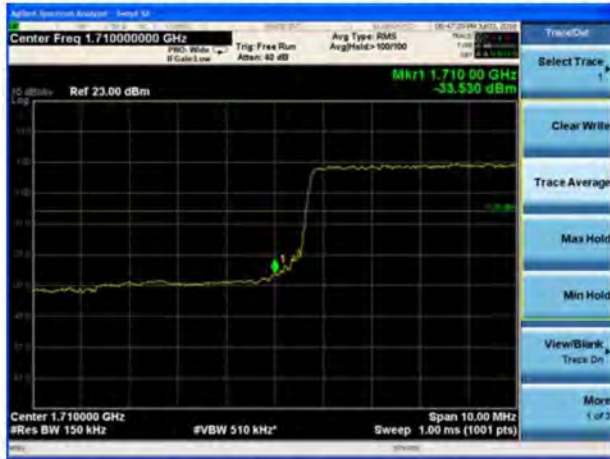




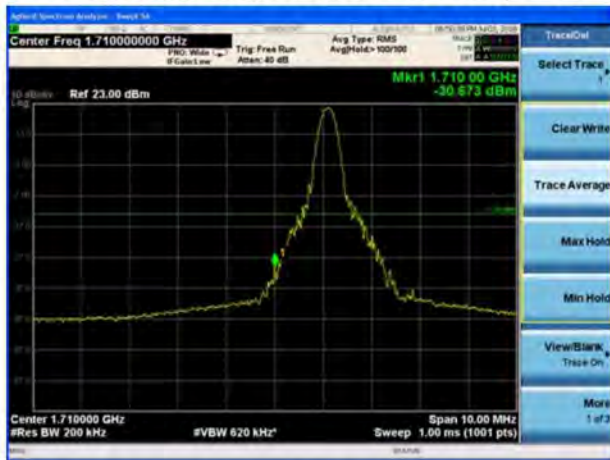
LTE Band 66 16QAM 15MHz CH-Low, 100%RB



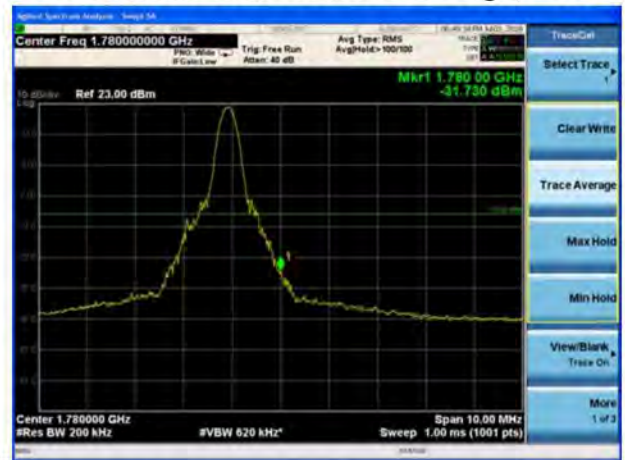
LTE Band 66 16QAM 15MHz CH-High, 100%RB



LTE Band 66 16QAM 20MHz CH-Low, 1 RB



LTE Band 66 16QAM 20MHz CH-High, 1 RB



LTE Band 66 16QAM 20MHz CH-Low, 100%RB

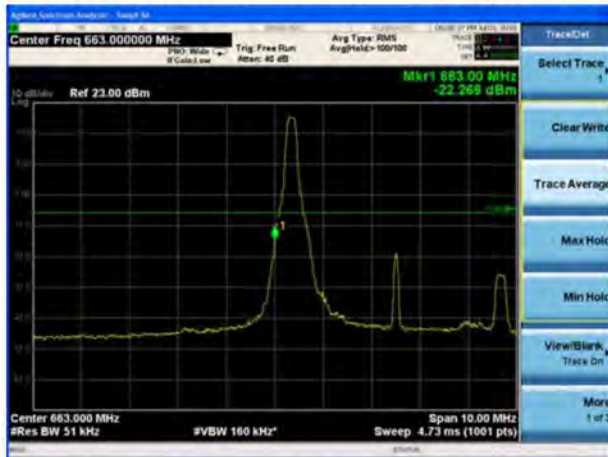


LTE Band 66 16QAM 20MHz CH-High, 100%RB

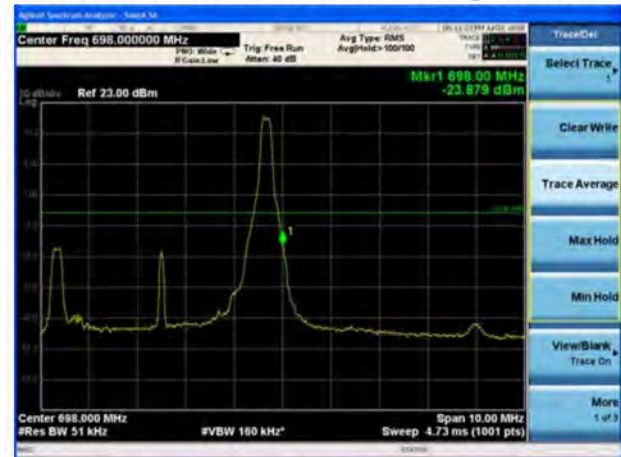




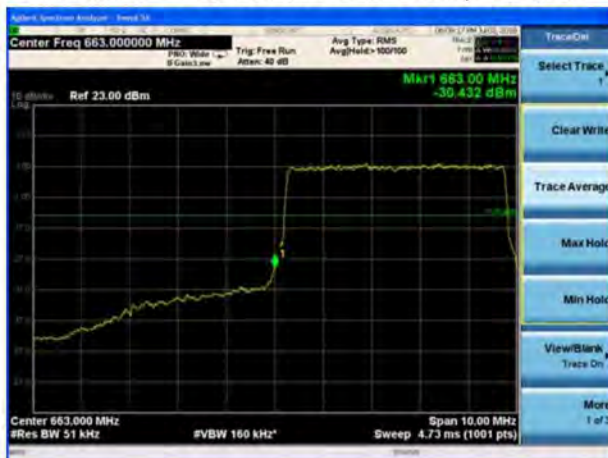
LTE Band 71 QPSK 5MHz CH-Low, 1 RB



LTE Band 71 QPSK 5MHz CH-High, 1 RB



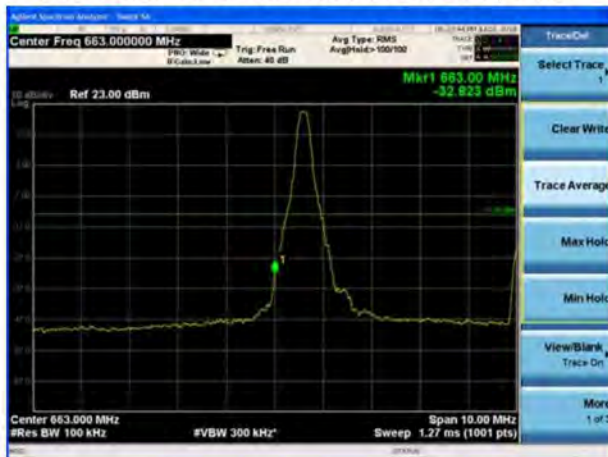
LTE Band 71 QPSK 5MHz CH-Low, 100%RB



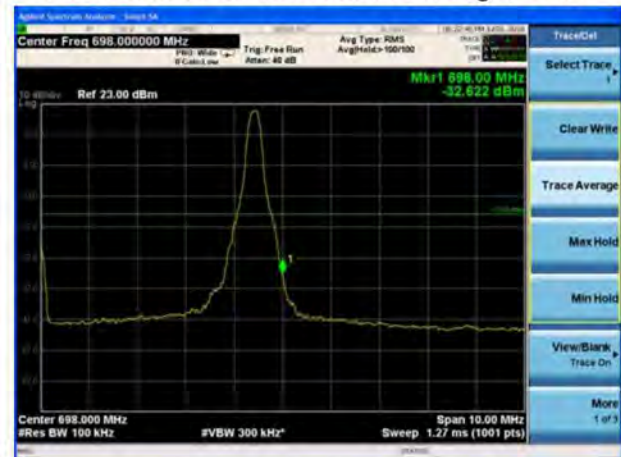
LTE Band 71 QPSK 5MHz CH-High, 100%RB



LTE Band 71 QPSK 10MHz CH-Low, 1 RB

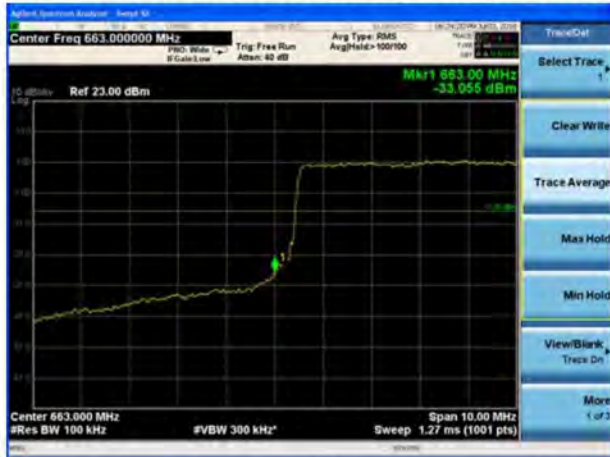


LTE Band 71 QPSK 10MHz CH-High, 1 RB

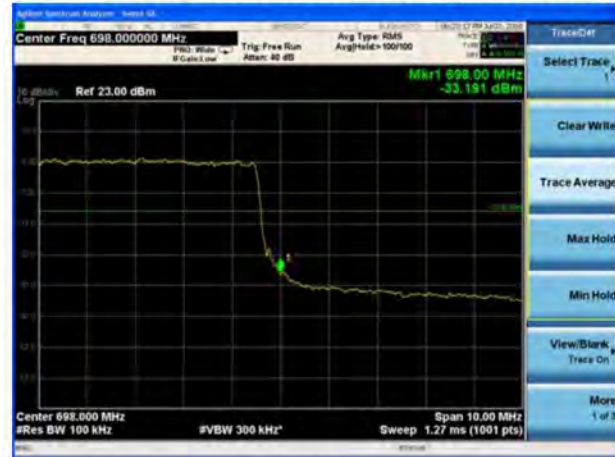




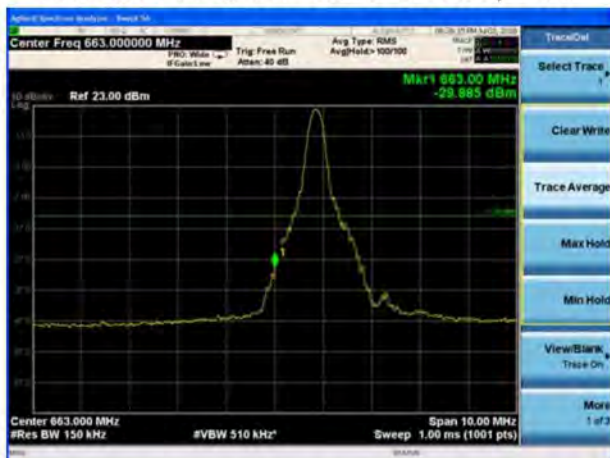
LTE Band 71 QPSK 10MHz CH-Low, 100%RB



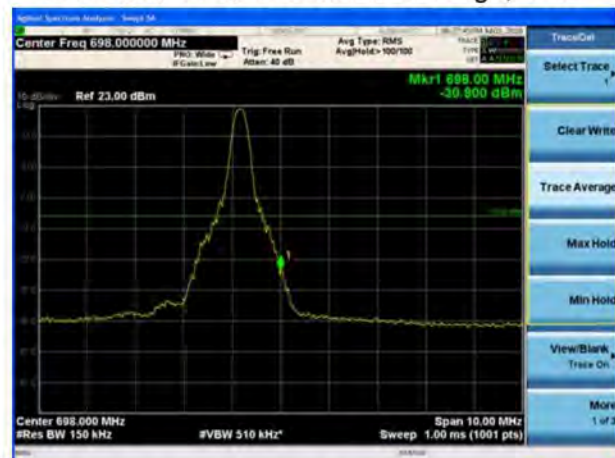
LTE Band 71 QPSK 10MHz CH-High, 100%RB



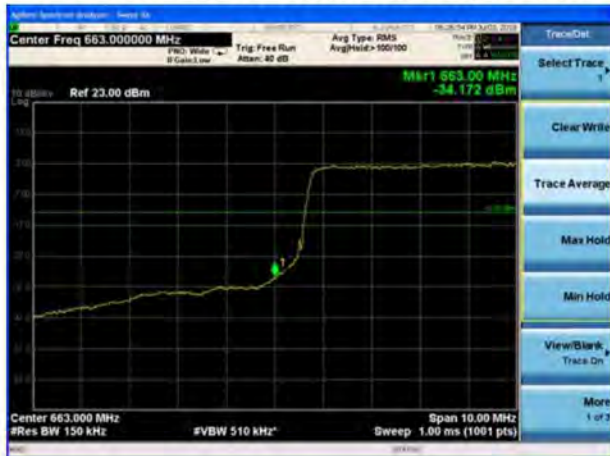
LTE Band 71 QPSK 15MHz CH-Low, 1 RB



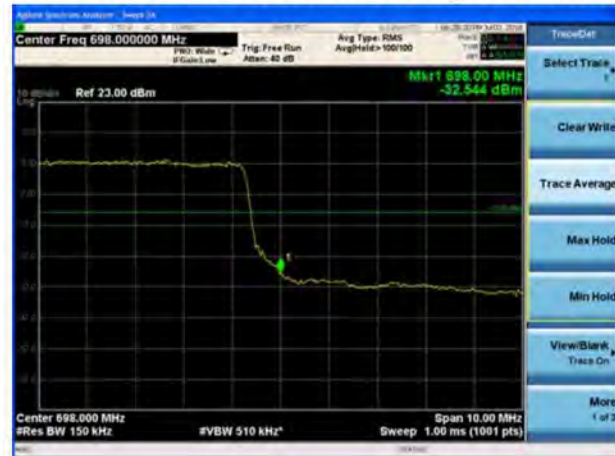
LTE Band 71 QPSK 15MHz CH-High, 1 RB



LTE Band 71 QPSK 15MHz CH-Low, 100%RB

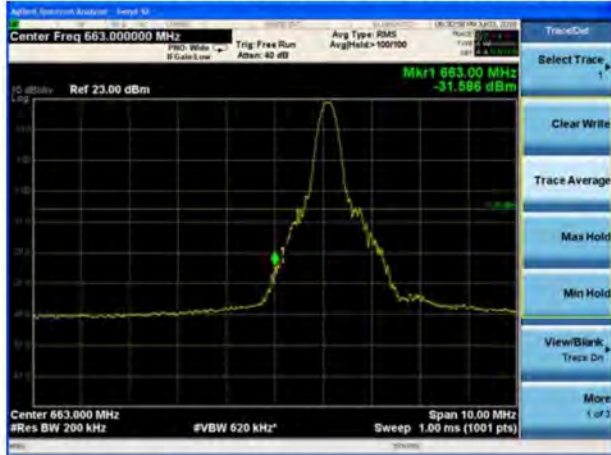


LTE Band 71 QPSK 15MHz CH-High, 100%RB

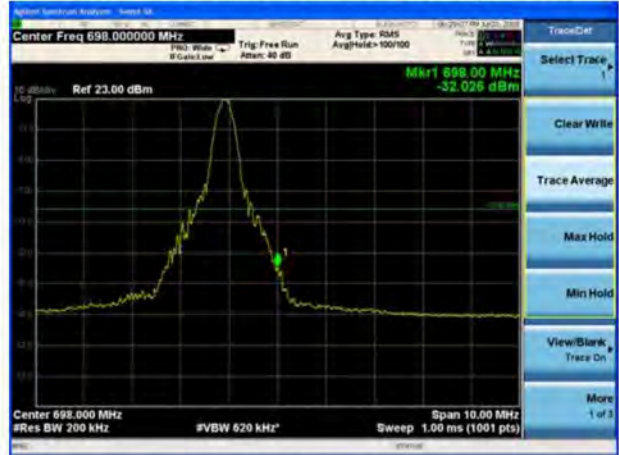




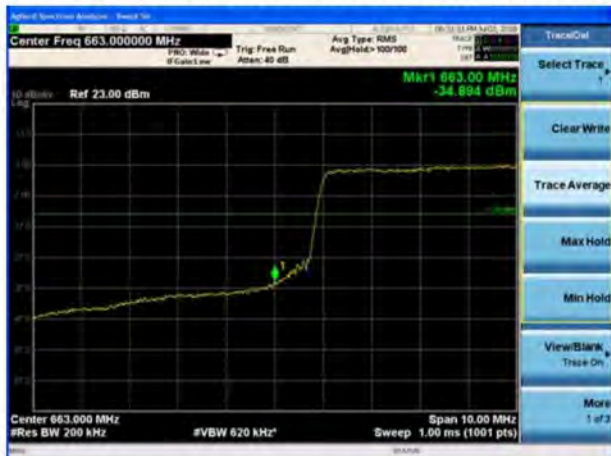
LTE Band 71 QPSK 20MHz CH-Low, 1 RB



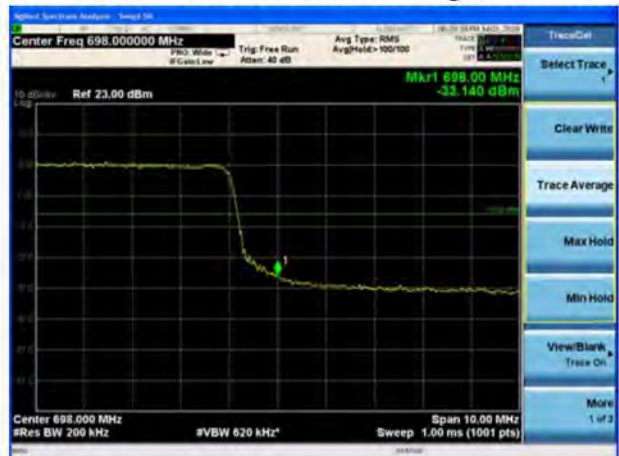
LTE Band 71 QPSK 20MHz CH-High, 1 RB



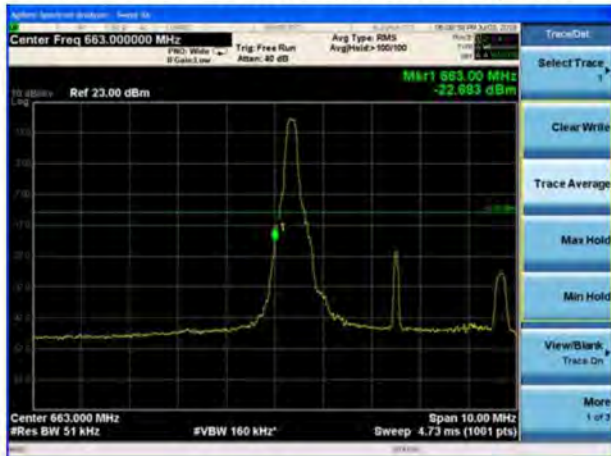
LTE Band 71 QPSK 20MHz CH-Low, 100%RB



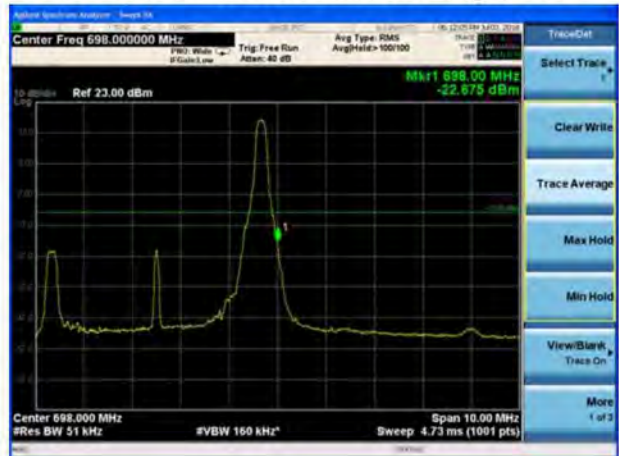
LTE Band 71 QPSK 20MHz CH-High, 100%RB



LTE Band 71 16QAM 5MHz CH-Low, 1 RB

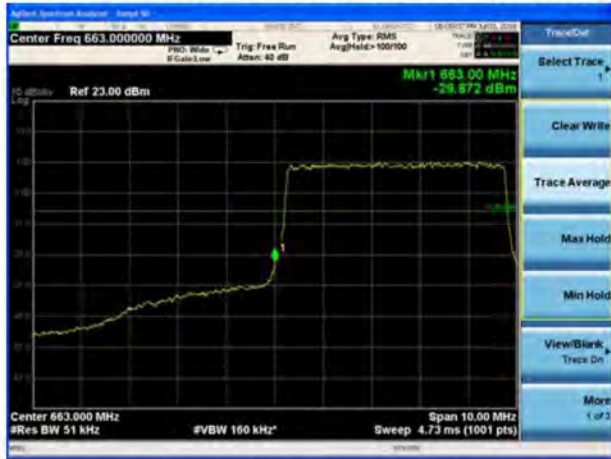


LTE Band 71 16QAM 5MHz CH-High, 1 RB

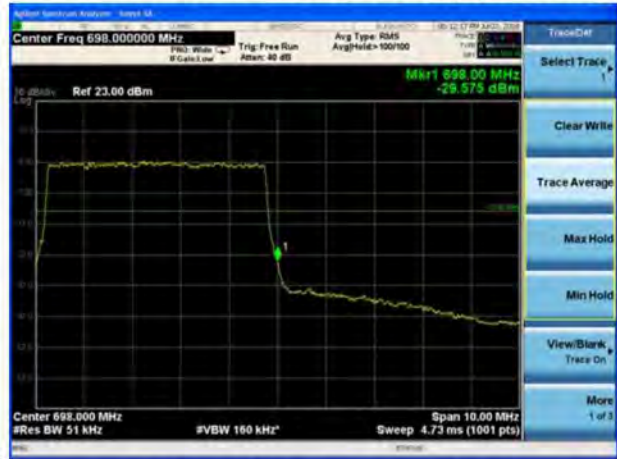




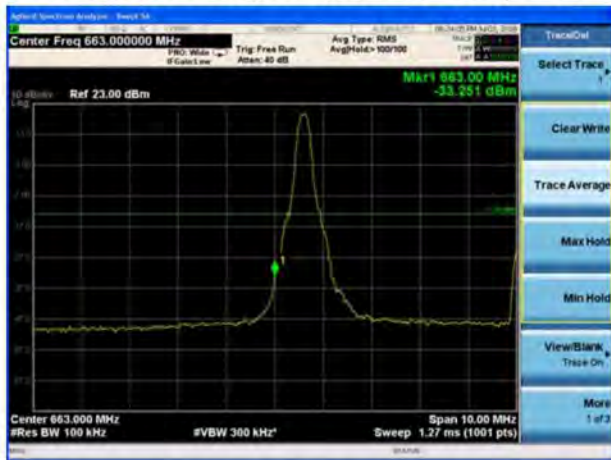
LTE Band 71 16QAM 5MHz CH-Low, 100%RB



LTE Band 71 16QAM 5MHz CH-High, 100%RB



LTE Band 71 16QAM 10MHz CH-Low, 1 RB



LTE Band 71 16QAM 10MHz CH-High, 1 RB



LTE Band 71 16QAM 10MHz CH-Low, 100%RB

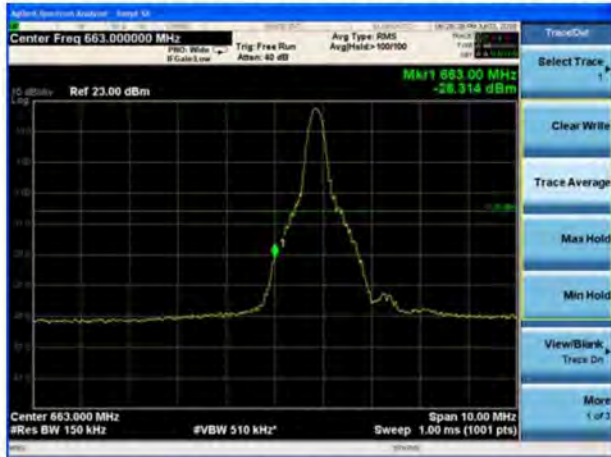


LTE Band 71 16QAM 10MHz CH-High, 100%RB

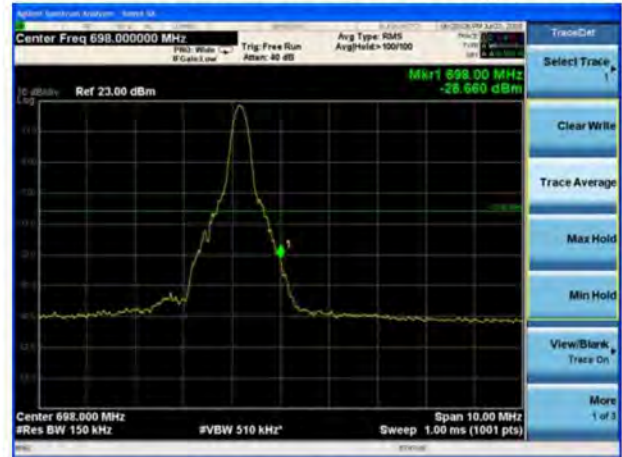




LTE Band 71 16QAM 15MHz CH-Low, 1 RB



LTE Band 71 16QAM 15MHz CH-High, 1 RB



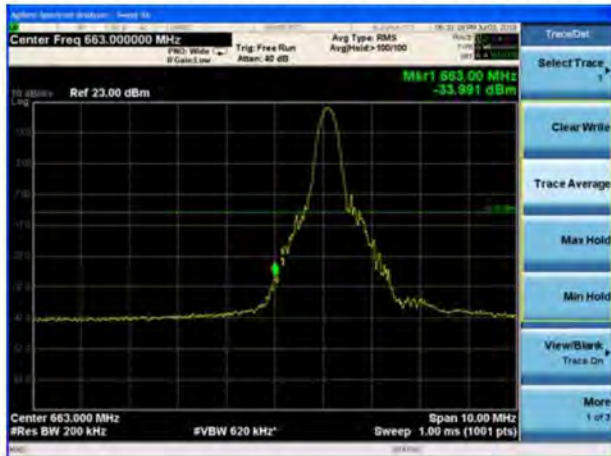
LTE Band 71 16QAM 15MHz CH-Low, 100%RB



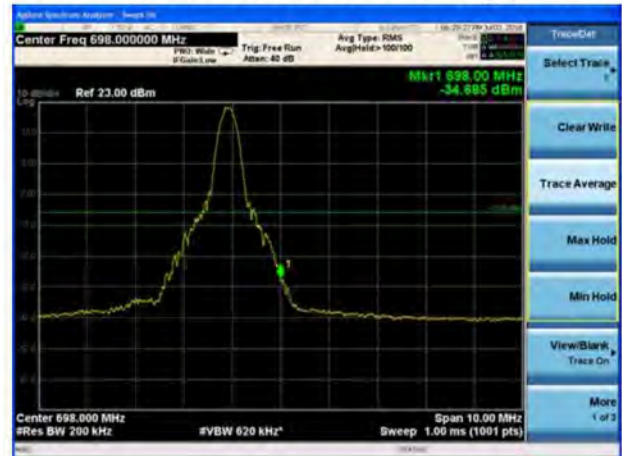
LTE Band 71 16QAM 15MHz CH-High, 100%RB



LTE Band 71 16QAM 20MHz CH-Low, 1 RB



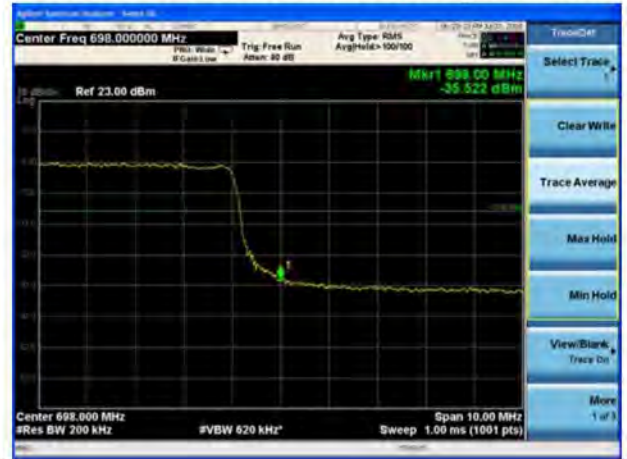
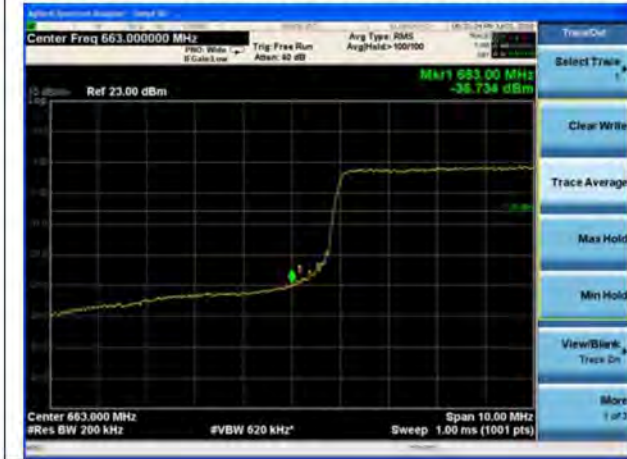
LTE Band 71 16QAM 20MHz CH-High, 1 RB





LTE Band 71 16QAM 20MHz CH-Low, 100%RB

LTE Band 71 16QAM 20MHz CH-High, 100%RB





5.5 Peak-to-Average Power Ratio (PAPR)

Ambient condition

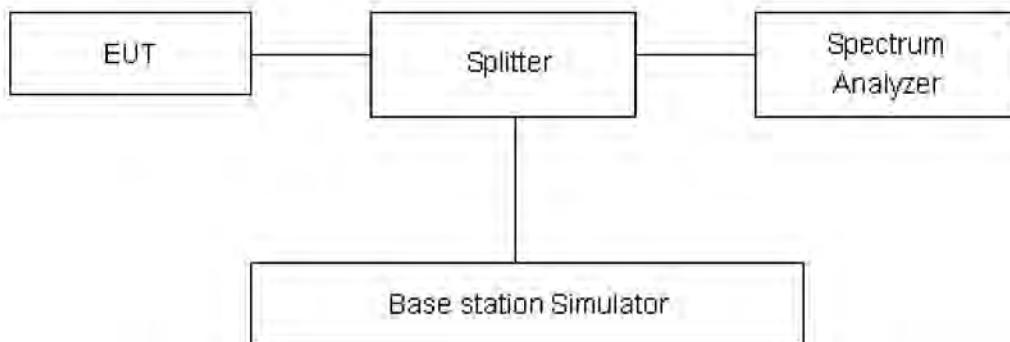
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.



Test Results

| WCDMA Band IV | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
|---------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| RMC | 1312 | 1712.4 | 26.51 | 23.46 | 3.05 | ≤13 | PASS |
| | 1413 | 1732.6 | 26.30 | 23.35 | 2.95 | ≤13 | PASS |
| | 1513 | 1752.6 | 26.19 | 23.37 | 2.82 | ≤13 | PASS |

| LTE Band 4 | | | | | | | | |
|------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 1.4 | 19957 | 1710.7 | 27.15 | 22.30 | 4.85 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.21 | 22.40 | 4.81 | ≤13 | PASS |
| | | 20393 | 1754.3 | 27.12 | 22.64 | 4.48 | ≤13 | PASS |
| | 3 | 19965 | 1711.5 | 27.30 | 22.33 | 4.97 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.37 | 22.44 | 4.93 | ≤13 | PASS |
| | | 20385 | 1753.5 | 27.37 | 22.67 | 4.70 | ≤13 | PASS |
| | 5 | 19975 | 1712.5 | 27.31 | 22.31 | 5.00 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.33 | 22.43 | 4.90 | ≤13 | PASS |
| | | 20375 | 1752.5 | 27.29 | 22.65 | 4.64 | ≤13 | PASS |
| | 10 | 20000 | 1715 | 27.34 | 22.39 | 4.95 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.28 | 22.45 | 4.83 | ≤13 | PASS |
| | | 20350 | 1750 | 27.31 | 22.69 | 4.62 | ≤13 | PASS |
| | 15 | 20025 | 1717.5 | 27.40 | 22.37 | 5.03 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.27 | 22.41 | 4.86 | ≤13 | PASS |
| | | 20325 | 1747.5 | 27.20 | 22.64 | 4.56 | ≤13 | PASS |
| 20 | 20050 | 1720 | 27.26 | 22.34 | 4.92 | ≤13 | PASS | |
| | 20175 | 1732.5 | 27.14 | 22.36 | 4.78 | ≤13 | PASS | |
| | 20300 | 1745 | 27.23 | 22.60 | 4.63 | ≤13 | PASS | |
| 16QAM | 1.4 | 19957 | 1710.7 | 27.03 | 21.34 | 5.69 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.07 | 21.48 | 5.59 | ≤13 | PASS |
| | | 20393 | 1754.3 | 26.99 | 21.68 | 5.31 | ≤13 | PASS |
| | 3 | 19965 | 1711.5 | 27.15 | 21.37 | 5.78 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.21 | 21.52 | 5.69 | ≤13 | PASS |
| | | 20385 | 1753.5 | 27.21 | 21.71 | 5.50 | ≤13 | PASS |
| | 5 | 19975 | 1712.5 | 27.11 | 21.35 | 5.76 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.16 | 21.48 | 5.68 | ≤13 | PASS |
| | | 20375 | 1752.5 | 27.05 | 21.66 | 5.39 | ≤13 | PASS |
| | 10 | 20000 | 1715 | 27.14 | 21.38 | 5.76 | ≤13 | PASS |
| | | 20175 | 1732.5 | 27.18 | 21.53 | 5.65 | ≤13 | PASS |
| | | 20350 | 1750 | 27.14 | 21.70 | 5.44 | ≤13 | PASS |



| | | | | | | | |
|----|-------|--------|-------|-------|------|-----|------|
| 15 | 20025 | 1717.5 | 27.12 | 21.35 | 5.77 | ≤13 | PASS |
| | 20175 | 1732.5 | 27.08 | 21.48 | 5.60 | ≤13 | PASS |
| | 20325 | 1747.5 | 26.95 | 21.66 | 5.29 | ≤13 | PASS |
| 20 | 20050 | 1720 | 27.04 | 21.33 | 5.71 | ≤13 | PASS |
| | 20175 | 1732.5 | 27.03 | 21.44 | 5.59 | ≤13 | PASS |
| | 20300 | 1745 | 27.03 | 21.63 | 5.40 | ≤13 | PASS |

| LTE Band 12 | | | | | | | | |
|-------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 1.4 | 23017 | 699.7 | 27.71 | 22.61 | 5.10 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.72 | 22.57 | 5.15 | ≤13 | PASS |
| | | 23173 | 715.3 | 27.70 | 22.65 | 5.05 | ≤13 | PASS |
| | 3 | 23025 | 700.5 | 27.83 | 22.64 | 5.19 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.82 | 22.61 | 5.21 | ≤13 | PASS |
| | | 23165 | 714.5 | 27.87 | 22.68 | 5.19 | ≤13 | PASS |
| | 5 | 23035 | 701.5 | 27.87 | 22.68 | 5.19 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.75 | 22.58 | 5.17 | ≤13 | PASS |
| | | 23155 | 713.5 | 27.86 | 22.65 | 5.21 | ≤13 | PASS |
| | 10 | 23060 | 704 | 27.83 | 22.65 | 5.18 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.60 | 22.53 | 5.07 | ≤13 | PASS |
| | | 23130 | 711 | 27.76 | 22.61 | 5.15 | ≤13 | PASS |
| 16QAM | 1.4 | 23017 | 699.7 | 27.73 | 21.71 | 6.02 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.57 | 21.63 | 5.94 | ≤13 | PASS |
| | | 23173 | 715.3 | 27.73 | 21.84 | 5.89 | ≤13 | PASS |
| | 3 | 23025 | 700.5 | 27.78 | 21.74 | 6.04 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.71 | 21.67 | 6.04 | ≤13 | PASS |
| | | 23165 | 714.5 | 27.89 | 21.87 | 6.02 | ≤13 | PASS |
| | 5 | 23035 | 701.5 | 27.70 | 21.72 | 5.98 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.59 | 21.63 | 5.96 | ≤13 | PASS |
| | | 23155 | 713.5 | 27.81 | 21.82 | 5.99 | ≤13 | PASS |
| | 10 | 23060 | 704 | 27.68 | 21.70 | 5.98 | ≤13 | PASS |
| | | 23095 | 707.5 | 27.50 | 21.59 | 5.91 | ≤13 | PASS |
| | | 23130 | 711 | 27.76 | 21.79 | 5.97 | ≤13 | PASS |

| LTE Band 13 | | | | | | | | |
|-------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 5 | 23205 | 779.5 | 27.81 | 22.81 | 5.00 | ≤13 | PASS |



| | | | | | | | | |
|-------|----|-------|-------|-------|-------|------|-----|------|
| | 10 | 23230 | 782 | 27.79 | 22.74 | 5.05 | ≤13 | PASS |
| | | 23255 | 784.5 | 27.89 | 22.80 | 5.09 | ≤13 | PASS |
| | | 23230 | 782 | 27.75 | 22.74 | 5.01 | ≤13 | PASS |
| 16QAM | 5 | 23205 | 779.5 | 27.57 | 21.74 | 5.83 | ≤13 | PASS |
| | | 23230 | 782 | 27.81 | 21.96 | 5.85 | ≤13 | PASS |
| | | 23255 | 784.5 | 27.47 | 21.62 | 5.85 | ≤13 | PASS |
| | 10 | 23230 | 782 | 27.65 | 21.82 | 5.83 | ≤13 | PASS |

| LTE Band 66 | | | | | | | | |
|-------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK | 1.4 | 131979 | 1710.7 | 27.40 | 22.51 | 4.89 | ≤13 | PASS |
| | | 132322 | 1745 | 27.22 | 22.73 | 4.49 | ≤13 | PASS |
| | | 132665 | 1779.3 | 27.31 | 22.34 | 4.97 | ≤13 | PASS |
| | 3 | 131987 | 1711.5 | 27.51 | 22.54 | 4.97 | ≤13 | PASS |
| | | 132322 | 1745 | 27.47 | 22.77 | 4.70 | ≤13 | PASS |
| | | 132657 | 1778.5 | 27.48 | 22.37 | 5.11 | ≤13 | PASS |
| | 5 | 131997 | 1712.5 | 27.52 | 22.52 | 5.00 | ≤13 | PASS |
| | | 132322 | 1745 | 27.40 | 22.76 | 4.64 | ≤13 | PASS |
| | | 132647 | 1777.5 | 27.38 | 22.35 | 5.03 | ≤13 | PASS |
| | 10 | 132022 | 1715 | 27.54 | 22.60 | 4.94 | ≤13 | PASS |
| | | 132322 | 1745 | 27.34 | 22.78 | 4.56 | ≤13 | PASS |
| | | 132622 | 1775 | 27.37 | 22.39 | 4.98 | ≤13 | PASS |
| | 15 | 132047 | 1717.5 | 27.57 | 22.58 | 4.99 | ≤13 | PASS |
| | | 132322 | 1745 | 27.25 | 22.74 | 4.51 | ≤13 | PASS |
| | | 132597 | 1772.5 | 27.36 | 22.34 | 5.02 | ≤13 | PASS |
| | 20 | 132072 | 1720 | 27.46 | 22.55 | 4.91 | ≤13 | PASS |
| | | 132322 | 1745 | 27.25 | 22.69 | 4.56 | ≤13 | PASS |
| | | 132572 | 1770 | 27.21 | 22.30 | 4.91 | ≤13 | PASS |
| 16QAM | 1.4 | 131979 | 1710.7 | 27.34 | 21.65 | 5.69 | ≤13 | PASS |
| | | 132322 | 1745 | 27.08 | 21.84 | 5.24 | ≤13 | PASS |
| | | 132665 | 1779.3 | 27.26 | 21.45 | 5.81 | ≤13 | PASS |
| | 3 | 131987 | 1711.5 | 27.44 | 21.68 | 5.76 | ≤13 | PASS |
| | | 132322 | 1745 | 27.35 | 21.88 | 5.47 | ≤13 | PASS |
| | | 132657 | 1778.5 | 27.37 | 21.48 | 5.89 | ≤13 | PASS |
| | 5 | 131997 | 1712.5 | 27.41 | 21.66 | 5.75 | ≤13 | PASS |
| | | 132322 | 1745 | 27.20 | 21.84 | 5.36 | ≤13 | PASS |
| | | 132647 | 1777.5 | 27.23 | 21.43 | 5.80 | ≤13 | PASS |



| | | | | | | | | |
|--|----|--------|--------|-------|-------|------|-----|------|
| | 10 | 132022 | 1715 | 27.48 | 21.69 | 5.79 | ≤13 | PASS |
| | | 132322 | 1745 | 27.25 | 21.89 | 5.36 | ≤13 | PASS |
| | | 132622 | 1775 | 27.28 | 21.47 | 5.81 | ≤13 | PASS |
| | 15 | 132047 | 1717.5 | 27.39 | 21.66 | 5.73 | ≤13 | PASS |
| | | 132322 | 1745 | 27.08 | 21.84 | 5.24 | ≤13 | PASS |
| | | 132597 | 1772.5 | 27.17 | 21.43 | 5.74 | ≤13 | PASS |
| | 20 | 132072 | 1720 | 27.33 | 21.64 | 5.69 | ≤13 | PASS |
| | | 132322 | 1745 | 27.16 | 21.80 | 5.36 | ≤13 | PASS |
| | | 132572 | 1770 | 27.10 | 21.40 | 5.70 | ≤13 | PASS |

| LTE Band 71 | | | | | | | | |
|-------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| | 5 | 133147 | 665.5 | 27.25 | 22.17 | 5.08 | ≤13 | PASS |
| | | 133297 | 680.5 | 27.48 | 22.40 | 5.08 | ≤13 | PASS |
| | | 133447 | 695.5 | 27.35 | 22.20 | 5.15 | ≤13 | PASS |
| | 10 | 133172 | 668 | 27.33 | 22.25 | 5.08 | ≤13 | PASS |
| | | 133297 | 680.5 | 27.47 | 22.42 | 5.05 | ≤13 | PASS |
| | | 133422 | 693 | 27.31 | 22.24 | 5.07 | ≤13 | PASS |
| | 15 | 133197 | 670.5 | 27.45 | 22.23 | 5.22 | ≤13 | PASS |
| | | 133297 | 680.5 | 27.28 | 22.11 | 5.17 | ≤13 | PASS |
| | | 133397 | 690.5 | 27.40 | 22.19 | 5.21 | ≤13 | PASS |
| | 20 | 133222 | 673 | 27.24 | 22.20 | 5.04 | ≤13 | PASS |
| | | 133322 | 683 | 27.36 | 22.33 | 5.03 | ≤13 | PASS |
| | | 133372 | 688 | 27.23 | 22.15 | 5.08 | ≤13 | PASS |
| | 5 | 133147 | 665.5 | 27.14 | 21.32 | 5.82 | ≤13 | PASS |
| | | 133297 | 680.5 | 27.36 | 21.50 | 5.86 | ≤13 | PASS |
| | | 133447 | 695.5 | 27.22 | 21.31 | 5.91 | ≤13 | PASS |
| | 10 | 133172 | 668 | 27.22 | 21.35 | 5.87 | ≤13 | PASS |
| | | 133297 | 680.5 | 27.37 | 21.55 | 5.82 | ≤13 | PASS |
| | | 133422 | 693 | 27.24 | 21.35 | 5.89 | ≤13 | PASS |
| | 15 | 133197 | 670.5 | 27.25 | 21.32 | 5.93 | ≤13 | PASS |
| | | 133297 | 680.5 | 26.98 | 21.11 | 5.87 | ≤13 | PASS |
| | | 133397 | 690.5 | 27.25 | 21.31 | 5.94 | ≤13 | PASS |
| | 20 | 133222 | 673 | 27.16 | 21.30 | 5.86 | ≤13 | PASS |
| | | 133322 | 683 | 27.29 | 21.46 | 5.83 | ≤13 | PASS |
| | | 133372 | 688 | 27.16 | 21.28 | 5.88 | ≤13 | PASS |

5.6 Frequency Stability

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -40°C to +85°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -40°C to +85°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

Frequency Stability (Voltage Variation)

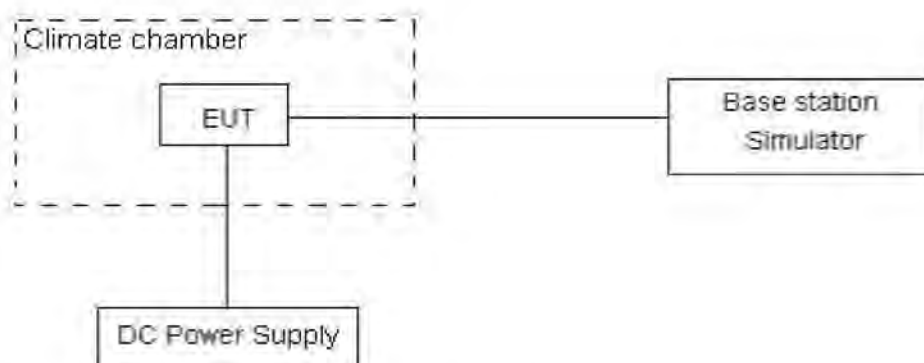
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.3 V and 4.3 V, with a nominal voltage of 3.8V.

Test setup



Limits

No specific frequency stability requirements in part 27.54

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3, U=0.01\text{ppm}$.

**Test Result**

WCDMA Band IV

| WCDMA Band IV | | | | | |
|-----------------|---------|-------------------|--------------------|-----------|--------------------------|
| Condition | | 1710 | 1755 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 1710.0279 | 1754.9113 | 2.13 | 0.00113 |
| Extreme (85°C) | | 1710.0281 | 1754.9112 | -3.16 | -0.00168 |
| Extreme (80°C) | | 1710.0276 | 1754.9116 | 0.59 | 0.00031 |
| Extreme (70°C) | | 1710.0291 | 1754.9101 | -5.54 | -0.00295 |
| Extreme (60°C) | | 1710.0272 | 1754.9122 | -1.17 | -0.00062 |
| Extreme (50°C) | | 1710.0269 | 1754.9123 | 0.16 | 0.00009 |
| Extreme (40°C) | | 1710.0284 | 1754.9108 | -5.52 | -0.00294 |
| Extreme (30°C) | | 1710.0273 | 1754.9119 | -3.36 | -0.00179 |
| Extreme (20°C) | | 1710.0271 | 1754.9122 | 0.69 | 0.00037 |
| Extreme (10C) | | 1710.0286 | 1754.9106 | 0.89 | 0.00047 |
| Extreme (0°C) | | 1710.0277 | 1754.9115 | 3.19 | 0.00170 |
| Extreme (-10°C) | | 1710.0291 | 1754.9122 | 0.39 | 0.00021 |
| Extreme (-20°C) | | 1710.0323 | 1754.9153 | 3.56 | 0.00189 |
| Extreme (-30°C) | | 1710.0339 | 1754.9175 | 0.19 | 0.00010 |
| Extreme (-40°C) | | 1710.0345 | 1754.9187 | 2.80 | 0.00149 |
| 25C | LV | 1710.0316 | 1754.9147 | 2.96 | 0.00157 |
| | HV | 1710.0303 | 1754.9156 | 0.49 | 0.00026 |

| LTE Band 4 | | | | | |
|-------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| (QPSK, 20MHz BANDWIDTH) | | | | | |
| Condition | | 1710 | 1755 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 1710.6538 | 1754.4302 | 1.44 | 0.00083 |
| Extreme (85°C) | | 1710.6549 | 1754.4314 | 0.86 | 0.00050 |
| Extreme (80°C) | | 1710.6516 | 1754.4275 | -2.69 | -0.00155 |
| Extreme (70°C) | | 1710.6529 | 1754.4294 | -1.82 | -0.00105 |
| Extreme (60°C) | | 1710.6515 | 1754.4285 | 2.10 | 0.00121 |
| Extreme (50°C) | | 1710.6521 | 1754.4286 | 0.86 | 0.00050 |
| Extreme (40°C) | | 1710.6534 | 1754.4299 | -0.07 | -0.00004 |
| Extreme (30°C) | | 1710.6541 | 1754.4306 | 0.35 | 0.00020 |
| Extreme (20°C) | | 1710.6523 | 1754.4285 | -0.40 | -0.00023 |
| Extreme (10C) | | 1710.6532 | 1754.4297 | -0.20 | -0.00012 |
| Extreme (0°C) | | 1710.6519 | 1754.4284 | 0.56 | 0.00032 |



| Condition | | 1710 | 1755 | Delta(Hz) | Frequency Stability(ppm) | |
|---------------------------------|---------|-------------------|--------------------|-----------|--------------------------|---------|
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | | |
| Extreme (-10°C) | | 1710.6514 | 1754.4279 | -2.60 | -0.00150 | |
| Extreme (-20°C) | | 1710.6525 | 1754.4291 | -0.42 | -0.00024 | |
| Extreme (-30°C) | | 1710.6558 | 1754.4323 | 1.26 | 0.00073 | |
| Extreme (-40°C) | | 1710.6576 | 1754.4335 | 3.50 | 0.00202 | |
| 25°C | LV | 1710.6522 | 1754.4287 | -1.15 | -0.00066 | |
| | HV | 1710.6528 | 1754.4293 | 0.97 | 0.00056 | |
| (16QAM, 20MHz BANDWIDTH) | | | | | | |
| Condition | | 1710 | 1755 | Delta(Hz) | Frequency Stability(ppm) | |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | | |
| Normal (25°C) | Normal | 1710.6387 | 1754.5105 | -6.99 | -0.00403 | |
| Extreme (85°C) | | 1710.6369 | 1754.5094 | 3.06 | 0.00177 | |
| Extreme (80°C) | | 1710.6408 | 1754.5133 | -3.56 | -0.00205 | |
| Extreme (70°C) | | 1710.6389 | 1754.5114 | -5.22 | -0.00301 | |
| Extreme (60°C) | | 1710.6403 | 1754.5128 | -3.92 | -0.00226 | |
| Extreme (50°C) | | 1710.6397 | 1754.5122 | -2.16 | -0.00125 | |
| Extreme (40°C) | | 1710.6384 | 1754.5109 | -2.64 | -0.00152 | |
| Extreme (30°C) | | 1710.6377 | 1754.5102 | 0.55 | 0.00032 | |
| Extreme (20°C) | | 1710.6398 | 1754.5123 | 0.33 | 0.00019 | |
| Extreme (10C) | | 1710.6386 | 1754.5111 | -2.00 | -0.00115 | |
| Extreme (0°C) | | 1710.6399 | 1754.5124 | 0.06 | 0.00003 | |
| Extreme (-10°C) | | 1710.6404 | 1754.5129 | 4.07 | 0.00235 | |
| Extreme (-20°C) | | 1710.6393 | 1754.5118 | -0.53 | -0.00031 | |
| Extreme (-30°C) | | 1710.6363 | 1754.5085 | 2.99 | 0.00173 | |
| Extreme (-40°C) | | | 1710.6348 | 1754.5073 | 0.55 | 0.00032 |
| 25°C | | LV | 1710.6396 | 1754.5121 | 0.15 | 0.00009 |
| | HV | 1710.6391 | 1754.5115 | 3.19 | 0.00184 | |

| LTE Band 12 | | | | | |
|--------------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| (QPSK, 10MHz BANDWIDTH) | | | | | |
| Condition | | 699 | 716 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 699.2572 | 715.7323 | -0.91 | -0.00109 |
| Extreme (85°C) | | 699.2583 | 715.7311 | -3.35 | -0.00400 |
| Extreme (80°C) | | 699.2544 | 715.7272 | -3.47 | -0.00415 |
| Extreme (70°C) | | 699.2563 | 715.7291 | -6.40 | -0.00765 |
| Extreme (60°C) | | 699.2549 | 715.7277 | -5.64 | -0.00674 |
| Extreme (50°C) | | 699.2555 | 715.7283 | -0.38 | -0.00045 |
| Extreme (40°C) | | 699.2568 | 715.7296 | -1.02 | -0.00122 |
| Extreme (30°C) | | 699.2575 | 715.7303 | -1.09 | -0.00130 |



| | | | | | |
|--------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| Extreme (20°C) | | 699.2554 | 715.7282 | 3.16 | 0.00378 |
| Extreme (10C) | | 699.2566 | 715.7294 | 1.15 | 0.00137 |
| Extreme (0°C) | | 699.2553 | 715.7281 | -3.64 | -0.00435 |
| Extreme (-10°C) | | 699.2548 | 715.7276 | -4.34 | -0.00519 |
| Extreme (-20°C) | | 699.2559 | 715.7287 | -0.35 | -0.00042 |
| Extreme (-30°C) | | 699.2592 | 715.7324 | 2.28 | 0.00273 |
| Extreme (-40°C) | | 699.2604 | 715.7332 | -3.92 | -0.00469 |
| 25°C | LV | 699.2556 | 715.7284 | -5.58 | -0.00667 |
| | HV | 699.2562 | 715.7295 | 0.20 | 0.00024 |
| (16QAM, 10MHz BANDWIDTH) | | | | | |
| Condition | | 699 | 716 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 699.3118 | 715.6805 | 0.85 | 0.00102 |
| Extreme (85°C) | | 699.3107 | 715.6794 | -0.85 | -0.00102 |
| Extreme (80°C) | | 699.3146 | 715.6833 | -0.21 | -0.00025 |
| Extreme (70°C) | | 699.3127 | 715.6814 | -1.63 | -0.00195 |
| Extreme (60°C) | | 699.3141 | 715.6828 | -1.10 | -0.00132 |
| Extreme (50°C) | | 699.3135 | 715.6822 | 0.86 | 0.00103 |
| Extreme (40°C) | | 699.3122 | 715.6809 | -1.34 | -0.00160 |
| Extreme (30°C) | | 699.3115 | 715.6802 | -3.09 | -0.00369 |
| Extreme (20°C) | | 699.3136 | 715.6823 | -2.91 | -0.00348 |
| Extreme (10C) | | 699.3124 | 715.6811 | -2.10 | -0.00251 |
| Extreme (0°C) | | 699.3137 | 715.6824 | 0.08 | 0.00010 |
| Extreme (-10°C) | | 699.3142 | 715.6829 | 2.56 | 0.00306 |
| Extreme (-20°C) | | 699.3131 | 715.6818 | -1.21 | -0.00145 |
| Extreme (-30°C) | | 699.3098 | 715.6785 | -1.31 | -0.00157 |
| Extreme (-40°C) | | | 699.3086 | 715.6773 | 0.69 |
| 25°C | LV | 699.3134 | 715.6821 | 3.45 | 0.00412 |
| | HV | 699.3128 | 715.6815 | 4.51 | 0.00539 |

| | | | | | |
|-------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| LTE Band 13 | | | | | |
| (QPSK, 10MHz BANDWIDTH) | | | | | |
| Condition | | 777 | 787 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 777.4363 | 786.5756 | 2.53 | 0.00302 |
| Extreme (85°C) | | 777.4364 | 786.5755 | -5.60 | -0.00669 |
| Extreme (80°C) | | 777.4360 | 786.5759 | 12.94 | 0.01547 |
| Extreme (70°C) | | 777.4375 | 786.5744 | -4.47 | -0.00534 |
| Extreme (60°C) | | 777.4356 | 786.5763 | 0.11 | 0.00013 |



| | | | | | |
|--------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| Extreme (50°C) | | 777.4353 | 786.5766 | 0.59 | 0.00071 |
| Extreme (40°C) | | 777.4368 | 786.5751 | -0.47 | -0.00056 |
| Extreme (30°C) | | 777.4357 | 786.5762 | 3.15 | 0.00377 |
| Extreme (20°C) | | 777.4354 | 786.5765 | 6.52 | 0.00779 |
| Extreme (10C) | | 777.4370 | 786.5749 | 5.15 | 0.00616 |
| Extreme (0°C) | | 777.4361 | 786.5758 | 1.84 | 0.00220 |
| Extreme (-10°C) | | 777.4356 | 786.5751 | -0.64 | -0.00077 |
| Extreme (-20°C) | | 777.4362 | 786.5765 | -1.12 | -0.00134 |
| Extreme (-30°C) | | 777.4356 | 786.5763 | -1.60 | -0.00191 |
| Extreme (-40°C) | | 777.4362 | 786.5757 | -3.90 | -0.00466 |
| 25°C | LV | 777.4356 | 786.5755 | 5.91 | 0.00707 |
| | HV | 777.4362 | 786.5744 | 3.58 | 0.00428 |
| (16QAM, 10MHz BANDWIDTH) | | | | | |
| Condition | | 777 | 787 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 777.5179 | 786.5012 | -11.34 | -0.01356 |
| Extreme (85°C) | | 777.5180 | 786.5011 | 7.20 | 0.00861 |
| Extreme (80°C) | | 777.5176 | 786.5015 | -10.21 | -0.01221 |
| Extreme (70°C) | | 777.5191 | 786.5131 | -5.63 | -0.00673 |
| Extreme (60°C) | | 777.5172 | 786.5019 | -5.15 | -0.00616 |
| Extreme (50°C) | | 777.5169 | 786.5022 | -6.21 | -0.00742 |
| Extreme (40°C) | | 777.5184 | 786.5007 | -2.59 | -0.00310 |
| Extreme (30°C) | | 777.5173 | 786.5018 | 0.78 | 0.00093 |
| Extreme (20°C) | | 777.5170 | 786.5021 | -0.59 | -0.00071 |
| Extreme (10C) | | 777.5186 | 786.5005 | -3.90 | -0.00466 |
| Extreme (0°C) | | 777.5177 | 786.5014 | -6.38 | -0.00763 |
| Extreme (-10°C) | | 777.5176 | 786.5011 | -6.86 | -0.00820 |
| Extreme (-20°C) | | 777.5169 | 786.5131 | -7.34 | -0.00877 |
| Extreme (-30°C) | | 777.5173 | 786.5018 | -9.64 | -0.01152 |
| Extreme (-40°C) | | | 777.5186 | 786.5005 | 0.17 |
| 25°C | LV | 777.5172 | 786.5019 | -7.34 | -0.00877 |
| | HV | 777.5178 | 786.5013 | -2.76 | -0.00330 |

| LTE Band 66 | | | | | |
|--------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| (QPSK, 20MHz BANDWIDTH) | | | | | |
| Condition | | 1710 | 1780 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 1710.3406 | 1779.6709 | 3.51 | 0.00201 |
| Extreme (85°C) | | 1710.3405 | 1779.6708 | 4.90 | 0.00281 |
| Extreme (80°C) | | 1710.3403 | 1779.6703 | -2.65 | -0.00152 |
| Extreme (70°C) | | 1710.3421 | 1779.6723 | -1.64 | -0.00094 |
| Extreme (60°C) | | 1710.3418 | 1779.6721 | 3.59 | 0.00206 |
| Extreme (50°C) | | 1710.3409 | 1779.6712 | -7.62 | -0.00437 |
| Extreme (40°C) | | 1710.3394 | 1779.6697 | -2.49 | -0.00143 |
| Extreme (30°C) | | 1710.3413 | 1779.6716 | -1.06 | -0.00061 |
| Extreme (20°C) | | 1710.3416 | 1779.6719 | 6.30 | 0.00361 |
| Extreme (10C) | | 1710.3401 | 1779.6704 | -9.93 | -0.00569 |
| Extreme (0°C) | | 1710.3412 | 1779.6715 | 5.59 | 0.00320 |
| Extreme (-10°C) | | 1710.3415 | 1779.6718 | 3.51 | 0.00201 |
| Extreme (-20°C) | | 1710.3399 | 1779.6702 | -9.02 | -0.00517 |
| Extreme (-30°C) | | 1710.3409 | 1779.6712 | -7.21 | -0.00413 |
| Extreme (-40°C) | | 1710.3408 | 1779.6711 | -8.13 | -0.00466 |
| 25°C | | LV | 1710.3413 | 1779.6716 | 3.89 |
| | HV | 1710.3407 | 1779.6713 | 6.47 | 0.00371 |
| (16QAM, 20MHz BANDWIDTH) | | | | | |
| Condition | | 1710 | 1780 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 1710.4049 | 1779.7132 | -1.97 | -0.00113 |
| Extreme (85°C) | | 1710.4051 | 1779.7131 | -2.98 | -0.00171 |
| Extreme (80°C) | | 1710.4069 | 1779.7131 | -6.40 | -0.00367 |
| Extreme (70°C) | | 1710.4047 | 1779.7144 | -4.42 | -0.00253 |
| Extreme (60°C) | | 1710.4042 | 1779.7145 | 0.08 | 0.00005 |
| Extreme (50°C) | | 1710.4046 | 1779.7135 | -0.67 | -0.00038 |
| Extreme (40°C) | | 1710.4061 | 1779.7123 | -8.29 | -0.00475 |
| Extreme (30°C) | | 1710.4042 | 1779.7139 | -1.03 | -0.00059 |
| Extreme (20°C) | | 1710.4039 | 1779.7142 | 0.28 | 0.00016 |
| Extreme (10C) | | 1710.4054 | 1779.7127 | -4.34 | -0.00249 |
| Extreme (0°C) | | 1710.4043 | 1779.7138 | -2.64 | -0.00151 |
| Extreme (-10°C) | | 1710.4043 | 1779.7141 | -2.85 | -0.00163 |
| Extreme (-20°C) | | 1710.4056 | 1779.7125 | -6.34 | -0.00363 |
| Extreme (-30°C) | | 1710.4046 | 1779.7135 | -2.06 | -0.00118 |
| Extreme (-40°C) | | 1710.4047 | 1779.7134 | -5.29 | -0.00303 |



| | | | | | |
|------|----|-----------|-----------|-------|----------|
| 25°C | LV | 1710.4042 | 1779.7139 | -3.54 | -0.00203 |
| | HV | 1710.4048 | 1779.7133 | -7.00 | -0.00401 |

| LTE Band 71 | | | | | |
|--------------------------|---------|-------------------|--------------------|-----------|--------------------------|
| (QPSK, 20MHz BANDWIDTH) | | | | | |
| Condition | | 663 | 698 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 663.5332 | 697.4977 | 4.02 | 0.00230 |
| Extreme (85°C) | | 663.6528 | 697.6175 | 6.14 | 0.00352 |
| Extreme (80°C) | | 663.5318 | 697.4965 | -2.23 | -0.00128 |
| Extreme (70°C) | | 663.5432 | 697.5079 | -1.56 | -0.00089 |
| Extreme (60°C) | | 663.5391 | 697.5038 | 6.49 | 0.00372 |
| Extreme (50°C) | | 663.5361 | 697.5008 | -5.08 | -0.00291 |
| Extreme (40°C) | | 663.5318 | 697.4965 | -1.82 | -0.00104 |
| Extreme (30°C) | | 663.5432 | 697.5079 | -0.55 | -0.00032 |
| Extreme (20°C) | | 663.5391 | 697.5038 | 7.17 | 0.00411 |
| Extreme (10C) | | 663.5321 | 697.4968 | -9.32 | -0.00534 |
| Extreme (0°C) | | 663.5375 | 697.5022 | 7.40 | 0.00424 |
| Extreme (-10°C) | | 663.5387 | 697.5034 | 4.78 | 0.00274 |
| Extreme (-20°C) | | 663.5345 | 697.4992 | -8.13 | -0.00466 |
| Extreme (-30°C) | | 663.5361 | 697.5008 | -6.09 | -0.00349 |
| Extreme (-40°C) | | 663.5311 | 697.4958 | -7.05 | -0.00404 |
| 25°C | | LV | 663.5326 | 697.4973 | 6.36 |
| | HV | 663.5361 | 697.5008 | 7.38 | 0.00423 |
| (16QAM, 20MHz BANDWIDTH) | | | | | |
| Condition | | 663 | 698 | Delta(Hz) | Frequency Stability(ppm) |
| Temperature | Voltage | F low@-13dBm(MHz) | F high@-13dBm(MHz) | | |
| Normal (25°C) | Normal | 663.5258 | 697.4905 | 0.97 | 0.00056 |
| Extreme (85°C) | | 663.4064 | 697.3707 | 3.93 | 0.00225 |
| Extreme (80°C) | | 663.5282 | 697.4926 | 1.26 | 0.00072 |
| Extreme (70°C) | | 663.5161 | 697.4808 | 3.21 | 0.00184 |
| Extreme (60°C) | | 663.5199 | 697.4846 | 4.58 | 0.00262 |
| Extreme (50°C) | | 663.5227 | 697.4874 | 2.22 | 0.00127 |
| Extreme (40°C) | | 663.5273 | 697.4917 | 1.50 | 0.00086 |
| Extreme (30°C) | | 663.5156 | 697.4803 | 0.31 | 0.00018 |
| Extreme (20°C) | | 663.5197 | 697.4844 | 3.52 | 0.00202 |
| Extreme (10C) | | 663.5267 | 697.4914 | -1.33 | -0.00076 |
| Extreme (0°C) | | 663.5213 | 697.4867 | 1.95 | 0.00112 |
| Extreme (-10°C) | | 663.5201 | 697.4848 | 1.46 | 0.00084 |



| | | | | | |
|-----------------|----|----------|----------|------|---------|
| Extreme (-20°C) | | 663.5243 | 697.4891 | 0.63 | 0.00036 |
| Extreme (-30°C) | | 663.5227 | 697.4874 | 2.25 | 0.00129 |
| Extreme (-40°C) | | 663.5277 | 697.4924 | 2.07 | 0.00119 |
| 25°C | LV | 663.5262 | 697.4909 | 2.96 | 0.00170 |
| | HV | 663.5227 | 697.4874 | 0.84 | 0.00048 |

5.7 Spurious Emissions at Antenna Terminals

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

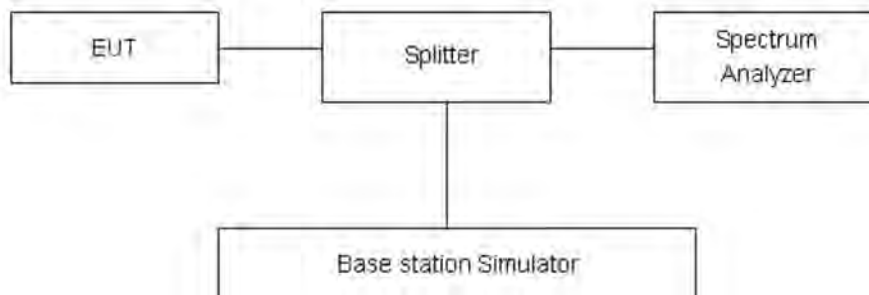
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

LTE -4 Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB..”

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and 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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE -13 Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent



isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

LTE 13- Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

| | | |
|-----------------------------|-------------------------------------|---------|
| Part 27.53(a)/(h)/(g) Limit | | -13 dBm |
| Part 27.53(f) Limit | Limit out of the band 1559-1610 MHz | -13 dBm |
| | Limit in the band 1559-1610 MHz | -40 dBm |

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

| Frequency | Uncertainty |
|------------|-------------|
| 9kHz-1GHz | 0.684 dB |
| 1GHz-27GHz | 1.407 dB |

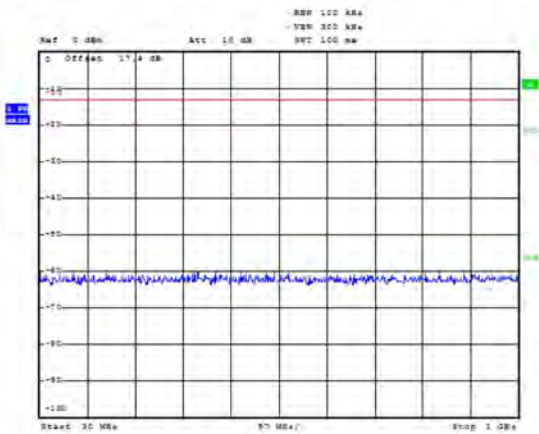


Test Result

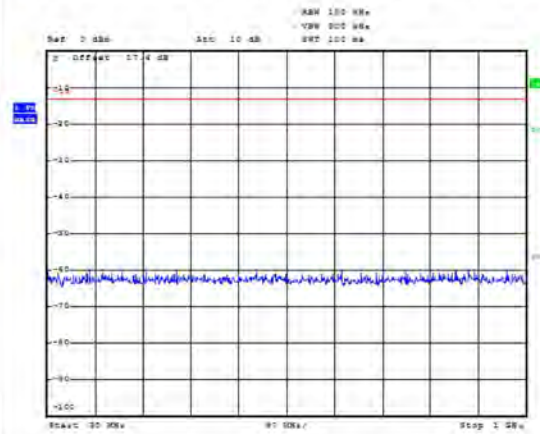
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

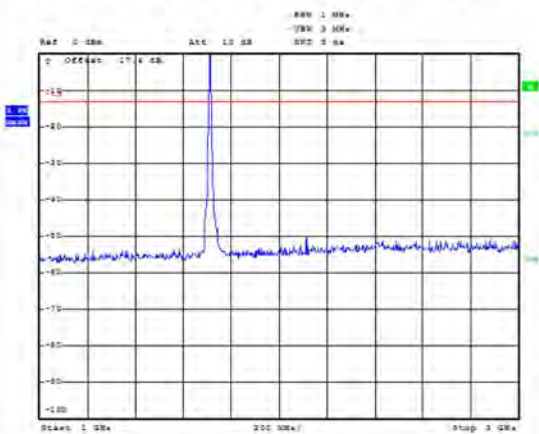
WCDMA Band IV CH-Low 30MHz~1GHz



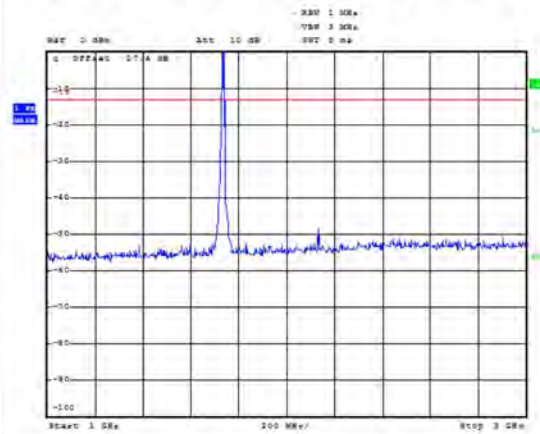
WCDMA Band IV CH-Middle 30MHz~1GHz



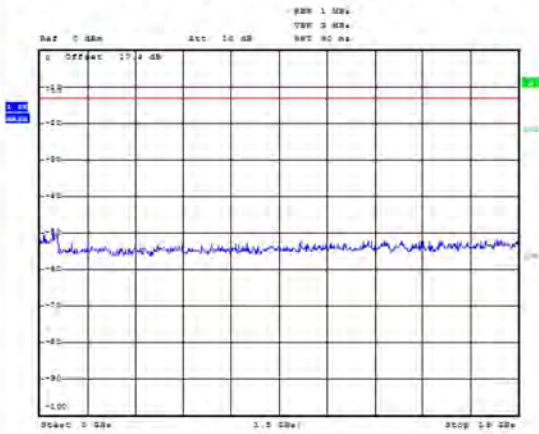
WCDMA Band IV CH-Low 1GHz~3GHz



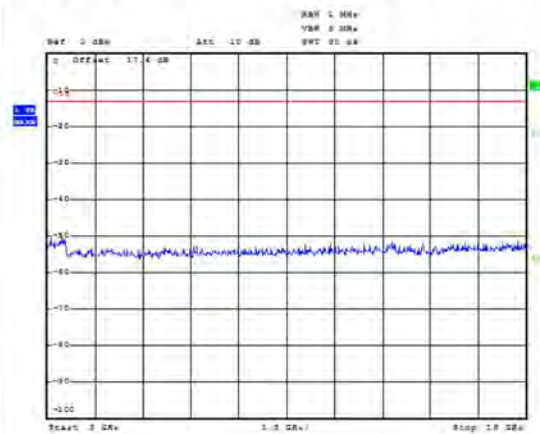
WCDMA Band IV CH-Middle 1GHz~3GHz



WCDMA Band IV CH-Low 3GHz~18GHz

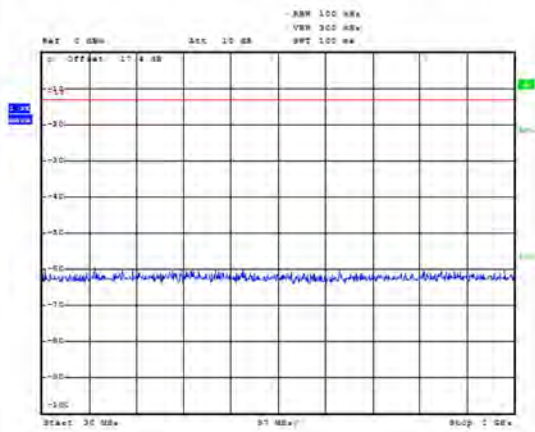


WCDMA Band IV CH-Middle 3GHz~18GHz

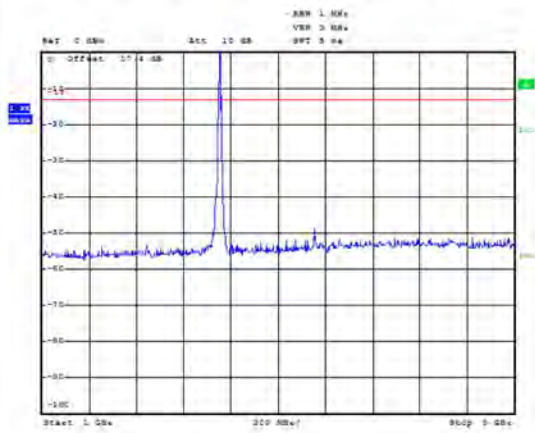




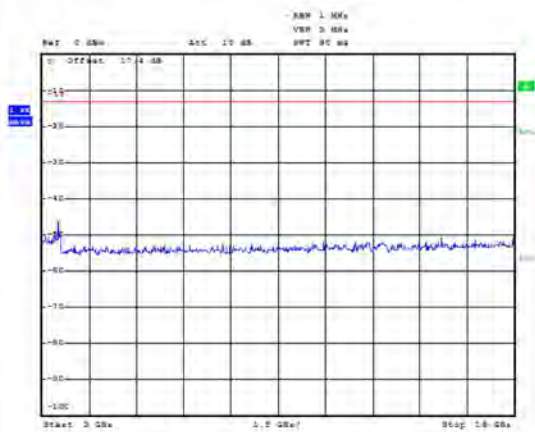
WCDMA Band IV CH-High 30MHz~1GHz



WCDMA Band IV CH-High 1GHz~3GHz

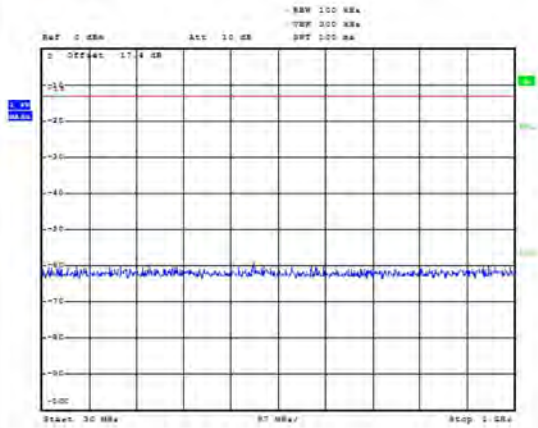


WCDMA Band IV CH-High 3GHz~18GHz

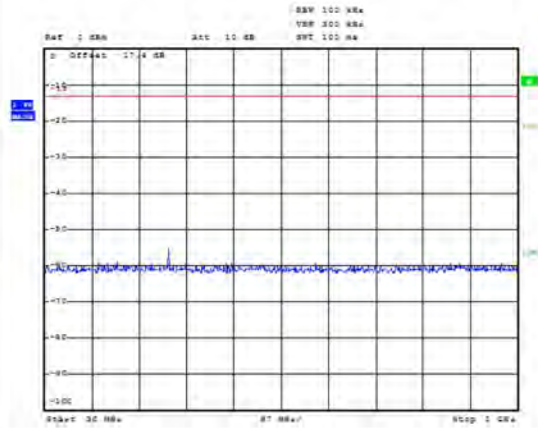




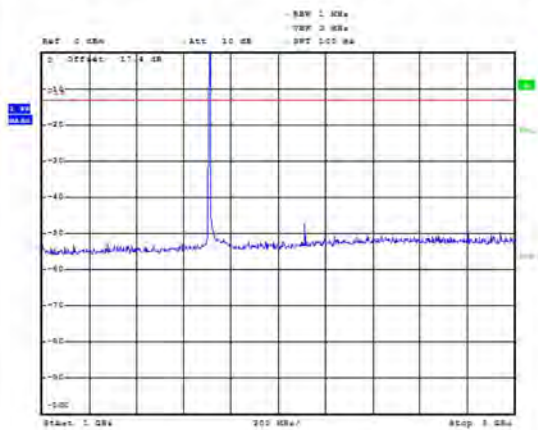
LTE Band 4 1.4MHz CH-Low 30MHz~1GHz



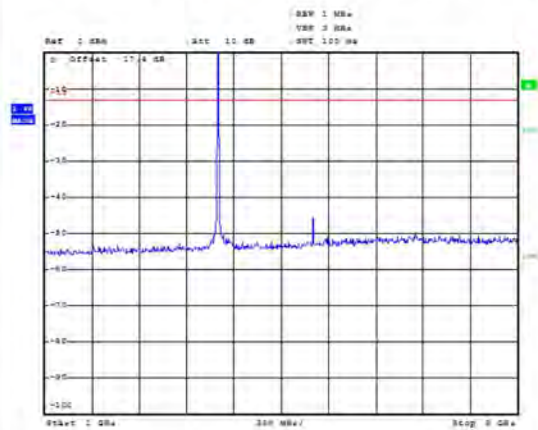
LTE Band 4 1.4MHz CH-Middle 30MHz~1GHz



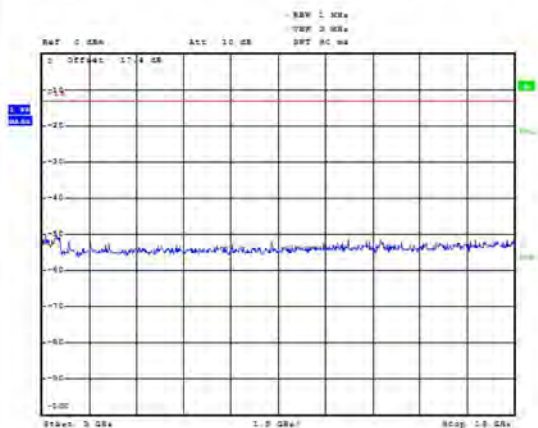
LTE Band 4 1.4MHz CH-Low 1GHz~3GHz



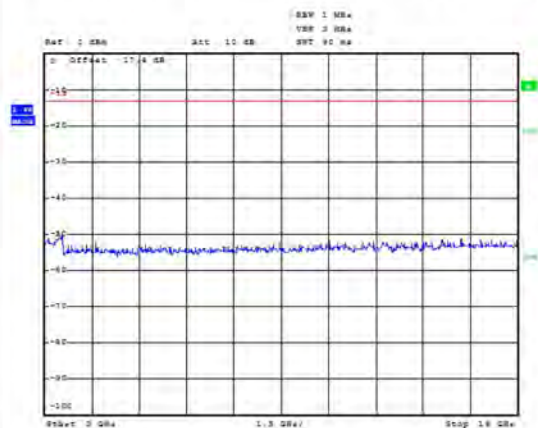
LTE Band 4 1.4MHz CH-Middle 1GHz~3GHz



LTE Band 4 1.4MHz CH-Low 3GHz~18GHz

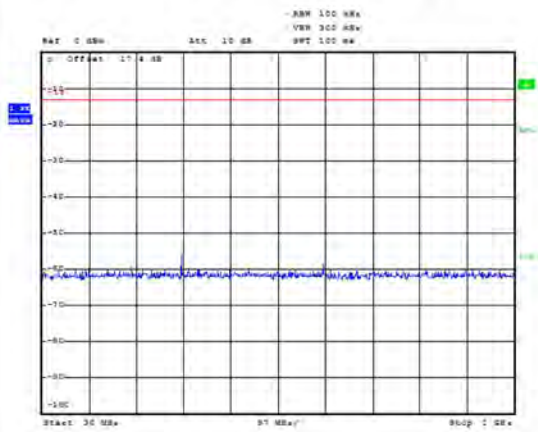


LTE Band 4 1.4MHz CH-Middle 3GHz~18GHz

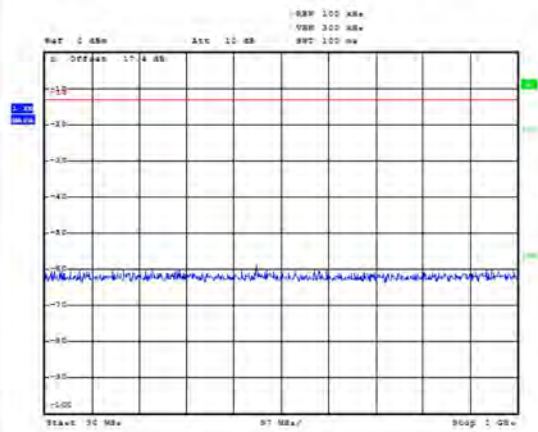




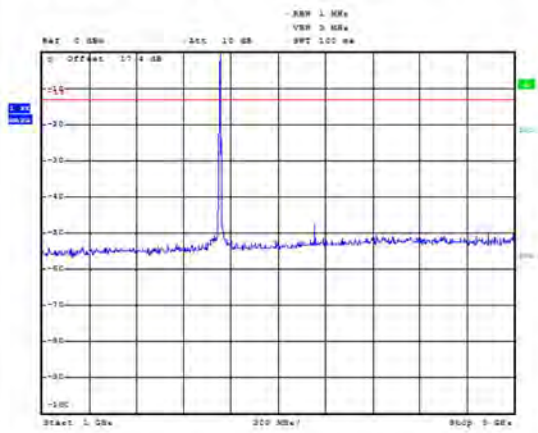
LTE Band 4 1.4MHz CH-High 30MHz~1GHz



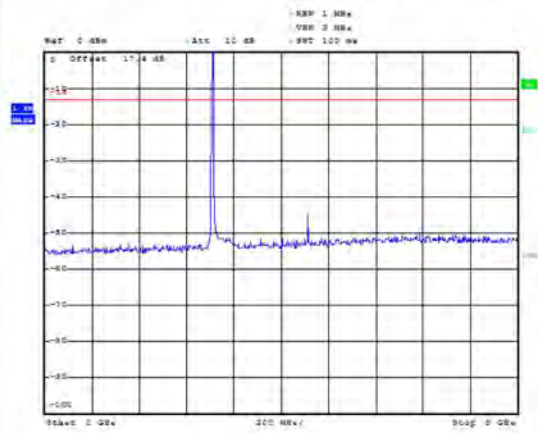
LTE Band 4 3MHz CH-Low 30MHz~1GHz



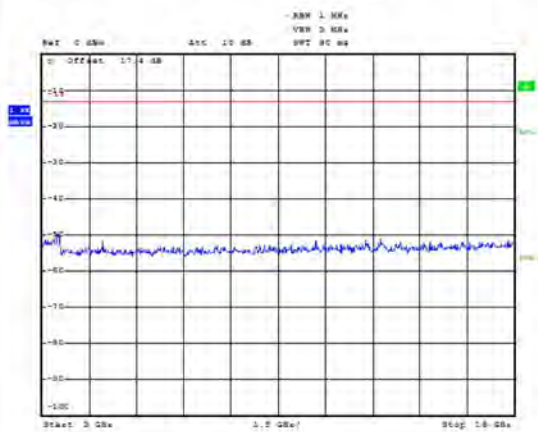
LTE Band 4 1.4MHz CH-High 1GHz~3GHz



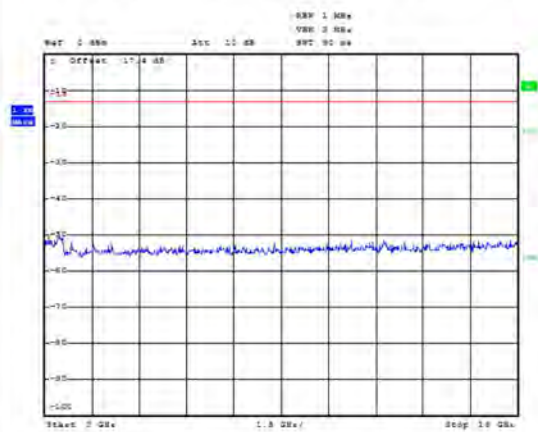
LTE Band 4 3MHz CH-Low 1GHz~3GHz



LTE Band 4 1.4MHz CH-High 3GHz~18GHz

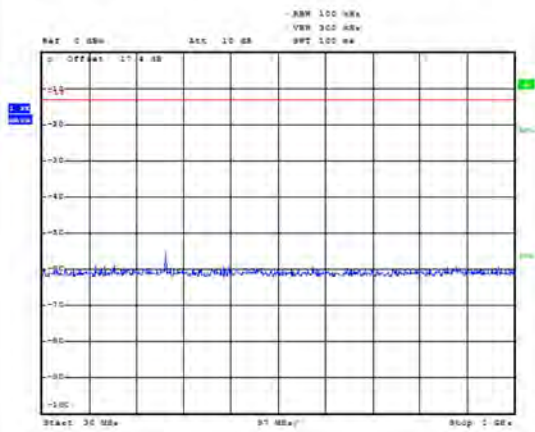


LTE Band 4 3MHz CH-Low 3GHz~18GHz

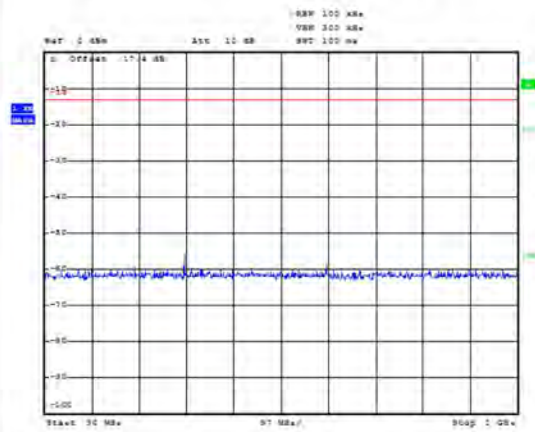




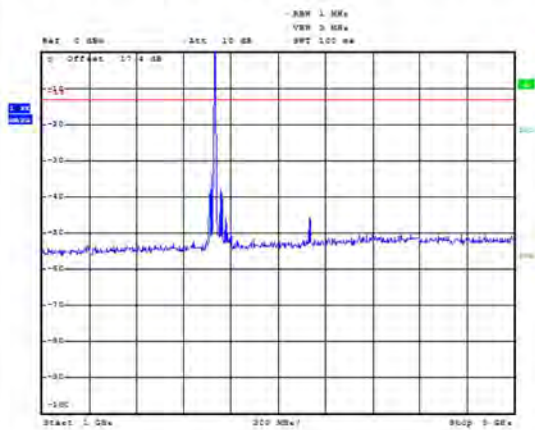
LTE Band 4 3MHz CH-Middle 30MHz~1GHz



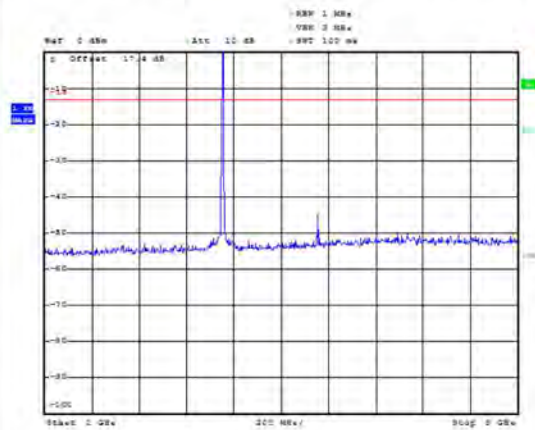
LTE Band 4 3MHz CH-High 30MHz~1GHz



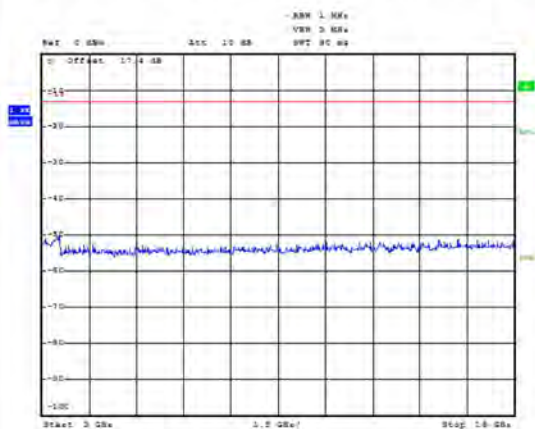
LTE Band 4 3MHz CH-Middle 1GHz~3GHz



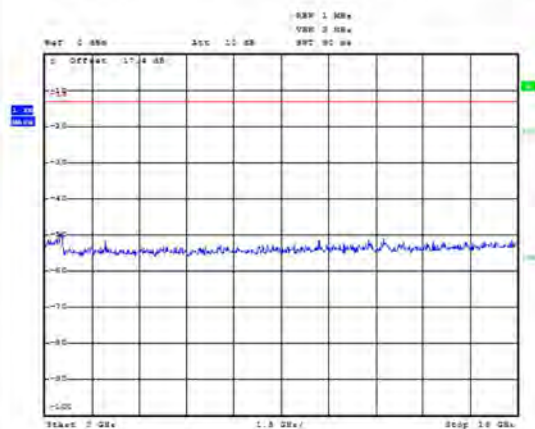
LTE Band 4 3MHz CH-High 1GHz~3GHz



LTE Band 4 3MHz CH-Middle 3GHz~18GHz

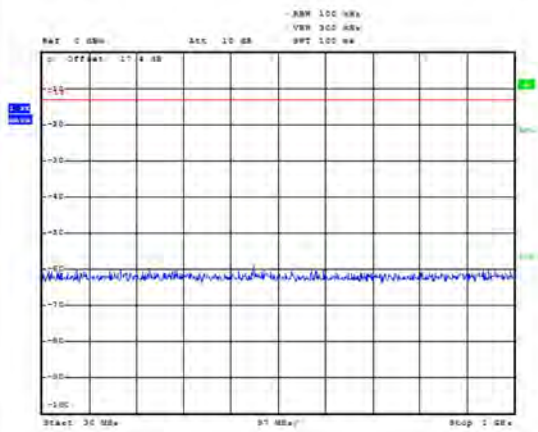


LTE Band 4 3MHz CH-High 3GHz~18GHz

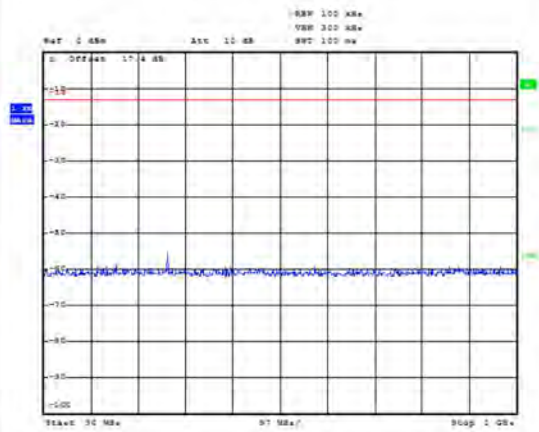




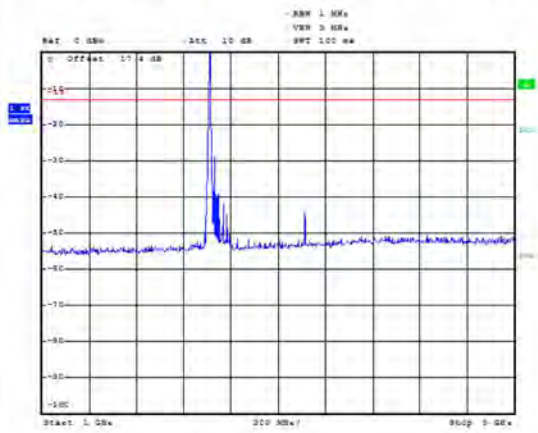
LTE Band 4 5MHz CH-Low 30MHz~1GHz



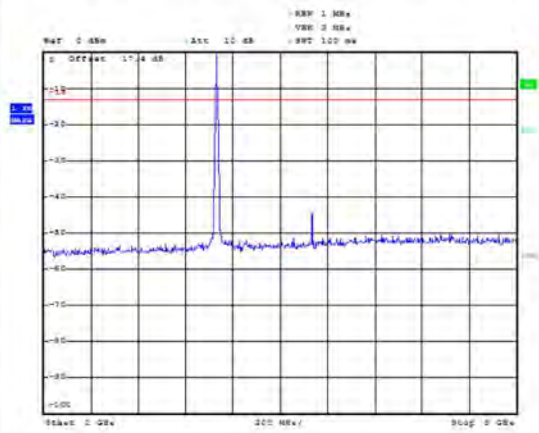
LTE Band 4 5MHz CH-Middle 30MHz~1GHz



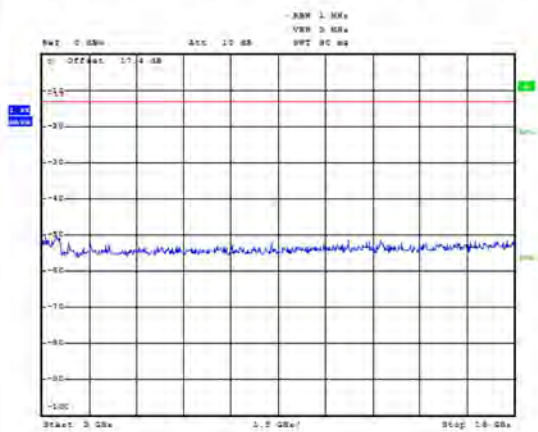
LTE Band 4 5MHz CH-Low 1GHz~3GHz



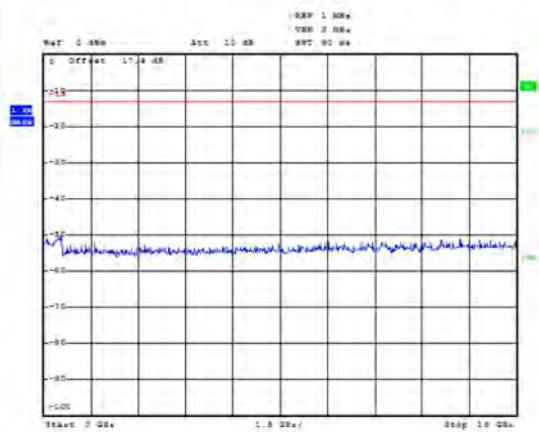
LTE Band 4 5MHz CH-Middle 1GHz~3GHz



LTE Band 4 5MHz CH-Low 3GHz~18GHz

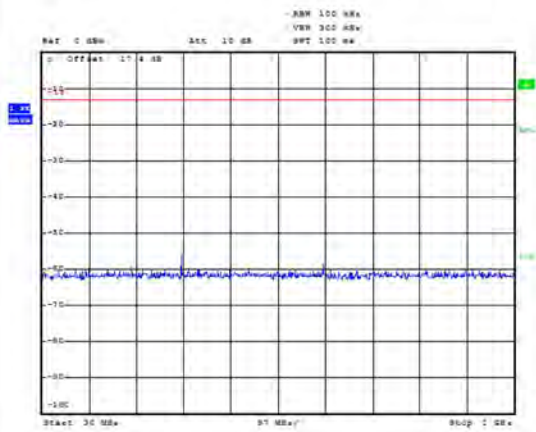


LTE Band 4 5MHz CH-Middle 3GHz~18GHz

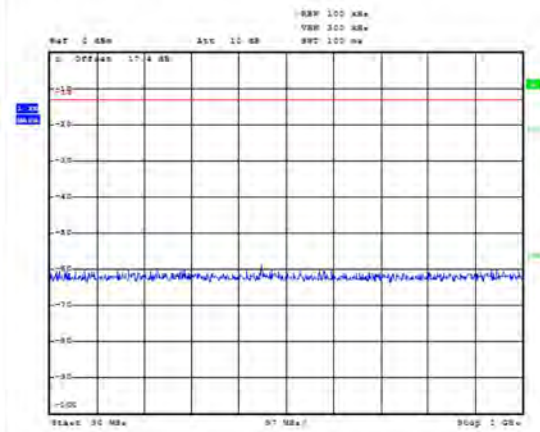




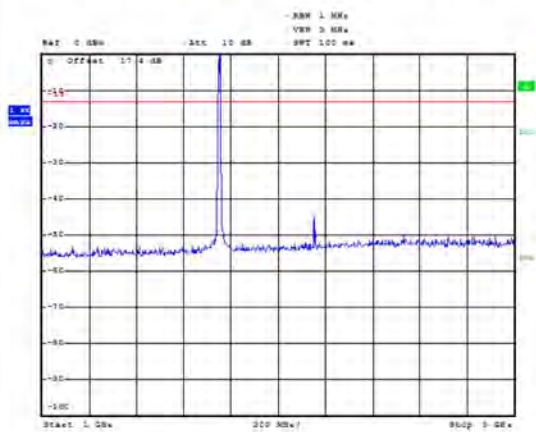
LTE Band 4 5MHz CH-High 30MHz~1GHz



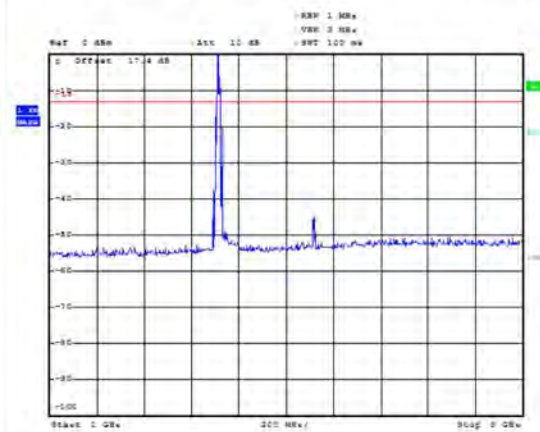
LTE Band 4 10MHz CH-Low 30MHz~1GHz



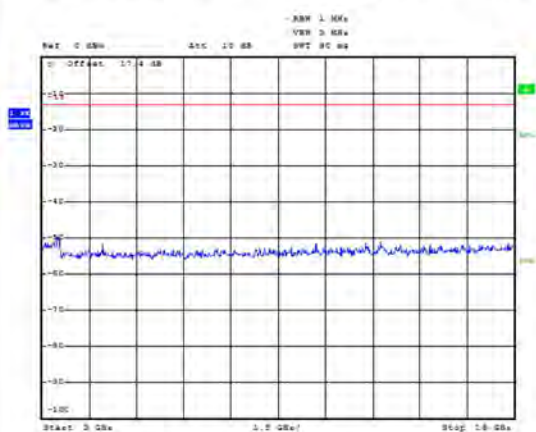
LTE Band 4 5MHz CH-High 1GHz~3GHz



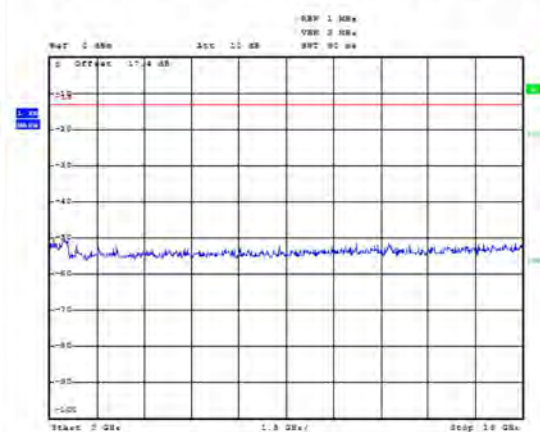
LTE Band 4 10MHz CH-Low 1GHz~3GHz



LTE Band 4 5MHz CH-High 3GHz~18GHz

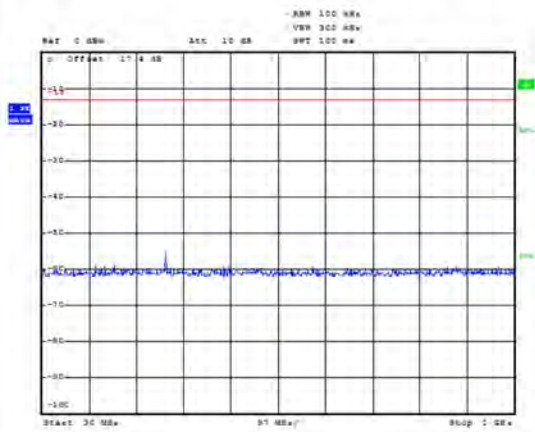


LTE Band 4 10MHz CH-Low 3GHz~18GHz

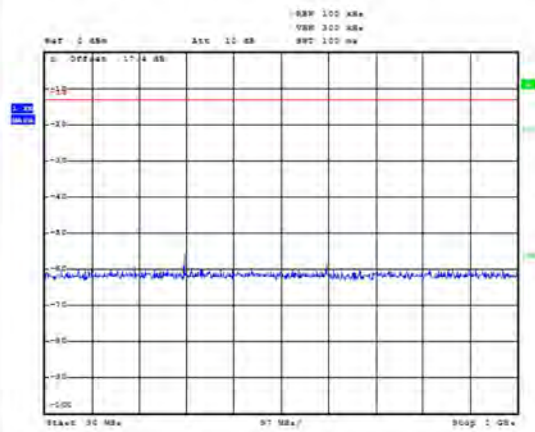




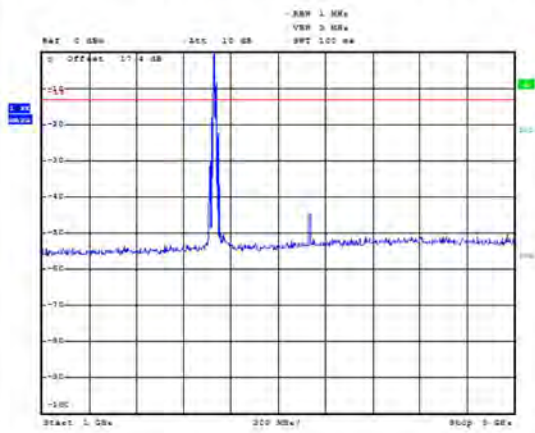
LTE Band 4 10MHz CH-Middle 30MHz~1GHz



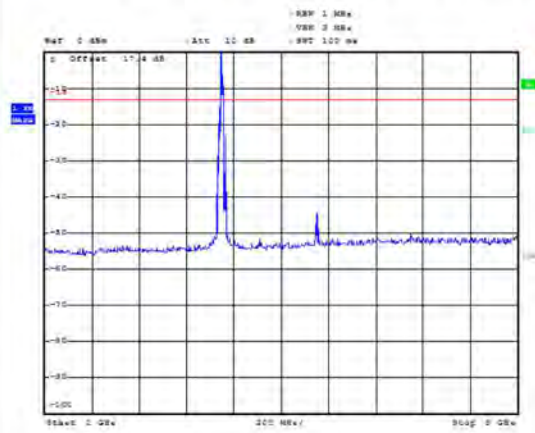
LTE Band 4 10MHz CH-High 30MHz~1GHz



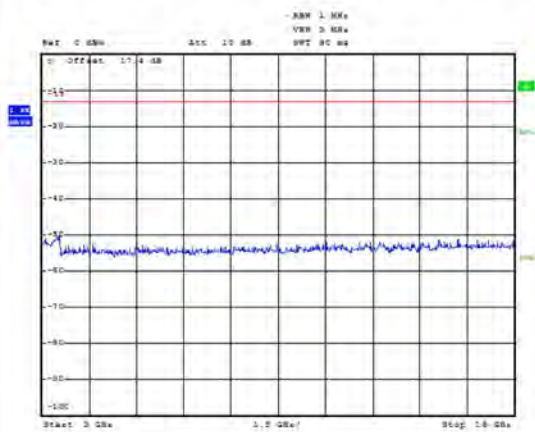
LTE Band 4 10MHz CH-Middle 1GHz~3GHz



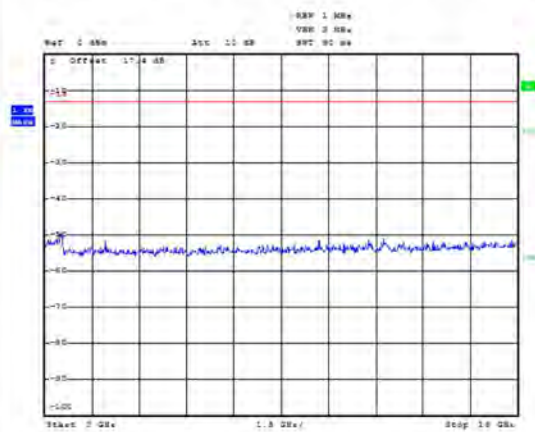
LTE Band 4 10MHz CH-High 1GHz~3GHz



LTE Band 4 10MHz CH-Middle 3GHz~18GHz

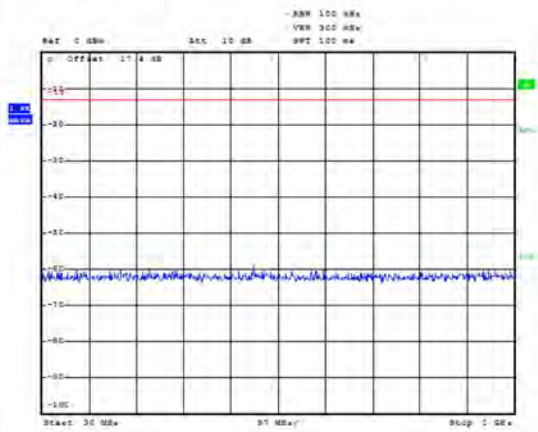


LTE Band 4 10MHz CH-High 3GHz~18GHz

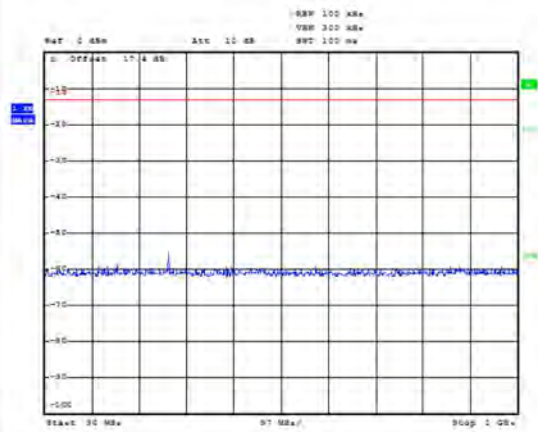




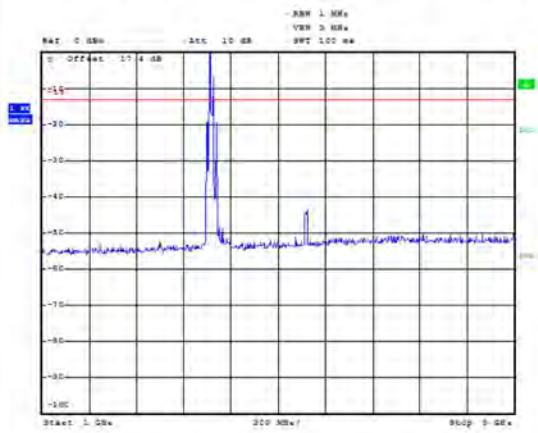
LTE Band 4 15MHz CH-Low 30MHz~1GHz



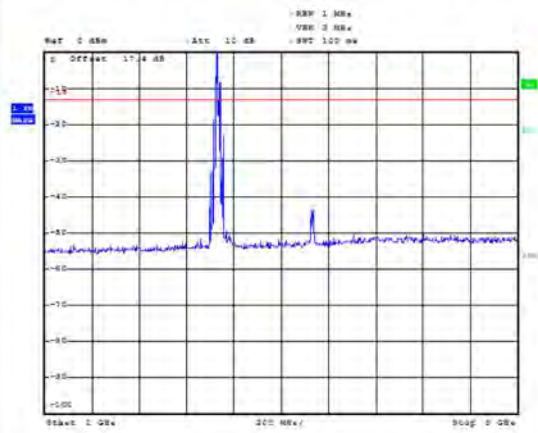
LTE Band 4 15MHz CH-Middle 30MHz~1GHz



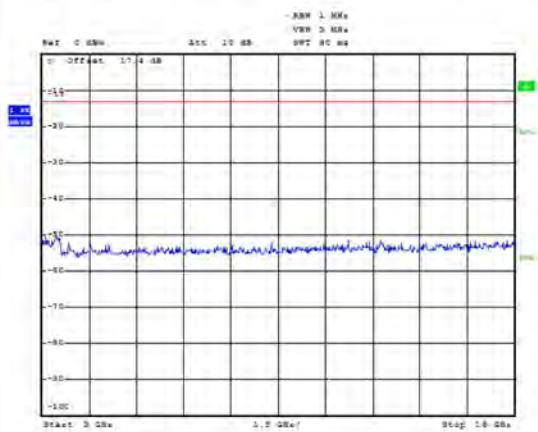
LTE Band 4 15MHz CH-Low 1GHz~3GHz



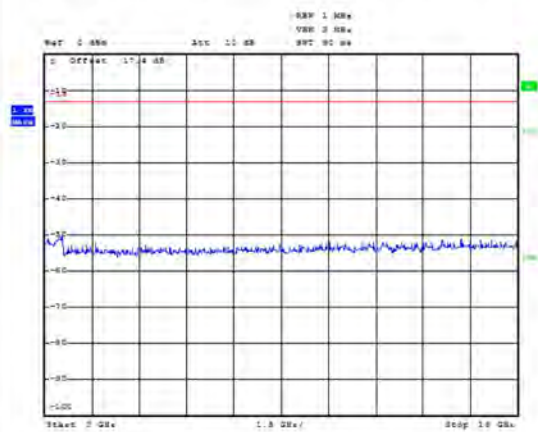
LTE Band 4 15MHz CH-Middle 1GHz~3GHz



LTE Band 4 15MHz CH-Low 3GHz~18GHz

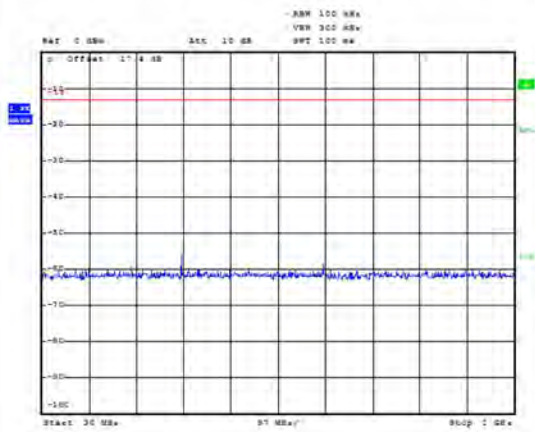


LTE Band 4 15MHz CH-Middle 3GHz~18GHz

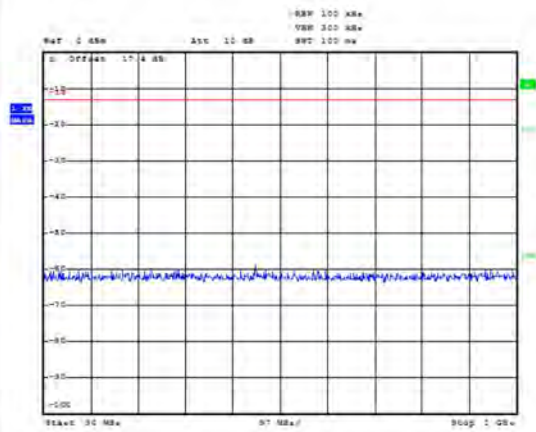




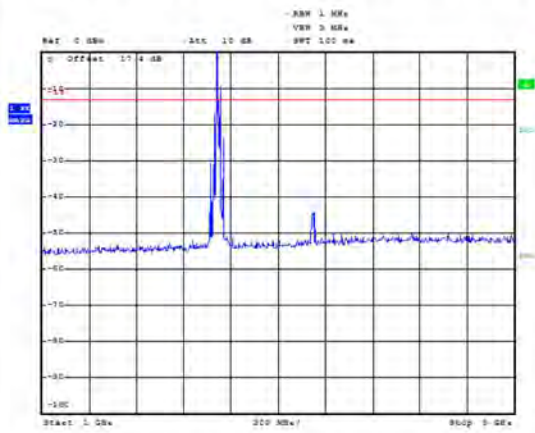
LTE Band 4 15MHz CH-High 30MHz~1GHz



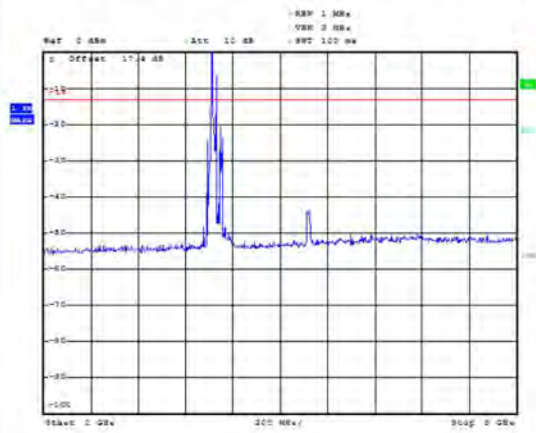
LTE Band 4 20MHz CH-Low 30MHz~1GHz



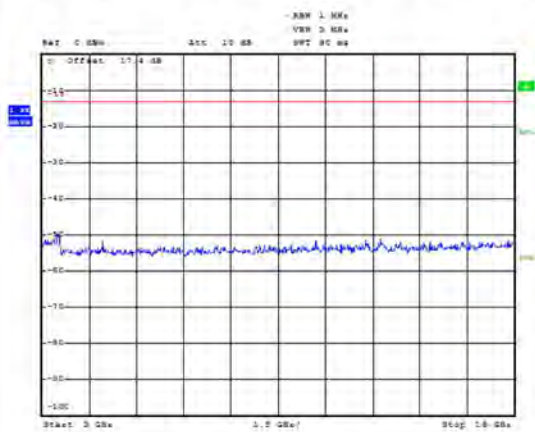
LTE Band 4 15MHz CH-High 1GHz~3GHz



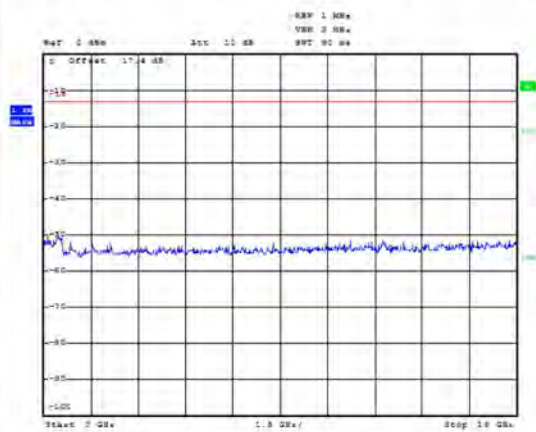
LTE Band 4 20MHz CH-Low 1GHz~3GHz



LTE Band 4 15MHz CH-High 3GHz~18GHz

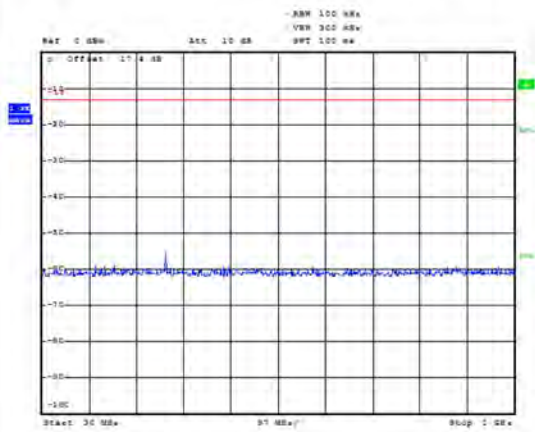


LTE Band 4 20MHz CH-Low 3GHz~18GHz

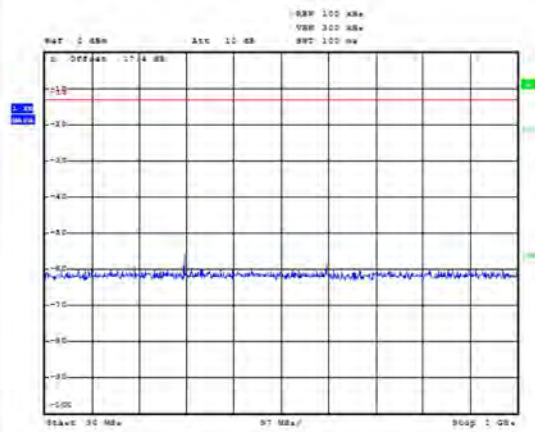




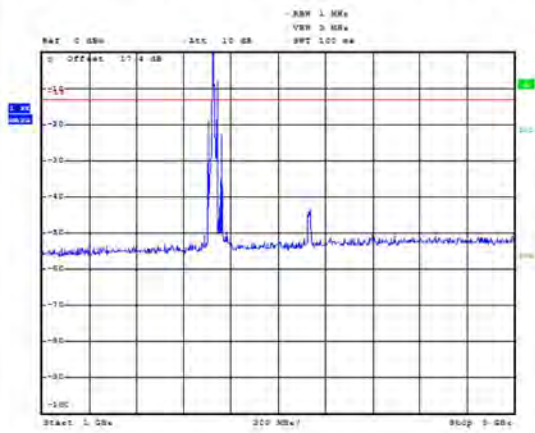
LTE Band 4 20MHz CH-Middle 30MHz~1GHz



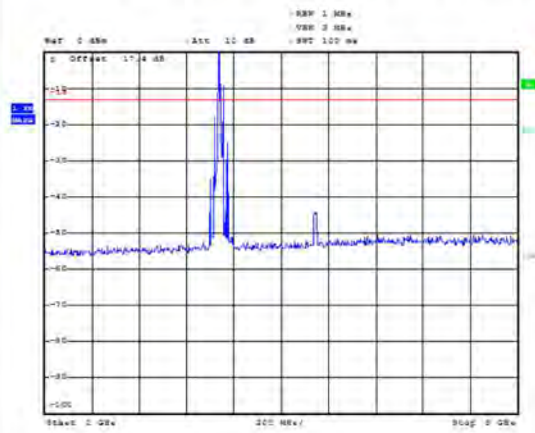
LTE Band 4 20MHz CH-High 30MHz~1GHz



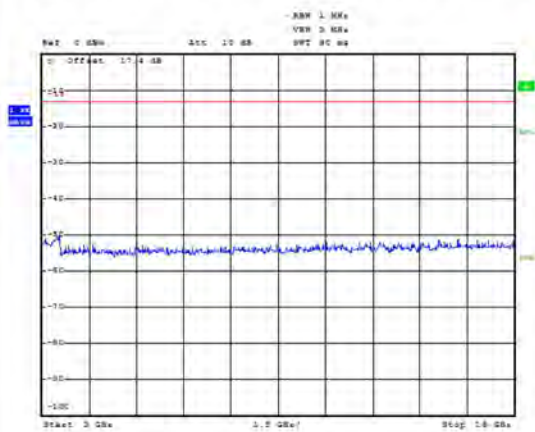
LTE Band 4 20MHz CH-Middle 1GHz~3GHz



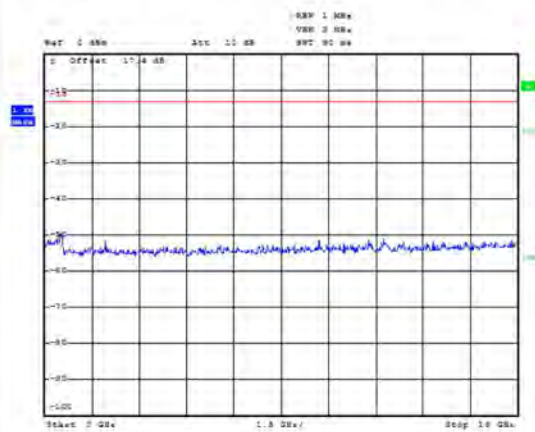
LTE Band 4 20MHz CH-High 1GHz~3GHz



LTE Band 4 20MHz CH-Middle 3GHz~18GHz

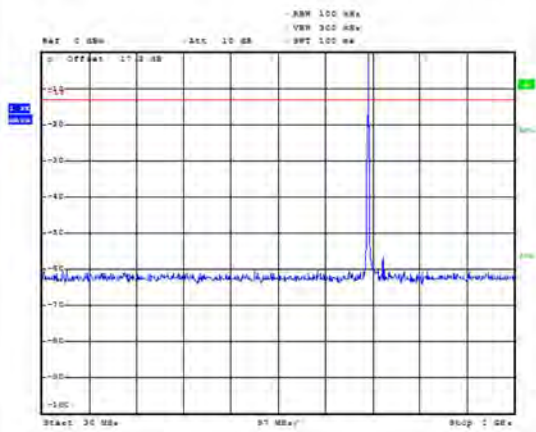


LTE Band 4 20MHz CH-High 3GHz~18GHz

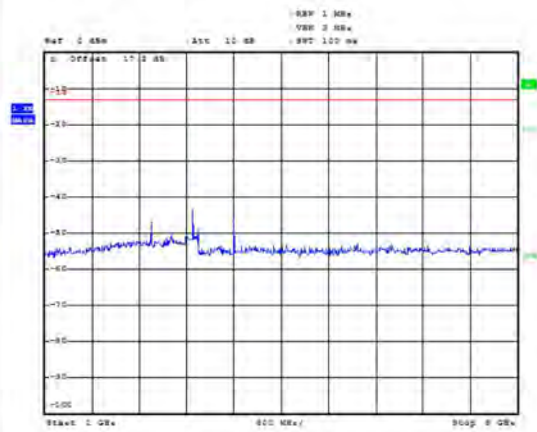




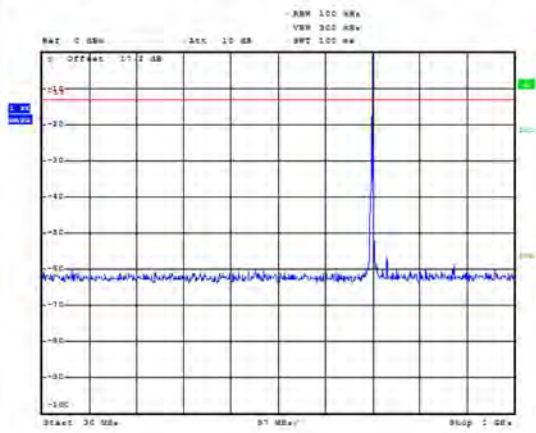
LTE Band 12 1.4MHz CH-Low 30MHz~1GHz



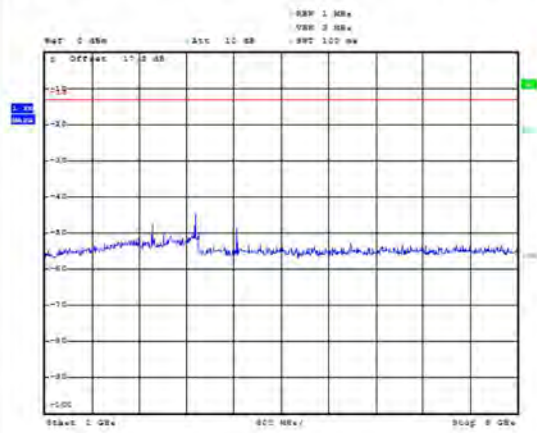
LTE Band 12 1.4MHz CH-Low 1GHz~9GHz



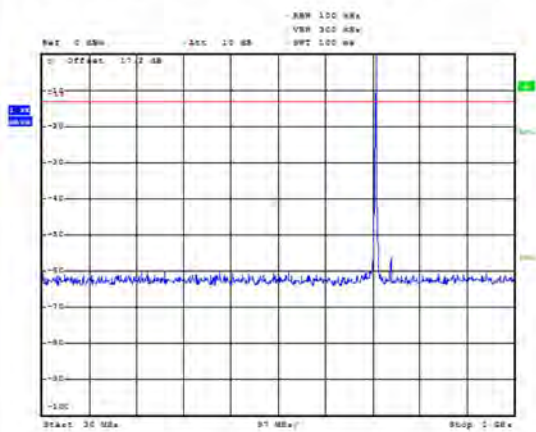
LTE Band 12 1.4MHz CH- Middle 30MHz~1GHz



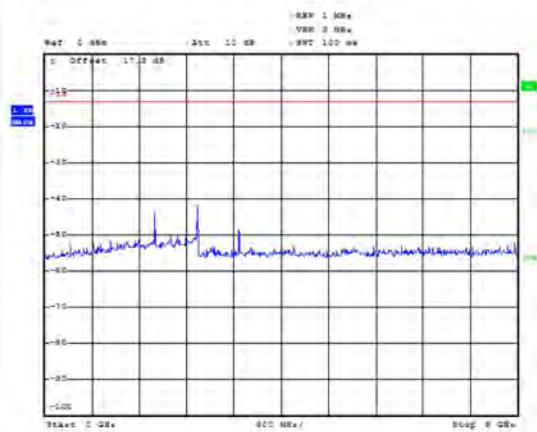
LTE Band 12 1.4MHz CH- Middle 1GHz~9GHz



LTE Band 12 1.4MHz CH-High 30MHz~1GHz

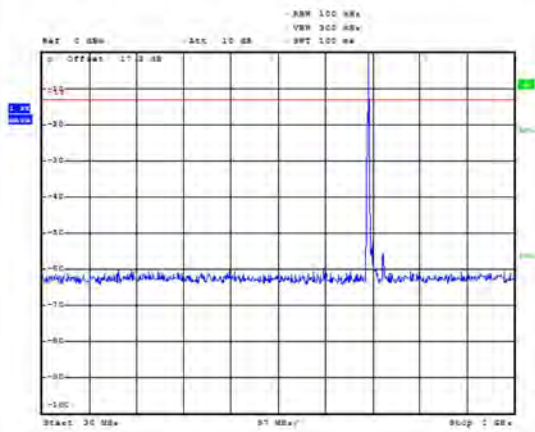


LTE Band 12 1.4MHz CH-High 1GHz~9GHz

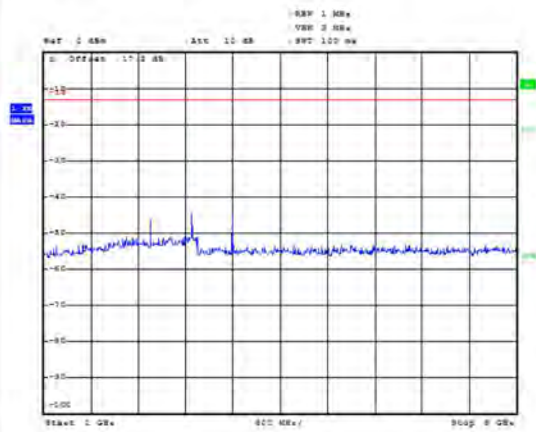




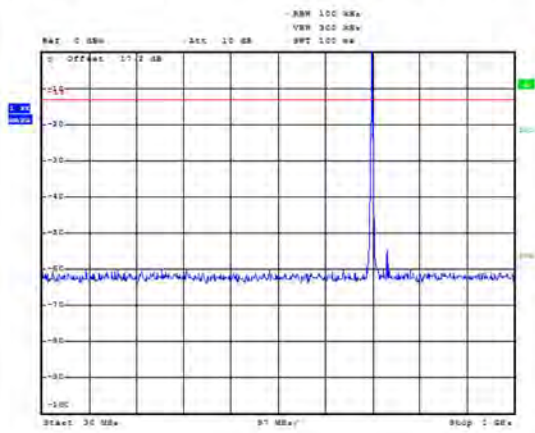
LTE Band 12 3MHz CH-Low 30MHz~1GHz



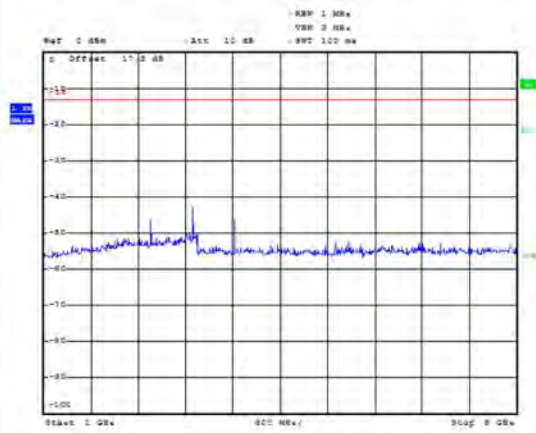
LTE Band 12 3MHz CH-Low 1GHz~9GHz



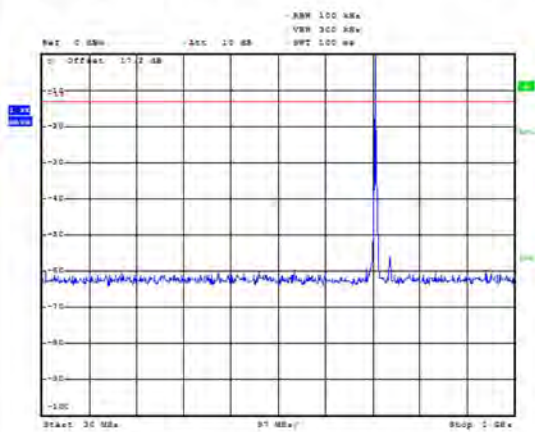
LTE Band 12 3MHz CH- Middle 30MHz~1GHz



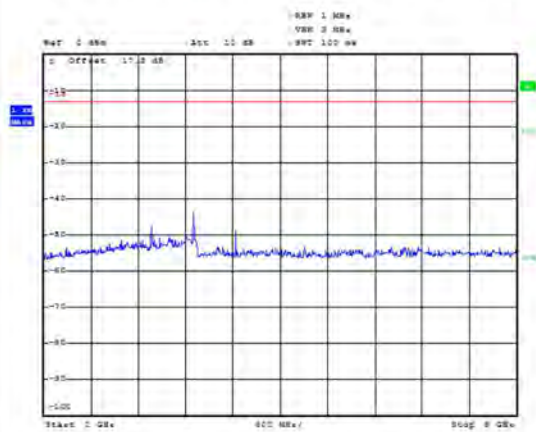
LTE Band 12 3MHz CH- Middle 1GHz~9GHz



LTE Band 12 3MHz CH-High 30MHz~1GHz

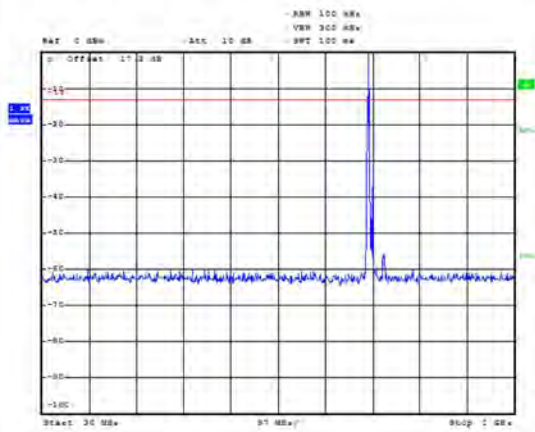


LTE Band 12 3MHz CH-High 1GHz~9GHz

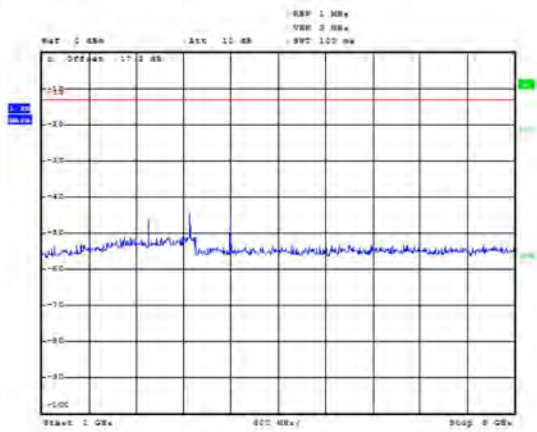




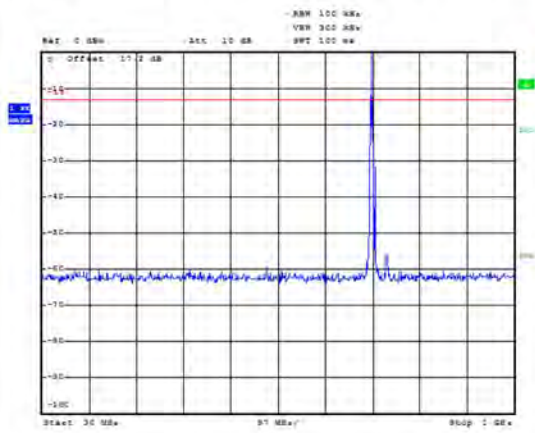
LTE Band 12 5MHz CH-Low 30MHz~1GHz



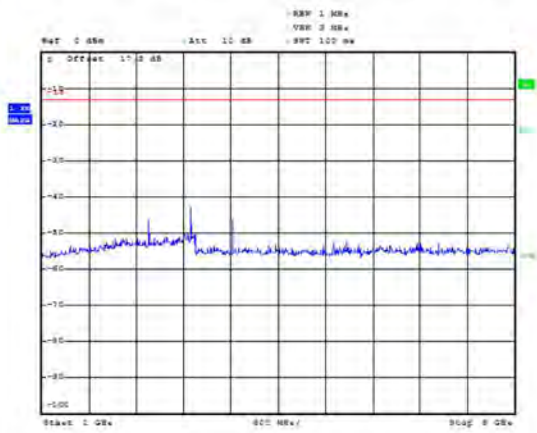
LTE Band 12 5MHz CH-Low 1GHz~9GHz



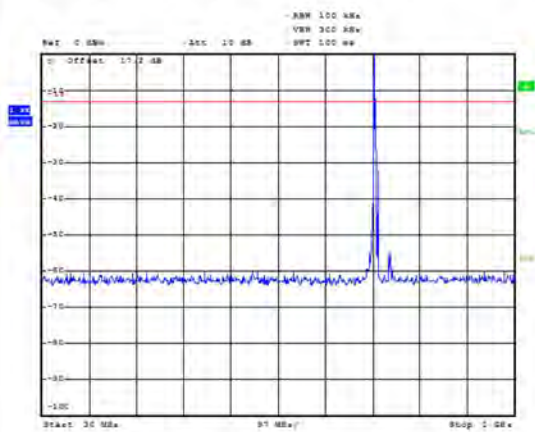
LTE Band 12 5MHz CH- Middle 30MHz~1GHz



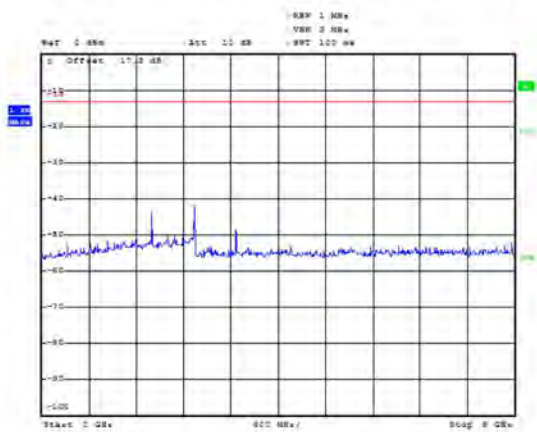
LTE Band 12 5MHz CH- Middle 1GHz~9GHz



LTE Band 12 5MHz CH-High 30MHz~1GHz

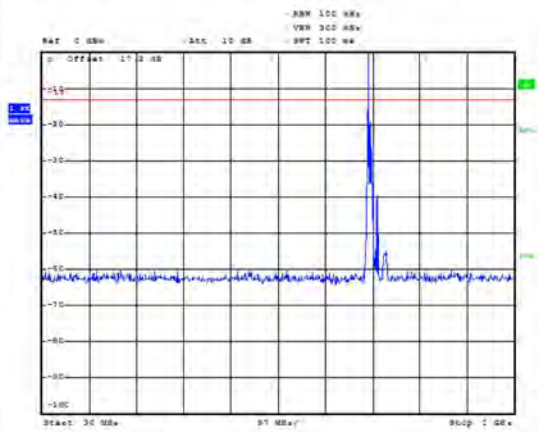


LTE Band 12 5MHz CH-High 1GHz~9GHz

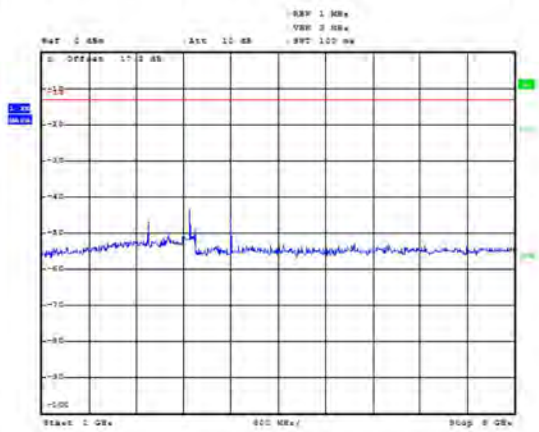




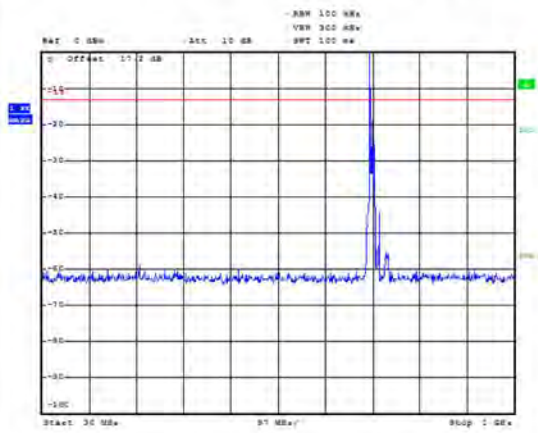
LTE Band 12 10MHz CH-Low 30MHz~1GHz



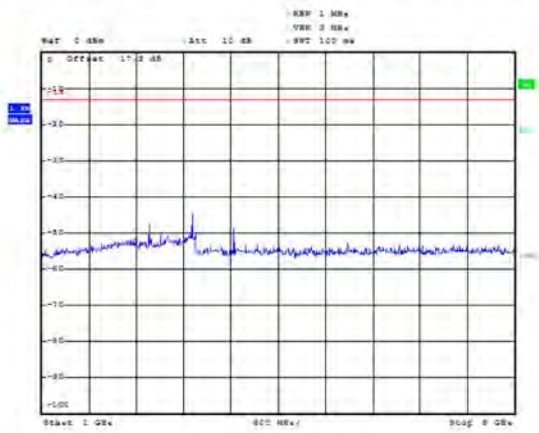
LTE Band 12 10MHz CH-Low 1GHz~9GHz



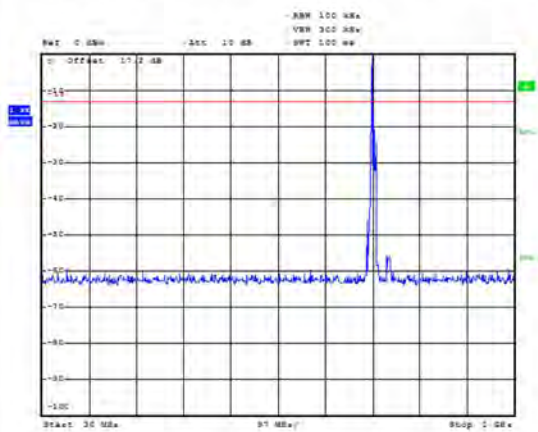
LTE Band 12 10MHz CH- Middle 30MHz~1GHz



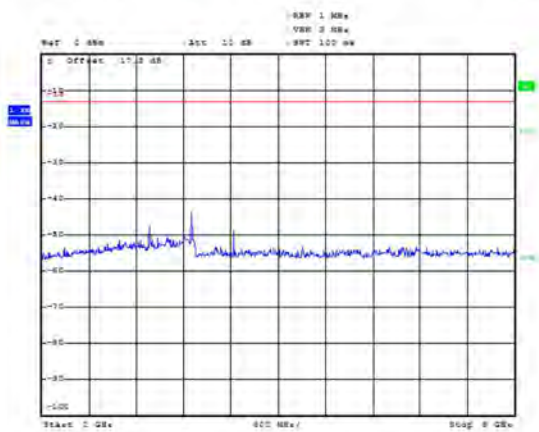
LTE Band 12 10MHz CH- Middle 1GHz~9GHz



LTE Band 12 10MHz CH-High 30MHz~1GHz

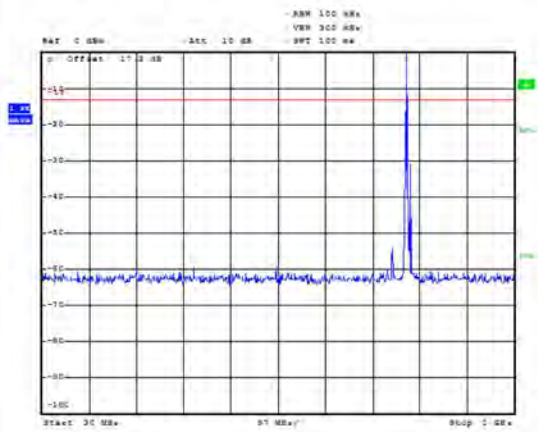


LTE Band 12 10MHz CH-High 1GHz~9GHz

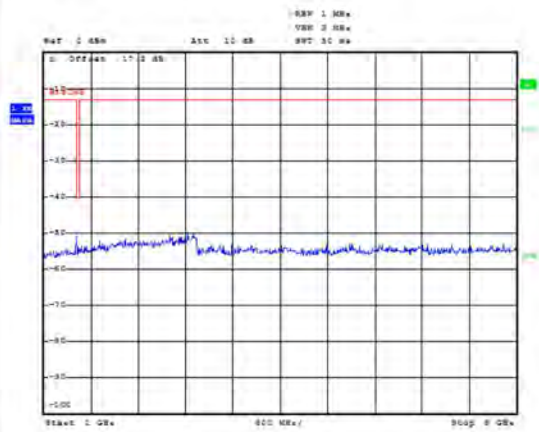




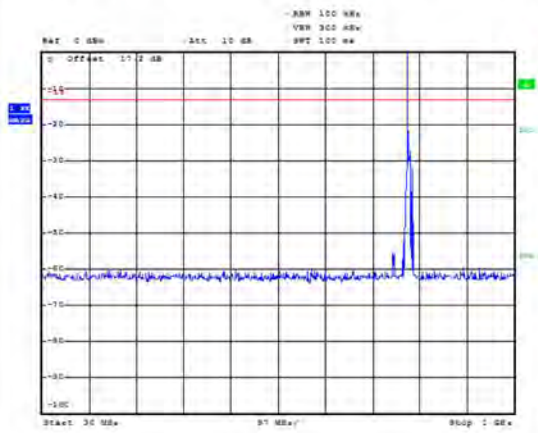
LTE Band 13 5MHz CH-Low 30MHz~1GHz



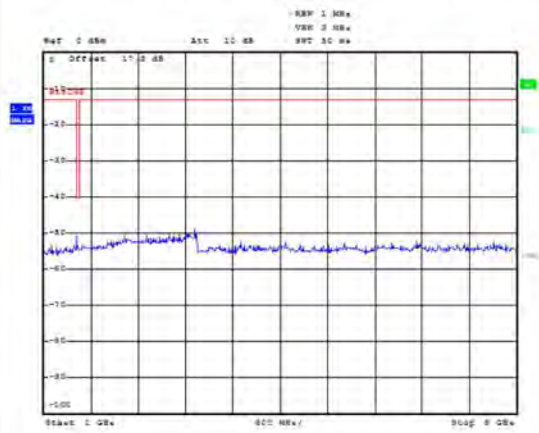
LTE Band 13 5MHz CH-Low 1GHz~9GHz



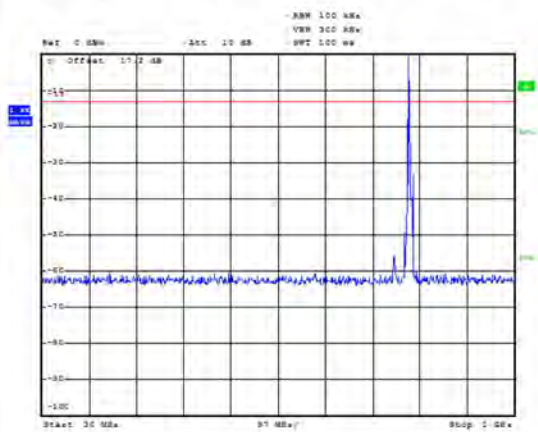
LTE Band 13 5MHz CH-Middle 30MHz~1GHz



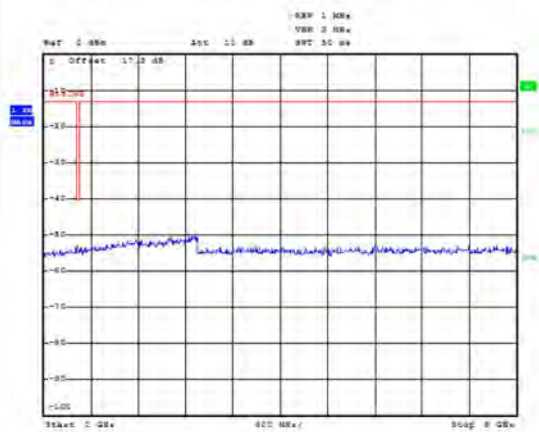
LTE Band 13 5MHz CH-Middle 1GHz~9GHz



LTE Band 13 5MHz CH-High 30MHz~1GHz

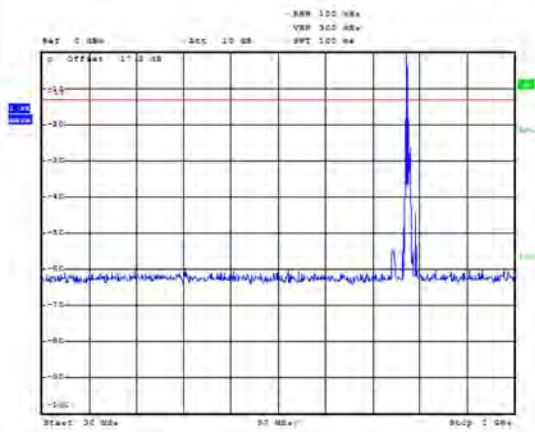


LTE Band 13 5MHz CH-High 1GHz~9GHz

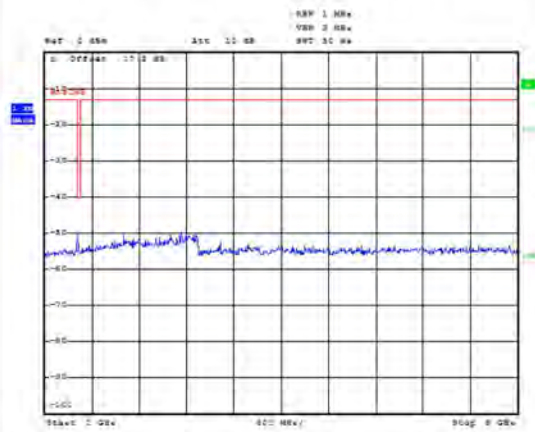




LTE Band 13 10MHz CH-Middle 30MHz~1GHz

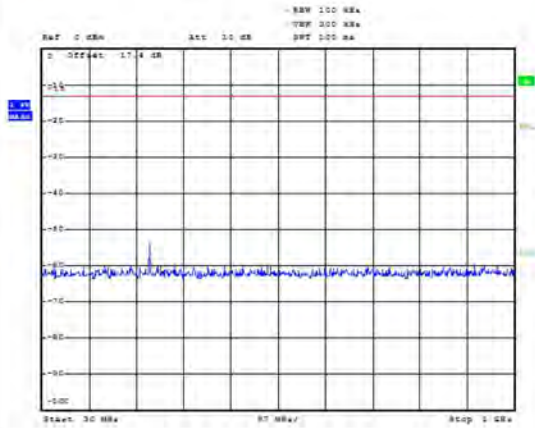


LTE Band 13 10MHz CH-Middle 1GHz~9GHz

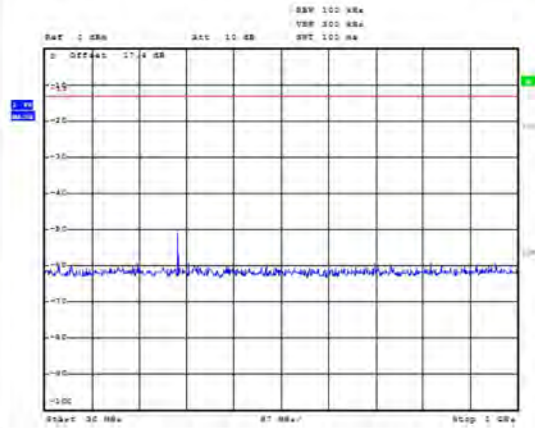




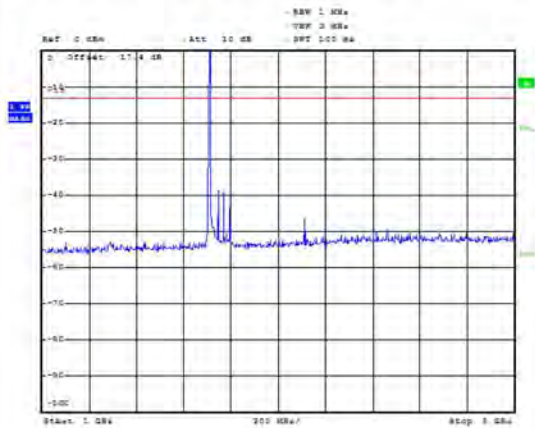
LTE Band 66 1.4MHz CH-Low 30MHz~1GHz



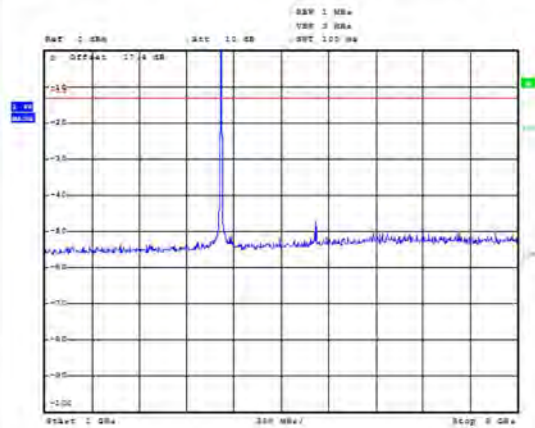
LTE Band 66 1.4MHz CH-Middle 30MHz~1GHz



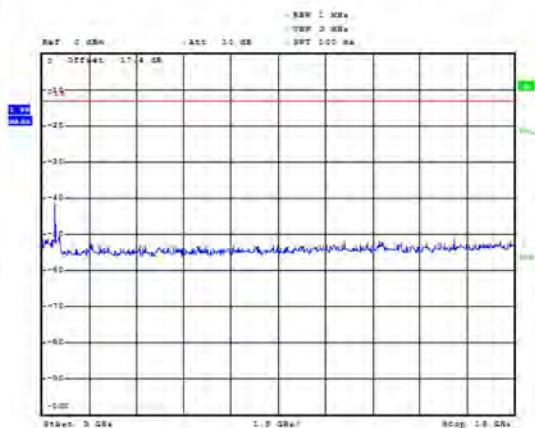
LTE Band 66 1.4MHz CH-Low 1GHz~3GHz



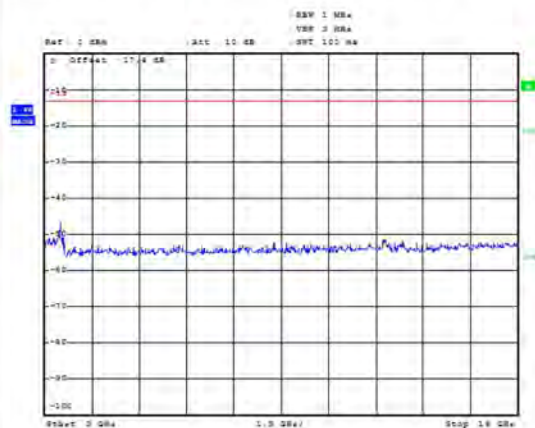
LTE Band 66 1.4MHz CH-Middle 1GHz~3GHz



LTE Band 66 1.4MHz CH-Low 3GHz~18GHz

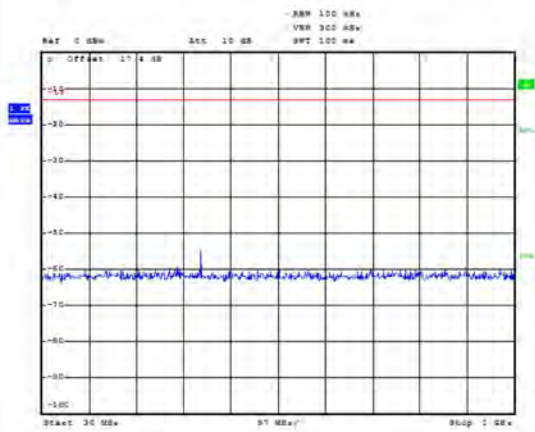


LTE Band 66 1.4MHz CH-Middle 3GHz~18GHz

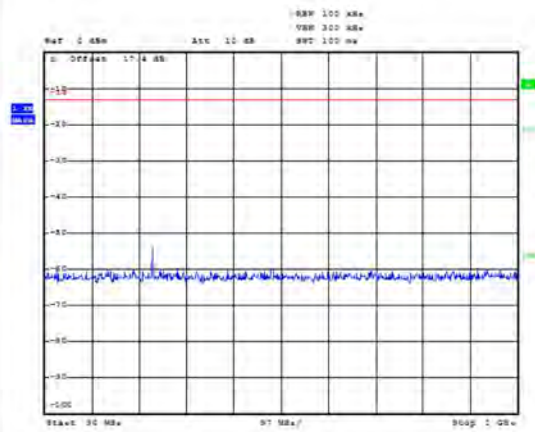




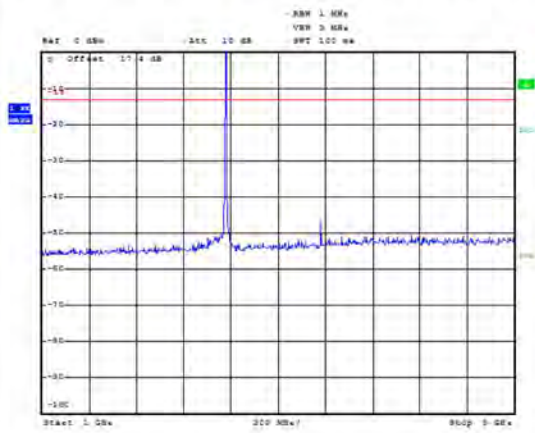
LTE Band 66 1.4MHz CH-High 30MHz~1GHz



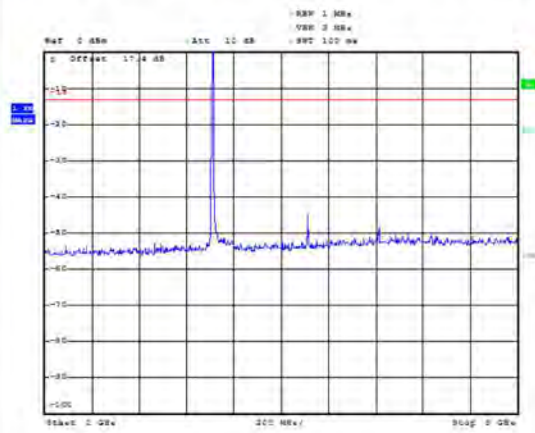
LTE Band 66 3MHz CH-Low 30MHz~1GHz



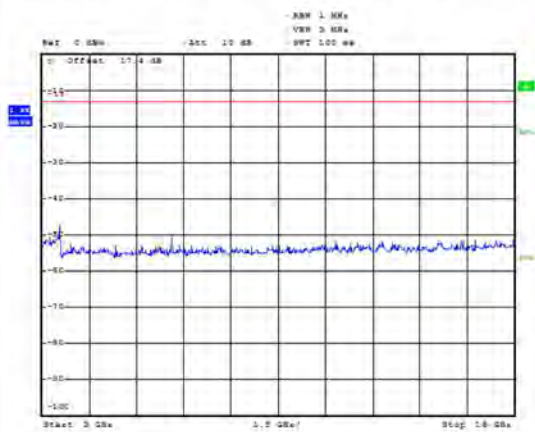
LTE Band 66 1.4MHz CH-High 1GHz~3GHz



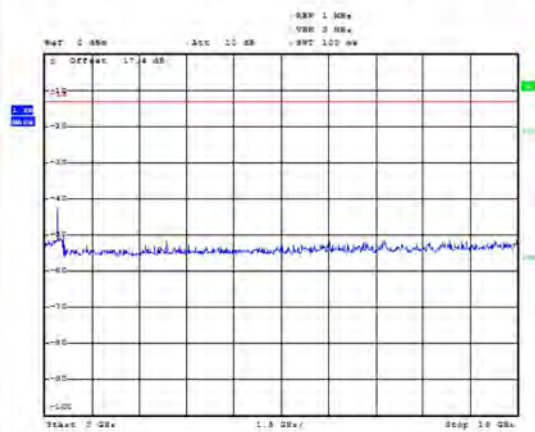
LTE Band 66 3MHz CH-Low 1GHz~3GHz



LTE Band 66 1.4MHz CH-High 3GHz~18GHz

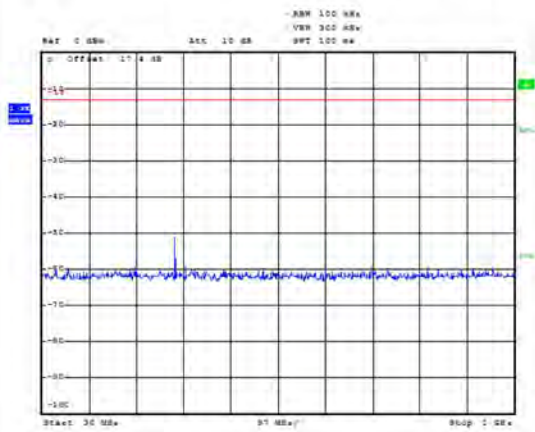


LTE Band 66 3MHz CH-Low 3GHz~18GHz

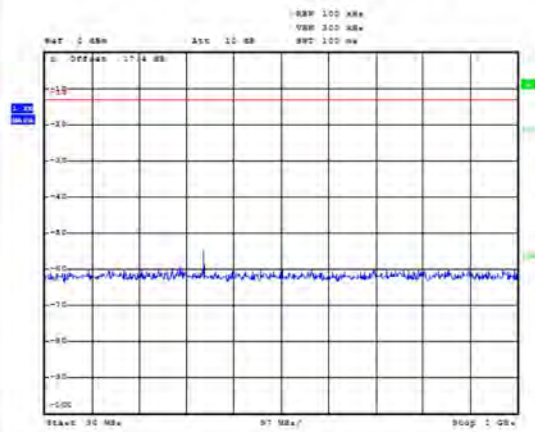




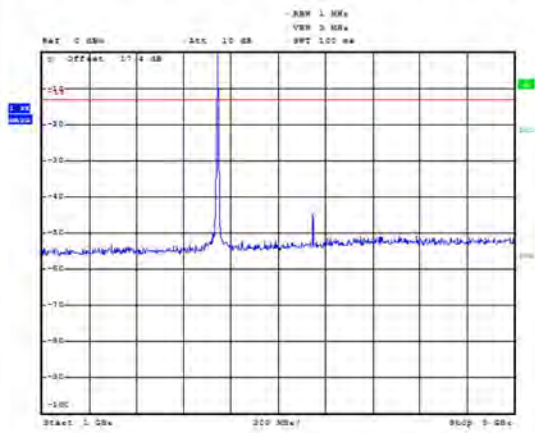
LTE Band 66 3MHz CH-Middle 30MHz~1GHz



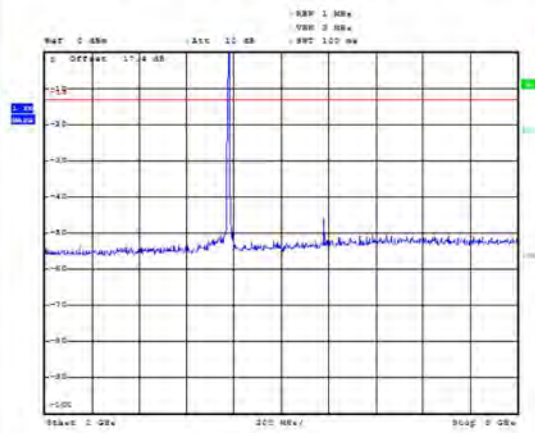
LTE Band 66 3MHz CH-High 30MHz~1GHz



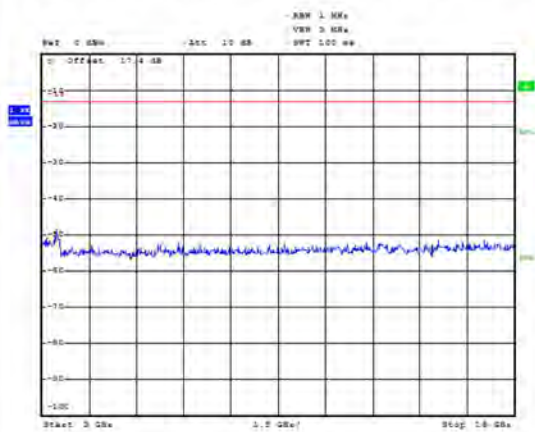
LTE Band 66 3MHz CH-Middle 1GHz~3GHz



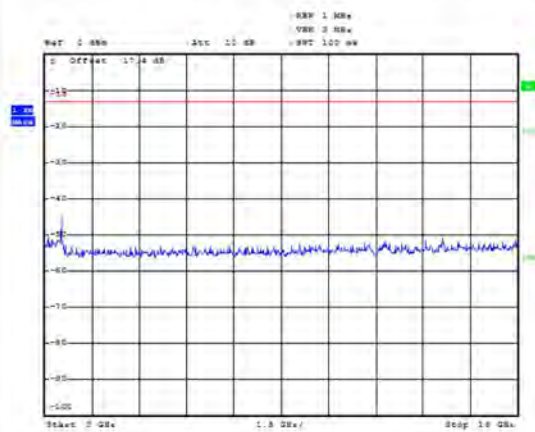
LTE Band 66 3MHz CH-High 1GHz~3GHz



LTE Band 66 3MHz CH-Middle 3GHz~18GHz

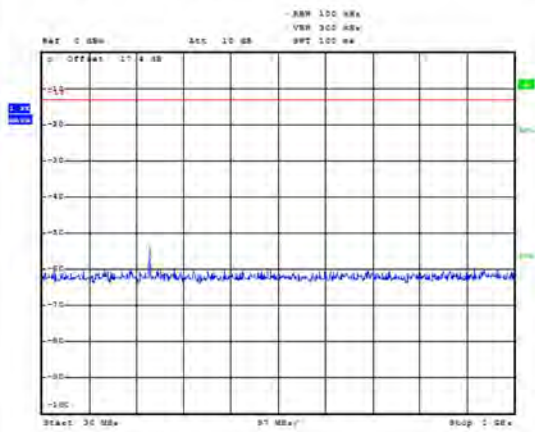


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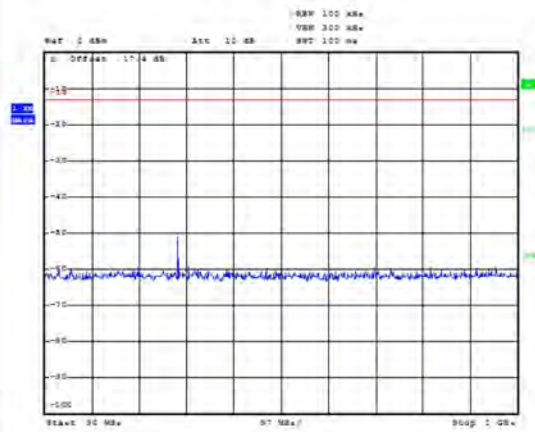




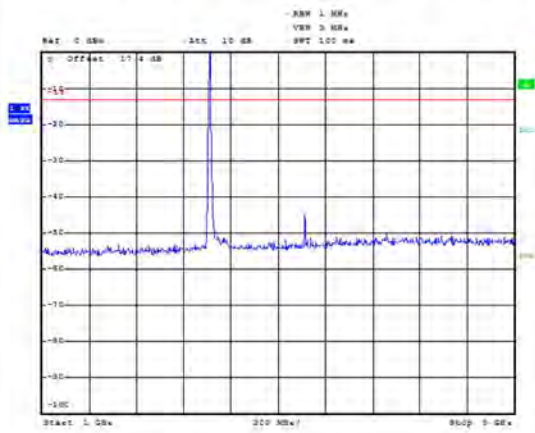
LTE Band 66 5MHz CH-Low 30MHz~1GHz



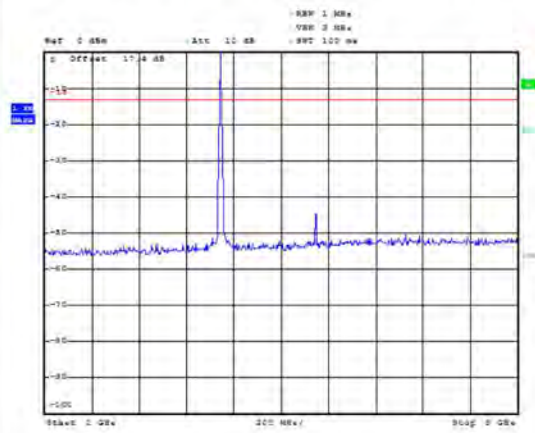
LTE Band 66 5MHz CH-Middle 30MHz~1GHz



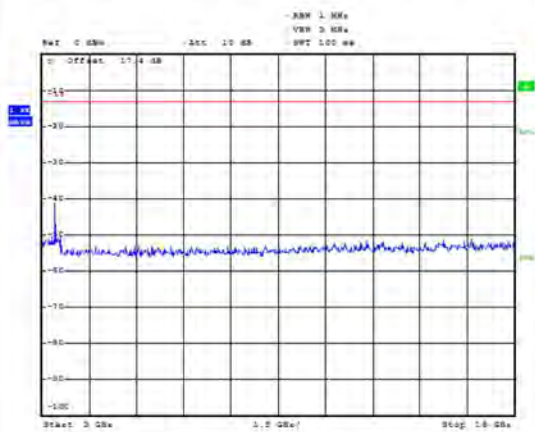
LTE Band 66 5MHz CH-Low 1GHz~3GHz



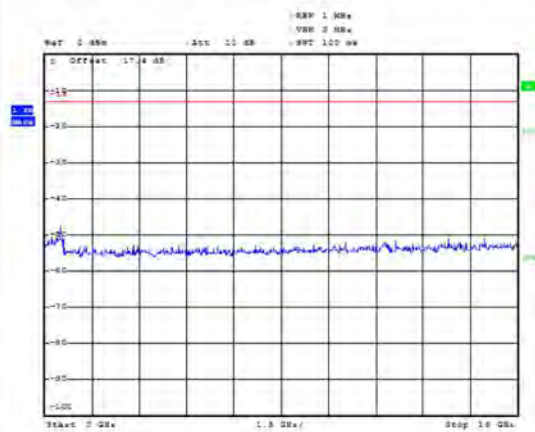
LTE Band 66 5MHz CH-Middle 1GHz~3GHz



LTE Band 66 5MHz CH-Low 3GHz~18GHz

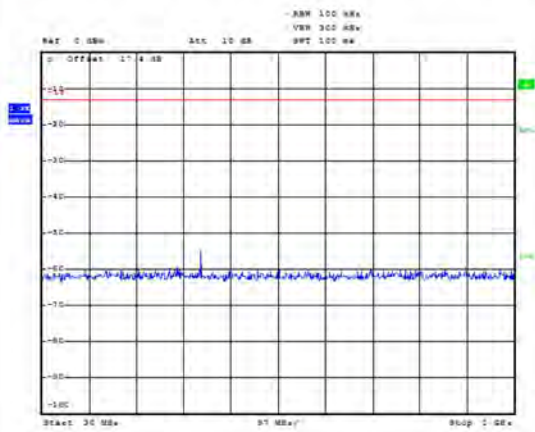


LTE Band 66 5MHz CH-Middle 3GHz~18GHz

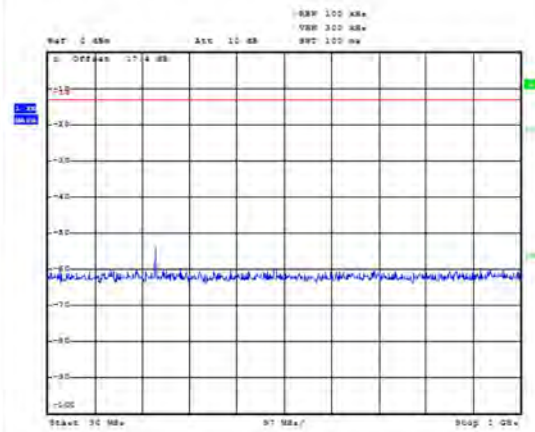




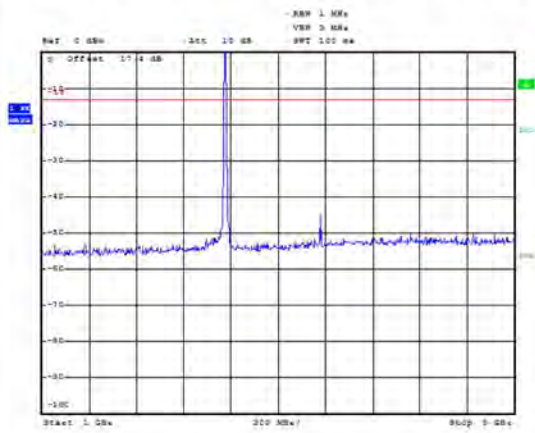
LTE Band 66 5MHz CH-High 30MHz~1GHz



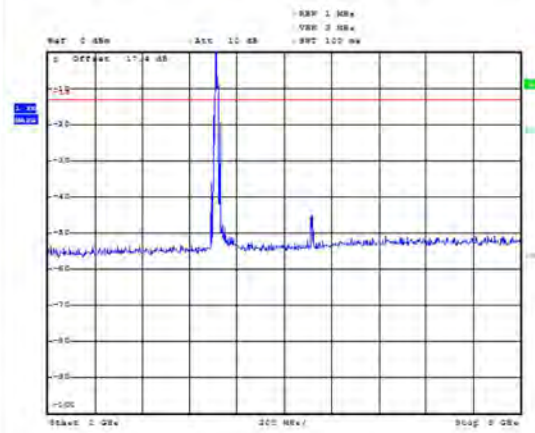
LTE Band 66 10MHz CH-Low 30MHz~1GHz



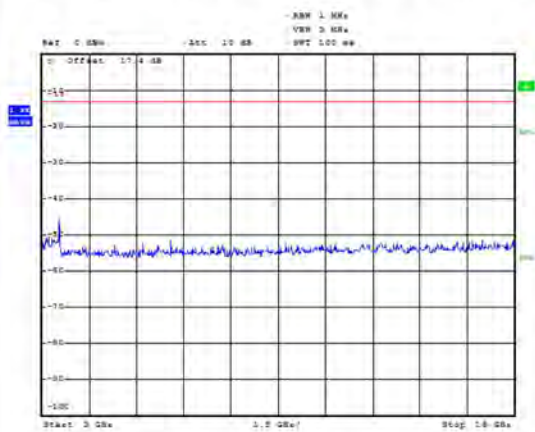
LTE Band 66 5MHz CH-High 1GHz~3GHz



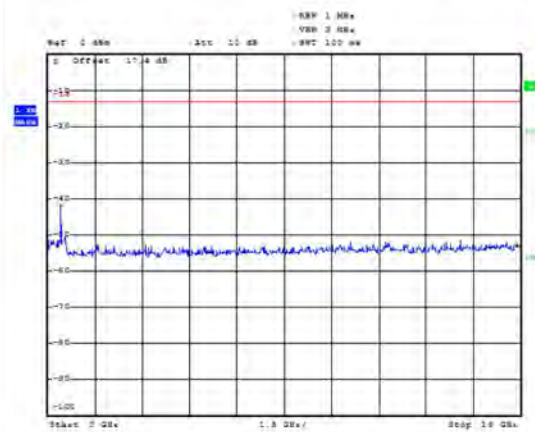
LTE Band 66 10MHz CH-Low 1GHz~3GHz



LTE Band 66 5MHz CH-High 3GHz~18GHz

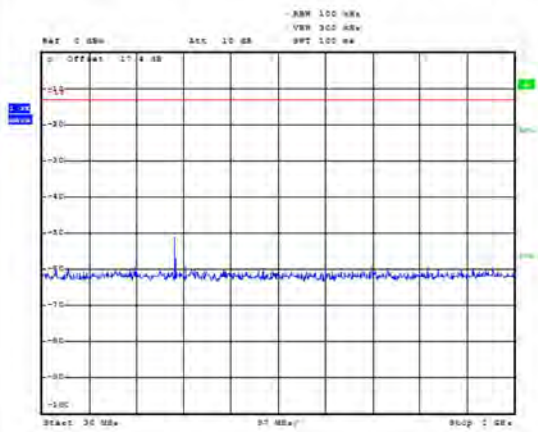


LTE Band 66 10MHz CH-Low 3GHz~18GHz

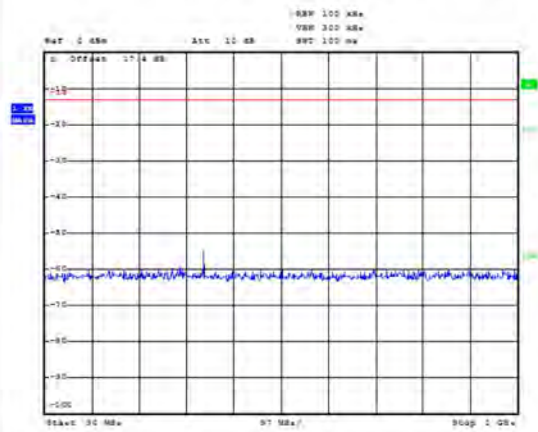




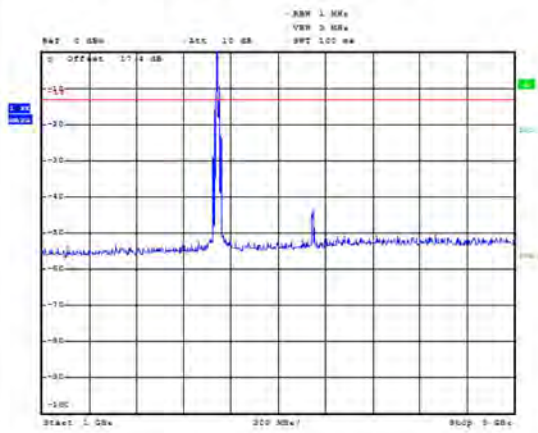
LTE Band 66 10MHz CH-Middle 30MHz~1GHz



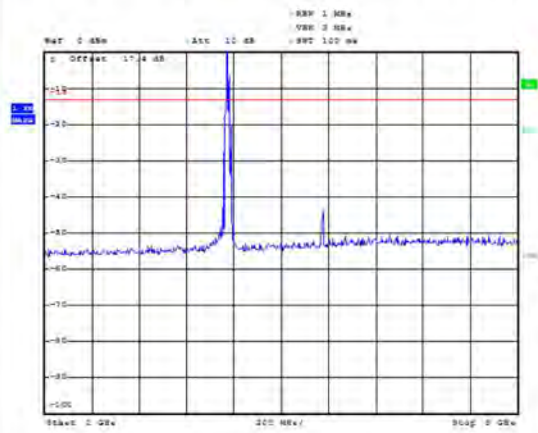
LTE Band 66 10MHz CH-High 30MHz~1GHz



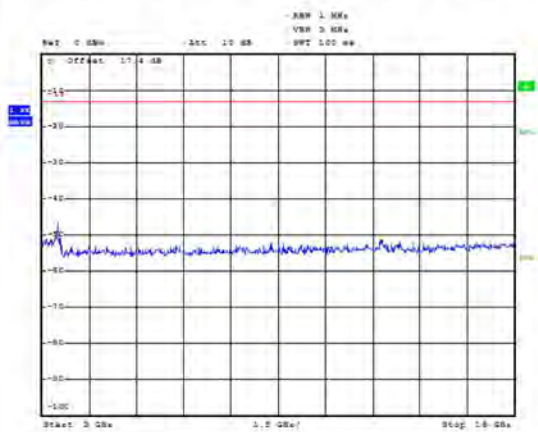
LTE Band 66 10MHz CH-Middle 1GHz~3GHz



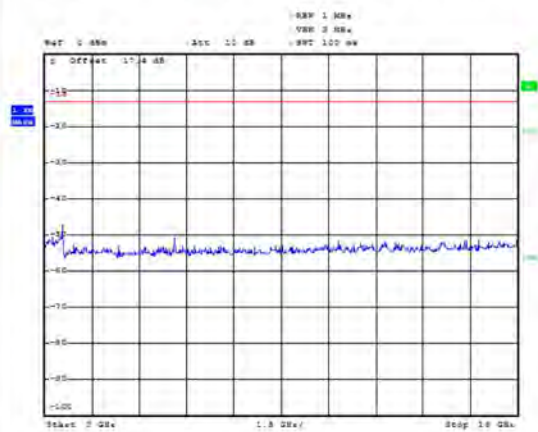
LTE Band 66 10MHz CH-High 1GHz~3GHz



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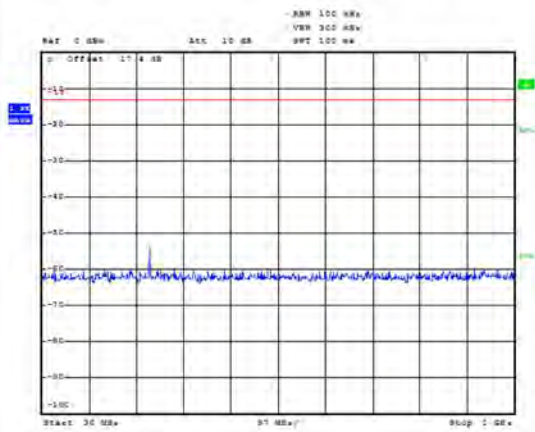
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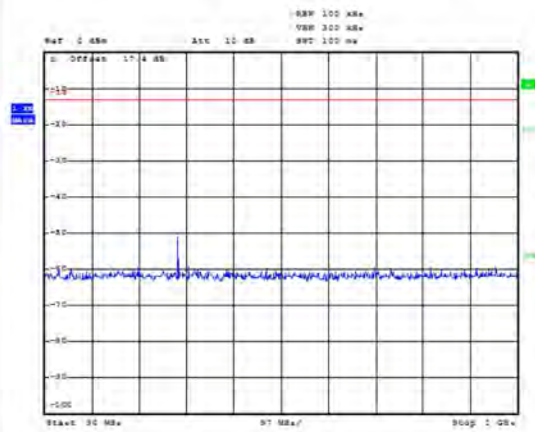




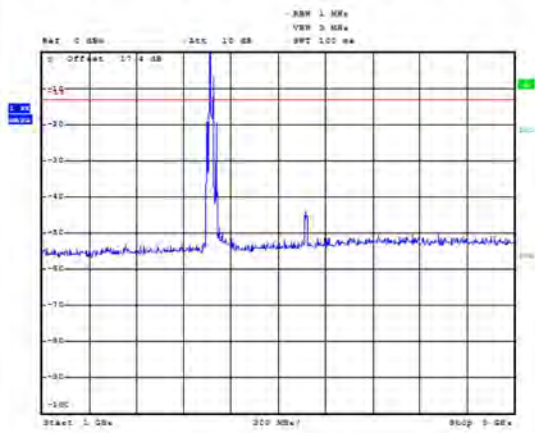
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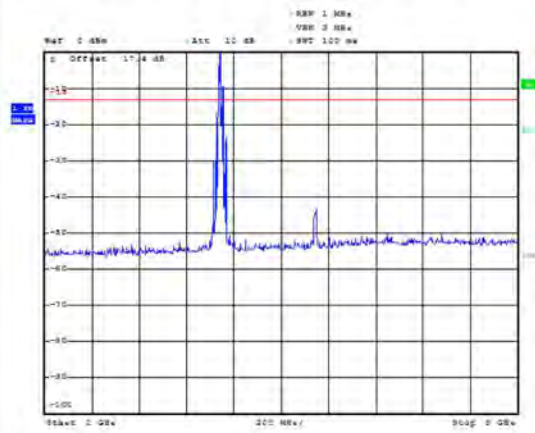
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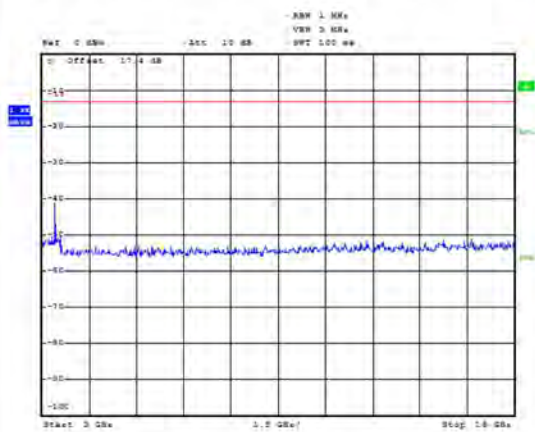
LTE Band 66 15MHz CH-Low 1GHz~3GHz



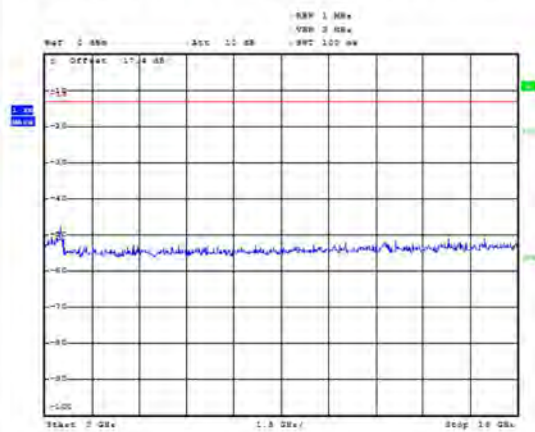
LTE Band 66 15MHz CH-Middle 1GHz~3GHz



LTE Band 66 15MHz CH-Low 3GHz~18GHz

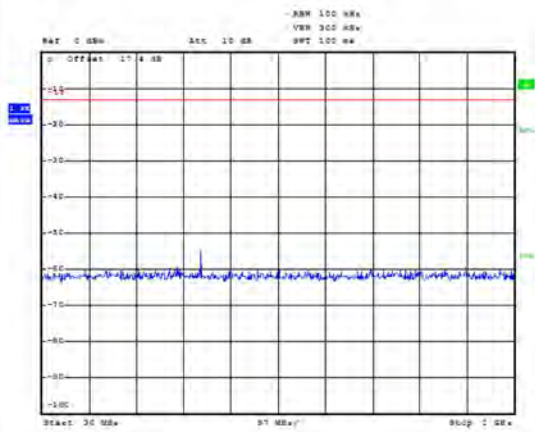


LTE Band 66 15MHz CH-Middle 3GHz~18GHz

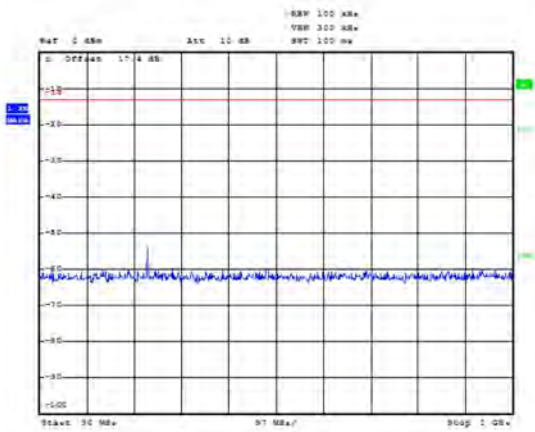




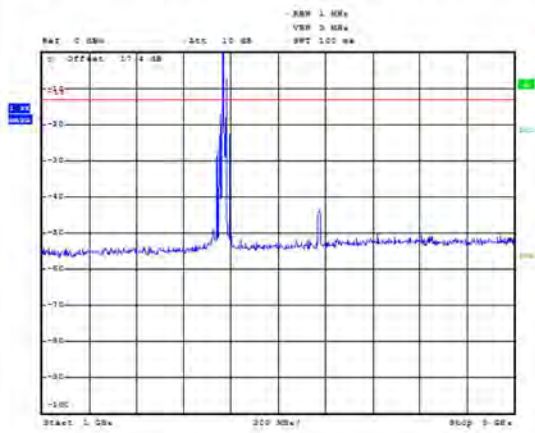
LTE Band 66 15MHz CH-High 30MHz~1GHz



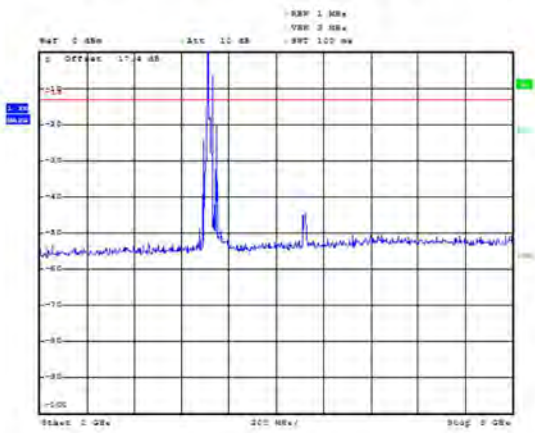
LTE Band 66 20MHz CH-Low 30MHz~1GHz



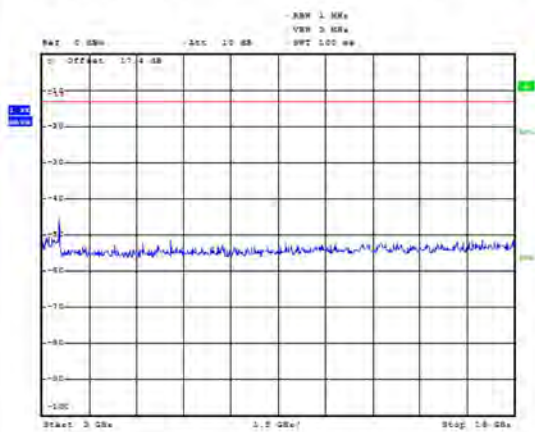
LTE Band 66 15MHz CH-High 1GHz~3GHz



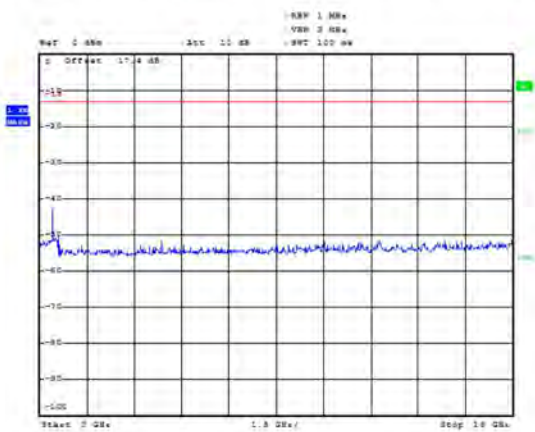
LTE Band 66 20MHz CH-Low 1GHz~3GHz



LTE Band 66 15MHz CH-High 3GHz~18GHz

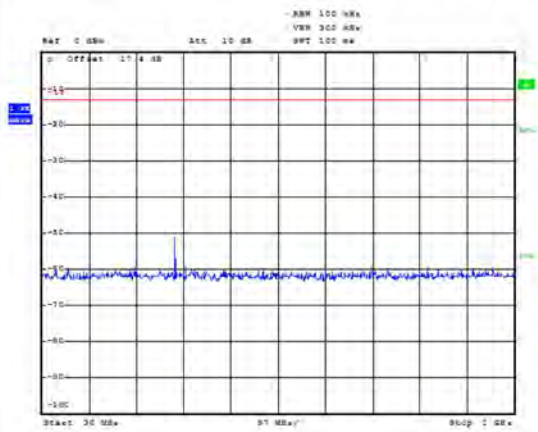


LTE Band 66 20MHz CH-Low 3GHz~18GHz

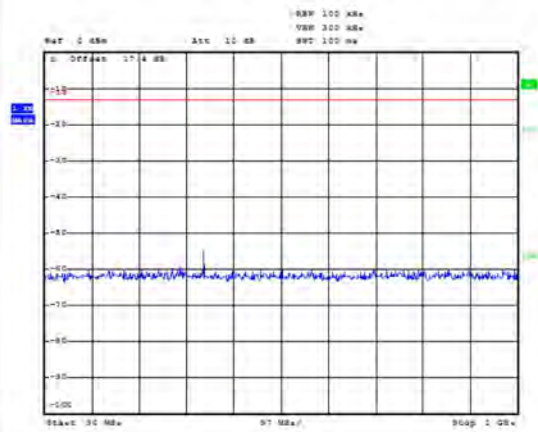




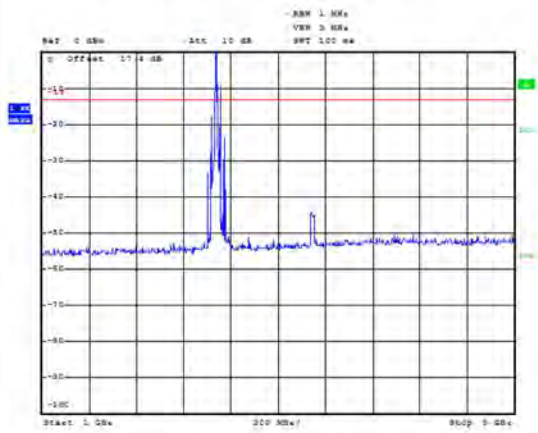
LTE Band 66 20MHz CH-Middle 30MHz~1GHz



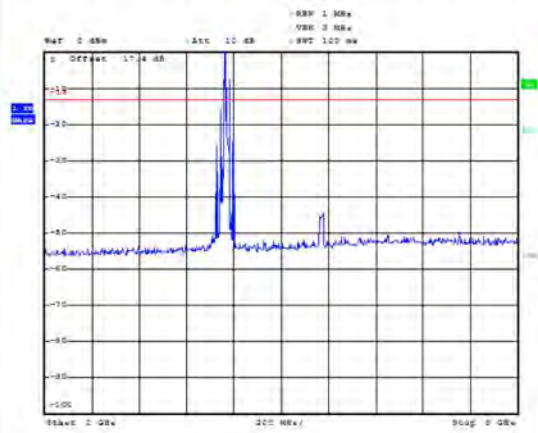
LTE Band 66 20MHz CH-High 30MHz~1GHz



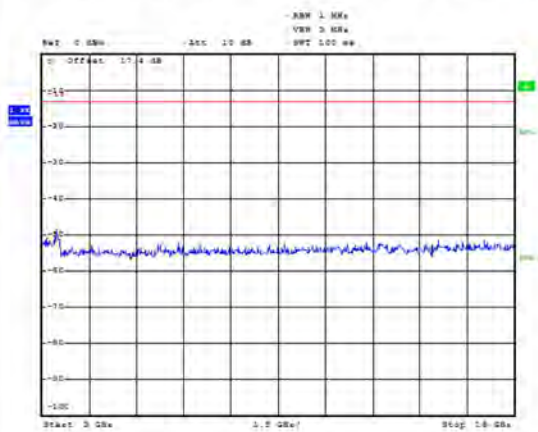
LTE Band 66 20MHz CH-Middle 1GHz~3GHz



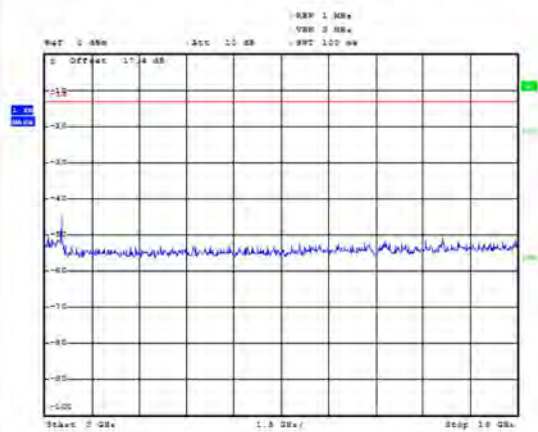
LTE Band 66 20MHz CH-High 1GHz~3GHz



LTE Band 66 20MHz CH-Middle 3GHz~18GHz

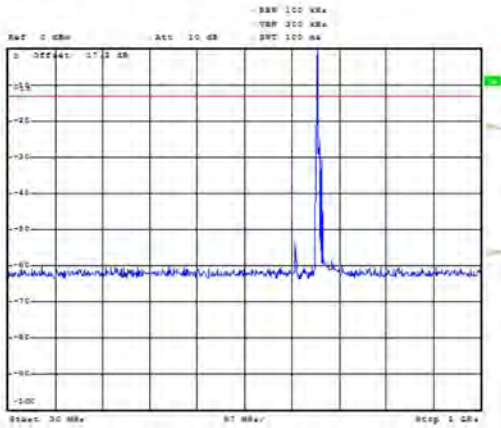


LTE Band 66 20MHz CH-High 3GHz~18GHz

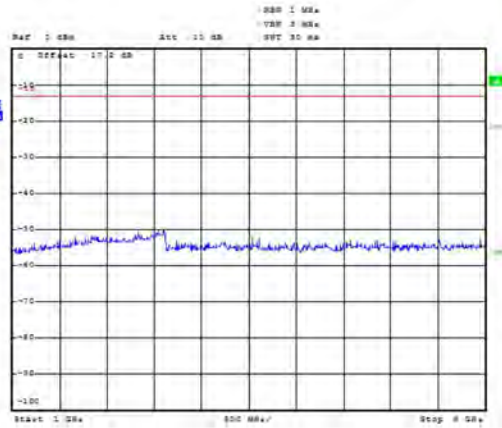




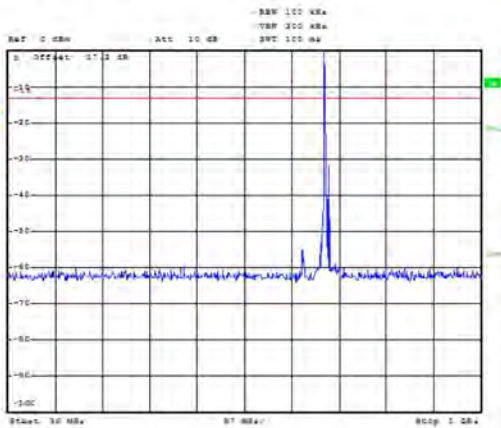
LTE Band 71 5MHz CH-Low 30MHz~1GHz



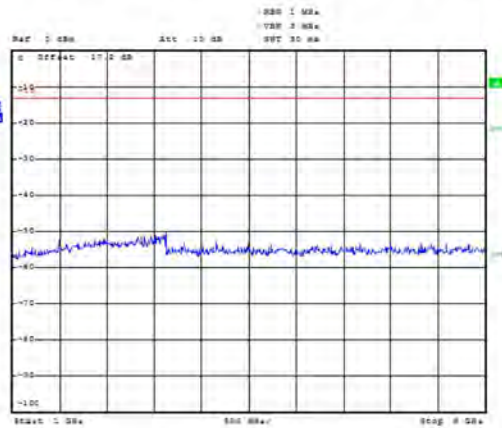
LTE Band 71 5MHz CH-Low 1GHz~9GHz



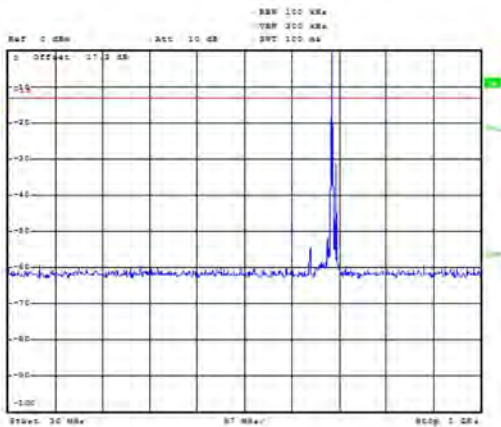
LTE Band 71 5MHz CH-Middle 30MHz~1GHz



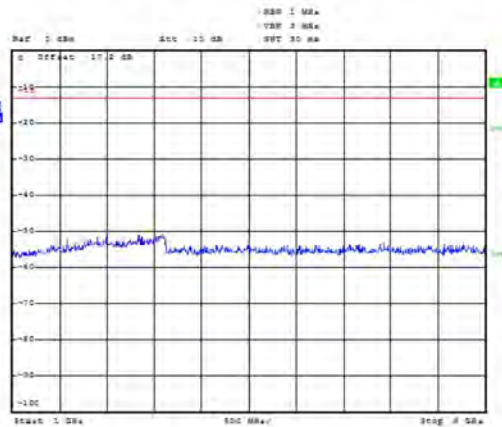
LTE Band 71 5MHz CH-Middle 1GHz~9GHz



LTE Band 71 5MHz CH-High 30MHz~1GHz

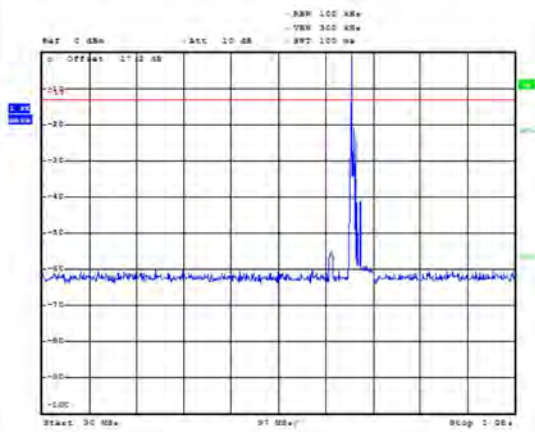


LTE Band 71 5MHz CH-High 1GHz~9GHz

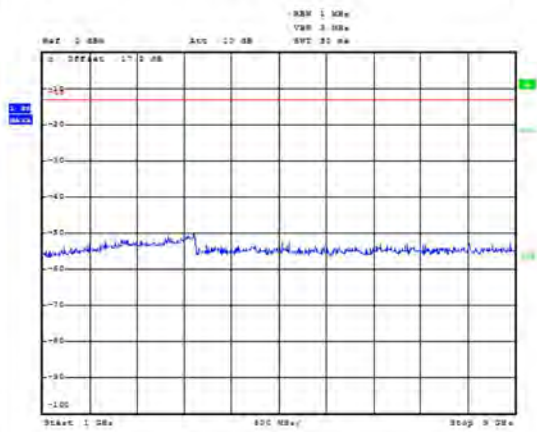




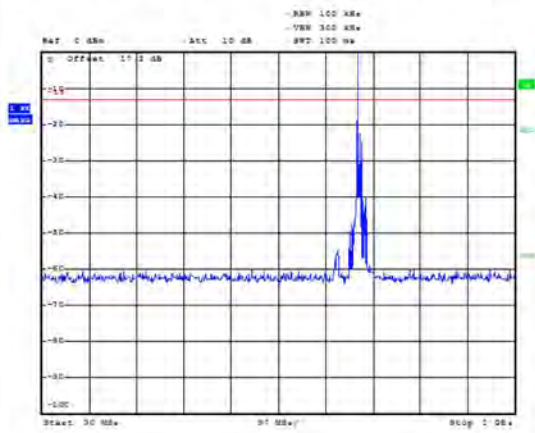
LTE Band 71 10MHz CH-Low 30MHz~1GHz



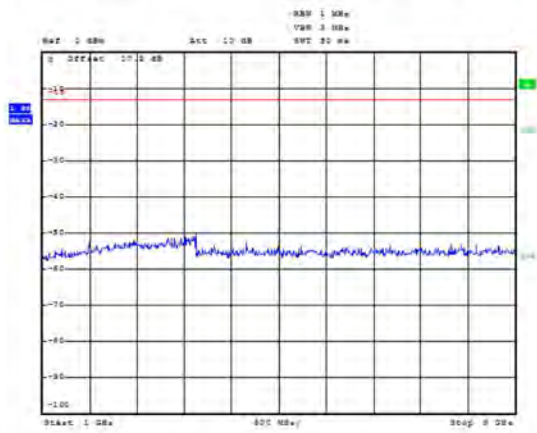
LTE Band 71 10MHz CH-Low 1GHz~9GHz



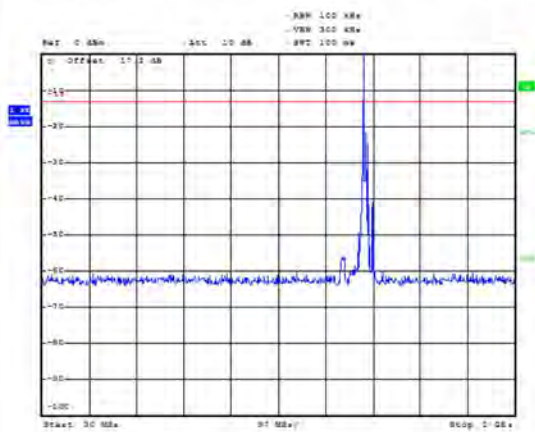
LTE Band 71 10MHz CH-Middle 30MHz~1GHz



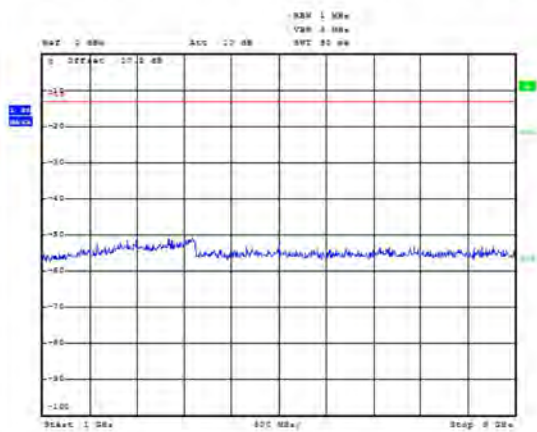
LTE Band 71 10MHz CH-Middle 1GHz~9GHz



LTE Band 71 10MHz CH-High 30MHz~1GHz

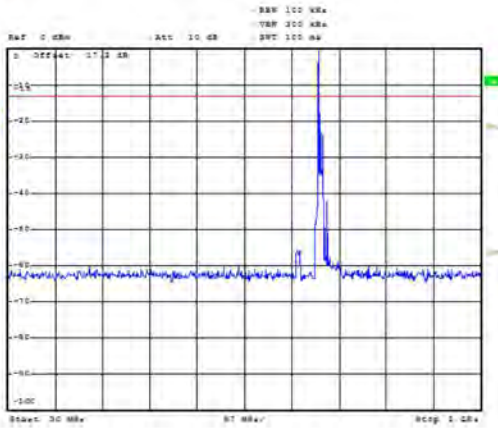


LTE Band 71 10MHz CH-High 1GHz~9GHz

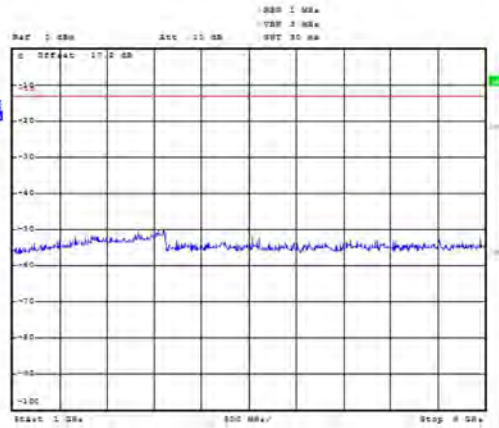




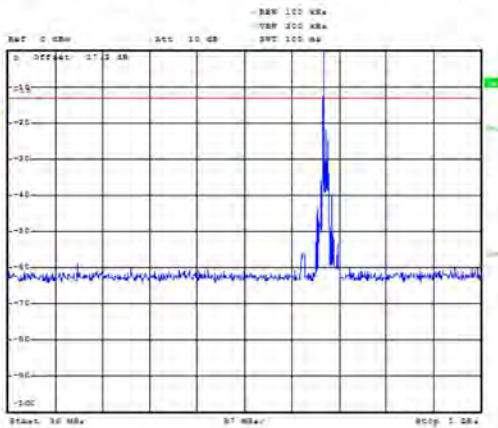
LTE Band 71 15MHz CH-Low 30MHz~1GHz



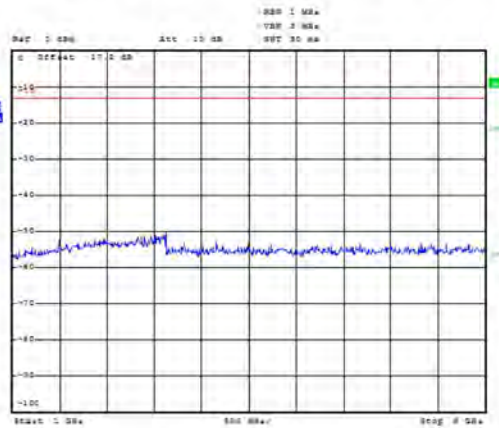
LTE Band 71 15MHz CH-Low 1GHz~9GHz



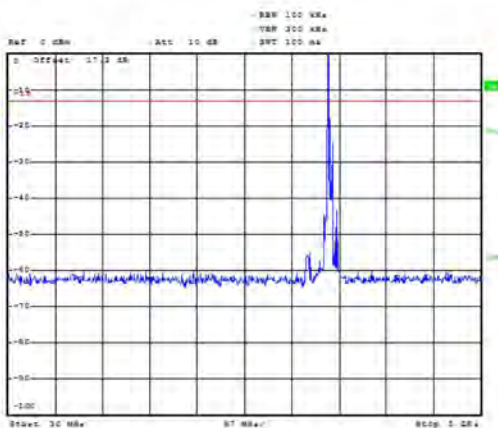
LTE Band 71 15MHz CH-Middle 30MHz~1GHz



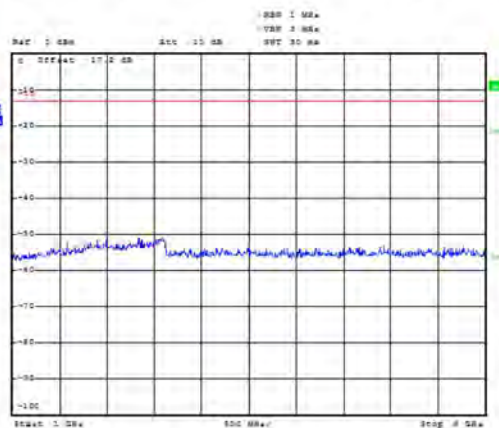
LTE Band 71 15MHz CH-Middle 1GHz~9GHz



LTE Band 71 15MHz CH-High 30MHz~1GHz

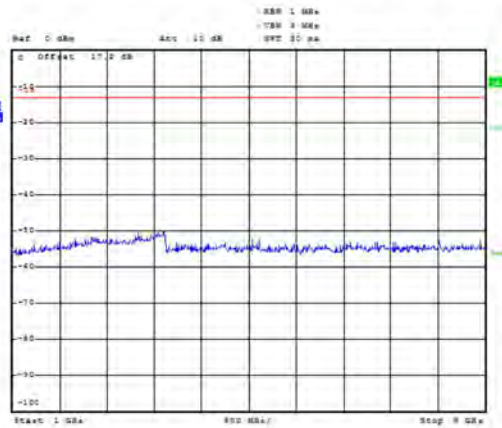
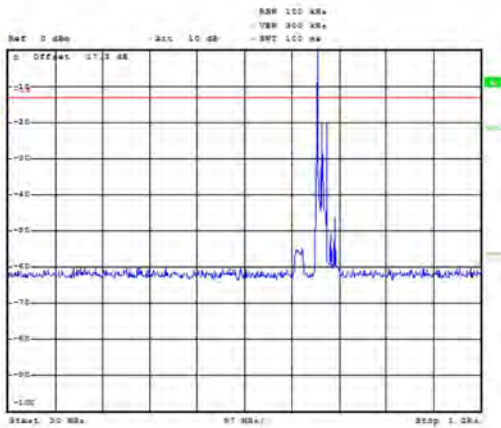


LTE Band 71 15MHz CH-High 1GHz~9GHz



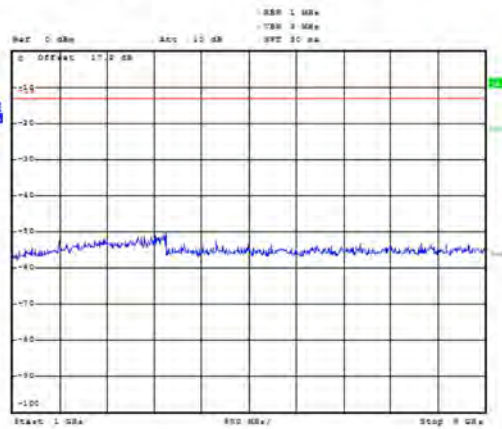
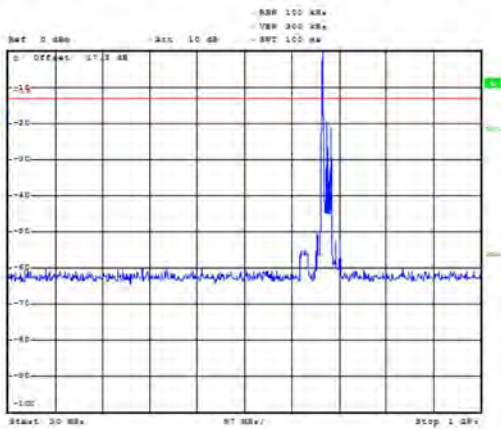
LTE Band 71 20MHz CH-Low 30MHz~1GHz

LTE Band 71 20MHz CH-Low 1GHz~9GHz



LTE Band 71 20MHz CH-Middle 30MHz~1GHz

LTE Band 71 20MHz CH-Middle 1GHz~9GHz



LTE Band 71 20MHz CH-High 30MHz~1GHz

LTE Band 71 20MHz CH-High 1GHz~9GHz

