# *TEST REPORT*

| | |
|---|---|
| **Application No.:** | FYCR2212000507AT |
| **Applicant:** | Vanstone Electronic (Beijing) Co., Ltd. |
| **Address of Applicant:** | 3F No.2 Building, Aisino Corporation Park 18A, Xingshikou Road, Haidian District, Beijing, China 100195 |
| **Manufacturer:** | Vanstone Electronic (Beijing) Co., Ltd. |
| **Address of Manufacturer:** | 3F No.2 Building, Aisino Corporation Park 18A, Xingshikou Road, Haidian District, Beijing, China 100195 |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | Android POS Terminal |
| **Model No.:** | A90 Pro |
| **FCC ID:** | OWLA90-PRO-A |
| **Standard(s) :** | 47 CFR Part 2<br>47 CFR Part 22 subpart H<br>47 CFR Part 24 subpart E<br>47 CFR Part 27 subpart C |
| **Date of Receipt:** | 2022-12-10 |
| **Date of Test:** | 2022-12-14 to 2023-03-03 |
| **Date of Issue:** | 2023-03-07 |
| **Test Result:** | **Pass** |

* In the configuration tested, the EUT complied with the standards specified above.

Winkey Wang
EMC Technical Manager

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| *01* | | *2023-03-07* | | *Original* |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| | | Tree Zhan<br>**Tree Zhan/Project Engineer** | | |
| | | Winkey Wang<br>**Winkey Wang/Reviewer** | | |



Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China 518103 t (86–755) 88663988 f (86–755) 26710594 www.sgsgroup.com.cn
中国・深圳・宝安区福永街道凤塘大道鑫龙科技园福永实验室 邮编: 518103 t (86–755) 88663988 f (86–755) 26710594 sgs.china@sgs.com

# 2 Test Summary

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective (Isotropic) Radiated Output Power Data | §2.1046<br>§22.913<br>§24.232<br>§27.50(a)<br>§27.50(d)<br>§27.50(h) | ERP≤ 7W(LTE Band 5)<br>EIRP≤ 2W(LTE Band 2)<br>EIRP≤ 250mW/5MHz(LTE Band 40)<br>EIRP≤ 1W(LTE Band 4)<br>EIRP≤ 2W(LTE Band 7,38,41) | PASS |
| Peak-Average Ratio | §22.913<br>§24.232<br>§27.50(a)<br>§27.50(d) | ≤13dB | PASS |
| Modulation Characteristics | §2.1047 | Digital modulation | PASS |
| Bandwidth | §2.1049(h) | OBW: No limit<br>EBW: No limit | PASS |
| Band Edge Compliance | §2.1051<br>§22.917<br>§24.238<br>§27.50(h)<br>§27.50(m)<br>§27.53(a) | ≤ -13dBm (LTE Band5)<br>≤ -13dBm (LTE Band2)<br>≤ -13dBm (LTE Band4)<br>Refer to clause 6.4 for LTE Band7,38,41<br>Refer to clause 6.4 for LTE Band40 | PASS |
| Spurious emissions at antenna terminals | §2.1051<br>§22.917<br>§24.238<br>§27.50(h)<br>§27.50(m)<br>§27.53(a) | ≤ -13dBm (LTE Band5)<br>≤ -13dBm (LTE Band2)<br>≤ -13dBm (LTE Band4)<br>Refer to clause 6.5 for LTE Band7,38,41<br>Refer to clause 6.5 for LTE Band40 | PASS |
| Field strength of spurious radiation | §2.1051<br>§22.917<br>§24.238<br>§27.50(h)<br>§27.50(m)<br>§27.53(a) | ≤ -13dBm (LTE Band5)<br>≤ -13dBm (LTE Band2)<br>≤ -13dBm (LTE Band4)<br>Refer to clause 6.6 for LTE Band7,38,41<br>Refer to clause 6.6 for LTE Band40 | PASS |
| Frequency stability | §2.1055<br>§22.355<br>§24.235<br>§27.54 | ≤ ±2.5ppm. | PASS |

# 3 Contents

# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Power supply: | DC3.6V by li-ion battery(5200mAh)<br>Recharge by AC/DC power adapter<br>Adapter M/N:SW-0983<br>Adapter input: AC100/240V, 50/60Hz, 0.5A<br>Adapter output: DC5V/2A |
| Cable(s): | USB cable: 1.5m shielded cable without ferrite core |
| Sample Type: | Portable production |
| LTE Operation Frequency Band: | LTE FDD Band 2,4,5,7,38,40,41 |
| Modulation Type: | QPSK, 16QAM |
| LTE Power Class: | Level 3 |
| Antenna Type: | PIFA Antenna |
| Antenna Gain: | LTE B2: 2.63dBi; B4: 1.14dBi: B5: -1.24dBi; B7: 3.58dBi; B38: 2.98dBi; B40: 2.75dBi; B41:3.58dBi |
| SIM Card: | This device has dual SIM Card sockets. Both the SIM sockets have been tested. SIM1 was worst case, only record SIM1. |

## 4.2 Test Frequency

| Test mode: | Nominal Bandwidth (MHz) | RF Channel | | |
|---|---|---|---|---|
| | | Low (L) | Middle (M) | High (H) |
| | | MHz | MHz | MHz |
| LTE FDD Band 2 | 1.4 | 1850.7 | 1880 | 1909.3 |
| | 3 | 1851.5 | 1880 | 1908.5 |
| | 5 | 1852.5 | 1880 | 1907.5 |
| | 10 | 1855.0 | 1880 | 1905.0 |
| | 15 | 1857.5 | 1880 | 1902.5 |
| | 20 | 1860.0 | 1880 | 1900.0 |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 4 | 1.4 | 1710.7 | 1732.5 | 1754.3 |
| | 3 | 1711.5 | 1732.5 | 1753.5 |
| | 5 | 1712.5 | 1732.5 | 1752.5 |
| | 10 | 1715.0 | 1732.5 | 1750.0 |
| | 15 | 1717.5 | 1732.5 | 1747.5 |
| | 20 | 1720.0 | 1732.5 | 1745.0 |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 5 | 1.4 | 824.7 | 836.5 | 848.3 |
| | 3 | 825.5 | 836.5 | 847.5 |
| | 5 | 826.5 | 836.5 | 846.5 |
| | 10 | 829.0 | 836.5 | 844.0 |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 7 | 5 | 2502.5 | 2535.0 | 2567.5 |
| | 10 | 2505.0 | 2535.0 | 2565.0 |
| | 15 | 2507.5 | 2535.0 | 2562.5 |
| | 20 | 2510.0 | 2535.0 | 2560.0 |
| **Test mode:** | | **RF Channel** | | |

| | Nominal Bandwidth (MHz) | Low (L) | Middle (M) | High (H) |
|---|---|---|---|---|
| | | MHz | MHz | MHz |
| LTE FDD Band 38 | 5 | 2572.5 | 2595.0 | 2617.5 |
| | 10 | 2575.0 | 2595.0 | 2615.0 |
| | 15 | 2577.5 | 2595.0 | 2612.5 |
| | 20 | 2580.0 | 2595.0 | 2610.0 |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 40a | 5 | 2307.5 | 2310.0 | 2312.5 |
| | 10 | / | 2310.0 | / |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 40b | 5 | 2352.5 | 2355.0 | 2357.5 |
| | 10 | / | 2355.0 | / |
| **Test mode:** | **Nominal Bandwidth (MHz)** | **RF Channel** | | |
| | | **Low (L)** | **Middle (M)** | **High (H)** |
| | | **MHz** | **MHz** | **MHz** |
| LTE FDD Band 41 | 5 | 2498.5 | 2593.0 | 2687.5 |
| | 10 | 2501.0 | 2593.0 | 2685.0 |
| | 15 | 2503.5 | 2593.0 | 2682.5 |
| | 20 | 2506.0 | 2593.0 | 2680.0 |

## 4.3 Test Environment

| Environment Parameter | Selected Values During Tests | |
|---|---|---|
| Temperature: | TL | -30°C |
| | TN | +20°C |
| | TH | +50°C |
| Voltage: | VL | 3.3 Vdc |
| | VN | 3.6 Vdc |
| | VH | 4.2 Vdc |

NOTE: VL= lower extreme test voltage
VN= nominal voltage
VH= upper extreme test voltage
TL= lower extreme test temperature
TN= normal temperature
TH= upper extreme test temperature

## 4.4 Description of Support Units

The EUT has been tested independent unit.

## 4.5 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Radio Frequency | ± 5.4 x $10^{-8}$ |
| 2 | Duty cycle | ± 0.3% |
| 3 | Occupied Bandwidth | ± 3% |
| 4 | RF conducted power | ± 0.8dB |
| 5 | RF power density | ± 0.4dB |
| 6 | Conducted Spurious emissions | ± 2.7dB |
| 7 | Radiated Spurious emission test | ± 3.1dB (Below 1GHz) |
| | | ± 4.4dB (Above 1GHz) |
| 8 | Temperature test | ± 1°C |
| 9 | Humidity test | ± 3% |
| 10 | Supply voltages | ± 1.5% |
| 11 | Time | ± 3% |

## 4.6 Test Location

All tests were performed at:

Compliance Certification Services（Kunshan）Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark,Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

## 4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**• A2LA (Certificate No. 6606.01)**

Compliance Certification Services（Kunshan）Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

**• FCC –Designation Number: CN1322**

Compliance Certification Services（Kunshan）Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

**• Innovation, Science and Economic Development Canada**

Compliance Certification Services（Kunshan）Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

## 4.8 Deviation from Standards

None

## 4.9 Abnormalities from Standard Conditions

None

# 5 Equipment List

| RF conducted test | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. Date** | **Cal. Due date** |
| Programmable DC Source | Chroma | 62024P-80-60 | SEM011-09 | 2022/07/12 | 2023/07/11 |
| Programmable Temperature & Humidity Chamber | Votsch Industrietechnik GmbH | VT 4002 | SEM002-15 | 2022/07/12 | 2023/07/11 |
| Spectrum Analyzer | Rohde & Schwarz | FSU43 | SEM004-08 | 2022/07/12 | 2023/07/11 |
| Measurement Software | TST | TST PASS V2.0 | N/A | N/A | N/A |
| Attenuator | Huber+Suhner | 6620_SMA-50-1 | SEM021-09 | 2022/07/12 | 2023/07/11 |
| Universal Radio Communication Tester | Rohde & Schwarz | CMW 500 | SEM010-03 | 2022/03/29 | 2023/03/28 |
| Power Sensor | KEYSIGHT | U2021XA | SEM009-15 | 2022/07/12 | 2023/07/11 |

| RE in Chamber | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. Date** | **Cal. Due date** |
| Trilog-Broadband Antenna | Schwarzbeck | VULB9168 | SEM003-33 | 2021/9/25 | 2024/9/24 |
| MXE EMI receiver | Agilent | N9038A | SEM004-05 | 2022/07/12 | 2023/07/11 |
| Pre-amplifier | HP | 8447D | SEM005-02 | 2022/07/12 | 2023/07/11 |
| Spectrum Analyzer | Rohde & Schwarz | 101288 | SEM004-08 | 2022/07/12 | 2023/07/11 |
| Low Noise Amplifier | CLAVIIO | BDLNA-0118-352810 | SEM005-05 | 2022/07/12 | 2023/07/11 |
| Substitution Antenna | Schwarzbeck | VULB9168 | SEM003-18 | 2022/08/07 | 2025/08/06 |
| Signal Generator(9kHz-40GHz) | N5173B | MY53270267 | Agilent | 2022/07/12 | 2023/07/11 |
| Pre-amplifier | HP | 8447D | SEM005-02 | 2022/07/12 | 2023/07/11 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | SEM003-15 | 2021/7/11 | 2024/7/10 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA 9120D | SEM003-32 | 2021/9/26 | 2024/9/25 |
| Double-ridged waveguide horn | ETS-LINDGREN | 3117 | SEM003-34 | 2021/9/25 | 2024/9/24 |
| Spectrum Analyzer | Rohde & Schwarz | 101288 | SEM004-08 | 2022/07/12 | 2023/07/11 |
| Low Noise Amplifier | CLAVIIO | BDLNA-0118-352810 | SEM005-05 | 2022/07/12 | 2023/07/11 |



Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China 518103 t (86–755) 88663988 f (86–755) 26710594 www.sgsgroup.com.cn
中国・深圳・宝安区福永街道凤塘大道鑫龙科技园福永实验室 邮编: 518103 t (86–755) 88663988 f (86–755) 26710594 sgs.china@sgs.com

| | | | | | |
|---|---|---|---|---|---|
| Pre-amplifier | Compliance Directions Systems Inc. | PAP-2640-50 | SEM005-08 | 2022/07/12 | 2023/07/11 |
| Pre-amplifier | Rohde & Schwarz | CH14-H052 | SEM005-17 | 2022/07/12 | 2023/07/11 |
| Substitution Antenna | ETS-Lindgren | 3142C | SEM003-01 | 2020/06/26 | 2023/06/25 |
| Universal Radio Communication Tester | Rohde & Schwarz | CMW 500 | SEM010-03 | 2022/03/29 | 2023/03/28 |

| **General used equipment** | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| Humidity/ Temperature Indicator | Mingle | TH607 | SEM002-22 | 2022/07/12 | 2023/07/11 |
| Humidity/ Temperature Indicator | Mingle | TH607 | SEM002-23 | 2022/07/12 | 2023/07/11 |
| Barometer | DUMAI | DYM3 | SEM002-24 | 2022/07/12 | 2023/07/11 |

# 6 Radio Spectrum Matter Test Results

## 6.1 Effective (Isotropic) Radiated Output Power Data

Test Requirement: §2.1046,§22.913,§24.232,§27.50(a),§27.50(d),§27.50(h)

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: ERP≤ 7W(LTE Band 5)
EIRP≤ 2W(LTE Band 2)
EIRP≤ 250mW/5MHz(LTE Band 40)
EIRP≤ 1W(LTE Band 4)
EIRP≤ 2W(LTE Band 7,38,41)

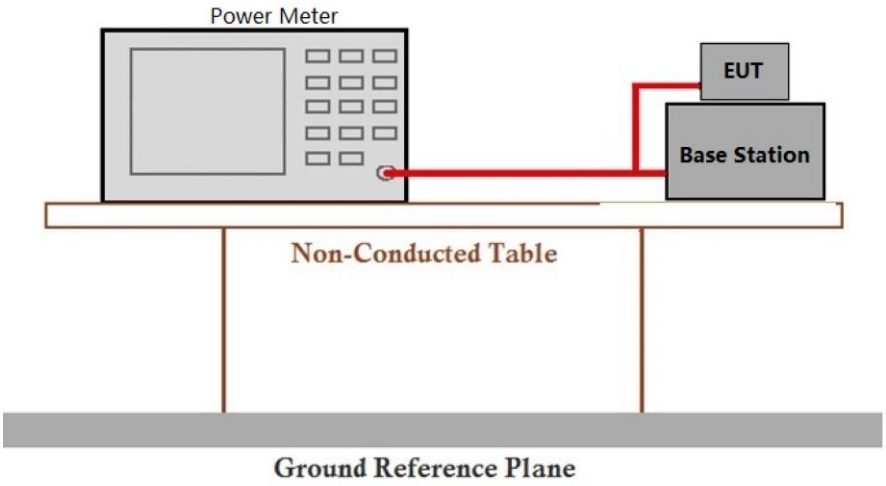
### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar

Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.1.2 Test Setup Diagram




### 6.1.3 Measurement Data

Please refer to Appendix for LTE test data.

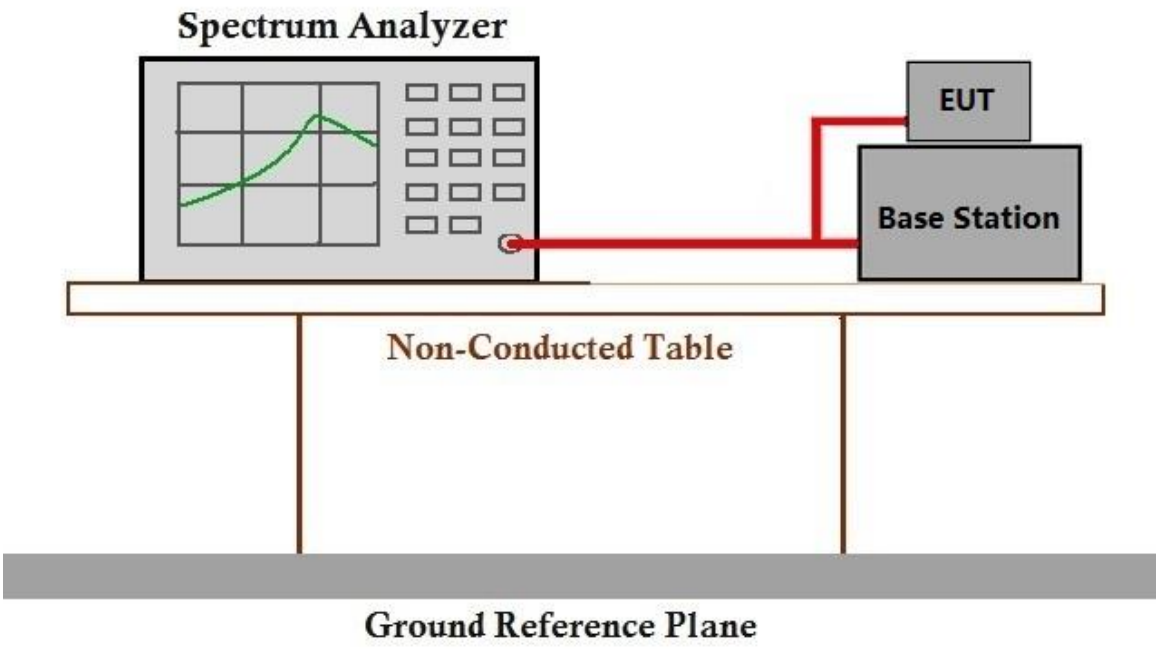
## 6.2 Peak-Average Ratio

Test Requirement: §22.913,§24.232,§27.50(a),§27.50(d)
Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01
Limit: ≤13dB

### 6.2.1 E.U.T. Operation

Operating Environment:
Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar
Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.2.2 Test Setup Diagram




### 6.2.3 Measurement Data

Please refer to Appendix for LTE test data.

## 6.3 Bandwidth

Test Requirement: §2.1049(h)

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: OBW: No limit
EBW: No limit

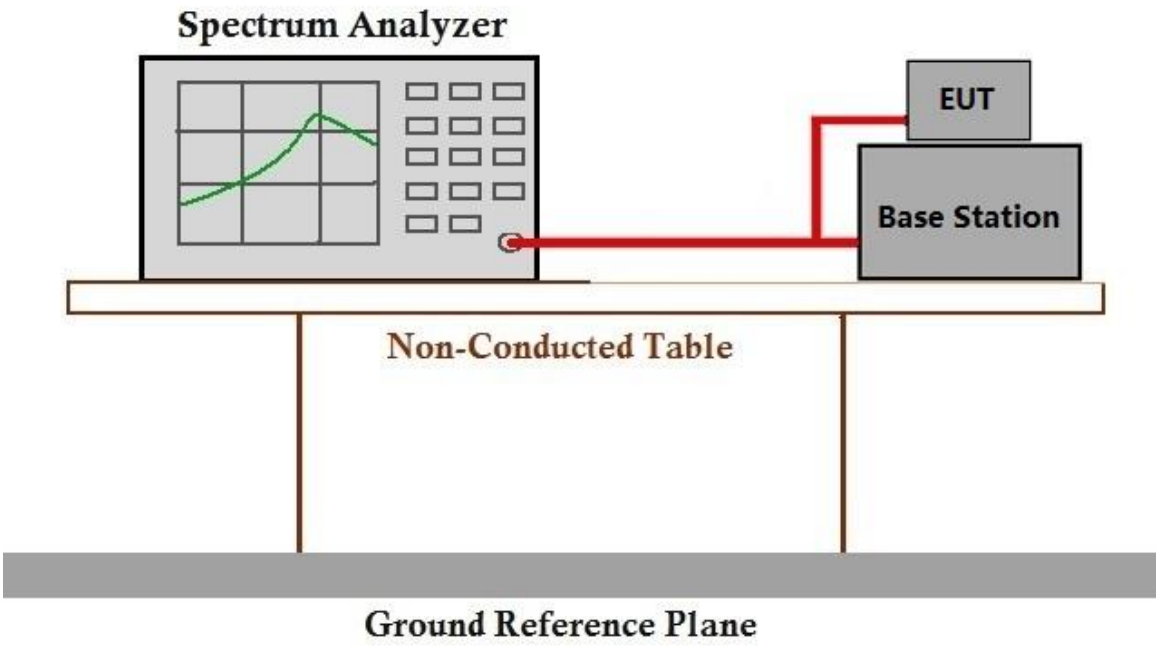
### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar

Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.3.2 Test Setup Diagram




### 6.3.3 Measurement Data

Please refer to Appendix for LTE test data.

## 6.4 Band Edge Compliance

Test Requirement: §2.1051,§22.917,§24.238,§27.50(h),§27.50(m),§27.53(a)

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: ≤ -13dBm (**LTE Band2,4,5**)

For **Band7,38,41**:

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

For **Band40**:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

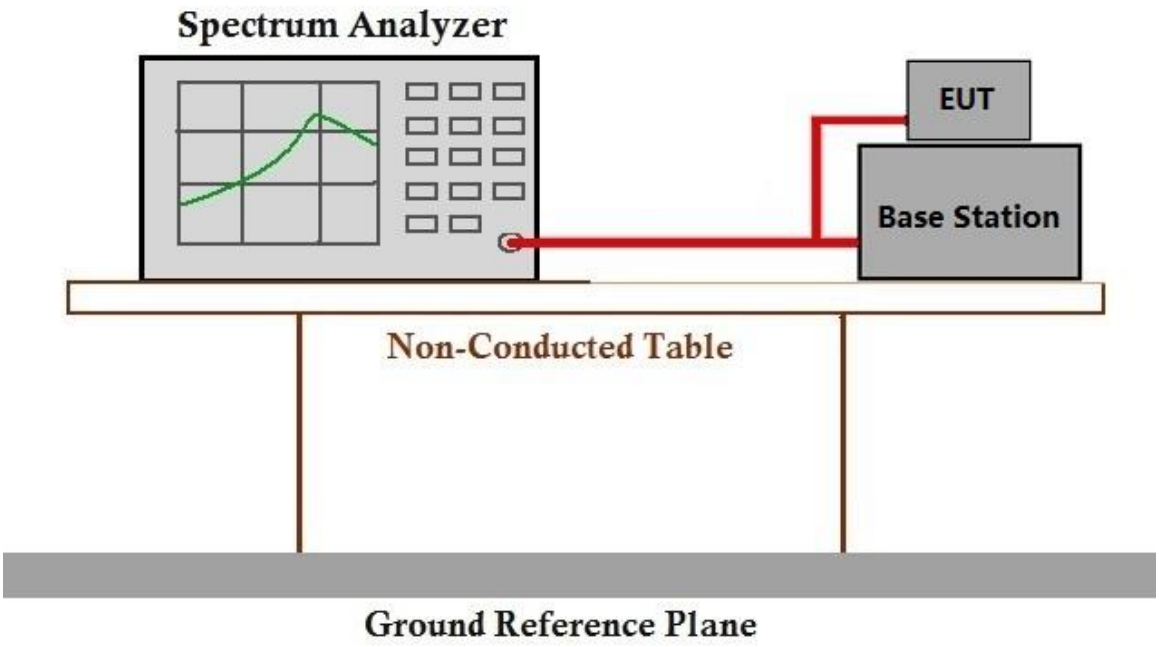
### 6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar

Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.4.2 Test Setup Diagram




### 6.4.3 Measurement Data

Please refer to Appendix for LTE test data.

## 6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051,§22.917,§24.238,§27.50(h),§27.50(m),§27.53(a)

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: ≤ -13dBm (**LTE Band2,4,5**)

For **Band7,38,41**:

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

For **Band40**:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

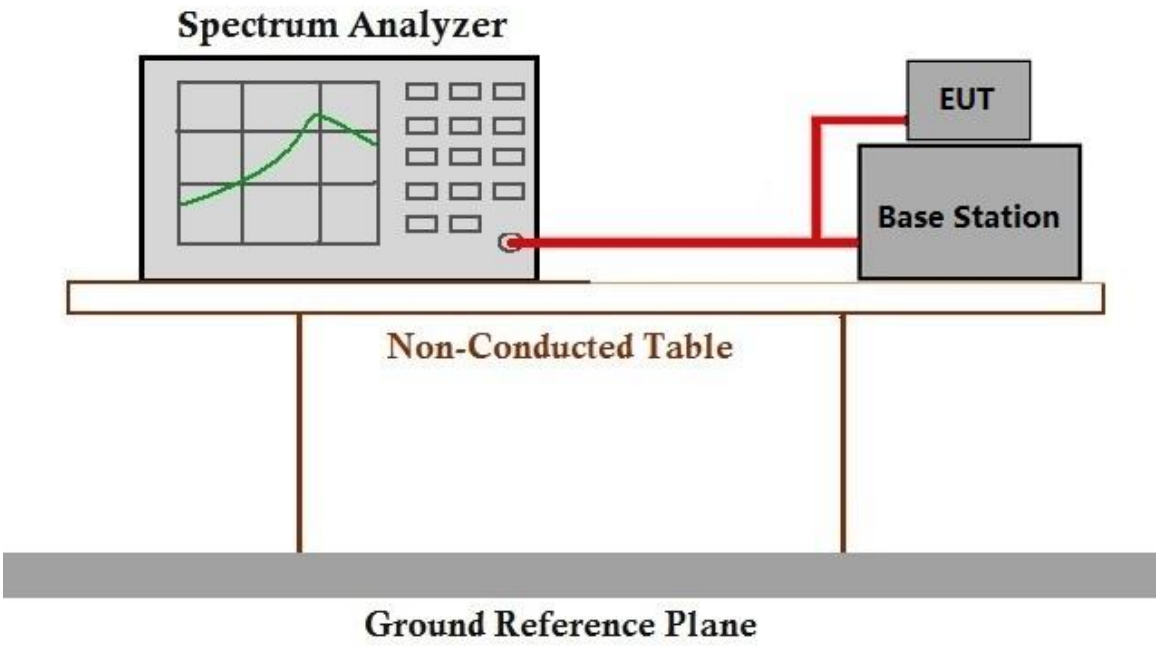
### 6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar

Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.5.2 Test Setup Diagram




### 6.5.3 Measurement Data

Please refer to Appendix for LTE test data.

## 6.6 Field strength of spurious radiation

Test Requirement: §2.1051,§22.917,§24.238,§27.50(h),§27.50(m),§27.53(a)

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: ≤ -13dBm (**LTE Band2,4,5**)

For **Band7,38,41**:

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

For **Band40**:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

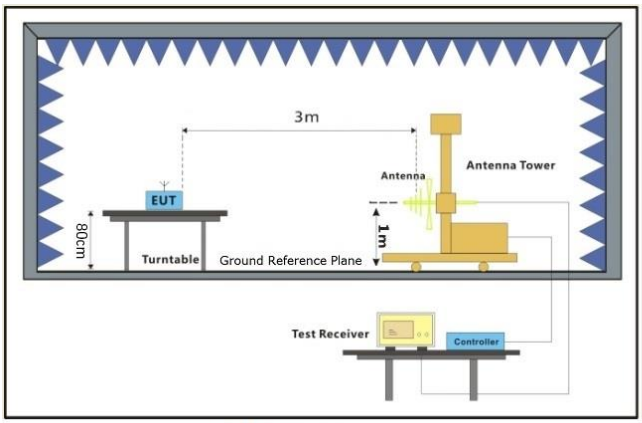
### 6.6.1 E.U.T. Operation

Operating Environment:

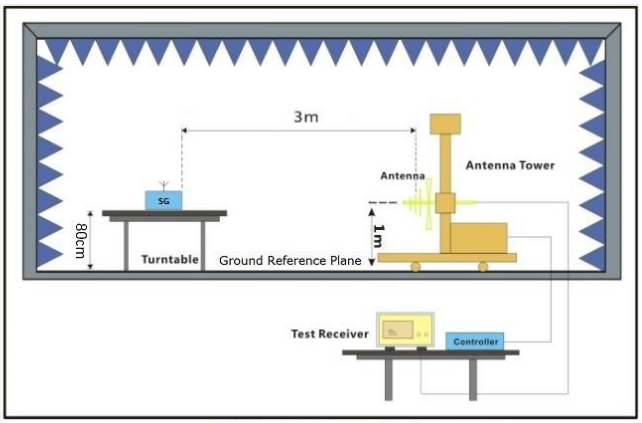
Temperature: 18.5 °C Humidity: 39.5 % RH Atmospheric Pressure: 1020 mbar

Test mode 30: Tx mode, Keep the EUT in transmitting mode.

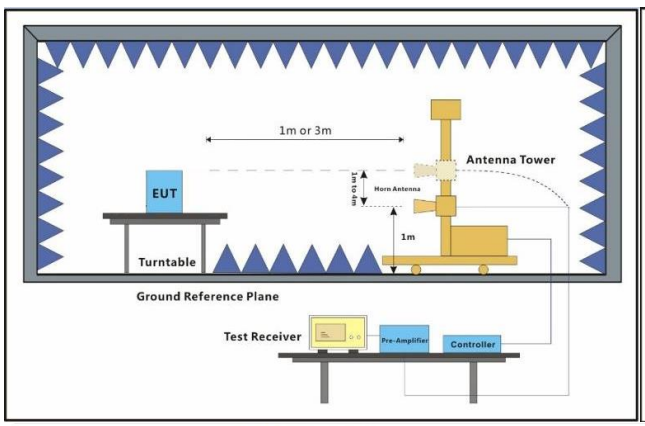
### 6.6.2 Test Setup Diagram



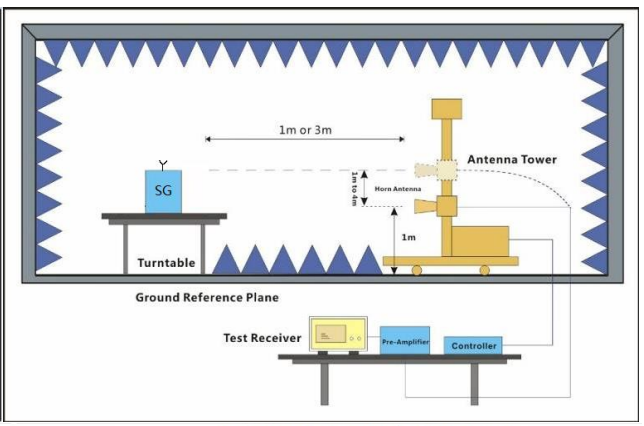

EUT




Substiute Antenna+Signal Generator




EUT




Substiute Antenna+Signal Generator

### 6.6.3 Measurement Procedure and Data

**Test Procedure:**

(1)On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
(2)The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
(3)The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
(4)The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
(5)The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
(6)The transmitter shall than be rotated through 360°in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
(7)The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
(8)The maximum signal level detected by the measuring receiver shall be noted.
(9)The measurement shall be repeated with the test antenna set to horizontal polarization.
(10) Replace the antenna with a proper Antenna (substitution antenna).
(11)The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
(12)The substitution antenna shall be connected to a calibrated signal generator.
(13)If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
(14)The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
(15)The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
(16)The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
(17)The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

| FDD LTE Band2-Low channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3702 | -53.9 | -13 | -40.9 | -56.12 | 6.99 | 9.21 | Horizontal | Pass |
| 5553 | -51.19 | -13 | -38.19 | -53.51 | 8.27 | 10.59 | Horizontal | Pass |
| 7404 | -48.55 | -13 | -35.55 | -52.09 | 8.19 | 11.73 | Horizontal | Pass |
| 3702 | -54.86 | -13 | -41.86 | -57.08 | 6.99 | 9.21 | Vertical | Pass |
| 5553 | -52.18 | -13 | -39.18 | -54.5 | 8.27 | 10.59 | Vertical | Pass |
| 7404 | -49.25 | -13 | -36.25 | -52.79 | 8.19 | 11.73 | Vertical | Pass |

| FDD LTE Band2-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3742 | -55.21 | -13 | -42.21 | -57.43 | 6.99 | 9.21 | Horizontal | Pass |
| 5613 | -53.47 | -13 | -40.47 | -55.79 | 8.27 | 10.59 | Horizontal | Pass |
| 7484 | -49.23 | -13 | -36.23 | -52.77 | 8.19 | 11.73 | Horizontal | Pass |
| 3742 | -54.77 | -13 | -41.77 | -56.99 | 6.99 | 9.21 | Vertical | Pass |
| 5613 | -53.56 | -13 | -40.56 | -55.88 | 8.27 | 10.59 | Vertical | Pass |
| 7484 | -47.79 | -13 | -34.79 | -51.33 | 8.19 | 11.73 | Vertical | Pass |

| FDD LTE Band2-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3782 | -54.8 | -13 | -41.8 | -57.02 | 6.99 | 9.21 | Horizontal | Pass |
| 5673 | -52.81 | -13 | -39.81 | -55.13 | 8.27 | 10.59 | Horizontal | Pass |
| 7564 | -49.04 | -13 | -36.04 | -52.87 | 8.43 | 12.26 | Horizontal | Pass |
| 3782 | -54.3 | -13 | -41.3 | -56.52 | 6.99 | 9.21 | Vertical | Pass |
| 5673 | -52.36 | -13 | -39.36 | -54.68 | 8.27 | 10.59 | Vertical | Pass |
| 7564 | -49.42 | -13 | -36.42 | -53.25 | 8.43 | 12.26 | Vertical | Pass |

| FDD LTE Band4-Low channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3422 | -55.97 | -13 | -42.97 | -58.55 | 5.72 | 8.3 | Horizontal | Pass |
| 5133 | -51.07 | -13 | -38.07 | -53.07 | 8.3 | 10.3 | Horizontal | Pass |
| 6844 | -51.22 | -13 | -38.22 | -54.77 | 7.7 | 11.25 | Horizontal | Pass |
| 3422 | -55.64 | -13 | -42.64 | -58.22 | 5.72 | 8.3 | Vertical | Pass |
| 5133 | -51.75 | -13 | -38.75 | -53.75 | 8.3 | 10.3 | Vertical | Pass |
| 6844 | -49.98 | -13 | -36.98 | -53.53 | 7.7 | 11.25 | Vertical | Pass |

| FDD LTE Band4-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3447 | -43.01 | -13 | -30.01 | -45.59 | 5.72 | 8.3 | Horizontal | Pass |
| 5170.5 | -52.3 | -13 | -39.3 | -54.3 | 8.3 | 10.3 | Horizontal | Pass |
| 6894 | -51.41 | -13 | -38.41 | -54.96 | 7.7 | 11.25 | Horizontal | Pass |
| 3447 | -47.85 | -13 | -34.85 | -50.43 | 5.72 | 8.3 | Vertical | Pass |
| 5170.5 | -52.19 | -13 | -39.19 | -54.19 | 8.3 | 10.3 | Vertical | Pass |
| 6894 | -51.96 | -13 | -38.96 | -55.51 | 7.7 | 11.25 | Vertical | Pass |

| FDD LTE Band4-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 3472 | -41.22 | -13 | -28.22 | -43.8 | 5.72 | 8.3 | Horizontal | Pass |
| 5208 | -52.26 | -13 | -39.26 | -54.26 | 8.3 | 10.3 | Horizontal | Pass |
| 6944 | -50.73 | -13 | -37.73 | -54.28 | 7.7 | 11.25 | Horizontal | Pass |
| 3472 | -44.55 | -13 | -31.55 | -47.13 | 5.72 | 8.3 | Vertical | Pass |
| 5208 | -49.86 | -13 | -36.86 | -51.86 | 8.3 | 10.3 | Vertical | Pass |
| 6944 | -50.95 | -13 | -37.95 | -54.5 | 7.7 | 11.25 | Vertical | Pass |

| FDD LTE Band5-Low channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 1649 | -39.51 | -13 | -26.51 | -43.17 | 3.77 | 7.43 | Horizontal | Pass |
| 2473.5 | -54.85 | -13 | -41.85 | -57.18 | 4.75 | 7.08 | Horizontal | Pass |
| 3298 | -57.46 | -13 | -44.46 | -60.04 | 5.72 | 8.3 | Horizontal | Pass |
| 1649 | -38.38 | -13 | -25.38 | -42.04 | 3.77 | 7.43 | Vertical | Pass |
| 2473.5 | -54.04 | -13 | -41.04 | -56.37 | 4.75 | 7.08 | Vertical | Pass |
| 3298 | -56.52 | -13 | -43.52 | -59.1 | 5.72 | 8.3 | Vertical | Pass |

| FDD LTE Band5-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 1664 | -38.69 | -13 | -25.69 | -42.35 | 3.77 | 7.43 | Horizontal | Pass |
| 2496 | -53.01 | -13 | -40.01 | -55.34 | 4.75 | 7.08 | Horizontal | Pass |
| 3328 | -53.9 | -13 | -40.9 | -56.48 | 5.72 | 8.3 | Horizontal | Pass |
| 1664 | -39.6 | -13 | -26.6 | -43.26 | 3.77 | 7.43 | Vertical | Pass |
| 2496 | -59.22 | -13 | -46.22 | -61.55 | 4.75 | 7.08 | Vertical | Pass |
| 3328 | -56.94 | -13 | -43.94 | -59.52 | 5.72 | 8.3 | Vertical | Pass |

| FDD LTE Band5-High channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 1679 | -41.22 | -13 | -28.22 | -44.88 | 3.77 | 7.43 | Horizontal | Pass |
| 2518.5 | -52.24 | -13 | -39.24 | -54.71 | 5.13 | 7.6 | Horizontal | Pass |
| 3358 | -55.47 | -13 | -42.47 | -58.05 | 5.72 | 8.3 | Horizontal | Pass |
| 1679 | -40.92 | -13 | -27.92 | -44.58 | 3.77 | 7.43 | Vertical | Pass |
| 2518.5 | -59.77 | -13 | -46.77 | -62.24 | 5.13 | 7.6 | Vertical | Pass |
| 3358 | -56.45 | -13 | -43.45 | -59.03 | 5.72 | 8.3 | Vertical | Pass |

| FDD LTE Band7-Low channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5002 | -52.43 | -25 | -27.43 | -54.43 | 8.3 | 10.3 | Horizontal | Pass |
| 7503 | -49.02 | -25 | -24.02 | -52.85 | 8.43 | 12.26 | Horizontal | Pass |
| 10004 | -47.16 | -25 | -22.16 | -49.41 | 11.12 | 13.37 | Horizontal | Pass |
| 5002 | -52.2 | -25 | -27.2 | -54.2 | 8.3 | 10.3 | Vertical | Pass |
| 7503 | -49.04 | -25 | -24.04 | -52.87 | 8.43 | 12.26 | Vertical | Pass |
| 10004 | -45.52 | -25 | -20.52 | -47.77 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band7-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5052 | -52.17 | -25 | -27.17 | -54.17 | 8.3 | 10.3 | Horizontal | Pass |
| 7578 | -49.7 | -25 | -24.7 | -53.53 | 8.43 | 12.26 | Horizontal | Pass |
| 10104 | -45.66 | -25 | -20.66 | -47.91 | 11.12 | 13.37 | Horizontal | Pass |
| 5052 | -50.95 | -25 | -25.95 | -52.95 | 8.3 | 10.3 | Vertical | Pass |
| 7578 | -48.86 | -25 | -23.86 | -52.69 | 8.43 | 12.26 | Vertical | Pass |
| 10104 | -46 | -25 | -21 | -48.25 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band7-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5102 | -51.21 | -25 | -26.21 | -53.21 | 8.3 | 10.3 | Horizontal | Pass |
| 7653 | -49.99 | -25 | -24.99 | -53.82 | 8.43 | 12.26 | Horizontal | Pass |
| 10204 | -46.71 | -25 | -21.71 | -48.96 | 11.12 | 13.37 | Horizontal | Pass |
| 5102 | -52.38 | -25 | -27.38 | -54.38 | 8.3 | 10.3 | Vertical | Pass |
| 7653 | -50.1 | -25 | -25.1 | -53.93 | 8.43 | 12.26 | Vertical | Pass |
| 10204 | -47.4 | -25 | -22.4 | -49.65 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band38-Low channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5142 | -52.57 | -25 | -27.57 | -54.57 | 8.3 | 10.3 | Horizontal | Pass |
| 7713 | -49 | -25 | -24 | -52.83 | 8.43 | 12.26 | Horizontal | Pass |
| 10284 | -47.22 | -25 | -22.22 | -49.47 | 11.12 | 13.37 | Horizontal | Pass |
| 5142 | -52.02 | -25 | -27.02 | -54.02 | 8.3 | 10.3 | Vertical | Pass |
| 7713 | -49.83 | -25 | -24.83 | -53.66 | 8.43 | 12.26 | Vertical | Pass |
| 10284 | -47.32 | -25 | -22.32 | -49.57 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band38-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5172 | -52.58 | -25 | -27.58 | -54.58 | 8.3 | 10.3 | Horizontal | Pass |
| 7758 | -50.12 | -25 | -25.12 | -53.95 | 8.43 | 12.26 | Horizontal | Pass |
| 10344 | -47.28 | -25 | -22.28 | -49.53 | 11.12 | 13.37 | Horizontal | Pass |
| 5172 | -52.92 | -25 | -27.92 | -54.92 | 8.3 | 10.3 | Vertical | Pass |
| 7758 | -50.44 | -25 | -25.44 | -54.27 | 8.43 | 12.26 | Vertical | Pass |
| 10344 | -46.37 | -25 | -21.37 | -48.62 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band38-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5202 | -52.35 | -25 | -27.35 | -54.35 | 8.3 | 10.3 | Horizontal | Pass |
| 7803 | -49.8 | -25 | -24.8 | -53.63 | 8.43 | 12.26 | Horizontal | Pass |
| 10404 | -46.85 | -25 | -21.85 | -49.1 | 11.12 | 13.37 | Horizontal | Pass |
| 5202 | -52.39 | -25 | -27.39 | -54.39 | 8.3 | 10.3 | Vertical | Pass |
| 7803 | -50.44 | -25 | -25.44 | -54.27 | 8.43 | 12.26 | Vertical | Pass |
| 10404 | -46.94 | -25 | -21.94 | -49.19 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band40a-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 4611 | -53.85 | -40 | -13.85 | -56.44 | 7.47 | 10.06 | Horizontal | Pass |
| 6916.5 | -50.75 | -40 | -10.75 | -54.3 | 7.7 | 11.25 | Horizontal | Pass |
| 9222 | -46.98 | -40 | -6.98 | -49.69 | 10.75 | 13.46 | Horizontal | Pass |
| 4611 | -53.95 | -40 | -13.95 | -56.54 | 7.47 | 10.06 | Vertical | Pass |
| 6916.5 | -48.99 | -40 | -8.99 | -52.54 | 7.7 | 11.25 | Vertical | Pass |
| 9222 | -48.06 | -40 | -8.06 | -50.77 | 10.75 | 13.46 | Vertical | Pass |

| FDD LTE Band40b-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 4701 | -52.8 | -40 | -12.8 | -55.39 | 7.47 | 10.06 | Horizontal | Pass |
| 7051.5 | -48.08 | -40 | -8.08 | -51.62 | 8.19 | 11.73 | Horizontal | Pass |
| 9402 | -46.49 | -40 | -6.49 | -49.2 | 10.75 | 13.46 | Horizontal | Pass |
| 4701 | -51.75 | -40 | -11.75 | -54.34 | 7.47 | 10.06 | Vertical | Pass |
| 7051.5 | -48.46 | -40 | -8.46 | -52 | 8.19 | 11.73 | Vertical | Pass |
| 9402 | -46.09 | -40 | -6.09 | -48.8 | 10.75 | 13.46 | Vertical | Pass |

| FDD LTE Band41-Low channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5012 | -52.38 | -25 | -27.38 | -54.38 | 8.3 | 10.3 | Horizontal | Pass |
| 7518 | -49.74 | -25 | -24.74 | -53.57 | 8.43 | 12.26 | Horizontal | Pass |
| 10024 | -46.57 | -25 | -21.57 | -48.82 | 11.12 | 13.37 | Horizontal | Pass |
| 5012 | -52.61 | -25 | -27.61 | -54.61 | 8.3 | 10.3 | Vertical | Pass |
| 7518 | -48.85 | -25 | -23.85 | -52.68 | 8.43 | 12.26 | Vertical | Pass |
| 10024 | -46.4 | -25 | -21.4 | -48.65 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band41-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5186 | -52.19 | -25 | -27.19 | -54.19 | 8.3 | 10.3 | Horizontal | Pass |
| 7779 | -49.99 | -25 | -24.99 | -53.82 | 8.43 | 12.26 | Horizontal | Pass |
| 10372 | -46.87 | -25 | -21.87 | -49.12 | 11.12 | 13.37 | Horizontal | Pass |
| 5186 | -52.91 | -25 | -27.91 | -54.91 | 8.3 | 10.3 | Vertical | Pass |
| 7779 | -50.01 | -25 | -25.01 | -53.84 | 8.43 | 12.26 | Vertical | Pass |
| 10372 | -47.62 | -25 | -22.62 | -49.87 | 11.12 | 13.37 | Vertical | Pass |

| FDD LTE Band41-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB0 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | EIRP (dBm) | Limit(dBm) | Over Limit (dB) | S.G. Power (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Polarization (H/V) | Result |
| 5360 | -52.7 | -25 | -27.7 | -54.7 | 8.3 | 10.3 | Horizontal | Pass |
| 8040 | -47.07 | -25 | -22.07 | -50.32 | 9.43 | 12.68 | Horizontal | Pass |
| 10720 | -45.46 | -25 | -20.46 | -47.88 | 11.06 | 13.48 | Horizontal | Pass |
| 5360 | -51.45 | -25 | -26.45 | -53.45 | 8.3 | 10.3 | Vertical | Pass |
| 8040 | -48.28 | -25 | -23.28 | -51.53 | 9.43 | 12.68 | Vertical | Pass |
| 10720 | -45.76 | -25 | -20.76 | -48.18 | 11.06 | 13.48 | Vertical | Pass |

Note: All modes have been tested and we found QPSK test mode has the worst test result. Only record the worst test result.

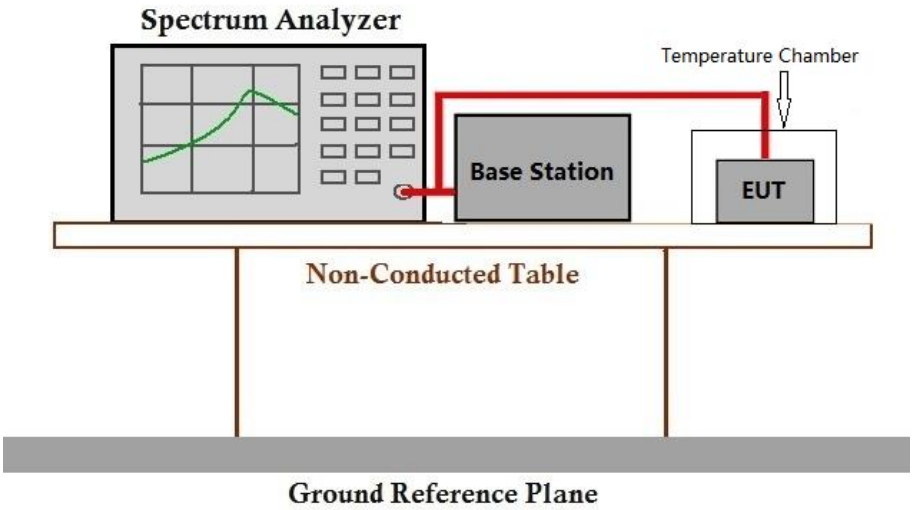
## 6.7 Frequency stability

Test Requirement: §2.1055,§22.355,§24.235,§27.54
Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01
Limit: ≤ ±2.5ppm.

### 6.7.1 E.U.T. Operation

Operating Environment:
Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar
Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.7.2 Test Setup Diagram




### 6.7.3 Measurement Data

Please refer to Appendix for LTE test data.

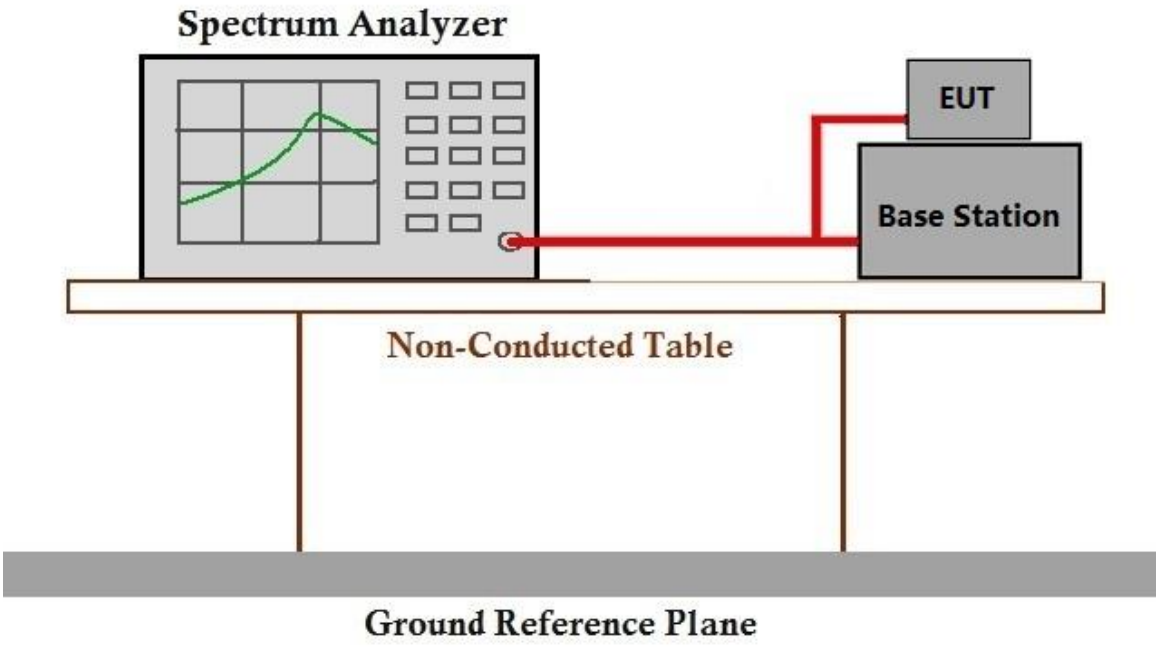
## 6.8 Modulation Characteristics

Test Requirement: §2.1047
Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01
Limit: Digital modulation

### 6.8.1 E.U.T. Operation

Operating Environment:
Temperature: 21.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1020 mbar
Test mode 30: Tx mode, Keep the EUT in transmitting mode.

### 6.8.2 Test Setup Diagram




### 6.8.3 Measurement Data

Pass, it's a digital modulation device.

# 7 Test Setup Photo

Refer to Appendix - Test Setup Photo for FYCR2212000507AT

# 8 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for FYCR2212000507AT

- End of the Report -