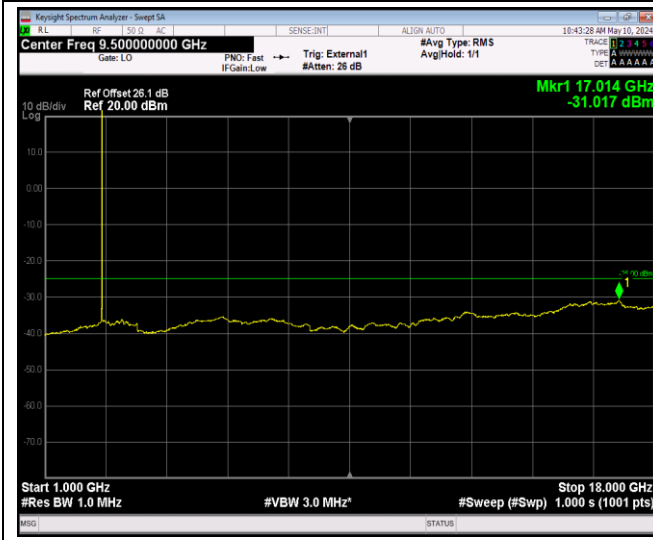
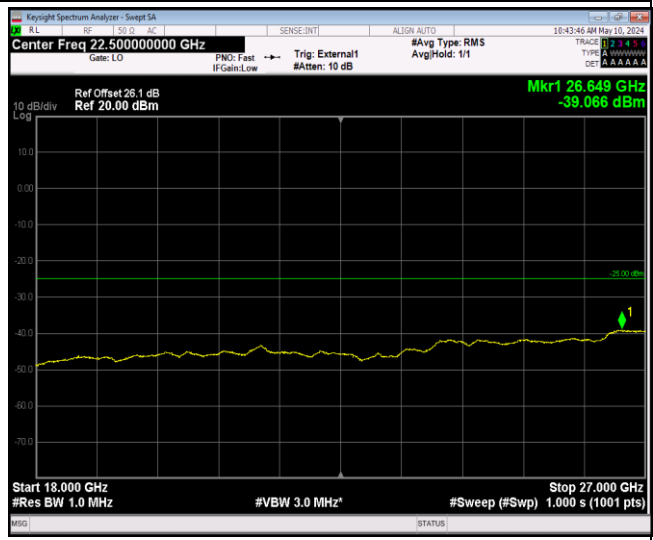


Band41\_5MHz\_64QAM\_40065\_1RB#0\_18000~27000\_18000~27000

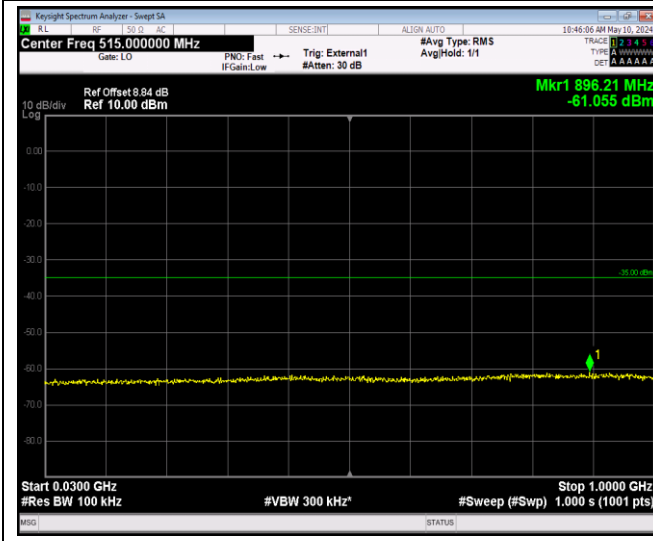
Band41\_5MHz\_64QAM\_40640\_1RB#0\_30~1000\_30~1000



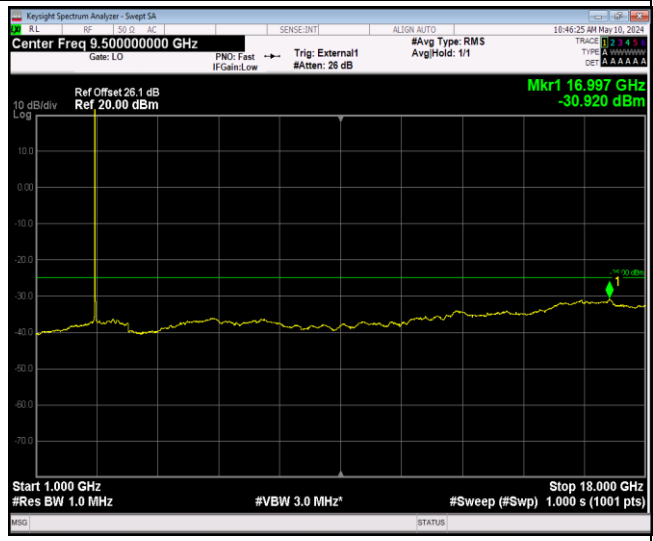
Band41\_5MHz\_64QAM\_40640\_1RB#0\_1000~18000\_1000~18000



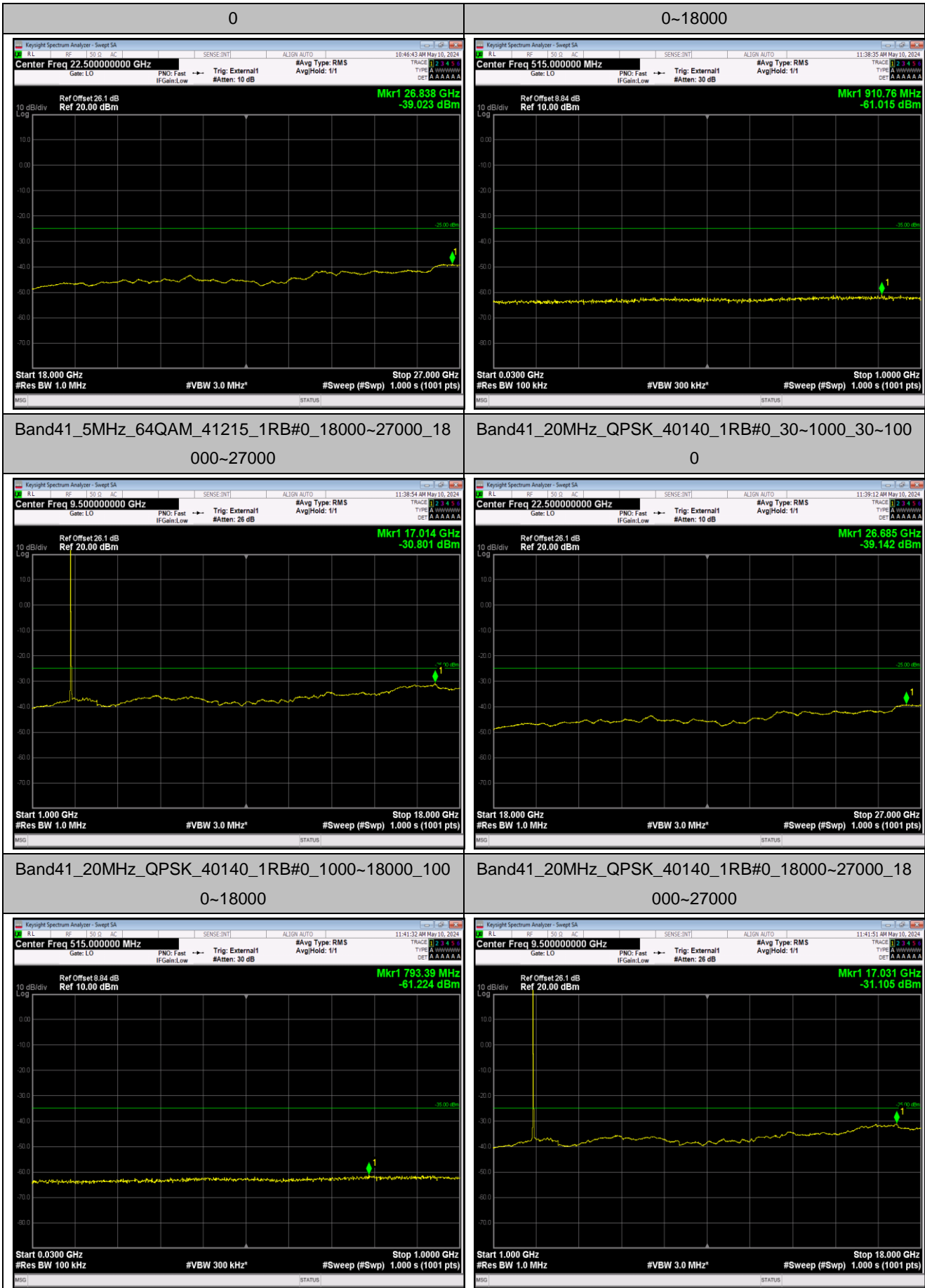
Band41\_5MHz\_64QAM\_40640\_1RB#0\_18000~27000\_18000~27000

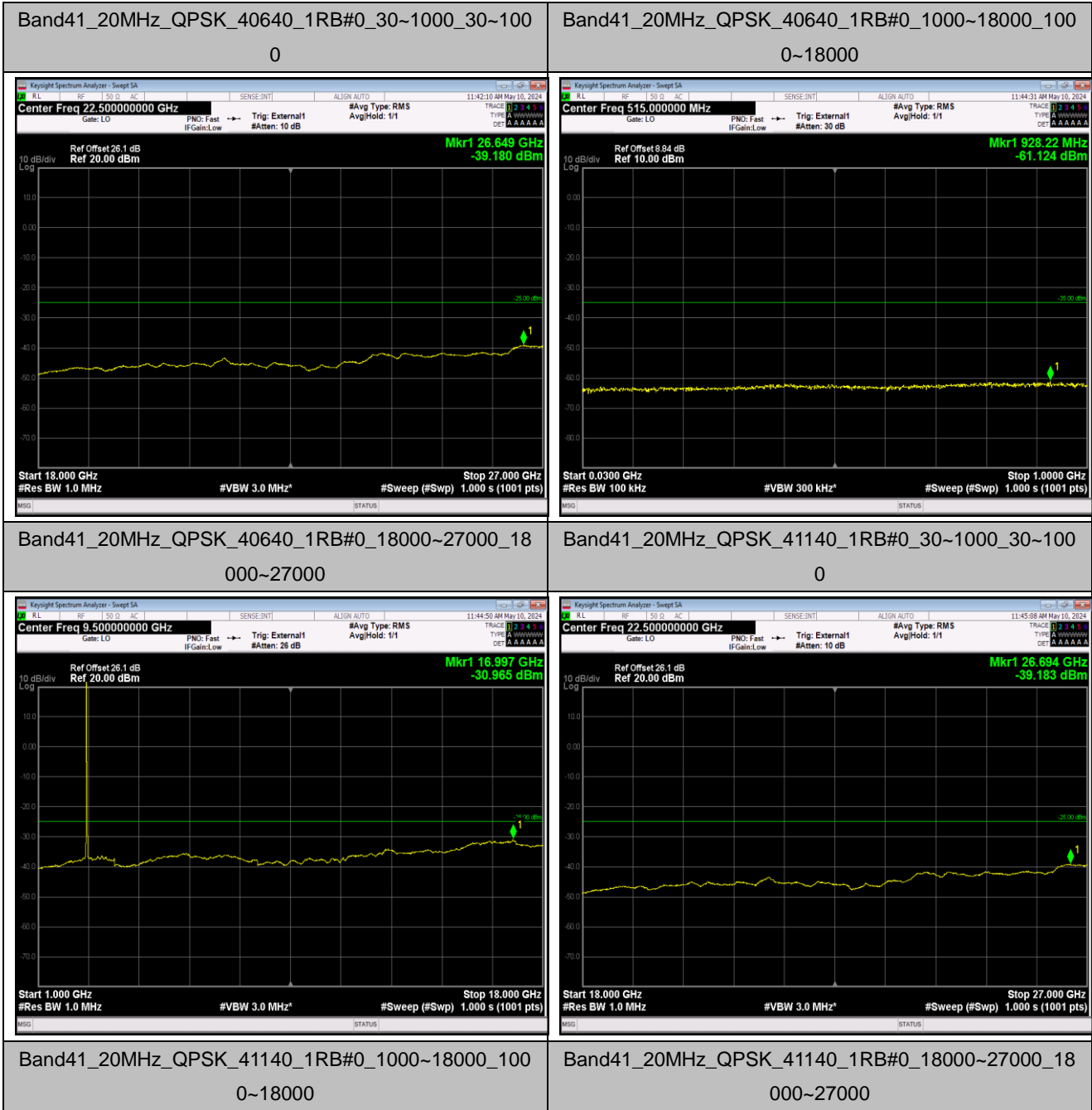


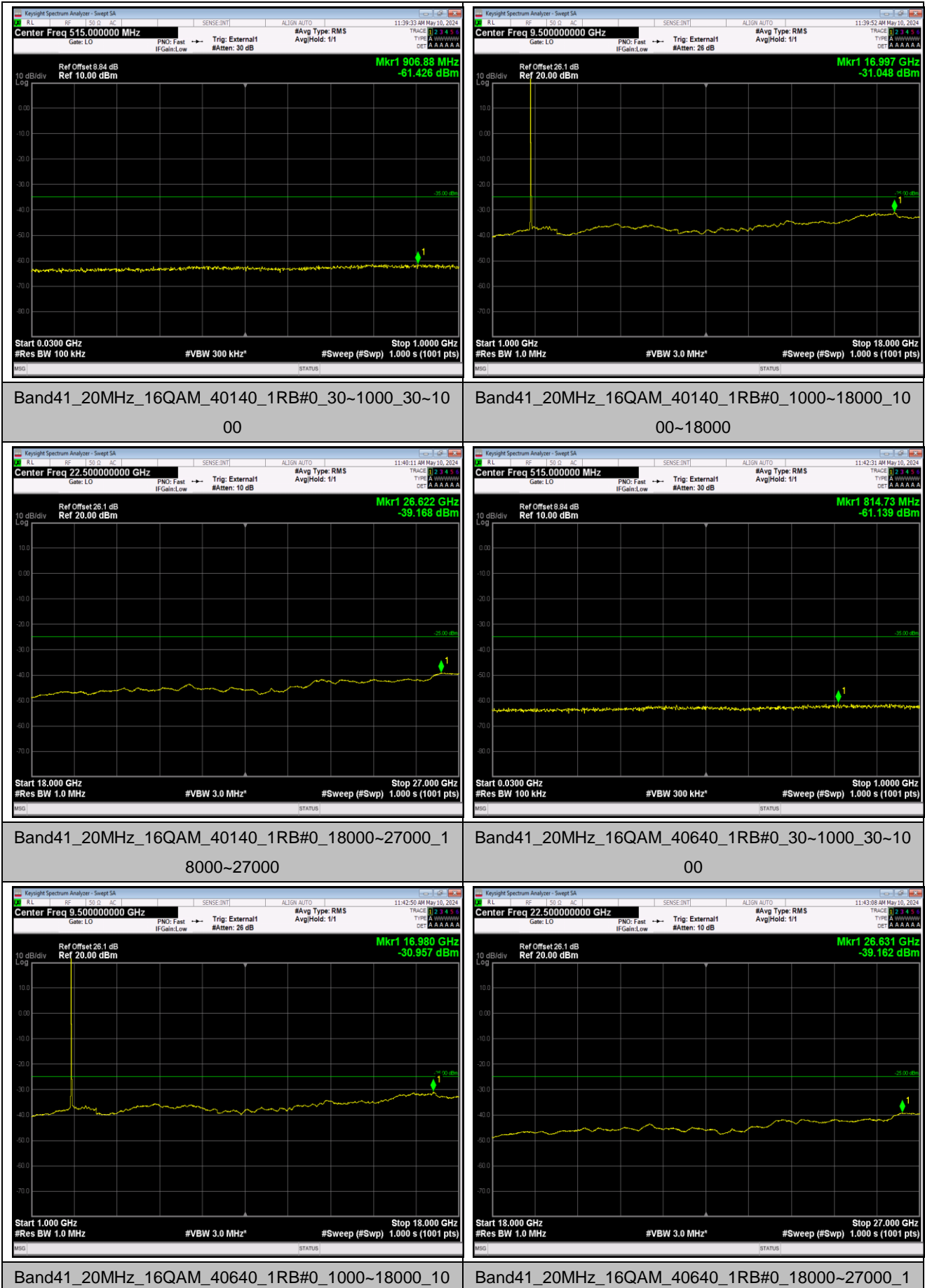
Band41\_5MHz\_64QAM\_41215\_1RB#0\_30~1000\_30~1000

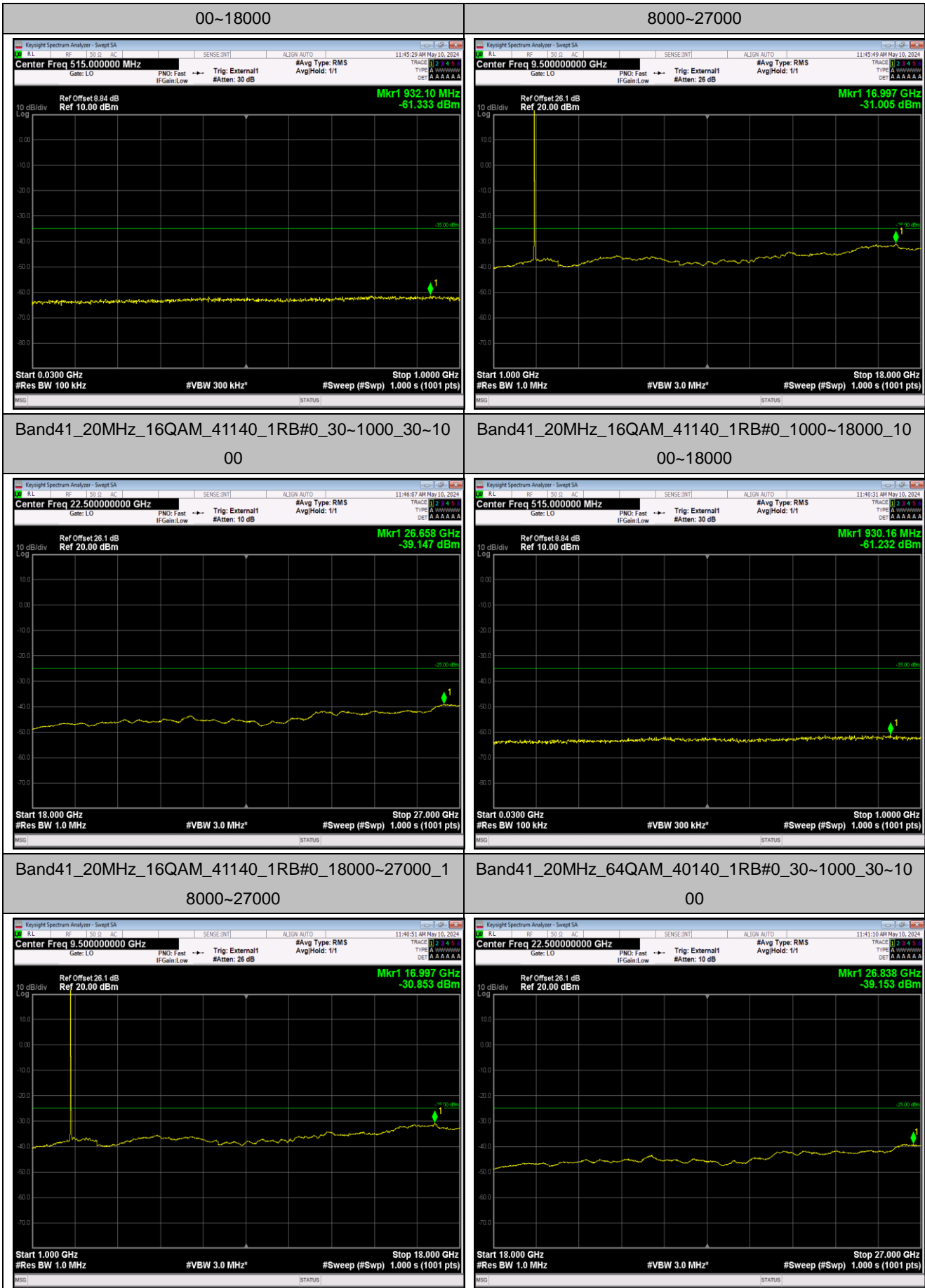


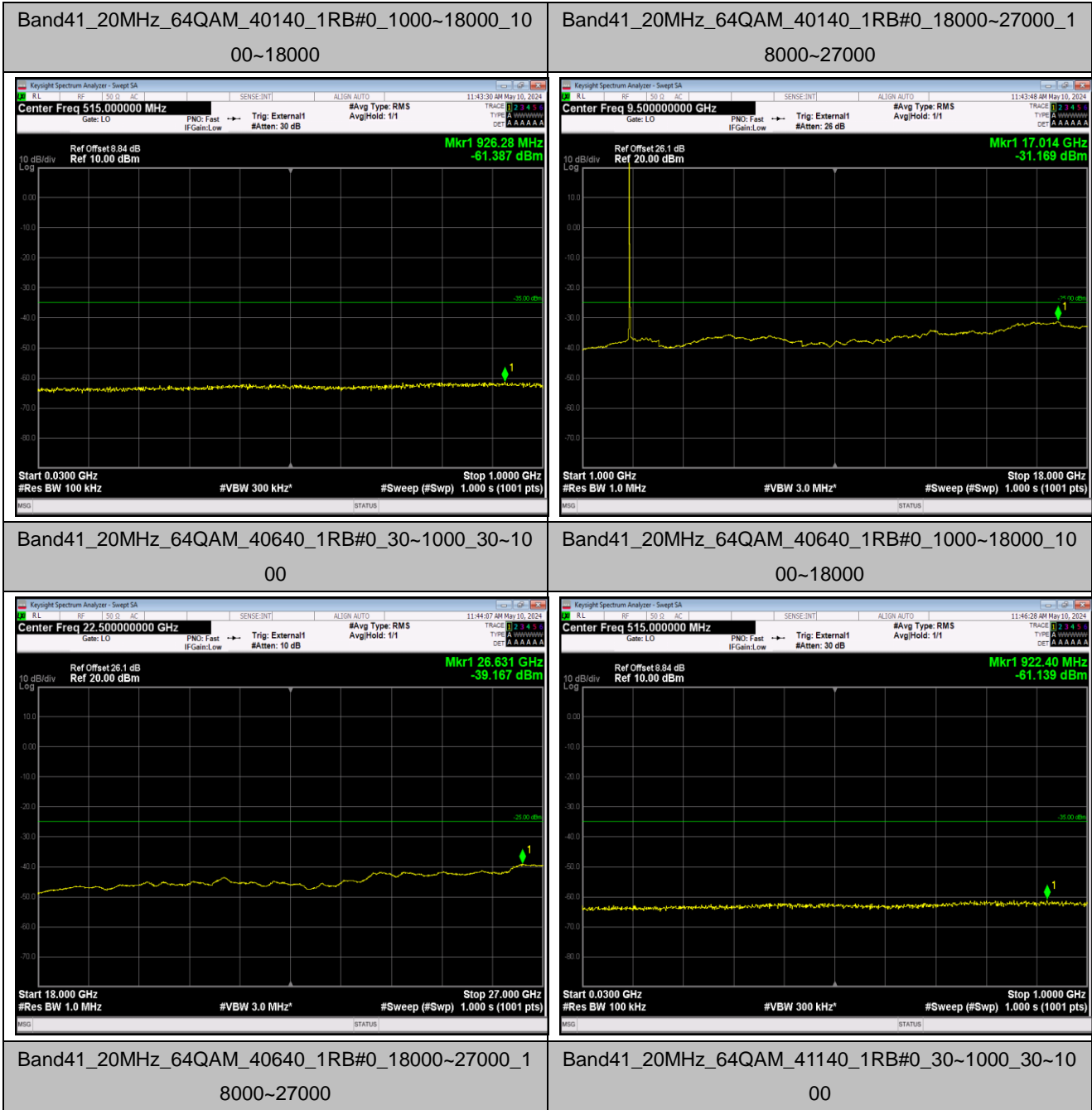
Band41\_5MHz\_64QAM\_41215\_1RB#0\_1000~18000\_1000~18000

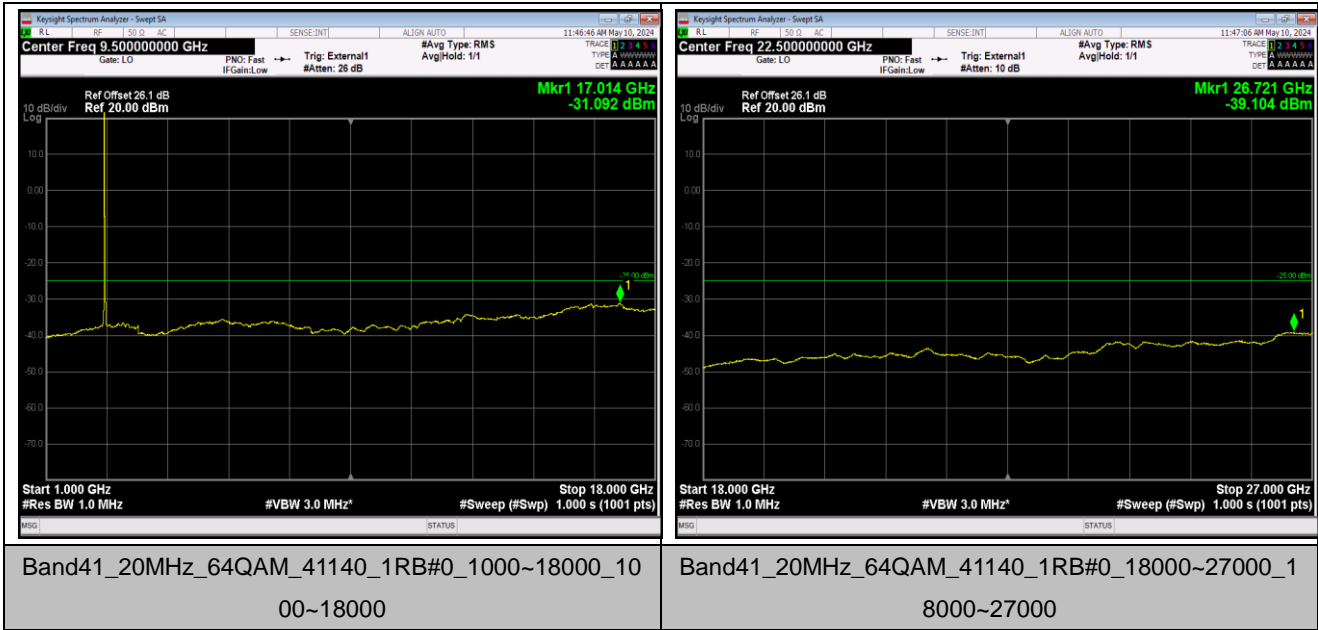












Band41\_20MHz\_64QAM\_41140\_1RB#0\_1000~18000\_10  
00~18000

Band41\_20MHz\_64QAM\_41140\_1RB#0\_18000~27000\_1  
8000~27000

## Appendix F: Frequency Stability

### Test Result

LTE Band 2 part:

| Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 Frequency=1880.0MHz |                  |                 |           |                                   |        |
|--|------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature  |                  |                 |           |                                   |        |
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |           | Limit (ppm)                       | Result |
|  |                  | Hz              | ppm       |                                   |        |
| <b>QPSK</b>  |                  |                 |           |                                   |        |
| 3.91   | -30              | -11.01          | -0.005856 | Within authorized band for Band 2 | Pass   |
|  | -20              | 9.80            | 0.005213  |                                   |        |
|  | -10              | 9.97            | 0.005303  |                                   |        |
|  | 0                | -10.51          | -0.005590 |                                   |        |
|  | 10               | -9.16           | -0.004872 |                                   |        |
|  | 20               | -11.90          | -0.006330 |                                   |        |
|  | 30               | 9.46            | 0.005032  |                                   |        |
|  | 40               | 8.65            | 0.004601  |                                   |        |
|  | 50               | 10.17           | 0.005410  |                                   |        |
| <b>16QAM</b>   |                  |                 |           |                                   |        |
| 3.91   | -30              | -4.72           | -0.002511 | Within authorized band for Band 2 | Pass   |
|  | -20              | 4.53            | 0.002410  |                                   |        |
|  | -10              | 4.61            | 0.002452  |                                   |        |
|  | 0                | -8.20           | -0.004362 |                                   |        |
|  | 10               | 7.88            | 0.004191  |                                   |        |
|  | 20               | 1.80            | 0.000957  |                                   |        |
|  | 30               | -9.80           | -0.005213 |                                   |        |
|  | 40               | -8.37           | -0.004452 |                                   |        |
|  | 50               | 2.05            | 0.001090  |                                   |        |
| <b>64QAM</b>   |                  |                 |           |                                   |        |
| 3.91   | -30              | -9.67           | -0.005144 | Within authorized band for Band 2 | Pass   |
|  | -20              | -4.59           | -0.002441 |                                   |        |
|  | -10              | -11.00          | -0.005851 |                                   |        |
|  | 0                | -9.88           | -0.005255 |                                   |        |
|  | 10               | 9.78            | 0.005202  |                                   |        |
|  | 20               | -5.48           | -0.002915 |                                   |        |
|  | 30               | -13.39          | -0.007122 |                                   |        |
|  | 40               | 8.91            | 0.004739  |                                   |        |
|  | 50               | -11.77          | -0.006261 |                                   |        |



| Voltage   |                      |                 |           |                                   |        |
|---|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature (°C)  | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|   |                      | Hz              | ppm       |                                   |        |
| QPSK  |                      |                 |           |                                   |        |
| 25  | 3.45                 | -2.69           | -0.001431 | Within authorized band for Band 2 | Pass   |
|   | 3.91                 | -11.14          | -0.005926 |                                   |        |
|   | 4.50                 | -1.43           | -0.000761 |                                   |        |
| 16QAM   |                      |                 |           |                                   |        |
| 25  | 3.45                 | -6.95           | -0.003697 | Within authorized band for Band 2 | Pass   |
|   | 3.91                 | 11.12           | 0.005915  |                                   |        |
|   | 4.50                 | 6.82            | 0.003628  |                                   |        |
| 64QAM   |                      |                 |           |                                   |        |
| 25  | 3.45                 | -12.23          | -0.006505 | Within authorized band for Band 2 | Pass   |
|   | 3.91                 | 6.48            | 0.003447  |                                   |        |
|   | 4.50                 | -9.47           | -0.005037 |                                   |        |
| <i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i> |                      |                 |           |                                   |        |

## LTE Band 4 part:

| Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 Frequency=1732.5MHz |                  |                 |           |                                   |        |
|--|------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature  |                  |                 |           |                                   |        |
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |           | Limit (ppm)                       | Result |
|  |                  | Hz              | ppm       |                                   |        |
| <b>QPSK</b>  |                  |                 |           |                                   |        |
| 3.91   | -30              | -2.26           | -0.001304 | Within authorized band for Band 4 | Pass   |
|  | -20              | -8.37           | -0.004831 |                                   |        |
|  | -10              | -10.01          | -0.005778 |                                   |        |
|  | 0                | 10.90           | 0.006291  |                                   |        |
|  | 10               | 2.99            | 0.001726  |                                   |        |
|  | 20               | -5.12           | -0.002955 |                                   |        |
|  | 30               | 7.28            | 0.004202  |                                   |        |
|  | 40               | 8.85            | 0.005108  |                                   |        |
|  | 50               | -5.05           | -0.002915 |                                   |        |
| <b>16QAM</b>   |                  |                 |           |                                   |        |
| 3.91   | -30              | -11.22          | -0.006476 | Within authorized band for Band 4 | Pass   |
|  | -20              | -12.72          | -0.007342 |                                   |        |
|  | -10              | -10.51          | -0.006066 |                                   |        |
|  | 0                | 7.52            | 0.004341  |                                   |        |
|  | 10               | -2.49           | -0.001437 |                                   |        |
|  | 20               | -9.67           | -0.005582 |                                   |        |
|  | 30               | -8.24           | -0.004756 |                                   |        |
|  | 40               | -4.96           | -0.002863 |                                   |        |
|  | 50               | -6.69           | -0.003861 |                                   |        |
| <b>64QAM</b>   |                  |                 |           |                                   |        |
| 3.91   | -30              | -6.95           | -0.004012 | Within authorized band for Band 4 | Pass   |
|  | -20              | -8.43           | -0.004866 |                                   |        |
|  | -10              | -11.03          | -0.006367 |                                   |        |
|  | 0                | -7.08           | -0.004087 |                                   |        |
|  | 10               | 3.29            | 0.001899  |                                   |        |
|  | 20               | 6.74            | 0.003890  |                                   |        |
|  | 30               | -9.16           | -0.005287 |                                   |        |
|  | 40               | -7.91           | -0.004566 |                                   |        |
|  | 50               | -10.34          | -0.005968 |                                   |        |

| Voltage  |                      |                 |           |                                   |        |
|--|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|  |                      | Hz              | ppm       |                                   |        |
| QPSK   |                      |                 |           |                                   |        |
| 25   | 3.45                 | 4.91            | 0.002834  | Within authorized band for Band 4 | Pass   |
|  | 3.91                 | -10.24          | -0.005911 |                                   |        |
|  | 4.50                 | -6.87           | -0.003965 |                                   |        |
| 16QAM  |                      |                 |           |                                   |        |
| 25   | 3.45                 | -3.09           | -0.001784 | Within authorized band for Band 4 | Pass   |
|  | 3.91                 | -10.03          | -0.005789 |                                   |        |
|  | 4.50                 | -1.83           | -0.001056 |                                   |        |
| 64QAM  |                      |                 |           |                                   |        |
| 25   | 3.45                 | -7.40           | -0.004271 | Within authorized band for Band 4 | Pass   |
|  | 3.91                 | -9.41           | -0.005431 |                                   |        |
|  | 4.50                 | -4.98           | -0.002874 |                                   |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |                                   |        |

## LTE Band 5 part:

| Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 Frequency=836.5MHz |                  |                 |           |             |        |
|--|------------------|-----------------|-----------|-------------|--------|
| Temperature  |                  |                 |           |             |        |
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |           | Limit (ppm) | Result |
|  |                  | Hz              | ppm       |             |        |
| QPSK   |                  |                 |           |             |        |
| 3.91   | -30              | -4.21           | -0.005033 | ±2.5        | Pass   |
|  | -20              | -3.30           | -0.003945 |             |        |
|  | -10              | -5.29           | -0.006324 |             |        |
|  | 0                | -4.23           | -0.005057 |             |        |
|  | 10               | -7.04           | -0.008416 |             |        |
|  | 20               | -10.71          | -0.012803 |             |        |
|  | 30               | -5.92           | -0.007077 |             |        |
|  | 40               | -7.42           | -0.008870 |             |        |
|  | 50               | -3.89           | -0.004650 |             |        |
| 16QAM  |                  |                 |           |             |        |
| 3.91   | -30              | -4.65           | -0.005559 | ±2.5        | Pass   |
|  | -20              | -11.12          | -0.013293 |             |        |
|  | -10              | 4.62            | 0.005523  |             |        |
|  | 0                | -9.57           | -0.011441 |             |        |
|  | 10               | 1.75            | 0.002092  |             |        |
|  | 20               | -4.61           | -0.005511 |             |        |
|  | 30               | -9.27           | -0.011082 |             |        |
|  | 40               | -7.72           | -0.009229 |             |        |
|  | 50               | -8.07           | -0.009647 |             |        |
| 64QAM  |                  |                 |           |             |        |
| 3.91   | -30              | -5.26           | -0.006288 | ±2.5        | Pass   |
|  | -20              | -7.54           | -0.009014 |             |        |
|  | -10              | -5.55           | -0.006635 |             |        |
|  | 0                | -7.94           | -0.009492 |             |        |
|  | 10               | -3.10           | -0.003706 |             |        |
|  | 20               | -6.25           | -0.007472 |             |        |
|  | 30               | -4.46           | -0.005332 |             |        |
|  | 40               | -6.64           | -0.007938 |             |        |
|  | 50               | 3.05            | 0.003646  |             |        |

| Voltage   |                      |                 |           |             |        |
|---|----------------------|-----------------|-----------|-------------|--------|
| Temperature (°C)  | Power supplied (Vdc) | Frequency error |           | Limit (ppm) | Result |
|   |                      | Hz              | ppm       |             |        |
| QPSK  |                      |                 |           |             |        |
| 25  | 3.45                 | -6.69           | -0.007998 | ±2.5        | Pass   |
|   | 3.91                 | -5.79           | -0.006922 |             |        |
|   | 4.50                 | -3.72           | -0.004447 |             |        |
| 16QAM   |                      |                 |           |             |        |
| 25  | 3.45                 | -5.52           | -0.006599 | ±2.5        | Pass   |
|   | 3.91                 | -2.19           | -0.002618 |             |        |
|   | 4.50                 | -6.22           | -0.007436 |             |        |
| 64QAM   |                      |                 |           |             |        |
| 25  | 3.45                 | -3.99           | -0.004770 | ±2.5        | Pass   |
|   | 3.91                 | -5.14           | -0.006145 |             |        |
|   | 4.50                 | -7.88           | -0.009420 |             |        |
| <i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i> |                      |                 |           |             |        |

LTE Band 7 part:

| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.0MHz |                  |                 |           |                                   |        |
|---|------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature   |                  |                 |           |                                   |        |
| Power supplied (Vdc)  | Temperature (°C) | Frequency error |           | Limit (ppm)                       | Result |
|   |                  | Hz              | ppm       |                                   |        |
| <b>QPSK</b>   |                  |                 |           |                                   |        |
| 3.91  | -30              | -14.86          | -0.005862 | Within authorized band for Band 7 | Pass   |
|   | -20              | -15.35          | -0.006055 |                                   |        |
|   | -10              | -19.00          | -0.007495 |                                   |        |
|   | 0                | -16.78          | -0.006619 |                                   |        |
|   | 10               | -13.68          | -0.005396 |                                   |        |
|   | 20               | -13.13          | -0.005179 |                                   |        |
|   | 30               | -11.22          | -0.004426 |                                   |        |
|   | 40               | 10.04           | 0.003961  |                                   |        |
|   | 50               | -13.79          | -0.005440 |                                   |        |
| <b>16QAM</b>  |                  |                 |           |                                   |        |
| 3.91  | -30              | -4.35           | -0.001716 | Within authorized band for Band 7 | Pass   |
|   | -20              | 12.50           | 0.004931  |                                   |        |
|   | -10              | -14.39          | -0.005677 |                                   |        |
|   | 0                | -22.73          | -0.008966 |                                   |        |
|   | 10               | 8.43            | 0.003325  |                                   |        |
|   | 20               | 7.70            | 0.003037  |                                   |        |
|   | 30               | -4.91           | -0.001937 |                                   |        |
|   | 40               | 9.17            | 0.003617  |                                   |        |
|   | 50               | 11.13           | 0.004391  |                                   |        |
| <b>64QAM</b>  |                  |                 |           |                                   |        |
| 3.91  | -30              | -9.83           | -0.003878 | Within authorized band for Band 7 | Pass   |
|   | -20              | 8.41            | 0.003318  |                                   |        |
|   | -10              | -10.51          | -0.004146 |                                   |        |
|   | 0                | -20.81          | -0.008209 |                                   |        |
|   | 10               | -13.36          | -0.005270 |                                   |        |
|   | 20               | 8.43            | 0.003325  |                                   |        |
|   | 30               | -17.85          | -0.007041 |                                   |        |
|   | 40               | -18.01          | -0.007105 |                                   |        |
|   | 50               | -11.06          | -0.004363 |                                   |        |

| Voltage  |                      |                 |           |                                   |        |
|--|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|  |                      | Hz              | ppm       |                                   |        |
| QPSK   |                      |                 |           |                                   |        |
| 25   | 3.45                 | -12.99          | -0.005124 | Within authorized band for Band 7 | Pass   |
|  | 3.91                 | -12.30          | -0.004852 |                                   |        |
|  | 4.50                 | -7.85           | -0.003097 |                                   |        |
| 16QAM  |                      |                 |           |                                   |        |
| 25   | 3.45                 | -12.95          | -0.005108 | Within authorized band for Band 7 | Pass   |
|  | 3.91                 | -14.66          | -0.005783 |                                   |        |
|  | 4.50                 | -15.29          | -0.006032 |                                   |        |
| 64QAM  |                      |                 |           |                                   |        |
| 25   | 3.45                 | 10.07           | 0.003972  | Within authorized band for Band 7 | Pass   |
|  | 3.91                 | 9.77            | 0.003854  |                                   |        |
|  | 4.50                 | 14.91           | 0.005882  |                                   |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |                                   |        |

## LTE Band 41 part:

| Reference Frequency: LTE Band 41 (10MHz) Middle channel=40640 Frequency=2595.0MHz |                  |                 |           |                                    |        |
|---|------------------|-----------------|-----------|------------------------------------|--------|
| Temperature   |                  |                 |           |                                    |        |
| Power supplied (Vdc)  | Temperature (°C) | Frequency error |           | Limit (ppm)                        | Result |
|   |                  | Hz              | ppm       |                                    |        |
| QPSK  |                  |                 |           |                                    |        |
| 3.91  | -30              | -8.78           | -0.003383 | Within authorized band for Band 41 | Pass   |
|   | -20              | -9.70           | -0.003738 |                                    |        |
|   | -10              | 4.52            | 0.001742  |                                    |        |
|   | 0                | -10.81          | -0.004166 |                                    |        |
|   | 10               | -10.47          | -0.004035 |                                    |        |
|   | 20               | -3.35           | -0.001291 |                                    |        |
|   | 30               | 6.11            | 0.002355  |                                    |        |
|   | 40               | -11.19          | -0.004312 |                                    |        |
|   | 50               | 9.21            | 0.003549  |                                    |        |
| 16QAM   |                  |                 |           |                                    |        |
| 3.91  | -30              | -4.56           | -0.001757 | Within authorized band for Band 41 | Pass   |
|   | -20              | 4.18            | 0.001611  |                                    |        |
|   | -10              | -10.41          | -0.004012 |                                    |        |
|   | 0                | 4.45            | 0.001715  |                                    |        |
|   | 10               | -18.10          | -0.006975 |                                    |        |
|   | 20               | -11.56          | -0.004455 |                                    |        |
|   | 30               | -6.77           | -0.002609 |                                    |        |
|   | 40               | 4.48            | 0.001726  |                                    |        |
|   | 50               | -2.46           | -0.000948 |                                    |        |
| 64QAM   |                  |                 |           |                                    |        |
| 3.91  | -30              | -10.69          | -0.004119 | Within authorized band for Band 41 | Pass   |
|   | -20              | 9.13            | 0.003518  |                                    |        |
|   | -10              | -9.78           | -0.003769 |                                    |        |
|   | 0                | 9.43            | 0.003634  |                                    |        |
|   | 10               | -7.75           | -0.002987 |                                    |        |
|   | 20               | 4.72            | 0.001819  |                                    |        |
|   | 30               | -7.61           | -0.002933 |                                    |        |
|   | 40               | -6.69           | -0.002578 |                                    |        |
|   | 50               | -11.86          | -0.004570 |                                    |        |



| Voltage   |                      |                 |           |                                    |        |
|---|----------------------|-----------------|-----------|------------------------------------|--------|
| Temperature (°C)  | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                        | Result |
|   |                      | Hz              | ppm       |                                    |        |
| QPSK  |                      |                 |           |                                    |        |
| 25  | 3.45                 | 7.10            | 0.002736  | Within authorized band for Band 41 | Pass   |
|   | 3.91                 | -8.01           | -0.003087 |                                    |        |
|   | 4.50                 | -5.41           | -0.002085 |                                    |        |
| 16QAM   |                      |                 |           |                                    |        |
| 25  | 3.45                 | -4.23           | -0.001630 | Within authorized band for Band41  | Pass   |
|   | 3.91                 | -9.51           | -0.003665 |                                    |        |
|   | 4.50                 | -9.66           | -0.003723 |                                    |        |
| 64QAM   |                      |                 |           |                                    |        |
| 25  | 3.45                 | -5.41           | -0.002085 | Within authorized band for Band41  | Pass   |
|   | 3.91                 | -9.07           | -0.003495 |                                    |        |
|   | 4.50                 | 5.38            | 0.002073  |                                    |        |
| <i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i> |                      |                 |           |                                    |        |

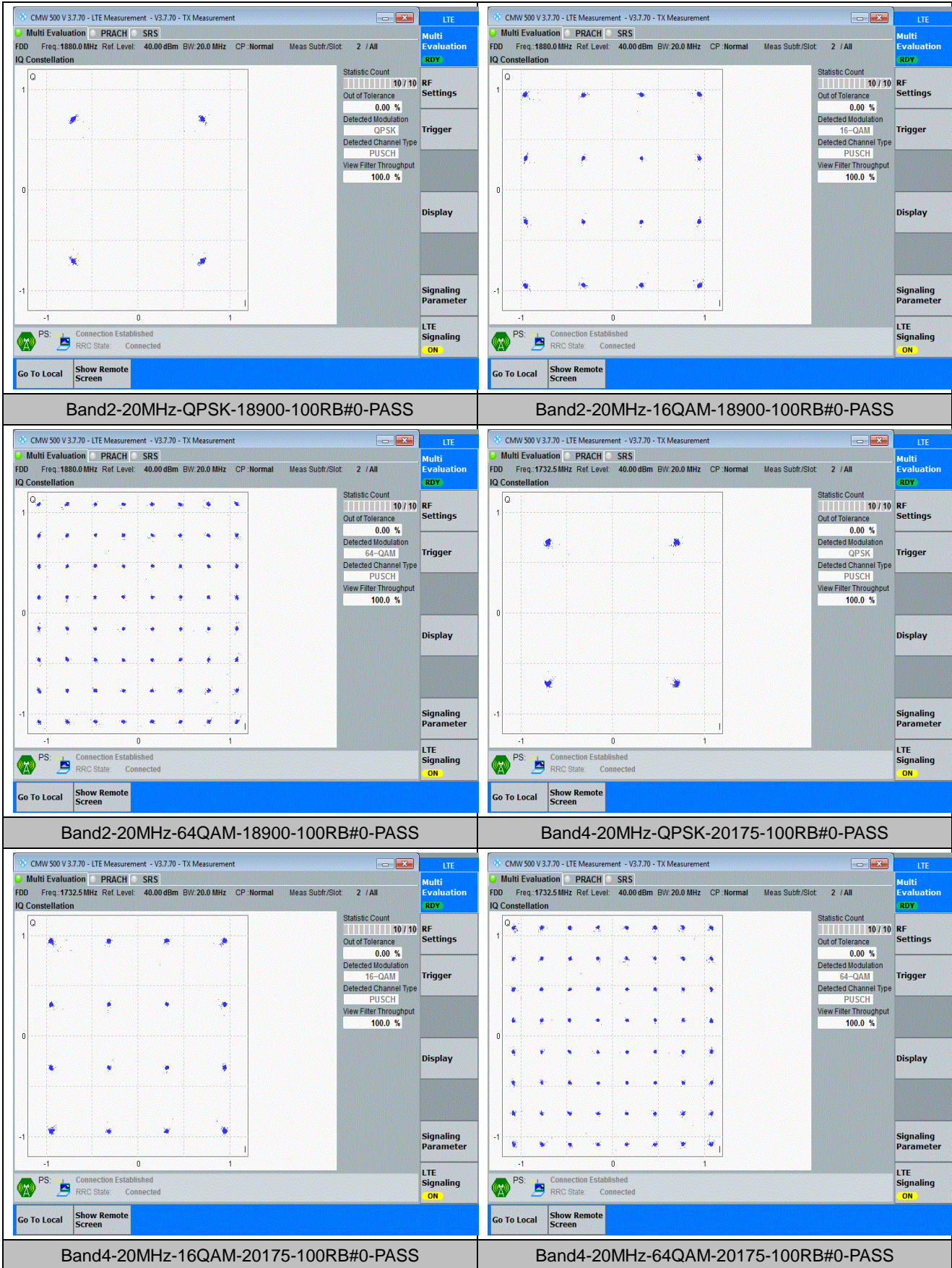
## Appendix G: Modulation Characteristics

### Test Result

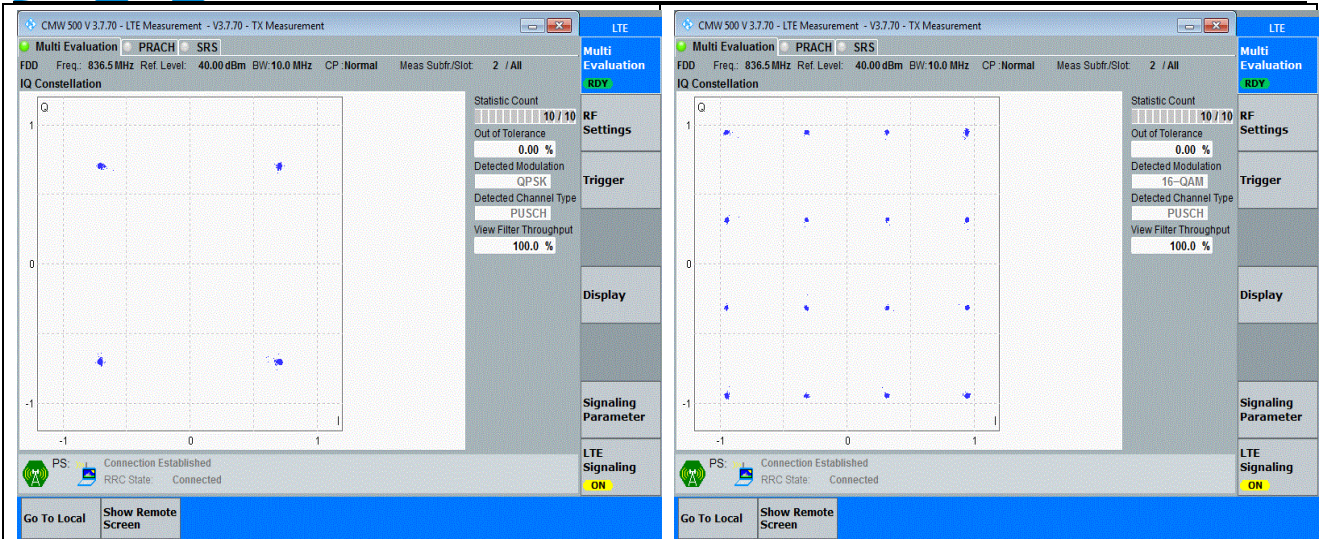
| Band          | Bandwidth | Modulation | Channel | RB Configuration | Verdict |
|---------------|-----------|------------|---------|------------------|---------|
| Band2         | 20MHz     | QPSK       | 18900   | 100RB#0          | PASS    |
| Band2         | 20MHz     | 16QAM      | 18900   | 100RB#0          | PASS    |
| Band2         | 20MHz     | 64QAM      | 18900   | 100RB#0          | PASS    |
| Band4         | 20MHz     | QPSK       | 20175   | 100RB#0          | PASS    |
| Band4         | 20MHz     | 16QAM      | 20175   | 100RB#0          | PASS    |
| Band4         | 20MHz     | 64QAM      | 20175   | 100RB#0          | PASS    |
| Band5         | 10MHz     | QPSK       | 20525   | 50RB#0           | PASS    |
| Band5         | 10MHz     | 16QAM      | 20525   | 50RB#0           | PASS    |
| Band5         | 10MHz     | 64QAM      | 20525   | 50RB#0           | PASS    |
| Band7         | 20MHz     | QPSK       | 21100   | 100RB#0          | PASS    |
| Band7         | 20MHz     | 16QAM      | 21100   | 100RB#0          | PASS    |
| Band7         | 20MHz     | 64QAM      | 21100   | 100RB#0          | PASS    |
| 41(2535-2655) | 20MHz     | QPSK       | 40640   | 100RB#0          | PASS    |
| 41(2535-2655) | 20MHz     | 16QAM      | 40640   | 100RB#0          | PASS    |
| 41(2535-2655) | 20MHz     | 64QAM      | 40640   | 100RB#0          | PASS    |



### Test Graphs

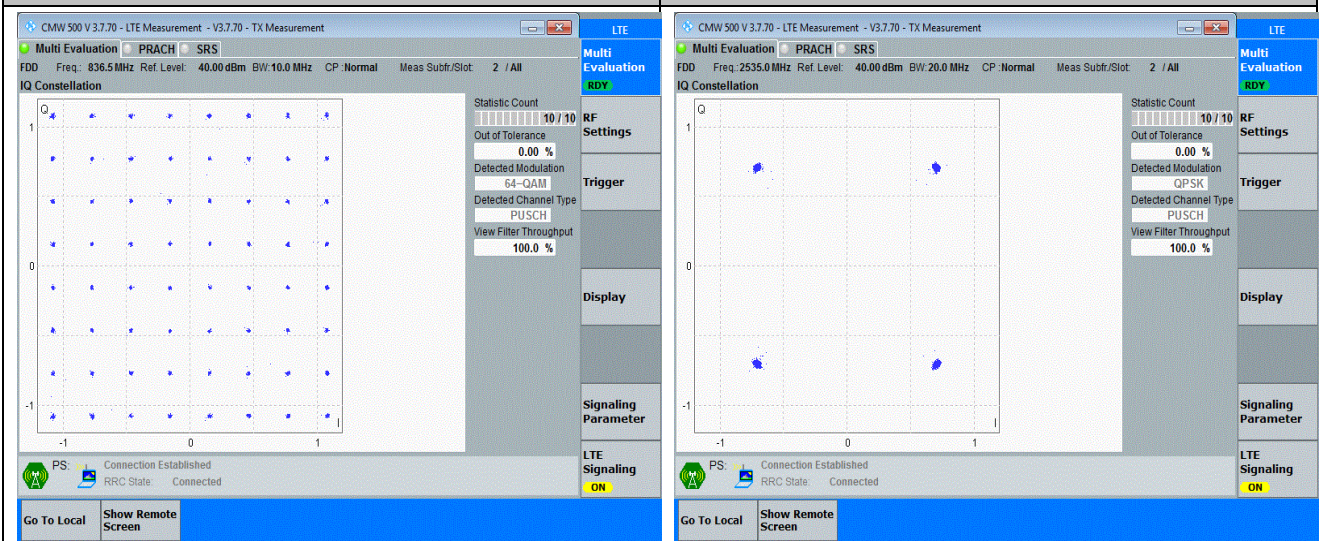






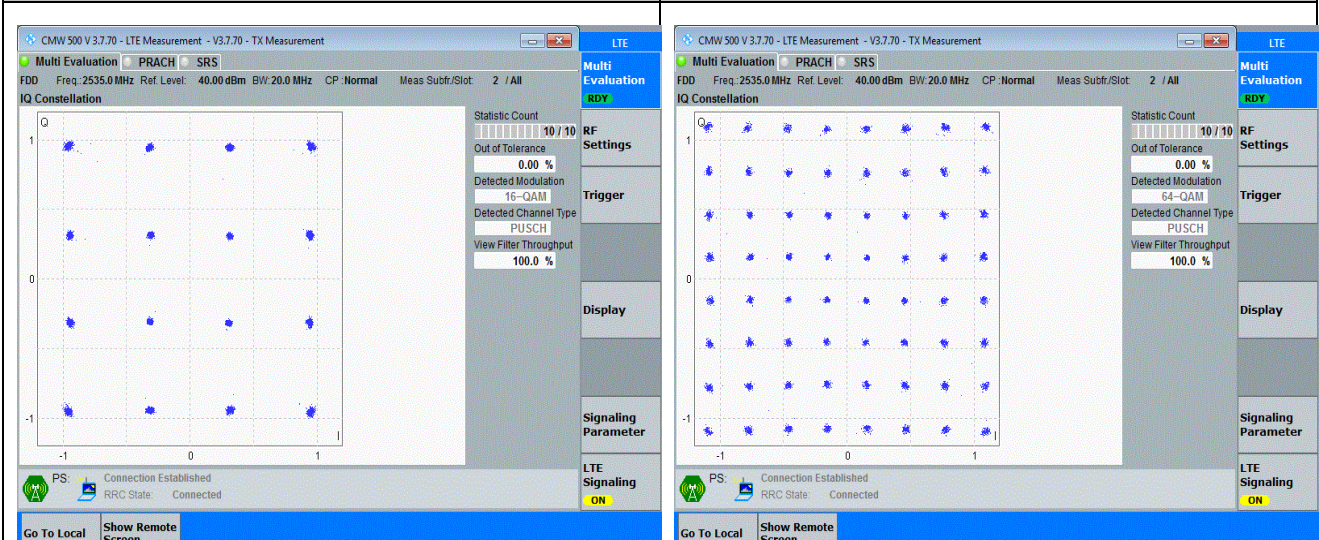
Band5-10MHz-QPSK-20525-50RB#0-PASS

Band5-10MHz-16QAM-20525-50RB#0-PASS



Band5-10MHz-64QAM-20525-50RB#0-PASS

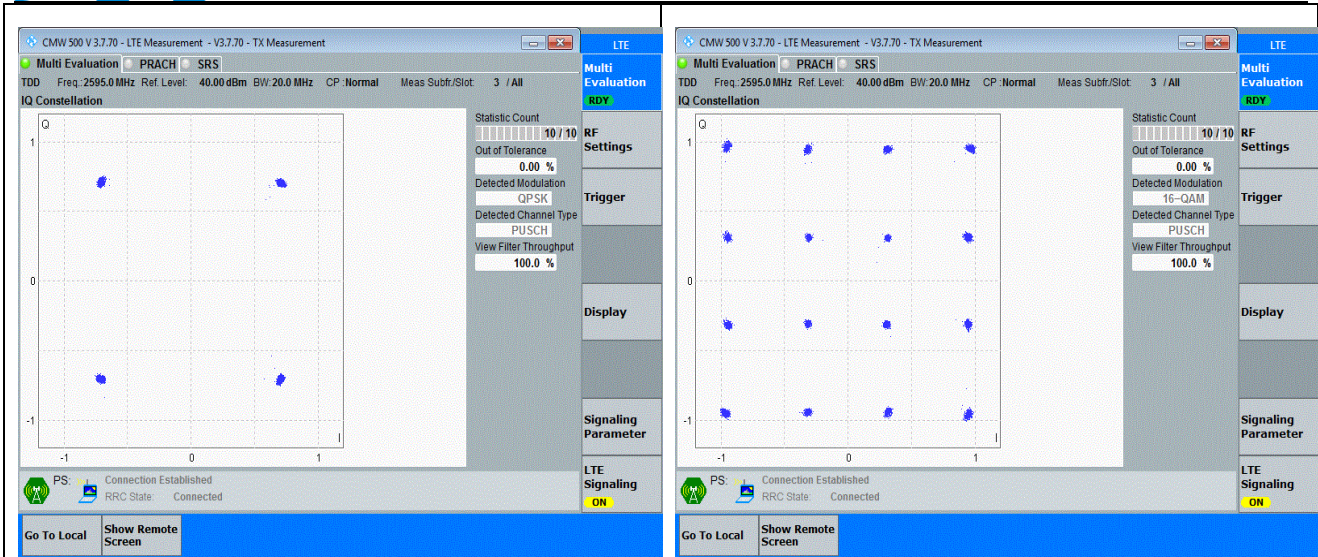
Band7-20MHz-QPSK-21100-100RB#0-PASS



Band7-20MHz-16QAM-21100-100RB#0-PASS

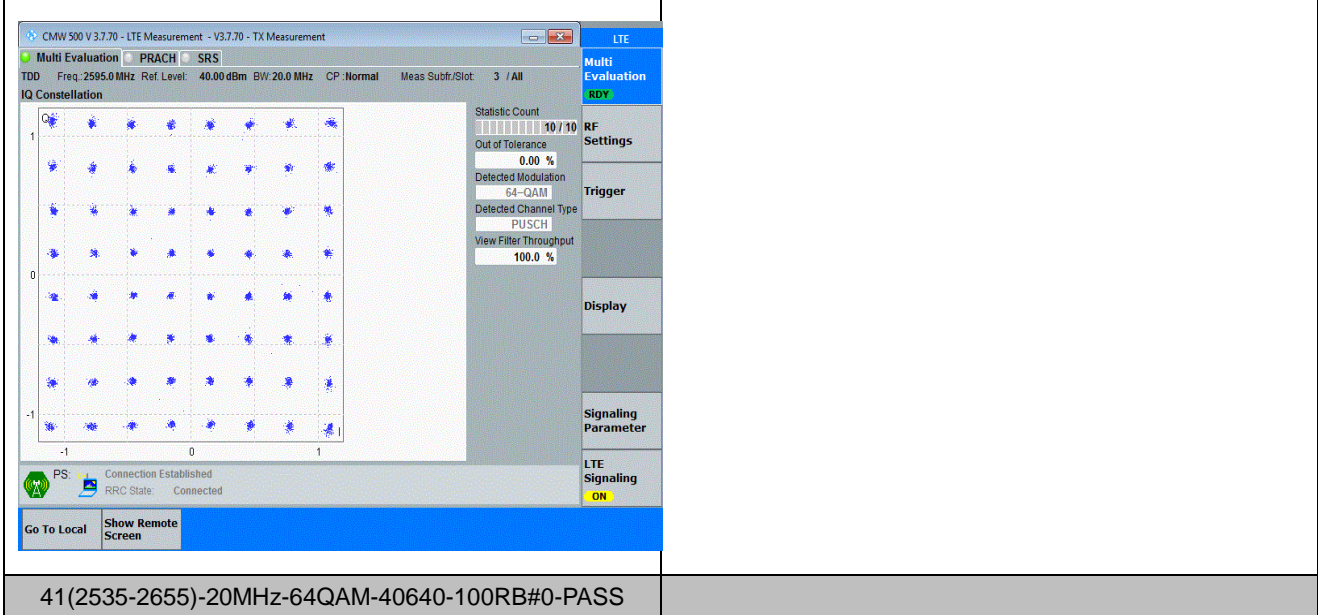
Band7-20MHz-64QAM-21100-100RB#0-PASS





41(2535-2655)-20MHz-QPSK-40640-100RB#0-PASS

41(2535-2655)-20MHz-16QAM-40640-100RB#0-PASS



41(2535-2655)-20MHz-64QAM-40640-100RB#0-PASS