# FCC TEST REPORT

# (PART 27)

| | |
|---|---|
| **REPORT NO.:** | RF130814E06C-2 |
| **MODEL NO.:** | LN931-NAG |
| **FCC ID:** | RI7LN931NAG |
| **RECEIVED:** | Aug. 14, 2013 |
| **TESTED:** | Sep. 06 to 10, 2013 |
| **ISSUED:** | Aug. 14, 2015 |

**APPLICANT:** Telit Communications S.p.A.

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**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| RF130814E06C-2 | Original release | Aug. 14, 2015 |

# 1 CERTIFICATION

| | |
|---|---|
| **PRODUCT :** | Data card |
| **BRAND NAME :** | Telit |
| **MODEL NO. :** | LN931-NAG |
| **TEST ITEM:** | ENGINEERING SAMPLE |
| **APPLICANT :** | Telit Communications S.p.A. |
| **TESTED DATE :** | Sep. 06 to 10, 2013 |
| **STANDARDS:** | **FCC Part 27, Subpart C, L** |
| | **FCC Part 2** |

The above equipment (Model: LN931-NAG) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** _____ , **Date:** Aug. 14, 2015
Lori Chung / Specialist

**Approved by :** _____ , **Date:** Aug. 14, 2015
May Chen / Manager

# 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 27 & Part 2 | | | |
|---|---|---|---|
| **STANDARD SECTION** | **TEST TYPE** | **RESULT** | **REMARK** |
| 2.1046<br>27.50(d)(4) | Equivalent isotropically radiated power | PASS | Meet the requirement of limit. |
| 2.1055<br>27.54 | Frequency Stability | PASS | Meet the requirement of limit. |
| 2.1049<br>27.53(h) | Occupied Bandwidth | PASS | Meet the requirement of limit. |
| 27.50(d)(5) | Peak to average ratio | PASS | Meet the requirement of limit. |
| 27.53(h) | Band Edge Measurements | PASS | Meet the requirement of limit. |
| 2.1051<br>27.53(h) | Conducted Spurious Emissions | PASS | Meet the requirement of limit. |
| 2.1053<br>27.53(h) | Radiated Spurious Emissions | PASS | Meet the requirement of limit.<br>Minimum passing margin is -2.73dB at 2346.00MHz. |

## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| MEASUREMENT | FREQUENCY | UNCERTAINTY |
|---|---|---|
| Radiated emissions | 30MHz ~ 200MHz | 5.46 dB |
| | 200MHz ~1000MHz | 3.54 dB |
| | 1GHz ~ 18GHz | 4.08 dB |
| | 18GHz ~ 40GHz | 4.11 dB |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 2.2 TEST SITE AND INSTRUMENTS

**For radiated spurious emissions:**

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Spectrum Analyzer Agilent | E4446A | MY48250253 | Aug. 28, 2013 | Aug. 27, 2014 |
| MXE EMI Receiver Agilent | N9038A | MY50010156 | Jan. 16, 2013 | Jan. 15, 2014 |
| Pre-Amplifier Mini-Circuits | ZFL-1000VH2 B | AMP-ZFL-04 | Nov. 14, 2012 | Nov. 13, 2013 |
| Pre-Amplifier Agilent | 8449B | 3008A01923 | Oct. 30, 2012 | Oct. 29, 2013 |
| Pre-Amplifier SPACEK LABS | SLKKa-48-6 | 9K16 | Nov. 14, 2012 | Nov. 13, 2013 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-361 | Mar. 25, 2013 | Mar. 24, 2014 |
| Horn_Antenna AISI | AIH.8018 | 0000220091110 | Nov. 27, 2012 | Nov. 26, 2013 |
| Horn_Antenna SCHWARZBECK | BBHA 9170 | 9170-424 | Oct. 12, 2012 | Oct. 11, 2013 |
| RF Cable | NA | RF104-205 RF104-207 RF104-202 | Dec. 26, 2012 | Dec. 25, 2013 |
| RF Cable | NA | CHHCAB_001 | Oct. 07, 2012 | Oct. 06, 2013 |
| Software | ADT_Radiated _V8.7.05 | NA | NA | NA |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |
| Radio Communication Analyzer | Anritsu | MT8820C | May 30, 2013 | May 29, 2014 |
| Universal Radio Communication Tester | R&S | CMU200 | Oct. 23, 2012 | Oct. 22, 2013 |

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: Sep. 06 to 10, 2013

**For other test items:**

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Spectrum Analyzer R&S | FSP 40 | 100060 | May 03, 2013 | May 02, 2014 |
| Spectrum Analyzer Agilent | E4446A | MY48250113 | Dec. 05, 2012 | Dec. 04, 2013 |
| AC Power Source EXTECH Electronics | 6502 | 1140503 | NA | NA |
| Temperature & Humidity Chamber TERCHY | MHU-225AU | 911033 | Dec. 11, 2012 | Dec. 10, 2013 |
| DC Power Supply GOOD WILL INSTRUMENT CO., LTD. | GPC - 3030D | 7700087 | NA | NA |
| ESG Vector signal generator Agilent | E4438C | MY47271330 506 602 UNJ | Apr. 30, 2013 | Apr. 29, 2014 |
| ESG Vector signal generator Agilent | E4438C | MY45094468/0 05 506 602 UK6 UNJ | Dec. 14, 2012 | Dec. 13, 2013 |
| Power meter Anritsu | ML2495A | 1014008 | Apr. 23, 2013 | Apr. 22, 2014 |
| Power sensor Anritsu | MA2411B | 0917122 | Apr. 23, 2013 | Apr. 22, 2014 |
| Power meter Anritsu | ML2495A | 0824006 | May 20, 2013 | May 19, 2014 |
| Power sensor Anritsu | MA2411B | 0738172 | May 20, 2013 | May 19, 2014 |
| Power meter Anritsu | ML2487B | 0930006 | Nov. 14, 2012 | Nov. 13, 2013 |
| Power sensor Anritsu | MA2491A | 0845370 | Nov. 14, 2012 | Nov. 13, 2013 |
| Software | Total Power Measurement Tools V7.1 | NA | NA | NA |
| Software | ADT_RF Test Software V6.6.5.3 | NA | NA | NA |
| Radio Communication Analyzer | Anritsu | MT8820C | May 30, 2013 | May 29, 2014 |
| Universal Radio Communication Tester | R&S | CMU200 | Oct. 23, 2012 | Oct. 22, 2013 |

**NOTE:** 1. The test was performed in Oven room A.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Sep. 09, 2013

# 3 GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| **PRODUCT** | Data card | |
| **MODEL NO.** | LN931-NAG | |
| **OPERATING VOLTAGES** | Vnom= 3.3 Vdc Vmin= 3.1 Vdc Vmax= 4.4 Vdc | |
| **HW VERSION** | 115 | |
| **SW VERSION** | M9615ACETWMLZD4520 | |
| **MODULATION TECHNOLOGY** | **WCDMA** | QPSK, BPSK |
| | **LTE Band 13** | QPSK, 16QAM |
| | **LTE Band 17** | QPSK, 16QAM |
| | **LTE Band 4** | QPSK, 16QAM |
| **FREQUENCY RANGE** | **WCDMA** | 1712.4MHz ~1752.6MHz |
| | **LTE Band 13 Channel Bandwidth: 5MHz** | 779.5MHz ~ 784.5MHz |
| | **LTE Band 13 Channel Bandwidth: 10MHz** | 782MHz |
| | **LTE Band 17 Channel Bandwidth: 5MHz** | 706.5MHz ~ 713.5MHz |
| | **LTE Band 17 Channel Bandwidth: 10MHz** | 709MHz ~ 711MHz |
| | **LTE Band 4 Channel Bandwidth: 1.4MHz** | 1710.7MHz ~1754.3MHz |
| | **LTE Band 4 Channel Bandwidth: 3MHz** | 1711.5MHz ~1753.5MHz |
| | **LTE Band 4 Channel Bandwidth: 5MHz** | 1712.5MHz ~1752.5MHz |
| | **LTE Band 4 Channel Bandwidth: 10MHz** | 1715.0MHz ~1750.0MHz |
| | **LTE Band 4 Channel Bandwidth: 15MHz** | 1717.5MHz ~ 1747.5MHz |
| | **LTE Band 4 Channel Bandwidth: 20MHz** | 1720.0MHz ~ 1745.0MHz |

| | | |
|---|---|---|
| EMISSION DESIGNATOR | **WCDMA** | 4M20F9W |
| | **LTE Band 13 Channel Bandwidth: 5MHz** | QPSK: 4M50G7W |
| | | 16QAM: 4M50W7W |
| | **LTE Band 13 Channel Bandwidth: 10MHz** | QPSK: 9M00G7W |
| | | 16QAM: 9M00W7W |
| | **LTE Band 17 Channel Bandwidth: 5MHz** | QPSK: 4M52G7W |
| | | 16QAM: 4M52W7W |
| | **LTE Band 17 Channel Bandwidth: 10MHz** | QPSK: 8M93G7W |
| | | 16QAM: 8M93W7W |
| | **LTE Band 4 Channel Bandwidth: 1.4MHz** | QPSK: 1M10G7W |
| | | 16QAM: 1M09W7W |
| | **LTE Band 4 Channel Bandwidth: 3MHz** | QPSK: 2M70G7W |
| | | 16QAM: 2M69W7W |
| | **LTE Band 4 Channel Bandwidth: 5MHz** | QPSK: 4M48G7W |
| | | 16QAM: 4M52W7W |
| | **LTE Band 4 Channel Bandwidth: 10MHz** | QPSK: 9M00G7W |
| | | 16QAM: 9M00W7W |
| | **LTE Band 4 Channel Bandwidth: 15MHz** | QPSK: 13M6G7W |
| | | 16QAM: 13M6W7W |
| | **LTE Band 4 Channel Bandwidth: 20MHz** | QPSK: 18M1G7W |
| | | 16QAM: 18M1W7W |
| MAX. ERP POWER (W) | **LTE Band 13 Channel Bandwidth: 5MHz** | QPSK: 335.0mW |
| | **LTE Band 13 Channel Bandwidth: 10MHz** | QPSK: 285.1mW |
| | **LTE Band 17 Channel Bandwidth: 5MHz** | QPSK: 384.6mW |
| | **LTE Band 17 Channel Bandwidth: 10MHz** | QPSK: 412.1mW |

| | | |
|---|---|---|
| **MAX. EIRP POWER (W)** | **WCDMA** | 354.8mW |
| | **LTE Band 4<br>Channel Bandwidth: 1.4MHz** | QPSK: 616.6mW |
| | **LTE Band 4<br>Channel Bandwidth: 3MHz** | QPSK: 602.6mW |
| | **LTE Band 4<br>Channel Bandwidth: 5MHz** | QPSK: 588.8mW |
| | **LTE Band 4<br>Channel Bandwidth: 10MHz** | QPSK: 549.5mW |
| | **LTE Band 4<br>Channel Bandwidth: 15MHz** | QPSK: 489.8mW |
| | **LTE Band 4<br>Channel Bandwidth: 20MHz** | QPSK: 467.7mW |
| **CATEGORY** | LTE: 3 | |
| **ANTENNA TYPE** | Refer to NOTE | |
| **I/O PORTS** | Refer to users' manual | |
| **DATA CABLE** | NA | |
| **ACCESSORY DEVICES** | NA | |

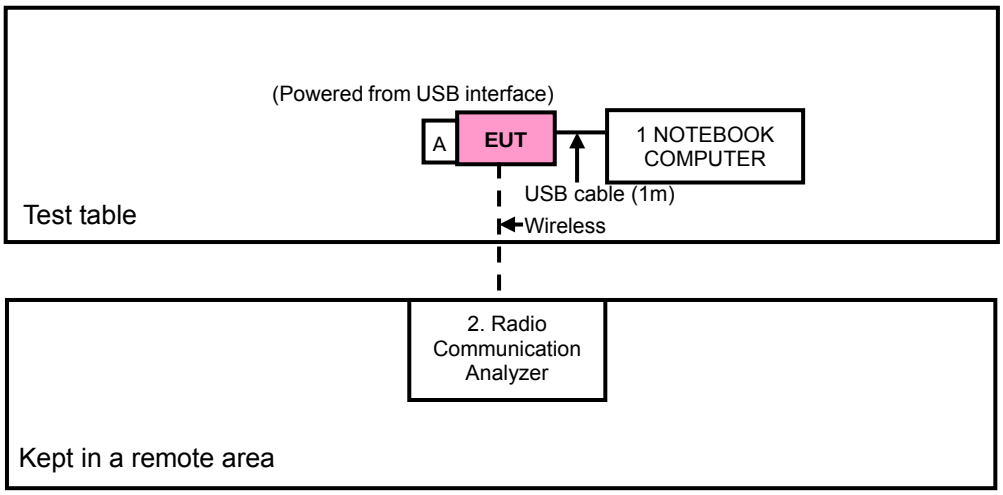
**NOTE:**

1. The antenna provided to the EUT, please refer to the following table:

| Antenna | Antenna Type | Gain(dBi) | Frequency range (MHz to MHz) | Band |
|---|---|---|---|---|
| 1 | PIFA | 5.28 | 704~716 | LTE Band 17 |
| 2 | PIFA | 6.33 | 777~915 | LTE Band 13 |
| 3 | PIFA | 4.97 | 1710~2690 | WCDMA & LTE Band 4 |

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

## 3.2 CONFIGURATION OF SYSTEM UNDER TEST




**NOTE:** Item A is SIM card.

## 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|---|---|---|---|---|---|
| 1 | NOTEBOOK COMPUTER | DELL | PP32LA | FSLB32S | FCC DoC |
| 2 | Radio Communication Analyzer | Anritsu | MT8820C | 6201127458 | NA |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | USB cable (1m) |
| 2 | NA |

**NOTE:**
1. All power cords of the above support units are non-shielded (1.8m).
2. Items 1-2 act as communication partners to transfer data.

## 3.4 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case was found when positioned on X-plane for WCDMA, LTE Band 13/17/4 for radiated emission below 1GHz. Z-plane for WCDMA, LTE Band 4 and Y-plane for LTE Band 13 and X-plane for LTE Band 17 for ERP and for radiated emission above 1GHz. Following channel(s) was (were) selected for the final test as listed below:

**WCDMA**

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|
| EIRP | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| FREQUENCY STABILITY | 1312 to 1513 | 1413 | WCDMA |
| OCCUPIED BANDWIDTH | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| PEAK TO AVERAGE RATIO | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| BAND EDGE | 1312 to 1513 | 1312, 1513 | WCDMA |
| CONDCUDETED EMISSION | 1312 to 1513 | 1413 | WCDMA |
| RADIATED EMISSION | 1312 to 1513 | 1413 | WCDMA |

## LTE Band 13

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| ERP | 23205 to 23255 | 23205, 23230, 23255 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 23205 to 23255 | 23230 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 23205 to 23255 | 23205, 23230, 23255 | 5MHz | QPSK/16QAM | 25 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK/16QAM | 50 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 23205 to 23255 | 23205, 23230, 23255 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| BAND EDGE | 23205 to 23255 | 23205, 23255 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| CONDCUDETED EMISSION | 23205 to 23255 | 23230 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| RADIATED EMISSION | 23205 to 23255 | 23230 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23230 | 23230 | 10MHz | QPSK | 1 RB / 0 RB Offset |

## LTE Band 17

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| ERP | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK/16QAM | 25 RB / 0 RB Offset |
| | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK/16QAM | 50 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| BAND EDGE | 23755 to 23825 | 23755, 23825 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 23780 to 23800 | 23780, 23800 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| CONDCUDETED EMISSION | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| RADIATED EMISSION | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 0 RB Offset |

## LTE Band 4

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| EIRP | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 19965 to 20385 | 20175 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 19975 to 20375 | 20175 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20000 to 20350 | 20175 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 20025 to 20325 | 20175 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | 20050 to 20300 | 20175 | 20MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK, 16QAM | 15 RB / 0 RB Offset |
| | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK, 16QAM | 75 RB / 0 RB Offset |
| | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK, 16QAM | 100 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK | 1 RB / 0 RB Offset |
| BAND EDGE | 19957 to 20393 | 19957, 20393 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | 19965 to 20385 | 19965 , 20385 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | 19975 to 20375 | 19957, 20393 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 20000 to 20350 | 20000, 20350 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| | 20025 to 20325 | 20025, 20325 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 75 RB / 0 RB Offset |
| | 20050 to 20300 | 20050, 20300 | 20MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 100 RB / 0 RB Offset |
| CONDCUDETED EMISSION | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 19965 to 20385 | 20175 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 19975 to 20375 | 20175 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20000 to 20350 | 20175 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 20025 to 20325 | 20175 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | 20050 to 20300 | 20175 | 20MHz | QPSK | 1 RB / 0 RB Offset |

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| RADIATED EMISSION | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 19965 to 20385 | 20175 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 19975 to 20375 | 20175 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20000 to 20350 | 20175 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 20025 to 20325 | 20175 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | 20050 to 20300 | 20175 | 20MHz | QPSK | 1 RB / 0 RB Offset |

## TEST CONDITION:

| TEST ITEM | ENVIRONMENTAL CONDITIONS | INPUT POWER | TESTED BY |
|---|---|---|---|
| ERP/EIRP | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| FREQUENCY STABILITY | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| OCCUPIED BANDWIDTH | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| PEAK TO AVERAGE RATIO | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| BAND EDGE | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| CONDCUDETED EMISSION | 25deg. C, 63%RH | 3.3Vdc | Rex Huang |
| RADIATED EMISSION | 25deg. C, 63%RH | 120Vac, 60Hz (SYSTEM) | Rex Huang |

## 3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**ANSI/TIA/EIA-603-C 2004**

**NOTE:** All test items have been performed and recorded as per the above standards.

# 4 TEST TYPES AND RESULTS

## 4.1 OUTPUT POWER MEASUREMENT

### 4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
Portable stations (hand-held devices) operating in the 698-746 MHz band are limited to 3 watts ERP

### 4.1.2 TEST PROCEDURES

**EIRP / ERP MEASUREMENT:**

a. All measurements were done at low, middle and high operational frequency range. RWB and VBW is 5MHz for WCDMA mode and10MHz for LTE mode.

b. EIRP power measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn

e. ERP = EIRP- 2.15 dB

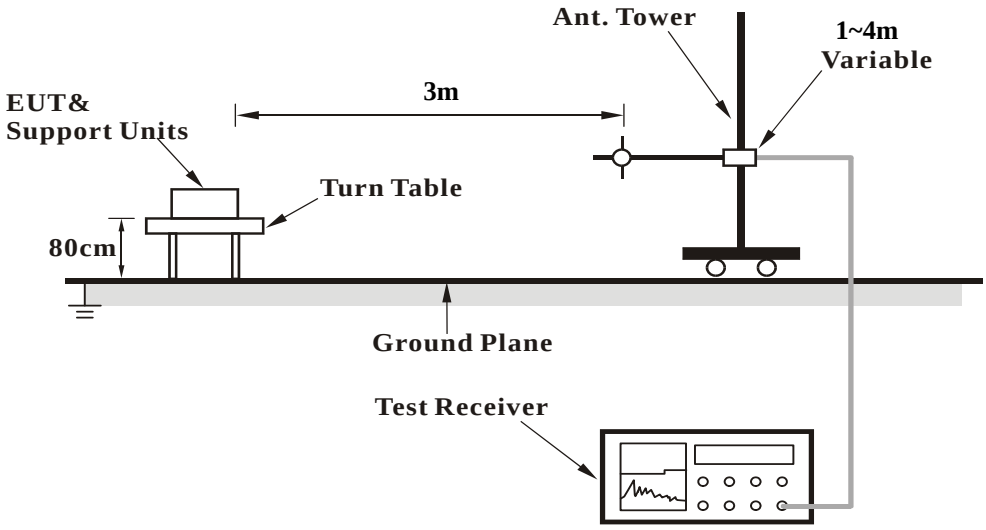
**CONDUCTED POWER MEASUREMENT:**

a. The EUT was set up for the maximum power with WCDMA/LTE link data modulation and link up with simulator.

b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

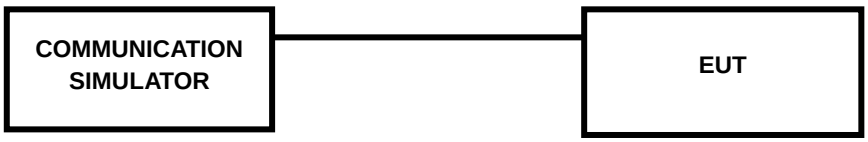
## 4.1.3 TEST SETUP

**EIRP / ERP MEASUREMENT:**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

**CONDUCTED POWER MEASUREMENT:**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 4.1.4 TEST RESULTS

### CONDUCTED OUTPUT POWER (dBm)

| Band | WCDMA IV | | |
|---|---|---|---|
| Channel | 1312 | 1413 | 1513 |
| Frequency (MHz) | 1712.4 | 1732.6 | 1752.6 |
| RMC 12.2K | 23.60 | **24.10** | 23.60 |
| HSDPA Subtest-1 | 23.40 | 23.80 | 23.50 |
| HSDPA Subtest-2 | 23.40 | 23.80 | 23.70 |
| HSDPA Subtest-3 | 23.30 | 23.70 | 23.60 |
| HSDPA Subtest-4 | 23.70 | 23.50 | 23.40 |
| HSUPA Subtest-1 | 23.40 | 24.00 | 23.60 |
| HSUPA Subtest-2 | 23.30 | 23.40 | 23.80 |
| HSUPA Subtest-3 | 23.70 | 23.60 | 23.70 |
| HSUPA Subtest-4 | 23.30 | 23.80 | 23.70 |
| HSUPA Subtest-5 | 23.30 | 23.50 | 23.20 |

| LTE Band 13 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 5 MHz | QPSK | 23205 | 779.5 | 1 | 0 | 0 | 23.8 | **23.61** |
| | | 23230 | 782 | 1 | 0 | 0 | 23.8 | 23.59 |
| | | 23255 | 784.5 | 1 | 0 | 0 | 23.8 | 23.38 |
| | | 23205 | 779.5 | 1 | 12 | 0 | 23.8 | 23.22 |
| | | 23230 | 782 | 1 | 12 | 0 | 23.8 | 23.27 |
| | | 23255 | 784.5 | 1 | 12 | 0 | 23.8 | 23.08 |
| | | 23205 | 779.5 | 1 | 24 | 0 | 23.8 | 23.3 |
| | | 23230 | 782 | 1 | 24 | 0 | 23.8 | 23.37 |
| | | 23255 | 784.5 | 1 | 24 | 0 | 23.8 | 23.04 |
| | | 23205 | 779.5 | 12 | 0 | 1 | 23.8 | 22.36 |
| | | 23230 | 782 | 12 | 0 | 1 | 23.8 | 22.21 |
| | | 23255 | 784.5 | 12 | 0 | 1 | 23.8 | 22.01 |
| | | 23205 | 779.5 | 12 | 6 | 1 | 23.8 | 22.33 |
| | | 23230 | 782 | 12 | 6 | 1 | 23.8 | 22.26 |
| | | 23255 | 784.5 | 12 | 6 | 1 | 23.8 | 22.02 |
| | | 23205 | 779.5 | 12 | 13 | 1 | 23.8 | 22.24 |
| | | 23230 | 782 | 12 | 13 | 1 | 23.8 | 22.21 |
| | | 23255 | 784.5 | 12 | 13 | 1 | 23.8 | 22.08 |
| | | 23205 | 779.5 | 25 | 0 | 1 | 23.8 | 22.41 |
| | | 23230 | 782 | 25 | 0 | 1 | 23.8 | 22.34 |
| | | 23255 | 784.5 | 25 | 0 | 1 | 23.8 | 22.12 |
| | 16QAM | 23205 | 779.5 | 1 | 0 | 1 | 23.8 | 22.59 |
| | | 23230 | 782 | 1 | 0 | 1 | 23.8 | 22.54 |
| | | 23255 | 784.5 | 1 | 0 | 1 | 23.8 | 22.41 |
| | | 23205 | 779.5 | 1 | 12 | 1 | 23.8 | 22.26 |
| | | 23230 | 782 | 1 | 12 | 1 | 23.8 | 22.26 |
| | | 23255 | 784.5 | 1 | 12 | 1 | 23.8 | 22.11 |
| | | 23205 | 779.5 | 1 | 24 | 1 | 23.8 | 22.38 |
| | | 23230 | 782 | 1 | 24 | 1 | 23.8 | 22.22 |
| | | 23255 | 784.5 | 1 | 24 | 1 | 23.8 | 22.08 |
| | | 23205 | 779.5 | 12 | 0 | 2 | 23.8 | 21.28 |
| | | 23230 | 782 | 12 | 0 | 2 | 23.8 | 21.29 |
| | | 23255 | 784.5 | 12 | 0 | 2 | 23.8 | 21.09 |
| | | 23205 | 779.5 | 12 | 6 | 2 | 23.8 | 21.35 |
| | | 23230 | 782 | 12 | 6 | 2 | 23.8 | 21.31 |
| | | 23255 | 784.5 | 12 | 6 | 2 | 23.8 | 21.02 |
| | | 23205 | 779.5 | 12 | 13 | 2 | 23.8 | 21.33 |
| | | 23230 | 782 | 12 | 13 | 2 | 23.8 | 21.32 |
| | | 23255 | 784.5 | 12 | 13 | 2 | 23.8 | 21.11 |
| | | 23205 | 779.5 | 25 | 0 | 2 | 23.8 | 21.21 |
| | | 23230 | 782 | 25 | 0 | 2 | 23.8 | 21.34 |
| | | 23255 | 784.5 | 25 | 0 | 2 | 23.8 | 21.19 |

| LTE Band 13 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 10 MHz | QPSK | 23230 | 782 | 1 | 0 | 0 | 23.8 | **23.39** |
| | | 23230 | 782 | 1 | 24 | 0 | 23.8 | 23.04 |
| | | 23230 | 782 | 1 | 49 | 0 | 23.8 | 23.17 |
| | | 23230 | 782 | 25 | 0 | 1 | 23.8 | 22.03 |
| | | 23230 | 782 | 25 | 12 | 1 | 23.8 | 22.11 |
| | | 23230 | 782 | 25 | 25 | 1 | 23.8 | 22.15 |
| | | 23230 | 782 | 50 | 0 | 1 | 23.8 | 22.17 |
| | 16QAM | 23230 | 782 | 1 | 0 | 1 | 23.8 | 22.33 |
| | | 23230 | 782 | 1 | 24 | 1 | 23.8 | 22.06 |
| | | 23230 | 782 | 1 | 49 | 1 | 23.8 | 22.02 |
| | | 23230 | 782 | 25 | 0 | 2 | 23.8 | 21 |
| | | 23230 | 782 | 25 | 12 | 2 | 23.8 | 21.1 |
| | | 23230 | 782 | 25 | 25 | 2 | 23.8 | 21.07 |
| | | 23230 | 782 | 50 | 0 | 2 | 23.8 | 20.99 |

| LTE Band 17 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 5 MHz | QPSK | 23755 | 706.5 | 1 | 0 | 0 | 24 | **23.89** |
| | | 23790 | 710 | 1 | 0 | 0 | 24 | 23.63 |
| | | 23825 | 713.5 | 1 | 0 | 0 | 24 | 23.53 |
| | | 23755 | 706.5 | 1 | 12 | 0 | 24 | 23.52 |
| | | 23790 | 710 | 1 | 12 | 0 | 24 | 23.31 |
| | | 23825 | 713.5 | 1 | 12 | 0 | 24 | 23.17 |
| | | 23755 | 706.5 | 1 | 24 | 0 | 24 | 23.5 |
| | | 23790 | 710 | 1 | 24 | 0 | 24 | 23.42 |
| | | 23825 | 713.5 | 1 | 24 | 0 | 24 | 23.28 |
| | | 23755 | 706.5 | 12 | 0 | 1 | 24 | 22.5 |
| | | 23790 | 710 | 12 | 0 | 1 | 24 | 22.41 |
| | | 23825 | 713.5 | 12 | 0 | 1 | 24 | 22.22 |
| | | 23755 | 706.5 | 12 | 6 | 1 | 24 | 22.54 |
| | | 23790 | 710 | 12 | 6 | 1 | 24 | 22.27 |
| | | 23825 | 713.5 | 12 | 6 | 1 | 24 | 22.2 |
| | | 23755 | 706.5 | 12 | 13 | 1 | 24 | 22.63 |
| | | 23790 | 710 | 12 | 13 | 1 | 24 | 22.32 |
| | | 23825 | 713.5 | 12 | 13 | 1 | 24 | 22.25 |
| | | 23755 | 706.5 | 25 | 0 | 1 | 24 | 22.57 |
| | | 23790 | 710 | 25 | 0 | 1 | 24 | 22.35 |
| | | 23825 | 713.5 | 25 | 0 | 1 | 24 | 22.14 |
| | 16QAM | 23755 | 706.5 | 1 | 0 | 1 | 24 | 22.79 |
| | | 23790 | 710 | 1 | 0 | 1 | 24 | 22.64 |
| | | 23825 | 713.5 | 1 | 0 | 1 | 24 | 22.61 |
| | | 23755 | 706.5 | 1 | 12 | 1 | 24 | 22.51 |
| | | 23790 | 710 | 1 | 12 | 1 | 24 | 22.41 |
| | | 23825 | 713.5 | 1 | 12 | 1 | 24 | 22.27 |
| | | 23755 | 706.5 | 1 | 24 | 1 | 24 | 22.46 |
| | | 23790 | 710 | 1 | 24 | 1 | 24 | 22.41 |
| | | 23825 | 713.5 | 1 | 24 | 1 | 24 | 22.23 |
| | | 23755 | 706.5 | 12 | 0 | 2 | 24 | 21.48 |
| | | 23790 | 710 | 12 | 0 | 2 | 24 | 21.36 |
| | | 23825 | 713.5 | 12 | 0 | 2 | 24 | 21.37 |
| | | 23755 | 706.5 | 12 | 6 | 2 | 24 | 21.5 |
| | | 23790 | 710 | 12 | 6 | 2 | 24 | 21.32 |
| | | 23825 | 713.5 | 12 | 6 | 2 | 24 | 21.32 |
| | | 23755 | 706.5 | 12 | 13 | 2 | 24 | 21.48 |
| | | 23790 | 710 | 12 | 13 | 2 | 24 | 21.39 |
| | | 23825 | 713.5 | 12 | 13 | 2 | 24 | 21.33 |
| | | 23755 | 706.5 | 25 | 0 | 2 | 24 | 21.52 |
| | | 23790 | 710 | 25 | 0 | 2 | 24 | 21.35 |
| | | 23825 | 713.5 | 25 | 0 | 2 | 24 | 21.3 |

| LTE Band 17 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 10MHz | QPSK | 23780 | 709 | 1 | 0 | 0 | 24 | **23.91** |
| | | 23790 | 710 | 1 | 0 | 0 | 24 | 23.87 |
| | | 23800 | 711 | 1 | 0 | 0 | 24 | 23.71 |
| | | 23780 | 709 | 1 | 24 | 0 | 24 | 23.56 |
| | | 23790 | 710 | 1 | 24 | 0 | 24 | 23.6 |
| | | 23800 | 711 | 1 | 24 | 0 | 24 | 23.43 |
| | | 23780 | 709 | 1 | 49 | 0 | 24 | 23.65 |
| | | 23790 | 710 | 1 | 49 | 0 | 24 | 23.57 |
| | | 23800 | 711 | 1 | 49 | 0 | 24 | 23.48 |
| | | 23780 | 709 | 25 | 0 | 1 | 24 | 22.6 |
| | | 23790 | 710 | 25 | 0 | 1 | 24 | 22.63 |
| | | 23800 | 711 | 25 | 0 | 1 | 24 | 22.43 |
| | | 23780 | 709 | 25 | 12 | 1 | 24 | 22.68 |
| | | 23790 | 710 | 25 | 12 | 1 | 24 | 22.62 |
| | | 23800 | 711 | 25 | 12 | 1 | 24 | 22.34 |
| | | 23780 | 709 | 25 | 25 | 1 | 24 | 22.63 |
| | | 23790 | 710 | 25 | 25 | 1 | 24 | 22.67 |
| | | 23800 | 711 | 25 | 25 | 1 | 24 | 22.33 |
| | | 23780 | 709 | 50 | 0 | 1 | 24 | 22.54 |
| | | 23790 | 710 | 50 | 0 | 1 | 24 | 22.55 |
| | | 23800 | 711 | 50 | 0 | 1 | 24 | 22.4 |
| | 16QAM | 23780 | 709 | 1 | 0 | 1 | 24 | 22.88 |
| | | 23790 | 710 | 1 | 0 | 1 | 24 | 22.83 |
| | | 23800 | 711 | 1 | 0 | 1 | 24 | 22.78 |
| | | 23780 | 709 | 1 | 24 | 1 | 24 | 22.5 |
| | | 23790 | 710 | 1 | 24 | 1 | 24 | 22.61 |
| | | 23800 | 711 | 1 | 24 | 1 | 24 | 22.47 |
| | | 23780 | 709 | 1 | 49 | 1 | 24 | 22.52 |
| | | 23790 | 710 | 1 | 49 | 1 | 24 | 22.46 |
| | | 23800 | 711 | 1 | 49 | 1 | 24 | 22.46 |
| | | 23780 | 709 | 25 | 0 | 2 | 24 | 21.53 |
| | | 23790 | 710 | 25 | 0 | 2 | 24 | 21.53 |
| | | 23800 | 711 | 25 | 0 | 2 | 24 | 21.44 |
| | | 23780 | 709 | 25 | 12 | 2 | 24 | 21.5 |
| | | 23790 | 710 | 25 | 12 | 2 | 24 | 21.48 |
| | | 23800 | 711 | 25 | 12 | 2 | 24 | 21.43 |
| | | 23780 | 709 | 25 | 25 | 2 | 24 | 21.67 |
| | | 23790 | 710 | 25 | 25 | 2 | 24 | 21.55 |
| | | 23800 | 711 | 25 | 25 | 2 | 24 | 21.43 |
| | | 23780 | 709 | 50 | 0 | 2 | 24 | 21.52 |
| | | 23790 | 710 | 50 | 0 | 2 | 24 | 21.61 |
| | | 23800 | 711 | 50 | 0 | 2 | 24 | 21.43 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 1.4 MHz | QPSK | 19957 | 1710.7 | 1 | 0 | 0 | 23.8 | **23.74** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.27 |
| | | 20393 | 1754.3 | 1 | 0 | 0 | 23.8 | 23.38 |
| | | 19957 | 1710.7 | 1 | 2 | 0 | 23.8 | 23.45 |
| | | 20175 | 1732.5 | 1 | 2 | 0 | 23.8 | 22.9 |
| | | 20393 | 1754.3 | 1 | 2 | 0 | 23.8 | 23.03 |
| | | 19957 | 1710.7 | 1 | 5 | 0 | 23.8 | 23.4 |
| | | 20175 | 1732.5 | 1 | 5 | 0 | 23.8 | 22.94 |
| | | 20393 | 1754.3 | 1 | 5 | 0 | 23.8 | 23.15 |
| | | 19957 | 1710.7 | 3 | 0 | 0 | 23.8 | 23.43 |
| | | 20175 | 1732.5 | 3 | 0 | 0 | 23.8 | 22.9 |
| | | 20393 | 1754.3 | 3 | 0 | 0 | 23.8 | 23.07 |
| | | 19957 | 1710.7 | 3 | 1 | 0 | 23.8 | 23.46 |
| | | 20175 | 1732.5 | 3 | 1 | 0 | 23.8 | 22.89 |
| | | 20393 | 1754.3 | 3 | 1 | 0 | 23.8 | 23.13 |
| | | 19957 | 1710.7 | 3 | 3 | 0 | 23.8 | 23.53 |
| | | 20175 | 1732.5 | 3 | 3 | 0 | 23.8 | 23.06 |
| | | 20393 | 1754.3 | 3 | 3 | 0 | 23.8 | 23.05 |
| | | 19957 | 1710.7 | 6 | 0 | 1 | 23.8 | 22.36 |
| | | 20175 | 1732.5 | 6 | 0 | 1 | 23.8 | 22.02 |
| | | 20393 | 1754.3 | 6 | 0 | 1 | 23.8 | 22.11 |
| | 16QAM | 19957 | 1710.7 | 1 | 0 | 1 | 23.8 | 22.67 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.18 |
| | | 20393 | 1754.3 | 1 | 0 | 1 | 23.8 | 22.35 |
| | | 19957 | 1710.7 | 1 | 2 | 1 | 23.8 | 22.43 |
| | | 20175 | 1732.5 | 1 | 2 | 1 | 23.8 | 21.84 |
| | | 20393 | 1754.3 | 1 | 2 | 1 | 23.8 | 21.97 |
| | | 19957 | 1710.7 | 1 | 5 | 1 | 23.8 | 22.35 |
| | | 20175 | 1732.5 | 1 | 5 | 1 | 23.8 | 21.81 |
| | | 20393 | 1754.3 | 1 | 5 | 1 | 23.8 | 22.06 |
| | | 19957 | 1710.7 | 3 | 0 | 1 | 23.8 | 22.41 |
| | | 20175 | 1732.5 | 3 | 0 | 1 | 23.8 | 21.9 |
| | | 20393 | 1754.3 | 3 | 0 | 1 | 23.8 | 22.07 |
| | | 19957 | 1710.7 | 3 | 1 | 1 | 23.8 | 22.29 |
| | | 20175 | 1732.5 | 3 | 1 | 1 | 23.8 | 21.98 |
| | | 20393 | 1754.3 | 3 | 1 | 1 | 23.8 | 22.09 |
| | | 19957 | 1710.7 | 3 | 3 | 1 | 23.8 | 22.37 |
| | | 20175 | 1732.5 | 3 | 3 | 1 | 23.8 | 21.86 |
| | | 20393 | 1754.3 | 3 | 3 | 1 | 23.8 | 22.05 |
| | | 19957 | 1710.7 | 6 | 0 | 2 | 23.8 | 21.31 |
| | | 20175 | 1732.5 | 6 | 0 | 2 | 23.8 | 20.9 |
| | | 20393 | 1754.3 | 6 | 0 | 2 | 23.8 | 21.02 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 3 MHz | QPSK | 19965 | 1711.5 | 1 | 0 | 0 | 23.8 | **23.76** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.27 |
| | | 20385 | 1753.5 | 1 | 0 | 0 | 23.8 | 23.45 |
| | | 19965 | 1711.5 | 1 | 7 | 0 | 23.8 | 23.54 |
| | | 20175 | 1732.5 | 1 | 7 | 0 | 23.8 | 22.89 |
| | | 20385 | 1753.5 | 1 | 7 | 0 | 23.8 | 23.11 |
| | | 19965 | 1711.5 | 1 | 14 | 0 | 23.8 | 23.41 |
| | | 20175 | 1732.5 | 1 | 14 | 0 | 23.8 | 22.91 |
| | | 20385 | 1753.5 | 1 | 14 | 0 | 23.8 | 23.22 |
| | | 19965 | 1711.5 | 8 | 0 | 1 | 23.8 | 22.4 |
| | | 20175 | 1732.5 | 8 | 0 | 1 | 23.8 | 21.94 |
| | | 20385 | 1753.5 | 8 | 0 | 1 | 23.8 | 22.25 |
| | | 19965 | 1711.5 | 8 | 3 | 1 | 23.8 | 22.4 |
| | | 20175 | 1732.5 | 8 | 3 | 1 | 23.8 | 21.91 |
| | | 20385 | 1753.5 | 8 | 3 | 1 | 23.8 | 22.14 |
| | | 19965 | 1711.5 | 8 | 7 | 1 | 23.8 | 22.37 |
| | | 20175 | 1732.5 | 8 | 7 | 1 | 23.8 | 22.07 |
| | | 20385 | 1753.5 | 8 | 7 | 1 | 23.8 | 22.22 |
| | | 19965 | 1711.5 | 15 | 0 | 1 | 23.8 | 22.38 |
| | | 20175 | 1732.5 | 15 | 0 | 1 | 23.8 | 22.07 |
| | | 20385 | 1753.5 | 15 | 0 | 1 | 23.8 | 22.12 |
| | 16QAM | 19965 | 1711.5 | 1 | 0 | 1 | 23.8 | 22.68 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.31 |
| | | 20385 | 1753.5 | 1 | 0 | 1 | 23.8 | 22.36 |
| | | 19965 | 1711.5 | 1 | 7 | 1 | 23.8 | 22.43 |
| | | 20175 | 1732.5 | 1 | 7 | 1 | 23.8 | 22.01 |
| | | 20385 | 1753.5 | 1 | 7 | 1 | 23.8 | 22.01 |
| | | 19965 | 1711.5 | 1 | 14 | 1 | 23.8 | 22.34 |
| | | 20175 | 1732.5 | 1 | 14 | 1 | 23.8 | 21.96 |
| | | 20385 | 1753.5 | 1 | 14 | 1 | 23.8 | 22.07 |
| | | 19965 | 1711.5 | 8 | 0 | 2 | 23.8 | 21.42 |
| | | 20175 | 1732.5 | 8 | 0 | 2 | 23.8 | 21.03 |
| | | 20385 | 1753.5 | 8 | 0 | 2 | 23.8 | 21.06 |
| | | 19965 | 1711.5 | 8 | 3 | 2 | 23.8 | 21.35 |
| | | 20175 | 1732.5 | 8 | 3 | 2 | 23.8 | 21.07 |
| | | 20385 | 1753.5 | 8 | 3 | 2 | 23.8 | 21.13 |
| | | 19965 | 1711.5 | 8 | 7 | 2 | 23.8 | 21.41 |
| | | 20175 | 1732.5 | 8 | 7 | 2 | 23.8 | 21.09 |
| | | 20385 | 1753.5 | 8 | 7 | 2 | 23.8 | 21.04 |
| | | 19965 | 1711.5 | 15 | 0 | 2 | 23.8 | 21.36 |
| | | 20175 | 1732.5 | 15 | 0 | 2 | 23.8 | 20.96 |
| | | 20385 | 1753.5 | 15 | 0 | 2 | 23.8 | 21.1 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 5 MHz | QPSK | 19975 | 1712.5 | 1 | 0 | 0 | 23.8 | **23.72** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.24 |
| | | 20375 | 1752.5 | 1 | 0 | 0 | 23.8 | 23.42 |
| | | 19975 | 1712.5 | 1 | 12 | 0 | 23.8 | 23.37 |
| | | 20175 | 1732.5 | 1 | 12 | 0 | 23.8 | 22.92 |
| | | 20375 | 1752.5 | 1 | 12 | 0 | 23.8 | 23.19 |
| | | 19975 | 1712.5 | 1 | 24 | 0 | 23.8 | 23.5 |
| | | 20175 | 1732.5 | 1 | 24 | 0 | 23.8 | 22.96 |
| | | 20375 | 1752.5 | 1 | 24 | 0 | 23.8 | 23.11 |
| | | 19975 | 1712.5 | 12 | 0 | 1 | 23.8 | 22.35 |
| | | 20175 | 1732.5 | 12 | 0 | 1 | 23.8 | 22 |
| | | 20375 | 1752.5 | 12 | 0 | 1 | 23.8 | 22.22 |
| | | 19975 | 1712.5 | 12 | 6 | 1 | 23.8 | 22.34 |
| | | 20175 | 1732.5 | 12 | 6 | 1 | 23.8 | 21.9 |
| | | 20375 | 1752.5 | 12 | 6 | 1 | 23.8 | 22.12 |
| | | 19975 | 1712.5 | 12 | 13 | 1 | 23.8 | 22.38 |
| | | 20175 | 1732.5 | 12 | 13 | 1 | 23.8 | 21.93 |
| | | 20375 | 1752.5 | 12 | 13 | 1 | 23.8 | 22.12 |
| | | 19975 | 1712.5 | 25 | 0 | 1 | 23.8 | 22.49 |
| | | 20175 | 1732.5 | 25 | 0 | 1 | 23.8 | 21.96 |
| | | 20375 | 1752.5 | 25 | 0 | 1 | 23.8 | 22.09 |
| | 16QAM | 19975 | 1712.5 | 1 | 0 | 1 | 23.8 | 22.68 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.19 |
| | | 20375 | 1752.5 | 1 | 0 | 1 | 23.8 | 22.34 |
| | | 19975 | 1712.5 | 1 | 12 | 1 | 23.8 | 22.41 |
| | | 20175 | 1732.5 | 1 | 12 | 1 | 23.8 | 21.92 |
| | | 20375 | 1752.5 | 1 | 12 | 1 | 23.8 | 22.04 |
| | | 19975 | 1712.5 | 1 | 24 | 1 | 23.8 | 22.33 |
| | | 20175 | 1732.5 | 1 | 24 | 1 | 23.8 | 21.96 |
| | | 20375 | 1752.5 | 1 | 24 | 1 | 23.8 | 21.97 |
| | | 19975 | 1712.5 | 12 | 0 | 2 | 23.8 | 21.38 |
| | | 20175 | 1732.5 | 12 | 0 | 2 | 23.8 | 20.88 |
| | | 20375 | 1752.5 | 12 | 0 | 2 | 23.8 | 20.99 |
| | | 19975 | 1712.5 | 12 | 6 | 2 | 23.8 | 21.34 |
| | | 20175 | 1732.5 | 12 | 6 | 2 | 23.8 | 20.84 |
| | | 20375 | 1752.5 | 12 | 6 | 2 | 23.8 | 21.1 |
| | | 19975 | 1712.5 | 12 | 13 | 2 | 23.8 | 21.41 |
| | | 20175 | 1732.5 | 12 | 13 | 2 | 23.8 | 20.99 |
| | | 20375 | 1752.5 | 12 | 13 | 2 | 23.8 | 21.13 |
| | | 19975 | 1712.5 | 25 | 0 | 2 | 23.8 | 21.41 |
| | | 20175 | 1732.5 | 25 | 0 | 2 | 23.8 | 20.95 |
| | | 20375 | 1752.5 | 25 | 0 | 2 | 23.8 | 20.98 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 10MHz | QPSK | 20000 | 1715 | 1 | 0 | 0 | 23.8 | **23.75** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.41 |
| | | 20350 | 1750 | 1 | 0 | 0 | 23.8 | 23.28 |
| | | 20000 | 1715 | 1 | 24 | 0 | 23.8 | 23.43 |
| | | 20175 | 1732.5 | 1 | 24 | 0 | 23.8 | 23.11 |
| | | 20350 | 1750 | 1 | 24 | 0 | 23.8 | 23.08 |
| | | 20000 | 1715 | 1 | 49 | 0 | 23.8 | 23.4 |
| | | 20175 | 1732.5 | 1 | 49 | 0 | 23.8 | 23.09 |
| | | 20350 | 1750 | 1 | 49 | 0 | 23.8 | 22.99 |
| | | 20000 | 1715 | 25 | 0 | 1 | 23.8 | 22.46 |
| | | 20175 | 1732.5 | 25 | 0 | 1 | 23.8 | 22.12 |
| | | 20350 | 1750 | 25 | 0 | 1 | 23.8 | 22.01 |
| | | 20000 | 1715 | 25 | 12 | 1 | 23.8 | 22.53 |
| | | 20175 | 1732.5 | 25 | 12 | 1 | 23.8 | 22.19 |
| | | 20350 | 1750 | 25 | 12 | 1 | 23.8 | 21.99 |
| | | 20000 | 1715 | 25 | 25 | 1 | 23.8 | 22.51 |
| | | 20175 | 1732.5 | 25 | 25 | 1 | 23.8 | 22.19 |
| | | 20350 | 1750 | 25 | 25 | 1 | 23.8 | 22.07 |
| | | 20000 | 1715 | 50 | 0 | 1 | 23.8 | 22.53 |
| | | 20175 | 1732.5 | 50 | 0 | 1 | 23.8 | 22.19 |
| | | 20350 | 1750 | 50 | 0 | 1 | 23.8 | 21.91 |
| | 16QAM | 20000 | 1715 | 1 | 0 | 1 | 23.8 | 22.68 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.39 |
| | | 20350 | 1750 | 1 | 0 | 1 | 23.8 | 22.25 |
| | | 20000 | 1715 | 1 | 24 | 1 | 23.8 | 22.39 |
| | | 20175 | 1732.5 | 1 | 24 | 1 | 23.8 | 22.09 |
| | | 20350 | 1750 | 1 | 24 | 1 | 23.8 | 21.97 |
| | | 20000 | 1715 | 1 | 49 | 1 | 23.8 | 22.37 |
| | | 20175 | 1732.5 | 1 | 49 | 1 | 23.8 | 22.13 |
| | | 20350 | 1750 | 1 | 49 | 1 | 23.8 | 21.99 |
| | | 20000 | 1715 | 25 | 0 | 2 | 23.8 | 21.33 |
| | | 20175 | 1732.5 | 25 | 0 | 2 | 23.8 | 21.08 |
| | | 20350 | 1750 | 25 | 0 | 2 | 23.8 | 20.89 |
| | | 20000 | 1715 | 25 | 12 | 2 | 23.8 | 21.47 |
| | | 20175 | 1732.5 | 25 | 12 | 2 | 23.8 | 21.14 |
| | | 20350 | 1750 | 25 | 12 | 2 | 23.8 | 20.88 |
| | | 20000 | 1715 | 25 | 25 | 2 | 23.8 | 21.4 |
| | | 20175 | 1732.5 | 25 | 25 | 2 | 23.8 | 21.09 |
| | | 20350 | 1750 | 25 | 25 | 2 | 23.8 | 21.02 |
| | | 20000 | 1715 | 50 | 0 | 2 | 23.8 | 21.44 |
| | | 20175 | 1732.5 | 50 | 0 | 2 | 23.8 | 21.13 |
| | | 20350 | 1750 | 50 | 0 | 2 | 23.8 | 20.95 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 15 MHz | QPSK | 20025 | 1717.5 | 1 | 0 | 0 | 23.8 | **23.69** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.43 |
| | | 20325 | 1747.5 | 1 | 0 | 0 | 23.8 | 23.19 |
| | | 20025 | 1717.5 | 1 | 37 | 0 | 23.8 | 23.42 |
| | | 20175 | 1732.5 | 1 | 37 | 0 | 23.8 | 23.2 |
| | | 20325 | 1747.5 | 1 | 37 | 0 | 23.8 | 22.95 |
| | | 20025 | 1717.5 | 1 | 74 | 0 | 23.8 | 23.36 |
| | | 20175 | 1732.5 | 1 | 74 | 0 | 23.8 | 23.21 |
| | | 20325 | 1747.5 | 1 | 74 | 0 | 23.8 | 22.96 |
| | | 20025 | 1717.5 | 36 | 0 | 1 | 23.8 | 22.32 |
| | | 20175 | 1732.5 | 36 | 0 | 1 | 23.8 | 22.1 |
| | | 20325 | 1747.5 | 36 | 0 | 1 | 23.8 | 21.91 |
| | | 20025 | 1717.5 | 36 | 19 | 1 | 23.8 | 22.31 |
| | | 20175 | 1732.5 | 36 | 19 | 1 | 23.8 | 22.12 |
| | | 20325 | 1747.5 | 36 | 19 | 1 | 23.8 | 21.83 |
| | | 20025 | 1717.5 | 36 | 39 | 1 | 23.8 | 22.46 |
| | | 20175 | 1732.5 | 36 | 39 | 1 | 23.8 | 22.07 |
| | | 20325 | 1747.5 | 36 | 39 | 1 | 23.8 | 21.97 |
| | | 20025 | 1717.5 | 75 | 0 | 1 | 23.8 | 22.41 |
| | | 20175 | 1732.5 | 75 | 0 | 1 | 23.8 | 22.13 |
| | | 20325 | 1747.5 | 75 | 0 | 1 | 23.8 | 21.98 |
| | 16QAM | 20025 | 1717.5 | 1 | 0 | 1 | 23.8 | 22.59 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.47 |
| | | 20325 | 1747.5 | 1 | 0 | 1 | 23.8 | 22.17 |
| | | 20025 | 1717.5 | 1 | 37 | 1 | 23.8 | 22.23 |
| | | 20175 | 1732.5 | 1 | 37 | 1 | 23.8 | 22.25 |
| | | 20325 | 1747.5 | 1 | 37 | 1 | 23.8 | 21.94 |
| | | 20025 | 1717.5 | 1 | 74 | 1 | 23.8 | 22.23 |
| | | 20175 | 1732.5 | 1 | 74 | 1 | 23.8 | 22.27 |
| | | 20325 | 1747.5 | 1 | 74 | 1 | 23.8 | 21.89 |
| | | 20025 | 1717.5 | 36 | 0 | 2 | 23.8 | 21.3 |
| | | 20175 | 1732.5 | 36 | 0 | 2 | 23.8 | 21.11 |
| | | 20325 | 1747.5 | 36 | 0 | 2 | 23.8 | 20.95 |
| | | 20025 | 1717.5 | 36 | 19 | 2 | 23.8 | 21.24 |
| | | 20175 | 1732.5 | 36 | 19 | 2 | 23.8 | 21.1 |
| | | 20325 | 1747.5 | 36 | 19 | 2 | 23.8 | 20.84 |
| | | 20025 | 1717.5 | 36 | 39 | 2 | 23.8 | 21.36 |
| | | 20175 | 1732.5 | 36 | 39 | 2 | 23.8 | 21.13 |
| | | 20325 | 1747.5 | 36 | 39 | 2 | 23.8 | 20.89 |
| | | 20025 | 1717.5 | 75 | 0 | 2 | 23.8 | 21.24 |
| | | 20175 | 1732.5 | 75 | 0 | 2 | 23.8 | 21.13 |
| | | 20325 | 1747.5 | 75 | 0 | 2 | 23.8 | 20.86 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | Modulation | CH | Frequency (MHz) | RB | RB Offset | MPR | Target Power | Measured Power |
| 20MHz | QPSK | 20050 | 1720 | 1 | 0 | 0 | 23.8 | **23.7** |
| | | 20175 | 1732.5 | 1 | 0 | 0 | 23.8 | 23.56 |
| | | 20300 | 1745 | 1 | 0 | 0 | 23.8 | 23.32 |
| | | 20050 | 1720 | 1 | 50 | 0 | 23.8 | 23.43 |
| | | 20175 | 1732.5 | 1 | 50 | 0 | 23.8 | 23.24 |
| | | 20300 | 1745 | 1 | 50 | 0 | 23.8 | 22.94 |
| | | 20050 | 1720 | 1 | 99 | 0 | 23.8 | 23.38 |
| | | 20175 | 1732.5 | 1 | 99 | 0 | 23.8 | 23.31 |
| | | 20300 | 1745 | 1 | 99 | 0 | 23.8 | 23.04 |
| | | 20050 | 1720 | 50 | 0 | 1 | 23.8 | 22.43 |
| | | 20175 | 1732.5 | 50 | 0 | 1 | 23.8 | 22.33 |
| | | 20300 | 1745 | 50 | 0 | 1 | 23.8 | 22 |
| | | 20050 | 1720 | 50 | 25 | 1 | 23.8 | 22.46 |
| | | 20175 | 1732.5 | 50 | 25 | 1 | 23.8 | 22.26 |
| | | 20300 | 1745 | 50 | 25 | 1 | 23.8 | 21.93 |
| | | 20050 | 1720 | 50 | 50 | 1 | 23.8 | 22.34 |
| | | 20175 | 1732.5 | 50 | 50 | 1 | 23.8 | 22.26 |
| | | 20300 | 1745 | 50 | 50 | 1 | 23.8 | 21.99 |
| | | 20050 | 1720 | 100 | 0 | 1 | 23.8 | 22.37 |
| | | 20175 | 1732.5 | 100 | 0 | 1 | 23.8 | 22.21 |
| | | 20300 | 1745 | 100 | 0 | 1 | 23.8 | 22.12 |
| | 16QAM | 20050 | 1720 | 1 | 0 | 1 | 23.8 | 22.68 |
| | | 20175 | 1732.5 | 1 | 0 | 1 | 23.8 | 22.47 |
| | | 20300 | 1745 | 1 | 0 | 1 | 23.8 | 22.28 |
| | | 20050 | 1720 | 1 | 50 | 1 | 23.8 | 22.35 |
| | | 20175 | 1732.5 | 1 | 50 | 1 | 23.8 | 22.17 |
| | | 20300 | 1745 | 1 | 50 | 1 | 23.8 | 22 |
| | | 20050 | 1720 | 1 | 99 | 1 | 23.8 | 22.48 |
| | | 20175 | 1732.5 | 1 | 99 | 1 | 23.8 | 22.14 |
| | | 20300 | 1745 | 1 | 99 | 1 | 23.8 | 22.05 |
| | | 20050 | 1720 | 50 | 0 | 2 | 23.8 | 21.44 |
| | | 20175 | 1732.5 | 50 | 0 | 2 | 23.8 | 21.14 |
| | | 20300 | 1745 | 50 | 0 | 2 | 23.8 | 21.04 |
| | | 20050 | 1720 | 50 | 25 | 2 | 23.8 | 21.35 |
| | | 20175 | 1732.5 | 50 | 25 | 2 | 23.8 | 21.14 |
| | | 20300 | 1745 | 50 | 25 | 2 | 23.8 | 20.96 |
| | | 20050 | 1720 | 50 | 50 | 2 | 23.8 | 21.29 |
| | | 20175 | 1732.5 | 50 | 50 | 2 | 23.8 | 21.12 |
| | | 20300 | 1745 | 50 | 50 | 2 | 23.8 | 21.04 |
| | | 20050 | 1720 | 100 | 0 | 2 | 23.8 | 21.4 |
| | | 20175 | 1732.5 | 100 | 0 | 2 | 23.8 | 21.21 |
| | | 20300 | 1745 | 100 | 0 | 2 | 23.8 | 21.06 |

## ERP/EIRP (dBm)

### WCDMA

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 1312 | 1712.4 | 18.7 | 6.6 | 25.3 | 338.8 |
| | 1413 | 1732.6 | 18.8 | 6.7 | 25.5 | 354.8 |
| | 1513 | 1752.6 | 18.4 | 6.7 | 25.1 | 323.6 |

### LTE BAND 13

### CHANNEL BANDWIDTH: 5MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
|---|---|---|---|---|---|---|
| Y | 23205 | 779.5 | 23.9 | 1.3 | 25.2 | 327.3 |
| | 23230 | 782 | 23.8 | 1.2 | 25.0 | 312.6 |
| | 23255 | 784.5 | 24.3 | 1.0 | 25.3 | 335.0 |

### CHANNEL BANDWIDTH: 10MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
|---|---|---|---|---|---|---|
| Y | 23230 | 782 | 23.4 | 1.2 | 24.6 | 285.1 |

### LTE BAND 17

### CHANNEL BANDWIDTH: 5MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
|---|---|---|---|---|---|---|
| X | 23755 | 706.5 | 24.6 | 1.3 | 25.9 | 384.6 |
| | 23790 | 710.0 | 24.4 | 1.2 | 25.6 | 358.9 |
| | 23825 | 713.5 | 24.8 | 1.0 | 25.8 | 375.8 |

### CHANNEL BANDWIDTH: 10MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
|---|---|---|---|---|---|---|
| X | 23780 | 709.0 | 24.9 | 1.3 | 26.2 | 412.1 |
| | 23790 | 710.0 | 24.0 | 1.2 | 25.2 | 327.3 |
| | 23800 | 711.0 | 25.1 | 1.0 | 26.1 | 402.7 |

## LTE BAND 4

### CHANNEL BANDWIDTH: 1.4MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 19957 | 1710.7 | 21.3 | 6.6 | 27.9 | 616.6 |
| | 20175 | 1732.5 | 21.1 | 6.7 | 27.8 | 602.6 |
| | 20393 | 1754.3 | 20.6 | 6.7 | 27.3 | 537.0 |

### CHANNEL BANDWIDTH: 3MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 19965 | 1711.5 | 21.2 | 6.6 | 27.8 | 602.6 |
| | 20175 | 1732.5 | 21.0 | 6.7 | 27.7 | 588.8 |
| | 20385 | 1753.5 | 20.5 | 6.7 | 27.2 | 524.8 |

### CHANNEL BANDWIDTH: 5MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 19975 | 1712.5 | 21.1 | 6.6 | 27.7 | 588.8 |
| | 20175 | 1732.5 | 20.9 | 6.7 | 27.6 | 575.4 |
| | 20375 | 1752.5 | 20.4 | 6.7 | 27.1 | 512.9 |

### CHANNEL BANDWIDTH: 10MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 20000 | 1715.0 | 20.8 | 6.6 | 27.4 | 549.5 |
| | 20175 | 1732.5 | 20.7 | 6.7 | 27.4 | 549.5 |
| | 20350 | 1750.0 | 20.2 | 6.7 | 26.9 | 489.8 |

### CHANNEL BANDWIDTH: 15MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 20025 | 1717.5 | 20.2 | 6.6 | 26.8 | 478.6 |
| | 20175 | 1732.5 | 20.2 | 6.7 | 26.9 | 489.8 |
| | 20325 | 1747.5 | 19.6 | 6.7 | 26.3 | 426.6 |

### CHANNEL BANDWIDTH: 20MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) |
|---|---|---|---|---|---|---|
| Z | 20050 | 1720.0 | 20.0 | 6.6 | 26.6 | 457.1 |
| | 20175 | 1732.5 | 20.0 | 6.7 | 26.7 | 467.7 |
| | 20300 | 1745.0 | 19.6 | 6.7 | 26.3 | 426.6 |

## 4.2 FREQUENCY STABILITY MEASUREMENT

### 4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 4.2.2 TEST PROCEDURE

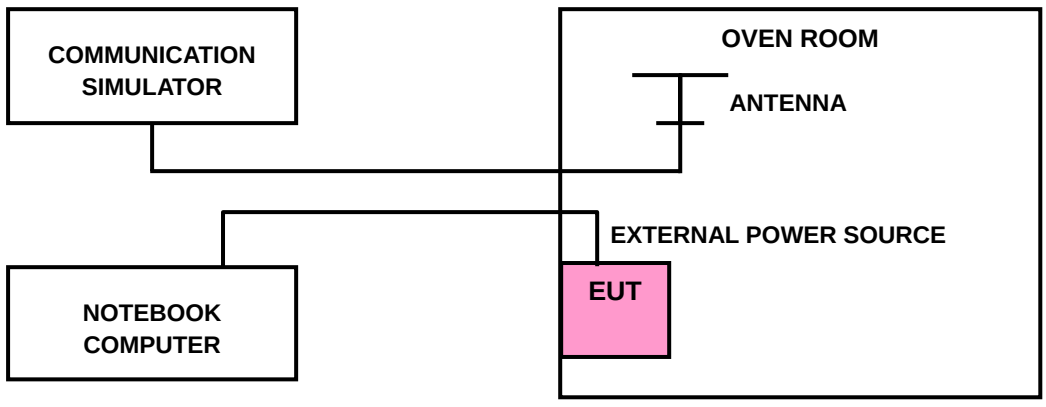
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected notebook. The test voltage range is from 102 to 138 working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 4.2.3 TEST SETUP



## 4.2.4 TEST RESULTS

| VOLTAGE (Volts) | FREQUENCY ERROR (ppm) | | | | | | | | | | | | LIMIT (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA | LTE BAND 13 | | LTE BAND 17 | | LTE BAND 4 | | | | | | |
| | | 5MHz | 10MHz | 5MHz | 10MHz | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | 20MHz | |
| 102 | 0.010 | 0.040 | 0.033 | 0.025 | 0.035 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.001 | 2.5 |
| 138 | 0.012 | 0.047 | 0.043 | 0.027 | 0.042 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 2.5 |

**NOTE:** The applicant defined the normal working voltage of the host equipment is from 102Vac to 138Vac.

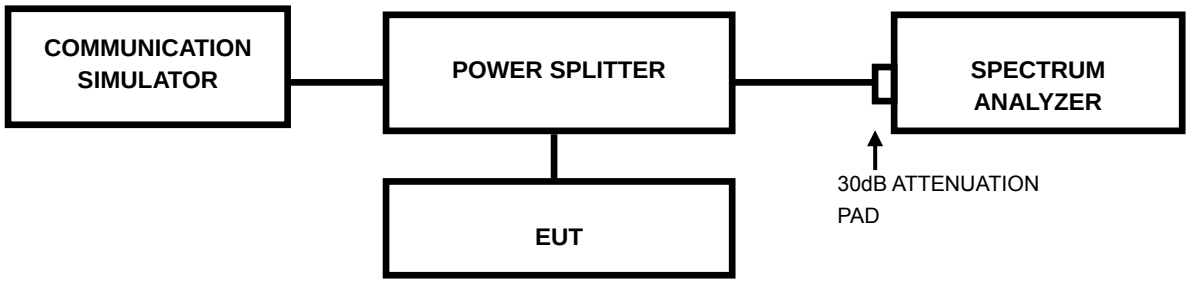
| TEMP. (℃) | FREQUENCY ERROR (ppm) | | | | | | | | | | | | LIMIT (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA | LTE BAND 13 | | LTE BAND 17 | | LTE BAND 4 | | | | | | |
| | | 5MHz | 10MHz | 5MHz | 10MHz | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | 20MHz | |
| 75 | 0.019 | 0.040 | 0.041 | 0.045 | 0.058 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 2.5 |
| 70 | 0.017 | 0.033 | 0.041 | 0.044 | 0.032 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 2.5 |
| 60 | 0.016 | 0.032 | 0.045 | 0.039 | 0.039 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 2.5 |
| 50 | 0.015 | 0.038 | 0.042 | 0.038 | 0.039 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 2.5 |
| 40 | 0.013 | 0.047 | 0.047 | 0.035 | 0.041 | 0.002 | 0.001 | 0.002 | 0.002 | 0.001 | 0.002 | 2.5 |
| 30 | 0.012 | 0.031 | 0.038 | 0.032 | 0.045 | 0.001 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 2.5 |
| 20 | 0.012 | 0.043 | 0.047 | 0.027 | 0.058 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 2.5 |
| 10 | 0.012 | 0.035 | 0.032 | 0.032 | 0.051 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 2.5 |
| 0 | 0.013 | 0.042 | 0.047 | 0.037 | 0.037 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 2.5 |
| -10 | 0.014 | 0.046 | 0.043 | 0.038 | 0.032 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.002 | 2.5 |
| -20 | 0.015 | 0.041 | 0.058 | 0.041 | 0.062 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 2.5 |
| -30 | 0.017 | 0.038 | 0.042 | 0.046 | 0.063 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 2.5 |

## 4.3 OCCUPIED BANDWIDTH MEASUREMENT

### 4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

### 4.3.2 TEST SETUP




### 4.3.3 TEST PROCEDURES

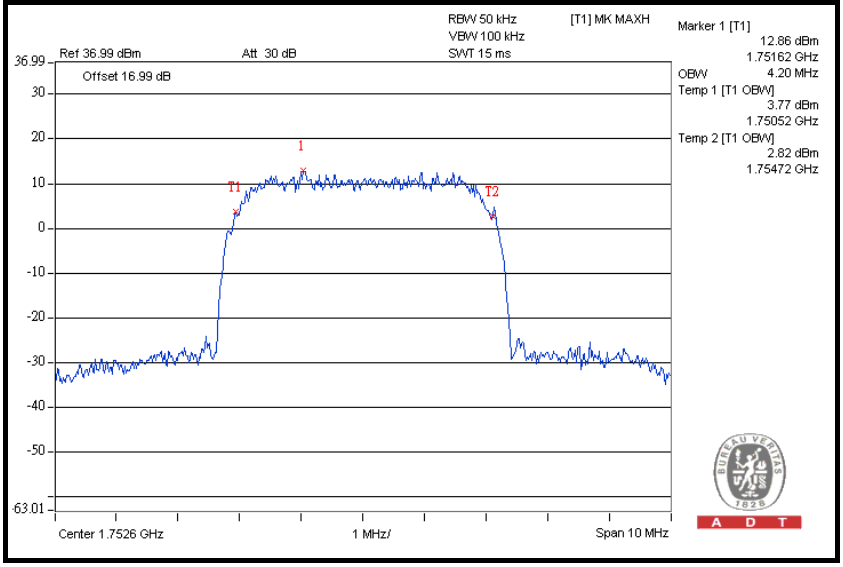
a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

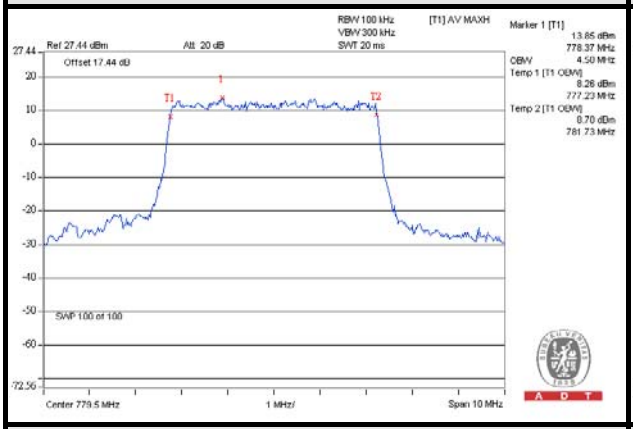
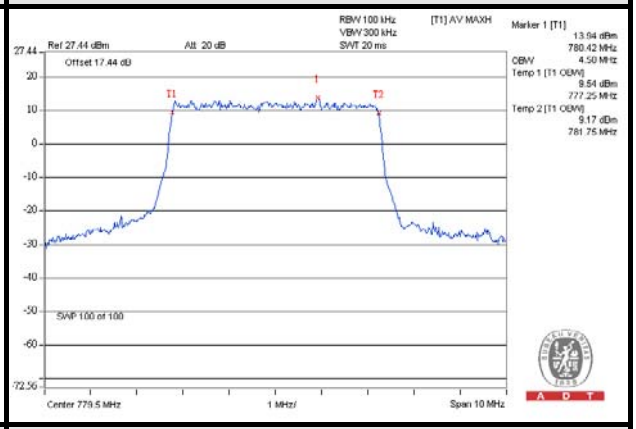
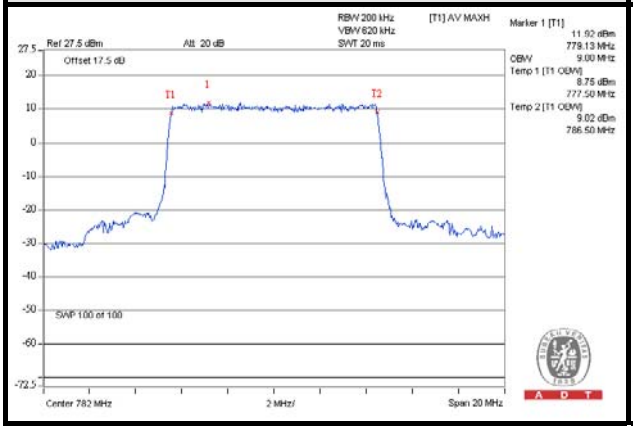
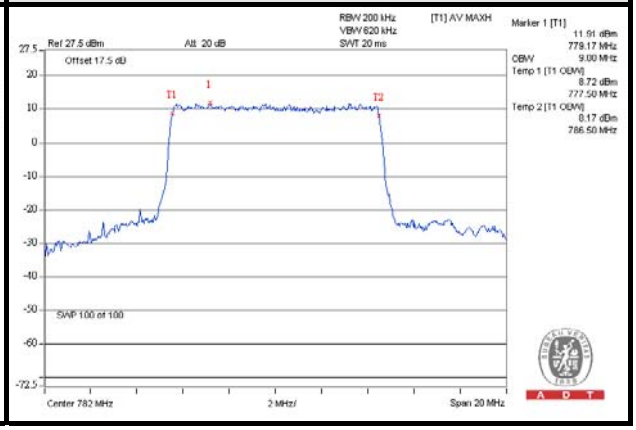
## 4.3.4 TEST RESULTS

| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) |
|---|---|---|
| | | WCDMA |
| 1312 | 1712.4 | 4.18 |
| 1413 | 1732.6 | 4.2 |
| 1513 | 1752.6 | 4.2 |

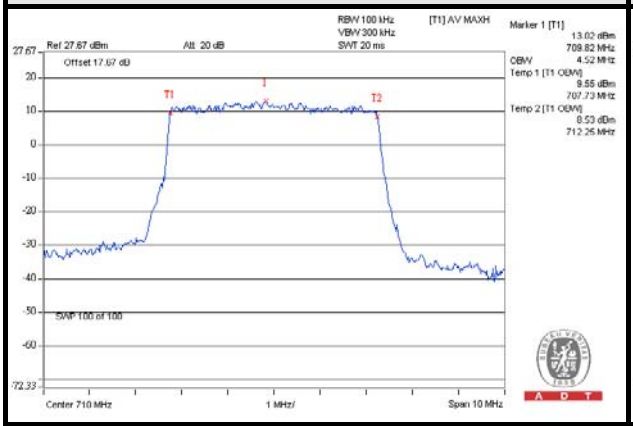
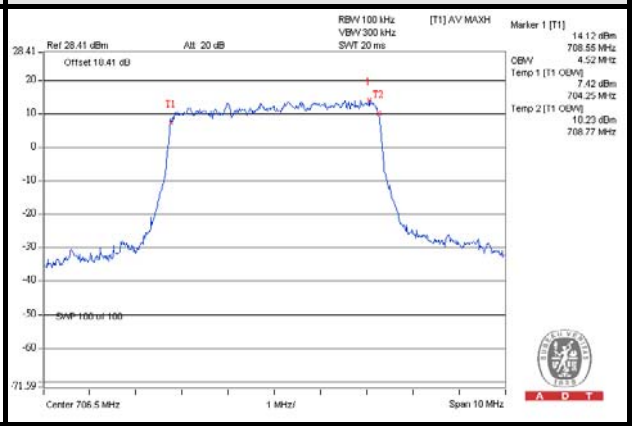
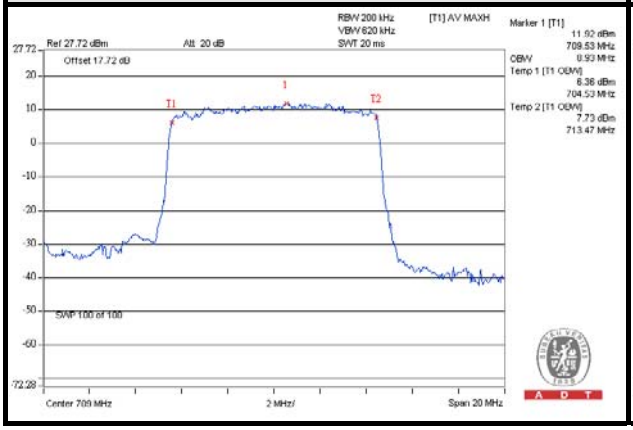
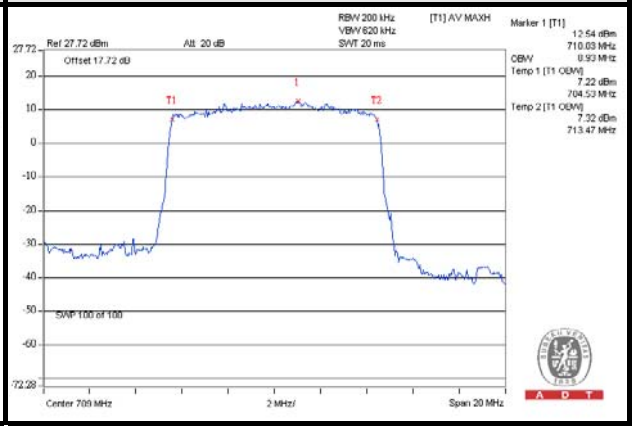
| SPECTRUM PLOT OF WORST VALUE |
|---|
| WCDMA |



| LTE BAND 13 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 23205 | 779.5 | 4.50 | 4.50 | 23230 | 782.0 | 9.00 | 9.00 |
| 23230 | 782.0 | 4.50 | 4.50 | | | | |
| 23255 | 784.5 | 4.50 | 4.50 | | | | |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 5MHz / QPSK | 5MHz / 16QAM |
|  |  |
| 10MHz / QPSK | 10MHz / 16QAM |
|  |  |

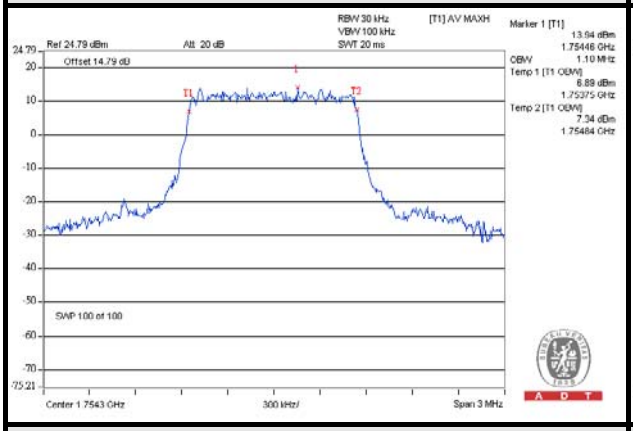
| LTE BAND 17 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 23755 | 706.5 | 4.50 | 4.52 | 23780 | 709 | 8.93 | 8.93 |
| 23790 | 710 | 4.52 | 4.48 | 23790 | 710 | 8.93 | 8.93 |
| 23825 | 713.5 | 4.50 | 4.50 | 23800 | 711 | 8.93 | 8.93 |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 5MHz / QPSK | 5MHz / 16QAM |
|  |  |
| 5MHz / QPSK | 5MHz / 16QAM |
|  |  |

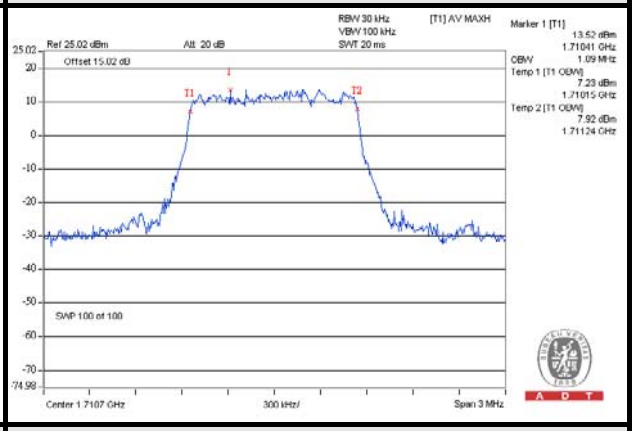
| LTE BAND 4 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH:3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19957 | 1710.7 | 1.09 | 1.09 | 19965 | 1711.5 | 2.68 | 2.69 |
| 20175 | 1732.5 | 1.09 | 1.09 | 20175 | 1732.5 | 2.69 | 2.69 |
| 20393 | 1754.3 | 1.1 | 1.09 | 20385 | 1753.5 | 2.70 | 2.69 |
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19975 | 1712.5 | 4.48 | 4.48 | 20000 | 1715.0 | 8.97 | 9.00 |
| 20175 | 1732.5 | 4.48 | 4.52 | 20175 | 1732.5 | 9.00 | 9.00 |
| 20375 | 1752.5 | 4.48 | 4.52 | 20350 | 1750.0 | 8.97 | 9.00 |
| CHANNEL BANDWIDTH: 15MHz | | | | CHANNEL BANDWIDTH: 20MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20025 | 1717.5 | 13.60 | 13.57 | 20050 | 1720 | 18.00 | 18.07 |
| 20175 | 1732.5 | 13.63 | 13.63 | 20175 | 1732.5 | 18.07 | 18.07 |
| 20325 | 1747.5 | 13.53 | 13.60 | 20300 | 1745 | 17.93 | 18.00 |

## SPECTRUM PLOT OF WORST VALUE

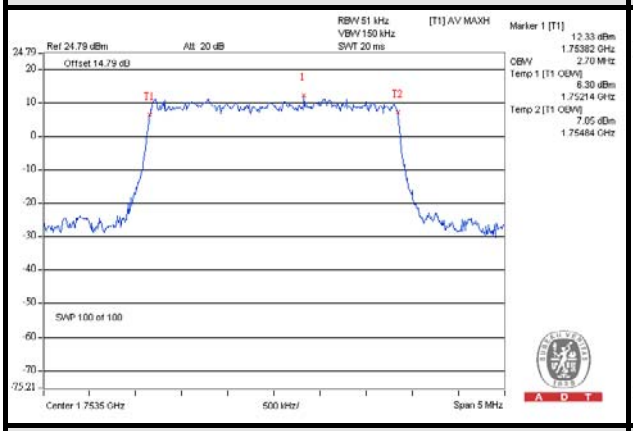
### 1.4MHz / QPSK



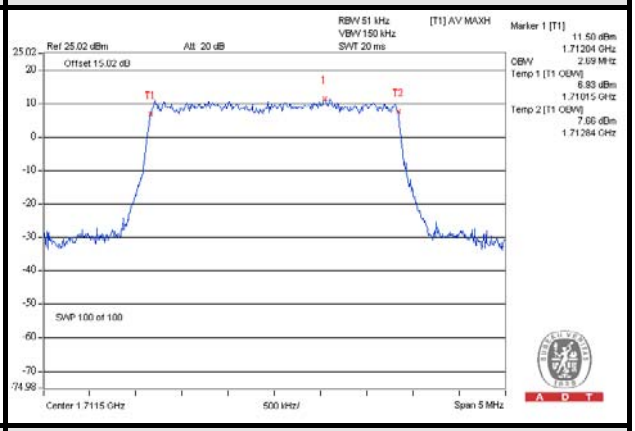

### 1.4MHz / 16QAM



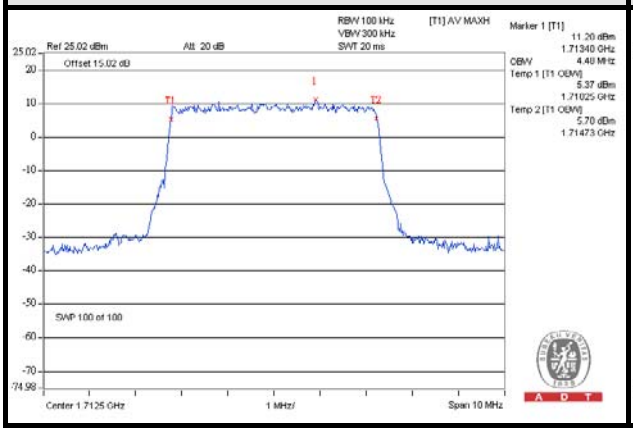

### 3MHz / QPSK



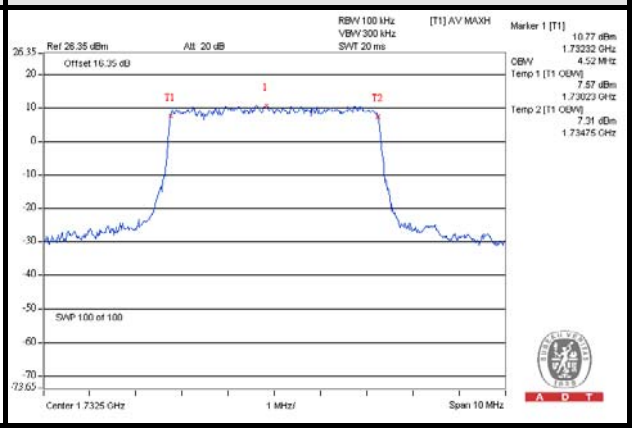

### 3MHz / 16QAM

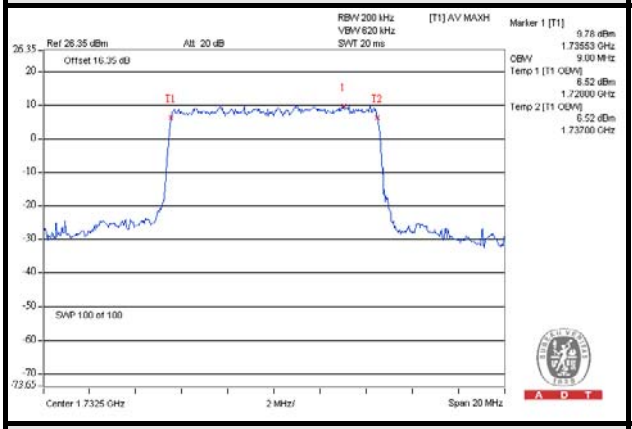
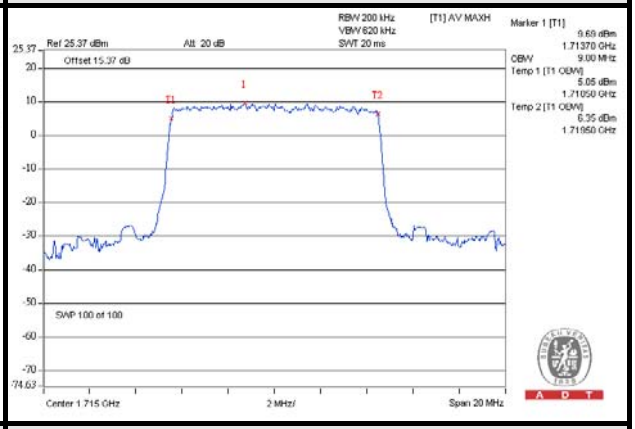
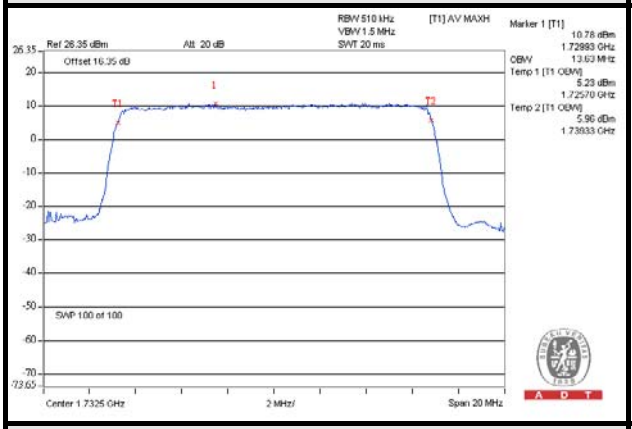
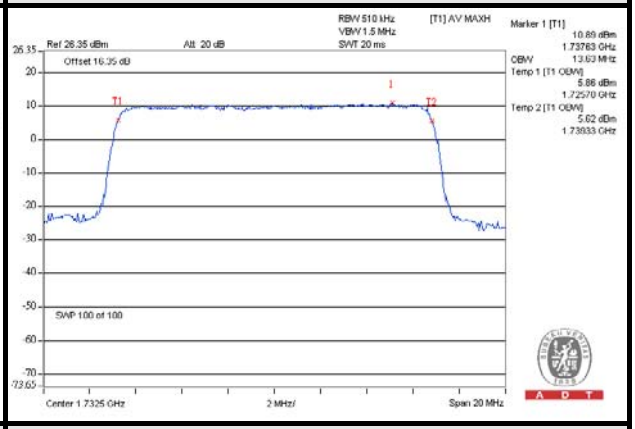
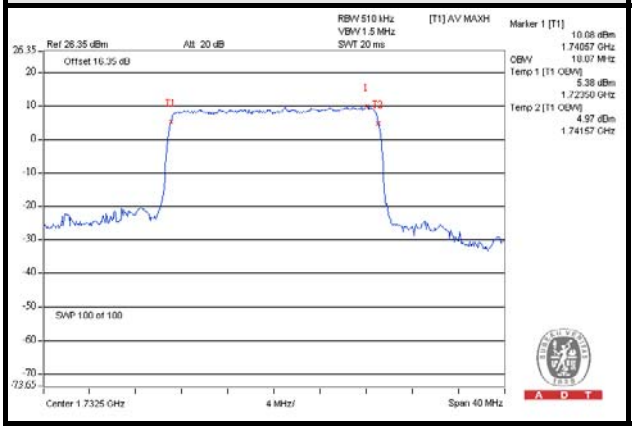
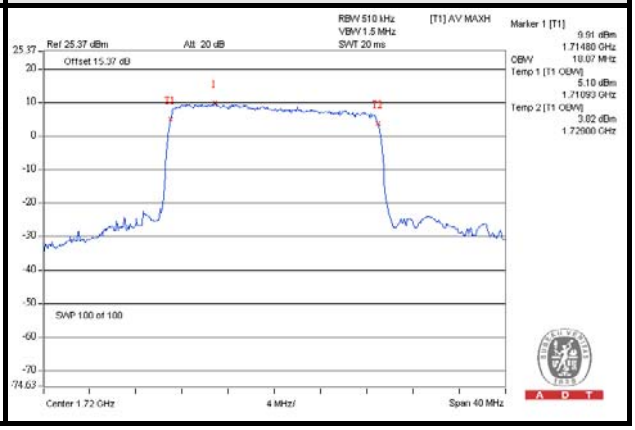



### 5MHz / QPSK




### 5MHz / 16QAM



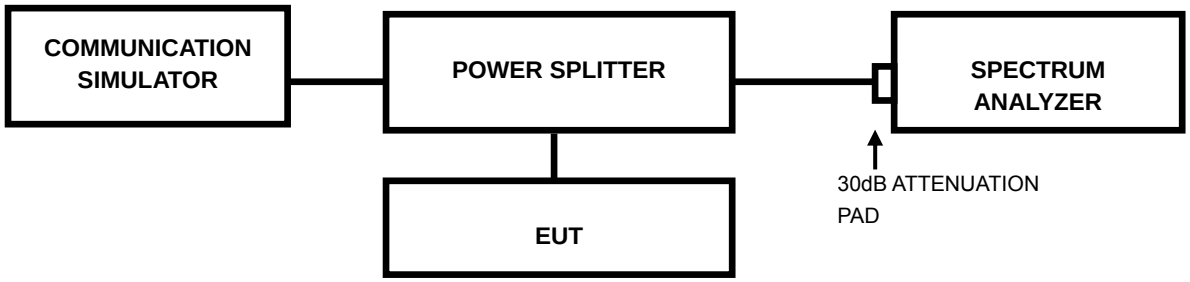
| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| **10MHz / QPSK** | **10MHz / 16QAM** |
|  |  |
| **15MHz / QPSK** | **15MHz / 16QAM** |
|  |  |
| **20MHz / QPSK** | **20MHz / 16QAM** |
|  |  |

## 4.4 PEAK TO AVERAGE RATIO

### 4.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

### 4.4.2 TEST SETUP




### 4.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

## 4.4.4 TEST RESULTS

### WCDMA

| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| | | WCDMA |
| 1312 | 1712.4 | 2.51 |
| 1413 | 1732.6 | 2.56 |
| 1513 | 1752.6 | 2.55 |

| SPECTRUM PLOT OF WORST VALUE |
|---|
| WCDMA |

## LTE BAND 13

| LTE BAND 13 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | CHANNEL BANDWIDTH: 10MHz | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| | | QPSK | | | QPSK |
| 23205 | 779.5 | 5.87 | 23230 | 782 | 4.86 |
| 23230 | 782 | 5.94 | | | |
| 23255 | 784.5 | 5.88 | | | |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 5MHz / QPSK | 10MHz / QPSK |
|  |  |

## LTE BAND 17

| LTE BAND 17 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | CHANNEL BANDWIDTH: 10MHz | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 23755 | 706.5 | 5.71 | 23780 | 709 | 4.68 |
| 23790 | 710 | 5.79 | 23790 | 710 | 4.71 |
| 23825 | 713.5 | 5.76 | 23800 | 711 | 4.65 |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 5MHz / QPSK | 10MHz / QPSK |
|  |  |

## LTE BAND 4

| LTE BAND 4 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | CHANNEL BANDWIDTH: 3MHz | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 19957 | 1710.7 | 4.44 | 19965 | 1711.5 | 4.78 |
| 20175 | 1732.5 | 4.55 | 20175 | 1732.5 | 4.87 |
| 20393 | 1754.3 | 4.49 | 20385 | 1753.5 | 4.83 |
| CHANNEL BANDWIDTH: 5MHz | | | CHANNEL BANDWIDTH: 10MHz | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 19975 | 1712.5 | 5.07 | 20000 | 1715.0 | 4.68 |
| 20175 | 1732.5 | 5.11 | 20175 | 1732.5 | 4.78 |
| 20375 | 1752.5 | 5.06 | 20350 | 1750.0 | 4.69 |
| CHANNEL BANDWIDTH: 15MHz | | | CHANNEL BANDWIDTH: 20MHz | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 20025 | 1717.5 | 5.63 | 20050 | 1720 | 6.47 |
| 20175 | 1732.5 | 5.78 | 20175 | 1732.5 | 6.5 |
| 20325 | 1747.5 | 5.65 | 20300 | 1745 | 6.44 |

## SPECTRUM PLOT OF WORST VALUE

### 1.4MHz / QPSK


### 3MHz / QPSK


### 5MHz / QPSK


### 10MHz / QPSK


### 15MHz / QPSK


### 20MHz / QPSK

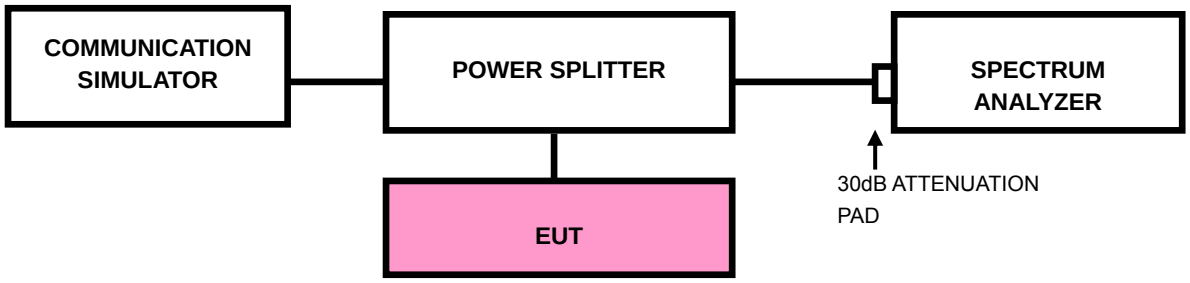
## 4.5 BAND EDGE MEASUREMENT

### 4.5.1 LIMITS OF BAND EDGE MEASUREMENT

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

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

### 4.5.2 TEST SETUP



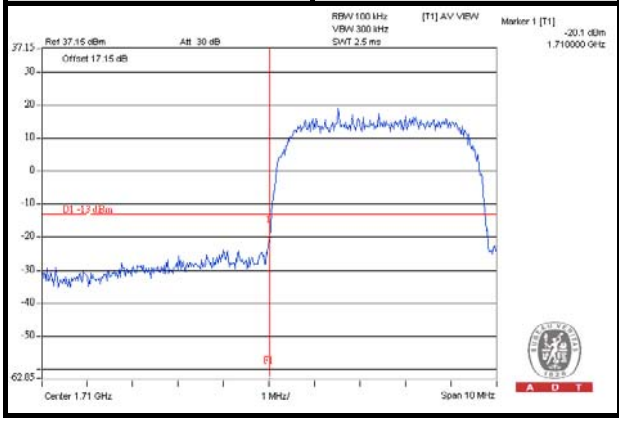

### 4.5.3 TEST PROCEDURES

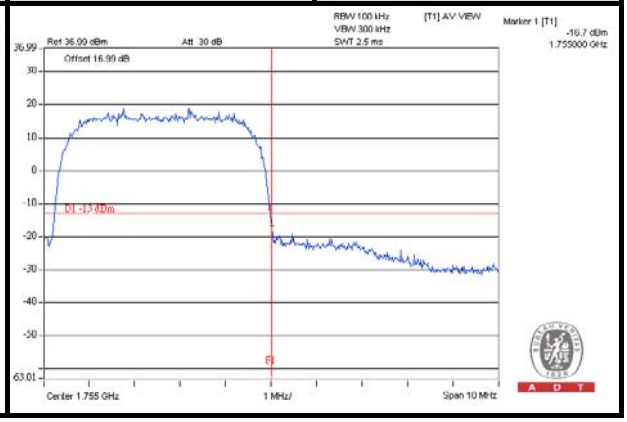
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% OCCUPIED BANDWIDTH and VB of the spectrum is ≧ 3*RB.
c. Record the max trace plot into the test report.

## 4.5.4 TEST RESULTS

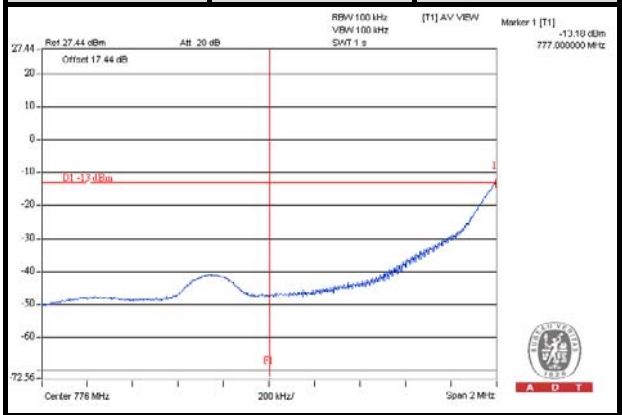
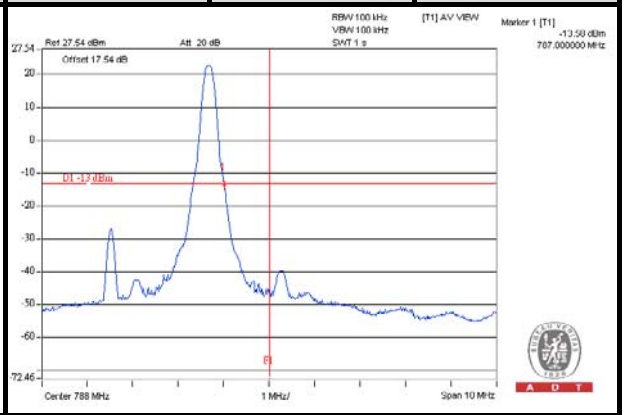
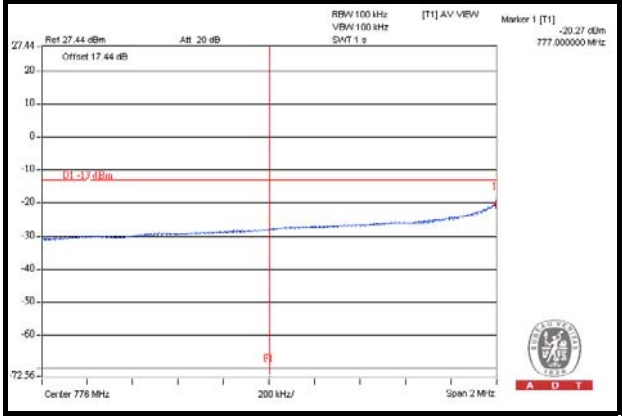
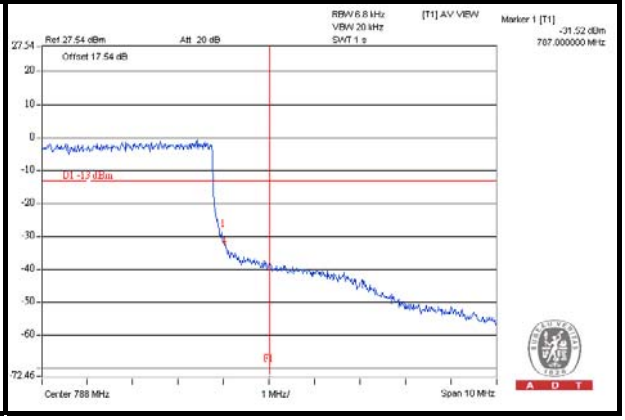
**WCDMA**

| CHANNEL | 1312 | CHANNEL | 1513 |
|---|---|---|---|



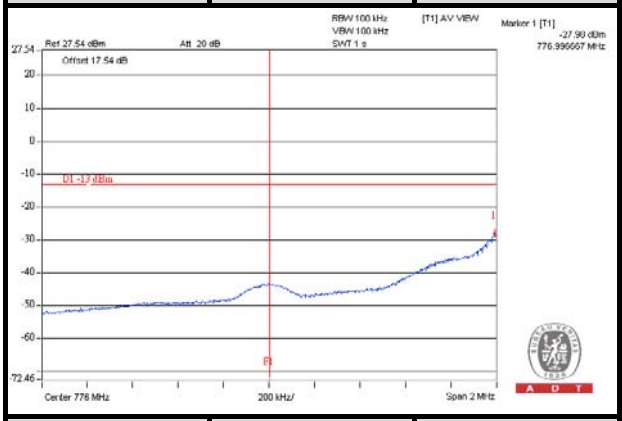



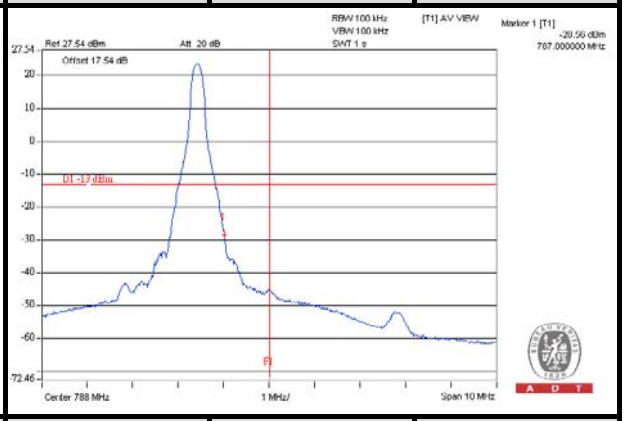
## LTE BAND 13

| Channel Bandwidth: 5MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 23205 | 1 RB | CHANNEL | 23255 | 1 RB |
|  | | |  | | |
| CHANNEL | 23205 | 25 RB | CHANNEL | 23255 | 25 RB |
|  | | |  | | |

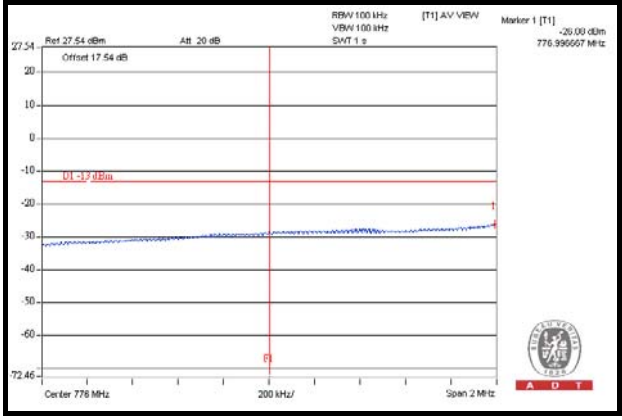
## Channel Bandwidth: 10MHz

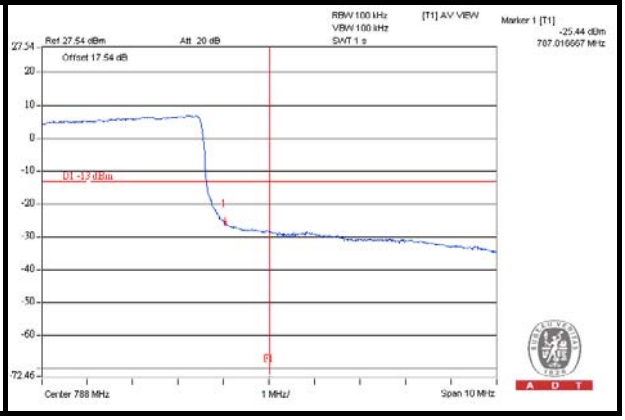
| CHANNEL | 23230 | 1 RB | CHANNEL | 23230 | 1 RB |
|---|---|---|---|---|---|



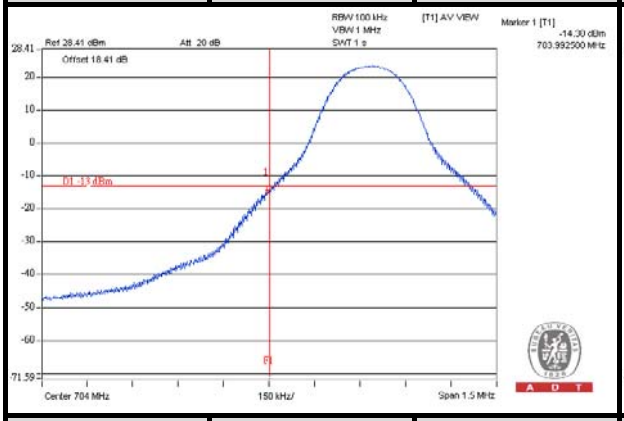
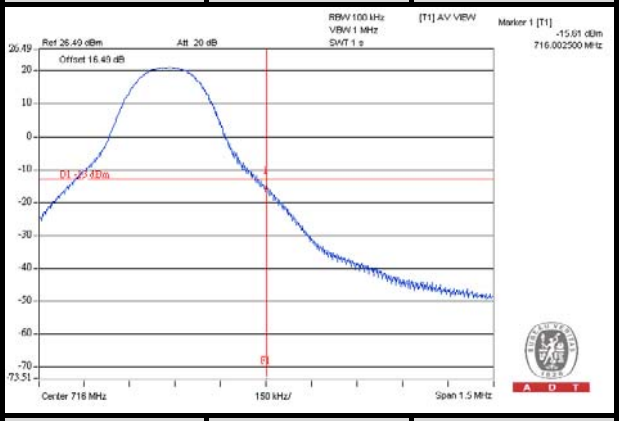
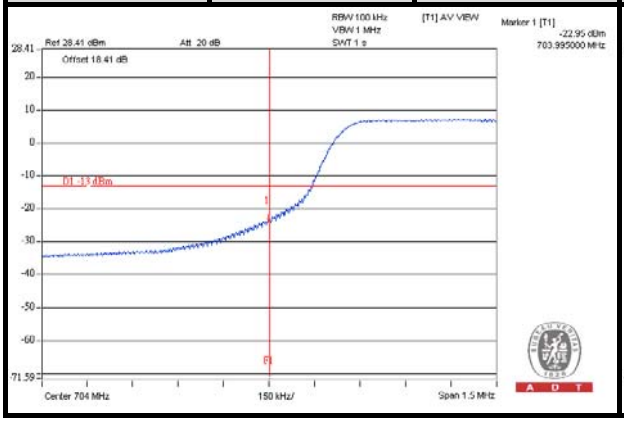
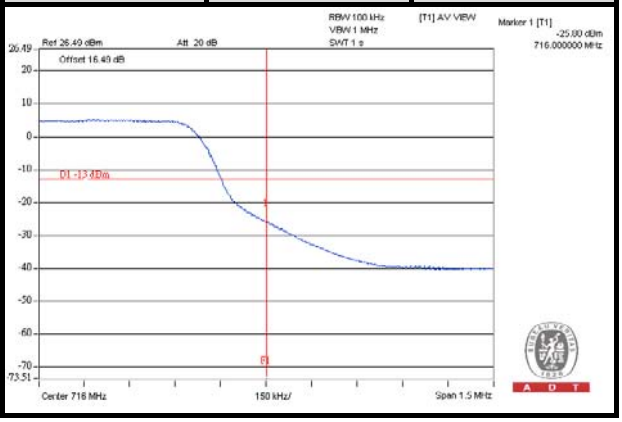



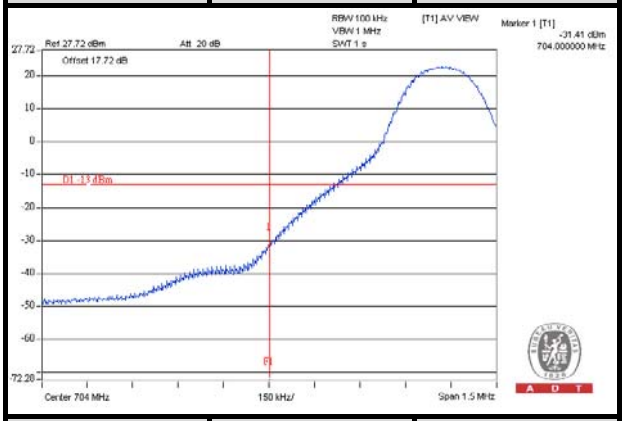
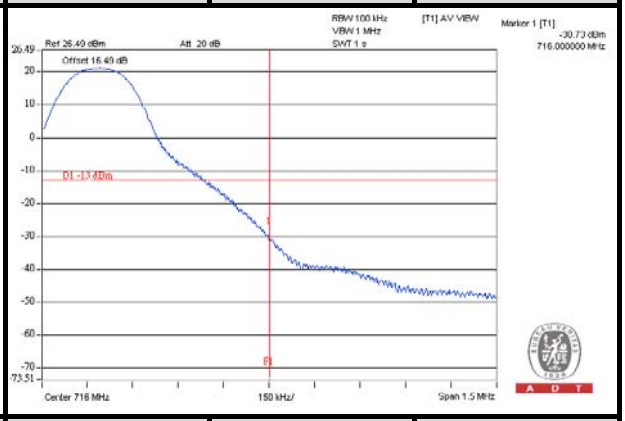
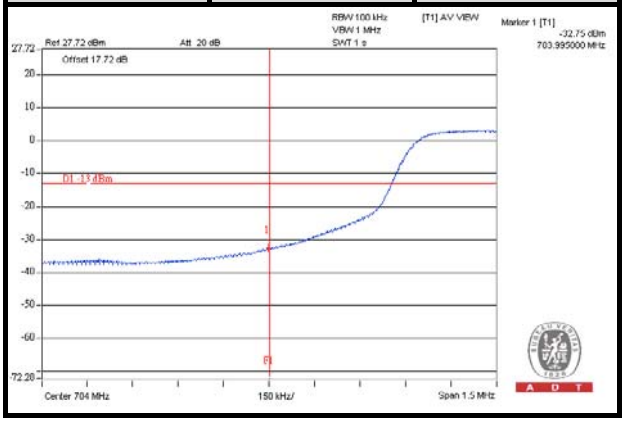
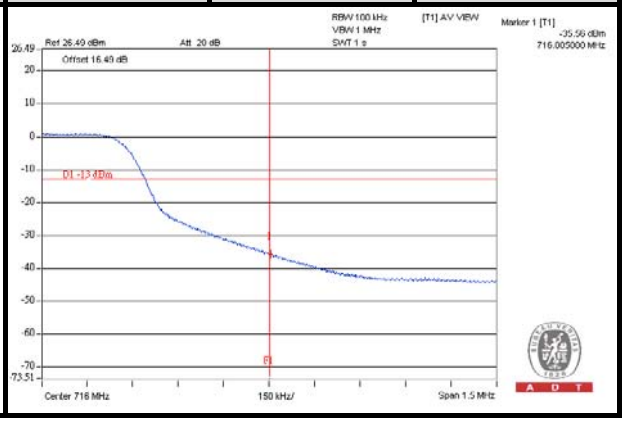

| CHANNEL | 23230 | 50 RB | CHANNEL | 23230 | 50 RB |
|---|---|---|---|---|---|



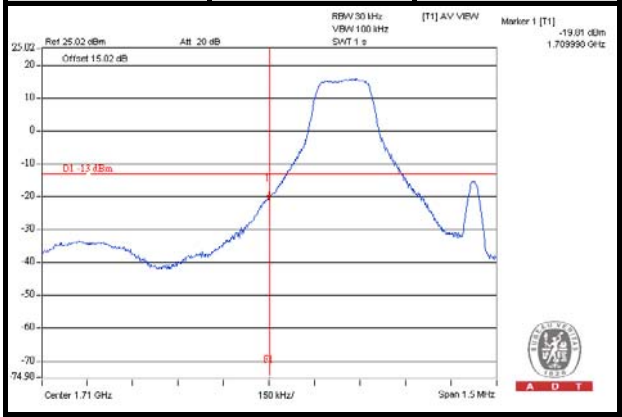
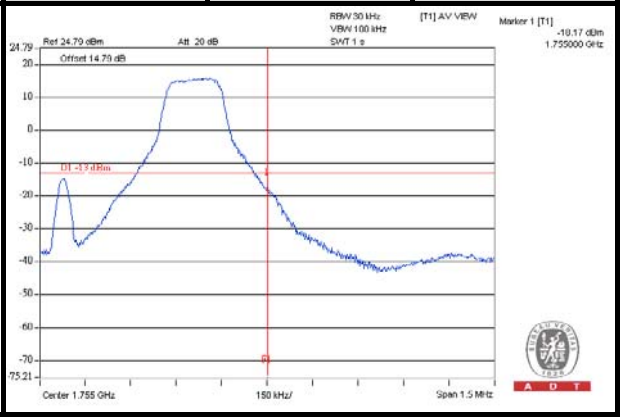
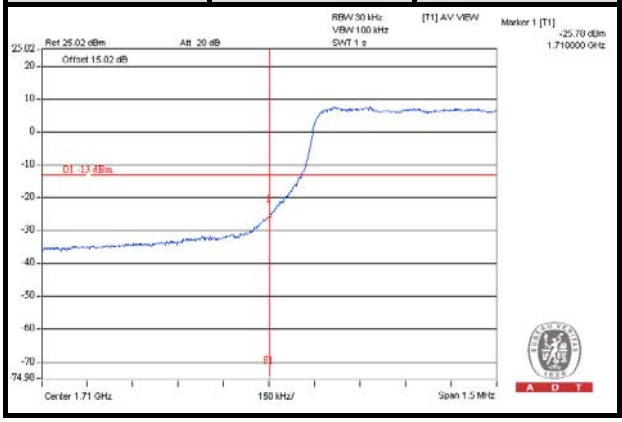
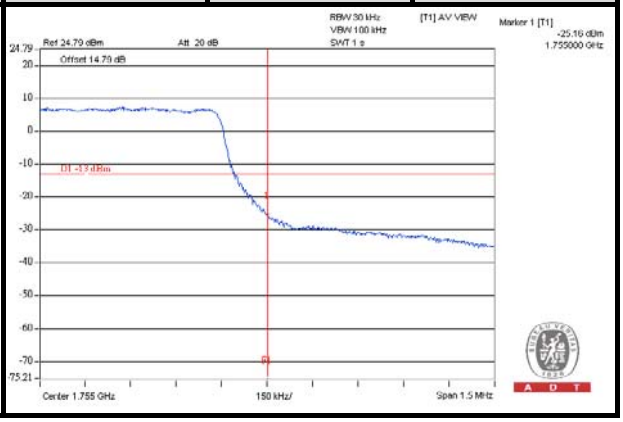



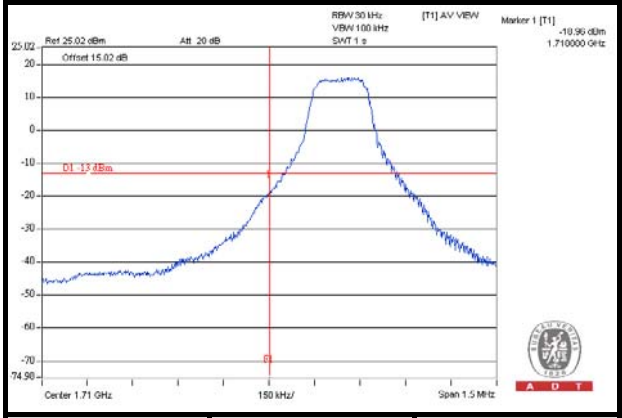
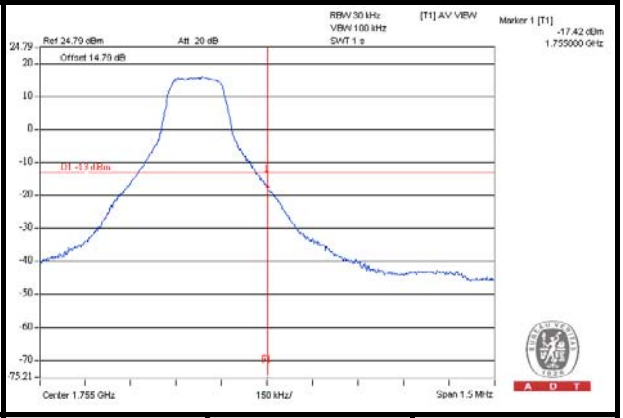
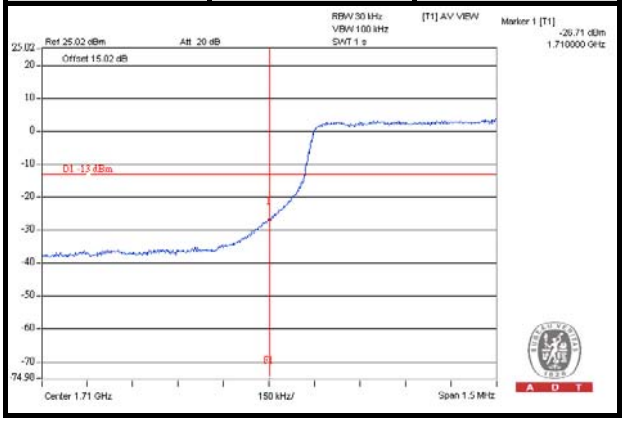
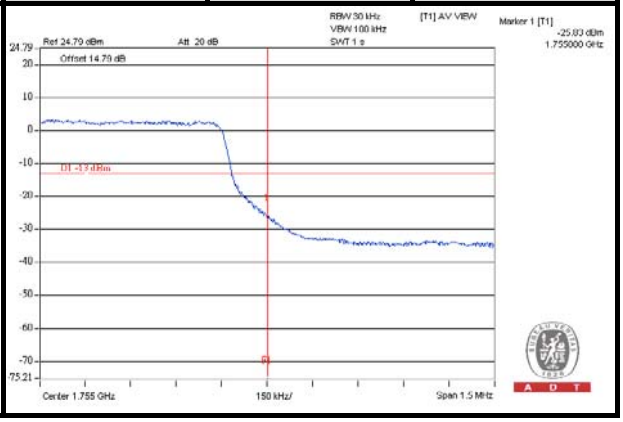
## LTE BAND 17

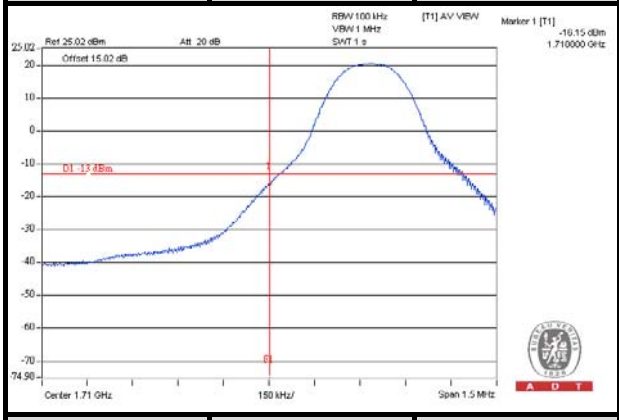
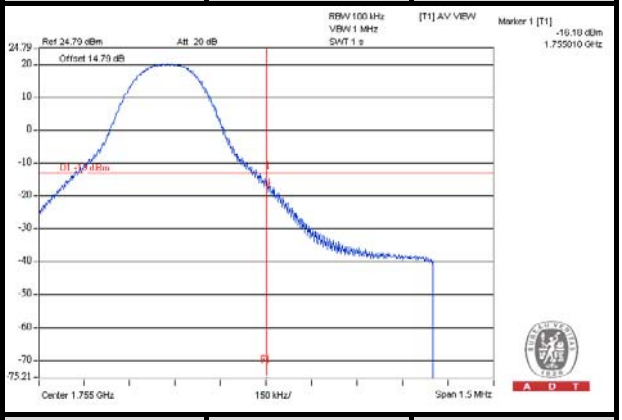
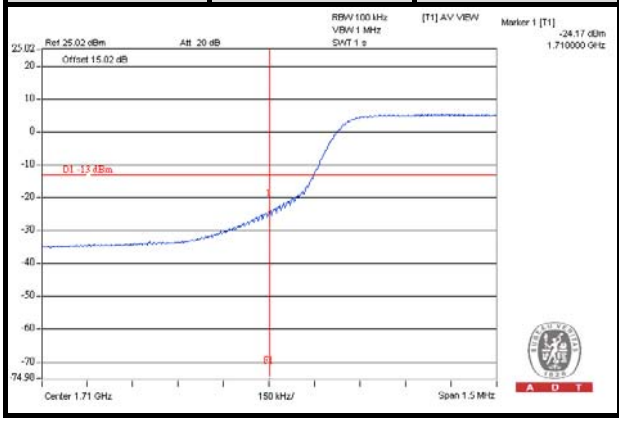
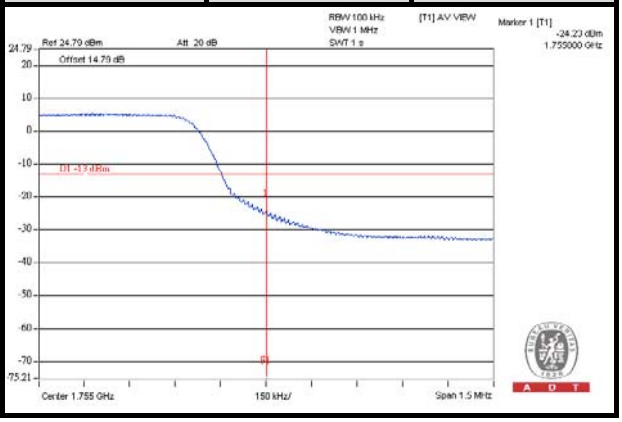
| Channel Bandwidth: 5MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 23755 | 1 RB | CHANNEL | 23825 | 1 RB |
|  | | |  | | |
| CHANNEL | 23755 | 25 RB | CHANNEL | 23825 | 25 RB |
|  | | |  | | |

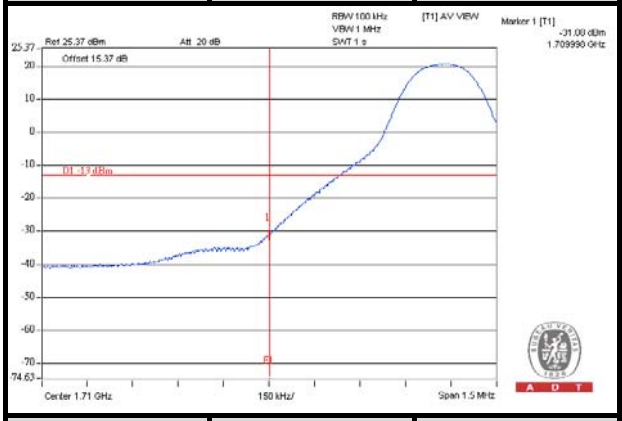
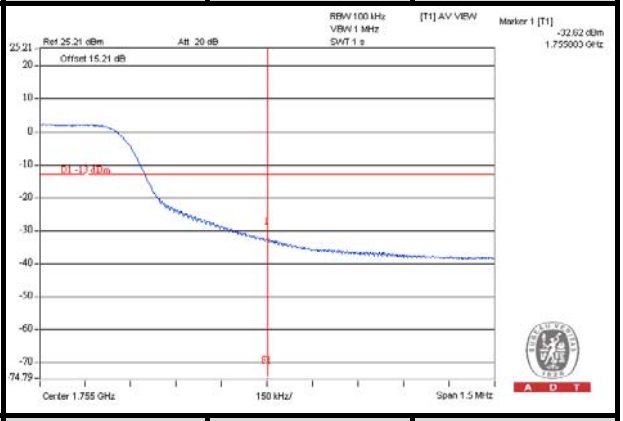
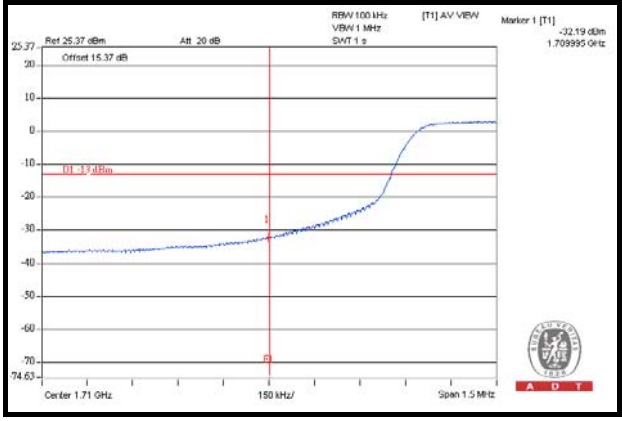
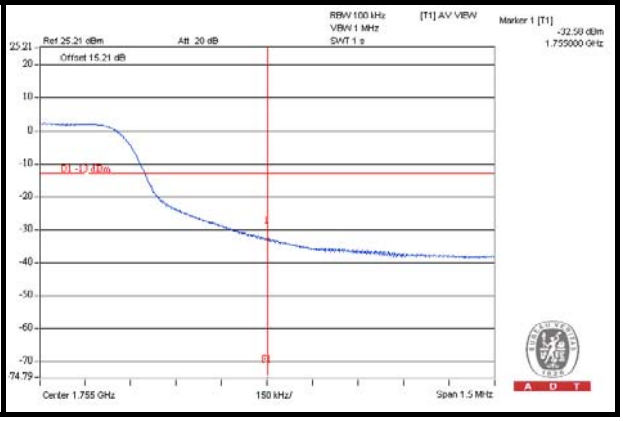
| Channel Bandwidth: 10MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 23780 | 1 RB | CHANNEL | 23800 | 1 RB |
|  | | |  | | |
| CHANNEL | 23780 | 50 RB | CHANNEL | 23800 | 50 RB |
|  | | |  | | |

## LTE BAND 4

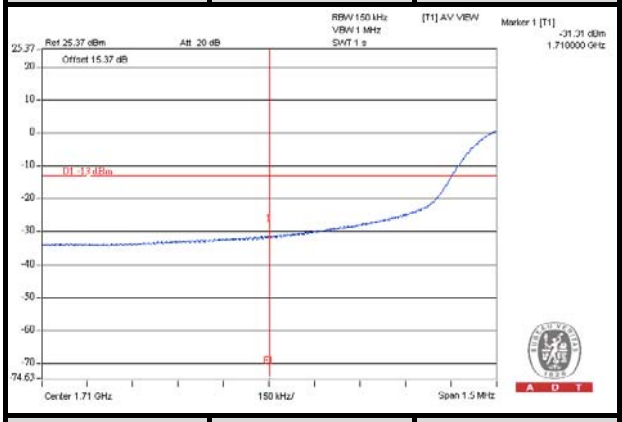
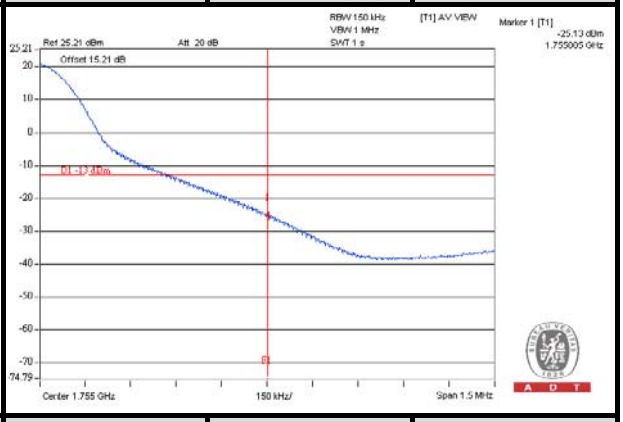
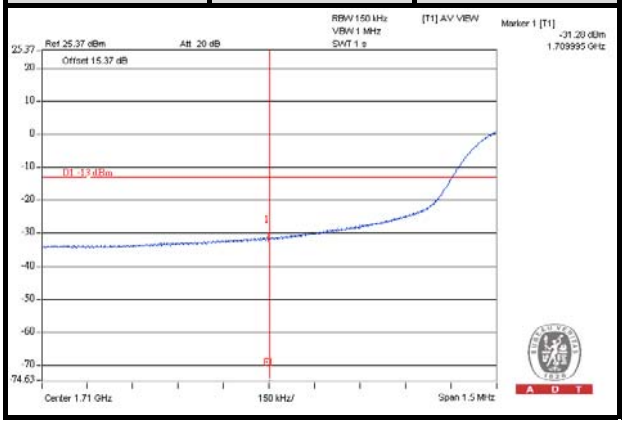
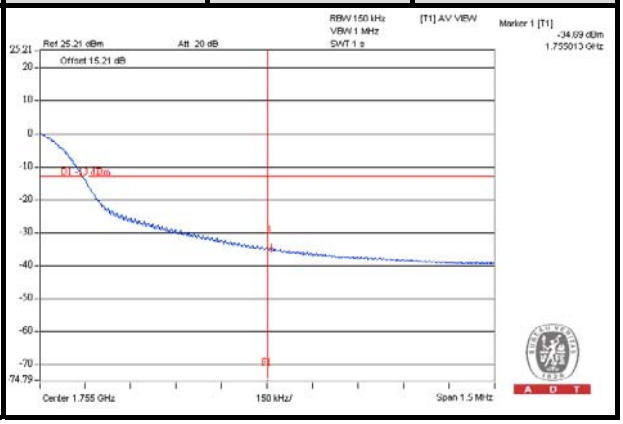
| Channel Bandwidth: 1.4MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 19957 | 1 RB | CHANNEL | 20393 | 1 RB |
|  | | |  | | |
| CHANNEL | 19957 | 25 RB | CHANNEL | 20393 | 25 RB |
|  | | |  | | |

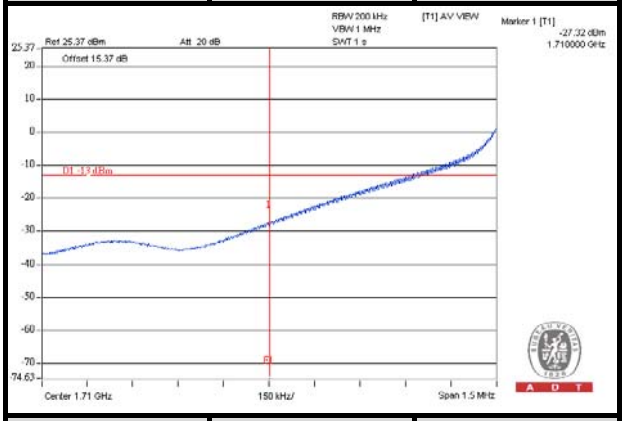
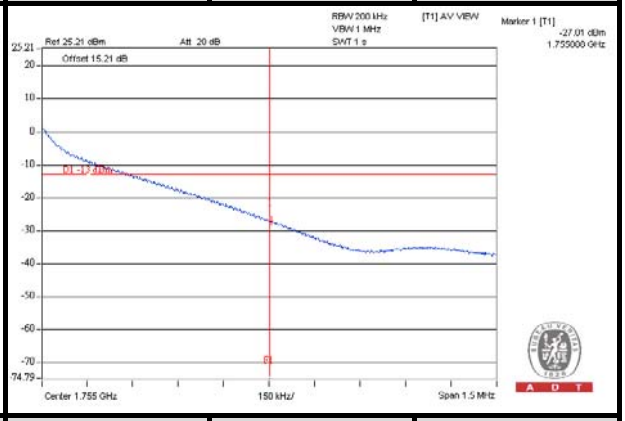
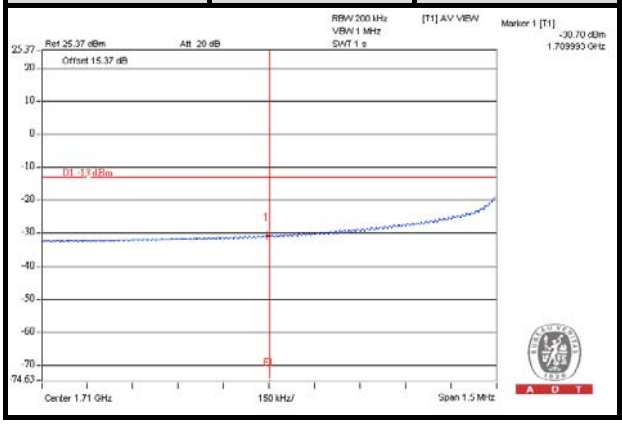
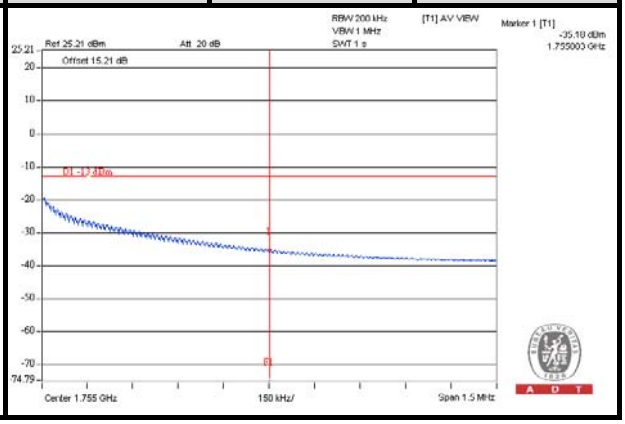
| Channel Bandwidth: 3MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 19965 | 1 RB | CHANNEL | 20385 | 1 RB |
|  | | |  | | |
| CHANNEL | 19965 | 25 RB | CHANNEL | 20385 | 25 RB |
|  | | |  | | |

| Channel Bandwidth: 5MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 19975 | 1 RB | CHANNEL | 20375 | 1 RB |
|  | | |  | | |
| CHANNEL | 19975 | 25 RB | CHANNEL | 20375 | 25 RB |
|  | | |  | | |

| Channel Bandwidth: 10MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 20000 | 1 RB | CHANNEL | 20350 | 1 RB |
|  | | |  | | |
| CHANNEL | 20000 | 50 RB | CHANNEL | 20350 | 50 RB |
|  | | |  | | |

## Channel Bandwidth: 15MHz

| CHANNEL | 20025 | 1 RB | CHANNEL | 20325 | 1 RB |
|---|---|---|---|---|---|
|  | | |  | | |
| CHANNEL | 20025 | 75 RB | CHANNEL | 20325 | 75 RB |
|  | | |  | | |

| Channel Bandwidth: 20MHz | | | | | |
|---|---|---|---|---|---|
| CHANNEL | 20050 | 1 RB | CHANNEL | 20300 | 1 RB |
|  | | |  | | |
| CHANNEL | 20050 | 100 RB | CHANNEL | 20300 | 100 RB |
|  | | |  | | |

## 4.6 CONDUCTED SPURIOUS EMISSIONS

### 4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

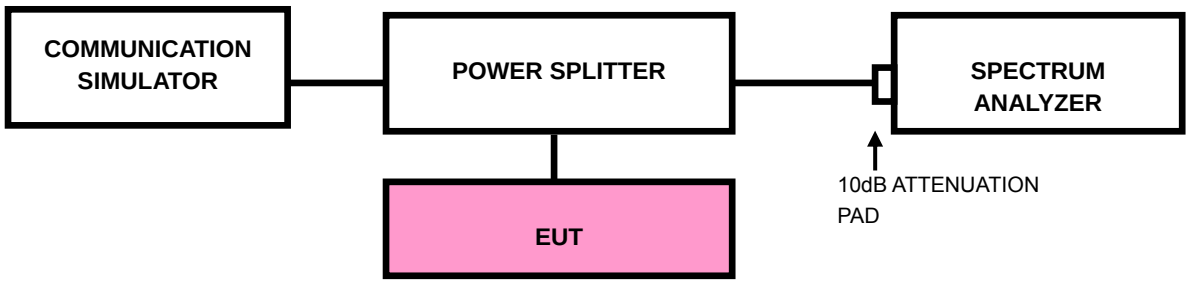
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

### 4.6.2 TEST PROCEDURE

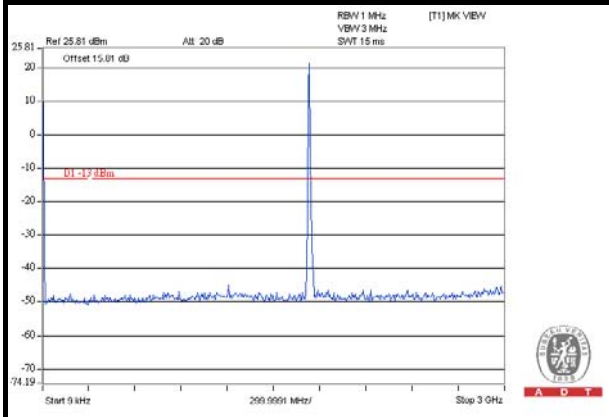
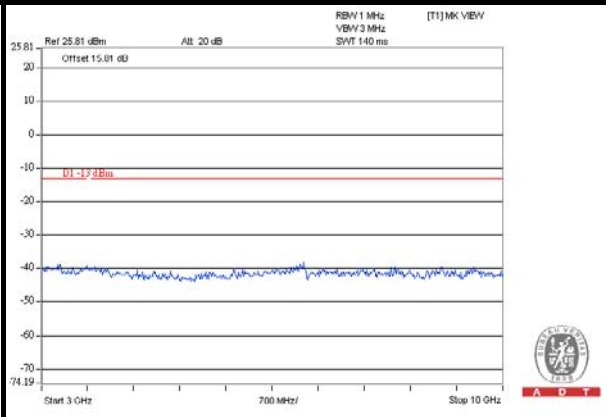
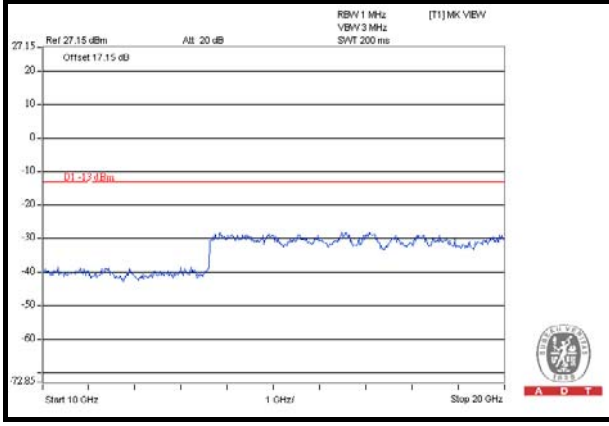
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

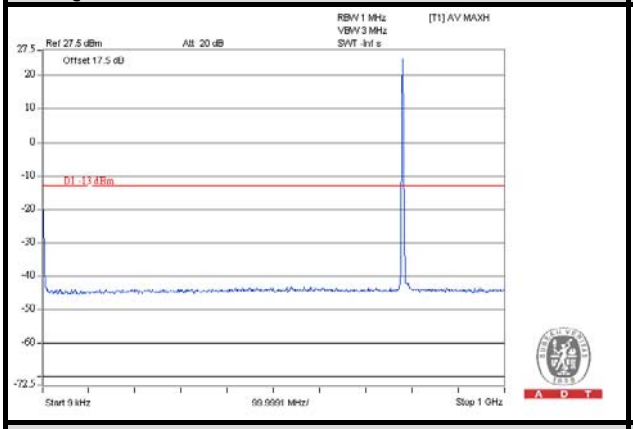
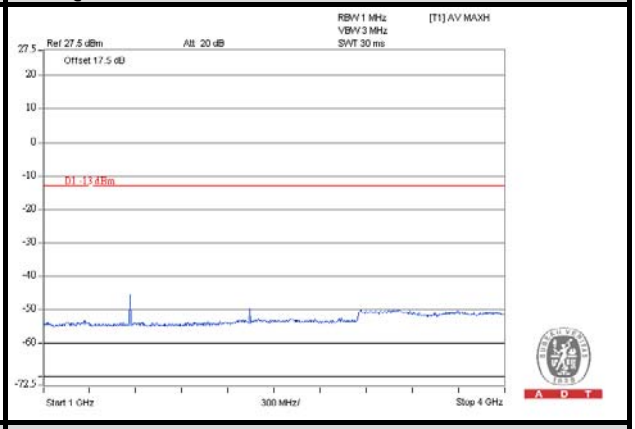
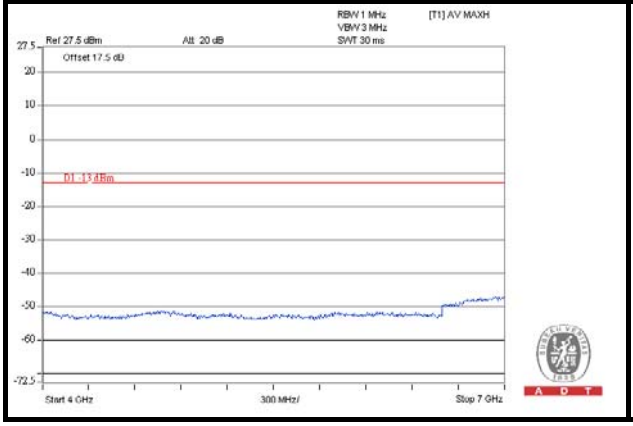
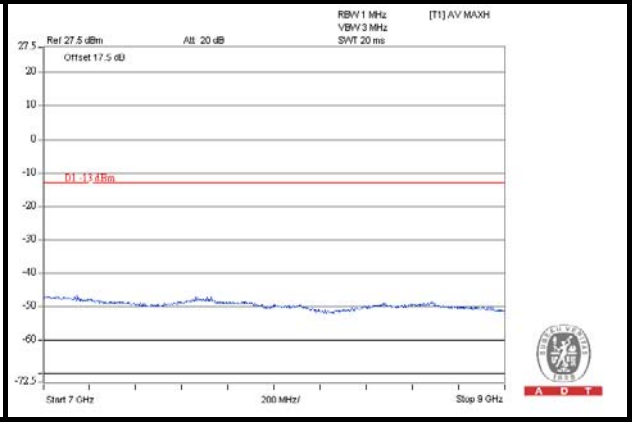
b. Measuring frequency range is from 9kHz to 9GHz for LTE Band 13 & 17 and from 9kHz to 20GHz for WCDMA & LTE Band 4. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

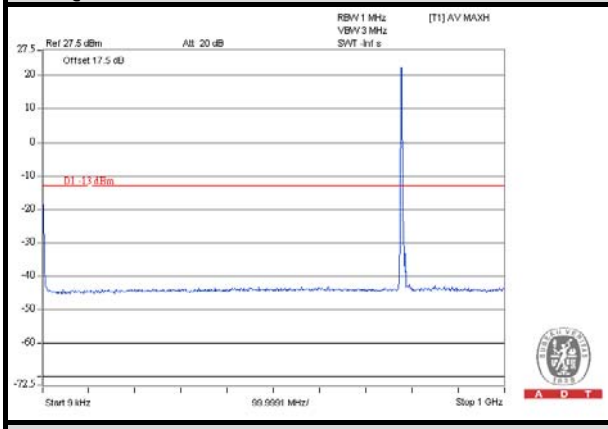
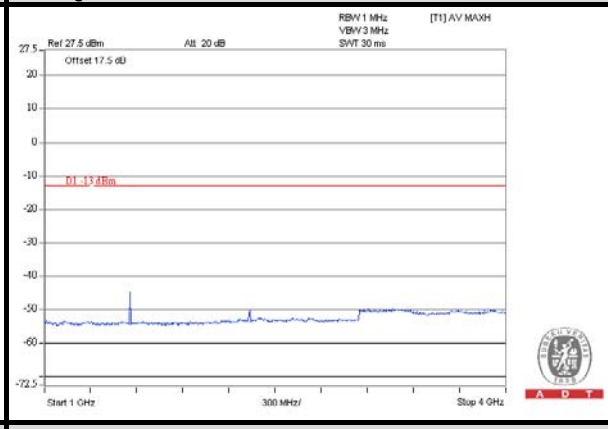
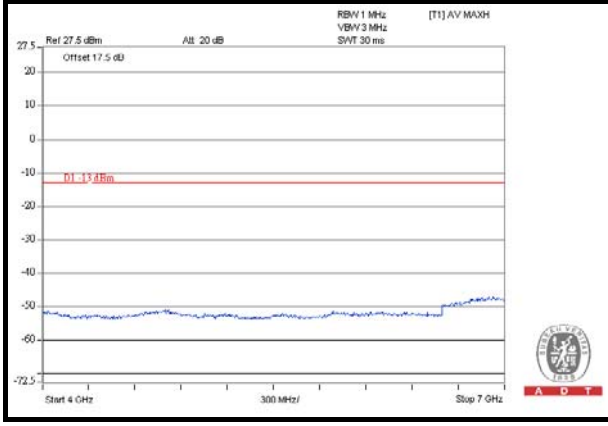
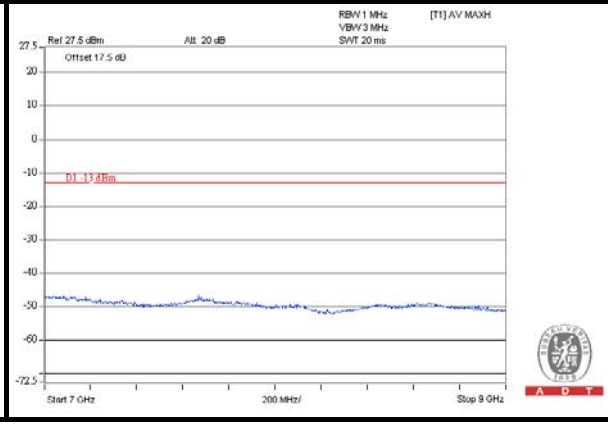
### 4.6.3 TEST SETUP

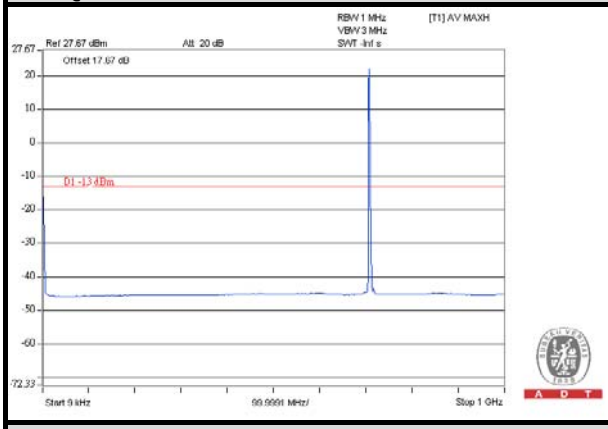
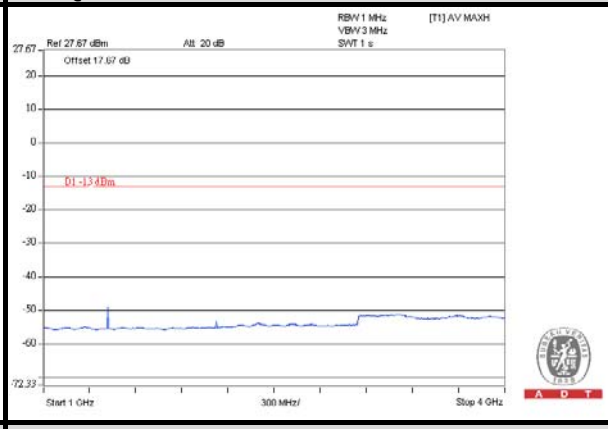
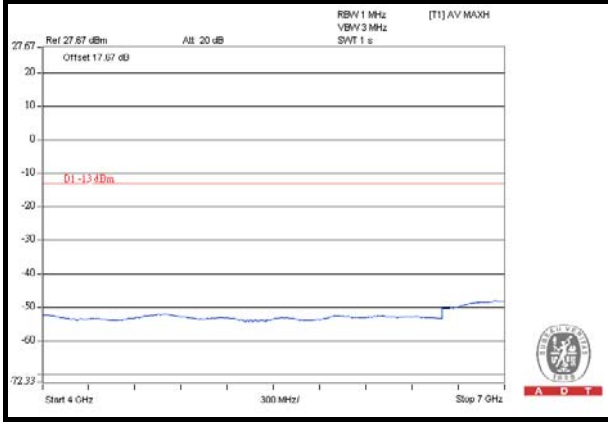
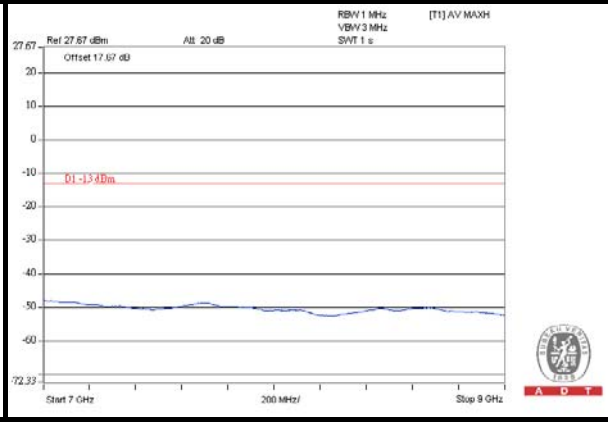


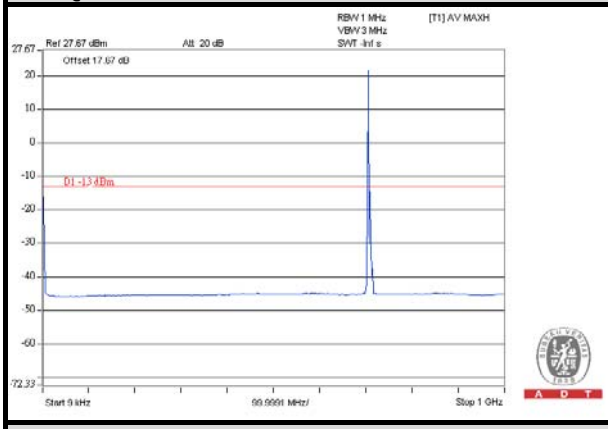
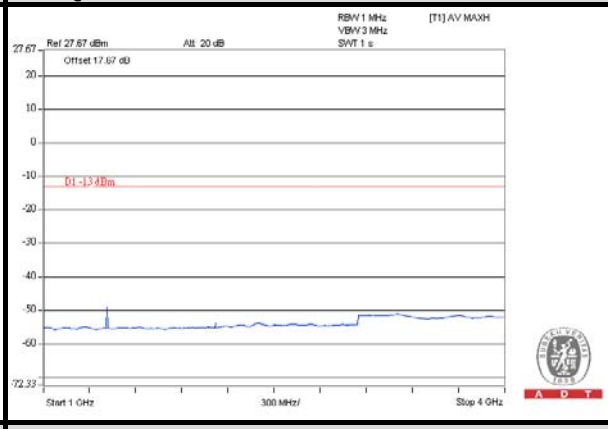
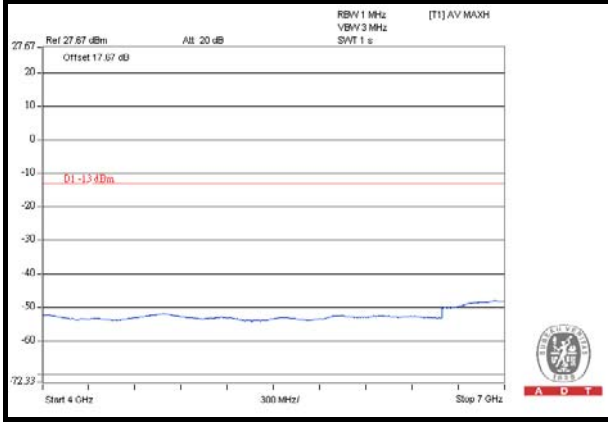
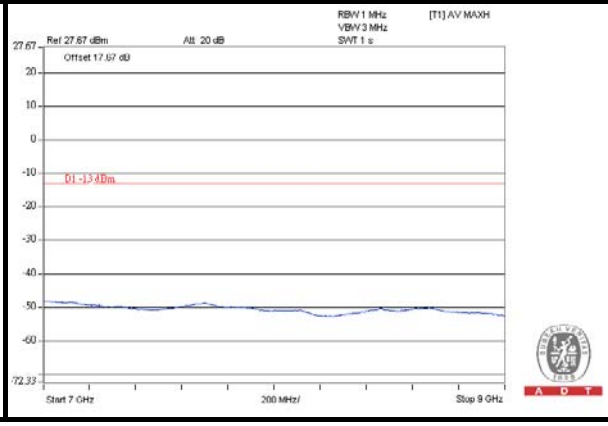
## 4.6.4 TEST RESULTS

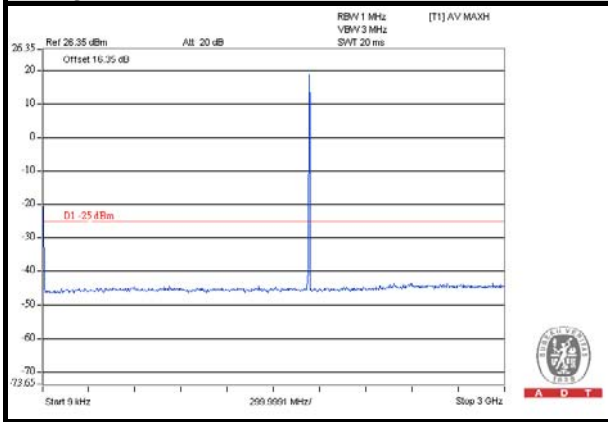
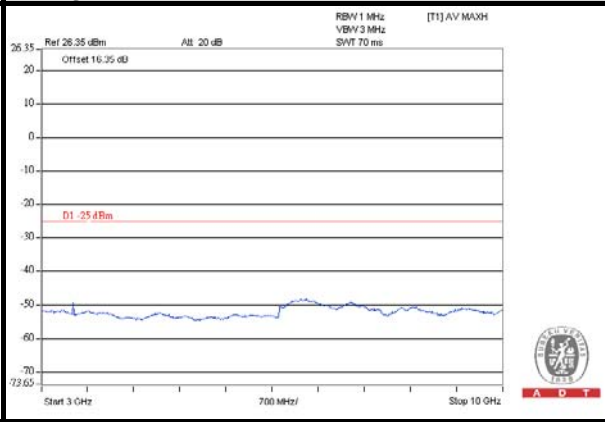
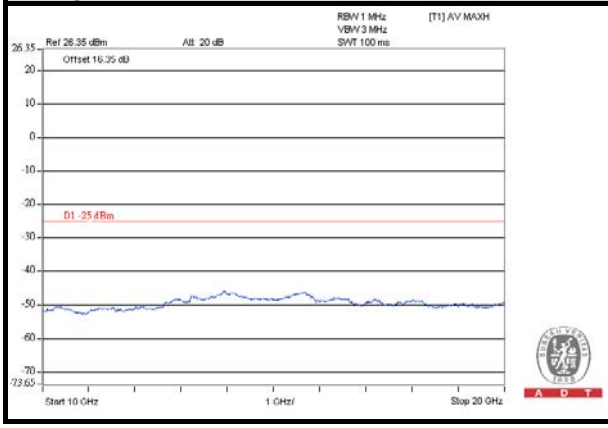
| WCDMA | |
|---|---|
| CHANNEL 1413 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

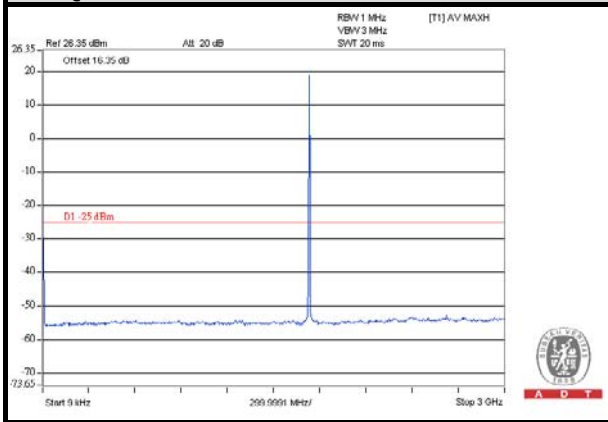
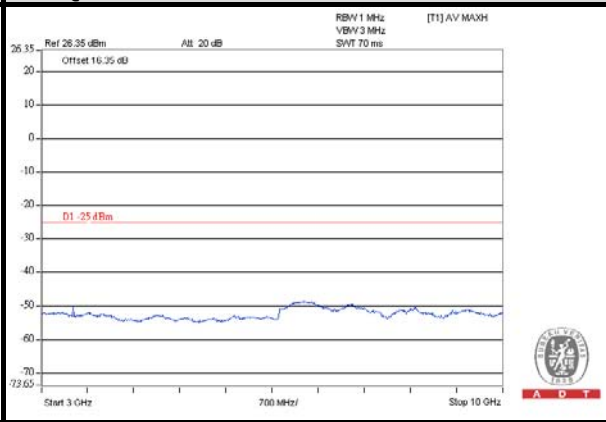
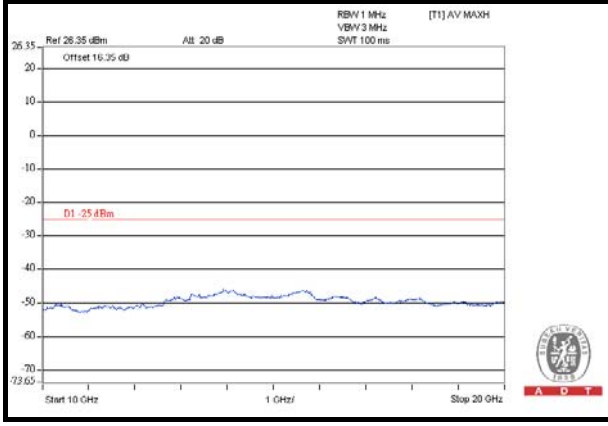
| LTE Band 13 (Channel Bandwidth: 5MHz) | |
|---|---|
| CHANNEL 23230 | |
| FREQUENCY RANGE : 9kHz~1GHz | FREQUENCY RANGE : 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE : 4GHz~7GHz | FREQUENCY RANGE :7GHz~9GHz |
|  |  |

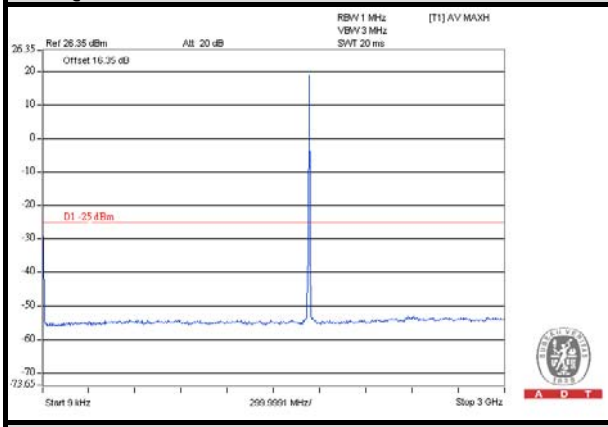
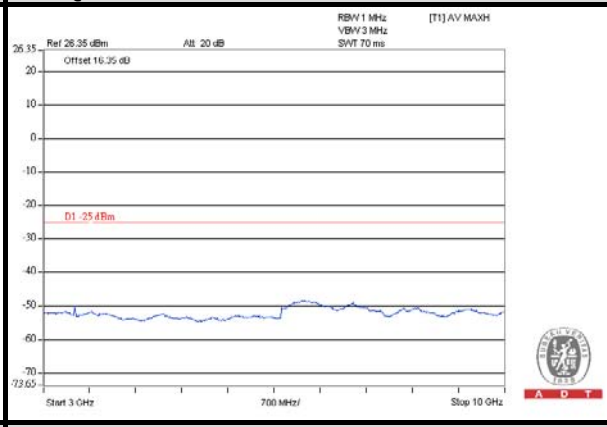
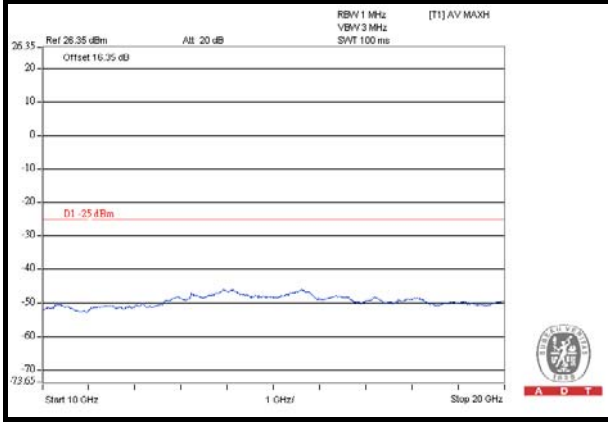
| LTE Band 13 (Channel Bandwidth: 10MHz) | |
|---|---|
| CHANNEL 23230 | |
| FREQUENCY RANGE : 9kHz~1GHz | FREQUENCY RANGE : 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE : 4GHz~7GHz | FREQUENCY RANGE :7GHz~9GHz |
|  |  |

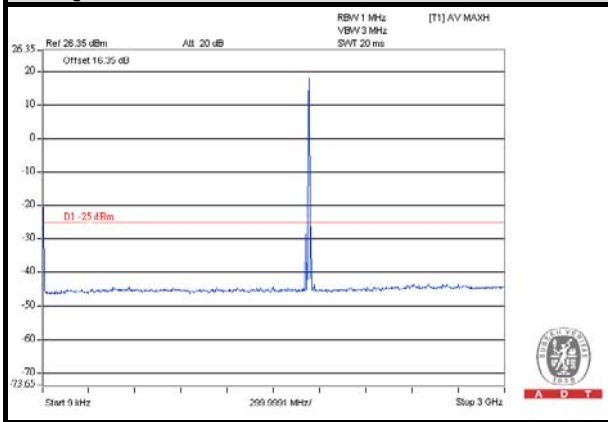
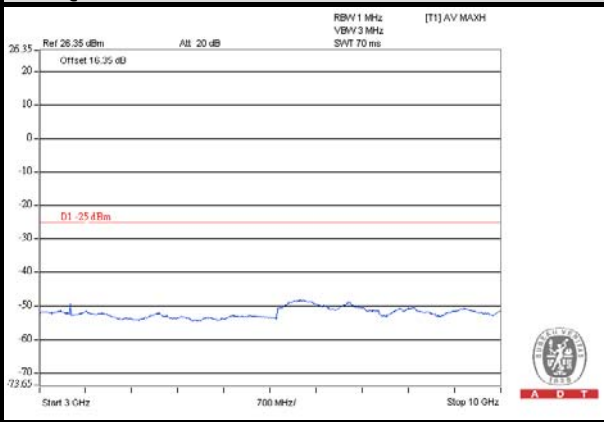
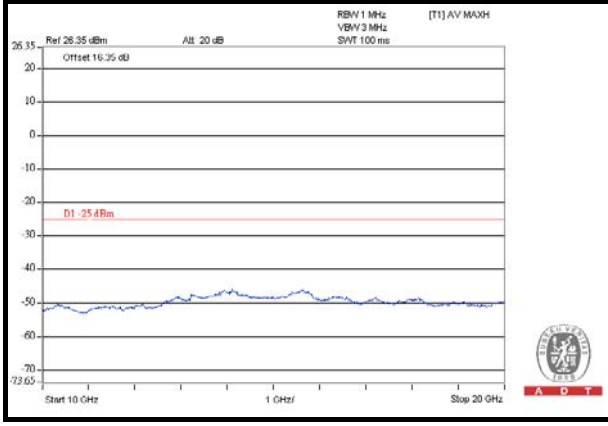
| LTE Band 17 (Channel Bandwidth: 5MHz) | |
|---|---|
| CHANNEL 23790 | |
| FREQUENCY RANGE : 9kHz~1GHz | FREQUENCY RANGE : 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE : 4GHz~7GHz | FREQUENCY RANGE :7GHz~9GHz |
|  |  |

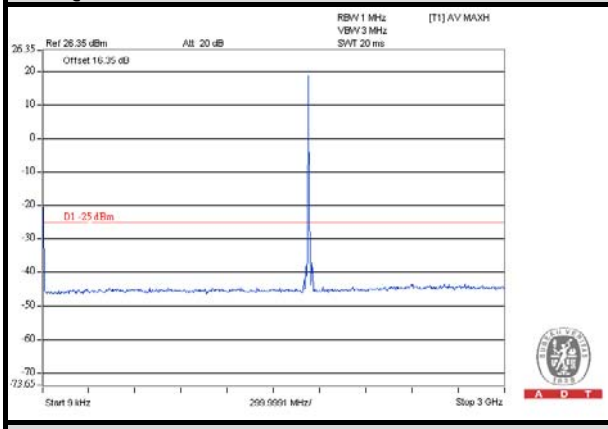
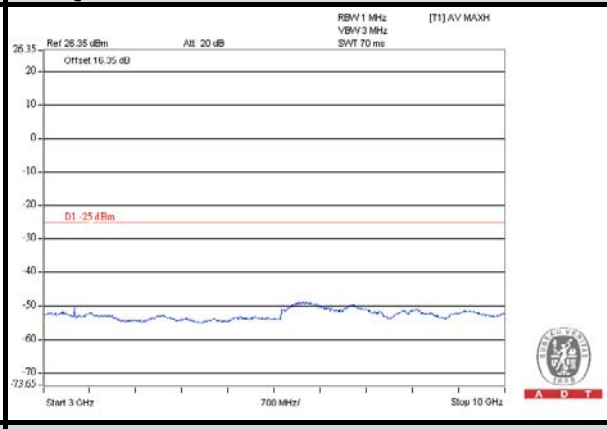
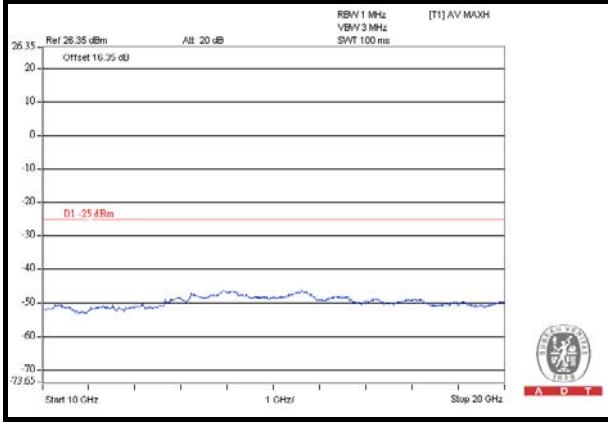
| LTE Band 17 (Channel Bandwidth: 10MHz) | |
|---|---|
| CHANNEL 23790 | |
| FREQUENCY RANGE : 9kHz~1GHz | FREQUENCY RANGE : 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE : 4GHz~7GHz | FREQUENCY RANGE :7GHz~9GHz |
|  |  |

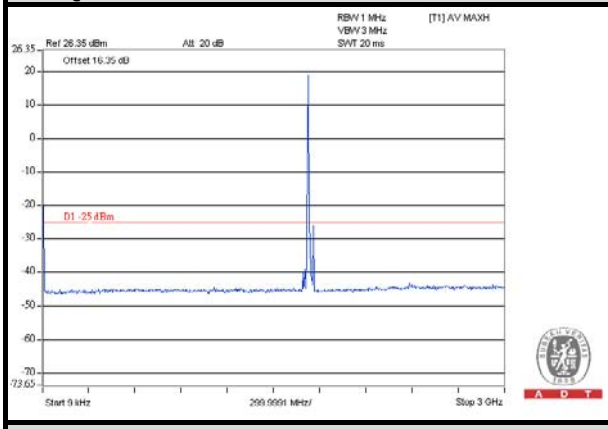
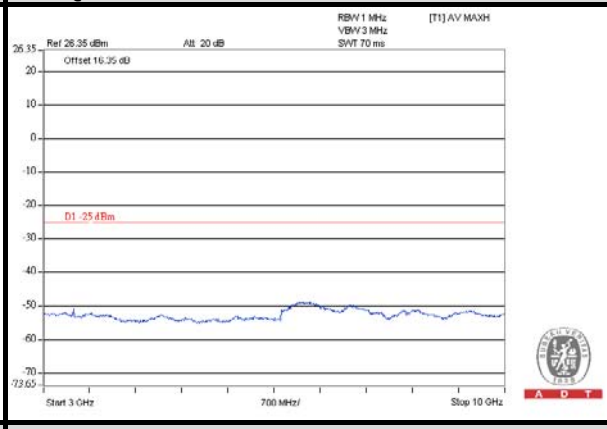
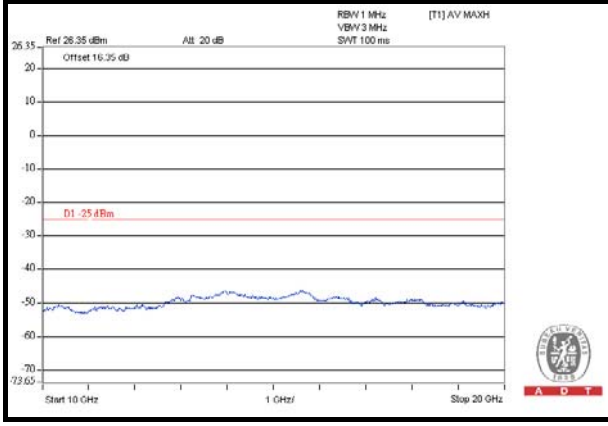
| LTE Band 4 (Channel Bandwidth: 1.4MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

| LTE Band 4 (Channel Bandwidth: 3MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

| LTE Band 4 (Channel Bandwidth: 5MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

| LTE Band 4 (Channel Bandwidth: 10MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

| LTE Band 4 (Channel Bandwidth: 15MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

| LTE Band 4 (Channel Bandwidth: 20MHz) | |
|---|---|
| CHANNEL 20175 | |
| FREQUENCY RANGE : 9kHz~3GHz | FREQUENCY RANGE : 3GHz~10GHz |
|  |  |
| FREQUENCY RANGE : 10GHz~20GHz | |
|  | |

## 4.7 RADIATED EMISSION MEASUREMENT

### 4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

### 4.7.2 TEST PROCEDURES

a. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

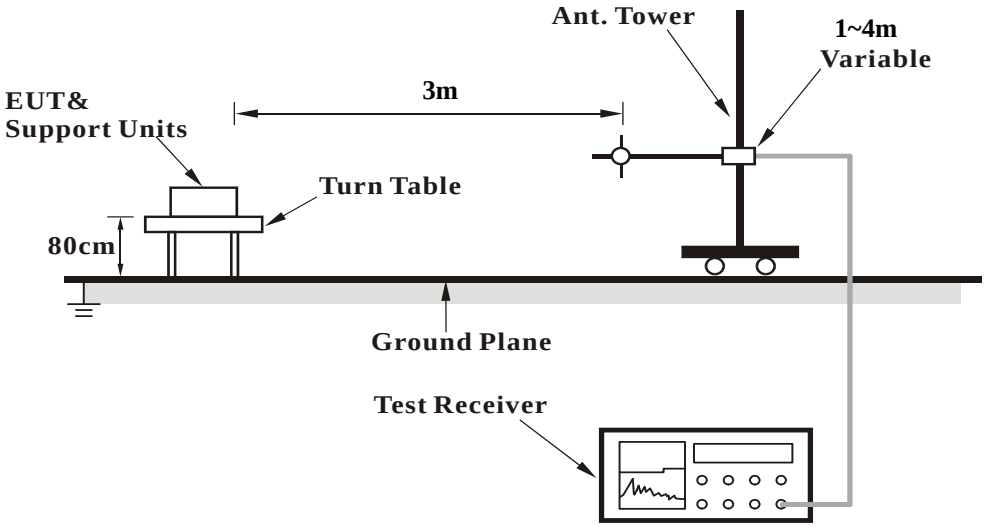
d. ERP power can be calculated form EIRP power by subtracting the gain of dipole, ERP power = E.I.P.R power - 2.15dBi.

**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 4.7.3 DEVIATION FROM TEST STANDARD

No deviation

### 4.7.4 TEST SETUP




For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 4.7.5 TEST RESULTS

**Below 1GHz**

**WCDMA:**

| MODE | TX channel 1413 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 54.56 | 32.64 | -13 | -47.51 | -8.91 | -56.42 | -43.42 |
| 2 | 163.17 | 28.81 | -13 | -60.28 | -0.24 | -60.52 | -47.52 |
| 3 | 226.85 | 34.32 | -13 | -61.08 | 3.99 | -57.09 | -44.09 |
| 4 | 477.74 | 27.71 | -13 | -69.03 | 2.85 | -66.18 | -53.18 |
| 5 | 710.37 | 31.26 | -13 | -65.09 | 1.45 | -63.63 | -50.63 |
| 6 | 848.73 | 29.32 | -13 | -65.23 | 1.05 | -64.18 | -51.18 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 54.47 | 28.20 | -13 | -51.92 | -8.93 | -60.85 | -47.85 |
| 2 | 142.18 | 26.32 | -13 | -66.99 | -1.24 | -68.24 | -55.24 |
| 3 | 263.89 | 27.55 | -13 | -67.14 | 3.95 | -63.19 | -50.19 |
| 4 | 304.39 | 27.34 | -13 | -68.63 | 3.70 | -64.92 | -51.92 |
| 5 | 479.48 | 34.41 | -13 | -64.09 | 2.50 | -61.59 | -48.59 |
| 6 | 745.49 | 28.23 | -13 | -68.14 | 0.89 | -67.25 | -54.25 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 13 (Channel Bandwidth 5MHz):

| MODE | TX channel 23230 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.31 | 30.29 | -13 | -42.17 | -14.09 | -56.26 | -43.26 |
| 2 | 48.46 | 36.69 | -13 | -35.77 | -14.09 | -49.86 | -36.86 |
| 3 | 106.71 | 37.50 | -13 | -52.81 | -0.81 | -53.62 | -40.62 |
| 4 | 269.5 | 35.49 | -13 | -59.37 | 3.91 | -55.46 | -42.46 |
| 5 | 344.89 | 36.85 | -13 | -60.80 | 3.61 | -57.19 | -44.19 |
| 6 | 358.07 | 39.18 | -13 | -58.69 | 3.55 | -55.13 | -42.13 |
| 7 | 376.68 | 40.30 | -13 | -57.57 | 3.55 | -54.01 | -41.01 |
| 8 | 895.48 | 43.98 | -13 | -54.39 | 0.54 | -53.84 | -40.84 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.79 | 40.99 | -13 | -31.64 | -13.97 | -45.62 | -32.62 |
| 2 | 50.66 | 42.97 | -13 | -29.66 | -13.97 | -43.64 | -30.64 |
| 3 | 62.08 | 42.15 | -13 | -41.22 | -6.97 | -48.20 | -35.20 |
| 4 | 108.42 | 44.10 | -13 | -46.12 | -0.86 | -46.98 | -33.98 |
| 5 | 367.27 | 35.75 | -13 | -62.11 | 3.50 | -58.60 | -45.60 |
| 6 | 382.47 | 38.31 | -13 | -59.55 | 3.50 | -56.04 | -43.04 |
| 7 | 396.82 | 38.47 | -13 | -59.35 | 3.37 | -55.98 | -42.98 |
| 8 | 895.37 | 43.28 | -13 | -55.08 | 0.54 | -54.53 | -41.53 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 13 (Channel Bandwidth 10MHz):

| MODE | TX channel 23230 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.33 | 29.66 | -13 | -42.80 | -14.09 | -56.89 | -43.89 |
| 2 | 48.94 | 37.63 | -13 | -34.83 | -14.09 | -48.92 | -35.92 |
| 3 | 106.59 | 37.73 | -13 | -52.59 | -0.81 | -53.40 | -40.40 |
| 4 | 270.57 | 36.25 | -13 | -58.65 | 3.91 | -54.74 | -41.74 |
| 5 | 345.85 | 36.48 | -13 | -61.21 | 3.60 | -57.60 | -44.60 |
| 6 | 359.27 | 39.36 | -13 | -58.51 | 3.55 | -54.96 | -41.96 |
| 7 | 378.58 | 40.88 | -13 | -56.98 | 3.55 | -53.44 | -40.44 |
| 8 | 896.09 | 44.36 | -13 | -54.06 | 0.54 | -53.52 | -40.52 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.31 | 40.92 | -13 | -31.32 | -14.24 | -45.56 | -32.56 |
| 2 | 49.28 | 42.71 | -13 | -36.37 | -9.63 | -46.00 | -33.00 |
| 3 | 61.58 | 42.88 | -13 | -40.19 | -7.12 | -47.31 | -34.31 |
| 4 | 108.47 | 42.97 | -13 | -47.31 | -0.83 | -48.14 | -35.14 |
| 5 | 365.17 | 36.99 | -13 | -60.87 | 3.50 | -57.37 | -44.37 |
| 6 | 381.22 | 37.33 | -13 | -60.52 | 3.43 | -57.09 | -44.09 |
| 7 | 397.54 | 37.07 | -13 | -60.78 | 3.36 | -57.42 | -44.42 |
| 8 | 896.51 | 42.30 | -13 | -56.14 | 0.53 | -55.61 | -42.61 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 17 (Channel Bandwidth 5MHz):

| MODE | TX channel 23790 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 34.2 | 29.31 | -13 | -43.47 | -13.87 | -57.34 | -44.34 |
| 2 | 46.87 | 37.70 | -13 | -35.08 | -13.87 | -48.95 | -35.95 |
| 3 | 107.26 | 35.73 | -13 | -54.55 | -0.83 | -55.38 | -42.38 |
| 4 | 270.08 | 36.27 | -13 | -58.61 | 3.91 | -54.70 | -41.70 |
| 5 | 346.58 | 35.62 | -13 | -62.10 | 3.60 | -58.50 | -45.50 |
| 6 | 361.29 | 38.80 | -13 | -59.06 | 3.54 | -55.53 | -42.53 |
| 7 | 377.53 | 40.79 | -13 | -57.07 | 3.54 | -53.54 | -40.54 |
| 8 | 897 | 44.25 | -13 | -54.24 | 0.53 | -53.72 | -40.72 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.81 | 42.21 | -13 | -30.43 | -13.97 | -44.40 | -31.40 |
| 2 | 47.4 | 42.83 | -13 | -29.81 | -13.97 | -43.78 | -30.78 |
| 3 | 63.38 | 42.57 | -13 | -41.58 | -6.60 | -48.18 | -35.18 |
| 4 | 109.51 | 41.06 | -13 | -49.10 | -0.89 | -49.99 | -36.99 |
| 5 | 365.65 | 35.96 | -13 | -61.90 | 3.51 | -58.39 | -45.39 |
| 6 | 381.04 | 37.27 | -13 | -60.59 | 3.51 | -57.08 | -44.08 |
| 7 | 396.75 | 38.64 | -13 | -59.18 | 3.37 | -55.81 | -42.81 |
| 8 | 896.23 | 42.23 | -13 | -56.20 | 0.53 | -55.66 | -42.66 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 17 (Channel Bandwidth 10MHz):

| MODE | TX channel 23790 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 35.12 | 28.42 | -13 | -44.69 | -13.65 | -58.34 | -45.34 |
| 2 | 46.38 | 38.26 | -13 | -34.85 | -13.65 | -48.50 | -35.50 |
| 3 | 108.19 | 36.67 | -13 | -53.56 | -0.85 | -54.41 | -41.41 |
| 4 | 270.14 | 37.05 | -13 | -57.83 | 3.91 | -53.92 | -40.92 |
| 5 | 346.31 | 34.64 | -13 | -63.07 | 3.60 | -59.46 | -46.46 |
| 6 | 360.65 | 39.09 | -13 | -58.77 | 3.54 | -55.24 | -42.24 |
| 7 | 376.92 | 40.96 | -13 | -56.90 | 3.54 | -53.36 | -40.36 |
| 8 | 897.54 | 44.55 | -13 | -53.98 | 0.52 | -53.47 | -40.47 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 33.43 | 41.82 | -13 | -30.68 | -14.06 | -44.75 | -31.75 |
| 2 | 47.62 | 42.63 | -13 | -29.87 | -14.06 | -43.94 | -30.94 |
| 3 | 64.36 | 42.64 | -13 | -42.10 | -6.31 | -48.41 | -35.41 |
| 4 | 109.4 | 41.60 | -13 | -48.57 | -0.89 | -49.45 | -36.45 |
| 5 | 365.62 | 35.18 | -13 | -62.68 | 3.51 | -59.17 | -46.17 |
| 6 | 380.62 | 37.10 | -13 | -60.76 | 3.51 | -57.25 | -44.25 |
| 7 | 396.64 | 39.58 | -13 | -58.24 | 3.37 | -54.87 | -41.87 |
| 8 | 896.84 | 42.47 | -13 | -56.01 | 0.53 | -55.48 | -42.48 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 1.4MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 33.24 | 31.48 | -13 | -40.95 | -14.11 | -55.06 | -42.06 |
| 2 | 50.52 | 35.43 | -13 | -43.26 | -9.89 | -53.15 | -40.15 |
| 3 | 107.22 | 36.83 | -13 | -47.66 | -6.43 | -54.09 | -41.09 |
| 4 | 270.84 | 34.85 | -13 | -55.44 | -0.83 | -56.26 | -43.26 |
| 5 | 346.2 | 37.30 | -13 | -60.40 | 3.60 | -56.80 | -43.80 |
| 6 | 357.4 | 39.04 | -13 | -58.83 | 3.56 | -55.27 | -42.27 |
| 7 | 378.4 | 39.00 | -13 | -58.86 | 3.45 | -55.41 | -42.41 |
| 8 | 896.4 | 43.51 | -13 | -54.93 | 0.53 | -54.40 | -41.40 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 32.7 | 39.41 | -13 | -32.83 | -14.24 | -47.07 | -34.07 |
| 2 | 51.6 | 40.52 | -13 | -38.56 | -9.63 | -48.19 | -35.19 |
| 3 | 63.48 | 43.88 | -13 | -40.33 | -6.57 | -46.90 | -33.90 |
| 4 | 107.22 | 42.96 | -13 | -47.32 | -0.83 | -48.15 | -35.15 |
| 5 | 368.6 | 36.99 | -13 | -60.87 | 3.50 | -57.37 | -44.37 |
| 6 | 381.2 | 38.85 | -13 | -59.00 | 3.43 | -55.57 | -42.57 |
| 7 | 395.2 | 36.65 | -13 | -61.16 | 3.38 | -57.77 | -44.77 |
| 8 | 896.4 | 44.57 | -13 | -53.87 | 0.53 | -53.34 | -40.34 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 3MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 34.1 | 31.17 | -13 | -41.38 | -14.03 | -55.41 | -42.41 |
| 2 | 50.47 | 36.09 | -13 | -42.60 | -9.89 | -52.49 | -39.49 |
| 3 | 108.15 | 36.58 | -13 | -53.70 | -0.83 | -54.53 | -41.53 |
| 4 | 269.92 | 34.77 | -13 | -51.95 | 5.67 | -46.28 | -33.28 |
| 5 | 345.52 | 37.28 | -13 | -60.42 | 3.60 | -56.82 | -43.82 |
| 6 | 358.34 | 38.72 | -13 | -59.14 | 3.45 | -55.69 | -42.69 |
| 7 | 378.23 | 39.31 | -13 | -58.55 | 3.45 | -55.10 | -42.10 |
| 8 | 897.12 | 44.16 | -13 | -54.28 | 0.53 | -53.75 | -40.75 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 31.79 | 38.98 | -13 | -32.93 | -14.46 | -47.39 | -34.39 |
| 2 | 51.58 | 39.92 | -13 | -39.15 | -9.63 | -48.79 | -35.79 |
| 3 | 63.26 | 42.97 | -13 | -41.11 | -6.63 | -47.74 | -34.74 |
| 4 | 107.01 | 42.61 | -13 | -47.68 | -0.82 | -48.51 | -35.51 |
| 5 | 369.53 | 37.61 | -13 | -60.25 | 3.49 | -56.75 | -43.75 |
| 6 | 381.12 | 39.75 | -13 | -58.10 | 3.43 | -54.67 | -41.67 |
| 7 | 396.07 | 37.38 | -13 | -60.43 | 3.37 | -57.06 | -44.06 |
| 8 | 896.8 | 44.24 | -13 | -54.23 | 0.53 | -53.71 | -40.71 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 5MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 33.37 | 30.40 | -13 | -41.86 | -14.22 | -56.09 | -43.09 |
| 2 | 49.64 | 36.33 | -13 | -42.36 | -9.89 | -52.25 | -39.25 |
| 3 | 109.07 | 36.63 | -13 | -53.65 | -0.83 | -54.48 | -41.48 |
| 4 | 270.43 | 34.55 | -13 | -70.18 | 1.91 | -68.27 | -55.27 |
| 5 | 345.75 | 36.53 | -13 | -50.18 | 5.67 | -44.51 | -31.51 |
| 6 | 358.65 | 37.80 | -13 | -59.91 | 3.60 | -56.31 | -43.31 |
| 7 | 377.72 | 38.52 | -13 | -59.34 | 3.45 | -55.89 | -42.89 |
| 8 | 896.46 | 43.54 | -13 | -54.90 | 0.53 | -54.37 | -41.37 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 32.17 | 38.26 | -13 | -33.79 | -14.37 | -48.16 | -35.16 |
| 2 | 52.53 | 39.43 | -13 | -39.99 | -9.40 | -49.39 | -36.39 |
| 3 | 63.95 | 43.01 | -13 | -41.48 | -6.43 | -47.92 | -34.92 |
| 4 | 107.01 | 41.61 | -13 | -48.68 | -0.82 | -49.51 | -36.51 |
| 5 | 370.27 | 38.28 | -13 | -59.58 | 3.49 | -56.09 | -43.09 |
| 6 | 382.11 | 39.89 | -13 | -57.96 | 3.43 | -54.53 | -41.53 |
| 7 | 395.12 | 37.72 | -13 | -60.09 | 3.38 | -56.70 | -43.70 |
| 8 | 897.28 | 44.78 | -13 | -53.73 | 0.52 | -53.21 | -40.21 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 10MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 32.5 | 30.98 | -13 | -41.18 | -14.29 | -55.47 | -42.47 |
| 2 | 49.33 | 36.95 | -13 | -41.31 | -10.18 | -51.49 | -38.49 |
| 3 | 109.8 | 36.15 | -13 | -53.99 | -0.90 | -54.89 | -41.89 |
| 4 | 271.39 | 35.12 | -13 | -59.80 | 3.90 | -55.90 | -42.90 |
| 5 | 345.82 | 35.86 | -13 | -61.83 | 3.60 | -58.22 | -45.22 |
| 6 | 357.76 | 37.91 | -13 | -59.96 | 3.55 | -56.40 | -43.40 |
| 7 | 377.25 | 39.25 | -13 | -58.61 | 3.45 | -55.15 | -42.15 |
| 8 | 897 | 44.50 | -13 | -53.99 | 0.53 | -53.47 | -40.47 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 31.21 | 39.20 | -13 | -32.50 | -14.60 | -47.10 | -34.10 |
| 2 | 52.61 | 38.45 | -13 | -41.00 | -9.38 | -50.38 | -37.38 |
| 3 | 63.34 | 43.03 | -13 | -41.10 | -6.61 | -47.71 | -34.71 |
| 4 | 106.92 | 41.37 | -13 | -48.93 | -0.82 | -49.75 | -36.75 |
| 5 | 369.99 | 37.35 | -13 | -60.51 | 3.49 | -57.02 | -44.02 |
| 6 | 381.46 | 40.89 | -13 | -56.96 | 3.43 | -53.53 | -40.53 |
| 7 | 395.14 | 38.33 | -13 | -59.48 | 3.38 | -56.09 | -43.09 |
| 8 | 897.29 | 45.72 | -13 | -52.79 | 0.52 | -52.27 | -39.27 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 15MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 32.56 | 31.82 | -13 | -40.37 | -14.27 | -54.64 | -41.64 |
| 2 | 49.55 | 37.33 | -13 | -41.01 | -10.13 | -51.14 | -38.14 |
| 3 | 110.02 | 35.16 | -13 | -54.97 | -0.91 | -55.88 | -42.88 |
| 4 | 270.78 | 34.86 | -13 | -60.04 | 3.90 | -56.14 | -43.14 |
| 5 | 346.06 | 35.88 | -13 | -61.98 | 3.62 | -58.37 | -45.37 |
| 6 | 358.55 | 38.59 | -13 | -59.28 | 3.55 | -55.73 | -42.73 |
| 7 | 376.42 | 38.29 | -13 | -59.57 | 3.46 | -56.11 | -43.11 |
| 8 | 896.81 | 45.14 | -13 | -53.34 | 0.53 | -52.81 | -39.81 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 30.83 | 39.64 | -13 | -31.92 | -14.70 | -46.62 | -33.62 |
| 2 | 51.8 | 38.01 | -13 | -41.14 | -9.58 | -50.72 | -37.72 |
| 3 | 62.73 | 42.42 | -13 | -41.34 | -6.79 | -48.13 | -35.13 |
| 4 | 106.16 | 42.26 | -13 | -48.08 | -0.80 | -48.88 | -35.88 |
| 5 | 370.72 | 36.45 | -13 | -61.41 | 3.49 | -57.92 | -44.92 |
| 6 | 381.12 | 40.75 | -13 | -57.10 | 3.43 | -53.67 | -40.67 |
| 7 | 394.37 | 38.52 | -13 | -59.28 | 3.39 | -55.89 | -42.89 |
| 8 | 898.11 | 44.84 | -13 | -53.74 | 0.51 | -53.23 | -40.23 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 20MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 31.82 | 31.02 | -13 | -40.90 | -14.46 | -55.35 | -42.35 |
| 2 | 50.03 | 36.84 | -13 | -41.67 | -10.01 | -51.68 | -38.68 |
| 3 | 110.98 | 36.09 | -13 | -53.99 | -0.93 | -54.92 | -41.92 |
| 4 | 271.12 | 34.88 | -13 | -60.03 | 3.90 | -56.13 | -43.13 |
| 5 | 345.15 | 36.17 | -13 | -61.49 | 3.61 | -57.88 | -44.88 |
| 6 | 359.15 | 38.57 | -13 | -59.30 | 3.55 | -55.75 | -42.75 |
| 7 | 375.68 | 37.43 | -13 | -60.43 | 3.46 | -56.97 | -43.97 |
| 8 | 897.7 | 44.60 | -13 | -53.95 | 0.52 | -53.43 | -40.43 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 30.64 | 38.77 | -13 | -32.72 | -14.74 | -47.47 | -34.47 |
| 2 | 51.74 | 37.64 | -13 | -41.49 | -9.59 | -51.09 | -38.09 |
| 3 | 62.18 | 42.53 | -13 | -36.60 | -9.59 | -46.20 | -33.20 |
| 4 | 105.46 | 42.78 | -13 | -40.65 | -6.95 | -47.59 | -34.59 |
| 5 | 369.96 | 36.32 | -13 | -54.06 | -0.78 | -54.84 | -41.84 |
| 6 | 380.84 | 40.96 | -13 | -56.90 | 3.49 | -53.41 | -40.41 |
| 7 | 395.01 | 39.13 | -13 | -58.67 | 3.39 | -55.29 | -42.29 |
| 8 | 897.57 | 45.03 | -13 | -53.51 | 0.52 | -52.99 | -39.99 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## Above 1GHz

### WCDMA:

| MODE | TX channel 1413 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3465.2 | 47.10 | -13 | -56.06 | 7.80 | -48.26 | -35.26 |
| 2 | 5197.8 | 49.80 | -13 | -54.73 | 7.05 | -47.67 | -34.67 |
| 3 | 6930.4 | 56.30 | -13 | -46.02 | 5.10 | -40.91 | -27.91 |
| 4 | 8663 | 55.9 | -13 | -46.81 | 4.23 | -42.58 | -29.58 |
| 5 | 10395.6 | 55.9 | -13 | -46.10 | 3.67 | -42.43 | -29.43 |
| 6 | 12128.2 | 59 | -13 | -42.48 | 4.38 | -38.10 | -25.10 |
| 7 | 13860.8 | 62.1 | -13 | -37.55 | 2.46 | -35.09 | -22.09 |
| 8 | 15593.4 | 63.5 | -13 | -34.44 | 3.73 | -30.71 | -17.71 |
| 9 | 17326 | 66.8 | -13 | -32.42 | 3.77 | -28.64 | -15.64 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3465.2 | 46.4 | -13 | -56.76 | 7.80 | -48.96 | -35.96 |
| 2 | 5197.8 | 49.8 | -13 | -54.73 | 7.05 | -47.67 | -34.67 |
| 3 | 6930.4 | 55.2 | -13 | -47.12 | 5.10 | -42.01 | -29.01 |
| 4 | 8663 | 55.8 | -13 | -46.91 | 4.23 | -42.68 | -29.68 |
| 5 | 10395.6 | 57.3 | -13 | -44.70 | 3.67 | -41.03 | -28.03 |
| 6 | 12128.2 | 58.8 | -13 | -42.68 | 4.38 | -38.30 | -25.30 |
| 7 | 13860.8 | 61.4 | -13 | -38.25 | 2.46 | -35.79 | -22.79 |
| 8 | 15593.4 | 62.8 | -13 | -35.14 | 3.73 | -31.41 | -18.41 |
| 9 | 17326 | 67.4 | -13 | -31.82 | 3.77 | -28.04 | -15.04 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 13 (Channel Bandwidth 5MHz):

| MODE | TX channel 23230 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1564 | 67.28 | -13 | -35.89 | 6.11 | -29.78 | -16.78 |
| 2 | 2346 | 74.78 | -13 | -22.38 | 6.50 | -15.88 | -2.88 |
| 3 | 3128 | 62.78 | -13 | -39.97 | 7.32 | -32.65 | -19.65 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1564 | 54.61 | -13 | -48.56 | 6.11 | -42.45 | -29.45 |
| 2 | 2346 | 62.64 | -13 | -34.52 | 6.50 | -28.02 | -15.02 |
| 3 | 3128 | 64.39 | -13 | -38.36 | 7.32 | -31.04 | -18.04 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 13 (Channel Bandwidth 10MHz):

| MODE | TX channel 23230 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1564 | 67.44 | -13 | -35.73 | 6.11 | -29.62 | -16.62 |
| **2** | **2346** | **74.93** | **-13** | **-22.23** | **6.50** | **-15.73** | **-2.73** |
| 3 | 3128 | 63.65 | -13 | -39.10 | 7.32 | -31.78 | -18.78 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1564 | 55.51 | -13 | -47.66 | 6.11 | -41.55 | -28.55 |
| 2 | 2346 | 62.56 | -13 | -34.60 | 6.50 | -28.10 | -15.10 |
| 3 | 3128 | 64.4 | -13 | -38.35 | 7.32 | -31.03 | -18.03 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 17 (Channel Bandwidth 5MHz):

| MODE | TX channel 23790 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1420 | 66.92 | -13 | -36.79 | 5.61 | -31.18 | -18.18 |
| 2 | 2130 | 77.14 | -13 | -23.19 | 6.83 | -16.36 | -3.36 |
| 3 | 2840 | 64.90 | -13 | -36.36 | 6.98 | -29.38 | -16.38 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1420 | 55.31 | -13 | -48.40 | 5.61 | -42.79 | -29.79 |
| 2 | 2130 | 59.91 | -13 | -40.42 | 6.83 | -33.59 | -20.59 |
| 3 | 2840 | 63.29 | -13 | -37.97 | 6.98 | -30.99 | -17.99 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 17 (Channel Bandwidth 10MHz):

| MODE | TX channel 23790 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1420 | 65.44 | -13 | -38.27 | 5.61 | -32.66 | -19.66 |
| 2 | 2130 | 75.45 | -13 | -24.88 | 6.83 | -18.05 | -5.05 |
| 3 | 2840 | 64.17 | -13 | -37.09 | 6.98 | -30.11 | -17.11 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | ERP (dBm) | Margin (dB) |
| 1 | 1420 | 54.76 | -13 | -48.95 | 5.61 | -43.34 | -30.34 |
| 2 | 2130 | 59.48 | -13 | -40.85 | 6.83 | -34.02 | -21.02 |
| 3 | 2840 | 62.98 | -13 | -38.28 | 6.98 | -31.30 | -18.30 |

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

## LTE Band 4 (Channel Bandwidth 1.4MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 55.70 | -13 | -47.46 | 7.80 | -39.66 | -26.66 |
| 2 | 5196 | 64.90 | -13 | -39.62 | 7.05 | -32.57 | -19.57 |
| 3 | 6928 | 61.00 | -13 | -41.33 | 5.11 | -36.22 | -23.22 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 47.66 | -13 | -55.50 | 7.80 | -47.70 | -34.70 |
| 2 | 5196 | 50.92 | -13 | -53.60 | 7.05 | -46.55 | -33.55 |
| 3 | 6928 | 53.86 | -13 | -48.47 | 5.11 | -43.36 | -30.36 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 4 (Channel Bandwidth 3MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 51.80 | -13 | -51.36 | 7.80 | -43.56 | -30.56 |
| 2 | 5196 | 59.90 | -13 | -44.62 | 7.05 | -37.57 | -24.57 |
| 3 | 6928 | 55.80 | -13 | -46.53 | 5.11 | -41.42 | -28.42 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 47.78 | -13 | -55.38 | 7.80 | -47.58 | -34.58 |
| 2 | 5196 | 50.66 | -13 | -53.86 | 7.05 | -46.81 | -33.81 |
| 3 | 6928 | 53.19 | -13 | -49.14 | 5.11 | -44.03 | -31.03 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 4 (Channel Bandwidth 5MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 51.07 | -13 | -52.09 | 7.80 | -44.29 | -31.29 |
| 2 | 5196 | 60.60 | -13 | -43.92 | 7.05 | -36.87 | -23.87 |
| 3 | 6928 | 56.32 | -13 | -46.01 | 5.11 | -40.90 | -27.90 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 47.37 | -13 | -55.79 | 7.80 | -47.99 | -34.99 |
| 2 | 5196 | 50.81 | -13 | -53.71 | 7.05 | -46.66 | -33.66 |
| 3 | 6928 | 52.33 | -13 | -50.00 | 5.11 | -44.89 | -31.89 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 4 (Channel Bandwidth 10MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 52.68 | -13 | -50.48 | 7.80 | -42.68 | -29.68 |
| 2 | 5196 | 59.61 | -13 | -44.91 | 7.05 | -37.86 | -24.86 |
| 3 | 6928 | 56.79 | -13 | -45.54 | 5.11 | -40.43 | -27.43 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 48.03 | -13 | -55.13 | 7.80 | -47.33 | -34.33 |
| 2 | 5196 | 51.32 | -13 | -53.20 | 7.05 | -46.15 | -33.15 |
| 3 | 6928 | 52.27 | -13 | -50.06 | 5.11 | -44.95 | -31.95 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 4 (Channel Bandwidth 15MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 51.83 | -13 | -51.33 | 7.80 | -43.53 | -30.53 |
| 2 | 5196 | 59.86 | -13 | -44.66 | 7.05 | -37.61 | -24.61 |
| 3 | 6928 | 57.21 | -13 | -45.12 | 5.11 | -40.01 | -27.01 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 48.85 | -13 | -54.31 | 7.80 | -46.51 | -33.51 |
| 2 | 5196 | 51.41 | -13 | -53.11 | 7.05 | -46.06 | -33.06 |
| 3 | 6928 | 53.25 | -13 | -49.08 | 5.11 | -43.97 | -30.97 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## LTE Band 4 (Channel Bandwidth 20MHz):

| MODE | TX channel 20175 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 51.94 | -13 | -51.22 | 7.80 | -43.42 | -30.42 |
| 2 | 5196 | 61.35 | -13 | -43.17 | 7.05 | -36.12 | -23.12 |
| 3 | 6928 | 56.98 | -13 | -45.35 | 5.11 | -40.24 | -27.24 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Margin (dB) |
| 1 | 3464 | 49.6 | -13 | -53.56 | 7.80 | -45.76 | -32.76 |
| 2 | 5196 | 52.12 | -13 | -52.40 | 7.05 | -45.35 | -32.35 |
| 3 | 6928 | 53.34 | -13 | -48.99 | 5.11 | -43.88 | -30.88 |

**REMARKS:**

1. EIRP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

# 5 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following: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The address and road map of all our labs can be found in our web site also.

# 6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

**---END---**