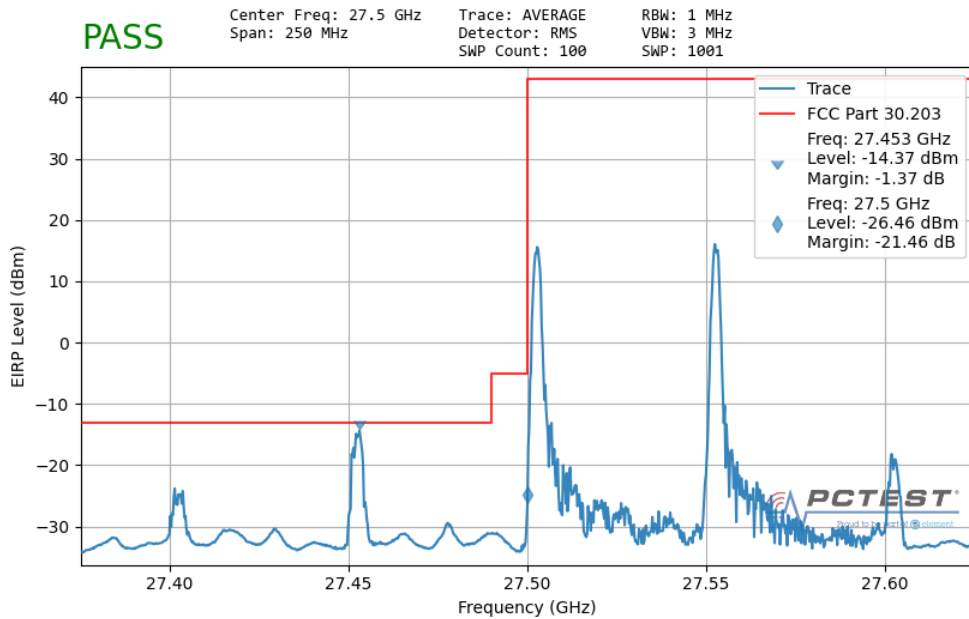


**Plot 7-113. Lower Band Edge Plot (50MHz QPSK Full RB) – Relay Side – V Beam**

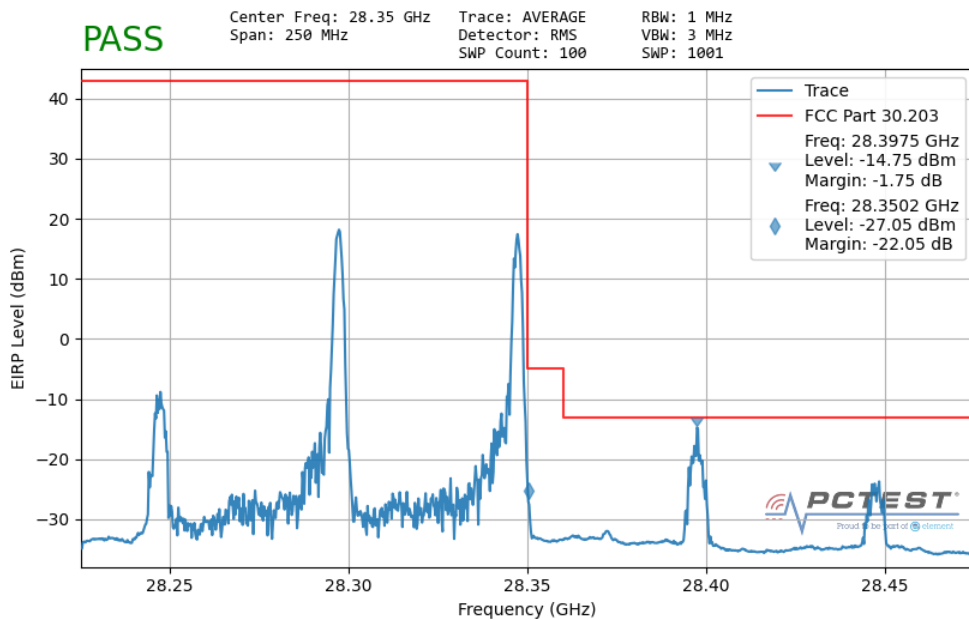


**Plot 7-114. Upper Band Edge Plot (50MHz QPSK Full RB) – Relay Side – V Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 95 of 136                    |

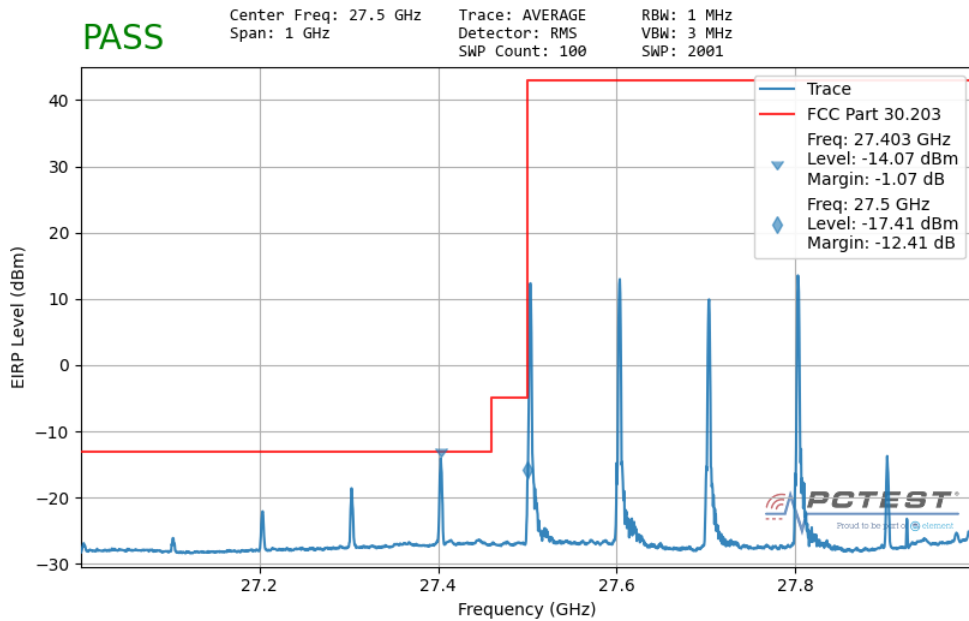


**Plot 7-115. Lower Band Edge Plot (50MHz 2CC QPSK 1 RB) – Relay Side – V Beam**

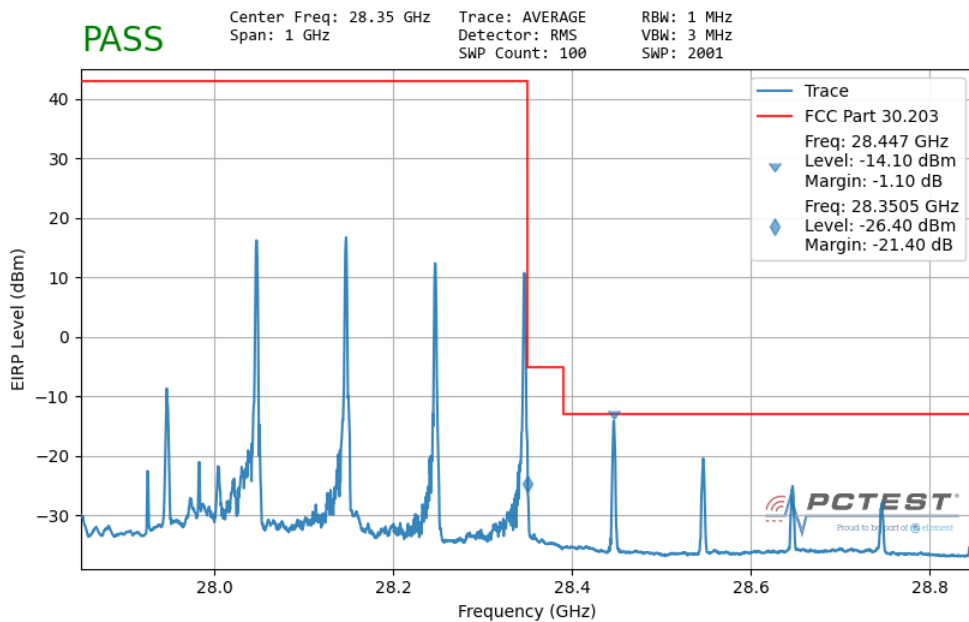


**Plot 7-116. Upper Band Edge Plot (50MHz 2CC QPSK 1 RB) – Relay Side – V Beam**

|                                            |                                                                                     |                                       |                                   |
|--------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021                                                | EUT Type:<br>5G Extender Gen 2        | Page 96 of 136                    |

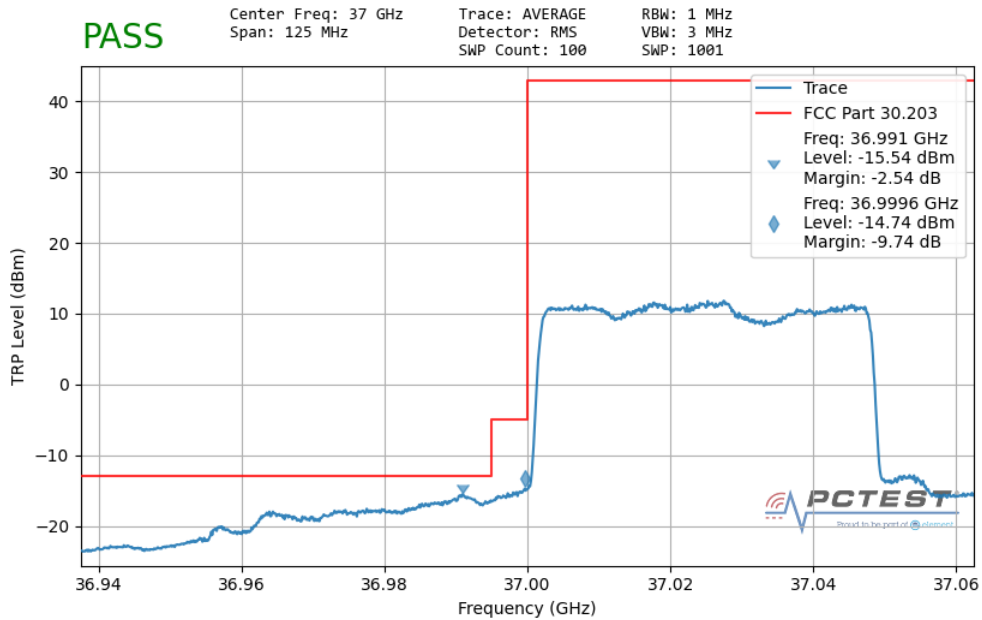


**Plot 7-117. Lower Band Edge Plot (100MHz 4CC QPSK 1 RB) – Relay Side – V Beam**

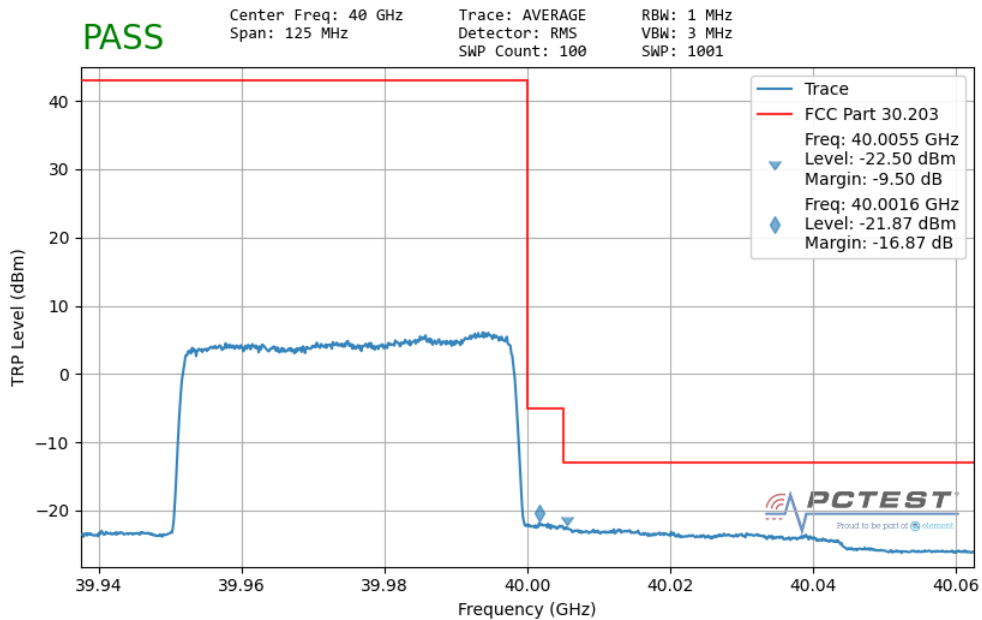


**Plot 7-118. Upper Band Edge Plot (100MHz 4CC QPSK 1 RB) – Relay Side – V Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 97 of 136                    |

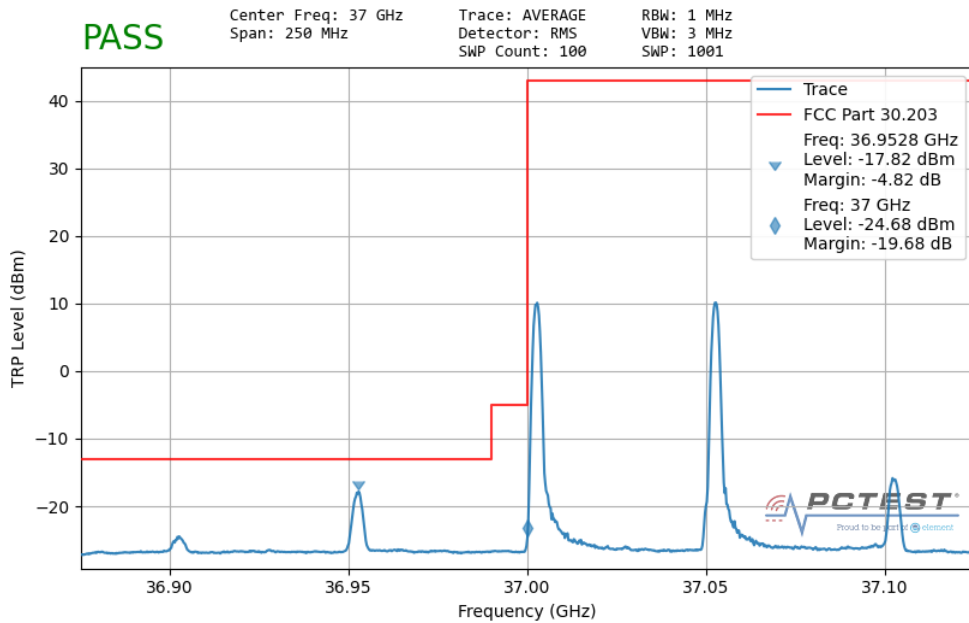


**Plot 7-119. Lower Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – H Beam**

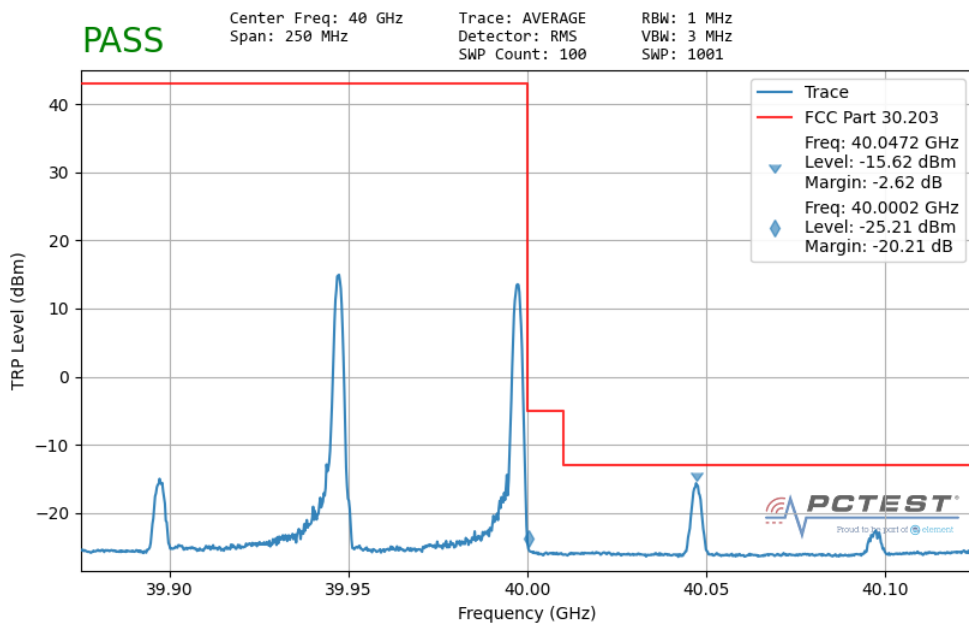


**Plot 7-120. Upper Band Edge Plot (50MHz QPSK Full RB) – TRP – Donor Side – H Beam**

|                                            |                                                                                                                                                                                                              |                                       |                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      |  <b>PCTEST</b><br>Proud to be part of  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021                                                                                                                                                                         | EUT Type:<br>5G Extender Gen 2        | Page 98 of 136                    |

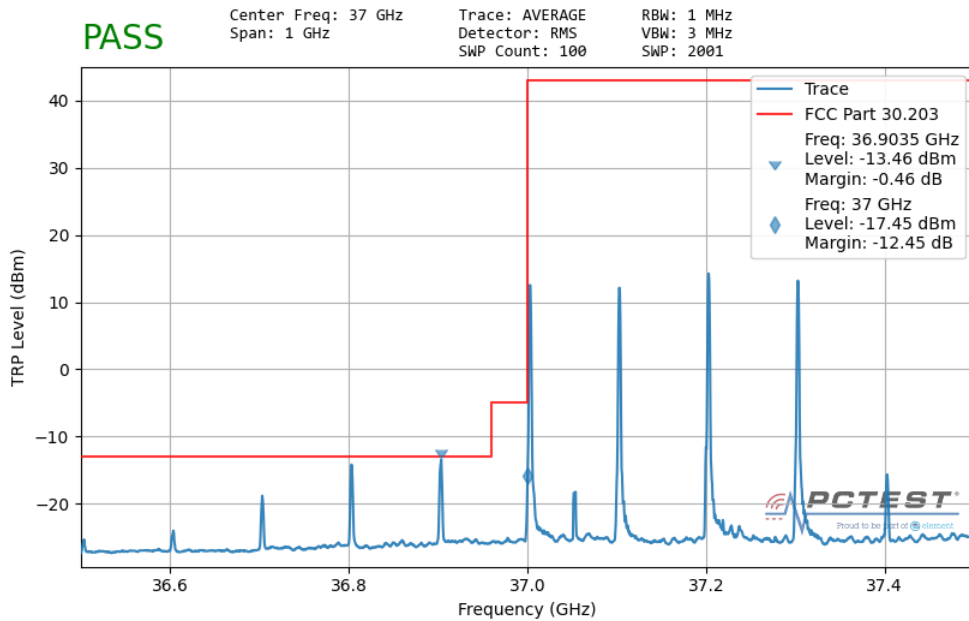


**Plot 7-121. Lower Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – H Beam**

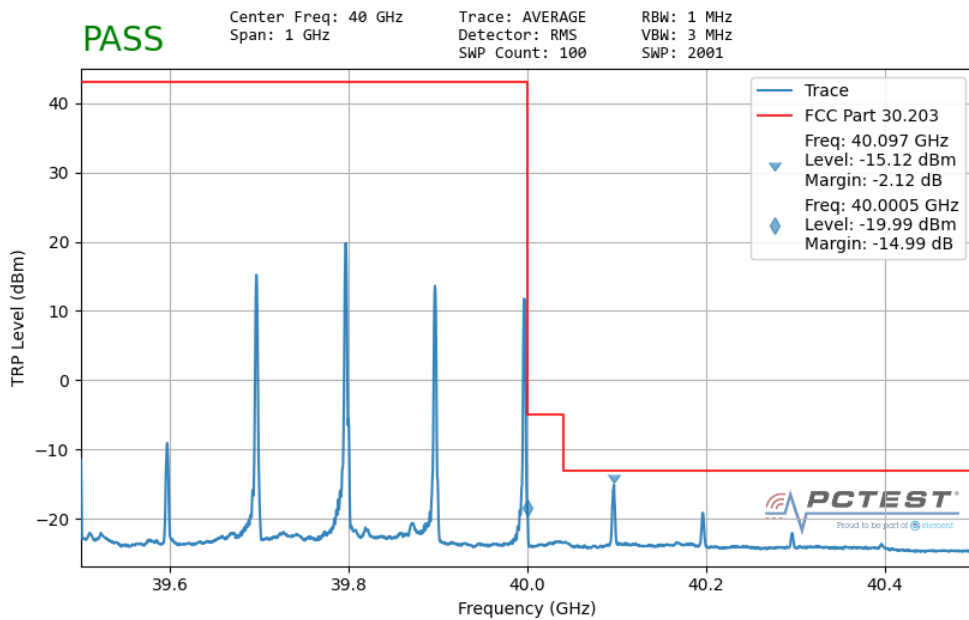


**Plot 7-122. Upper Band Edge Plot (50MHz 2CC QPSK 1 RB) – TRP – Donor Side – H Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3.NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 99 of 136                    |



**Plot 7-123. Lower Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – H Beam**



**Plot 7-124. Upper Band Edge Plot (100MHz 4CC QPSK 1 RB) – TRP – Donor Side – H Beam**

|                                            |                                              |                                       |                                   |
|--------------------------------------------|----------------------------------------------|---------------------------------------|-----------------------------------|
| FCC ID: NKR-TR2V1-IDU                      | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2106230069-02-R3-NKR | Test Dates:<br>07/12/2021-08/16/2021         | EUT Type:<br>5G Extender Gen 2        | Page 100 of 136                   |