



# Variant FCC RF Test Report

APPLICANT : ZTE CORPORATION  
EQUIPMENT : CDMA/LTE Digital Mobile Handset  
BRAND NAME : ZTE  
MODEL NAME : ZTE FLASH 4G LTE  
FCC ID : Q78-ZTEN9500  
STANDARD : 47 CFR Part 2, 24(E)  
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

This is a variant report which is only valid together with the original test report. The product was received on Nov. 01, 2012 and completely tested on Dec. 12, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



**SPORTON INTERNATIONAL (KUNSHAN) INC.**  
**No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.**



# TABLE OF CONTENTS

**REVISION HISTORY..... 3**

**SUMMARY OF TEST RESULT ..... 4**

**1 GENERAL DESCRIPTION ..... 5**

    1.1 Applicant ..... 5

    1.2 Manufacturer ..... 5

    1.3 Feature of Equipment Under Test ..... 5

    1.4 Product Specification of Equipment Under Test ..... 5

    1.5 Emission Designator and Maximum EIRP ..... 6

    1.6 Testing Site ..... 6

    1.7 Applied Standards ..... 6

    1.8 Ancillary Equipment List ..... 6

**2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 7**

    2.1 Test Mode ..... 7

    2.2 Connection Diagram of Test System ..... 8

**3 TEST RESULT ..... 9**

    3.1 Maximum Output Power and Effective Isotropic Radiated Power Measurement ..... 9

    3.2 Radiated Emissions Measurement ..... 16

**4 LIST OF MEASURING EQUIPMENT ..... 21**

**5 UNCERTAINTY OF EVALUATION ..... 22**

**APPENDIX A. PHOTOGRAPHS OF EUT**

**APPENDIX B. SETUP PHOTOGRAPHS**

**APPENDIX C. PRODUCT EQUALITY DECLARATION**





### SUMMARY OF TEST RESULT

| Report Section | FCC Rule              | IC Rule                          | Description                         | Limit                               | Result | Remark                                     |
|----------------|-----------------------|----------------------------------|-------------------------------------|-------------------------------------|--------|--|
| 3.1            | §2.1046               | NA                               | Conducted Output Power              | NA                                  | PASS   | -  |
| 3.1            | §24.232(c)            | RSS-133 (6.4)<br>SRSP-510(5.1.2) | Equivalent Isotropic Radiated Power | EIRP < 2 Watt                       | PASS   | -  |
| 3.2            | §2.1053<br>§24.238(a) | RSS-133 (6.5.1)                  | Undesirable Out of Band Emissions   | < 43+10log <sub>10</sub> (P[Watts]) | PASS   | Under limit<br>33.05 dB at<br>3760.000 MHz |



# 1 General Description

## 1.1 Applicant

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.2 Manufacturer

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.3 Feature of Equipment Under Test

| Product Feature                 |   |
|---------------------------------|---|
| Equipment                       | CDMA/LTE Digital Mobile Handset                           |
| Brand Name                      | ZTE   |
| Model Name                      | ZTE FLASH 4G LTE  |
| FCC ID                          | Q78-ZTEN9500  |
| EUT supports Radios application | CDMA/EV-DO/LTE/WLAN 11bgn/Bluetooth/Bluetooth4.0 – LE/NFC |
| HW Version                      | c7zB  |
| SW Version                      | N9500V1.0.0B13  |
| EUT Stage                       | Identical Prototype                                       |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Product Specification subjective to this standard |                             |
|---|-----------------------------|
| Tx Frequency                                      | 1850.7 MHz ~ 1914.3 MHz     |
| Rx Frequency                                      | 1930.7 MHz ~ 1994.3 MHz     |
| Bandwidth   | 1.4MHz / 3MHz / 5MHz/ 10MHz |
| Maximum Output Power to Antenna                   | 23.32 dBm                   |
| Antenna Type                                      | PIFA Antenna                |
| Type of Modulation                                | QPSK / 16QAM                |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



### 1.5 Maximum EIRP Power

| FCC Rule | System      | Type of Modulation | BW   | Maximum EIRP (W) |
|----------|-------------|--------------------|------|------------------|
| Part 24E | LTE Band 25 | QPSK               | 5MHz | 0.1109 W         |
| Part 24E | LTE Band 25 | 16QAM              | 5MHz | 0.0957 W         |

### 1.6 Testing Site

|                    |  |           |                         |
|--------------------|--|-----------|-------------------------|
| Test Site          | SPORTON INTERNATIONAL (KUNSHAN) INC.   |           |                         |
| Test Site Location | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 |           |                         |
| Test Site No.      | Sporton Site No.   |           | FCC/IC Registration No. |
|                    | TH01-KS  | 03CH01-KS | 149928/4086E-1          |

### 1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 24(E)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v01
- IC RSS-133 Issue 5

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

### 1.8 Ancillary Equipment List

| Item | Equipment        | Trade Name | Model No. | FCC ID | Data Cable | Power Cord        |
|------|------------------|------------|-----------|--------|------------|-------------------|
| 1.   | LTE Base Station | Anritsu    | MT8820C   | N/A    | N/A        | Unshielded, 1.8 m |
| 2.   | DC Power Supply  | GWINSTEK   | GPS-3030D | N/A    | N/A        | Unshielded, 1.8 m |



## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

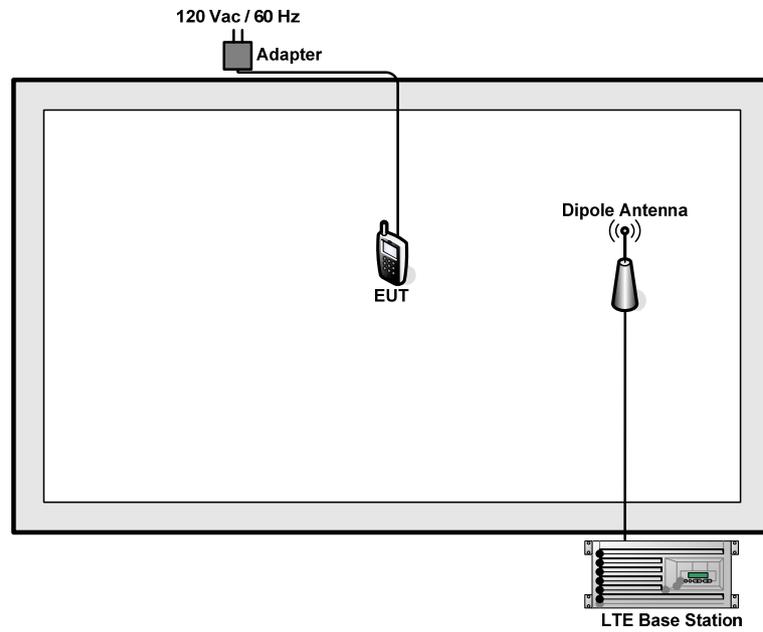
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission is: 30 MHz to 19000 MHz.

| Test Modes     |              |  |  |
|----------------|--------------|--|--|
| Band           |              | Radiated TCs   | Conducted TCs  |
| LTE<br>Band 25 | BW<br>1.4MHz | -  | <ul style="list-style-type: none"> <li>■ LTE (RB Size 1, RB Offset 0)Link</li> <li>■ LTE (RB Size 1, RB Offset 5)Link</li> <li>■ LTE (RB Size 3, RB Offset 2)Link</li> <li>■ LTE (RB Size 6, RB Offset 0)Link</li> </ul>     |
|                | BW<br>3MHz   | -  | <ul style="list-style-type: none"> <li>■ LTE (RB Size 1, RB Offset 0)Link</li> <li>■ LTE (RB Size 1, RB Offset 14)Link</li> <li>■ LTE (RB Size 8, RB Offset 4)Link</li> <li>■ LTE (RB Size 15, RB Offset 0)Link</li> </ul>   |
|                | BW<br>5MHz   | <ul style="list-style-type: none"> <li>■ LTE (RB Size 1, RB Offset 0) QPSK Link</li> </ul> | <ul style="list-style-type: none"> <li>■ LTE (RB Size 1, RB Offset 0)Link</li> <li>■ LTE (RB Size 1, RB Offset 24)Link</li> <li>■ LTE (RB Size 12, RB Offset 6)Link</li> <li>■ LTE (RB Size 25, RB Offset 0)Link</li> </ul>  |
|                | BW<br>10MHz  | -  | <ul style="list-style-type: none"> <li>■ LTE (RB Size 1, RB Offset 0)Link</li> <li>■ LTE (RB Size 1, RB Offset 49)Link</li> <li>■ LTE (RB Size 25, RB Offset 13)Link</li> <li>■ LTE (RB Size 50, RB Offset 0)Link</li> </ul> |

**Note:** For conducted power test, both two Modulations (QPSK and 16QAM) are tested. For RSE and ERP/EIRP test, only the worst case are chosen.

## 2.2 Connection Diagram of Test System





### 3 Test Result

#### 3.1 Maximum Output Power and Effective Isotropic Radiated Power Measurement

##### 3.1.1 Limit

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004. Mobile and portable (hand-held) stations operating in each channel are limited to average EIRP of 2 watts.

##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedures

###### For Conducted Power Measurement:

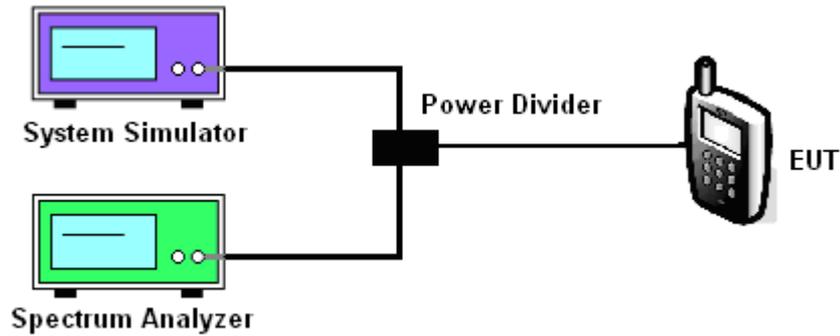
1. The RF output of the transmitter was connected to base station simulator.
2. Set EUT at maximum average power by base station simulator.
3. Measure lowest, middle, and highest channels for each bandwidth and different modulation.

###### For Effective Isotropic Radiated Power Measurement:

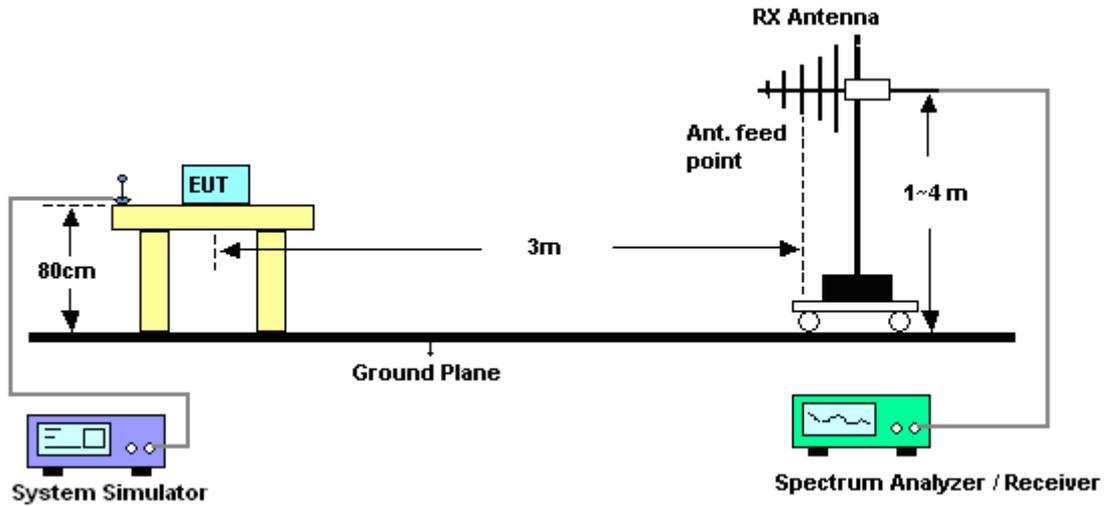
1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m.
2. During the measurement, the EUT was enforced in maximum power. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Radiated Power (ERP) and Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor,  $EIRP = LVL + \text{Correction factor}$ .

### 3.1.4 Test Setup

#### <Conducted Power and Band Edge Measurement>



#### < Effective Isotropic Radiated Power Measurement >





3.1.5 Test Result of Conducted Output Power

| Mode        | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration |           | Average Power (dBm) | Average Power (Watts) |
|-------------|------------|---------|-----------------|------------|------------------|-----------|---------------------|-----------------------|
|             |            |         |                 |            | RB Size          | RB Offset |                     |                       |
| LTE Band 25 | 1.4MHz     | 26047   | 1850.7          | QPSK       | 1                | 0         | 23.24               | 0.2109                |
|             |            |         |                 |            | 1                | 5         | 23.20               | 0.2089                |
|             |            |         |                 |            | 3                | 2         | 23.18               | 0.2080                |
|             |            |         |                 |            | 6                | 0         | 22.37               | 0.1726                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.28               | 0.1690                |
|             |            |         |                 |            | 1                | 5         | 22.06               | 0.1607                |
|             |            |         |                 |            | 3                | 2         | 22.19               | 0.1656                |
|             |            |         |                 |            | 6                | 0         | 21.24               | 0.1330                |
|             |            | 26365   | 1882.5          | QPSK       | 1                | 0         | 23.26               | 0.2118                |
|             |            |         |                 |            | 1                | 5         | 23.23               | 0.2104                |
|             |            |         |                 |            | 3                | 2         | 23.22               | 0.2099                |
|             |            |         |                 |            | 6                | 0         | 22.22               | 0.1667                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.39               | 0.1734                |
|             |            |         |                 |            | 1                | 5         | 22.15               | 0.1641                |
|             |            |         |                 |            | 3                | 2         | 22.28               | 0.1690                |
|             |            |         |                 |            | 6                | 0         | 21.28               | 0.1343                |
|             |            | 26683   | 1914.3          | QPSK       | 1                | 0         | 23.23               | 0.2104                |
|             |            |         |                 |            | 1                | 5         | 23.25               | 0.2113                |
|             |            |         |                 |            | 3                | 2         | 23.22               | 0.2099                |
|             |            |         |                 |            | 6                | 0         | 22.35               | 0.1718                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.38               | 0.1730                |
|             |            |         |                 |            | 1                | 5         | 22.34               | 0.1714                |
|             |            |         |                 |            | 3                | 2         | 22.35               | 0.1718                |
|             |            |         |                 |            | 6                | 0         | 21.20               | 0.1318                |



| Mode        | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration |           | Average Power (dBm) | Average Power (Watts) |
|-------------|------------|---------|-----------------|------------|------------------|-----------|---------------------|-----------------------|
|             |            |         |                 |            | RB Size          | RB Offset |                     |                       |
| LTE Band 25 | 3MHz       | 26055   | 1851.5          | QPSK       | 1                | 0         | 23.08               | 0.2032                |
|             |            |         |                 |            | 1                | 14        | 23.06               | 0.2023                |
|             |            |         |                 |            | 8                | 4         | 22.36               | 0.1722                |
|             |            |         |                 |            | 15               | 0         | 22.26               | 0.1683                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.11               | 0.1626                |
|             |            |         |                 |            | 1                | 14        | 22.10               | 0.1622                |
|             |            |         |                 |            | 8                | 4         | 21.28               | 0.1343                |
|             |            |         |                 |            | 15               | 0         | 21.32               | 0.1355                |
|             |            | 26365   | 1882.5          | QPSK       | 1                | 0         | 23.12               | 0.2051                |
|             |            |         |                 |            | 1                | 14        | 23.07               | 0.2028                |
|             |            |         |                 |            | 8                | 4         | 22.27               | 0.1687                |
|             |            |         |                 |            | 15               | 0         | 22.24               | 0.1675                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.13               | 0.1633                |
|             |            |         |                 |            | 1                | 14        | 22.12               | 0.1629                |
|             |            |         |                 |            | 8                | 4         | 21.28               | 0.1343                |
|             |            |         |                 |            | 15               | 0         | 21.16               | 0.1306                |
|             |            | 26675   | 1913.5          | QPSK       | 1                | 0         | 23.08               | 0.2032                |
|             |            |         |                 |            | 1                | 14        | 23.06               | 0.2023                |
|             |            |         |                 |            | 8                | 4         | 22.49               | 0.1774                |
|             |            |         |                 |            | 15               | 0         | 22.22               | 0.1667                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.12               | 0.1629                |
|             |            |         |                 |            | 1                | 14        | 22.10               | 0.1622                |
|             |            |         |                 |            | 8                | 4         | 21.29               | 0.1346                |
|             |            |         |                 |            | 15               | 0         | 21.38               | 0.1374                |



| Mode        | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration |           | Average Power (dBm) | Average Power (Watts) |
|-------------|------------|---------|-----------------|------------|------------------|-----------|---------------------|-----------------------|
|             |            |         |                 |            | RB Size          | RB Offset |                     |                       |
| LTE Band 25 | 5MHz       | 26065   | 1852.5          | QPSK       | 1                | 0         | 23.32               | 0.2148                |
|             |            |         |                 |            | 1                | 24        | 23.29               | 0.2133                |
|             |            |         |                 |            | 12               | 6         | 22.27               | 0.1687                |
|             |            |         |                 |            | 25               | 0         | 22.06               | 0.1607                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.40               | 0.1738                |
|             |            |         |                 |            | 1                | 24        | 22.18               | 0.1652                |
|             |            |         |                 |            | 12               | 6         | 21.39               | 0.1377                |
|             |            |         |                 |            | 25               | 0         | 21.27               | 0.1340                |
|             |            | 26365   | 1882.5          | QPSK       | 1                | 0         | 23.32               | 0.2148                |
|             |            |         |                 |            | 1                | 24        | 23.25               | 0.2113                |
|             |            |         |                 |            | 12               | 6         | 22.17               | 0.1648                |
|             |            |         |                 |            | 25               | 0         | 22.09               | 0.1618                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.42               | 0.1746                |
|             |            |         |                 |            | 1                | 24        | 22.40               | 0.1738                |
|             |            |         |                 |            | 12               | 6         | 21.25               | 0.1334                |
|             |            |         |                 |            | 25               | 0         | 21.14               | 0.1300                |
|             |            | 26665   | 1912.5          | QPSK       | 1                | 0         | 23.30               | 0.2138                |
|             |            |         |                 |            | 1                | 24        | 23.18               | 0.2080                |
|             |            |         |                 |            | 12               | 6         | 22.37               | 0.1726                |
|             |            |         |                 |            | 25               | 0         | 22.14               | 0.1637                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.40               | 0.1738                |
|             |            |         |                 |            | 1                | 24        | 22.26               | 0.1683                |
|             |            |         |                 |            | 12               | 6         | 21.35               | 0.1365                |
|             |            |         |                 |            | 25               | 0         | 21.03               | 0.1268                |



| Mode        | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration |           | Average Power (dBm) | Average Power (Watts) |
|-------------|------------|---------|-----------------|------------|------------------|-----------|---------------------|-----------------------|
|             |            |         |                 |            | RB Size          | RB Offset |                     |                       |
| LTE Band 25 | 10MHz      | 26090   | 1855            | QPSK       | 1                | 0         | 23.27               | 0.2123                |
|             |            |         |                 |            | 1                | 49        | 23.22               | 0.2099                |
|             |            |         |                 |            | 25               | 13        | 22.05               | 0.1603                |
|             |            |         |                 |            | 50               | 0         | 21.94               | 0.1563                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.30               | 0.1698                |
|             |            |         |                 |            | 1                | 49        | 22.26               | 0.1683                |
|             |            |         |                 |            | 25               | 13        | 21.19               | 0.1315                |
|             |            |         |                 |            | 50               | 0         | 20.90               | 0.1230                |
|             |            | 26365   | 1882.5          | QPSK       | 1                | 0         | 23.30               | 0.2138                |
|             |            |         |                 |            | 1                | 49        | 23.29               | 0.2133                |
|             |            |         |                 |            | 25               | 13        | 22.12               | 0.1629                |
|             |            |         |                 |            | 50               | 0         | 22.05               | 0.1603                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.42               | 0.1746                |
|             |            |         |                 |            | 1                | 49        | 22.29               | 0.1694                |
|             |            |         |                 |            | 25               | 13        | 21.06               | 0.1276                |
|             |            |         |                 |            | 50               | 0         | 21.02               | 0.1265                |
|             |            | 26640   | 1910            | QPSK       | 1                | 0         | 23.26               | 0.2118                |
|             |            |         |                 |            | 1                | 49        | 23.21               | 0.2094                |
|             |            |         |                 |            | 25               | 13        | 22.13               | 0.1633                |
|             |            |         |                 |            | 50               | 0         | 21.95               | 0.1567                |
|             |            |         |                 | 16-QAM     | 1                | 0         | 22.34               | 0.1714                |
|             |            |         |                 |            | 1                | 49        | 22.29               | 0.1694                |
|             |            |         |                 |            | 25               | 13        | 20.98               | 0.1253                |
|             |            |         |                 |            | 50               | 0         | 20.95               | 0.1245                |



**3.1.6 Test Result of EIRP**

| LTE Band 25 Radiated Power EIRP |                  |            |                  |           |             |           |                        |            |          |     |
|---------------------------------|------------------|------------|------------------|-----------|-------------|-----------|------------------------|------------|----------|-----|
| LTE Band                        | Channel BW (MHz) | Modulation | RB Configuration |           | Freq. (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) | H/V |
|                                 |                  |            | RB Size          | RB Offset |             |           |                        |            |          |     |
| 25                              | 5                | QPSK       | 1                | 0         | 1852.5      | -16.71    | 37.16                  | 20.45      | 0.1109   | H   |
| 25                              | 5                | QPSK       | 1                | 0         | 1882.5      | -16.57    | 35.61                  | 19.04      | 0.0802   | H   |
| 25                              | 5                | QPSK       | 1                | 0         | 1912.5      | -17.75    | 36.04                  | 18.29      | 0.0675   | H   |
| 25                              | 5                | QPSK       | 1                | 0         | 1852.5      | -21.12    | 36.1                   | 14.98      | 0.0315   | V   |
| 25                              | 5                | QPSK       | 1                | 0         | 1882.5      | -22.30    | 37.44                  | 15.14      | 0.0327   | V   |
| 25                              | 5                | QPSK       | 1                | 0         | 1912.5      | -21.74    | 39.12                  | 17.38      | 0.0547   | V   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1852.5      | -17.35    | 37.16                  | 19.81      | 0.0957   | H   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1882.5      | -17.38    | 35.61                  | 18.23      | 0.0665   | H   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1912.5      | -18.53    | 36.04                  | 17.51      | 0.0564   | H   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1852.5      | -21.67    | 36.1                   | 14.43      | 0.0277   | V   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1882.5      | -21.70    | 37.44                  | 15.74      | 0.0375   | V   |
| 25                              | 5                | 16QAM      | 1                | 0         | 1912.5      | -21.35    | 39.12                  | 17.77      | 0.0598   | V   |

## 3.2 Radiated Emissions Measurement

### 3.2.1 Description of Radiated Emissions Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 3.2.2 Measuring Instruments

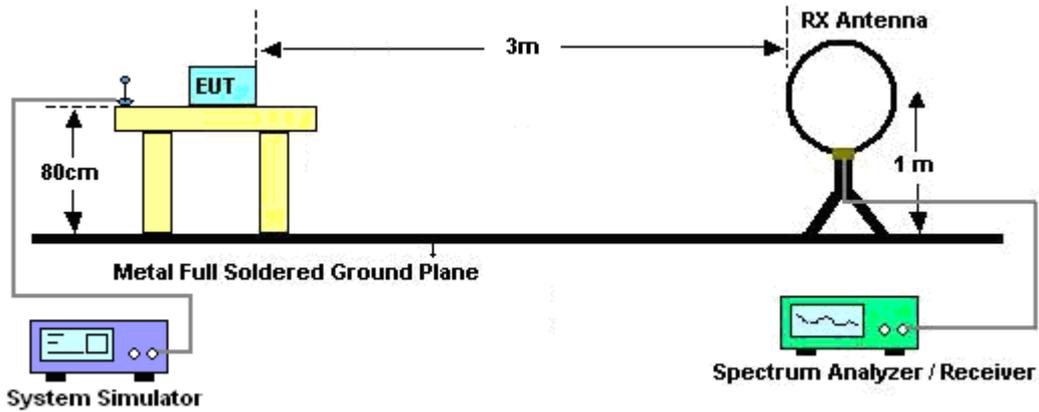
See list of measuring instruments of this test report.

### 3.2.3 Test Procedures

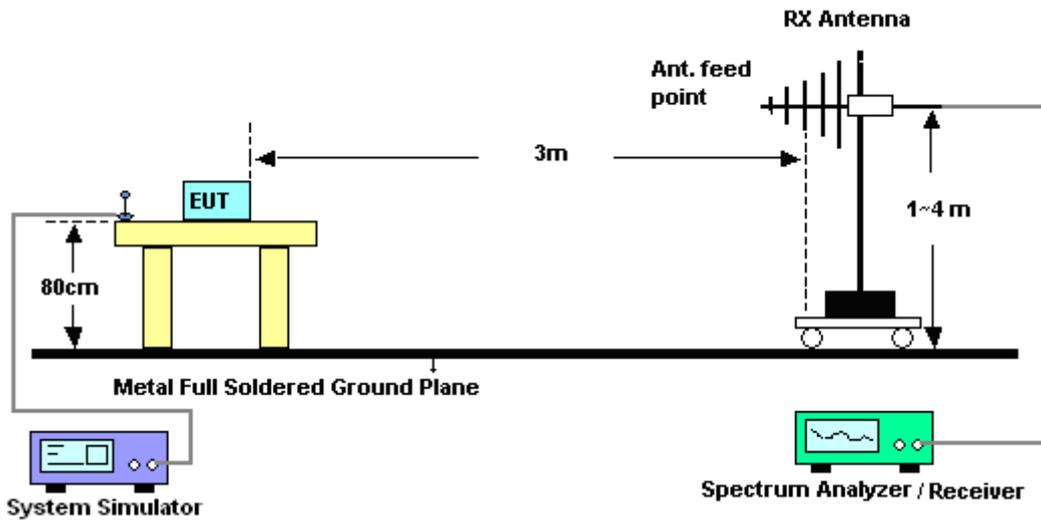
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Emission level (dBm) = output power + substitution Gain.

### 3.2.4 Test Setup

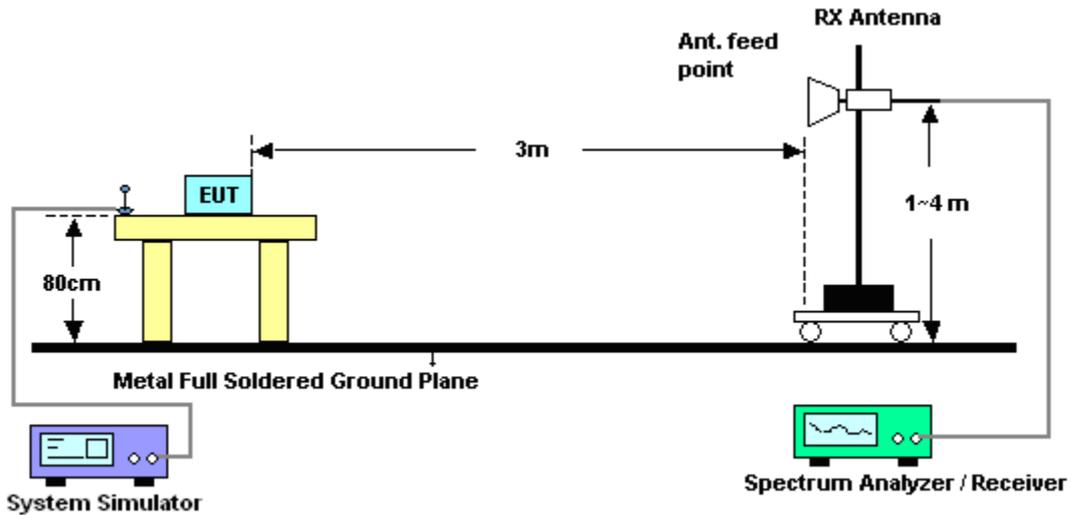
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



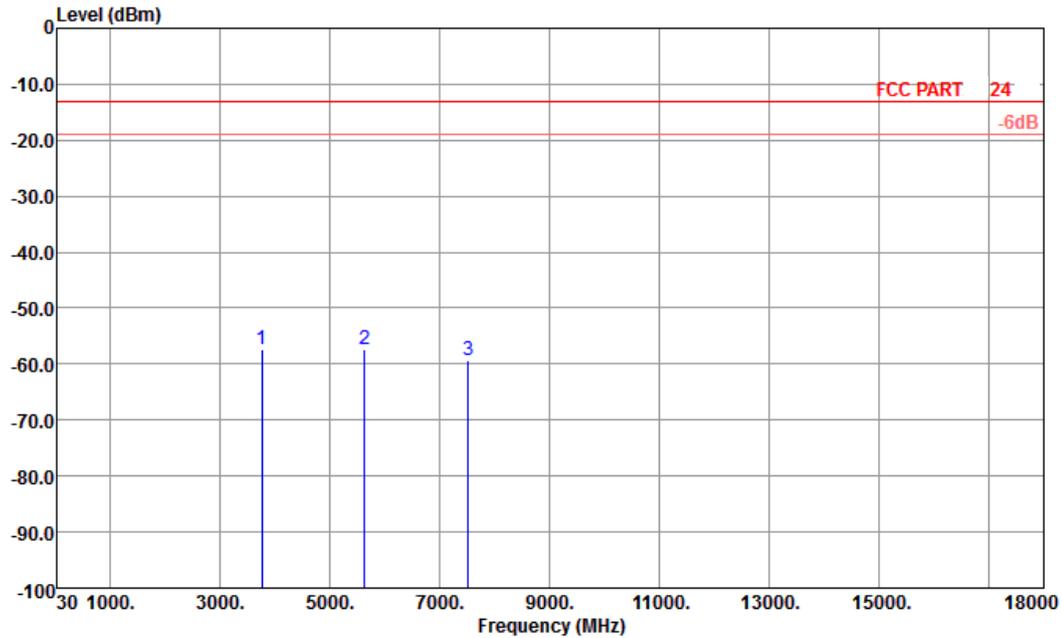
### 3.2.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.2.6 Test Result of Radiated Emissions

|                        |  |                            |            |
|------------------------|--|----------------------------|------------|
| <b>Band :</b>          | LTE Band 25  | <b>Temperature :</b>       | 21~22°C    |
| <b>Test Mode :</b>     | 5MHz, QPSK, RB Size 1, RB Offset 0   | <b>Relative Humidity :</b> | 45~46%     |
| <b>Test Engineer :</b> | Allen Cheng  | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-1000MHz were found more than 20dB below limit line. |                            |            |



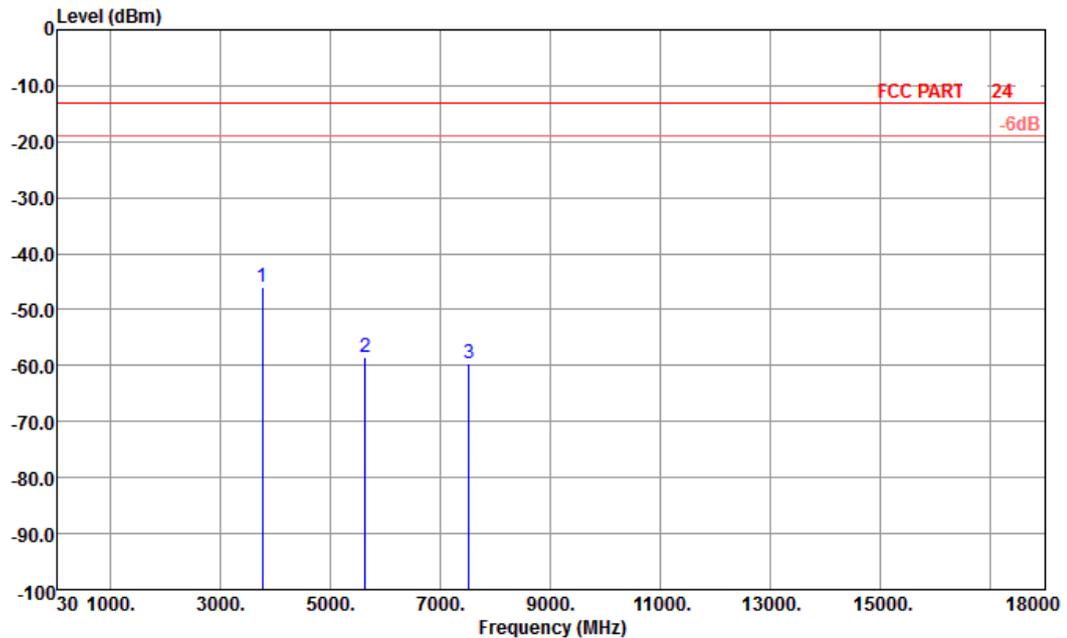
Site : 03CH01-KS  
 Condition : FCC PART 24 HF EIRP FACTOR-09020 HORIZONTAL

Plan : E2

| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>( dBm ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>( dBi ) | Polarization<br>( H/V ) | Result |
|----------------------|-----------------|------------------|-------------------------|---------------------------|--------------------------|----------------------------|-------------------------------|-------------------------|--------|
| 3760                 | -57.45          | -13              | -44.45                  | -58.42                    | -63.83                   | 0.78                       | 7.16                          | H                       | Pass   |
| 5642                 | -57.47          | -13              | -44.47                  | -61.65                    | -66.01                   | 1.04                       | 9.58                          | H                       | Pass   |
| 7520                 | -59.47          | -13              | -46.47                  | -64.60                    | -69.58                   | 1.35                       | 11.46                         | H                       | Pass   |



|                        |  |                            |          |
|------------------------|--|----------------------------|----------|
| <b>Band :</b>          | LTE Band 25  | <b>Temperature :</b>       | 21~22°C  |
| <b>Test Mode :</b>     | 5MHz, QPSK, RB Size 1, RB Offset 0   | <b>Relative Humidity :</b> | 45~46%   |
| <b>Test Engineer :</b> | Allen Cheng  | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-1000MHz were found more than 20dB below limit line. |                            |          |



Site : 03CH01-KS  
 Condition : FCC PART 24 HF EIRP FACTOR-09020 VERTICAL

Plan : E2

| Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading ( dBm ) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain ( dBi ) | Polarization ( H/V ) | Result |
|-------------------|--------------|---------------|-------------------|---------------------|--------------------|----------------------|-------------------------|----------------------|--------|
| 3760              | -46.05       | -13           | -33.05            | -52.41              | -52.43             | 0.78                 | 7.16                    | V                    | Pass   |
| 5642              | -58.62       | -13           | -45.62            | -61.84              | -67.16             | 1.04                 | 9.58                    | V                    | Pass   |
| 7520              | -59.70       | -13           | -46.70            | -64.19              | -69.81             | 1.35                 | 11.46                   | V                    | Pass   |



## 4 List of Measuring Equipment

| Instrument                | Manufacturer | Model No. | Serial No. | Characteristics   | Calibration Date | Test Date                       | Due Date      | Remark                |
|---------------------------|--------------|-----------|------------|-------------------|------------------|---------------------------------|---------------|-----------------------|
| Spectrum Analyzer         | R&S          | FSP40     | 100319     | 9kHz~40GHz        | Dec. 30, 2011    | Dec. 12, 2012                   | Dec. 29, 2012 | Conducted (TH01-KS)   |
| DC Power Supply           | GWINSTEK     | GPS-3030D | E1884515   | N/A               | Aug. 22, 2012    | Dec. 12, 2012                   | Aug. 21, 2013 | Conducted (TH01-KS)   |
| Thermal Chamber           | Ten Billion  | TTC-B3S   | TBN-960502 | N/A               | Dec. 30, 2011    | Dec. 12, 2012                   | Dec. 29, 2012 | Conducted (TH01-KS)   |
| EMI Test Receiver         | R&S          | ESCI      | 100534     | 9kHz~3GHz         | Nov. 08, 2012    | Dec. 11, 2012                   | Nov. 07, 2013 | Radiation (03CH01-KS) |
| Spectrum Analyzer         | R&S          | FSP40     | 100319     | 9kHz~40GHz        | Dec. 30, 2011    | Dec. 11, 2012                   | Dec. 29, 2012 | Radiation (03CH01-KS) |
| Bilog Antenna             | SCHAFFNER    | CBL6112D  | 23182      | 25MHz~2GHz        | Dec. 07, 2012    | Dec. 11, 2012                   | Dec. 06, 2013 | Radiation (03CH01-KS) |
| Double Ridge Horn Antenna | EMCO         | 3117      | 00075959   | 1GHz~18GHz        | Jan. 06, 2012    | Dec. 11, 2012                   | Jan. 05, 2013 | Radiation (03CH01-KS) |
| Amplifier                 | Wireless     | FPA-6592G | 060007     | 30MHz~2GHz        | Dec. 30, 2011    | Dec. 11, 2012                   | Dec. 29, 2012 | Radiation (03CH01-KS) |
| Amplifier                 | Agilent      | 8449B     | 3008A02370 | 1GHz~26.5GHz      | Dec. 30, 2011    | Dec. 11, 2012                   | Dec. 29, 2012 | Radiation (03CH01-KS) |
| SHE-EHF Horn              | Schwarzbeck  | BBHA9170  | BBHA170249 | 15GHz-40GHz       | Oct. 10, 2012    | Dec. 11, 2012                   | Oct. 09, 2013 | Radiation (03CH01-KS) |
| Loop Antenna              | R&S          | HFH2-Z2   | 860004/00  | 9kHz~30 MHz       | Jul. 28, 2012    | Dec. 11, 2012                   | Jul. 27, 2014 | Radiation (03CH01-KS) |
| Signal Generator          | R&S          | SMR40     | 100455     | 10MHz-40GHz       | Dec. 30, 2011    | Dec. 11, 2012                   | Dec. 29, 2012 | Radiation (03CH01-KS) |
| LTE Base Station          | Anritsu      | MT8820C   | 6201074235 | LTE_FDD full band | Dec. 30, 2011    | Dec. 11, 2012~<br>Dec. 12, 2012 | Dec. 29, 2012 | -                     |



## 5 Uncertainty of Evaluation

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|   |      |
|---|------|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 2.54 |
|---|------|

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

|  |      |
|--|------|
| Measuring Uncertainty for a Level of Confidence of 95%(U = 2Uc(y)) | 4.72 |
|--|------|



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP270201-03 as below.



## **Appendix C. Product Equality Declaration**

**ZTE CORPORATION****Product Change Description**

As the applicant of the below model, [ZTE Corporation] declares that the product,

[ZTE N9500]  
[ZTE Corporation]

is the variant of the initial certified product,

[ZTE N9500]  
[ZTE Corporation]  
[Project Number: 12ZTE132]  
FCC ID: Q78-ZTEN9500

**SOFTWARE MODIFICATIONS:**

Protocol Stack changes: NO  
MMS/STK changes: NO  
JAVA changes: NO  
Other changes detailed: NO

**HARDWARE MODIFICATION:**

Band changes: NO  
Power Amplifier changes: NO  
Antenna changes: YES, new WIFI/Bluetooth antenna with higher gain (1dB up).  
PCB Layout changes: NO  
Components on PCB changes: Yes

**A: Optimize PDN and change below filter capacitances from top layer to bottom.**

VREG\_S6\_1P05: C271  
VREG\_L27\_1P05: C238  
VREG\_L26\_1P05: C279  
VREG\_L28\_1P05: C242

**B: Delete redundant components:**

S4200, C4221, C4220, L4215, L4210, L4216, L4208, L5121, L5120, L5119, C5121, C5122, S5100, C5118.

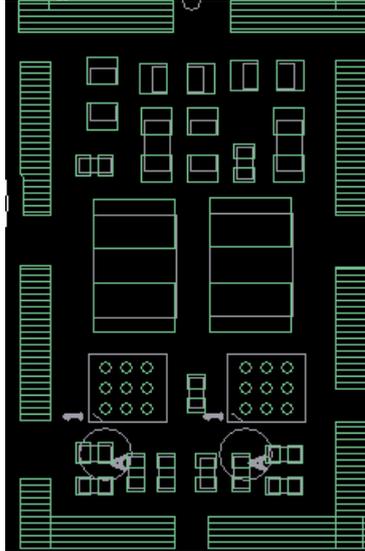
**C: Component packaging updated:**

L5101 now be packaged with 0402 instead of 0201.

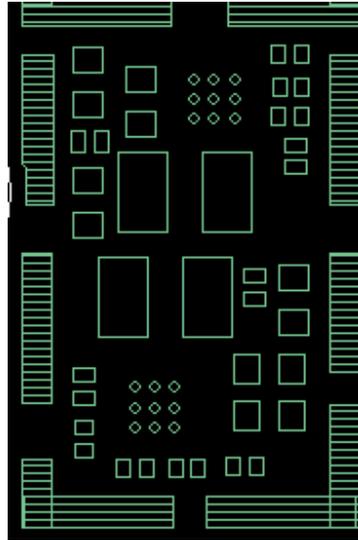
**D: Optimize ADP components layout.**

Please notice that only change components layout but PCB layout is same.

Original:



Now:



,  
LCD changes: NO  
Speaker changes: NO  
Camera changes: NO  
Vibrator changes: NO  
Bluetooth changes: NO  
FM changes: NO  
Other changes: NO

**MECHANICAL MODIFICATIONS:**

Use new metal front/back cover or keypad: NO  
Mechanical shell changes: NO  
Other changes detailed: NO

**ACCESSORY MODIFICATIONS:**

Battery changes: NO  
AC Adaptor changes: NO  
Earphone changes: NO

*Min Zhang*

---

APPROVED BY: Min Zhang

Project Manager: Yongliang Zhang

Date: 2013-1-10

Company: ZTE Corporation

Address: B109, #889, Bibo Rd, Zhangjiang Hi-Tech Park, Shanghai, China

Tel: +86-21-68896840

Fax: +86-21-68896835