

# TEST REPORT

**Application No.:** GZCR2202000224AT  
**Applicant:** Binatone Electronics International Ltd.  
**Address of Applicant:** 25/F, Guangdong Investment Tower, 148 Connaught Road Central, Sheung Wan, Hong Kong.  
**Manufacturer:** Binatone Telecom Plc.  
**Address of Manufacturer:** 1 Apsley Way London NW2 7HF, United Kingdom  
**Factory:** Heyuan Yongyida Technology Co., Ltd  
**Address of Factory:** Xinyongyi Science and Technology Park, No. 9, Gaoxin 3rd Road, High-tech Zone, Heyuan City, Guangdong, China

**Equipment Under Test (EUT):**  
**EUT Name:** Kids Smart Watch  
**Model No.:** MIMO WATCH  
**Trade mark:**

**Standard(s) :** 47 CFR Part 2  
47 CFR Part 22 subpart H  
47 CFR Part 24 subpart E  
47 CFR Part 27 subpart C  
47 CFR Part 90 subpart S

**Date of Receipt:** 2022-02-14  
**Date of Test:** 2022-02-16 to 2022-04-23  
**Date of Issue:** 2022-04-25

|                     |             |
|---------------------|-------------|
| <b>Test Result:</b> | <b>Pass</b> |
|---------------------|-------------|

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

Kobe Jian  
EMC Laboratory Manager



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| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2022-04-25 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                         |  |   |  |
|-------------------------|--|---|--|
| Authorized for issue by |  |   |  |
|                         |  |   |  |
|                         |  | <hr/> <b>Curry Wu/Project Engineer</b>  |  |
|                         |  |  |  |
|                         |  | <hr/> <b>Ricky Liu/Reviewer</b>   |  |



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## 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(b)<br>§27.50(c)<br>§27.50(d)<br>§27.50(h)<br>§90.635 | ERP≤ 7W(LTE Band 26b)<br>EIRP≤ 2W(LTE Band 2)<br>ERP≤ 3W(LTE Band 13)<br>ERP≤ 3W(LTE Band 12,17)<br>EIRP≤ 1W(LTE Band 4,66)<br>EIRP≤ 2W(LTE Band 7,41)<br>ERP≤ 100W(LTE Band 26a)  | PASS    |
| Peak-Average Ratio                               | §22.913<br>§24.232<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(c)<br>§27.50(g)<br>§27.50(h)<br>§27.50(m)<br>§90.691 | ≤ -13dBm (LTE Band26b)<br>≤ -13dBm (LTE Band2)<br>Refer to clause 6.4 for LTE Band13<br>≤ -13dBm (LTE Band12,17)<br>≤ -13dBm (LTE Band4,66)<br>Refer to clause 6.4 for LTE Band7,41<br>Refer to clause 6.4 for LTE Band26a | PASS    |
| Spurious emissions at antenna terminals          | §2.1051<br>§22.917<br>§24.238<br>§27.50(c)<br>§27.50(g)<br>§27.50(h)<br>§27.50(m)<br>§90.691 | ≤ -13dBm (LTE Band26b)<br>≤ -13dBm (LTE Band2)<br>Refer to clause 6.5 for LTE Band13<br>≤ -13dBm (LTE Band12,17)<br>≤ -13dBm (LTE Band4,66)<br>Refer to clause 6.5 for LTE Band7,41<br>Refer to clause 6.5 for LTE Band26a | PASS    |
| Field strength of spurious radiation             | §2.1051<br>§22.917<br>§24.238<br>§27.50(c)<br>§27.50(g)<br>§27.50(h)<br>§27.50(m)<br>§90.691 | ≤ -13dBm (LTE Band26b)<br>≤ -13dBm (LTE Band2)<br>Refer to clause 6.6 for LTE Band13<br>≤ -13dBm (LTE Band12,17)<br>≤ -13dBm (LTE Band4,66)<br>Refer to clause 6.6 for LTE Band7,41<br>Refer to clause 6.6 for LTE Band26a | PASS    |
| Frequency stability                              | §2.1055<br>§22.355<br>§24.235<br>§27.54<br>§90.213   | ≤ ±2.5ppm.   | PASS    |



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**Note:**

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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## 4 General Information

### 4.1 Details of E.U.T.

|                               |  |
|-------------------------------|--|
| Power supply:                 | DC3.8V by li-ion battery(620mAh)<br>Recharged by 5V/1A from wireless charger |
| Cable(s):                     | USB type C cable: 1m shielded cable without ferrite core                     |
| Sample Type:                  | Portable production  |
| LTE Operation Frequency Band: | LTE FDD Band 2,4,7,12,13,17,26,41,66   |
| Modulation Type:              | QPSK, 16QAM  |
| LTE Power Class:              | Level 3  |
| Antenna Type:                 | PIFA Antenna   |
| Antenna Gain:                 | 0.3dBi   |
| Extreme temp. Tolerance:      | -30°C to +50°C   |
| Extreme vol. Limits:          | 3.5VDC to 4.35VDC (nominal: 3.8VDC)  |

### 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 7 | 5                       | 2502.5     | 2535.0     | 2567.5   |
|                | 10                      | 2505.0     | 2535.0     | 2565.0   |



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|                   |                                |                   |                   |                 |
|-------------------|--------------------------------|-------------------|-------------------|-----------------|
|                   | 15                             | 2507.5            | 2535.0            | 2562.5          |
|                   | 20                             | 2510.0            | 2535.0            | 2560.0          |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD Band 12   | 1.4                            | 699.7             | 707.5             | 715.3           |
|                   | 3                              | 700.5             | 707.5             | 714.5           |
|                   | 5                              | 701.5             | 707.5             | 713.5           |
|                   | 10                             | 704.0             | 707.5             | 711.0           |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD Band 13   | 5                              | 779.5             | 782.0             | 784.5           |
|                   | 10                             | /                 | 782.0             | /               |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD Band 17   | 5                              | 706.5             | 710.0             | 713.5           |
|                   | 10                             | 709.0             | 710.0             | 711.0           |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD Band 26a  | 1.4                            | 814.7             | 819.0             | 823.3           |
|                   | 3                              | 815.5             | 819.0             | 822.5           |
|                   | 5                              | 816.5             | 819.0             | 821.5           |
|                   | 10                             | /                 | 819.0             | /               |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD Band 26b  | 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           |
|                   | 15                             | 831.5             | 836.5             | 841.5           |
| <b>Test mode:</b> | <b>Nominal Bandwidth (MHz)</b> | <b>RF Channel</b> |                   |                 |
|                   |                                | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                   |                                | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |



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|                                  |  |                   |                   |                 |
|----------------------------------|--|-------------------|-------------------|-----------------|
| LTE FDD<br>Band 26<br>cross rule | 15                                     | /                 | 821.5             | /               |
| <b>Test mode:</b>                | <b>Nominal<br/>Bandwidth<br/>(MHz)</b> | <b>RF Channel</b> |                   |                 |
|                                  |  | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                                  |  | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD<br>Band 41               | 5                                      | 2547.5            | 2600.0            | 2652.5          |
|                                  | 10                                     | 2550.5            | 2600.0            | 2650.0          |
|                                  | 15                                     | 2552.5            | 2600.0            | 2647.5          |
|                                  | 20                                     | 2555.0            | 2600.0            | 2645.0          |
| <b>Test mode:</b>                | <b>Nominal<br/>Bandwidth<br/>(MHz)</b> | <b>RF Channel</b> |                   |                 |
|                                  |  | <b>Low (L)</b>    | <b>Middle (M)</b> | <b>High (H)</b> |
|                                  |  | <b>MHz</b>        | <b>MHz</b>        | <b>MHz</b>      |
| LTE FDD<br>Band 66               | 1.4                                    | 1710.7            | 1745.0            | 1779.3          |
|                                  | 3                                      | 1711.5            | 1745.0            | 1778.5          |
|                                  | 5                                      | 1712.5            | 1745.0            | 1777.5          |
|                                  | 10                                     | 1715.0            | 1745.0            | 1775.0          |
|                                  | 15                                     | 1717.5            | 1745.0            | 1772.5          |
|                                  | 20                                     | 1720.0            | 1745.0            | 1770.0          |



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**4.3 Test Environment**

| Environment Parameter | Selected Values During Tests |        |
|-----------------------|------------------------------|--------|
| Relative Humidity     | 52%                          |        |
| Atmospheric Pressure: | 1015Pa                       |        |
| Temperature:          | TL                           | -30°C  |
|                       | TN                           | +20°C  |
|                       | TH                           | +50°C  |
| Voltage:              | VL                           | 3.5 V  |
|                       | VN                           | 3.8 V  |
|                       | VH                           | 4.35 V |

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**

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--------------|-----------|------------|
| /           | /            | /         | /          |

**4.5 Measurement Uncertainty**

| No. | Item                            | Measurement Uncertainty                 |
|-----|---------------------------------|---|
| 1   | Radio Frequency                 | 7.25 x 10 <sup>-8</sup>                 |
| 2   | Duty cycle                      | 0.37%                                   |
| 3   | Occupied Bandwidth              | 3%                                      |
| 4   | RF conducted power              | 0.75dB                                  |
| 5   | RF power density                | 2.84dB                                  |
| 6   | Conducted Spurious emissions    | 0.75dB                                  |
| 7   | RF Radiated power               | ±5.06dB (3m); ±4.46dB (10m)             |
|     |                                 | ±5.08dB (1GHz-6GHz);±5.14dB(above 6GHz) |
| 8   | Radiated Spurious emission test | ±5.06dB (3m); ±4.46dB (10m)             |
|     |                                 | ±5.08dB (1GHz-6GHz);±5.14dB(above 6GHz) |
| 9   | Temperature test                | 1°C                                     |
| 10  | Humidity test                   | 3%                                      |
| 11  | Supply voltages                 | 1.5%                                    |
| 12  | Time                            | 3%                                      |



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#### 4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
Guangzhou, China 510663

Tel: +86 20 82155555

Fax: +86 20 82075059

No tests were sub-contracted.



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#### 4.7 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

#### 4.8 Deviation from Standards

None

#### 4.9 Abnormalities from Standard Conditions

None



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## 5 Equipment List

| RF conducted test                           |                      |              |               |            |               |
|---|----------------------|--------------|---------------|------------|---------------|
| Test Equipment                              | Manufacturer         | Model No.    | Inventory No. | Cal. Date  | Cal. Due date |
| EXA Signal Analyzer(10Hz-44GHz)             | Agilent Technologies | N9010A       | EMC2138       | 2021-09-16 | 2022-09-15    |
| 6dB Attenuator                              | HP                   | 8491A        | EMC2062       | 2020-04-15 | 2022-04-14    |
|   |                      |              |               | 2022-04-14 | 2024-04-13    |
| Measurement Software                        | TST                  | V2.0         | GZE100-78     | N/A        | N/A           |
| MI CABLE                                    | SGS-EMC              | 0.8M         | EMC2136       | 2021-11-01 | 2022-10-31    |
| Attenuator                                  | Weinschel Associates | WA41         | SEM021-09     | N/A        | N/A           |
| Wideband Radio Communication Tester(CMW500) | R&S                  | CMW500       | EMC2215       | 2021-09-19 | 2022-09-18    |
| Power Meter (U2021XA_Ch2)                   | Agilent Technologies | U2021XA_Ch 2 | SEM009-02     | 2021-05-19 | 2022-05-18    |
| Temperature Chamber                         | GZ GongWen Co.Ltd.   | GDJW-100     | EMC0039       | 2021-07-04 | 2022-07-03    |

| RE in Chamber(below 1GHz)                   |                             |               |               |            |               |
|---|-----------------------------|---------------|---------------|------------|---------------|
| Test Equipment                              | Manufacturer                | Model No.     | Inventory No. | Cal. Date  | Cal. Due date |
| Chamber cable                               | HangTianXing                | N/A           | EMC0542       | 2020-09-09 | 2022-09-08    |
| Trilog Broadband Antenna(25MHz-1GHz)-Lab    | SCHWARZBECK MESS-ELEKTRONIK | VULB 9168     | SEM003-18     | 2019-02-22 | 2022-02-21    |
|   |                             |               |               | 2022-02-21 | 2025-02-20    |
| Amplifier(9kHz-1.3GHz)                      | HP                          | 8447F         | EMC2065       | 2021-05-19 | 2022-05-18    |
| 10m Semi-Anechoic Chamber                   | ETS                         | N/A           | EMC0530       | 2019-10-20 | 2022-10-19    |
| Test Software E3                            | Audix                       | Ver.6.120110a | GZE100-61     | N/A        | N/A           |
| EMI Test Receiver(1Hz-8GHz)                 | Rohde & Schwarz             | ESW8          | EMC2220       | 2021-05-26 | 2022-05-25    |
| Chamber cable                               | HangTianXing                | N/A           | EMC0542       | 2021-09-08 | 2022-09-07    |
| Trilog Broadband Antenna(25MHz-1GHz)        | SCHWARZBECK                 | VULB 9160     | EMC2025       | 2020-09-24 | 2023-09-23    |
| Signal Generator (10MHz-20GHz)              | Rohde & Schwarz             | SMR20         | EMC0516       | 2022-01-10 | 2023-01-09    |
| Wideband Radio Communication Tester(CMW500) | R&S                         | CMW500        | EMC2215       | 2021-09-19 | 2022-09-18    |



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| <b>RE in Chamber(above 1GHz)</b>            |                                    |               |               |            |               |
|---|------------------------------------|---------------|---------------|------------|---------------|
| Test Equipment                              | Manufacturer                       | Model No.     | Inventory No. | Cal. Date  | Cal. Due date |
| Chamber cable(Above 1GHz)                   | Scoflex                            | KMKM-8.0m     | EMC0545       | 2021-09-08 | 2022-09-07    |
| Horn Antenna(1GHz-18GHz)                    | SCHWARZBECK<br>MESS-<br>ELEKTRONIK | BBHA 9120D    | EMC2026       | 2019-09-25 | 2022-09-24    |
| 1GHz-26.5 GHz Pre-Amplifier                 | Agilent                            | 8449B         | EMC0521       | 2022-01-07 | 2023-01-06    |
| 966 Anechoic Chamber                        | C.R.T                              | 9m x 6m x 6m  | EMC2142       | 2020-12-20 | 2023-12-19    |
| EXA Signal Analyzer(10Hz-44GHz)             | Keysight                           | N9010A        | EMC2138       | 2021-09-16 | 2022-09-15    |
| Test Software E3                            | Audix                              | Ver.6.120110a | GZE100-61     | N/A        | N/A           |
| Horn Antenna(14-40GHz)                      | SCHWARZBECK                        | BBHA 9170     | EMC2041       | 2020-06-28 | 2023-06-27    |
| Microwave Broadband Preamplifier (18-40GHz) | SCHWARZBECK                        | BBV 9721      | EMC2172       | 2021-09-08 | 2022-09-07    |
| Wideband Radio Communication Tester(CMW500) | R&S                                | CMW500        | EMC2215       | 2021-09-19 | 2022-09-18    |
| Substitution Antenna                        | SCHWARZBECK<br>MESS-<br>ELEKTRONIK | BBHA 9120D    | EMC2026       | 2019-09-25 | 2022-09-24    |
| Signal Generator (10MHz-20GHz)              | Rohde & Schwarz                    | SMR20         | EMC0516       | 2022-01-10 | 2023-01-09    |

| <b>General used equipment</b> |              |          |              |            |              |
|-------------------------------|--------------|----------|--------------|------------|--------------|
| Equipment                     | Manufacturer | Model No | Inventory No | Cal Date   | Cal Due Date |
| DMM                           | Fluke        | 73       | EMC0006      | 2021-07-05 | 2022-07-04   |
| DMM                           | Fluke        | 73       | EMC0007      | 2021-07-05 | 2022-07-04   |



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## 6 Radio Spectrum Matter Test Results

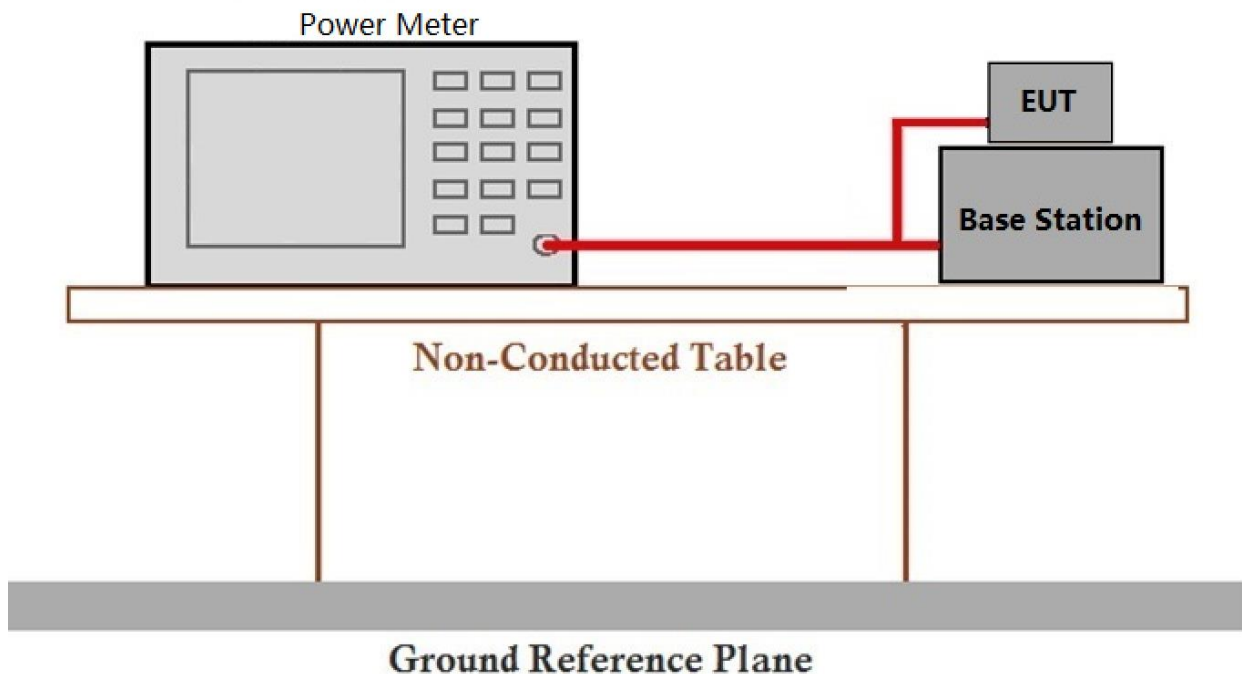
### 6.1 Effective (Isotropic) Radiated Output Power Data

Test Requirement: §2.1046, §22.913, §24.232, §27.50(b), §27.50(c), §27.50(d), §27.50(h), §90.635  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit:  
 ERP ≤ 7W (LTE Band 26b)  
 EIRP ≤ 2W (LTE Band 2)  
 ERP ≤ 3W (LTE Band 13)  
 ERP ≤ 3W (LTE Band 12, 17)  
 EIRP ≤ 1W (LTE Band 4, 66)  
 EIRP ≤ 2W (LTE Band 7, 41)  
 ERP ≤ 100W (LTE Band 26a)

#### 6.1.1 E.U.T. Operation

Operating Environment:  
 Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: 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.



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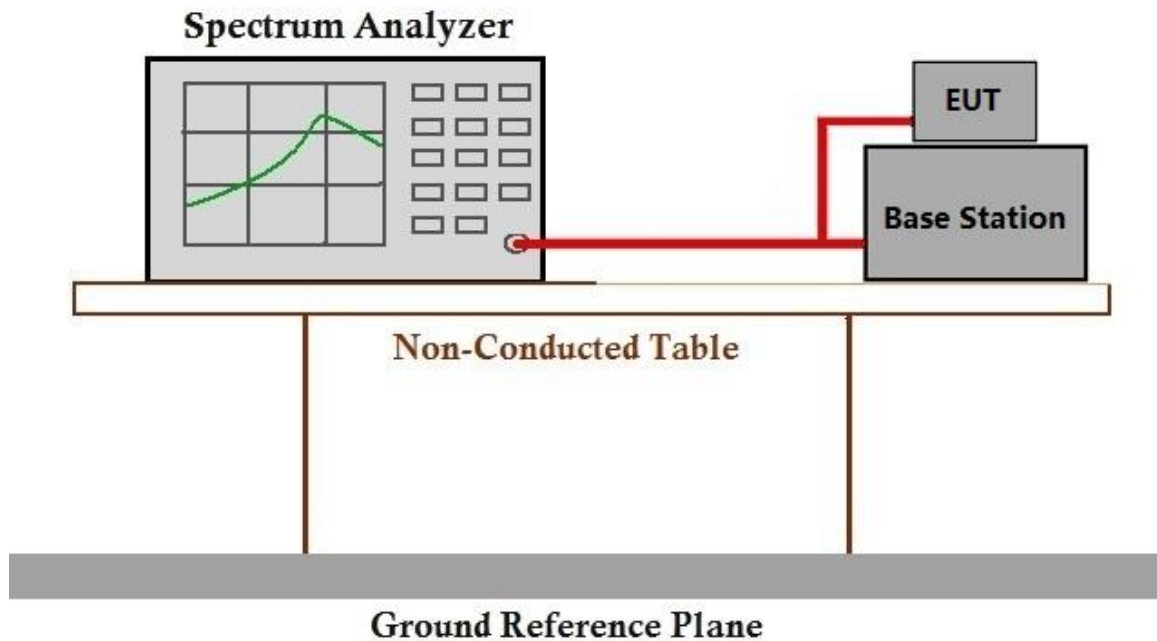
**6.2 Peak-Average Ratio**

Test Requirement: §22.913, §24.232, §27.50(d)  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: ≤13dB

**6.2.1 E.U.T. Operation**

Operating Environment:  
 Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: 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.





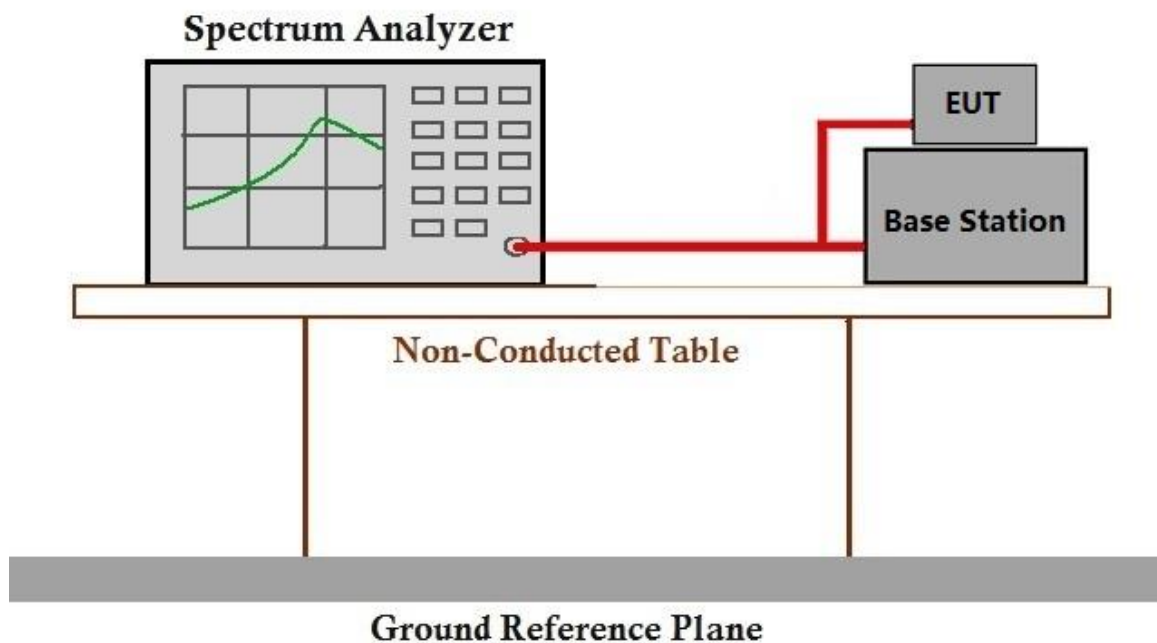
### 6.3 Bandwidth

Test Requirement: §2.1049(h)  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: OBW: No limit  
 EBW: No limit

#### 6.3.1 E.U.T. Operation

Operating Environment:  
 Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: 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.



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**6.4 Band Edge Compliance**

Test Requirement: §2.1051, §22.917§24.238,§27.50(c),§27.50(g),§27.50(h),§27.50(m),§90.691  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: ≤ -13dBm (LTE Band26b)  
 ≤ -13dBm (LTE Band2)

For band 13:

- (1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
- (2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

≤ -13dBm (LTE Band12,17)  
 ≤ -13dBm (LTE Band4,66)

For Band7,41:

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 than 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 Band26a:

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 Log10(f/6.1) decibels or 50 + 10 Log10(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.

**6.4.1 E.U.T. Operation**

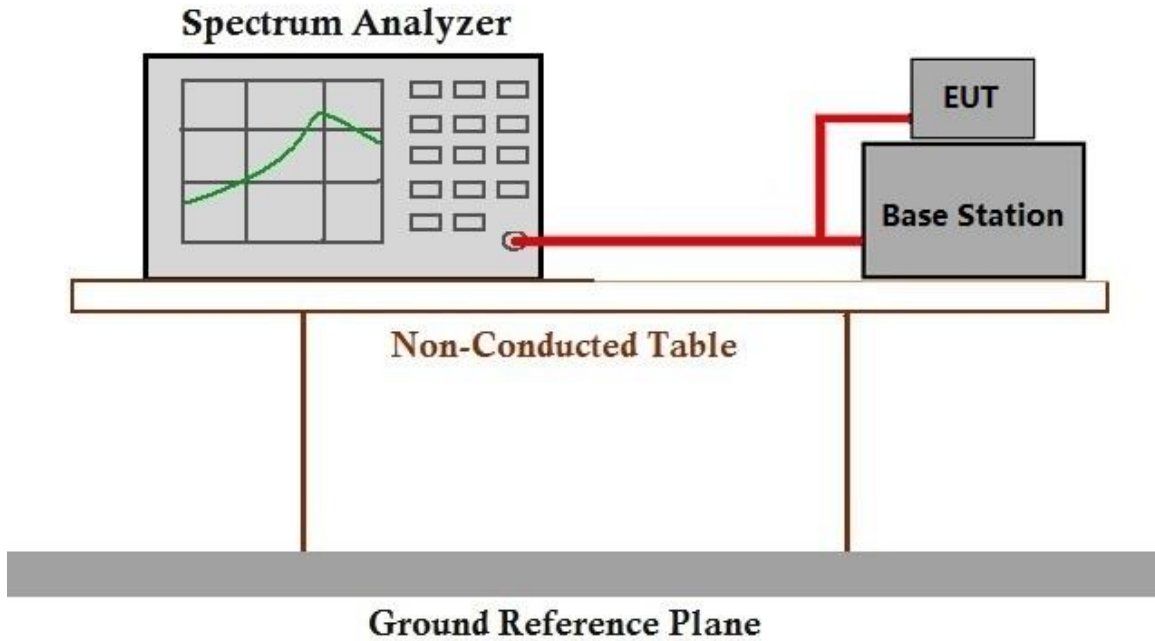
Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: Tx mode, Keep the EUT in transmitting mode.



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### 6.4.2 Test Setup Diagram



### 6.4.3 Measurement Data

Please refer to Appendix for LTE test data.



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**6.5 Spurious emissions at antenna terminals**

Test Requirement: §2.1051, §22.917§24.238,§27.50(c),§27.50(g),§27.50(h),§27.50(m),§90.691  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: ≤ -13dBm (LTE Band26b)  
 ≤ -13dBm (LTE Band2)

For band 13:

- (1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
- (2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

≤ -13dBm (LTE Band12,17)  
 ≤ -13dBm (LTE Band4,66)

For Band7,41:

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 than 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 Band26a:

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 Log10(f/6.1) decibels or 50 + 10 Log10(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.

**6.5.1 E.U.T. Operation**

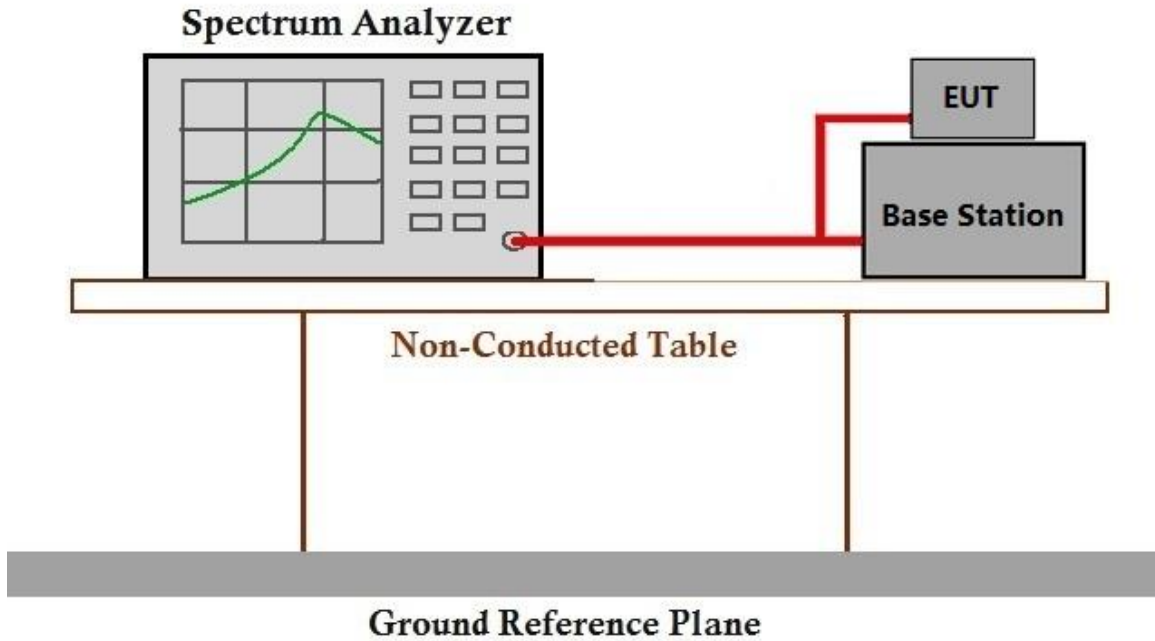
Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: Tx mode, Keep the EUT in transmitting mode.



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### 6.5.2 Test Setup Diagram



### 6.5.3 Measurement Data

Please refer to Appendix for LTE test data.



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**6.6 Field strength of spurious radiation**

Test Requirement: §2.1051, §22.917§24.238,§27.50(c),§27.50(g),§27.50(h),§27.50(m),§90.691

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: ≤ -13dBm (LTE Band26b)

≤ -13dBm (LTE Band2)

For band 13:

(1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

≤ -13dBm (LTE Band12,17)

≤ -13dBm (LTE Band4,66)

For Band7,41:

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 than 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 Band26a:

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 Log10(f/6.1) decibels or 50 + 10 Log10(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.

**6.6.1 E.U.T. Operation**

Operating Environment:

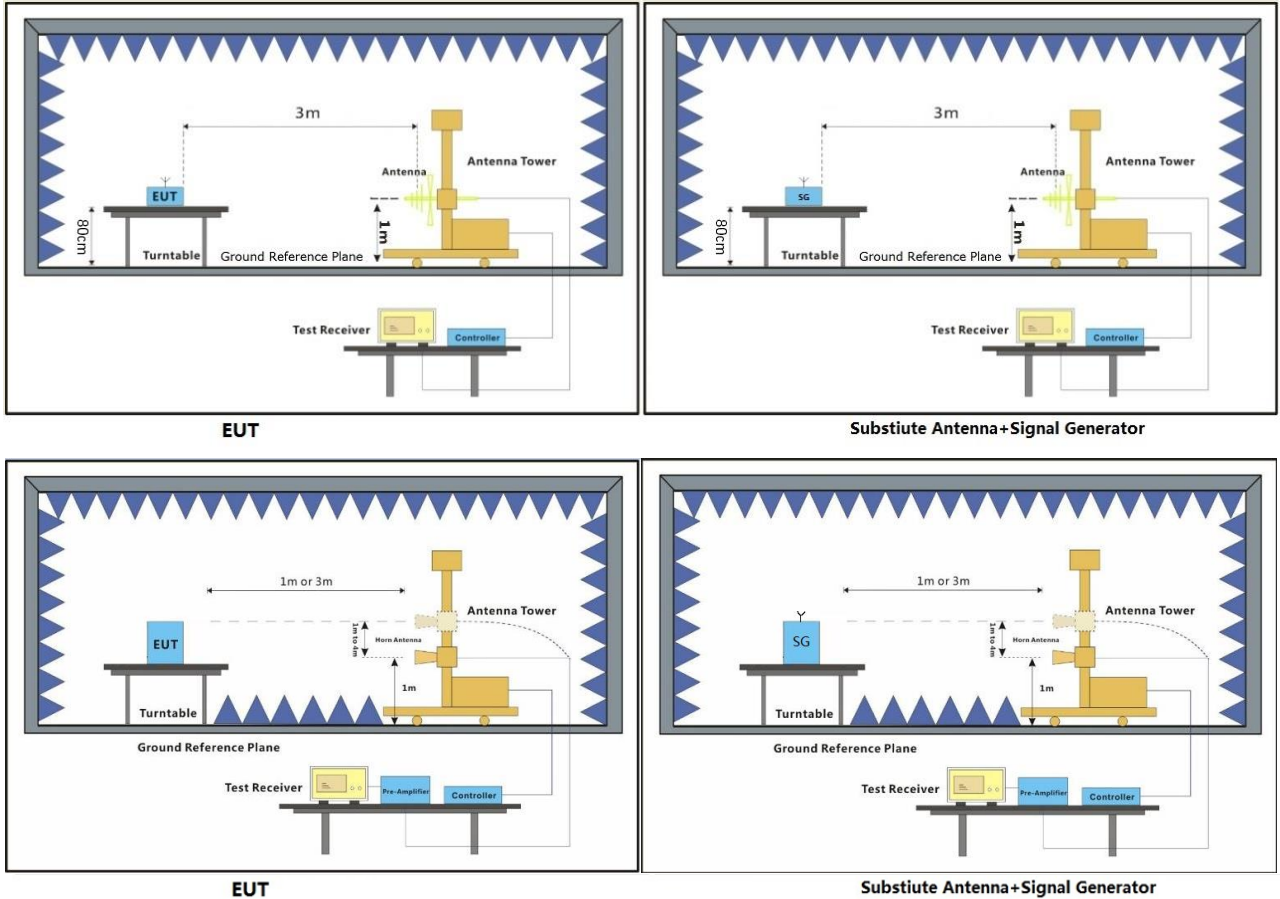
Temperature: 18.5 °C Humidity: 39.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.



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### 6.6.2 Test Setup Diagram



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**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 then 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.



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| 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   | -57.13     | -13        | -44.13          | -66.81           | 2.92            | 12.6               | Horizontal         | Pass   |
| 5553   | -54.11     | -13        | -41.11          | -64.06           | 3.15            | 13.1               | Horizontal         | Pass   |
| 7404   | -51.28     | -13        | -38.28          | -59.58           | 3.4             | 11.7               | Horizontal         | Pass   |
| 3702   | -56.84     | -13        | -43.84          | -66.52           | 2.92            | 12.6               | Vertical           | Pass   |
| 5553   | -53.89     | -13        | -40.89          | -63.84           | 3.15            | 13.1               | Vertical           | Pass   |
| 7404   | -52.08     | -13        | -39.08          | -60.38           | 3.4             | 11.7               | 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  | -58.23     | -13        | -45.23          | -67.91           | 2.92            | 12.6               | Horizontal         | Pass   |
| 5613  | -55.02     | -13        | -42.02          | -64.97           | 3.15            | 13.1               | Horizontal         | Pass   |
| 7484  | -50.15     | -13        | -37.15          | -58.45           | 3.4             | 11.7               | Horizontal         | Pass   |
| 3742  | -57.58     | -13        | -44.58          | -67.26           | 2.92            | 12.6               | Vertical           | Pass   |
| 5613  | -55.44     | -13        | -42.44          | -65.39           | 3.15            | 13.1               | Vertical           | Pass   |
| 7484  | -50.35     | -13        | -37.35          | -58.65           | 3.4             | 11.7               | 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  | -56.67     | -13        | -43.67          | -66.35           | 2.92            | 12.6               | Horizontal         | Pass   |
| 5673  | -54.66     | -13        | -41.66          | -64.61           | 3.15            | 13.1               | Horizontal         | Pass   |
| 7564  | -50.72     | -13        | -37.72          | -58.27           | 3.85            | 11.4               | Horizontal         | Pass   |
| 3782  | -56.56     | -13        | -43.56          | -66.24           | 2.92            | 12.6               | Vertical           | Pass   |
| 5673  | -53.87     | -13        | -40.87          | -63.82           | 3.15            | 13.1               | Vertical           | Pass   |
| 7564  | -51.68     | -13        | -38.68          | -59.23           | 3.85            | 11.4               | Vertical           | Pass   |



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| 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   | -57.01     | -13        | -44.01          | -65.52           | 2.99            | 11.5               | Horizontal         | Pass   |
| 5133   | -54.38     | -13        | -41.38          | -64.08           | 3               | 12.7               | Horizontal         | Pass   |
| 6844   | -52.74     | -13        | -39.74          | -62.16           | 3.08            | 12.5               | Horizontal         | Pass   |
| 3422   | -57.92     | -13        | -44.92          | -66.43           | 2.99            | 11.5               | Vertical           | Pass   |
| 5133   | -53.69     | -13        | -40.69          | -63.39           | 3               | 12.7               | Vertical           | Pass   |
| 6844   | -53.38     | -13        | -40.38          | -62.8            | 3.08            | 12.5               | 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  | -58.23     | -13        | -45.23          | -66.74           | 2.99            | 11.5               | Horizontal         | Pass   |
| 5170.5  | -54.22     | -13        | -41.22          | -63.92           | 3               | 12.7               | Horizontal         | Pass   |
| 6894  | -53.7      | -13        | -40.7           | -63.12           | 3.08            | 12.5               | Horizontal         | Pass   |
| 3447  | -57.33     | -13        | -44.33          | -65.84           | 2.99            | 11.5               | Vertical           | Pass   |
| 5170.5  | -54.05     | -13        | -41.05          | -63.75           | 3               | 12.7               | Vertical           | Pass   |
| 6894  | -52.98     | -13        | -39.98          | -62.4            | 3.08            | 12.5               | 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  | -57.69     | -13        | -44.69          | -66.2            | 2.99            | 11.5               | Horizontal         | Pass   |
| 5208  | -52.58     | -13        | -39.58          | -62.28           | 3               | 12.7               | Horizontal         | Pass   |
| 6944  | -52.58     | -13        | -39.58          | -62              | 3.08            | 12.5               | Horizontal         | Pass   |
| 3472  | -57.48     | -13        | -44.48          | -65.99           | 2.99            | 11.5               | Vertical           | Pass   |
| 5208  | -53.81     | -13        | -40.81          | -63.51           | 3               | 12.7               | Vertical           | Pass   |
| 6944  | -52.73     | -13        | -39.73          | -62.15           | 3.08            | 12.5               | Vertical           | Pass   |



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| 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   | -54.28     | -25        | -29.28          | -63.98           | 3               | 12.7               | Horizontal         | Pass   |
| 7503   | -50.47     | -25        | -25.47          | -58.02           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10004  | -48.07     | -25        | -23.07          | -56.48           | 3.69            | 12.1               | Horizontal         | Pass   |
| 5002   | -53.75     | -25        | -28.75          | -63.45           | 3               | 12.7               | Vertical           | Pass   |
| 7503   | -50.54     | -25        | -25.54          | -58.09           | 3.85            | 11.4               | Vertical           | Pass   |
| 10004  | -48.56     | -25        | -23.56          | -56.97           | 3.69            | 12.1               | 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  | -50.92     | -25        | -25.92          | -60.62           | 3               | 12.7               | Horizontal         | Pass   |
| 7578  | -51.01     | -25        | -26.01          | -58.56           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10104   | -47.32     | -25        | -22.32          | -55.73           | 3.69            | 12.1               | Horizontal         | Pass   |
| 5052  | -54.04     | -25        | -29.04          | -63.74           | 3               | 12.7               | Vertical           | Pass   |
| 7578  | -51.84     | -25        | -26.84          | -59.39           | 3.85            | 11.4               | Vertical           | Pass   |
| 10104   | -47.75     | -25        | -22.75          | -56.16           | 3.69            | 12.1               | 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  | -54.27     | -25        | -29.27          | -63.97           | 3               | 12.7               | Horizontal         | Pass   |
| 7653  | -50.98     | -25        | -25.98          | -58.53           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10204   | -49.49     | -25        | -24.49          | -57.9            | 3.69            | 12.1               | Horizontal         | Pass   |
| 5102  | -53.74     | -25        | -28.74          | -63.44           | 3               | 12.7               | Vertical           | Pass   |
| 7653  | -51.04     | -25        | -26.04          | -58.59           | 3.85            | 11.4               | Vertical           | Pass   |
| 10204   | -49.19     | -25        | -24.19          | -57.6            | 3.69            | 12.1               | Vertical           | Pass   |



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| FDD LTE Band12-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 |
| 1399  | -64.31     | -13        | -51.31          | -65.59           | 2.57            | 6                  | Horizontal         | Pass   |
| 2098.5  | -63.66     | -13        | -50.66          | -68.51           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2798  | -60.72     | -13        | -47.72          | -65.96           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1399  | -65.01     | -13        | -52.01          | -66.29           | 2.57            | 6                  | Vertical           | Pass   |
| 2098.5  | -63.94     | -13        | -50.94          | -68.79           | 3.4             | 10.4               | Vertical           | Pass   |
| 2798  | -60.38     | -13        | -47.38          | -65.62           | 3.21            | 10.6               | Vertical           | Pass   |

| FDD LTE Band12-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 |
| 1406   | -64.1      | -13        | -51.1           | -65.38           | 2.57            | 6                  | Horizontal         | Pass   |
| 2109   | -63.52     | -13        | -50.52          | -68.37           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2812   | -60.87     | -13        | -47.87          | -66.11           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1406   | -59.91     | -13        | -46.91          | -61.19           | 2.57            | 6                  | Vertical           | Pass   |
| 2109   | -63.74     | -13        | -50.74          | -68.59           | 3.4             | 10.4               | Vertical           | Pass   |
| 2812   | -61        | -13        | -48             | -66.24           | 3.21            | 10.6               | Vertical           | Pass   |

| FDD LTE Band12-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 |
| 1413   | -64.11     | -13        | -51.11          | -65.39           | 2.57            | 6                  | Horizontal         | Pass   |
| 2119.5   | -63.67     | -13        | -50.67          | -68.52           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2826   | -58.92     | -13        | -45.92          | -64.16           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1413   | -58.77     | -13        | -45.77          | -60.05           | 2.57            | 6                  | Vertical           | Pass   |
| 2119.5   | -63.16     | -13        | -50.16          | -68.01           | 3.4             | 10.4               | Vertical           | Pass   |
| 2826   | -53.83     | -13        | -40.83          | -59.07           | 3.21            | 10.6               | Vertical           | Pass   |



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| FDD LTE Band13-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 |
| 1555   | -57.25     | -13        | -44.25          | -60.27           | 3.33            | 8.5                | Horizontal         | Pass   |
| 2332.5   | -52.11     | -13        | -39.11          | -56.96           | 3.4             | 10.4               | Horizontal         | Pass   |
| 3110   | -49.72     | -13        | -36.72          | -56.08           | 2.99            | 11.5               | Horizontal         | Pass   |
| 1555   | -56.33     | -13        | -43.33          | -59.35           | 3.33            | 8.5                | Vertical           | Pass   |
| 2332.5   | -50.48     | -13        | -37.48          | -55.33           | 3.4             | 10.4               | Vertical           | Pass   |
| 3110   | -48.41     | -13        | -35.41          | -54.77           | 2.99            | 11.5               | Vertical           | Pass   |



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| FDD LTE Band17-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 |
| 1409  | -64.62     | -13        | -51.62          | -65.9            | 2.57            | 6                  | Horizontal         | Pass   |
| 2113.5  | -63.43     | -13        | -50.43          | -68.28           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2818  | -58.39     | -13        | -45.39          | -63.63           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1409  | -58.68     | -13        | -45.68          | -59.96           | 2.57            | 6                  | Vertical           | Pass   |
| 2113.5  | -62.83     | -13        | -49.83          | -67.68           | 3.4             | 10.4               | Vertical           | Pass   |
| 2818  | -53.7      | -13        | -40.7           | -58.94           | 3.21            | 10.6               | Vertical           | Pass   |

| FDD LTE Band17-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 |
| 1411   | -64.49     | -13        | -51.49          | -65.77           | 2.57            | 6                  | Horizontal         | Pass   |
| 2116.5   | -63.39     | -13        | -50.39          | -68.24           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2822   | -57.6      | -13        | -44.6           | -62.84           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1411   | -57.87     | -13        | -44.87          | -59.15           | 2.57            | 6                  | Vertical           | Pass   |
| 2116.5   | -63.47     | -13        | -50.47          | -68.32           | 3.4             | 10.4               | Vertical           | Pass   |
| 2822   | -53.29     | -13        | -40.29          | -58.53           | 3.21            | 10.6               | Vertical           | Pass   |

| FDD LTE Band17-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 |
| 1413   | -63.93     | -13        | -50.93          | -65.21           | 2.57            | 6                  | Horizontal         | Pass   |
| 2119.5   | -63.52     | -13        | -50.52          | -68.37           | 3.4             | 10.4               | Horizontal         | Pass   |
| 2826   | -57.71     | -13        | -44.71          | -62.95           | 3.21            | 10.6               | Horizontal         | Pass   |
| 1413   | -57.92     | -13        | -44.92          | -59.2            | 2.57            | 6                  | Vertical           | Pass   |
| 2119.5   | -64.05     | -13        | -51.05          | -68.9            | 3.4             | 10.4               | Vertical           | Pass   |
| 2826   | -53.43     | -13        | -40.43          | -58.67           | 3.21            | 10.6               | Vertical           | Pass   |



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| FDD LTE Band26-Low channel, Modulation: QPSK, Bandwidth: 15MHz, 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 |
| 1649.5  | -56.67     | -13        | -43.67          | -59.69           | 3.33            | 8.5                | Horizontal         | Pass   |
| 2474.25   | -61.98     | -13        | -48.98          | -66.83           | 3.4             | 10.4               | Horizontal         | Pass   |
| 3299  | -58.24     | -13        | -45.24          | -64.6            | 2.99            | 11.5               | Horizontal         | Pass   |
| 1649.5  | -58.01     | -13        | -45.01          | -61.03           | 3.33            | 8.5                | Vertical           | Pass   |
| 2474.25   | -60.23     | -13        | -47.23          | -65.08           | 3.4             | 10.4               | Vertical           | Pass   |
| 3299  | -57.98     | -13        | -44.98          | -64.34           | 2.99            | 11.5               | Vertical           | Pass   |

| FDD LTE Band26-Middle channel, Modulation: QPSK, Bandwidth: 15MHz, 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 |
| 1659.5   | -65.91     | -13        | -52.91          | -68.93           | 3.33            | 8.5                | Horizontal         | Pass   |
| 2489.25  | -61.71     | -13        | -48.71          | -66.56           | 3.4             | 10.4               | Horizontal         | Pass   |
| 3319   | -58.48     | -13        | -45.48          | -64.84           | 2.99            | 11.5               | Horizontal         | Pass   |
| 1659.5   | -65.91     | -13        | -52.91          | -68.93           | 3.33            | 8.5                | Vertical           | Pass   |
| 2489.25  | -61.59     | -13        | -48.59          | -66.44           | 3.4             | 10.4               | Vertical           | Pass   |
| 3319   | -58.37     | -13        | -45.37          | -64.73           | 2.99            | 11.5               | Vertical           | Pass   |

| FDD LTE Band26-High channel, Modulation: QPSK, Bandwidth: 15MHz, 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 |
| 1669.5   | -65.57     | -13        | -52.57          | -68.59           | 3.33            | 8.5                | Horizontal         | Pass   |
| 2504.25  | -62.08     | -13        | -49.08          | -67.32           | 3.21            | 10.6               | Horizontal         | Pass   |
| 3339   | -57.88     | -13        | -44.88          | -64.24           | 2.99            | 11.5               | Horizontal         | Pass   |
| 1669.5   | -65.45     | -13        | -52.45          | -68.47           | 3.33            | 8.5                | Vertical           | Pass   |
| 2504.25  | -62.06     | -13        | -49.06          | -67.3            | 3.21            | 10.6               | Vertical           | Pass   |
| 3339   | -58.4      | -13        | -45.4           | -64.76           | 2.99            | 11.5               | Vertical           | Pass   |



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| 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 |
| 5092  | -55.16     | -25        | -30.16          | -64.86           | 3               | 12.7               | Horizontal         | Pass   |
| 7638  | -50.31     | -25        | -25.31          | -57.86           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10184   | -48.4      | -25        | -23.4           | -56.81           | 3.69            | 12.1               | Horizontal         | Pass   |
| 5092  | -55.08     | -25        | -30.08          | -64.78           | 3               | 12.7               | Vertical           | Pass   |
| 7638  | -51.54     | -25        | -26.54          | -59.09           | 3.85            | 11.4               | Vertical           | Pass   |
| 10184   | -48.55     | -25        | -23.55          | -56.96           | 3.69            | 12.1               | 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 |
| 5182   | -54.43     | -25        | -29.43          | -64.13           | 3               | 12.7               | Horizontal         | Pass   |
| 7773   | -51.46     | -25        | -26.46          | -59.01           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10364  | -49.04     | -25        | -24.04          | -57.45           | 3.69            | 12.1               | Horizontal         | Pass   |
| 5182   | -54.31     | -25        | -29.31          | -64.01           | 3               | 12.7               | Vertical           | Pass   |
| 7773   | -51.71     | -25        | -26.71          | -59.26           | 3.85            | 11.4               | Vertical           | Pass   |
| 10364  | -49.19     | -25        | -24.19          | -57.6            | 3.69            | 12.1               | 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 |
| 5272   | -54.54     | -25        | -29.54          | -64.24           | 3               | 12.7               | Horizontal         | Pass   |
| 7908   | -49.48     | -25        | -24.48          | -57.03           | 3.85            | 11.4               | Horizontal         | Pass   |
| 10544  | -46.56     | -25        | -21.56          | -54.59           | 3.77            | 11.8               | Horizontal         | Pass   |
| 5272   | -54.41     | -25        | -29.41          | -64.11           | 3               | 12.7               | Vertical           | Pass   |
| 7908   | -49.29     | -25        | -24.29          | -56.84           | 3.85            | 11.4               | Vertical           | Pass   |
| 10544  | -47.06     | -25        | -22.06          | -55.09           | 3.77            | 11.8               | Vertical           | Pass   |



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SGS-CSTC Standards Technical Services Co., Ltd. No.198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com  
 Guangzhou Branch Testing Center EEC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com



| FDD LTE Band66-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  | -57.35     | -13        | -44.35          | -65.86           | 2.99            | 11.5               | Horizontal         | Pass   |
| 5133  | -53.88     | -13        | -40.88          | -63.58           | 3               | 12.7               | Horizontal         | Pass   |
| 6844  | -53.61     | -13        | -40.61          | -63.03           | 3.08            | 12.5               | Horizontal         | Pass   |
| 3422  | -57.56     | -13        | -44.56          | -66.07           | 2.99            | 11.5               | Vertical           | Pass   |
| 5133  | -53.28     | -13        | -40.28          | -62.98           | 3               | 12.7               | Vertical           | Pass   |
| 6844  | -53.49     | -13        | -40.49          | -62.91           | 3.08            | 12.5               | Vertical           | Pass   |

| FDD LTE Band66-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   | -58        | -13        | -45             | -66.51           | 2.99            | 11.5               | Horizontal         | Pass   |
| 5170.5   | -54.52     | -13        | -41.52          | -64.22           | 3               | 12.7               | Horizontal         | Pass   |
| 6894   | -53.12     | -13        | -40.12          | -62.54           | 3.08            | 12.5               | Horizontal         | Pass   |
| 3447   | -58.09     | -13        | -45.09          | -66.6            | 2.99            | 11.5               | Vertical           | Pass   |
| 5170.5   | -54.01     | -13        | -41.01          | -63.71           | 3               | 12.7               | Vertical           | Pass   |
| 6894   | -52.48     | -13        | -39.48          | -61.9            | 3.08            | 12.5               | Vertical           | Pass   |

| FDD LTE Band66-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   | -56.82     | -13        | -43.82          | -65.33           | 2.99            | 11.5               | Horizontal         | Pass   |
| 5208   | -53.66     | -13        | -40.66          | -63.36           | 3               | 12.7               | Horizontal         | Pass   |
| 6944   | -52.64     | -13        | -39.64          | -62.06           | 3.08            | 12.5               | Horizontal         | Pass   |
| 3472   | -57.13     | -13        | -44.13          | -65.64           | 2.99            | 11.5               | Vertical           | Pass   |
| 5208   | -53.45     | -13        | -40.45          | -63.15           | 3               | 12.7               | Vertical           | Pass   |
| 6944   | -52.42     | -13        | -39.42          | -61.84           | 3.08            | 12.5               | 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.



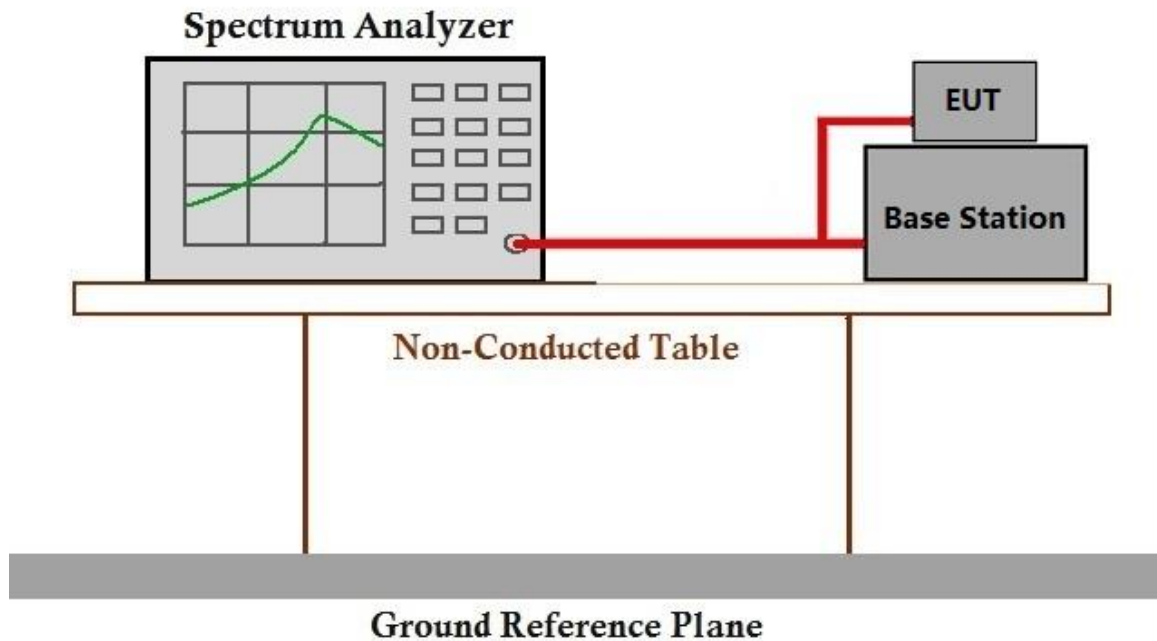
**6.7 Frequency stability**

Test Requirement: §2.1055, §22.355§24.235,§27.54,§90.213  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: ≤ ±2.5ppm.

**6.7.1 E.U.T. Operation**

Operating Environment:  
 Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: 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.



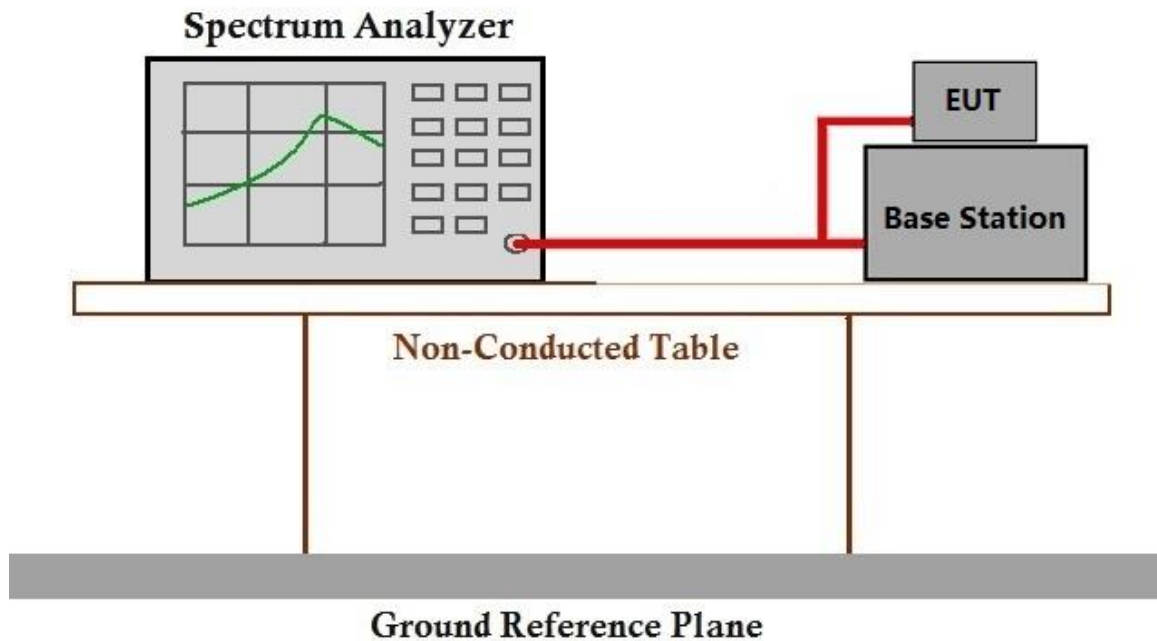
**6.8 Modulation Characteristics**

Test Requirement: §2.1047  
 Test Method: ANSI C63.26, KDB 971168 D01 v03  
 Limit: Digital modulation

**6.8.1 E.U.T. Operation**

Operating Environment:  
 Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar  
 Test mode 21: 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 Photographs

### 7.1 Test Setup Photos

Refer to Appendix - MIMO WATCH WWAN Test Setup Photo for GZCR2202000224AT.

### 7.2 EUT Constructional Details (EUT Photos)

Refer to Appendix - MIMO WATCH External and Internal Photos for GZCR2202000224AT.

- End of the Report -



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