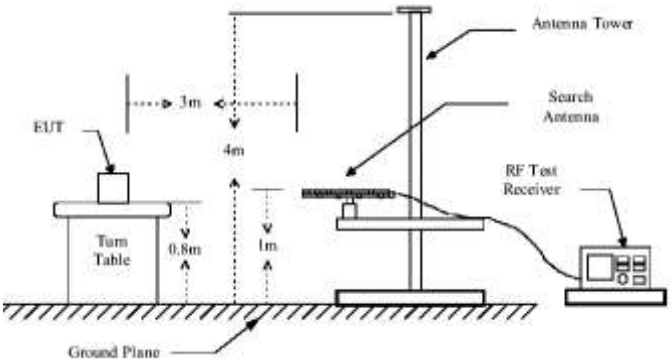
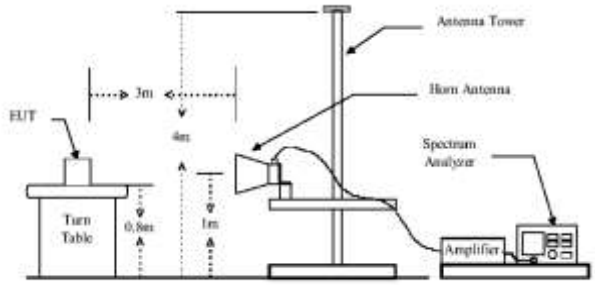
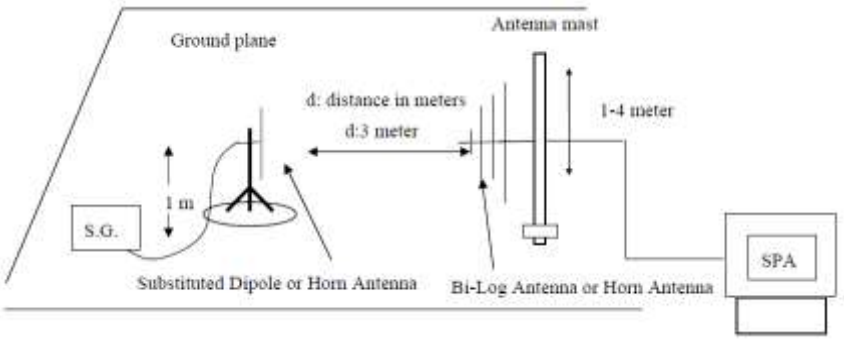
## 6.10 ERP, EIRP Measurement

| | |
|---|---|
| Test Requirement: | 24.232 (c), part 27.50(c), part 27.50(d), part 27.50 (h) |
| Test Method: | FCC part2.1046 |
| Limit: | LTE Band 2: 2W EIRP<br>LTE Band 4: 1W EIRP<br>LTE Band 7: 2W EIRP<br>LTE Band 17: 3W EIRP |
| Test setup: | Below 1GHz<br>  <br>Above 1GHz<br>  <br>Substituted method:<br>  |

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|---|---|
| Test Procedure: | 1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.<br>2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.<br>3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:<br>ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)<br>4. EIRP in frequency band above 1GHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:<br>EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)<br>5. The worse case was relating to the conducted output power. |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

**Measurement Data (worst case):**

**LTE band 2 part**

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1850.70 | 18607 | QPSK | 1.4 | H | V | 22.33 | 33.00 | Pass |
| | | | | | H | 18.81 | | |
| 1850.70 | 18607 | 16QAM | 1.4 | H | V | 22.30 | | |
| | | | | | H | 18.78 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1850.70 | 18607 | QPSK | 1.4 | H | V | 22.28 | 33.00 | Pass |
| | | | | | H | 18.65 | | |
| 1850.70 | 18607 | 16QAM | 1.4 | H | V | 22.43 | | |
| | | | | | H | 18.75 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1850.70 | 18607 | QPSK | 1.4 | H | V | 21.32 | 33.00 | Pass |
| | | | | | H | 17.64 | | |
| 1850.70 | 18607 | 16QAM | 1.4 | H | V | 21.29 | | |
| | | | | | H | 17.71 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 1.4 | H | V | 22.18 | 33.00 | Pass |
| | | | | | H | 18.72 | | |
| 1880.00 | 18900 | 16QAM | 1.4 | H | V | 22.23 | | |
| | | | | | H | 18.37 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 1.4 | H | V | 22.39 | 33.00 | Pass |
| | | | | | H | 18.31 | | |
| 1880.00 | 18900 | 16QAM | 1.4 | H | V | 22.35 | | |
| | | | | | H | 18.30 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 1.40 | H | V | 21.17 | 33.00 | Pass |
| | | | | | H | 17.75 | | |
| 1880.00 | 18900 | 16QAM | 1.40 | H | V | 21.41 | | |
| | | | | | H | 17.91 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1909.30 | 19193 | QPSK | 1.4 | H | V | 22.18 | 33.00 | Pass |
| | | | | | H | 18.85 | | |
| 1909.30 | 19193 | 16QAM | 1.4 | H | V | 22.72 | | |
| | | | | | H | 18.91 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1909.30 | 19193 | QPSK | 1.4 | H | V | 22.17 | 33.00 | Pass |
| | | | | | H | 18.39 | | |
| 1909.30 | 19193 | 16QAM | 1.4 | H | V | 22.01 | | |
| | | | | | H | 18.75 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1909.30 | 19193 | QPSK | 1.4 | H | V | 21.72 | 33.00 | Pass |
| | | | | | H | 17.17 | | |
| 1909.30 | 19193 | 16QAM | 1.4 | H | V | 21.00 | | |
| | | | | | H | 17.85 | | |

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1860.00 | 18700 | QPSK | 20 | H | V | 22.36 | 33.00 | Pass |
| | | | | | H | 18.85 | | |
| 1860.00 | 18700 | 16QAM | 20 | H | V | 22.19 | | |
| | | | | | H | 18.34 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1860.00 | 18700 | QPSK | 20 | H | V | 22.43 | 33.00 | Pass |
| | | | | | H | 18.43 | | |
| 1860.00 | 18700 | 16QAM | 20 | H | V | 22.19 | | |
| | | | | | H | 18.34 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1860.00 | 18700 | QPSK | 20 | H | V | 21.25 | 33.00 | Pass |
| | | | | | H | 17.33 | | |
| 1860.00 | 18700 | 16QAM | 20 | H | V | 21.15 | | |
| | | | | | H | 17.51 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 20 | H | V | 22.37 | 33.00 | Pass |
| | | | | | H | 18.19 | | |
| 1880.00 | 18900 | 16QAM | 20 | H | V | 22.00 | | |
| | | | | | H | 18.37 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 20 | H | V | 22.39 | 33.00 | Pass |
| | | | | | H | 18.73 | | |
| 1880.00 | 18900 | 16QAM | 20 | H | V | 22.01 | | |
| | | | | | H | 18.37 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1880.00 | 18900 | QPSK | 20 | H | V | 21.22 | 33.00 | Pass |
| | | | | | H | 17.28 | | |
| 1880.00 | 18900 | 16QAM | 20 | H | V | 21.01 | | |
| | | | | | H | 17.45 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1900.00 | 19100 | QPSK | 20 | H | V | 22.18 | 33.00 | Pass |
| | | | | | H | 18.85 | | |
| 1900.00 | 19100 | 16QAM | 20 | H | V | 22.19 | | |
| | | | | | H | 18.45 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1900.00 | 19100 | QPSK | 20 | H | V | 22.22 | 33.00 | Pass |
| | | | | | H | 18.17 | | |
| 1900.00 | 19100 | 16QAM | 20 | H | V | 22.06 | | |
| | | | | | H | 18.37 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1900.00 | 19100 | QPSK | 20 | H | V | 21.22 | 33.00 | Pass |
| | | | | | H | 17.41 | | |
| 1900.00 | 19100 | 16QAM | 20 | H | V | 21.22 | | |
| | | | | | H | 17.28 | | |

**LTE band 4 part**

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1710.70 | 19957 | QPSK | 1.4 | H | V | 22.06 | 30.00 | Pass |
| | | | | | H | 16.50 | | |
| 1710.70 | 19957 | 16QAM | 1.4 | H | V | 22.09 | | |
| | | | | | H | 16.45 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1710.70 | 19957 | QPSK | 1.4 | H | V | 21.92 | 30.00 | Pass |
| | | | | | H | 16.13 | | |
| 1710.70 | 19957 | 16QAM | 1.4 | H | V | 22.06 | | |
| | | | | | H | 16.26 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1710.70 | 19957 | QPSK | 1.4 | H | V | 21.31 | 30.00 | Pass |
| | | | | | H | 15.47 | | |
| 1710.70 | 19957 | 16QAM | 1.4 | H | V | 20.49 | | |
| | | | | | H | 14.50 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 1.4 | H | V | 22.17 | 30.00 | Pass |
| | | | | | H | 16.71 | | |
| 1732.50 | 20175 | 16QAM | 1.4 | H | V | 22.73 | | |
| | | | | | H | 16.33 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 1.4 | H | V | 21.20 | 30.00 | Pass |
| | | | | | H | 16.85 | | |
| 1732.50 | 20175 | 16QAM | 1.4 | H | V | 22.34 | | |
| | | | | | H | 16.41 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 1.4 | H | V | 21.20 | 30.00 | Pass |
| | | | | | H | 15.49 | | |
| 1732.50 | 20175 | 16QAM | 1.4 | H | V | 20.39 | | |
| | | | | | H | 14.01 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1754.30 | 20393 | QPSK | 1.4 | H | V | 22.01 | 30.00 | Pass |
| | | | | | H | 16.52 | | |
| 1754.30 | 20393 | 16QAM | 1.4 | H | V | 22.85 | | |
| | | | | | H | 16.49 | | |
| 1.4MHz(RB size 3 & RB offset 0) | | | | | | | | |
| 1754.30 | 20393 | QPSK | 1.4 | H | V | 21.34 | 30.00 | Pass |
| | | | | | H | 16.85 | | |
| 1754.30 | 20393 | 16QAM | 1.4 | H | V | 22.41 | | |
| | | | | | H | 16.01 | | |
| 1.4MHz(RB size 6 & RB offset 0) | | | | | | | | |
| 1754.30 | 20393 | QPSK | 1.4 | H | V | 21.52 | 30.00 | Pass |
| | | | | | H | 15.37 | | |
| 1754.30 | 20393 | 16QAM | 1.4 | H | V | 20.52 | | |
| | | | | | H | 14.49 | | |

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1720.00 | 20050 | QPSK | 20 | H | V | 22.20 | 30.00 | Pass |
| | | | | | H | 16.85 | | |
| 1720.00 | 20050 | 16QAM | 20 | H | V | 22.37 | | |
| | | | | | H | 16.34 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1720.00 | 20050 | QPSK | 20 | H | V | 21.17 | 30.00 | Pass |
| | | | | | H | 16.71 | | |
| 1720.00 | 20050 | 16QAM | 20 | H | V | 22.43 | | |
| | | | | | H | 16.28 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1720.00 | 20050 | QPSK | 20 | H | V | 21.37 | 30.00 | Pass |
| | | | | | H | 15.73 | | |
| 1720.00 | 20050 | 16QAM | 20 | H | V | 20.85 | | |
| | | | | | H | 14.41 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 20 | H | V | 22.17 | 30.00 | Pass |
| | | | | | H | 16.71 | | |
| 1732.50 | 20175 | 16QAM | 20 | H | V | 22.37 | | |
| | | | | | H | 16.34 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 20 | H | V | 21.41 | 30.00 | Pass |
| | | | | | H | 16.31 | | |
| 1732.50 | 20175 | 16QAM | 20 | H | V | 22.21 | | |
| | | | | | H | 16.39 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1732.50 | 20175 | QPSK | 20 | H | V | 21.01 | 30.00 | Pass |
| | | | | | H | 15.37 | | |
| 1732.50 | 20175 | 16QAM | 20 | H | V | 20.17 | | |
| | | | | | H | 14.39 | | |

**High channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 1745.00 | 20300 | QPSK | 20 | H | V | 22.33 | 30.00 | Pass |
| | | | | | H | 16.34 | | |
| 1745.00 | 20300 | 16QAM | 20 | H | V | 22.41 | | |
| | | | | | H | 16.22 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 1745.00 | 20300 | QPSK | 20 | H | V | 21.42 | 30.00 | Pass |
| | | | | | H | 16.44 | | |
| 1745.00 | 20300 | 16QAM | 20 | H | V | 22.22 | | |
| | | | | | H | 16.06 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 1745.00 | 20300 | QPSK | 20 | H | V | 21.01 | 30.00 | Pass |
| | | | | | H | 15.37 | | |
| 1745.00 | 20300 | 16QAM | 20 | H | V | 20.95 | | |
| | | | | | H | 14.06 | | |

**LTE band 7 part**

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2502.50 | 20775 | QPSK | 5 | H | V | 19.56 | 33.00 | Pass |
| | | | | | H | 14.04 | | |
| 2502.50 | 20775 | 16QAM | 5 | H | V | 19.59 | | |
| | | | | | H | 14.16 | | |
| 5MHz(RB size 12& RB offset 0) | | | | | | | | |
| 2502.50 | 20775 | QPSK | 5 | H | V | 19.14 | 33.00 | Pass |
| | | | | | H | 13.55 | | |
| 2502.50 | 20775 | 16QAM | 5 | H | V | 19.35 | | |
| | | | | | H | 13.80 | | |
| 5MHz(RB size 25& RB offset 0) | | | | | | | | |
| 2502.50 | 20775 | QPSK | 5 | H | V | 17.83 | 33.00 | Pass |
| | | | | | H | 12.42 | | |
| 2502.50 | 20775 | 16QAM | 5 | H | V | 18.87 | | |
| | | | | | H | 13.25 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 5 | H | V | 19.25 | 33.00 | Pass |
| | | | | | H | 14.01 | | |
| 2535.00 | 21100 | 16QAM | 5 | H | V | 19.50 | | |
| | | | | | H | 14.16 | | |
| 5MHz(RB size 12& RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 5 | H | V | 19.16 | 33.00 | Pass |
| | | | | | H | 13.62 | | |
| 2535.00 | 21100 | 16QAM | 5 | H | V | 19.20 | | |
| | | | | | H | 13.02 | | |
| 5MHz(RB size 25& RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 5 | H | V | 17.39 | 33.00 | Pass |
| | | | | | H | 12.38 | | |
| 2535.00 | 21100 | 16QAM | 5 | H | V | 18.98 | | |
| | | | | | H | 13.48 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2567.50 | 21425 | QPSK | 5 | H | V | 19.34 | 33.00 | Pass |
| | | | | | H | 14.38 | | |
| 2567.50 | 21425 | 16QAM | 5 | H | V | 19.48 | | |
| | | | | | H | 14.82 | | |
| 5MHz(RB size 12& RB offset 0) | | | | | | | | |
| 2567.50 | 21425 | QPSK | 5 | H | V | 19.32 | 33.00 | Pass |
| | | | | | H | 13.12 | | |
| 2567.50 | 21425 | 16QAM | 5 | H | V | 19.51 | | |
| | | | | | H | 13.39 | | |
| 5MHz(RB size 25& RB offset 0) | | | | | | | | |
| 2567.50 | 21425 | QPSK | 5 | H | V | 17.24 | 33.00 | Pass |
| | | | | | H | 12.18 | | |
| 2567.50 | 21425 | 16QAM | 5 | H | V | 18.87 | | |
| | | | | | H | 13.39 | | |

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2510.00 | 20850 | QPSK | 20 | H | V | 19.25 | 33.00 | Pass |
| | | | | | H | 14.14 | | |
| 2510.00 | 20850 | 16QAM | 20 | H | V | 19.26 | | |
| | | | | | H | 14.92 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 2510.00 | 20850 | QPSK | 20 | H | V | 19.33 | 33.00 | Pass |
| | | | | | H | 13.15 | | |
| 2510.00 | 20850 | 16QAM | 20 | H | V | 19.85 | | |
| | | | | | H | 13.14 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 2510.00 | 20850 | QPSK | 20 | H | V | 17.52 | 33.00 | Pass |
| | | | | | H | 12.01 | | |
| 2510.00 | 20850 | 16QAM | 20 | H | V | 18.66 | | |
| | | | | | H | 13.25 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 20 | H | V | 19.17 | 33.00 | Pass |
| | | | | | H | 14.83 | | |
| 2535.00 | 21100 | 16QAM | 20 | H | V | 19.39 | | |
| | | | | | H | 14.35 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 20 | H | V | 19.52 | 33.00 | Pass |
| | | | | | H | 13.26 | | |
| 2535.00 | 21100 | 16QAM | 20 | H | V | 19.83 | | |
| | | | | | H | 13.17 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 2535.00 | 21100 | QPSK | 20 | H | V | 17.83 | 33.00 | Pass |
| | | | | | H | 12.37 | | |
| 2535.00 | 21100 | 16QAM | 20 | H | V | 18.75 | | |
| | | | | | H | 13.82 | | |

**High channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 20MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 2560.00 | 21350 | QPSK | 20 | H | V | 19.25 | 33.00 | Pass |
| | | | | | H | 14.36 | | |
| 2560.00 | 21350 | 16QAM | 20 | H | V | 19.48 | | |
| | | | | | H | 14.17 | | |
| 20MHz(RB size 50 & RB offset 0) | | | | | | | | |
| 2560.00 | 21350 | QPSK | 20 | H | V | 19.82 | 33.00 | Pass |
| | | | | | H | 13.25 | | |
| 2560.00 | 21350 | 16QAM | 20 | H | V | 19.22 | | |
| | | | | | H | 13.24 | | |
| 20MHz(RB size 100 & RB offset 0) | | | | | | | | |
| 2560.00 | 21350 | QPSK | 20 | H | V | 17.57 | 33.00 | Pass |
| | | | | | H | 12.48 | | |
| 2560.00 | 21350 | 16QAM | 20 | H | V | 18.11 | | |
| | | | | | H | 13.01 | | |

**LTE band 17 part**
**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 706.50 | 23755 | QPSK | 5 | H | V | 15.45 | 34.77 | Pass |
| | | | | | H | 11.19 | | |
| 706.50 | 23755 | 16QAM | 5 | H | V | 15.17 | | |
| | | | | | H | 10.94 | | |
| 5MHz(RB size 12 & RB offset 0) | | | | | | | | |
| 706.50 | 23755 | QPSK | 5 | H | V | 15.11 | 34.77 | Pass |
| | | | | | H | 10.71 | | |
| 706.50 | 23755 | 16QAM | 5 | H | V | 15.00 | | |
| | | | | | H | 10.58 | | |
| 5MHz(RB size 25 & RB offset 0) | | | | | | | | |
| 706.50 | 23755 | QPSK | 5 | H | V | 13.39 | 34.77 | Pass |
| | | | | | H | 8.82 | | |
| 706.50 | 23755 | 16QAM | 5 | H | V | 15.32 | | |
| | | | | | H | 10.91 | | |

**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 5 | H | V | 15.76 | 34.77 | Pass |
| | | | | | H | 11.06 | | |
| 710.00 | 23790 | 16QAM | 5 | H | V | 15.18 | | |
| | | | | | H | 10.29 | | |
| 5MHz(RB size 12 & RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 5 | H | V | 15.42 | 34.77 | Pass |
| | | | | | H | 10.15 | | |
| 710.00 | 23790 | 16QAM | 5 | H | V | 15.81 | | |
| | | | | | H | 10.79 | | |
| 5MHz(RB size 25 & RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 5 | H | V | 13.18 | 34.77 | Pass |
| | | | | | H | 8.18 | | |
| 710.00 | 23790 | 16QAM | 5 | H | V | 15.42 | | |
| | | | | | H | 10.32 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 5MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 713.50 | 23825 | QPSK | 5 | H | V | 15.65 | 34.77 | Pass |
| | | | | | H | 11.29 | | |
| 713.50 | 23825 | 16QAM | 5 | H | V | 15.91 | | |
| | | | | | H | 10.42 | | |
| 5MHz(RB size 12 & RB offset 0) | | | | | | | | |
| 713.50 | 23825 | QPSK | 5 | H | V | 15.15 | 34.77 | Pass |
| | | | | | H | 10.32 | | |
| 713.50 | 23825 | 16QAM | 5 | H | V | 15.37 | | |
| | | | | | H | 10.39 | | |
| 5MHz(RB size 25 & RB offset 0) | | | | | | | | |
| 713.50 | 23825 | QPSK | 5 | H | V | 13.79 | 34.77 | Pass |
| | | | | | H | 8.42 | | |
| 713.50 | 23825 | 16QAM | 5 | H | V | 15.24 | | |
| | | | | | H | 10.02 | | |

**Lowest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 10MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 709.00 | 23780 | QPSK | 10 | H | V | 15.71 | 34.77 | Pass |
| | | | | | H | 11.36 | | |
| 709.00 | 23780 | 16QAM | 10 | H | V | 15.32 | | |
| | | | | | H | 10.54 | | |
| 10MHz(RB size 25& RB offset 0) | | | | | | | | |
| 709.00 | 23780 | QPSK | 10 | H | V | 15.36 | 34.77 | Pass |
| | | | | | H | 10.24 | | |
| 709.00 | 23780 | 16QAM | 10 | H | V | 15.21 | | |
| | | | | | H | 10.82 | | |
| 10MHz(RB size 50& RB offset 0) | | | | | | | | |
| 709.00 | 23780 | QPSK | 10 | H | V | 13.36 | 34.77 | Pass |
| | | | | | H | 8.98 | | |
| 709.00 | 23780 | 16QAM | 10 | H | V | 15.30 | | |
| | | | | | H | 10.42 | | |

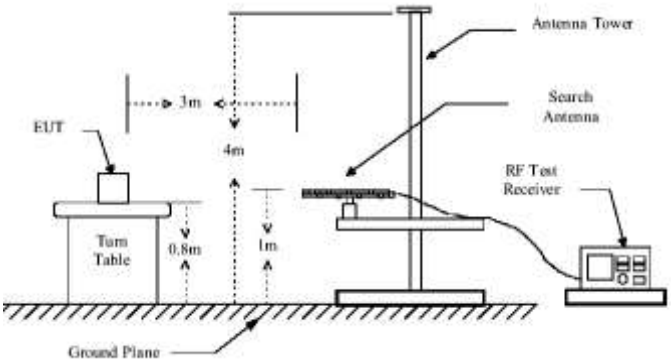
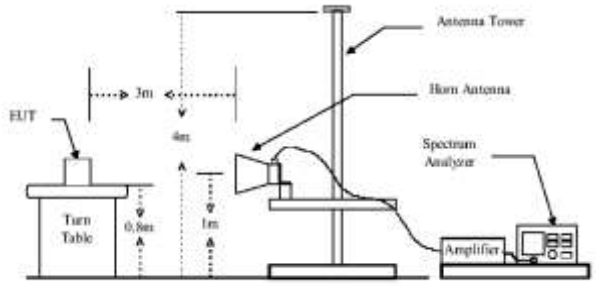
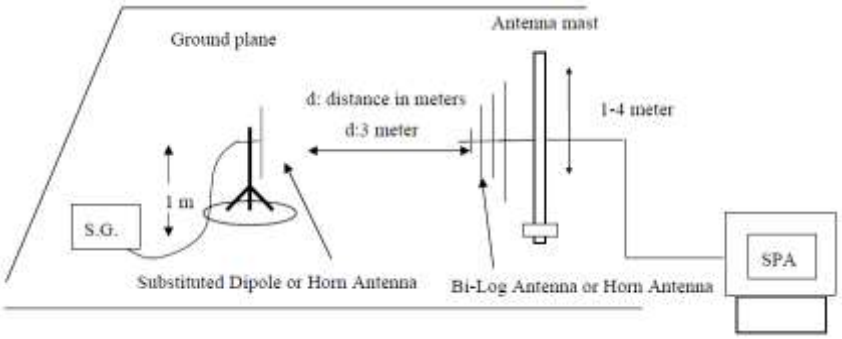
**Middle channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 10MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 10 | H | V | 15.71 | 34.77 | Pass |
| | | | | | H | 11.05 | | |
| 710.00 | 23790 | 16QAM | 10 | H | V | 15.72 | | |
| | | | | | H | 10.42 | | |
| 10MHz(RB size 25& RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 10 | H | V | 15.13 | 34.77 | Pass |
| | | | | | H | 10.33 | | |
| 710.00 | 23790 | 16QAM | 10 | H | V | 15.01 | | |
| | | | | | H | 10.37 | | |
| 10MHz(RB size 50& RB offset 0) | | | | | | | | |
| 710.00 | 23790 | QPSK | 10 | H | V | 13.97 | 34.77 | Pass |
| | | | | | H | 8.92 | | |
| 710.00 | 23790 | 16QAM | 10 | H | V | 15.62 | | |
| | | | | | H | 10.37 | | |

**Highest channel**

| Frequency (MHz) | UL Channel | Modulation | BW (MHz) | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 10MHz(RB size 1 & RB offset 0) | | | | | | | | |
| 711.00 | 23800 | QPSK | 10 | H | V | 15.90 | 34.77 | Pass |
| | | | | | H | 11.42 | | |
| 711.00 | 23800 | 16QAM | 10 | H | V | 15.39 | | |
| | | | | | H | 10.62 | | |
| 10MHz(RB size 25& RB offset 0) | | | | | | | | |
| 711.00 | 23800 | QPSK | 10 | H | V | 15.41 | 34.77 | Pass |
| | | | | | H | 10.29 | | |
| 711.00 | 23800 | 16QAM | 10 | H | V | 15.91 | | |
| | | | | | H | 10.20 | | |
| 10MHz(RB size 50& RB offset 0) | | | | | | | | |
| 711.00 | 23800 | QPSK | 10 | H | V | 13.51 | 34.77 | Pass |
| | | | | | H | 8.76 | | |
| 711.00 | 23800 | 16QAM | 10 | H | V | 15.91 | | |
| | | | | | H | 10.13 | | |

## 6.11 Field strength of spurious radiation measurement

| | |
|---|---|
| Test Requirement: | Part 24.238 (a),Part 27.53(g), Part 27.53(m), Part 27.53(h) |
| Test Method: | FCC part2.1053 |
| Limit: | LTE Band 2, LTE Band 4, LTE Band 5 and LTE Band 17: -13dBm,<br>LTE Band 7: -25dBm |
| Test setup: | Below 1GHz<br>  <br><br>Above 1GHz<br>  <br><br>Substituted method:<br>  <br> |
| Test Procedure: | 1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.<br>2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.<br>3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission |

| | |
|---|---|
| | was determined using the substitution method.<br>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.<br>ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB) |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details. |
| Test results: | Passed |

**Measurement Data (worst case):**

**Below 1GHz:**

The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

**Above 1GHz**

For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

**LTE band 2 part:**

| 1.4MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3701.40 | Vertical | -50.16 | -13.00 | Pass |
| 5552.10 | V | -40.31 | | |
| 7402.00 | V | -39.05 | | |
| 3701.40 | Horizontal | -49.73 | | |
| 5552.10 | H | -40.32 | | |
| 7402.00 | H | -38.63 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.25 | -13.00 | Pass |
| 5640.00 | V | -41.72 | | |
| 7520.00 | V | -39.19 | | |
| 3760.00 | Horizontal | -50.66 | | |
| 5640.00 | H | -41.41 | | |
| 7520.00 | H | -40.57 | | |
| **Highest** | | | | |
| 3816.60 | Vertical | -49.66 | -13.00 | Pass |
| 5724.90 | V | -41.51 | | |
| 7633.20 | V | -38.67 | | |
| 3816.60 | Horizontal | -50.33 | | |
| 5724.90 | H | -43.05 | | |
| 7633.20 | H | -39.37 | | |

| 3MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3703.00 | Vertical | -50.85 | -13.00 | Pass |
| 5554.50 | V | -40.19 | | |
| 7406.00 | V | -39.76 | | |
| 3703.00 | Horizontal | -49.45 | | |
| 5554.50 | H | -40.19 | | |
| 7406.00 | H | -38.51 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.28 | -13.00 | Pass |
| 5640.00 | V | -41.54 | | |
| 7520.00 | V | -39.55 | | |
| 3760.00 | Horizontal | -50.82 | | |
| 5640.00 | H | -41.15 | | |
| 7520.00 | H | -40.16 | | |
| **Highest** | | | | |
| 3817.00 | Vertical | 49.38 | -13.00 | Pass |
| 5725.50 | V | -41.36 | | |
| 7634.00 | V | -38.76 | | |
| 3817.00 | Horizontal | -50.42 | | |
| 5725.50 | H | -43.55 | | |
| 7634.00 | H | -39.33 | | |

| 5MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3705.00 | Vertical | -50.38 | -13.00 | Pass |
| 5557.50 | V | -40.57 | | |
| 7410.00 | V | -39.42 | | |
| 3705.00 | Horizontal | -49.41 | | |
| 5557.50 | H | -40.49 | | |
| 7410.00 | H | -38.12 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.12 | -13.00 | Pass |
| 5640.00 | V | -41.99 | | |
| 7520.00 | V | -39.36 | | |
| 3760.00 | Horizontal | -50.67 | | |
| 5640.00 | H | -41.68 | | |
| 7520.00 | H | -40.12 | | |
| **Highest** | | | | |
| 3815.00 | Vertical | -49.64 | -13.00 | Pass |
| 5722.50 | V | -41.42 | | |
| 7630.00 | V | -38.12 | | |
| 3815.00 | Horizontal | -50.83 | | |
| 5722.50 | H | -43.45 | | |
| 7630.00 | H | -39.47 | | |

| 10MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3710.00 | Vertical | -50.57 | -13.00 | Pass |
| 5565.00 | V | -40.18 | | |
| 7420.00 | V | -39.47 | | |
| 3710.00 | Horizontal | -49.92 | | |
| 5565.00 | H | -40.38 | | |
| 7420.00 | H | -38.12 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.67 | -13.00 | Pass |
| 5640.00 | V | -41.52 | | |
| 7520.00 | V | -39.67 | | |
| 3760.00 | Horizontal | -50.67 | | |
| 5640.00 | H | -41.38 | | |
| 7520.00 | H | -40.12 | | |
| **Highest** | | | | |
| 3810.00 | Vertical | -49.41 | -13.00 | Pass |
| 5715.00 | V | -41.66 | | |
| 7620.00 | V | -38.64 | | |
| 3810.00 | Horizontal | -50.85 | | |
| 5715.00 | H | -43.41 | | |
| 7620.00 | H | -39.67 | | |

| 15MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3715.00 | Vertical | -50.57 | -13.00 | Pass |
| 5572.50 | V | -40.33 | | |
| 7430.00 | V | -39.42 | | |
| 3715.00 | Horizontal | -49.41 | | |
| 5572.50 | H | -40.64 | | |
| 7430.00 | H | -38.41 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.79 | -13.00 | Pass |
| 5640.00 | V | -41.12 | | |
| 7520.00 | V | -39.49 | | |
| 3760.00 | Horizontal | -50.79 | | |
| 5640.00 | H | -41.51 | | |
| 7520.00 | H | -40.12 | | |
| **Highest** | | | | |
| 3805.00 | Vertical | -49.54 | -13.00 | Pass |
| 5707.50 | V | -41.55 | | |
| 7610.00 | V | -38.13 | | |
| 3805.00 | Horizontal | -50.85 | | |
| 5707.50 | H | -43.68 | | |
| 7610.00 | H | -39.41 | | |

| 20MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3720.00 | Vertical | -50.75 | -13.00 | Pass |
| 5580.00 | V | -40.47 | | |
| 7440.00 | V | -39.08 | | |
| 3720.00 | Horizontal | -49.64 | | |
| 5580.00 | H | -40.49 | | |
| 7440.00 | H | -38.66 | | |
| **Middle** | | | | |
| 3760.00 | Vertical | -49.64 | -13.00 | Pass |
| 5640.00 | V | -41.75 | | |
| 7520.00 | V | -39.39 | | |
| 3760.00 | Horizontal | -50.74 | | |
| 5640.00 | H | -41.38 | | |
| 7520.00 | H | -40.12 | | |
| **Highest** | | | | |
| 3800.00 | Vertical | -49.12 | -13.00 | Pass |
| 5700.00 | V | -41.92 | | |
| 7600.00 | V | -38.49 | | |
| 3800.00 | Horizontal | -50.54 | | |
| 5700.00 | H | -43.24 | | |
| 7600.00 | H | -39.39 | | |

**LTE Band 4 Part:**

| 1.4MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3421.40 | Vertical | -49.99 | -13.00 | Pass |
| 5132.10 | V | -41.17 | | |
| 6842.80 | V | -35.95 | | |
| 3421.40 | Horizontal | -49.59 | | |
| 5132.10 | H | -39.19 | | |
| 6842.80 | H | -35.03 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.48 | -13.00 | Pass |
| 5197.50 | V | -43.76 | | |
| 6930.00 | V | -40.35 | | |
| 3465.00 | Horizontal | -50.09 | | |
| 5197.50 | H | -43.68 | | |
| 6930.00 | H | -39.66 | | |
| **Highest** | | | | |
| 3508.60 | Vertical | -49.93 | -13.00 | Pass |
| 5262.90 | V | -40.08 | | |
| 7017.20 | V | -38.67 | | |
| 3508.60 | Horizontal | -48.25 | | |
| 5262.90 | H | -39.62 | | |
| 7017.20 | H | -36.99 | | |

| 3MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3423.00 | Vertical | -49.41 | -13.00 | Pass |
| 5134.50 | V | -41.63 | | |
| 6846.00 | V | -35.35 | | |
| 3423.00 | Horizontal | -49.42 | | |
| 5134.50 | H | -39.65 | | |
| 6846.00 | H | -35.93 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.41 | -13.00 | Pass |
| 5197.50 | V | -43.88 | | |
| 6930.00 | V | -40.08 | | |
| 3465.00 | Horizontal | -50.42 | | |
| 5197.50 | H | -43.84 | | |
| 6930.00 | H | -39.49 | | |
| **Highest** | | | | |
| 3507.00 | Vertical | -49.94 | -13.00 | Pass |
| 5260.50 | V | -40.46 | | |
| 7014.00 | V | -38.16 | | |
| 3507.00 | Horizontal | -48.64 | | |
| 5260.50 | H | -39.51 | | |
| 7014.00 | H | -36.63 | | |

| 5MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3425.00 | Vertical | -49.35 | -13.00 | Pass |
| 5137.50 | V | -41.50 | | |
| 6850.00 | V | -35.07 | | |
| 3425.00 | Horizontal | -49.74 | | |
| 5137.50 | H | -39.57 | | |
| 6850.00 | H | -35.41 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.84 | -13.00 | Pass |
| 5197.50 | V | -43.41 | | |
| 6930.00 | V | -40.36 | | |
| 3465.00 | Horizontal | -50.12 | | |
| 5197.50 | H | -43.99 | | |
| 6930.00 | H | -39.94 | | |
| **Highest** | | | | |
| 3505.00 | Vertical | -49.43 | -13.00 | Pass |
| 5257.50 | V | -40.16 | | |
| 7010.00 | V | -38.57 | | |
| 3505.00 | Horizontal | -48.41 | | |
| 5257.50 | H | -39.18 | | |
| 7010.00 | H | -36.56 | | |

| 10MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3430.00 | Vertical | -49.52 | -13.00 | Pass |
| 5145.00 | V | -41.06 | | |
| 6860.00 | V | -35.74 | | |
| 3430.00 | Horizontal | -49.52 | | |
| 5145.00 | H | -39.49 | | |
| 6860.00 | H | -35.92 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.35 | -13.00 | Pass |
| 5197.50 | V | -43.42 | | |
| 6930.00 | V | -40.45 | | |
| 3465.00 | Horizontal | -50.94 | | |
| 5197.50 | H | -43.08 | | |
| 6930.00 | H | -39.93 | | |
| **Highest** | | | | |
| 3500.00 | Vertical | -49.08 | -13.00 | Pass |
| 5250.00 | V | -40.93 | | |
| 7000.00 | V | -38.12 | | |
| 3500.00 | Horizontal | -48.08 | | |
| 5250.00 | H | -39.16 | | |
| 7000.00 | H | -36.50 | | |

| 15MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3435.00 | Vertical | -49.52 | -13.00 | Pass |
| 5152.50 | V | -41.65 | | |
| 6870.00 | V | -35.16 | | |
| 3435.00 | Horizontal | -49.45 | | |
| 5152.50 | H | -39.74 | | |
| 6870.00 | H | -35.46 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.71 | -13.00 | Pass |
| 5197.50 | V | -43.52 | | |
| 6930.00 | V | -40.49 | | |
| 3465.00 | Horizontal | -50.41 | | |
| 5197.50 | H | -43.77 | | |
| 6930.00 | H | -39.94 | | |
| **Highest** | | | | |
| 3495.00 | Vertical | -49.94 | -13.00 | Pass |
| 5242.50 | V | -40.44 | | |
| 6990.00 | V | -38.12 | | |
| 3495.00 | Horizontal | -48.71 | | |
| 5242.50 | H | -39.94 | | |
| 6990.00 | H | -36.49 | | |

| 20MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 3440.00 | Vertical | -49.56 | -13.00 | Pass |
| 5160.00 | V | -41.71 | | |
| 6880.00 | V | -35.52 | | |
| 3440.00 | Horizontal | -49.77 | | |
| 5160.00 | H | -39.45 | | |
| 6880.00 | H | -35.93 | | |
| **Middle** | | | | |
| 3465.00 | Vertical | -49.08 | -13.00 | Pass |
| 5197.50 | V | -43.12 | | |
| 6930.00 | V | -40.94 | | |
| 3465.00 | Horizontal | -50.93 | | |
| 5197.50 | H | -43.12 | | |
| 6930.00 | H | -39.41 | | |
| **Highest** | | | | |
| 3490.00 | Vertical | -49.43 | -13.00 | Pass |
| 5235.00 | V | -40.41 | | |
| 6980.00 | V | -38.49 | | |
| 3490.00 | Horizontal | -48.57 | | |
| 5235.00 | H | -39.42 | | |
| 6980.00 | H | -36.46 | | |

**LTE Band 7 Part:**

| 5MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 5005.00 | Vertical | -45.60 | -25.00 | Pass |
| 7507.50 | V | -39.01 | | |
| 10010.00 | V | -37.71 | | |
| 5005.00 | Horizontal | -45.73 | | |
| 7507.50 | H | -39.49 | | |
| 10010.00 | H | -39.21 | | |
| **Middle** | | | | |
| 5070.00 | Vertical | -46.00 | -25.00 | Pass |
| 7605.00 | V | -39.16 | | |
| 10140.00 | V | -37.61 | | |
| 5070.00 | Horizontal | -45.60 | | |
| 7605.00 | H | -38.87 | | |
| 10140.00 | H | -38.08 | | |
| **Highest** | | | | |
| 5135.00 | Vertical | -43.24 | -25.00 | Pass |
| 7702.50 | V | -38.29 | | |
| 10270.00 | V | -36.66 | | |
| 5135.00 | Horizontal | -44.32 | | |
| 7702.50 | H | -38.77 | | |
| 10270.00 | H | -36.41 | | |

| 10MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 5010.00 | Vertical | -45.41 | -25.00 | Pass |
| 7515.00 | V | -39.44 | | |
| 10020.00 | V | -37.24 | | |
| 5010.00 | Horizontal | -45.94 | | |
| 7515.00 | H | -39.44 | | |
| 10020.00 | H | -39.94 | | |
| **Middle** | | | | |
| 5070.00 | Vertical | -46.99 | -25.00 | Pass |
| 7605.00 | V | -39.42 | | |
| 10140.00 | V | -37.95 | | |
| 5070.00 | Horizontal | -45.91 | | |
| 7605.00 | H | -38.39 | | |
| 10140.00 | H | -38.54 | | |
| **Highest** | | | | |
| 5130.00 | Vertical | -43.46 | -25.00 | Pass |
| 7695.00 | V | -38.50 | | |
| 10260.00 | V | -36.51 | | |
| 5130.00 | Horizontal | -44.41 | | |
| 7695.00 | H | -38.42 | | |
| 10260.00 | H | -36.99 | | |

| 15MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 5015.00 | Vertical | -45.51 | -25.00 | Pass |
| 7522.50 | V | -39.77 | | |
| 10030.00 | V | -37.10 | | |
| 5015.00 | Horizontal | -45.55 | | |
| 7522.50 | H | -39.78 | | |
| 10030.00 | H | -39.61 | | |
| **Middle** | | | | |
| 5070.00 | Vertical | -46.61 | -25.00 | Pass |
| 7605.00 | V | -39.19 | | |
| 10140.00 | V | -37.41 | | |
| 5070.00 | Horizontal | -45.24 | | |
| 7605.00 | H | -38.24 | | |
| 10140.00 | H | -38.33 | | |
| **Highest** | | | | |
| 5125.00 | Vertical | -43.46 | -25.00 | Pass |
| 7687.50 | V | -35.36 | | |
| 10250.00 | V | -36.41 | | |
| 5125.00 | Horizontal | -44.35 | | |
| 7687.50 | H | -38.27 | | |
| 10250.00 | H | -36.50 | | |

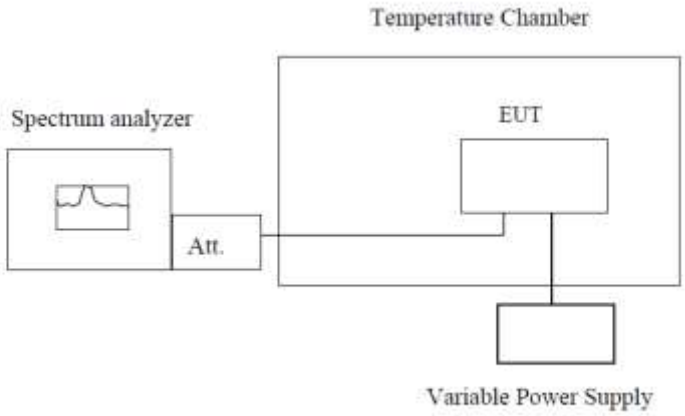
| 20MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 5020.00 | Vertical | -45.49 | -25.00 | Pass |
| 7530.00 | V | -39.69 | | |
| 10040.00 | V | -37.41 | | |
| 5020.00 | Horizontal | -45.37 | | |
| 7530.00 | H | -39.24 | | |
| 10040.00 | H | -39.99 | | |
| **Middle** | | | | |
| 5070.00 | Vertical | -46.99 | -25.00 | Pass |
| 7605.00 | V | -39.61 | | |
| 10140.00 | V | -37.72 | | |
| 5070.00 | Horizontal | -45.24 | | |
| 7605.00 | H | -38.42 | | |
| 10140.00 | H | -38.68 | | |
| **Highest** | | | | |
| 5120.00 | Vertical | -43.84 | -25.00 | Pass |
| 7680.00 | V | -35.44 | | |
| 10240.00 | V | -36.24 | | |
| 5120.00 | Horizontal | -44.37 | | |
| 7680.00 | H | -38.41 | | |
| 10240.00 | H | -36.94 | | |

**LTE Band 17 Part:**

| 5MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 1413.00 | Vertical | -46.00 | -13.00 | Pass |
| 2119.50 | V | -56.46 | | |
| 2826.00 | V | -53.31 | | |
| 1413.00 | Horizontal | -45.13 | | |
| 2119.50 | H | -58.23 | | |
| 2826.00 | H | -53.61 | | |
| **Middle** | | | | |
| 1420.00 | Vertical | -40.01 | -13.00 | Pass |
| 2130.00 | V | -58.73 | | |
| 2840.00 | V | -53.27 | | |
| 1420.00 | Horizontal | -41.86 | | |
| 2130.00 | H | -58.16 | | |
| 2840.00 | H | -51.66 | | |
| **Highest** | | | | |
| 1427.00 | Vertical | -44.71 | -13.00 | Pass |
| 2140.50 | V | -60.59 | | |
| 2854.00 | V | -51.60 | | |
| 1427.00 | Horizontal | -43.75 | | |
| 2140.50 | H | -58.12 | | |
| 2854.00 | H | -51.99 | | |

| 10MHz(RB size 1 & RB offset 0) for QPSK | | | | |
|---|---|---|---|---|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | Polarization | Level (dBm) | | |
| **Lowest** | | | | |
| 1418.00 | Vertical | -46.12 | -13.00 | Pass |
| 2127.00 | V | -56.21 | | |
| 2836.00 | V | -53.36 | | |
| 1418.00 | Horizontal | -45.36 | | |
| 2127.00 | H | -58.41 | | |
| 2836.00 | H | -53.75 | | |
| **Middle** | | | | |
| 1420.00 | Vertical | -40.36 | -13.00 | Pass |
| 2130.00 | V | -58.43 | | |
| 2840.00 | V | -53.30 | | |
| 1420.00 | Horizontal | -41.76 | | |
| 2130.00 | H | -58.13 | | |
| 2840.00 | H | -51.99 | | |
| **Highest** | | | | |
| 1422.00 | Vertical | -44.58 | -13.00 | Pass |
| 2133.00 | V | -60.36 | | |
| 2844.00 | V | -51.43 | | |
| 1422.00 | Horizontal | -43.14 | | |
| 2133.00 | H | -58.97 | | |
| 2844.00 | H | -51.66 | | |

## 6.12 Frequency stability V.S. Temperature measurement

| | |
|---|---|
| Test Requirement: | Part 24.235, Part 27.54, Part 2.1055(a)(1)(b) |
| Test Method: | FCC Part2.1055(a)(1)(b) |
| Limit: | ±2.5ppm |
| Test setup: |  <br>**Note :** Measurement setup for testing on Antenna connector |
| Test procedure: | 1. The equipment under test was connected to an external DC power supply and input rated voltage.<br>2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.<br>3. The EUT was placed inside the temperature chamber.<br>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.<br>5. Turn EUT off and set the chamber temperature to –30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.<br>6. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |
| Remark: | All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item. |

Measurement Data (the worst channel):

**LTE Band 2(QPSK):**

| Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 163 | 0.086702 | ±2.5 | Pass |
| | -20 | 144 | 0.076596 | | |
| | -10 | 125 | 0.066489 | | |
| | 0 | 103 | 0.054787 | | |
| | 10 | 116 | 0.061702 | | |
| | 20 | 152 | 0.080851 | | |
| | 30 | 160 | 0.085106 | | |
| | 40 | 133 | 0.070745 | | |
| | 50 | 142 | 0.075532 | | |
| Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 166 | 0.088298 | ±2.5 | Pass |
| | -20 | 145 | 0.077128 | | |
| | -10 | 150 | 0.079787 | | |
| | 0 | 136 | 0.072340 | | |
| | 10 | 155 | 0.082447 | | |
| | 20 | 142 | 0.075532 | | |
| | 30 | 112 | 0.059574 | | |
| | 40 | 106 | 0.056383 | | |
| | 50 | 128 | 0.068085 | | |
| Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 174 | 0.092553 | ±2.5 | Pass |
| | -20 | 152 | 0.080851 | | |
| | -10 | 163 | 0.086702 | | |
| | 0 | 134 | 0.071277 | | |
| | 10 | 105 | 0.055851 | | |
| | 20 | 122 | 0.064894 | | |
| | 30 | 130 | 0.069149 | | |
| | 40 | 142 | 0.075532 | | |
| | 50 | 105 | 0.055851 | | |

| Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 163 | 0.086702 | ±2.5 | Pass |
| | -20 | 152 | 0.080851 | | |
| | -10 | 141 | 0.075000 | | |
| | 0 | 102 | 0.054255 | | |
| | 10 | 122 | 0.064894 | | |
| | 20 | 108 | 0.057447 | | |
| | 30 | 126 | 0.067021 | | |
| | 40 | 136 | 0.072340 | | |
| | 50 | 101 | 0.053723 | | |
| Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 155 | 0.082447 | ±2.5 | Pass |
| | -20 | 142 | 0.075532 | | |
| | -10 | 102 | 0.054255 | | |
| | 0 | 113 | 0.060106 | | |
| | 10 | 140 | 0.074468 | | |
| | 20 | 103 | 0.054787 | | |
| | 30 | 122 | 0.064894 | | |
| | 40 | 130 | 0.069149 | | |
| | 50 | 152 | 0.080851 | | |
| Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 177 | 0.094149 | ±2.5 | Pass |
| | -20 | 168 | 0.089362 | | |
| | -10 | 152 | 0.080851 | | |
| | 0 | 125 | 0.066489 | | |
| | 10 | 123 | 0.065426 | | |
| | 20 | 105 | 0.055851 | | |
| | 30 | 146 | 0.077660 | | |
| | 40 | 140 | 0.074468 | | |
| | 50 | 113 | 0.060106 | | |

**LTE Band 2(16QAM):**

| Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 142 | 0.075532 | ±2.5 | Pass |
| | -20 | 120 | 0.063830 | | |
| | -10 | 113 | 0.060106 | | |
| | 0 | 106 | 0.056383 | | |
| | 10 | 125 | 0.066489 | | |
| | 20 | 140 | 0.074468 | | |
| | 30 | 133 | 0.070745 | | |
| | 40 | 135 | 0.071809 | | |
| | 50 | 116 | 0.061702 | | |
| Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 147 | 0.078191 | ±2.5 | Pass |
| | -20 | 136 | 0.072340 | | |
| | -10 | 105 | 0.055851 | | |
| | 0 | 122 | 0.064894 | | |
| | 10 | 114 | 0.060638 | | |
| | 20 | 103 | 0.054787 | | |
| | 30 | 118 | 0.062766 | | |
| | 40 | 126 | 0.067021 | | |
| | 50 | 108 | 0.057447 | | |
| Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 169 | 0.089894 | ±2.5 | Pass |
| | -20 | 155 | 0.082447 | | |
| | -10 | 150 | 0.079787 | | |
| | 0 | 142 | 0.075532 | | |
| | 10 | 136 | 0.072340 | | |
| | 20 | 130 | 0.069149 | | |
| | 30 | 125 | 0.066489 | | |
| | 40 | 156 | 0.082979 | | |
| | 50 | 145 | 0.077128 | | |

| Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 175 | 0.093085 | ±2.5 | Pass |
| | -20 | 126 | 0.067021 | | |
| | -10 | 152 | 0.080851 | | |
| | 0 | 141 | 0.075000 | | |
| | 10 | 133 | 0.070745 | | |
| | 20 | 106 | 0.056383 | | |
| | 30 | 150 | 0.079787 | | |
| | 40 | 142 | 0.075532 | | |
| | 50 | 146 | 0.077660 | | |
| Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 180 | 0.095745 | ±2.5 | Pass |
| | -20 | 156 | 0.082979 | | |
| | -10 | 175 | 0.093085 | | |
| | 0 | 170 | 0.090426 | | |
| | 10 | 166 | 0.088298 | | |
| | 20 | 154 | 0.081915 | | |
| | 30 | 136 | 0.072340 | | |
| | 40 | 108 | 0.057447 | | |
| | 50 | 128 | 0.068085 | | |
| Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 156 | 0.082979 | ±2.5 | Pass |
| | -20 | 142 | 0.075532 | | |
| | -10 | 105 | 0.055851 | | |
| | 0 | 123 | 0.065426 | | |
| | 10 | 105 | 0.055851 | | |
| | 20 | 142 | 0.075532 | | |
| | 30 | 106 | 0.056383 | | |
| | 40 | 105 | 0.055851 | | |
| | 50 | 123 | 0.065426 | | |

**LTE Band 4(QPSK):**

| Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 177 | 0.102165 | ±2.5 | Pass |
| | -20 | 163 | 0.094084 | | |
| | -10 | 125 | 0.072150 | | |
| | 0 | 122 | 0.070418 | | |
| | 10 | 134 | 0.077345 | | |
| | 20 | 105 | 0.060606 | | |
| | 30 | 126 | 0.072727 | | |
| | 40 | 137 | 0.079076 | | |
| | 50 | 108 | 0.062338 | | |
| Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 149 | 0.086003 | ±2.5 | Pass |
| | -20 | 120 | 0.069264 | | |
| | -10 | 106 | 0.061183 | | |
| | 0 | 113 | 0.065224 | | |
| | 10 | 125 | 0.072150 | | |
| | 20 | 106 | 0.061183 | | |
| | 30 | 114 | 0.065801 | | |
| | 40 | 107 | 0.061760 | | |
| | 50 | 122 | 0.070418 | | |
| Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 169 | 0.097547 | ±2.5 | Pass |
| | -20 | 152 | 0.087734 | | |
| | -10 | 142 | 0.081962 | | |
| | 0 | 106 | 0.061183 | | |
| | 10 | 122 | 0.070418 | | |
| | 20 | 134 | 0.077345 | | |
| | 30 | 105 | 0.060606 | | |
| | 40 | 126 | 0.072727 | | |
| | 50 | 140 | 0.080808 | | |

| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 185 | 0.106782 | ±2.5 | Pass |
| | -20 | 152 | 0.087734 | | |
| | -10 | 166 | 0.095815 | | |
| | 0 | 174 | 0.100433 | | |
| | 10 | 152 | 0.087734 | | |
| | 20 | 136 | 0.078499 | | |
| | 30 | 104 | 0.060029 | | |
| | 40 | 135 | 0.077922 | | |
| | 50 | 139 | 0.080231 | | |
| Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 170 | 0.098124 | ±2.5 | Pass |
| | -20 | 152 | 0.087734 | | |
| | -10 | 163 | 0.094084 | | |
| | 0 | 142 | 0.081962 | | |
| | 10 | 152 | 0.087734 | | |
| | 20 | 105 | 0.060606 | | |
| | 30 | 136 | 0.078499 | | |
| | 40 | 108 | 0.062338 | | |
| | 50 | 108 | 0.062338 | | |
| Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 145 | 0.083694 | ±2.5 | Pass |
| | -20 | 102 | 0.058874 | | |
| | -10 | 140 | 0.080808 | | |
| | 0 | 133 | 0.076768 | | |
| | 10 | 126 | 0.072727 | | |
| | 20 | 100 | 0.057720 | | |
| | 30 | 114 | 0.065801 | | |
| | 40 | 126 | 0.072727 | | |
| | 50 | 130 | 0.075036 | | |

**LTE Band 4(16QAM):**

| Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 136 | 0.078499 | ±2.5 | Pass |
| | -20 | 130 | 0.075036 | | |
| | -10 | 120 | 0.069264 | | |
| | 0 | 115 | 0.066378 | | |
| | 10 | 105 | 0.060606 | | |
| | 20 | 107 | 0.061760 | | |
| | 30 | 123 | 0.070996 | | |
| | 40 | 142 | 0.081962 | | |
| | 50 | 126 | 0.072727 | | |
| Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 177 | 0.102165 | ±2.5 | Pass |
| | -20 | 155 | 0.089466 | | |
| | -10 | 136 | 0.078499 | | |
| | 0 | 146 | 0.084271 | | |
| | 10 | 125 | 0.072150 | | |
| | 20 | 136 | 0.078499 | | |
| | 30 | 145 | 0.083694 | | |
| | 40 | 108 | 0.062338 | | |
| | 50 | 129 | 0.074459 | | |
| Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 178 | 0.102742 | ±2.5 | Pass |
| | -20 | 165 | 0.095238 | | |
| | -10 | 145 | 0.083694 | | |
| | 0 | 126 | 0.072727 | | |
| | 10 | 136 | 0.078499 | | |
| | 20 | 142 | 0.081962 | | |
| | 30 | 105 | 0.060606 | | |
| | 40 | 128 | 0.073882 | | |
| | 50 | 109 | 0.062915 | | |

| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 184 | 0.106205 | ±2.5 | Pass |
| | -20 | 165 | 0.095238 | | |
| | -10 | 155 | 0.089466 | | |
| | 0 | 125 | 0.072150 | | |
| | 10 | 152 | 0.087734 | | |
| | 20 | 143 | 0.082540 | | |
| | 30 | 126 | 0.072727 | | |
| | 40 | 142 | 0.081962 | | |
| | 50 | 102 | 0.058874 | | |
| Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 191 | 0.110245 | ±2.5 | Pass |
| | -20 | 152 | 0.087734 | | |
| | -10 | 133 | 0.076768 | | |
| | 0 | 158 | 0.091198 | | |
| | 10 | 167 | 0.096392 | | |
| | 20 | 152 | 0.087734 | | |
| | 30 | 143 | 0.082540 | | |
| | 40 | 152 | 0.087734 | | |
| | 50 | 160 | 0.092352 | | |
| Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 174 | 0.100433 | ±2.5 | Pass |
| | -20 | 125 | 0.072150 | | |
| | -10 | 126 | 0.072727 | | |
| | 0 | 134 | 0.077345 | | |
| | 10 | 160 | 0.092352 | | |
| | 20 | 152 | 0.087734 | | |
| | 30 | 148 | 0.085426 | | |
| | 40 | 155 | 0.089466 | | |
| | 50 | 126 | 0.072727 | | |

**LTE Band 7(QPSK):**

| Reference Frequency: LTE Band 7(5MHz) Middle channel=21100Frequency=2535.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 170 | 0.067061 | ±2.5 | Pass |
| | -20 | 166 | 0.065483 | | |
| | -10 | 145 | 0.057199 | | |
| | 0 | 125 | 0.049310 | | |
| | 10 | 123 | 0.048521 | | |
| | 20 | 130 | 0.051282 | | |
| | 30 | 105 | 0.041420 | | |
| | 40 | 124 | 0.048915 | | |
| | 50 | 126 | 0.049704 | | |
| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 146 | 0.057594 | ±2.5 | Pass |
| | -20 | 123 | 0.048521 | | |
| | -10 | 120 | 0.047337 | | |
| | 0 | 114 | 0.044970 | | |
| | 10 | 105 | 0.041420 | | |
| | 20 | 103 | 0.040631 | | |
| | 30 | 124 | 0.048915 | | |
| | 40 | 126 | 0.049704 | | |
| | 50 | 134 | 0.052860 | | |
| Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 142 | 0.056016 | ±2.5 | Pass |
| | -20 | 120 | 0.047337 | | |
| | -10 | 102 | 0.040237 | | |
| | 0 | 113 | 0.044576 | | |
| | 10 | 116 | 0.045759 | | |
| | 20 | 108 | 0.042604 | | |
| | 30 | 123 | 0.048521 | | |
| | 40 | 126 | 0.049704 | | |
| | 50 | 134 | 0.052860 | | |
| Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 177 | 0.069822 | ±2.5 | Pass |
| | -20 | 163 | 0.064300 | | |
| | -10 | 125 | 0.049310 | | |
| | 0 | 108 | 0.042604 | | |
| | 10 | 152 | 0.059961 | | |
| | 20 | 163 | 0.064300 | | |
| | 30 | 142 | 0.056016 | | |
| | 40 | 105 | 0.041420 | | |
| | 50 | 123 | 0.048521 | | |

**LTE Band 7(16QAM):**

| Reference Frequency: LTE Band 7(5MHz) Middle channel=21100Frequency=2535.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 152 | 0.059961 | ±2.5 | Pass |
| | -20 | 122 | 0.048126 | | |
| | -10 | 103 | 0.040631 | | |
| | 0 | 113 | 0.044576 | | |
| | 10 | 124 | 0.048915 | | |
| | 20 | 106 | 0.041815 | | |
| | 30 | 133 | 0.052465 | | |
| | 40 | 124 | 0.048915 | | |
| | 50 | 125 | 0.049310 | | |
| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 167 | 0.065878 | ±2.5 | Pass |
| | -20 | 152 | 0.059961 | | |
| | -10 | 142 | 0.056016 | | |
| | 0 | 133 | 0.052465 | | |
| | 10 | 116 | 0.045759 | | |
| | 20 | 108 | 0.042604 | | |
| | 30 | 126 | 0.049704 | | |
| | 40 | 137 | 0.054043 | | |
| | 50 | 105 | 0.041420 | | |
| Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 166 | 0.065483 | 2.5 | Pass |
| | -20 | 152 | 0.059961 | | |
| | -10 | 142 | 0.056016 | | |
| | 0 | 130 | 0.051282 | | |
| | 10 | 142 | 0.056016 | | |
| | 20 | 102 | 0.040237 | | |
| | 30 | 124 | 0.048915 | | |
| | 40 | 130 | 0.051282 | | |
| | 50 | 122 | 0.048126 | | |
| Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 141 | 0.055621 | 2.5 | Pass |
| | -20 | 125 | 0.049310 | | |
| | -10 | 103 | 0.040631 | | |
| | 0 | 106 | 0.041815 | | |
| | 10 | 140 | 0.055227 | | |
| | 20 | 105 | 0.041420 | | |
| | 30 | 116 | 0.045759 | | |
| | 40 | 125 | 0.049310 | | |
| | 50 | 136 | 0.053649 | | |

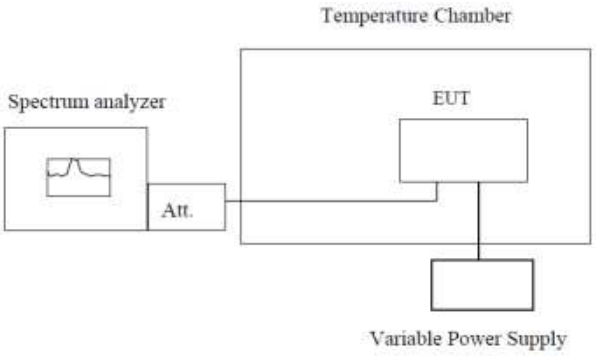
**LTE Band 17(QPSK):**

| Reference Frequency: LTE Band 17(5MHz) Middle channel=23790 channel=710.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 163 | 0.229577 | ±2.5 | Pass |
| | -20 | 142 | 0.200000 | | |
| | -10 | 125 | 0.176056 | | |
| | 0 | 130 | 0.183099 | | |
| | 10 | 104 | 0.146479 | | |
| | 20 | 125 | 0.176056 | | |
| | 30 | 146 | 0.205634 | | |
| | 40 | 123 | 0.173239 | | |
| | 50 | 108 | 0.152113 | | |
| Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 channel=710.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 167 | 0.235211 | ±2.5 | Pass |
| | -20 | 152 | 0.214085 | | |
| | -10 | 142 | 0.200000 | | |
| | 0 | 103 | 0.145070 | | |
| | 10 | 123 | 0.173239 | | |
| | 20 | 142 | 0.200000 | | |
| | 30 | 105 | 0.147887 | | |
| | 40 | 144 | 0.202817 | | |
| | 50 | 120 | 0.169014 | | |

**LTE Band 17(16QAM):**

| Reference Frequency: LTE Band 17(5MHz) Middle channel=23790 channel=710.00MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 195 | 0.274648 | ±2.5 | Pass |
| | -20 | 124 | 0.174648 | | |
| | -10 | 132 | 0.185915 | | |
| | 0 | 105 | 0.147887 | | |
| | 10 | 141 | 0.198592 | | |
| | 20 | 155 | 0.218310 | | |
| | 30 | 166 | 0.233803 | | |
| | 40 | 144 | 0.202817 | | |
| | 50 | 172 | 0.242254 | | |
| Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 channel=710.00MHz | | | | | |
| Power supplied (Vdc) | Temperature (℃) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 156 | 0.219718 | ±2.5 | Pass |
| | -20 | 128 | 0.180282 | | |
| | -10 | 142 | 0.200000 | | |
| | 0 | 102 | 0.143662 | | |
| | 10 | 123 | 0.173239 | | |
| | 20 | 116 | 0.163380 | | |
| | 30 | 118 | 0.166197 | | |
| | 40 | 104 | 0.146479 | | |
| | 50 | 126 | 0.177465 | | |

## 6.13 Frequency stability V.S. Voltage measurement

| | |
|---|---|
| Test Requirement: | Part 24.235, Part 27.54, Part 2.1055(d)(2) |
| Test Method: | FCC Part2.1055(d)(1)(2) |
| Limit: | 2.5ppm |
| Test setup: |  <br>**Note :** Measurement setup for testing on Antenna connector |
| Test procedure: | 1. Set chamber temperature to 25℃. Use a variable DC power source to power the EUT and set the voltage to rated voltage.<br>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.<br>3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change. |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report. |
| Test results: | Passed |

**Measurement Data (the worst channel):**

**LTE Band 2(QPSK):**

| Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.039362 | ±2.5 | Pass |
| | 3.80 | 62 | 0.032979 | | |
| | 3.23 | 52 | 0.027660 | | |
| Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 67 | 0.0356383 | ±2.5 | Pass |
| | 3.80 | 80 | 0.0425532 | | |
| | 3.23 | 60 | 0.0319149 | | |
| Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.039362 | ±2.5 | Pass |
| | 3.80 | 80 | 0.042553 | | |
| | 3.23 | 96 | 0.051064 | | |
| Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.039362 | ±2.5 | Pass |
| | 3.80 | 52 | 0.027660 | | |
| | 3.23 | 63 | 0.033511 | | |
| Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 88 | 0.046809 | ±2.5 | Pass |
| | 3.80 | 74 | 0.039362 | | |
| | 3.23 | 68 | 0.036170 | | |
| Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 55 | 0.029255 | ±2.5 | Pass |
| | 3.80 | 74 | 0.039362 | | |
| | 3.23 | 91 | 0.048404 | | |

**LTE Band 2(16QAM):**

| Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 85 | 0.045213 | ±2.5 | Pass |
| | 3.80 | 74 | 0.039362 | | |
| | 3.23 | 63 | 0.033511 | | |
| Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 85 | 0.045213 | ±2.5 | Pass |
| | 3.80 | 65 | 0.034574 | | |
| | 3.23 | 90 | 0.047872 | | |
| Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.039362 | ±2.5 | Pass |
| | 3.80 | 52 | 0.027660 | | |
| | 3.23 | 80 | 0.042553 | | |
| Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.039362 | ±2.5 | Pass |
| | 3.80 | 63 | 0.033511 | | |
| | 3.23 | 52 | 0.027660 | | |
| Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 88 | 0.046809 | ±2.5 | Pass |
| | 3.80 | 72 | 0.038298 | | |
| | 3.23 | 65 | 0.034574 | | |
| Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 87 | 0.046277 | ±2.5 | Pass |
| | 3.80 | 45 | 0.023936 | | |
| | 3.23 | 90 | 0.047872 | | |

**LTE Band 4(QPSK):**

| Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.042713 | ±2.5 | Pass |
| | 3.80 | 65 | 0.037518 | | |
| | 3.23 | 55 | 0.031746 | | |
| Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.042713 | ±2.5 | Pass |
| | 3.80 | 58 | 0.033478 | | |
| | 3.23 | 74 | 0.042713 | | |
| Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 56 | 0.032323 | ±2.5 | Pass |
| | 3.80 | 80 | 0.046176 | | |
| | 3.23 | 74 | 0.042713 | | |
| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 90 | 0.051948 | ±2.5 | Pass |
| | 3.80 | 85 | 0.049062 | | |
| | 3.23 | 63 | 0.036364 | | |
| Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 75 | 0.04329 | ±2.5 | Pass |
| | 3.80 | 85 | 0.049062 | | |
| | 3.23 | 74 | 0.042713 | | |
| Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 72 | 0.041558 | ±2.5 | Pass |
| | 3.80 | 92 | 0.053102 | | |
| | 3.23 | 85 | 0.049062 | | |

**LTE Band 4(16QAM):**

| Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.042713 | ±2.5 | Pass |
| | 3.80 | 63 | 0.036364 | | |
| | 3.23 | 85 | 0.049062 | | |
| Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 95 | 0.054834 | ±2.5 | Pass |
| | 3.80 | 88 | 0.050794 | | |
| | 3.23 | 74 | 0.042713 | | |
| Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 63 | 0.036364 | ±2.5 | Pass |
| | 3.80 | 85 | 0.049062 | | |
| | 3.23 | 71 | 0.040981 | | |
| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 77 | 0.044444 | ±2.5 | Pass |
| | 3.80 | 56 | 0.032323 | | |
| | 3.23 | 90 | 0.051948 | | |
| Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 85 | 0.049062 | ±2.5 | Pass |
| | 3.80 | 85 | 0.049062 | | |
| | 3.23 | 74 | 0.042713 | | |
| Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 68 | 0.03925 | ±2.5 | Pass |
| | 3.80 | 52 | 0.030014 | | |
| | 3.23 | 66 | 0.038095 | | |

**LTE Band 7(QPSK):**

| Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 77 | 0.030375 | ±2.5 | Pass |
| | 3.80 | 85 | 0.033531 | | |
| | 3.23 | 84 | 0.033136 | | |
| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 67 | 0.026430 | ±2.5 | Pass |
| | 3.80 | 70 | 0.027613 | | |
| | 3.23 | 55 | 0.021696 | | |
| Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 86 | 0.033925 | ±2.5 | Pass |
| | 3.80 | 74 | 0.029191 | | |
| | 3.23 | 85 | 0.033531 | | |
| Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 75 | 0.029586 | ±2.5 | Pass |
| | 3.80 | 90 | 0.035503 | | |
| | 3.23 | 67 | 0.026430 | | |

**LTE Band 7(16QAM):**

| Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 88 | 0.034714 | ±2.5 | Pass |
| | 3.80 | 75 | 0.029586 | | |
| | 3.23 | 63 | 0.024852 | | |
| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.029191 | ±2.5 | Pass |
| | 3.80 | 85 | 0.033531 | | |
| | 3.23 | 80 | 0.031558 | | |
| Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.029191 | ±2.5 | Pass |
| | 3.80 | 63 | 0.024852 | | |
| | 3.23 | 85 | 0.033531 | | |
| Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 77 | 0.030375 | ±2.5 | Pass |
| | 3.80 | 90 | 0.035503 | | |
| | 3.23 | 85 | 0.033531 | | |

**LTE Band 17(QPSK):**

| Reference Frequency: LTE Band 17(5MHz) Middle channel=23790 channel=710.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.104225 | ±2.5 | Pass |
| | 3.80 | 52 | 0.073239 | | |
| | 3.23 | 33 | 0.046479 | | |
| Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 channel=710.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.104225 | ±2.5 | Pass |
| | 3.80 | 80 | 0.112676 | | |
| | 3.23 | 96 | 0.135211 | | |

**LTE Band 17(16QAM):**

| Reference Frequency: LTE Band 17(5MHz) Middle channel=23790 channel=710.00MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 72 | 0.101408 | ±2.5 | Pass |
| | 3.80 | 82 | 0.115493 | | |
| | 3.23 | 66 | 0.092958 | | |
| Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 channel=710.00MHz | | | | | |
| Temperature (℃) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.37 | 74 | 0.104225 | ±2.5 | Pass |
| | 3.80 | 87 | 0.122535 | | |
| | 3.23 | 90 | 0.126761 | | |