# FCC Test Report
# (Part 24)

**Report No.:** RF161214C23-8

**FCC ID:** Q3N-MR00002

**Test Model:** RS31

**Series Model:** BHT-1600 (refer to item 3.1 for more details)

**Received Date:** Nov. 30, 2016

**Test Date:** Dec. 20, 2016 ~ Jan. 18, 2017

**Issued Date:** Jan. 19, 2017

**Applicant:** CIPHERLAB CO., LTD

**Address:** 12F, 333 Dunhua S. Rd., Sec. 2 Taipei, Taiwan 106

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.
The report must 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** ..... **3**

**1 Certificate of Conformity** ..... **4**

**2 Summary of Test Results** ..... **5**

2.1 Measurement Uncertainty ..... 5
2.2 Test Site and Instruments ..... 6

**3 General Information** ..... **7**

3.1 General Description of EUT ..... 7
3.2 Configuration of System Under Test ..... 8
3.2.1 Description of Support Units ..... 8
3.3 Test Mode Applicability and Tested Channel Detail ..... 9
3.4 EUT Operating Conditions ..... 10
3.5 General Description of Applied Standards ..... 10

**4 Test Types and Results** ..... **11**

4.1 Output Power Measurement ..... 11
4.1.1 Limits of Output Power Measurement ..... 11
4.1.2 Test Procedures ..... 11
4.1.3 Test Setup ..... 12
4.1.4 Test Results ..... 13
4.2 Frequency Stability Measurement ..... 16
4.2.1 Limits of Frequency Stabiliity Measurement ..... 16
4.2.2 Test Procedure ..... 16
4.2.3 Test Setup ..... 16
4.2.4 Test Results ..... 17
4.3 Occupied Bandwidth Measurement ..... 18
4.3.1 Test Procedure ..... 18
4.3.2 Test Setup ..... 18
4.3.3 Test Result ..... 19
4.4 Band Edge Measurement ..... 21
4.4.1 Limits of Band Edge Measurement ..... 21
4.4.2 Test Setup ..... 21
4.4.3 Test Procedures ..... 21
4.4.4 Test Results ..... 22
4.5 Peak To Average Ratio ..... 24
4.5.1 Limits of Peak To Average Ratio Measurement ..... 24
4.5.2 Test Setup ..... 24
4.5.3 Test Procedures ..... 24
4.5.4 Test Results ..... 25
4.6 Conducted Spurious Emissions ..... 27
4.6.1 Limits of Conducted Spurious Emissions Measurement ..... 27
4.6.2 Test Setup ..... 27
4.6.3 Test Procedure ..... 27
4.6.4 Test Results ..... 28
4.7 Radiated Emission Measurement ..... 46
4.7.1 Limits of Radiated Emission Measurement ..... 46
4.7.2 Test Procedure ..... 46
4.7.3 Deviation from Test Standard ..... 46
4.7.4 Test Setup ..... 47
4.7.5 Test Results ..... 48

**5 Pictures of Test Arrangements** ..... **64**

**Appendix – Information on the Testing Laboratories** ..... **65**

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| RF161214C23-8 | Original release | Jan. 19, 2017 |

## 1 Certificate of Conformity

**Product:** Mobile Computer

**Brand:** CIPHERLAB, DENSO (refer to item 3.1 for more details)

**Test Model:** RS31

**Series Model:** BHT-1600 (refer to item 3.1 for more details)

**Sample Status:** Engineering sample

**Applicant:** CIPHERLAB CO., LTD

**Test Date:** Dec. 20, 2016 ~ Jan. 18, 2017

**Standards:** FCC Part 24, Subpart E

The above equipment 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 :** Celine Chou , **Date:** Jan. 19, 2017

Celine Chou / Specialist

**Approved by :** Bruce Chen , **Date:** Jan. 19, 2017

Bruce Chen / Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 24 & Part 2 | | | |
|---|---|---|---|
| FCC Clause | Test Item | Result | Remarks |
| 2.1046<br>24.232 | Effective radiated power | Pass | Meet the requirement of limit. |
| 2.1046<br>24.232(d) | Peak To Average Ratio | Pass | Meet the requirement of limit. |
| 2.1055<br>24.235 | Frequency Stability | Pass | Meet the requirement of limit. |
| 2.1049<br>24.238(b) | Occupied Bandwidth | Pass | Meet the requirement of limit. |
| 24.238(b) | Band Edge Measurements | Pass | Meet the requirement of limit. |
| 2.1051<br>24.238 | Conducted Spurious Emissions | Pass | Meet the requirement of limit. |
| 2.1053<br>24.238 | Radiated Spurious Emissions | Pass | Meet the requirement of limit.<br>Minimum passing margin is<br>-15.90dB at 5557.20MHz. |

### 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 | Expanded Uncertainty (k=2) (±) |
|---|---|---|
| Radiated Emissions up to 1 GHz | 30MHz ~ 200MHz | 3.63 dB |
| | 200MHz ~1000MHz | 3.64 dB |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz | 2.29 dB |
| | 18GHz ~ 40GHz | 2.29 dB |

## 2.2 Test Site and Instruments

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---|---|---|---|---|
| Test Receiver KEYSIGHT | N9038A | MY55420137 | Feb. 06, 2016 | Feb. 05, 2017 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSP40 | 100269 | Apr. 19, 2016 | Apr. 18, 2017 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-148 | Dec. 28, 2015 | Dec. 27, 2016 |
| | | | Dec. 28, 2016 | Dec. 27, 2017 |
| HORN Antenna SCHWARZBECK | BBHA 9120 D | 9120D-1169 | Dec. 27, 2015 | Dec. 26, 2016 |
| | | | Dec. 27, 2016 | Dec. 26, 2017 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | BBHA9170241 | Dec. 14, 2016 | Dec. 13, 2017 |
| Loop Antenna | EM-6879 | 269 | Aug. 11, 2016 | Aug. 10, 2017 |
| Preamplifier Agilent | 8449B | 3008A01911 | Aug. 09, 2016 | Aug. 08, 2017 |
| Preamplifier Agilent | 8447D | 2944A10638 | Aug. 09, 2016 | Aug. 08, 2017 |
| RF signal cable HUBER+SUHNER | SUCOFLEX 104 | CABLE-CH9-02 (309222 +248780) | Aug. 09, 2016 | Aug. 08, 2017 |
| RF signal cable HUBER+SUHNER | SUCOFLEX 104 | CABLE-CH9-03 (274092) | Aug. 09, 2016 | Aug. 08, 2017 |
| RF signal cable Woken | 8D-FB | Cable-CH9-01 | Aug. 09, 2016 | Aug. 08, 2017 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.4 | NA | NA | NA |
| Antenna Tower EMCO | 2070/2080 | 512.835.4684 | NA | NA |
| Turn Table EMCO | 2087-2.03 | NA | NA | NA |
| Antenna Tower &Turn BV ADT | AT100 | AT93021705 | NA | NA |
| Turn Table BV ADT | TT100 | TT93021705 | NA | NA |
| Turn Table Controller BV ADT | SC100 | SC93021705 | NA | NA |
| WIT Standard Temperature And Humidity Chamber | TH-4S-C | W981030 | Jun. 08, 2016 | Jun. 07, 2017 |
| Mini-Circuits Power Splitter | ZN2PD-9G | NA | Jun. 09, 2016 | Jun. 08, 2017 |
| JFW 20dB attenuation | 50HF-020-SMA | 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 test was performed in HwaYa Chamber 9.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 215374.
5. The IC Site Registration No. is IC 7450F-9.

## 3 General Information

### 3.1 General Description of EUT

| | |
|---|---|
| Product | Mobile Computer |
| Brand | CIPHERLAB, DENSO (refer to note for more details) |
| Test Model | RS31 |
| Series Model | BHT-1600 |
| Model Difference | Refer to note as below |
| Sample Status | Engineering sample |
| Power Supply Rating | 3.85Vdc (Battery)<br>5Vdc (Adapter) |
| Modulation Type | GSM, GPRS: GMSK<br>EDGE: 8PSK<br>WCDMA: BPSK, QPSK<br>HSDPA: BPSK<br>HSUPA: QPSK |
| Operating Frequency | GSM: 1850.2MHz ~ 1909.8MHz<br>WCDMA: 1852.4MHz ~ 1907.6MHz |
| Max. EIRP Power | GSM: 446.684mW (26.50dBm)<br>WCDMA: 102.329mW (20.10dBm) |
| Antenna Type | Main: PIFA antenna with 2.23dBi gain<br>Aux: PIFA antenna with 1.51dBi gain |
| Antenna Connector | Patch |
| Accessory Device | Adapter, Battery |
| Data Cable Supplied | 1m shielded USB cable without core<br>1.6m non-shielded snapon cable with one core |

Note:

1. All models and brands are listed as below. Model RS31 is the representatives for final test.

| Brand | Model | Difference |
|---|---|---|
| CIPHERLAB | RS31 | All models are electrically identical, different colors, model names and brand names are for marketing purpose. |
| DENSO | BHT-1600 | |

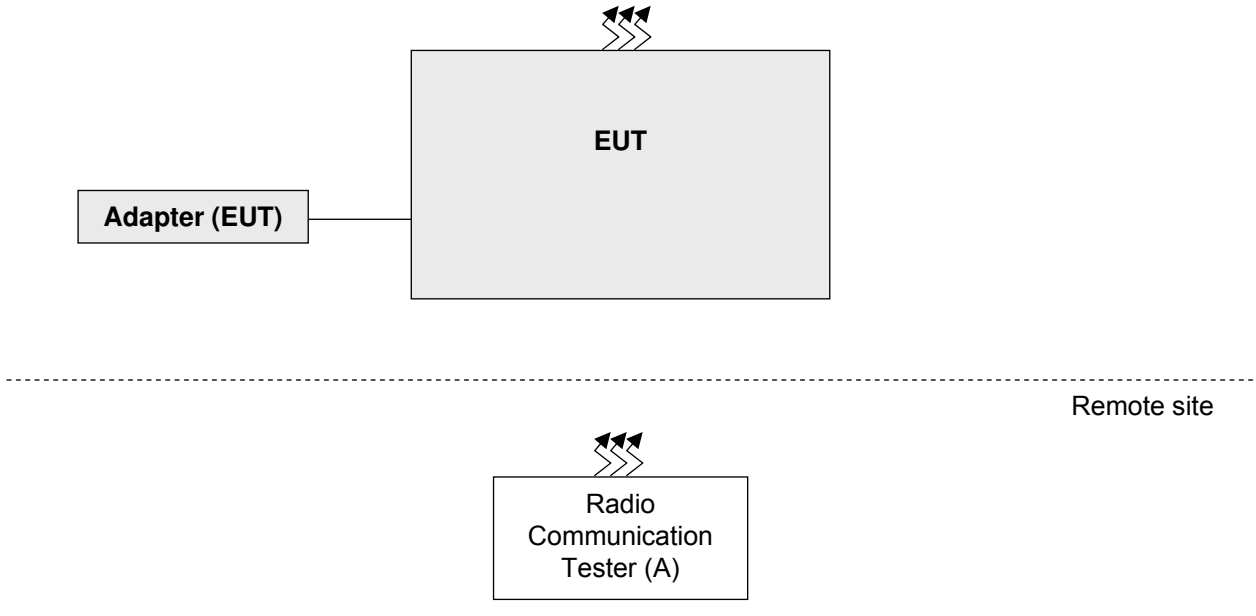
2. The EUT uses following adapter and battery.

| Adapter | |
|---|---|
| Brand | Sunny COMPUTER TECHNOLOGY CO., LTD. |
| Model | SYS1561-1005 |
| Input Power | 100-240Vac, 1.0A MAX 50-60Hz |
| Output Power | +5Vdc, 2A |

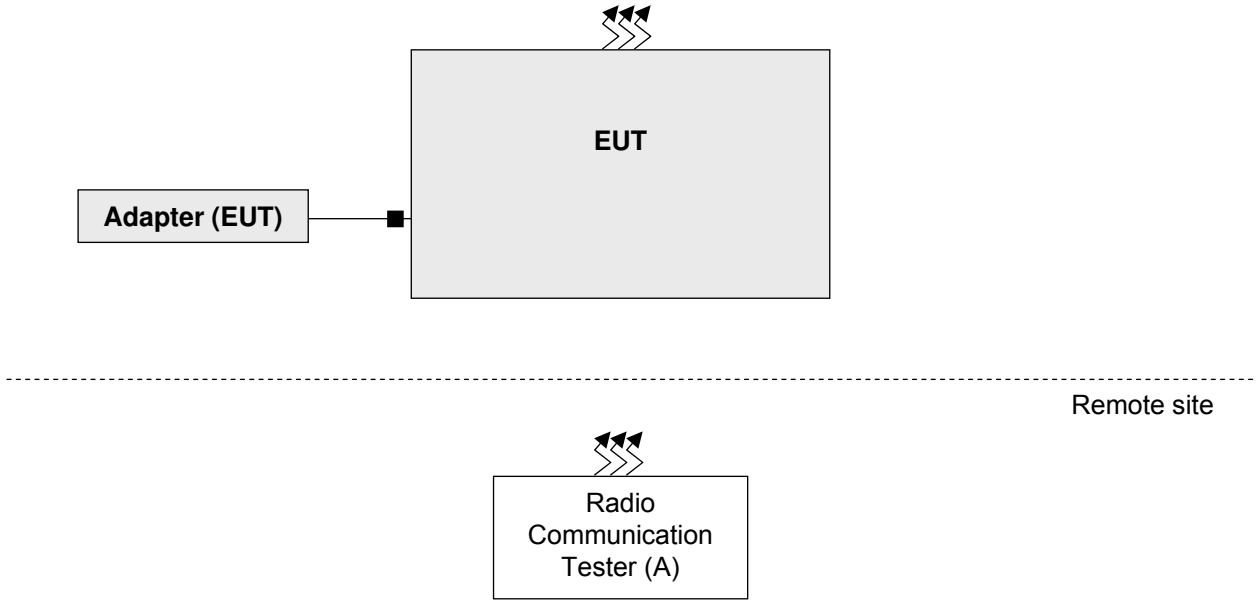
| Battery | |
|---|---|
| Brand | CIPHERLAB, DENSO |
| Model | BA-0093A0 |
| Rating | 3.85Vdc, 2960mAh, 11.40Wh |

## 3.2 Configuration of System Under Test

Test Mode A




Test Mode B




### 3.2.1 Description of Support Units

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

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A. | Universal Radio Communication Tester | R&S | CMU200 | 123112 | NA | - |
| B. | DC Power Supply | Topward | 6603D | 700637 | NA | - |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

### 3.3 Test Mode Applicability and Tested Channel Detail

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

Test results are presented in the report as below.

| Test Mode | Test Condition |
|---|---|
| A | EUT + USB Cable + Adapter + Battery |
| B | EUT + Snapon Cable + Adapter + Battery |

GSM Mode

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| A | EIRP | 512 to 810 | 512, 661, 810 | GSM |
| A | Frequency Stability | 512 to 810 | 661 | GSM |
| A | Occupied Bandwidth | 512 to 810 | 512, 661, 810 | GSM, GPRS, EDGE |
| A | Band Edge | 512 to 810 | 512, 810 | GSM, GPRS, EDGE |
| A | Peak To Average Ratio | 512 to 810 | 512, 661, 810 | GSM, GPRS, EDGE |
| A | Conducted Emission | 512 to 810 | 512, 661, 810 | GSM, GPRS, EDGE |
| A, B | Radiated Emission Below 1GHz | 512 to 810 | 512, 661, 810 | GSM |
| A | Radiated Emission Above 1GHz | 512 to 810 | 512, 661, 810 | GSM |

WCDMA Mode

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| A | EIRP | 9262 to 9538 | 9262, 9400, 9538 | WCDMA |
| A | Frequency Stability | 9262 to 9538 | 9400 | WCDMA |
| A | Occupied Bandwidth | 9262 to 9538 | 9262, 9400, 9538 | WCDMA, HSDPA, HSUPA |
| A | Band Edge | 9262 to 9538 | 9262, 9538 | WCDMA, HSDPA, HSUPA |
| A | Peak To Average Ratio | 9262 to 9538 | 9262, 9400, 9538 | WCDMA, HSDPA, HSUPA |
| A | Conducted Emission | 9262 to 9538 | 9262, 9400, 9538 | WCDMA, HSDPA, HSUPA |
| A, B | Radiated Emission Below 1GHz | 9262 to 9538 | 9262, 9400, 9538 | WCDMA |
| A | Radiated Emission Above 1GHz | 9262 to 9538 | 9262, 9400, 9538 | WCDMA |

Test Condition:

| Test Item | Environmental Conditions | Input Power (System) | Tested By |
|---|---|---|---|
| EIRP | 24deg. C, 64%RH | 120Vac, 60Hz | Match Tsui |
| Frequency Stability | 24deg. C, 64%RH | 3.85Vdc | Match Tsui |
| Occupied Bandwidth | 24deg. C, 64%RH | 120Vac, 60Hz | Match Tsui |
| Band Edge | 24deg. C, 64%RH | 120Vac, 60Hz | Match Tsui |
| Peak To Average Ratio | 24deg. C, 64%RH | 120Vac, 60Hz | Match Tsui |
| Conducted Emission | 24deg. C, 64%RH | 120Vac, 60Hz | Match Tsui |
| Radiated Emission | 24deg. C, 51%RH<br>25deg. C, 69%RH | 120Vac, 60Hz | Bond Tseng<br>Tank Wu |

### 3.4 EUT Operating Conditions

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

### 3.5 General Description of Applied Standards

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

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 24**

**KDB 971168 D01 Power Meas License Digital Systems v02r02**

**ANSI/TIA/EIA-603-D 2010**

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

# 4 Test Types and Results

## 4.1 Output Power Measurement

### 4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.r.p.

### 4.1.2 Test Procedures

**EIRP / ERP Measurement:**

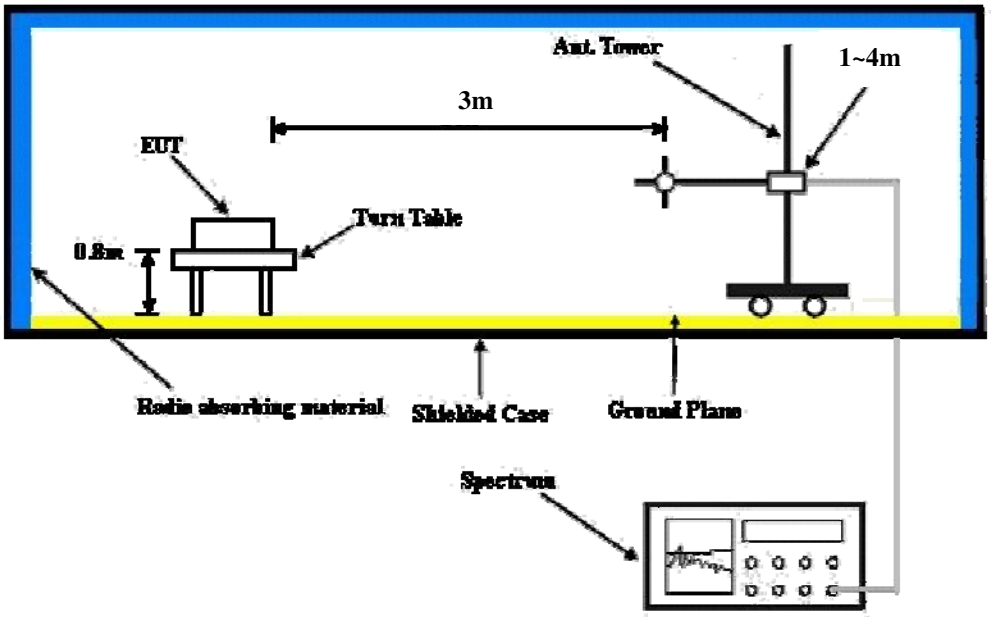
a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM and 5MHz for WCDMA mode.
b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees 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.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

**Conducted Power Measurement:**

The EUT was set up for the maximum power with GSM, WCDMA 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:




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

Conducted Power Measurement:

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

### 4.1.4 Test Results

Conducted Output Power (dBm)

| Band | GSM1900 | | |
|---|---|---|---|
| Channel | 512 | 661 | 810 |
| Frequency | 1850.2 | 1880 | 1909.8 |
| GSM | 29.91 | **29.98** | 29.94 |
| GPRS 8 | 29.89 | 29.96 | 29.92 |
| GPRS 10 | 29.31 | 29.38 | 29.34 |
| GPRS 11 | 27.61 | 27.68 | 27.64 |
| GPRS 12 | 26.54 | 26.61 | 26.57 |
| GPRS 30 | 29.88 | 29.95 | 29.91 |
| GPRS 31 | 29.30 | 29.37 | 29.33 |
| GPRS 32 | 27.59 | 27.66 | 27.62 |
| GPRS 33 | 26.53 | 26.60 | 26.56 |
| EDGE 8 (MCS9) | 25.82 | 25.89 | 25.85 |
| EDGE 10 (MCS9) | 24.84 | 24.91 | 24.87 |
| EDGE 11 (MCS9) | 22.81 | 22.88 | 22.84 |
| EDGE 12 (MCS9) | 21.71 | 21.78 | 21.74 |
| EDGE 30 (MCS9) | 25.79 | 25.86 | 25.82 |
| EDGE 31 (MCS9) | 24.83 | 24.90 | 24.86 |
| EDGE 32 (MCS9) | 22.78 | 22.85 | 22.81 |
| EDGE 33 (MCS9) | 21.70 | 21.77 | 21.73 |

| Band | WCDMA II | | |
|---|---|---|---|
| Channel | 9262 | 9400 | 9538 |
| Frequency | 1852.4 | 1880 | 1907.6 |
| RMC 12.2K | 23.26 | 23.32 | **23.35** |
| HSDPA Subtest-1 | 22.16 | 22.20 | 22.24 |
| HSDPA Subtest-2 | 22.13 | 22.19 | 22.22 |
| HSDPA Subtest-3 | 21.69 | 21.73 | 21.84 |
| HSDPA Subtest-4 | 21.56 | 21.69 | 21.71 |
| HSUPA Subtest-1 | 20.36 | 20.41 | 20.53 |
| HSUPA Subtest-2 | 20.26 | 20.31 | 20.33 |
| HSUPA Subtest-3 | 20.77 | 20.85 | 20.88 |
| HSUPA Subtest-4 | 19.84 | 19.90 | 19.99 |
| HSUPA Subtest-5 | 22.24 | 22.28 | 22.30 |

EIRP Power (dBm)
GSM Mode

| MODE | | TX channel 512 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1850.20 | -16.20 | 24.00 | 0.10 | 24.10 | 33.00 | -8.90 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| **1** | **1850.20** | **-14.00** | **26.40** | **0.10** | **26.50** | **33.00** | **-6.50** |

| MODE | | TX channel 661 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1880.00 | -17.90 | 22.60 | 0.00 | 22.60 | 33.00 | -10.40 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1880.00 | -16.40 | 24.20 | 0.00 | 24.20 | 33.00 | -8.80 |

| MODE | | TX channel 810 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1909.80 | -18.90 | 21.70 | -0.10 | 21.60 | 33.00 | -11.40 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1909.80 | -16.40 | 24.40 | -0.10 | 24.30 | 33.00 | -8.70 |

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

WCDMA Mode

| MODE | | TX channel 9262 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1852.40 | -22.50 | 17.70 | 0.10 | 17.80 | 33.00 | -15.20 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| **1** | **1852.40** | **-20.40** | **20.00** | **0.10** | **20.10** | **33.00** | **-12.90** |

| MODE | | TX channel 9400 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1880.00 | -25.60 | 14.90 | 0.00 | 14.90 | 33.00 | -18.10 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1880.00 | -21.80 | 18.80 | 0.00 | 18.80 | 33.00 | -14.20 |

| MODE | | TX channel 9538 | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1907.60 | -23.80 | 16.90 | -0.10 | 16.80 | 33.00 | -16.20 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 1907.60 | -22.60 | 18.20 | -0.10 | 18.10 | 33.00 | -14.90 |

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

## 4.2 Frequency Stability Measurement

### 4.2.1 Limits of Frequency Stabiliity Measurement

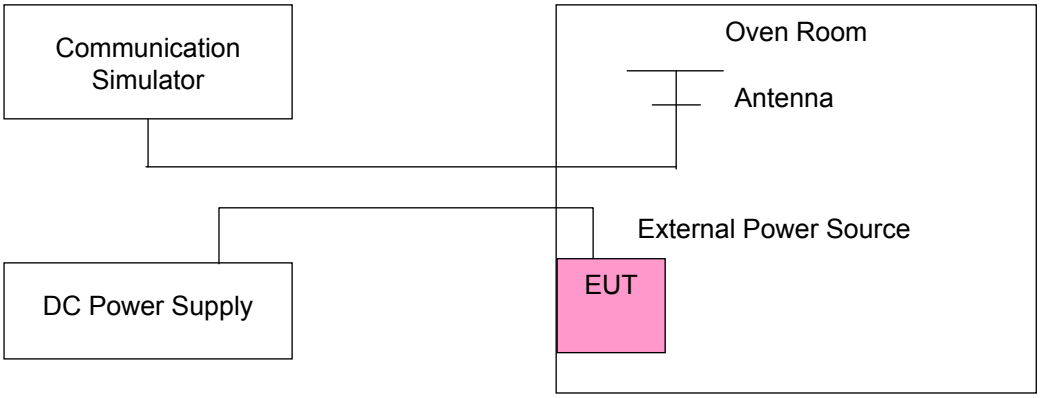
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 4.2.2 Test Procedure

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

### 4.2.3 Test Setup



### 4.2.4 Test Results

Frequency Error vs. Voltage

| Voltage (Volts) | Frequency Error (ppm) | | Limit (ppm) |
|---|---|---|---|
| | GSM | WCDMA | |
| 4.35 | -0.005 | -0.005 | 2.5 |
| 3.85 | -0.005 | -0.005 | 2.5 |
| 3.60 | -0.005 | -0.005 | 2.5 |

Note: The applicant defined the normal working voltage is from 3.60Vdc to 4.35Vdc.

Frequency Error vs. Temperature.

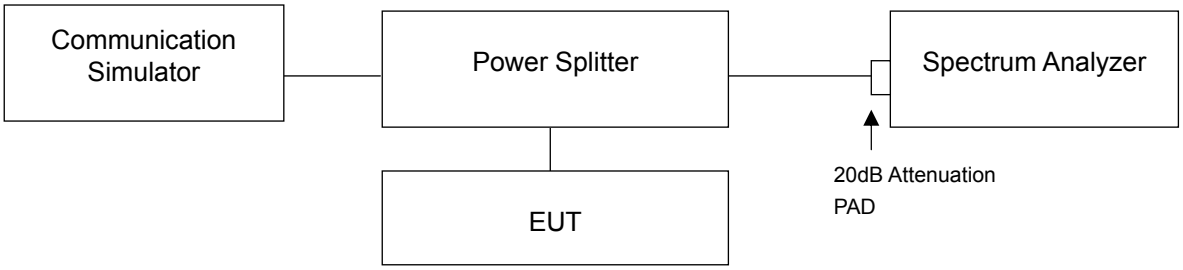
| Temp. (℃) | Frequency Error (ppm) | | Limit (ppm) |
|---|---|---|---|
| | GSM | WCDMA | |
| 50 | -0.005 | -0.005 | 2.5 |
| 40 | -0.005 | -0.004 | 2.5 |
| 30 | -0.005 | -0.005 | 2.5 |
| 20 | -0.005 | -0.005 | 2.5 |
| 10 | -0.005 | -0.005 | 2.5 |
| 0 | -0.007 | -0.007 | 2.5 |
| -10 | -0.008 | -0.007 | 2.5 |
| -20 | -0.007 | -0.007 | 2.5 |

## 4.3 Occupied Bandwidth Measurement

### 4.3.1 Test Procedure

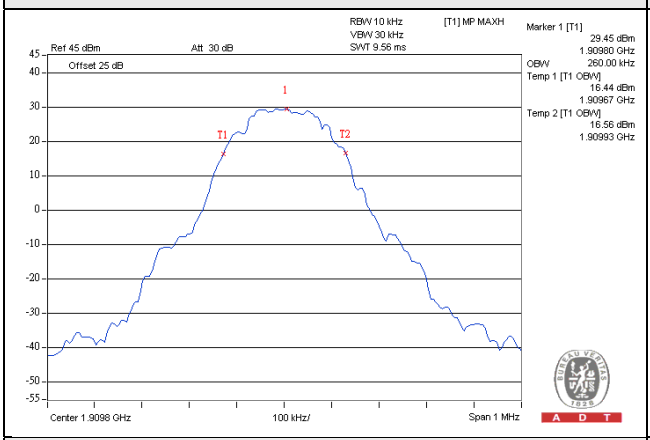
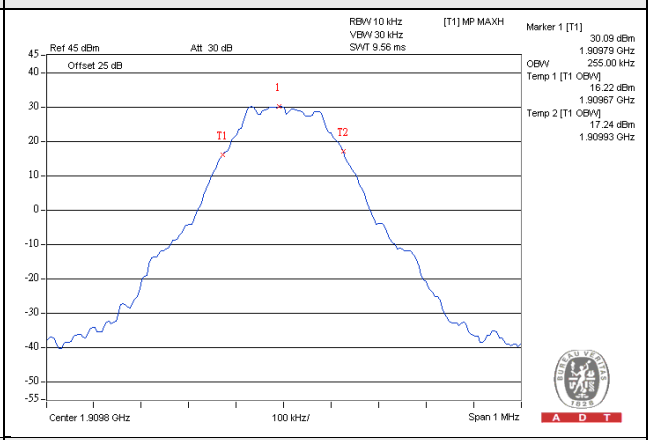
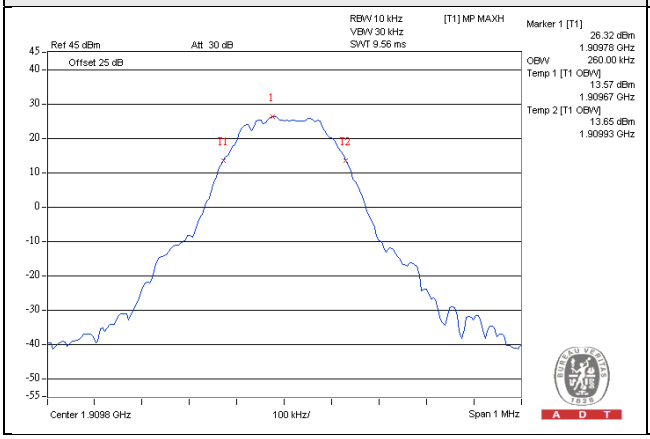
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function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

### 4.3.2 Test Setup



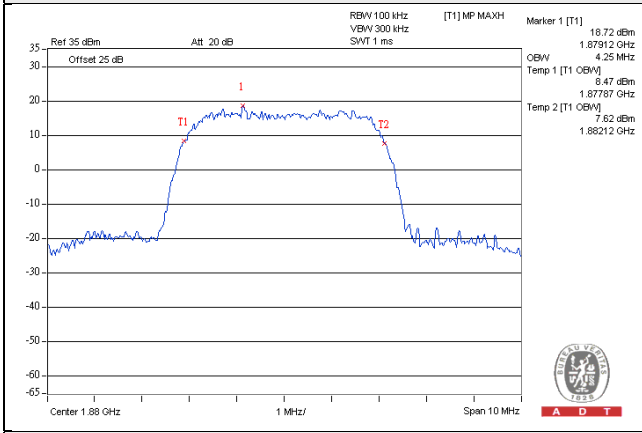
### 4.3.3 Test Result

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | | |
|---|---|---|---|---|
| | | GSM | GPRS | EDGE |
| 512 | 1850.2 | 250 | 250 | 245 |
| 661 | 1880.0 | 250 | 250 | 250 |
| 810 | 1909.8 | 260 | 255 | 260 |

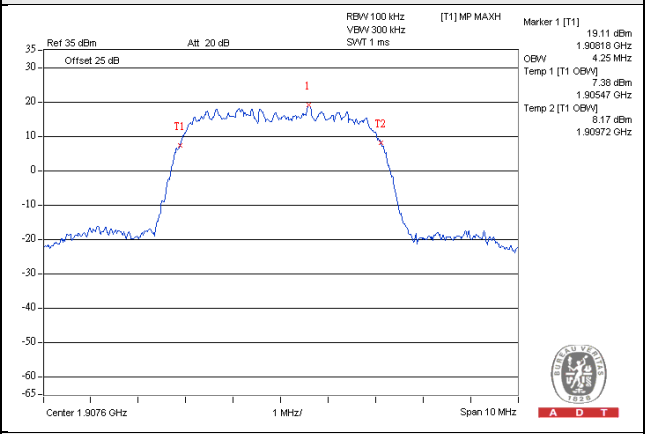
| Spectrum Plot Of Worst Value | |
|---|---|
| GSM | GPRS |
|  |  |
| EDGE | |
|  | |

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | WCDMA | HSDPA | HSUPA |
| 9262 | 1852.4 | 4.23 | 4.22 | 4.23 |
| 9400 | 1880.0 | 4.25 | 4.22 | 4.25 |
| 9538 | 1907.6 | 4.22 | 4.25 | 4.23 |

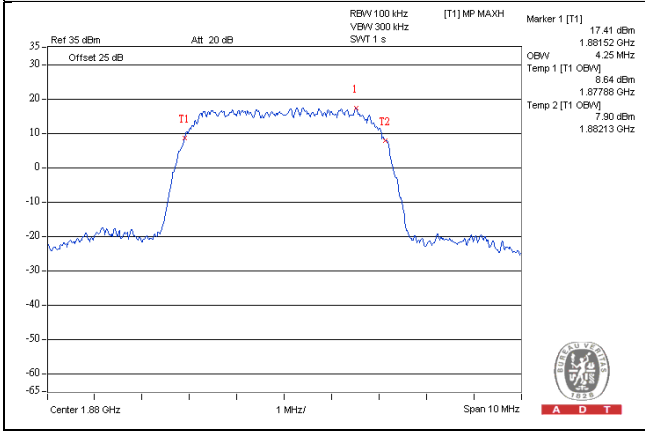
WCDMA




HSDPA




HSUPA

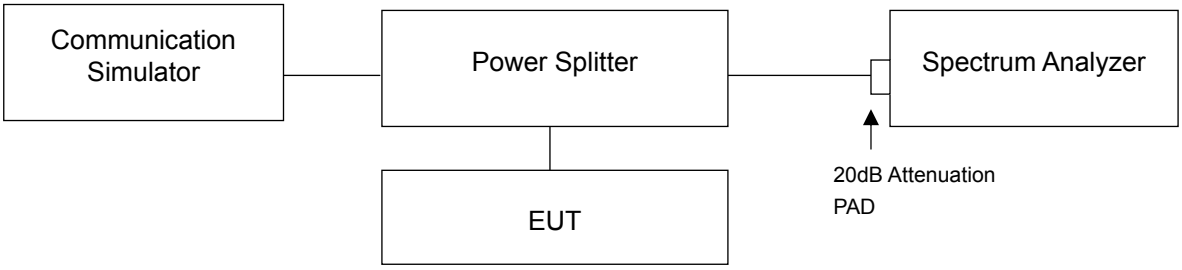


## 4.4 Band Edge Measurement

### 4.4.1 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.

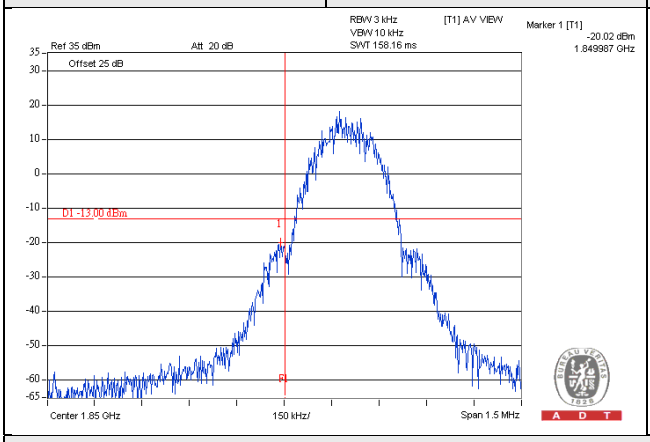
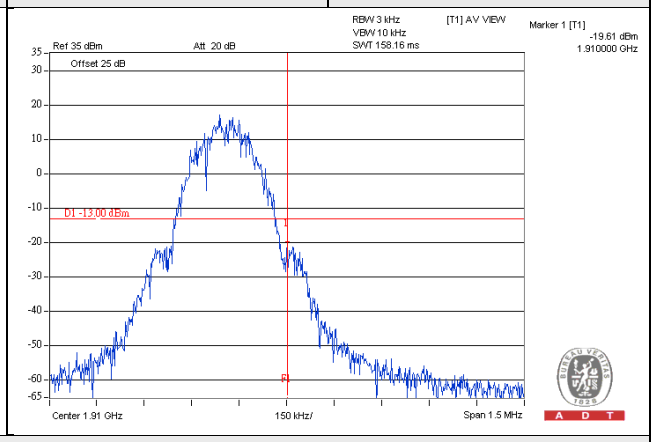
### 4.4.2 Test Setup




### 4.4.3 Test Procedures

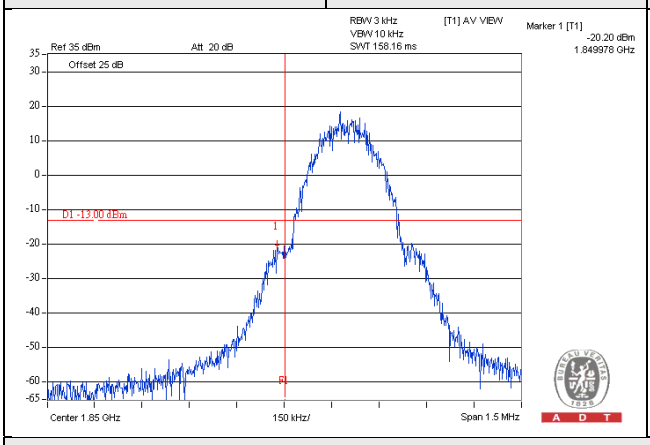
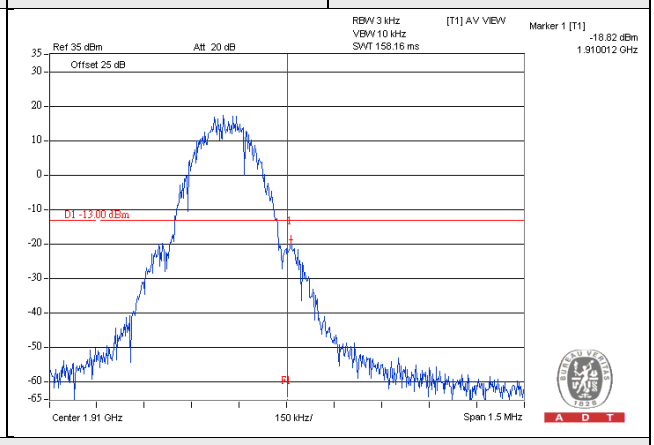
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz (GSM / GPRS / EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA / HSDPA / HSUPA).
d. Record the max trace plot into the test report.

### 4.4.4 Test Results

| GSM | | | |
|---|---|---|---|
| Channel | 512 | Channel | 810 |
|  | |  | |

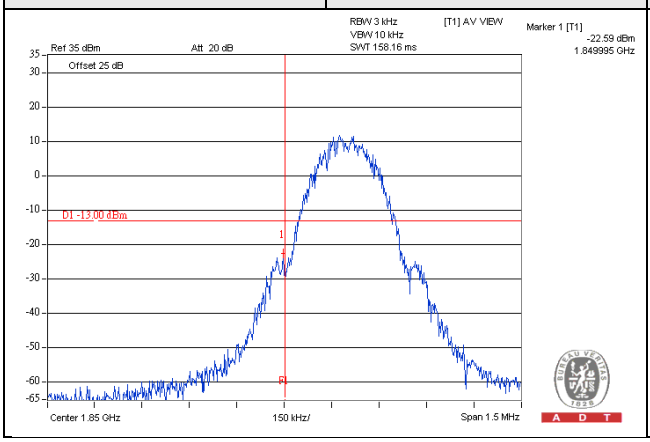
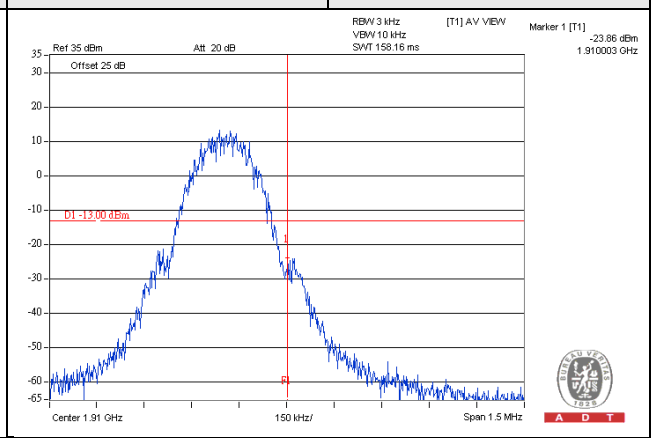




| GPRS | | | |
|---|---|---|---|
| Channel | 512 | Channel | 810 |
|  | |  | |

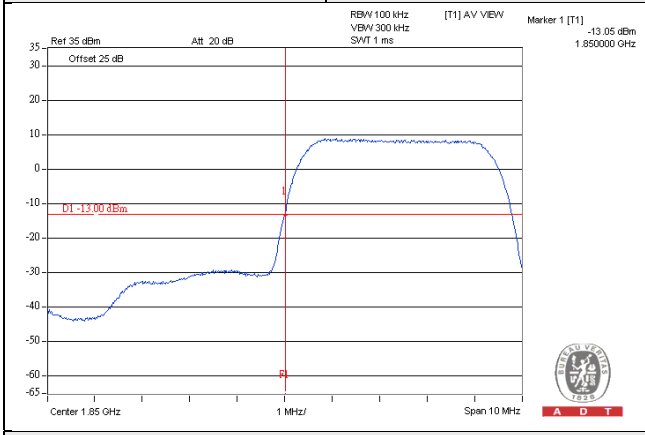


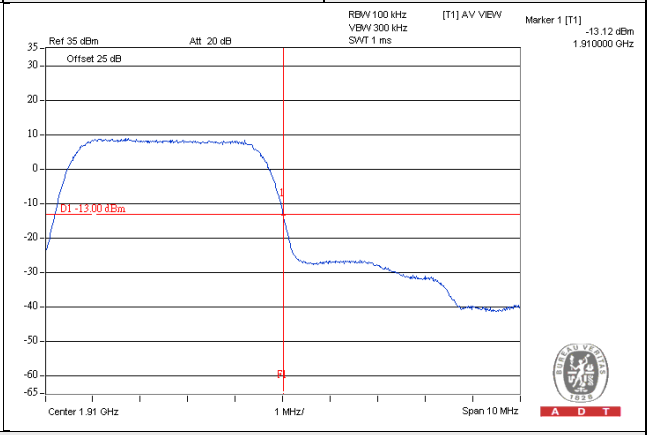


| EDGE | | | |
|---|---|---|---|
| Channel | 512 | Channel | 810 |
|  | |  | |

## WCDMA

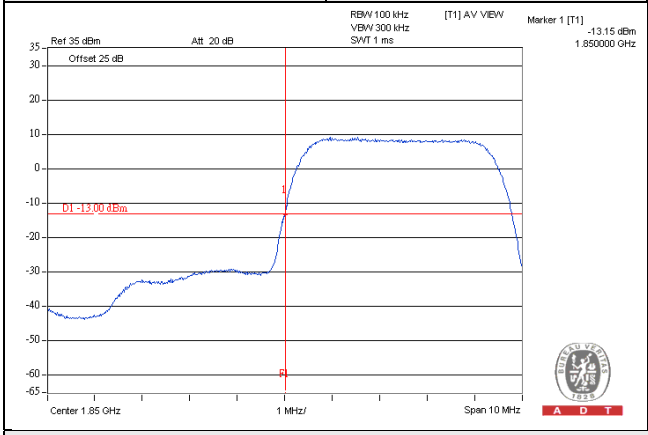
| Channel | 9262 | Channel | 9538 |
|---|---|---|---|

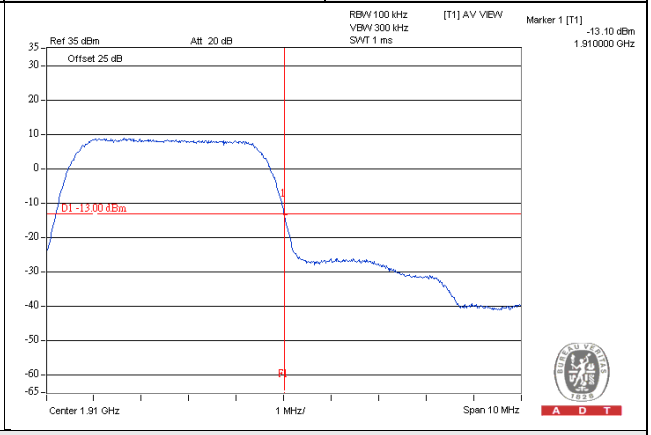



## HSDPA

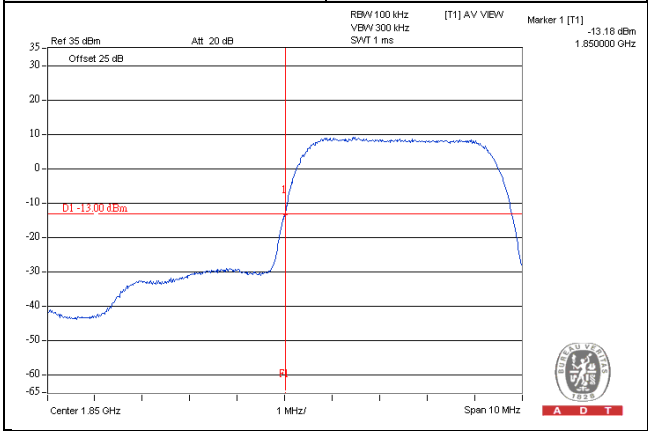
| Channel | 9262 | Channel | 9538 |
|---|---|---|---|

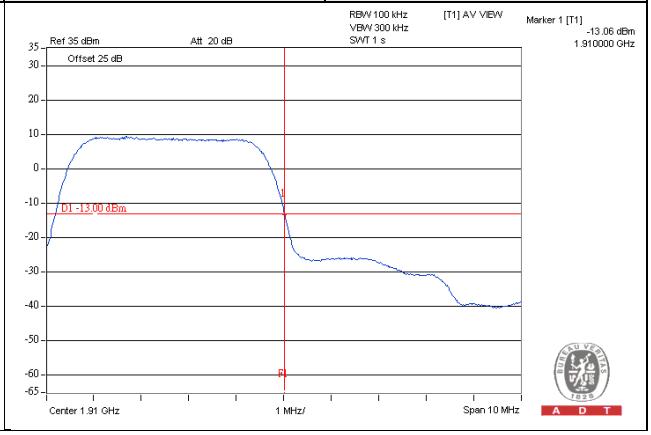



## HSUPA

| Channel | 9262 | Channel | 9538 |
|---|---|---|---|



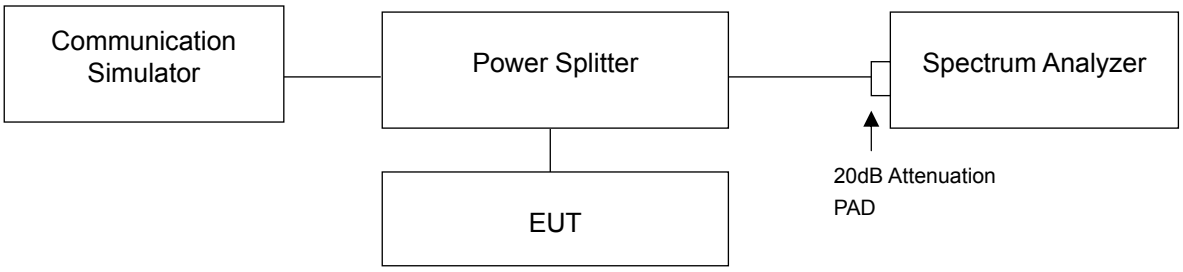



## 4.5 Peak To Average Ratio

### 4.5.1 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

### 4.5.2 Test Setup




### 4.5.3 Test Procedures

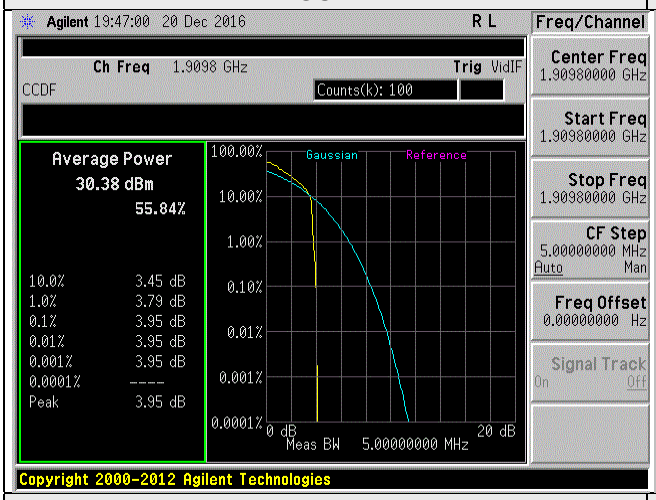
a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

### 4.5.4 Test Results

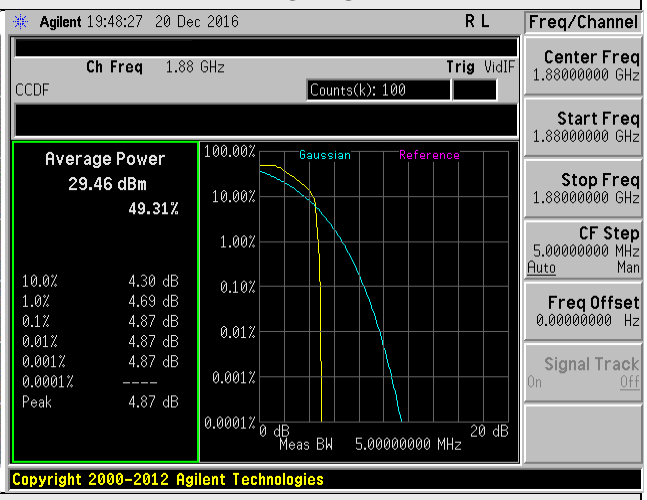
| Channel | Frequency (MHz) | Peak To Average Ratio (dB) | | |
|---|---|---|---|---|
| | | GSM | GPRS | EDGE |
| 512 | 1850.2 | 3.53 | 4.28 | 3.42 |
| 661 | 1880.0 | 3.74 | 4.87 | 3.30 |
| 810 | 1909.8 | 3.95 | 4.30 | 3.15 |

Spectrum Plot Of Worst Value

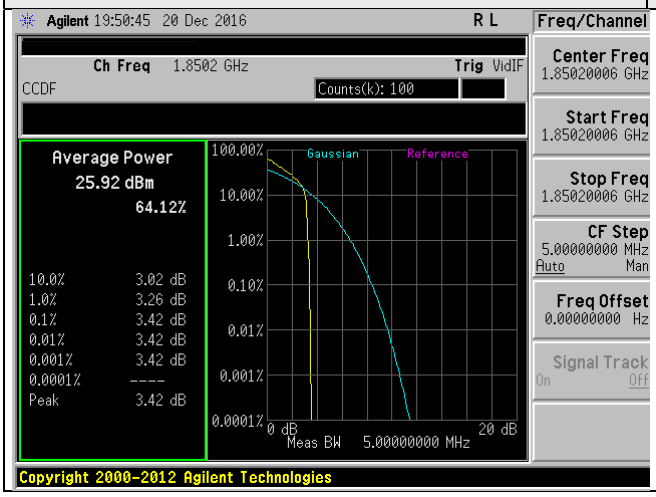
GSM




GPRS

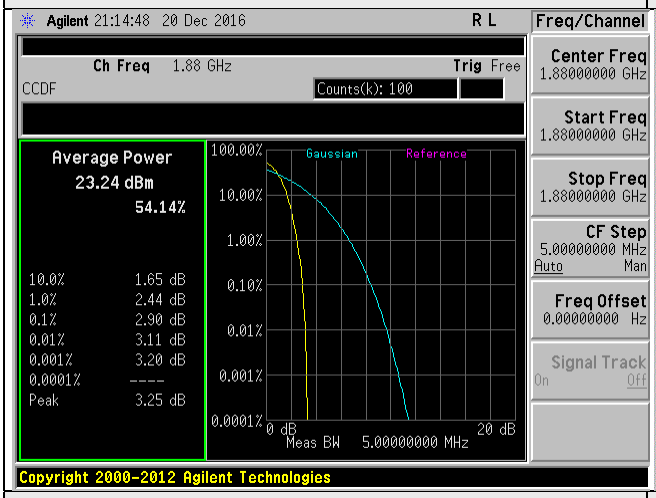



EDGE

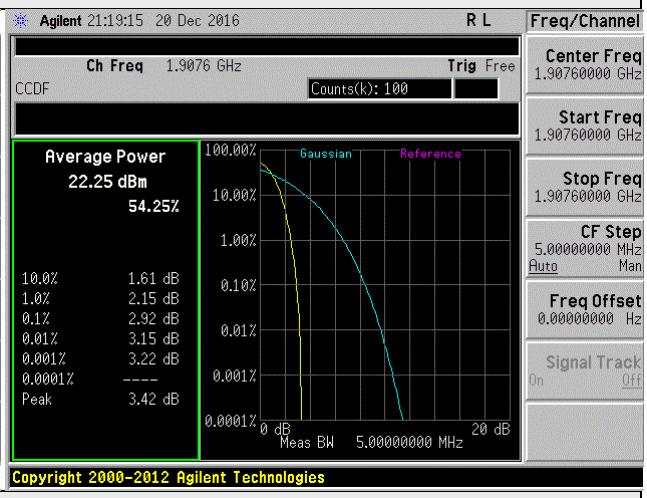


| Channel | Frequency (MHz) | Peak To Average Ratio (dB) | | |
|---|---|---|---|---|
| | | WCDMA | HSDPA | HSUPA |
| 9262 | 1852.4 | 2.70 | 2.70 | 2.67 |
| 9400 | 1880.0 | 2.90 | 2.91 | 2.80 |
| 9538 | 1907.6 | 2.70 | 2.92 | 2.95 |

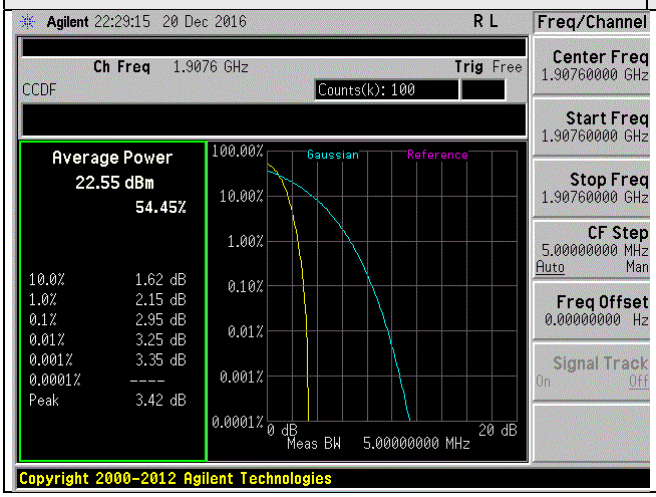
WCDMA




HSDPA




HSUPA

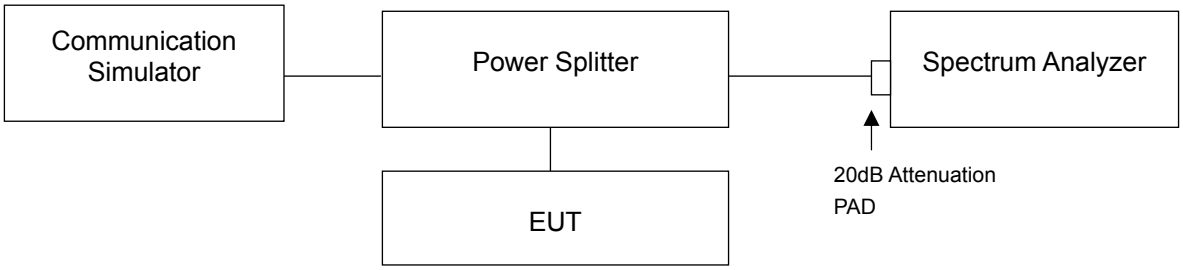


## 4.6 Conducted Spurious Emissions

### 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 equal to –13dBm.

### 4.6.2 Test Setup

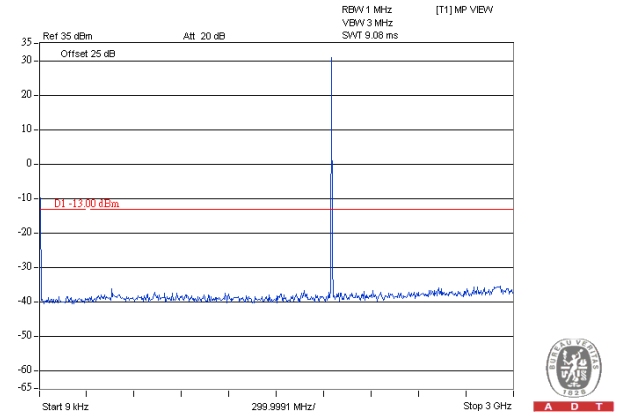
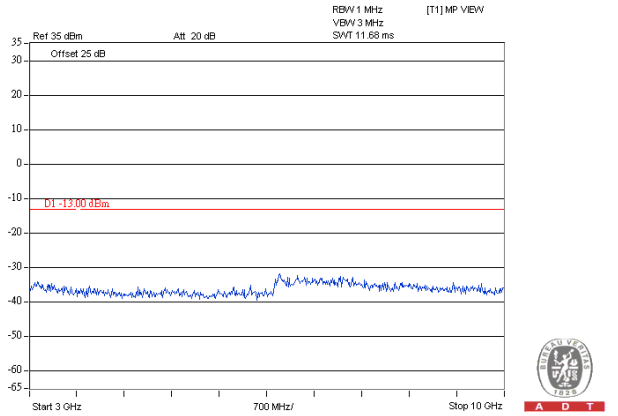
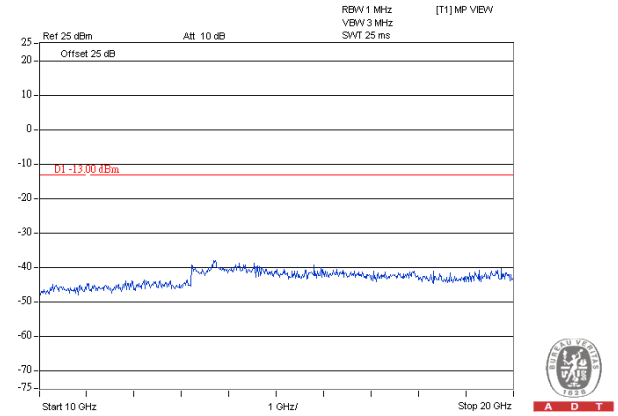


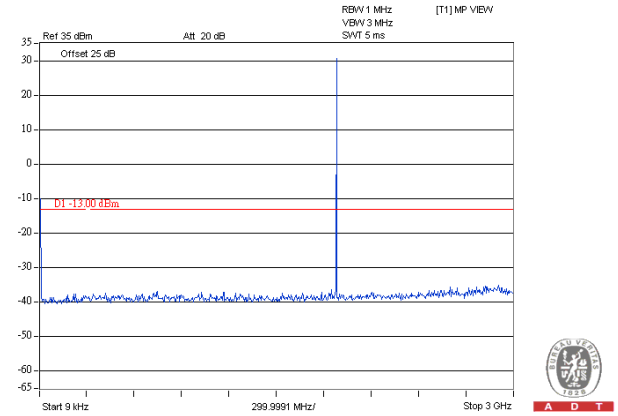
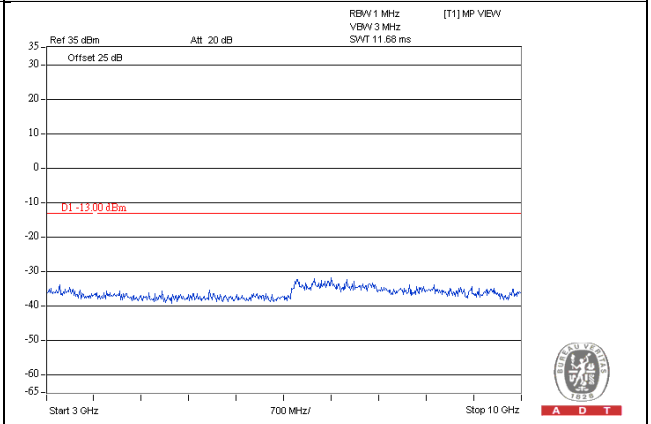
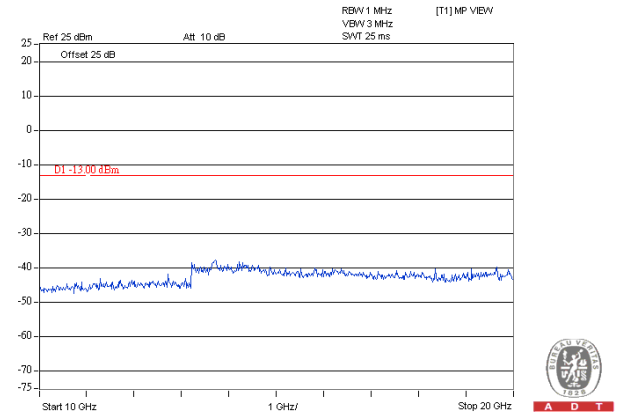

### 4.6.3 Test Procedure

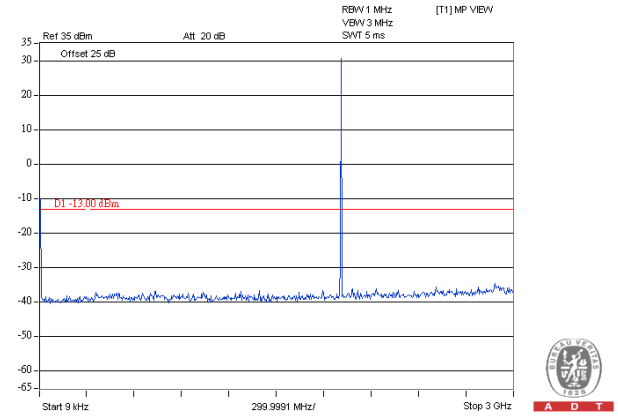
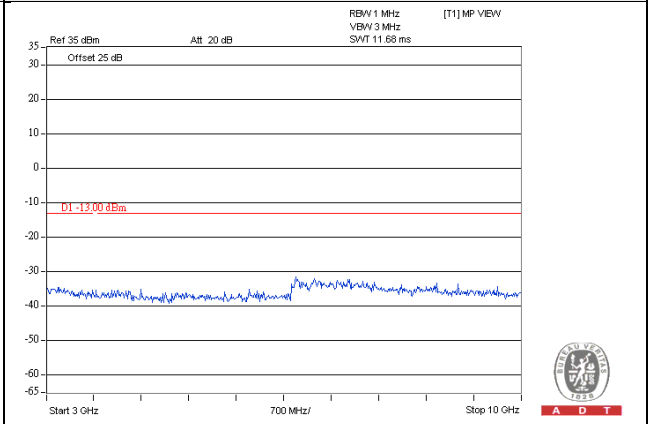
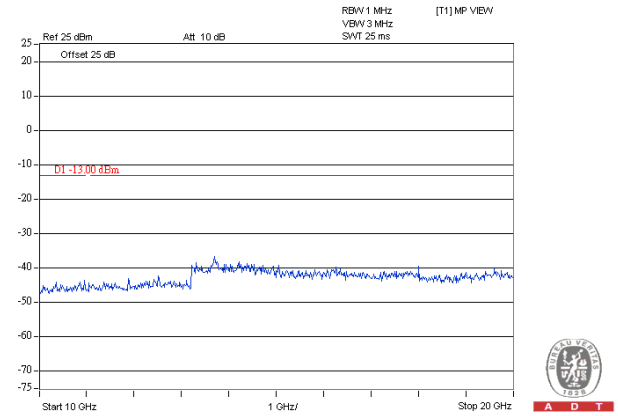
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

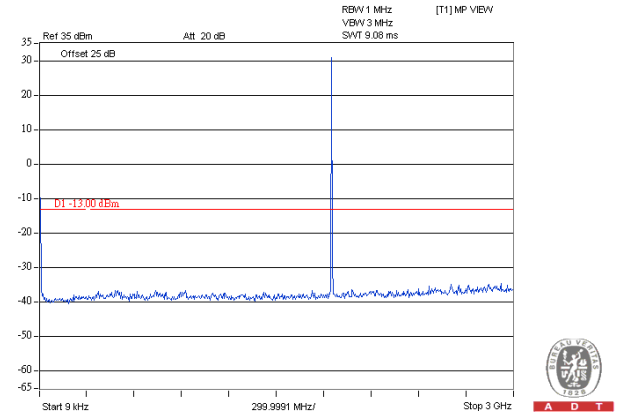
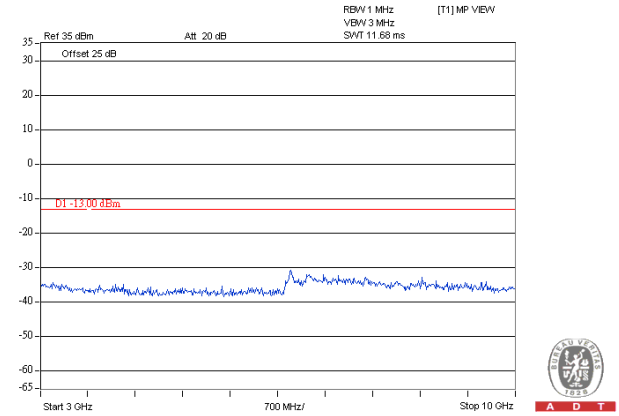
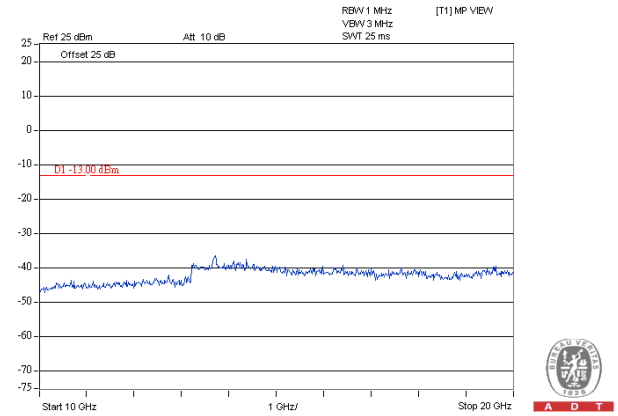
b. Measuring frequency range is from 9 kHz to 20GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

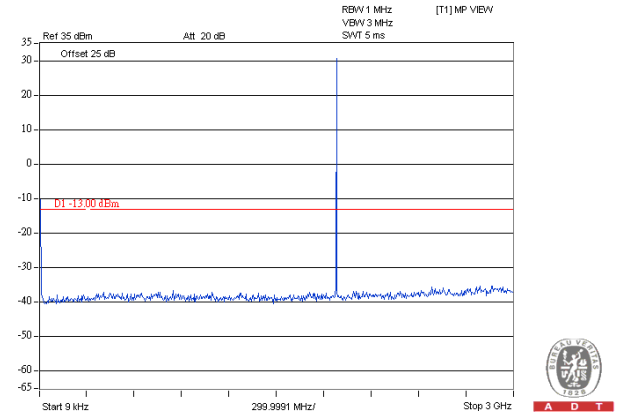
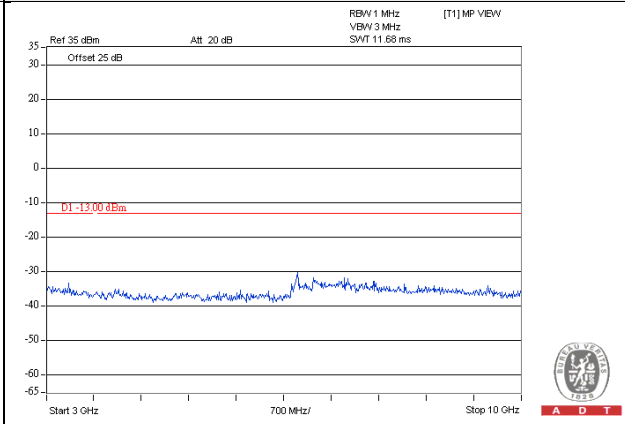
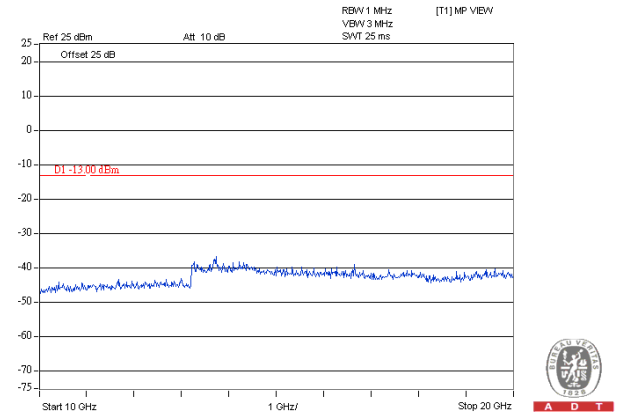
### 4.6.4 Test Results

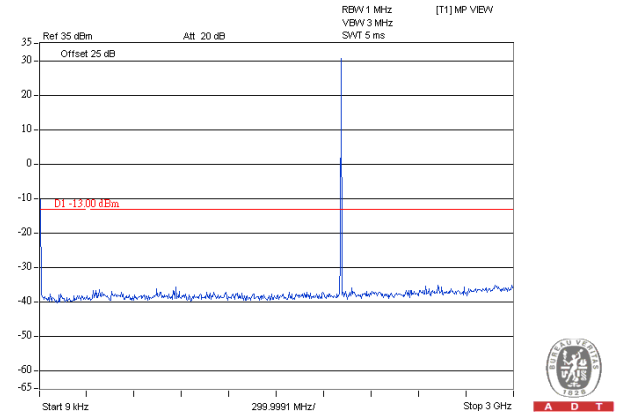
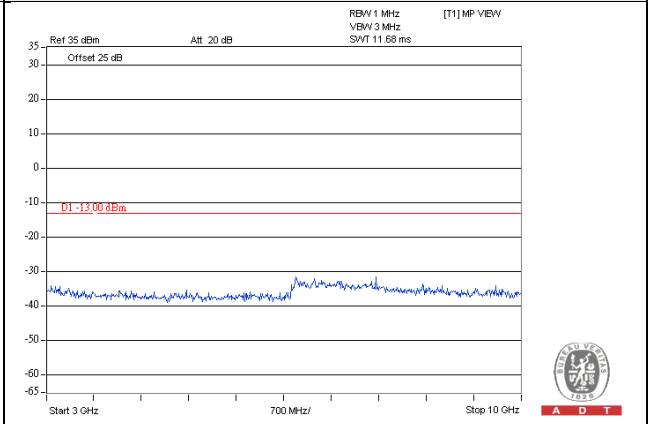
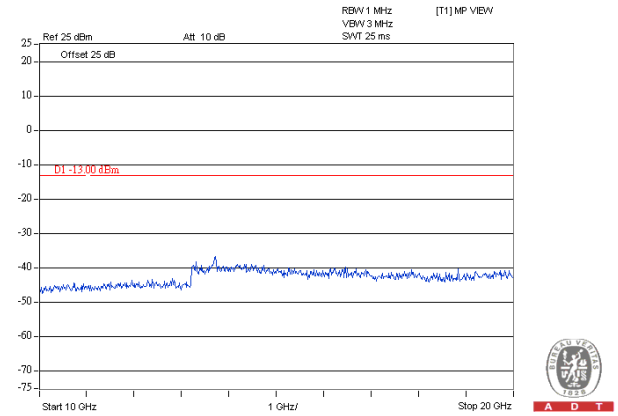
| GSM | |
|---|---|
| Channel 512 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

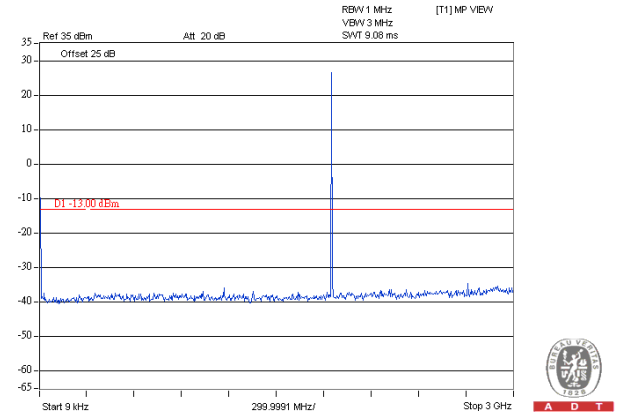
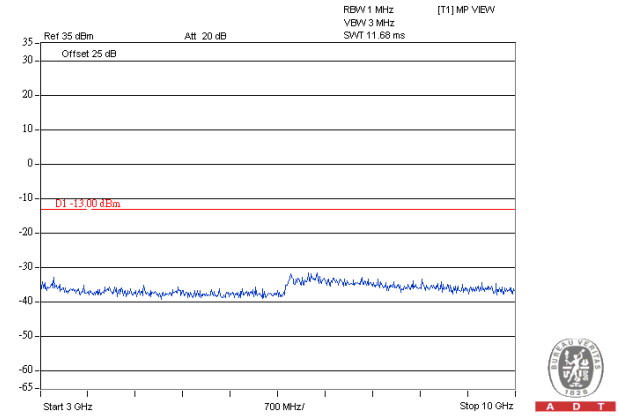
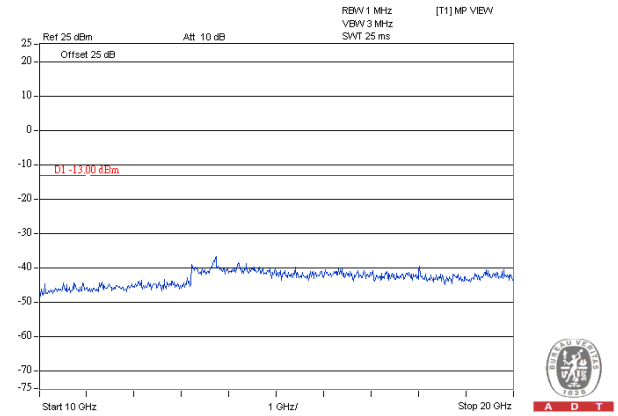
| GSM | |
|---|---|
| Channel 661 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

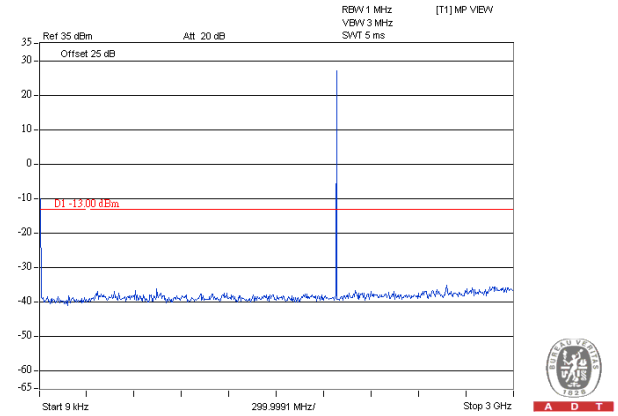
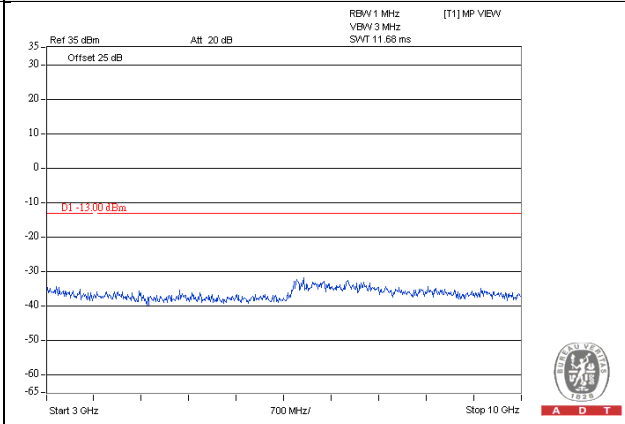
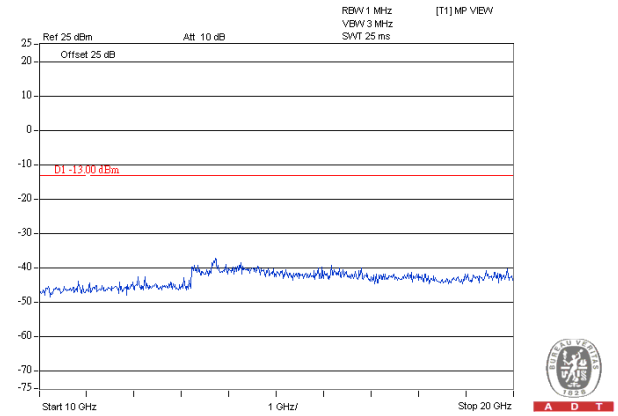
| GSM | |
|---|---|
| Channel 810 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

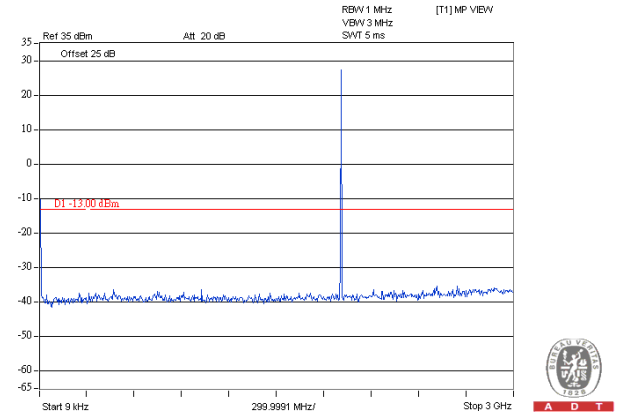
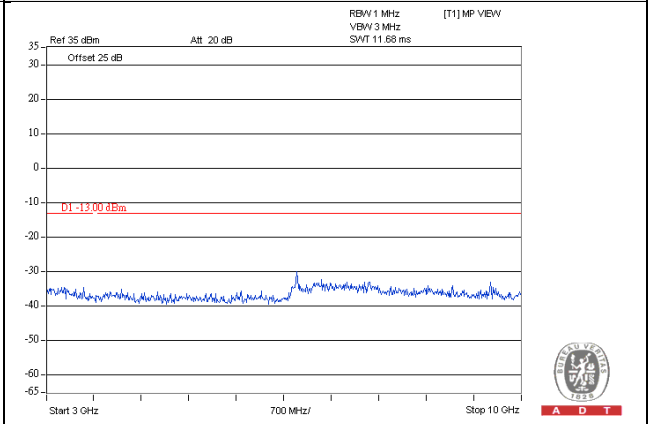
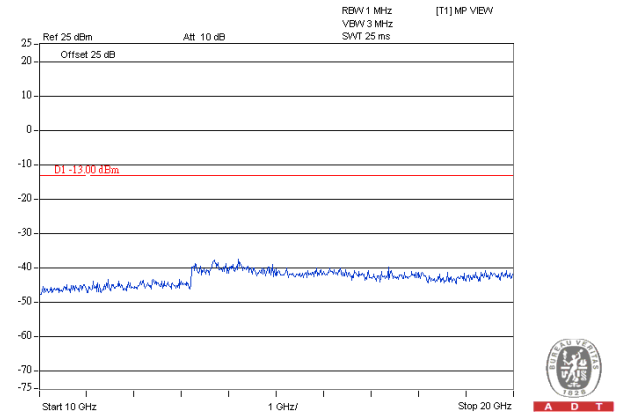
| GPRS | |
|---|---|
| Channel 512 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

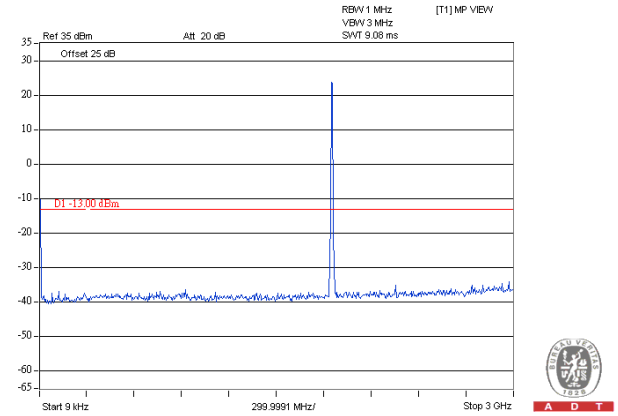
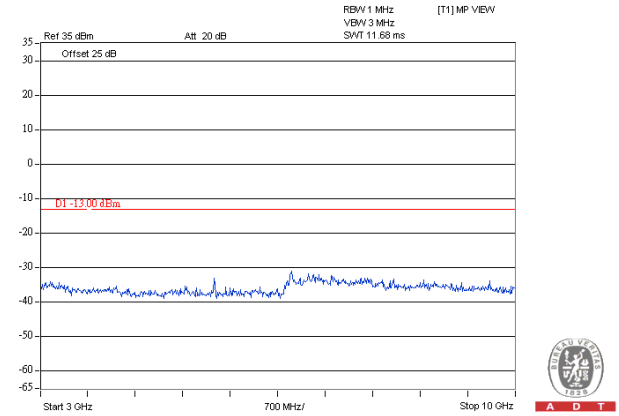
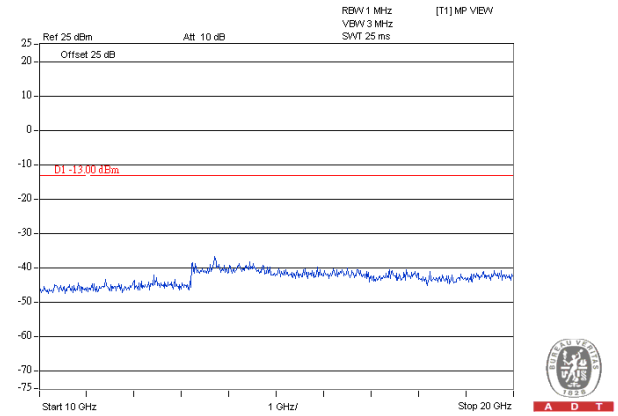
| GPRS | |
|---|---|
| Channel 661 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

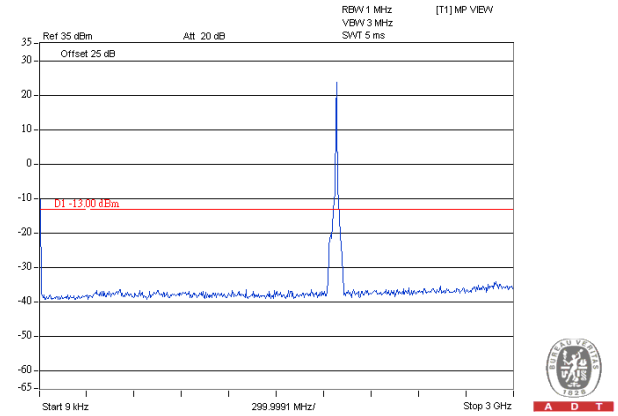
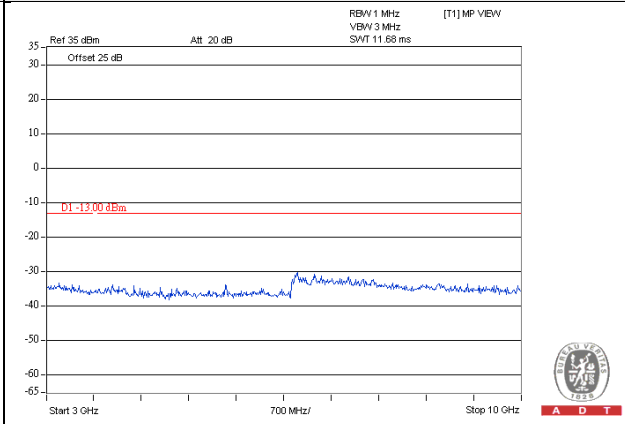
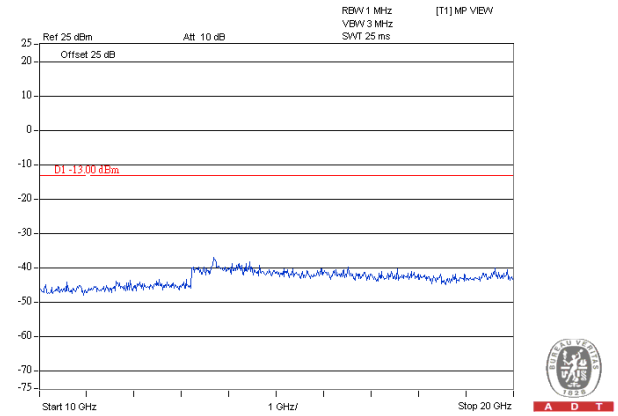
| GPRS | |
|---|---|
| Channel 810 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

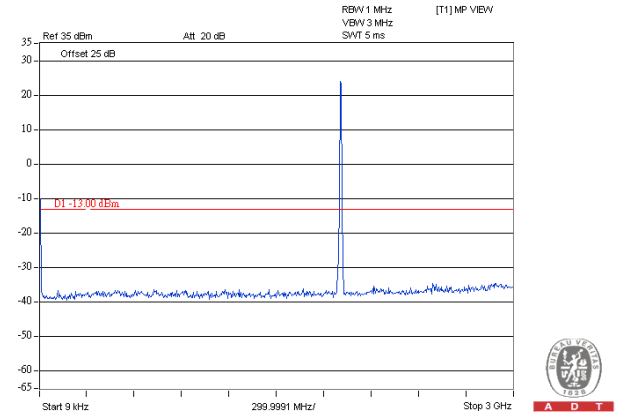
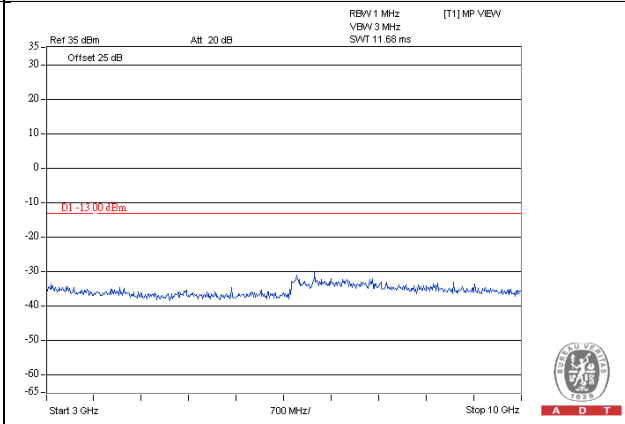
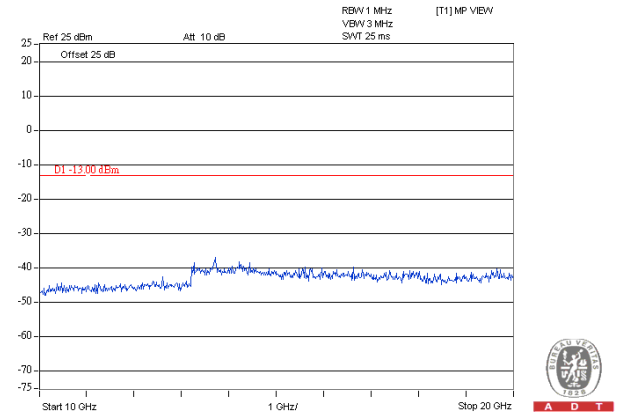
| EDGE | |
|---|---|
| Channel 512 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

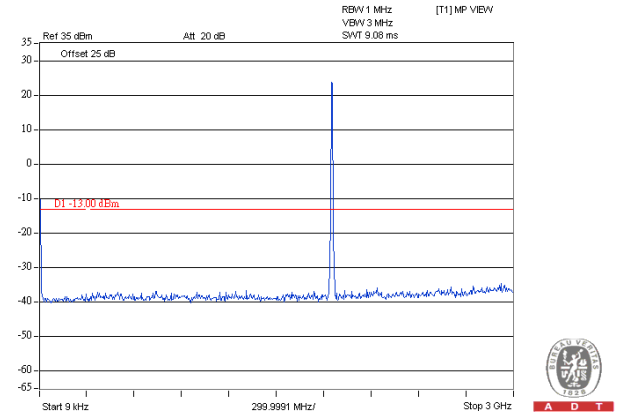
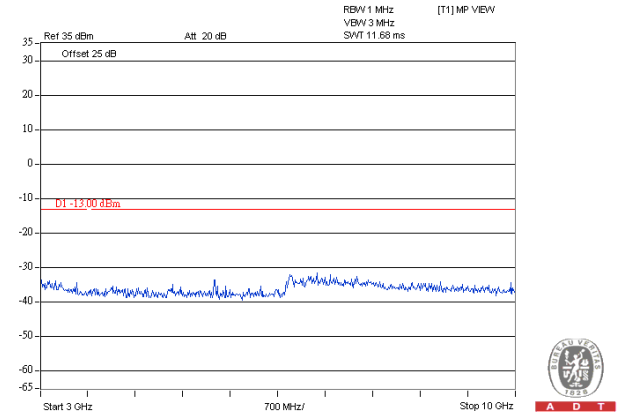
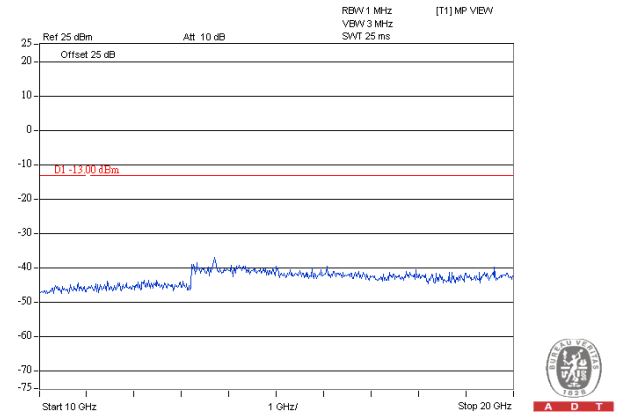
| EDGE | |
|---|---|
| Channel 661 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

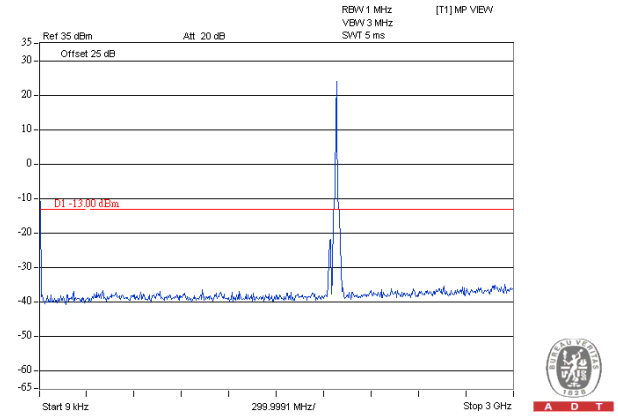
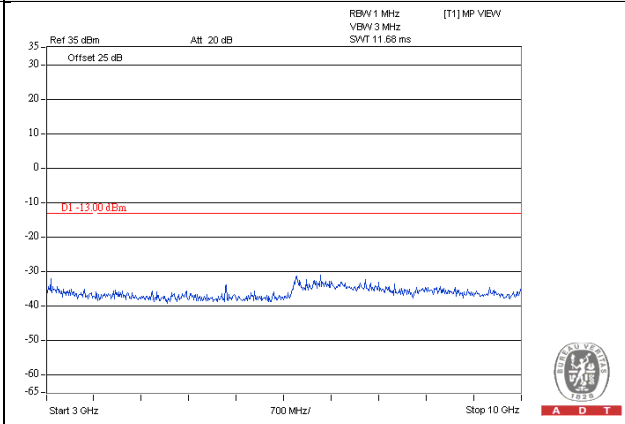
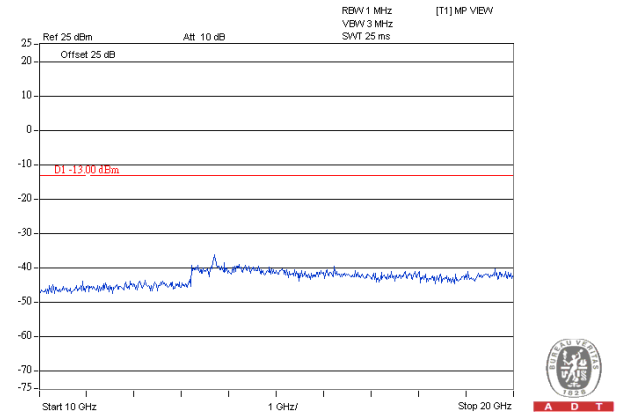
| EDGE | |
|---|---|
| Channel 810 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

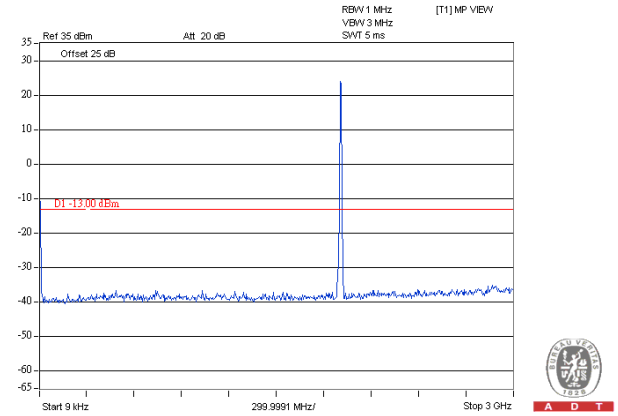
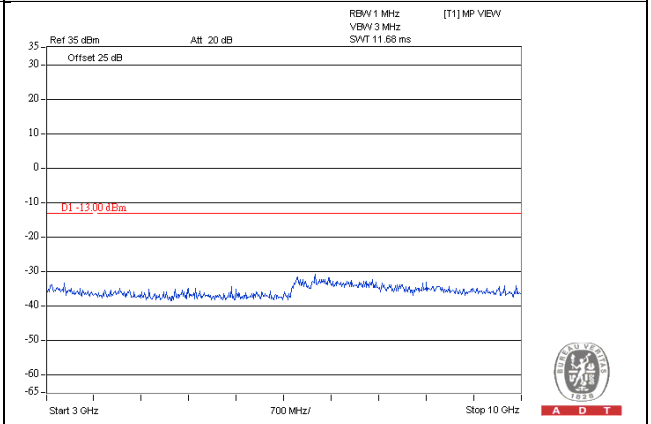
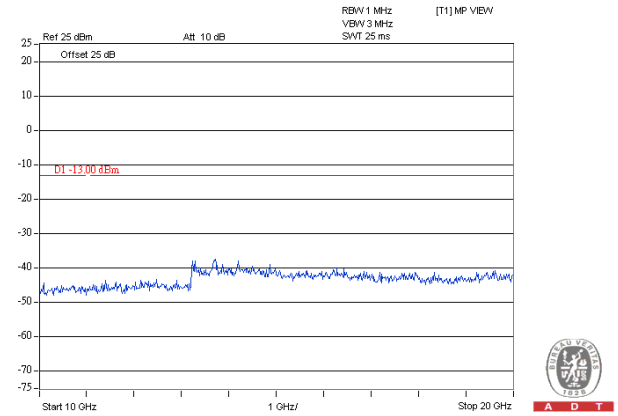
| WCDMA | |
|---|---|
| Channel 9262 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

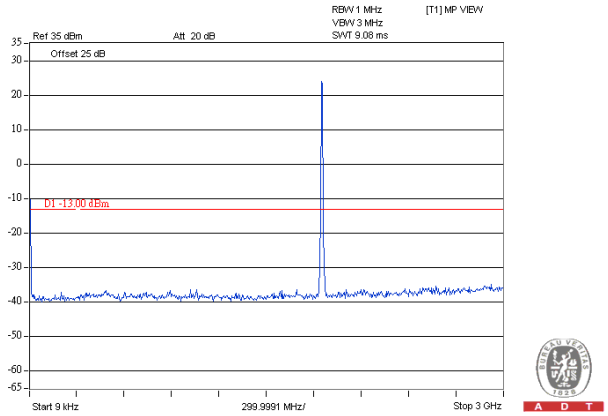
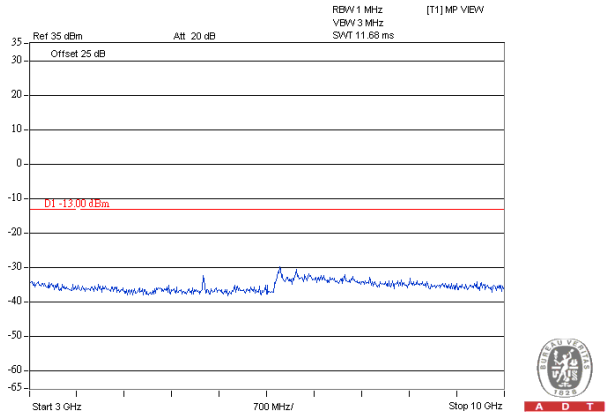
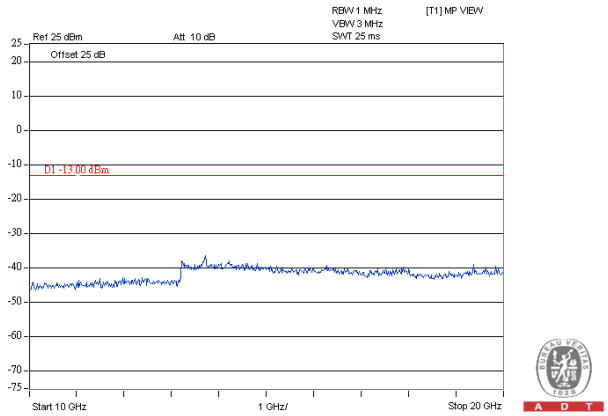
| WCDMA | |
|---|---|
| Channel 9400 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

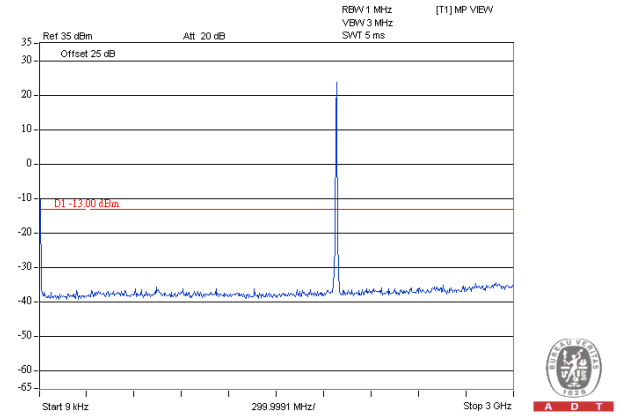
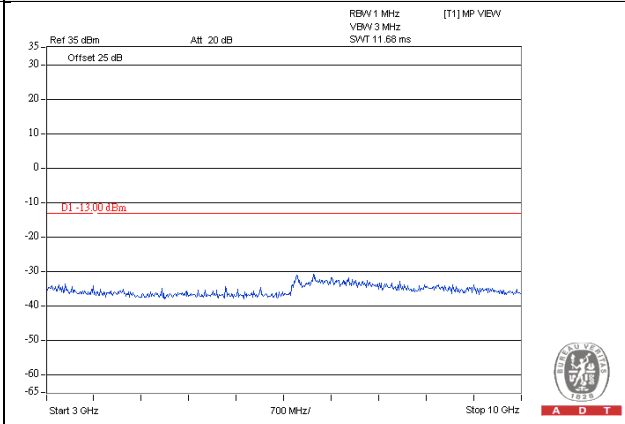
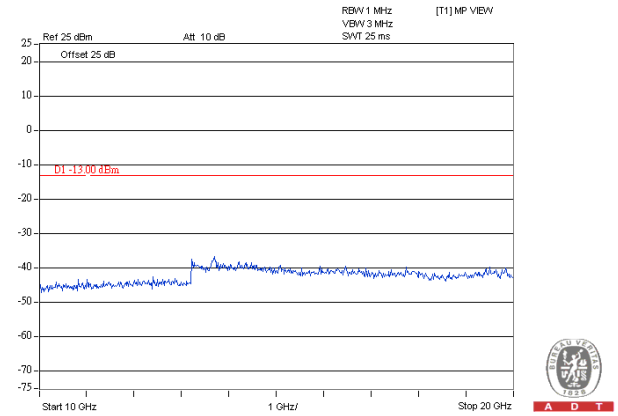
| WCDMA | |
|---|---|
| Channel 9538 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

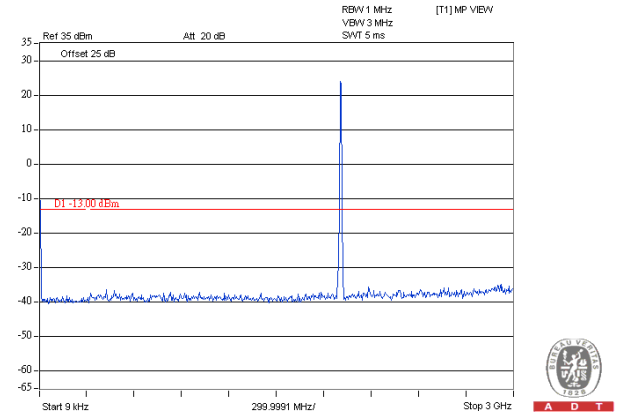
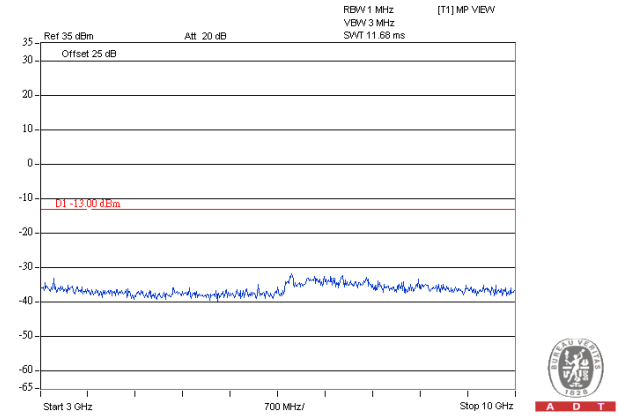
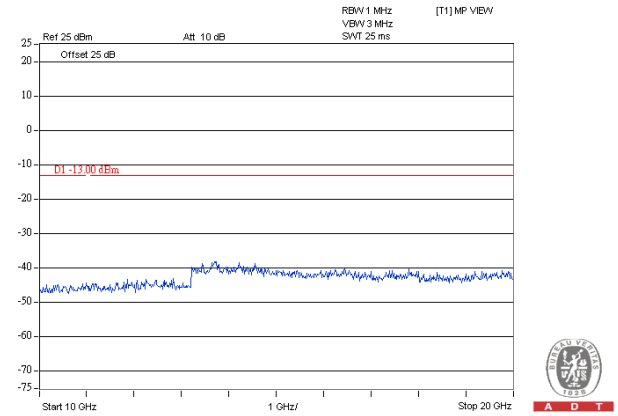
| HSDPA | |
|---|---|
| Channel 9262 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

| HSDPA | |
|---|---|
| Channel 9400 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

| HSDPA | |
|---|---|
| Channel 9538 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

| HSUPA | |
|---|---|
| Channel 9262 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

| HSUPA | |
|---|---|
| Channel 9400 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

| HSUPA | |
|---|---|
| Channel 9538 | |
| Frequency Range : 9kHz~3GHz | Frequency Range : 3GHz~10GHz |
|   |   |
| Frequency Range : 10GHz~20GHz | |
|   | |

## 4.7 Radiated Emission Measurement

### 4.7.1 Limits of Radiated Emission Measurement

The power of any emission outside 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 equal to –13dBm.

### 4.7.2 Test Procedure

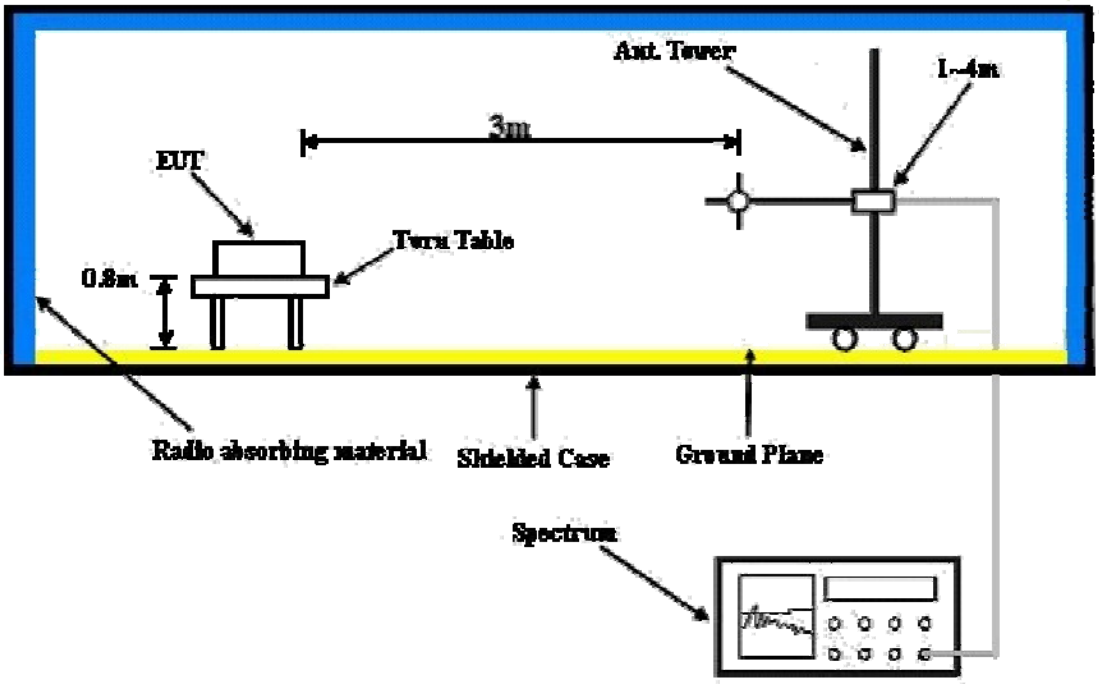
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P 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

Below 1GHz
GSM Mode

| | | | |
|---|---|---|---|
| Mode | TX channel 512 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -43.20 | -25.40 | -17.10 | -42.50 | -13.00 | -29.50 |
| 2 | 62.98 | -47.30 | -53.00 | -2.40 | -55.40 | -13.00 | -42.40 |
| 3 | 86.26 | -42.50 | -51.50 | 0.10 | -51.40 | -13.00 | -38.40 |
| 4 | 159.98 | -41.80 | -46.20 | -3.00 | -49.20 | -13.00 | -36.20 |
| 5 | 289.96 | -49.90 | -53.70 | -1.70 | -55.40 | -13.00 | -42.40 |
| 6 | 943.74 | -67.20 | -64.70 | 3.70 | -61.00 | -13.00 | -48.00 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -31.20 | -26.90 | -17.10 | -44.00 | -13.00 | -31.00 |
| 2 | 55.22 | -34.50 | -38.20 | -5.40 | -43.60 | -13.00 | -30.60 |
| 3 | 76.56 | -44.90 | -53.10 | 0.30 | -52.80 | -13.00 | -39.80 |
| 4 | 144.46 | -49.40 | -50.50 | -3.20 | -53.70 | -13.00 | -40.70 |
| 5 | 289.96 | -51.10 | -50.40 | -1.70 | -52.10 | -13.00 | -39.10 |
| 6 | 945.68 | -67.00 | -63.70 | 3.80 | -59.90 | -13.00 | -46.90 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 661 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -35.60 | -14.40 | -19.40 | -33.80 | -13.00 | -20.80 |
| 2 | 88.20 | -45.90 | -55.40 | -0.20 | -55.60 | -13.00 | -42.60 |
| 3 | 158.04 | -42.20 | -46.50 | -2.70 | -49.20 | -13.00 | -36.20 |
| 4 | 187.14 | -47.50 | -55.20 | -2.70 | -57.90 | -13.00 | -44.90 |
| 5 | 289.96 | -48.20 | -52.00 | -1.70 | -53.70 | -13.00 | -40.70 |
| 6 | 949.56 | -67.50 | -65.10 | 3.70 | -61.40 | -13.00 | -48.40 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -27.20 | -19.90 | -19.40 | -39.30 | -13.00 | -26.30 |
| 2 | 84.32 | -45.60 | -53.10 | 0.40 | -52.70 | -13.00 | -39.70 |
| 3 | 144.46 | -49.60 | -50.80 | -3.20 | -54.00 | -13.00 | -41.00 |
| 4 | 192.96 | -51.10 | -52.20 | -2.60 | -54.80 | -13.00 | -41.80 |
| 5 | 289.96 | -51.20 | -50.50 | -1.70 | -52.20 | -13.00 | -39.20 |
| 6 | 949.56 | -67.20 | -63.70 | 3.70 | -60.00 | -13.00 | -47.00 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 810 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -41.90 | -24.00 | -17.10 | -41.10 | -13.00 | -28.10 |
| 2 | 86.26 | -43.50 | -52.50 | 0.10 | -52.40 | -13.00 | -39.40 |
| 3 | 161.92 | -41.60 | -46.40 | -2.90 | -49.30 | -13.00 | -36.30 |
| 4 | 289.96 | -49.10 | -52.90 | -1.70 | -54.60 | -13.00 | -41.60 |
| 5 | 357.86 | -60.50 | -69.60 | 4.00 | -65.60 | -13.00 | -52.60 |
| 6 | 947.62 | -67.00 | -64.70 | 3.80 | -60.90 | -13.00 | -47.90 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -28.80 | -21.50 | -19.40 | -40.90 | -13.00 | -27.90 |
| 2 | 72.68 | -44.80 | -52.70 | -0.10 | -52.80 | -13.00 | -39.80 |
| 3 | 144.46 | -50.20 | -51.40 | -3.20 | -54.60 | -13.00 | -41.60 |
| 4 | 194.90 | -53.00 | -53.70 | -2.60 | -56.30 | -13.00 | -43.30 |
| 5 | 289.96 | -51.10 | -50.40 | -1.70 | -52.10 | -13.00 | -39.10 |
| 6 | 945.68 | -67.00 | -63.60 | 3.80 | -59.80 | -13.00 | -46.80 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 512 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -44.70 | -23.00 | -18.30 | -41.30 | -13.00 | -28.30 |
| 2 | 51.34 | -60.80 | -54.70 | -7.30 | -62.00 | -13.00 | -49.00 |
| 3 | 189.08 | -52.00 | -57.60 | -2.80 | -60.40 | -13.00 | -47.40 |
| 4 | 297.72 | -60.20 | -61.20 | -1.70 | -62.90 | -13.00 | -49.90 |
| 5 | 342.34 | -61.60 | -69.00 | 3.90 | -65.10 | -13.00 | -52.10 |
| 6 | 967.02 | -67.40 | -62.60 | 3.60 | -59.00 | -13.00 | -46.00 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -32.10 | -24.30 | -18.30 | -42.60 | -13.00 | -29.60 |
| 2 | 57.16 | -53.70 | -55.90 | -4.70 | -60.60 | -13.00 | -47.60 |
| 3 | 165.80 | -55.10 | -55.50 | -3.00 | -58.50 | -13.00 | -45.50 |
| 4 | 191.02 | -55.90 | -55.10 | -2.70 | -57.80 | -13.00 | -44.80 |
| 5 | 295.78 | -59.30 | -57.50 | -1.80 | -59.30 | -13.00 | -46.30 |
| 6 | 980.60 | -67.90 | -62.00 | 3.50 | -58.50 | -13.00 | -45.50 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 661 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -45.60 | -22.20 | -19.40 | -41.60 | -13.00 | -28.60 |
| 2 | 128.94 | -59.90 | -62.90 | -3.20 | -66.10 | -13.00 | -53.10 |
| 3 | 192.96 | -54.20 | -60.00 | -2.60 | -62.60 | -13.00 | -49.60 |
| 4 | 297.72 | -62.10 | -63.10 | -1.70 | -64.80 | -13.00 | -51.80 |
| 5 | 340.40 | -61.30 | -68.80 | 4.00 | -64.80 | -13.00 | -51.80 |
| 6 | 992.24 | -67.60 | -62.10 | 3.40 | -58.70 | -13.00 | -45.70 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -34.30 | -26.50 | -18.30 | -44.80 | -13.00 | -31.80 |
| 2 | 55.22 | -53.20 | -54.70 | -5.40 | -60.10 | -13.00 | -47.10 |
| 3 | 128.94 | -44.10 | -46.30 | -3.20 | -49.50 | -13.00 | -36.50 |
| 4 | 191.02 | -55.20 | -54.40 | -2.70 | -57.10 | -13.00 | -44.10 |
| 5 | 288.02 | -60.60 | -57.30 | -1.80 | -59.10 | -13.00 | -46.10 |
| 6 | 976.72 | -68.00 | -62.20 | 3.60 | -58.60 | -13.00 | -45.60 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 810 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -43.30 | -21.60 | -18.30 | -39.90 | -13.00 | -26.90 |
| 2 | 53.28 | -66.00 | -61.50 | -6.20 | -67.70 | -13.00 | -54.70 |
| 3 | 128.94 | -60.60 | -63.60 | -3.20 | -66.80 | -13.00 | -53.80 |
| 4 | 189.08 | -53.50 | -59.10 | -2.80 | -61.90 | -13.00 | -48.90 |
| 5 | 297.72 | -64.10 | -65.10 | -1.70 | -66.80 | -13.00 | -53.80 |
| 6 | 831.22 | -66.70 | -63.70 | 3.90 | -59.80 | -13.00 | -46.80 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -32.70 | -26.20 | -17.10 | -43.30 | -13.00 | -30.30 |
| 2 | 53.28 | -51.40 | -52.10 | -6.20 | -58.30 | -13.00 | -45.30 |
| 3 | 154.16 | -57.60 | -57.00 | -2.90 | -59.90 | -13.00 | -46.90 |
| 4 | 189.08 | -53.50 | -52.90 | -2.80 | -55.70 | -13.00 | -42.70 |
| 5 | 301.60 | -58.90 | -62.40 | 3.70 | -58.70 | -13.00 | -45.70 |
| 6 | 982.54 | -67.70 | -61.80 | 3.50 | -58.30 | -13.00 | -45.30 |

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

WCDMA Mode

| Mode | TX channel 9262 | Frequency Range | Below 1000 MHz |
|---|---|---|---|
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -42.10 | -20.90 | -19.40 | -40.30 | -13.00 | -27.30 |
| 2 | 86.26 | -50.50 | -59.60 | 0.10 | -59.50 | -13.00 | -46.50 |
| 3 | 161.92 | -50.40 | -55.10 | -2.90 | -58.00 | -13.00 | -45.00 |
| 4 | 191.02 | -50.00 | -57.90 | -2.70 | -60.60 | -13.00 | -47.60 |
| 5 | 293.84 | -52.60 | -56.20 | -1.80 | -58.00 | -13.00 | -45.00 |
| 6 | 980.60 | -61.80 | -58.60 | 3.50 | -55.10 | -13.00 | -42.10 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -34.10 | -28.40 | -18.30 | -46.70 | -13.00 | -33.70 |
| 2 | 55.22 | -38.70 | -42.30 | -5.40 | -47.70 | -13.00 | -34.70 |
| 3 | 163.86 | -54.00 | -56.30 | -2.90 | -59.20 | -13.00 | -46.20 |
| 4 | 191.02 | -56.20 | -57.60 | -2.70 | -60.30 | -13.00 | -47.30 |
| 5 | 278.32 | -58.60 | -55.90 | -1.60 | -57.50 | -13.00 | -44.50 |
| 6 | 990.30 | -62.00 | -57.80 | 3.40 | -54.40 | -13.00 | -41.40 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9400 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -42.10 | -20.80 | -19.40 | -40.20 | -13.00 | -27.20 |
| 2 | 86.26 | -52.80 | -61.80 | 0.10 | -61.70 | -13.00 | -48.70 |
| 3 | 161.92 | -50.50 | -55.20 | -2.90 | -58.10 | -13.00 | -45.10 |
| 4 | 191.02 | -50.80 | -58.60 | -2.70 | -61.30 | -13.00 | -48.30 |
| 5 | 293.84 | -52.40 | -55.90 | -1.80 | -57.70 | -13.00 | -44.70 |
| 6 | 974.78 | -62.40 | -59.20 | 3.60 | -55.60 | -13.00 | -42.60 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -31.00 | -25.30 | -18.30 | -43.60 | -13.00 | -30.60 |
| 2 | 84.32 | -51.00 | -58.50 | 0.40 | -58.10 | -13.00 | -45.10 |
| 3 | 159.98 | -54.50 | -56.60 | -3.00 | -59.60 | -13.00 | -46.60 |
| 4 | 191.02 | -57.20 | -58.50 | -2.70 | -61.20 | -13.00 | -48.20 |
| 5 | 280.26 | -59.90 | -57.30 | -1.60 | -58.90 | -13.00 | -45.90 |
| 6 | 957.32 | -61.40 | -58.10 | 3.80 | -54.30 | -13.00 | -41.30 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9538 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | A |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -40.20 | -20.70 | -18.30 | -39.00 | -13.00 | -26.00 |
| 2 | 86.26 | -50.20 | -59.30 | 0.10 | -59.20 | -13.00 | -46.20 |
| 3 | 161.92 | -49.00 | -53.70 | -2.90 | -56.60 | -13.00 | -43.60 |
| 4 | 191.02 | -50.00 | -57.80 | -2.70 | -60.50 | -13.00 | -47.50 |
| 5 | 288.02 | -51.20 | -55.20 | -1.80 | -57.00 | -13.00 | -44.00 |
| 6 | 988.36 | -61.50 | -58.30 | 3.40 | -54.90 | -13.00 | -41.90 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -35.80 | -31.40 | -17.10 | -48.50 | -13.00 | -35.50 |
| 2 | 82.38 | -54.20 | -61.30 | 0.40 | -60.90 | -13.00 | -47.90 |
| 3 | 159.98 | -56.60 | -58.70 | -3.00 | -61.70 | -13.00 | -48.70 |
| 4 | 189.08 | -56.50 | -58.10 | -2.80 | -60.90 | -13.00 | -47.90 |
| 5 | 286.08 | -59.40 | -57.80 | -1.70 | -59.50 | -13.00 | -46.50 |
| 6 | 939.86 | -61.80 | -58.60 | 3.70 | -54.90 | -13.00 | -41.90 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9262 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 31.94 | -48.40 | -26.70 | -18.30 | -45.00 | -13.00 | -32.00 |
| 2 | 68.80 | -43.50 | -49.30 | -0.80 | -50.10 | -13.00 | -37.10 |
| 3 | 138.64 | -53.40 | -56.20 | -3.20 | -59.40 | -13.00 | -46.40 |
| 4 | 200.72 | -52.10 | -58.10 | -2.30 | -60.40 | -13.00 | -47.40 |
| 5 | 328.76 | -54.90 | -62.80 | 4.10 | -58.70 | -13.00 | -45.70 |
| 6 | 992.24 | -68.30 | -62.80 | 3.40 | -59.40 | -13.00 | -46.40 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -39.30 | -29.80 | -19.40 | -49.20 | -13.00 | -36.20 |
| 2 | 53.28 | -41.90 | -42.60 | -6.20 | -48.80 | -13.00 | -35.80 |
| 3 | 144.46 | -47.60 | -46.60 | -3.20 | -49.80 | -13.00 | -36.80 |
| 4 | 198.78 | -54.10 | -52.70 | -2.40 | -55.10 | -13.00 | -42.10 |
| 5 | 258.92 | -57.30 | -55.10 | -1.50 | -56.60 | -13.00 | -43.60 |
| 6 | 992.24 | -68.30 | -61.80 | 3.40 | -58.40 | -13.00 | -45.40 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9400 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -45.90 | -22.50 | -19.40 | -41.90 | -13.00 | -28.90 |
| 2 | 68.80 | -42.40 | -48.20 | -0.80 | -49.00 | -13.00 | -36.00 |
| 3 | 150.28 | -53.40 | -55.10 | -3.00 | -58.10 | -13.00 | -45.10 |
| 4 | 202.66 | -50.90 | -56.80 | -2.10 | -58.90 | -13.00 | -45.90 |
| 5 | 340.40 | -55.50 | -63.00 | 4.00 | -59.00 | -13.00 | -46.00 |
| 6 | 978.66 | -69.00 | -63.70 | 3.50 | -60.20 | -13.00 | -47.20 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 33.88 | -35.20 | -28.70 | -17.10 | -45.80 | -13.00 | -32.80 |
| 2 | 53.28 | -42.10 | -42.80 | -6.20 | -49.00 | -13.00 | -36.00 |
| 3 | 142.52 | -47.80 | -46.90 | -3.10 | -50.00 | -13.00 | -37.00 |
| 4 | 198.78 | -55.30 | -53.90 | -2.40 | -56.30 | -13.00 | -43.30 |
| 5 | 260.86 | -58.90 | -56.40 | -1.50 | -57.90 | -13.00 | -44.90 |
| 6 | 943.74 | -67.10 | -61.70 | 3.70 | -58.00 | -13.00 | -45.00 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9538 | Frequency Range | Below 1000 MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | Test Mode | B |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -43.40 | -20.00 | -19.40 | -39.40 | -13.00 | -26.40 |
| 2 | 68.80 | -44.40 | -50.20 | -0.80 | -51.00 | -13.00 | -38.00 |
| 3 | 150.28 | -54.80 | -56.50 | -3.00 | -59.50 | -13.00 | -46.50 |
| 4 | 198.78 | -51.40 | -57.40 | -2.40 | -59.80 | -13.00 | -46.80 |
| 5 | 342.34 | -55.10 | -62.50 | 3.90 | -58.60 | -13.00 | -45.60 |
| 6 | 943.74 | -67.70 | -63.10 | 3.70 | -59.40 | -13.00 | -46.40 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 30.00 | -30.80 | -21.30 | -19.40 | -40.70 | -13.00 | -27.70 |
| 2 | 51.34 | -43.70 | -43.60 | -7.30 | -50.90 | -13.00 | -37.90 |
| 3 | 142.52 | -48.60 | -47.70 | -3.10 | -50.80 | -13.00 | -37.80 |
| 4 | 198.78 | -55.00 | -53.60 | -2.40 | -56.00 | -13.00 | -43.00 |
| 5 | 258.92 | -57.50 | -55.30 | -1.50 | -56.80 | -13.00 | -43.80 |
| 6 | 943.74 | -67.20 | -61.80 | 3.70 | -58.10 | -13.00 | -45.10 |

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

Above 1GHz
GSM Mode

| | | | |
|---|---|---|---|
| Mode | TX channel 512 | Frequency Range | Above 1000MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3700.40 | -53.10 | -46.80 | 1.40 | -45.40 | -13.00 | -32.40 |
| 2 | 5550.60 | -48.10 | -37.50 | 1.40 | -36.10 | -13.00 | -23.10 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3700.40 | -52.80 | -46.70 | 1.40 | -45.30 | -13.00 | -32.30 |
| 2 | 5550.60 | -51.50 | -41.60 | 1.40 | -40.20 | -13.00 | -27.20 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 661 | Frequency Range | Above 1000MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3760.00 | -53.00 | -46.70 | 1.30 | -45.40 | -13.00 | -32.40 |
| 2 | 5640.00 | -50.60 | -39.80 | 1.30 | -38.50 | -13.00 | -25.50 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3760.00 | -51.20 | -45.10 | 1.30 | -43.80 | -13.00 | -30.80 |
| 2 | 5640.00 | -51.80 | -42.10 | 1.30 | -40.80 | -13.00 | -27.80 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 810 | Frequency Range | Above 1000MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3819.60 | -52.90 | -46.80 | 1.40 | -45.40 | -13.00 | -32.40 |
| 2 | 5729.40 | -53.00 | -42.10 | 1.20 | -40.90 | -13.00 | -27.90 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3819.60 | -51.70 | -45.60 | 1.40 | -44.20 | -13.00 | -31.20 |
| 2 | 5729.40 | -55.50 | -45.40 | 1.20 | -44.20 | -13.00 | -31.20 |

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

WCDMA Mode

| Mode | TX channel 9262 | Frequency Range | Above 1000MHz |
|---|---|---|---|
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3704.80 | -55.10 | -46.60 | 1.40 | -45.20 | -13.00 | -32.20 |
| 2 | 5557.20 | -44.70 | -31.80 | 1.30 | -30.50 | -13.00 | -17.50 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3704.80 | -55.80 | -47.60 | 1.40 | -46.20 | -13.00 | -33.20 |
| **2** | **5557.20** | **-42.30** | **-30.20** | **1.30** | **-28.90** | **-13.00** | **-15.90** |

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

| Mode | TX channel 9400 | Frequency Range | Above 1000MHz |
|---|---|---|---|
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3760.00 | -56.60 | -48.10 | 1.30 | -46.80 | -13.00 | -33.80 |
| 2 | 5640.00 | -47.90 | -34.90 | 1.30 | -33.60 | -13.00 | -20.60 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3760.00 | -56.50 | -48.20 | 1.30 | -46.90 | -13.00 | -33.90 |
| 2 | 5640.00 | -45.40 | -33.50 | 1.30 | -32.20 | -13.00 | -19.20 |

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

| | | | |
|---|---|---|---|
| Mode | TX channel 9538 | Frequency Range | Above 1000MHz |
| Environmental Conditions | 25deg. C, 69%RH | Input Power | 120Vac, 60Hz |
| Tested By | Tank Wu | | |

| Antenna Polarity & Test Distance: Horizontal at 3 M | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3815.20 | -56.80 | -48.50 | 1.40 | -47.10 | -13.00 | -34.10 |
| 2 | 5722.80 | -49.20 | -36.10 | 1.20 | -34.90 | -13.00 | -21.90 |
| Antenna Polarity & Test Distance: Vertical at 3 M | | | | | | | |
| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1 | 3815.20 | -57.50 | -49.30 | 1.40 | -47.90 | -13.00 | -34.90 |
| 2 | 5722.80 | -45.10 | -33.00 | 1.20 | -31.80 | -13.00 | -18.80 |

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

## 5 Pictures of Test Arrangements

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

## Appendix – 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: 886-3-6668565
Fax: 886-3-6668323

**Hwa Ya EMC/RF/Safety Lab**
Tel: 886-3-3183232
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.

**--- END ---**