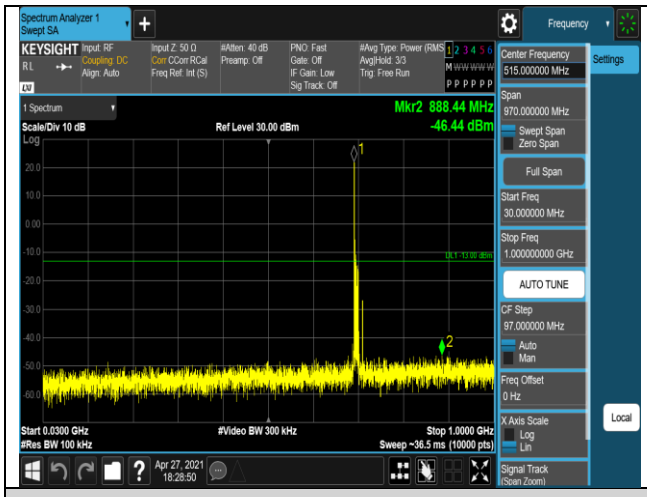
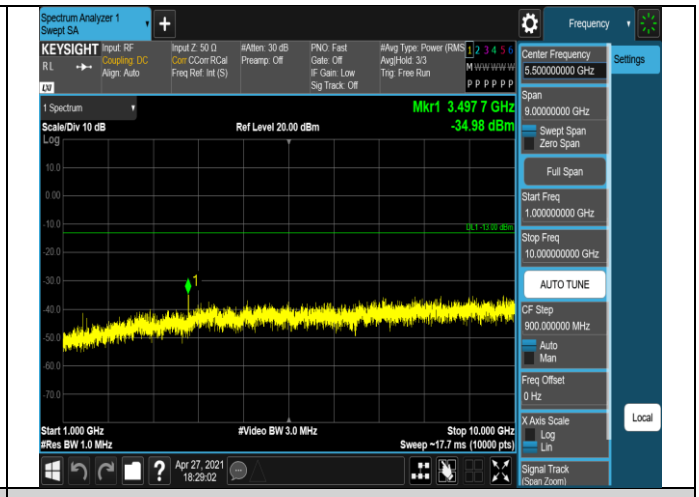
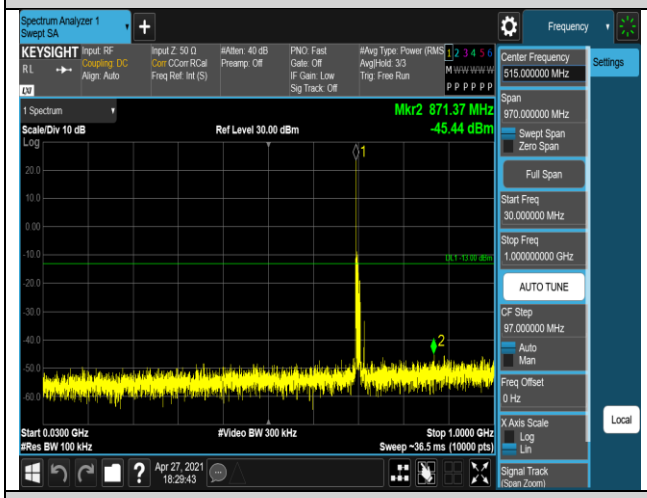


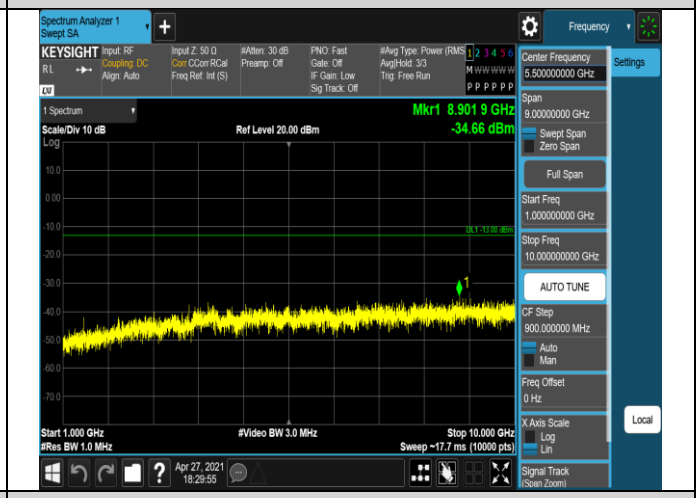

Band12-10MHz-QPSK-23095-1RB#0-Range1:30~1000MHz



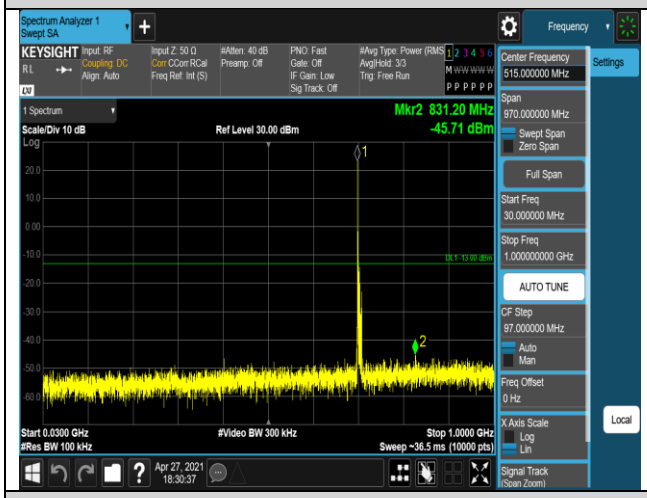

Band12-10MHz-QPSK-23095-1RB#0-Range2:1000~10000MHz



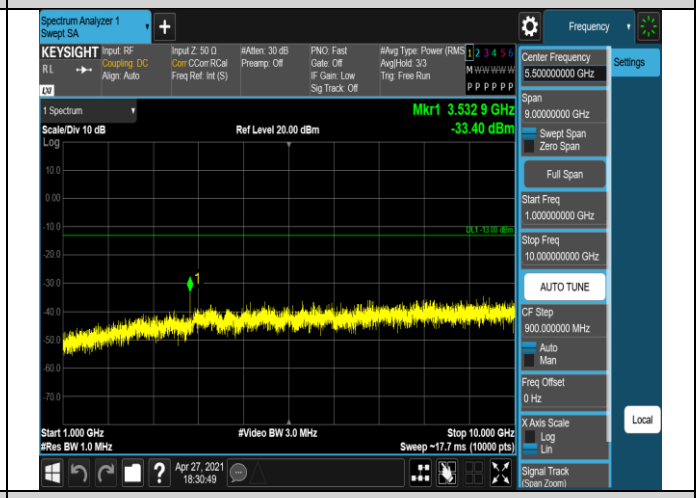

Band12-10MHz-QPSK-23130-1RB#0-Range1:30~1000MHz



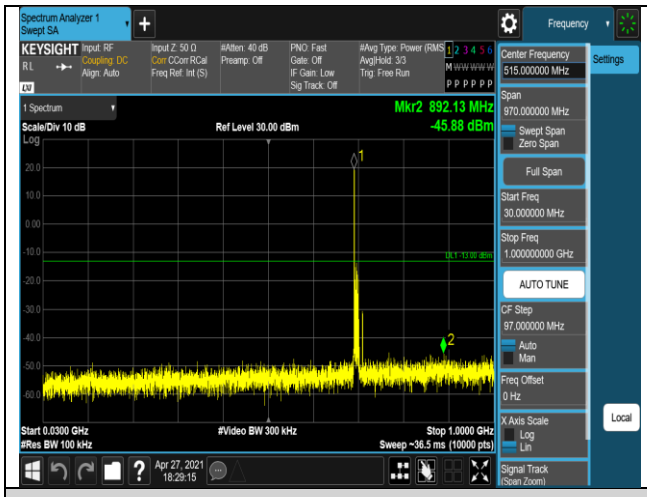

Band12-10MHz-QPSK-23130-1RB#0-Range2:1000~10000MHz



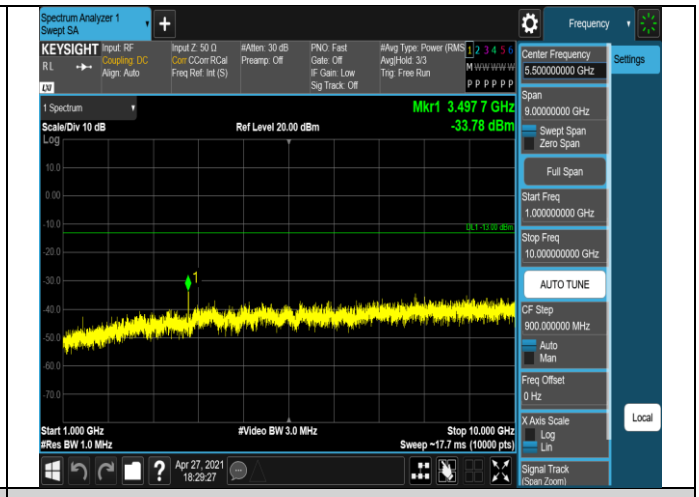

Band12-10MHz-16QAM-23060-1RB#0-Range1:30~1000MHz



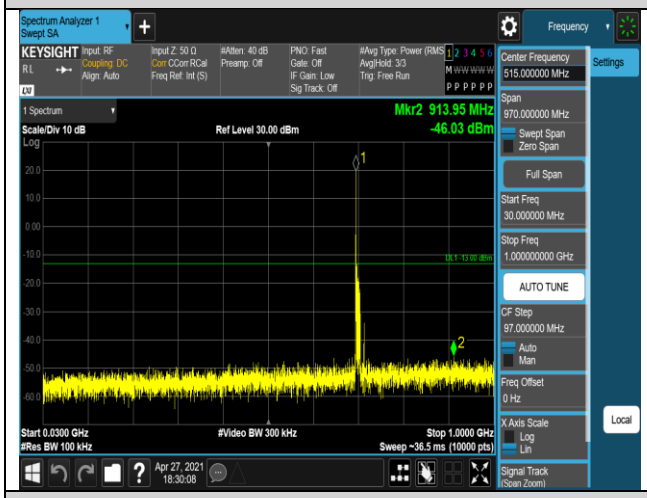

Band12-10MHz-16QAM-23060-1RB#0-Range2:1000~10000MHz



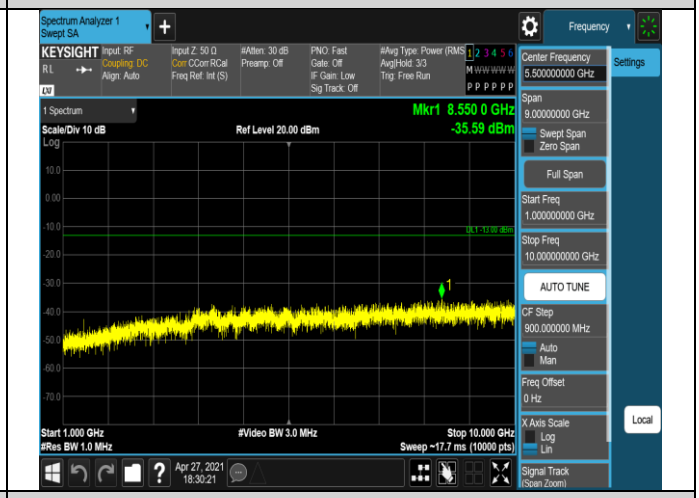

Band12-10MHz-16QAM-23095-1RB#0-Range1:30~1000MHz



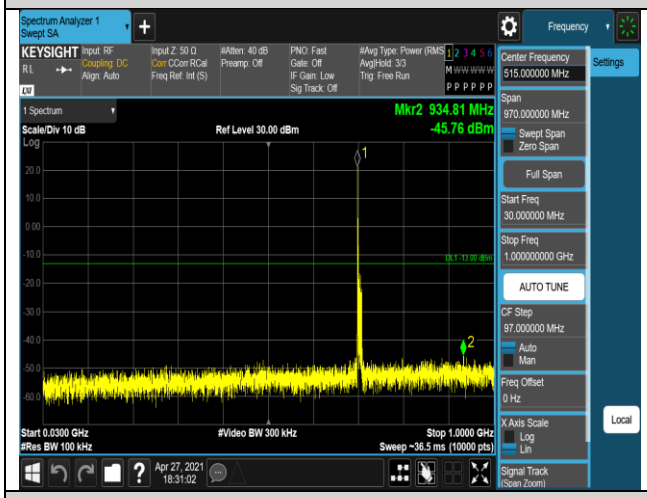

Band12-10MHz-16QAM-23095-1RB#0-Range2:1000~10000MHz



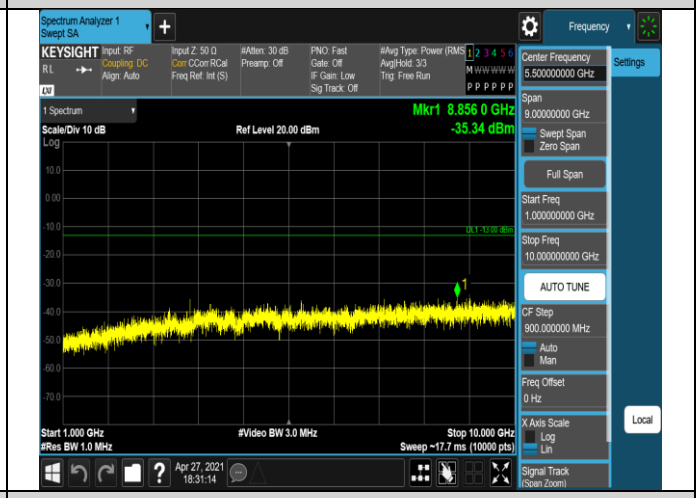

Band12-10MHz-16QAM-23130-1RB#0-Range1:30~1000MHz



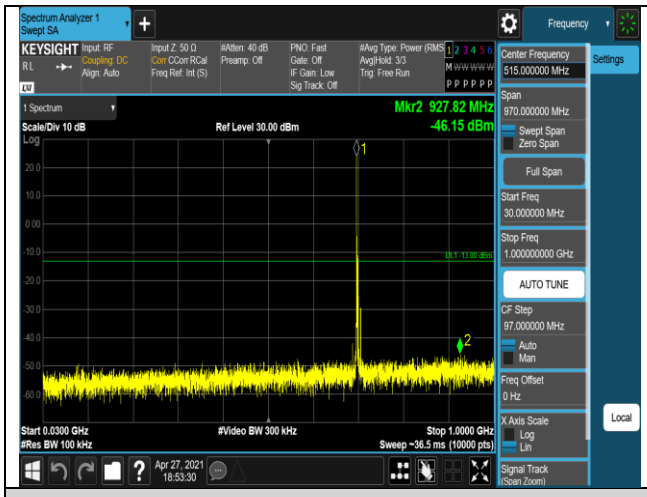

Band12-10MHz-16QAM-23130-1RB#0-Range2:1000~10000MHz



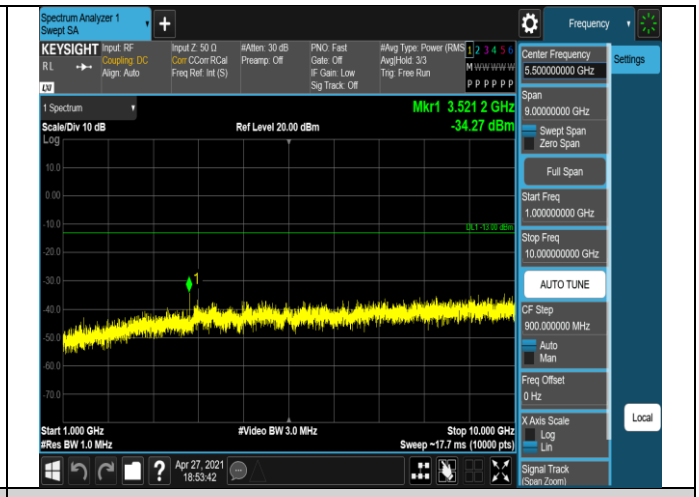

Band17-5MHz-QPSK-23755-1RB#0-Range1:30~1000MHz



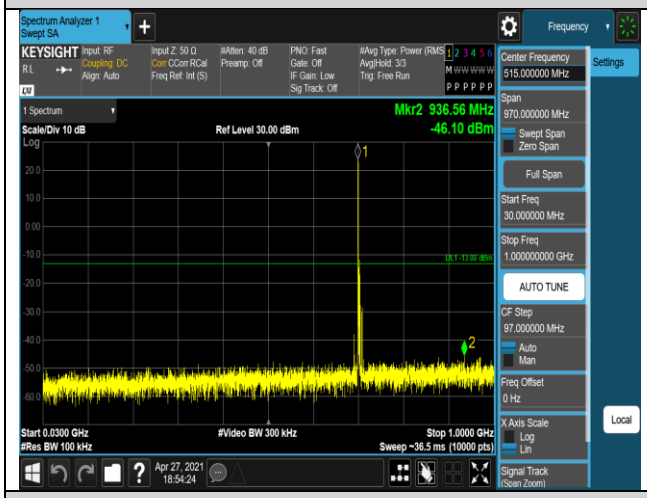

Band17-5MHz-QPSK-23755-1RB#0-Range2:1000~10000MHz



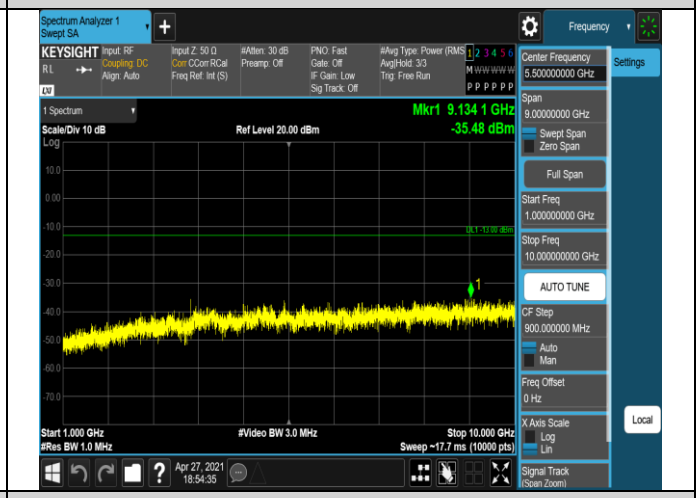

Band17-5MHz-QPSK-23790-1RB#0-Range1:30~1000MHz



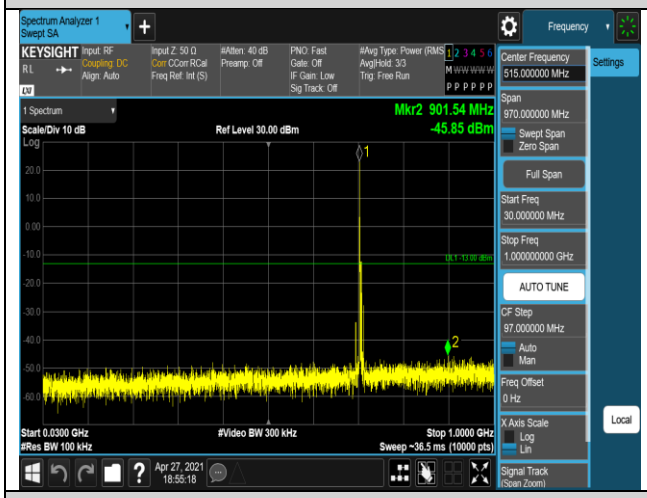

Band17-5MHz-QPSK-23790-1RB#0-Range2:1000~10000MHz



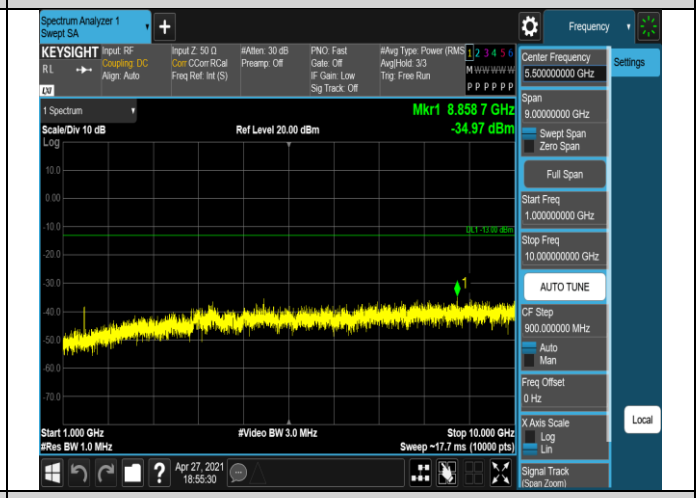

Band17-5MHz-QPSK-23825-1RB#0-Range1:30~1000MHz



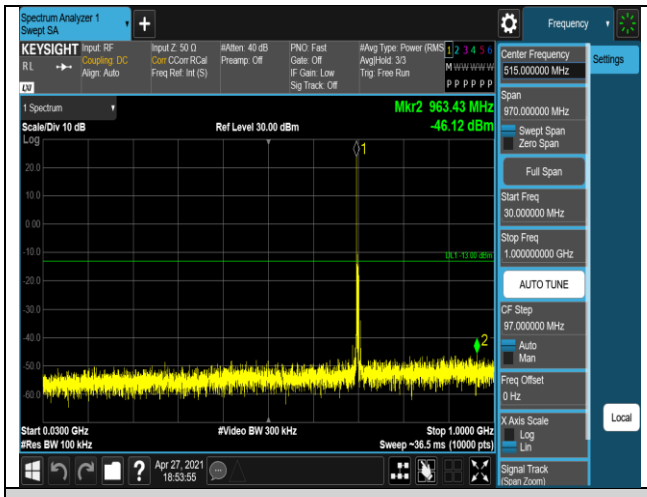

Band17-5MHz-QPSK-23825-1RB#0-Range2:1000~10000MHz



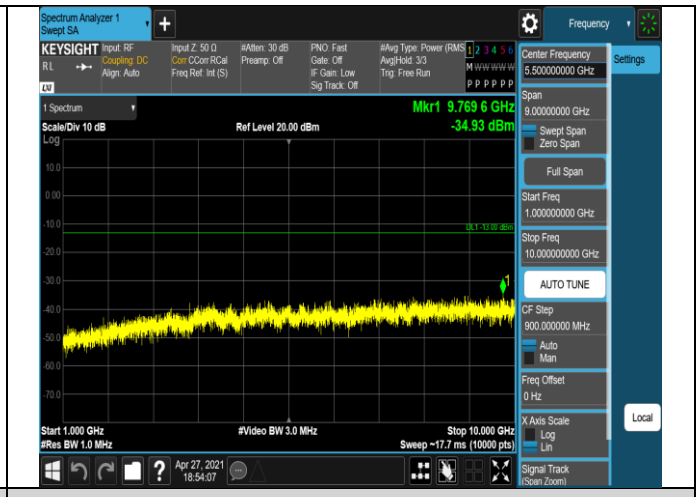

Band17-5MHz-16QAM-23755-1RB#0-Range1:30~1000MHz



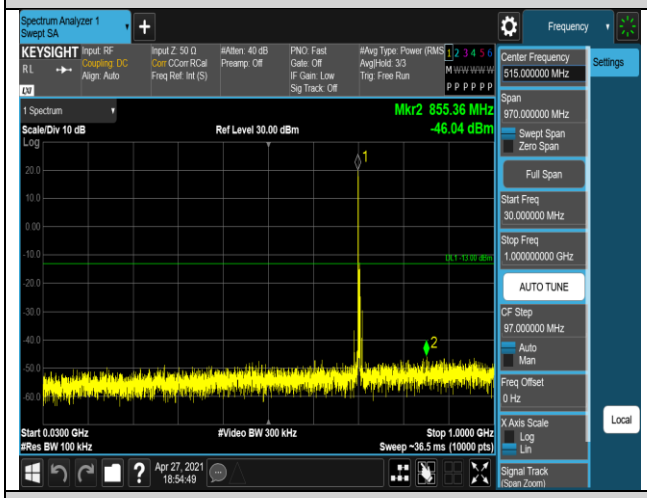

Band17-5MHz-16QAM-23755-1RB#0-Range2:1000~10000MHz



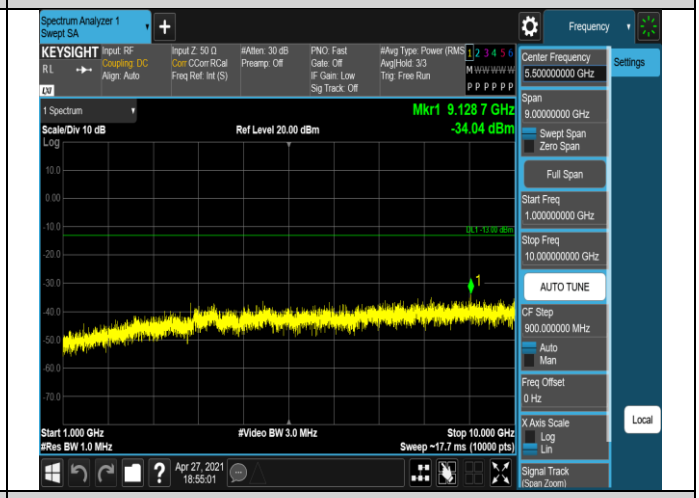

Band17-5MHz-16QAM-23790-1RB#0-Range1:30~1000MHz



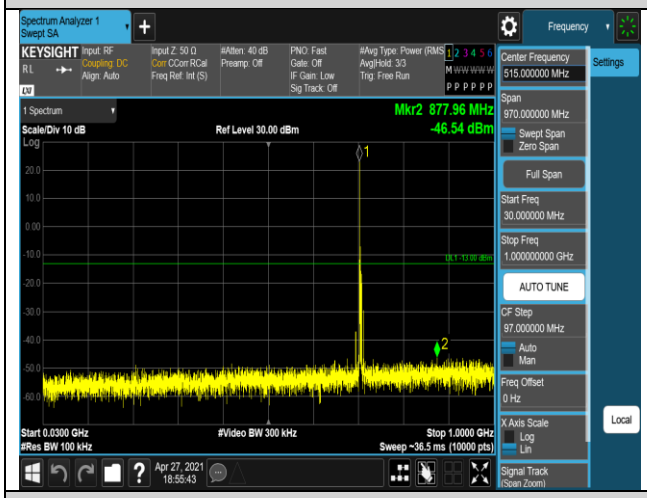

Band17-5MHz-16QAM-23790-1RB#0-Range2:1000~10000MHz



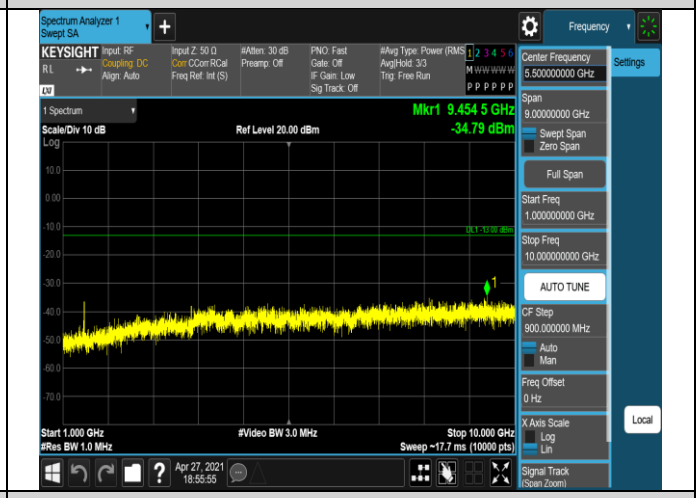

Band17-5MHz-16QAM-23825-1RB#0-Range1:30~1000MHz



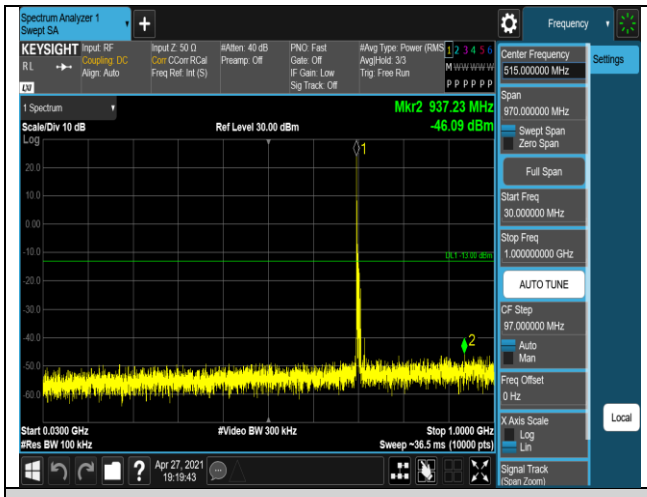

Band17-5MHz-16QAM-23825-1RB#0-Range2:1000~10000MHz



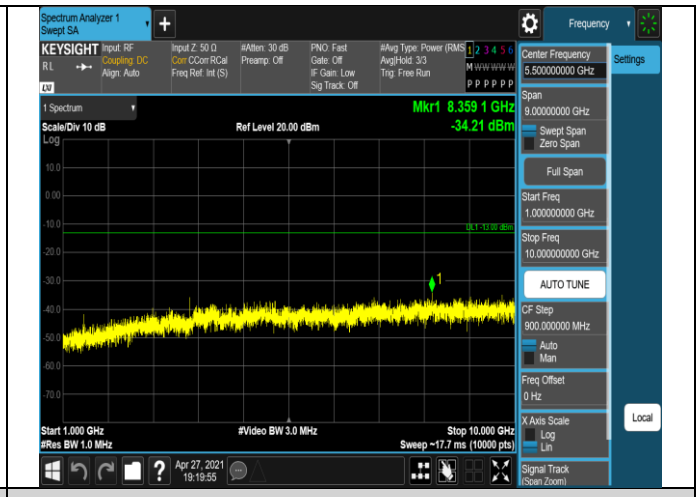

Band17-10MHz-QPSK-23780-1RB#0-Range1:30~1000MHz



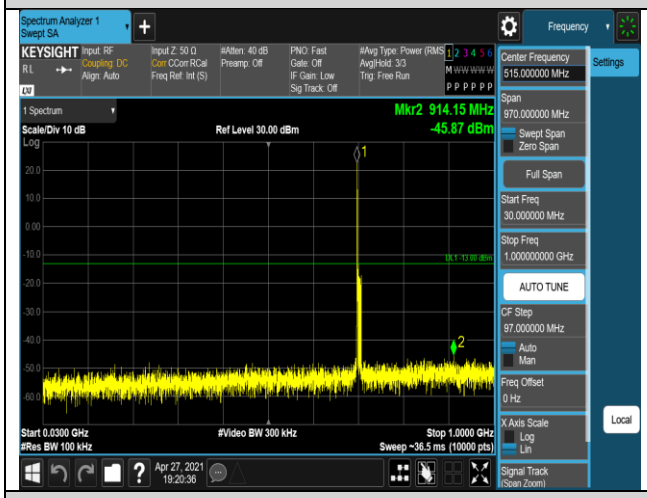

Band17-10MHz-QPSK-23780-1RB#0-Range2:1000~10000MHz



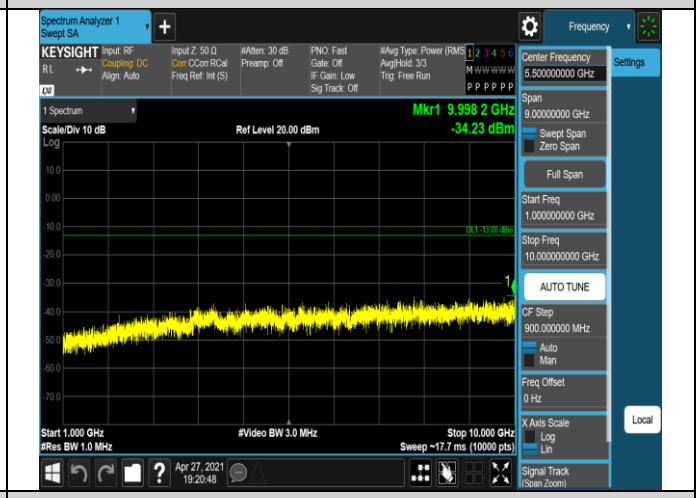

Band17-10MHz-QPSK-23790-1RB#0-Range1:30~1000MHz



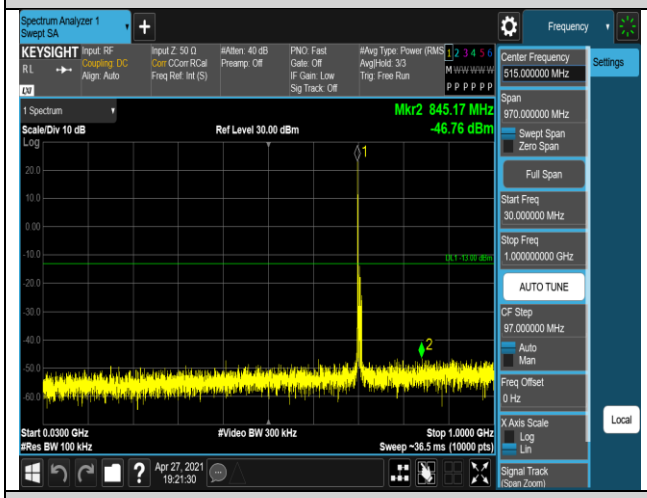

Band17-10MHz-QPSK-23790-1RB#0-Range2:1000~10000MHz



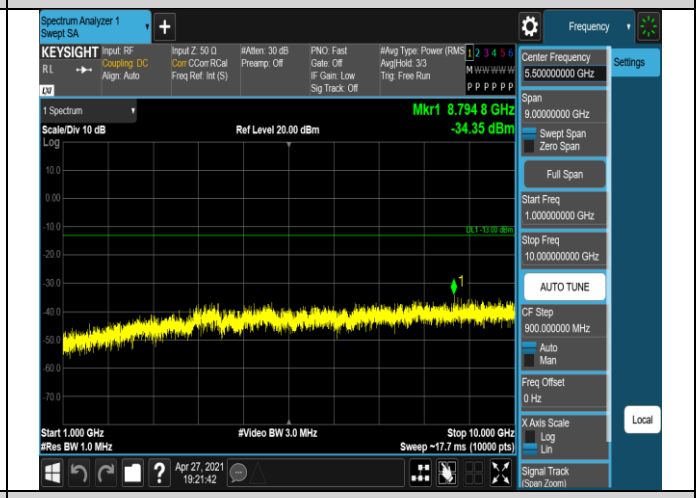

Band17-10MHz-QPSK-23800-1RB#0-Range1:30~1000MHz



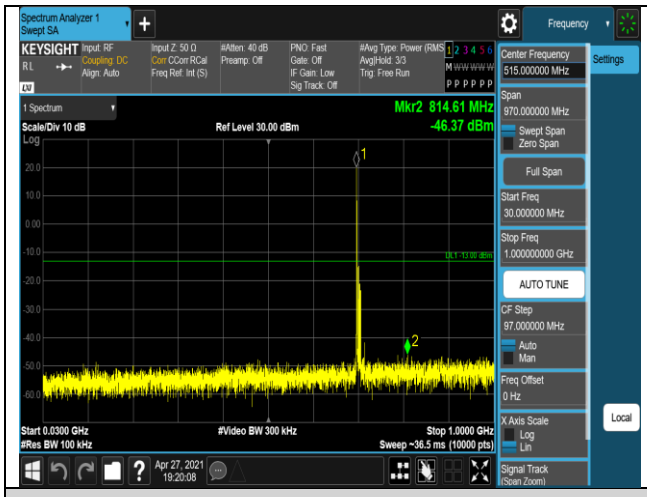

Band17-10MHz-QPSK-23800-1RB#0-Range2:1000~10000MHz



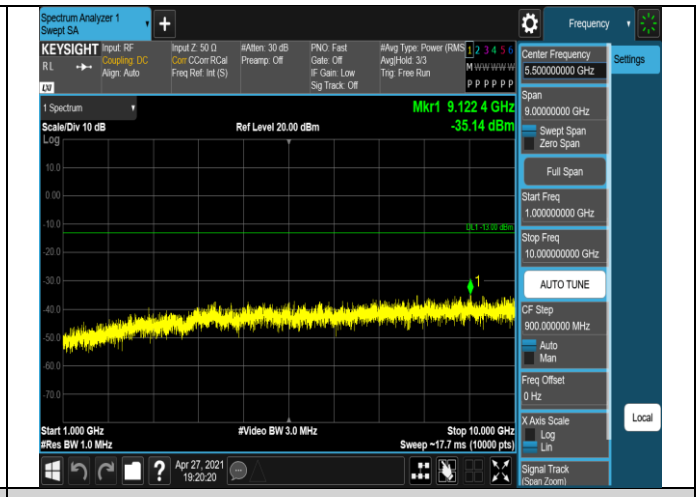

Band17-10MHz-16QAM-23780-1RB#0-Range1:30~1000MHz



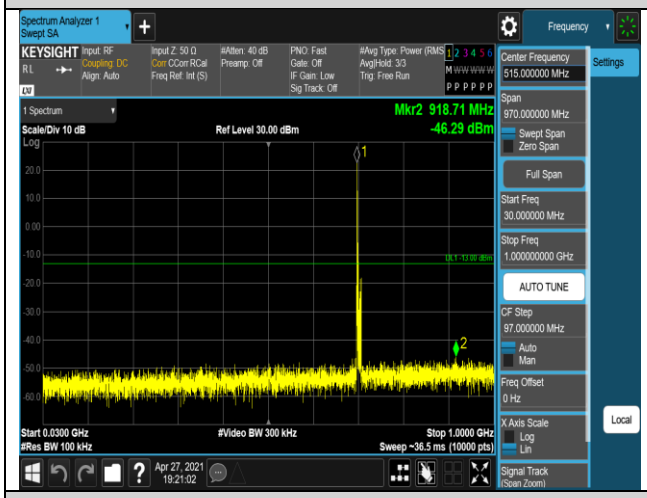

Band17-10MHz-16QAM-23780-1RB#0-Range2:1000~10000MHz



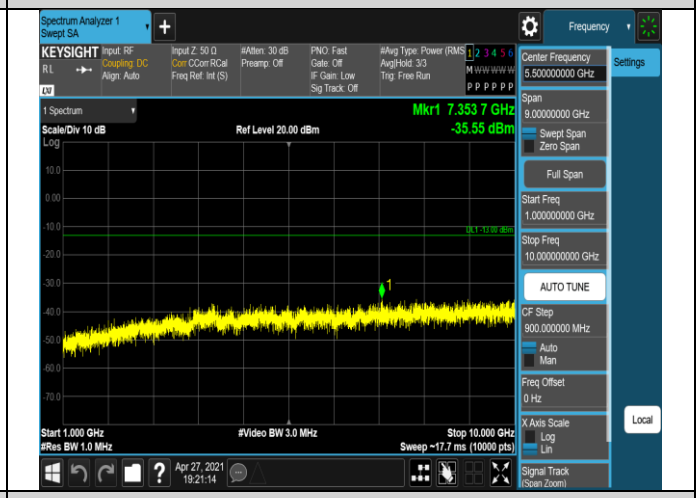

Band17-10MHz-16QAM-23790-1RB#0-Range1:30~1000MHz



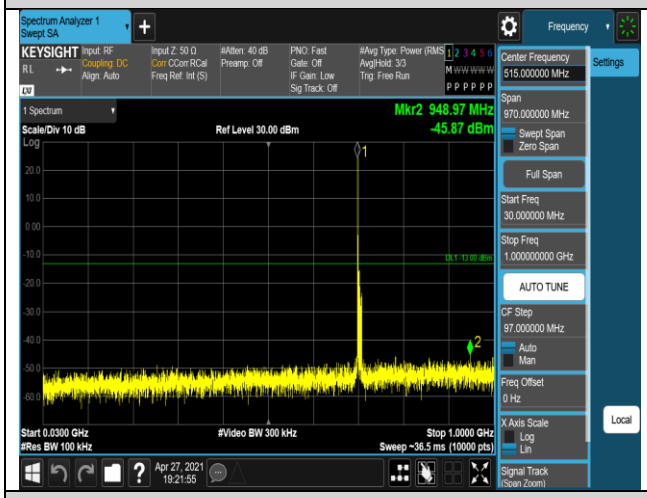

Band17-10MHz-16QAM-23790-1RB#0-Range2:1000~10000MHz



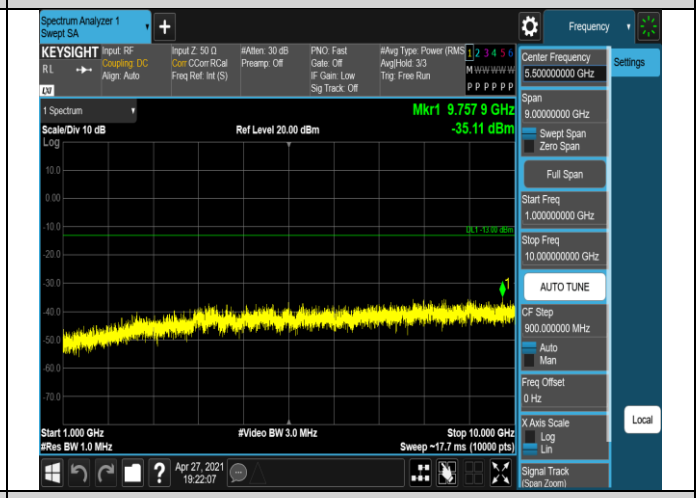

Band17-10MHz-16QAM-23800-1RB#0-Range1:30~1000MHz



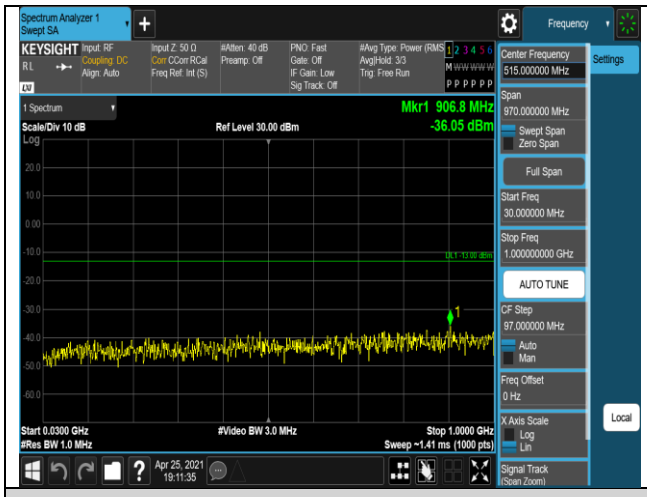

Band17-10MHz-16QAM-23800-1RB#0-Range2:1000~10000MHz



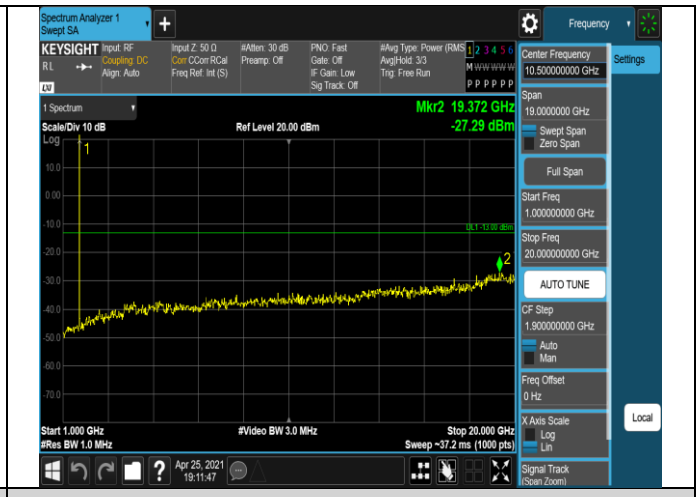

Band66-1.4MHz-QPSK-131979-1RB#0-Range1:30~1000MHz



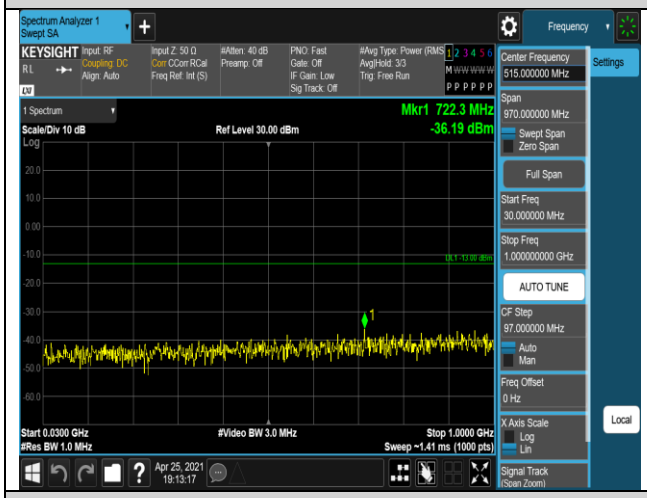

Band66-1.4MHz-QPSK-131979-1RB#0-Range2:1000~20000MHz



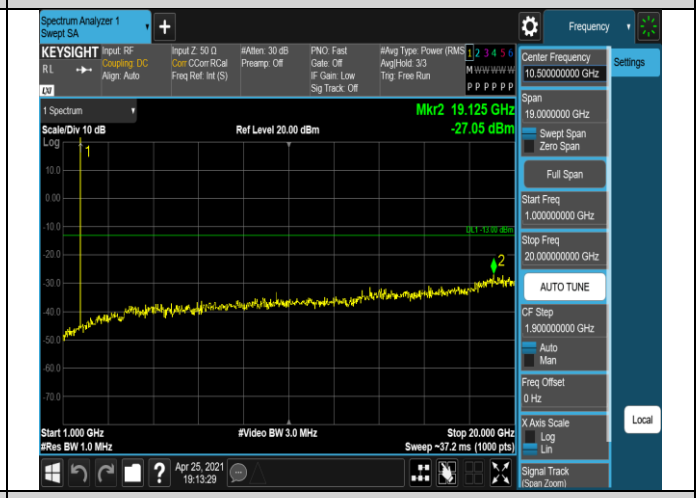

Band66-1.4MHz-QPSK-132322-1RB#0-Range1:30~1000MHz



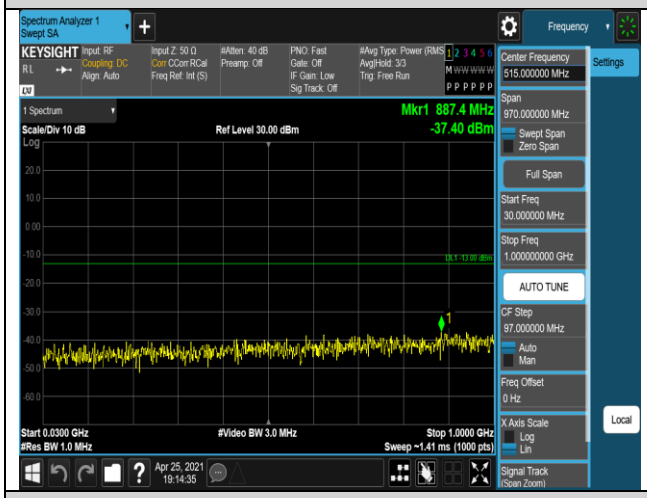

Band66-1.4MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz



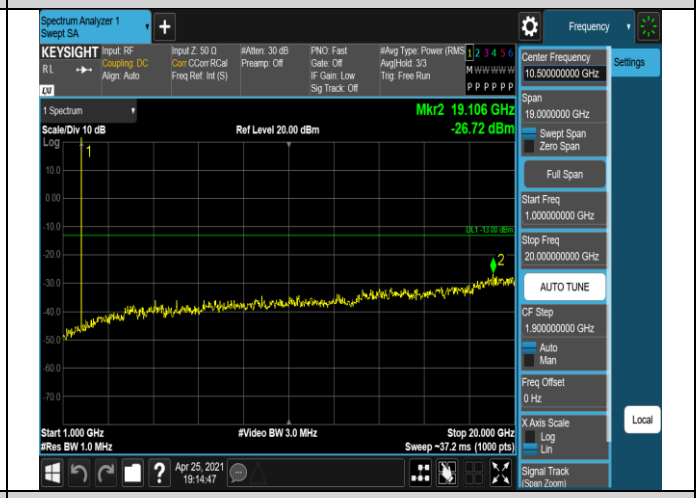

Band66-1.4MHz-QPSK-132665-1RB#0-Range1:30~1000MHz



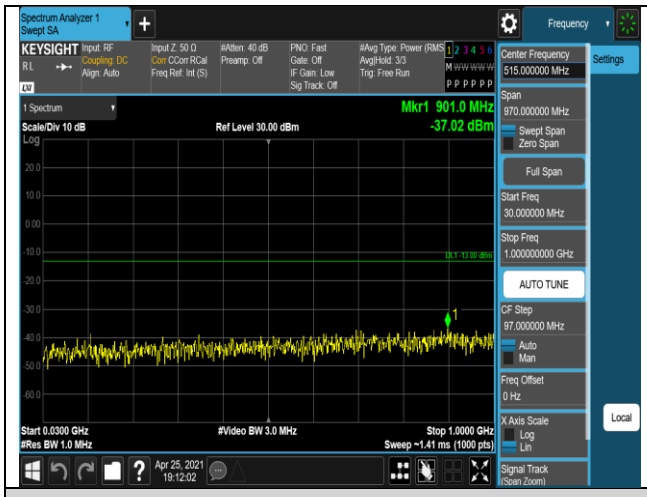

Band66-1.4MHz-QPSK-132665-1RB#0-Range2:1000~20000MHz



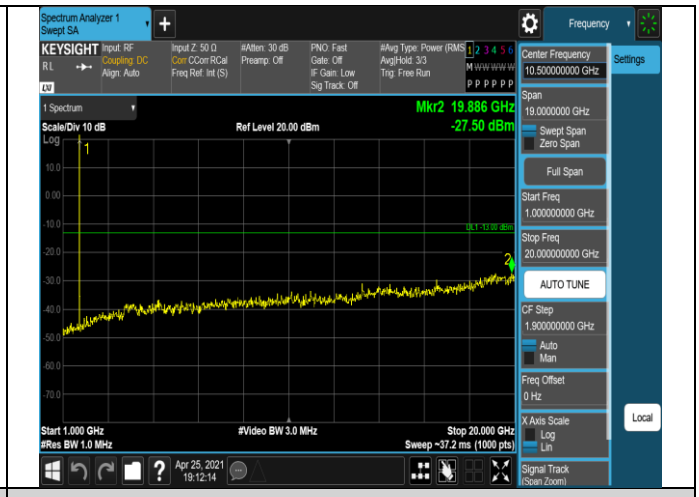

Band66-1.4MHz-16QAM-131979-1RB#0-Range1:30~1000MHz



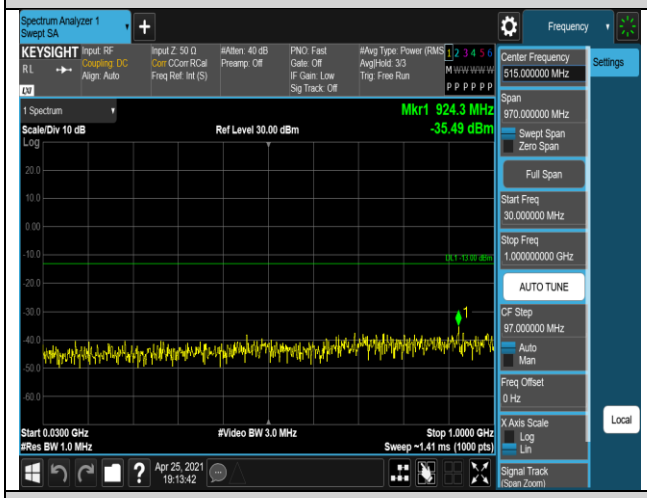

Band66-1.4MHz-16QAM-131979-1RB#0-Range2:1000~20000MHz



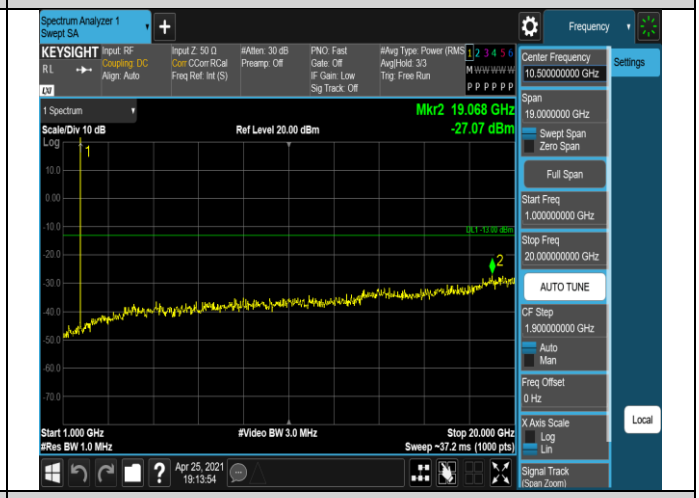

Band66-1.4MHz-16QAM-132322-1RB#0-Range1:30~1000MHz



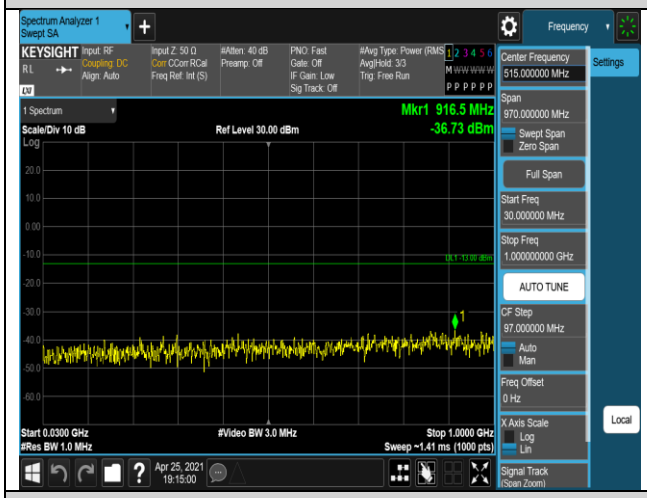

Band66-1.4MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz



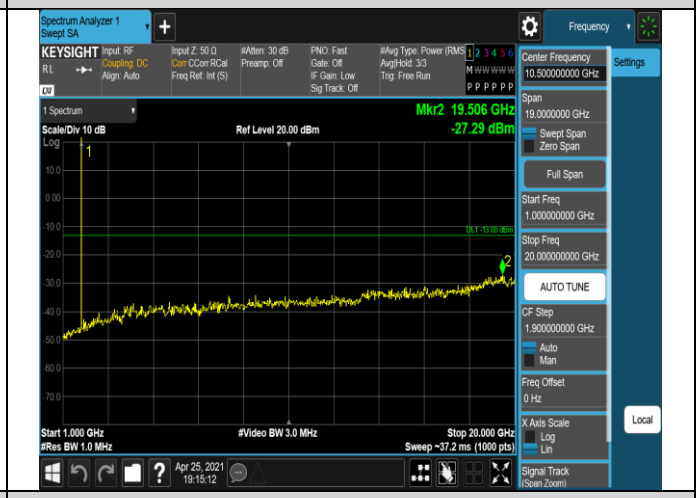

Band66-1.4MHz-16QAM-132665-1RB#0-Range1:30~1000MHz



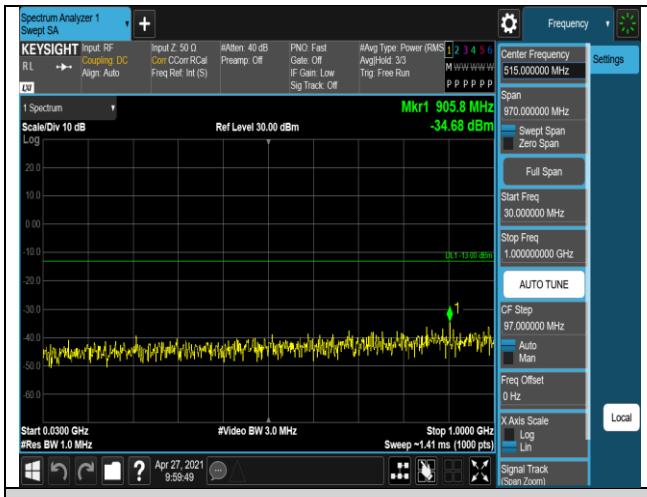

Band66-1.4MHz-16QAM-132665-1RB#0-Range2:1000~20000MHz



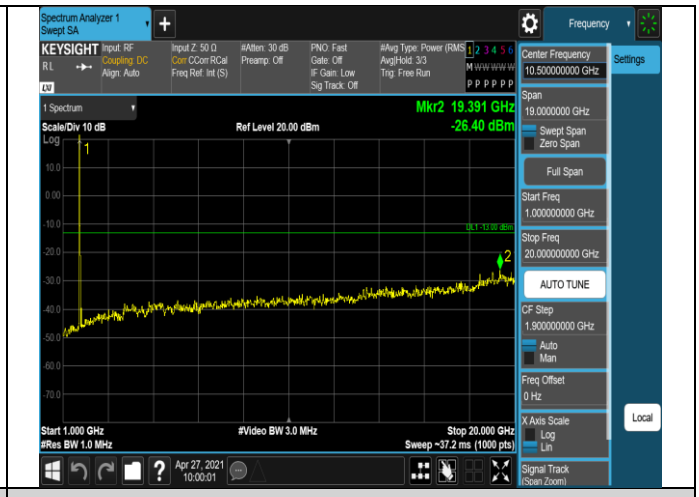

Band66-20MHz-QPSK-132072-1RB#0-Range1:30~1000MHz



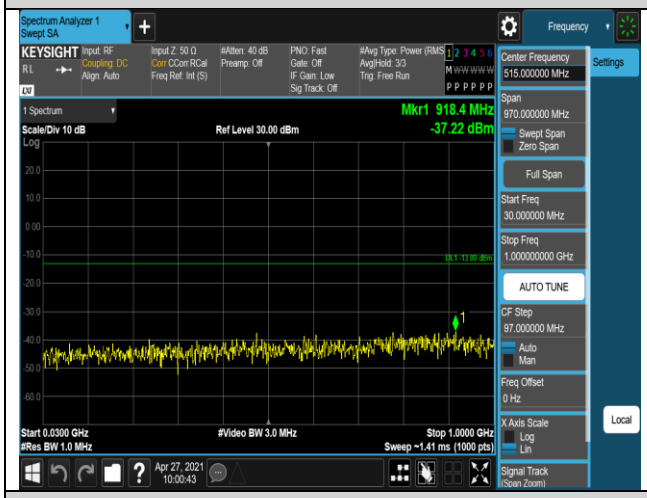

Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~20000MHz



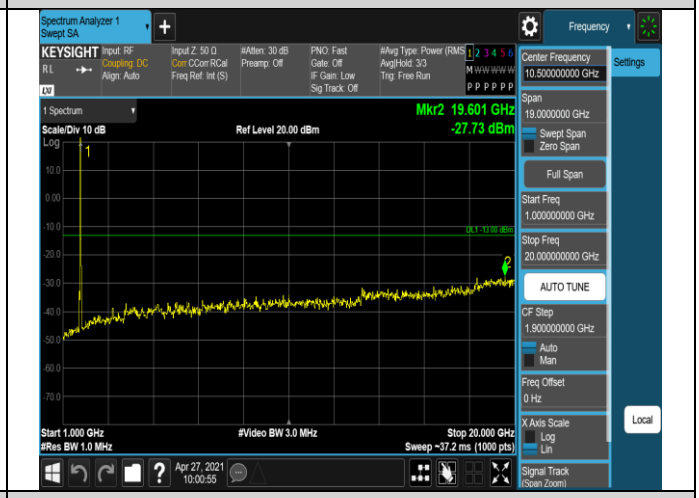

Band66-20MHz-QPSK-132322-1RB#0-Range1:30~1000MHz



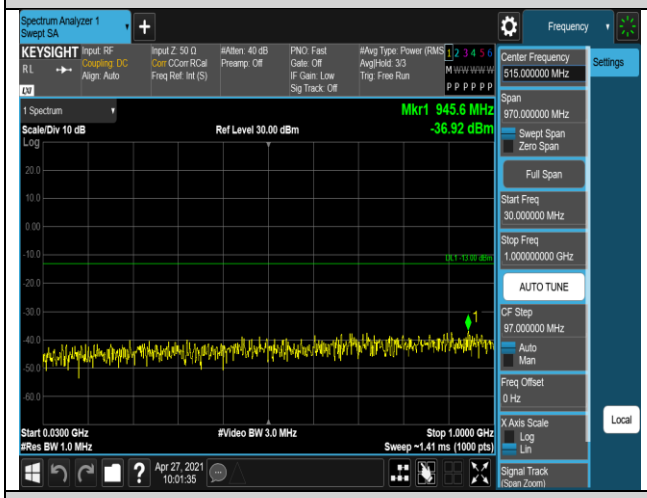

Band66-20MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz



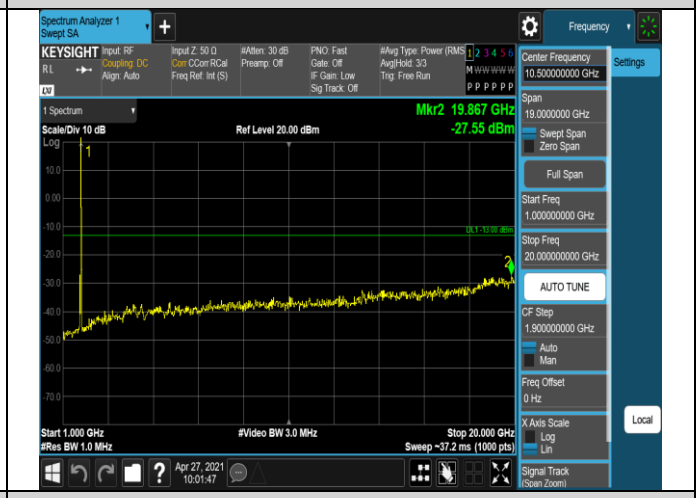

Band66-20MHz-QPSK-132572-1RB#0-Range1:30~1000MHz



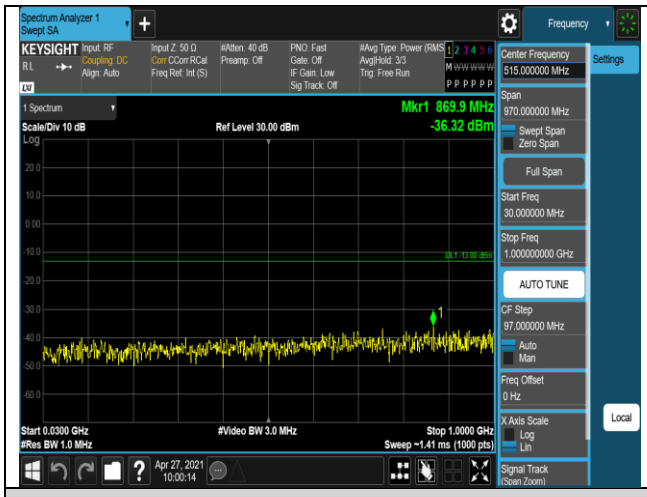

Band66-20MHz-QPSK-132572-1RB#0-Range2:1000~20000MHz



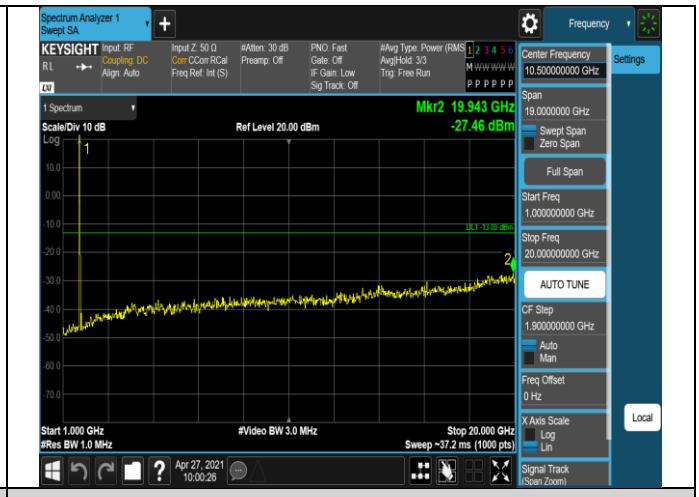

Band66-20MHz-16QAM-132072-1RB#0-Range1:30~1000MHz



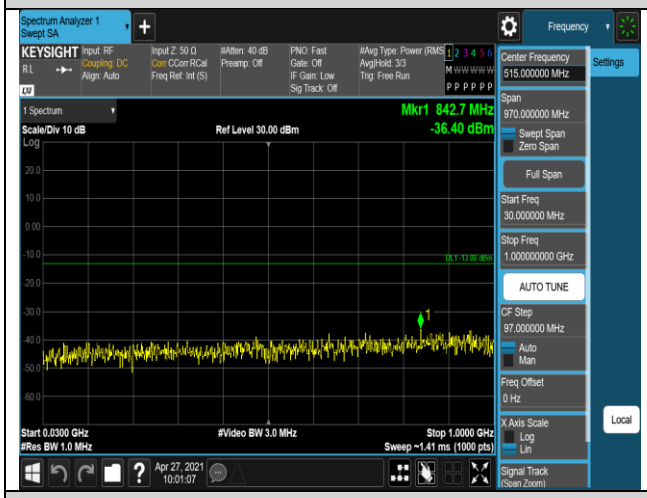

Band66-20MHz-16QAM-132072-1RB#0-Range2:1000~20000MHz



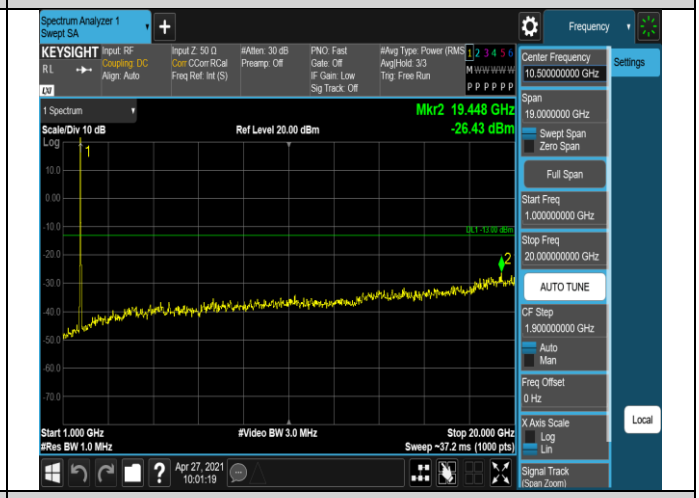

Band66-20MHz-16QAM-132322-1RB#0-Range1:30~1000MHz



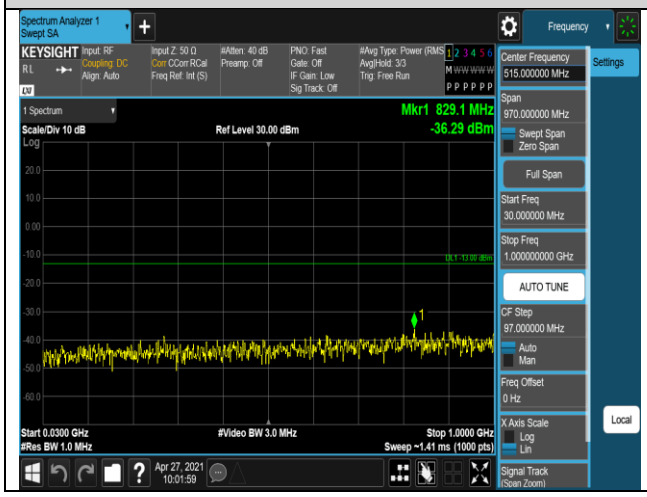

Band66-20MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz

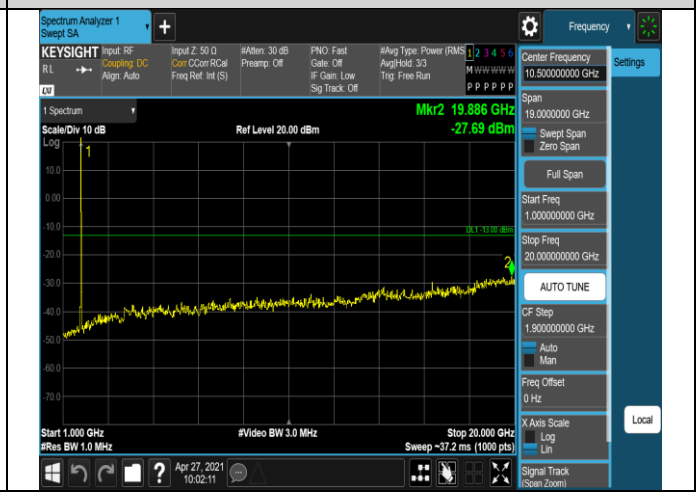



Band66-20MHz-16QAM-132572-1RB#0-Range1:30~1000MHz




Band66-20MHz-16QAM-132572-1RB#0-Range2:1000~20000MHz



# Appendix F: Frequency Stability

**Test Result (Worst case):**

LTE Band 2 part:

| Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 Frequency=1880.0MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | -38.22 | -0.020330 | Within authorized band for Band 2 | Pass |
| | -20 | -38.22 | -0.020330 | | |
| | -10 | -21.96 | -0.011681 | | |
| | 0 | -48.34 | -0.025713 | | |
| | 10 | -10.04 | -0.005340 | | |
| | 20 | -31.73 | -0.016878 | | |
| | 30 | -44.25 | -0.023537 | | |
| | 40 | -11.69 | -0.006218 | | |
| | 50 | -9.58 | -0.005096 | | |
| 16QAM | | | | | |
| 3.85 | -30 | 19.58 | 0.010415 | Within authorized band for Band 2 | Pass |
| | -20 | 21.11 | 0.011229 | | |
| | -10 | 29.20 | 0.015532 | | |
| | 0 | 42.06 | 0.022372 | | |
| | 10 | 47.39 | 0.025207 | | |
| | 20 | 43.67 | 0.023229 | | |
| | 30 | -3.05 | -0.001622 | | |
| | 40 | 8.74 | 0.004649 | | |
| | 50 | 13.63 | 0.007250 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | -6.19 | -0.003293 | Within authorized band for Band 2 | Pass |
| | 3.85 | -42.90 | -0.022819 | | |
| | 3.50 | -16.69 | -0.008878 | | |
| 16QAM | | | | | |
| 25 | 4.42 | -9.43 | -0.005016 | Within authorized band for Band 2 | Pass |
| | 3.85 | -17.52 | -0.009319 | | |
| | 3.50 | 11.83 | 0.006293 | | |
| *Note: Only the worst case shown in the report.* | | | | | |

**LTE Band 4 part:**

| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | -46.32 | -0.026736 | Within authorized band for Band 4 | Pass |
| | -20 | -28.38 | -0.016381 | | |
| | -10 | -53.33 | -0.030782 | | |
| | 0 | -15.21 | -0.008779 | | |
| | 10 | -35.55 | -0.020519 | | |
| | 20 | -11.32 | -0.006534 | | |
| | 30 | -27.88 | -0.016092 | | |
| | 40 | -41.73 | -0.024087 | | |
| | 50 | 3.86 | 0.002228 | | |
| 16QAM | | | | | |
| 3.85 | -30 | 16.08 | 0.009281 | Within authorized band for Band 4 | Pass |
| | -20 | 20.94 | 0.012087 | | |
| | -10 | 22.14 | 0.012779 | | |
| | 0 | 33.35 | 0.019250 | | |
| | 10 | 38.14 | 0.022014 | | |
| | 20 | -16.99 | -0.009807 | | |
| | 30 | -9.28 | -0.005356 | | |
| | 40 | -6.39 | -0.003688 | | |
| | 50 | -13.09 | -0.007556 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | -40.24 | -0.023227 | Within authorized band for Band 4 | Pass |
| | 3.85 | -8.63 | -0.004981 | | |
| | 3.50 | -38.12 | -0.022003 | | |
| 16QAM | | | | | |
| 25 | 4.42 | -7.02 | -0.004052 | Within authorized band for Band 4 | Pass |
| | 3.85 | -13.66 | -0.007885 | | |
| | 3.50 | 10.57 | 0.006101 | | |
| *Note: Only the worst case shown in the report.* | | | | | |

**LTE Band 5 part:**

| Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 Frequency=836.5MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | -21.44 | -0.025631 | ±2.5 | Pass |
| | -20 | -29.51 | -0.035278 | | |
| | -10 | -31.10 | -0.037179 | | |
| | 0 | -33.36 | -0.039880 | | |
| | 10 | -33.69 | -0.040275 | | |
| | 20 | -34.83 | -0.041638 | | |
| | 30 | -33.56 | -0.040120 | | |
| | 40 | -39.05 | -0.046683 | | |
| | 50 | -37.67 | -0.045033 | | |
| 16QAM | | | | | |
| 3.85 | -30 | -39.88 | -0.047675 | ±2.5 | Pass |
| | -20 | -40.98 | -0.048990 | | |
| | -10 | -38.94 | -0.046551 | | |
| | 0 | -33.97 | -0.040610 | | |
| | 10 | -30.28 | -0.036198 | | |
| | 20 | -29.58 | -0.035362 | | |
| | 30 | -24.92 | -0.029791 | | |
| | 40 | -22.95 | -0.027436 | | |
| | 50 | -19.11 | -0.022845 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | 5.11 | 0.006109 | ±2.5 | Pass |
| | 3.85 | 23.78 | 0.028428 | | |
| | 3.50 | -12.22 | -0.014608 | | |
| 16QAM | | | | | |
| 25 | 4.42 | -41.10 | -0.049133 | ±2.5 | Pass |
| | 3.85 | -38.17 | -0.045631 | | |
| | 3.50 | -41.46 | -0.049564 | | |
| *Note: Only the worst case shown in the report.* | | | | | |

**LTE Band 12 part:**

| Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | 13.30 | 0.018799 | Within authorized band for Band 12 | Pass |
| | -20 | 24.79 | 0.035039 | | |
| | -10 | 27.35 | 0.038657 | | |
| | 0 | 32.87 | 0.046459 | | |
| | 10 | 37.06 | 0.052382 | | |
| | 20 | 40.51 | 0.057258 | | |
| | 30 | 46.05 | 0.065088 | | |
| | 40 | -3.08 | -0.004353 | | |
| | 50 | 1.96 | 0.002770 | | |
| 16QAM | | | | | |
| 3.85 | -30 | 40.88 | 0.057781 | Within authorized band for Band 12 | Pass |
| | -20 | -1.90 | -0.002686 | | |
| | -10 | 8.77 | 0.012396 | | |
| | 0 | 14.65 | 0.020707 | | |
| | 10 | 17.91 | 0.025314 | | |
| | 20 | 18.81 | 0.026587 | | |
| | 30 | 22.56 | 0.031887 | | |
| | 40 | 30.16 | 0.042629 | | |
| | 50 | 29.74 | 0.042035 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | -5.04 | -0.007124 | Within authorized band for Band 12 | Pass |
| | 3.85 | -13.79 | -0.019491 | | |
| | 3.50 | 11.69 | 0.016523 | | |
| 16QAM | | | | | |
| 25 | 4.42 | 22.02 | 0.031124 | Within authorized band for Band 12 | Pass |
| | 3.85 | 8.88 | 0.012551 | | |
| | 3.50 | 31.73 | 0.044848 | | |
| *Note: Only the worst case shown in the report.* | | | | | |

**LTE Band 17 part:**

| Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | 13.40 | 0.018967 | Within authorized band for Band 17 | Pass |
| | -20 | 18.61 | 0.026341 | | |
| | -10 | 24.85 | 0.035173 | | |
| | 0 | 29.78 | 0.042151 | | |
| | 10 | 32.29 | 0.045704 | | |
| | 20 | 38.92 | 0.055088 | | |
| | 30 | 40.58 | 0.057438 | | |
| | 40 | 44.78 | 0.063383 | | |
| | 50 | 45.56 | 0.064487 | | |
| 16QAM | | | | | |
| 3.85 | -30 | -5.29 | -0.007488 | Within authorized band for Band 17 | Pass |
| | -20 | -4.62 | -0.006539 | | |
| | -10 | -7.71 | -0.010913 | | |
| | 0 | -7.65 | -0.010828 | | |
| | 10 | -5.32 | -0.007530 | | |
| | 20 | -6.45 | -0.009130 | | |
| | 30 | -6.39 | -0.009045 | | |
| | 40 | -5.91 | -0.008365 | | |
| | 50 | -7.41 | -0.010488 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | -7.88 | -0.011154 | Within authorized band for Band 17 | Pass |
| | 3.85 | -5.51 | -0.007799 | | |
| | 3.50 | 3.71 | 0.005251 | | |
| 16QAM | | | | | |
| 25 | 4.42 | -2.83 | -0.004006 | Within authorized band for Band 17 | Pass |
| | 3.85 | 47.59 | 0.067360 | | |
| | 3.50 | -3.95 | -0.005591 | | |
| *Note: Only the worst case shown in the report.* | | | | | |

**LTE Band 66 part:**

| Reference Frequency: LTE Band 66 (10MHz) Middle channel=132322 Frequency=1745.0MHz | | | | | |
|---|---|---|---|---|---|
| **Temperature** | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 3.85 | -30 | -28.54 | -0.016355 | Within authorized band for Band 66 | Pass |
| | -20 | -28.10 | -0.016103 | | |
| | -10 | -26.72 | -0.015312 | | |
| | 0 | -35.22 | -0.020183 | | |
| | 10 | -24.02 | -0.013765 | | |
| | 20 | -20.37 | -0.011673 | | |
| | 30 | -12.86 | -0.007370 | | |
| | 40 | -37.87 | -0.021702 | | |
| | 50 | -23.13 | -0.013255 | | |
| 16QAM | | | | | |
| 3.85 | -30 | 24.00 | 0.013754 | Within authorized band for Band 66 | Pass |
| | -20 | 25.61 | 0.014676 | | |
| | -10 | 29.61 | 0.016968 | | |
| | 0 | 28.80 | 0.016504 | | |
| | 10 | 21.33 | 0.012223 | | |
| | 20 | 20.04 | 0.011484 | | |
| | 30 | 15.88 | 0.009100 | | |
| | 40 | 14.81 | 0.008487 | | |
| | 50 | 15.61 | 0.008946 | | |
| **Voltage** | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| QPSK | | | | | |
| 25 | 4.42 | -4.65 | -0.002665 | Within authorized band for Band 66 | Pass |
| | 3.85 | -24.06 | -0.013788 | | |
| | 3.50 | -22.92 | -0.013135 | | |
| 16QAM | | | | | |
| 25 | 4.42 | 14.28 | 0.008183 | Within authorized band for Band 66 | Pass |
| | 3.85 | -55.38 | -0.031736 | | |
| | 3.50 | 11.36 | 0.006510 | | |
| *Note: Only the worst case shown in the report.* | | | | | |