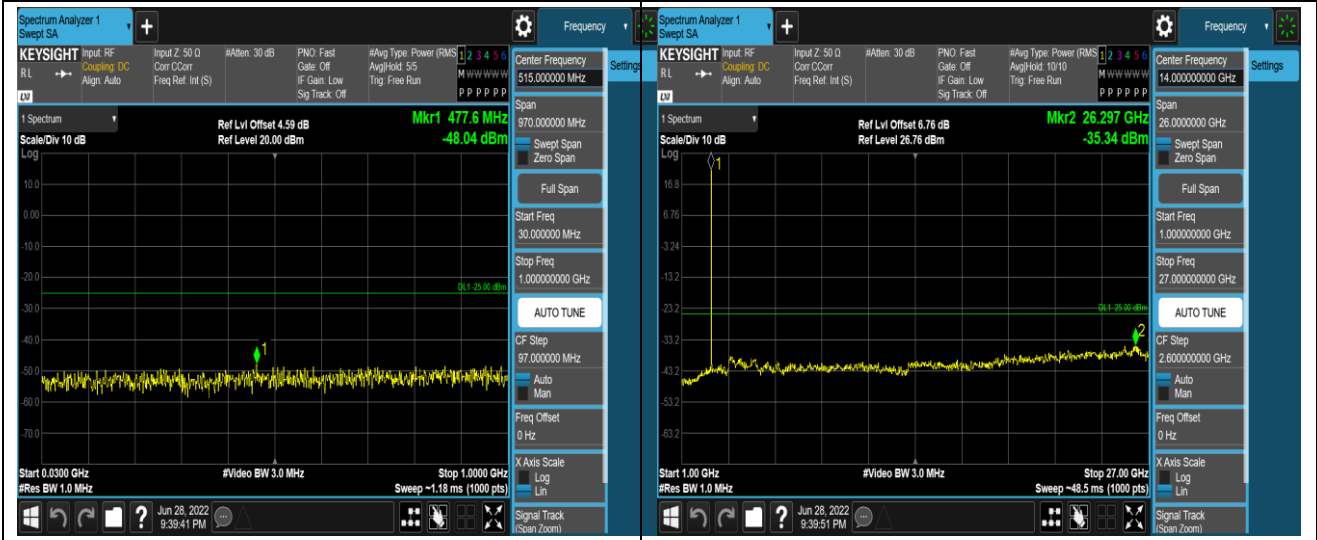




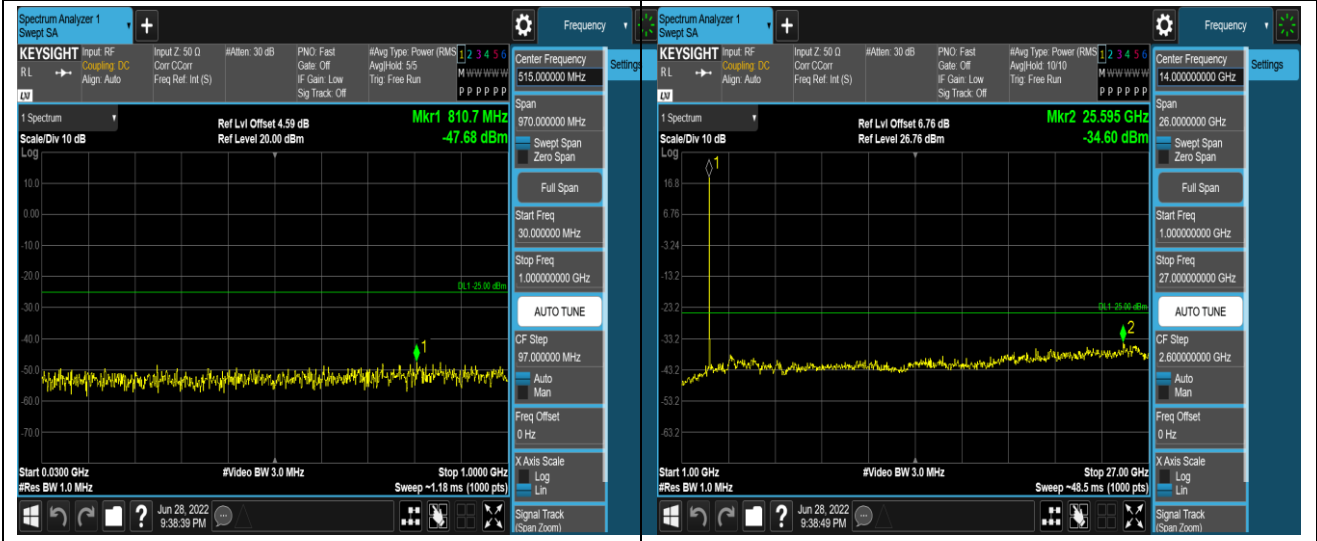
Band41-5MHz-QPSK-41215-1RB#0-Range1:30~1000MHz

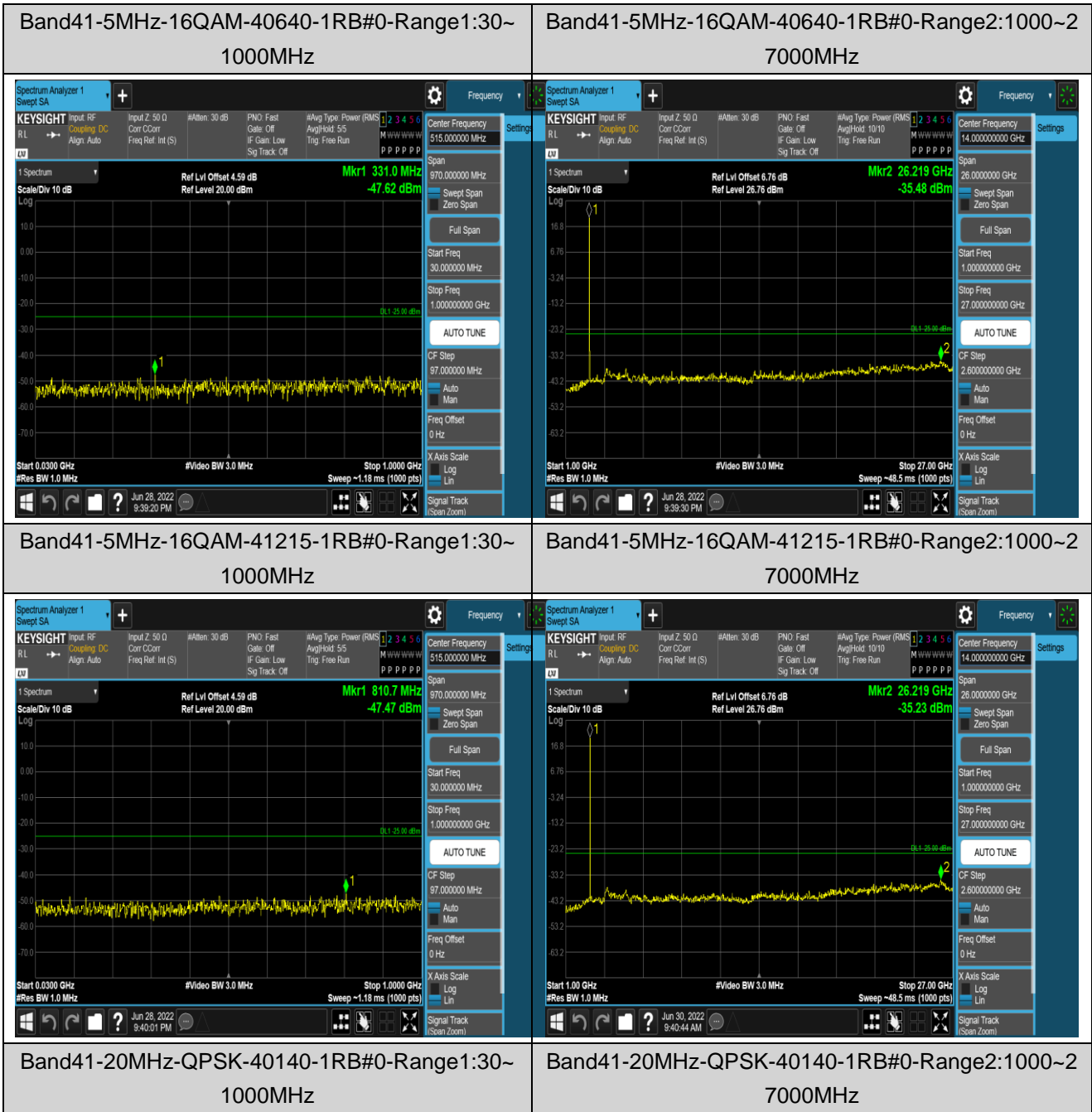
Band41-5MHz-QPSK-41215-1RB#0-Range2:1000~27000MHz

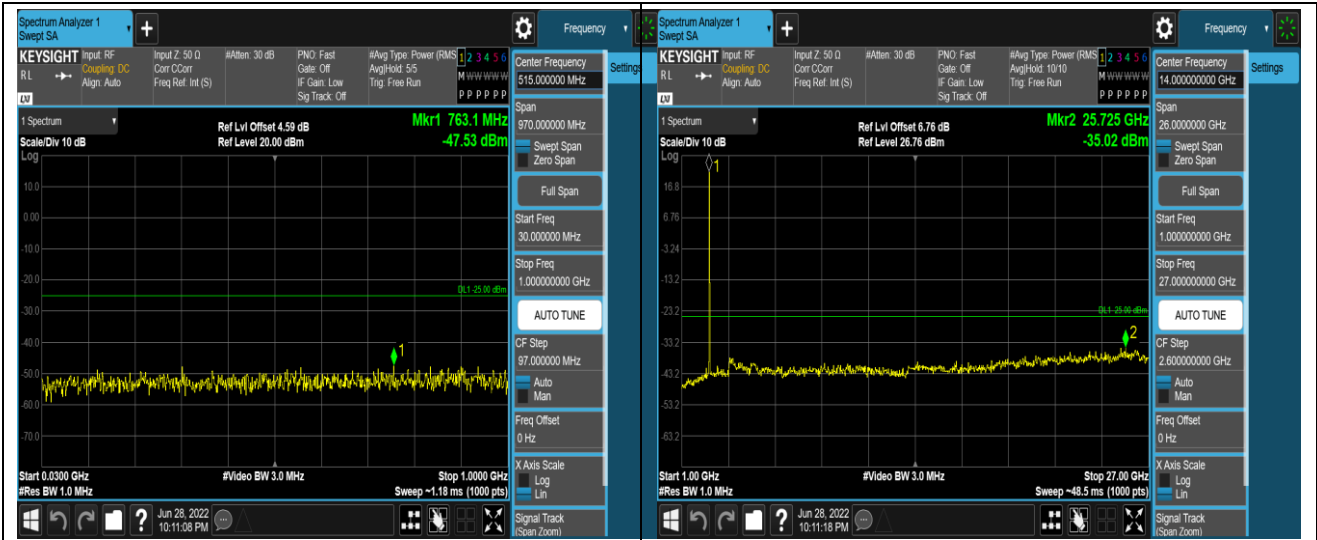


Band41-5MHz-16QAM-40065-1RB#0-Range1:30~1000MHz

Band41-5MHz-16QAM-40065-1RB#0-Range2:1000~27000MHz

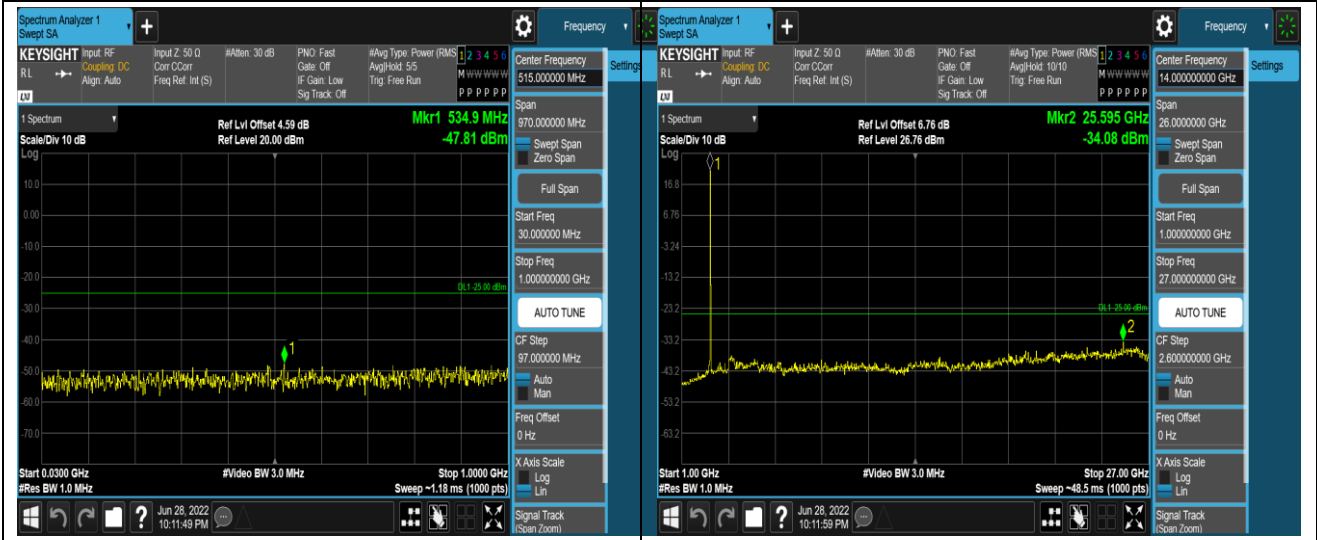






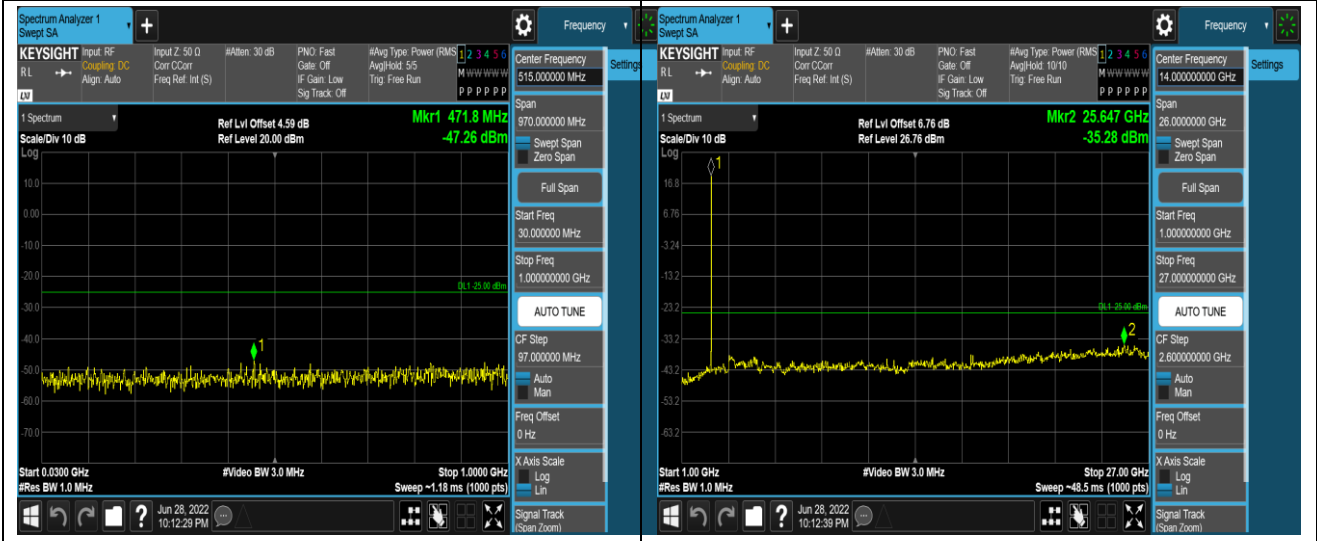
Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz

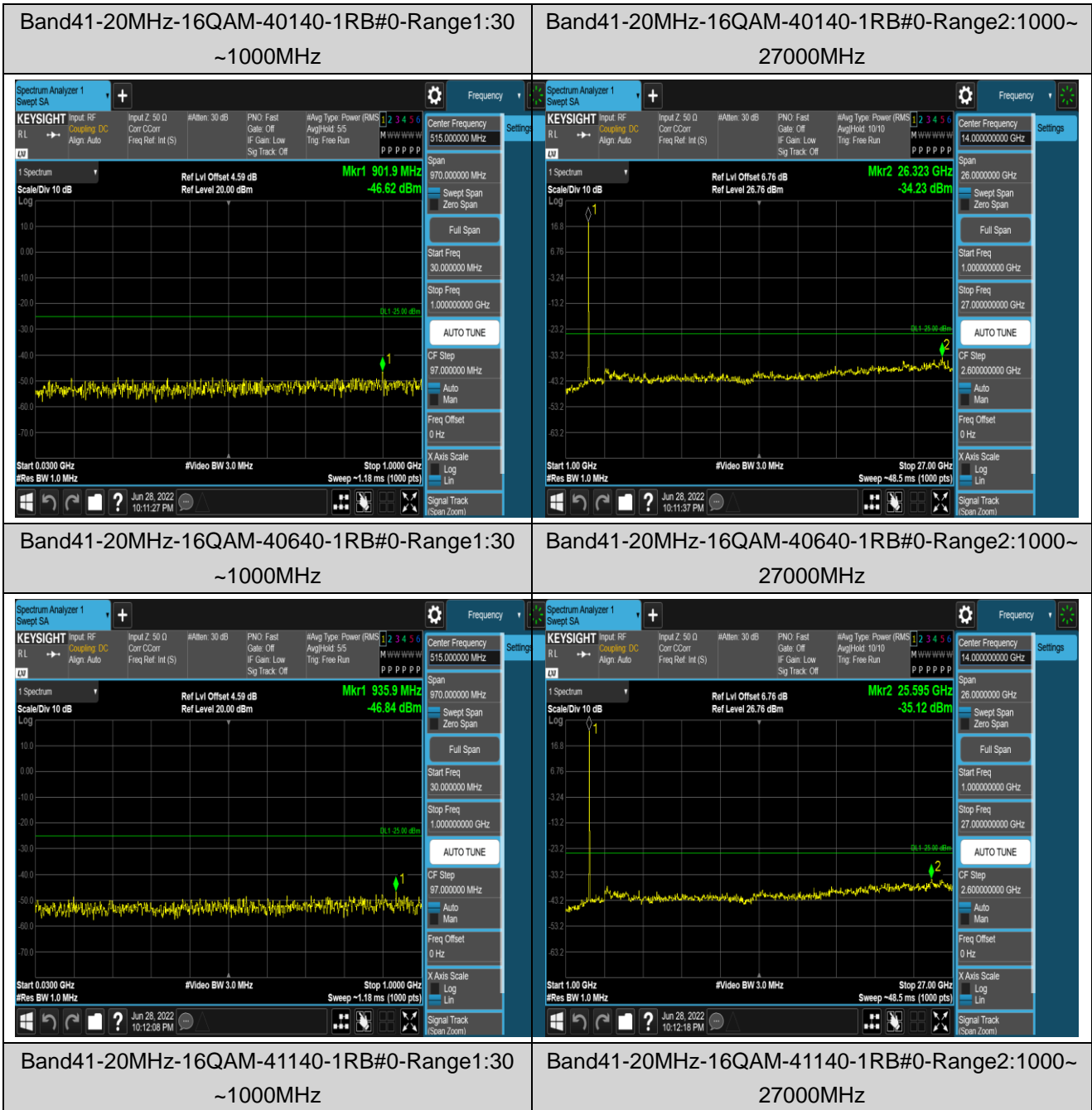
Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~7000MHz

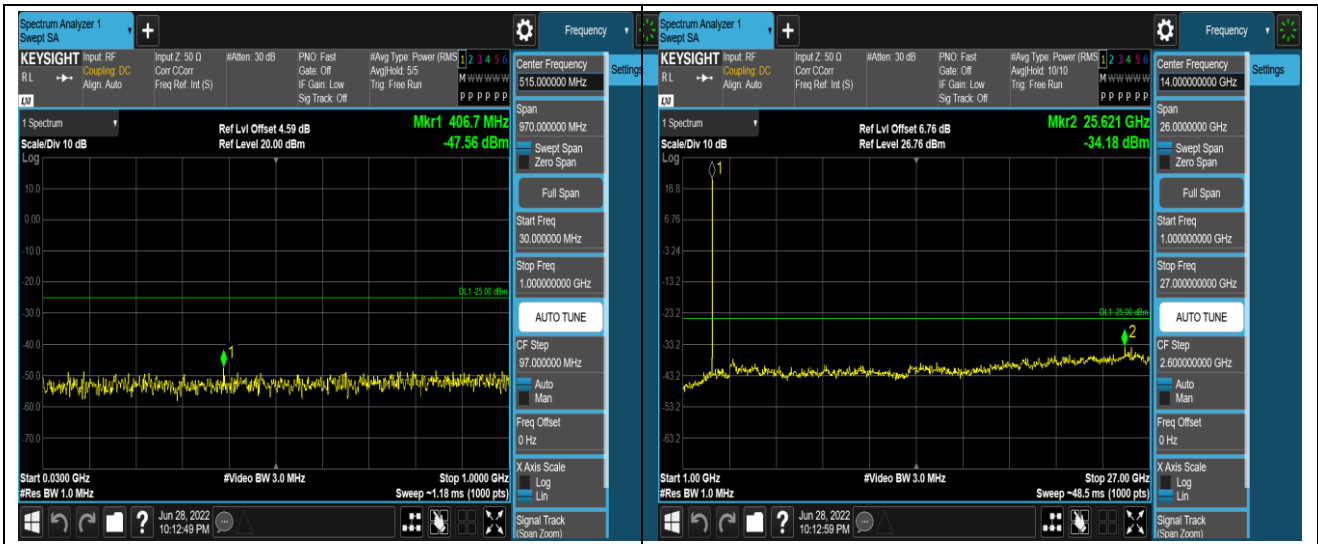


Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz

Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~7000MHz







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 | | |
| QPSK | | | | | |
| 3.87 | -30 | -1.80 | -0.000957 | Within authorized band for Band 2 | Pass |
| | -20 | -13.26 | -0.007053 | | |
| | -10 | 4.95 | 0.002633 | | |
| | 0 | -3.42 | -0.001819 | | |
| | 10 | 4.63 | 0.002463 | | |
| | 20 | -10.77 | -0.005729 | | |
| | 30 | -5.72 | -0.003043 | | |
| | 40 | -8.57 | -0.004559 | | |
| | 50 | -12.17 | -0.006473 | | |
| 16QAM | | | | | |
| 3.87 | -30 | -10.51 | -0.005590 | Within authorized band for Band 2 | Pass |
| | -20 | 9.48 | 0.005043 | | |
| | -10 | -7.07 | -0.003761 | | |
| | 0 | 4.26 | 0.002266 | | |
| | 10 | -4.18 | -0.002223 | | |
| | 20 | 6.65 | 0.003537 | | |
| | 30 | -13.23 | -0.007037 | | |
| | 40 | 4.71 | 0.002505 | | |
| | 50 | 10.30 | 0.005479 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 3.45 | -19.63 | -0.010441 | Within authorized band for Band 2 | Pass |
| | 3.87 | 6.97 | 0.003707 | | |
| | 4.45 | -8.28 | -0.004404 | | |
| 16QAM | | | | | |
| 25 | 3.45 | -9.30 | -0.004947 | Within authorized band for Band 2 | Pass |
| | 3.87 | -7.98 | -0.004245 | | |
| | 4.45 | -5.39 | -0.002867 | | |

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

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 | | |
| QPSK | | | | | |
| 3.87 | -30 | -4.86 | -0.002805 | Within authorized band for Band 4 | Pass |
| | -20 | 5.84 | 0.003371 | | |
| | -10 | -13.07 | -0.007544 | | |
| | 0 | 4.62 | 0.002667 | | |
| | 10 | 8.07 | 0.004658 | | |
| | 20 | 4.11 | 0.002372 | | |
| | 30 | -7.82 | -0.004514 | | |
| | 40 | 4.53 | 0.002615 | | |
| | 50 | 7.58 | 0.004375 | | |
| 16QAM | | | | | |
| 3.87 | -30 | 7.28 | 0.004202 | Within authorized band for Band 4 | Pass |
| | -20 | -3.19 | -0.001841 | | |
| | -10 | -11.77 | -0.006794 | | |
| | 0 | 6.15 | 0.003550 | | |
| | 10 | 3.88 | 0.002240 | | |
| | 20 | 6.84 | 0.003948 | | |
| | 30 | 3.98 | 0.002297 | | |
| | 40 | -3.02 | -0.001743 | | |
| | 50 | 2.33 | 0.001345 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 3.45 | -9.61 | -0.005547 | Within authorized band for Band 4 | Pass |
| | 3.87 | -5.81 | -0.003354 | | |
| | 4.45 | -9.53 | -0.005501 | | |
| 16QAM | | | | | |
| 25 | 3.45 | -6.05 | -0.003492 | Within authorized band for Band 4 | Pass |
| | 3.87 | 7.04 | 0.004063 | | |
| | 4.45 | -5.15 | -0.002973 | | |

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 | | | | | |
| 3.87 | -30 | -4.65 | -0.005559 | ±2.5 | Pass |
| | -20 | -5.48 | -0.006551 | | |
| | -10 | -5.04 | -0.006025 | | |
| | 0 | -5.01 | -0.005989 | | |
| | 10 | -5.55 | -0.006635 | | |
| | 20 | -5.38 | -0.006432 | | |
| | 30 | -5.22 | -0.006240 | | |
| | 40 | -4.63 | -0.005535 | | |
| | 50 | -3.23 | -0.003861 | | |
| 16QAM | | | | | |
| 3.87 | -30 | -3.18 | -0.003802 | ±2.5 | Pass |
| | -20 | -4.86 | -0.005810 | | |
| | -10 | -6.71 | -0.008022 | | |
| | 0 | -2.93 | -0.003503 | | |
| | 10 | -5.12 | -0.006121 | | |
| | 20 | -5.68 | -0.006790 | | |
| | 30 | -4.22 | -0.005045 | | |
| | 40 | -4.52 | -0.005403 | | |
| | 50 | -2.45 | -0.002929 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 3.45 | -4.11 | -0.004913 | ±2.5 | Pass |
| | 3.87 | 3.96 | 0.004734 | | |
| | 4.45 | -7.10 | -0.008488 | | |
| 16QAM | | | | | |
| 25 | 3.45 | 1.99 | 0.002379 | ±2.5 | Pass |
| | 3.87 | -4.45 | -0.005320 | | |
| | 4.45 | -5.19 | -0.006204 | | |

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

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 | | |
| QPSK | | | | | |
| 3.87 | -30 | -8.25 | -0.003254 | Within authorized band for Band 7 | Pass |
| | -20 | -3.18 | -0.001254 | | |
| | -10 | -7.45 | -0.002939 | | |
| | 0 | -14.15 | -0.005582 | | |
| | 10 | 7.52 | 0.002966 | | |
| | 20 | 9.47 | 0.003736 | | |
| | 30 | -11.83 | -0.004667 | | |
| | 40 | -10.34 | -0.004079 | | |
| | 50 | -4.23 | -0.001669 | | |
| 16QAM | | | | | |
| 3.87 | -30 | -10.37 | -0.004091 | Within authorized band for Band 7 | Pass |
| | -20 | -9.14 | -0.003606 | | |
| | -10 | -9.47 | -0.003736 | | |
| | 0 | -15.98 | -0.006304 | | |
| | 10 | -10.49 | -0.004138 | | |
| | 20 | 7.44 | 0.002935 | | |
| | 30 | 5.45 | 0.002150 | | |
| | 40 | -10.84 | -0.004276 | | |
| | 50 | 6.90 | 0.002722 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 3.45 | -7.55 | -0.002978 | Within authorized band for Band 7 | Pass |
| | 3.87 | 13.45 | 0.005306 | | |
| | 4.45 | -16.55 | -0.006529 | | |
| 16QAM | | | | | |
| 25 | 3.45 | -9.13 | -0.003602 | Within authorized band for Band 7 | Pass |
| | 3.87 | 9.54 | 0.003763 | | |
| | 4.45 | -13.56 | -0.005349 | | |

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 | | | | | |
| 3.87 | -30 | -7.52 | -0.002898 | Within authorized band for Band 41 | Pass |
| | -20 | -7.64 | -0.002944 | | |
| | -10 | -11.06 | -0.004262 | | |
| | 0 | -7.72 | -0.002975 | | |
| | 10 | -2.90 | -0.001118 | | |
| | 20 | 5.06 | 0.001950 | | |
| | 30 | -8.43 | -0.003249 | | |
| | 40 | -4.59 | -0.001769 | | |
| | 50 | 2.80 | 0.001079 | | |
| 16QAM | | | | | |
| 3.87 | -30 | -4.23 | -0.001630 | Within authorized band for Band 41 | Pass |
| | -20 | -2.43 | -0.000936 | | |
| | -10 | -8.08 | -0.003114 | | |
| | 0 | -4.52 | -0.001742 | | |
| | 10 | -6.59 | -0.002539 | | |
| | 20 | -6.59 | -0.002539 | | |
| | 30 | -7.94 | -0.003060 | | |
| | 40 | -9.93 | -0.003827 | | |
| | 50 | -5.22 | -0.002012 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 3.45 | -12.36 | -0.004763 | Within authorized band for Band 41 | Pass |
| | 3.87 | 5.38 | 0.002073 | | |
| | 4.45 | -10.71 | -0.004127 | | |
| 16QAM | | | | | |
| 25 | 3.45 | 5.22 | 0.002012 | Within authorized band for Band41 | Pass |
| | 3.87 | -6.98 | -0.002690 | | |
| | 4.45 | 7.37 | 0.002840 | | |

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Appendix G: Modulation Characteristics

Test Result

| Band | Bandwidth | Modulation | Channel | RB Configuration | Result | Verdict |
|--------|-----------|------------|---------|------------------|--------|---------|
| Band2 | 20MHz | QPSK | 18900 | 100RB#0 | PASS | PASS |
| Band2 | 20MHz | 16QAM | 18900 | 100RB#0 | PASS | PASS |
| Band4 | 20MHz | QPSK | 20175 | 100RB#0 | PASS | PASS |
| Band4 | 20MHz | 16QAM | 20175 | 100RB#0 | PASS | PASS |
| Band5 | 10MHz | QPSK | 20525 | 50RB#0 | PASS | PASS |
| Band5 | 10MHz | 16QAM | 20525 | 50RB#0 | PASS | PASS |
| Band7 | 20MHz | QPSK | 21100 | 100RB#0 | PASS | PASS |
| Band7 | 20MHz | 16QAM | 21100 | 100RB#0 | PASS | PASS |
| Band41 | 20MHz | QPSK | 40640 | 100RB#0 | PASS | PASS |
| Band41 | 20MHz | 16QAM | 40640 | 100RB#0 | PASS | PASS |

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

