



中国认可  
国际互认  
检测  
TESTING  
CNAS L2264

## RF TEST REPORT

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| <b>Applicant</b>  | ZTE CORPORATION                                         |
| <b>FCC ID</b>     | SRQ-ZTU31                                               |
| <b>Product</b>    | LTE/WCDMA/GSM (GPRS)<br>Multi-Mode Digital Mobile Phone |
| <b>Brand</b>      | ZTE                                                     |
| <b>Model</b>      | ZTU31/ZTE Blade V770/Blade V770                         |
| <b>Report No.</b> | RXC1611-0258RF04R1                                      |
| <b>Issue Date</b> | February 4, 2017                                        |

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2016)/ FCC CFR 47 Part 90S (2016)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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### Summary of measurement results

| No.                                                                       | Test Type                               | Clause in FCC rules | Verdict |
|---------------------------------------------------------------------------|-----------------------------------------|---------------------|---------|
| 1                                                                         | RF power output                         | 2.1046/90.635(b)    | PASS    |
| 2                                                                         | Effective Radiated Power                | 90.635(b)           | PASS    |
| 3                                                                         | Occupied Bandwidth                      | 2.1049/ 90.209      | PASS    |
| 4                                                                         | Emission Masks                          | 2.1051 / 90.691     | PASS    |
| 5                                                                         | Peak-to-Average Power Ratio             | KDB 971168 D01(5.7) | PASS    |
| 6                                                                         | Frequency Stability                     | 2.1055 / 90.213     | PASS    |
| 7                                                                         | Spurious Emissions at Antenna Terminals | 2.1051 / 90.691     | PASS    |
| 8                                                                         | Radiates Spurious Emission              | 2.1053 /90.691      | PASS    |
| Date of Testing: November 18, 2016 ~ December 5, 2016 and February 3,2017 |                                         |                     |         |



## 1. Test Laboratory

### 1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

### 1.2. Test facility

#### **CNAS (accreditation number:L2264)**

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

#### **FCC (recognition number is 428261)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

#### **IC (recognition number is 8510A)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

#### **VCCI (recognition number is C-4595, T-2154, R-4113, G-766)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

#### **A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



### 1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 2. General Description of Equipment under Test

### Client Information

|                             |                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Applicant</b>            | ZTE CORPORATION                                                                                                  |
| <b>Applicant address</b>    | ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District<br>Shenzhen, Guangdong, 518057, P.R. China |
| <b>Manufacturer</b>         | ZTE CORPORATION                                                                                                  |
| <b>Manufacturer address</b> | ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District<br>Shenzhen, Guangdong, 518057, P.R. China |

### General Information

| EUT Description                                                                                                                     |                                                                               |           |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------|
| Model Number:                                                                                                                       | ZTU31/ZTE Blade V770/Blade V770                                               |           |
| IMEI:                                                                                                                               | 863682030001706                                                               |           |
| Hardware Version:                                                                                                                   | uu9A                                                                          |           |
| Software Version:                                                                                                                   | KDDI_JP_BV770_V1.0                                                            |           |
| Power Supply:                                                                                                                       | Battery/AC adapter                                                            |           |
| Antenna Type:                                                                                                                       | Internal Antenna                                                              |           |
| Test Mode(s):                                                                                                                       | LTE Band 26;                                                                  |           |
| Test Modulation:                                                                                                                    | (LTE)QPSK 16QAM;                                                              |           |
| GPRS/ EGPRS Multislot Class:                                                                                                        | B                                                                             |           |
| Maximum E.R.P.                                                                                                                      | LTE Band 26: 21.15dBm                                                         |           |
| Rated Power Supply Voltage:                                                                                                         | 3.7V                                                                          |           |
| Extreme Voltage:                                                                                                                    | Minimum: 3.5V      Maximum: 4.20V                                             |           |
| Extreme Temperature:                                                                                                                | Lowest: -10°C      Highest: +55°C                                             |           |
| Operating Frequency Range(s)                                                                                                        | Band                                                                          | Tx (MHz)  |
|                                                                                                                                     | LTE Band 26                                                                   | 814 ~ 824 |
| EUT Accessory                                                                                                                       |                                                                               |           |
| Battery                                                                                                                             | Manufacturer: SCUD (Fujian) Electronics Co., Ltd<br>Model: Li3925T44P8h786035 |           |
| USB Cable                                                                                                                           | 100cm Cable, Shielded                                                         |           |
| Note: The information of the EUT is declared by the manufacturer.<br>Please refer to the specifications or user manual for details. |                                                                               |           |



### 3. Applied Standards

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

**FCC CFR47 Part 2 (2016)**

**FCC CFR 47 Part 90S (2016)**

**ANSI/TIA-603-D (2010)**

## 4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

All mode and data rates and positions were investigated.

The following testing in LTE is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below:

Test modes are chosen as the worst case configuration below for LTE Band 26

| Test items                              | Bandwidth (MHz)                                                                                                                       |   |   |    |    | Modulation |       | RB |     |      | Test Channel |   |   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---|---|----|----|------------|-------|----|-----|------|--------------|---|---|
|                                         | 1.4                                                                                                                                   | 3 | 5 | 10 | 15 | QPSK       | 16QAM | 1  | 50% | 100% | L            | M | H |
| RF power output                         | O                                                                                                                                     | O | O | O  | O  | O          | O     | O  | O   | O    | O            | O | O |
| Effective Isotropic Radiated power      | O                                                                                                                                     | O | O | O  | O  | O          | O     | -  | -   | O    | O            | O | O |
| Occupied Bandwidth                      | O                                                                                                                                     | O | O | O  | O  | O          | O     | -  | -   | O    | O            | O | O |
| Emission Mask                           | O                                                                                                                                     | O | O | O  | O  | O          | O     | -  | -   | O    | O            | O | O |
| Peak-to-Average Power Ratio             | O                                                                                                                                     | O | O | O  | O  | O          | O     | -  | -   | O    | O            | O | O |
| Frequency Stability                     | O                                                                                                                                     | O | O | O  | O  | O          | O     | -  | -   | O    | -            | O | - |
| Spurious Emissions at Antenna Terminals | O                                                                                                                                     | O | O | O  | O  | O          | -     | O  | -   | -    | O            | O | O |
| Radiates Spurious Emission              | O                                                                                                                                     | O | O | O  | O  | O          | -     | O  | -   | -    | O            | O | O |
| Note                                    | 1. The mark "O" means that this configuration is chosen for testing.<br>2. The mark "-" means that this configuration is not testing. |   |   |    |    |            |       |    |     |      |              |   |   |

## 5. Test Case Results

### 5.1. RF Power Output

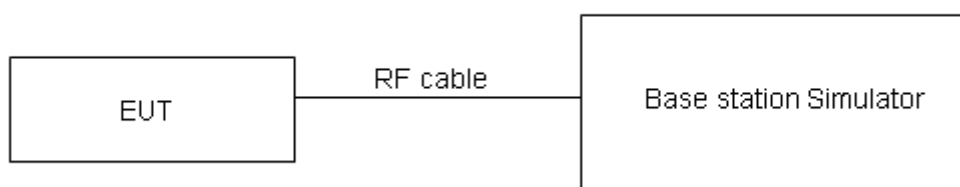
#### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

#### Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

#### Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

#### Limits

No specific RF power output requirements in part 2.1046.

Part 90.635 (b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.4$  dB.

# Test Results

| LTE FDD Band 26 |            |         |           | Conducted Power(dBm)   |           |             |
|-----------------|------------|---------|-----------|------------------------|-----------|-------------|
| BW              | Modulation | RB size | RB offset | Channel/Frequency(MHz) |           |             |
|                 |            |         |           | 26697/814.7            | 26740/819 | 26783/823.3 |
| 1.4MHz          | QPSK       | 1       | 0         | 23.89                  | 23.90     | 23.84       |
|                 |            | 1       | 2         | 23.65                  | 23.69     | 23.85       |
|                 |            | 1       | 5         | 23.61                  | 23.63     | 23.78       |
|                 |            | 3       | 0         | 23.64                  | 22.74     | 22.69       |
|                 |            | 3       | 2         | 23.63                  | 22.76     | 22.59       |
|                 |            | 3       | 3         | 23.76                  | 22.86     | 22.61       |
|                 |            | 6       | 0         | 22.69                  | 22.78     | 22.73       |
|                 | 16QAM      | 1       | 0         | 23.39                  | 23.41     | 22.84       |
|                 |            | 1       | 2         | 23.46                  | 23.49     | 22.53       |
|                 |            | 1       | 5         | 23.15                  | 23.17     | 22.12       |
|                 |            | 3       | 0         | 22.56                  | 21.68     | 22.29       |
|                 |            | 3       | 2         | 22.61                  | 21.71     | 22.22       |
|                 |            | 3       | 3         | 22.60                  | 21.70     | 22.29       |
|                 |            | 6       | 0         | 21.67                  | 21.71     | 21.65       |
| BW              | Modulation | RB size | RB offset | Channel/Frequency(MHz) |           |             |
|                 |            |         |           | 26705/815.5            | 26740/819 | 26775/822.5 |
| 3MHz            | QPSK       | 1       | 0         | 23.91                  | 23.76     | 23.86       |
|                 |            | 1       | 13        | 23.68                  | 23.39     | 23.66       |
|                 |            | 1       | 24        | 23.64                  | 23.65     | 23.58       |
|                 |            | 12      | 0         | 22.74                  | 22.52     | 22.69       |
|                 |            | 12      | 6         | 22.75                  | 22.42     | 22.71       |
|                 |            | 12      | 13        | 22.86                  | 22.63     | 22.80       |
|                 |            | 25      | 0         | 22.72                  | 22.53     | 22.73       |
|                 | 16QAM      | 1       | 0         | 23.42                  | 22.19     | 23.34       |
|                 |            | 1       | 13        | 23.49                  | 22.56     | 23.43       |
|                 |            | 1       | 24        | 23.17                  | 21.97     | 23.12       |
|                 |            | 12      | 0         | 21.67                  | 21.48     | 21.62       |
|                 |            | 12      | 6         | 21.72                  | 21.34     | 21.65       |



|       |            | 12      | 13        | 21.70                  | 21.44     | 21.65       |
|-------|------------|---------|-----------|------------------------|-----------|-------------|
|       |            | 25      | 0         | 21.70                  | 21.37     | 21.66       |
| BW    | Modulation | RB size | RB offset | Channel/Frequency(MHz) |           |             |
|       |            |         |           | 26715/816.5            | 26740/819 | 26765/822.5 |
| 5MHz  | QPSK       | 1       | 0         | 23.88                  | 23.78     | 23.73       |
|       |            | 1       | 13        | 23.66                  | 23.41     | 23.74       |
|       |            | 1       | 24        | 23.61                  | 23.67     | 23.67       |
|       |            | 12      | 0         | 22.71                  | 22.54     | 22.58       |
|       |            | 12      | 6         | 22.73                  | 22.44     | 22.52       |
|       |            | 12      | 13        | 22.84                  | 22.65     | 22.55       |
|       |            | 25      | 0         | 22.70                  | 22.55     | 22.62       |
|       | 16QAM      | 1       | 0         | 23.39                  | 22.21     | 22.73       |
|       |            | 1       | 13        | 23.46                  | 22.58     | 22.42       |
|       |            | 1       | 24        | 23.14                  | 21.99     | 22.01       |
|       |            | 12      | 0         | 21.65                  | 21.50     | 21.56       |
|       |            | 12      | 6         | 21.69                  | 21.36     | 21.49       |
|       |            | 12      | 13        | 21.67                  | 21.46     | 21.56       |
|       |            | 25      | 0         | 21.68                  | 21.39     | 21.54       |
| BW    | Modulation | RB size | RB offset | Channel/Frequency(MHz) |           |             |
|       |            |         |           | /                      | 26740/819 | /           |
| 10MHz | QPSK       | 1       | 0         | /                      | 22.68     | /           |
|       |            | 1       | 25        | /                      | 23.68     | /           |
|       |            | 1       | 49        | /                      | 22.78     | /           |
|       |            | 25      | 0         | /                      | 22.78     | /           |
|       |            | 25      | 13        | /                      | 22.77     | /           |
|       |            | 25      | 25        | /                      | 22.97     | /           |
|       |            | 50      | 0         | /                      | 21.69     | /           |
|       | 16QAM      | 1       | 0         | /                      | 21.74     | /           |
|       |            | 1       | 25        | /                      | 22.58     | /           |
|       |            | 1       | 49        | /                      | 21.73     | /           |
|       |            | 25      | 0         | /                      | 21.72     | /           |
|       |            | 25      | 13        | /                      | 21.56     | /           |
|       |            | 25      | 25        | /                      | 21.26     | /           |
|       |            | 50      | 0         | /                      | 21.49     | /           |



| BW    | Modulation | RB size | RB offset | Channel/Frequency(MHz) |   |   |
|-------|------------|---------|-----------|------------------------|---|---|
|       |            |         |           | 26715/816.5            | / | / |
| 15MHz | QPSK       | 1       | 0         | 23.11                  | / | / |
|       |            | 1       | 13        | 23.18                  | / | / |
|       |            | 1       | 24        | 23.09                  | / | / |
|       |            | 12      | 0         | 22.38                  | / | / |
|       |            | 12      | 6         | 22.29                  | / | / |
|       |            | 12      | 13        | 22.45                  | / | / |
|       |            | 25      | 0         | 21.68                  | / | / |
|       | 16QAM      | 1       | 0         | 23.18                  | / | / |
|       |            | 1       | 13        | 23.05                  | / | / |
|       |            | 1       | 24        | 22.29                  | / | / |
|       |            | 12      | 0         | 22.25                  | / | / |
|       |            | 12      | 6         | 22.15                  | / | / |
|       |            | 12      | 13        | 21.77                  | / | / |
|       |            | 25      | 0         | 21.86                  | / | / |

## 5.2. Effective Radiated Power

### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

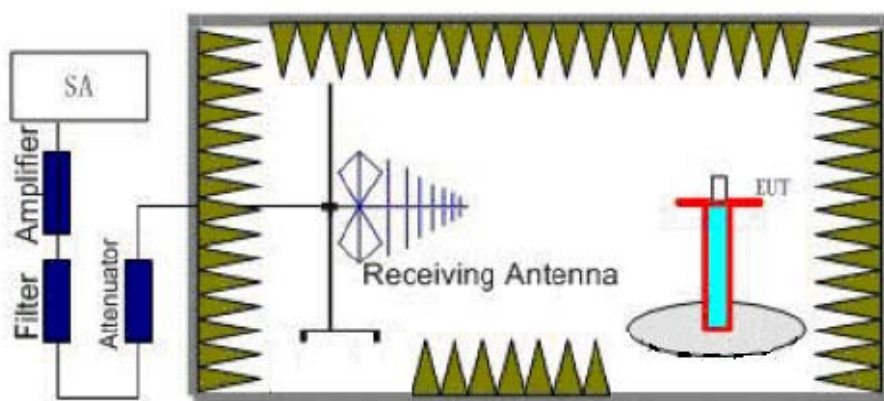
### Methods of Measurement

The measurement procedures in TIA- 603-D are used.

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;  
UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10.  $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$   
 $P_s$  (dBm) : Input power to substitution antenna.  
 $G_s$  (dBi or dBd) : Substitution antenna Gain.  
 $E_t = R_t + AF$   
 $E_s = R_s + AF$   
 $AF$  (dB/m) : Receive antenna factor  
 $R_t$  : The highest received signal in spectrum analyzer for EUT.  
 $R_s$  : The highest received signal in spectrum analyzer for substitution antenna.

$$EIRP = E.R.P + 2.15$$

### Test Setup





## Limits

Rule Part 90.635(b) specifies that “The maximum output power of the transmitter for mobile stations is 100 watts”.

|       |                              |
|-------|------------------------------|
| Limit | $\leq 100\text{ W}$ (50 dBm) |
|-------|------------------------------|

## Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 1.19\text{ dB}$



## Test Results:

| LTE Band 26     |              |                 |          |          |          |          |           |            |
|-----------------|--------------|-----------------|----------|----------|----------|----------|-----------|------------|
| bandwidth       | Polarization | Frequency (MHz) | Rt (dBm) | Rs (dBm) | Ps (dBm) | Gs (dBi) | ERP (dBm) | Conclusion |
| 1.4 MHz (QPSK)  | H            | 814.7           | -29.90   | -47.87   | 0.00     | 0.90     | 18.87     | Pass       |
|                 | H            | 819             | -29.94   | -47.71   | 0.00     | 1.00     | 18.76     | Pass       |
|                 | H            | 823.3           | -29.90   | -47.62   | 0.00     | 1.06     | 18.78     | Pass       |
|                 | V            | 814.7           | -40.31   | -47.78   | 0.00     | 0.90     | 8.37      | Pass       |
|                 | V            | 819             | -40.72   | -47.71   | 0.00     | 1.00     | 7.98      | Pass       |
|                 | V            | 823.3           | -40.18   | -47.33   | 0.00     | 1.06     | 8.21      | Pass       |
| 1.4 MHz (16QAM) | H            | 814.7           | -30.51   | -47.87   | 0.00     | 0.90     | 18.26     | Pass       |
|                 | H            | 819             | -30.52   | -47.71   | 0.00     | 1.00     | 18.18     | Pass       |
|                 | H            | 823.3           | -30.47   | -47.62   | 0.00     | 1.06     | 18.21     | Pass       |
|                 | V            | 814.7           | -40.87   | -47.78   | 0.00     | 0.90     | 7.81      | Pass       |
|                 | V            | 819             | -41.24   | -47.71   | 0.00     | 1.00     | 7.46      | Pass       |
|                 | V            | 823.3           | -40.73   | -47.33   | 0.00     | 1.06     | 7.66      | Pass       |
| 3 MHz (QPSK)    | H            | 815.5           | -29.94   | -47.83   | 0.00     | 0.90     | 18.79     | Pass       |
|                 | H            | 819             | -29.93   | -47.71   | 0.00     | 1.00     | 18.77     | Pass       |
|                 | H            | 822.5           | -29.96   | -47.64   | 0.00     | 1.06     | 18.74     | Pass       |
|                 | V            | 815.5           | -41.18   | -47.71   | 0.00     | 0.90     | 7.43      | Pass       |
|                 | V            | 819             | -41.37   | -47.71   | 0.00     | 1.00     | 7.33      | Pass       |
|                 | V            | 822.5           | -41.05   | -47.36   | 0.00     | 1.06     | 7.37      | Pass       |
| 3 MHz (16QAM)   | H            | 815.5           | -30.67   | -47.83   | 0.00     | 0.90     | 18.06     | Pass       |
|                 | H            | 819             | -30.60   | -47.71   | 0.00     | 1.00     | 18.10     | Pass       |
|                 | H            | 822.5           | -30.49   | -47.64   | 0.00     | 1.06     | 18.21     | Pass       |
|                 | V            | 815.5           | -41.74   | -47.71   | 0.00     | 0.90     | 6.87      | Pass       |
|                 | V            | 819             | -41.92   | -47.71   | 0.00     | 1.00     | 6.78      | Pass       |
|                 | V            | 822.5           | -41.59   | -47.36   | 0.00     | 1.06     | 6.83      | Pass       |
| 5 MHz (QPSK)    | H            | 816.5           | -30.11   | -47.78   | 0.00     | 0.90     | 18.57     | Pass       |
|                 | H            | 819             | -30.17   | -47.71   | 0.00     | 1.00     | 18.53     | Pass       |
|                 | H            | 821.5           | -29.98   | -47.65   | 0.00     | 1.00     | 18.67     | Pass       |
|                 | V            | 816.5           | -41.30   | -47.65   | 0.00     | 0.90     | 7.25      | Pass       |
|                 | V            | 819             | -41.58   | -47.71   | 0.00     | 1.00     | 7.12      | Pass       |
|                 | V            | 821.5           | -41.08   | -47.41   | 0.00     | 1.00     | 7.33      | Pass       |
| 5 MHz (16QAM)   | H            | 816.5           | -30.59   | -47.78   | 0.00     | 0.90     | 18.09     | Pass       |
|                 | H            | 819             | -30.66   | -47.71   | 0.00     | 1.00     | 18.04     | Pass       |
|                 | H            | 821.5           | -30.45   | -47.65   | 0.00     | 1.00     | 18.20     | Pass       |
|                 | V            | 816.5           | -41.73   | -47.65   | 0.00     | 0.90     | 6.82      | Pass       |
|                 | V            | 819             | -42.09   | -47.71   | 0.00     | 1.00     | 6.61      | Pass       |
|                 | V            | 821.5           | -41.63   | -47.41   | 0.00     | 1.00     | 6.78      | Pass       |
| 10 MHz (QPSK)   | H            | 819             | -29.88   | -47.71   | 0.00     | 1.00     | 18.82     | Pass       |
|                 | V            | 819             | -40.43   | -47.71   | 0.00     | 1.00     | 8.27      | Pass       |
| 15 MHz (QPSK)   | H            | 821.5           | -27.40   | -47.48   | 0.00     | 1.07     | 21.15     | Pass       |
|                 | V            | 821.5           | -39.38   | -46.81   | 0.00     | 1.07     | 8.50      | Pass       |



| LTE Band 26    |              |                 |          |          |          |          |           |            |
|----------------|--------------|-----------------|----------|----------|----------|----------|-----------|------------|
| bandwidth      | Polarization | Frequency (MHz) | Rt (dBm) | Rs (dBm) | Ps (dBm) | Gs (dBi) | ERP (dBm) | Conclusion |
| 10 MHz (16QAM) | H            | 819             | -30.64   | -47.71   | 0.00     | 1.00     | 18.06     | Pass       |
|                | V            | 819             | -41.09   | -47.71   | 0.00     | 1.00     | 7.61      | Pass       |
| 15 MHz (16QAM) | H            | 821.5           | -27.79   | -47.48   | 0.00     | 1.07     | 20.76     | Pass       |
|                | V            | 821.5           | -39.86   | -46.81   | 0.00     | 1.07     | 8.02      | Pass       |

### 5.3. Occupied Bandwidth

#### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

#### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

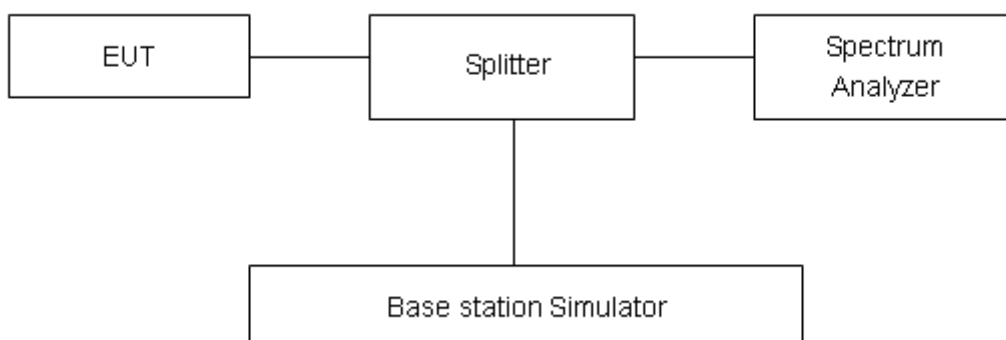
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 26 (1.4MHz),

RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 26 (3MHz/5MHz).

RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 26 (10MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

#### Test Setup



#### Limits

No specific occupied bandwidth requirements in part 2.1049.

Part 90.209 (a) Each authorization issued to a station licensed under this part will show an emission designator representing the class of emission authorized. The designator will be prefixed by a specified necessary bandwidth. This number does not necessarily indicate the bandwidth occupied by the emission at any instant. In those cases where part 2.202 of this chapter does not provide a formula for the computation of necessary bandwidth, the occupied bandwidth, as defined in part 2 of this chapter, may be used in lieu of the necessary bandwidth.

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 624\text{Hz}$ .

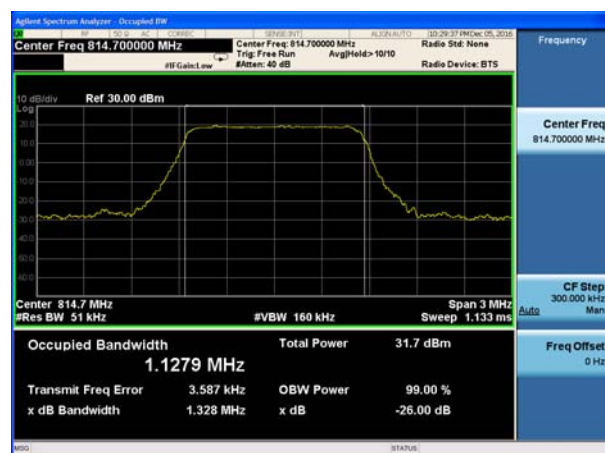


## Test Result

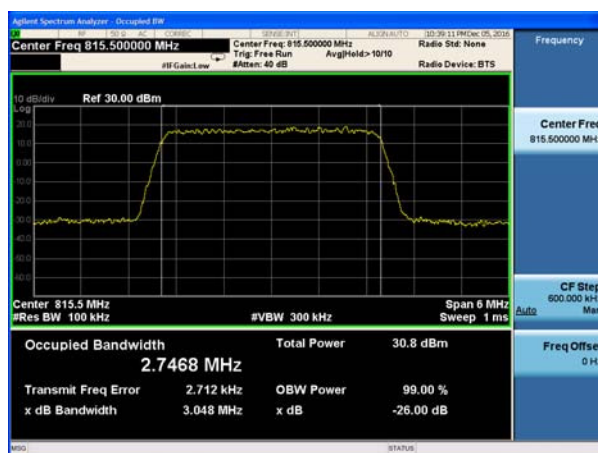
| LTE Band 26 |            |                 |         |                 |                          |                       |
|-------------|------------|-----------------|---------|-----------------|--------------------------|-----------------------|
| RB          | Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | 99% Power Bandwidth(MHz) | -26dBc Bandwidth(MHz) |
| 100%        | QPSK       | 1.4             | 26697   | 814.7           | 1.1279                   | 1.328                 |
|             |            |                 | 26740   | 819             | 1.1256                   | 1.347                 |
|             |            |                 | 26783   | 823.3           | 1.1214                   | 1.345                 |
|             |            | 3               | 26705   | 815.5           | 2.7468                   | 3.048                 |
|             |            |                 | 26740   | 819             | 2.7429                   | 3.053                 |
|             |            |                 | 26775   | 822.5           | 2.7387                   | 3.047                 |
|             |            | 5               | 26715   | 816.5           | 4.5027                   | 4.996                 |
|             |            |                 | 26740   | 819             | 4.5240                   | 5.022                 |
|             |            |                 | 26765   | 821.5           | 4.5039                   | 4.988                 |
|             |            | 10              | 26740   | 819             | 9.0077                   | 10.09                 |
|             |            | 15              | 26765   | 821.5           | 13.450                   | 14.80                 |
|             | 16QAM      | 1.4             | 26697   | 814.7           | 1.1178                   | 1.341                 |
|             |            |                 | 26740   | 819             | 1.1086                   | 1.317                 |
|             |            |                 | 26783   | 823.3           | 1.1301                   | 1.320                 |
|             |            | 3               | 26705   | 815.5           | 2.7346                   | 3.073                 |
|             |            |                 | 26740   | 819             | 2.7362                   | 3.044                 |
|             |            |                 | 26775   | 822.5           | 2.7307                   | 3.040                 |
|             |            | 5               | 26715   | 816.5           | 4.5265                   | 5.031                 |
|             |            |                 | 26740   | 819             | 4.5025                   | 4.928                 |
|             |            |                 | 26765   | 821.5           | 4.5361                   | 5.054                 |
|             |            | 10              | 26740   | 819             | 9.0148                   | 9.985                 |
|             |            | 15              | 26765   | 821.5           | 13.468                   | 14.790                |



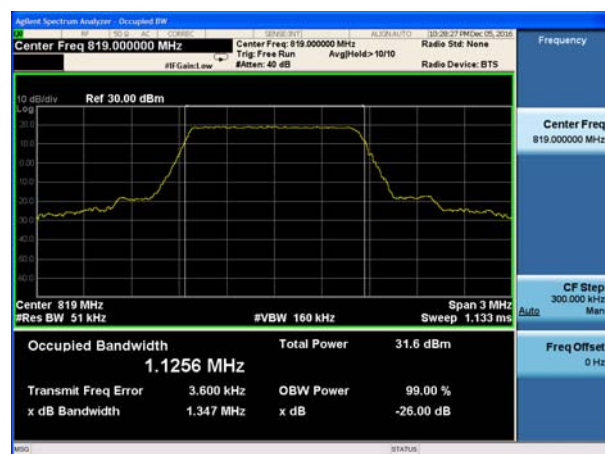
## LTE Band 26 QPSK 1.4MHz CH26697



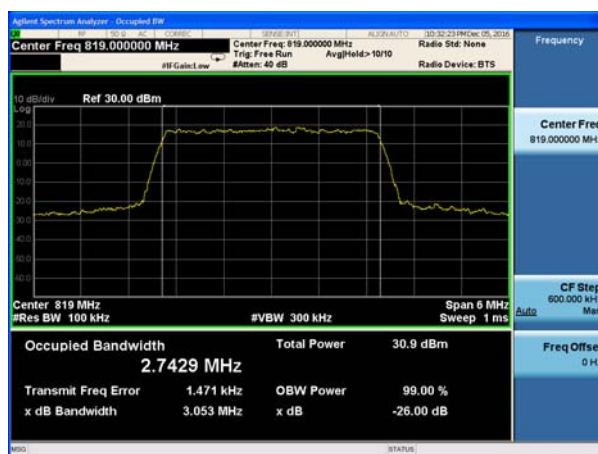
## LTE Band 26 QPSK 3MHz CH26705



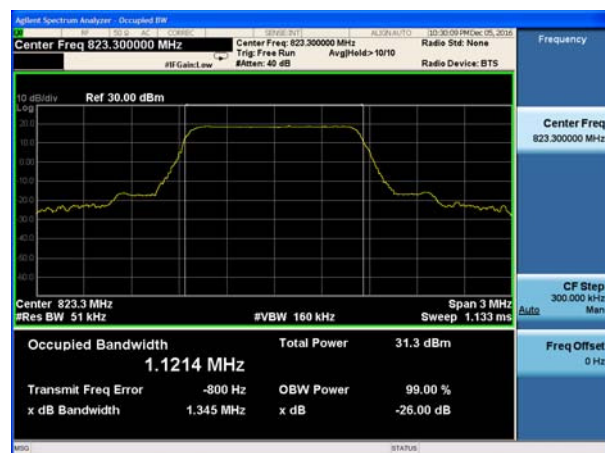
## LTE Band 26 QPSK 1.4MHz CH26740



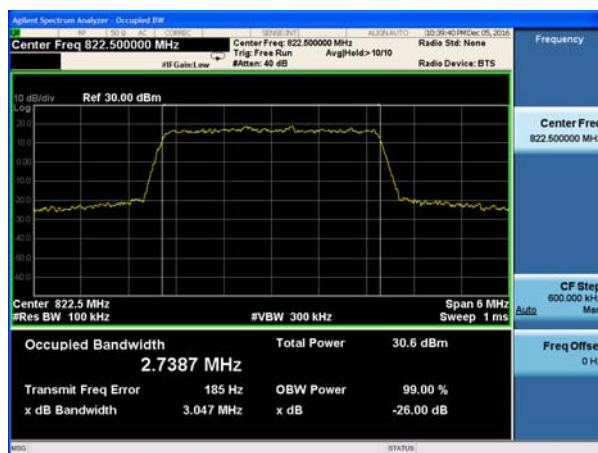
## LTE Band 26 QPSK 3MHz CH26740



## LTE Band 26 QPSK 1.4MHz CH26783

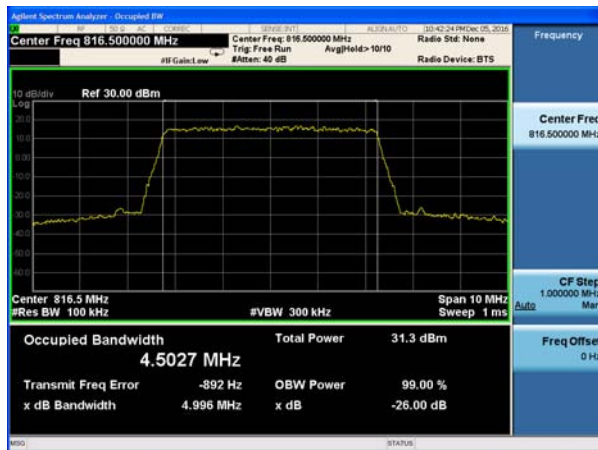


## LTE Band 26 QPSK 3MHz CH26775





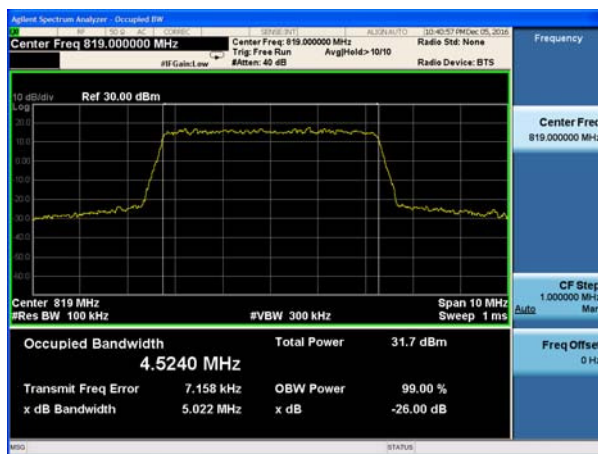
## LTE Band 26 QPSK 5MHz CH26715



## LTE Band 26 QPSK 10MHz CH26740



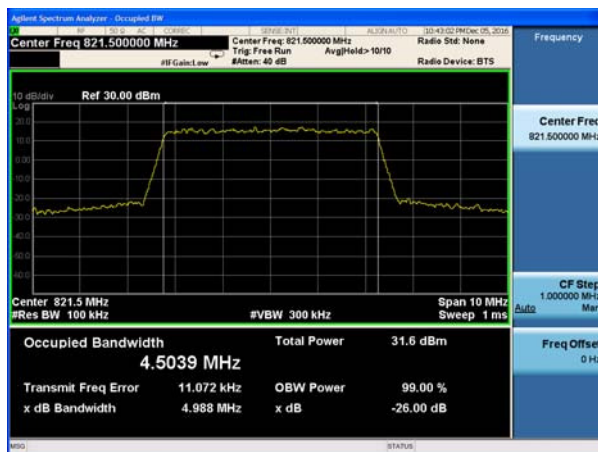
## LTE Band 26 QPSK 5MHz CH26740



## LTE Band 26 QPSK 15MHz CH26765

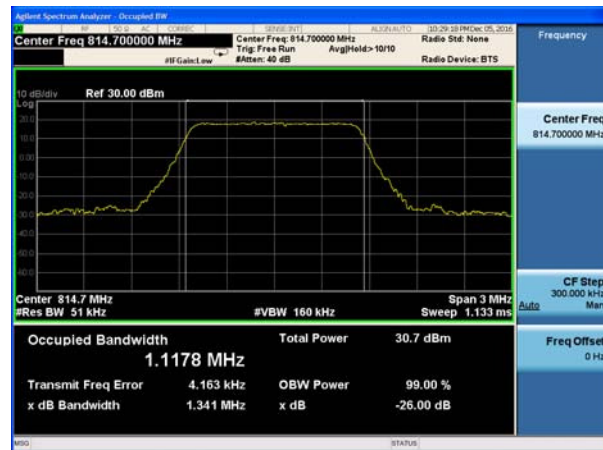


## LTE Band 26 QPSK 5MHz CH26765

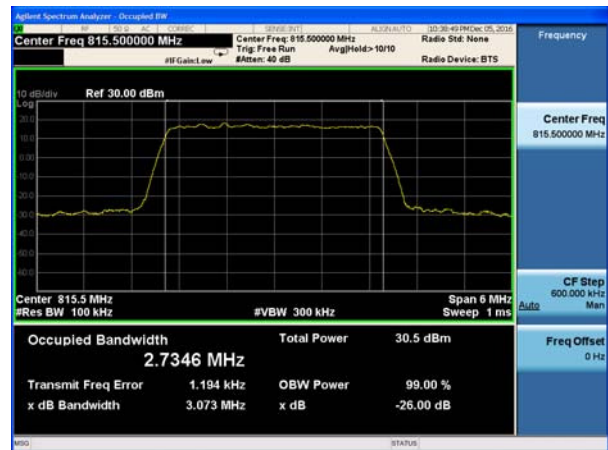




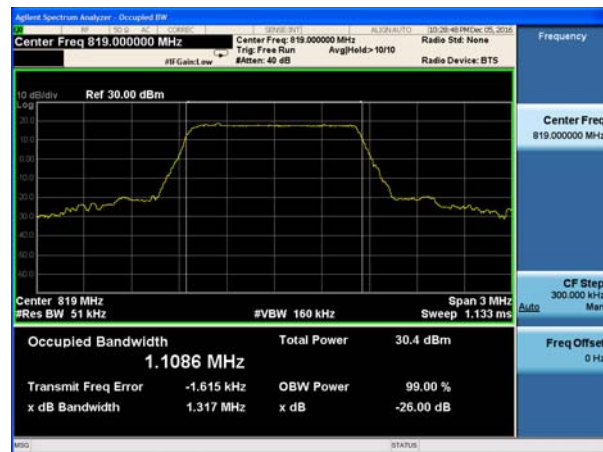
## LTE Band 26 16QAM 1.4MHz CH26697



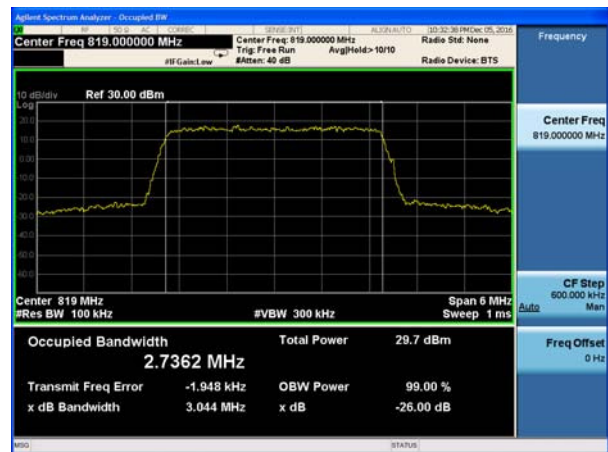
## LTE Band 26 16QAM 3MHz CH26705



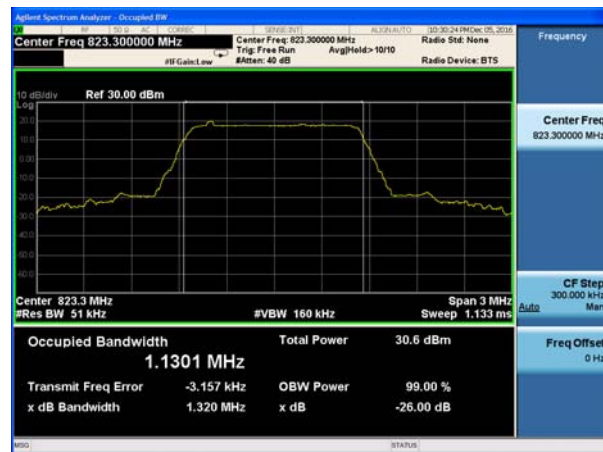
## LTE Band 26 16QAM 1.4MHz CH26740



## LTE Band 26 16QAM 3MHz CH26740



## LTE Band 26 16QAM 1.4MHz CH26783

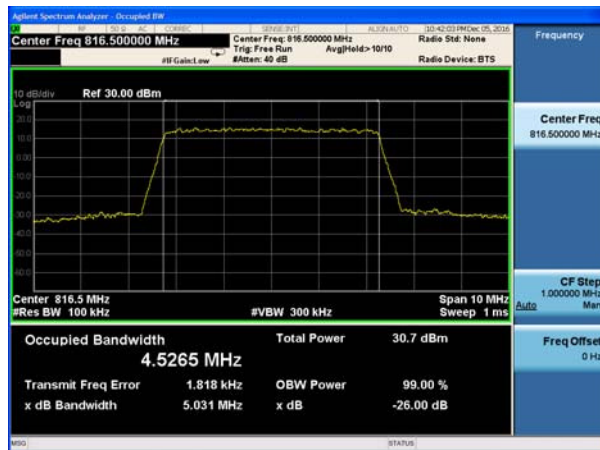


## LTE Band 26 16QAM 3MHz CH26775





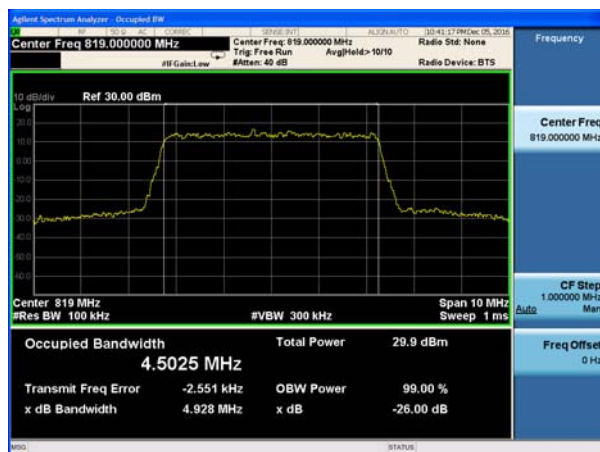
## LTE Band 26 16QAM 5MHz CH26715



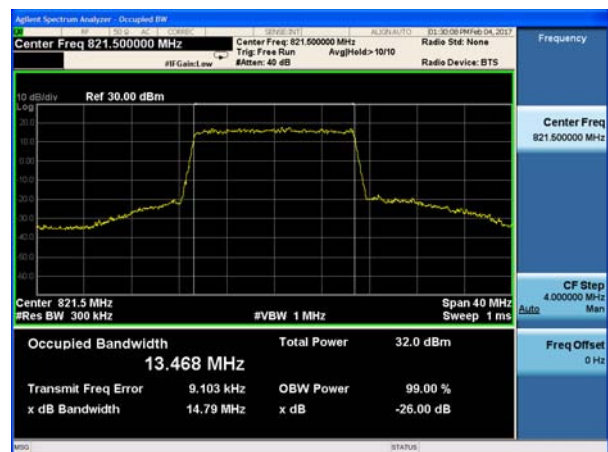
## LTE Band 26 16QAM 10MHz CH26740



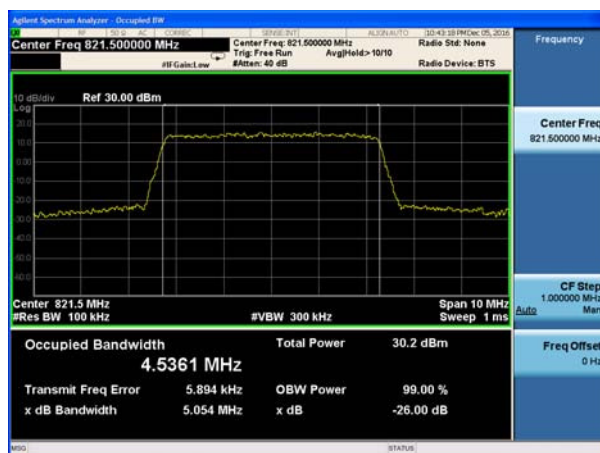
## LTE Band 26 16QAM 5MHz CH26740



## LTE Band 26 16QAM 15MHz CH26765



## LTE Band 26 16QAM 5MHz CH26765



## 5.4. Emission Mask

### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

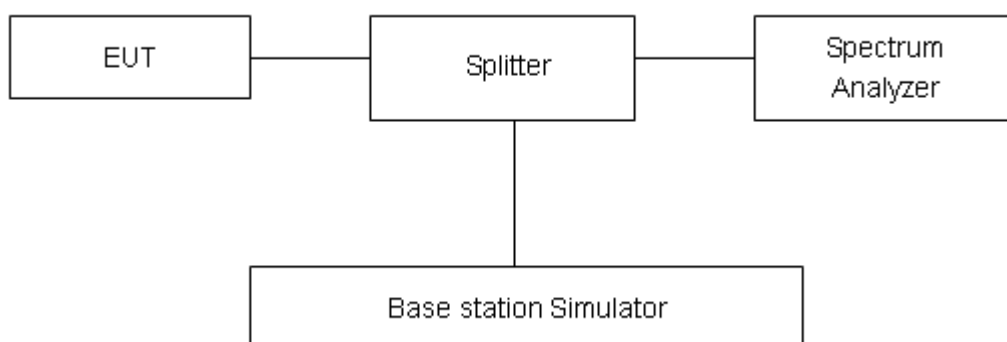
### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The average detector is used.

RBW is set to 100kHz, VBW is set to 300kHz.

Spectrum analyzer plots are included on the following pages.

### Test Setup



### Limits

Rule Part 90.691(a) specifies that “ For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.”

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U=0.684\text{dB}$ .



## Test Result:

LTE Band 26 QPSK CH Low 1.4M



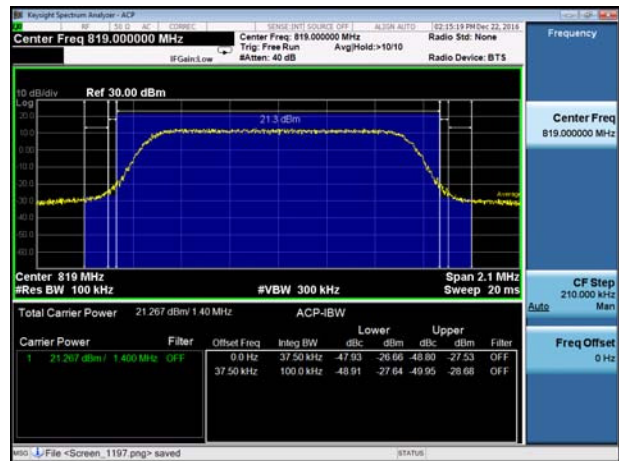
LTE Band 26 16QAM CH Low 1.4M



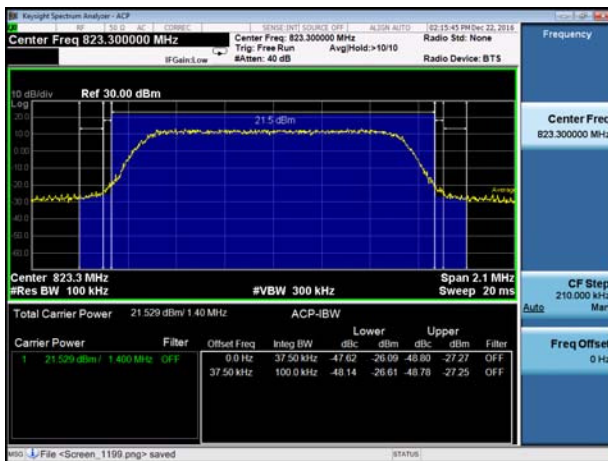
LTE Band 26 QPSK CH Middle 1.4M



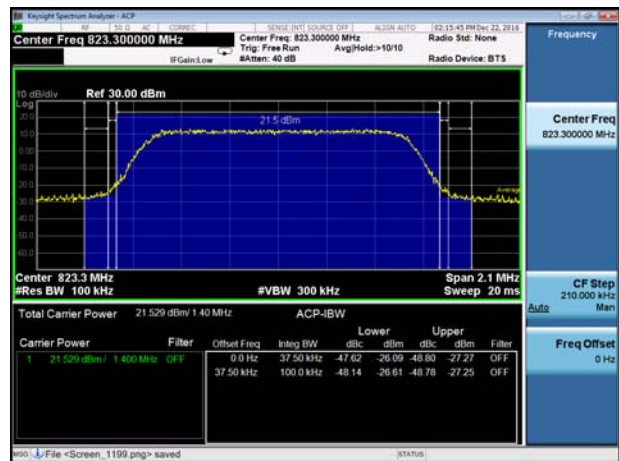
LTE Band 26 16QAM CH Middle 1.4M



LTE Band 26 QPSK CH High 1.4M



LTE Band 26 16QAM CH High 1.4M



LTE Band 26 QPSK CH Low 3M



LTE Band 26 16QAM CH Low 3M



LTE Band 26 QPSK CH Middle 3M



LTE Band 26 16QAM CH Middle 3M



LTE Band 26 QPSK CH High 3M

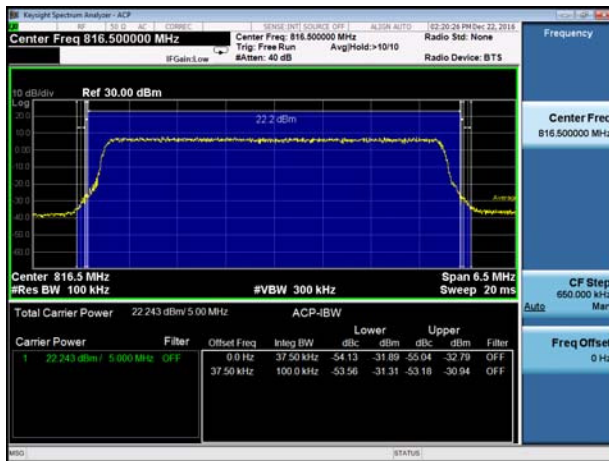


LTE Band 26 16QAM CH High 3M

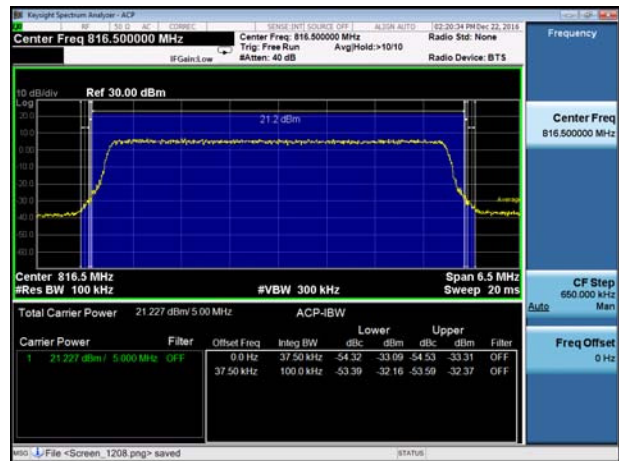




## LTE Band 26 QPSK CH Low 5M



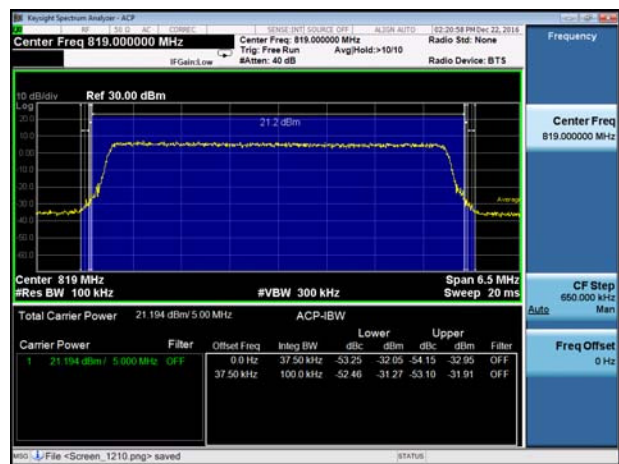
## LTE Band 26 16QAM CH Low 5M



## LTE Band 26 QPSK CH Middle 5M



## LTE Band 26 16QAM CH Middle 5M



## LTE Band 26 QPSK CH High 5M

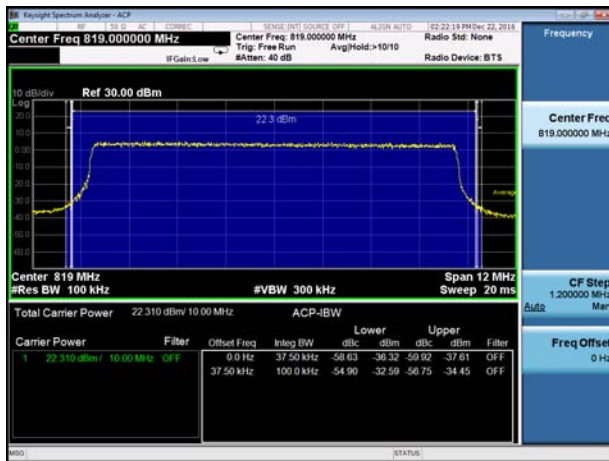


## LTE Band 26 16QAM CH High 5M

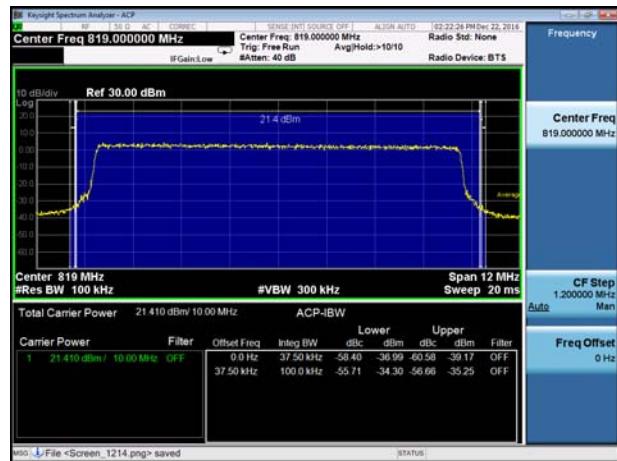




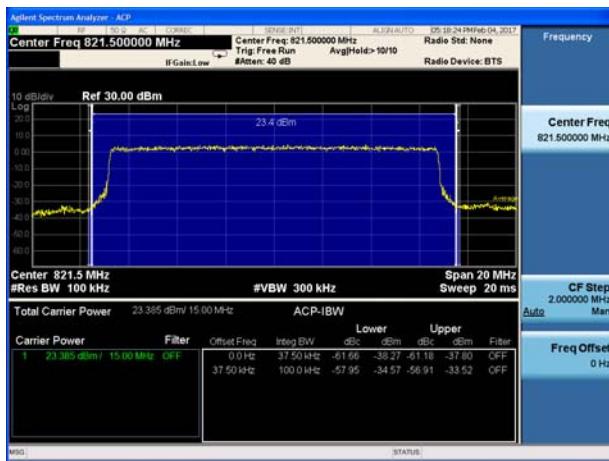
## LTE Band 26 QPSK CH Middle 10M



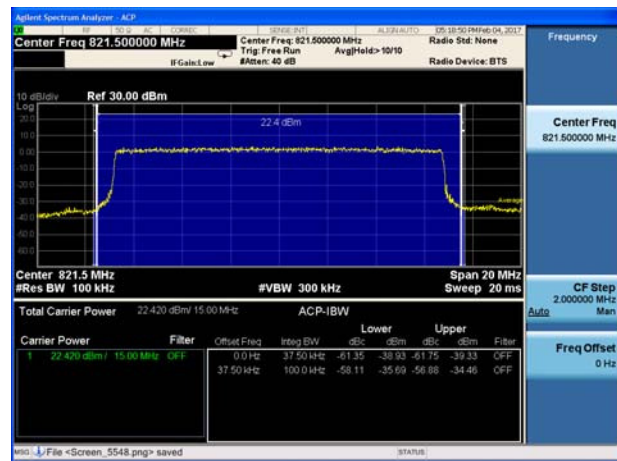
## LTE Band 26 16QAM CH Middle 10M



## LTE Band 26 QPSK CH Middle 15M



## LTE Band 26 16QAM CH Middle 15M



## 5.5. Peak-to-Average Power Ratio (PAPR)

### Ambient condition

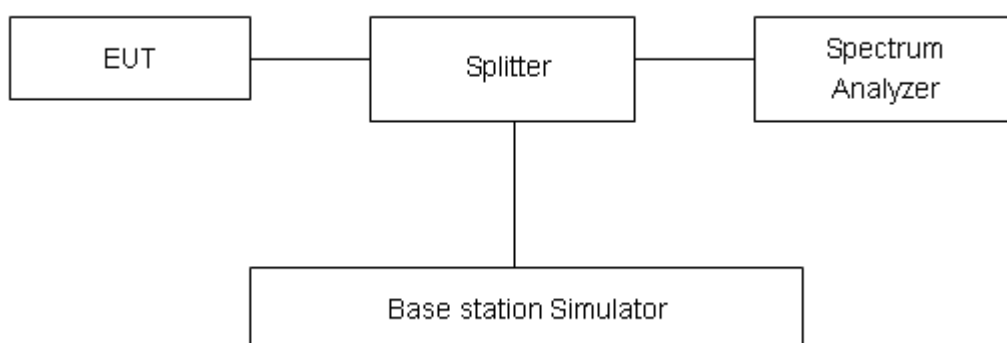
| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

### Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$PAPR (dB) = PPk (dBm) - PAvg (dBm)$ .

### Test Setup



### Limits

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 in 24.232(d).

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.4$  dB.

**Test Results**

| Mode           | Channel | Frequency (MHz) | Peak(dBm) | Avg(dBm) | PAPR(dB) | Limit(dB) | Conclusion |
|----------------|---------|-----------------|-----------|----------|----------|-----------|------------|
| 1.4 MHz (QPSK) | 26697   | 814.7           | 27.37     | 22.69    | 4.68     | 13        | PASS       |
|                | 26740   | 819             | 27.82     | 22.78    | 5.04     | 13        | PASS       |
|                | 26783   | 823.3           | 27.89     | 22.73    | 5.16     | 13        | PASS       |
| 3 MHz (QPSK)   | 26697   | 814.7           | 27.57     | 22.72    | 4.85     | 13        | PASS       |
|                | 26740   | 819             | 27.64     | 22.53    | 5.11     | 13        | PASS       |
|                | 26783   | 823.3           | 27.92     | 22.73    | 5.19     | 13        | PASS       |
| 5 MHz (QPSK)   | 26697   | 814.7           | 27.53     | 22.70    | 4.83     | 13        | PASS       |
|                | 26740   | 819             | 27.57     | 22.55    | 5.02     | 13        | PASS       |
|                | 26783   | 823.3           | 27.73     | 22.62    | 5.11     | 13        | PASS       |
| 10 MHz (QPSK)  | 26740   | 819             | 26.81     | 21.69    | 5.12     | 13        | PASS       |
| 15 MHz (QPSK)  | 26765   | 821.5           | 26.62     | 21.68    | 4.94     | 13        | PASS       |

| Mode            | Channel | Frequency (MHz) | Peak(dBm) | Avg(dBm) | PAPR(dB) | Limit(dB) | Conclusion |
|-----------------|---------|-----------------|-----------|----------|----------|-----------|------------|
| 1.4 MHz (16QAM) | 26697   | 814.7           | 27.20     | 21.67    | 5.53     | 13        | PASS       |
|                 | 26740   | 819             | 27.59     | 21.71    | 5.88     | 13        | PASS       |
|                 | 26783   | 823.3           | 27.66     | 21.65    | 6.01     | 13        | PASS       |
| 3 MHz (16QAM)   | 26697   | 814.7           | 27.39     | 21.70    | 5.69     | 13        | PASS       |
|                 | 26740   | 819             | 27.33     | 21.37    | 5.96     | 13        | PASS       |
|                 | 26783   | 823.3           | 27.73     | 21.66    | 6.07     | 13        | PASS       |
| 5 MHz (16QAM)   | 26697   | 814.7           | 27.34     | 21.68    | 5.66     | 13        | PASS       |
|                 | 26740   | 819             | 27.26     | 21.39    | 5.87     | 13        | PASS       |
|                 | 26783   | 823.3           | 27.49     | 21.54    | 5.95     | 13        | PASS       |
| 10 MHz (16QAM)  | 26740   | 819             | 26.65     | 21.49    | 5.16     | 13        | PASS       |
| 15 MHz (16QAM)  | 26765   | 821.5           | 27.79     | 21.86    | 5.93     | 13        | PASS       |

## 5.6. Frequency Stability

### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

### Method of Measurement

#### 1. Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,

(1) With all power removed, the temperature was decreased to 0°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

#### 2. Frequency Stability (Voltage Variation)

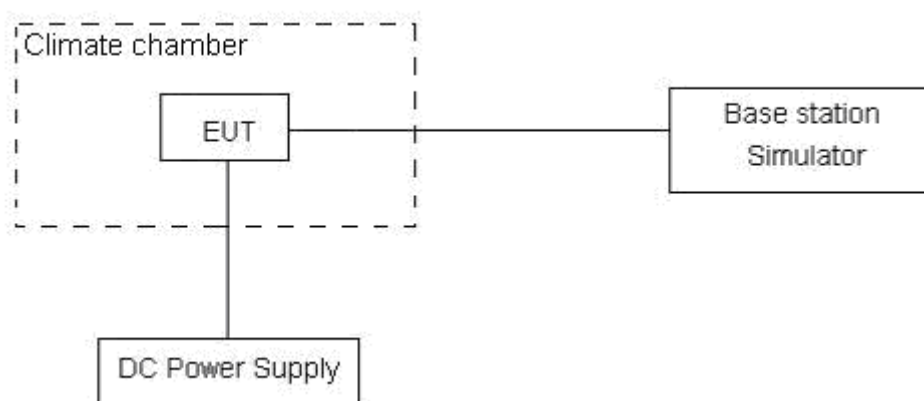
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.5 V and 4.2 V, with a nominal voltage of 3.7V.

### Test setup



**Limits**

According to the Sec. 90.213.(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

Minimum Frequency Stability

[Parts per million (ppm)]

| Frequency range<br>(MHz) | Fixed and base<br>stations | Mobile stations              |                                 |
|--------------------------|----------------------------|------------------------------|---------------------------------|
|                          |                            | Over 2 watts output<br>power | 2 watts or less output<br>power |
| 809-824                  | 1.5                        | 2.5                          | 2.5                             |

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor  $k = 3$ ,  $U = 0.01\text{ppm}$ .



## Test Result

| Bandwidth | Test status | LTE Band 26 Channel 26740 Test Results (ppm) |          |            |
|-----------|-------------|----------------------------------------------|----------|------------|
|           |             | QPSK                                         | 16QAM    | Conclusion |
| 1.4MHz    | -30°C/3.7 V | -0.00585                                     | -0.00461 | PASS       |
|           | -20°C/3.7 V | -0.00310                                     | 0.00801  | PASS       |
|           | -10°C/3.7 V | -0.00556                                     | 0.00484  | PASS       |
|           | 0°C/3.7 V   | -0.00439                                     | 0.00988  | PASS       |
|           | 10°C/3.7 V  | -0.00744                                     | -0.00295 | PASS       |
|           | 20°C/3.7 V  | -0.00994                                     | -0.00230 | PASS       |
|           | 30°C/3.7 V  | -0.00529                                     | -0.00238 | PASS       |
|           | 40°C/3.7 V  | -0.00331                                     | -0.00342 | PASS       |
|           | 50°C/3.7 V  | -0.00526                                     | -0.00224 | PASS       |
|           | 20°C/3.5 V  | -0.00150                                     | 0.00303  | PASS       |
|           | 20°C/4.2 V  | -0.00328                                     | -0.00598 | PASS       |
| 3MHz      | -30°C/3.7 V | 0.00214                                      | 0.00306  | PASS       |
|           | -20°C/3.7 V | 0.00144                                      | 0.00410  | PASS       |
|           | -10°C/3.7 V | 0.00209                                      | 0.00487  | PASS       |
|           | 0°C/3.7 V   | 0.00278                                      | -0.00019 | PASS       |
|           | 10°C/3.7 V  | -0.00132                                     | -0.00030 | PASS       |
|           | 20°C/3.7 V  | -0.00041                                     | 0.00202  | PASS       |
|           | 30°C/3.7 V  | -0.00044                                     | 0.00028  | PASS       |
|           | 40°C/3.7 V  | 0.00704                                      | 0.00089  | PASS       |
|           | 50°C/3.7 V  | 0.00067                                      | 0.00347  | PASS       |
|           | 20°C/3.5 V  | -0.00332                                     | 0.00400  | PASS       |
|           | 20°C/4.2 V  | -0.00057                                     | 0.00330  | PASS       |
| 5MHz      | -30°C/3.7 V | 0.00611                                      | 0.00207  | PASS       |
|           | -20°C/3.7 V | 0.00053                                      | 0.00411  | PASS       |
|           | -10°C/3.7 V | 0.00918                                      | 0.00054  | PASS       |
|           | 0°C/3.7 V   | 0.00948                                      | 0.00554  | PASS       |
|           | 10°C/3.7 V  | -0.00046                                     | 0.00545  | PASS       |
|           | 20°C/3.7 V  | -0.00024                                     | 0.00794  | PASS       |
|           | 30°C/3.7 V  | -0.00171                                     | 0.00348  | PASS       |
|           | 40°C/3.7 V  | -0.00058                                     | 0.00592  | PASS       |
|           | 50°C/3.7 V  | 0.00584                                      | 0.00423  | PASS       |
|           | 20°C/3.5 V  | 0.00531                                      | 0.00432  | PASS       |
|           | 20°C/4.2 V  | 0.00324                                      | 0.00998  | PASS       |
| 10MHz     | -30°C/3.7 V | 0.00438                                      | 0.00276  | PASS       |
|           | -20°C/3.7 V | -0.00205                                     | 0.00446  | PASS       |



|       |             |          |          |      |
|-------|-------------|----------|----------|------|
|       | -10°C/3.7 V | -0.00317 | 0.00202  | PASS |
|       | 0°C/3.7 V   | -0.00171 | 0.00648  | PASS |
|       | 10°C/3.7 V  | -0.00192 | 0.00398  | PASS |
|       | 20°C/3.7 V  | 0.00802  | 0.00408  | PASS |
|       | 30°C/3.7 V  | 0.00771  | -0.00093 | PASS |
|       | 40°C/3.7 V  | -0.00094 | 0.00264  | PASS |
|       | 50°C/3.7 V  | 0.00465  | 0.00060  | PASS |
|       | 20°C/3.5 V  | 0.00178  | 0.00851  | PASS |
|       | 20°C/4.2 V  | 0.00385  | 0.00286  | PASS |
| 15MHz | -30°C/3.7 V | -0.00983 | 0.00487  | PASS |
|       | -20°C/3.7 V | -0.0075  | 0.00399  | PASS |
|       | -10°C/3.7 V | -0.00129 | 0.00667  | PASS |
|       | 0°C/3.7 V   | -0.00633 | 0.00579  | PASS |
|       | 10°C/3.7 V  | -0.00575 | 0.00384  | PASS |
|       | 20°C/3.7 V  | -0.00887 | -0.00165 | PASS |
|       | 30°C/3.7 V  | -0.0033  | -0.00979 | PASS |
|       | 40°C/3.7 V  | -0.00287 | -0.00475 | PASS |
|       | 50°C/3.7 V  | 0.00679  | -0.00349 | PASS |
|       | 20°C/3.5 V  | 0.00321  | -0.00903 | PASS |
|       | 20°C/4.2 V  | 0.00608  | -0.00962 | PASS |

## 5.7. Spurious Emissions at Antenna Terminals

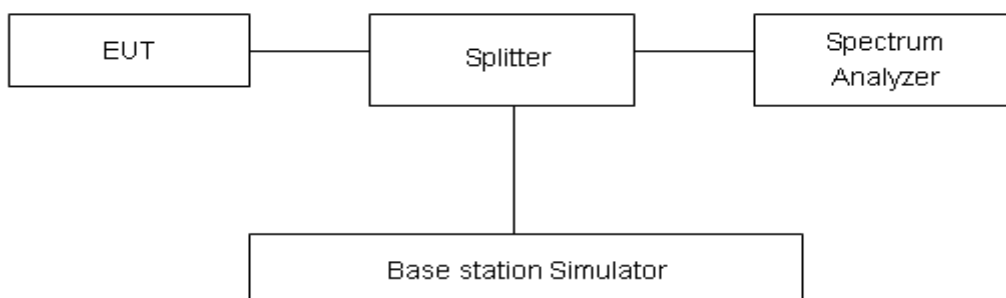
### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

### Test setup



### Limits

Rule Part 90.691 specifies that “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.”

| Limit | -13 dBm |
|-------|---------|
|-------|---------|

### Measurement Uncertainty

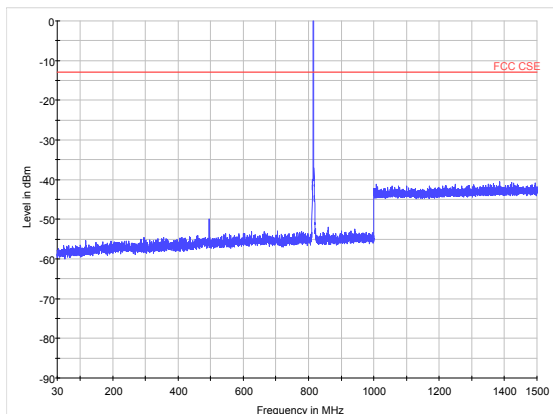
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

| Frequency     | Uncertainty |
|---------------|-------------|
| 100kHz-2GHz   | 0.684 dB    |
| 2GHz-12.75GHz | 1.407 dB    |

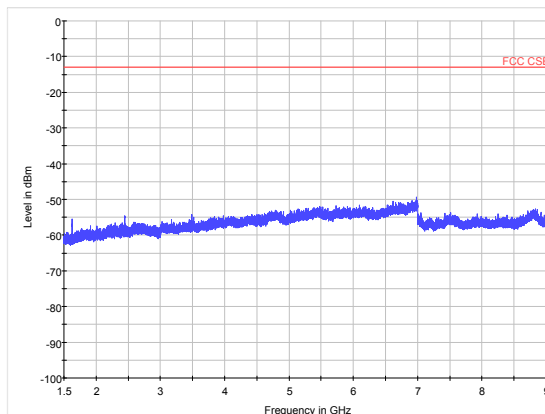
## Test Result

If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.  
The signal beyond the limit is carrier.

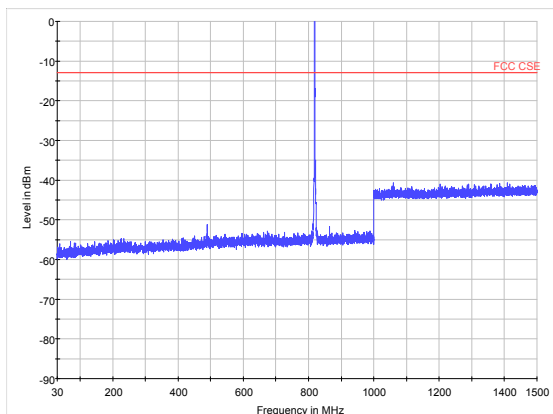
LTE Band 26 1.4MHz CH26697 30MHz~1.5GHz



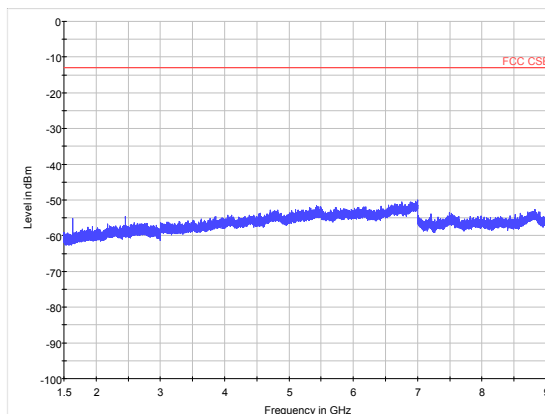
LTE Band 26 1.4MHz CH26697 1.5GHz~9GHz



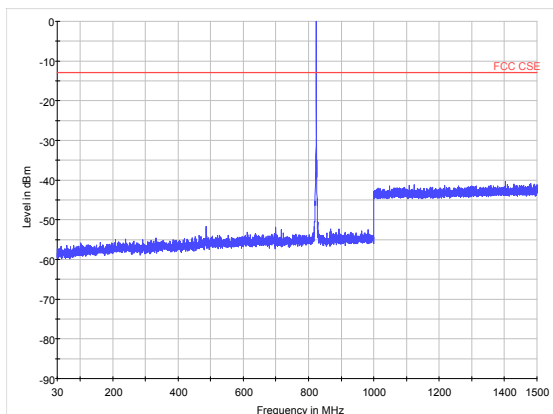
LTE Band 26 1.4MHz CH26740 30MHz~1.5GHz



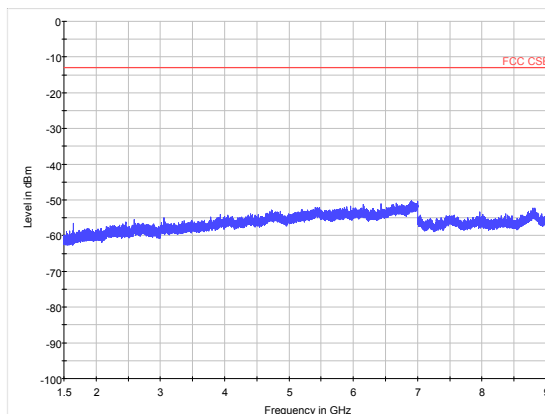
LTE Band 26 1.4MHz CH26740 1.5GHz~9GHz



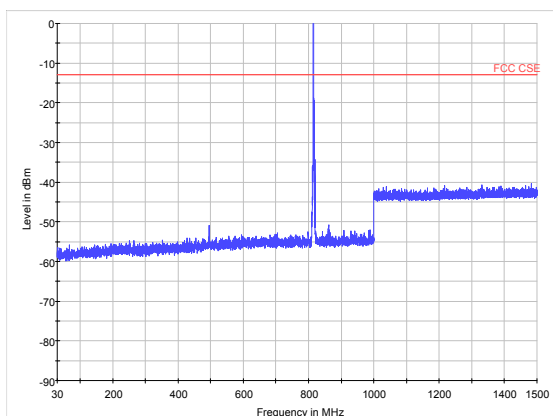
LTE Band 26 1.4MHz CH26783 30MHz~1.5GHz



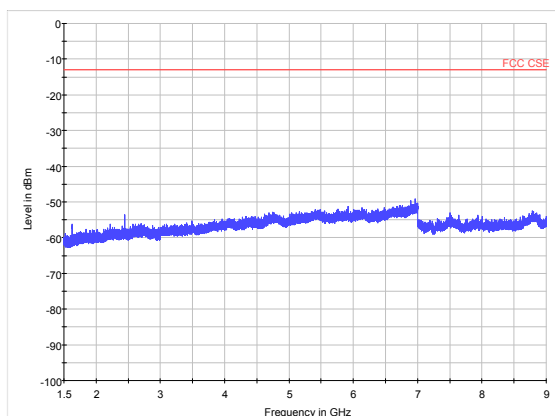
LTE Band 26 1.4MHz CH26783 1.5GHz~9GHz



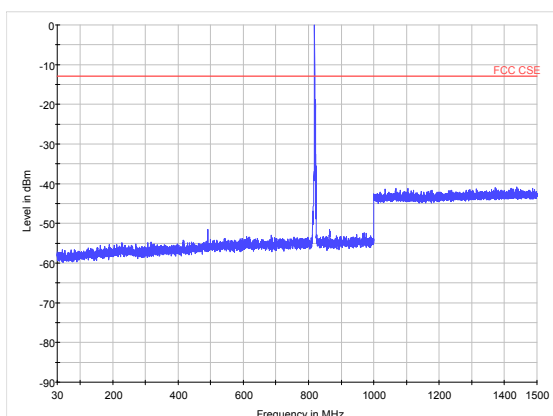
LTE Band 26 3MHz CH26705 30MHz~1.5GHz



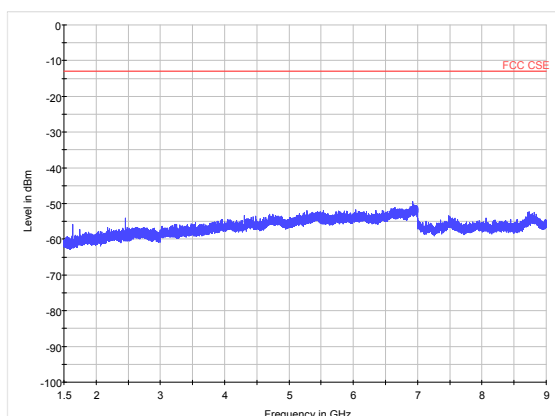
LTE Band 26 3MHz CH26705 1.5GHz~9GHz



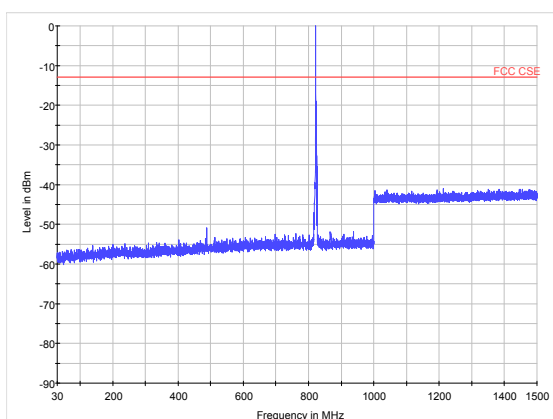
LTE Band 26 3MHz CH26740 30MHz~1.5GHz



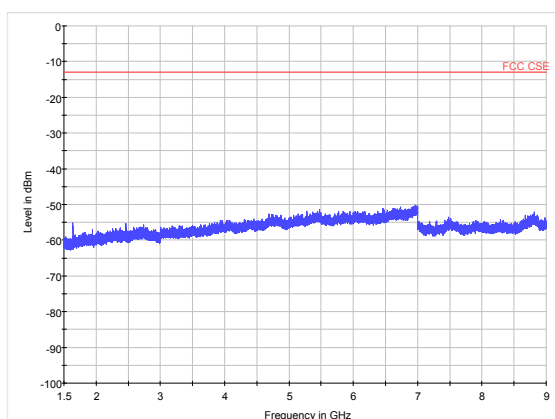
LTE Band 26 3MHz CH26740 1.5GHz~9GHz



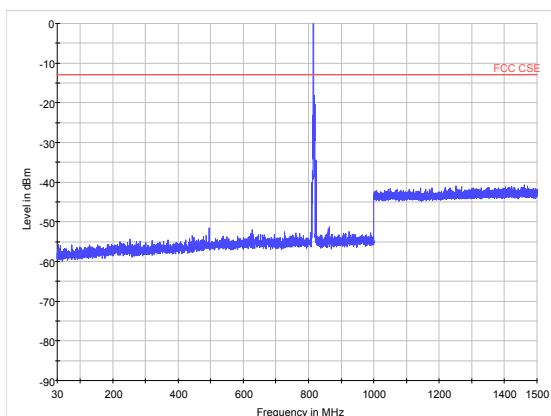
LTE Band 26 3MHz CH26775 30MHz~1.5GHz



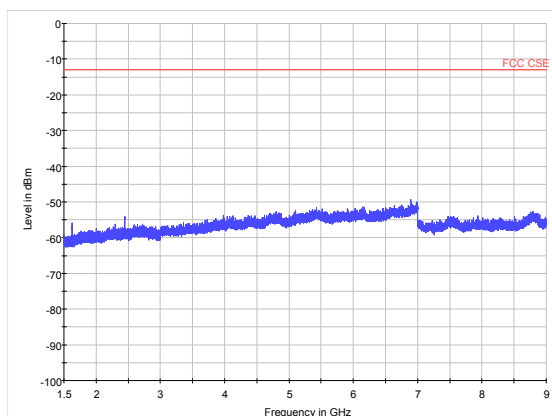
LTE Band 26 3MHz CH26775 1.5GHz~9GHz



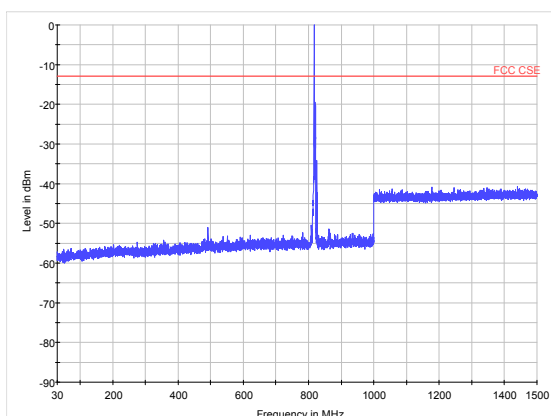
LTE Band 26 5MHz CH26715 30MHz~1.5GHz



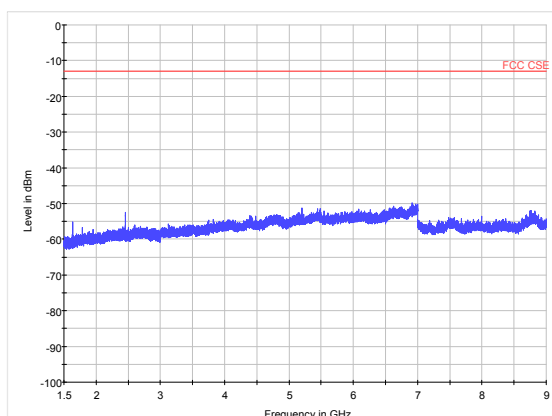
LTE Band 26 5MHz CH26715 1.5GHz~9GHz



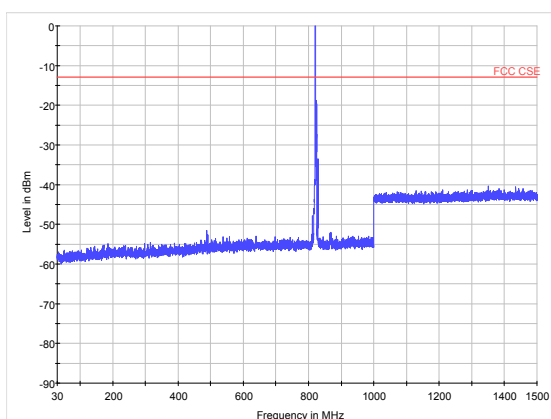
LTE Band 26 5MHz CH26740 30MHz~1.5GHz



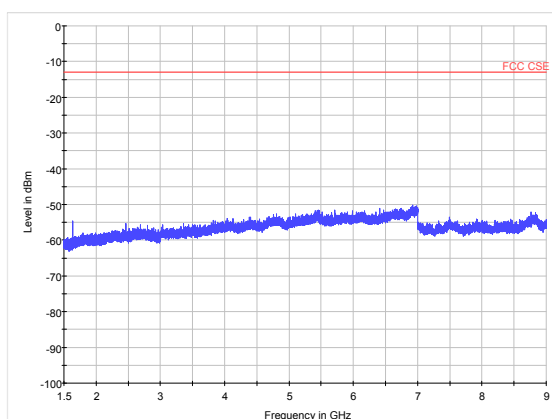
LTE Band 26 5MHz CH26740 1.5GHz~9GHz



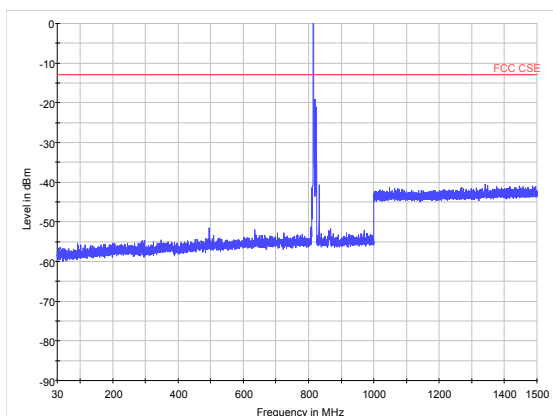
LTE Band 26 5MHz CH26765 30MHz~1.5GHz



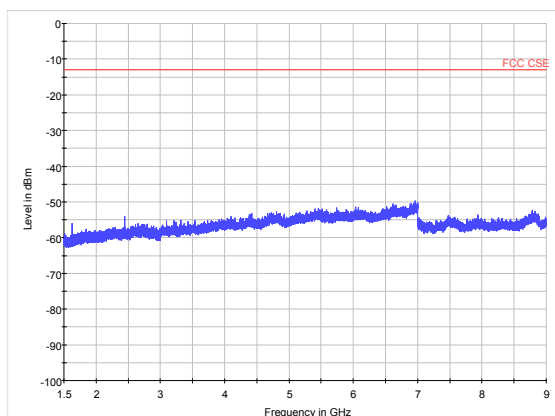
LTE Band 26 5MHz CH26765 1.5GHz~9GHz



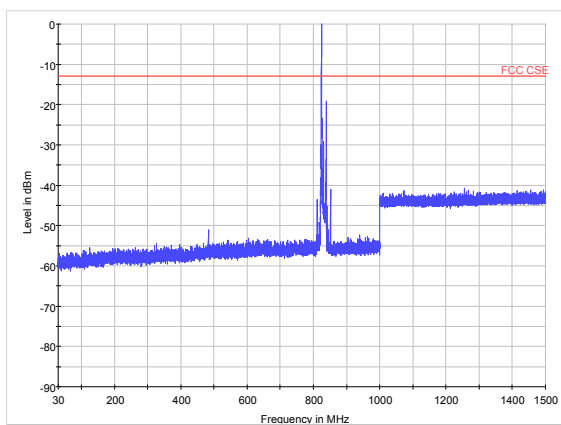
LTE Band 26 10MHz CH26740 30MHz~1.5GHz



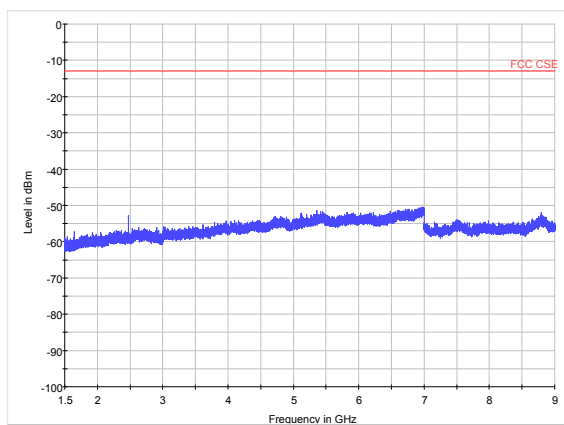
LTE Band 26 10MHz CH26740 1.5GHz~9GHz



LTE Band 26 15MHz CH26765 30MHz~1.5GHz



LTE Band 26 15MHz CH26765 1.5GHz~9GHz



## 5.8. Radiates Spurious Emission

### Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C  | 40%~60%           |

### Method of Measurement

The measurements procedures in TIA -603-D are used.

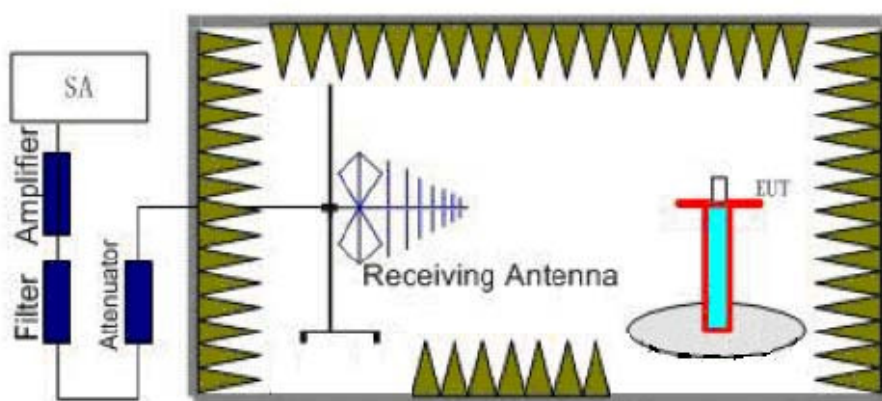
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment.

The emissions less than 20 dB below the permissible value are reported.

The procedure of Radiates Spurious Emission is as follows:

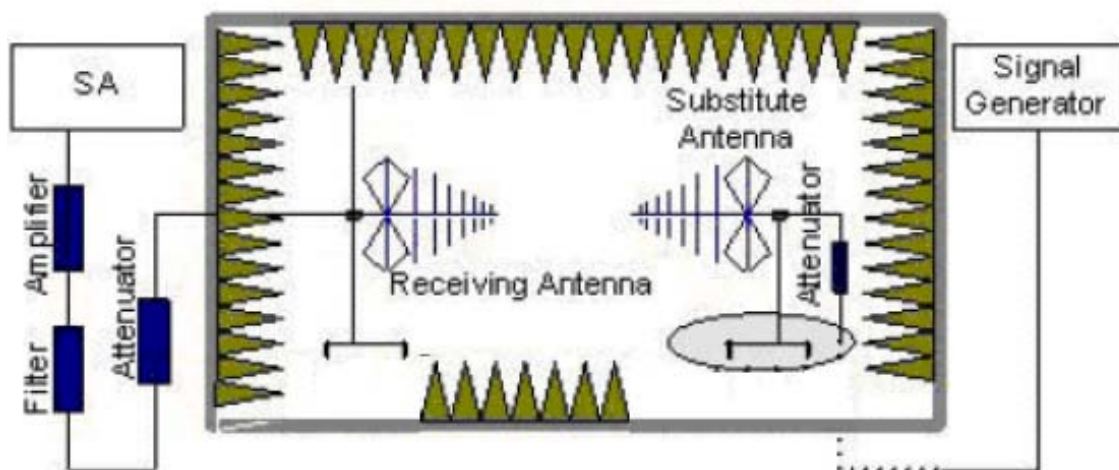
#### Step 1:

The measurement is carried out in the semi-anechoic chamber. EUT was placed on a 1.5 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 100 kHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



#### Step 2:

A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with a adjustable S.G. applied through a Tx cable. Adjust the level of the signal generator output until the value of the receiver reach the previously recorded analyzer power level (LVL). Then The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.



E.R.P (peak power) =S.G. - Tx Cable loss + Substitution antenna gain – 2.15.

EIRP= E.R.P+2.15

### Limits

Rule Part 90.691 specifies that “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.”

|       |         |
|-------|---------|
| Limit | -13 dBm |
|-------|---------|

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 3.55$  dB.

## Test Result

Receiver antenna polarization (horizontal and vertical), the worst emission was found in vertical polarization, and the worst case in vertical polarization was recorded.

LTE Band 26 1.4MHz CH26697

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1628.4          | -59.10   | 2.00            | 10.75      | vertical             | -52.5           | -13.00      | 39.50       | 0             |
| 3        | 2442.8          | -40.39   | 2.51            | 11.05      | vertical             | -34.0           | -13.00      | 21.00       | 45            |
| 4        | 3258.8          | -54.70   | 4.20            | 11.15      | vertical             | -49.9           | -13.00      | 36.90       | 135           |
| 5        | 4073.5          | -52.40   | 5.20            | 11.15      | vertical             | -48.6           | -13.00      | 35.60       | 225           |
| 6        | 4888.2          | -51.10   | 5.50            | 11.95      | vertical             | -46.8           | -13.00      | 33.80       | 225           |
| 7        | 5702.9          | -51.30   | 5.70            | 13.55      | vertical             | -45.6           | -13.00      | 32.60       | 90            |
| 8        | 6517.6          | -48.70   | 6.30            | 13.75      | vertical             | -43.4           | -13.00      | 30.40       | 45            |
| 9        | 7332.3          | -47.60   | 6.80            | 13.85      | vertical             | -42.7           | -13.00      | 29.70       | 225           |
| 10       | 8147.0          | -47.30   | 6.90            | 14.25      | vertical             | -42.1           | -13.00      | 29.10       | 90            |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

LTE Band 26 1.4MHz CH26740

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1628.4          | -59.00   | 2.00            | 10.75      | vertical             | -52.4           | -13.00      | 39.40       | 90            |
| 3        | 2442.8          | -40.49   | 2.51            | 11.05      | vertical             | -34.1           | -13.00      | 21.10       | 225           |
| 4        | 3276.0          | -55.40   | 4.20            | 11.15      | vertical             | -50.6           | -13.00      | 37.60       | 45            |
| 5        | 4095.0          | -53.10   | 5.20            | 11.15      | vertical             | -49.3           | -13.00      | 36.30       | 135           |
| 6        | 4914.0          | -50.50   | 5.50            | 11.95      | vertical             | -46.2           | -13.00      | 33.20       | 0             |
| 7        | 5733.0          | -51.10   | 5.70            | 13.55      | vertical             | -45.4           | -13.00      | 32.40       | 135           |
| 8        | 6552.0          | -49.80   | 6.30            | 13.75      | vertical             | -44.5           | -13.00      | 31.50       | 225           |
| 9        | 7371.0          | -47.60   | 6.80            | 13.85      | vertical             | -42.7           | -13.00      | 29.70       | 135           |
| 10       | 8190.0          | -48.40   | 6.90            | 14.25      | vertical             | -43.2           | -13.00      | 30.20       | 0             |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 1.4MHz CH26783

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1645.5          | -58.00   | 2.00            | 10.75      | vertical             | -51.4           | -13.00      | 38.40       | 90            |
| 3        | 2468.6          | -39.79   | 2.51            | 11.05      | vertical             | -33.4           | -13.00      | 20.40       | 135           |
| 4        | 3293.2          | -55.00   | 4.20            | 11.15      | vertical             | -50.2           | -13.00      | 37.20       | 45            |
| 5        | 4116.5          | -52.90   | 5.20            | 11.15      | vertical             | -49.1           | -13.00      | 36.10       | 90            |
| 6        | 4939.8          | -50.80   | 5.50            | 11.95      | vertical             | -46.5           | -13.00      | 33.50       | 225           |
| 7        | 5763.1          | -51.00   | 5.70            | 13.55      | vertical             | -45.3           | -13.00      | 32.30       | 90            |
| 8        | 6586.4          | -49.50   | 6.30            | 13.75      | vertical             | -44.2           | -13.00      | 31.20       | 135           |
| 9        | 7409.7          | -48.40   | 6.80            | 13.85      | vertical             | -43.5           | -13.00      | 30.50       | 225           |
| 10       | 8233.0          | -47.50   | 6.90            | 14.25      | vertical             | -42.3           | -13.00      | 29.30       | 225           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 3MHz CH26705

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1628.4          | -58.70   | 2.00            | 10.75      | vertical             | -52.1           | -13.00      | 39.10       | 225           |
| 3        | 2442.8          | -40.59   | 2.51            | 11.05      | vertical             | -34.2           | -13.00      | 21.20       | 225           |
| 4        | 3262.0          | -55.10   | 4.20            | 11.15      | vertical             | -50.3           | -13.00      | 37.30       | 90            |
| 5        | 4077.5          | -52.50   | 5.20            | 11.15      | vertical             | -48.7           | -13.00      | 35.70       | 45            |
| 6        | 4893.0          | -50.80   | 5.50            | 11.95      | vertical             | -46.5           | -13.00      | 33.50       | 225           |
| 7        | 5708.5          | -51.90   | 5.70            | 13.55      | vertical             | -46.2           | -13.00      | 33.20       | 90            |
| 8        | 6524.0          | -50.70   | 6.30            | 13.75      | vertical             | -45.4           | -13.00      | 32.40       | 45            |
| 9        | 7339.5          | -48.40   | 6.80            | 13.85      | vertical             | -43.5           | -13.00      | 30.50       | 135           |
| 10       | 8155.0          | -48.40   | 6.90            | 14.25      | vertical             | -43.2           | -13.00      | 30.20       | 0             |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 3MHz CH26740

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1635.6          | -62.10   | 2.00            | 10.75      | vertical             | -55.5           | -13.00      | 42.50       | 90            |
| 3        | 2453.1          | -40.19   | 2.51            | 11.05      | vertical             | -33.8           | -13.00      | 20.80       | 45            |
| 4        | 3276.0          | -55.80   | 4.20            | 11.15      | vertical             | -51.0           | -13.00      | 38.00       | 90            |
| 5        | 4095.0          | -52.70   | 5.20            | 11.15      | vertical             | -48.9           | -13.00      | 35.90       | 135           |
| 6        | 4914.0          | -51.50   | 5.50            | 11.95      | vertical             | -47.2           | -13.00      | 34.20       | 270           |
| 7        | 5733.0          | -52.60   | 5.70            | 13.55      | vertical             | -46.9           | -13.00      | 33.90       | 225           |
| 8        | 6552.0          | -50.10   | 6.30            | 13.75      | vertical             | -44.8           | -13.00      | 31.80       | 135           |
| 9        | 7371.0          | -47.50   | 6.80            | 13.85      | vertical             | -42.6           | -13.00      | 29.60       | 225           |
| 10       | 8190.0          | -48.80   | 6.90            | 14.25      | vertical             | -43.6           | -13.00      | 30.60       | 135           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 3MHz CH26775

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1642.1          | -59.00   | 2.00            | 10.75      | vertical             | -52.4           | -13.00      | 39.40       | 225           |
| 3        | 2463.6          | -39.79   | 2.51            | 11.05      | vertical             | -33.4           | -13.00      | 20.40       | 90            |
| 4        | 3290.0          | -55.40   | 4.20            | 11.15      | vertical             | -50.6           | -13.00      | 37.60       | 0             |
| 5        | 4112.5          | -53.00   | 5.20            | 11.15      | vertical             | -49.2           | -13.00      | 36.20       | 45            |
| 6        | 4935.0          | -50.80   | 5.50            | 11.95      | vertical             | -46.5           | -13.00      | 33.50       | 90            |
| 7        | 5757.5          | -50.40   | 5.70            | 13.55      | vertical             | -44.7           | -13.00      | 31.70       | 225           |
| 8        | 6580.0          | -48.70   | 6.30            | 13.75      | vertical             | -43.4           | -13.00      | 30.40       | 90            |
| 9        | 7402.5          | -46.80   | 6.80            | 13.85      | vertical             | -41.9           | -13.00      | 28.90       | 135           |
| 10       | 8225.0          | -47.90   | 6.90            | 14.25      | vertical             | -42.7           | -13.00      | 29.70       | 225           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 5MHz CH26715

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1628.4          | -58.60   | 2.00            | 10.75      | vertical             | -52.0           | -13.00      | 39.00       | 45            |
| 3        | 2442.9          | -41.49   | 2.51            | 11.05      | vertical             | -35.1           | -13.00      | 22.10       | 135           |
| 4        | 3266.0          | -54.70   | 4.20            | 11.15      | vertical             | -49.9           | -13.00      | 36.90       | 225           |
| 5        | 4082.5          | -53.00   | 5.20            | 11.15      | vertical             | -49.2           | -13.00      | 36.20       | 90            |
| 6        | 4899.0          | -50.80   | 5.50            | 11.95      | vertical             | -46.5           | -13.00      | 33.50       | 45            |
| 7        | 5715.5          | -52.00   | 5.70            | 13.55      | vertical             | -46.3           | -13.00      | 33.30       | 225           |
| 8        | 6532.0          | -49.40   | 6.30            | 13.75      | vertical             | -44.1           | -13.00      | 31.10       | 90            |
| 9        | 7348.5          | -48.60   | 6.80            | 13.85      | vertical             | -43.7           | -13.00      | 30.70       | 45            |
| 10       | 8165.0          | -46.90   | 6.90            | 14.25      | vertical             | -41.7           | -13.00      | 28.70       | 135           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 5MHz CH26740

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1633.5          | -62.60   | 2.00            | 10.75      | vertical             | -56.0           | -13.00      | 43.00       | 0             |
| 3        | 2450.6          | -40.89   | 2.51            | 11.05      | vertical             | -34.5           | -13.00      | 21.50       | 0             |
| 4        | 3276.0          | -55.60   | 4.20            | 11.15      | vertical             | -50.8           | -13.00      | 37.80       | 0             |
| 5        | 4095.0          | -52.50   | 5.20            | 11.15      | vertical             | -48.7           | -13.00      | 35.70       | 90            |
| 6        | 4914.0          | -50.00   | 5.50            | 11.95      | vertical             | -45.7           | -13.00      | 32.70       | 135           |
| 7        | 5733.0          | -51.70   | 5.70            | 13.55      | vertical             | -46.0           | -13.00      | 33.00       | 270           |
| 8        | 6552.0          | -48.70   | 6.30            | 13.75      | vertical             | -43.4           | -13.00      | 30.40       | 225           |
| 9        | 7371.0          | -48.80   | 6.80            | 13.85      | vertical             | -43.9           | -13.00      | 30.90       | 135           |
| 10       | 8190.0          | -48.70   | 6.90            | 14.25      | vertical             | -43.5           | -13.00      | 30.50       | 225           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.



## LTE Band 26 5MHz CH26765

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1640.8          | -58.20   | 2.00            | 10.75      | vertical             | -51.6           | -13.00      | 38.60       | 45            |
| 3        | 2460.9          | -39.59   | 2.51            | 11.05      | vertical             | -33.2           | -13.00      | 20.20       | 90            |
| 4        | 3290.0          | -55.30   | 4.20            | 11.15      | vertical             | -50.5           | -13.00      | 37.50       | 135           |
| 5        | 4112.5          | -52.60   | 5.20            | 11.15      | vertical             | -48.8           | -13.00      | 35.80       | 0             |
| 6        | 4935.0          | -52.00   | 5.50            | 11.95      | vertical             | -47.7           | -13.00      | 34.70       | 45            |
| 7        | 5757.5          | -51.80   | 5.70            | 13.55      | vertical             | -46.1           | -13.00      | 33.10       | 90            |
| 8        | 6580.0          | -48.80   | 6.30            | 13.75      | vertical             | -43.5           | -13.00      | 30.50       | 225           |
| 9        | 7402.5          | -48.70   | 6.80            | 13.85      | vertical             | -43.8           | -13.00      | 30.80       | 90            |
| 10       | 8225.0          | -46.10   | 6.90            | 14.25      | vertical             | -40.9           | -13.00      | 27.90       | 135           |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## LTE Band 26 10MHz CH26740

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1629.2          | -59.70   | 2.00            | 10.75      | vertical             | -53.1           | -13.00      | 40.10       | 225           |
| 3        | 2443.9          | -41.09   | 2.51            | 11.05      | vertical             | -34.7           | -13.00      | 21.70       | 90            |
| 4        | 3276.0          | -53.60   | 4.20            | 11.15      | vertical             | -48.8           | -13.00      | 35.80       | 225           |
| 5        | 4095.0          | -51.60   | 5.20            | 11.15      | vertical             | -47.8           | -13.00      | 34.80       | 225           |
| 6        | 4914.0          | -51.50   | 5.50            | 11.95      | vertical             | -47.2           | -13.00      | 34.20       | 90            |
| 7        | 5733.0          | -52.00   | 5.70            | 13.55      | vertical             | -46.3           | -13.00      | 33.30       | 45            |
| 8        | 6552.0          | -48.80   | 6.30            | 13.75      | vertical             | -43.5           | -13.00      | 30.50       | 225           |
| 9        | 7371.0          | -47.60   | 6.80            | 13.85      | vertical             | -42.7           | -13.00      | 29.70       | 90            |
| 10       | 8190.0          | -47.90   | 6.90            | 14.25      | vertical             | -42.7           | -13.00      | 29.70       | 45            |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.



LTE Band 26 15MHz CH26765

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|-----------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2        | 1643.0          | -57.50   | 2.00            | 10.75      | vertical             | -50.9           | -13.00      | 37.90       | 225           |
| 3        | 2464.5          | -40.39   | 2.51            | 11.05      | vertical             | -34.0           | -13.00      | 21.00       | 90            |
| 4        | 3286.00         | -55.20   | 4.20            | 11.15      | vertical             | -50.4           | -13.00      | 37.40       | 135           |
| 5        | 4107.50         | -52.20   | 5.20            | 11.15      | vertical             | -48.4           | -13.00      | 35.40       | 270           |
| 6        | 4929.00         | -50.80   | 5.50            | 11.95      | vertical             | -46.5           | -13.00      | 33.50       | 225           |
| 7        | 5750.50         | -51.60   | 5.70            | 13.55      | vertical             | -45.9           | -13.00      | 32.90       | 135           |
| 8        | 6572.00         | -49.10   | 6.30            | 13.75      | vertical             | -43.8           | -13.00      | 30.80       | 225           |
| 9        | 7393.50         | -47.20   | 6.80            | 13.85      | vertical             | -42.3           | -13.00      | 29.30       | 135           |
| 10       | 8215.00         | -47.20   | 6.90            | 14.25      | vertical             | -42.0           | -13.00      | 29.00       | 0             |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

## 6. Main Test Instruments

| Name                                 | Type         | Manufacturer | Serial Number | Calibration Date | Expiration Time |
|--------------------------------------|--------------|--------------|---------------|------------------|-----------------|
| Base Station Simulator               | CMW500       | R&S          | 113645        | 2016-05-21       | 2017-05-20      |
| Power Splitter                       | SHX-GF2-2-13 | Hua Xiang    | 10120101      | NA               | NA              |
| Spectrum Analyzer                    | N9010A       | Agilent      | MY47191109    | 2016-05-21       | 2017-05-20      |
| Universal Radio Communication Tester | E5515C       | Agilent      | MY48367192    | 2016-05-21       | 2017-05-20      |
| Signal Analyzer                      | FSV30        | R&S          | 100815        | 2015-12-17       | 2016-12-16      |
| Signal generator                     | SMB 100A     | R&S          | 102594        | 2016-05-21       | 2017-05-20      |
| Signal generator                     | SMR27        | R&S          | 100365        | 2016-05-21       | 2017-05-20      |
| EMI Test Receiver                    | ESCI         | R&S          | 100948        | 2016-06-01       | 2017-05-31      |
| Trilog Antenna                       | VUBL 9163    | SCHWARZBECK  | 9163-201      | 2014-12-06       | 2017-12-05      |
| Horn Antenna                         | HF907        | R&S          | 100126        | 2014-12-06       | 2017-12-05      |
| Climatic Chamber                     | PT-30B       | Re Ce        | 20101891      | 2016-07-18       | 2017-07-17      |
| Climatic Chamber                     | PT-30B       | Re Ce        | 20101891      | 2016-07-17       | 2017-07-16      |
| RF Cable                             | SMA 15cm     | Agilent      | 0001          | 2016-10-06       | 2017-01-05      |

\*\*\*\*\*END OF REPORT \*\*\*\*\*

## ANNEX A: EUT Appearance and Test Setup

### A.1 EUT Appearance



Front Side

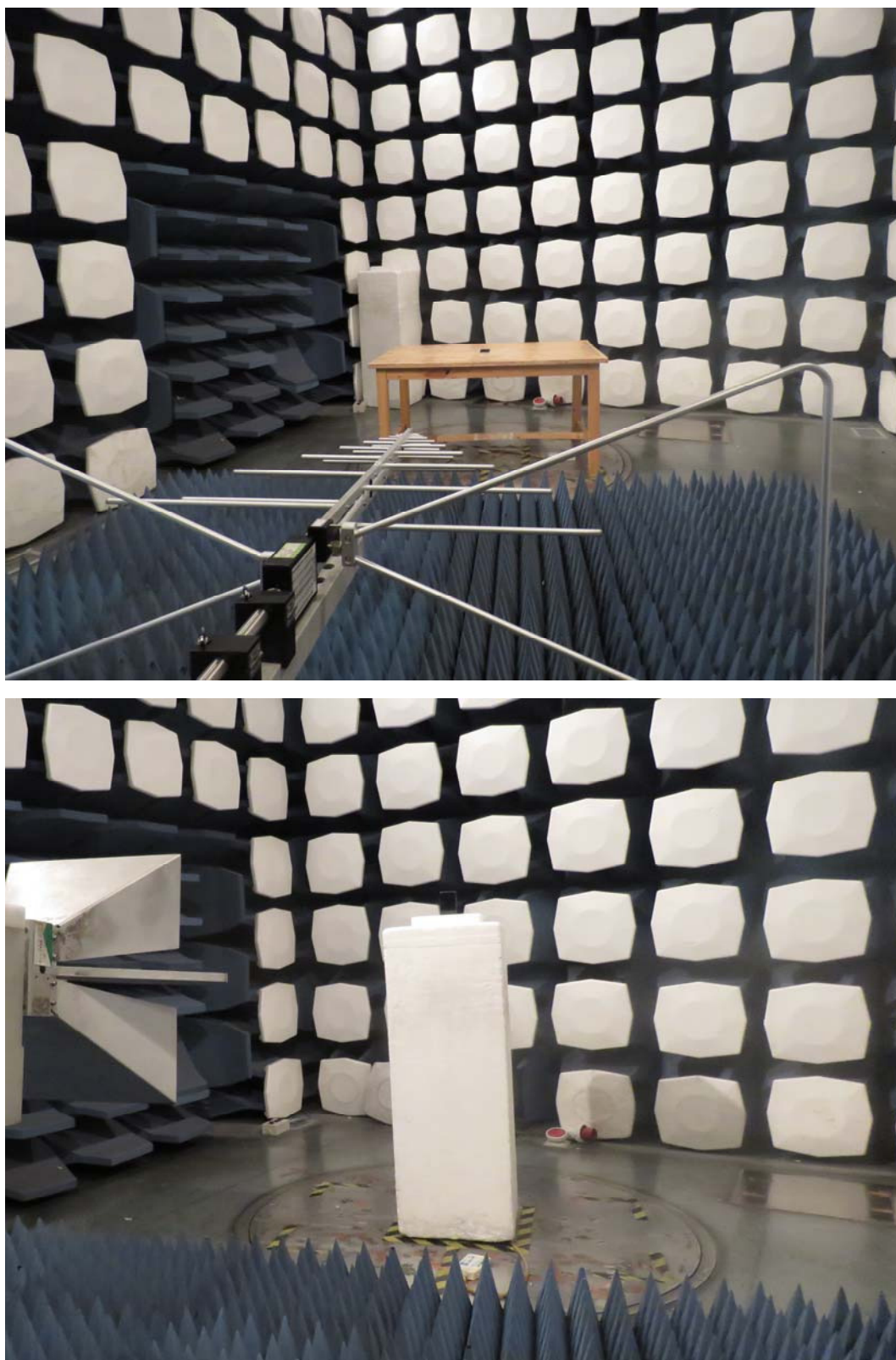


Back Side

a: EUT

Picture 1 EUT and Accessory

## A.2 Test Setup



Picture 2: Radiated Spurious Emissions Test setup