# FCC TEST REPORT

# (PART 22)

| | |
|---|---|
| **REPORT NO.:** | RF141218E07 |
| **MODEL NO.:** | T77W595 |
| **FCC ID:** | MCLT77W595 |
| **RECEIVED:** | Dec. 18, 2014 |
| **TESTED:** | Dec. 26, 2014 to Jan. 15, 2015 |
| **ISSUED:** | Jan. 27, 2015 |

| | |
|---|---|
| **APPLICANT:** | HON HAI PRECISION IND. CO., LTD. |
| **ADDRESS:** | 5F-1,5 Hsin-An Road Hsinchu, Science-Based Industrial Park Taiwan, R.O.C. |

| | |
|---|---|
| **ISSUED BY:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory |
| **LAB ADDRESS:** | No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C. |
| **TEST LOCATION (1):** | No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C. |
| **TEST LOCATION (2):** | No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C. |

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

# TABLE OF CONTENTS

# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| RF141218E07 | Original release | Jan. 27, 2015 |

# 1 CERTIFICATION

| | |
|---|---|
| **PRODUCT:** | LTE Cat4 PCI Express M.2 Module |
| **MODEL:** | T77W595 |
| **BRAND:** | FOXCONN |
| **APPLICANT:** | HON HAI PRECISION IND. CO., LTD. |
| **TESTED:** | Dec. 26, 2014 to Jan. 15, 2015 |
| **TEST SAMPLE:** | ENGINEERING SAMPLE |
| **STANDARDS:** | **FCC PART 22, Subpart H** |

The above equipment (Model: T77W595) 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:** Jan. 27, 2015
( Lori Chung, Specialist )

**Approved by :** _____ , **Date:** Jan. 27, 2015
( May Chen, Manager )

# 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 22 & Part 2 | | | |
|---|---|---|---|
| **STANDARD SECTION** | **TEST TYPE** | **RESULT** | **REMARK** |
| 2.1046<br>22.913 (a) | Effective Radiated Power | PASS | Meet the requirement of limit. |
| 2.1055<br>22.355 | Frequency Stability | PASS | Meet the requirement of limit. |
| 2.1049 | Occupied Bandwidth | PASS | Meet the requirement of limit. |
| 22.917 | Band Edge Measurements | PASS | Meet the requirement of limit. |
| 2.1051<br>22.917 | Conducted Spurious Emissions | PASS | Meet the requirement of limit. |
| 2.1053<br>22.917 | Radiated Spurious Emissions | PASS | Meet the requirement of limit.<br>Minimum passing margin is -9.13dB at 1673MHz. |

## 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 ~ 1GHz – Chamber G | 5.37 dB |
| | 30MHz ~ 1GHz – Chamber H | 5.43 dB |
| | 1GHz ~6GHz – Chamber G | 3.65 dB |
| | 1GHz ~6GHz – Chamber H | 3.72 dB |
| | 6GHz ~ 18GHz – Chamber G | 3.88 dB |
| | 6GHz ~ 18GHz – Chamber H | 4.00 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 test – GPRS, EDGE, WCDMA, CDMA2000:**

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| MXE EMI Receiver Agilent | N9038A | MY51210105 | July 21, 2014 | July 20, 2015 |
| Pre-Amplifier Mini-Circuits | ZFL-1000VH2 B | AMP-ZFL-03 | Nov. 12, 2014 | Nov. 11, 2015 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-360 | Feb. 26, 2014 | Feb. 25, 2015 |
| RF Cable | NA | CHGCAB_001 | Oct. 04, 2014 | Oct. 03, 2015 |
| Horn_Antenna AISI | AIH.8018 | 0000320091110 | Aug. 27, 2014 | Aug. 26, 2015 |
| Pre-Amplifier Agilent | 8449B | 3008A02578 | June 24, 2014 | June 23, 2015 |
| RF Cable | NA | 131205<br>131214<br>SNMY23684/4 | Jan. 17, 2014 | Jan. 16, 2015 |
| Spectrum Analyzer R&S | FSV40 | 100964 | July 05, 2014 | July 04, 2015 |
| Pre-Amplifier EMCI | EMC184045 | 980143 | Jan. 17, 2014 | Jan. 16, 2015 |
| Horn_Antenna SCHWARZBECK | BBHA 9170 | 9170-424 | Aug. 26, 2014 | Aug. 25, 2015 |
| RF Cable | NA | RF104-121<br>RF104-204 | Dec. 11, 2014 | Dec. 10, 2015 |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |

**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. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: Jan. 08, 2015

**For Radiated Spurious Emissions test – LTE band 5 & 26:**

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| MXE EMI Receiver Agilent | N9038A | MY50010156 | Aug. 11, 2014 | Aug. 10, 2015 |
| Pre-Amplifier Mini-Circuits | ZFL-1000VH2 B | AMP-ZFL-04 | Nov. 12, 2014 | Nov. 11, 2015 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-361 | Feb. 27, 2014 | Feb. 26, 2015 |
| RF Cable | NA | CHHCAB_001 | Oct. 05, 2014 | Oct. 04, 2015 |
| Horn_Antenna AISI | AIH.8018 | 0000220091110 | Aug. 26, 2014 | Aug. 25, 2015 |
| Pre-Amplifier Agilent | 8449B | 300801923 | Oct. 28, 2014 | Oct. 27, 2015 |
| RF Cable | NA | 131206<br>131215<br>SNMY23685/4 | Jan. 17, 2014 | Jan. 16, 2015 |
| Spectrum Analyzer R&S | FSV40 | 100964 | July 05, 2014 | July 04, 2015 |
| Pre-Amplifier EMCI | EMC184045 | 980143 | Jan. 17, 2014 | Jan. 16, 2015 |
| Horn_Antenna SCHWARZBECK | BBHA 9170 | 9170-424 | Aug. 26, 2014 | Aug. 25, 2015 |
| RF Cable | NA | RF104-121<br>RF104-204 | Dec. 11, 2014 | Dec. 10, 2015 |
| Software | ADT_Radiated _V8.7.07 | NA | NA | NA |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |

**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: Jan. 15, 2015

**For other test items:**

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Spectrum Analyzer R&S | FSP 40 | 100037 | Oct. 30, 2014 | Oct. 29, 2015 |
| Spectrum Analyzer Agilent | E4446A | MY48250253 | Dec. 18, 2014 | Dec. 17, 2015 |
| AC Power Source EXTECH Electronics | 6502 | 1140503 | NA | NA |
| Temperature & Humidity Chamber TERCHY | MHU-225AU | 911033 | Dec. 08, 2014 | Dec. 07, 2015 |
| DC Power Supply GOOD WILL INSTRUMENT CO., LTD. | GPC - 3030D | 7700087 | NA | NA |
| ESG Vector signal generator Agilent | E4438C | MY47271330 506 602 UNJ | Apr. 28, 2014 | Apr. 27, 2015 |
| Upgrade the software license on current E4438C ESG Agilent | E4438CK-403 | ESG E4_010004 | NA | NA |
| ESG Vector signal generator Agilent | E4438C | MY45094468/ 005 506 602 UK6 UNJ | Dec. 05, 2014 | Dec. 04, 2015 |
| Upgrade the software license on current E4438C ESG Agilent | E4438CK-403 | ESG E4_010001 | NA | NA |
| Power meter Anritsu | ML2495A | 0824006 | May 22, 2014 | May 21, 2015 |
| Power sensor Anritsu | MA2411B | 0738172 | May 22, 2014 | May 21, 2015 |
| Software | ADT_RF Test Software V6.6.5.3 | NA | NA | NA |
| Universal Radio Communication Tester R&S | CMU200 | 121040 | Dec. 16, 2014 | Dec. 15, 2015 |
| Radio Communication Analyzer Anritsu | MT8820C | 6201127458 | Mar. 05, 2014 | Mar. 04, 2015 |

**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: Dec. 26, 2014 to Jan. 13, 2015

# 3 GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| **EUT** | LTE Cat4 PCI Express M.2 Module | |
| **MODEL NO.** | T77W595 | |
| **POWER SUPPLY** | 3.3Vdc from host equipment | |
| **MODULATION TYPE** | **GPRS** | GMSK |
| | **EDGE** | GMSK, 8PSK |
| | **WCDMA** | BPSK |
| | **CDMA2000** | QPSK, OQPSK, HPSK |
| | **LTE** | QPSK, 16QAM |
| **FREQUENCY RANGE** | **GPRS/EDGE** | 824.2MHz ~ 848.8MHz |
| | **WCDMA** | 826.4MHz ~ 846.6MHz |
| | **CDMA2000 & EVDO** | 824.7MHz ~ 848.31MHz |
| | **LTE 5 (Channel Bandwidth: 1.4MHz)** | 824.7MHz ~ 848.3MHz |
| | **LTE 5 (Channel Bandwidth: 3MHz)** | 825.5MHz ~ 847.5MHz |
| | **LTE 5 (Channel Bandwidth: 5MHz)** | 826.5MHz ~ 846.5MHz |
| | **LTE 5 (Channel Bandwidth: 10MHz)** | 829MHz ~ 844MHz |
| | **LTE 26 (Channel Bandwidth: 1.4MHz)** | 824.7MHz ~ 848.3MHz |
| | **LTE 26 (Channel Bandwidth: 3MHz)** | 825.5MHz ~ 847.5MHz |
| | **LTE 26 (Channel Bandwidth: 5MHz)** | 826.5MHz ~ 846.5MHz |
| | **LTE 26 (Channel Bandwidth: 10MHz)** | 829MHz ~ 844MHz |
| | **LTE 26 (Channel Bandwidth: 15MHz)** | 831.5MHz ~ 841.5MHz |
| **MAX. ERP POWER** | **GPRS** | 1905.5mW |
| | **EDGE** | 776.2mW |
| | **WCDMA** | 259.4mW |
| | **CDMA2000 & EVDO** | 305.072mW |
| | **LTE 5 (Channel Bandwidth: 1.4MHz)** | 380.2mW |
| | **LTE 5 (Channel Bandwidth: 3MHz)** | 446.7mW |
| | **LTE 5 (Channel Bandwidth: 5MHz)** | 426.6mW |
| | **LTE 5 (Channel Bandwidth: 10MHz)** | 354.8mW |
| | **LTE 26 (Channel Bandwidth: 1.4MHz)** | 323.6mW |
| | **LTE 26 (Channel Bandwidth: 3MHz)** | 309.0mW |
| | **LTE 26 (Channel Bandwidth: 5MHz)** | 275.4mW |
| | **LTE 26 (Channel Bandwidth: 10MHz)** | 302.0mW |
| | **LTE 26 (Channel Bandwidth: 15MHz)** | 288.4mW |

| | | |
|---|---|---|
| **EMISSION DESIGNATOR** | **GPRS** | 242KGXW |
| | **EDGE** | 246KG7W |
| | **WCDMA** | 4M18F9W |
| | **CDMA2000 & EVDO** | 1M28F9W |
| | **LTE 5 (Channel Bandwidth: 1.4MHz)** | QPSK: 1M24G7D |
| | | 16QAM: 1M23W7D |
| | **LTE 5 (Channel Bandwidth: 3MHz)** | QPSK: 2M74G7D |
| | | 16QAM: 2M73W7D |
| | **LTE 5 (Channel Bandwidth: 5MHz)** | QPSK: 4M50G7D |
| | | 16QAM: 4M48W7D |
| | **LTE 5 (Channel Bandwidth: 10MHz)** | QPSK: 9M03G7D |
| | | 16QAM: 9M00W7D |
| | **LTE 26 (Channel Bandwidth: 1.4MHz)** | QPSK: 1M09G7D |
| | | 16QAM: 1M09W7D |
| | **LTE 26 (Channel Bandwidth: 3MHz)** | QPSK: 2M73G7D |
| | | 16QAM: 2M73W7D |
| | **LTE 26 (Channel Bandwidth: 5MHz)** | QPSK: 4M50G7D |
| | | 16QAM: 4M48W7D |
| | **LTE 26 (Channel Bandwidth: 10MHz)** | QPSK: 9M00G7D |
| | | 16QAM: 9M00W7D |
| | **LTE 26 (Channel Bandwidth: 15MHz)** | QPSK: 13M4G7D |
| | | 16QAM: 13M4W7D |
| **ANTENNA TYPE** | Refer to NOTE | |
| **I/O PORTS** | Refer to users' manual | |
| **DATA CABLE** | NA | |
| **ACCESSORY DEVICES** | NA | |

**NOTE:**

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

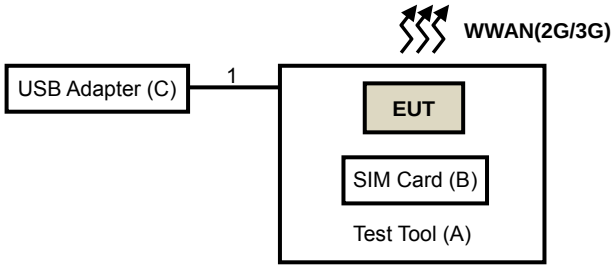
| Ant. Set | Transmitter Circuit | Brand | Model | Operation Band | Ant. Gain(dBi) <including cable loss> | Frequency range (MHz ~ MHz) | Ant. Type | Connecter Type |
|---|---|---|---|---|---|---|---|---|
| LTE 1 | Main | NA | NA | LTE(4G) B12 / B17 | 5.19 | 699 ~ 716 | PIFA | I-PEX MHF IV |
| | | | | LTE(4G) B28 | 5.2 | 703 ~ 748 | | |
| | Aux | | | LTE(4G) B12 / B17 | 5.19 | 699 ~ 716 | | |
| | | | | LTE(4G) B28 | 5.2 | 703 ~ 748 | | |

| Ant. Set | Transmitter Circuit | Brand | Model | Operation Band | Ant. Gain(dBi) <including cable loss> | Frequency range (MHz ~ MHz) | Ant. Type | Connecter Type |
|---|---|---|---|---|---|---|---|---|
| LTE 2 | Main | NA | NA | LTE(4G) B13 | 6.14 | 777 ~ 787 | PIFA | I-PEX MHF IV |
| | | | | LTE(4G) B20 | 3.77 | 832 ~ 862 | | |
| | | | | CDMA(3G) BC10 | 3.22 | 816 ~ 824 | | |
| | | | | LTE(4G) B26 | 3.4 | 814 ~ 849 | | |
| | | | | WCDMA(3G) B5 / GSM850(2G) / LTE(4G) B5 / CDMA(3G) BC0 | 3.4 | 824 ~ 849 | | |
| | | | | WCDMA(3G) B8 / E-GSM900(2G) / LTE(4G) B8 | 4.39 | 880 ~ 915 | | |
| | Aux | | | LTE(4G) B13 | 6.14 | 777 ~ 787 | | |
| | | | | LTE(4G) B20 | 3.77 | 832 ~ 862 | | |
| | | | | CDMA(3G) BC10 | 3.22 | 816 ~ 824 | | |
| | | | | LTE(4G) B26 | 3.4 | 814 ~ 849 | | |
| | | | | WCDMA(3G) B5 / GSM850(2G) / LTE(4G) B5 / CDMA(3G) BC0 | 3.4 | 824 ~ 849 | | |
| | | | | WCDMA(3G) B8 / E-GSM900(2G) / LTE(4G) B8 | 4.39 | 880 ~ 915 | | |
| LTE 3 | Main | NA | NA | WCDMA(3G) B2 / LTE(4G) B2 / B25 / PCS1900(2G) / CDMA(3G) BC1 | 3.62 | 1850 to 1915 | PIFA | I-PEX MHF IV |
| | | | | WCDMA(3G) B4 / DCS1800(2G) / LTE(4G) B3 / B4 | 4.25 | 1710 to 1785 | | |
| | | | | LTE(4G) B7 | 4.37 | 2500 to 2570 | | |
| | | | | WCDMA(3G) B1/ LTE(4G) B1 | 3.82 | 1920 to 1980 | | |
| | | | | GPS | 2.19 | 1575.42 ~ 1602 | | |
| | Aux | | | WCDMA(3G) B2 / LTE(4G) B2 / B25 / PCS1900(2G) / CDMA(3G) BC1 | 3.62 | 1850 to 1915 | | |
| | | | | WCDMA(3G) B4 / DCS1800(2G) / LTE(4G) B3 / B4 | 4.25 | 1710 to 1785 | | |
| | | | | LTE(4G) B7 | 4.37 | 2500 to 2570 | | |
| | | | | WCDMA(3G) B1/ LTE(4G) B1 | 3.82 | 1920 to 1980 | | |
| | | | | GPS | 2.19 | 1575.42 ~ 1602 | | |

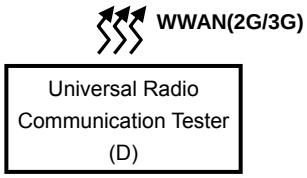
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

## 3.2 CONFIGURATION OF SYSTEM UNDER TEST

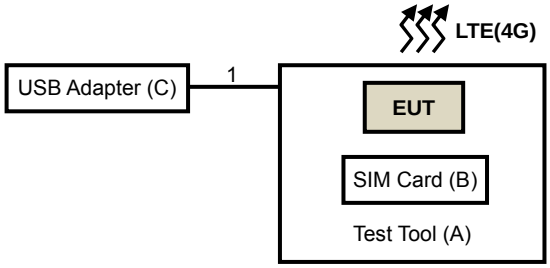
**For GPRS, EDGE, WCDMA, CDMA2000 mode:**



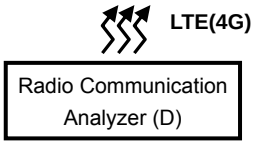

**Remote site**



**For LTE mode:**




**Remote site**



## 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

| No. | Product | Brand | Model No. | Serial No. | FCC ID | Remark |
|---|---|---|---|---|---|---|
| A | Test Tool | FOXCONN | NA | NA | NA | Supplied by Client |
| B | SIM Card | NA | NA | NA | NA | Provided by Lab |
| C | USB Adapter | NICELINK | US-T128 | NA | NA | Provided by Lab |
| D | Universal Radio Communication Tester (For GPRS, EDGE, WCDMA, CDMA2000 mode) | R&S | CMU200 | 121040 | NA | Provided by Lab |
| | Radio Communication Analyzer (For LTE mode) | Anritsu | MT8820C | 6201127458 | NA | Provided by Lab |

**NOTE:**

1. All power cords of the above support units are non-shielded (1.8 m).

| No. | Cable | Qty. | Length (m) | Shielded (Yes/ No) | Cores (Number) | Remark |
|---|---|---|---|---|---|---|
| 1 | DC | 1 | 1 | No | 0 | Provided by Lab |

## 3.4 TEST ITEM AND TEST CONFIGURATION

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. Following channel(s) was (were) selected for the final test as listed below:

**GPRS & EDGE MODE**

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|
| ERP | 128 to 251 | 128, 189, 251 | GPRS, EDGE |
| FREQUENCY STABILITY | 128 to 251 | 189 | GPRS, EDGE |
| OCCUPIED BANDWIDTH | 128 to 251 | 128, 189, 251 | GPRS, EDGE |
| PEAK TO AVERAGE RATIO | 128 to 251 | 128, 189, 251 | GPRS, EDGE |
| BAND EDGE | 128 to 251 | 128, 251 | GPRS, EDGE |
| CONDCUDETED EMISSION | 128 to 251 | 189 | GPRS, EDGE |
| RADIATED EMISSION | 128 to 251 | 189 | GPRS, EDGE |

**WCDMA MODE**

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|
| ERP | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| FREQUENCY STABILITY | 4132 to 4233 | 4182 | WCDMA |
| OCCUPIED BANDWIDTH | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| PEAK TO AVERAGE RATIO | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| BAND EDGE | 4132 to 4233 | 4132, 4233 | WCDMA |
| CONDCUDETED EMISSION | 4132 to 4233 | 4182 | WCDMA |
| RADIATED EMISSION | 4132 to 4233 | 4182 | WCDMA |

**CDMA2000 & EVDO**

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|
| ERP | 1013 to 777 | 1013, 384, 777 | CDMA2000 |
| FREQUENCY STABILITY | 1013 to 777 | 384 | CDMA2000 |
| OCCUPIED BANDWIDTH | 1013 to 777 | 1013, 384, 777 | CDMA2000 |
| PEAK TO AVERAGE RATIO | 1013 to 777 | 1013, 384, 777 | CDMA2000 |
| BAND EDGE | 1013 to 777 | 1013, 777 | CDMA2000 |
| CONDCUDETED EMISSION | 1013 to 777 | 384 | CDMA2000 |
| RADIATED EMISSION | 1013 to 777 | 384 | CDMA2000 |

**Note:** This device was tested under EVDO mode and CDMA2000 mode. The worst case was found in CDMA2000 mode.

## LTE BAND 5 MODE

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20525 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK, 16QAM | 15 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK, 16QAM | 1 RB / 2 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK, 16QAM | 1 RB / 7 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK, 16QAM | 1 RB / 12 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK, 16QAM | 1 RB / 24 RB Offset |
| BAND EDGE | 20407 to 20643 | 20407 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | | 20643 | 1.4MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | 20415 to 20635 | 20415 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | | 20635 | 3MHz | QPSK | 1 RB / 14 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | 20425 to 20625 | 20425 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | | 20625 | 5MHz | QPSK | 1 RB / 24 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 20450 to 20600 | 20450 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| | | 20600 | 10MHz | QPSK | 1 RB / 49 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| CONDCUDETED EMISSION | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20525 | 3MHz | QPSK | 75 RB / 0 RB Offset |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1 RB / 74 RB Offset |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 75 RB / 0 RB Offset |
| RADIATED EMISSION | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20525 | 3MHz | QPSK | 100 RB / 0 RB Offset |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1 RB / 99 RB Offset |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 100 RB / 0 RB Offset |

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

## LTE BAND 26 MODE

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| ERP | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 26797 to 27033 | 26915 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 26805 to 27025 | 26915 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 26840 to 26990 | 26915 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK, 16QAM | 15 RB / 0 RB Offset |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK, 16QAM | 75 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 26797 to 27033 | 26797, 26915, 27033 | 1.4MHz | QPSK, 16QAM | 100 RB / 0 RB Offset |
| | 26805 to 27025 | 26805, 26915, 27025 | 3MHz | QPSK, 16QAM | 1 RB / 2 RB Offset |
| | 26815 to 27015 | 26815, 26915, 27015 | 5MHz | QPSK, 16QAM | 1 RB / 7 RB Offset |
| | 26840 to 26990 | 26840, 26915, 26990 | 10MHz | QPSK, 16QAM | 1 RB / 12 RB Offset |
| | 26865 to 26965 | 26865, 26915, 26965 | 15MHz | QPSK, 16QAM | 1 RB / 24 RB Offset |
| BAND EDGE | 26797 to 27033 | 26797 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | | 27033 | 1.4MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | 26805 to 27025 | 26805 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | | 27025 | 3MHz | QPSK | 1 RB / 14 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | 26815 to 27015 | 26815 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | | 27015 | 5MHz | QPSK | 1 RB / 24 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 26840 to 26990 | 26840 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| | | 26990 | 10MHz | QPSK | 1 RB / 49 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| | 26865 to 26965 | 26865 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | 75 RB / 0 RB Offset |
| | | 26965 | 15MHz | QPSK | 1 RB / 74 RB Offset |
| | | | | | 75 RB / 0 RB Offset |

| TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|
| CONDCUDETED EMISSION | 26797 to 27033 | 26915 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 26805 to 27025 | 26915 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 26840 to 26990 | 26915 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| RADIATED EMISSION | 26797 to 27033 | 26915 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 26805 to 27025 | 26915 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 26815 to 27015 | 26915 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 26840 to 26990 | 26915 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | 26865 to 26965 | 26915 | 15MHz | QPSK | 1 RB / 0 RB Offset |

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

**TEST CONDITION:**

| TEST ITEM | ENVIRONMENTAL CONDITIONS | INPUT POWER (SYSTEM) | TESTED BY |
|---|---|---|---|
| ERP | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| FREQUENCY STABILITY | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| OCCUPIED BANDWIDTH | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| PEAK TO AVERAGE RATIO | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| BAND EDGE | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| CONDCUDETED EMISSION | 25deg. C, 63%RH | 120Vac, 60Hz | James Chan |
| RADIATED EMISSION | 25deg. C, 65%RH | 120Vac, 60Hz | Robert Cheng |

## 3.5 EUT OPERATING CONDITIONS

The EUT links to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

## 3.6 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 22**
**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

Mobile / Portable station are limited to 7 watts e.r.p.

### 4.1.2 TEST PROCEDURES

**EIRP / ERP MEASUREMENT:**

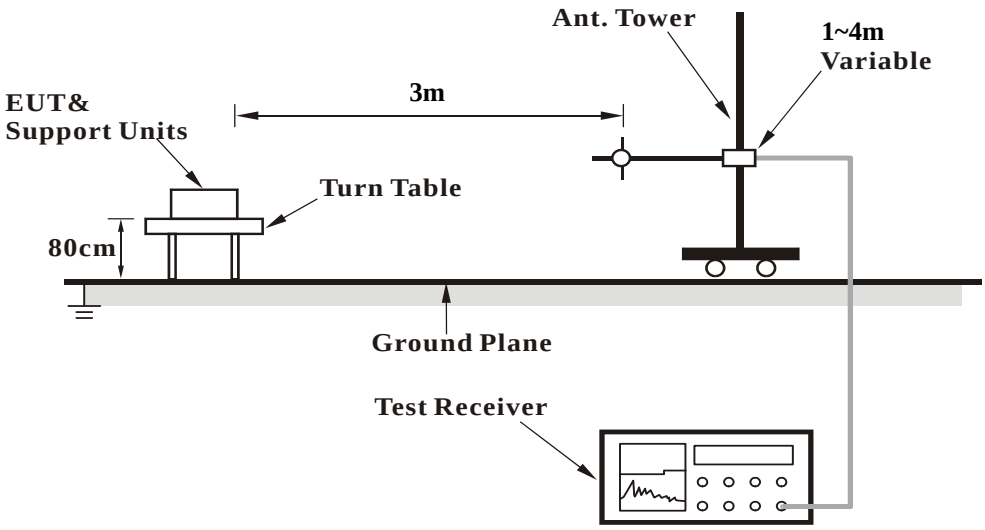
a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GPRS & EDGE, 5MHz for WCDMA, and 10MHz for LTE mode.
b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table 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.
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 b. Record the power level of S.G
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. ERP power can be calculated form EIRP power by subtracting the gain of dipole, ERP power = EIRP power - 2.15dBi.

**CONDUCTED POWER MEASUREMENT:**

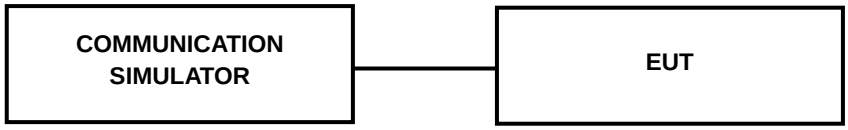
The EUT was set up for the maximum power with GPRS, EDGE, WCDMA & LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

### 4.1.3 TEST SETUP

**EIRP / ERP MEASUREMENT:**




**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 | GPRS850 | | |
|---|---|---|---|
| Channel | 128 | 189 | 251 |
| Frequency (MHz) | 824.2 | 836.4 | 848.8 |
| GPRS 8 (GMSK, 1 slot) | 32.04 | **32.09** | 32.06 |
| GPRS 10 (GMSK, 2 slot) | 31.86 | 31.91 | 31.88 |
| GPRS 11 (GMSK, 3 slot) | 31.63 | 31.68 | 31.65 |
| GPRS 12 (GMSK, 4 slot) | 31.41 | 31.46 | 31.43 |
| EDGE 8 (GMSK, 1 Uplink) | 32.01 | 32.06 | 32.03 |
| EDGE 10 (GMSK, 2 Uplink) | 31.73 | 31.78 | 31.75 |
| EDGE 11 (GMSK, 3 Uplink) | 31.57 | 31.62 | 31.59 |
| EDGE 12 (GMSK, 4 Uplink) | 31.37 | 31.42 | 31.39 |
| EDGE 8 (8PSK, 1 Uplink) | 26.96 | 27.01 | 26.98 |
| EDGE 10 (8PSK, 2 Uplink) | 26.89 | 26.94 | 26.91 |
| EDGE 11 (8PSK, 3 Uplink) | 26.72 | 26.77 | 26.74 |
| EDGE 12 (8PSK, 4 Uplink) | 26.56 | 26.61 | 26.58 |

| Band | WCDMA V | | |
|---|---|---|---|
| Channel | 4132 | 4182 | 4233 |
| Frequency (MHz) | 826.4 | 836.4 | 846.6 |
| RMC 12.2K | 24.14 | **24.35** | 24.10 |
| HSDPA Subtest-1 | 23.37 | 23.34 | 23.29 |
| HSDPA Subtest-2 | 23.44 | 23.46 | 23.34 |
| HSDPA Subtest-3 | 22.92 | 22.95 | 22.84 |
| HSDPA Subtest-4 | 22.88 | 22.92 | 22.90 |
| HSUPA Subtest-1 | 23.40 | 23.53 | 23.30 |
| HSUPA Subtest-2 | 22.34 | 22.44 | 22.29 |
| HSUPA Subtest-3 | 22.00 | 22.14 | 21.91 |
| HSUPA Subtest-4 | 22.28 | 22.27 | 22.26 |
| HSUPA Subtest-5 | 22.97 | 23.50 | 22.91 |

| Band | CDMA2000 BC0 | | |
|---|---|---|---|
| Channel | 1013 | 384 | 777 |
| Frequency (MHz) | 824.7 | 836.52 | 848.31 |
| RC1+SO55 | 24.43 | 24.49 | 24.44 |
| RC3+SO55 | 24.48 | **24.53** | 24.49 |
| RC3+SO32(+ F-SCH) | 24.43 | 24.48 | 24.44 |
| RC3+SO32(+SCH) | 24.44 | 24.46 | 24.45 |
| RTAP 153.6 | 24.44 | 24.44 | 24.45 |
| RETAP 4096 | 24.49 | 24.52 | 24.50 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 20407 | Mid CH 20525 | High CH 20643 | | Low CH 20407 | Mid CH 20525 | High CH 20643 | |
| | | | 824.7 MHz | 836.5 MHz | 848.3 MHz | | 824.7 MHz | 836.5 MHz | 848.3 MHz | |
| 5 / 1.4M | 1 | 0 | 23.31 | 23.31 | 23.27 | 0 | 22.24 | 22.24 | 22.20 | 1 |
| | 1 | 2 | 23.33 | **23.36** | 23.29 | 0 | 22.26 | **22.29** | 22.22 | 1 |
| | 1 | 5 | 23.24 | 23.28 | 23.24 | 0 | 22.17 | 22.21 | 22.17 | 1 |
| | 3 | 0 | 23.33 | 23.35 | 23.29 | 0 | 22.26 | 22.28 | 22.22 | 1 |
| | 3 | 1 | 23.33 | 23.33 | 23.33 | 0 | 22.26 | 22.26 | 22.26 | 1 |
| | 3 | 3 | 23.20 | 23.32 | 23.27 | 0 | 22.13 | 22.25 | 22.20 | 1 |
| | 6 | 0 | 22.45 | 22.42 | 22.38 | 1 | 21.38 | 21.35 | 21.31 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 20415 | Mid CH 20525 | High CH 20635 | | Low CH 20415 | Mid CH 20525 | High CH 20635 | |
| | | | 825.5 MHz | 836.5 MHz | 847.5 MHz | | 825.5 MHz | 836.5 MHz | 847.5 MHz | |
| 5 / 3M | 1 | 0 | 23.37 | 23.37 | 23.33 | 0 | 22.28 | 22.28 | 22.24 | 1 |
| | 1 | 7 | 23.26 | **23.38** | 23.33 | 0 | 22.17 | **22.29** | 22.24 | 1 |
| | 1 | 14 | 23.30 | 23.34 | 23.30 | 0 | 22.21 | 22.25 | 22.21 | 1 |
| | 8 | 0 | 22.39 | 22.41 | 22.35 | 1 | 21.30 | 21.32 | 21.26 | 2 |
| | 8 | 3 | 22.39 | 22.39 | 22.39 | 1 | 21.30 | 21.30 | 21.30 | 2 |
| | 8 | 7 | 22.39 | 22.42 | 22.35 | 1 | 21.30 | 21.33 | 21.26 | 2 |
| | 15 | 0 | 22.51 | 22.48 | 22.44 | 1 | 21.42 | 21.39 | 21.35 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 20425 | Mid CH 20525 | High CH 20625 | | Low CH 20425 | Mid CH 20525 | High CH 20625 | |
| | | | 826.5 MHz | 836.5 MHz | 846.5 MHz | | 826.5 MHz | 836.5 MHz | 846.5 MHz | |
| 5 / 5M | 1 | 0 | 23.40 | 23.40 | 23.36 | 0 | 22.37 | 22.37 | 22.33 | 1 |
| | 1 | 12 | 23.29 | **23.41** | 23.36 | 0 | 22.26 | **22.38** | 22.33 | 1 |
| | 1 | 24 | 23.33 | 23.37 | 23.33 | 0 | 22.30 | 22.34 | 22.30 | 1 |
| | 12 | 0 | 22.42 | 22.44 | 22.38 | 1 | 21.39 | 21.41 | 21.35 | 2 |
| | 12 | 6 | 22.42 | 22.42 | 22.42 | 1 | 21.39 | 21.39 | 21.39 | 2 |
| | 12 | 13 | 22.42 | 22.45 | 22.38 | 1 | 21.39 | 21.42 | 21.35 | 2 |
| | 25 | 0 | 22.54 | 22.51 | 22.47 | 1 | 21.51 | 21.48 | 21.44 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 20450 | Mid CH 20525 | High CH 20600 | | Low CH 20450 | Mid CH 20525 | High CH 20600 | |
| | | | 829.0 MHz | 836.5 MHz | 844.0 MHz | | 829.0 MHz | 836.5 MHz | 844.0 MHz | |
| 5 / 10M | 1 | 0 | 23.48 | 23.48 | 23.44 | 0 | 22.42 | 22.42 | 22.38 | 1 |
| | 1 | 24 | 23.37 | **23.49** | 23.44 | 0 | 22.31 | **22.43** | 22.38 | 1 |
| | 1 | 49 | 23.41 | 23.45 | 23.41 | 0 | 22.35 | 22.39 | 22.35 | 1 |
| | 25 | 0 | 22.50 | 22.52 | 22.46 | 1 | 21.44 | 21.46 | 21.40 | 2 |
| | 25 | 12 | 22.50 | 22.53 | 22.50 | 1 | 21.44 | 21.47 | 21.44 | 2 |
| | 25 | 25 | 22.50 | 22.50 | 22.46 | 1 | 21.44 | 21.44 | 21.40 | 2 |
| | 50 | 0 | 22.62 | 22.59 | 22.55 | 1 | 21.56 | 21.53 | 21.49 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 26797 | Mid CH 26915 | High CH 27033 | | Low CH 26797 | Mid CH 26915 | High CH 27033 | |
| | | | 824.7 MHz | 836.5 MHz | 848.3 MHz | | 824.7 MHz | 836.5 MHz | 848.3 MHz | |
| 26 / 1.4M | 1 | 0 | 23.14 | 23.13 | 23.15 | 0 | 22.17 | 22.16 | 22.18 | 1 |
| | 1 | 2 | 23.31 | 23.30 | 23.27 | 0 | 22.34 | 22.33 | 22.30 | 1 |
| | 1 | 5 | 23.16 | 23.15 | 22.81 | 0 | 22.19 | 22.18 | 21.84 | 1 |
| | 3 | 0 | 23.29 | 23.28 | 23.19 | 0 | 22.32 | 22.31 | 22.22 | 1 |
| | 3 | 1 | 23.19 | 23.18 | **23.32** | 0 | 22.22 | 22.21 | **22.35** | 1 |
| | 3 | 3 | 23.30 | 23.29 | 23.19 | 0 | 22.33 | 22.32 | 22.22 | 1 |
| | 6 | 0 | 22.31 | 22.30 | 22.29 | 1 | 21.34 | 21.33 | 21.32 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 26805 | Mid CH 26915 | High CH 27025 | | Low CH 26805 | Mid CH 26915 | High CH 27025 | |
| | | | 825.5 MHz | 836.5 MHz | 847.5 MHz | | 825.5 MHz | 836.5 MHz | 847.5 MHz | |
| 26 / 3M | 1 | 0 | 23.20 | 23.19 | 23.21 | 0 | 22.21 | 22.20 | 22.22 | 1 |
| | 1 | 7 | **23.36** | 23.35 | 23.25 | 0 | **22.37** | 22.36 | 22.26 | 1 |
| | 1 | 14 | 23.22 | 23.21 | 22.87 | 0 | 22.23 | 22.22 | 21.88 | 1 |
| | 8 | 0 | 22.35 | 22.34 | 22.25 | 1 | 21.36 | 21.35 | 21.26 | 2 |
| | 8 | 3 | 22.25 | 22.24 | 22.38 | 1 | 21.26 | 21.25 | 21.39 | 2 |
| | 8 | 7 | 22.27 | 22.26 | 22.33 | 1 | 21.28 | 21.27 | 21.34 | 2 |
| | 15 | 0 | 22.37 | 22.36 | 22.35 | 1 | 21.38 | 21.37 | 21.36 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 26815 | Mid CH 26915 | High CH 27015 | | Low CH 26815 | Mid CH 26915 | High CH 27015 | |
| | | | 826.5 MHz | 836.5 MHz | 846.5 MHz | | 826.5 MHz | 836.5 MHz | 846.5 MHz | |
| 26 / 5M | 1 | 0 | 23.28 | 23.28 | 23.29 | 0 | 22.26 | 22.26 | 22.27 | 1 |
| | 1 | 12 | **23.44** | **23.44** | 23.33 | 0 | **22.42** | 22.42 | 22.31 | 1 |
| | 1 | 24 | 23.30 | 23.30 | 22.95 | 0 | 22.28 | 22.28 | 21.93 | 1 |
| | 12 | 0 | 22.43 | 22.43 | 22.33 | 1 | 21.41 | 21.41 | 21.31 | 2 |
| | 12 | 6 | 22.33 | 22.33 | 22.46 | 1 | 21.31 | 21.31 | 21.44 | 2 |
| | 12 | 13 | 22.35 | 22.35 | 22.41 | 1 | 21.33 | 21.33 | 21.39 | 2 |
| | 25 | 0 | 22.45 | 22.45 | 22.43 | 1 | 21.43 | 21.43 | 21.41 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 26840 | Mid CH 26915 | High CH 26990 | | Low CH 26840 | Mid CH 26915 | High CH 26990 | |
| | | | 829.0 MHz | 836.5 MHz | 844.0 MHz | | 829.0 MHz | 836.5 MHz | 844.0 MHz | |
| 26 / 10M | 1 | 0 | 23.40 | 23.39 | 23.38 | 0 | 22.34 | 22.33 | 22.32 | 1 |
| | 1 | 24 | **23.56** | 23.55 | 23.42 | 0 | **22.50** | 22.49 | 22.36 | 1 |
| | 1 | 49 | 23.42 | 23.41 | 23.04 | 0 | 22.36 | 22.35 | 21.98 | 1 |
| | 25 | 0 | 22.55 | 22.54 | 22.42 | 1 | 21.49 | 21.48 | 21.36 | 2 |
| | 25 | 12 | 22.45 | 22.44 | 22.55 | 1 | 21.39 | 21.38 | 21.49 | 2 |
| | 25 | 25 | 22.47 | 22.46 | 22.50 | 1 | 21.41 | 21.40 | 21.44 | 2 |
| | 50 | 0 | 22.57 | 22.56 | 22.52 | 1 | 21.51 | 21.50 | 21.46 | 2 |

| LTE Band / BW (Hz) | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Low CH 26865 | Mid CH 26915 | High CH 26965 | | Low CH 26865 | Mid CH 26915 | High CH 26965 | |
| | | | 831.5 MHz | 836.5 MHz | 841.5 MHz | | 831.5 MHz | 836.5 MHz | 841.5 MHz | |
| 26 / 15M | 1 | 0 | 23.15 | 23.13 | 23.12 | 0 | 22.09 | 22.07 | 22.05 | 1 |
| | 1 | 37 | 23.15 | 23.13 | 23.16 | 0 | **22.25** | 22.07 | 22.09 | 1 |
| | 1 | 74 | **23.22** | 23.20 | 22.78 | 0 | 22.11 | 22.14 | 21.71 | 1 |
| | 36 | 0 | 22.18 | 22.16 | 22.16 | 1 | 21.24 | 21.10 | 21.09 | 2 |
| | 36 | 19 | 22.18 | 22.16 | 22.29 | 1 | 21.14 | 21.10 | 21.22 | 2 |
| | 36 | 39 | 22.33 | 22.31 | 22.24 | 1 | 21.16 | 21.25 | 21.17 | 2 |
| | 75 | 0 | 22.29 | 22.27 | 22.26 | 1 | 21.26 | 21.21 | 21.19 | 2 |

**ERP POWER (dBm)**

| GPRS | | | | | | |
|---|---|---|---|---|---|---|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 128 | 824.2 | 29.8 | 2.75 | 32.5 | 1778.3 |
| | 189 | 836.4 | 30.0 | 2.78 | 32.8 | 1905.5 |
| | 251 | 848.8 | 29.6 | 2.73 | 32.3 | 1698.2 |

| EDGE | | | | | | |
|---|---|---|---|---|---|---|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 128 | 824.2 | 26.2 | 2.8 | 28.9 | 776.2 |
| | 189 | 836.4 | 25.9 | 2.8 | 28.7 | 741.3 |
| | 251 | 848.8 | 26.2 | 2.7 | 28.9 | 776.2 |

| WCDMA | | | | | | |
|---|---|---|---|---|---|---|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 4132 | 826.4 | 21.1 | 2.8 | 23.8 | 241.5 |
| | 4182 | 836.4 | 21.4 | 2.8 | 24.1 | 259.4 |
| | 4233 | 846.6 | 20.7 | 2.8 | 23.5 | 224.9 |

| CDMA2000 | | | | | | |
|---|---|---|---|---|---|---|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 1013 | 824.7 | 22.1 | 2.8 | 24.8 | 304.371 |
| | 384 | 836.52 | 22.1 | 2.8 | 24.8 | 305.072 |
| | 777 | 848.31 | 22.0 | 2.7 | 24.8 | 299.504 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 20407 | 824.7 | 22.7 | 2.8 | 25.5 | 354.8 |
| | 20525 | 836.5 | 23.0 | 2.8 | 25.8 | 380.2 |
| | 20643 | 848.3 | 22.8 | 2.8 | 25.6 | 363.1 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 3MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 20415 | 825.5 | 23.5 | 2.8 | 26.3 | 426.6 |
| | 20525 | 836.5 | 23.7 | 2.8 | 26.5 | 446.7 |
| | 20635 | 847.5 | 23.4 | 2.8 | 26.2 | 416.9 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 5MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 20425 | 826.5 | 23.4 | 2.8 | 26.2 | 416.9 |
| | 20525 | 836.5 | 23.5 | 2.8 | 26.3 | 426.6 |
| | 20625 | 846.5 | 23.4 | 2.8 | 26.2 | 416.9 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 10MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 20450 | 829.0 | 22.7 | 2.8 | 25.5 | 354.8 |
| | 20525 | 836.5 | 22.6 | 2.8 | 25.4 | 346.7 |
| | 20600 | 844.0 | 22.7 | 2.8 | 25.5 | 354.8 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 26797 | 824.7 | 22.4 | 2.6 | 25.0 | 316.2 |
| | 26915 | 836.5 | 22.4 | 2.7 | 25.1 | 323.6 |
| | 27033 | 848.3 | 22.2 | 2.7 | 24.9 | 309.0 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 3MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 26805 | 825.5 | 22.2 | 2.6 | 24.8 | 302.0 |
| | 26915 | 836.5 | 22.2 | 2.7 | 24.9 | 309.0 |
| | 27025 | 847.5 | 21.9 | 2.7 | 24.6 | 288.4 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 5MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 26815 | 826.5 | 21.8 | 2.6 | 24.4 | 275.4 |
| | 26915 | 836.5 | 21.7 | 2.7 | 24.4 | 275.4 |
| | 27015 | 846.5 | 21.7 | 2.7 | 24.4 | 275.4 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 10MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 26840 | 829.0 | 22.0 | 2.6 | 24.6 | 288.4 |
| | 26915 | 836.5 | 22.1 | 2.7 | 24.8 | 302.0 |
| | 26990 | 844.0 | 22.0 | 2.7 | 24.7 | 295.1 |

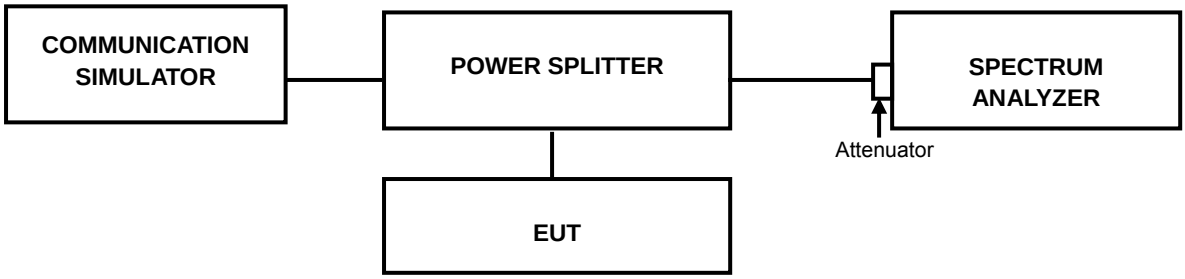
| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 15MHz / QPSK | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) |
| X | 26865 | 831.5 | 22.0 | 2.6 | 24.6 | 288.4 |
| | 26915 | 836.5 | 21.7 | 2.7 | 24.4 | 275.4 |
| | 26965 | 841.5 | 21.6 | 2.7 | 24.3 | 269.2 |

## 4.2 PEAK TO AVERAGE RATIO MEASUREMENT

### 4.2.1 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

### 4.2.2 TEST SETUP




### 4.2.3 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%.

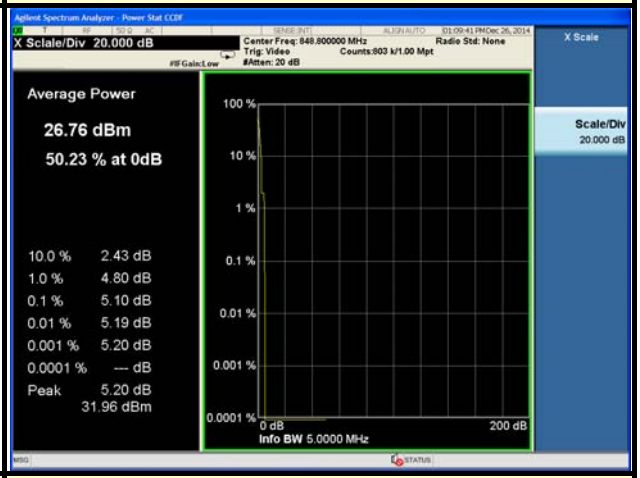
## 4.2.4 TEST RESULTS

| GPRS | | | EDGE | | |
|---|---|---|---|---|---|
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 128 | 824.2 | 0.31 | 128 | 824.2 | 2.95 |
| 189 | 836.4 | 0.34 | 189 | 836.4 | 4.79 |
| 251 | 848.8 | 0.38 | 251 | 848.8 | 5.1 |
| **WCDMA** | | | **CDMA2000** | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
| 4132 | 826.4 | 2.62 | 1013 | 824.7 | 3.41 |
| 4182 | 836.4 | 3.02 | 384 | 836.52 | 3.81 |
| 4233 | 846.6 | 2.66 | 777 | 848.31 | 3.44 |

**SPECTRUM PLOT OF WORST VALUE**

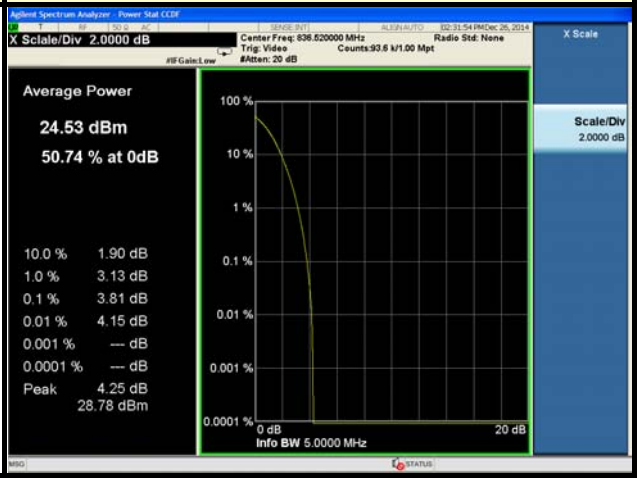
**GPRS**


**EDGE**




**WCDMA**


**CDMA2000**

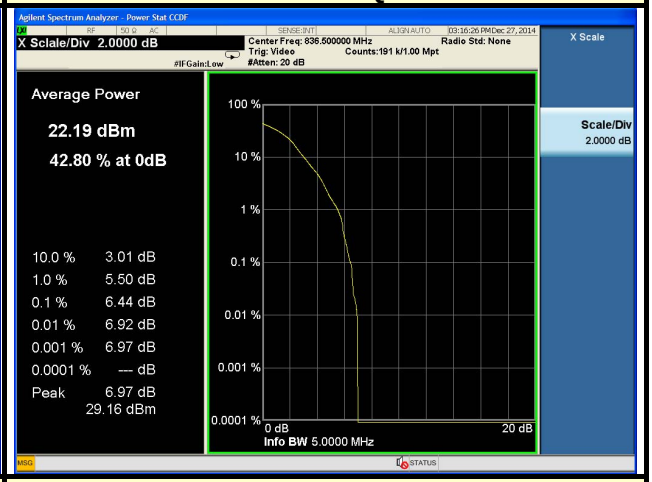


| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH: 3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20407 | 824.7 | 5.2 | 5.98 | 20415 | 825.5 | 4.98 | 5.97 |
| 20525 | 836.5 | 5.3 | 6.44 | 20525 | 836.5 | 5.25 | 6.6 |
| 20643 | 848.3 | 4.5 | 5.67 | 20635 | 847.5 | 4.44 | 5.58 |
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20425 | 826.5 | 4.7 | 5.91 | 20450 | 829 | 4.02 | 5.03 |
| 20525 | 836.5 | 5.24 | 6.35 | 20525 | 836.5 | 5.3 | 6.38 |
| 20625 | 846.5 | 4.05 | 5.22 | 20600 | 844 | 3.85 | 5.07 |

## SPECTRUM PLOT OF WORST VALUE

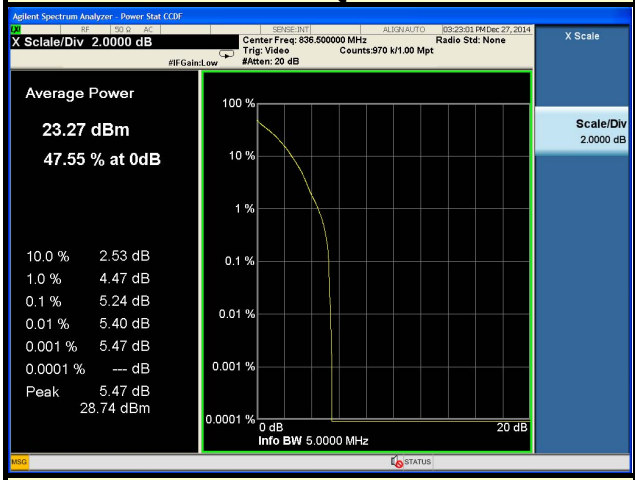
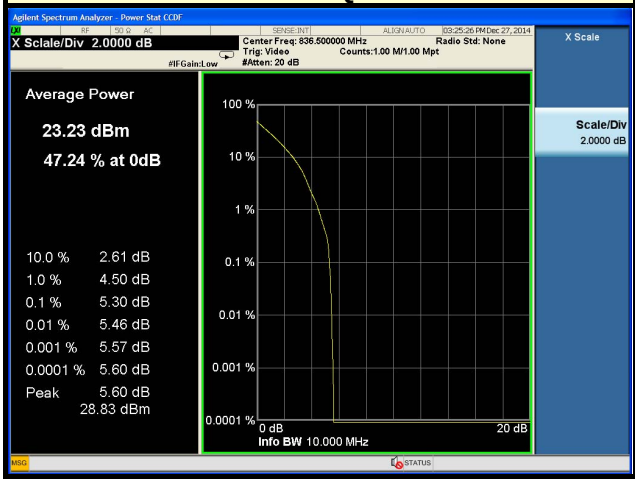
### 1.4MHz / QPSK


### 1.4MHz / 16QAM




### 3MHz / QPSK


### 3MHz / 16QAM

| 5MHz / QPSK | 5MHz / 16QAM |
|---|---|
|  |  |
| **10MHz / QPSK** | **10MHz / 16QAM** |
|  |  |

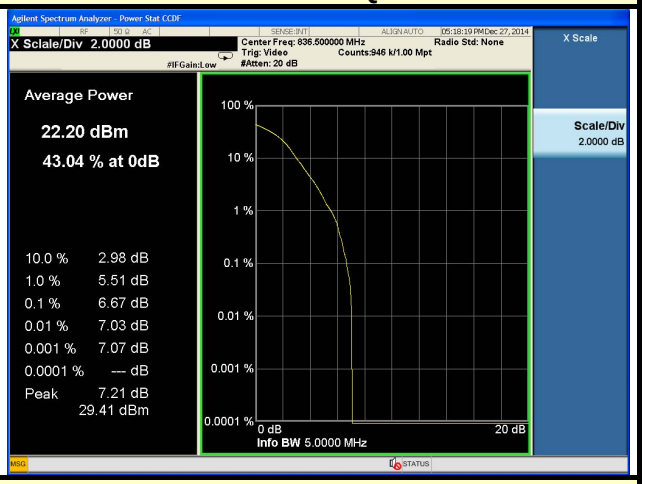
| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH: 3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26797 | 824.7 | 5.3 | 6.27 | 26805 | 825.5 | 5.06 | 6.04 |
| 26915 | 836.5 | 5.3 | 6.67 | 26915 | 836.5 | 5.33 | 6.53 |
| 27033 | 848.3 | 4.66 | 5.81 | 27025 | 847.5 | 4.45 | 5.65 |
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26815 | 826.5 | 4.73 | 5.74 | 26840 | 829.0 | 4.08 | 5.08 |
| 26915 | 836.5 | 5.28 | 6.39 | 26915 | 836.5 | 5.27 | 6.56 |
| 27015 | 846.5 | 4.08 | 5.25 | 26990 | 844.0 | 3.87 | 4.98 |

| CHANNEL BANDWIDTH: 15MHz | | | |
|---|---|---|---|
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM |
| 26865 | 831.5 | 4.15 | 5.09 |
| 26915 | 836.5 | 5.19 | 6.42 |
| 26965 | 841.5 | 4.76 | 5.87 |

## SPECTRUM PLOT OF WORST VALUE

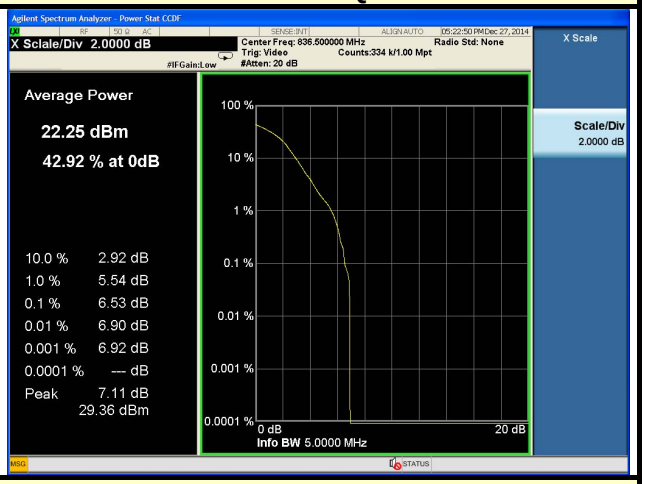
### 1.4MHz / QPSK


### 1.4MHz / 16QAM



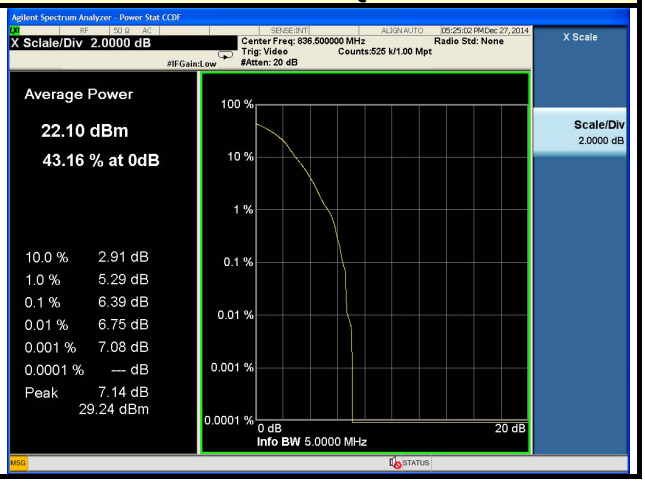

### 3MHz / QPSK

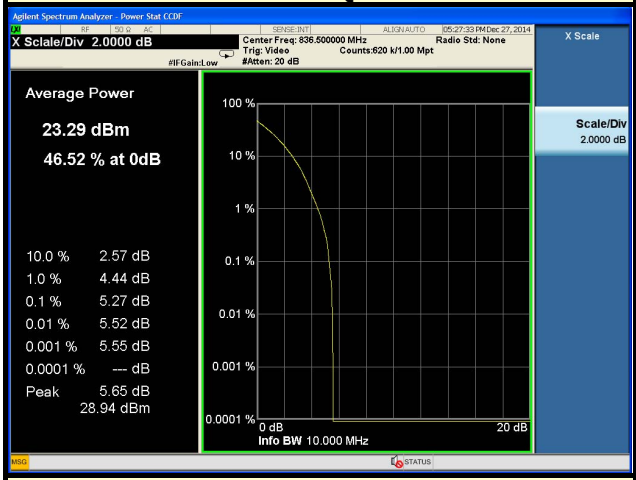
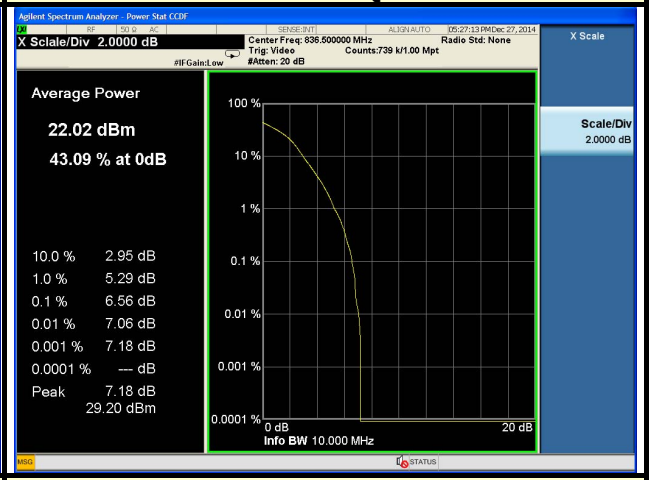
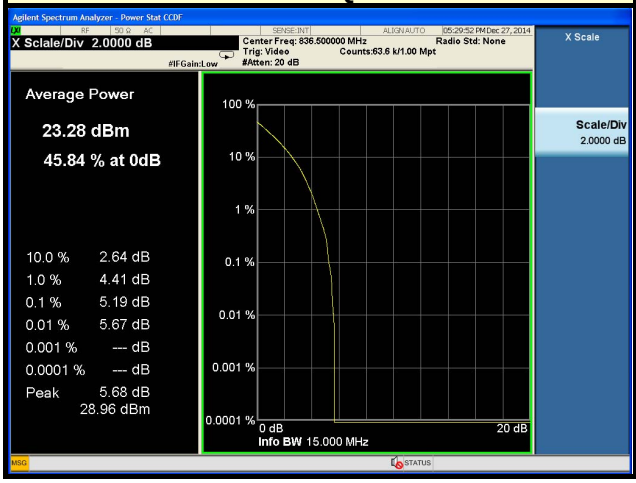

### 3MHz / 16QAM




### 5MHz / QPSK


### 5MHz / 16QAM



| 10MHz / QPSK | 10MHz / 16QAM |
|---|---|
|  |  |
| **15MHz / QPSK** | **15MHz / 16QAM** |
|  |  |

## 4.3 FREQUENCY STABILITY MEASUREMENT

### 4.3.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

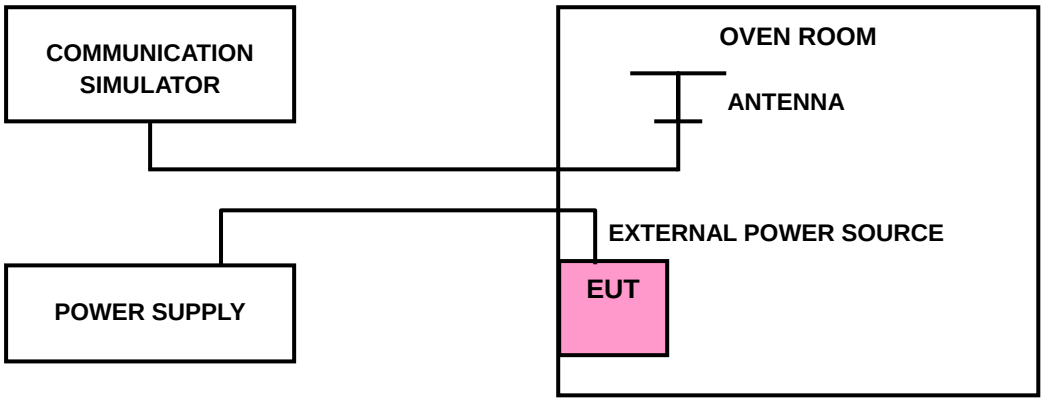
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 4.3.2 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 the external power supply to control the input power. The test voltage range is from minimum to maximum 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.

### 4.3.3 TEST SETUP



### 4.3.4 TEST RESULTS

**FREQUENCY ERROR vs. VOLTAGE**

| VOLTAGE (Volts) | FREQUENCY ERROR (ppm) | | | LIMIT (ppm) |
|---|---|---|---|---|
| | GPRS | WCDMA | CDMA2000 | |
| 102 | 0.018 | 0.008 | -0.017 | 2.5 |
| 138 | 0.017 | 0.007 | -0.020 | 2.5 |

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

**FREQUENCY ERROR vs. TEMPERATURE**

| TEMP. (℃) | FREQUENCY ERROR (ppm) | | | LIMIT (ppm) |
|---|---|---|---|---|
| | GPRS | WCDMA | CDMA2000 | |
| 75 | 0.038 | 0.025 | -0.030 | 2.5 |
| 70 | 0.035 | 0.024 | -0.029 | 2.5 |
| 60 | 0.035 | 0.022 | -0.026 | 2.5 |
| 50 | 0.030 | 0.018 | -0.026 | 2.5 |
| 40 | 0.027 | 0.016 | -0.024 | 2.5 |
| 30 | 0.023 | 0.011 | -0.020 | 2.5 |
| 20 | 0.022 | 0.008 | -0.017 | 2.5 |
| 10 | 0.024 | 0.012 | -0.020 | 2.5 |
| 0 | 0.025 | 0.011 | -0.023 | 2.5 |
| -10 | 0.032 | 0.016 | -0.022 | 2.5 |

**FREQUENCY ERROR vs. VOLTAGE**

| VOLTAGE (Volts) | FREQUENCY ERROR (ppm) | | | | LIMIT (ppm) |
|---|---|---|---|---|---|
| | LTE Band 5 | | | | |
| | 1.4MHz | 3MHz | 5MHz | 10MHz | |
| 102 | 0.033 | 0.050 | 0.051 | 0.030 | 2.5 |
| 138 | 0.032 | 0.029 | 0.048 | 0.045 | 2.5 |

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

**FREQUENCY ERROR vs. TEMPERATURE**

| TEMP. (℃) | FREQUENCY ERROR (ppm) | | | | LIMIT (ppm) |
|---|---|---|---|---|---|
| | LTE Band 5 | | | | |
| | 1.4MHz | 3MHz | 5MHz | 10MHz | |
| 75 | 0.035 | 0.033 | 0.037 | 0.032 | 2.5 |
| 70 | 0.055 | 0.047 | 0.031 | 0.047 | 2.5 |
| 60 | 0.045 | 0.043 | 0.044 | 0.051 | 2.5 |
| 50 | 0.045 | 0.044 | 0.038 | 0.045 | 2.5 |
| 40 | 0.053 | 0.053 | 0.053 | 0.048 | 2.5 |
| 30 | 0.053 | 0.031 | 0.048 | 0.050 | 2.5 |
| 20 | 0.042 | 0.029 | 0.029 | 0.041 | 2.5 |
| 10 | 0.047 | 0.038 | 0.043 | 0.039 | 2.5 |
| 0 | 0.033 | 0.033 | 0.039 | 0.050 | 2.5 |
| -10 | 0.033 | 0.050 | 0.055 | 0.055 | 2.5 |

**FREQUENCY ERROR vs. VOLTAGE**

| VOLTAGE (Volts) | FREQUENCY ERROR (ppm) | | | | | LIMIT (ppm) |
|---|---|---|---|---|---|---|
| | LTE Band 26 | | | | | |
| | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | |
| 102 | 0.044 | 0.031 | 0.047 | 0.039 | 0.044 | 2.5 |
| 138 | 0.036 | 0.032 | 0.053 | 0.038 | 0.054 | 2.5 |

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

**FREQUENCY ERROR vs. TEMPERATURE**

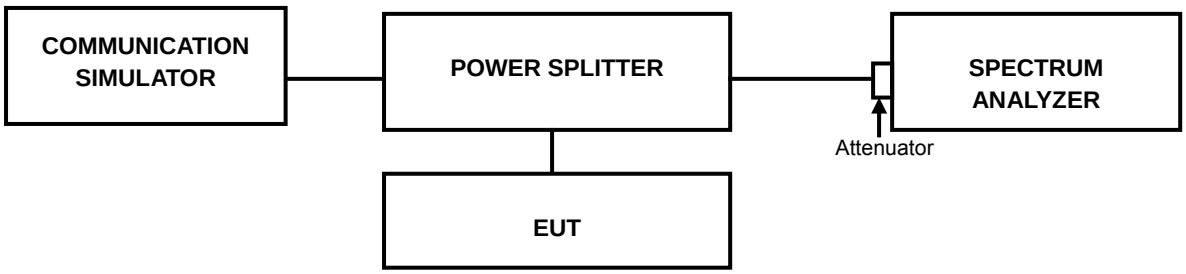
| TEMP. (℃) | FREQUENCY ERROR (ppm) | | | | | LIMIT (ppm) |
|---|---|---|---|---|---|---|
| | LTE Band 26 | | | | | |
| | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | |
| 75 | 0.030 | 0.032 | 0.030 | 0.047 | 0.031 | 2.5 |
| 70 | 0.054 | 0.029 | 0.050 | 0.029 | 0.050 | 2.5 |
| 60 | 0.043 | 0.039 | 0.035 | 0.043 | 0.054 | 2.5 |
| 50 | 0.036 | 0.029 | 0.033 | 0.030 | 0.038 | 2.5 |
| 40 | 0.043 | 0.032 | 0.038 | 0.048 | 0.045 | 2.5 |
| 30 | 0.029 | 0.030 | 0.041 | 0.051 | 0.041 | 2.5 |
| 20 | 0.030 | 0.037 | 0.048 | 0.042 | 0.027 | 2.5 |
| 10 | 0.047 | 0.035 | 0.043 | 0.050 | 0.036 | 2.5 |
| 0 | 0.042 | 0.048 | 0.041 | 0.044 | 0.053 | 2.5 |
| -10 | 0.039 | 0.048 | 0.043 | 0.039 | 0.036 | 2.5 |

## 4.4 OCCUPIED BANDWIDTH MEASUREMENT

### 4.4.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 4.4.2 TEST SETUP



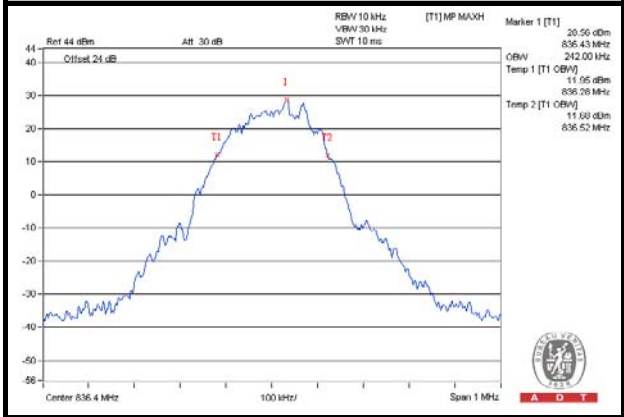
### 4.4.3 TEST RESULTS

| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (kHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) |
|---|---|---|---|---|---|---|
| | | GPRS | EDGE | | | WCDMA |
| 128 | 824.2 | 240 | 240 | 4132 | 826.4 | 4.16 |
| 189 | 836.4 | 242 | 246 | 4182 | 836.4 | 4.18 |
| 251 | 848.8 | 240 | 244 | 4233 | 846.6 | 4.14 |

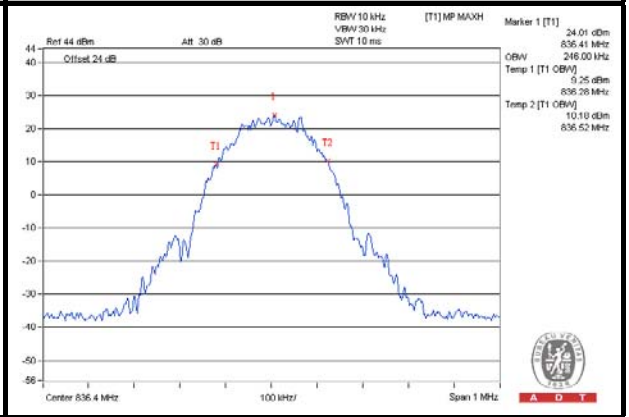
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) |
|---|---|---|
| | | CDMA2000 |
| 1013 | 824.7 | 1.28 |
| 384 | 836.52 | 1.28 |
| 777 | 848.31 | 1.28 |

**SPECTRUM PLOT OF WORST VALUE**

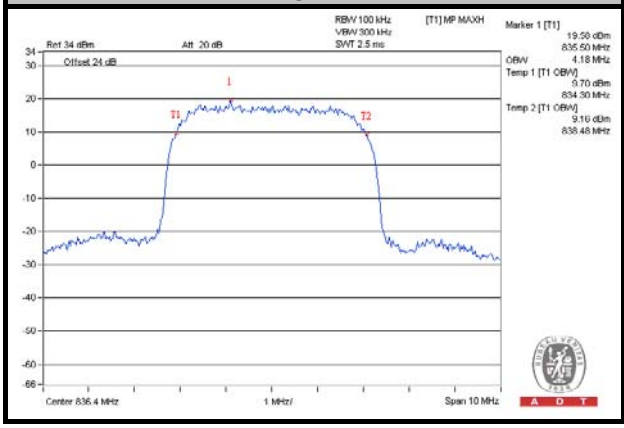
**GPRS**



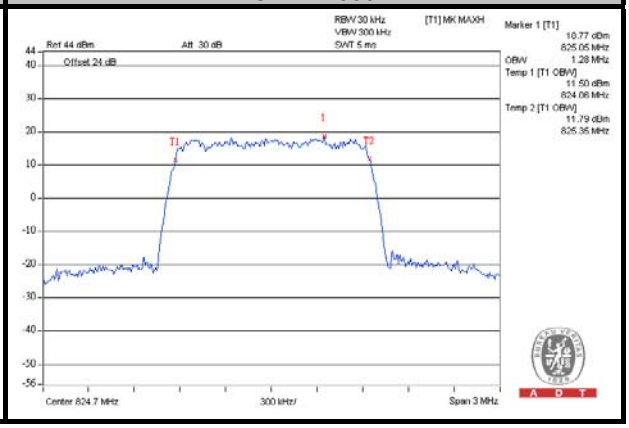

**EDGE**



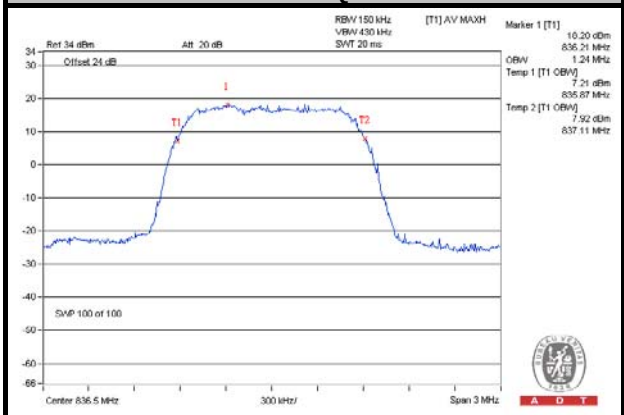
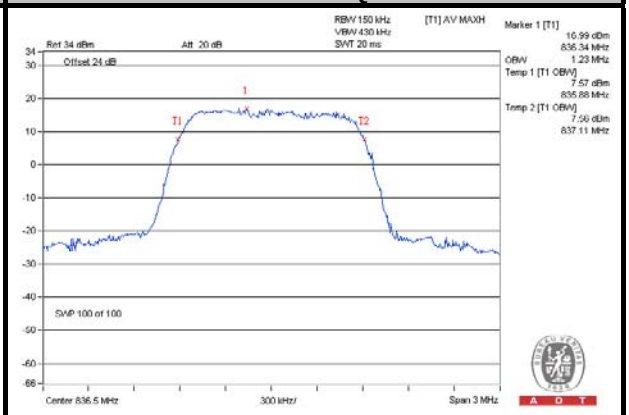
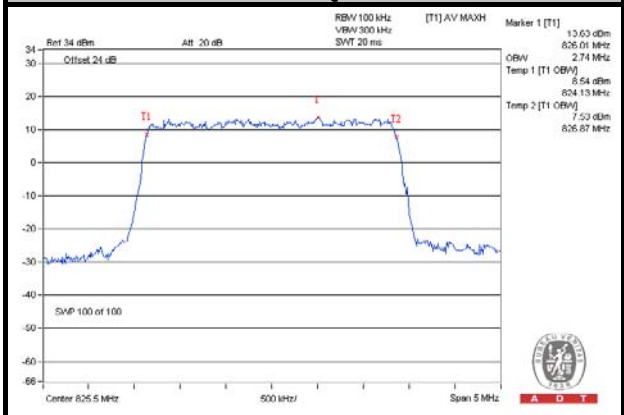
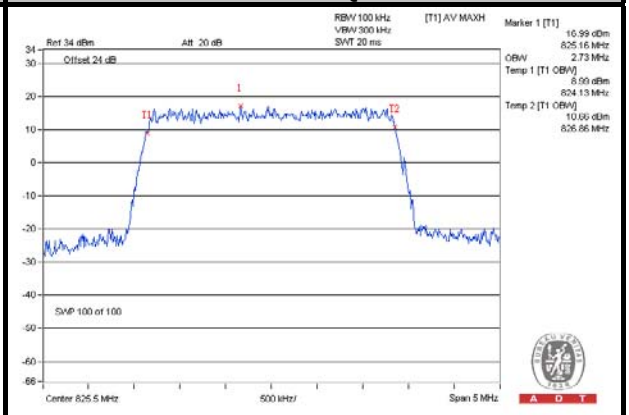
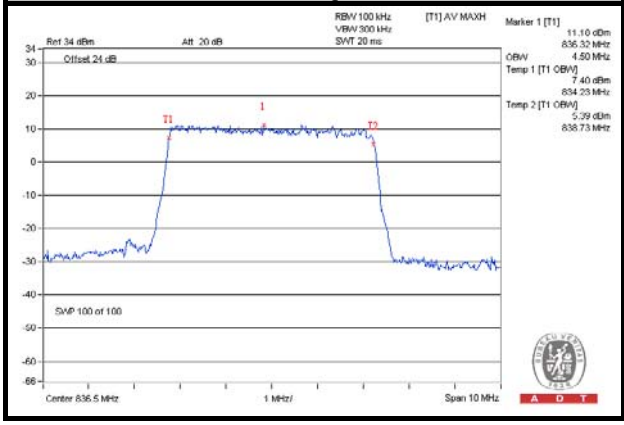
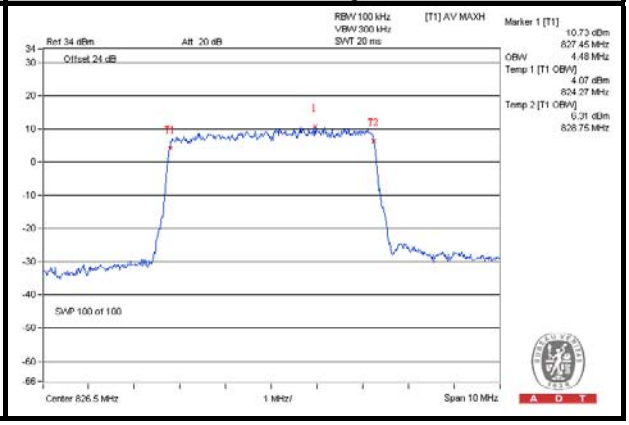

**WCDMA**

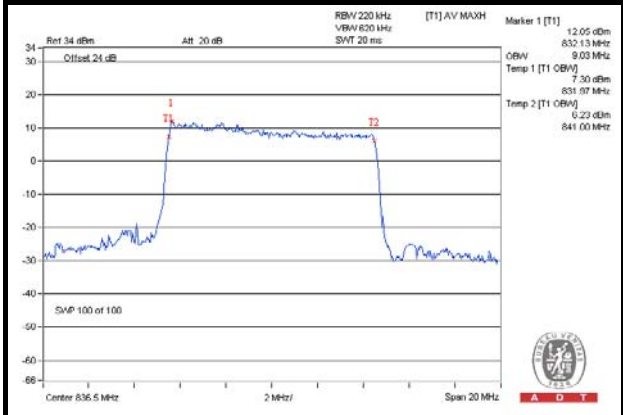
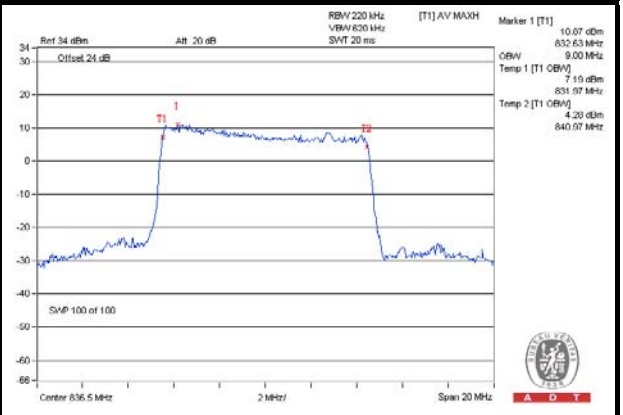



**CDMA2000**

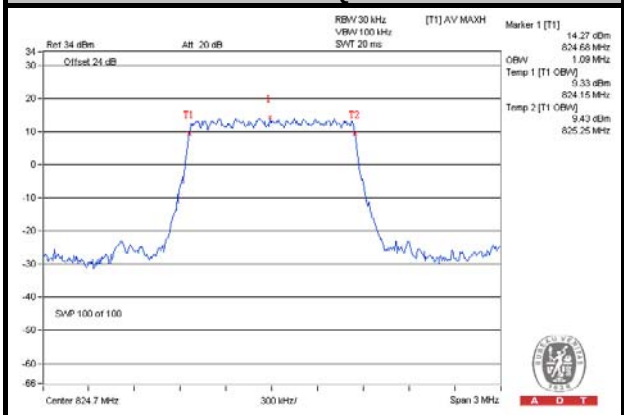
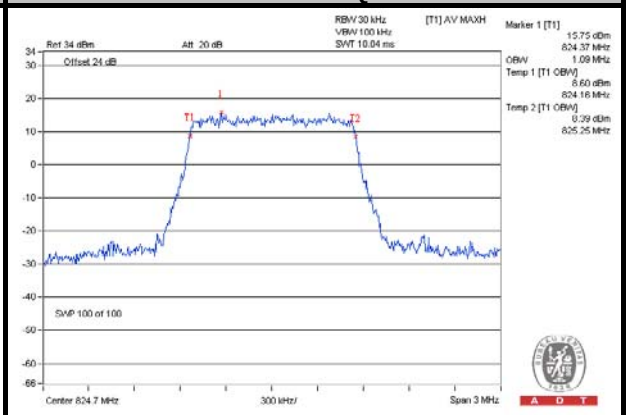
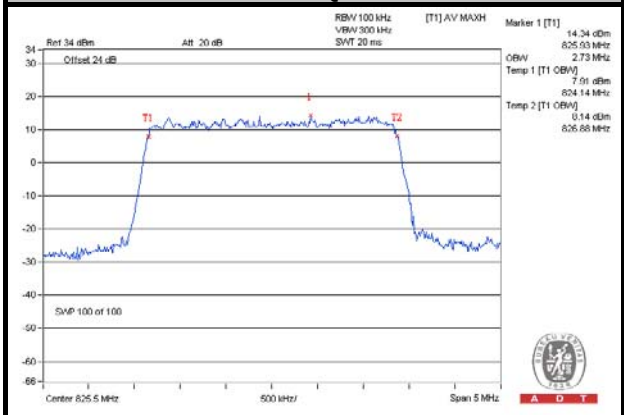
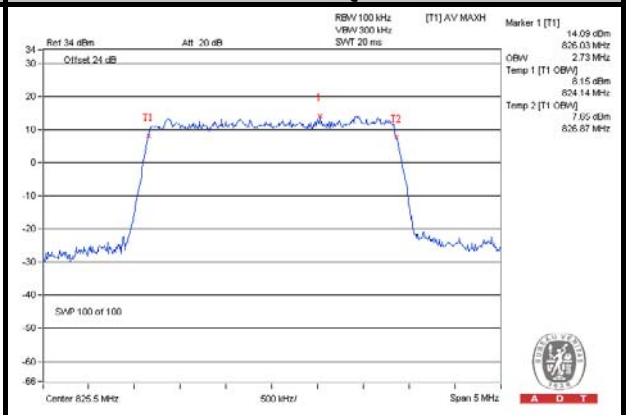
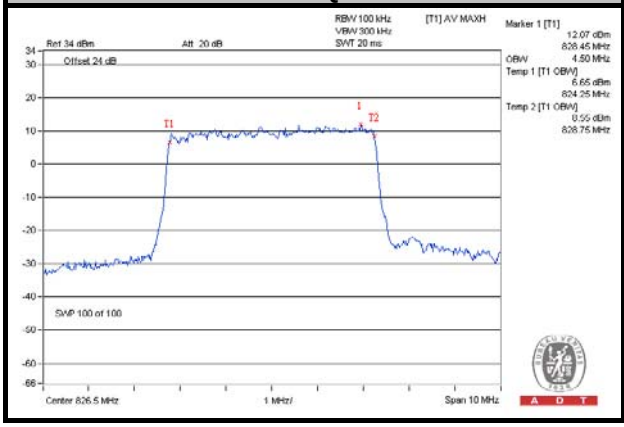
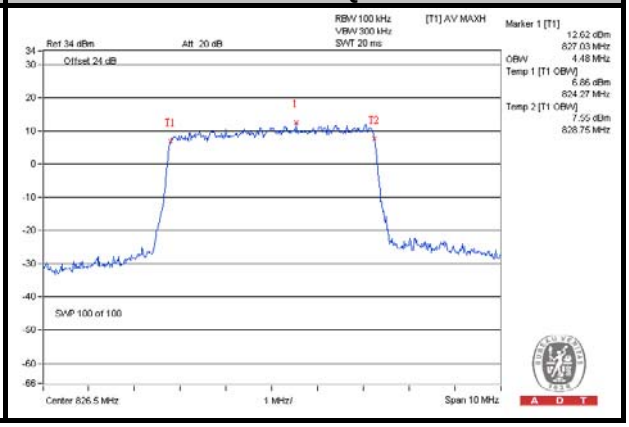


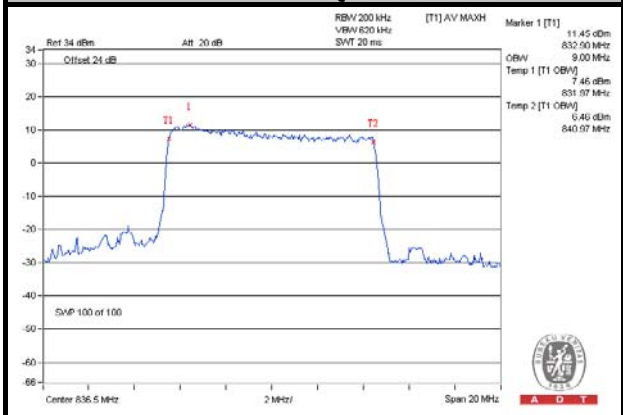
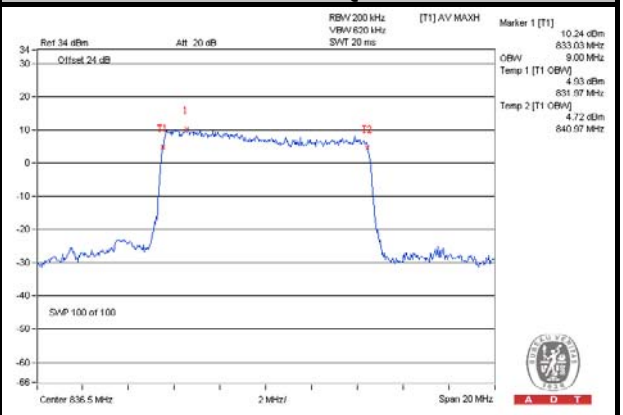
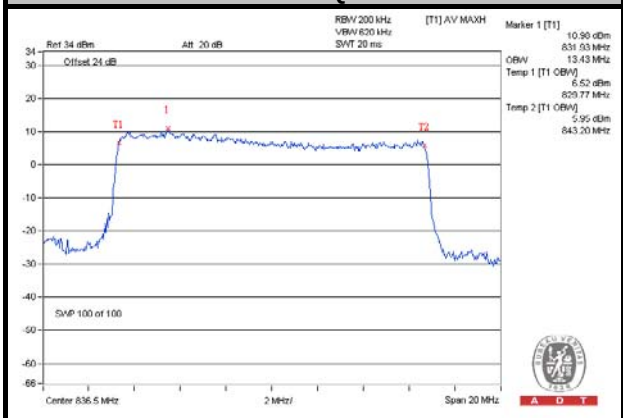
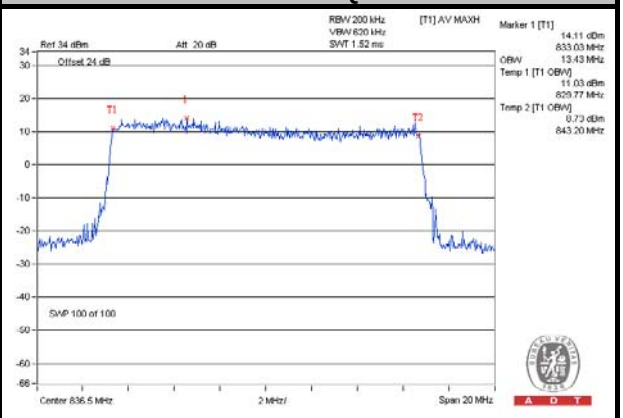
| LTE BAND 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH: 3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20407 | 824.7 | 1.23 | 1.21 | 20415 | 825.5 | 2.74 | 2.73 |
| 20525 | 836.5 | 1.24 | 1.23 | 20525 | 836.5 | 2.74 | 2.72 |
| 20643 | 848.3 | 1.23 | 1.23 | 20635 | 847.5 | 2.72 | 2.73 |
| LTE BAND 5 | | | | | | | |
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20425 | 826.5 | 4.48 | 4.48 | 20450 | 829.0 | 9.00 | 8.97 |
| 20525 | 836.5 | 4.50 | 4.48 | 20525 | 836.5 | 9.03 | 9.00 |
| 20625 | 846.5 | 4.48 | 4.48 | 20600 | 844.0 | 8.97 | 8.97 |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 1.4MHz / QPSK | 1.4MHz / 16QAM |
|  |  |
| 3MHz / QPSK | 3MHz / 16QAM |
|  |  |
| 5MHz / QPSK | 5MHz / 16QAM |
|  |  |

| 10MHz / QPSK | 10MHz / 16QAM |
|---|---|
|  |  |

| LTE BAND 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 |
| 26797 | 824.7 | 1.09 | 1.09 | 26805 | 825.5 | 2.73 | 2.73 |
| 26915 | 836.5 | 1.09 | 1.09 | 26915 | 836.5 | 2.73 | 2.73 |
| 27033 | 848.3 | 1.09 | 1.09 | 27025 | 847.5 | 2.73 | 2.73 |
| LTE BAND 26 | | | | | | | |
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26815 | 826.5 | 4.50 | 4.48 | 26840 | 829.0 | 8.93 | 8.93 |
| 26915 | 836.5 | 4.48 | 4.48 | 26915 | 836.5 | 9.00 | 9.00 |
| 27015 | 846.5 | 4.47 | 4.48 | 26990 | 844.0 | 8.93 | 8.93 |
| LTE BAND 26 | | | | | | | |
| CHANNEL BANDWIDTH: 15MHz | | | | | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | | | | |
| | | QPSK | | 16QAM | | | |
| 26865 | 831.5 | 13.30 | | 13.30 | | | |
| 26915 | 836.5 | 13.43 | | 13.43 | | | |
| 26965 | 841.5 | 13.37 | | 13.40 | | | |

| SPECTRUM PLOT OF WORST VALUE | |
|---|---|
| 1.4MHz / QPSK | 1.4MHz / 16QAM |
|  |  |
| 3MHz / QPSK | 3MHz / 16QAM |
|  |  |
| 5MHz / QPSK | 5MHz / 16QAM |
|  |  |

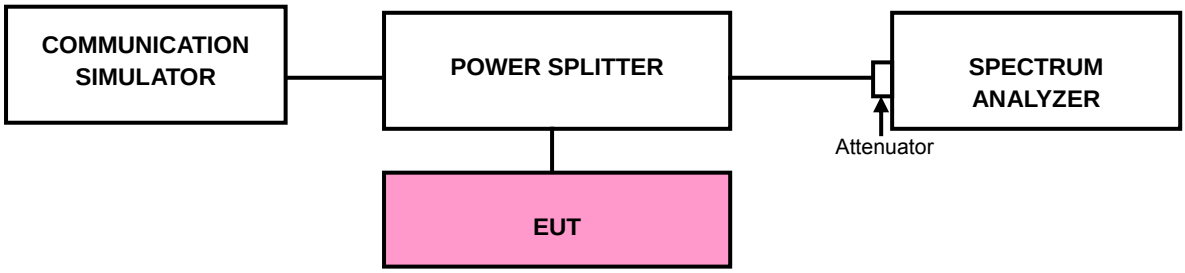
| 10MHz / QPSK | 10MHz / 16QAM |
|---|---|
|  |  |
| **15MHz / QPSK** | **15MHz / 16QAM** |
|  |  |

## 4.5 BAND EDGE MEASUREMENT

### 4.5.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### 4.5.2 TEST SETUP



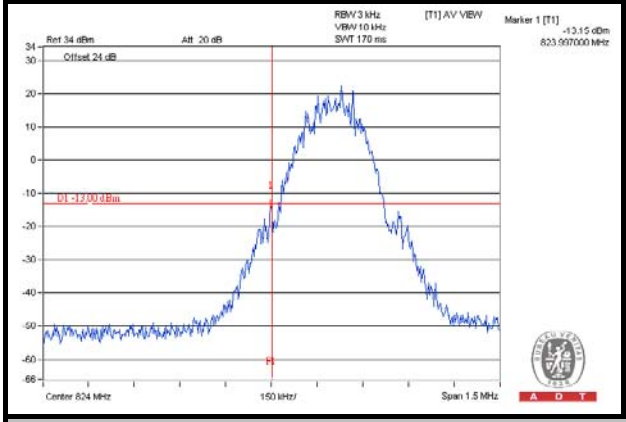
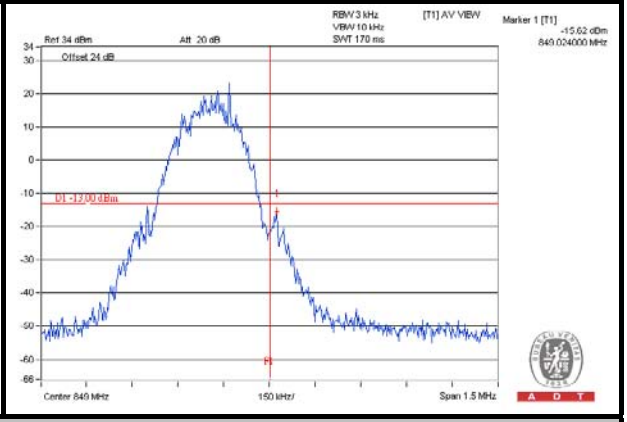
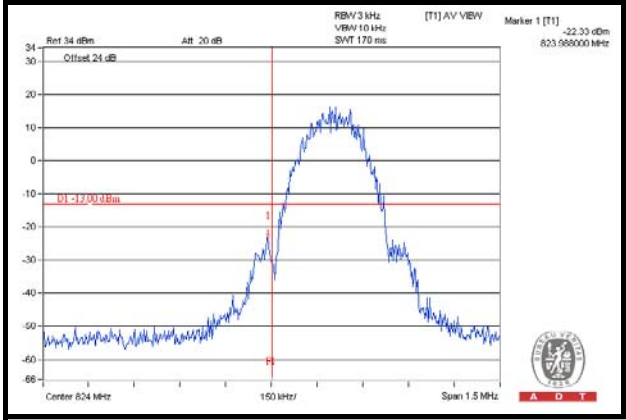
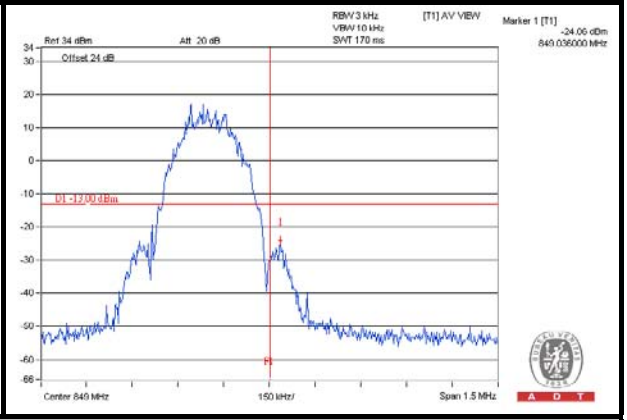
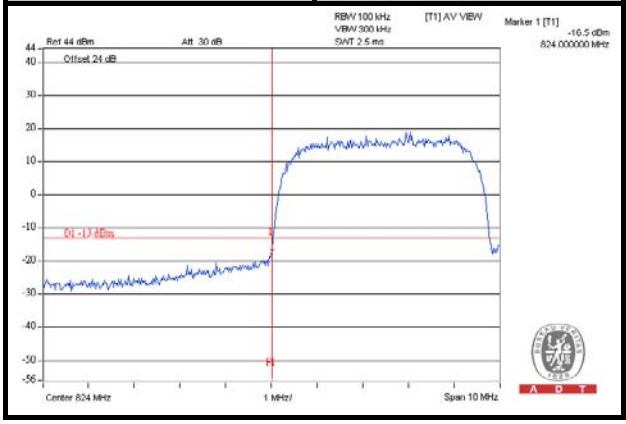
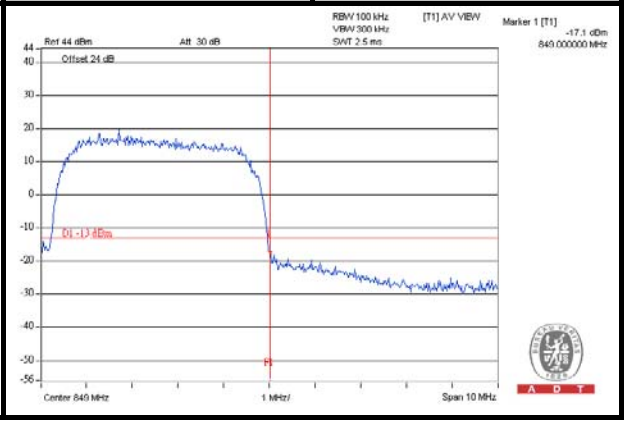

### 4.5.3 TEST PROCEDURES

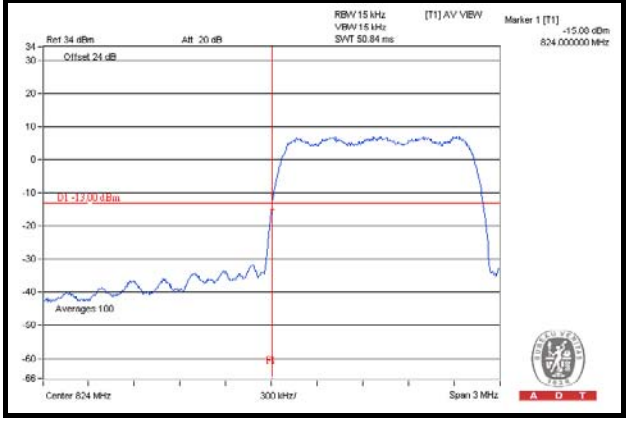
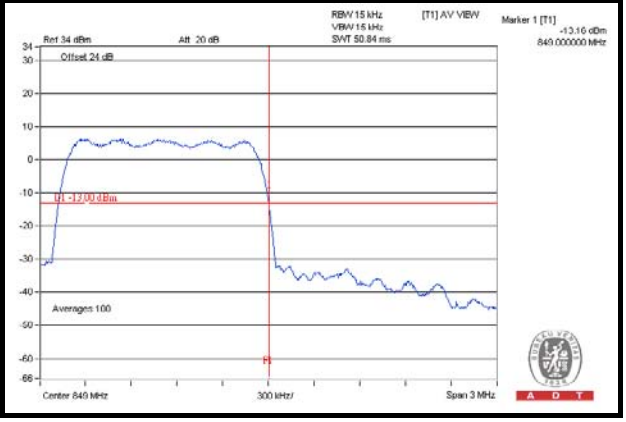
a. All measurements were done at low and high operational frequency range.

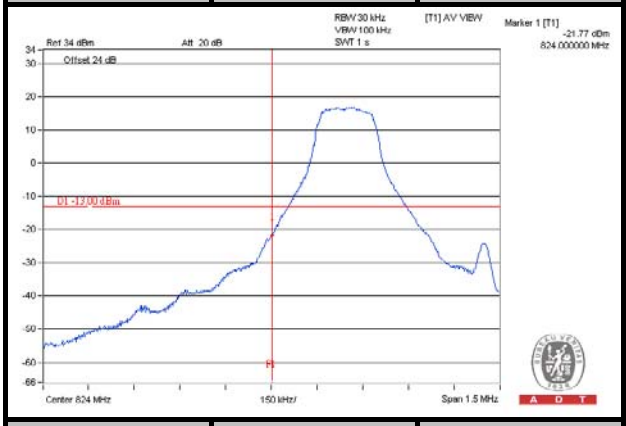
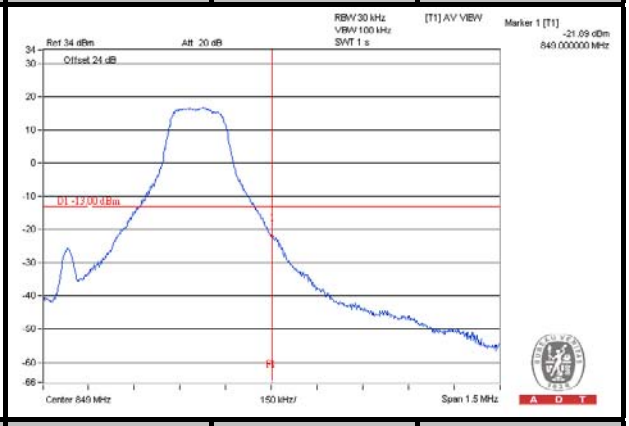
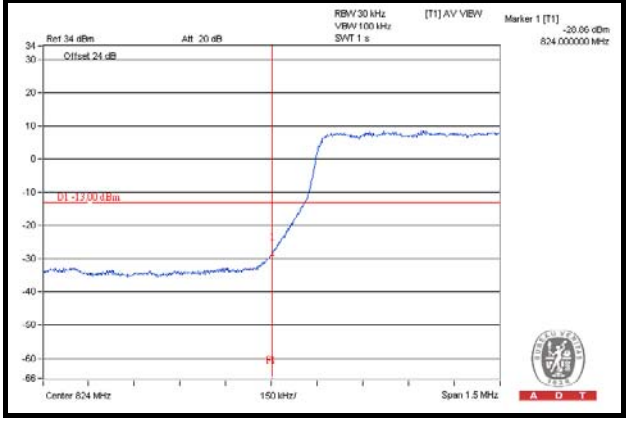
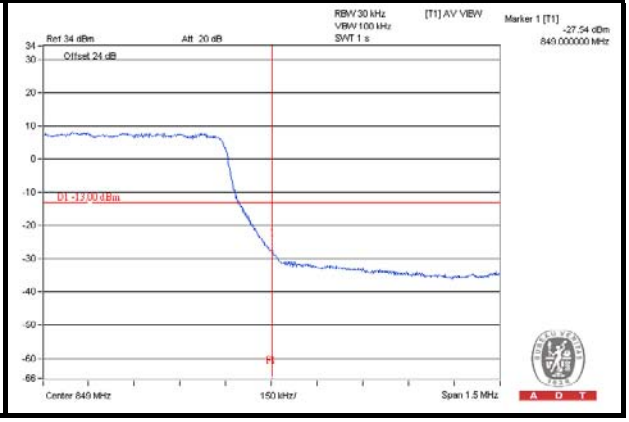
b. The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% OCCUPIED BANDWIDTH and VB of the spectrum is ≧ 3*RB.

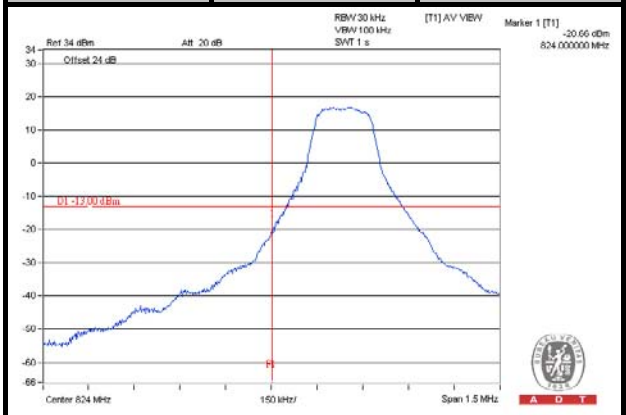
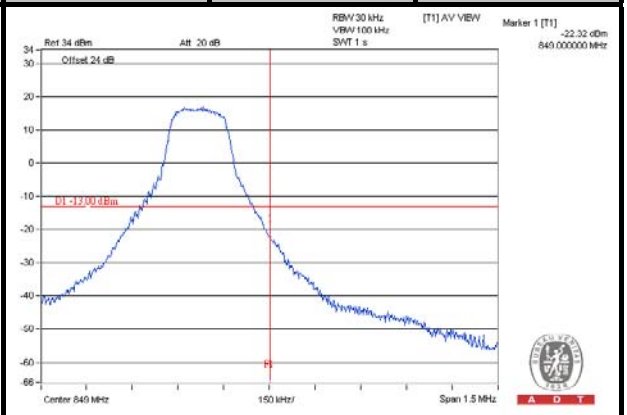
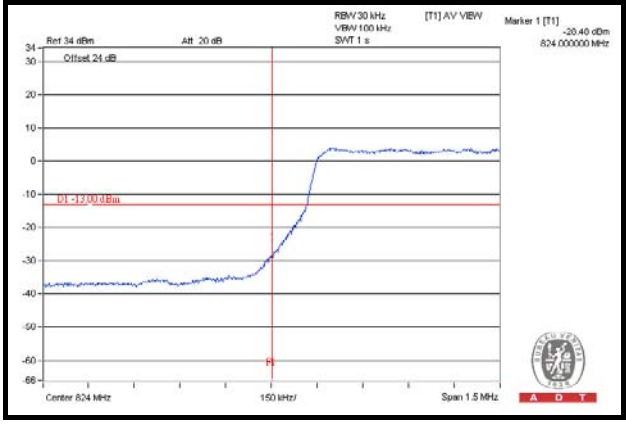
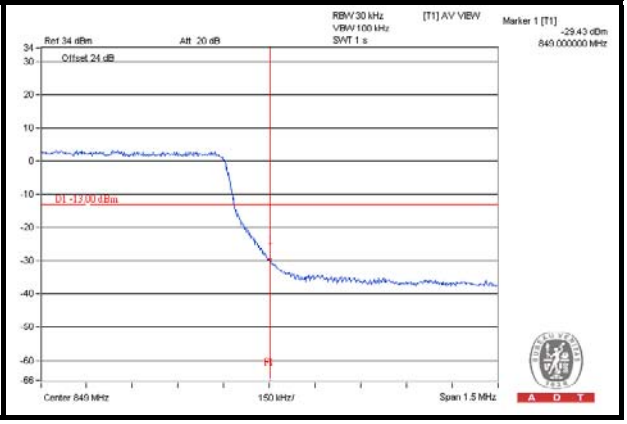
c. Record the max trace plot into the test report.

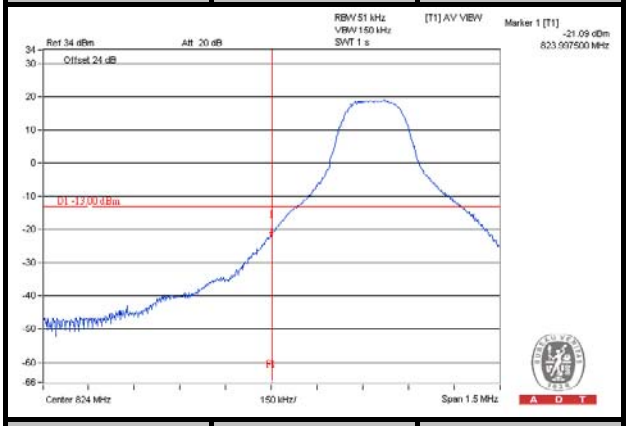
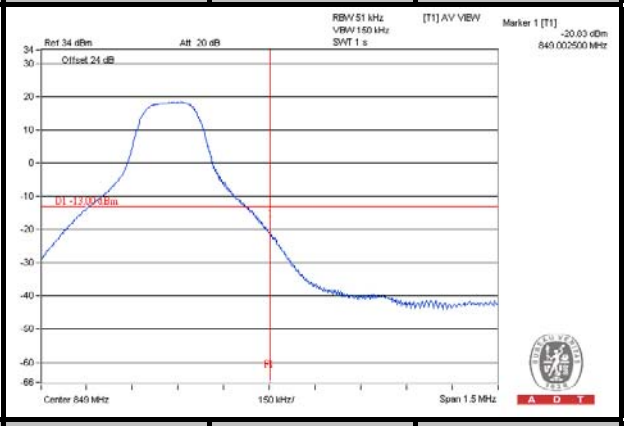
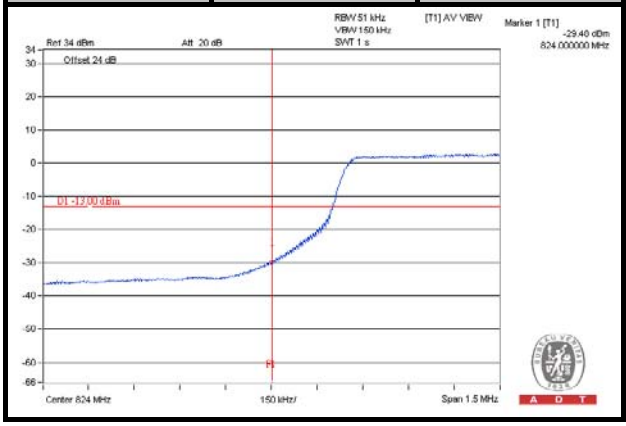
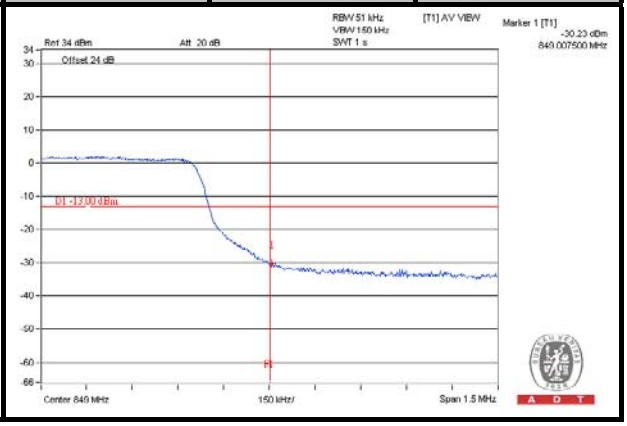
### 4.5.4 TEST RESULTS

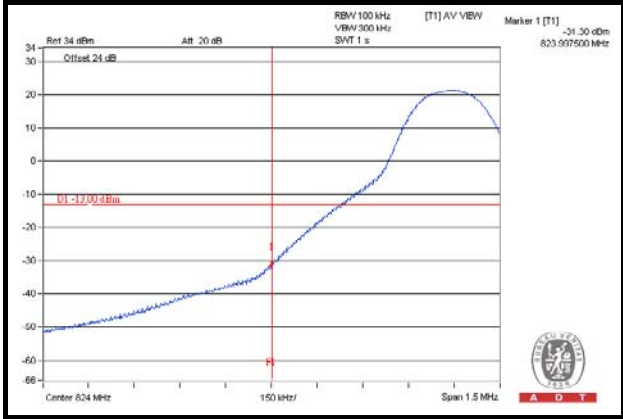
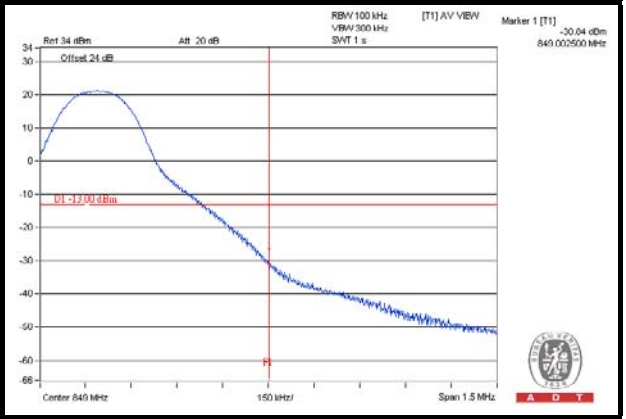
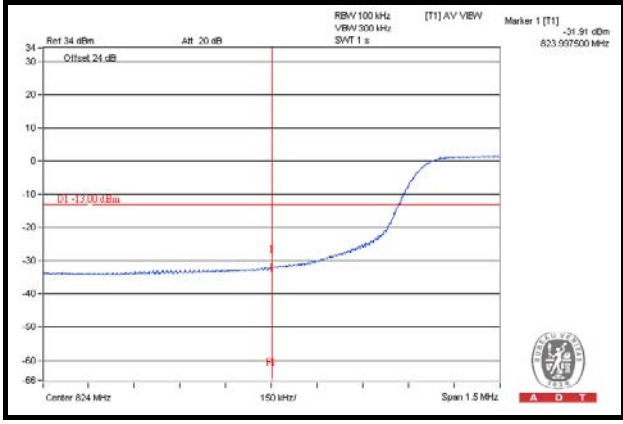
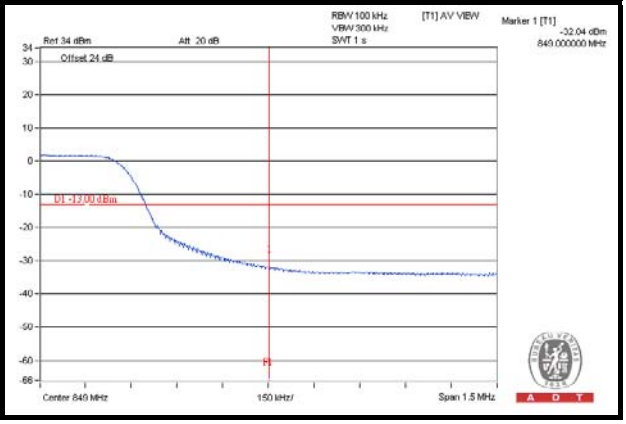
| GPRS | | | |
|---|---|---|---|
| CHANNEL | 128 | CHANNEL | 251 |
|  | |  | |
| **EDGE** | | | |
| CHANNEL | 128 | CHANNEL | 251 |
|  | |  | |
| **WCDMA** | | | |
| CHANNEL | 4132 | CHANNEL | 4233 |
|  | |  | |

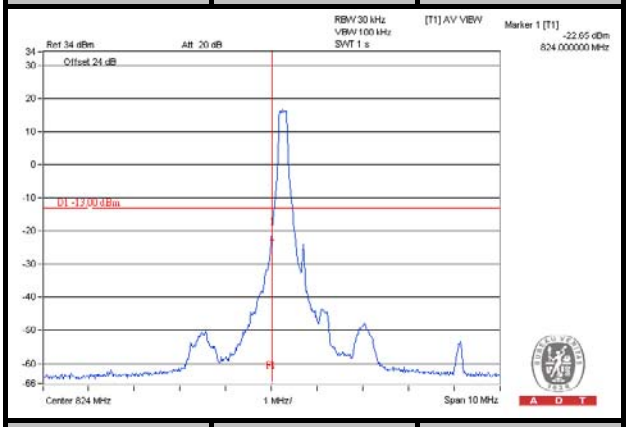
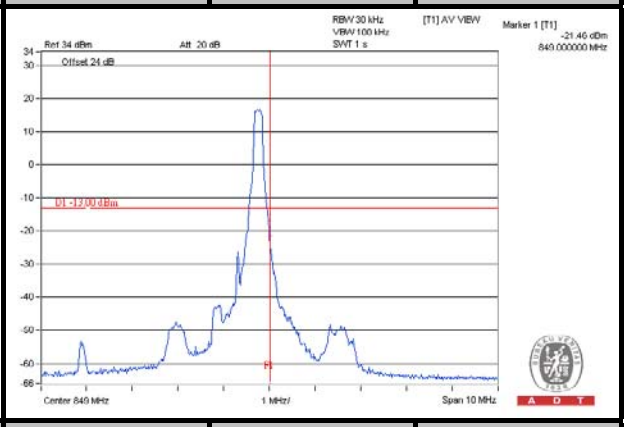
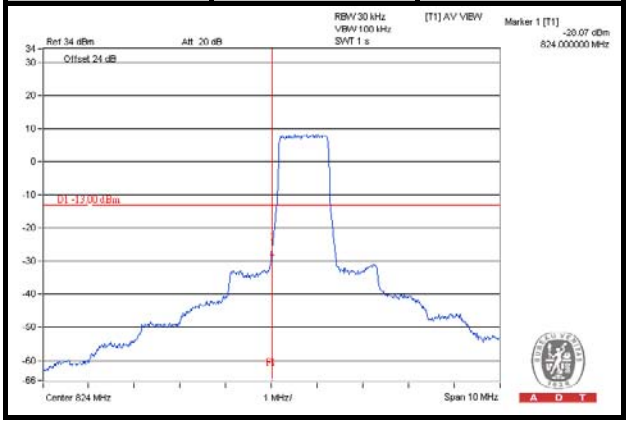
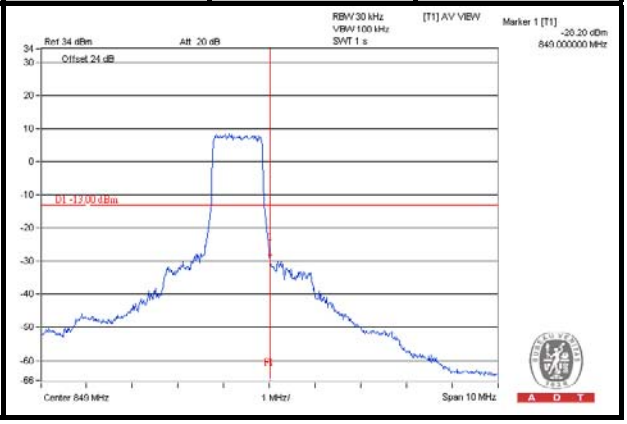
| CDMA2000 | | | |
|---|---|---|---|
| CHANNEL | 1013 | CHANNEL | 777 |
|  | |  | |

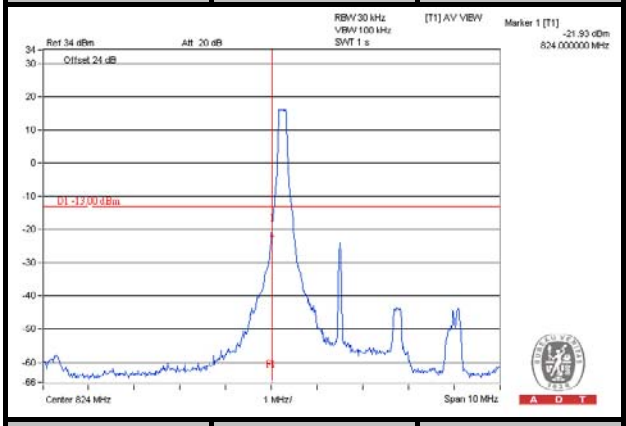
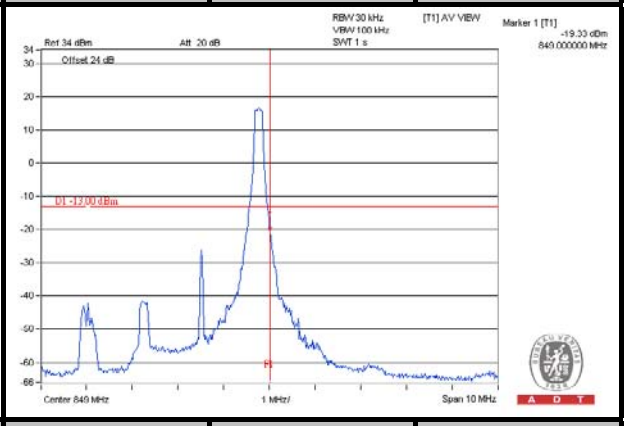
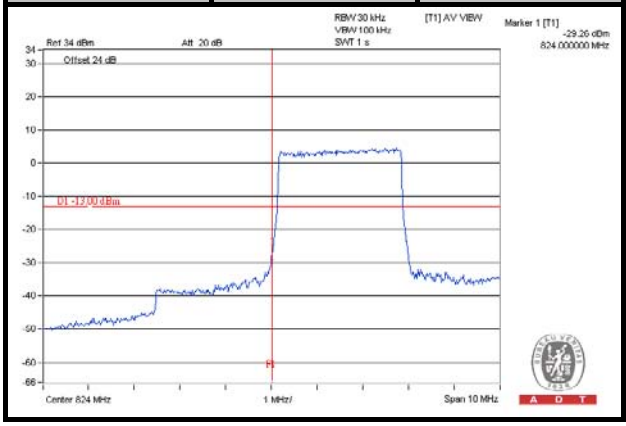
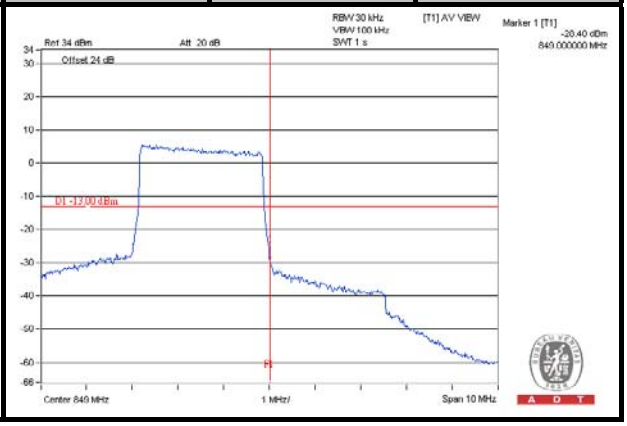
| LTE BAND 5 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | | |
| CHANNEL | 20407 | 1 RB | CHANNEL | 20643 | 1 RB |
|  | | |  | | |
| CHANNEL | 20407 | 6 RB | CHANNEL | 20643 | 6 RB |
|  | | |  | | |

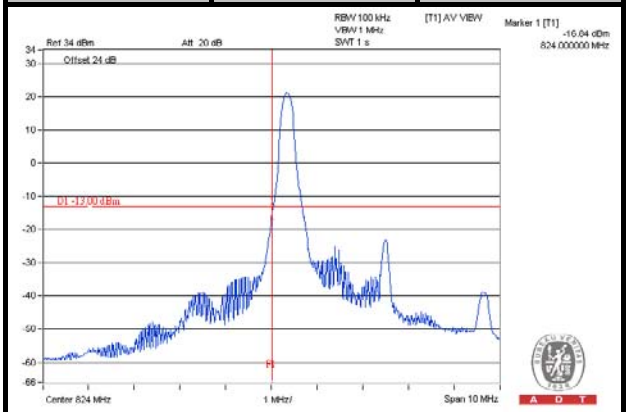
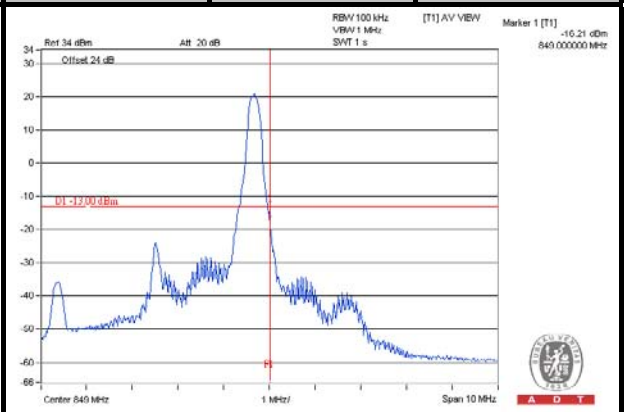
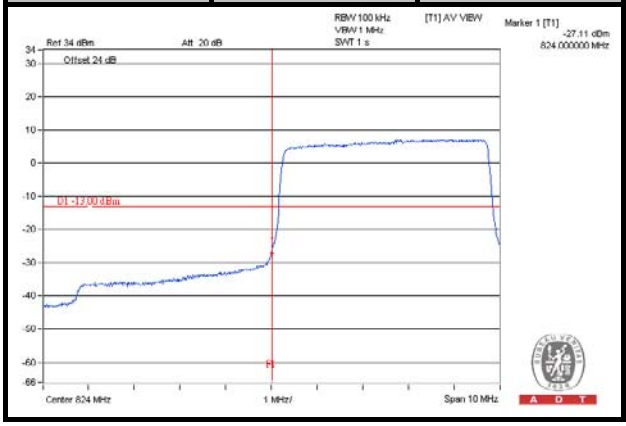
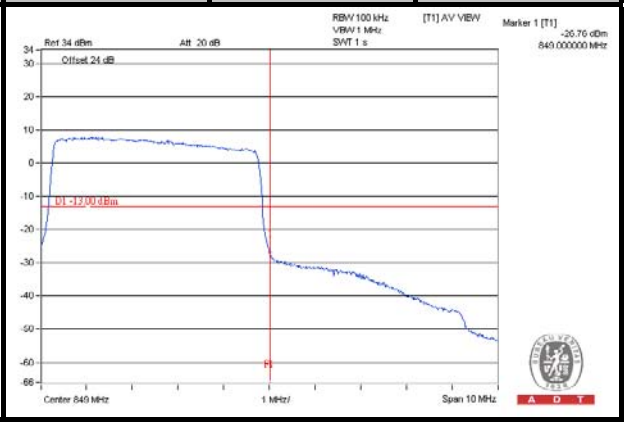
| LTE BAND 5 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 3MHz | | | | | |
| CHANNEL | 20145 | 1 RB | CHANNEL | 20635 | 1 RB |
|  | | |  | | |
| CHANNEL | 20145 | 15 RB | CHANNEL | 20635 | 15 RB |
|  | | |  | | |

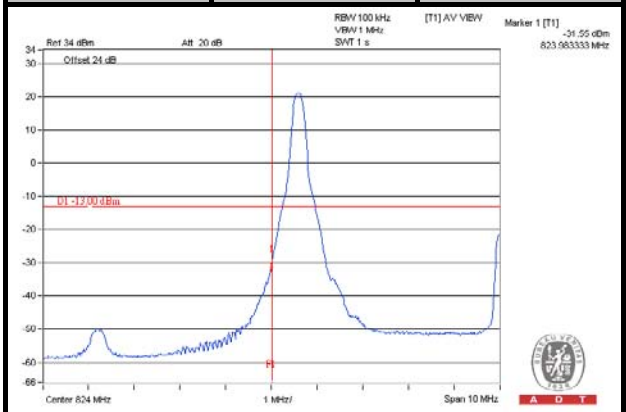
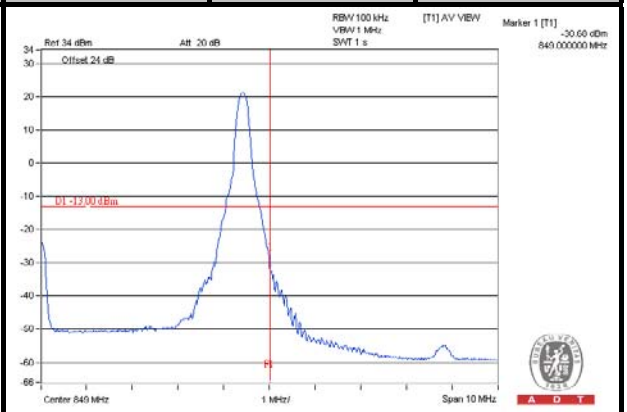
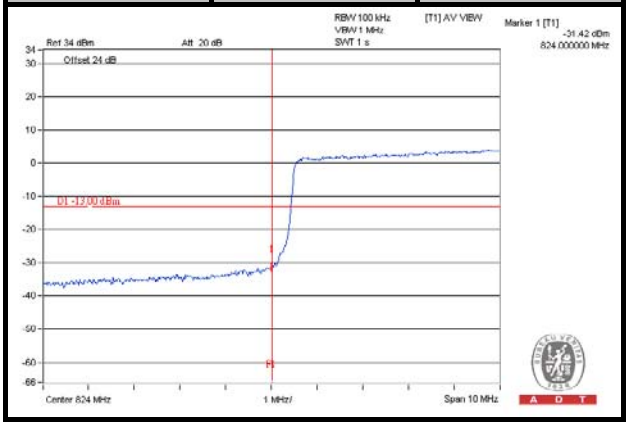
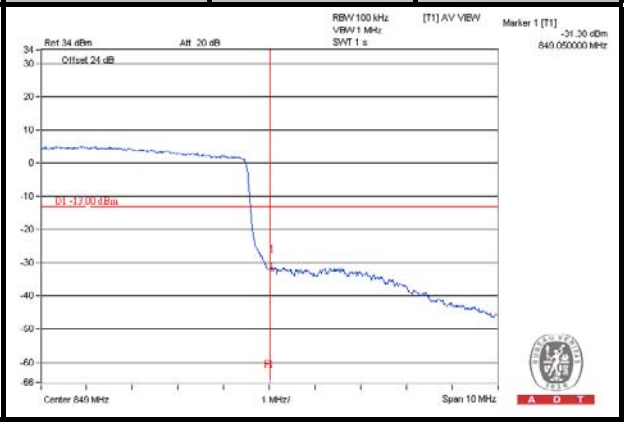
| LTE BAND 5 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | | | |
| CHANNEL | 20425 | 1 RB | CHANNEL | 20625 | 1 RB |
|  | | |  | | |
| CHANNEL | 20425 | 25 RB | CHANNEL | 20625 | 25 RB |
|  | | |  | | |

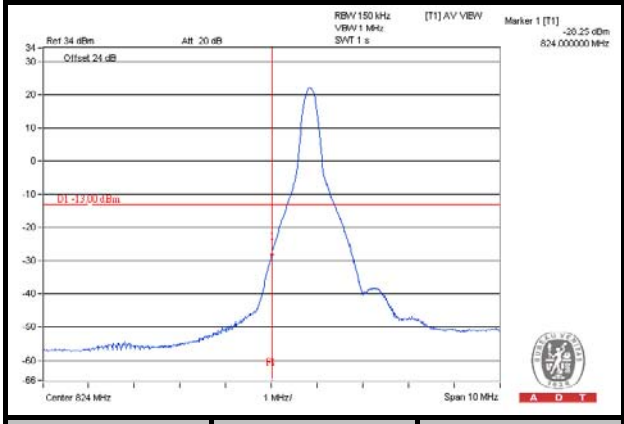
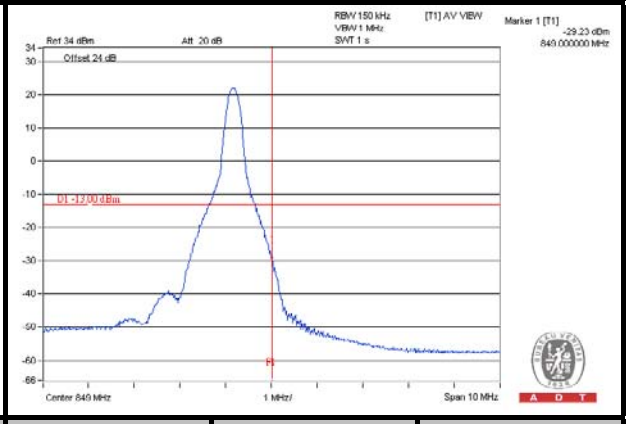
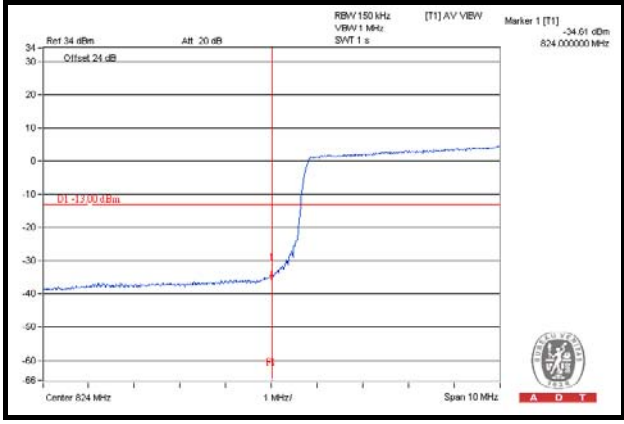
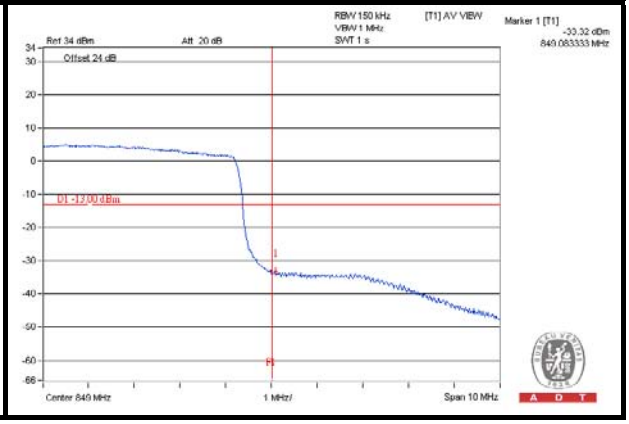
| LTE BAND 5 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 10MHz | | | | | |
| CHANNEL | 20450 | 1 RB | CHANNEL | 20600 | 1 RB |
|  | | |  | | |
| CHANNEL | 20450 | 50 RB | CHANNEL | 20600 | 50 RB |
|  | | |  | | |

| LTE BAND 26 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 1.4MHz | | | | | |
| CHANNEL | 26797 | 1 RB | CHANNEL | 27033 | 1 RB |
|  | | |  | | |
| CHANNEL | 26797 | 6 RB | CHANNEL | 27033 | 6 RB |
|  | | |  | | |

| LTE BAND 26 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 3MHz | | | | | |
| CHANNEL | 26805 | 1 RB | CHANNEL | 27025 | 1 RB |
|  | | |  | | |
| CHANNEL | 26805 | 15 RB | CHANNEL | 27025 | 15 RB |
|  | | |  | | |

| LTE BAND 26 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 5MHz | | | | | |
| CHANNEL | 26815 | 1 RB | CHANNEL | 27015 | 1 RB |
|  | | |  | | |
| CHANNEL | 26815 | 25 RB | CHANNEL | 27015 | 25 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 10MHz | | | | | |
| CHANNEL | 26840 | 1 RB | CHANNEL | 26990 | 1 RB |
|  | | |  | | |
| CHANNEL | 26840 | 50 RB | CHANNEL | 26990 | 50 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| CHANNEL BANDWIDTH: 15MHz | | | | | |
| CHANNEL | 26865 | 1 RB | CHANNEL | 26965 | 1 RB |
|  | | |  | | |
| CHANNEL | 26865 | 75 RB | CHANNEL | 26965 | 75 RB |
|  | | |  | | |

## 4.6 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

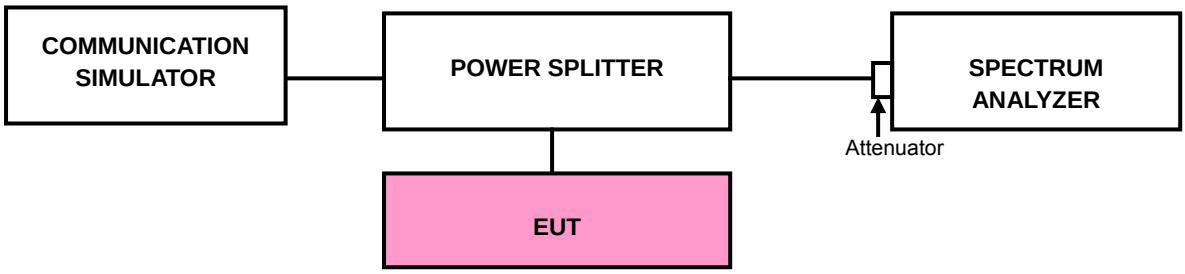
### 4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to -13dBm.

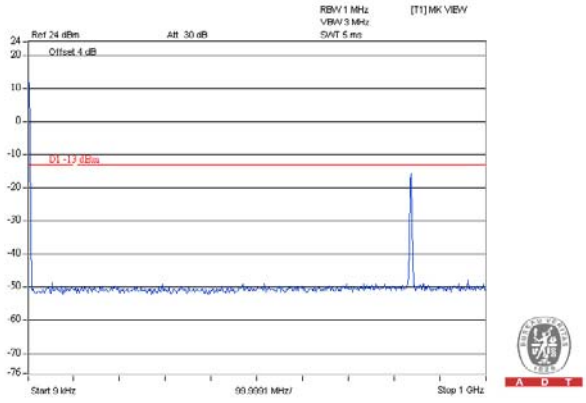
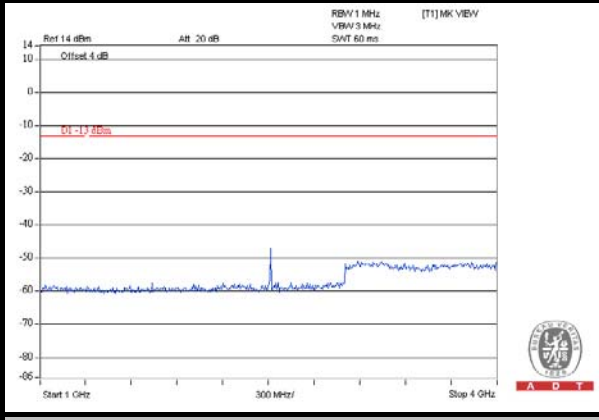
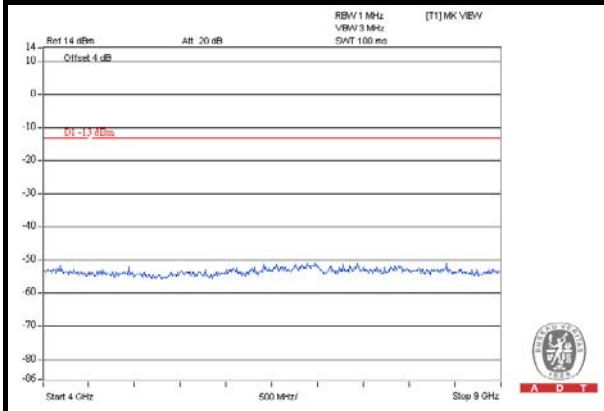
### 4.6.2 TEST PROCEDURE

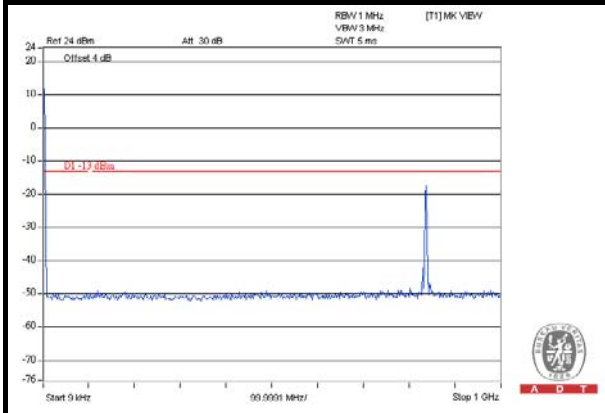
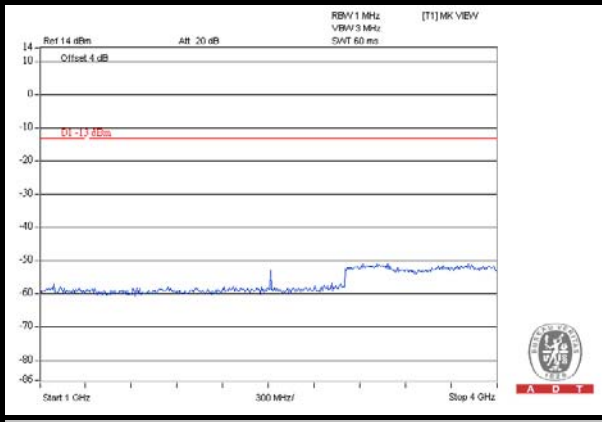
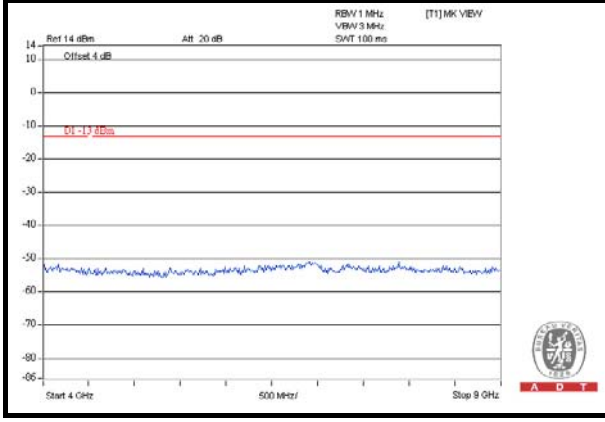
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9kHz to 9GHz. Attenuator is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

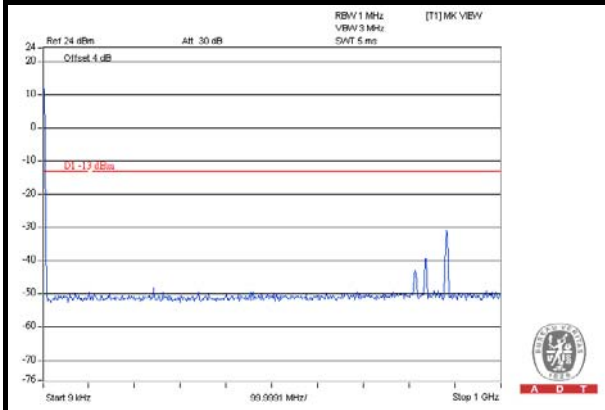
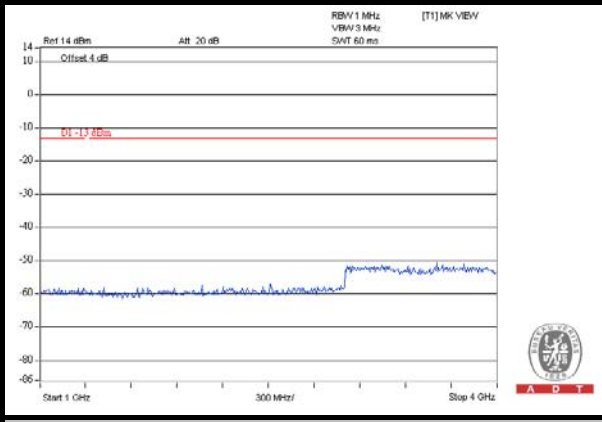
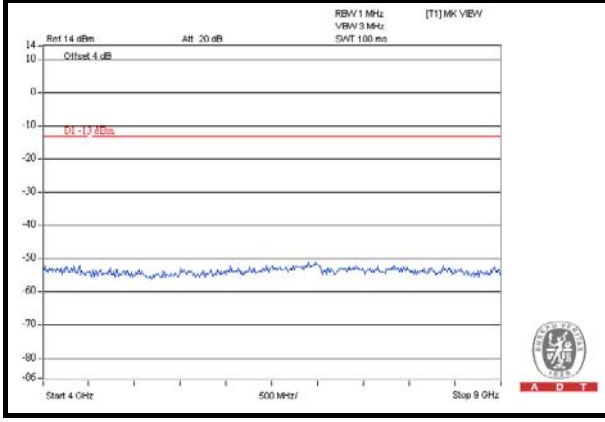
### 4.6.3 TEST SETUP

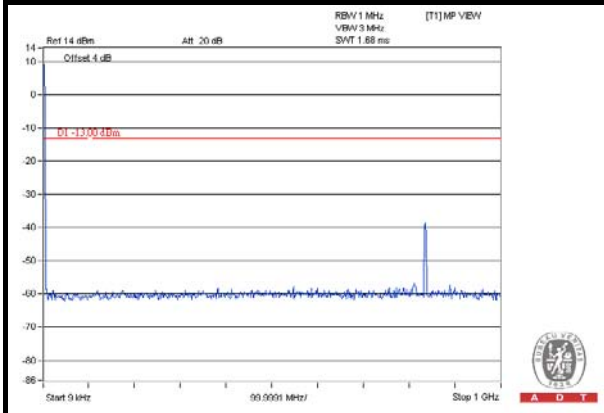
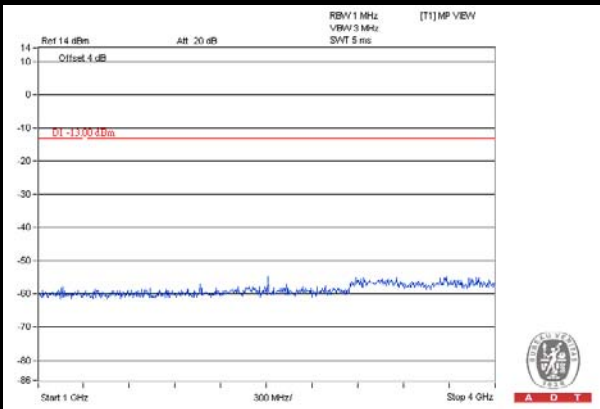
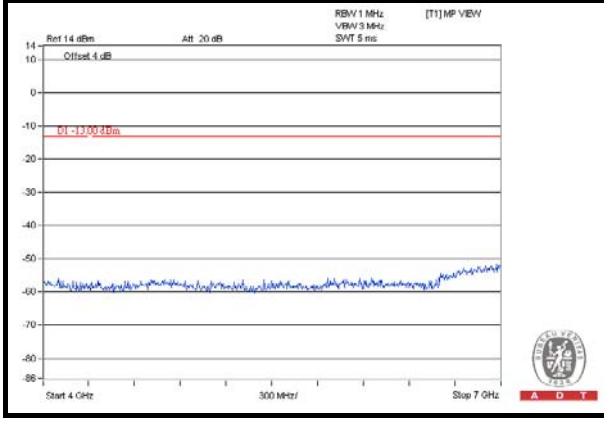
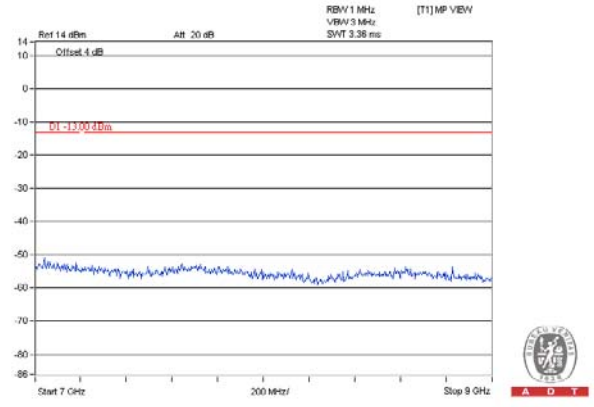


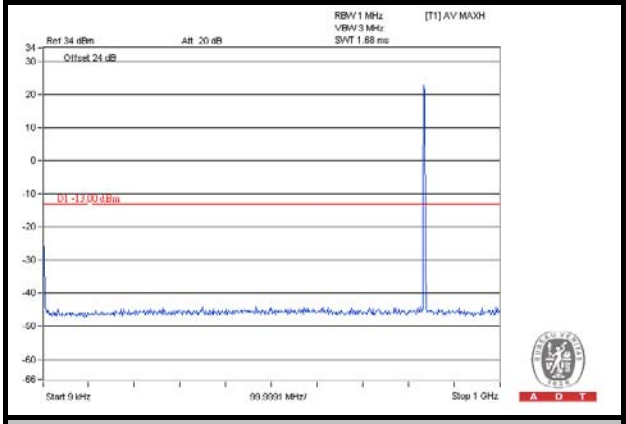
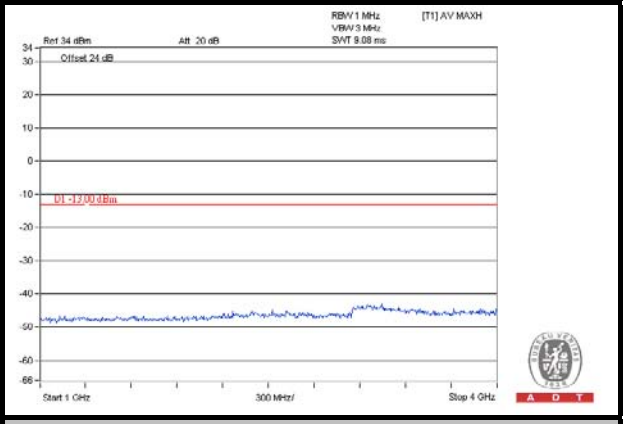
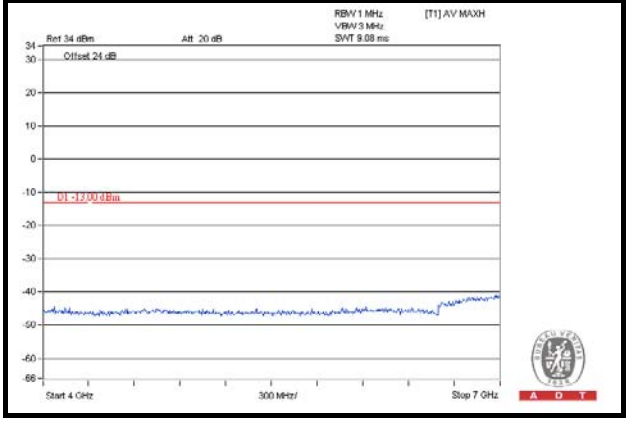
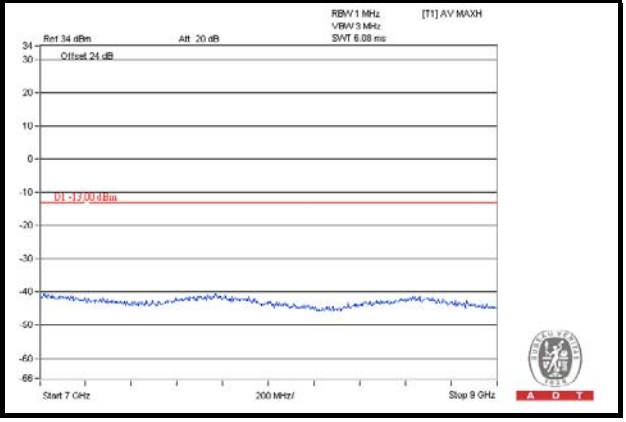
### 4.6.4 TEST RESULTS

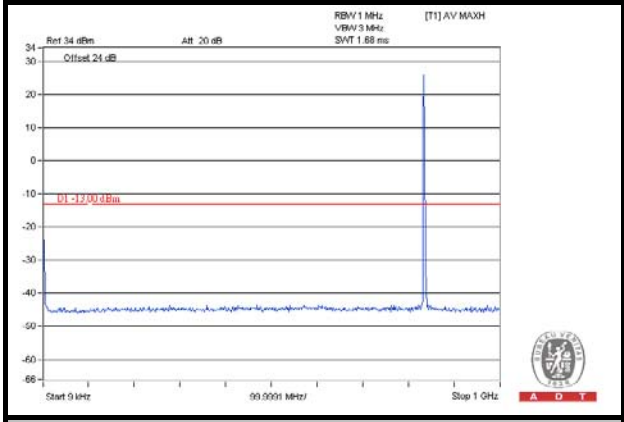
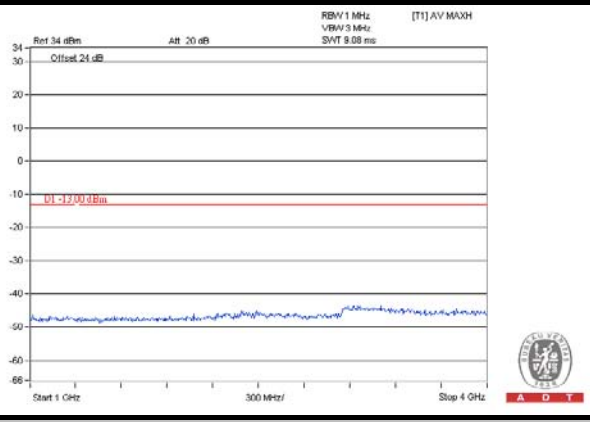
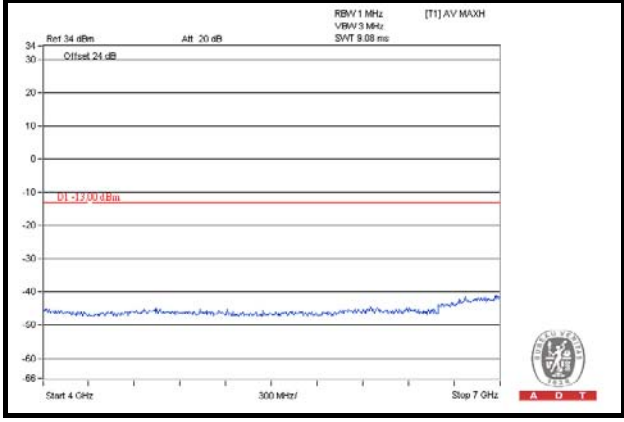
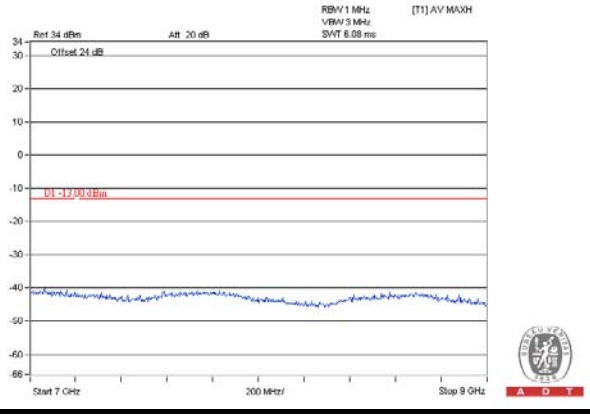
| GPRS | |
|---|---|
| CHANNEL 189 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~9GHz | |
|  | |

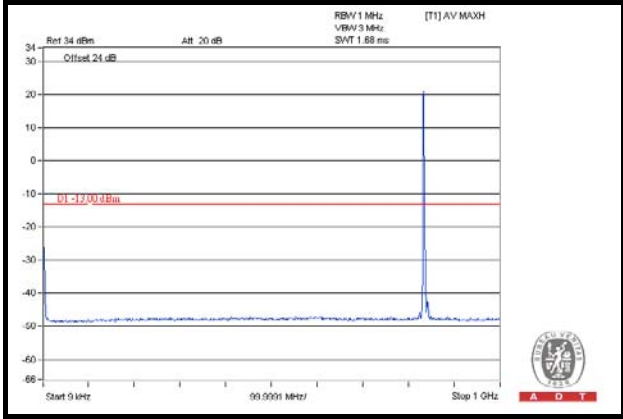
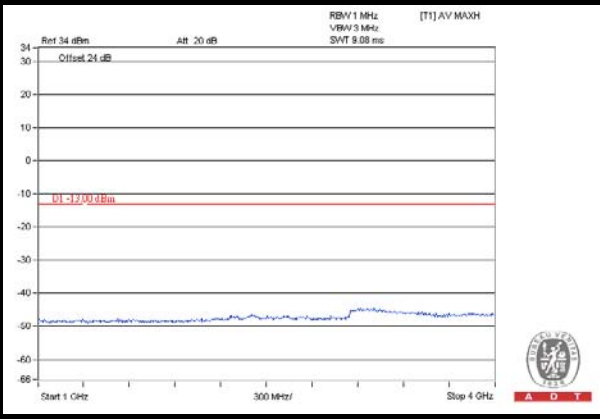
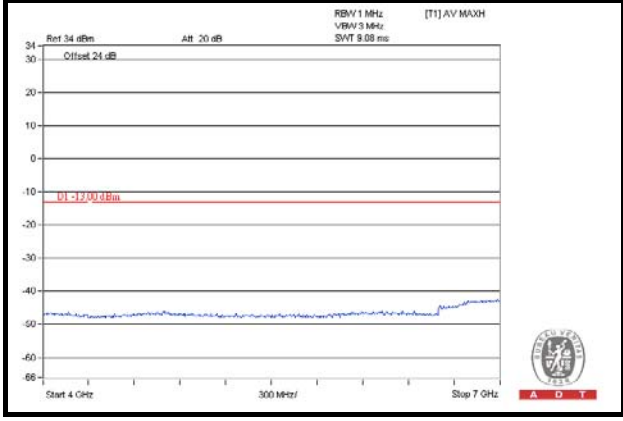
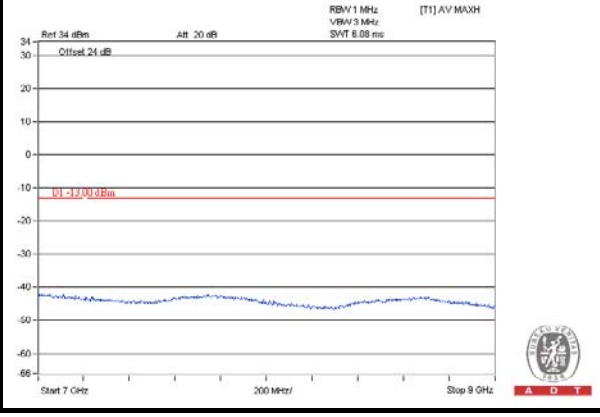
| EDGE | |
|---|---|
| CHANNEL 189 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~9GHz | |
|  | |

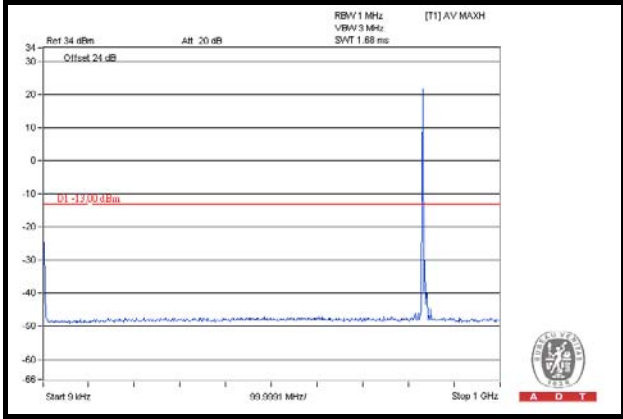
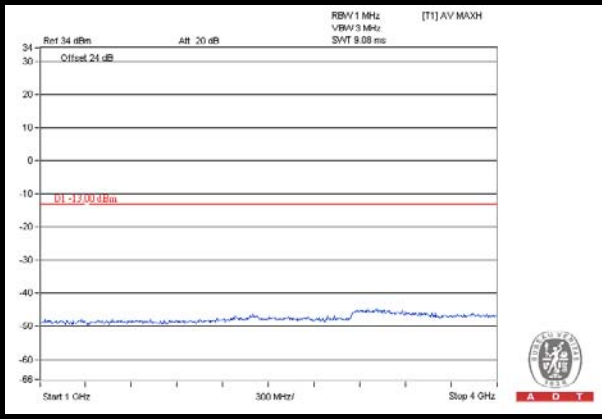
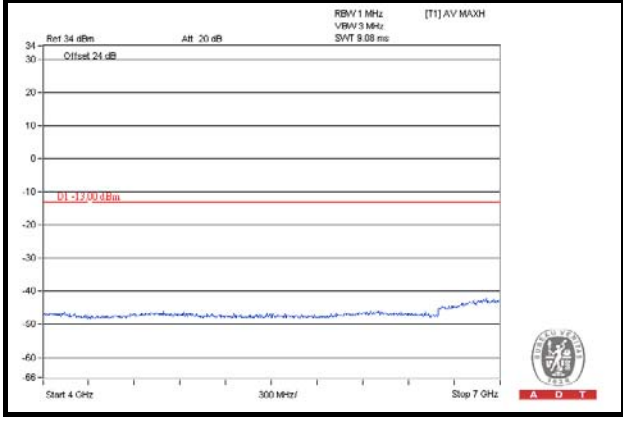
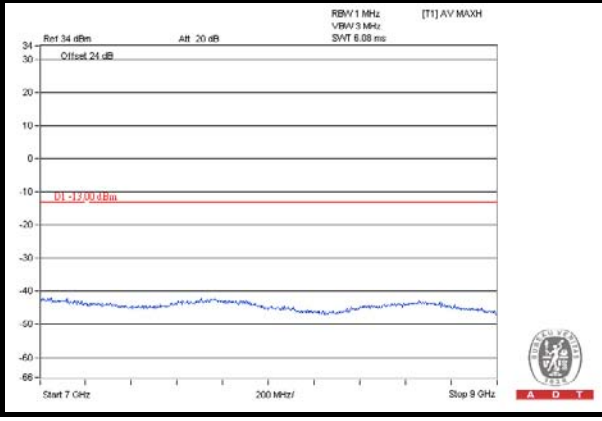
| WCDMA | |
|---|---|
| CHANNEL 4182 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~9GHz | |
|  | |

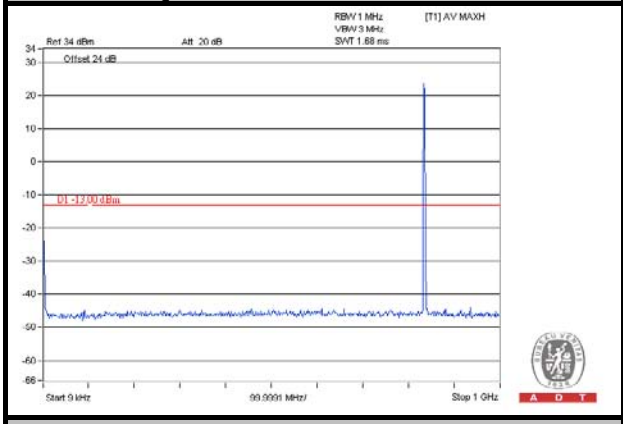
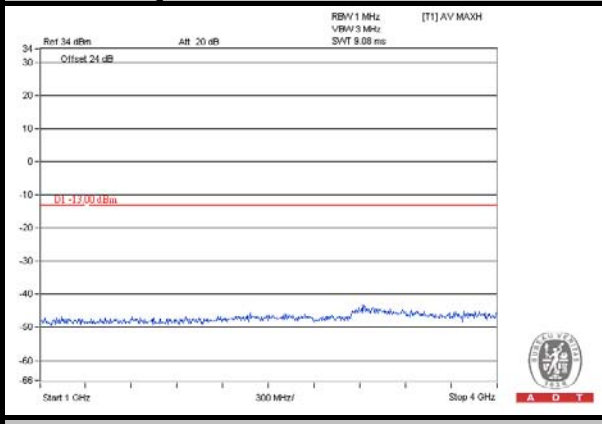
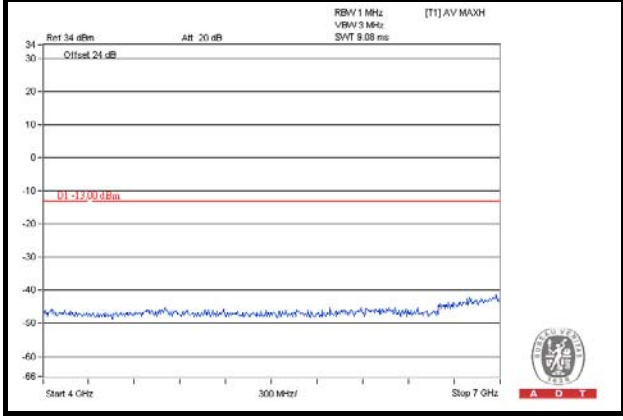
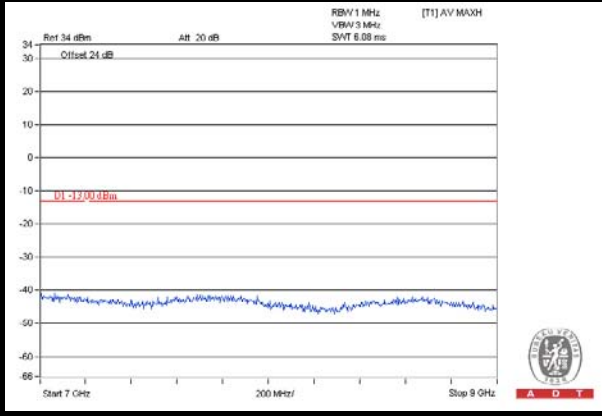
| CDMA2000 | |
|---|---|
| CHANNEL 384 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

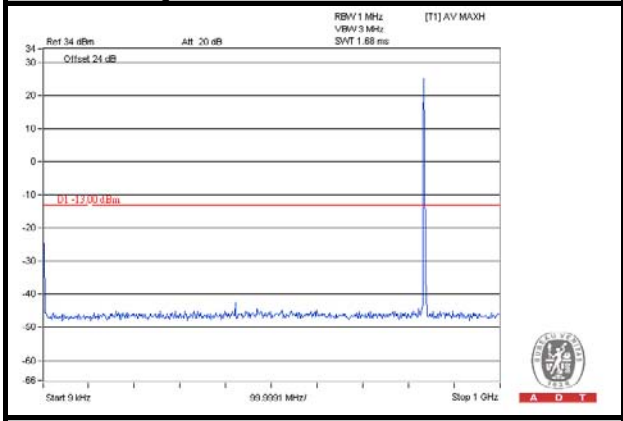
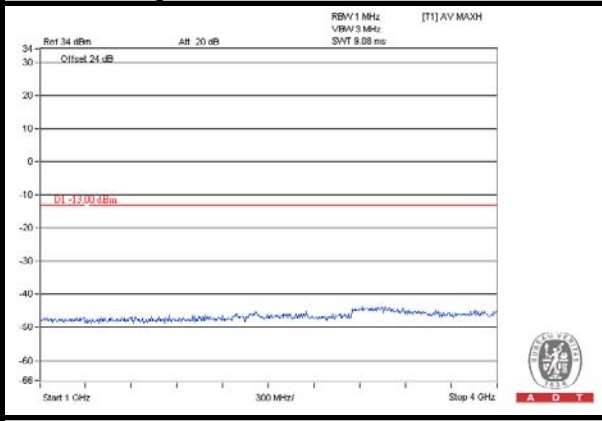
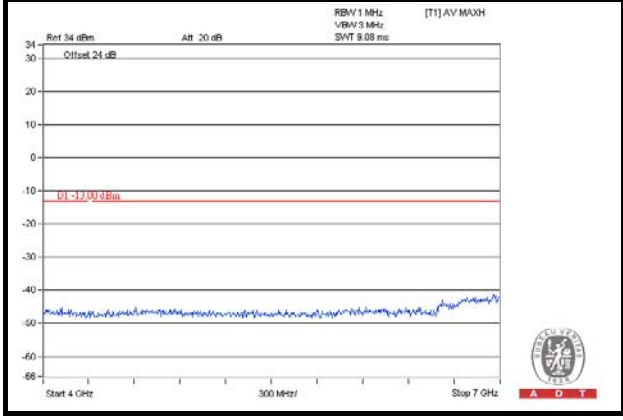
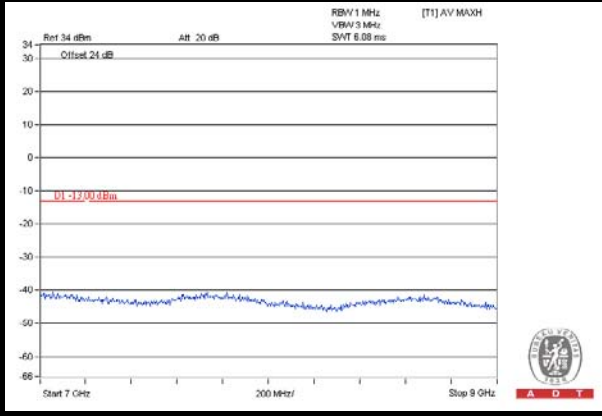
| LTE BAND 5 (Channel Bandwidth: 1.4MHz) | |
|---|---|
| CHANNEL 20525 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

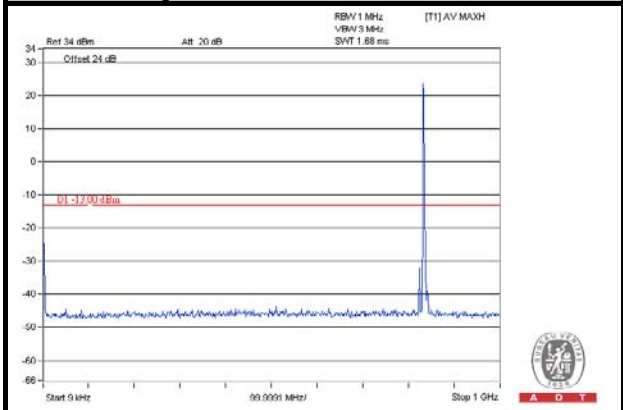
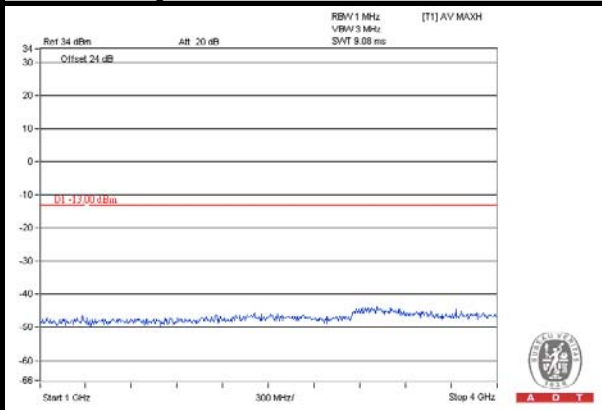
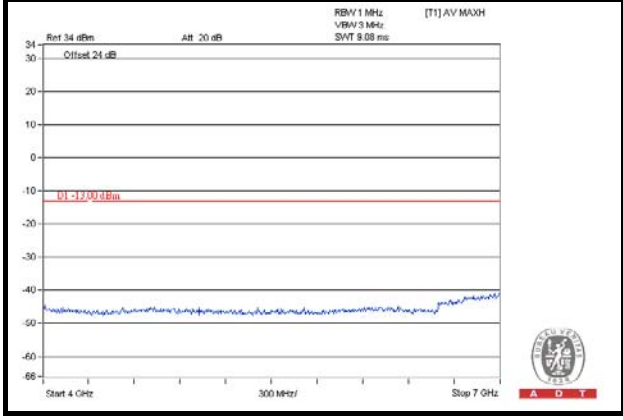
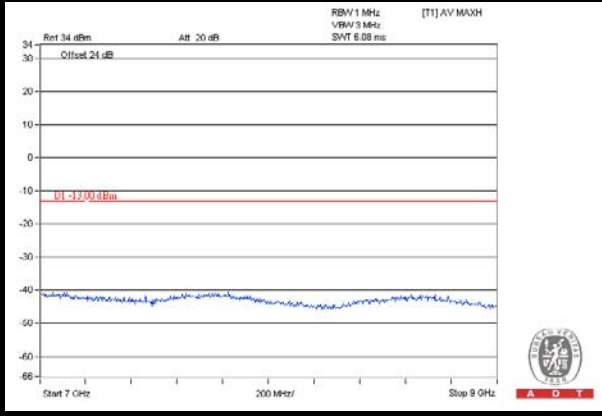
| LTE BAND 5 (Channel Bandwidth: 3MHz) | |
|---|---|
| CHANNEL 20525 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

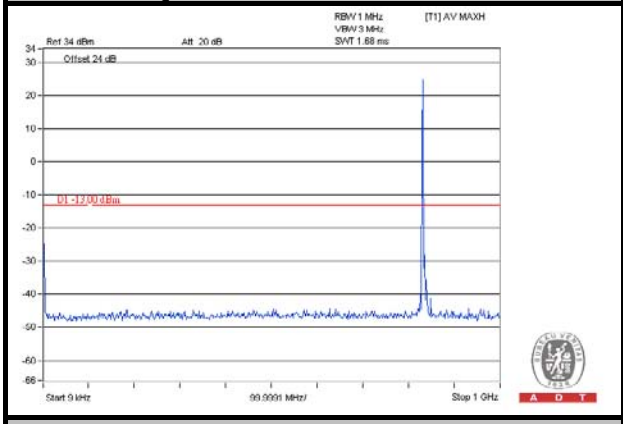
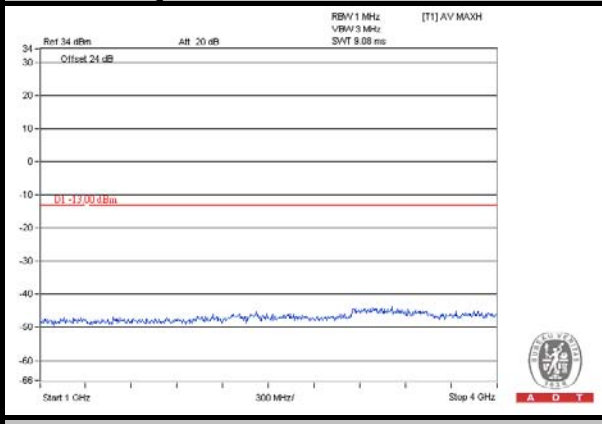
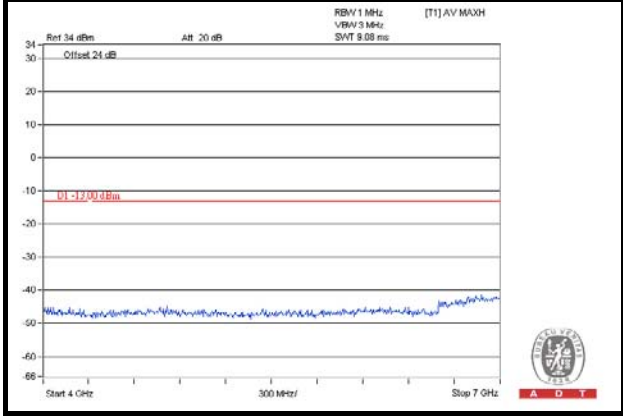
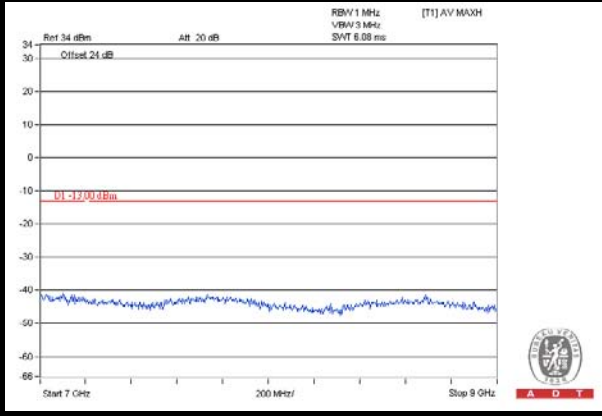
| LTE BAND 5 (Channel Bandwidth: 5MHz) | |
|---|---|
| CHANNEL 20525 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

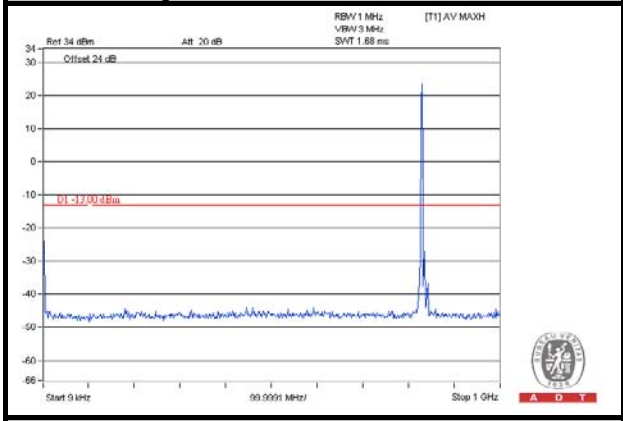
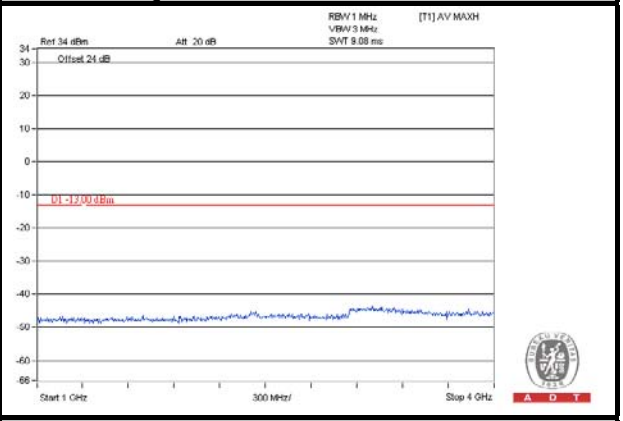
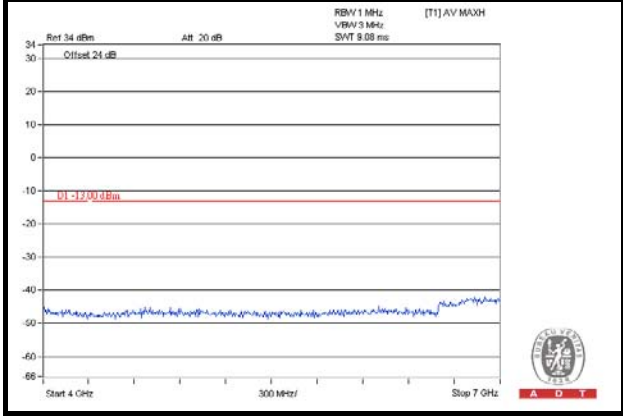
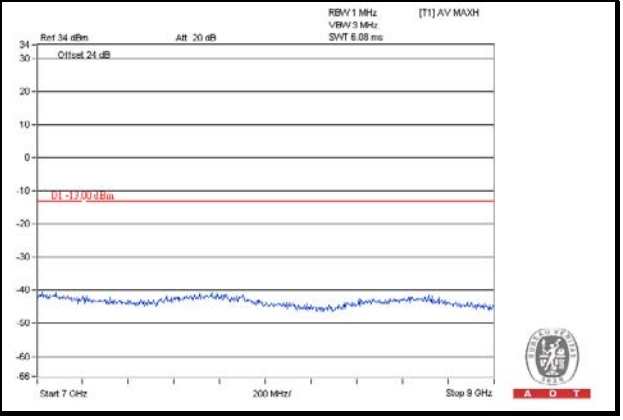
| LTE BAND 5 (Channel Bandwidth: 10MHz) | |
|---|---|
| CHANNEL 20525 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

| LTE BAND 26 (Channel Bandwidth: 1.4MHz) | |
|---|---|
| CHANNEL 26915 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

| LTE BAND 26 (Channel Bandwidth: 3MHz) | |
|---|---|
| CHANNEL 26915 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

| LTE BAND 26 (Channel Bandwidth: 5MHz) | |
|---|---|
| CHANNEL 26915 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

| LTE BAND 26 (Channel Bandwidth: 10MHz) | |
|---|---|
| CHANNEL 26915 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

| LTE BAND 26 (Channel Bandwidth: 15MHz) | |
|---|---|
| CHANNEL 26915 | |
| FREQUENCY RANGE: 9kHz~1GHz | FREQUENCY RANGE: 1GHz~4GHz |
|  |  |
| FREQUENCY RANGE: 4GHz~7GHz | FREQUENCY RANGE: 7GHz~9GHz |
|  |  |

## 4.7 RADIATED SPURIOUS EMISSION MEASUREMENT

### 4.7.1 LIMITS OF RADIATED SPURIOUS EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to -13dBm.

### 4.7.2 TEST PROCEDURES

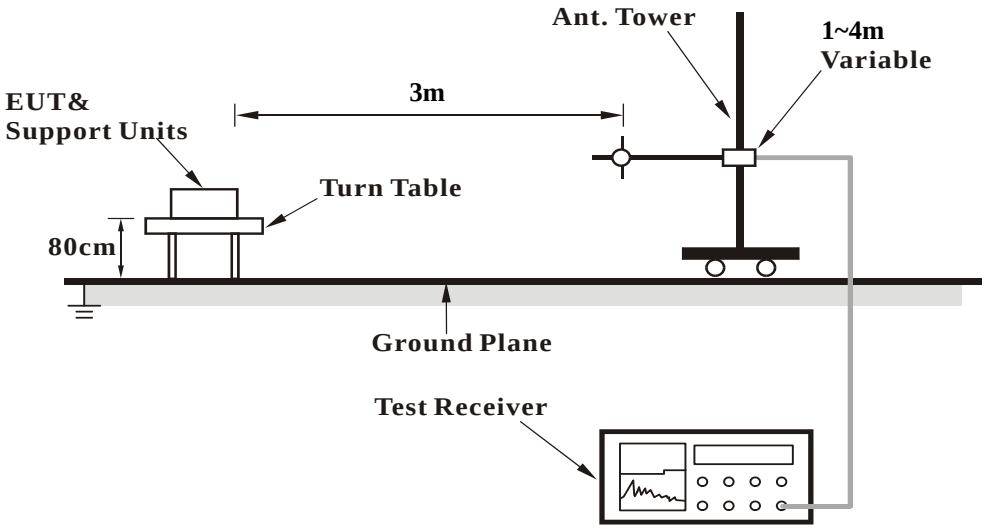
a. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m 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 = EIRP power - 2.15dBi.

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

### 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

**GPRS:**

| MODE | TX channel 189 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 52.512 | 35.78 | -13 | -44.82 | -8.60 | -53.42 | -40.42 |
| 2 | 162.424 | 32.34 | -13 | -55.17 | -1.06 | -56.22 | -43.22 |
| 3 | 228.245 | 35.31 | -13 | -60.05 | 3.82 | -56.23 | -43.23 |
| 4 | 479.751 | 29.64 | -13 | -64.61 | 4.04 | -60.57 | -47.57 |
| 5 | 713.64 | 32.64 | -13 | -63.97 | 2.86 | -61.12 | -48.12 |
| 6 | 849.367 | 33.51 | -13 | -62.84 | 1.40 | -61.44 | -48.44 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 52.451 | 36.32 | -13 | -43.09 | -9.41 | -52.50 | -39.50 |
| 2 | 146.754 | 28.98 | -13 | -59.90 | -0.35 | -60.25 | -47.25 |
| 3 | 240.124 | 28.68 | -13 | -66.72 | 3.97 | -62.75 | -49.75 |
| 4 | 303.645 | 27.86 | -13 | -68.77 | 2.86 | -65.91 | -52.91 |
| 5 | 480.241 | 30.65 | -13 | -65.70 | 1.40 | -64.30 | -51.30 |
| 6 | 848.245 | 32.64 | -13 | -61.96 | 1.04 | -60.92 | -47.92 |

**REMARKS:**

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

| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 73.47 | -13 | -29.16 | 6.31 | -22.85 | -9.85 |
| 2 | 2509.2 | 57.91 | -13 | -40.61 | 6.66 | -33.95 | -20.95 |
| 3 | 3345.6 | 59.38 | -13 | -43.63 | 7.63 | -36.00 | -23.00 |
| 4 | 4182 | 48.4 | -13 | -56.44 | 7.44 | -49.00 | -36.00 |
| 5 | 5018.4 | 46.18 | -13 | -58.08 | 7.01 | -51.07 | -38.07 |
| 6 | 5854.8 | 48.11 | -13 | -56.03 | 7.02 | -49.01 | -36.01 |
| 7 | 6691.2 | 49.26 | -13 | -54.07 | 5.56 | -48.51 | -35.51 |
| 8 | 7527.6 | 49.95 | -13 | -52.67 | 4.52 | -48.15 | -35.15 |
| 9 | 8364 | 50.16 | -13 | -52.39 | 4.19 | -48.20 | -35.20 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 73.35 | -13 | -29.28 | 6.31 | -22.97 | -9.97 |
| 2 | 2509.2 | 58.28 | -13 | -40.24 | 6.66 | -33.58 | -20.58 |
| 3 | 3345.6 | 62.18 | -13 | -40.83 | 7.63 | -33.20 | -20.20 |
| 4 | 4182 | 49.96 | -13 | -54.88 | 7.44 | -47.44 | -34.44 |
| 5 | 5018.4 | 50.84 | -13 | -53.42 | 7.01 | -46.41 | -33.41 |
| 6 | 5854.8 | 49.63 | -13 | -54.51 | 7.02 | -47.49 | -34.49 |
| 7 | 6691.2 | 50.74 | -13 | -52.59 | 5.56 | -47.03 | -34.03 |
| 8 | 7527.6 | 50.26 | -13 | -52.36 | 4.52 | -47.84 | -34.84 |
| 9 | 8364 | 49.81 | -13 | -52.74 | 4.19 | -48.55 | -35.55 |

**REMARKS:**

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

**EDGE:**

| MODE | TX channel 189 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 52.512 | 35.72 | -13 | -44.88 | -8.60 | -53.48 | -40.48 |
| 2 | 162.424 | 32.26 | -13 | -55.25 | -1.06 | -56.30 | -43.30 |
| 3 | 228.245 | 35.25 | -13 | -60.11 | 3.82 | -56.29 | -43.29 |
| 4 | 479.751 | 29.66 | -13 | -64.59 | 4.04 | -60.55 | -47.55 |
| 5 | 713.64 | 32.67 | -13 | -63.94 | 2.86 | -61.09 | -48.09 |
| 6 | 849.367 | 33.55 | -13 | -62.80 | 1.40 | -61.40 | -48.40 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 52.451 | 36.37 | -13 | -43.04 | -9.41 | -52.45 | -39.45 |
| 2 | 146.754 | 29.03 | -13 | -59.85 | -0.35 | -60.20 | -47.20 |
| 3 | 240.124 | 28.63 | -13 | -66.77 | 3.97 | -62.80 | -49.80 |
| 4 | 303.645 | 27.78 | -13 | -68.85 | 2.86 | -65.99 | -52.99 |
| 5 | 480.241 | 30.64 | -13 | -65.71 | 1.40 | -64.31 | -51.31 |
| 6 | 848.245 | 32.73 | -13 | -61.87 | 1.04 | -60.83 | -47.83 |

**REMARKS:**

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

| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 72.96 | -13 | -29.67 | 6.31 | -23.36 | -10.36 |
| 2 | 2509.2 | 57.82 | -13 | -40.70 | 6.66 | -34.04 | -21.04 |
| 3 | 3345.6 | 58.90 | -13 | -44.11 | 7.63 | -36.48 | -23.48 |
| 4 | 4182 | 48.36 | -13 | -56.48 | 7.44 | -49.04 | -36.04 |
| 5 | 5018.4 | 45.92 | -13 | -58.34 | 7.01 | -51.33 | -38.33 |
| 6 | 5854.8 | 47.84 | -13 | -56.30 | 7.02 | -49.28 | -36.28 |
| 7 | 6691.2 | 48.84 | -13 | -54.49 | 5.56 | -48.93 | -35.93 |
| 8 | 7527.6 | 49.64 | -13 | -52.98 | 4.52 | -48.46 | -35.46 |
| 9 | 8364 | 49.84 | -13 | -52.71 | 4.19 | -48.52 | -35.52 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 72.56 | -13 | -30.06 | 6.31 | -23.76 | -10.76 |
| 2 | 2509.2 | 57.73 | -13 | -40.78 | 6.66 | -34.12 | -21.12 |
| 3 | 3345.6 | 61.58 | -13 | -41.43 | 7.63 | -33.80 | -20.80 |
| 4 | 4182 | 49.35 | -13 | -55.50 | 7.44 | -48.05 | -35.05 |
| 5 | 5018.4 | 50.16 | -13 | -54.10 | 7.01 | -47.08 | -34.08 |
| 6 | 5854.8 | 48.86 | -13 | -55.28 | 7.02 | -48.27 | -35.27 |
| 7 | 6691.2 | 49.82 | -13 | -53.51 | 5.56 | -47.95 | -34.95 |
| 8 | 7527.6 | 49.47 | -13 | -53.15 | 4.52 | -48.63 | -35.63 |
| 9 | 8364 | 48.98 | -13 | -53.57 | 4.19 | -49.38 | -36.38 |

**REMARKS:**

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

**WCDMA:**

| MODE | TX channel 4182 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 53.125 | 34.24 | -13 | -45.98 | -8.86 | -54.84 | -41.84 |
| 2 | 162.547 | 31.75 | -13 | -56.04 | -0.91 | -56.95 | -43.95 |
| 3 | 240.114 | 35.24 | -13 | -60.12 | 3.82 | -56.30 | -43.30 |
| 4 | 479.754 | 29.42 | -13 | -65.61 | 3.88 | -61.73 | -48.73 |
| 5 | 713.54 | 32.14 | -13 | -64.31 | 2.86 | -61.45 | -48.45 |
| 6 | 960.145 | 36.34 | -13 | -60.01 | 1.40 | -58.60 | -45.60 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 54.542 | 28.65 | -13 | -52.69 | -7.95 | -60.65 | -47.65 |
| 2 | 142.64 | 26.65 | -13 | -66.51 | -1.23 | -67.73 | -54.73 |
| 3 | 263.641 | 27.24 | -13 | -66.76 | 4.09 | -62.67 | -49.67 |
| 4 | 304.675 | 27.56 | -13 | -68.08 | 3.74 | -64.34 | -51.34 |
| 5 | 479.87 | 34.64 | -13 | -61.39 | 3.70 | -57.69 | -44.69 |
| 6 | 745.645 | 28.56 | -13 | -68.72 | 1.10 | -67.62 | -54.62 |

**REMARKS:**

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

| MODE | TX channel 4182 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 39.70 | -13 | -62.93 | 6.31 | -56.62 | -43.62 |
| 2 | 2509.2 | 41.10 | -13 | -57.42 | 6.66 | -50.76 | -37.76 |
| 3 | 3345.6 | 43.20 | -13 | -59.81 | 7.63 | -52.18 | -39.18 |
| 4 | 4182 | 48.84 | -13 | -56.00 | 7.44 | -48.56 | -35.56 |
| 5 | 5018.4 | 46.64 | -13 | -57.62 | 7.01 | -50.61 | -37.61 |
| 6 | 5854.8 | 48.89 | -13 | -55.25 | 7.02 | -48.23 | -35.23 |
| 7 | 6691.2 | 50.11 | -13 | -53.22 | 5.56 | -47.66 | -34.66 |
| 8 | 7527.6 | 49.73 | -13 | -52.89 | 4.52 | -48.37 | -35.37 |
| 9 | 8364 | 50.13 | -13 | -52.42 | 4.19 | -48.23 | -35.23 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1672.8 | 38.9 | -13 | -63.73 | 6.31 | -57.42 | -44.42 |
| 2 | 2509.2 | 41.3 | -13 | -57.22 | 6.66 | -50.56 | -37.56 |
| 3 | 3345.6 | 43.2 | -13 | -59.81 | 7.63 | -52.18 | -39.18 |
| 4 | 4182 | 49.61 | -13 | -55.23 | 7.44 | -47.79 | -34.79 |
| 5 | 5018.4 | 50.38 | -13 | -53.88 | 7.01 | -46.87 | -33.87 |
| 6 | 5854.8 | 50.4 | -13 | -53.74 | 7.02 | -46.72 | -33.72 |
| 7 | 6691.2 | 50.83 | -13 | -52.50 | 5.56 | -46.94 | -33.94 |
| 8 | 7527.6 | 50.58 | -13 | -52.04 | 4.52 | -47.52 | -34.52 |
| 9 | 8364 | 48.83 | -13 | -53.72 | 4.19 | -49.53 | -36.53 |

**REMARKS:**

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

**CDMA2000:**

| MODE | TX channel 384 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 53.654 | 34.65 | -13 | -45.25 | -9.08 | -54.32 | -41.32 |
| 2 | 162.124 | 31.12 | -13 | -57.56 | -0.75 | -58.30 | -45.30 |
| 3 | 227.786 | 34.12 | -13 | -61.08 | 3.85 | -57.23 | -44.23 |
| 4 | 478.624 | 27.42 | -13 | -67.69 | 3.86 | -63.83 | -50.83 |
| 5 | 712.124 | 31.31 | -13 | -65.12 | 2.86 | -62.25 | -49.25 |
| 6 | 848.641 | 31.23 | -13 | -65.12 | 1.43 | -63.68 | -50.68 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 54.254 | 28.64 | -13 | -54.35 | -7.16 | -61.51 | -48.51 |
| 2 | 142.342 | 26.21 | -13 | -66.15 | -1.14 | -67.29 | -54.29 |
| 3 | 263.75 | 27.42 | -13 | -67.56 | 3.89 | -63.67 | -50.67 |
| 4 | 304.24 | 27.52 | -13 | -68.04 | 3.73 | -64.32 | -51.32 |
| 5 | 479.24 | 34.34 | -13 | -61.60 | 3.70 | -57.90 | -44.90 |
| 6 | 745.24 | 28.11 | -13 | -69.32 | 1.15 | -68.17 | -55.17 |

**REMARKS:**

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

| MODE | TX channel 384 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673.08 | 40.00 | -13 | -62.63 | 6.31 | -56.32 | -43.32 |
| 2 | 2509.62 | 40.19 | -13 | -58.33 | 6.66 | -51.67 | -38.67 |
| 3 | 3346.16 | 42.49 | -13 | -60.52 | 7.63 | -52.89 | -39.89 |
| 4 | 4182.7 | 48.44 | -13 | -56.40 | 7.44 | -48.96 | -35.96 |
| 5 | 5019.24 | 46.88 | -13 | -57.38 | 7.01 | -50.37 | -37.37 |
| 6 | 5855.78 | 49.4 | -13 | -54.74 | 7.02 | -47.72 | -34.72 |
| 7 | 6692.32 | 49.36 | -13 | -53.97 | 5.56 | -48.41 | -35.41 |
| 8 | 7528.86 | 50.38 | -13 | -52.24 | 4.52 | -47.72 | -34.72 |
| 9 | 8365.4 | 50.45 | -13 | -52.10 | 4.19 | -47.91 | -34.91 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673.08 | 38.54 | -13 | -64.09 | 6.31 | -57.78 | -44.78 |
| 2 | 2509.62 | 40.96 | -13 | -57.56 | 6.66 | -50.90 | -37.90 |
| 3 | 3346.16 | 44.14 | -13 | -58.87 | 7.63 | -51.24 | -38.24 |
| 4 | 4182.7 | 48.77 | -13 | -56.07 | 7.44 | -48.63 | -35.63 |
| 5 | 5019.24 | 50.27 | -13 | -53.99 | 7.01 | -46.98 | -33.98 |
| 6 | 5855.78 | 49.52 | -13 | -54.62 | 7.02 | -47.60 | -34.60 |
| 7 | 6692.32 | 51.75 | -13 | -51.58 | 5.56 | -46.02 | -33.02 |
| 8 | 7528.86 | 51.37 | -13 | -51.25 | 4.52 | -46.73 | -33.73 |
| 9 | 8365.4 | 49.05 | -13 | -53.50 | 4.19 | -49.31 | -36.31 |

**REMARKS:**

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

**LTE BAND 5**

**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

| MODE | TX channel 20525 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.34 | 27.94 | -13 | -43.44 | -14.82 | -58.26 | -45.26 |
| 2 | 74.786 | 20.37 | -13 | -74.64 | -2.08 | -76.72 | -63.72 |
| 3 | 134.479 | 23.38 | -13 | -72.14 | -1.48 | -73.62 | -60.62 |
| 4 | 158.688 | 23.53 | -13 | -64.31 | -0.89 | -65.19 | -52.19 |
| 5 | 205.794 | 25.66 | -13 | -69.81 | 4.27 | -65.55 | -52.55 |
| 6 | 239.955 | 27.30 | -13 | -68.06 | 3.81 | -64.24 | -51.24 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.79 | 40.10 | -13 | -31.45 | -14.71 | -46.15 | -33.15 |
| 2 | 126.527 | 28.93 | -13 | -62.08 | -1.22 | -63.31 | -50.31 |
| 3 | 158.198 | 25.58 | -13 | -62.12 | -0.96 | -63.08 | -50.08 |
| 4 | 168.311 | 29.13 | -13 | -61.40 | 0.50 | -60.90 | -47.90 |
| 5 | 205.714 | 26.81 | -13 | -68.66 | 4.27 | -64.40 | -51.40 |
| 6 | 956.401 | 36.23 | -13 | -61.72 | 0.37 | -61.35 | -48.35 |

**REMARKS:**

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

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.61 | -13 | -29.02 | 6.31 | -22.71 | -9.71 |
| 2 | 2509.5 | 57.14 | -13 | -41.38 | 6.66 | -34.72 | -21.72 |
| 3 | 3346 | 59.26 | -13 | -43.75 | 7.63 | -36.12 | -23.12 |
| 4 | 4182.5 | 48.7 | -13 | -56.14 | 7.44 | -48.70 | -35.70 |
| 5 | 5019 | 47.15 | -13 | -57.11 | 7.01 | -50.10 | -37.10 |
| 6 | 5855.5 | 48.24 | -13 | -55.90 | 7.01 | -48.89 | -35.89 |
| 7 | 6692 | 48.53 | -13 | -54.80 | 5.56 | -49.24 | -36.24 |
| 8 | 7528.5 | 50.26 | -13 | -52.36 | 4.52 | -47.84 | -34.84 |
| 9 | 8365 | 49.96 | -13 | -52.59 | 4.19 | -48.40 | -35.40 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.89 | -13 | -29.74 | 6.31 | -23.43 | -10.43 |
| 2 | 2509.5 | 57.77 | -13 | -40.75 | 6.66 | -34.09 | -21.09 |
| 3 | 3346 | 62.83 | -13 | -40.18 | 7.63 | -32.55 | -19.55 |
| 4 | 4182.5 | 50.07 | -13 | -54.77 | 7.44 | -47.33 | -34.33 |
| 5 | 5019 | 50.87 | -13 | -53.39 | 7.01 | -46.38 | -33.38 |
| 6 | 5855.5 | 49.26 | -13 | -54.88 | 7.01 | -47.87 | -34.87 |
| 7 | 6692 | 49.78 | -13 | -53.55 | 5.56 | -47.99 | -34.99 |
| 8 | 7528.5 | 49.47 | -13 | -53.15 | 4.52 | -48.63 | -35.63 |
| 9 | 8365 | 48.96 | -13 | -53.59 | 4.19 | -49.40 | -36.40 |

**REMARKS:**

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

**LTE BAND 5**

**CHANNEL BANDWIDTH: 3MHz / QPSK**

| MODE | TX channel 20525 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.8 | 27.07 | -13 | -44.48 | -14.70 | -59.18 | -46.18 |
| 2 | 74.096 | 20.53 | -13 | -74.60 | -2.12 | -76.71 | -63.71 |
| 3 | 134.049 | 23.78 | -13 | -71.87 | -1.49 | -73.36 | -60.36 |
| 4 | 158.368 | 22.59 | -13 | -65.16 | -0.93 | -66.09 | -53.09 |
| 5 | 206.724 | 25.52 | -13 | -69.95 | 4.25 | -65.70 | -52.70 |
| 6 | 239.645 | 26.43 | -13 | -68.94 | 3.81 | -65.13 | -52.13 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 31.19 | 41.38 | -13 | -30.31 | -14.61 | -44.92 | -31.92 |
| 2 | 127.387 | 29.28 | -13 | -61.92 | -1.23 | -63.15 | -50.15 |
| 3 | 158.748 | 25.52 | -13 | -62.33 | -0.88 | -63.21 | -50.21 |
| 4 | 167.401 | 29.31 | -13 | -60.96 | 0.37 | -60.59 | -47.59 |
| 5 | 207.384 | 26.36 | -13 | -69.11 | 4.25 | -64.86 | -51.86 |
| 6 | 956.161 | 34.45 | -13 | -63.51 | 0.37 | -63.14 | -50.14 |

**REMARKS:**

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

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.52 | -13 | -29.11 | 6.31 | -22.80 | -9.80 |
| 2 | 2509.5 | 57.27 | -13 | -41.25 | 6.66 | -34.59 | -21.59 |
| 3 | 3346 | 58.39 | -13 | -44.62 | 7.63 | -36.99 | -23.99 |
| 4 | 4182.5 | 48.12 | -13 | -56.72 | 7.44 | -49.28 | -36.28 |
| 5 | 5019 | 48.15 | -13 | -56.11 | 7.01 | -49.10 | -36.10 |
| 6 | 5855.5 | 47.67 | -13 | -56.47 | 7.01 | -49.46 | -36.46 |
| 7 | 6692 | 49.09 | -13 | -54.24 | 5.56 | -48.68 | -35.68 |
| 8 | 7528.5 | 50.66 | -13 | -51.96 | 4.52 | -47.44 | -34.44 |
| 9 | 8365 | 49 | -13 | -53.55 | 4.19 | -49.36 | -36.36 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.17 | -13 | -30.46 | 6.31 | -24.15 | -11.15 |
| 2 | 2509.5 | 58.38 | -13 | -40.14 | 6.66 | -33.48 | -20.48 |
| 3 | 3346 | 62.34 | -13 | -40.67 | 7.63 | -33.04 | -20.04 |
| 4 | 4182.5 | 50.31 | -13 | -54.53 | 7.44 | -47.09 | -34.09 |
| 5 | 5019 | 51.6 | -13 | -52.66 | 7.01 | -45.65 | -32.65 |
| 6 | 5855.5 | 48.27 | -13 | -55.87 | 7.01 | -48.86 | -35.86 |
| 7 | 6692 | 50.19 | -13 | -53.14 | 5.56 | -47.58 | -34.58 |
| 8 | 7528.5 | 48.92 | -13 | -53.70 | 4.52 | -49.18 | -36.18 |
| 9 | 8365 | 49.7 | -13 | -52.85 | 4.19 | -48.66 | -35.66 |

**REMARKS:**

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

**LTE BAND 5**

**CHANNEL BANDWIDTH: 5MHz / QPSK**

| MODE | TX channel 20525 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.32 | 26.51 | -13 | -44.87 | -14.82 | -59.69 | -46.69 |
| 2 | 74.006 | 20.47 | -13 | -74.67 | -2.12 | -76.79 | -63.79 |
| 3 | 133.509 | 24.29 | -13 | -68.24 | -1.27 | -69.51 | -56.51 |
| 4 | 157.568 | 22.08 | -13 | -65.44 | -1.05 | -66.49 | -53.49 |
| 5 | 206.484 | 24.95 | -13 | -70.52 | 4.26 | -66.26 | -53.26 |
| 6 | 240.465 | 27.01 | -13 | -68.33 | 3.82 | -64.51 | -51.51 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.53 | 41.34 | -13 | -30.11 | -14.77 | -44.88 | -31.88 |
| 2 | 127.617 | 28.03 | -13 | -63.22 | -1.23 | -64.45 | -51.45 |
| 3 | 159.068 | 25.91 | -13 | -62.03 | -0.83 | -62.86 | -49.86 |
| 4 | 168.521 | 29.12 | -13 | -61.47 | 0.53 | -60.93 | -47.93 |
| 5 | 206.914 | 27.07 | -13 | -68.40 | 4.25 | -64.15 | -51.15 |
| 6 | 957.601 | 36.29 | -13 | -61.62 | 0.38 | -61.24 | -48.24 |

**REMARKS:**

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

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 74.05 | -13 | -28.58 | 6.31 | -22.27 | -9.27 |
| 2 | 2509.5 | 56.17 | -13 | -42.35 | 6.66 | -35.69 | -22.69 |
| 3 | 3346 | 59.90 | -13 | -43.11 | 7.63 | -35.48 | -22.48 |
| 4 | 4182.5 | 48.97 | -13 | -55.87 | 7.44 | -48.43 | -35.43 |
| 5 | 5019 | 47.96 | -13 | -56.30 | 7.01 | -49.29 | -36.29 |
| 6 | 5855.5 | 49.01 | -13 | -55.13 | 7.01 | -48.12 | -35.12 |
| 7 | 6692 | 47.83 | -13 | -55.50 | 5.56 | -49.94 | -36.94 |
| 8 | 7528.5 | 49.53 | -13 | -53.09 | 4.52 | -48.57 | -35.57 |
| 9 | 8365 | 49.32 | -13 | -53.23 | 4.19 | -49.04 | -36.04 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.69 | -13 | -28.94 | 6.31 | -22.63 | -9.63 |
| 2 | 2509.5 | 57.92 | -13 | -40.60 | 6.66 | -33.94 | -20.94 |
| 3 | 3346 | 62.14 | -13 | -40.87 | 7.63 | -33.24 | -20.24 |
| 4 | 4182.5 | 50.49 | -13 | -54.35 | 7.44 | -46.91 | -33.91 |
| 5 | 5019 | 50.95 | -13 | -53.31 | 7.01 | -46.30 | -33.30 |
| 6 | 5855.5 | 48.83 | -13 | -55.31 | 7.01 | -48.30 | -35.30 |
| 7 | 6692 | 50.42 | -13 | -52.91 | 5.56 | -47.35 | -34.35 |
| 8 | 7528.5 | 49.11 | -13 | -53.51 | 4.52 | -48.99 | -35.99 |
| 9 | 8365 | 48.9 | -13 | -53.65 | 4.19 | -49.46 | -36.46 |

**REMARKS:**

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

**LTE BAND 5**

**CHANNEL BANDWIDTH: 10MHz / QPSK**

| MODE | TX channel 20525 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 31.258 | 28.08 | -13 | -43.64 | -14.59 | -58.23 | -45.23 |
| 2 | 75.556 | 20.47 | -13 | -74.40 | -2.03 | -76.44 | -63.44 |
| 3 | 133.929 | 23.86 | -13 | -71.82 | -1.50 | -73.32 | -60.32 |
| 4 | 158.848 | 22.02 | -13 | -65.86 | -0.86 | -66.72 | -53.72 |
| 5 | 205.994 | 24.54 | -13 | -70.93 | 4.26 | -66.67 | -53.67 |
| 6 | 239.805 | 26.35 | -13 | -69.01 | 3.81 | -65.20 | -52.20 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 31.57 | 40.70 | -13 | -31.13 | -14.52 | -45.65 | -32.65 |
| 2 | 126.897 | 28.50 | -13 | -62.60 | -1.23 | -63.82 | -50.82 |
| 3 | 157.968 | 26.39 | -13 | -62.40 | -0.76 | -63.15 | -50.15 |
| 4 | 168.861 | 27.36 | -13 | -63.32 | 0.58 | -62.74 | -49.74 |
| 5 | 206.974 | 25.68 | -13 | -69.79 | 4.25 | -65.54 | -52.54 |
| 6 | 956.571 | 35.40 | -13 | -62.55 | 0.37 | -62.17 | -49.17 |

**REMARKS:**

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

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| **1** | **1673** | **74.19** | **-13** | **-28.44** | **6.31** | **-22.13** | **-9.13** |
| 2 | 2509.5 | 56.56 | -13 | -41.96 | 6.66 | -35.30 | -22.30 |
| 3 | 3346 | 58.45 | -13 | -44.56 | 7.63 | -36.93 | -23.93 |
| 4 | 4182.5 | 48.98 | -13 | -55.86 | 7.44 | -48.42 | -35.42 |
| 5 | 5019 | 47.84 | -13 | -56.42 | 7.01 | -49.41 | -36.41 |
| 6 | 5855.5 | 47.87 | -13 | -56.27 | 7.01 | -49.26 | -36.26 |
| 7 | 6692 | 47.79 | -13 | -55.54 | 5.56 | -49.98 | -36.98 |
| 8 | 7528.5 | 49.7 | -13 | -52.92 | 4.52 | -48.40 | -35.40 |
| 9 | 8365 | 49.45 | -13 | -53.10 | 4.19 | -48.91 | -35.91 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.43 | -13 | -30.20 | 6.31 | -23.89 | -10.89 |
| 2 | 2509.5 | 57.84 | -13 | -40.68 | 6.66 | -34.02 | -21.02 |
| 3 | 3346 | 63.49 | -13 | -39.52 | 7.63 | -31.89 | -18.89 |
| 4 | 4182.5 | 50.04 | -13 | -54.80 | 7.44 | -47.36 | -34.36 |
| 5 | 5019 | 50.35 | -13 | -53.91 | 7.01 | -46.90 | -33.90 |
| 6 | 5855.5 | 49.65 | -13 | -54.49 | 7.01 | -47.48 | -34.48 |
| 7 | 6692 | 49.32 | -13 | -54.01 | 5.56 | -48.45 | -35.45 |
| 8 | 7528.5 | 49.54 | -13 | -53.08 | 4.52 | -48.56 | -35.56 |
| 9 | 8365 | 48.97 | -13 | -53.58 | 4.19 | -49.39 | -36.39 |

**REMARKS:**

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

**LTE BAND 26**

**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

| MODE | TX channel 26915 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.668 | 27.18 | -13 | -44.32 | -14.74 | -59.06 | -46.06 |
| 2 | 75.206 | 20.98 | -13 | -73.95 | -2.05 | -76.01 | -63.01 |
| 3 | 134.759 | 22.62 | -13 | -72.82 | -1.47 | -74.29 | -61.29 |
| 4 | 159.088 | 24.06 | -13 | -63.89 | -0.83 | -64.72 | -51.72 |
| 5 | 207.294 | 25.11 | -13 | -70.36 | 4.25 | -66.11 | -53.11 |
| 6 | 240.135 | 27.30 | -13 | -68.05 | 3.82 | -64.23 | -51.23 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 32.47 | 40.70 | -13 | -31.45 | -14.30 | -45.75 | -32.75 |
| 2 | 126.037 | 27.09 | -13 | -63.82 | -1.22 | -65.04 | -52.04 |
| 3 | 158.378 | 23.98 | -13 | -63.77 | -0.93 | -64.70 | -51.70 |
| 4 | 169.811 | 29.47 | -13 | -61.48 | 0.72 | -60.76 | -47.76 |
| 5 | 207.044 | 27.32 | -13 | -68.15 | 4.25 | -63.90 | -50.90 |
| 6 | 957.271 | 35.15 | -13 | -62.77 | 0.38 | -62.40 | -49.40 |

**REMARKS:**

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

| MODE | TX channel 26915 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.17 | -13 | -29.63 | 6.24 | -23.39 | -10.39 |
| 2 | 2509.5 | 56.59 | -13 | -41.49 | 6.61 | -34.89 | -21.89 |
| 3 | 3346 | 60.05 | -13 | -42.88 | 7.53 | -35.35 | -22.35 |
| 4 | 4182.5 | 48.43 | -13 | -56.50 | 7.48 | -49.02 | -36.02 |
| 5 | 5019 | 47.42 | -13 | -56.68 | 6.99 | -49.69 | -36.69 |
| 6 | 5855.5 | 48.87 | -13 | -55.27 | 7.22 | -48.05 | -35.05 |
| 7 | 6692 | 49.39 | -13 | -54.53 | 5.83 | -48.70 | -35.70 |
| 8 | 7528.5 | 49.92 | -13 | -52.70 | 4.66 | -48.04 | -35.04 |
| 9 | 8365 | 50.93 | -13 | -51.52 | 4.16 | -47.36 | -34.36 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.61 | -13 | -30.19 | 6.24 | -23.95 | -10.95 |
| 2 | 2509.5 | 57.56 | -13 | -40.52 | 6.61 | -33.92 | -20.92 |
| 3 | 3346 | 63.97 | -13 | -38.96 | 7.53 | -31.43 | -18.43 |
| 4 | 4182.5 | 50.49 | -13 | -54.44 | 7.48 | -46.96 | -33.96 |
| 5 | 5019 | 51.24 | -13 | -52.86 | 6.99 | -45.87 | -32.87 |
| 6 | 5855.5 | 48.53 | -13 | -55.61 | 7.22 | -48.39 | -35.39 |
| 7 | 6692 | 50.2 | -13 | -53.72 | 5.83 | -47.89 | -34.89 |
| 8 | 7528.5 | 50.65 | -13 | -51.97 | 4.66 | -47.31 | -34.31 |
| 9 | 8365 | 49.73 | -13 | -52.72 | 4.16 | -48.56 | -35.56 |

**REMARKS:**

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

**LTE BAND 26**

**CHANNEL BANDWIDTH: 3MHz / QPSK**

| MODE | TX channel 26915 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 31.178 | 26.19 | -13 | -45.50 | -14.61 | -60.11 | -47.11 |
| 2 | 76.176 | 21.74 | -13 | -73.03 | -2.00 | -75.03 | -62.03 |
| 3 | 134.049 | 23.62 | -13 | -72.03 | -1.49 | -73.52 | -60.52 |
| 4 | 157.828 | 21.21 | -13 | -66.39 | -1.01 | -67.40 | -54.40 |
| 5 | 208.254 | 23.58 | -13 | -71.88 | 4.23 | -67.65 | -54.65 |
| 6 | 241.905 | 23.89 | -13 | -71.39 | 3.83 | -67.56 | -54.56 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 32.86 | 41.15 | -13 | -31.15 | -14.20 | -45.35 | -32.35 |
| 2 | 125.907 | 27.52 | -13 | -63.36 | -1.22 | -64.58 | -51.58 |
| 3 | 160.088 | 25.71 | -13 | -62.52 | -0.68 | -63.20 | -50.20 |
| 4 | 169.541 | 28.66 | -13 | -62.21 | 0.68 | -61.53 | -48.53 |
| 5 | 208.314 | 26.98 | -13 | -68.48 | 4.23 | -64.25 | -51.25 |
| 6 | 958.311 | 33.58 | -13 | -64.31 | 0.38 | -63.93 | -50.93 |

**REMARKS:**

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

| MODE | TX channel 26915 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.81 | -13 | -28.99 | 6.24 | -22.75 | -9.75 |
| 2 | 2509.5 | 57.28 | -13 | -40.80 | 6.61 | -34.20 | -21.20 |
| 3 | 3346 | 60.10 | -13 | -42.83 | 7.53 | -35.30 | -22.30 |
| 4 | 4182.5 | 50.12 | -13 | -54.81 | 7.48 | -47.33 | -34.33 |
| 5 | 5019 | 47.02 | -13 | -57.08 | 6.99 | -50.09 | -37.09 |
| 6 | 5855.5 | 47.92 | -13 | -56.22 | 7.22 | -49.00 | -36.00 |
| 7 | 6692 | 48.29 | -13 | -55.63 | 5.83 | -49.80 | -36.80 |
| 8 | 7528.5 | 49.62 | -13 | -53.00 | 4.66 | -48.34 | -35.34 |
| 9 | 8365 | 50.87 | -13 | -51.58 | 4.16 | -47.42 | -34.42 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.39 | -13 | -30.41 | 6.24 | -24.17 | -11.17 |
| 2 | 2509.5 | 58.65 | -13 | -39.43 | 6.61 | -32.83 | -19.83 |
| 3 | 3346 | 62.55 | -13 | -40.38 | 7.53 | -32.85 | -19.85 |
| 4 | 4182.5 | 49.57 | -13 | -55.36 | 7.48 | -47.88 | -34.88 |
| 5 | 5019 | 50.16 | -13 | -53.94 | 6.99 | -46.95 | -33.95 |
| 6 | 5855.5 | 48.61 | -13 | -55.53 | 7.22 | -48.31 | -35.31 |
| 7 | 6692 | 50.78 | -13 | -53.14 | 5.83 | -47.31 | -34.31 |
| 8 | 7528.5 | 49.54 | -13 | -53.08 | 4.66 | -48.42 | -35.42 |
| 9 | 8365 | 49.3 | -13 | -53.15 | 4.16 | -48.99 | -35.99 |

**REMARKS:**

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

**LTE BAND 26**

**CHANNEL BANDWIDTH: 5MHz / QPSK**

| MODE | TX channel 26915 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 31.358 | 27.11 | -13 | -44.64 | -14.57 | -59.21 | -46.21 |
| 2 | 74.506 | 20.13 | -13 | -74.92 | -2.10 | -77.02 | -64.02 |
| 3 | 134.099 | 23.91 | -13 | -71.72 | -1.49 | -73.21 | -60.21 |
| 4 | 158.348 | 23.61 | -13 | -64.13 | -0.93 | -65.07 | -52.07 |
| 5 | 207.144 | 24.96 | -13 | -70.51 | 4.25 | -66.26 | -53.26 |
| 6 | 238.745 | 27.79 | -13 | -67.61 | 3.81 | -63.81 | -50.81 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 32.72 | 41.24 | -13 | -31.01 | -14.24 | -45.24 | -32.24 |
| 2 | 127.627 | 28.35 | -13 | -62.90 | -1.23 | -64.14 | -51.14 |
| 3 | 160.278 | 23.76 | -13 | -64.52 | -0.66 | -65.18 | -52.18 |
| 4 | 166.811 | 27.67 | -13 | -62.44 | 0.28 | -62.15 | -49.15 |
| 5 | 205.834 | 27.89 | -13 | -67.58 | 4.27 | -63.32 | -50.32 |
| 6 | 956.531 | 34.93 | -13 | -63.02 | 0.37 | -62.65 | -49.65 |

**REMARKS:**

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

| MODE | TX channel 26915 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 73.49 | -13 | -29.31 | 6.24 | -23.07 | -10.07 |
| 2 | 2509.5 | 58.47 | -13 | -39.61 | 6.61 | -33.01 | -20.01 |
| 3 | 3346 | 59.16 | -13 | -43.77 | 7.53 | -36.24 | -23.24 |
| 4 | 4182.5 | 49.97 | -13 | -54.96 | 7.48 | -47.48 | -34.48 |
| 5 | 5019 | 47.53 | -13 | -56.57 | 6.99 | -49.58 | -36.58 |
| 6 | 5855.5 | 48.38 | -13 | -55.76 | 7.22 | -48.54 | -35.54 |
| 7 | 6692 | 47.94 | -13 | -55.98 | 5.83 | -50.15 | -37.15 |
| 8 | 7528.5 | 50.73 | -13 | -51.89 | 4.66 | -47.23 | -34.23 |
| 9 | 8365 | 48.95 | -13 | -53.50 | 4.16 | -49.34 | -36.34 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 71.5 | -13 | -31.30 | 6.24 | -25.06 | -12.06 |
| 2 | 2509.5 | 57.31 | -13 | -40.77 | 6.61 | -34.17 | -21.17 |
| 3 | 3346 | 63.84 | -13 | -39.09 | 7.53 | -31.56 | -18.56 |
| 4 | 4182.5 | 50.66 | -13 | -54.27 | 7.48 | -46.79 | -33.79 |
| 5 | 5019 | 50.8 | -13 | -53.30 | 6.99 | -46.31 | -33.31 |
| 6 | 5855.5 | 47.59 | -13 | -56.55 | 7.22 | -49.33 | -36.33 |
| 7 | 6692 | 50.05 | -13 | -53.87 | 5.83 | -48.04 | -35.04 |
| 8 | 7528.5 | 49.51 | -13 | -53.11 | 4.66 | -48.45 | -35.45 |
| 9 | 8365 | 49.13 | -13 | -53.32 | 4.16 | -49.16 | -36.16 |

**REMARKS:**

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

**LTE BAND 26**

**CHANNEL BANDWIDTH: 10MHz / QPSK**

| MODE | TX channel 26915 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 32.09 | 26.64 | -13 | -45.38 | -14.39 | -59.77 | -46.77 |
| 2 | 75.076 | 21.11 | -13 | -73.85 | -2.06 | -75.91 | -62.91 |
| 3 | 134.869 | 24.02 | -13 | -71.39 | -1.47 | -72.86 | -59.86 |
| 4 | 158.278 | 22.95 | -13 | -64.77 | -0.94 | -65.72 | -52.72 |
| 5 | 206.764 | 23.67 | -13 | -71.80 | 4.25 | -67.55 | -54.55 |
| 6 | 240.055 | 23.65 | -13 | -71.70 | 3.82 | -67.89 | -54.89 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.71 | 40.33 | -13 | -31.19 | -14.73 | -45.91 | -32.91 |
| 2 | 126.387 | 28.02 | -13 | -62.96 | -1.22 | -64.19 | -51.19 |
| 3 | 158.298 | 24.31 | -13 | -63.42 | -0.94 | -64.36 | -51.36 |
| 4 | 167.041 | 28.78 | -13 | -61.39 | 0.32 | -61.07 | -48.07 |
| 5 | 206.494 | 27.94 | -13 | -67.53 | 4.26 | -63.27 | -50.27 |
| 6 | 958.571 | 34.88 | -13 | -63.00 | 0.38 | -62.62 | -49.62 |

**REMARKS:**

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

| MODE | TX channel 26915 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.96 | -13 | -29.84 | 6.24 | -23.60 | -10.60 |
| 2 | 2509.5 | 57.08 | -13 | -41.00 | 6.61 | -34.40 | -21.40 |
| 3 | 3346 | 59.93 | -13 | -43.00 | 7.53 | -35.47 | -22.47 |
| 4 | 4182.5 | 49.02 | -13 | -55.91 | 7.48 | -48.43 | -35.43 |
| 5 | 5019 | 49.31 | -13 | -54.79 | 6.99 | -47.80 | -34.80 |
| 6 | 5855.5 | 49.56 | -13 | -54.58 | 7.22 | -47.36 | -34.36 |
| 7 | 6692 | 49.87 | -13 | -54.05 | 5.83 | -48.22 | -35.22 |
| 8 | 7528.5 | 51.03 | -13 | -51.59 | 4.66 | -46.93 | -33.93 |
| 9 | 8365 | 48.6 | -13 | -53.85 | 4.16 | -49.69 | -36.69 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 71.2 | -13 | -31.60 | 6.24 | -25.36 | -12.36 |
| 2 | 2509.5 | 55.82 | -13 | -42.26 | 6.61 | -35.66 | -22.66 |
| 3 | 3346 | 63.25 | -13 | -39.68 | 7.53 | -32.15 | -19.15 |
| 4 | 4182.5 | 50.15 | -13 | -54.78 | 7.48 | -47.30 | -34.30 |
| 5 | 5019 | 50.46 | -13 | -53.64 | 6.99 | -46.65 | -33.65 |
| 6 | 5855.5 | 46.92 | -13 | -57.22 | 7.22 | -50.00 | -37.00 |
| 7 | 6692 | 48.26 | -13 | -55.66 | 5.83 | -49.83 | -36.83 |
| 8 | 7528.5 | 49.61 | -13 | -53.01 | 4.66 | -48.35 | -35.35 |
| 9 | 8365 | 47.63 | -13 | -54.82 | 4.16 | -50.66 | -37.66 |

**REMARKS:**

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

**LTE BAND 26**

**CHANNEL BANDWIDTH: 15MHz / QPSK**

| MODE | TX channel 26915 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 32.91 | 26.38 | -13 | -45.93 | -14.19 | -60.12 | -47.12 |
| 2 | 75.056 | 19.74 | -13 | -75.22 | -2.06 | -77.28 | -64.28 |
| 3 | 134.869 | 24.82 | -13 | -70.59 | -1.47 | -72.06 | -59.06 |
| 4 | 157.958 | 23.46 | -13 | -64.17 | -0.99 | -65.16 | -52.16 |
| 5 | 208.214 | 24.71 | -13 | -70.75 | 4.23 | -66.52 | -53.52 |
| 6 | 240.665 | 24.11 | -13 | -71.22 | 3.82 | -67.40 | -54.40 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 30.25 | 41.02 | -13 | -30.33 | -14.84 | -45.17 | -32.17 |
| 2 | 126.987 | 28.07 | -13 | -63.04 | -1.23 | -64.27 | -51.27 |
| 3 | 158.838 | 25.88 | -13 | -62.00 | -0.86 | -62.86 | -49.86 |
| 4 | 167.661 | 27.88 | -13 | -62.46 | 0.41 | -62.06 | -49.06 |
| 5 | 207.904 | 28.32 | -13 | -67.15 | 4.24 | -62.91 | -49.91 |
| 6 | 958.941 | 34.70 | -13 | -63.17 | 0.39 | -62.78 | -49.78 |

**REMARKS:**

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

| MODE | TX channel 26915 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 72.92 | -13 | -29.88 | 6.24 | -23.64 | -10.64 |
| 2 | 2509.5 | 56.58 | -13 | -41.50 | 6.61 | -34.90 | -21.90 |
| 3 | 3346 | 59.20 | -13 | -43.73 | 7.53 | -36.20 | -23.20 |
| 4 | 4182.5 | 50.47 | -13 | -54.46 | 7.48 | -46.98 | -33.98 |
| 5 | 5019 | 47.66 | -13 | -56.44 | 6.99 | -49.45 | -36.45 |
| 6 | 5855.5 | 48.45 | -13 | -55.69 | 7.22 | -48.47 | -35.47 |
| 7 | 6692 | 48.35 | -13 | -55.57 | 5.83 | -49.74 | -36.74 |
| 8 | 7528.5 | 51.94 | -13 | -50.68 | 4.66 | -46.02 | -33.02 |
| 9 | 8365 | 50.13 | -13 | -52.32 | 4.16 | -48.16 | -35.16 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBu V/m) | Limit (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | Level (dBm) | Margin (dB) |
| 1 | 1673 | 71.33 | -13 | -31.47 | 6.24 | -25.23 | -12.23 |
| 2 | 2509.5 | 57.09 | -13 | -40.99 | 6.61 | -34.39 | -21.39 |
| 3 | 3346 | 62.24 | -13 | -40.69 | 7.53 | -33.16 | -20.16 |
| 4 | 4182.5 | 50.43 | -13 | -54.50 | 7.48 | -47.02 | -34.02 |
| 5 | 5019 | 50.88 | -13 | -53.22 | 6.99 | -46.23 | -33.23 |
| 6 | 5855.5 | 46.95 | -13 | -57.19 | 7.22 | -49.97 | -36.97 |
| 7 | 6692 | 49.05 | -13 | -54.87 | 5.83 | -49.04 | -36.04 |
| 8 | 7528.5 | 49.83 | -13 | -52.79 | 4.66 | -48.13 | -35.13 |
| 9 | 8365 | 49.02 | -13 | -53.43 | 4.16 | -49.27 | -36.27 |

**REMARKS:**

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

# 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

# 6 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:


**Linko EMC/RF Lab**:
Tel: 886-2-26052180
Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**:
Tel: 886-3-5935343
Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Lab**:
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Fax: 886-3-3270892

**Email:** service.adt@tw.bureauveritas.com
**Web Site**: www.bureauveritas-adt.com


The address and road map of all our labs can be found in our web site also.

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

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

**---END---**