| Radiated Power (EIRP) for Band 2 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 1850.7 | -2.77 | 3.76 | 28.24 | 21.71 | 148.318 | Horizontal | Pass |
| | | 1880 | -1.87 | 3.91 | 28.22 | 22.44 | 175.416 | Horizontal | Pass |
| | | 1909.3 | -2.51 | 3.93 | 28.20 | 21.76 | 149.980 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 1850.7 | -3.29 | 3.76 | 28.24 | 21.19 | 131.633 | Horizontal | Pass |
| | | 1880 | -3.77 | 3.91 | 28.22 | 20.54 | 113.262 | Horizontal | Pass |
| | | 1909.3 | -3.57 | 3.93 | 28.20 | 20.70 | 117.412 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 1851.5 | -2.61 | 3.77 | 28.23 | 21.85 | 153.111 | Horizontal | Pass |
| | | 1880 | -2.72 | 3.91 | 28.24 | 21.61 | 145.027 | Horizontal | Pass |
| | | 1908.5 | -2.27 | 3.94 | 28.25 | 22.04 | 159.830 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 1851.5 | -3.41 | 3.77 | 28.23 | 21.05 | 127.483 | Horizontal | Pass |
| | | 1880 | -3.22 | 3.91 | 28.24 | 21.11 | 129.224 | Horizontal | Pass |
| | | 1908.5 | -3.80 | 3.94 | 28.25 | 20.51 | 112.431 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 1852.5 | -2.66 | 3.77 | 28.31 | 21.88 | 154.315 | Horizontal | Pass |
| | | 1880 | -2.52 | 3.91 | 28.22 | 21.79 | 151.094 | Horizontal | Pass |
| | | 1907.5 | -2.08 | 3.94 | 28.20 | 22.18 | 165.014 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 1852.5 | -3.57 | 3.77 | 28.31 | 20.97 | 125.070 | Horizontal | Pass |
| | | 1880 | -2.76 | 3.91 | 28.22 | 21.55 | 142.727 | Horizontal | Pass |
| | | 1907.5 | -3.56 | 3.94 | 28.20 | 20.70 | 117.370 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 1855 | -2.86 | 3.79 | 28.33 | 21.68 | 147.265 | Horizontal | Pass |
| | | 1880 | -2.21 | 3.95 | 28.22 | 22.06 | 160.526 | Horizontal | Pass |
| | | 1905 | -2.11 | 3.97 | 28.19 | 22.11 | 162.572 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 1855 | -3.61 | 3.79 | 28.33 | 20.93 | 123.958 | Horizontal | Pass |
| | | 1880 | -3.40 | 3.95 | 28.22 | 20.87 | 122.133 | Horizontal | Pass |
| | | 1905 | -3.40 | 3.97 | 28.19 | 20.82 | 120.897 | Horizontal | Pass |
| 15.0MHz BW QPSK | 75/0 | 1857.5 | -2.89 | 3.79 | 28.34 | 21.66 | 146.588 | Horizontal | Pass |
| | | 1880 | -2.45 | 3.95 | 28.22 | 21.82 | 151.959 | Horizontal | Pass |
| | | 1902.5 | -2.10 | 3.97 | 28.18 | 22.11 | 162.585 | Horizontal | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 1857.5 | -3.59 | 3.79 | 28.34 | 20.96 | 124.649 | Horizontal | Pass |
| | | 1880 | -3.67 | 3.95 | 28.22 | 20.60 | 114.730 | Horizontal | Pass |
| | | 1902.5 | -3.47 | 3.97 | 28.18 | 20.74 | 118.594 | Horizontal | Pass |
| 20.0MHz BW QPSK | 100/0 | 1860 | -3.93 | 3.81 | 28.35 | 20.61 | 115.038 | Horizontal | Pass |
| | | 1880 | -2.49 | 3.96 | 28.22 | 21.77 | 150.143 | Horizontal | Pass |
| | | 1900 | -3.08 | 4.00 | 28.16 | 21.08 | 128.158 | Horizontal | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 20.0MHz BW 16 QAM | 100/0 | 1860 | -3.62 | 3.81 | 28.35 | 20.92 | 123.737 | Horizontal | Pass |
| | | 1880 | -3.91 | 3.96 | 28.22 | 20.35 | 108.465 | Horizontal | Pass |
| | | 1900 | -3.66 | 4.00 | 28.16 | 20.50 | 112.113 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.3 LTE BAND 4

| Radiated Power (EIRP) for Band 4 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 1710.7 | -3.61 | 3.12 | 27.58 | 20.85 | 121.708 | Vertical | Pass |
| | | 1732.5 | -3.97 | 3.27 | 27.61 | 20.37 | 108.875 | Vertical | Pass |
| | | 1754.3 | -3.87 | 3.29 | 27.63 | 20.47 | 111.339 | Vertical | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 1710.7 | -4.31 | 3.12 | 27.58 | 20.15 | 103.520 | Vertical | Pass |
| | | 1732.5 | -4.97 | 3.27 | 27.61 | 19.37 | 86.509 | Vertical | Pass |
| | | 1754.3 | -5.03 | 3.29 | 27.63 | 19.31 | 85.376 | Vertical | Pass |
| 3.0MHz BW QPSK | 15/0 | 1711.5 | -3.72 | 3.13 | 27.61 | 20.76 | 119.037 | Vertical | Pass |
| | | 1732.5 | -4.10 | 3.27 | 27.61 | 20.24 | 105.793 | Vertical | Pass |
| | | 1753.5 | -3.54 | 3.30 | 27.62 | 20.78 | 119.741 | Vertical | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 1711.5 | -4.99 | 3.13 | 27.61 | 19.49 | 88.999 | Vertical | Pass |
| | | 1732.5 | -4.41 | 3.27 | 27.61 | 19.93 | 98.312 | Vertical | Pass |
| | | 1753.5 | -4.74 | 3.30 | 27.62 | 19.58 | 90.823 | Vertical | Pass |
| 5.0MHz BW QPSK | 25/0 | 1712.5 | -3.57 | 3.13 | 27.63 | 20.93 | 123.841 | Vertical | Pass |
| | | 1732.5 | -3.16 | 3.27 | 27.61 | 21.18 | 131.139 | Vertical | Pass |
| | | 1752.5 | -3.68 | 3.30 | 27.60 | 20.62 | 115.300 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 1712.5 | -4.37 | 3.13 | 27.63 | 20.13 | 102.934 | Vertical | Pass |
| | | 1732.5 | -4.25 | 3.27 | 27.61 | 20.09 | 102.125 | Vertical | Pass |
| | | 1752.5 | -4.80 | 3.30 | 27.60 | 19.50 | 89.192 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 1715 | -3.93 | 3.15 | 27.64 | 20.56 | 113.738 | Vertical | Pass |
| | | 1732.5 | -3.28 | 3.31 | 27.61 | 21.02 | 126.352 | Vertical | Pass |
| | | 1750 | -3.03 | 3.33 | 27.59 | 21.23 | 132.600 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 1715 | -5.15 | 3.15 | 27.64 | 19.34 | 86.000 | Vertical | Pass |
| | | 1732.5 | -4.13 | 3.31 | 27.61 | 20.17 | 104.035 | Vertical | Pass |
| | | 1750 | -4.95 | 3.33 | 27.59 | 19.31 | 85.322 | Vertical | Pass |
| 15.0MHz BW QPSK | 75/0 | 1717.5 | -3.93 | 3.15 | 27.65 | 20.57 | 114.014 | Vertical | Pass |
| | | 1732.5 | -3.94 | 3.31 | 27.61 | 20.36 | 108.672 | Vertical | Pass |
| | | 1747.5 | -3.49 | 3.33 | 27.57 | 20.75 | 118.897 | Vertical | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 1717.5 | -4.55 | 3.15 | 27.65 | 19.95 | 98.962 | Vertical | Pass |
| | | 1732.5 | -4.95 | 3.31 | 27.61 | 19.35 | 86.142 | Vertical | Pass |
| | | 1747.5 | -4.53 | 3.33 | 27.57 | 19.71 | 93.560 | Vertical | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 20.0MHz BW QPSK | 100/0 | 1720 | -4.07 | 3.17 | 27.66 | 20.42 | 110.190 | Vertical | Pass |
| | | 1732.5 | -4.04 | 3.32 | 27.61 | 20.25 | 106.043 | Vertical | Pass |
| | | 1745 | -3.24 | 3.36 | 27.56 | 20.96 | 124.678 | Vertical | Pass |
| 20.0MHz BW 16 QAM | 100/0 | 1720 | -4.69 | 3.17 | 27.66 | 19.80 | 95.445 | Vertical | Pass |
| | | 1732.5 | -4.49 | 3.32 | 27.61 | 19.80 | 95.432 | Vertical | Pass |
| | | 1745 | -4.64 | 3.36 | 27.56 | 19.56 | 90.272 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

| Radiated Power (EIRP) for Band 4 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 1710.7 | -4.01 | 3.12 | 27.58 | 20.45 | 110.983 | Horizontal | Pass |
| | | 1732.5 | -4.00 | 3.27 | 27.61 | 20.34 | 108.062 | Horizontal | Pass |
| | | 1754.3 | -3.76 | 3.29 | 27.63 | 20.58 | 114.343 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 1710.7 | -4.94 | 3.12 | 27.58 | 19.52 | 89.583 | Horizontal | Pass |
| | | 1732.5 | -5.07 | 3.27 | 27.61 | 19.27 | 84.513 | Horizontal | Pass |
| | | 1754.3 | -5.17 | 3.29 | 27.63 | 19.17 | 82.661 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 1711.5 | -4.24 | 3.13 | 27.61 | 20.24 | 105.766 | Horizontal | Pass |
| | | 1732.5 | -4.11 | 3.27 | 27.61 | 20.23 | 105.531 | Horizontal | Pass |
| | | 1753.5 | -3.82 | 3.30 | 27.62 | 20.50 | 112.178 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 1711.5 | -5.59 | 3.13 | 27.61 | 18.89 | 77.457 | Horizontal | Pass |
| | | 1732.5 | -4.66 | 3.27 | 27.61 | 19.68 | 92.857 | Horizontal | Pass |
| | | 1753.5 | -4.67 | 3.30 | 27.62 | 19.65 | 92.353 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 1712.5 | -3.23 | 3.13 | 27.63 | 21.27 | 133.860 | Horizontal | Pass |
| | | 1732.5 | -3.52 | 3.27 | 27.61 | 20.82 | 120.865 | Horizontal | Pass |
| | | 1752.5 | -3.57 | 3.30 | 27.60 | 20.73 | 118.217 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 1712.5 | -4.43 | 3.13 | 27.63 | 20.07 | 101.674 | Horizontal | Pass |
| | | 1732.5 | -4.80 | 3.27 | 27.61 | 19.54 | 89.922 | Horizontal | Pass |
| | | 1752.5 | -5.19 | 3.30 | 27.60 | 19.11 | 81.486 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 1715 | -4.09 | 3.15 | 27.64 | 20.40 | 109.532 | Horizontal | Pass |
| | | 1732.5 | -3.71 | 3.31 | 27.61 | 20.59 | 114.622 | Horizontal | Pass |
| | | 1750 | -3.40 | 3.33 | 27.59 | 20.86 | 121.775 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 1715 | -4.85 | 3.15 | 27.64 | 19.64 | 92.124 | Horizontal | Pass |
| | | 1732.5 | -5.30 | 3.31 | 27.61 | 19.00 | 79.417 | Horizontal | Pass |
| | | 1750 | -4.73 | 3.33 | 27.59 | 19.53 | 89.798 | Horizontal | Pass |
| 15.0MHz BW QPSK | 75/0 | 1717.5 | -4.43 | 3.15 | 27.65 | 20.07 | 101.708 | Horizontal | Pass |
| | | 1732.5 | -3.89 | 3.31 | 27.61 | 20.41 | 109.938 | Horizontal | Pass |
| | | 1747.5 | -3.72 | 3.33 | 27.57 | 20.52 | 112.727 | Horizontal | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 1717.5 | -4.56 | 3.15 | 27.65 | 19.94 | 98.633 | Horizontal | Pass |
| | | 1732.5 | -4.86 | 3.31 | 27.61 | 19.44 | 87.937 | Horizontal | Pass |
| | | 1747.5 | -5.20 | 3.33 | 27.57 | 19.04 | 80.170 | Horizontal | Pass |
| 20.0MHz BW | 100/0 | 1720 | -4.41 | 3.17 | 27.66 | 20.08 | 101.858 | Horizontal | Pass |
| | | 1732.5 | -4.32 | 3.32 | 27.61 | 19.97 | 99.362 | Horizontal | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| QPSK | | 1745 | -4.19 | 3.36 | 27.56 | 20.01 | 100.170 | Horizontal | Pass |
| 20.0MH | | 1720 | -5.16 | 3.17 | 27.66 | 19.33 | 85.765 | Horizontal | Pass |
| z BW 16 | 100/0 | 1732.5 | -4.64 | 3.32 | 27.61 | 19.65 | 92.201 | Horizontal | Pass |
| QAM | | 1745 | -4.82 | 3.36 | 27.56 | 19.38 | 86.793 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.4 LTE BAND 5

| Radiated Power (ERP) for Band 5 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 824.7 | 3.45 | 2.01 | 19.68 | 2.15 | 18.97 | 78.910 | Vertical | Pass |
| | | 836.5 | 3.23 | 2.01 | 19.77 | 2.15 | 18.84 | 76.640 | Vertical | Pass |
| | | 848.3 | 3.39 | 2.02 | 19.82 | 2.15 | 19.04 | 80.231 | Vertical | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 824.7 | 2.21 | 2.01 | 19.68 | 2.15 | 17.73 | 59.284 | Vertical | Pass |
| | | 836.5 | 2.38 | 2.01 | 19.77 | 2.15 | 17.99 | 62.909 | Vertical | Pass |
| | | 848.3 | 2.01 | 2.02 | 19.82 | 2.15 | 17.66 | 58.337 | Vertical | Pass |
| 3.0MHz BW QPSK | 15/0 | 825.5 | 2.96 | 2.01 | 19.70 | 2.15 | 18.50 | 70.825 | Vertical | Pass |
| | | 836.5 | 3.33 | 2.01 | 19.77 | 2.15 | 18.94 | 78.350 | Vertical | Pass |
| | | 847.5 | 3.04 | 2.02 | 19.81 | 2.15 | 18.68 | 73.726 | Vertical | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 825.5 | 1.78 | 2.01 | 19.70 | 2.15 | 17.32 | 53.962 | Vertical | Pass |
| | | 836.5 | 1.42 | 2.01 | 19.77 | 2.15 | 17.03 | 50.480 | Vertical | Pass |
| | | 847.5 | 2.20 | 2.02 | 19.81 | 2.15 | 17.84 | 60.819 | Vertical | Pass |
| 5.0MHz BW QPSK | 25/0 | 826.5 | 2.57 | 2.01 | 19.71 | 2.15 | 18.12 | 64.862 | Vertical | Pass |
| | | 836.5 | 3.58 | 2.01 | 19.77 | 2.15 | 19.19 | 82.967 | Vertical | Pass |
| | | 846.5 | 2.75 | 2.02 | 19.79 | 2.15 | 18.37 | 68.686 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 826.5 | 2.26 | 2.01 | 19.71 | 2.15 | 17.81 | 60.342 | Vertical | Pass |
| | | 836.5 | 1.34 | 2.01 | 19.77 | 2.15 | 16.95 | 49.569 | Vertical | Pass |
| | | 846.5 | 2.16 | 2.02 | 19.79 | 2.15 | 17.78 | 59.934 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 829 | 2.46 | 2.01 | 19.73 | 2.15 | 18.03 | 63.576 | Vertical | Pass |
| | | 836.5 | 3.30 | 2.01 | 19.77 | 2.15 | 18.91 | 77.788 | Vertical | Pass |
| | | 844 | 2.92 | 2.02 | 19.78 | 2.15 | 18.53 | 71.206 | Vertical | Pass |
| 10.0MHz BW QAM | 50/0 | 829 | 2.00 | 2.01 | 19.73 | 2.15 | 17.57 | 57.194 | Vertical | Pass |
| | | 836.5 | 1.99 | 2.01 | 19.77 | 2.15 | 17.60 | 57.534 | Vertical | Pass |
| | | 844 | 1.89 | 2.02 | 19.78 | 2.15 | 17.50 | 56.240 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

| Radiated Power (ERP) for Band 5 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 824.7 | 3.22 | 2.01 | 19.68 | 2.15 | 18.74 | 74.858 | Horizontal | Pass |
| | | 836.5 | 2.09 | 2.01 | 19.77 | 2.15 | 17.70 | 58.891 | Horizontal | Pass |
| | | 848.3 | 3.09 | 2.02 | 19.82 | 2.15 | 18.74 | 74.752 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 824.7 | 2.25 | 2.01 | 19.68 | 2.15 | 17.77 | 59.855 | Horizontal | Pass |
| | | 836.5 | 1.39 | 2.01 | 19.77 | 2.15 | 17.00 | 50.119 | Horizontal | Pass |
| | | 848.3 | 1.45 | 2.02 | 19.82 | 2.15 | 17.10 | 51.339 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 825.5 | 2.55 | 2.01 | 19.70 | 2.15 | 18.09 | 64.418 | Horizontal | Pass |
| | | 836.5 | 2.24 | 2.01 | 19.77 | 2.15 | 17.85 | 60.941 | Horizontal | Pass |
| | | 847.5 | 2.96 | 2.02 | 19.81 | 2.15 | 18.60 | 72.485 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 825.5 | 1.50 | 2.01 | 19.70 | 2.15 | 17.04 | 50.540 | Horizontal | Pass |
| | | 836.5 | 1.38 | 2.01 | 19.77 | 2.15 | 16.99 | 49.992 | Horizontal | Pass |
| | | 847.5 | 1.56 | 2.02 | 19.81 | 2.15 | 17.20 | 52.426 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 826.5 | 2.60 | 2.01 | 19.71 | 2.15 | 18.15 | 65.239 | Horizontal | Pass |
| | | 836.5 | 1.70 | 2.01 | 19.77 | 2.15 | 17.31 | 53.869 | Horizontal | Pass |
| | | 846.5 | 2.93 | 2.02 | 19.79 | 2.15 | 18.55 | 71.675 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 826.5 | 1.26 | 2.01 | 19.71 | 2.15 | 16.81 | 47.961 | Horizontal | Pass |
| | | 836.5 | 1.34 | 2.01 | 19.77 | 2.15 | 16.95 | 49.542 | Horizontal | Pass |
| | | 846.5 | 1.86 | 2.02 | 19.79 | 2.15 | 17.48 | 55.959 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 829 | 2.47 | 2.01 | 19.73 | 2.15 | 18.04 | 63.651 | Horizontal | Pass |
| | | 836.5 | 2.46 | 2.01 | 19.77 | 2.15 | 18.07 | 64.190 | Horizontal | Pass |
| | | 844 | 2.39 | 2.02 | 19.78 | 2.15 | 18.00 | 63.044 | Horizontal | Pass |
| 10.0MHz BW QAM | 50/0 | 829 | 1.48 | 2.01 | 19.73 | 2.15 | 17.05 | 50.713 | Horizontal | Pass |
| | | 836.5 | 1.36 | 2.01 | 19.77 | 2.15 | 16.97 | 49.825 | Horizontal | Pass |
| | | 844 | 1.57 | 2.02 | 19.78 | 2.15 | 17.18 | 52.210 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.5 LTE BAND 7

| Radiated Power (EIRP) for Band 7 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 2502.5 | -3.67 | 4.54 | 27.75 | 19.54 | 89.913 | Vertical | Pass |
| | | 2535 | -3.33 | 4.69 | 27.72 | 19.70 | 93.219 | Vertical | Pass |
| | | 2567.5 | -3.48 | 4.71 | 27.71 | 19.52 | 89.524 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 2502.5 | -4.76 | 4.54 | 27.75 | 18.45 | 70.046 | Vertical | Pass |
| | | 2535 | -4.55 | 4.69 | 27.72 | 18.48 | 70.448 | Vertical | Pass |
| | | 2567.5 | -4.49 | 4.71 | 27.71 | 18.51 | 70.997 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 2505 | -3.32 | 4.55 | 27.76 | 19.89 | 97.517 | Vertical | Pass |
| | | 2535 | -3.11 | 4.69 | 27.72 | 19.92 | 98.285 | Vertical | Pass |
| | | 2565 | -2.60 | 4.72 | 27.70 | 20.38 | 109.262 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 2505 | -4.27 | 4.55 | 27.76 | 18.94 | 78.363 | Vertical | Pass |
| | | 2535 | -4.05 | 4.69 | 27.72 | 18.98 | 79.139 | Vertical | Pass |
| | | 2565 | -4.33 | 4.72 | 27.70 | 18.65 | 73.330 | Vertical | Pass |
| 15.0MHz BW QPSK | 75/0 | 2507.5 | -3.52 | 4.55 | 27.77 | 19.70 | 93.280 | Vertical | Pass |
| | | 2535 | -2.82 | 4.69 | 27.72 | 20.21 | 104.878 | Vertical | Pass |
| | | 2562.5 | -3.05 | 4.72 | 27.69 | 19.92 | 98.287 | Vertical | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 2507.5 | -4.31 | 4.55 | 27.77 | 18.91 | 77.803 | Vertical | Pass |
| | | 2535 | -3.61 | 4.69 | 27.72 | 19.42 | 87.406 | Vertical | Pass |
| | | 2562.5 | -3.85 | 4.72 | 27.69 | 19.12 | 81.613 | Vertical | Pass |
| 20.0MHz BW QPSK | 100/ 0 | 2510 | -2.71 | 4.57 | 27.78 | 20.50 | 112.107 | Vertical | Pass |
| | | 2535 | -3.24 | 4.73 | 27.72 | 19.75 | 94.322 | Vertical | Pass |
| | | 2560 | -2.49 | 4.75 | 27.68 | 20.44 | 110.695 | Vertical | Pass |
| 20.0MHz BW 16 QAM | 100/ 0 | 2510 | -4.37 | 4.57 | 27.78 | 18.84 | 76.576 | Vertical | Pass |
| | | 2535 | -4.03 | 4.73 | 27.72 | 18.96 | 78.765 | Vertical | Pass |
| | | 2560 | -3.90 | 4.75 | 27.68 | 19.03 | 80.028 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

| Radiated Power (EIRP) for Band 7 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 2502.5 | -3.76 | 4.54 | 27.75 | 19.45 | 88.127 | Horizontal | Pass |
| | | 2535 | -3.46 | 4.69 | 27.72 | 19.57 | 90.587 | Horizontal | Pass |
| | | 2567.5 | -3.74 | 4.71 | 27.71 | 19.26 | 84.249 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 2502.5 | -4.78 | 4.54 | 27.75 | 18.43 | 69.689 | Horizontal | Pass |
| | | 2535 | -4.78 | 4.69 | 27.72 | 18.25 | 66.896 | Horizontal | Pass |
| | | 2567.5 | -4.53 | 4.71 | 27.71 | 18.47 | 70.249 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 2505 | -3.09 | 4.55 | 27.76 | 20.12 | 102.836 | Horizontal | Pass |
| | | 2535 | -3.19 | 4.69 | 27.72 | 19.84 | 96.404 | Horizontal | Pass |
| | | 2565 | -3.10 | 4.72 | 27.7 | 19.88 | 97.290 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 2505 | -4.80 | 4.55 | 27.76 | 18.41 | 69.382 | Horizontal | Pass |
| | | 2535 | -3.46 | 4.69 | 27.72 | 19.57 | 90.514 | Horizontal | Pass |
| | | 2565 | -3.88 | 4.72 | 27.7 | 19.10 | 81.230 | Horizontal | Pass |
| 15.0MHz BW QPSK | 75/0 | 2507.5 | -3.55 | 4.55 | 27.77 | 19.67 | 92.626 | Horizontal | Pass |
| | | 2535 | -3.30 | 4.69 | 27.72 | 19.73 | 94.037 | Horizontal | Pass |
| | | 2562.5 | -3.77 | 4.72 | 27.69 | 19.20 | 83.173 | Horizontal | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 2507.5 | -3.96 | 4.55 | 27.77 | 19.26 | 84.360 | Horizontal | Pass |
| | | 2535 | -4.18 | 4.69 | 27.72 | 18.85 | 76.651 | Horizontal | Pass |
| | | 2562.5 | -4.47 | 4.72 | 27.69 | 18.50 | 70.845 | Horizontal | Pass |
| 20.0MHz BW QPSK | 100/0 | 2510 | -3.14 | 4.57 | 27.78 | 20.07 | 101.720 | Horizontal | Pass |
| | | 2535 | -2.94 | 4.73 | 27.72 | 20.05 | 101.251 | Horizontal | Pass |
| | | 2560 | -3.41 | 4.75 | 27.68 | 19.52 | 89.616 | Horizontal | Pass |
| 20.0MHz BW 16 QAM | 100/0 | 2510 | -4.41 | 4.57 | 27.78 | 18.80 | 75.865 | Horizontal | Pass |
| | | 2535 | -4.81 | 4.73 | 27.72 | 18.18 | 65.703 | Horizontal | Pass |
| | | 2560 | -4.33 | 4.75 | 27.68 | 18.60 | 72.474 | Horizontal | Pass |

Note:

SG Level= Signal generator output

Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

## 8.6 LTE BAND 12

| Radiated Power (ERP) for Band 12 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 699.7 | 3.88 | 1.91 | 19.21 | 2.15 | 19.03 | 80.037 | Vertical | Pass |
| | | 707.5 | 3.63 | 1.91 | 19.26 | 2.15 | 18.83 | 76.338 | Vertical | Pass |
| | | 715.3 | 2.88 | 1.93 | 19.34 | 2.15 | 18.14 | 65.140 | Vertical | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 699.7 | 2.65 | 1.91 | 19.21 | 2.15 | 17.80 | 60.305 | Vertical | Pass |
| | | 707.5 | 2.03 | 1.91 | 19.26 | 2.15 | 17.23 | 52.824 | Vertical | Pass |
| | | 715.3 | 1.60 | 1.93 | 19.34 | 2.15 | 16.86 | 48.538 | Vertical | Pass |
| 3.0MHz BW QPSK | 15/0 | 700.5 | 3.22 | 1.91 | 19.21 | 2.15 | 18.37 | 68.778 | Vertical | Pass |
| | | 707.5 | 3.60 | 1.91 | 19.26 | 2.15 | 18.80 | 75.823 | Vertical | Pass |
| | | 714.5 | 3.36 | 1.93 | 19.34 | 2.15 | 18.62 | 72.790 | Vertical | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 700.5 | 1.85 | 1.91 | 19.21 | 2.15 | 17.00 | 50.073 | Vertical | Pass |
| | | 707.5 | 2.39 | 1.91 | 19.26 | 2.15 | 17.59 | 57.462 | Vertical | Pass |
| | | 714.5 | 2.31 | 1.93 | 19.34 | 2.15 | 17.57 | 57.127 | Vertical | Pass |
| 5.0MHz BW QPSK | 25/0 | 701.5 | 3.54 | 1.91 | 19.23 | 2.15 | 18.71 | 74.287 | Vertical | Pass |
| | | 707.5 | 3.03 | 1.91 | 19.26 | 2.15 | 18.23 | 66.543 | Vertical | Pass |
| | | 713.5 | 2.77 | 1.92 | 19.33 | 2.15 | 18.03 | 63.545 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 701.5 | 2.49 | 1.91 | 19.23 | 2.15 | 17.66 | 58.299 | Vertical | Pass |
| | | 707.5 | 2.40 | 1.91 | 19.26 | 2.15 | 17.60 | 57.596 | Vertical | Pass |
| | | 713.5 | 2.47 | 1.92 | 19.33 | 2.15 | 17.73 | 59.340 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 704 | 3.14 | 1.91 | 19.25 | 2.15 | 18.33 | 68.083 | Vertical | Pass |
| | | 707.5 | 3.60 | 1.91 | 19.26 | 2.15 | 18.80 | 75.890 | Vertical | Pass |
| | | 711 | 3.28 | 1.92 | 19.32 | 2.15 | 18.53 | 71.270 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 704 | 2.15 | 1.91 | 19.25 | 2.15 | 17.34 | 54.222 | Vertical | Pass |
| | | 707.5 | 1.69 | 1.91 | 19.26 | 2.15 | 16.89 | 48.912 | Vertical | Pass |
| | | 711 | 1.62 | 1.92 | 19.32 | 2.15 | 16.87 | 48.593 | Vertical | Pass |

| Radiated Power (EIRP) for Band 12 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 699.7 | 2.73 | 1.91 | 19.21 | 2.15 | 17.88 | 61.353 | Horizontal | Pass |
| | | 707.5 | 3.29 | 1.91 | 19.26 | 2.15 | 18.49 | 70.687 | Horizontal | Pass |
| | | 715.3 | 3.45 | 1.93 | 19.34 | 2.15 | 18.71 | 74.386 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 699.7 | 2.10 | 1.91 | 19.21 | 2.15 | 17.25 | 53.120 | Horizontal | Pass |
| | | 707.5 | 2.34 | 1.91 | 19.26 | 2.15 | 17.54 | 56.709 | Horizontal | Pass |
| | | 715.3 | 1.43 | 1.93 | 19.34 | 2.15 | 16.69 | 46.680 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 700.5 | 3.28 | 1.91 | 19.21 | 2.15 | 18.43 | 69.719 | Horizontal | Pass |
| | | 707.5 | 2.63 | 1.91 | 19.26 | 2.15 | 17.83 | 60.723 | Horizontal | Pass |
| | | 714.5 | 2.91 | 1.93 | 19.34 | 2.15 | 18.17 | 65.683 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 700.5 | 1.92 | 1.91 | 19.21 | 2.15 | 17.07 | 50.891 | Horizontal | Pass |
| | | 707.5 | 1.80 | 1.91 | 19.26 | 2.15 | 17.00 | 50.160 | Horizontal | Pass |
| | | 714.5 | 1.75 | 1.93 | 19.34 | 2.15 | 17.01 | 50.186 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 701.5 | 3.04 | 1.91 | 19.23 | 2.15 | 18.21 | 66.296 | Horizontal | Pass |
| | | 707.5 | 2.89 | 1.91 | 19.26 | 2.15 | 18.09 | 64.412 | Horizontal | Pass |
| | | 713.5 | 2.59 | 1.92 | 19.33 | 2.15 | 17.85 | 60.908 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 701.5 | 2.39 | 1.91 | 19.23 | 2.15 | 17.56 | 56.966 | Horizontal | Pass |
| | | 707.5 | 1.47 | 1.91 | 19.26 | 2.15 | 16.67 | 46.451 | Horizontal | Pass |
| | | 713.5 | 1.39 | 1.92 | 19.33 | 2.15 | 16.65 | 46.195 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 704 | 3.07 | 1.91 | 19.25 | 2.15 | 18.26 | 67.059 | Horizontal | Pass |
| | | 707.5 | 3.25 | 1.91 | 19.26 | 2.15 | 18.45 | 69.950 | Horizontal | Pass |
| | | 711 | 2.97 | 1.92 | 19.32 | 2.15 | 18.22 | 66.337 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 704 | 1.89 | 1.91 | 19.25 | 2.15 | 17.08 | 51.100 | Horizontal | Pass |
| | | 707.5 | 1.40 | 1.91 | 19.26 | 2.15 | 16.60 | 45.754 | Horizontal | Pass |
| | | 711 | 2.35 | 1.92 | 19.32 | 2.15 | 17.60 | 57.570 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.7 LTE BAND 13

| Radiated Power (ERP) for Band 13 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 779.5 | 3.36 | 1.91 | 19.23 | 2.15 | 18.53 | 71.223 | Vertical | Pass |
| | | 782 | 3.75 | 1.91 | 19.26 | 2.15 | 18.95 | 78.600 | Vertical | Pass |
| | | 784.5 | 4.19 | 1.92 | 19.33 | 2.15 | 19.45 | 88.150 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 779.5 | 2.45 | 1.91 | 19.23 | 2.15 | 17.62 | 57.822 | Vertical | Pass |
| | | 782 | 2.97 | 1.91 | 19.26 | 2.15 | 18.17 | 65.544 | Vertical | Pass |
| | | 784.5 | 2.93 | 1.92 | 19.33 | 2.15 | 18.19 | 65.948 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 782 | 4.01 | 1.91 | 19.25 | 2.15 | 19.20 | 83.113 | Vertical | Pass |
| | | | 4.15 | 1.91 | 19.26 | 2.15 | 19.35 | 86.024 | Vertical | Pass |
| | | | 3.99 | 1.92 | 19.32 | 2.15 | 19.24 | 83.967 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 782 | 2.94 | 1.91 | 19.25 | 2.15 | 18.13 | 65.079 | Vertical | Pass |
| | | | 2.93 | 1.91 | 19.26 | 2.15 | 18.13 | 64.954 | Vertical | Pass |
| | | | 2.92 | 1.92 | 19.32 | 2.15 | 18.17 | 65.632 | Vertical | Pass |

| Radiated Power (EIRP) for Band 13 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 779.5 | 3.05 | 1.91 | 19.23 | 2.15 | 18.22 | 66.377 | Horizontal | Pass |
| | | 782 | 3.86 | 1.91 | 19.26 | 2.15 | 19.06 | 80.455 | Horizontal | Pass |
| | | 784.5 | 3.33 | 1.92 | 19.33 | 2.15 | 18.59 | 72.360 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 779.5 | 2.74 | 1.91 | 19.23 | 2.15 | 17.91 | 61.821 | Horizontal | Pass |
| | | 782 | 1.59 | 1.91 | 19.26 | 2.15 | 16.79 | 47.808 | Horizontal | Pass |
| | | 784.5 | 2.34 | 1.92 | 19.33 | 2.15 | 17.60 | 57.606 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 782 | 3.09 | 1.91 | 19.25 | 2.15 | 18.28 | 67.335 | Horizontal | Pass |
| | | | 3.51 | 1.91 | 19.26 | 2.15 | 18.71 | 74.222 | Horizontal | Pass |
| | | | 3.76 | 1.92 | 19.32 | 2.15 | 19.01 | 79.629 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 782 | 1.81 | 1.91 | 19.25 | 2.15 | 17.00 | 50.073 | Horizontal | Pass |
| | | | 2.58 | 1.91 | 19.26 | 2.15 | 17.78 | 59.942 | Horizontal | Pass |
| | | | 2.79 | 1.92 | 19.32 | 2.15 | 18.04 | 63.616 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.8 LTE BAND 14

| Radiated Power (ERP) for Band 14 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 790.5 | 3.58 | 1.91 | 19.21 | 2.15 | 18.73 | 74.583 | Vertical | Pass |
| | | 793 | 3.56 | 1.93 | 19.34 | 2.15 | 18.82 | 76.121 | Vertical | Pass |
| | | 795.5 | 2.86 | 1.96 | 19.52 | 2.15 | 18.27 | 67.212 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 790.5 | 1.79 | 1.91 | 19.21 | 2.15 | 16.94 | 49.387 | Vertical | Pass |
| | | 793 | 2.25 | 1.93 | 19.34 | 2.15 | 17.51 | 56.311 | Vertical | Pass |
| | | 795.5 | 1.56 | 1.96 | 19.52 | 2.15 | 16.97 | 49.731 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 793 | 3.36 | 1.92 | 19.25 | 2.15 | 18.54 | 71.4496 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 793 | 2.66 | 1.92 | 19.25 | 2.15 | 17.84 | 60.8135 | Vertical | Pass |

| Radiated Power (EIRP) for Band 14 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Correction (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 705.5 | 3.30 | 1.91 | 19.21 | 2.15 | 18.45 | 69.984 | Vertical | Pass |
| | | 720.5 | 3.36 | 1.93 | 19.34 | 2.15 | 18.62 | 72.778 | Vertical | Pass |
| | | 745.5 | 2.81 | 1.96 | 19.52 | 2.15 | 18.22 | 66.374 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 705.5 | 2.19 | 1.91 | 19.21 | 2.15 | 17.34 | 54.200 | Vertical | Pass |
| | | 720.5 | 2.15 | 1.93 | 19.34 | 2.15 | 17.41 | 55.081 | Vertical | Pass |
| | | 745.5 | 1.78 | 1.96 | 19.52 | 2.15 | 17.19 | 52.360 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 793 | 3.06 | 1.92 | 19.25 | 2.15 | 18.24 | 66.68 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 793 | 2.23 | 1.92 | 19.25 | 2.15 | 17.41 | 55.08 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.9 LTE BAND 25

| Radiated Power (EIRP) for Band 25 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 1850.7 | -2.53 | 3.76 | 28.24 | 21.95 | 156.752 | Vertical | Pass |
| | | 1882.5 | -1.87 | 3.91 | 28.22 | 22.44 | 175.511 | Vertical | Pass |
| | | 1914.3 | -2.56 | 3.93 | 28.20 | 21.71 | 148.318 | Vertical | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 1850.7 | -3.17 | 3.76 | 28.24 | 21.31 | 135.341 | Vertical | Pass |
| | | 1882.5 | -3.79 | 3.91 | 28.22 | 20.52 | 112.592 | Vertical | Pass |
| | | 1914.3 | -3.27 | 3.93 | 28.20 | 21.00 | 125.988 | Vertical | Pass |
| 3.0MHz BW QPSK | 15/0 | 1851.5 | -2.53 | 3.77 | 28.23 | 21.93 | 155.844 | Vertical | Pass |
| | | 1882.5 | -1.65 | 3.91 | 28.24 | 22.68 | 185.228 | Vertical | Pass |
| | | 1913.5 | -2.32 | 3.94 | 28.25 | 21.99 | 158.199 | Vertical | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 1851.5 | -2.58 | 3.77 | 28.23 | 21.88 | 154.139 | Vertical | Pass |
| | | 1882.5 | -2.66 | 3.91 | 28.24 | 21.67 | 146.837 | Vertical | Pass |
| | | 1913.5 | -3.12 | 3.94 | 28.25 | 21.19 | 131.647 | Vertical | Pass |
| 5.0MHz BW QPSK | 25/0 | 1852.5 | -2.68 | 3.77 | 28.31 | 21.86 | 153.286 | Vertical | Pass |
| | | 1882.5 | -2.41 | 3.91 | 28.22 | 21.90 | 154.729 | Vertical | Pass |
| | | 1912.5 | -1.76 | 3.94 | 28.20 | 22.50 | 177.892 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 1852.5 | -3.12 | 3.77 | 28.31 | 21.42 | 138.780 | Vertical | Pass |
| | | 1882.5 | -2.62 | 3.91 | 28.22 | 21.69 | 147.491 | Vertical | Pass |
| | | 1912.5 | -3.17 | 3.94 | 28.20 | 21.09 | 128.622 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 1855 | -2.20 | 3.79 | 28.33 | 22.34 | 171.374 | Vertical | Pass |
| | | 1882.5 | -2.01 | 3.95 | 28.22 | 22.26 | 168.101 | Vertical | Pass |
| | | 1910 | -1.80 | 3.97 | 28.19 | 22.42 | 174.426 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 1855 | -3.81 | 3.79 | 28.33 | 20.73 | 118.213 | Vertical | Pass |
| | | 1882.5 | -3.19 | 3.95 | 28.22 | 21.08 | 128.331 | Vertical | Pass |
| | | 1910 | -3.24 | 3.97 | 28.19 | 20.98 | 125.367 | Vertical | Pass |
| 15.0MHz BW QPSK | 75/0 | 1857.5 | -2.91 | 3.79 | 28.34 | 21.64 | 145.917 | Vertical | Pass |
| | | 1882.5 | -2.23 | 3.95 | 28.22 | 22.04 | 159.909 | Vertical | Pass |
| | | 1907.5 | -1.65 | 3.97 | 28.18 | 22.56 | 180.114 | Vertical | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 1857.5 | -3.76 | 3.79 | 28.34 | 20.79 | 119.986 | Vertical | Pass |
| | | 1882.5 | -3.19 | 3.95 | 28.22 | 21.08 | 128.137 | Vertical | Pass |
| | | 1907.5 | -3.05 | 3.97 | 28.18 | 21.16 | 130.614 | Vertical | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 20.0MHz BW QPSK | 100/0 | 1860 | -3.79 | 3.81 | 28.35 | 20.75 | 118.861 | Vertical | Pass |
| | | 1882.5 | -2.28 | 3.96 | 28.22 | 21.98 | 157.682 | Vertical | Pass |
| | | 1905 | -2.12 | 4.00 | 28.16 | 22.04 | 159.897 | Vertical | Pass |
| 20.0MHz BW 16 QAM | 100/0 | 1860 | -2.95 | 3.81 | 28.35 | 21.59 | 144.370 | Vertical | Pass |
| | | 1882.5 | -2.63 | 3.96 | 28.22 | 21.63 | 145.568 | Vertical | Pass |
| | | 1905 | -3.17 | 4.00 | 28.16 | 20.99 | 125.554 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

| Radiated Power (EIRP) for Band 25 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 1850.7 | -2.49 | 3.76 | 28.24 | 21.99 | 158.160 | Horizontal | Pass |
| | | 1882.5 | -1.87 | 3.91 | 28.22 | 22.44 | 175.274 | Horizontal | Pass |
| | | 1914.3 | -2.53 | 3.93 | 28.20 | 21.74 | 149.438 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 1850.7 | -3.47 | 3.76 | 28.24 | 21.01 | 126.083 | Horizontal | Pass |
| | | 1882.5 | -3.27 | 3.91 | 28.22 | 21.04 | 127.106 | Horizontal | Pass |
| | | 1914.3 | -3.32 | 3.93 | 28.20 | 20.95 | 124.352 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 1851.5 | -2.42 | 3.77 | 28.23 | 22.04 | 160.061 | Horizontal | Pass |
| | | 1882.5 | -2.64 | 3.91 | 28.24 | 21.69 | 147.578 | Horizontal | Pass |
| | | 1913.5 | -2.14 | 3.94 | 28.25 | 22.17 | 165.005 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 1851.5 | -3.53 | 3.77 | 28.23 | 20.93 | 124.006 | Horizontal | Pass |
| | | 1882.5 | -3.58 | 3.91 | 28.24 | 20.75 | 118.973 | Horizontal | Pass |
| | | 1913.5 | -3.41 | 3.94 | 28.25 | 20.90 | 123.026 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 1852.5 | -2.31 | 3.77 | 28.31 | 22.23 | 166.974 | Horizontal | Pass |
| | | 1882.5 | -2.75 | 3.91 | 28.22 | 21.56 | 143.144 | Horizontal | Pass |
| | | 1912.5 | -1.99 | 3.94 | 28.20 | 22.27 | 168.785 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 1852.5 | -3.39 | 3.77 | 28.31 | 21.15 | 130.429 | Horizontal | Pass |
| | | 1882.5 | -3.31 | 3.91 | 28.22 | 21.00 | 125.818 | Horizontal | Pass |
| | | 1912.5 | -3.18 | 3.94 | 28.20 | 21.08 | 128.311 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 1855 | -2.22 | 3.79 | 28.33 | 22.32 | 170.568 | Horizontal | Pass |
| | | 1882.5 | -2.54 | 3.95 | 28.22 | 21.73 | 148.809 | Horizontal | Pass |
| | | 1910 | -1.76 | 3.97 | 28.19 | 22.46 | 176.399 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 1855 | -3.41 | 3.79 | 28.33 | 21.13 | 129.602 | Horizontal | Pass |
| | | 1882.5 | -3.48 | 3.95 | 28.22 | 20.79 | 119.981 | Horizontal | Pass |
| | | 1910 | -3.56 | 3.97 | 28.19 | 20.66 | 116.479 | Horizontal | Pass |
| 15.0MHz BW QPSK | 75/0 | 1857.5 | -2.60 | 3.79 | 28.34 | 21.95 | 156.667 | Horizontal | Pass |
| | | 1882.5 | -3.00 | 3.95 | 28.22 | 21.27 | 134.004 | Horizontal | Pass |
| | | 1907.5 | -2.60 | 3.97 | 28.18 | 21.61 | 144.873 | Horizontal | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 1857.5 | -3.32 | 3.79 | 28.34 | 21.23 | 132.684 | Horizontal | Pass |
| | | 1882.5 | -3.55 | 3.95 | 28.22 | 20.72 | 117.989 | Horizontal | Pass |
| | | 1907.5 | -3.32 | 3.97 | 28.18 | 20.89 | 122.612 | Horizontal | Pass |
| 20.0MHz BW | 100/0 | 1860 | -4.05 | 3.81 | 28.35 | 20.49 | 111.951 | Horizontal | Pass |
| | | 1882.5 | -2.71 | 3.96 | 28.22 | 21.55 | 142.879 | Horizontal | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| QPSK | | 1905 | -3.18 | 4.00 | 28.16 | 20.98 | 125.350 | Horizontal | Pass |
| 20.0MHz BW 16QAM | 100/0 | 1860 | -3.58 | 3.81 | 28.35 | 20.96 | 124.862 | Horizontal | Pass |
| | | 1882.5 | -3.44 | 3.96 | 28.22 | 20.82 | 120.864 | Horizontal | Pass |
| | | 1905 | -3.73 | 4.00 | 28.16 | 20.43 | 110.485 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

8.10 LTE BAND 26

| Radiated Power (EIRP) for Band 26 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 814.7 | -1.39 | 3.76 | 28.24 | 23.09 | 203.871 | Vertical | Pass |
| | | 819.0 | -0.77 | 3.91 | 28.22 | 23.54 | 225.841 | Vertical | Pass |
| | | 823.3 | -0.80 | 3.93 | 28.20 | 23.47 | 222.139 | Vertical | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 814.7 | -2.16 | 3.76 | 28.24 | 22.32 | 170.592 | Vertical | Pass |
| | | 819.0 | -2.37 | 3.91 | 28.22 | 21.94 | 156.183 | Vertical | Pass |
| | | 823.3 | -2.16 | 3.93 | 28.20 | 22.11 | 162.697 | Vertical | Pass |
| 3.0MHz BW QPSK | 15/0 | 815.5 | -1.10 | 3.77 | 28.23 | 23.36 | 216.658 | Vertical | Pass |
| | | 819.0 | -0.63 | 3.91 | 28.24 | 23.70 | 234.530 | Vertical | Pass |
| | | 822.5 | -0.72 | 3.94 | 28.25 | 23.59 | 228.381 | Vertical | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 815.5 | -1.64 | 3.77 | 28.23 | 22.82 | 191.514 | Vertical | Pass |
| | | 819.0 | -1.57 | 3.91 | 28.24 | 22.76 | 188.923 | Vertical | Pass |
| | | 822.5 | -1.85 | 3.94 | 28.25 | 22.46 | 176.346 | Vertical | Pass |
| 5.0MHz BW QPSK | 25/0 | 816.5 | -1.15 | 3.77 | 28.31 | 23.39 | 218.463 | Vertical | Pass |
| | | 819.0 | -0.87 | 3.91 | 28.22 | 23.44 | 220.975 | Vertical | Pass |
| | | 821.5 | -0.91 | 3.94 | 28.20 | 23.35 | 216.501 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 816.5 | -2.27 | 3.77 | 28.31 | 22.27 | 168.614 | Vertical | Pass |
| | | 819.0 | -1.80 | 3.91 | 28.22 | 22.51 | 178.347 | Vertical | Pass |
| | | 821.5 | -1.61 | 3.94 | 28.20 | 22.65 | 184.263 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 819.0 | -0.91 | 3.79 | 28.33 | 23.63 | 230.696 | Vertical | Pass |

| Radiated Power (EIRP) for Band 26 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 1.4MHz BW QPSK | 6/0 | 814.7 | -2.45 | 3.76 | 28.24 | 22.03 | 159.718 | Horizontal | Pass |
| | | 819.0 | -1.83 | 3.91 | 28.22 | 22.48 | 176.930 | Horizontal | Pass |
| | | 823.3 | -1.86 | 3.93 | 28.20 | 22.41 | 174.031 | Horizontal | Pass |
| 1.4MHz BW 16 QAM | 6/0 | 814.7 | -3.22 | 3.76 | 28.24 | 21.26 | 133.647 | Horizontal | Pass |
| | | 819.0 | -3.43 | 3.91 | 28.22 | 20.88 | 122.359 | Horizontal | Pass |
| | | 823.3 | -3.22 | 3.93 | 28.20 | 21.05 | 127.461 | Horizontal | Pass |
| 3.0MHz BW QPSK | 15/0 | 815.5 | -2.16 | 3.77 | 28.23 | 22.30 | 169.737 | Horizontal | Pass |
| | | 819.0 | -1.69 | 3.91 | 28.24 | 22.64 | 183.738 | Horizontal | Pass |
| | | 822.5 | -1.78 | 3.94 | 28.25 | 22.53 | 178.920 | Horizontal | Pass |
| 3.0MHz BW 16 QAM | 15/0 | 815.5 | -2.70 | 3.77 | 28.23 | 21.76 | 150.038 | Horizontal | Pass |
| | | 819.0 | -2.63 | 3.91 | 28.24 | 21.70 | 148.008 | Horizontal | Pass |
| | | 822.5 | -2.91 | 3.94 | 28.25 | 21.40 | 138.155 | Horizontal | Pass |
| 5.0MHz BW QPSK | 25/0 | 816.5 | -2.21 | 3.77 | 28.31 | 22.33 | 171.150 | Horizontal | Pass |
| | | 819.0 | -1.93 | 3.91 | 28.22 | 22.38 | 173.118 | Horizontal | Pass |
| | | 821.5 | -1.97 | 3.94 | 28.20 | 22.29 | 169.613 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 816.5 | -3.33 | 3.77 | 28.31 | 21.21 | 132.097 | Horizontal | Pass |
| | | 819.0 | -2.86 | 3.91 | 28.22 | 21.45 | 139.722 | Horizontal | Pass |
| | | 821.5 | -2.67 | 3.94 | 28.20 | 21.59 | 144.357 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 819.0 | -1.97 | 3.79 | 28.33 | 22.57 | 180.734 | Horizontal | Pass |

8.11 LTE BAND 41

| Radiated Power (EIRP) for Band 41 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 2535 | -3.11 | 4.54 | 27.75 | 20.10 | 102.419 | Horizontal | Pass |
| | | 2593 | -3.34 | 4.69 | 27.72 | 19.69 | 93.050 | Horizontal | Pass |
| | | 2655 | -3.48 | 4.71 | 27.71 | 19.52 | 89.550 | Horizontal | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 2535 | -4.34 | 4.54 | 27.75 | 18.87 | 77.006 | Horizontal | Pass |
| | | 2593 | -4.18 | 4.69 | 27.72 | 18.85 | 76.815 | Horizontal | Pass |
| | | 2655 | -4.57 | 4.71 | 27.71 | 18.43 | 69.596 | Horizontal | Pass |
| 10.0MHz BW QPSK | 50/0 | 2537.5 | -3.44 | 4.55 | 27.76 | 19.77 | 94.890 | Horizontal | Pass |
| | | 2593 | -3.39 | 4.69 | 27.72 | 19.64 | 91.969 | Horizontal | Pass |
| | | 2652.5 | -2.88 | 4.72 | 27.7 | 20.10 | 102.351 | Horizontal | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 2537.5 | -4.52 | 4.55 | 27.76 | 18.69 | 73.989 | Horizontal | Pass |
| | | 2593 | -4.41 | 4.69 | 27.72 | 18.62 | 72.702 | Horizontal | Pass |
| | | 2652.5 | -4.23 | 4.72 | 27.7 | 18.75 | 74.915 | Horizontal | Pass |
| 15.0MHz BW QPSK | 75/0 | 2540 | -3.02 | 4.55 | 27.77 | 20.20 | 104.597 | Horizontal | Pass |
| | | 2593 | -3.31 | 4.69 | 27.72 | 19.72 | 93.775 | Horizontal | Pass |
| | | 2650 | -3.24 | 4.72 | 27.69 | 19.73 | 93.897 | Horizontal | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 2540 | -4.11 | 4.55 | 27.77 | 19.11 | 81.500 | Horizontal | Pass |
| | | 2593 | -3.90 | 4.69 | 27.72 | 19.13 | 81.841 | Horizontal | Pass |
| | | 2650 | -4.08 | 4.72 | 27.69 | 18.89 | 77.403 | Horizontal | Pass |
| 20.0MHz BW QPSK | 100/0 | 2542.5 | -3.42 | 4.57 | 27.78 | 19.79 | 95.355 | Horizontal | Pass |
| | | 2593 | -3.07 | 4.73 | 27.72 | 19.92 | 98.224 | Horizontal | Pass |
| | | 2647.5 | -2.68 | 4.75 | 27.68 | 20.25 | 105.840 | Horizontal | Pass |
| 20.0MHz BW 16 QAM | 100/0 | 2542.5 | -4.43 | 4.57 | 27.78 | 18.78 | 75.502 | Horizontal | Pass |
| | | 2593 | -4.25 | 4.73 | 27.72 | 18.74 | 74.761 | Horizontal | Pass |
| | | 2647.5 | -3.86 | 4.75 | 27.68 | 19.07 | 80.670 | Horizontal | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

| Radiated Power (EIRP) for Band 41 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mode | RB/ RB SIZE | Frequency | Result | | | | | | Conclusion |
| | | | SG Level (dBm) | Cable Loss (dBm) | Antenna Gain (dB) | Max. EIRP Average (dBm) | Max. EIRP Average (mW) | Polarization Of Max. ERP | |
| 5.0MHz BW QPSK | 25/0 | 2535 | -3.47 | 4.54 | 27.75 | 19.74 | 94.237 | Vertical | Pass |
| | | 2593 | -3.84 | 4.69 | 27.72 | 19.19 | 82.924 | Vertical | Pass |
| | | 2655 | -3.22 | 4.71 | 27.71 | 19.78 | 95.120 | Vertical | Pass |
| 5.0MHz BW 16 QAM | 25/0 | 2535 | -4.66 | 4.54 | 27.75 | 18.55 | 71.596 | Vertical | Pass |
| | | 2593 | -4.48 | 4.69 | 27.72 | 18.55 | 71.598 | Vertical | Pass |
| | | 2655 | -4.29 | 4.71 | 27.71 | 18.71 | 74.240 | Vertical | Pass |
| 10.0MHz BW QPSK | 50/0 | 2537.5 | -3.73 | 4.55 | 27.76 | 19.48 | 88.782 | Vertical | Pass |
| | | 2593 | -3.12 | 4.69 | 27.72 | 19.91 | 98.019 | Vertical | Pass |
| | | 2652.5 | -3.35 | 4.72 | 27.7 | 19.63 | 91.849 | Vertical | Pass |
| 10.0MHz BW 16 QAM | 50/0 | 2537.5 | -4.81 | 4.55 | 27.76 | 18.40 | 69.156 | Vertical | Pass |
| | | 2593 | -3.59 | 4.69 | 27.72 | 19.44 | 87.836 | Vertical | Pass |
| | | 2652.5 | -3.93 | 4.72 | 27.7 | 19.05 | 80.373 | Vertical | Pass |
| 15.0MHz BW QPSK | 75/0 | 2540 | -2.99 | 4.55 | 27.77 | 20.23 | 105.502 | Vertical | Pass |
| | | 2593 | -3.39 | 4.69 | 27.72 | 19.64 | 92.046 | Vertical | Pass |
| | | 2650 | -3.60 | 4.72 | 27.69 | 19.37 | 86.405 | Vertical | Pass |
| 15.0MHz BW 16 QAM | 75/0 | 2540 | -4.56 | 4.55 | 27.77 | 18.66 | 73.535 | Vertical | Pass |
| | | 2593 | -4.37 | 4.69 | 27.72 | 18.66 | 73.429 | Vertical | Pass |
| | | 2650 | -3.74 | 4.72 | 27.69 | 19.23 | 83.774 | Vertical | Pass |
| 20.0MHz BW QPSK | 100/0 | 2542.5 | -3.68 | 4.57 | 27.78 | 19.53 | 89.754 | Vertical | Pass |
| | | 2593 | -3.22 | 4.73 | 27.72 | 19.77 | 94.837 | Vertical | Pass |
| | | 2647.5 | -3.09 | 4.75 | 27.68 | 19.84 | 96.481 | Vertical | Pass |
| 20.0MHz BW 16 QAM | 100/0 | 2542.5 | -3.86 | 4.57 | 27.78 | 19.35 | 86.101 | Vertical | Pass |
| | | 2593 | -4.44 | 4.73 | 27.72 | 18.55 | 71.655 | Vertical | Pass |
| | | 2647.5 | -4.33 | 4.75 | 27.68 | 18.60 | 72.365 | Vertical | Pass |

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

# 9. SPURIOUS RADIATION EMISSION

**RULE PART(S)**

FCC: §2.1053, §22.917, §24.238 and §27.53

**LIMIT**

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

**TEST PROCEDURE**

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth ( i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:
a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and
b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

**MODES TESTED**

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 25
- LTE Band 26
- LTE Band 41

**RESULTS**

PASS

9.1 LTE BAND 2

**QPSK EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 1850.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3701.4 | -52.33 | 4.04 | 33.51 | -22.86 | -13 | -9.86 | Horizontal |
| 3701.4 | -54.58 | 4.04 | 33.51 | -25.11 | -13 | -12.11 | Vertical |
| 5552.1 | -56.94 | 5.24 | 35.84 | -26.34 | -13 | -13.34 | Vertical |
| 5552.1 | -67.45 | 5.24 | 35.84 | -36.85 | -13 | -23.85 | Horizontal |
| **Test Results for Mid Channel 1880MHz** | | | | | | | |
| 3760 | -54.07 | 4.04 | 33.56 | -24.55 | -13 | -11.55 | Horizontal |
| 3760 | -54.27 | 4.04 | 33.56 | -24.75 | -13 | -11.75 | Vertical |
| 5640 | -54.92 | 5.24 | 35.91 | -24.25 | -13 | -11.25 | Vertical |
| 5640 | -56.39 | 5.24 | 35.91 | -25.72 | -13 | -12.72 | Horizontal |
| **Test Results for High Channel 1909.3MHz** | | | | | | | |
| 3818.6 | -53.77 | 4.04 | 34.00 | -23.81 | -13 | -10.81 | Horizontal |
| 3818.6 | -55.40 | 4.04 | 34.00 | -25.44 | -13 | -12.44 | Vertical |
| 5727.9 | -57.98 | 5.24 | 36.04 | -27.18 | -13 | -14.18 | Vertical |
| 5727.9 | -57.07 | 5.24 | 36.04 | -26.27 | -13 | -13.27 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)**

| Test Results for Low Channel 1860MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3720 | -57.04 | 4.07 | 33.54 | -27.57 | -13 | -14.57 | Horizontal |
| 3720 | -52.61 | 4.07 | 33.54 | -23.14 | -13 | -10.14 | Vertical |
| 5580 | -59.30 | 5.28 | 35.86 | -28.72 | -13 | -15.72 | Vertical |
| 5580 | -60.47 | 5.28 | 35.86 | -29.89 | -13 | -16.89 | Horizontal |
| **Test Results for Mid Channel 1880MHz** | | | | | | | |
| 3760 | -56.61 | 4.04 | 33.56 | -27.09 | -13 | -14.09 | Horizontal |
| 3760 | -53.44 | 4.04 | 33.56 | -23.92 | -13 | -10.92 | Vertical |
| 5640 | -58.20 | 5.24 | 35.91 | -27.53 | -13 | -14.53 | Vertical |
| 5640 | -58.86 | 5.24 | 35.91 | -28.19 | -13 | -15.19 | Horizontal |
| **Test Results for High Channel 1900MHz** | | | | | | | |
| 3800 | -55.82 | 4.04 | 34.00 | -25.86 | -13 | -12.86 | Horizontal |
| 3800 | -56.97 | 4.04 | 34.00 | -27.01 | -13 | -14.01 | Vertical |
| 5700 | -58.31 | 5.24 | 36.04 | -27.51 | -13 | -14.51 | Vertical |
| 5700 | -56.62 | 5.24 | 36.04 | -25.82 | -13 | -12.82 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.2 LTE BAND 4

**QPSK EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 1710.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3421.4 | -59.90 | 4.02 | 29.80 | -34.12 | -13 | -21.12 | Horizontal |
| 3421.4 | -57.10 | 4.02 | 29.80 | -31.32 | -13 | -18.32 | Vertical |
| 5132.1 | -61.63 | 5.24 | 35.84 | -31.03 | -13 | -18.03 | Vertical |
| 5132.1 | -63.01 | 5.24 | 35.84 | -32.41 | -13 | -19.41 | Horizontal |
| **Test Results for Mid Channel 1732.5MHz** | | | | | | | |
| 3465 | -51.48 | 4.03 | 30.00 | -25.51 | -13 | -12.51 | Horizontal |
| 3465 | -55.12 | 4.03 | 30.00 | -29.15 | -13 | -16.15 | Vertical |
| 5197.5 | -58.82 | 5.25 | 35.86 | -28.21 | -13 | -15.21 | Vertical |
| 5197.5 | -56.33 | 5.25 | 35.86 | -25.72 | -13 | -12.72 | Horizontal |
| **Test Results for High Channel 1754.3MHz** | | | | | | | |
| 3508.6 | -51.05 | 4.05 | 30.01 | -25.09 | -13 | -12.09 | Horizontal |
| 3508.6 | -57.90 | 4.05 | 30.01 | -31.94 | -13 | -18.94 | Vertical |
| 5262.9 | -57.66 | 5.26 | 35.86 | -27.06 | -13 | -14.06 | Vertical |
| 5262.9 | -55.99 | 5.26 | 35.86 | -25.39 | -13 | -12.39 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)**

| Test Results for Low Channel 1720MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3440 | -56.56 | 4.02 | 29.80 | -30.78 | -13 | -17.78 | Horizontal |
| 3440 | -57.66 | 4.02 | 29.80 | -31.88 | -13 | -18.88 | Vertical |
| 5160 | -59.82 | 5.24 | 35.84 | -29.22 | -13 | -16.22 | Vertical |
| 5160 | -62.09 | 5.24 | 35.84 | -31.49 | -13 | -18.49 | Horizontal |
| **Test Results for Mid Channel 1732.5MHz** | | | | | | | |
| 3465 | -51.51 | 4.03 | 30.00 | -25.54 | -13 | -12.54 | Horizontal |
| 3465 | -54.19 | 4.03 | 30.00 | -28.22 | -13 | -15.22 | Vertical |
| 5197.5 | -60.84 | 5.25 | 35.86 | -30.23 | -13 | -17.23 | Vertical |
| 5197.5 | -59.39 | 5.25 | 35.86 | -28.78 | -13 | -15.78 | Horizontal |
| **Test Results for High Channel 1745MHz** | | | | | | | |
| 2490 | -53.96 | 2.91 | 27.68 | -29.19 | -13 | -16.19 | Horizontal |
| 3490 | -55.70 | 2.91 | 27.68 | -30.93 | -13 | -17.93 | Vertical |
| 5235 | -59.34 | 5.26 | 35.86 | -28.74 | -13 | -15.74 | Vertical |
| 5235 | -57.58 | 5.26 | 35.86 | -26.98 | -13 | -13.98 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.3 LTE BAND 5

**QPSK EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 824.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1649.4 | -51.02 | 2.78 | 27.50 | -26.30 | -13 | -13.30 | Horizontal |
| 1649.4 | -56.20 | 2.78 | 27.50 | -31.48 | -13 | -18.48 | Vertical |
| 2474.1 | -55.14 | 2.90 | 27.80 | -30.24 | -13 | -17.24 | Vertical |
| 2474.1 | -53.83 | 2.90 | 27.80 | -28.93 | -13 | -15.93 | Horizontal |
| **Test Results For Mid Channel 836.5MHz** | | | | | | | |
| 1673 | -51.74 | 2.78 | 27.48 | -27.04 | -13 | -14.04 | Horizontal |
| 1673 | -50.11 | 2.78 | 27.48 | -25.41 | -13 | -12.41 | Vertical |
| 2509.5 | -52.27 | 2.91 | 27.70 | -27.48 | -13 | -14.48 | Vertical |
| 2509.5 | -52.30 | 2.91 | 27.70 | -27.51 | -13 | -14.51 | Horizontal |
| **Test Results for High Channel 848.3MHz** | | | | | | | |
| 1696.6 | -52.72 | 2.78 | 27.43 | -28.07 | -13 | -15.07 | Horizontal |
| 1696.6 | -54.22 | 2.78 | 27.43 | -29.57 | -13 | -16.57 | Vertical |
| 2544.9 | -50.73 | 2.92 | 27.74 | -25.91 | -13 | -12.91 | Vertical |
| 2544.9 | -52.65 | 2.92 | 27.74 | -27.83 | -13 | -14.83 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 5 (10MHZ BANDWIDTH)**

| Test Results for Low Channel 829MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1658 | -53.98 | 2.78 | 27.50 | -29.26 | -13 | -16.26 | Horizontal |
| 1658 | -50.70 | 2.78 | 27.50 | -25.98 | -13 | -12.98 | Vertical |
| 2487 | -55.15 | 2.90 | 27.80 | -30.25 | -13 | -17.25 | Vertical |
| 2487 | -52.90 | 2.90 | 27.80 | -28.00 | -13 | -15.00 | Horizontal |
| **Test Results For Mid Channel 836.5MHz** | | | | | | | |
| 1673 | -51.95 | 2.78 | 27.48 | -27.25 | -13 | -14.25 | Horizontal |
| 1673 | -52.04 | 2.78 | 27.48 | -27.34 | -13 | -14.34 | Vertical |
| 2509.5 | -55.90 | 2.91 | 27.70 | -31.11 | -13 | -18.11 | Vertical |
| 2509.5 | -53.15 | 2.91 | 27.70 | -28.36 | -13 | -15.36 | Horizontal |
| **Test Results for High Channel 844MHz** | | | | | | | |
| 1688 | -55.45 | 2.78 | 27.43 | -30.80 | -13 | -17.80 | Horizontal |
| 1688 | -50.13 | 2.78 | 27.43 | -25.48 | -13 | -12.48 | Vertical |
| 2532 | -50.76 | 2.92 | 27.74 | -25.94 | -13 | -12.94 | Vertical |
| 2532 | -52.13 | 2.92 | 27.74 | -27.31 | -13 | -14.31 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.4 LTE BAND 7

**QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)**

| Test Results for Low Channel 2502.5MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 5005 | -76.76 | 5.23 | 35.81 | -46.18 | -25 | -21.18 | Horizontal |
| 5005 | -64.33 | 5.23 | 35.81 | -33.75 | -25 | -8.75 | Vertical |
| 7507.5 | -68.77 | 5.67 | 36.85 | -37.59 | -25 | -12.59 | Vertical |
| 7507.5 | -65.76 | 5.67 | 36.85 | -34.58 | -25 | -9.58 | Horizontal |
| **Test Results for Mid Channel 2535MHz** | | | | | | | |
| 5070 | -76.48 | 5.23 | 35.82 | -45.89 | -25 | -20.89 | Horizontal |
| 5070 | -69.48 | 5.23 | 35.82 | -38.89 | -25 | -13.89 | Vertical |
| 7605 | -69.86 | 5.67 | 36.85 | -38.68 | -25 | -13.68 | Vertical |
| 7605 | -68.64 | 5.67 | 36.85 | -37.46 | -25 | -12.46 | Horizontal |
| **Test Results for High Channel 2567.5MHz** | | | | | | | |
| 5135 | -76.45 | 5.24 | 35.83 | -45.86 | -25 | -20.86 | Horizontal |
| 5135 | -70.24 | 5.24 | 35.83 | -39.65 | -25 | -14.65 | Vertical |
| 7702.5 | -66.27 | 5.68 | 36.87 | -35.08 | -25 | -10.08 | Vertical |
| 7702.5 | -67.71 | 5.68 | 36.87 | -36.52 | -25 | -11.52 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)**

| Test Results for Low Channel 2510MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 5020 | -65.82 | 5.23 | 35.82 | -35.23 | -25 | -10.23 | Horizontal |
| 5020 | -64.86 | 5.23 | 35.82 | -34.27 | -25 | -9.27 | Vertical |
| 7530 | -66.13 | 5.67 | 36.86 | -34.94 | -25 | -9.94 | Vertical |
| 7530 | -65.91 | 5.67 | 36.86 | -34.72 | -25 | -9.72 | Horizontal |
| **Test Results for Mid Channel 2535MHz** | | | | | | | |
| 5070 | -66.83 | 5.23 | 35.82 | -36.24 | -25 | -11.24 | Horizontal |
| 5070 | -65.87 | 5.23 | 35.82 | -35.28 | -25 | -10.28 | Vertical |
| 7605 | -67.06 | 5.67 | 36.85 | -35.88 | -25 | -10.88 | Vertical |
| 7605 | -66.92 | 5.67 | 36.85 | -35.74 | -25 | -10.74 | Horizontal |
| **Test Results for High Channel 2560MHz** | | | | | | | |
| 5120 | -65.19 | 5.24 | 35.83 | -34.6 | -25 | -9.6 | Horizontal |
| 5120 | -64.38 | 5.24 | 35.83 | -33.79 | -25 | -8.79 | Vertical |
| 7680 | -68.09 | 5.7 | 36.88 | -36.91 | -25 | -11.91 | Vertical |
| 7680 | -66.25 | 5.7 | 36.88 | -35.07 | -25 | -10.07 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

9.5 LTE BAND 12

**QPSK EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 699.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1399.4 | -50.25 | 2.60 | 27.2 | -25.65 | -13 | -12.65 | Horizontal |
| 1399.4 | -50.51 | 2.60 | 27.2 | -25.91 | -13 | -12.91 | Vertical |
| 2099.1 | -51.15 | 2.85 | 27.54 | -26.46 | -13 | -13.46 | Vertical |
| 2099.1 | -50.55 | 2.85 | 27.54 | -25.86 | -13 | -12.86 | Horizontal |
| **Test Results For Mid Channel 707.5MHz** | | | | | | | |
| 1415 | -52.55 | 2.61 | 27.28 | -27.88 | -13 | -14.88 | Horizontal |
| 1415 | -50.58 | 2.61 | 27.28 | -25.91 | -13 | -12.91 | Vertical |
| 2122.5 | -48.94 | 2.87 | 27.59 | -24.22 | -13 | -11.22 | Vertical |
| 2122.5 | -53.87 | 2.87 | 27.59 | -29.15 | -13 | -16.15 | Horizontal |
| **Test Results for High Channel 715.3MHz** | | | | | | | |
| 1430.6 | -52.28 | 2.63 | 27.28 | -27.63 | -13 | -14.63 | Horizontal |
| 1430.6 | -56.19 | 2.63 | 27.28 | -31.54 | -13 | -18.54 | Vertical |
| 2145.9 | -53.15 | 2.88 | 27.60 | -28.43 | -13 | -15.43 | Vertical |
| 2145.9 | -52.15 | 2.88 | 27.60 | -27.43 | -13 | -14.43 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 12 (10MHZ BANDWIDTH)**

| Test Results for Low Channel 704MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1408 | -48.97 | 2.61 | 27.26 | -24.32 | -13 | -11.32 | Horizontal |
| 1408 | -53.26 | 2.61 | 27.26 | -28.61 | -13 | -15.61 | Vertical |
| 2112 | -53.00 | 2.87 | 27.58 | -28.29 | -13 | -15.29 | Vertical |
| 2112 | -53.02 | 2.87 | 27.58 | -28.31 | -13 | -15.31 | Horizontal |
| **Test Results for Mid Channel 707.5MHz** | | | | | | | |
| 1415 | -51.65 | 2.61 | 27.28 | -26.98 | -13 | -13.98 | Horizontal |
| 1415 | -55.47 | 2.61 | 27.28 | -30.80 | -13 | -17.80 | Vertical |
| 2122.5 | -53.21 | 2.87 | 27.59 | -28.49 | -13 | -15.49 | Vertical |
| 2122.5 | -52.46 | 2.87 | 27.59 | -27.74 | -13 | -14.74 | Horizontal |
| **Test Results for High Channel 711MHz** | | | | | | | |
| 1422 | -54.82 | 2.62 | 27.28 | -30.16 | -13 | -17.16 | Horizontal |
| 1422 | -50.60 | 2.62 | 27.28 | -25.94 | -13 | -12.94 | Vertical |
| 2133 | -53.50 | 2.87 | 27.60 | -28.77 | -13 | -15.77 | Vertical |
| 2133 | -53.12 | 2.87 | 27.60 | -28.39 | -13 | -15.39 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.6 LTE BAND 13

**QPSK EIRP POWER FOR LTE BAND 13 (5MHZ BANDWIDTH)**

| Test Results for Low Channel 779.5MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1559 | -50.22 | 2.61 | 27.28 | -25.55 | -13 | -12.55 | Horizontal |
| 1559 | -49.79 | 2.61 | 27.28 | -25.12 | -13 | -12.12 | Vertical |
| 2338.5 | -51.02 | 2.87 | 27.59 | -26.30 | -13 | -13.30 | Vertical |
| 2338.5 | -50.03 | 2.87 | 27.59 | -25.31 | -13 | -12.31 | Horizontal |
| **Test Results For Mid Channel 782MHz** | | | | | | | |
| 1564 | -49.70 | 2.62 | 27.30 | -25.02 | -13 | -12.02 | Horizontal |
| 1564 | -52.45 | 2.62 | 27.30 | -27.77 | -13 | -14.77 | Vertical |
| 2346 | -53.40 | 2.87 | 27.62 | -28.65 | -13 | -15.65 | Vertical |
| 2346 | -55.32 | 2.87 | 27.62 | -30.57 | -13 | -17.57 | Horizontal |
| **Test Results for High Channel 784.5MHz** | | | | | | | |
| 1569 | -53.53 | 2.66 | 27.28 | -28.91 | -13 | -15.91 | Horizontal |
| 1569 | -53.13 | 2.66 | 27.28 | -28.51 | -13 | -15.51 | Vertical |
| 2353.5 | -50.91 | 2.88 | 27.60 | -26.19 | -13 | -13.19 | Vertical |
| 2353.5 | -49.98 | 2.88 | 27.60 | -25.26 | -13 | -12.26 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 13 (10MHZ BANDWIDTH)**

| Test Results for Low Channel 782MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1564 | -53.01 | 2.62 | 27.30 | -28.33 | -13 | -15.33 | Horizontal |
| 1564 | -51.11 | 2.62 | 27.30 | -26.43 | -13 | -13.43 | Vertical |
| 2346 | -52.60 | 2.87 | 27.62 | -27.85 | -13 | -14.85 | Vertical |
| 2346 | -55.63 | 2.87 | 27.62 | -30.88 | -13 | -17.88 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

9.7 LTE BAND 14

**QPSK EIRP POWER FOR LTE BAND 14 (5MHZ BANDWIDTH)**

| Test Results for Low Channel 790.5MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1581 | -50.78 | 2.61 | 27.28 | -26.11 | -13 | -13.11 | Horizontal |
| 1581 | -49.06 | 2.61 | 27.28 | -24.39 | -13 | -11.39 | Vertical |
| 2371.5 | -51.34 | 2.87 | 27.59 | -26.62 | -13 | -13.62 | Vertical |
| 2371.5 | -50.44 | 2.87 | 27.59 | -25.72 | -13 | -12.72 | Horizontal |
| **Test Results For Mid Channel 793MHz** | | | | | | | |
| 1586 | -49.54 | 2.62 | 27.30 | -24.86 | -13 | -11.86 | Horizontal |
| 1586 | -52.66 | 2.62 | 27.30 | -27.98 | -13 | -14.98 | Vertical |
| 2379 | -53.87 | 2.87 | 27.62 | -29.12 | -13 | -16.12 | Vertical |
| 2379 | -55.09 | 2.87 | 27.62 | -30.34 | -13 | -17.34 | Horizontal |
| **Test Results for High Channel 795.5MHz** | | | | | | | |
| 1591 | -52.80 | 2.66 | 27.28 | -28.18 | -13 | -15.18 | Horizontal |
| 1591 | -53.97 | 2.66 | 27.28 | -29.35 | -13 | -16.35 | Vertical |
| 2386.5 | -51.02 | 2.88 | 27.60 | -26.30 | -13 | -13.30 | Vertical |
| 2386.5 | -50.30 | 2.88 | 27.60 | -25.58 | -13 | -12.58 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 14 (10MHZ BANDWIDTH)**

| Test Results for Low Channel 793MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 1586 | -53.51 | 2.62 | 27.30 | -28.83 | -13 | -15.83 | Horizontal |
| 1586 | -51.08 | 2.62 | 27.30 | -26.40 | -13 | -13.40 | Vertical |
| 2379 | -51.92 | 2.87 | 27.62 | -27.17 | -13 | -14.17 | Vertical |
| 2379 | -55.91 | 2.87 | 27.62 | -31.16 | -13 | -18.16 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.8 LTE BAND 25

**QPSK EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 1850.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3701.4 | -51.82 | 4.04 | 33.51 | -22.35 | -13 | -9.35 | Horizontal |
| 3701.4 | -53.88 | 4.04 | 33.51 | -24.41 | -13 | -11.41 | Vertical |
| 5552.1 | -56.39 | 5.24 | 35.84 | -25.79 | -13 | -12.79 | Vertical |
| 5552.1 | -67.12 | 5.24 | 35.84 | -36.52 | -13 | -23.52 | Horizontal |
| **Test Results For Mid Channel 1882.5MHz** | | | | | | | |
| 3765 | -52.90 | 4.04 | 33.56 | -23.38 | -13 | -10.38 | Horizontal |
| 3765 | -53.99 | 4.04 | 33.56 | -24.47 | -13 | -11.47 | Vertical |
| 5647.5 | -54.47 | 5.24 | 35.91 | -23.80 | -13 | -10.80 | Vertical |
| 5647.5 | -56.15 | 5.24 | 35.91 | -25.48 | -13 | -12.48 | Horizontal |
| **Test Results for High Channel 1914.3MHz** | | | | | | | |
| 3828.6 | -53.24 | 4.04 | 34.00 | -23.28 | -13 | -10.28 | Horizontal |
| 3828.6 | -55.32 | 4.04 | 34.00 | -25.36 | -13 | -12.36 | Vertical |
| 5742.9 | -56.94 | 5.24 | 36.04 | -26.14 | -13 | -13.14 | Vertical |
| 5742.9 | -56.35 | 5.24 | 36.04 | -25.55 | -13 | -12.55 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)**

| Test Results for Low Channel 1860MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 3720 | -57.10 | 4.07 | 33.54 | -27.63 | -13 | -14.63 | Horizontal |
| 3720 | -51.51 | 4.07 | 33.54 | -22.04 | -13 | -9.04 | Vertical |
| 5580 | -58.57 | 5.28 | 35.86 | -27.99 | -13 | -14.99 | Vertical |
| 5580 | -59.37 | 5.28 | 35.86 | -28.79 | -13 | -15.79 | Horizontal |
| **Test Results for Mid Channel 1882.5MHz** | | | | | | | |
| 3764 | -56.79 | 4.04 | 33.56 | -27.27 | -13 | -14.27 | Horizontal |
| 3764 | -53.52 | 4.04 | 33.56 | -24.00 | -13 | -11.00 | Vertical |
| 5646 | -57.58 | 5.24 | 35.91 | -26.91 | -13 | -13.91 | Vertical |
| 5646 | -58.44 | 5.24 | 35.91 | -27.77 | -13 | -14.77 | Horizontal |
| **Test Results for High Channel 1905MHz** | | | | | | | |
| 3810 | -55.25 | 4.04 | 34.00 | -25.29 | -13 | -12.29 | Horizontal |
| 3810 | -56.22 | 4.04 | 34.00 | -26.26 | -13 | -13.26 | Vertical |
| 5715 | -57.50 | 5.24 | 36.04 | -26.70 | -13 | -13.70 | Vertical |
| 5715 | -56.10 | 5.24 | 36.04 | -25.30 | -13 | -12.30 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

9.9 LTE BAND 26

**QPSK EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)**

| Test Results for Low Channel 814.7MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit（dBm） | Margin(dBm) | Polarity |
| 1629.4 | -51.82 | 2.78 | 27.50 | -27.10 | -13 | -14.10 | Horizontal |
| 1629.4 | -53.88 | 2.78 | 27.50 | -29.16 | -13 | -16.16 | Vertical |
| 2444.1 | -56.39 | 2.90 | 27.80 | -31.49 | -13 | -18.49 | Vertical |
| 2444.1 | -67.12 | 2.90 | 27.80 | -42.22 | -13 | -29.22 | Horizontal |
| **Test Results For Mid Channel 819.0MHz** | | | | | | | |
| 1638 | -52.90 | 2.80 | 27.48 | -28.22 | -13 | -15.22 | Horizontal |
| 1638 | -53.99 | 2.80 | 27.48 | -29.31 | -13 | -16.31 | Vertical |
| 2457.5 | -54.47 | 2.91 | 27.70 | -29.68 | -13 | -16.68 | Vertical |
| 2457.5 | -56.15 | 2.91 | 27.70 | -31.36 | -13 | -18.36 | Horizontal |
| **Test Results for High Channel 823.3MHz** | | | | | | | |
| 1646.6 | -53.24 | 2.82 | 27.43 | -28.63 | -13 | -15.63 | Horizontal |
| 1646.6 | -55.32 | 2.82 | 27.43 | -30.71 | -13 | -17.71 | Vertical |
| 2469.9 | -56.94 | 2.92 | 27.74 | -32.12 | -13 | -19.12 | Vertical |
| 2469.9 | -56.35 | 2.92 | 27.74 | -31.53 | -13 | -18.53 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)**

| Test Results for Low Channel 819.0MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit（dBm） | Margin(dBm) | Polarity |
| 1638 | -57.10 | 2.78 | 27.50 | -32.38 | -13 | -19.38 | Horizontal |
| 1638 | -51.51 | 2.78 | 27.50 | -26.79 | -13 | -13.79 | Vertical |
| 2457.5 | -58.57 | 2.90 | 27.80 | -33.67 | -13 | -20.67 | Vertical |
| 2457.5 | -59.37 | 2.90 | 27.80 | -34.47 | -13 | -21.47 | Horizontal |

Note:

SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

## 9.10 LTE BAND 41

**QPSK EIRP POWER FOR LTE BAND 41 (5MHZ BANDWIDTH)**

| Test Results for Low Channel 2535MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit （dBm） | Margin(dBm) | Polarity |
| 5070 | -66.35 | 5.28 | 35.81 | -35.82 | -25 | -10.82 | Horizontal |
| 5070 | -65.24 | 5.28 | 35.81 | -34.71 | -25 | -9.71 | Vertical |
| 7605 | -67.15 | 5.74 | 36.85 | -36.04 | -25 | -11.04 | Vertical |
| 7605 | -66.28 | 5.74 | 36.85 | -35.17 | -25 | -10.17 | Horizontal |
| **Test Results For Mid Channel 2593MHz** | | | | | | | |
| 5186 | -68.13 | 5.28 | 35.82 | -37.59 | -25 | -12.59 | Horizontal |
| 5186 | -67.31 | 5.28 | 35.82 | -36.77 | -25 | -11.77 | Vertical |
| 7779 | -66.66 | 5.78 | 36.85 | -35.59 | -25 | -10.59 | Vertical |
| 7779 | -65.29 | 5.78 | 36.85 | -34.22 | -25 | -9.22 | Horizontal |
| **Test Results for High Channel 2655MHz** | | | | | | | |
| 5310 | -68.03 | 5.31 | 35.83 | -37.51 | -25 | -12.51 | Horizontal |
| 5310 | -67.53 | 5.31 | 35.83 | -37.01 | -25 | -12.01 | Vertical |
| 7965 | -67.51 | 5.8 | 36.87 | -36.44 | -25 | -11.44 | Vertical |
| 7965 | -66.37 | 5.8 | 36.87 | -35.3 | -25 | -10.3 | Horizontal |

**QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)**

| Test Results for Low Channel 2542.5MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency(MHz) | SG Level(dBm) | Cable Loss(dB) | Antenna Gain(dB) | Absolute Level(dBm) | Limit（dBm） | Margin(dBm) | Polarity |
| 5085 | -65.13 | 5.28 | 35.82 | -34.59 | -25 | -9.59 | Horizontal |
| 5085 | -64.35 | 5.28 | 35.82 | -33.81 | -25 | -8.81 | Vertical |
| 7627.5 | -66.28 | 5.76 | 36.86 | -35.18 | -25 | -10.18 | Vertical |
| 7627.5 | -63.76 | 5.76 | 36.86 | -32.66 | -25 | -7.66 | Horizontal |
| **Test Results for Mid Channel 2593MHz** | | | | | | | |
| 5186 | -65.18 | 5.28 | 35.82 | -34.64 | -25 | -9.64 | Horizontal |
| 5186 | -64.39 | 5.28 | 35.82 | -33.85 | -25 | -8.85 | Vertical |
| 7779 | -67.08 | 5.78 | 36.85 | -36.01 | -25 | -11.01 | Vertical |
| 7779 | -65.83 | 5.78 | 36.85 | -34.76 | -25 | -9.76 | Horizontal |
| **Test Results for High Channel 2647.5MHz** | | | | | | | |
| 5295 | -66.13 | 5.3 | 35.83 | -35.6 | -25 | -10.6 | Horizontal |
| 5295 | -65.73 | 5.3 | 35.83 | -35.2 | -25 | -10.2 | Vertical |
| 7942.5 | -66.28 | 5.8 | 36.88 | -35.2 | -25 | -10.2 | Vertical |
| 7942.5 | -65.73 | 5.8 | 36.88 | -34.65 | -25 | -9.65 | Horizontal |

Note: SG Level= Signal generator output

Absolute Level (dBm)= SG Level (dBm)+ Antenna Gain(dB) - Cable Loss(dBm)

# 10. FREQUENCY STABILITY

**RULE PART(S)**

FCC: §2.1055, §22.355, §24.235, §27.54

**LIMITS**

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

**TEST PROCEDURE**

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage,DC 3.2V, Normal, DC 3.85V and High voltage, DC DC 4.43V.

**Frequency Stability vs Temperature:**

The EUT is place inside a temperature chamber. The temperature is set to -30ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

**Frequency Stability vs Voltage:**

The peak frequency error is recorded (worst-case).

**MODES TESTED**

- LTE Band 2

LTE Band 4

- LTE Band5

LTE Band 7

LTE Band 12

LTE Band 13

LTE Band 14

LTE Band 25

LTE Band 26

LTE Band 41

**RESULTS**

See the following pages.

## 10.1 LTE BAND 2

**QPSK, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1880 | 4.5 | 0.002414 | 2.5 |
| 3.85 | 1880 | -7.0 | -0.003701 | 2.5 |
| 4.43 | 1880 | 4.6 | 0.002470 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1880 | 5.9 | 0.003138 | 2.5 |
| Extreme (50C) | 1880 | -6.5 | -0.003453 | 2.5 |
| Extreme (40C) | 1880 | -7.5 | -0.004001 | 2.5 |
| Extreme (30C) | 1880 | 8.1 | 0.004335 | 2.5 |
| Extreme (10C) | 1880 | 8.3 | 0.004392 | 2.5 |
| Extreme (0C) | 1880 | 5.9 | 0.003121 | 2.5 |
| Extreme (-10C) | 1880 | -7.7 | -0.004070 | 2.5 |
| Extreme (-20C) | 1880 | 7.8 | 0.004136 | 2.5 |
| Extreme (-30C) | 1880 | 5.3 | 0.002817 | 2.5 |

**16QAM, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1880 | 7.3 | 0.003902 | 2.5 |
| 3.85 | 1880 | 5.6 | 0.002971 | 2.5 |
| 4.43 | 1880 | 6.2 | 0.003324 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1880 | -7.0 | -0.003706 | 2.5 |
| Extreme (50C) | 1880 | -4.3 | -0.002290 | 2.5 |
| Extreme (40C) | 1880 | 4.9 | 0.002605 | 2.5 |
| Extreme (30C) | 1880 | -4.2 | -0.002260 | 2.5 |
| Extreme (10C) | 1880 | 5.9 | 0.003161 | 2.5 |
| Extreme (0C) | 1880 | 4.3 | 0.002301 | 2.5 |
| Extreme (-10C) | 1880 | 9.0 | 0.004800 | 2.5 |
| Extreme (-20C) | 1880 | 10.3 | 0.005483 | 2.5 |
| Extreme (-30C) | 1880 | 5.7 | 0.003019 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.2 LTE BAND 4

**QPSK, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1732.5 | 5.2 | 0.003020 | 2.5 |
| 3.85 | 1732.5 | 9.9 | 0.005707 | 2.5 |
| 4.43 | 1732.5 | 10.0 | 0.005756 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1732.5 | 6.6 | 0.003804 | 2.5 |
| Extreme (50C) | 1732.5 | 5.8 | 0.003357 | 2.5 |
| Extreme (40C) | 1732.5 | 5.4 | 0.003121 | 2.5 |
| Extreme (30C) | 1732.5 | 8.7 | 0.005029 | 2.5 |
| Extreme (10C) | 1732.5 | -5.4 | -0.003120 | 2.5 |
| Extreme (0C) | 1732.5 | -4.3 | -0.002464 | 2.5 |
| Extreme (-10C) | 1732.5 | 8.5 | 0.004904 | 2.5 |
| Extreme (-20C) | 1732.5 | 8.6 | 0.004954 | 2.5 |
| Extreme (-30C) | 1732.5 | 8.5 | 0.004914 | 2.5 |

**16QAM, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1732.5 | 6.5 | 0.003766 | 2.5 |
| 3.85 | 1732.5 | 7.5 | 0.004306 | 2.5 |
| 4.43 | 1732.5 | 6.3 | 0.003642 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1732.5 | 5.1 | 0.002951 | 2.5 |
| Extreme (50C) | 1732.5 | 5.1 | 0.002922 | 2.5 |
| Extreme (40C) | 1732.5 | 3.5 | 0.002015 | 2.5 |
| Extreme (30C) | 1732.5 | -6.4 | -0.003686 | 2.5 |
| Extreme (10C) | 1732.5 | -3.1 | -0.001766 | 2.5 |
| Extreme (0C) | 1732.5 | 4.3 | 0.002484 | 2.5 |
| Extreme (-10C) | 1732.5 | 6.3 | 0.003632 | 2.5 |
| Extreme (-20C) | 1732.5 | 6.8 | 0.003897 | 2.5 |
| Extreme (-30C) | 1732.5 | 5.9 | 0.003429 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.3 LTE BAND 5

**QPSK, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 836.5 | -1.3 | -0.001495 | 2.5 |
| 3.85 | 836.5 | -4.7 | -0.005594 | 2.5 |
| 4.43 | 836.5 | 4.9 | 0.005845 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 836.5 | -1.8 | -0.002124 | 2.5 |
| Extreme (50C) | 836.5 | -4.8 | -0.005721 | 2.5 |
| Extreme (40C) | 836.5 | -3.8 | -0.004528 | 2.5 |
| Extreme (30C) | 836.5 | -2.8 | -0.003341 | 2.5 |
| Extreme (10C) | 836.5 | 1.7 | 0.002047 | 2.5 |
| Extreme (0C) | 836.5 | 2.8 | 0.003377 | 2.5 |
| Extreme (-10C) | 836.5 | 5.2 | 0.006160 | 2.5 |
| Extreme (-20C) | 836.5 | -4.0 | -0.004792 | 2.5 |
| Extreme (-30C) | 836.5 | -6.5 | -0.007721 | 2.5 |

**16QAM, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 836.5 | -2.0 | -0.002369 | 2.5 |
| 3.85 | 836.5 | -4.8 | -0.005720 | 2.5 |
| 4.43 | 836.5 | -6.2 | -0.007358 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 836.5 | -3.2 | -0.003820 | 2.5 |
| Extreme (50C) | 836.5 | -5.6 | -0.006652 | 2.5 |
| Extreme (40C) | 836.5 | -3.7 | -0.004450 | 2.5 |
| Extreme (30C) | 836.5 | 7.7 | 0.009161 | 2.5 |
| Extreme (10C) | 836.5 | 4.6 | 0.005480 | 2.5 |
| Extreme (0C) | 836.5 | 3.8 | 0.004519 | 2.5 |
| Extreme (-10C) | 836.5 | -3.7 | -0.004466 | 2.5 |
| Extreme (-20C) | 836.5 | -4.3 | -0.005155 | 2.5 |
| Extreme (-30C) | 836.5 | -4.3 | -0.005137 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.4 LTE BAND 7

**QPSK, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 2535 | -5.0 | -0.001987 | 2.5 |
| 3.85 | 2535 | -11.6 | -0.004571 | 2.5 |
| 4.43 | 2535 | -8.4 | -0.003308 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 2535 | -8.1 | -0.003198 | 2.5 |
| Extreme (50C) | 2535 | -5.8 | -0.002296 | 2.5 |
| Extreme (40C) | 2535 | 5.9 | 0.002327 | 2.5 |
| Extreme (30C) | 2535 | 4.4 | 0.001729 | 2.5 |
| Extreme (10C) | 2535 | 4.5 | 0.001756 | 2.5 |
| Extreme (0C) | 2535 | -6.7 | -0.002626 | 2.5 |
| Extreme (-10C) | 2535 | -6.2 | -0.002431 | 2.5 |
| Extreme (-20C) | 2535 | -8.8 | -0.003471 | 2.5 |
| Extreme (-30C) | 2535 | -12.7 | -0.005020 | 2.5 |

**16QAM, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 2535 | -8.0 | -0.003164 | 2.5 |
| 3.85 | 2535 | -7.2 | -0.002843 | 2.5 |
| 4.43 | 2535 | -8.8 | -0.003491 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 2535 | -5.5 | -0.002159 | 2.5 |
| Extreme (50C) | 2535 | -8.5 | -0.003346 | 2.5 |
| Extreme (40C) | 2535 | -9.3 | -0.003672 | 2.5 |
| Extreme (30C) | 2535 | -10.2 | -0.004032 | 2.5 |
| Extreme (10C) | 2535 | 3.8 | 0.001509 | 2.5 |
| Extreme (0C) | 2535 | 4.8 | 0.001908 | 2.5 |
| Extreme (-10C) | 2535 | 6.8 | 0.002679 | 2.5 |
| Extreme (-20C) | 2535 | -7.5 | -0.002951 | 2.5 |
| Extreme (-30C) | 2535 | -7.7 | -0.003021 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.5 LTE BAND 12

**QPSK, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 707.5 | -4.3 | -0.006091 | 2.5 |
| 3.85 | 707.5 | -5.0 | -0.007091 | 2.5 |
| 4.43 | 707.5 | -4.9 | -0.006912 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 707.5 | -3.8 | -0.005348 | 2.5 |
| Extreme (50C) | 707.5 | -4.4 | -0.006207 | 2.5 |
| Extreme (40C) | 707.5 | -5.6 | -0.007939 | 2.5 |
| Extreme (30C) | 707.5 | -5.4 | -0.007605 | 2.5 |
| Extreme (10C) | 707.5 | -5.1 | -0.007164 | 2.5 |
| Extreme (0C) | 707.5 | -4.3 | -0.006123 | 2.5 |
| Extreme (-10C) | 707.5 | -2.9 | -0.004091 | 2.5 |
| Extreme (-20C) | 707.5 | -5.0 | -0.007130 | 2.5 |
| Extreme (-30C) | 707.5 | -4.6 | -0.006572 | 2.5 |

**16QAM, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 12 16QAM, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 707.5 | -2.0 | -0.002808 | 2.5 |
| 3.85 | 707.5 | -3.5 | -0.004922 | 2.5 |
| 4.43 | 707.5 | -3.6 | -0.005079 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 707.5 | -6.5 | -0.009175 | 2.5 |
| Extreme (50C) | 707.5 | -5.5 | -0.007765 | 2.5 |
| Extreme (40C) | 707.5 | -6.4 | -0.009110 | 2.5 |
| Extreme (30C) | 707.5 | -7.7 | -0.010912 | 2.5 |
| Extreme (10C) | 707.5 | -8.2 | -0.011590 | 2.5 |
| Extreme (0C) | 707.5 | 2.9 | 0.004100 | 2.5 |
| Extreme (-10C) | 707.5 | -5.2 | -0.007292 | 2.5 |
| Extreme (-20C) | 707.5 | -8.7 | -0.012302 | 2.5 |
| Extreme (-30C) | 707.5 | -10.2 | -0.014350 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.6 LTE BAND 13

**QPSK, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 782.0 | -2.5 | -0.003500 | 2.5 |
| 3.85 | 782.0 | 6.1 | 0.008574 | 2.5 |
| 4.43 | 782.0 | 6.6 | 0.009340 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 782.0 | 4.6 | 0.006439 | 2.5 |
| Extreme (50C) | 782.0 | 6.8 | 0.009563 | 2.5 |
| Extreme (40C) | 782.0 | 5.4 | 0.007612 | 2.5 |
| Extreme (30C) | 782.0 | 5.8 | 0.008160 | 2.5 |
| Extreme (10C) | 782.0 | 7.7 | 0.010866 | 2.5 |
| Extreme (0C) | 782.0 | -6.7 | -0.009502 | 2.5 |
| Extreme (-10C) | 782.0 | -6.4 | -0.008956 | 2.5 |
| Extreme (-20C) | 782.0 | 7.8 | 0.010931 | 2.5 |
| Extreme (-30C) | 782.0 | 6.9 | 0.009669 | 2.5 |

**16QAM, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 13 16QAM, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 782.0 | 3.4 | 0.004740 | 2.5 |
| 3.85 | 782.0 | 7.0 | 0.009914 | 2.5 |
| 4.43 | 782.0 | -5.6 | -0.007926 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 782.0 | 4.0 | 0.005673 | 2.5 |
| Extreme (50C) | 782.0 | -3.7 | -0.005160 | 2.5 |
| Extreme (40C) | 782.0 | -3.8 | -0.005283 | 2.5 |
| Extreme (30C) | 782.0 | -5.8 | -0.008102 | 2.5 |
| Extreme (10C) | 782.0 | 5.9 | 0.008310 | 2.5 |
| Extreme (0C) | 782.0 | 8.0 | 0.011220 | 2.5 |
| Extreme (-10C) | 782.0 | 8.5 | 0.011985 | 2.5 |
| Extreme (-20C) | 782.0 | 7.0 | 0.009917 | 2.5 |
| Extreme (-30C) | 782.0 | 5.5 | 0.007693 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.7 LTE BAND 14

**QPSK, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 14 QPSK, (CH 23330 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 793.0 | 2.9 | 0.004015 | 2.5 |
| 3.85 | 793.0 | -8.0 | -0.010996 | 2.5 |
| 4.43 | 793.0 | -6.2 | -0.008465 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 14 QPSK, (CH 23330 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 793.0 | -3.8 | -0.005246 | 2.5 |
| Extreme (50C) | 793.0 | -5.6 | -0.007656 | 2.5 |
| Extreme (40C) | 793.0 | 5.8 | 0.008018 | 2.5 |
| Extreme (30C) | 793.0 | 1.5 | 0.002099 | 2.5 |
| Extreme (10C) | 793.0 | 1.7 | 0.002388 | 2.5 |
| Extreme (0C) | 793.0 | -7.6 | -0.010460 | 2.5 |
| Extreme (-10C) | 793.0 | -5.1 | -0.007042 | 2.5 |
| Extreme (-20C) | 793.0 | -5.0 | -0.006926 | 2.5 |
| Extreme (-30C) | 793.0 | -5.6 | -0.007641 | 2.5 |

**16QAM, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 14 16QAM, (CH 23330 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 793.0 | 3.7 | 0.005031 | 2.5 |
| 3.85 | 793.0 | -6.3 | -0.008712 | 2.5 |
| 4.43 | 793.0 | 3.5 | 0.004785 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 14 QPSK, (CH 23330 RB size 50 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 793.0 | -7.4 | -0.010107 | 2.5 |
| Extreme (50C) | 793.0 | -8.1 | -0.011101 | 2.5 |
| Extreme (40C) | 793.0 | -4.2 | -0.005752 | 2.5 |
| Extreme (30C) | 793.0 | -6.4 | -0.008803 | 2.5 |
| Extreme (10C) | 793.0 | 2.4 | 0.003269 | 2.5 |
| Extreme (0C) | 793.0 | 3.0 | 0.004169 | 2.5 |
| Extreme (-10C) | 793.0 | 2.7 | 0.003766 | 2.5 |
| Extreme (-20C) | 793.0 | 1.4 | 0.001980 | 2.5 |
| Extreme (-30C) | 793.0 | -6.7 | -0.009251 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.8 LTE BAND 25

**QPSK, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1882.5 | 3.2 | 0.004396 | 2.5 |
| 3.85 | 1882.5 | -5.6 | -0.007692 | 2.5 |
| 4.43 | 1882.5 | -7.1 | -0.009753 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1882.5 | -4.5 | -0.006181 | 2.5 |
| Extreme (50C) | 1882.5 | -3.2 | -0.004396 | 2.5 |
| Extreme (40C) | 1882.5 | -4.9 | -0.006731 | 2.5 |
| Extreme (30C) | 1882.5 | 2.3 | 0.003159 | 2.5 |
| Extreme (10C) | 1882.5 | 3.6 | 0.004945 | 2.5 |
| Extreme (0C) | 1882.5 | -7.2 | -0.009890 | 2.5 |
| Extreme (-10C) | 1882.5 | -5.9 | -0.008104 | 2.5 |
| Extreme (-20C) | 1882.5 | -5.3 | -0.007280 | 2.5 |
| Extreme (-30C) | 1882.5 | -5.6 | -0.007641 | 2.5 |

**16QAM, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 1882.5 | 3.6 | 0.004945 | 2.5 |
| 3.85 | 1882.5 | -5.7 | -0.007830 | 2.5 |
| 4.43 | 1882.5 | -4.6 | -0.006319 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 1882.5 | -7.6 | -0.010440 | 2.5 |
| Extreme (50C) | 1882.5 | -5.9 | -0.008104 | 2.5 |
| Extreme (40C) | 1882.5 | -5.1 | -0.007005 | 2.5 |
| Extreme (30C) | 1882.5 | -3.4 | -0.004670 | 2.5 |
| Extreme (10C) | 1882.5 | -3.4 | -0.004670 | 2.5 |
| Extreme (0C) | 1882.5 | -5.6 | -0.007692 | 2.5 |
| Extreme (-10C) | 1882.5 | 2.7 | 0.003766 | 2.5 |
| Extreme (-20C) | 1882.5 | 1.4 | 0.001980 | 2.5 |
| Extreme (-30C) | 1882.5 | -5.8 | -0.007967 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.9 LTE BAND 26

**QPSK, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 26 QPSK, (CH 26740 RB size 75 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 819.0 | 3.4 | 0.004089 | 2.5 |
| 3.85 | 819.0 | 7.0 | 0.008425 | 2.5 |
| 4.43 | 819.0 | 4.6 | 0.005585 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 26 QPSK, (CH 26740 RB size 75 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| Normal (25C) | 819.0 | 5.9 | 0.007095 | 2.5 |
| Extreme (50C) | 819.0 | -6.5 | -0.007807 | 2.5 |
| Extreme (40C) | 819.0 | -7.5 | -0.009046 | 2.5 |
| Extreme (30C) | 819.0 | 8.1 | 0.009800 | 2.5 |
| Extreme (10C) | 819.0 | 8.3 | 0.009929 | 2.5 |
| Extreme (0C) | 819.0 | 5.9 | 0.007057 | 2.5 |
| Extreme (-10C) | 819.0 | -7.7 | -0.009202 | 2.5 |
| Extreme (-20C) | 819.0 | 7.8 | 0.009352 | 2.5 |
| Extreme (-30C) | 819.0 | 5.3 | 0.006369 | 2.5 |

**16QAM, (10MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 26 16QAM, (CH 26740 RB size 75 RB Offset 0 10MHz BANDWIDTH)** | | | | |
| 3.27 | 819.0 | 3.5 | 0.004209 | 2.5 |
| 3.85 | 819.0 | 6.9 | 0.008298 | 2.5 |
| 4.43 | 819.0 | 5.2 | 0.006254 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [°C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 26 16QAM, (CH 26865 RB size 75 RB Offset 0 15MHz BANDWIDTH)** | | | | |
| Normal (25C) | 831.5 | -5.0 | -0.006013 | 2.5 |
| Extreme (50C) | 831.5 | 5.1 | 0.006133 | 2.5 |
| Extreme (40C) | 831.5 | 3.7 | 0.004450 | 2.5 |
| Extreme (30C) | 831.5 | 3.6 | 0.004330 | 2.5 |
| Extreme (10C) | 831.5 | -4.6 | -0.005532 | 2.5 |
| Extreme (0C) | 831.5 | -1.5 | -0.001804 | 2.5 |
| Extreme (-10C) | 831.5 | 5.6 | 0.006735 | 2.5 |
| Extreme (-20C) | 831.5 | 5.8 | 0.006975 | 2.5 |
| Extreme (-30C) | 831.5 | 5.2 | 0.006254 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

## 10.10 LTE BAND 41

**QPSK, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 41 QPSK, (CH 40620 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 2593.0 | 3.2 | 0.004396 | 2.5 |
| 3.85 | 2593.0 | 5.1 | 0.007005 | 2.5 |
| 4.43 | 2593.0 | -3.2 | -0.004396 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 41 QPSK, (CH 40620 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 2593.0 | -6.3 | -0.008654 | 2.5 |
| Extreme (50C) | 2593.0 | -5.2 | -0.007143 | 2.5 |
| Extreme (40C) | 2593.0 | -5.4 | -0.007418 | 2.5 |
| Extreme (30C) | 2593.0 | 2.6 | 0.003571 | 2.5 |
| Extreme (10C) | 2593.0 | 1.7 | 0.002388 | 2.5 |
| Extreme (0C) | 2593.0 | -7.6 | -0.010460 | 2.5 |
| Extreme (-10C) | 2593.0 | -6.1 | -0.008379 | 2.5 |
| Extreme (-20C) | 2593.0 | -4.7 | -0.006456 | 2.5 |
| Extreme (-30C) | 2593.0 | -3.5 | -0.004808 | 2.5 |

**16QAM, (20MHz BANDWIDTH)**

**Frequency error vs. Voltage**

| Voltage [Vdc] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 41 16QAM, (CH 40620 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| 3.27 | 2593.0 | 2.9 | 0.003984 | 2.5 |
| 3.85 | 2593.0 | -5.5 | -0.007555 | 2.5 |
| 4.43 | 2593.0 | 3.6 | 0.004945 | 2.5 |

**Frequency error vs. Temperature**

| Temperature [° C] | Frequency [MHz] | Frequency* Error[Hz] | Frequency Error[ppm] | Limit [ppm] |
|---|---|---|---|---|
| **BAND 41 16QAM, (CH 40620 RB size 100 RB Offset 0 20MHz BANDWIDTH)** | | | | |
| Normal (25C) | 2593.0 | -6.4 | -0.008791 | 2.5 |
| Extreme (50C) | 2593.0 | -7.1 | -0.009753 | 2.5 |
| Extreme (40C) | 2593.0 | -4.6 | -0.006319 | 2.5 |
| Extreme (30C) | 2593.0 | -6.4 | -0.008791 | 2.5 |
| Extreme (10C) | 2593.0 | 3.5 | 0.004808 | 2.5 |
| Extreme (0C) | 2593.0 | 4.7 | 0.006456 | 2.5 |
| Extreme (-10C) | 2593.0 | 5.2 | 0.007143 | 2.5 |
| Extreme (-20C) | 2593.0 | 2.4 | 0.003297 | 2.5 |
| Extreme (-30C) | 2593.0 | -3.1 | -0.004258 | 2.5 |

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

# 11. Peak-to-Average Ratio

## 11.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

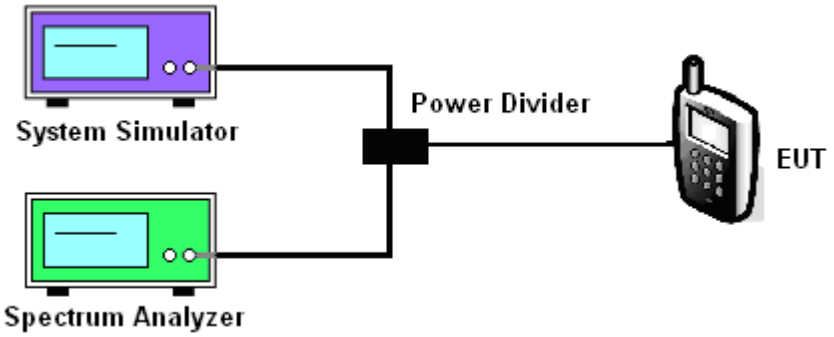
## 11.2 Measuring Instruments

See list of measuring instruments of this test report.

## 11.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

## 11.4 Test Setup




**MODES TESTED**

- LTE Band2/ LTE Band 4
- LTE Band5/ LTE Band 7
- LTE Band 12/ LTE Band 13
  LTE Band 14/ LTE Band 25
  LTE Band 26/ LTE Band 41

| BAND | CHANNEL | Frequency [MHz] | BANDWIDTH | NO. RB | RB POS. | MODULATION | PAR [dB] |
|---|---|---|---|---|---|---|---|
| 2 | 18900 | 1880.0 | 1.4 | 1 | Low | QPSK | 4.05 |
| 2 | 18900 | 1880.0 | 1.4 | 1 | Low | 16-QAM | 4.94 |
| 2 | 18900 | 1880.0 | 3.0 | 1 | Low | QPSK | 4.05 |
| 2 | 18900 | 1880.0 | 3.0 | 1 | Low | 16-QAM | 4.82 |
| 2 | 18900 | 1880.0 | 5.0 | 1 | Low | QPSK | 4.00 |
| 2 | 18900 | 1880.0 | 5.0 | 1 | Low | 16-QAM | 4.83 |
| 2 | 18900 | 1880.0 | 10.0 | 1 | Low | QPSK | 3.82 |
| 2 | 18900 | 1880.0 | 10.0 | 1 | Low | 16-QAM | 4.60 |
| 2 | 18900 | 1880.0 | 15.0 | 1 | Low | QPSK | 3.59 |
| 2 | 18900 | 1880.0 | 15.0 | 1 | Low | 16-QAM | 4.37 |
| 2 | 18900 | 1880.0 | 20.0 | 1 | Low | QPSK | 3.44 |
| 2 | 18900 | 1880.0 | 20.0 | 1 | Low | 16-QAM | 4.23 |
| 4 | 20175 | 1732.5 | 1.4 | 1 | Low | QPSK | 5.06 |
| 4 | 20175 | 1732.5 | 1.4 | 1 | Low | 16-QAM | 6.00 |
| 4 | 20175 | 1732.5 | 3.0 | 1 | Low | QPSK | 5.07 |
| 4 | 20175 | 1732.5 | 3.0 | 1 | Low | 16-QAM | 5.88 |
| 4 | 20175 | 1732.5 | 5.0 | 1 | Low | QPSK | 4.93 |
| 4 | 20175 | 1732.5 | 5.0 | 1 | Low | 16-QAM | 5.86 |
| 4 | 20175 | 1732.5 | 10.0 | 1 | Low | QPSK | 4.84 |

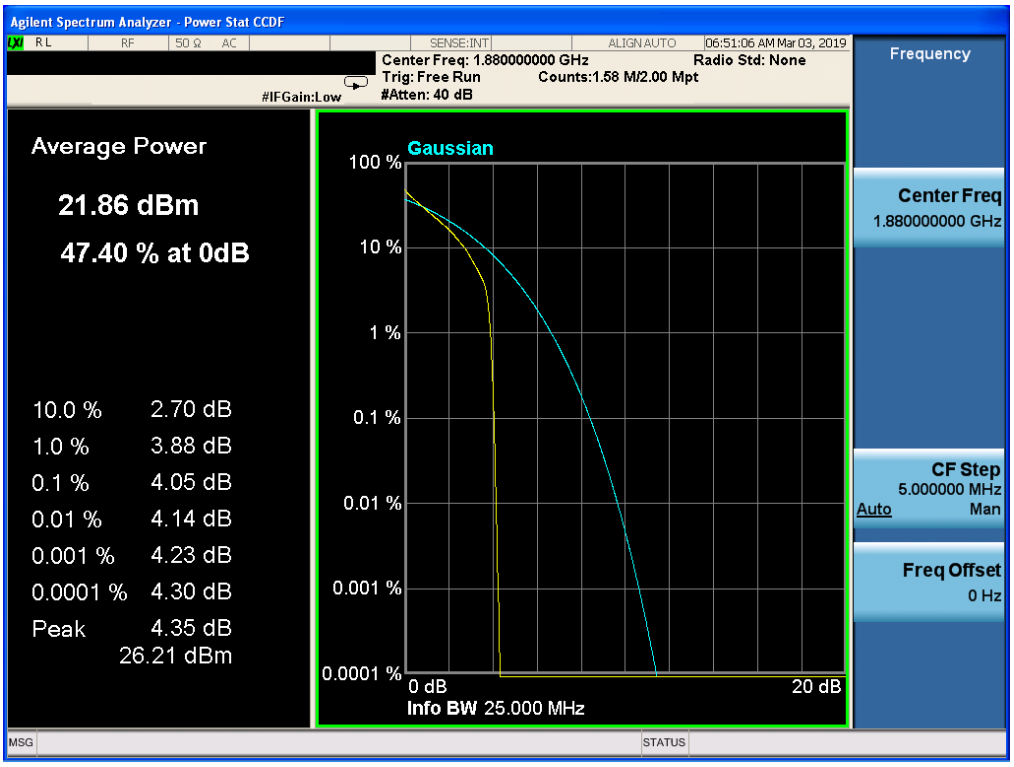
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | 20175 | 1732.5 | 10.0 | 1 | Low | 16-QAM | 5.61 |
| 4 | 20175 | 1732.5 | 15.0 | 1 | Low | QPSK | 4.87 |
| 4 | 20175 | 1732.5 | 15.0 | 1 | Low | 16-QAM | 5.62 |
| 4 | 20175 | 1732.5 | 20.0 | 1 | Low | QPSK | 4.90 |
| 4 | 20175 | 1732.5 | 20.0 | 1 | Low | 16-QAM | 5.82 |
| 5 | 20525 | 836.5 | 1.4 | 1 | Low | QPSK | 3.49 |
| 5 | 20525 | 836.5 | 1.4 | 1 | Low | 16-QAM | 4.34 |
| 5 | 20525 | 836.5 | 3.0 | 1 | Low | QPSK | 3.57 |
| 5 | 20525 | 836.5 | 3.0 | 1 | Low | 16-QAM | 4.32 |
| 5 | 20525 | 836.5 | 5.0 | 1 | Low | QPSK | 3.53 |
| 5 | 20525 | 836.5 | 5.0 | 1 | Low | 16-QAM | 4.41 |
| 5 | 20525 | 836.5 | 10.0 | 1 | Low | QPSK | 3.55 |
| 5 | 20525 | 836.5 | 10.0 | 1 | Low | 16-QAM | 4.38 |
| 7 | 21100 | 2535.0 | 5.0 | 1 | Low | QPSK | 3.36 |
| 7 | 21100 | 2535.0 | 5.0 | 1 | Low | 16-QAM | 4.26 |
| 7 | 21100 | 2535.0 | 10.0 | 1 | Low | QPSK | 3.30 |
| 7 | 21100 | 2535.0 | 10.0 | 1 | Low | 16-QAM | 3.97 |
| 7 | 21100 | 2535.0 | 15.0 | 1 | Low | QPSK | 3.41 |
| 7 | 21100 | 2535.0 | 15.0 | 1 | Low | 16-QAM | 4.10 |
| 7 | 21100 | 2535.0 | 20.0 | 1 | Low | QPSK | 3.31 |
| 7 | 21100 | 2535.0 | 20.0 | 1 | Low | 16-QAM | 4.32 |
| 12 | 23095 | 707.5 | 1.4 | 1 | Low | QPSK | 4.51 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | 23095 | 707.5 | 1.4 | 1 | Low | 16-QAM | 5.39 |
| 12 | 23095 | 707.5 | 3.0 | 1 | Low | QPSK | 4.40 |
| 12 | 23095 | 707.5 | 3.0 | 1 | Low | 16-QAM | 5.15 |
| 12 | 23095 | 707.5 | 5.0 | 1 | Low | QPSK | 4.30 |
| 12 | 23095 | 707.5 | 5.0 | 1 | Low | 16-QAM | 5.10 |
| 12 | 23095 | 707.5 | 10.0 | 1 | Low | QPSK | 4.17 |
| 12 | 23095 | 707.5 | 10.0 | 1 | Low | 16-QAM | 5.06 |
| 13 | 23230 | 782.0 | 5.0 | 1 | Low | QPSK | 4.59 |
| 13 | 23230 | 782.0 | 5.0 | 1 | Low | 16-QAM | 5.43 |
| 13 | 23230 | 782.0 | 10.0 | 1 | Low | QPSK | 4.25 |
| 13 | 23230 | 782.0 | 10.0 | 1 | Low | 16-QAM | 5.23 |
| 25 | 26365 | 1882.5 | 1.4 | 1 | Low | QPSK | 5.25 |
| 25 | 26365 | 1882.5 | 1.4 | 1 | Low | 16-QAM | 6.41 |
| 25 | 26365 | 1882.5 | 3.0 | 1 | Low | QPSK | 5.22 |
| 25 | 26365 | 1882.5 | 3.0 | 1 | Low | 16-QAM | 6.09 |
| 25 | 26365 | 1882.5 | 5.0 | 1 | Low | QPSK | 5.11 |
| 25 | 26365 | 1882.5 | 5.0 | 1 | Low | 16-QAM | 6.05 |
| 25 | 26365 | 1882.5 | 10.0 | 1 | Low | QPSK | 5.00 |
| 25 | 26365 | 1882.5 | 10.0 | 1 | Low | 16-QAM | 5.89 |
| 25 | 26365 | 1882.5 | 15.0 | 1 | Low | QPSK | 4.88 |
| 25 | 26365 | 1882.5 | 15.0 | 1 | Low | 16-QAM | 5.69 |
| 25 | 26365 | 1882.5 | 20.0 | 1 | Low | QPSK | 4.64 |

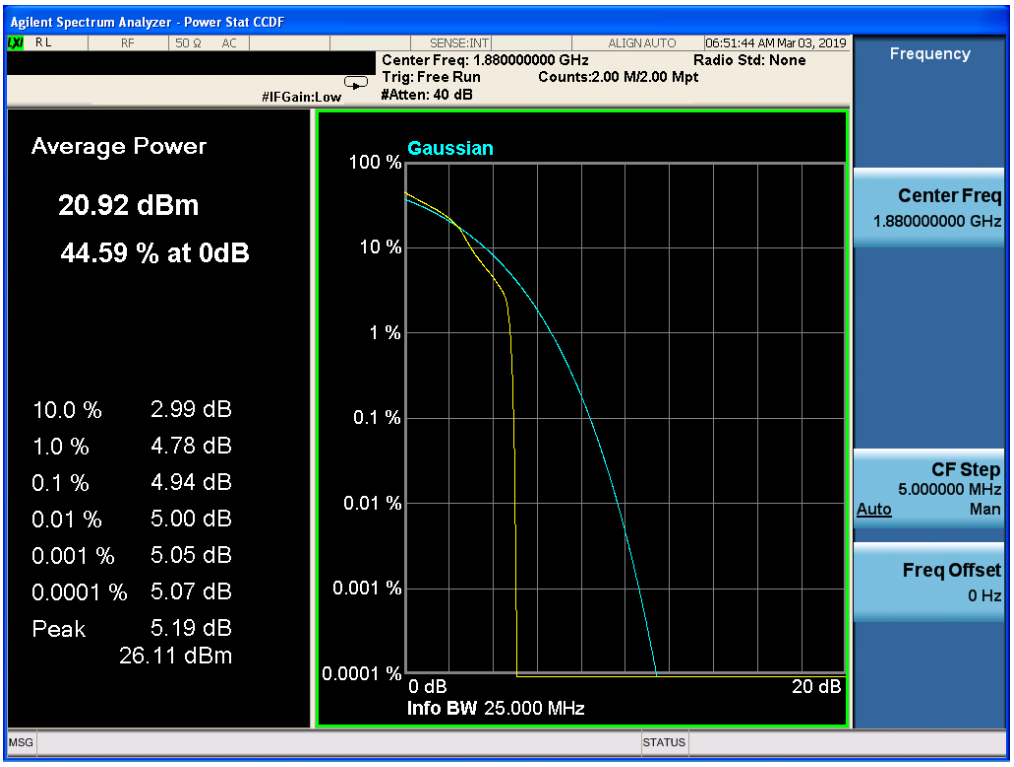
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 25 | 26365 | 1882.5 | 20.0 | 1 | Low | 16-QAM | 5.58 |
| 26 | 26470 | 819.0 | 1.4 | 1 | Low | QPSK | 3.45 |
| 26 | 26470 | 819.0 | 1.4 | 1 | Low | 16-QAM | 4.34 |
| 26 | 26470 | 819.0 | 3.0 | 1 | Low | QPSK | 3.42 |
| 26 | 26470 | 819.0 | 3.0 | 1 | Low | 16-QAM | 4.24 |
| 26 | 26470 | 819.0 | 5.0 | 1 | Low | QPSK | 3.46 |
| 26 | 26470 | 819.0 | 5.0 | 1 | Low | 16-QAM | 4.28 |
| 26 | 26470 | 819.0 | 10.0 | 1 | Low | QPSK | 3.30 |
| 26 | 26470 | 819.0 | 10.0 | 1 | Low | 16-QAM | 3.89 |
| 41 | 40620 | 2593.0 | 5.0 | 1 | Low | QPSK | 4.74 |
| 41 | 40620 | 2593.0 | 5.0 | 1 | Low | 16-QAM | 5.35 |
| 41 | 40620 | 2593.0 | 10.0 | 1 | Low | QPSK | 4.69 |
| 41 | 40620 | 2593.0 | 10.0 | 1 | Low | 16-QAM | 5.90 |
| 41 | 40620 | 2593.0 | 15.0 | 1 | Low | QPSK | 4.50 |
| 41 | 40620 | 2593.0 | 15.0 | 1 | Low | 16-QAM | 5.94 |
| 41 | 40620 | 2593.0 | 20.0 | 1 | Low | QPSK | 4.93 |
| 41 | 40620 | 2593.0 | 20.0 | 1 | Low | 16-QAM | 5.72 |

## 11.5 LTE BAND 2

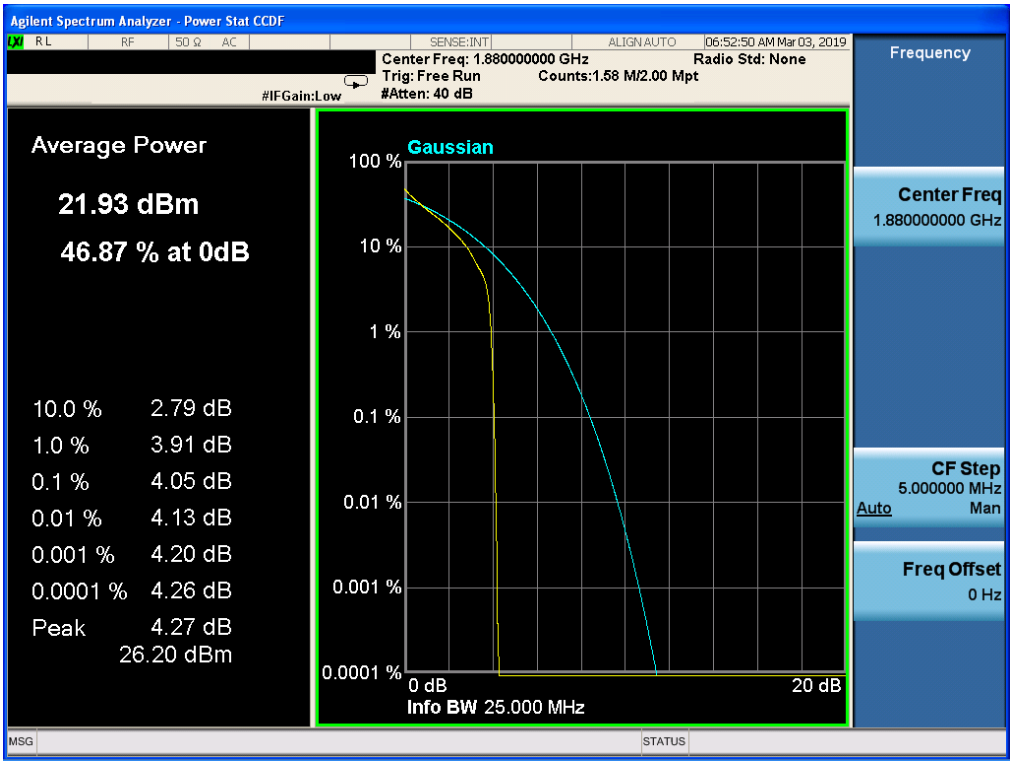
***Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK***



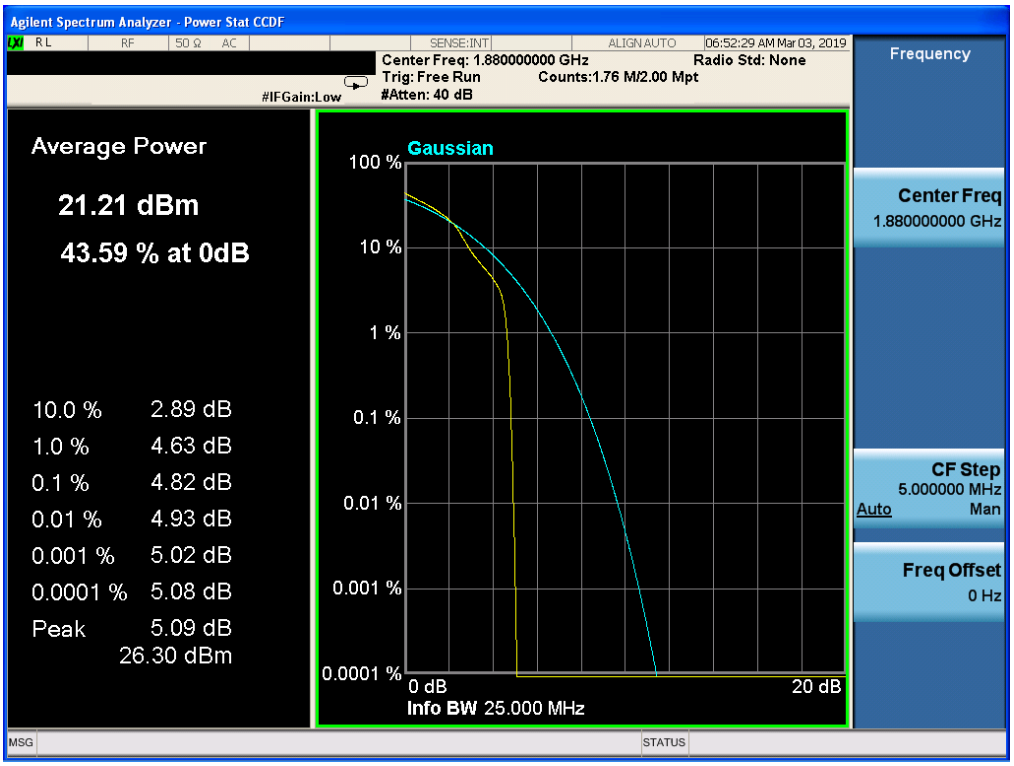

***Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,16-QAM***



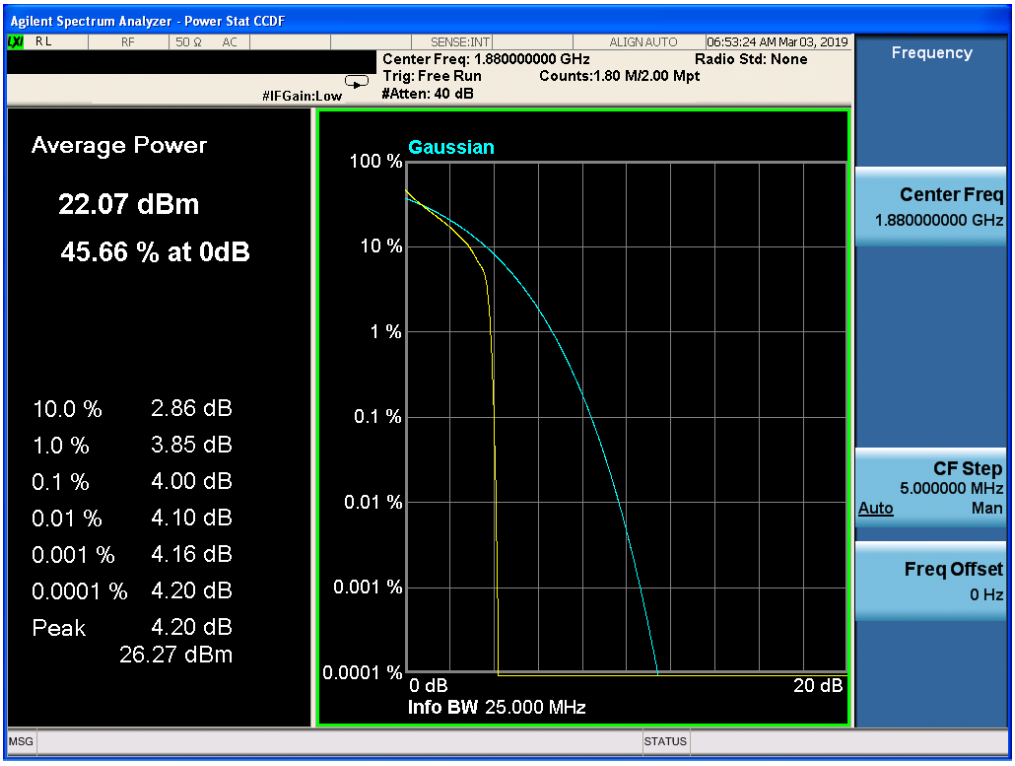
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



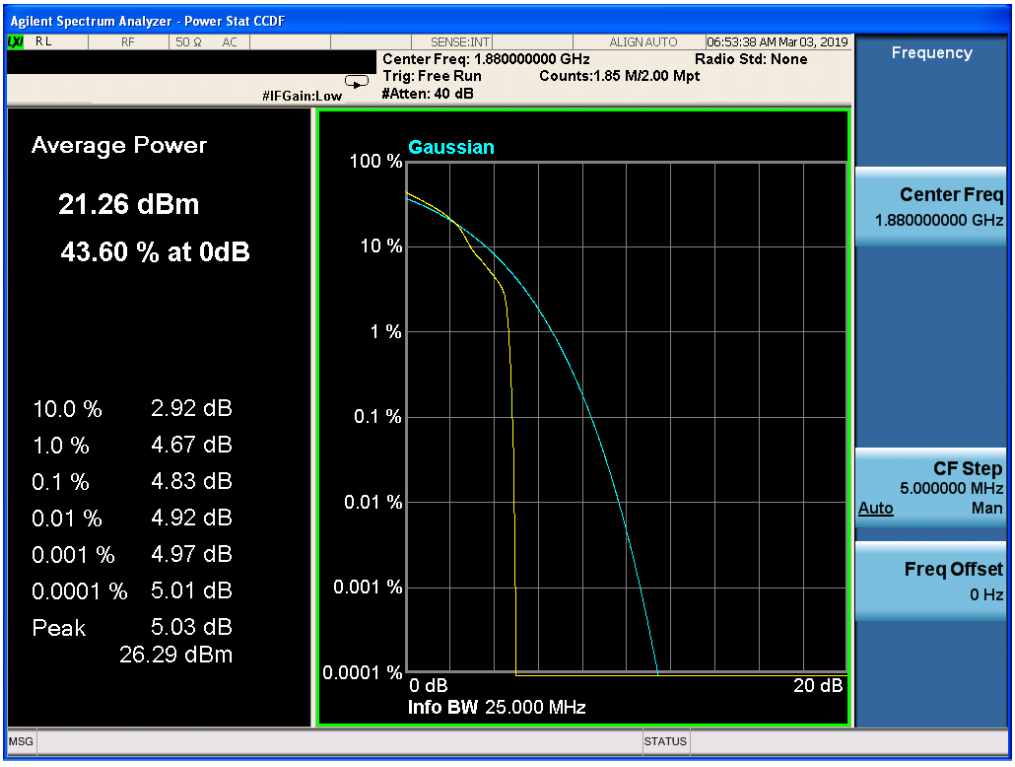

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,16-QAM*



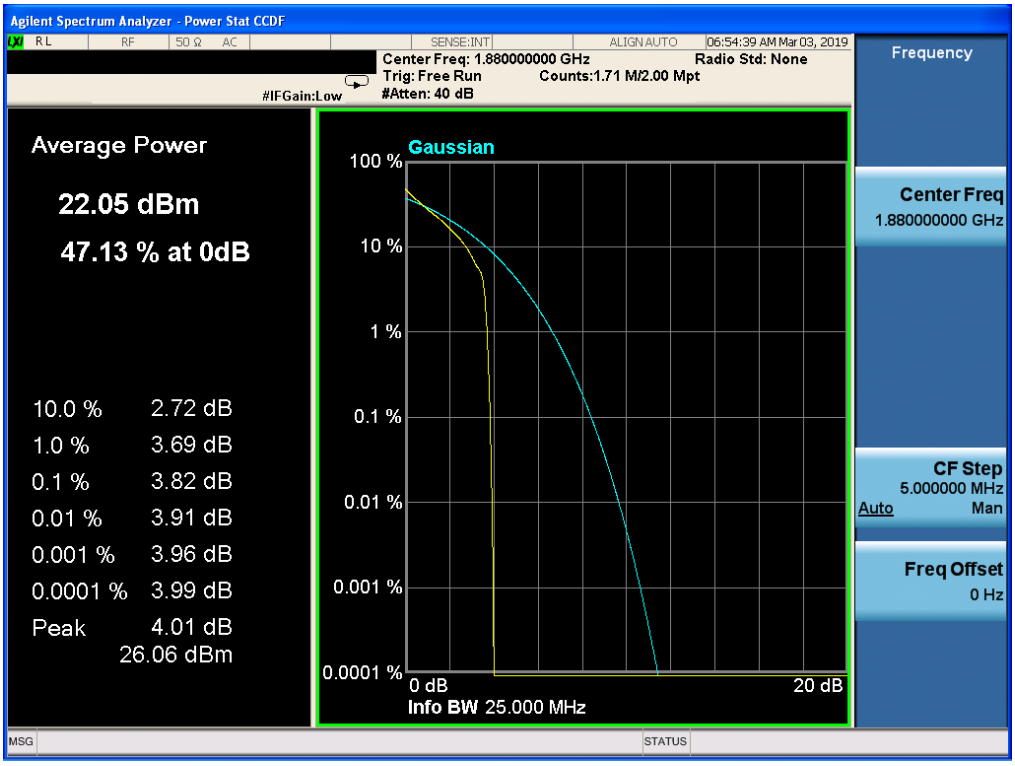
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



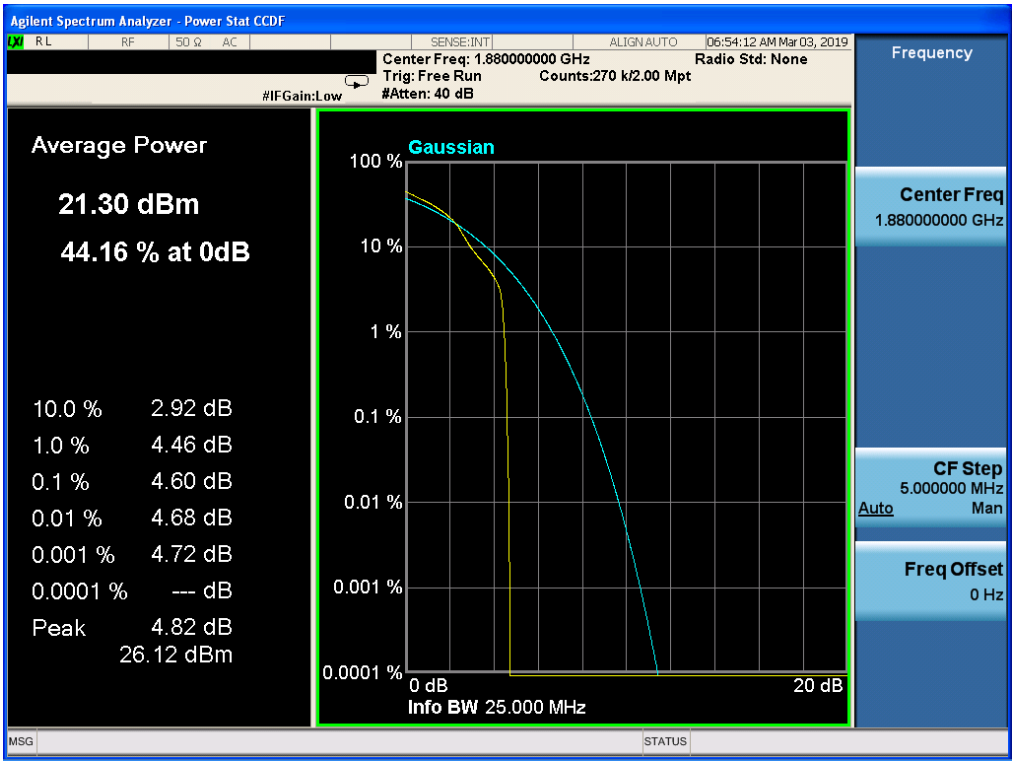

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,16-QAM*



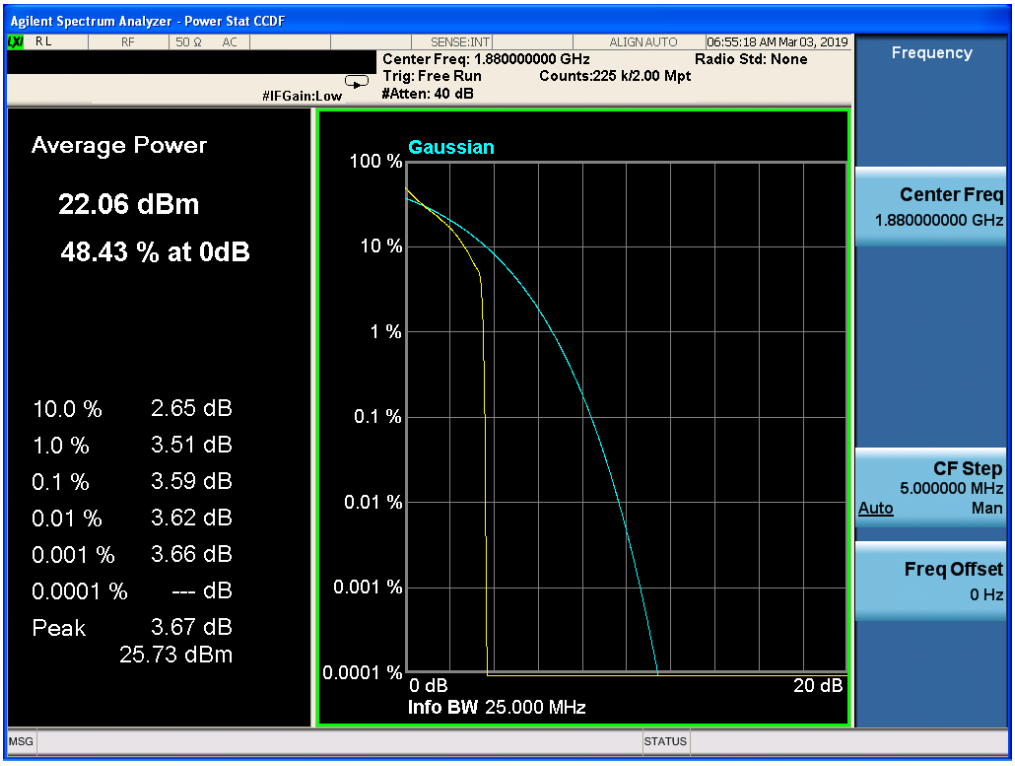
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK*



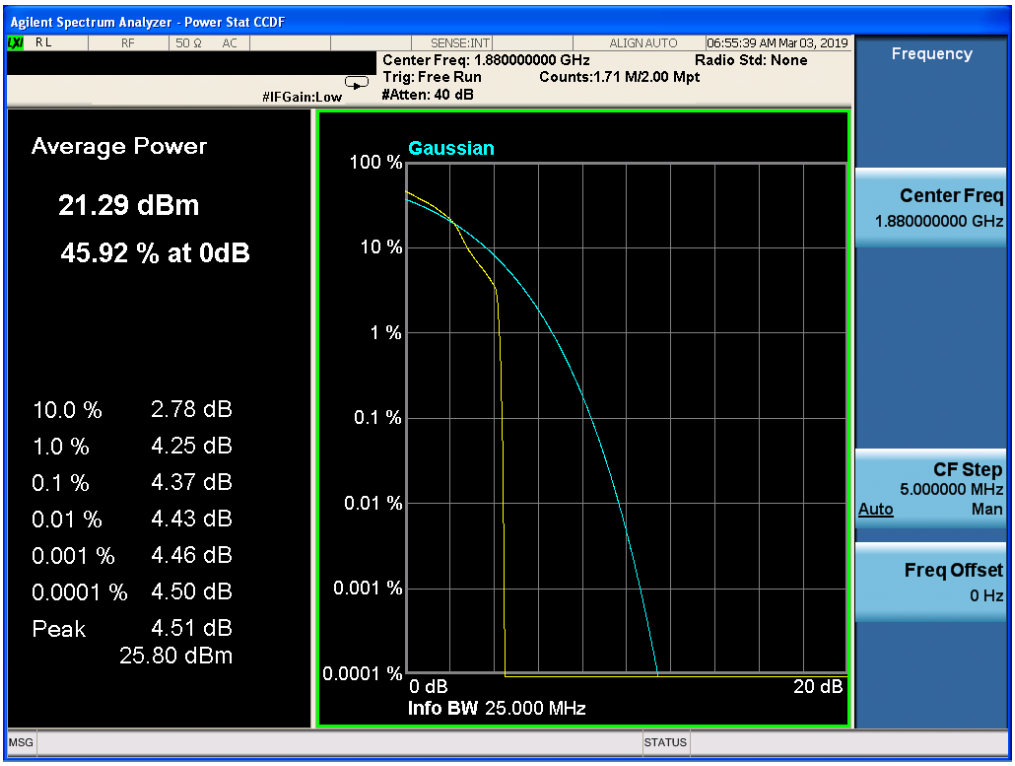

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*



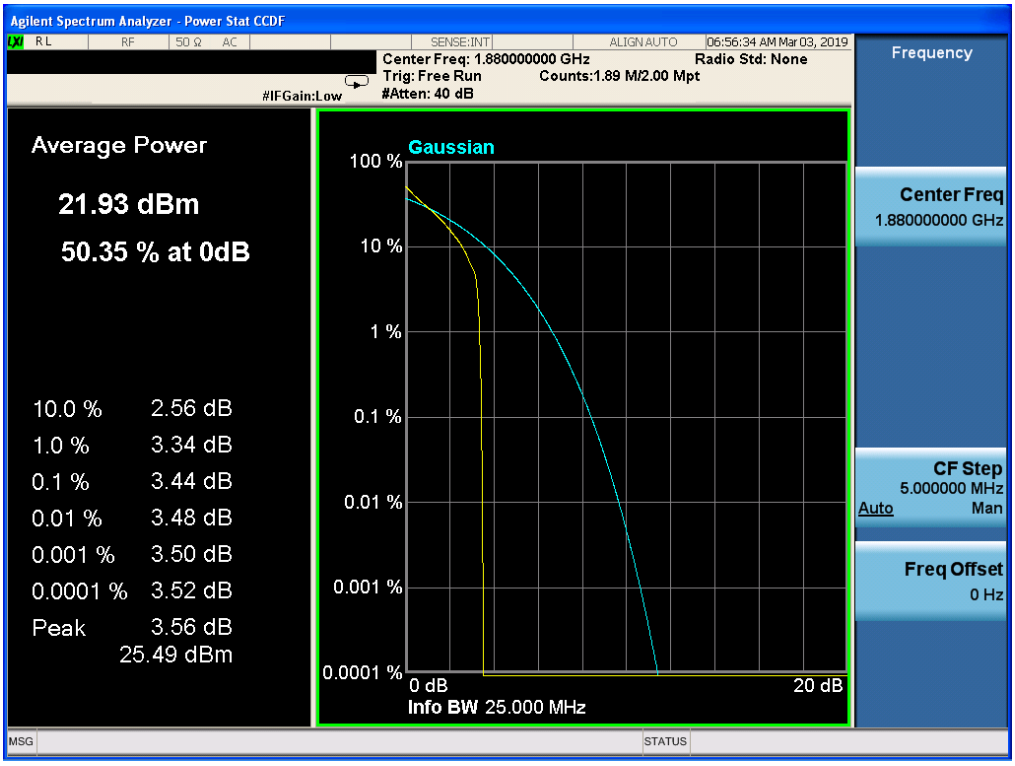
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK*



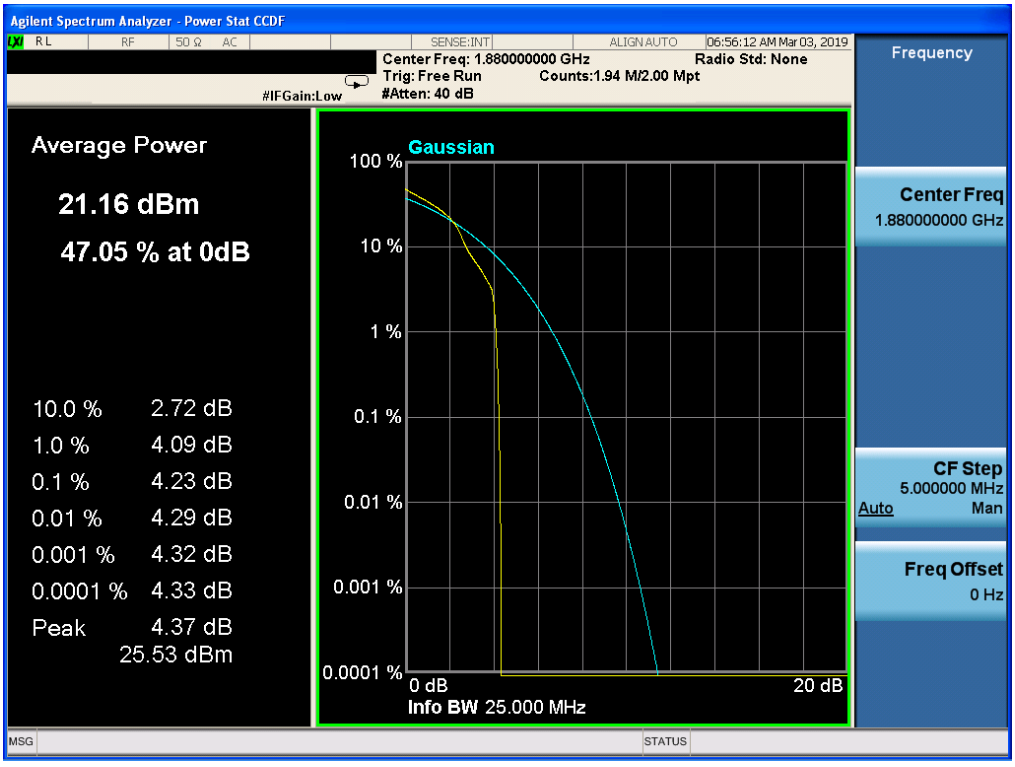

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK*

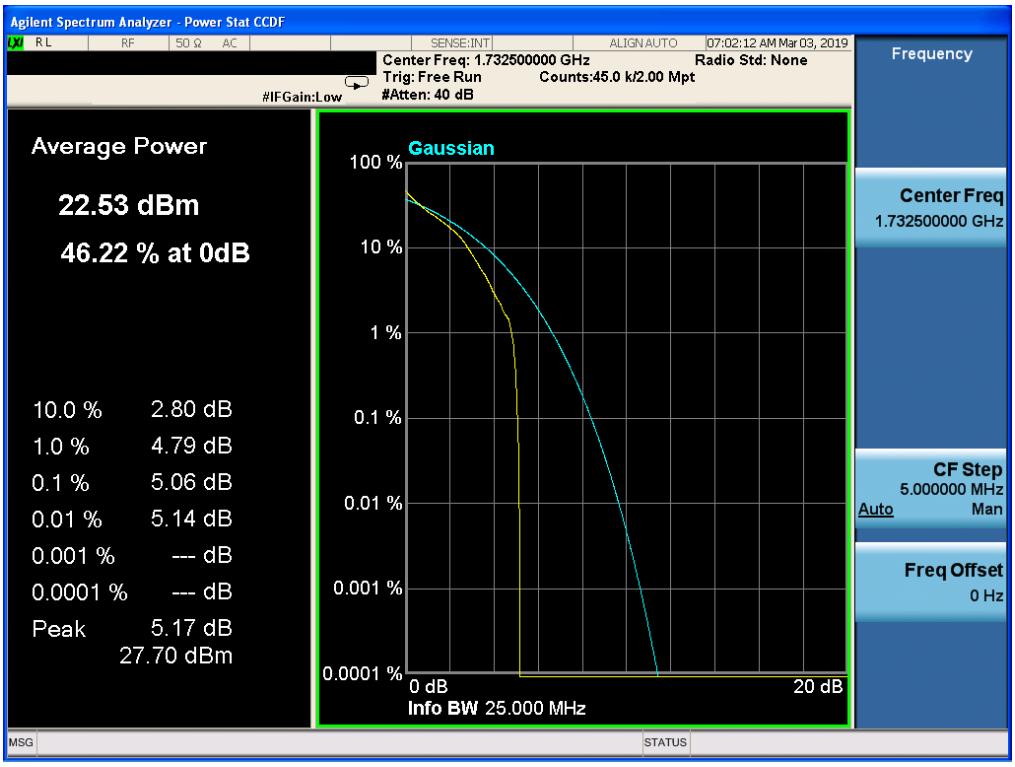



*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,16-QAM*

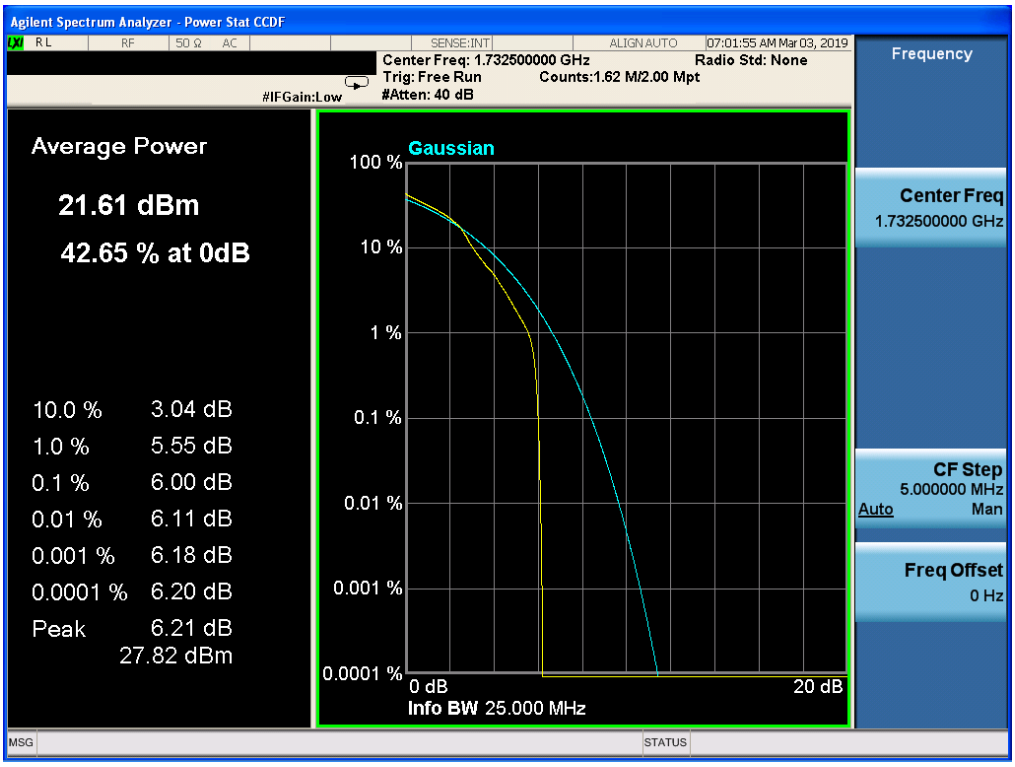


## 11.6 LTE BAND 4

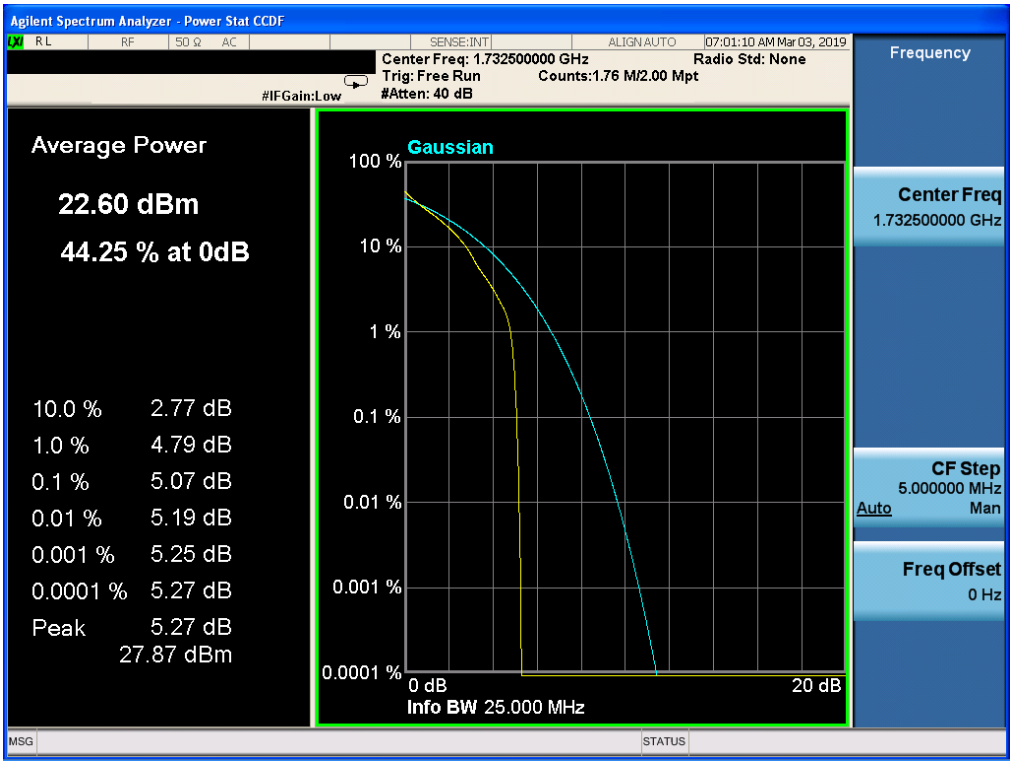
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK*



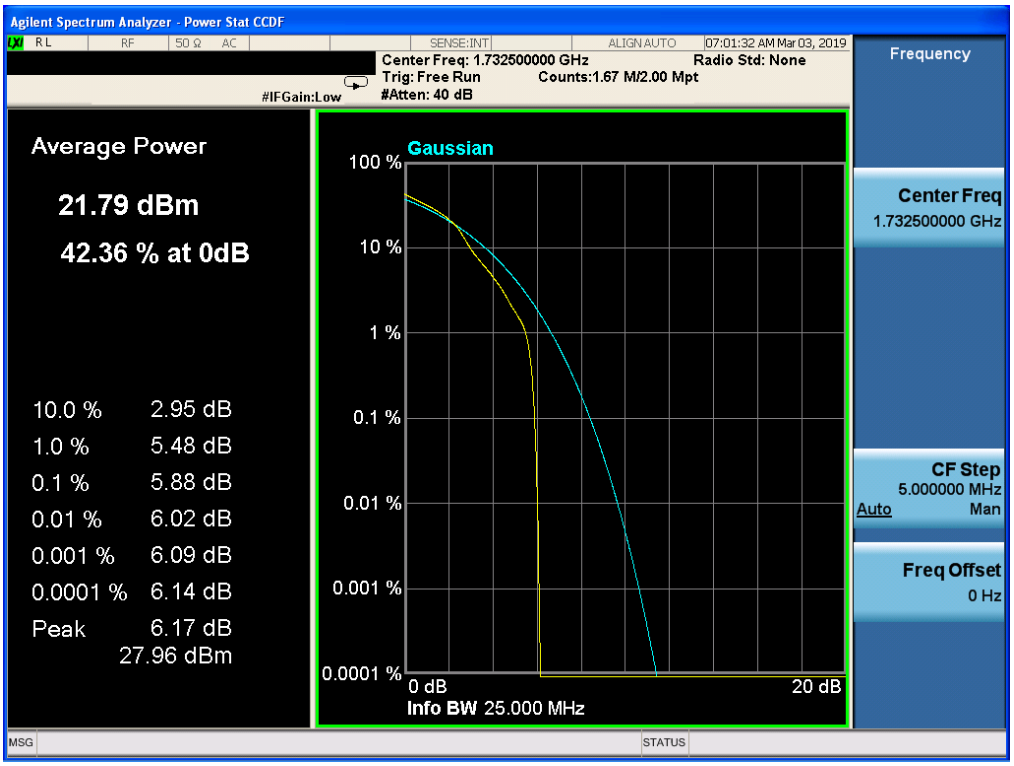

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,16-QAM*



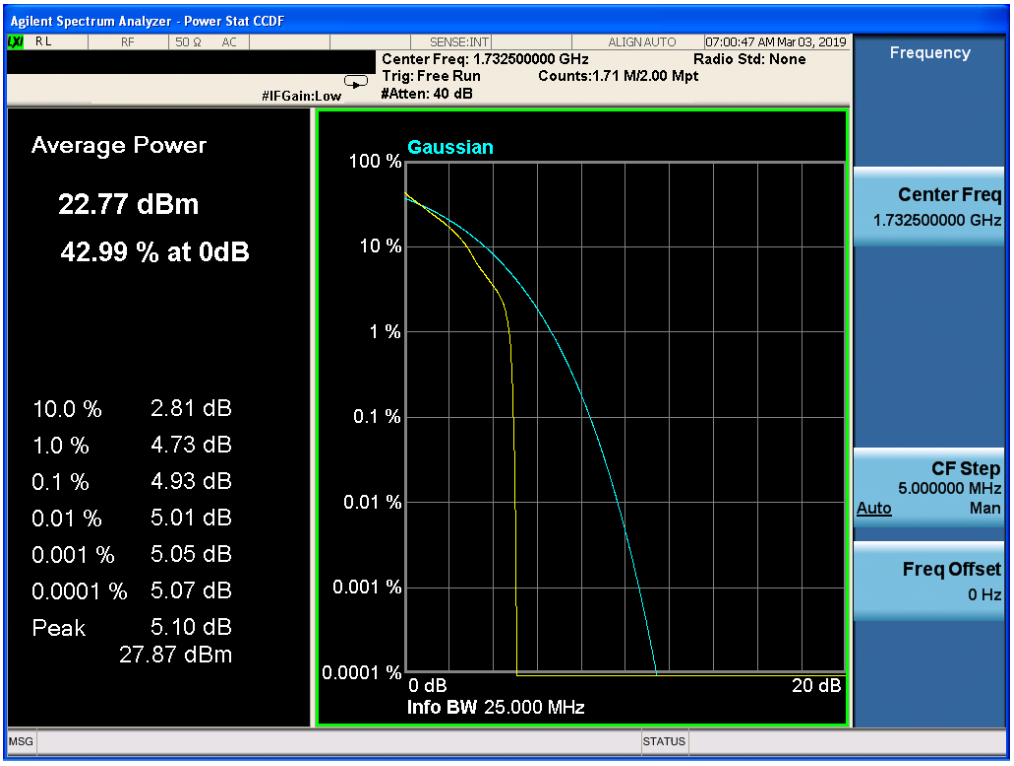
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



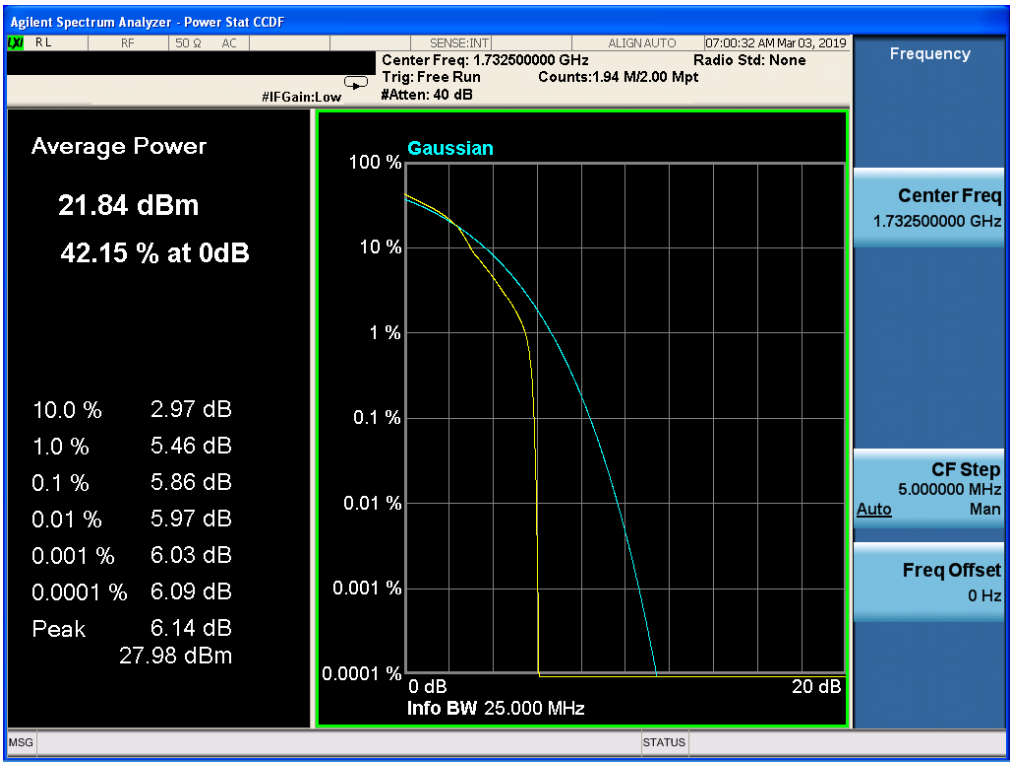

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,16-QAM*



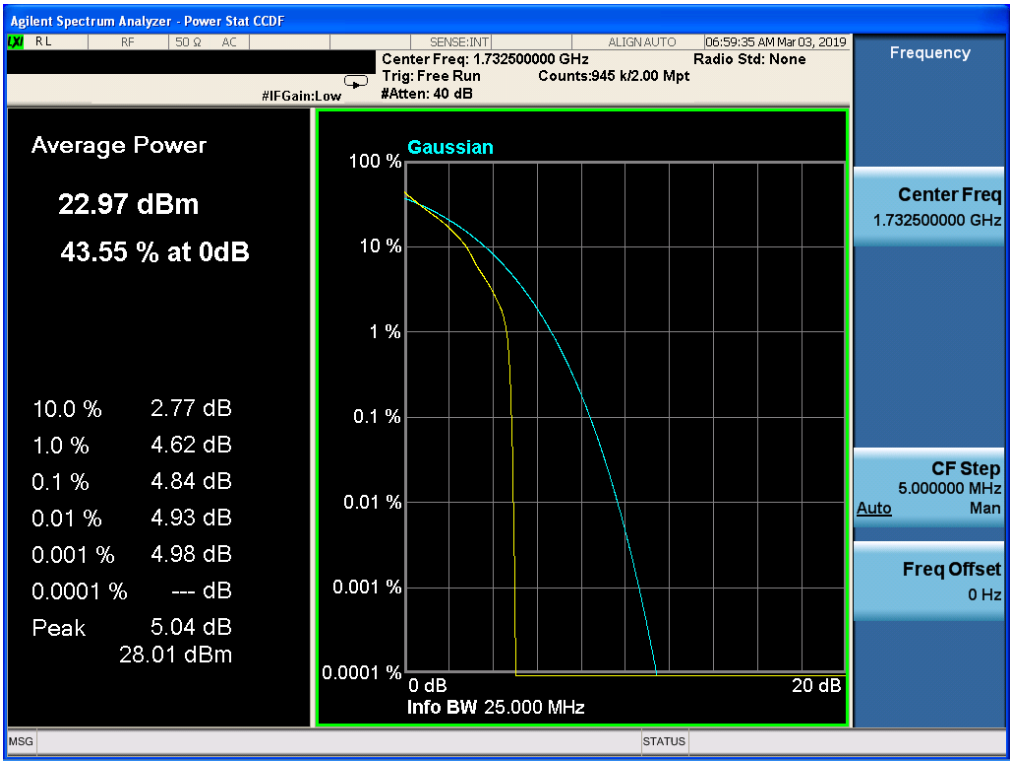
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



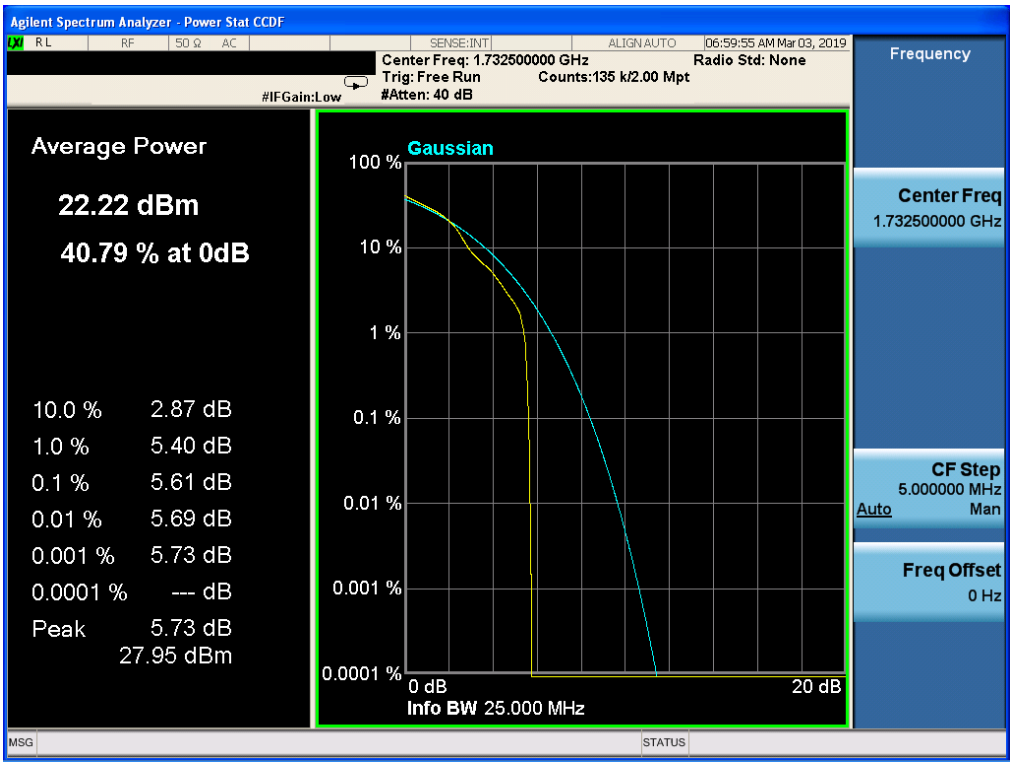

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,16-QAM*



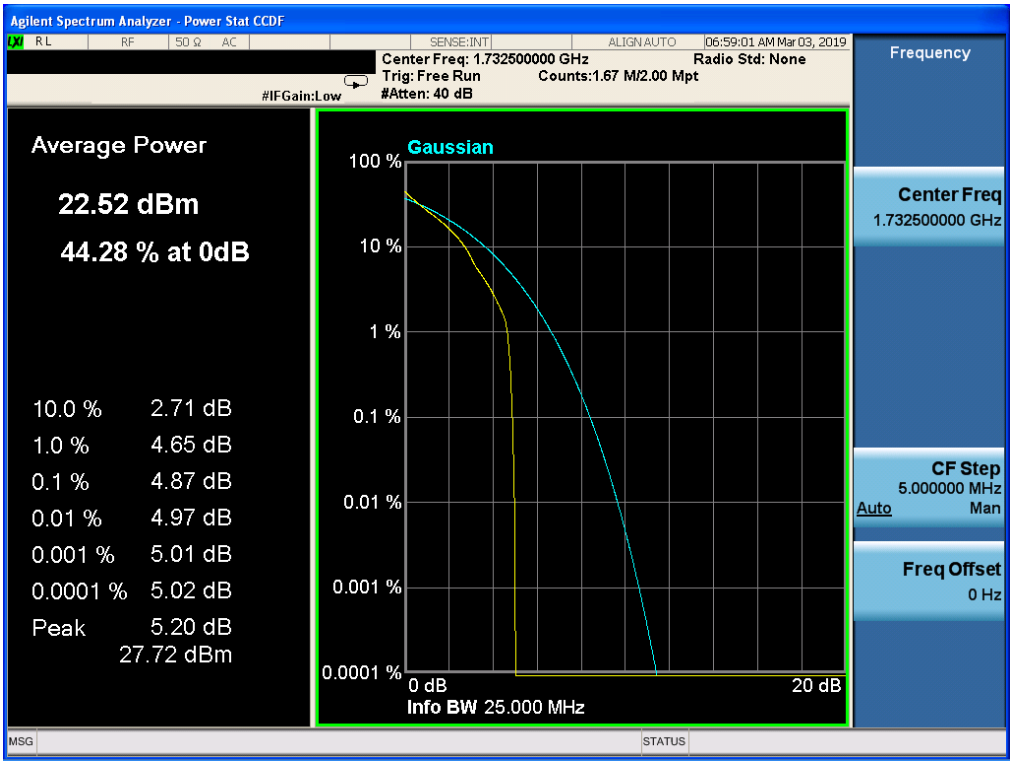
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK*



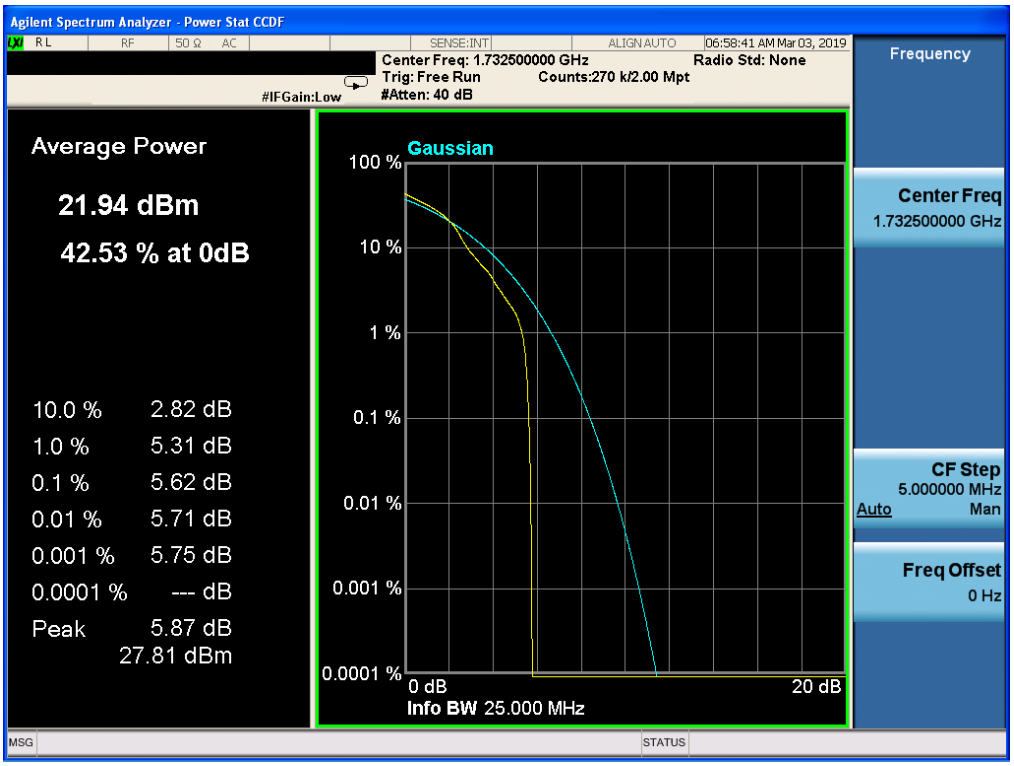

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*



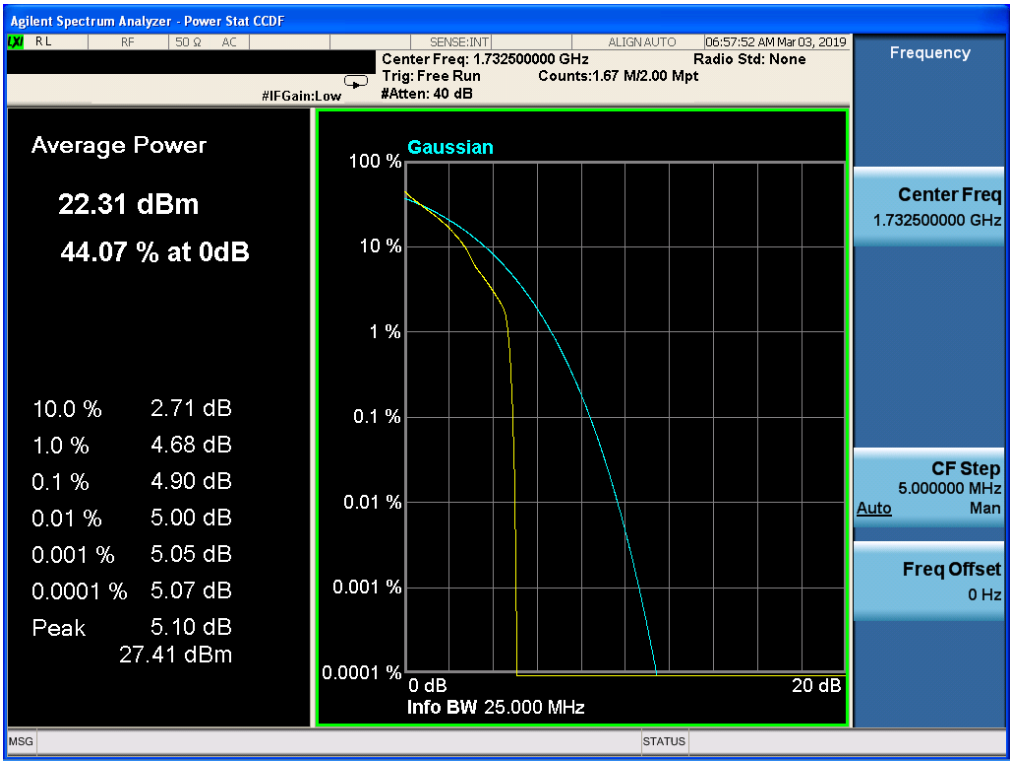
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK*



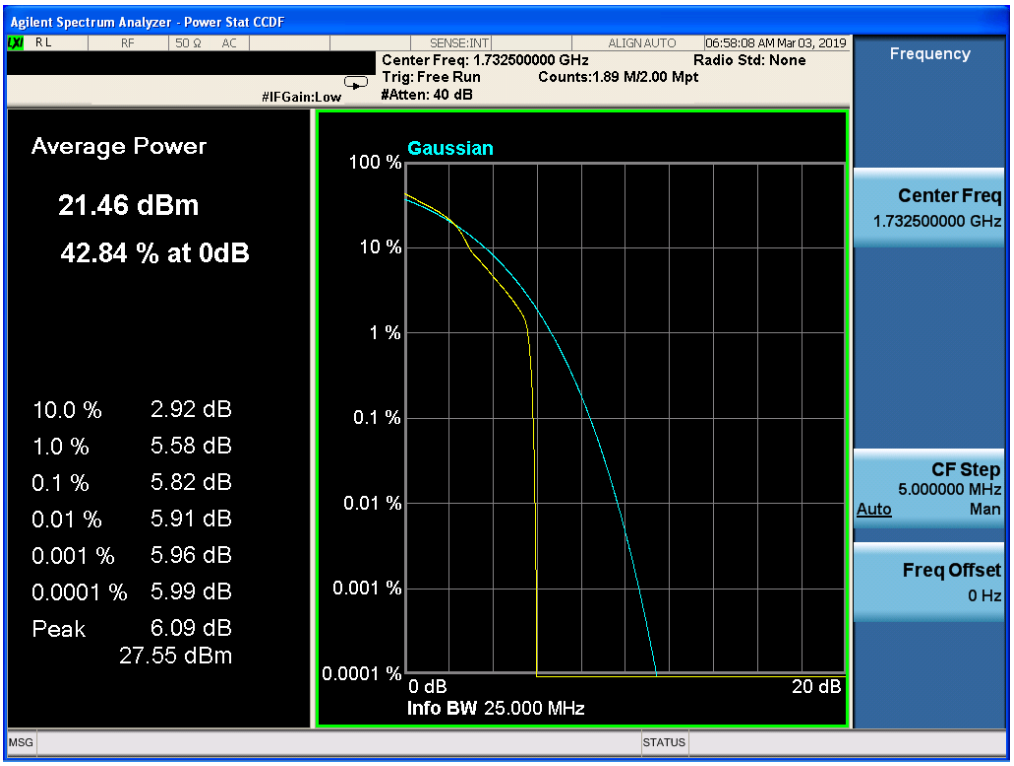

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,QPSK*

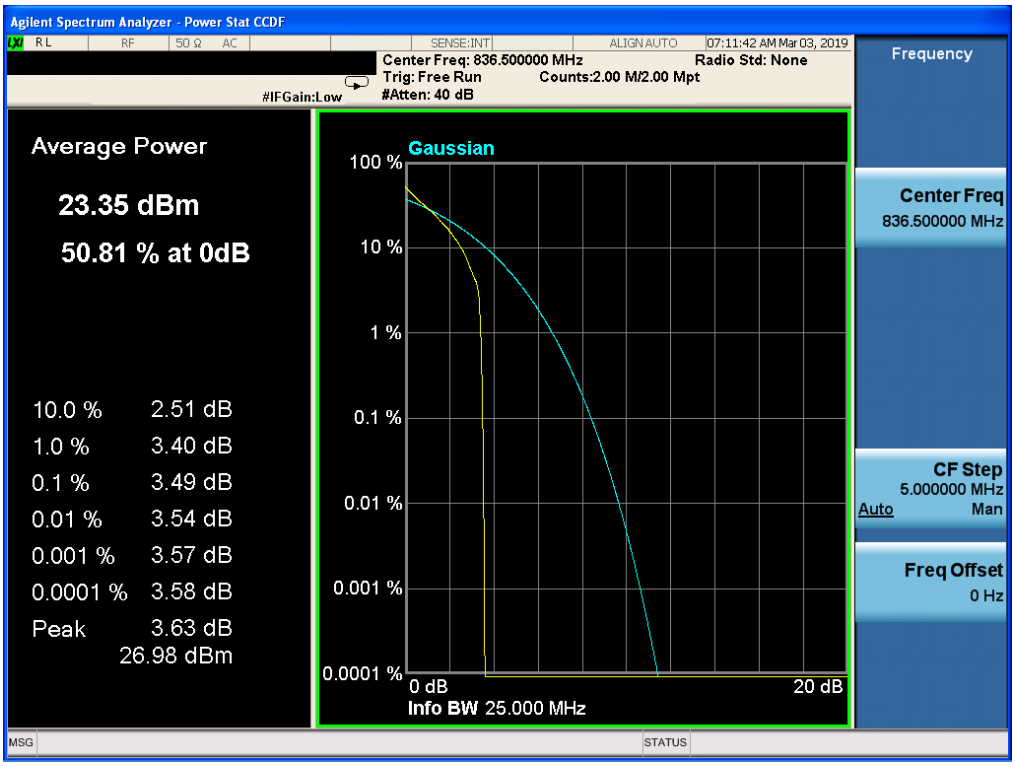



*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,16-QAM*

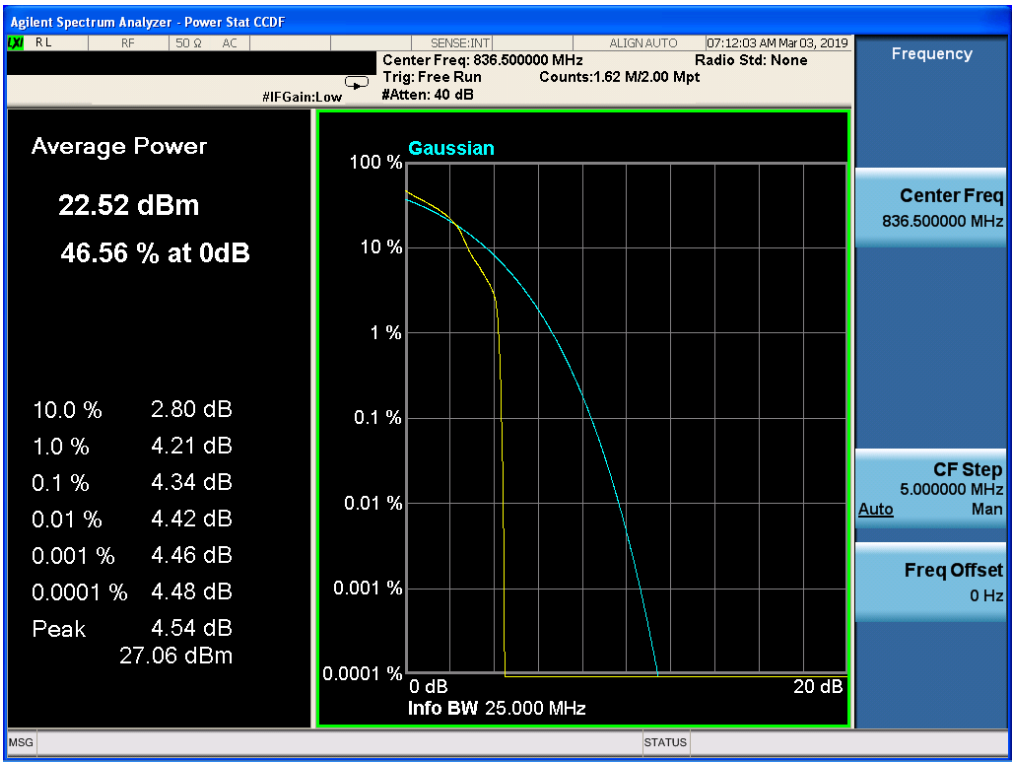


## 11.7 LTE BAND 5

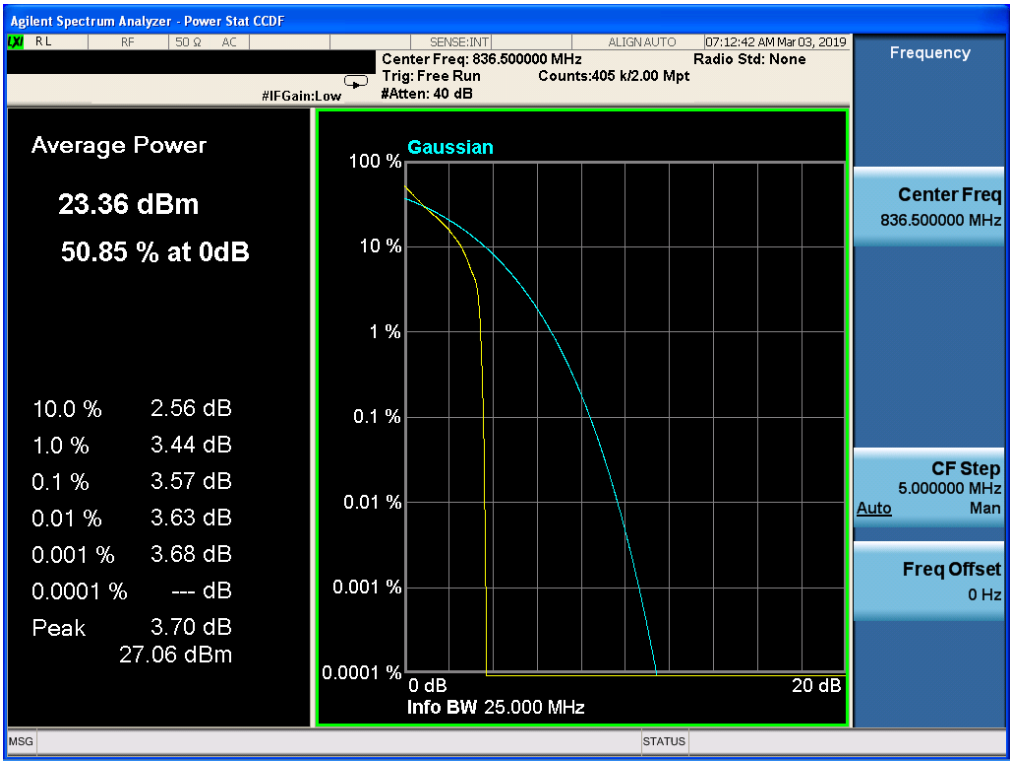
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK*



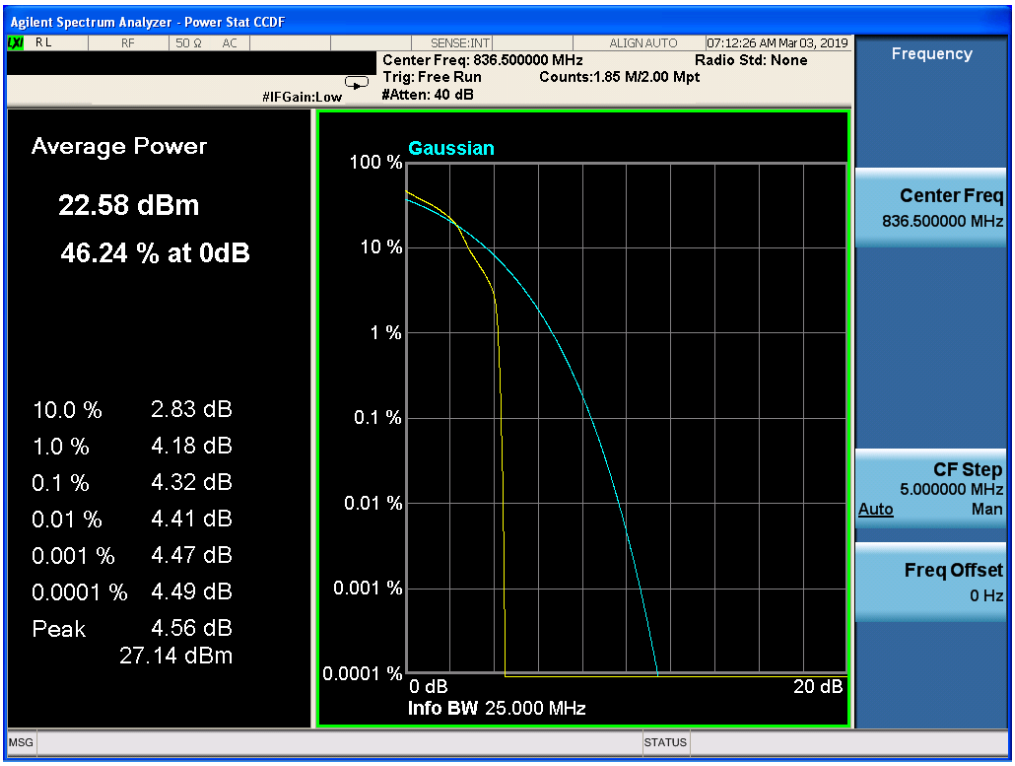

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 1.4,NO. RB 1,RB POS. Low,16-QAM*



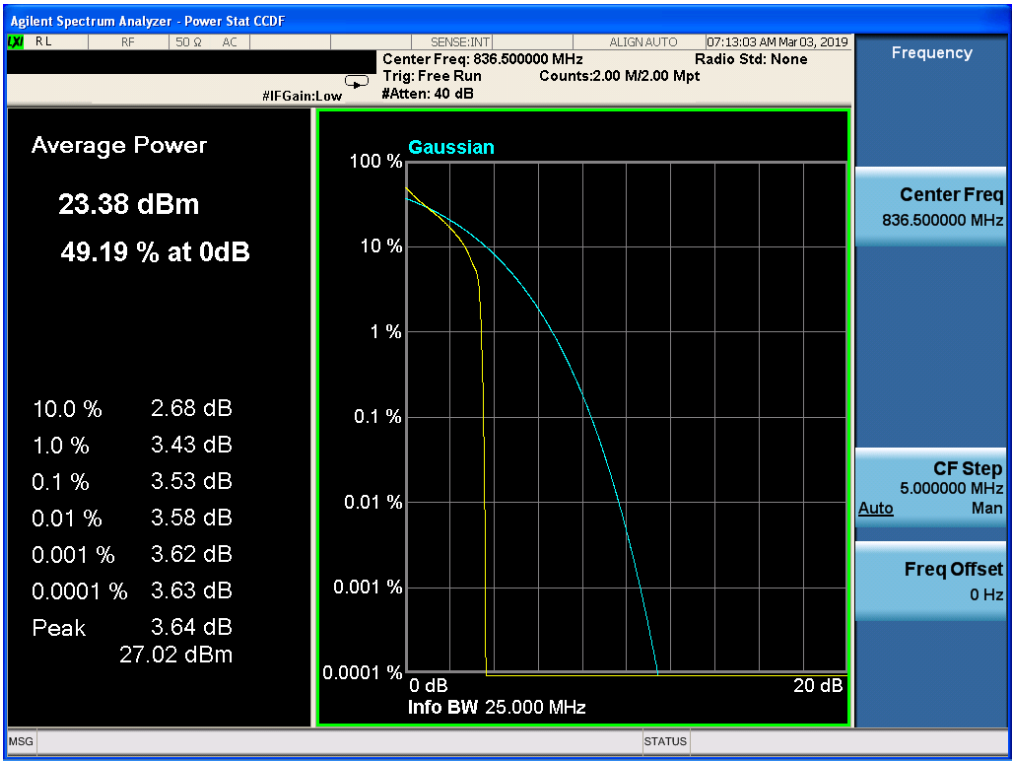
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



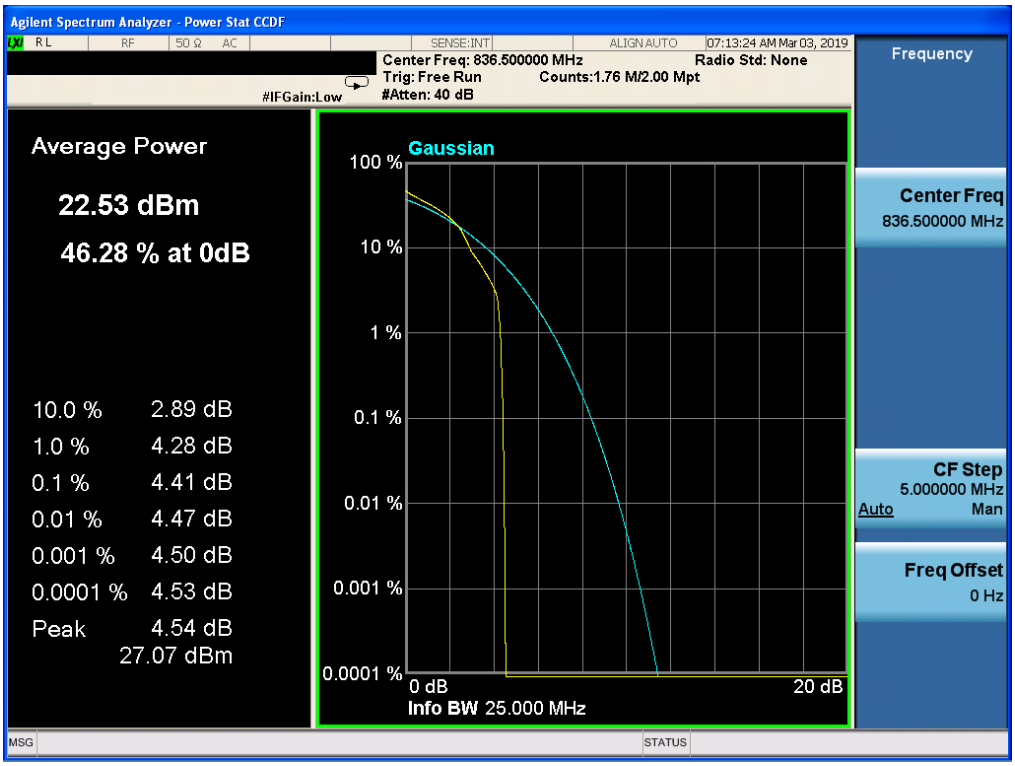

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 3.0,NO. RB 1,RB POS. Low,16-QAM*



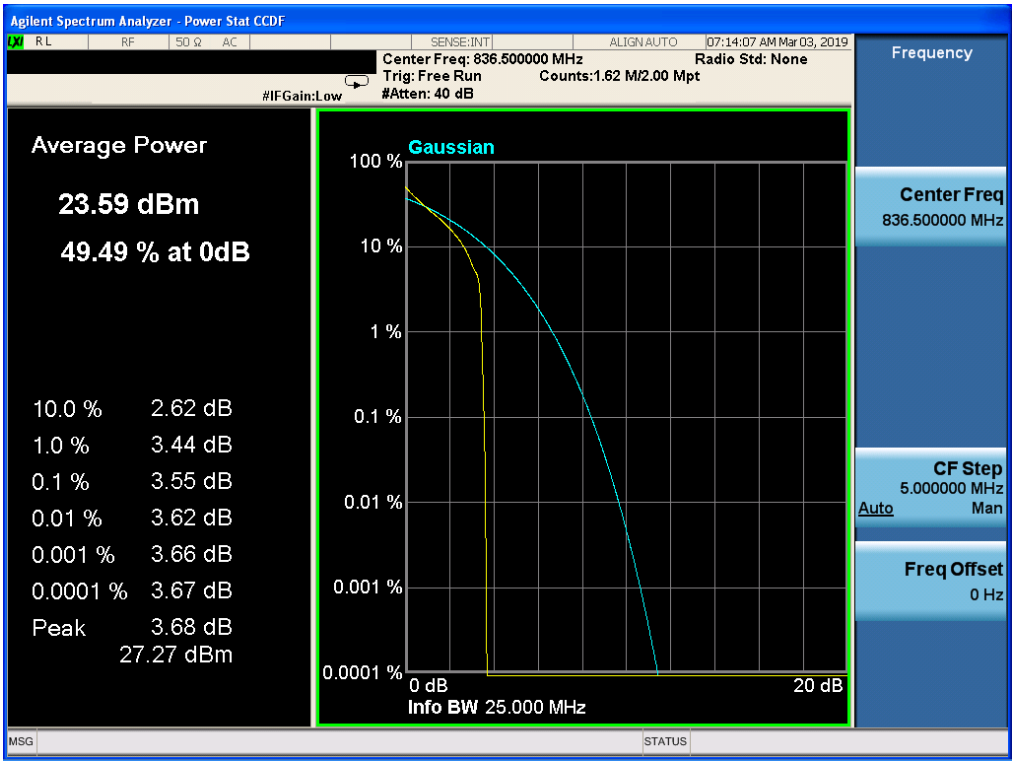
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



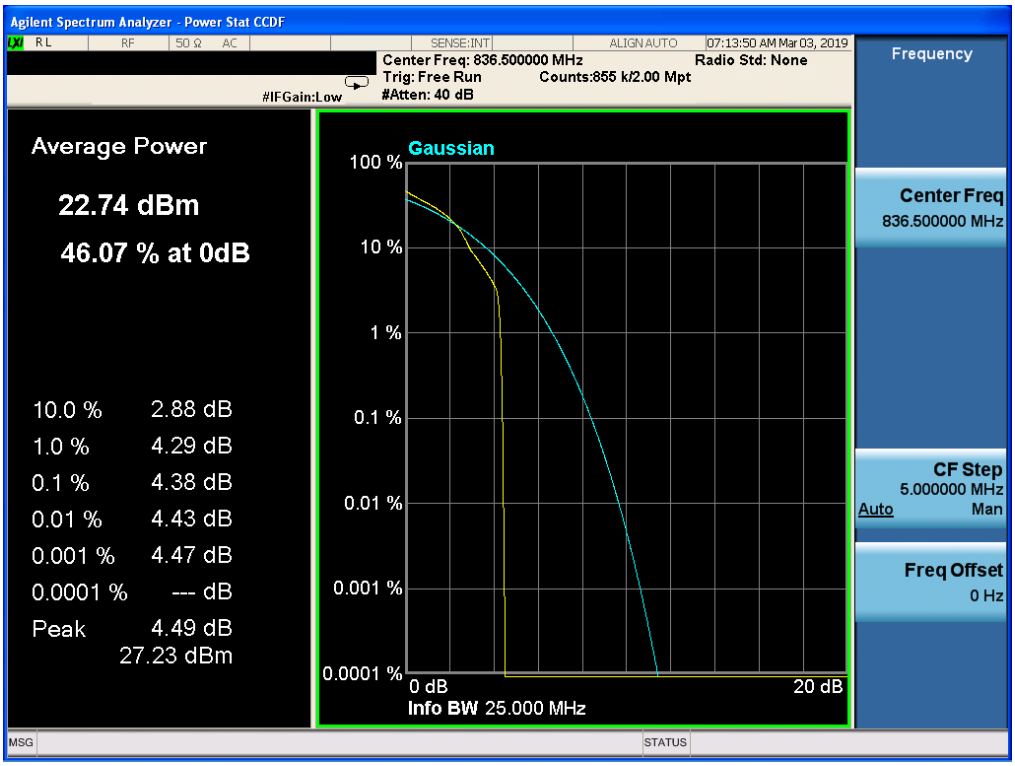

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 5.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 5,UL Channel 20525,UL Frequency 836.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK*

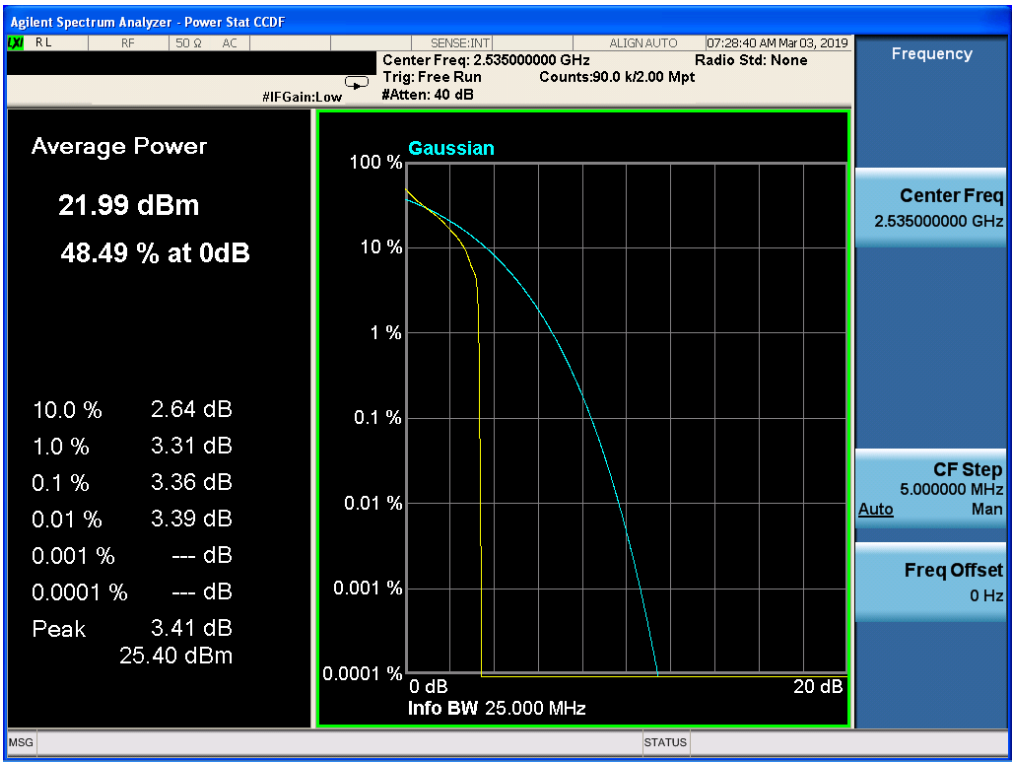



*Band 5,UL Channel 20525,UL Frequency 836.5,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*

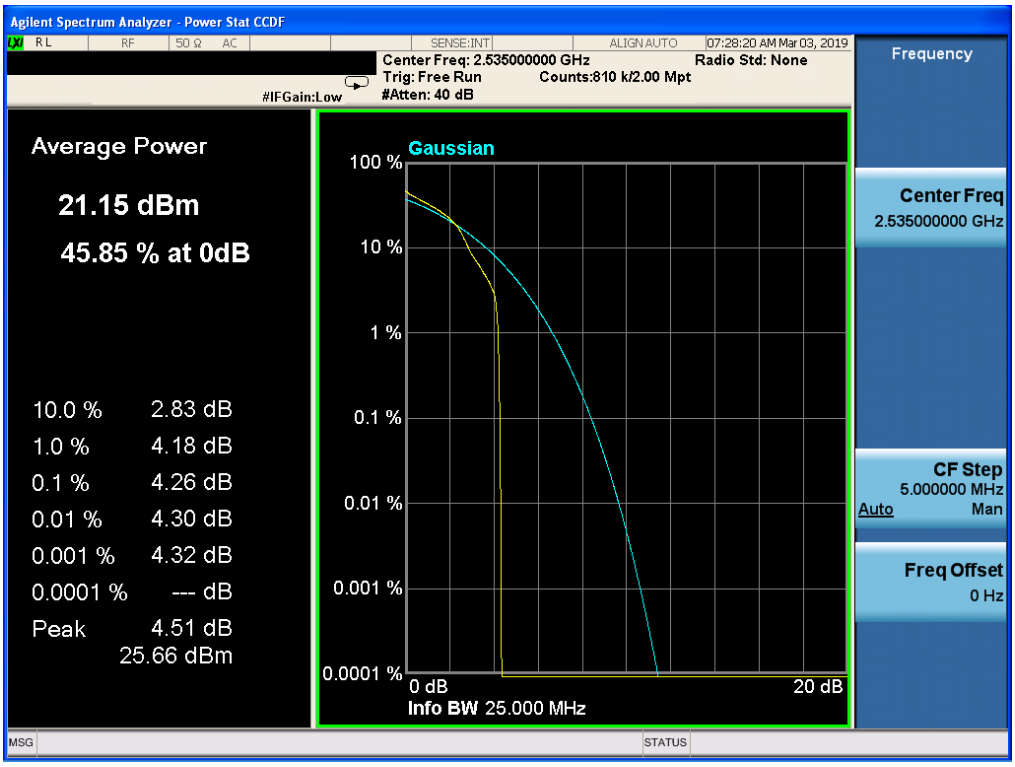


## 11.8 LTE BAND 7

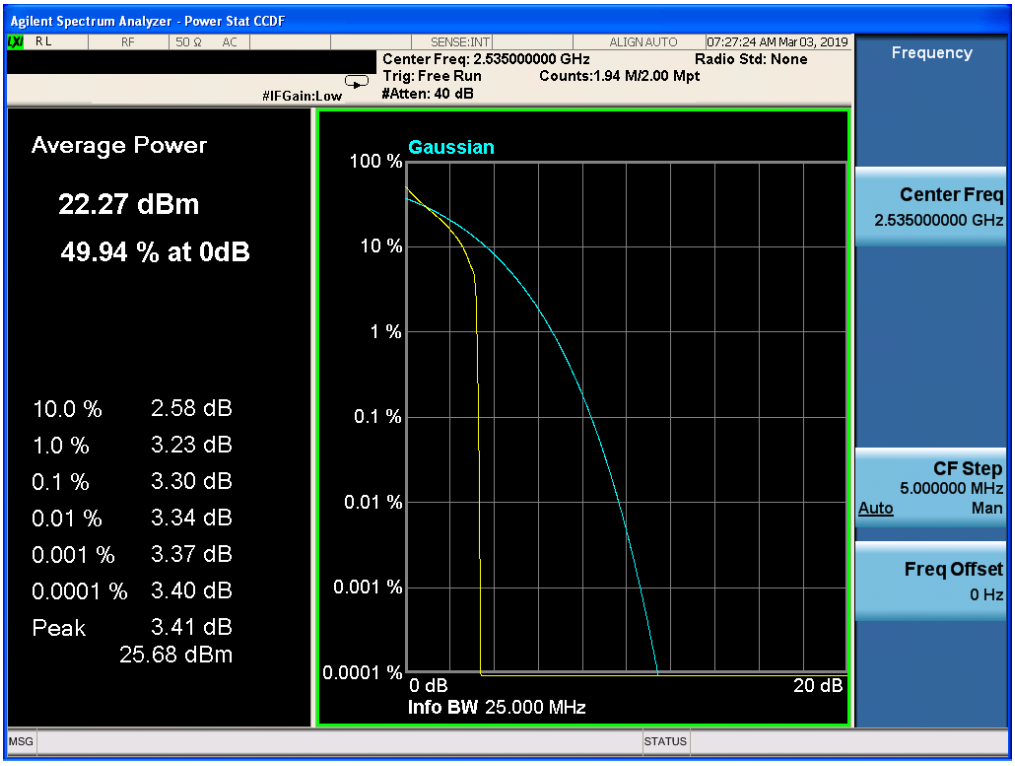
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



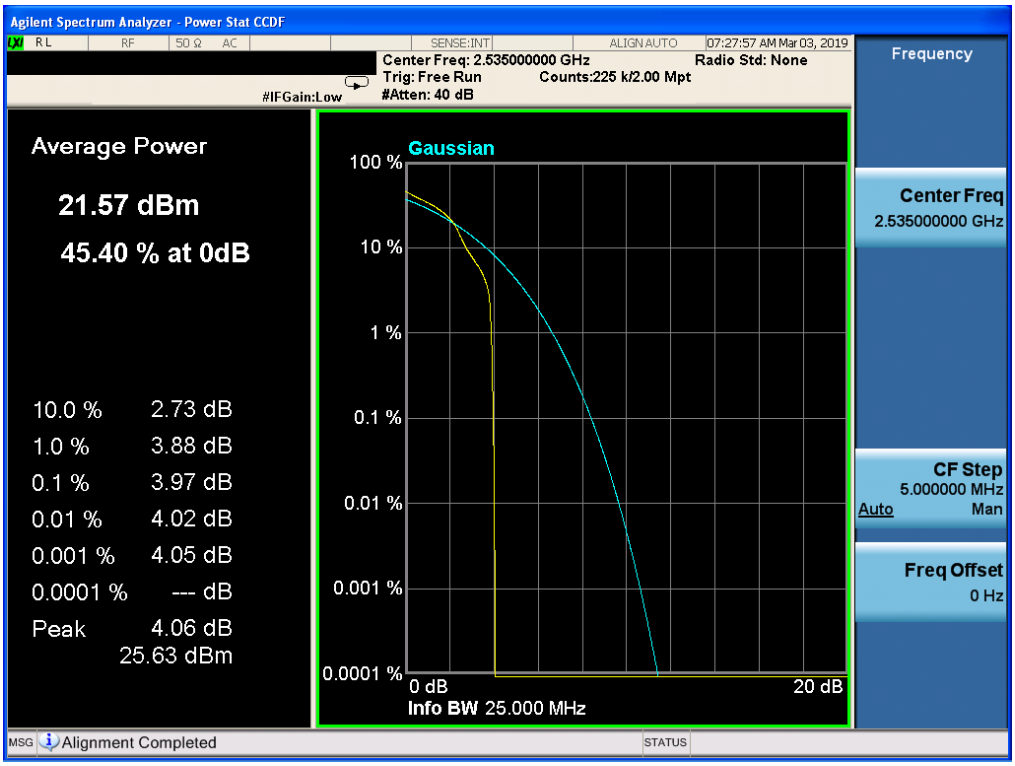

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 25,RB POS. Low,16-QAM*



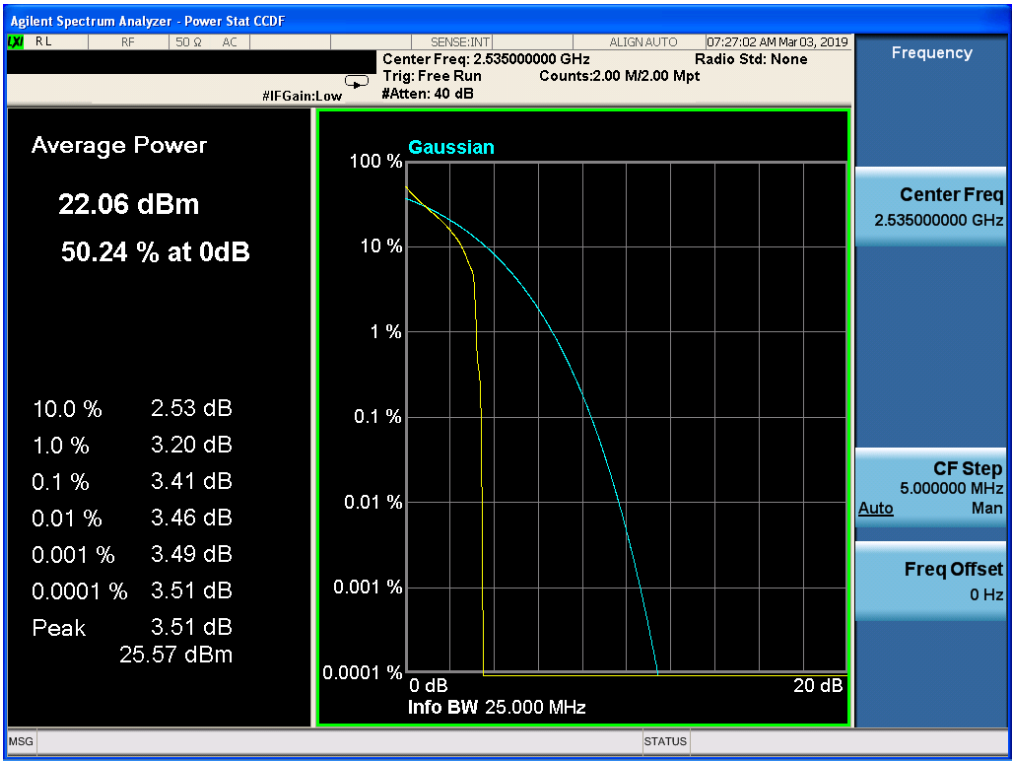
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



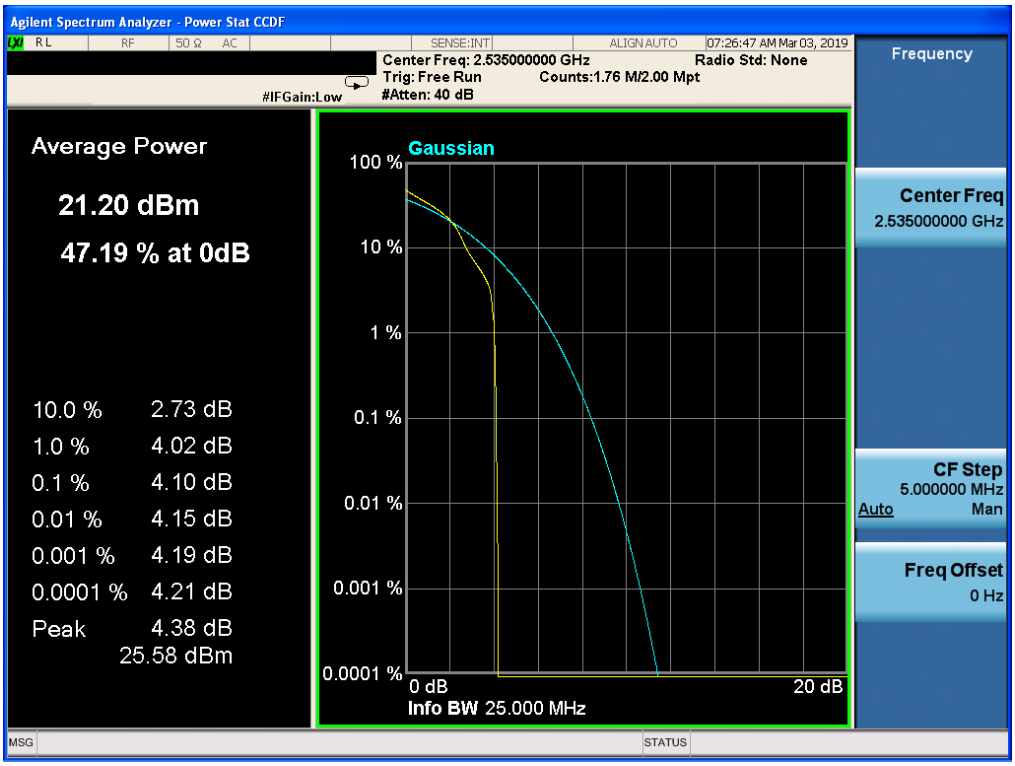

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*



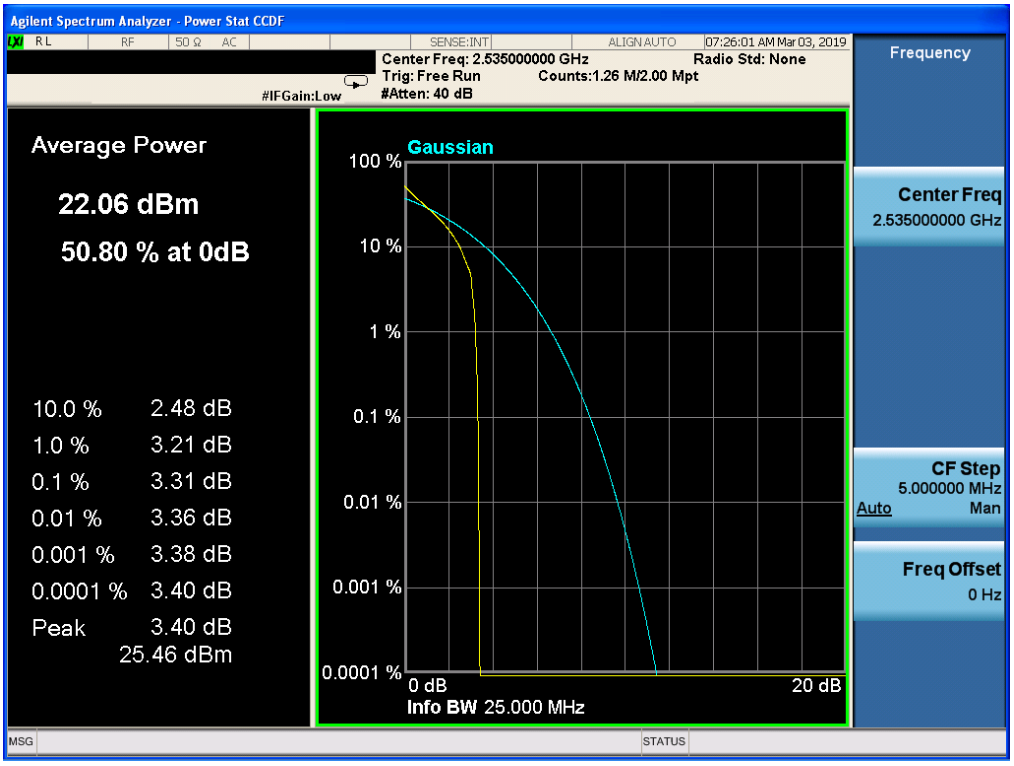
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK*



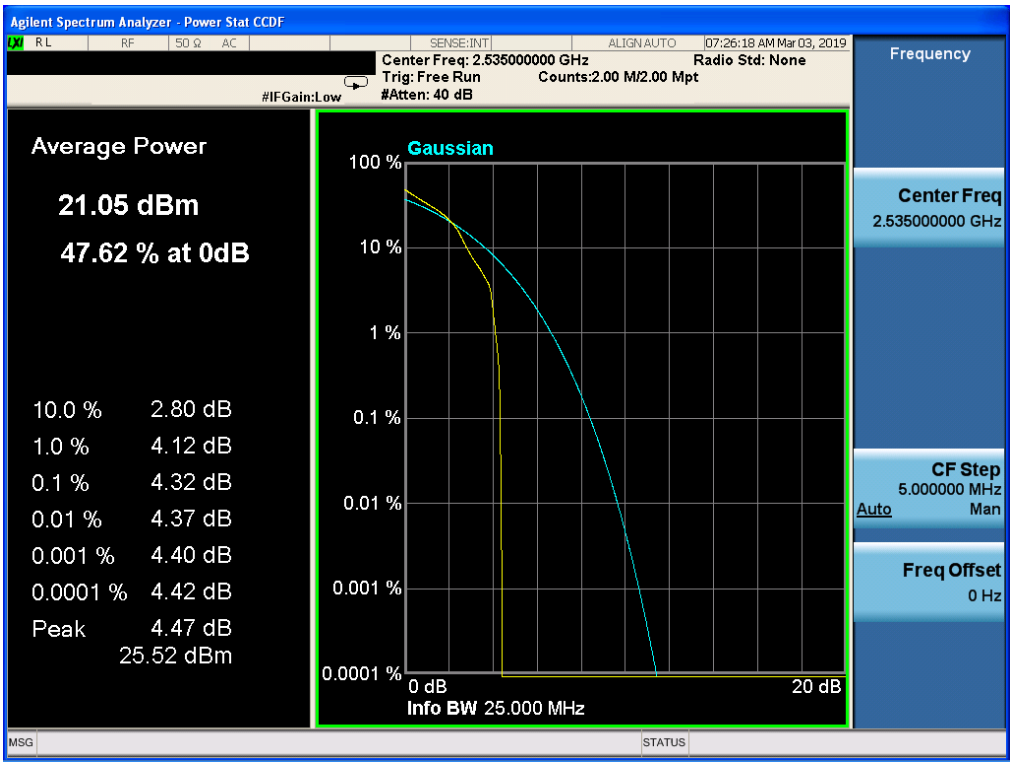

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK*

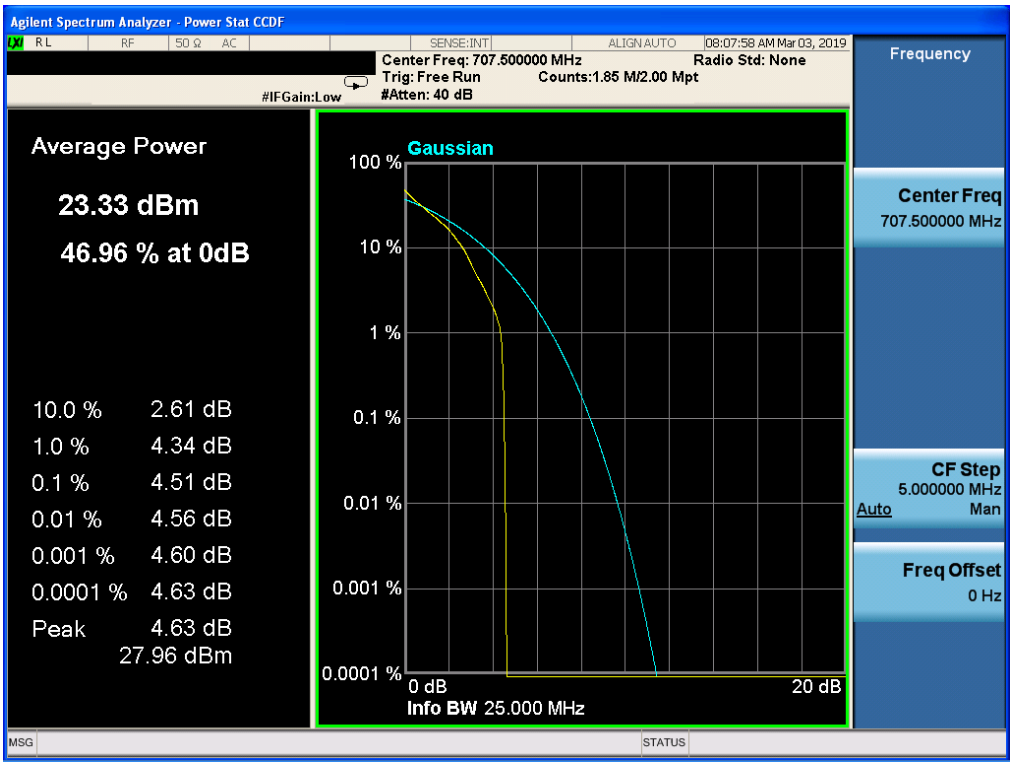



*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 1,RB POS. Low,16-QAM*

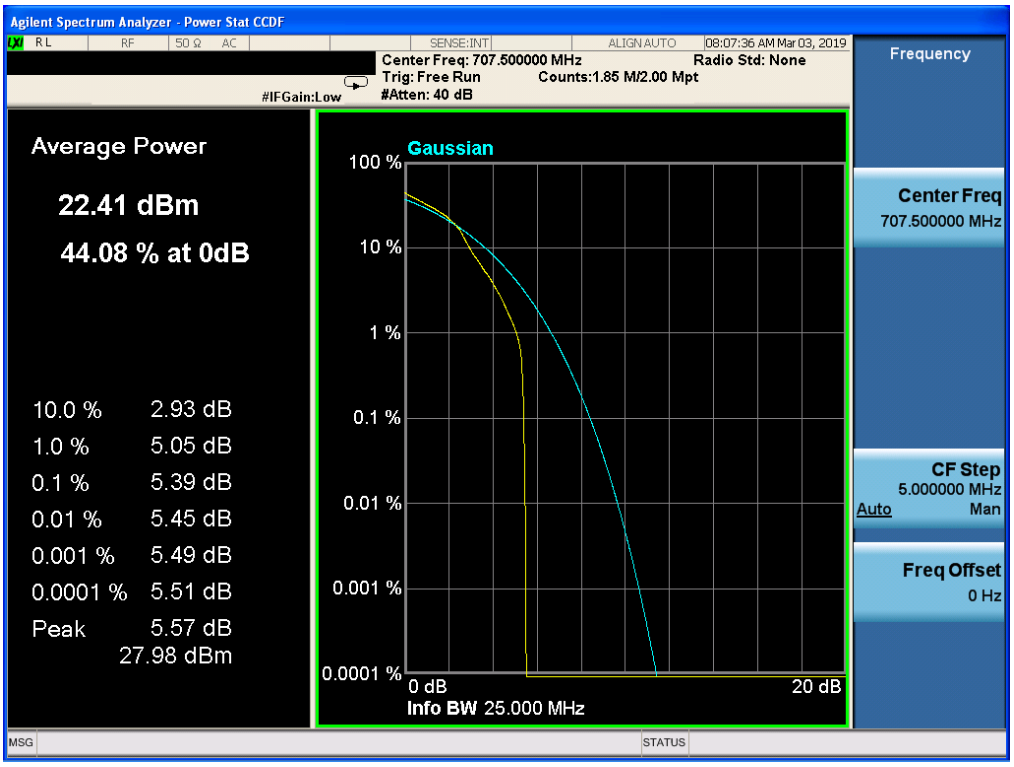


## 11.9 LTE BAND 12

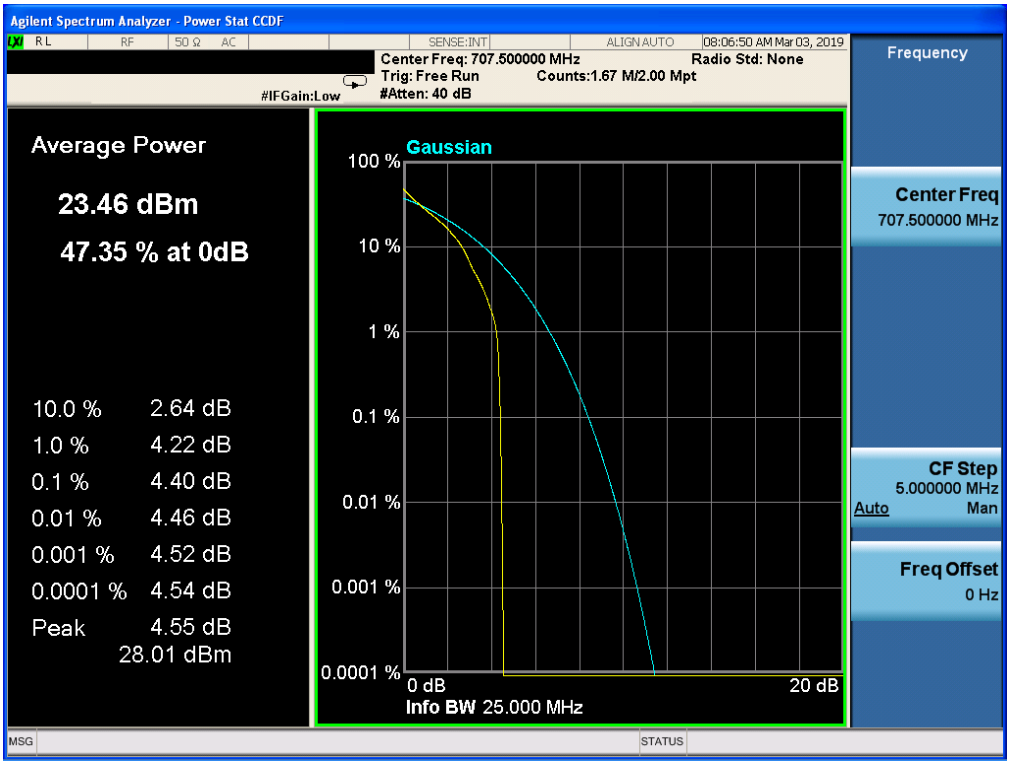
*Band 12,UL Channel 23095,UL Frequency 707.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK*



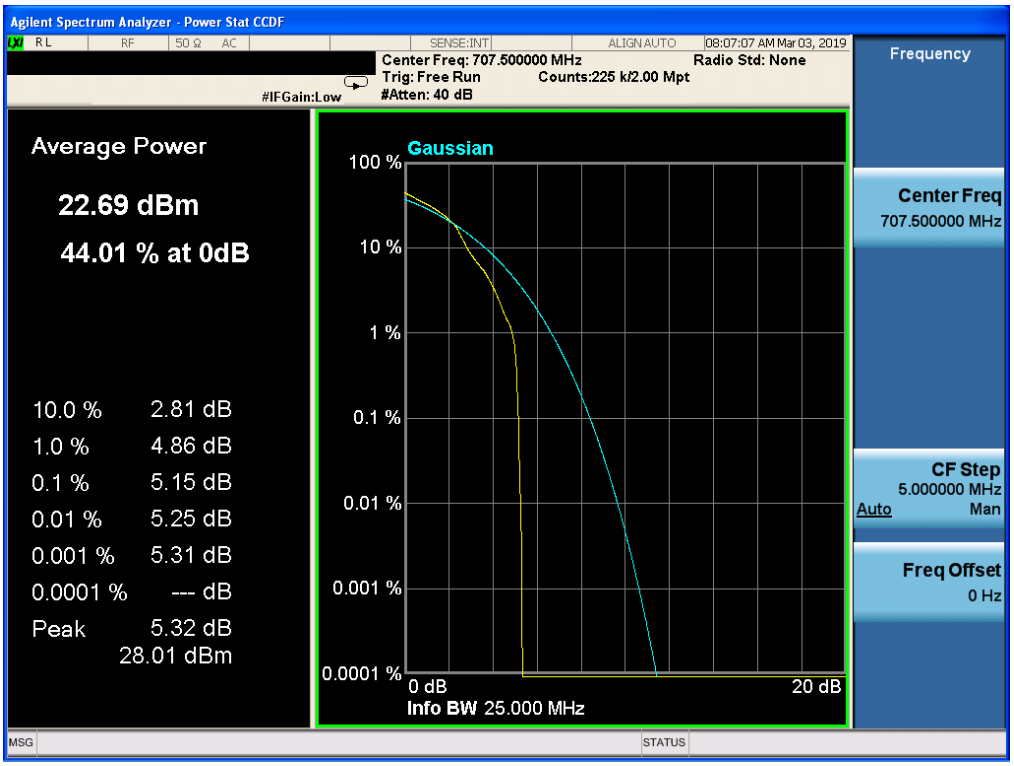

*Band 12,UL Channel 23095,UL Frequency 707.5,BW 1.4,NO. RB 1,RB POS. Low,16-QAM*



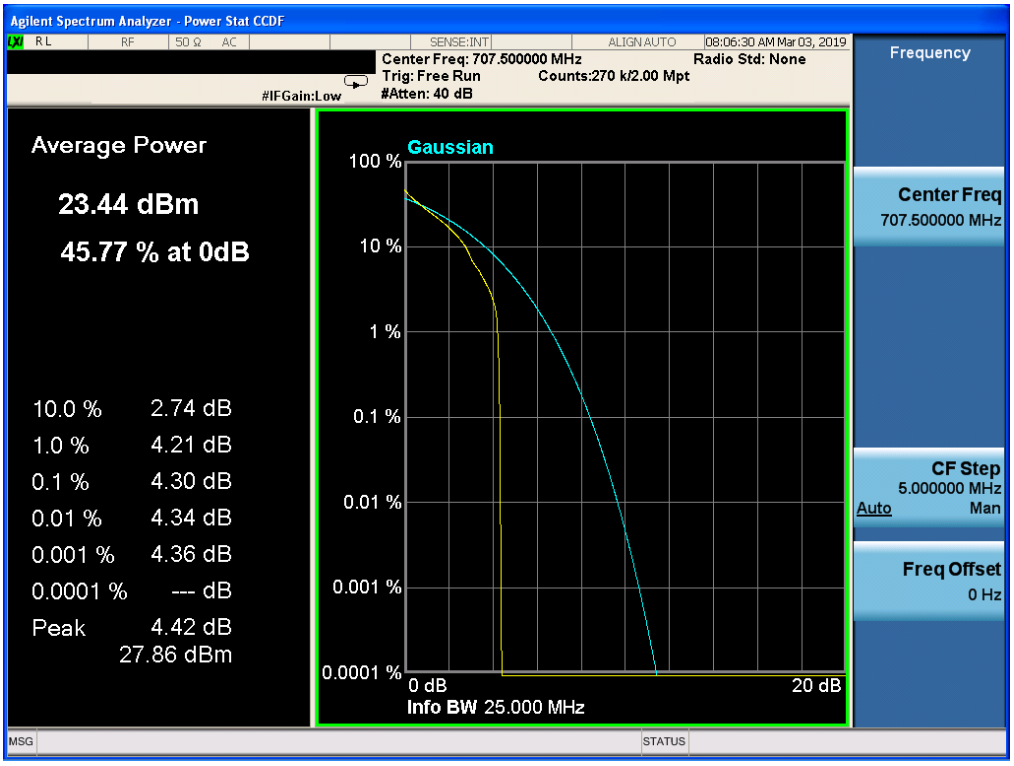
*Band 12,UL Channel 23095,UL Frequency 707.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



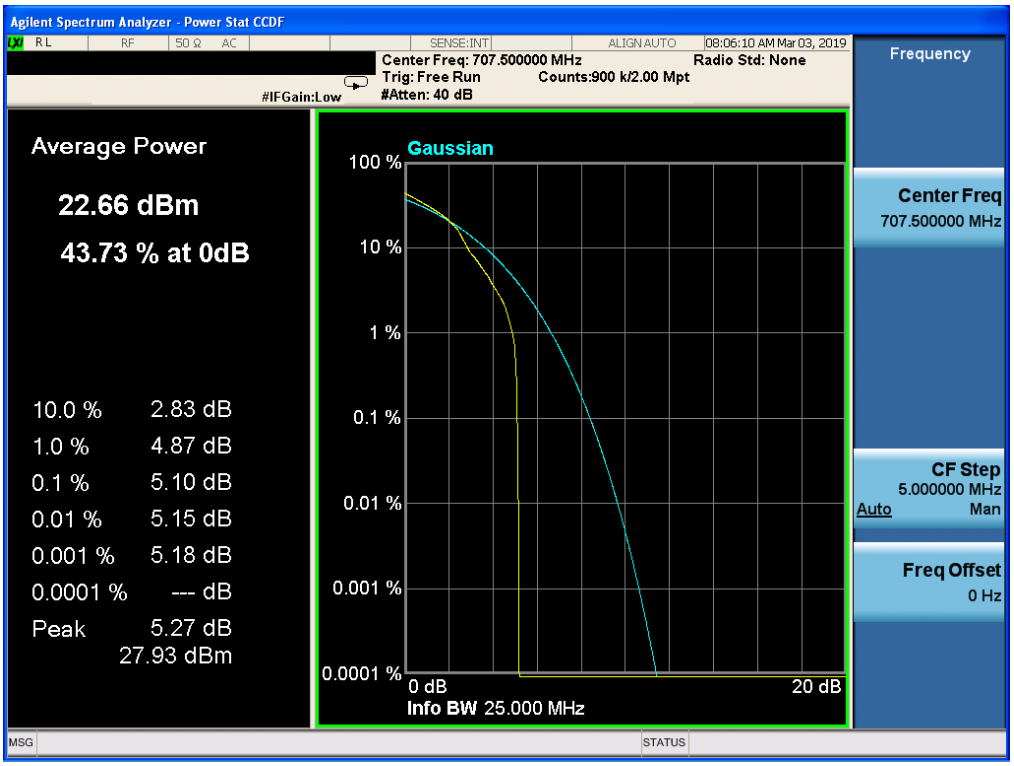

*Band 12,UL Channel 23095,UL Frequency 707.5,BW 3.0,NO. RB 1,RB POS. Low,16-QAM*



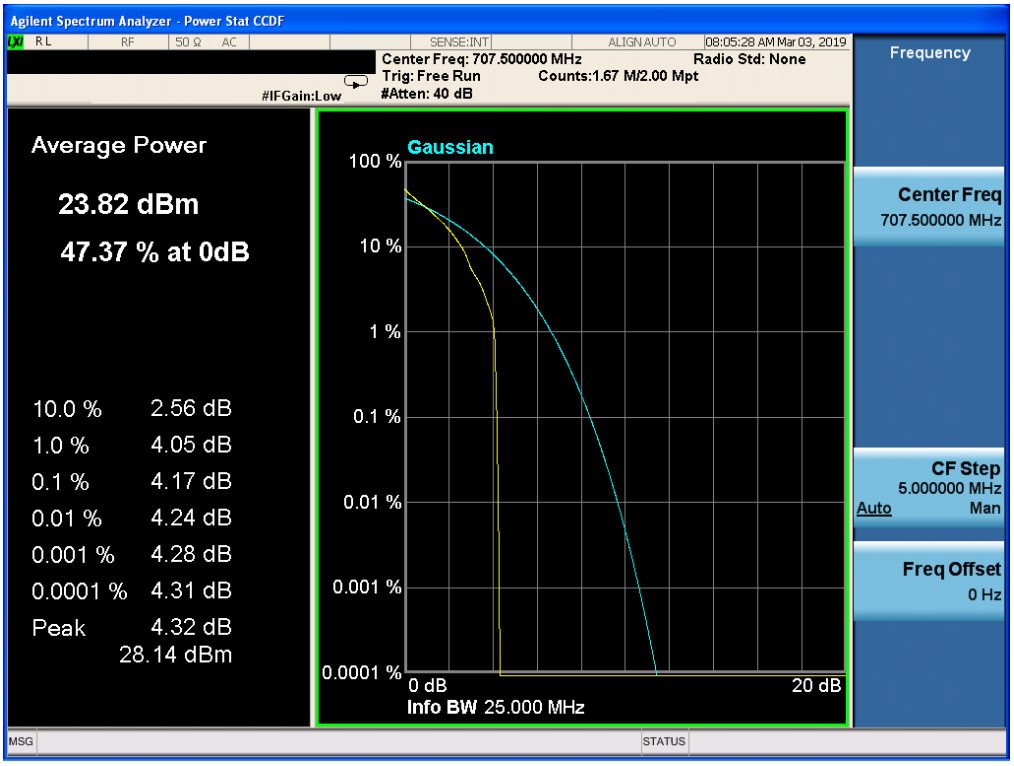
*Band 12,UL Channel 23095,UL Frequency 707.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



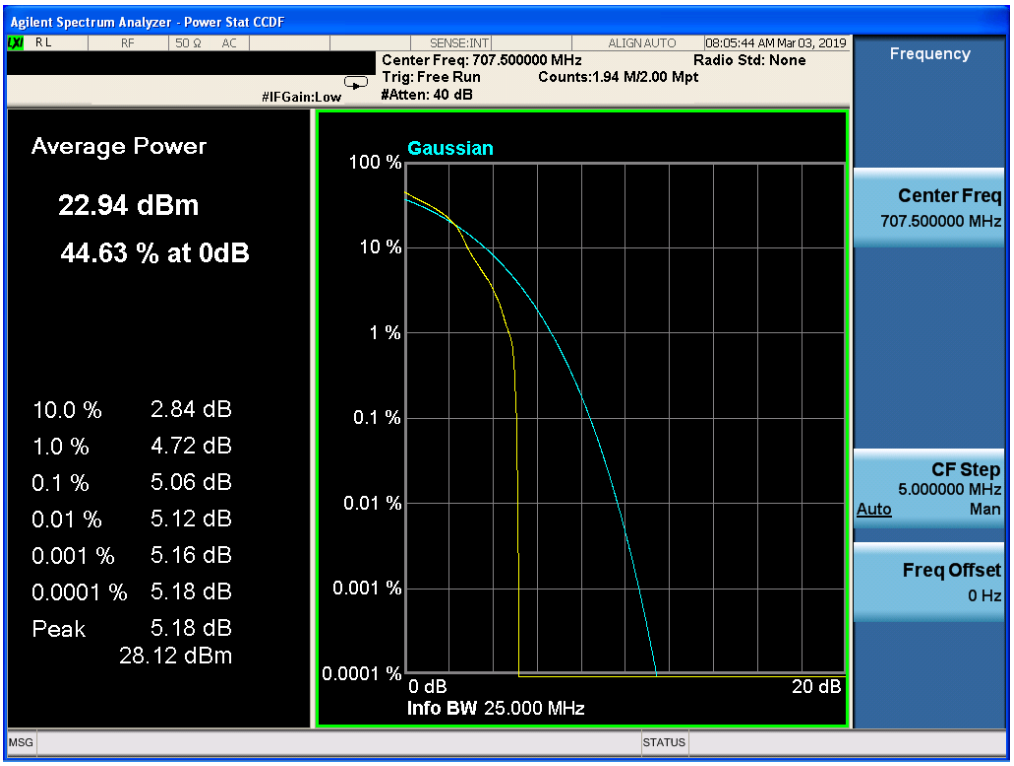

*Band 12,UL Channel 23095,UL Frequency 707.5,BW 5.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 12,UL Channel 23095,UL Frequency 707.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK*

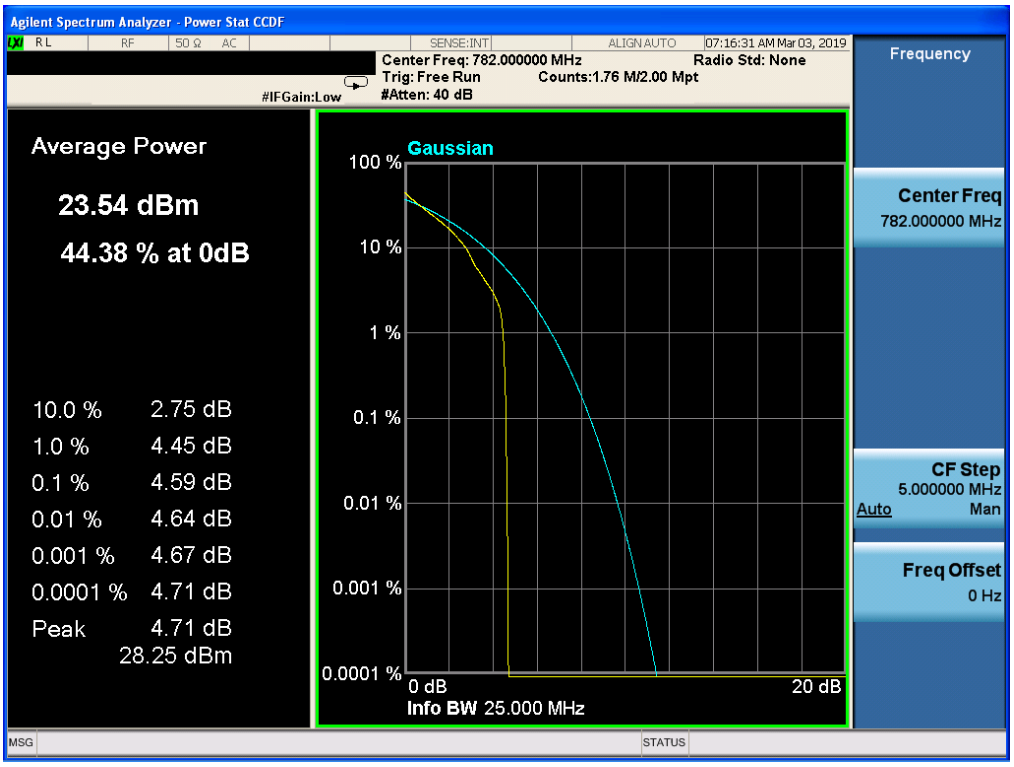



*Band 12,UL Channel 23095,UL Frequency 707.5,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*

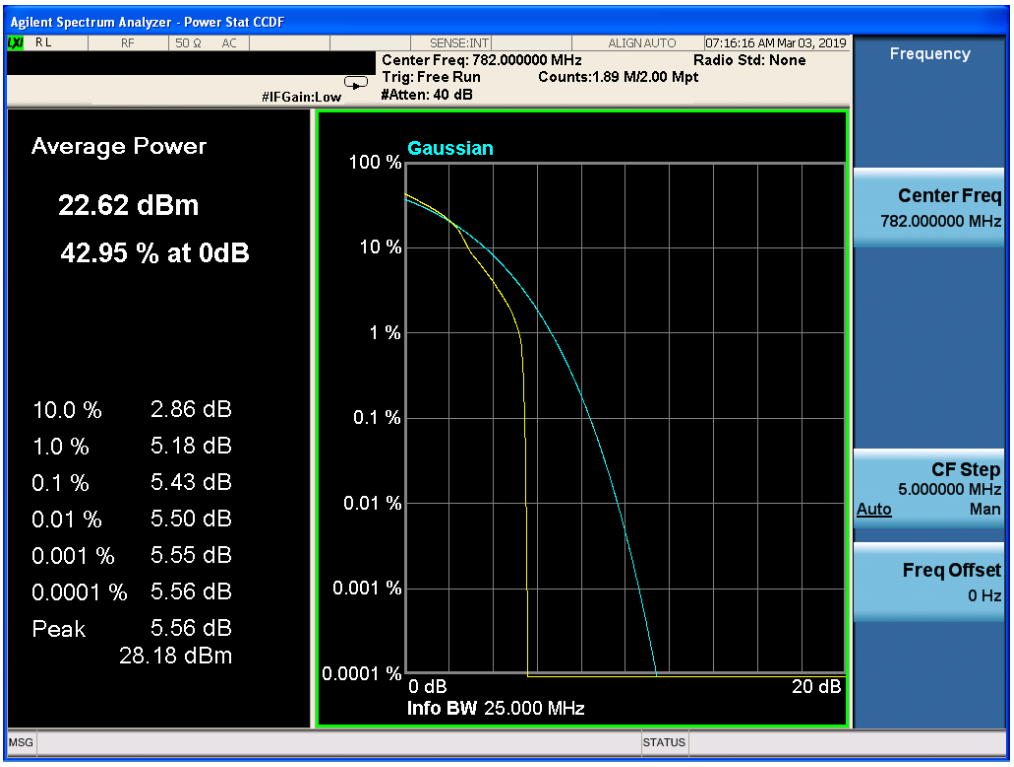


## 11.10 LTE BAND 13

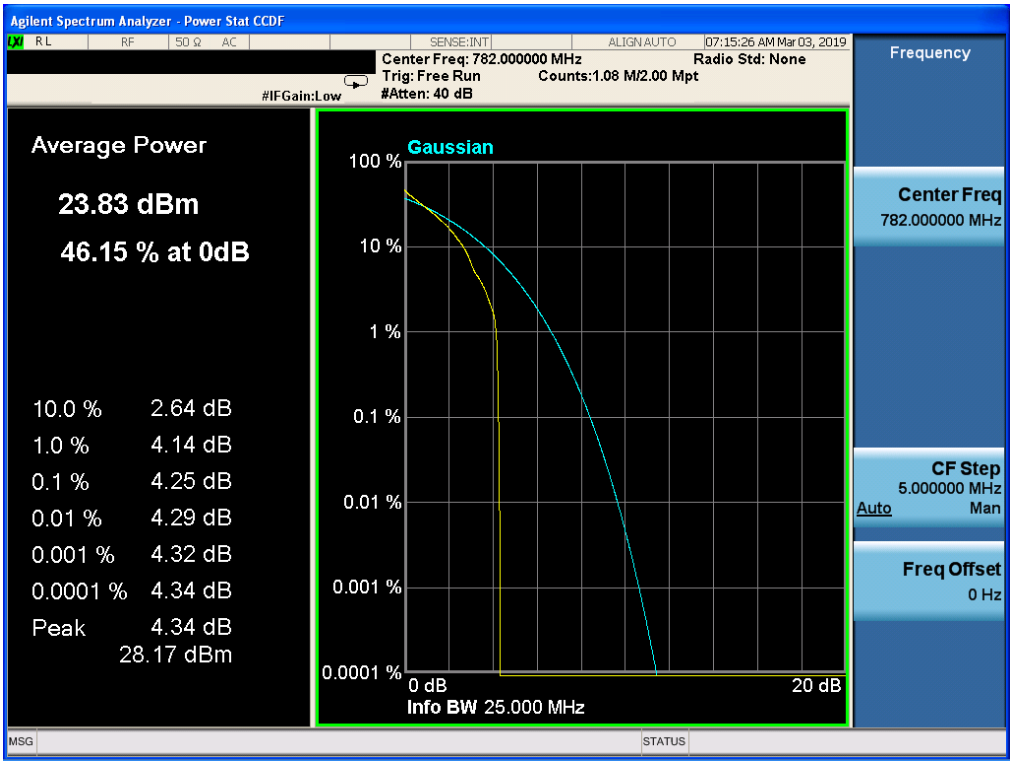
*Band 13,UL Channel 23230,UL Frequency 782.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



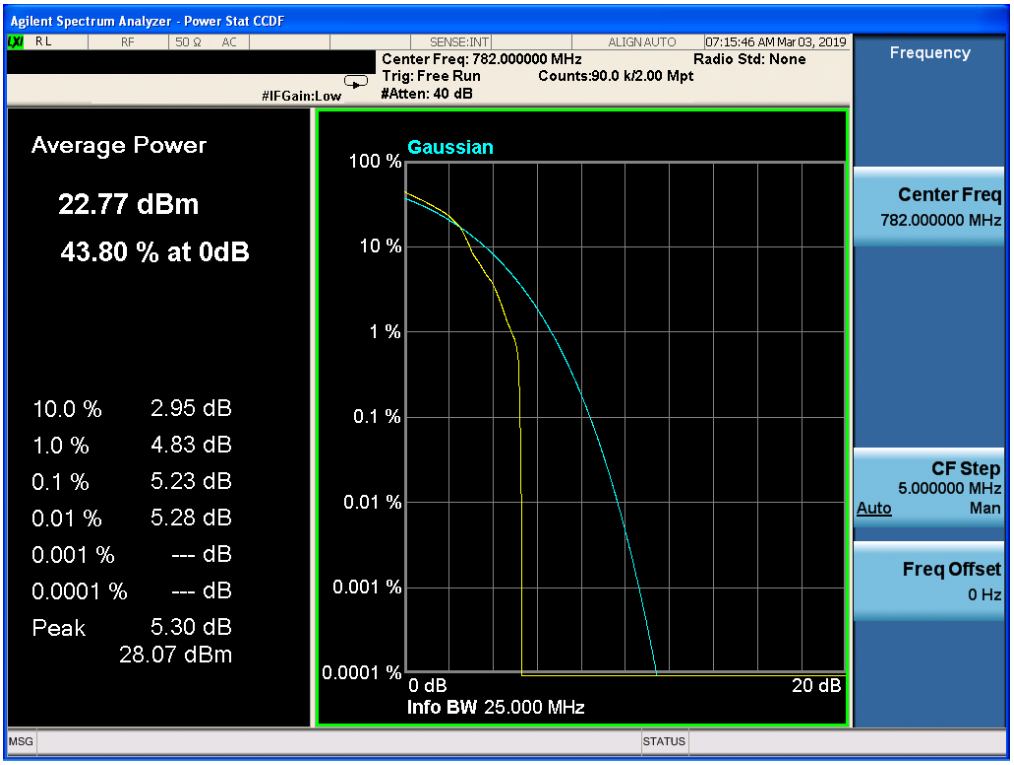

*Band 13,UL Channel 23230,UL Frequency 782.0,BW 5.0,NO. RB 1,RB POS. Low, 16-QAM*



*Band 13,UL Channel 23230,UL Frequency 782.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK*

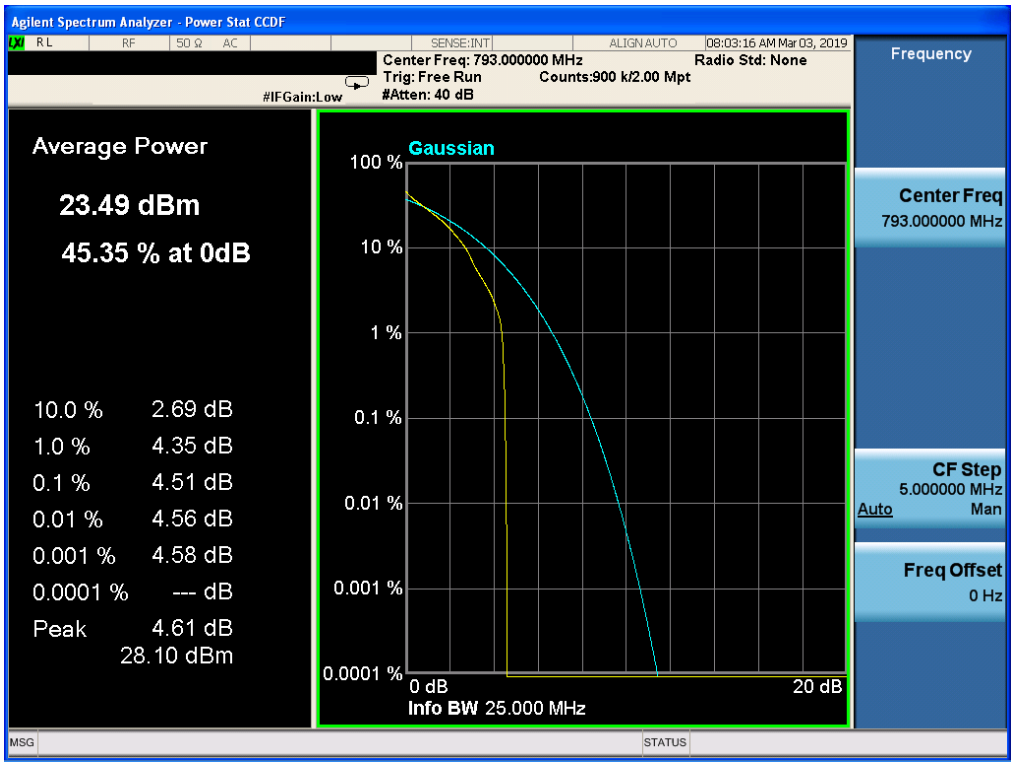



*Band 13,UL Channel 23230,UL Frequency 782.0,BW 10.0,NO. RB 1,RB POS. Low, 16-QAM*

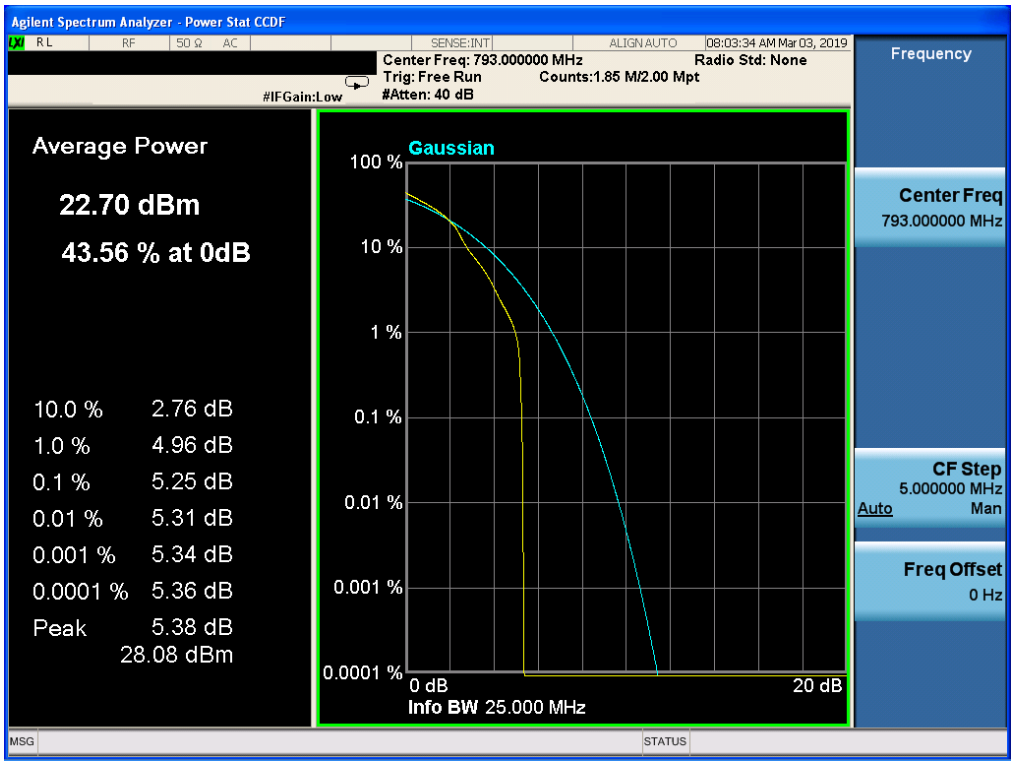


## 11.11 LTE BAND 14

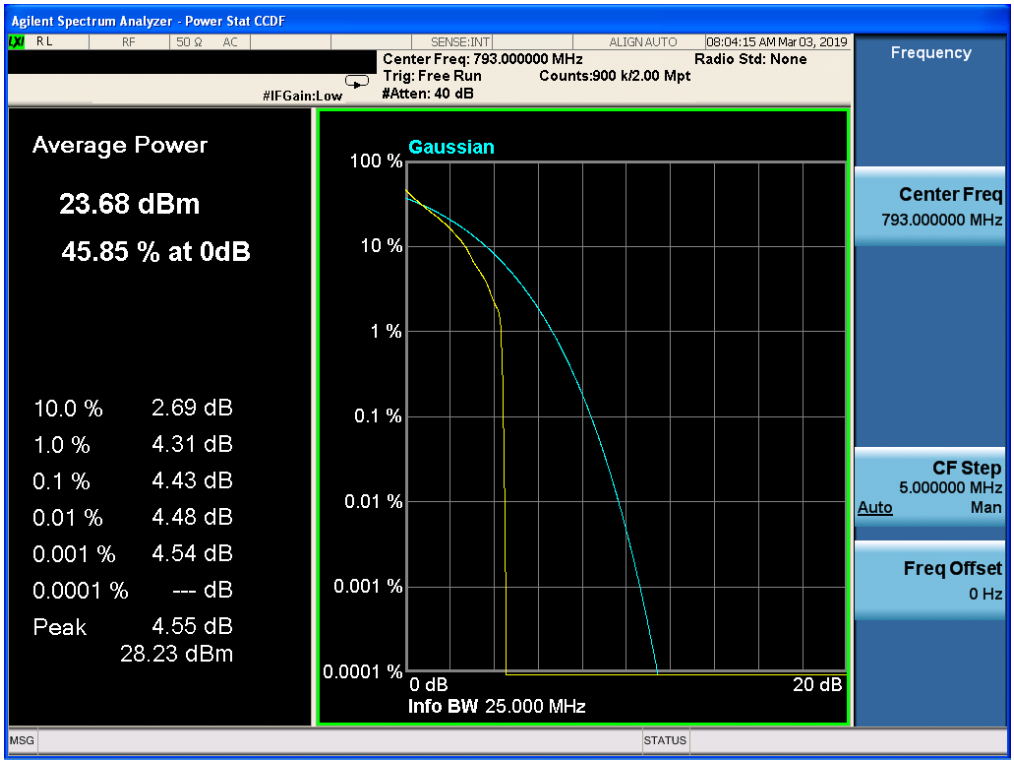
*Band 14,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



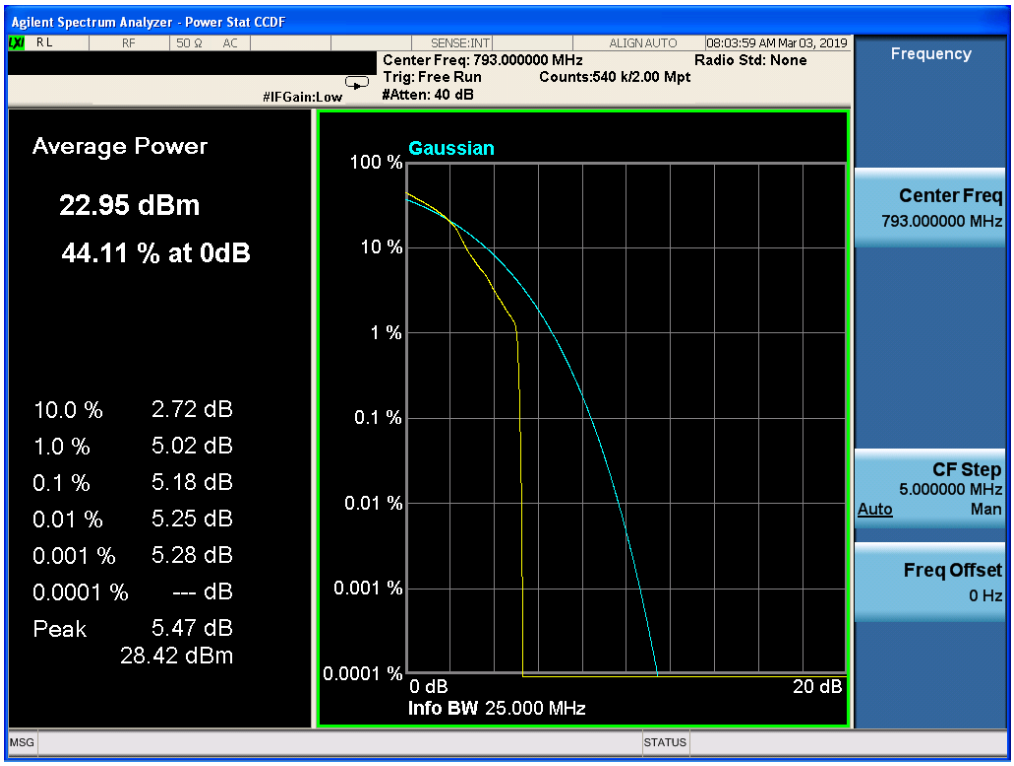

*Band 14,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 1,RB POS. Low, 16-QAM*



*Band 14,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK*

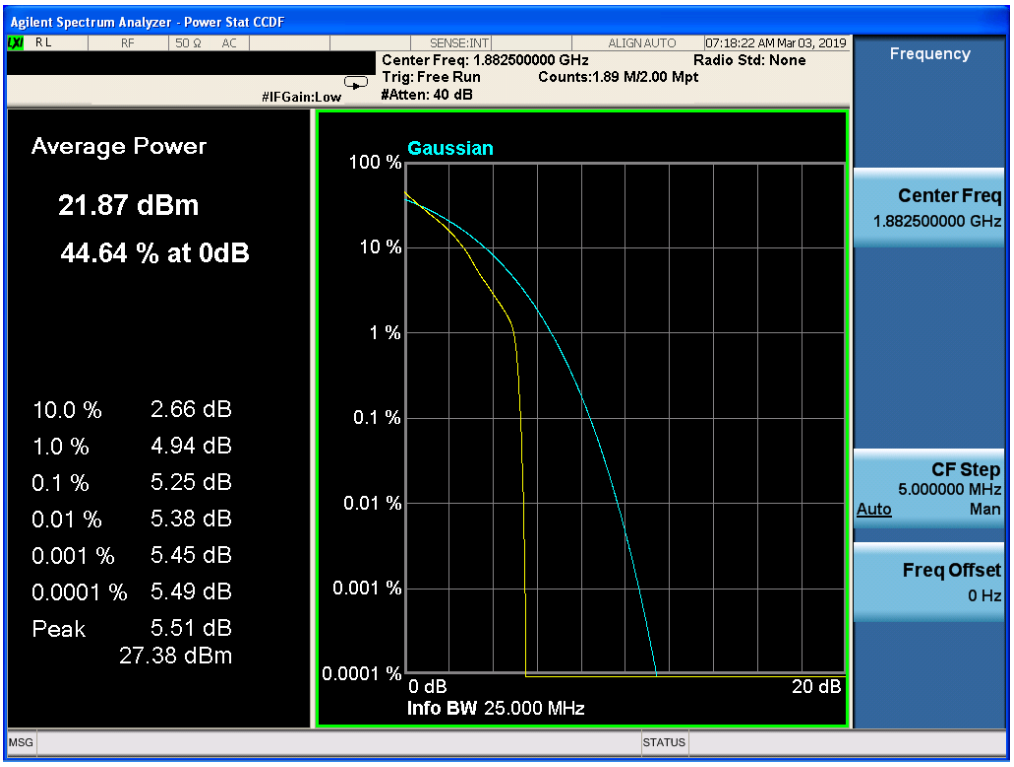



*Band 14,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 1,RB POS. Low, 16-QAM*

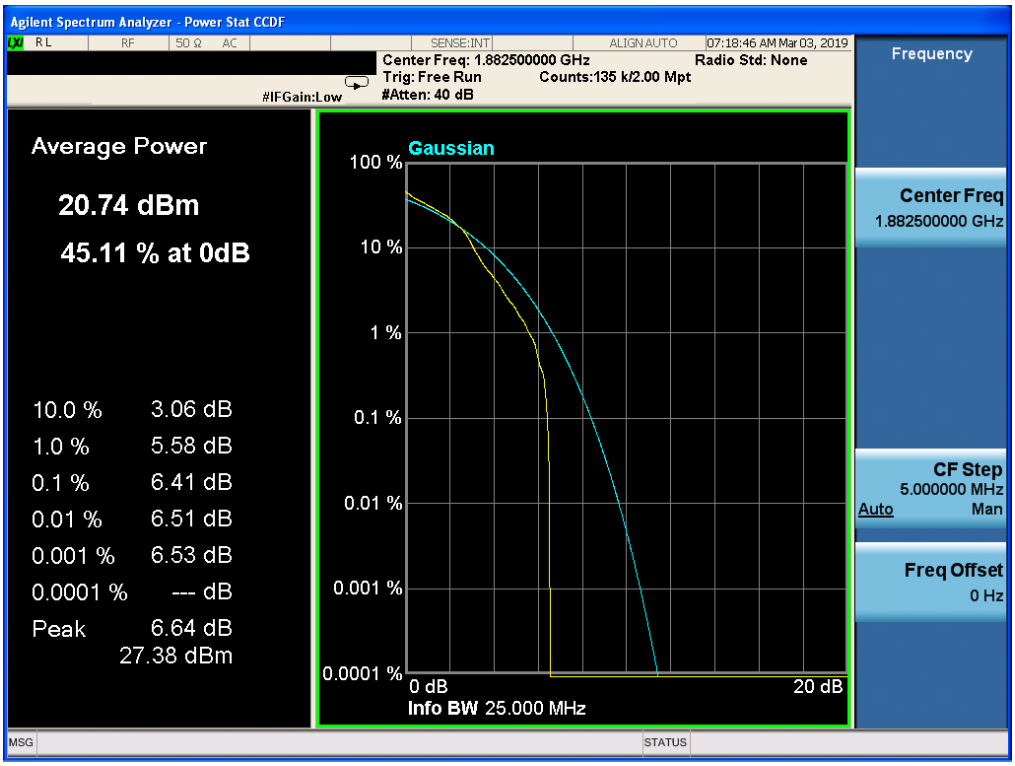


## 11.12 LTE BAND 25

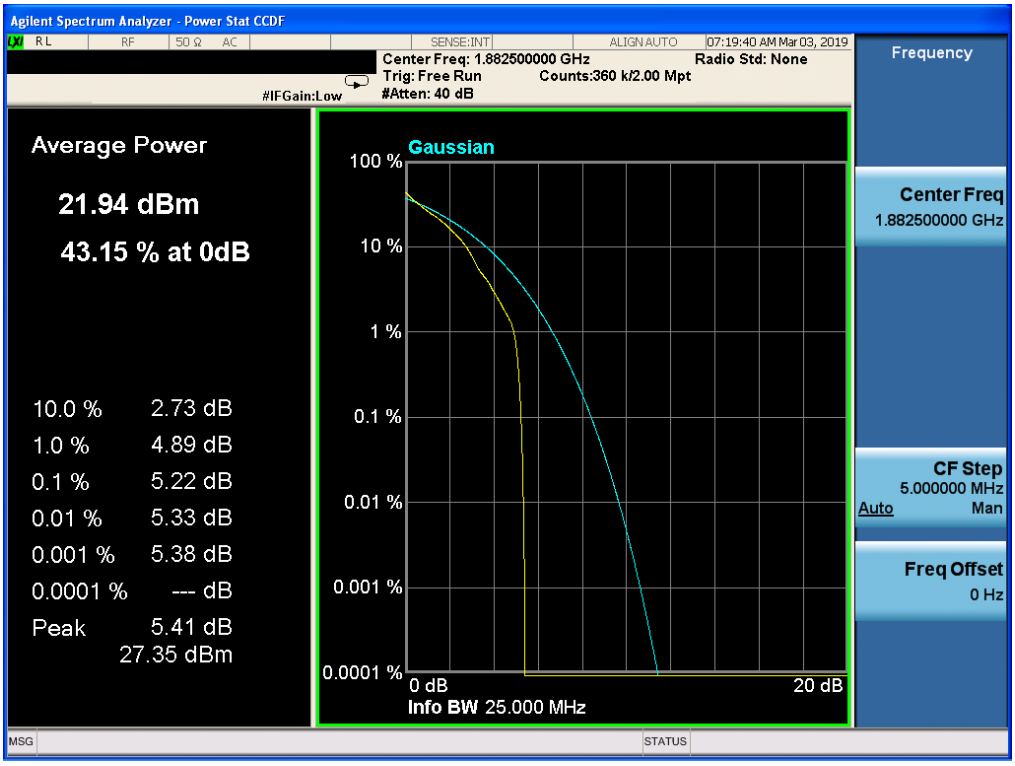
*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK*



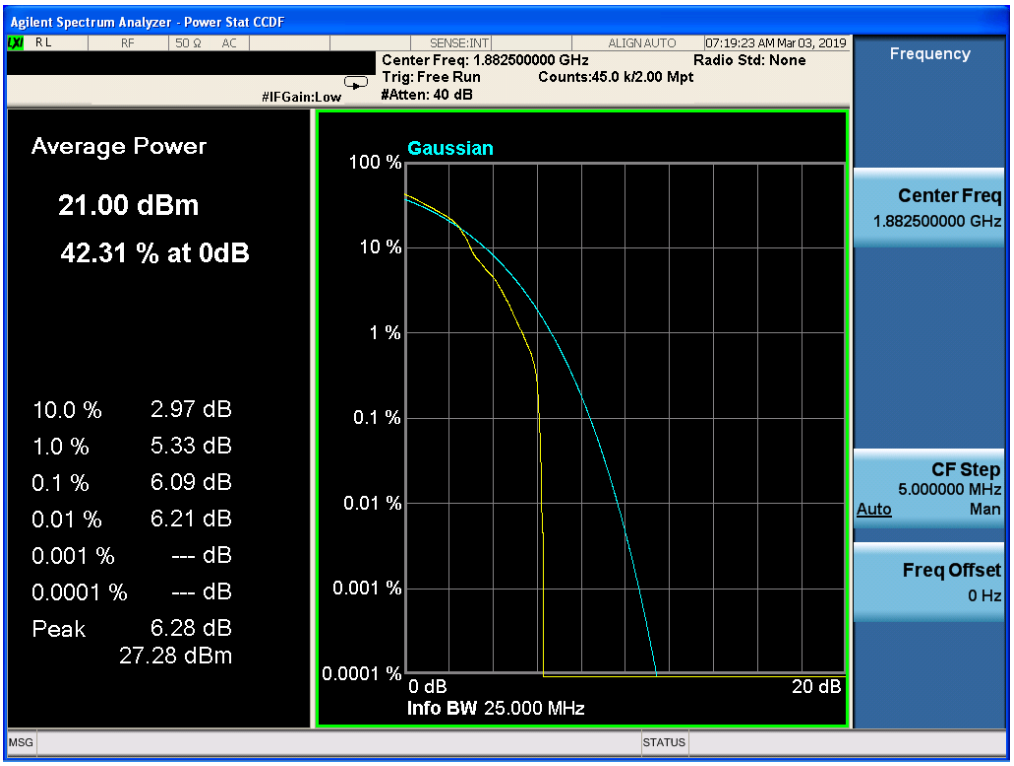

*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 1.4,NO. RB 1,RB POS. Low, 16-QAM*



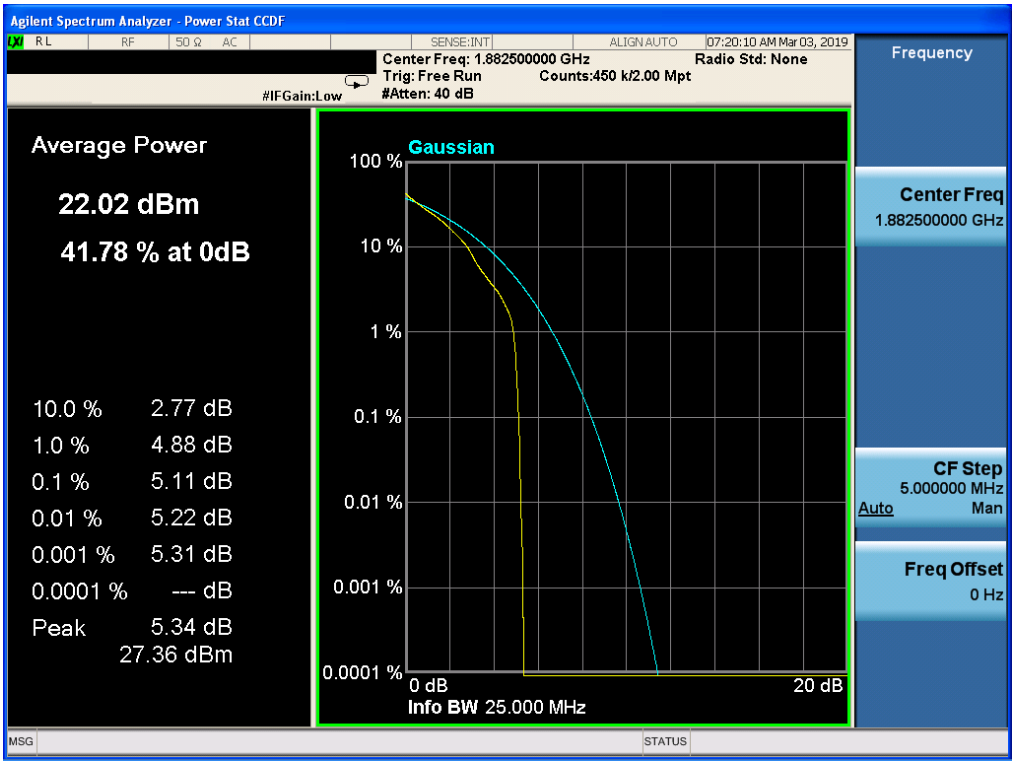
*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



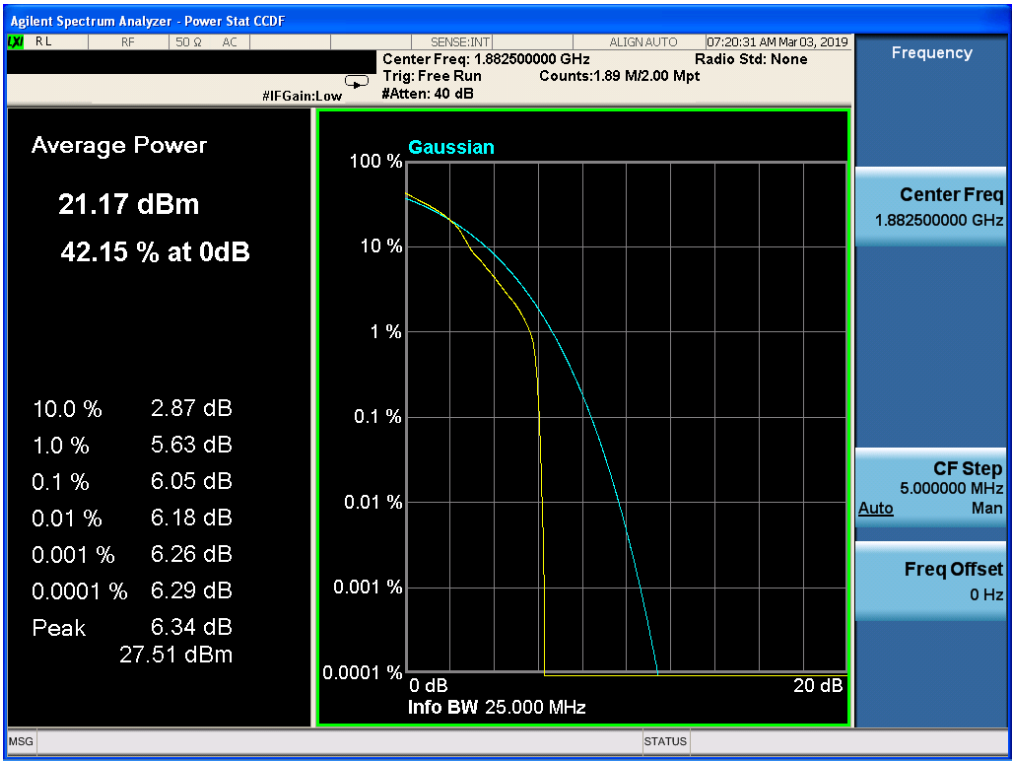

*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 3.0,NO. RB 1,RB POS. Low, 16-QAM*



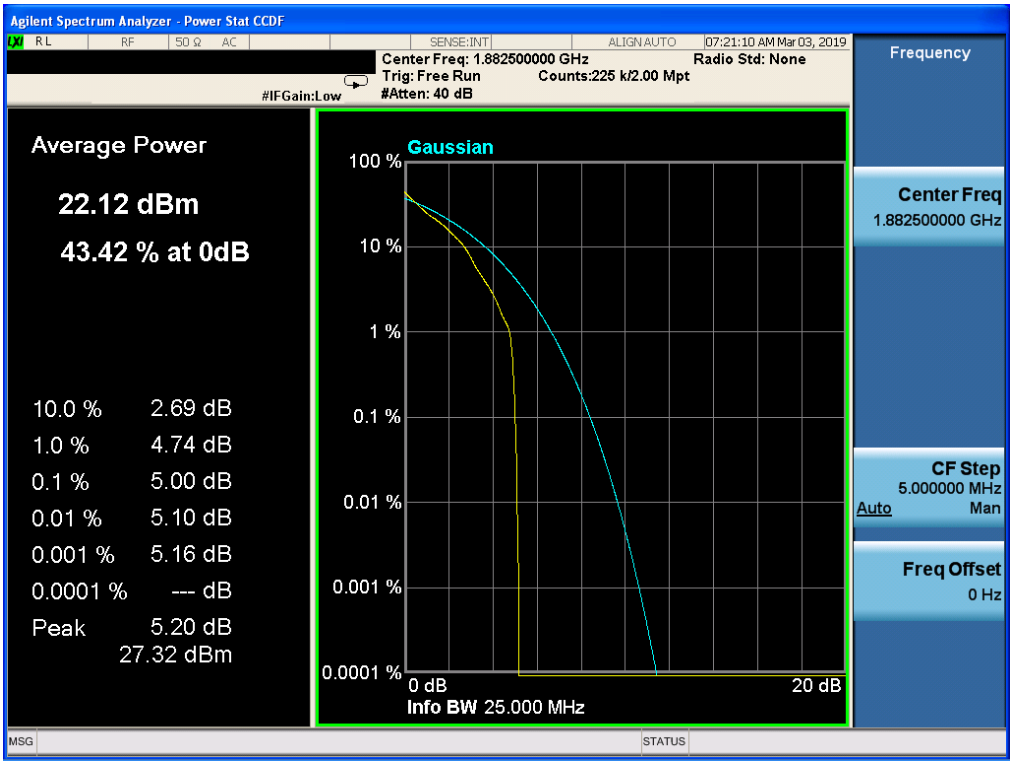
*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



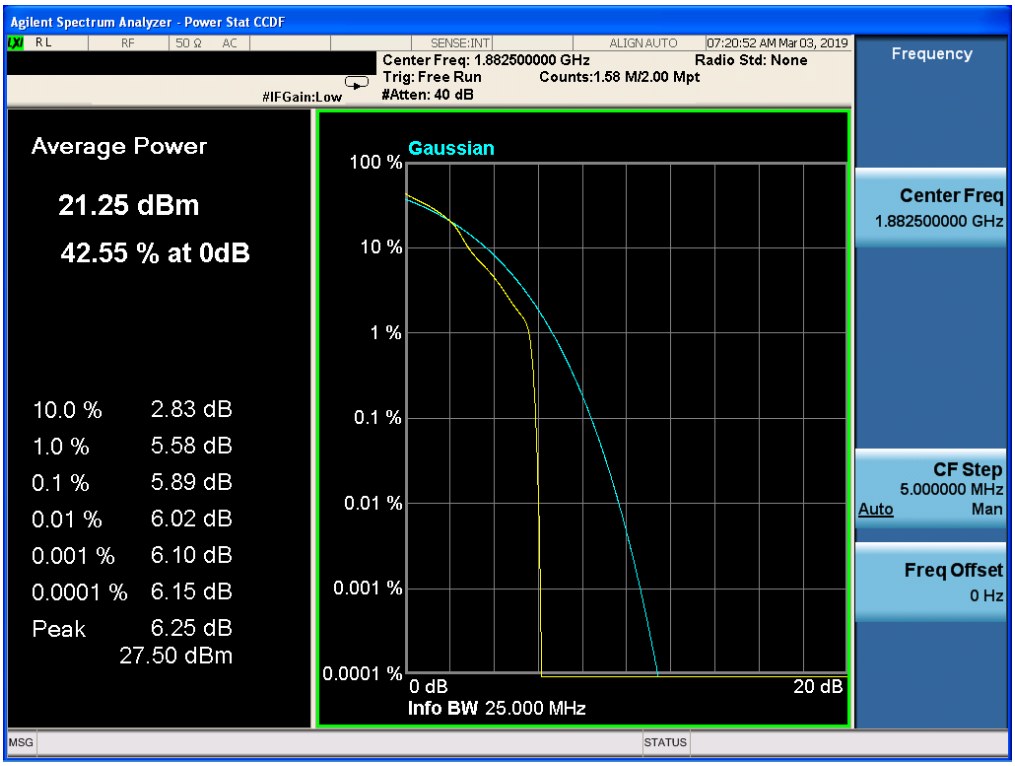

*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 5.0,NO. RB 1,RB POS. Low, 16-QAM*



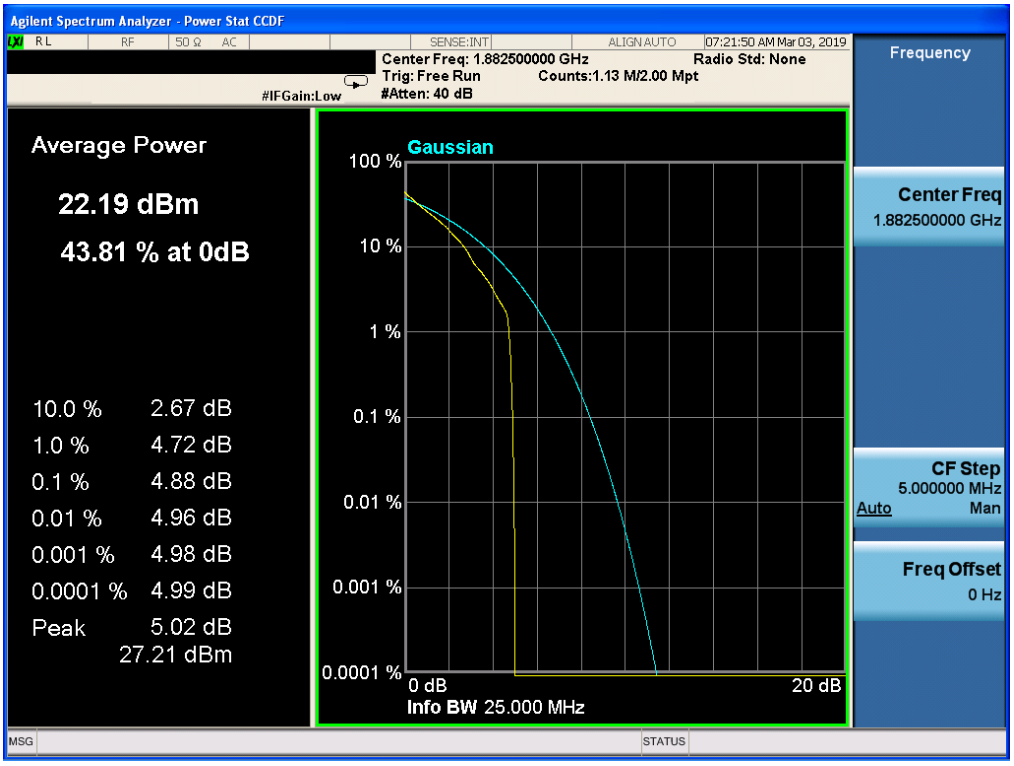
*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK*



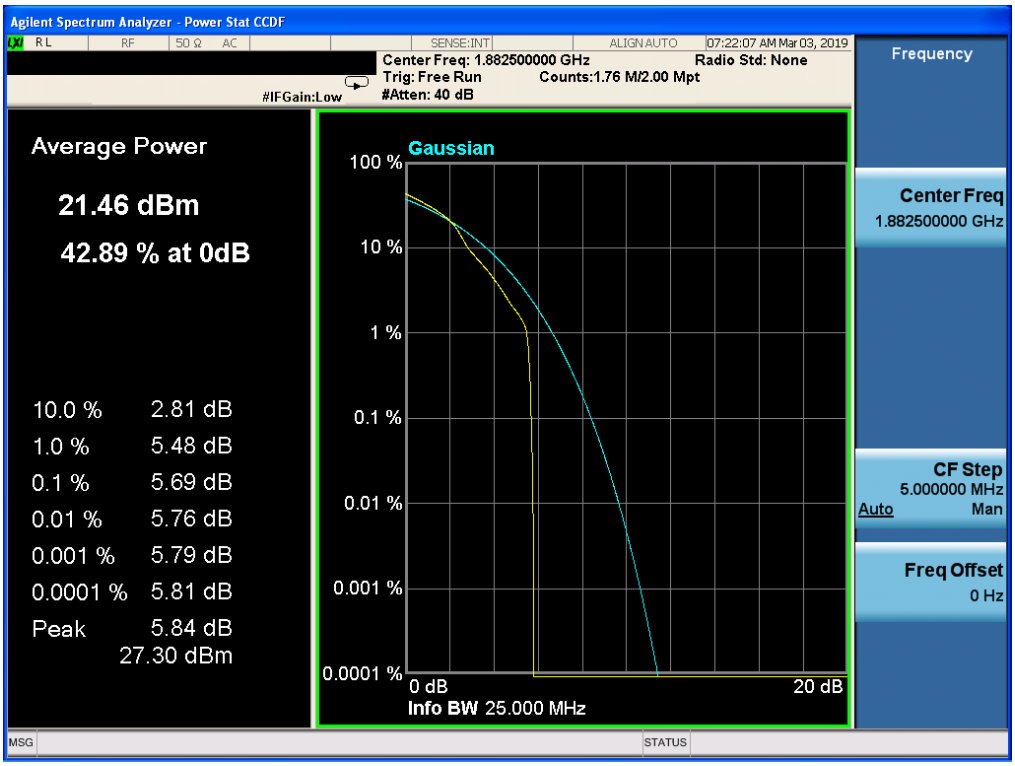

*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 10.0,NO. RB 1,RB POS. Low, 16-QAM*



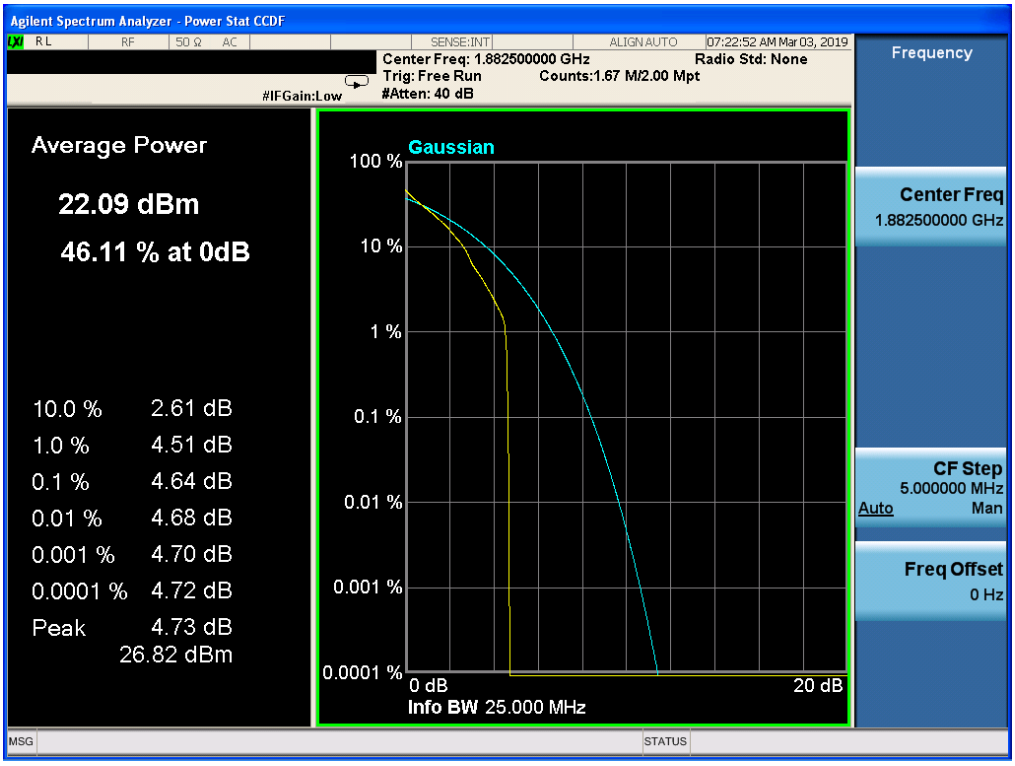
*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK*



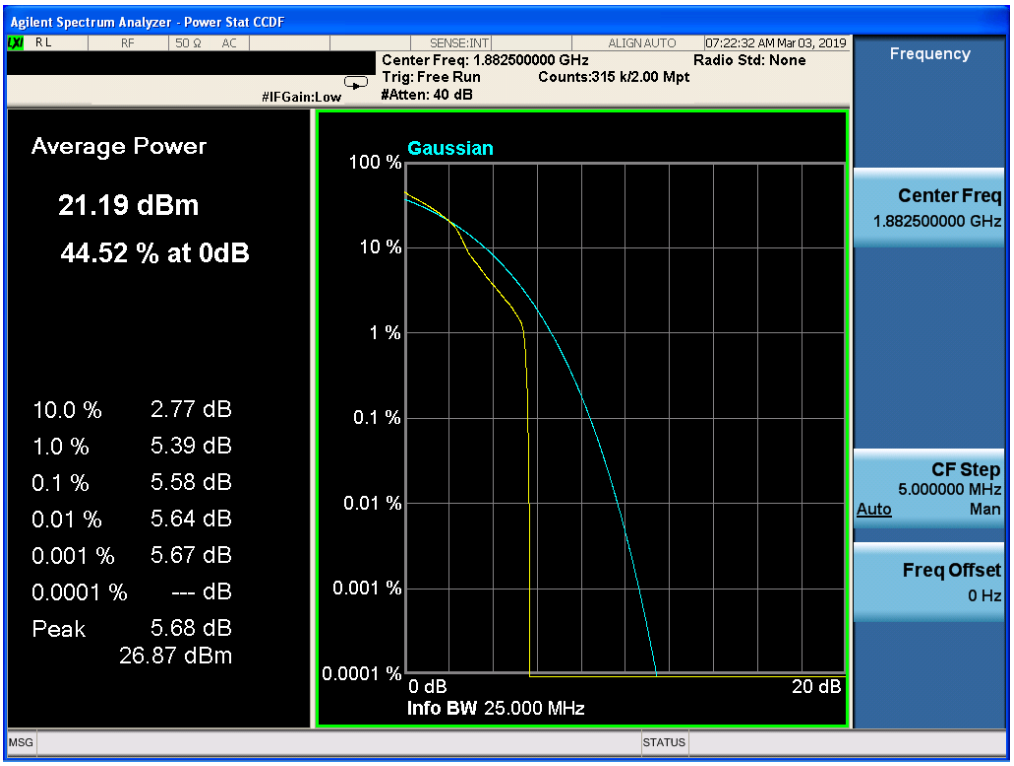

*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 15.0,NO. RB 1,RB POS. Low, 16-QAM*



*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 20.0,NO. RB 1,RB POS. Low,QPSK*

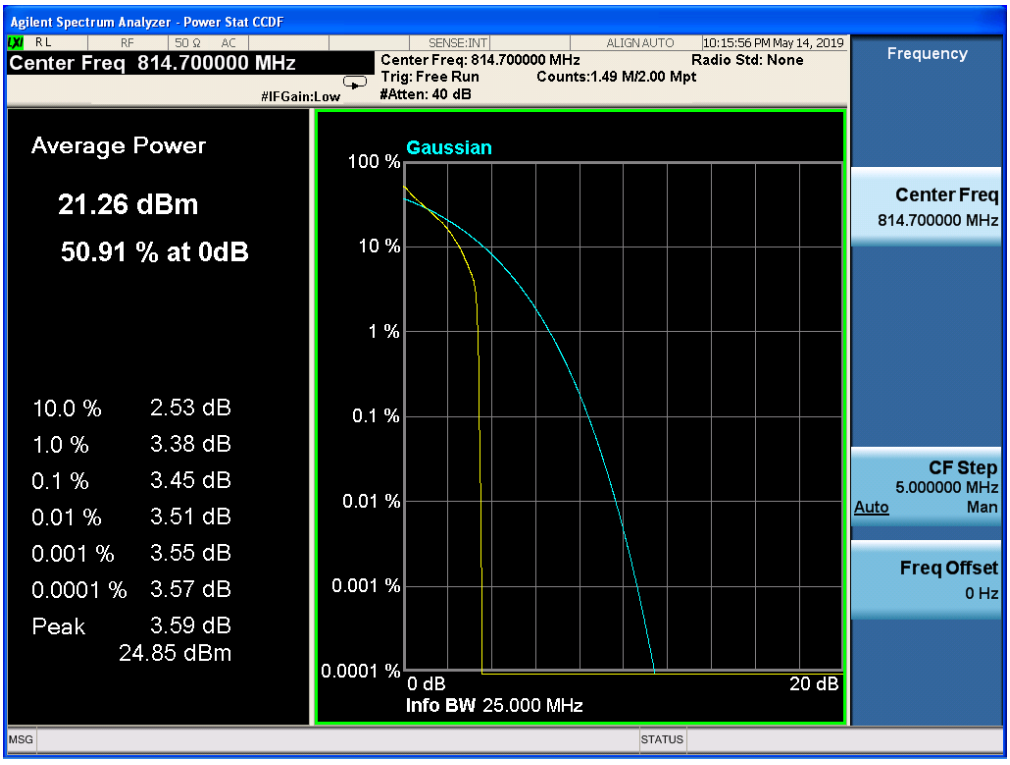



*Band 25,UL Channel 26365,UL Frequency 1882.5,BW 20.0,NO. RB 1,RB POS. Low, 16-QAM*

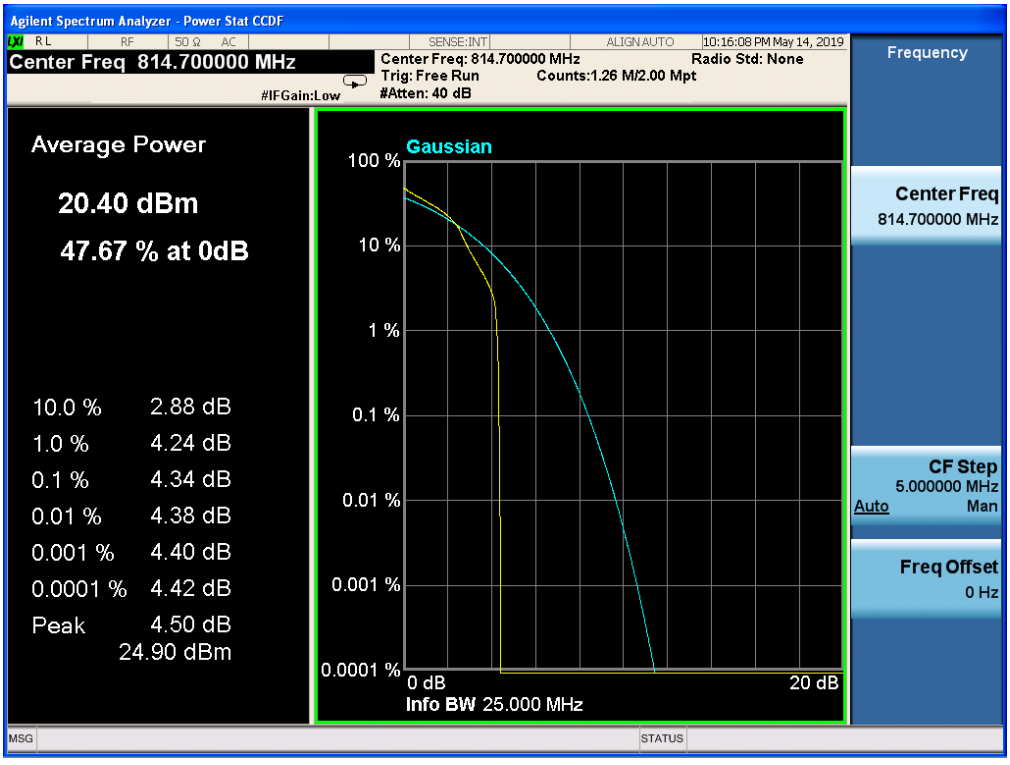


## 11.13 LTE BAND 26

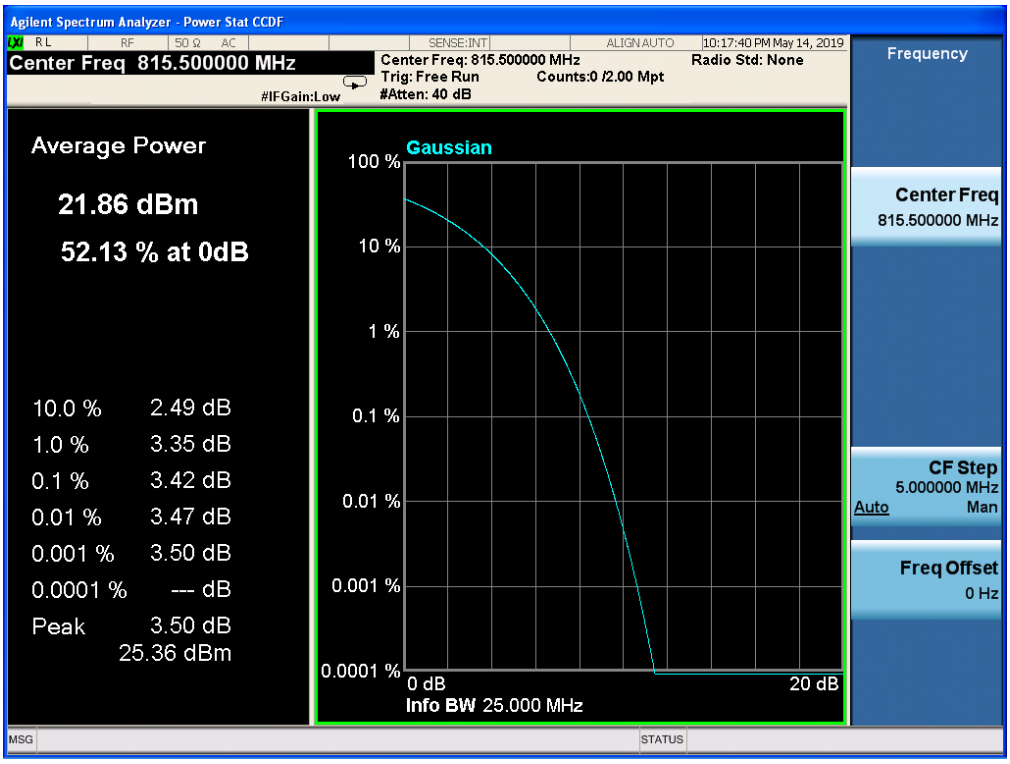
*Band 26,UL Channel 26740,UL Frequency 819.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK*



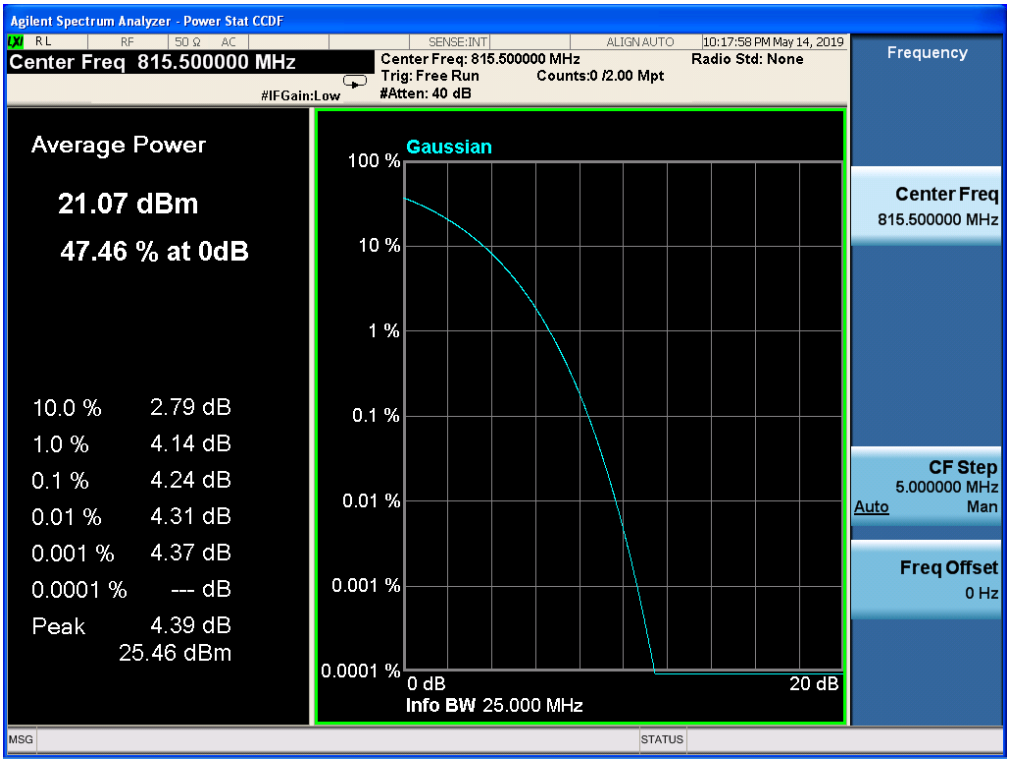

*Band 26,UL Channel 26740,UL Frequency 819.0,BW 1.4,NO. RB 1,RB POS. Low, 16-QAM*



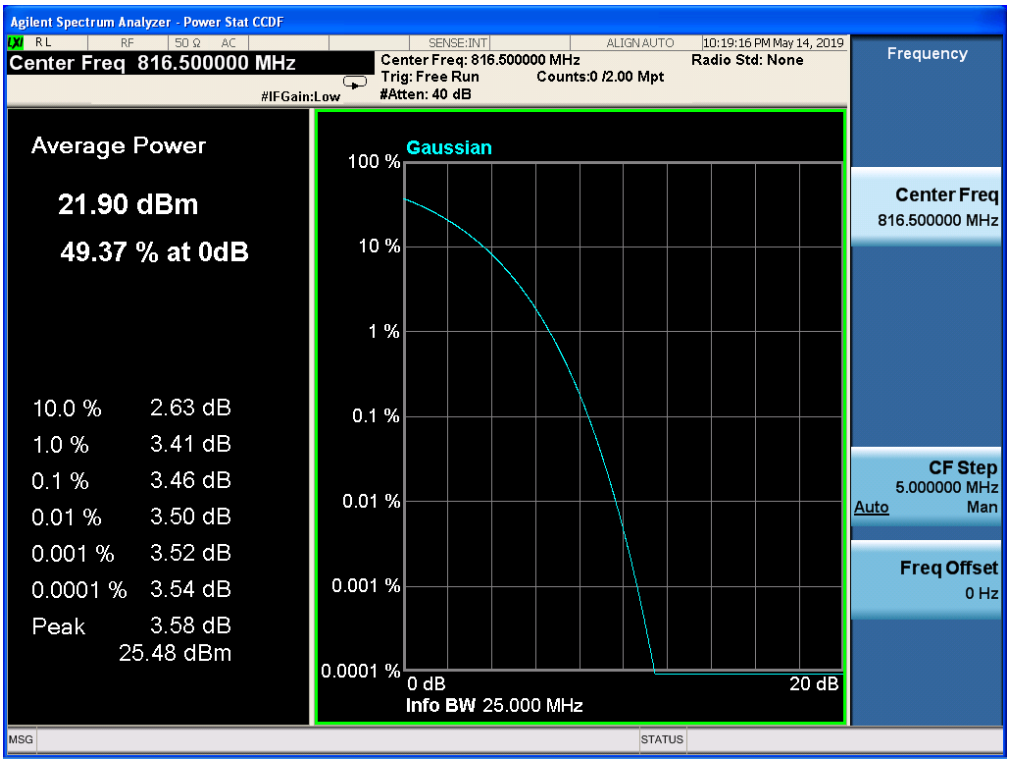
*Band 26,UL Channel 26740,UL Frequency 819.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK*



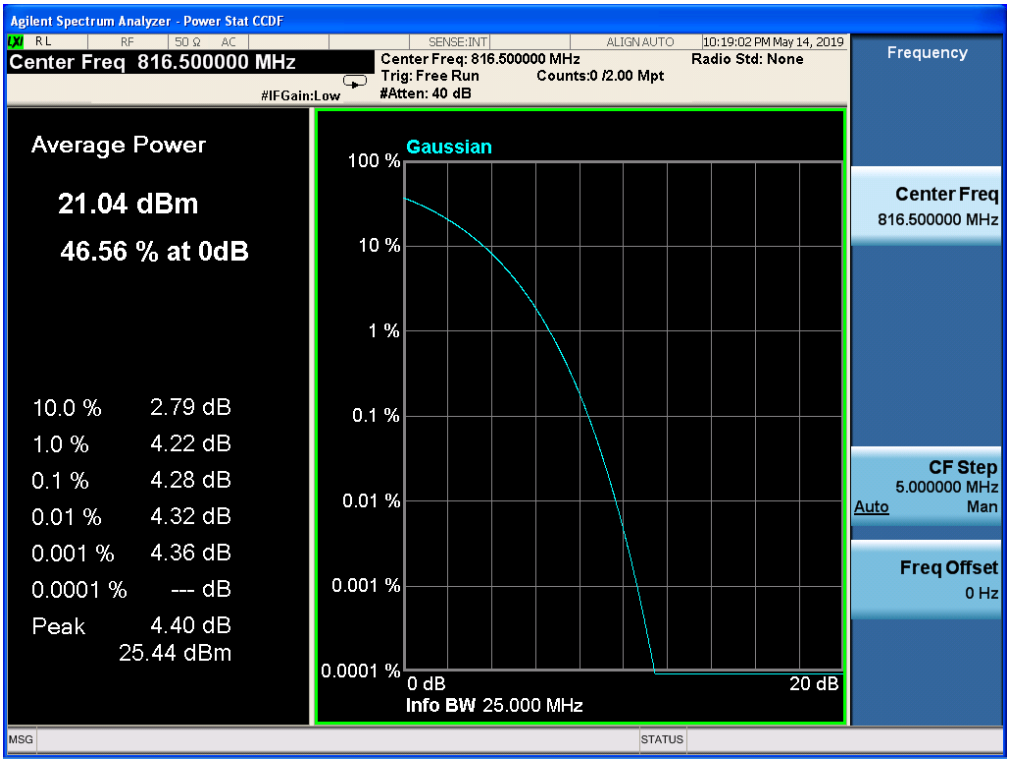

*Band 26,UL Channel 26740,UL Frequency 819.0,BW 3.0,NO. RB 1,RB POS. Low, 16-QAM*



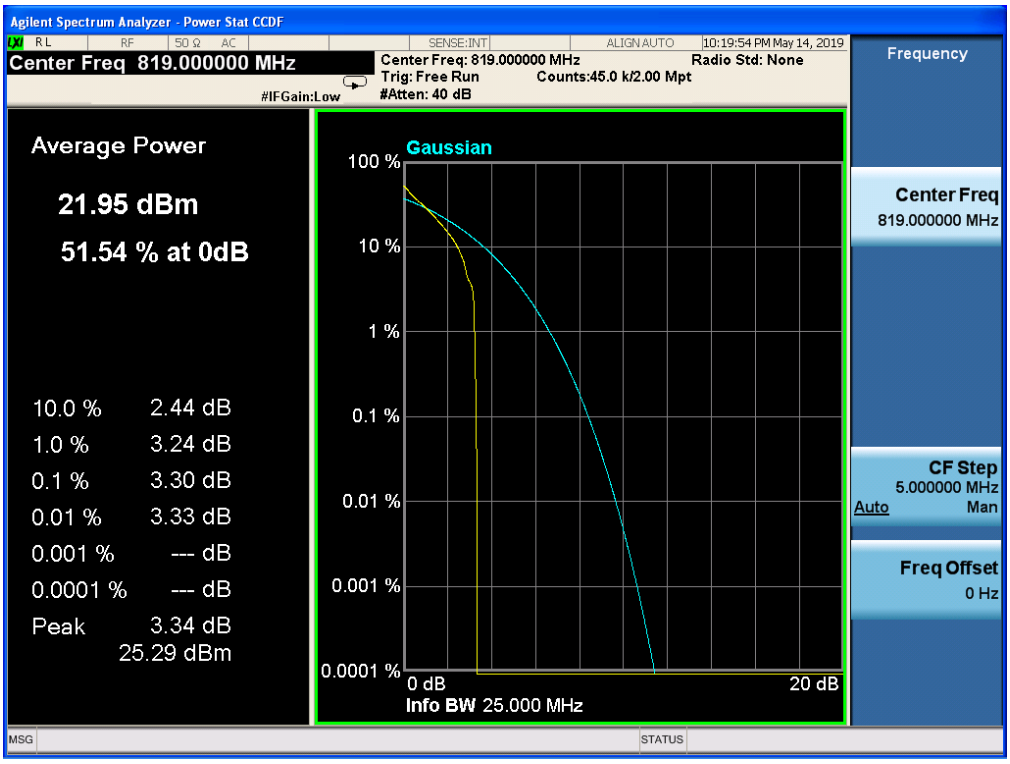
*Band 26,UL Channel 26740,UL Frequency 819.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



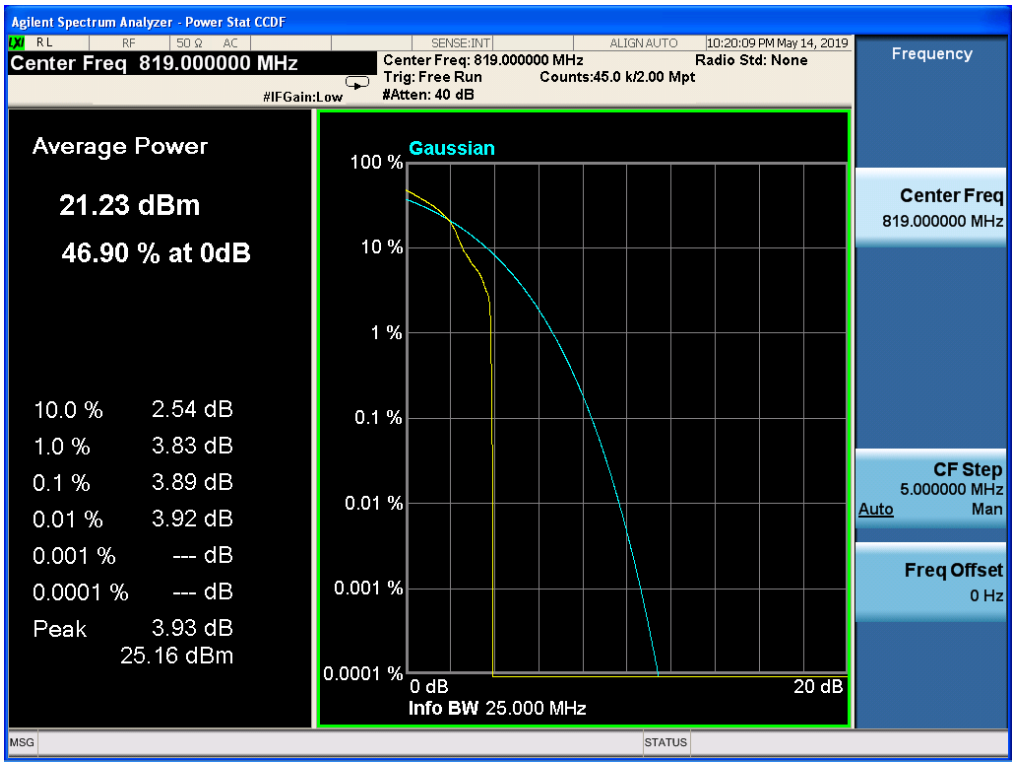

*Band 26,UL Channel 26740,UL Frequency 819.0,BW 5.0,NO. RB 1,RB POS. Low, 16-QAM*



*Band 26,UL Channel 26740,UL Frequency 819.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK*

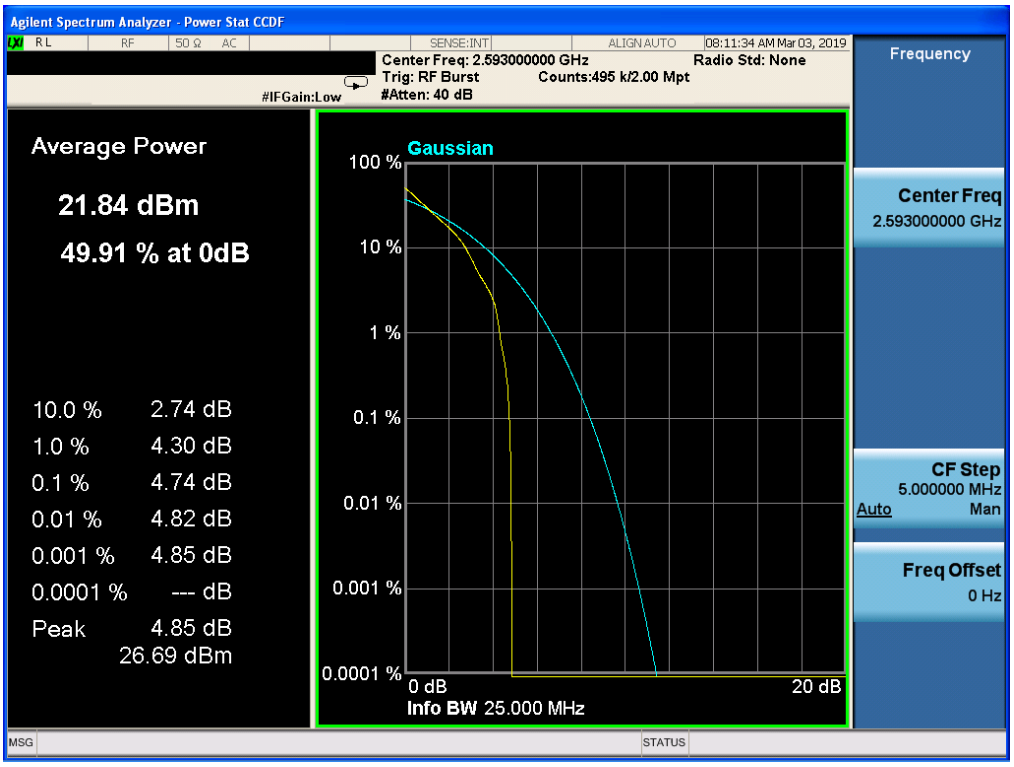



*Band 26,UL Channel 26740,UL Frequency 819.0,BW 10.0,NO. RB 1,RB POS. Low, 16-QAM*

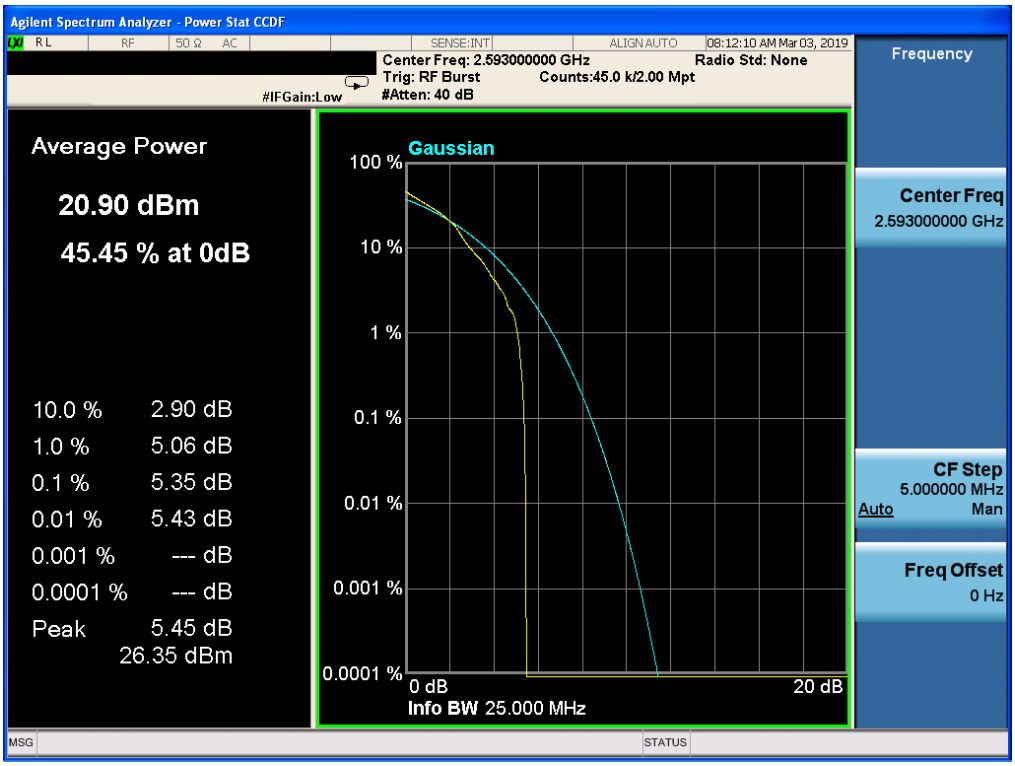


## 11.14 LTE BAND 41

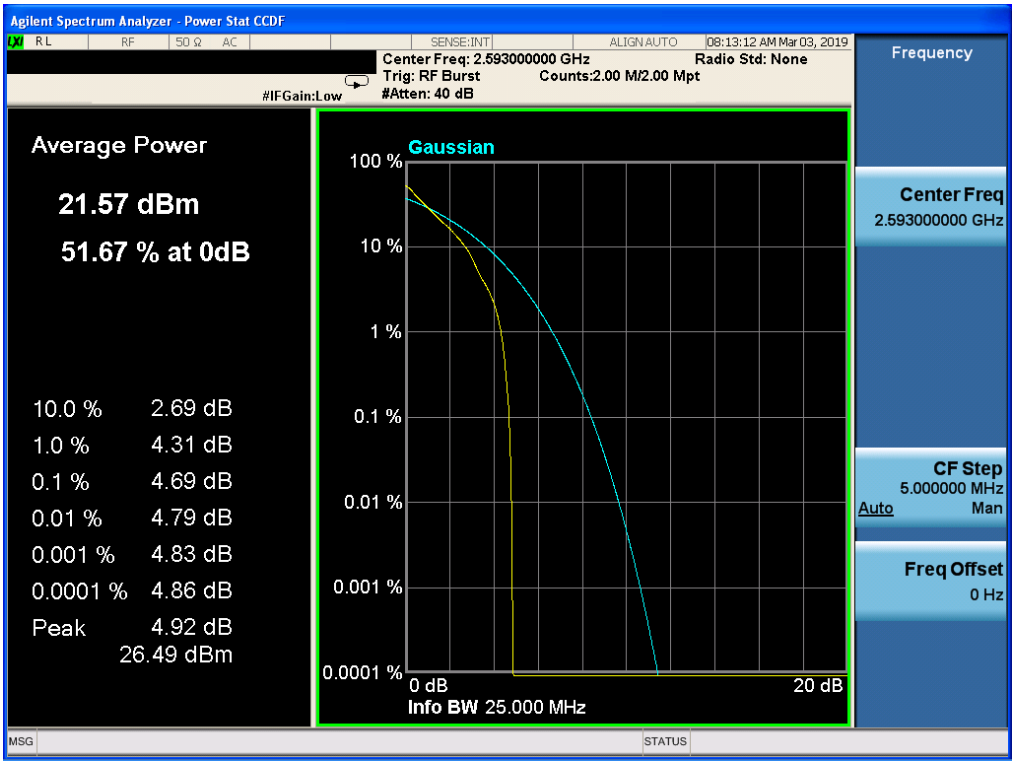
*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK*



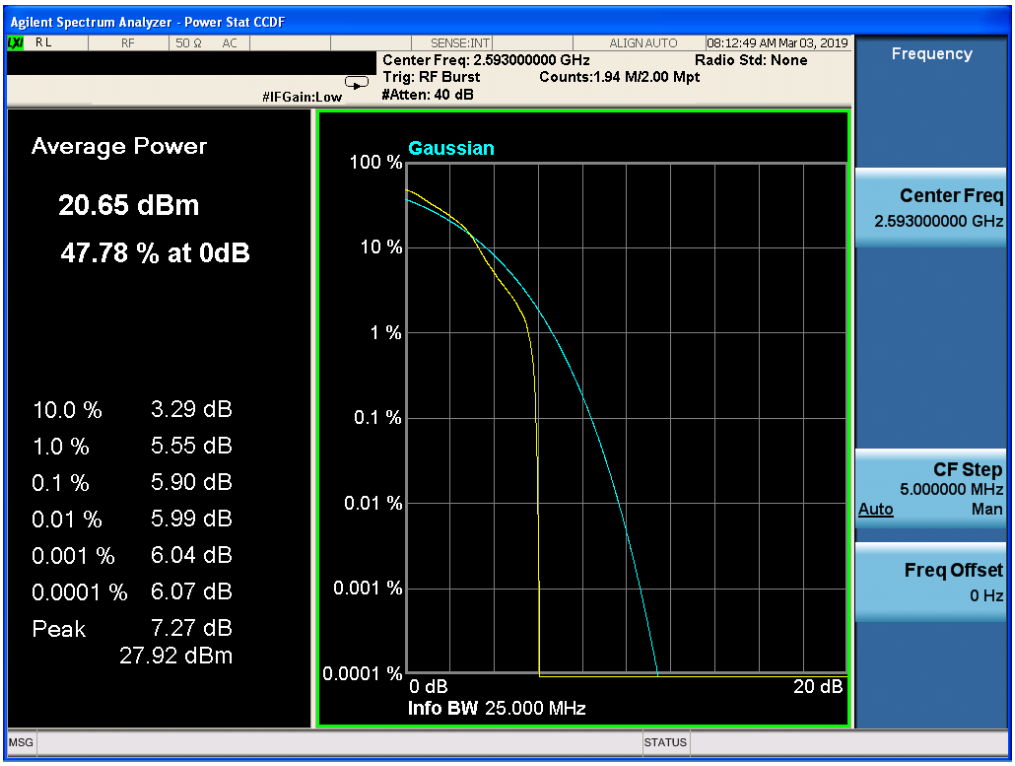

*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 5.0,NO. RB 1,RB POS. Low,16-QAM*



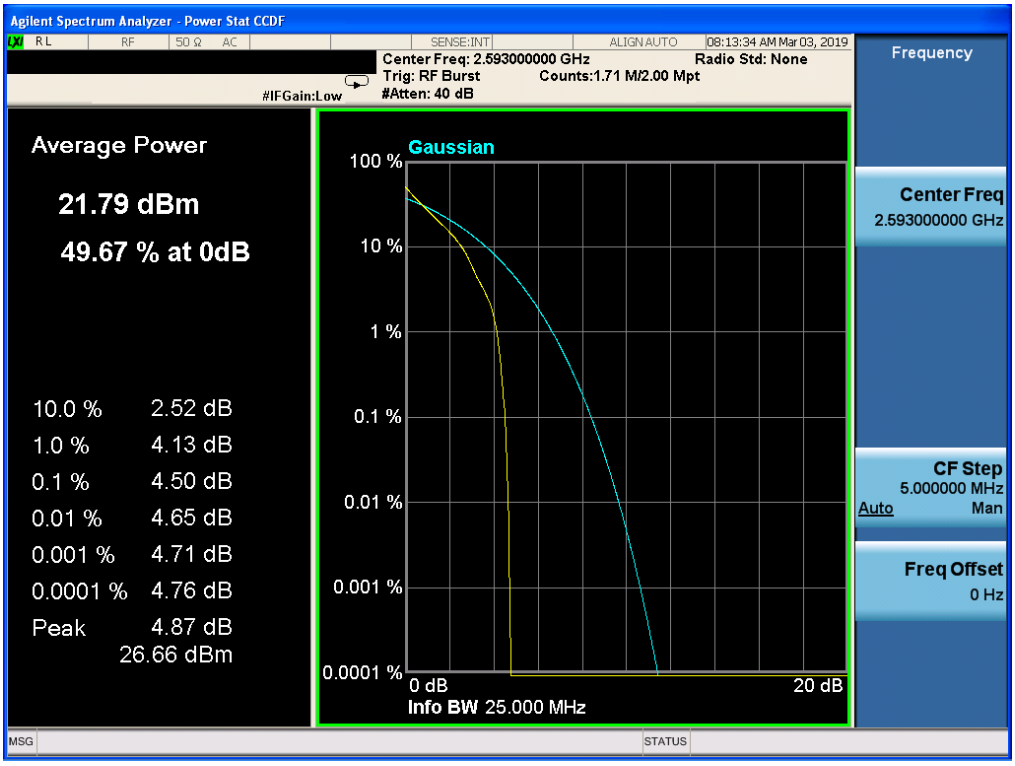
*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK*



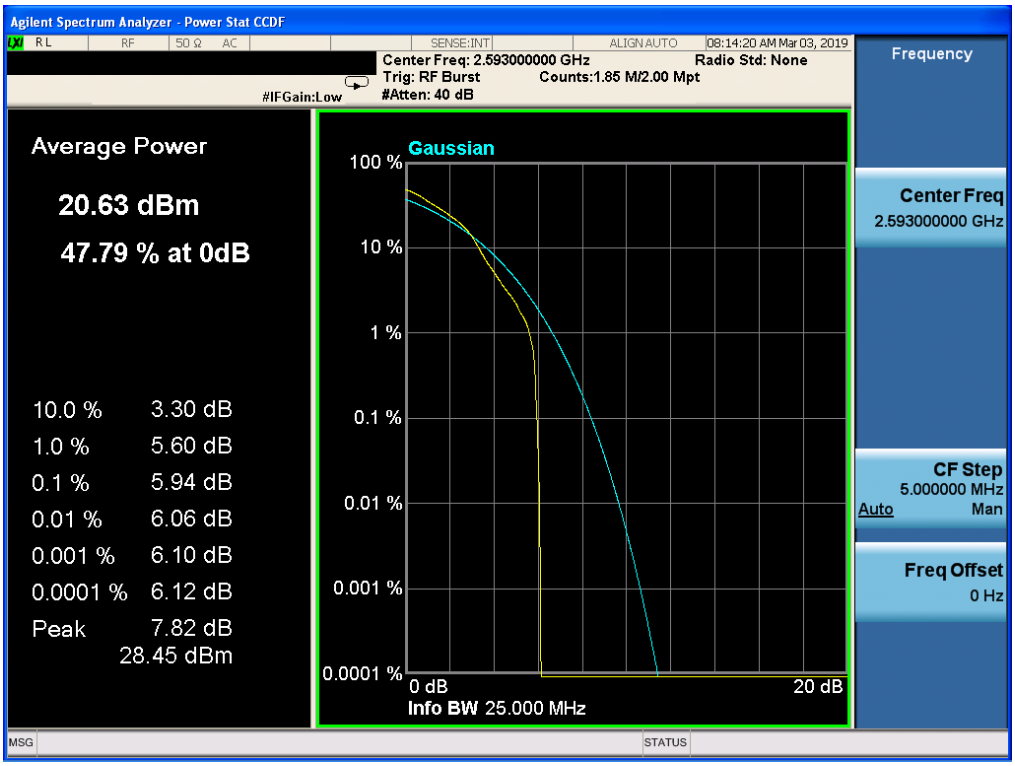

*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 10.0,NO. RB 1,RB POS. Low,16-QAM*



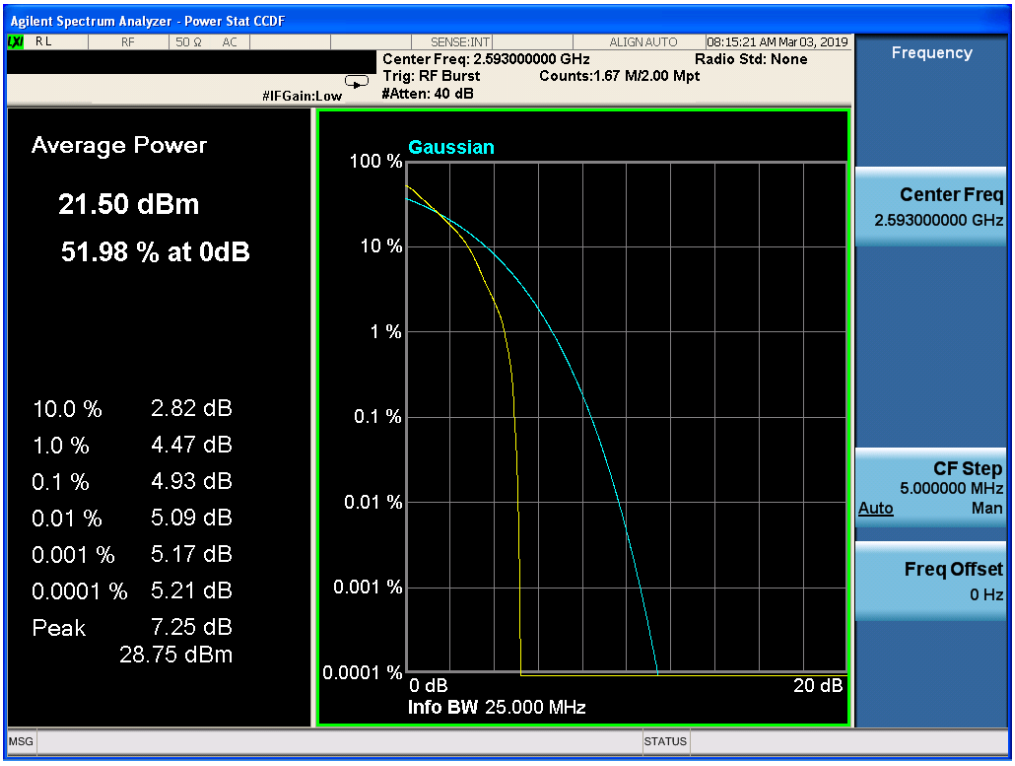
*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK*



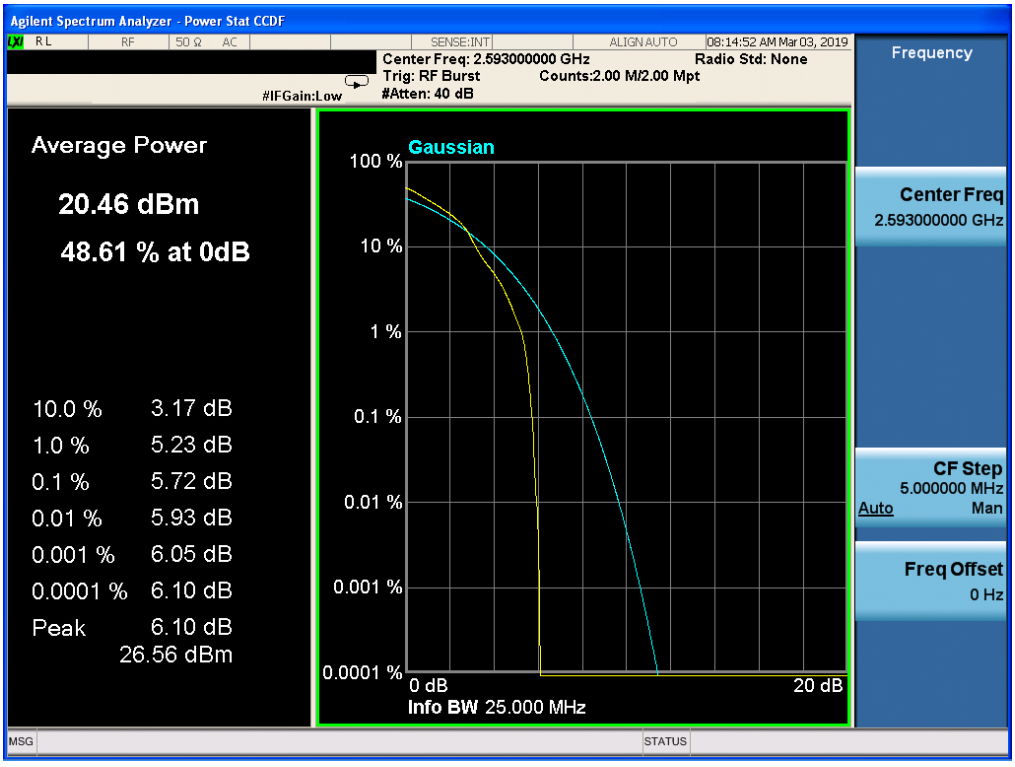

*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 15.0,NO. RB 1,RB POS. Low,16-QAM*



*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK*




*Band 41,UL Channel 40620,UL Frequency 2593.0,BW 20.0,NO. RB 1,RB POS. Low,16-QAM*




**----END OF REPORT----**