

# FCC REPORT

(LTE)

Shenzhen ZKS Mobile IOT Tech. Co., Ltd **Applicant** 

Room 304, Building B, Huazhong University of Science

**Address** and Technology Research Institute, No. 9, Yuexing 3rd

Road, Nanshan District, Shenzhen, Guangdong, China

**Product Name** YFL Temperature & Humidity AloT Datalogger

**Brand Mark** YFL

Model S6SA

FCC ID 2BMOJ-S6SA

**Report Number** BLA-EMC-202503-A9102

**Date of Receipt** Mar. 24, 2025

**Date of Test** Mar. 24, 2025 to July 14, 2025

FCC CFR Title 47 Part 2 Test standard

> FCC CFR Title 47 Part 22 Subpart H FCC CFR Title 47 Part 24 Subpart E

FCC CFR Title 47 Part 27

Test result **PASS** 

Compiled by: Hugh Review by: Xavier Approved by: 13 live There

Issued Date: July 14, 2025

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# **Revise Record**

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 01          | July 14, 2025 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |





## 1 General Information

## 1.1 Client Information

| Applicant:    | Shenzhen ZKS Mobile IOT Tech. Co., Ltd  |
|---------------|---|
| Address:      | Room 304, Building B, Huazhong University of Science and Technology<br>Research Institute, No. 9, Yuexing 3rd Road, Nanshan District,<br>Shenzhen, Guangdong, China |
| Manufacturer: | Shenzhen ZKS Mobile IOT Tech. Co., Ltd  |
| Address:      | Room 304, Building B, Huazhong University of Science and Technology Research Institute, No. 9, Yuexing 3rd Road, Nanshan District, Shenzhen, Guangdong, China       |
| Factory       | Shenzhen ZKS Mobile IOT Tech. Co., Ltd  |
| Address       | Room 304, Building B, Huazhong University of Science and Technology<br>Research Institute, No. 9, Yuexing 3rd Road, Nanshan District,<br>Shenzhen, Guangdong, China |

# 1.2 General Description of E.U.T.

| Product Name:              | YFL Temperature & Humidity AloT Datalogger  |  |  |  |
|----------------------------|---|--|--|--|
| Test Model No.:            | S6SA  |  |  |  |
| Series model:              | N/A   |  |  |  |
| Operation Frequency range: | LTE Band 2:TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz LTE Band 4:TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 5:TX: 824MHz-849MHz, RX: 869MHz-894MHz LTE Band 12 TX:699MHz-716MHz, RX: 729MHz-746MHz LTE Band 13 TX: 777MHz-787MHz, RX: 746MHz-756MHz LTE Band 66 TX: 1710MHz-1780MHz, RX: 2110MHz-2200MHz |  |  |  |
| Modulation type:           | QPSK  |  |  |  |
| Antenna type:              | Internal Antenna  |  |  |  |
| Antenna gain:              | LTE Band 2:TX: 1.8 dBi; LTE Band 4:TX: 1.8 dBi;<br>LTE Band 5:TX: 1.8 dBi; LTE Band 12 TX: 1.8 dBi;<br>LTE Band 13 TX: 1.8 dBi; LTE Band 66 TX: 1.8 dBi   |  |  |  |
|                            | Battery: DC3.7V Power supply:   |  |  |  |
| Power supply:              | Model: GDB006L3-050200CU  |  |  |  |
|                            | Input: 100-240V~50/60Hz 0.35A   |  |  |  |
|                            | Output: 5V-2A   |  |  |  |
| Hardware version:          | N/A   |  |  |  |
| Software version:          | N/A   |  |  |  |
| Software version:          |   |  |  |  |



2 Test Summary

| Test Items   | Section in CFR 47                                       | Result |
|--|---|--------|
| RF Output Power  | Part 2.1046<br>Part 27.50 (d)(4)                        | Pass   |
| Peak-to-Average Ratio  | Part 24.232 (d) Part 27.50(d)(5)                        | Pass   |
| 99% & -26 dB Occupied Bandwidth                              | Part 2.1049<br>Part 27.53(h)                            | Pass   |
| Out of band emission, Band Edge                              | Part 22.917(a)<br>Part 27.53 (h)                        | Pass   |
| Field Strength of Spurious Radiation<br>ERP EIRP Measurement | Part 2.1053<br>Part 27.53 (h)                           | Pass   |
| Spurious Emissions at Antenna Terminal                       | Part 2.1051<br>Part 27.53 (h)                           | Pass   |
| Frequency stability vs. temperature                          | Part 22.355 Part 24.235 Part 27.54 Part 2.1055(a)(1)(b) | Pass   |
| Frequency stability vs. voltage                              | Part 22.355 Part 24.235 Part 27.54 Part 2.1055(d)(2)    | Pass   |



# 3 Test Configuration

## 3.1 Test mode

| Test Mode Note 1                  | Description  |  |  |
|-----------------------------------|--|--|--|
| TX                                | Keep the EUT in continuously transmitting mode with modulation. (Duty cycle>98%) |  |  |
| RX Keep the EUT in receiving mode |  |  |  |
| TX Low channel                    | Keep the EUT in continuously transmitting mode in low channel                    |  |  |
| TX middle channel                 | Keep the EUT in continuously transmitting mode in middle channel                 |  |  |
| TX high channel                   | Keep the EUT in continuously transmitting mode in high channel                   |  |  |

Note 1: The EUT was configured to measure its highest possible emission and/or immunity level. The test modes were adapted according to the operation manual for use; the EUT was operated in the engineering mode Note 2 to fix the TX or Rx frequency that was for the purpose of the measurements.

### **Operation Frequency List:**

Regards to the operating frequency range, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels as below:

| LTE Band 2(1.4MHz)        |             |                 | LTE Band 2(3MHz)  |       |                 |
|---------------------------|-------------|-----------------|-------------------|-------|-----------------|
| Channel:                  |             | Frequency (MHz) | Channel           |       | Frequency (MHz) |
| Lowest channel            | 18607       | 1850.70         | Lowest channel    | 18615 | 1851.5          |
| Middle channel            | 18900       | 1880.00         | Middle channel    | 18900 | 1880.00         |
| Highest channel           | 19193       | 1909.30         | Highest channel   | 19185 | 1908.5          |
| LTE Band 2(5MH<br>Channel |             | z)              | LTE Band 2(10MHz) |       |                 |
|                           |             | Frequency (MHz) | Channel           |       | Frequency (MHz) |
| Lowest channel            | 18625       | 1852.50         | Lowest channel    | 18650 | 1855.00         |
| Middle channel            | 18900       | 1880.00         | Middle channel    | 18900 | 1880.00         |
| Highest channel           | 19175       | 1907.50         | Highest channel   | 19150 | 1905.00         |
| LTE                       | Band 2(15MF | lz)             | LTE Band 2(20MHz) |       | Hz)             |
| Channe                    | el          | Frequency (MHz) | Channe            | el    | Frequency (MHz) |
| Lowest channel            | 18675       | 1857.50         | Lowest channel    | 18700 | 1860.00         |
| Middle channel            | 18900       | 1880.00         | Middle channel    | 18900 | 1880.00         |
| Highest channel           | 19125       | 1902.50         | Highest channel   | 19100 | 1900.00         |

| LTE             | Band 4(1.4Ml  | Hz)             | LTE Band 4(3MHz)  |       |                 |
|-----------------|---------------|-----------------|-------------------|-------|-----------------|
| Channel:        |               | Frequency (MHz) | Channel           |       | Frequency (MHz) |
| Lowest channel  | 19957         | 1710.70         | Lowest channel    | 19965 | 1711.50         |
| Middle channel  | 20175         | 1732.50         | Middle channel    | 20175 | 1732.50         |
| Highest channel | 20393         | 1754.30         | Highest channel   | 20385 | 1753.50         |
| LTE Band 4(5MH  |               | z)              | LTE Band 4(10MHz) |       | Hz)             |
| Channel         |               | Frequency (MHz) | Channel           |       | Frequency (MHz) |
| Lowest channel  | 19975         | 1712.50         | Lowest channel    | 20000 | 1715.00         |
| Middle channel  | 20175         | 1732.50         | Middle channel    | 20175 | 1732.50         |
| Highest channel | 20375         | 1752.50         | Highest channel   | 20350 | 1750.00         |
| LTE             | E Band 4(15MF | łz)             | LTE Band 4(20MF   |       | Hz)             |
| Channel         |               | Frequency (MHz) | Channe            | el    | Frequency (MHz) |
| Lowest channel  | 20025         | 1717.50         | Lowest channel    | 20050 | 1720.00         |
| Middle channel  | 20175         | 1732.50         | Middle channel    | 20175 | 1732.50         |
| Highest channel | 20325         | 1747.50         | Highest channel   | 20300 | 1745.00         |







| LTE             | E Band 5(1.4Ml | Hz)             | LTE Band 5(3MHz)  |       |                 |
|-----------------|----------------|-----------------|-------------------|-------|-----------------|
| Channe          | l:             | Frequency (MHz) | Channe            | el    | Frequency (MHz) |
| Lowest channel  | 20407          | 824.7           | Lowest channel    | 20415 | 825.5           |
| Middle channel  | 20525          | 836.5           | Middle channel    | 20525 | 836.5           |
| Highest channel | 20643          | 848.3           | Highest channel   | 20635 | 847.5           |
| LT              | E Band 5(5MH   | z)              | LTE Band 5(10MHz) |       |                 |
| Channe          | el             | Frequency (MHz) | Channe            | el    | Frequency (MHz) |
| Lowest channel  | 20425          | 826.5           | Lowest channel    | 20450 | 829.0           |
| Middle channel  | 20525          | 836.5           | Middle channel    | 20525 | 836.5           |
| Highest channel | 20625          | 846.5           | Highest channel   | 20600 | 844.0           |

| LTE             | Band 12(1.4M  | Hz)             | LTE Band 12(3MHz)  |       |                 |
|-----------------|---------------|-----------------|--------------------|-------|-----------------|
| Channe          | l:            | Frequency (MHz) | Channe             | el    | Frequency (MHz) |
| Lowest channel  | 23017         | 699.7           | Lowest channel     | 23025 | 700.5           |
| Middle channel  | 23095         | 707.5           | Middle channel     | 23095 | 707.5           |
| Highest channel | 23173         | 715.3           | Highest channel    | 23165 | 714.0           |
| LTE             | E Band 12(5MF | Hz)             | LTE Band 12(10MHz) |       |                 |
| Channe          | el            | Frequency (MHz) | Channe             | el    | Frequency (MHz) |
| Lowest channel  | 23035         | 701.5           | Lowest channel     | 23060 | 704             |
| Middle channel  | 23095         | 707.5           | Middle channel     | 23095 | 707.5           |
| Highest channel | 23155         | 713.5           | Highest channel    | 23130 | 711             |

| LTE Band 13(5MHz) |       |                 | LTE Band 13(10MHz) |       |                 |
|-------------------|-------|-----------------|--------------------|-------|-----------------|
| Channel           |       | Frequency (MHz) | Channel            |       | Frequency (MHz) |
| Lowest channel    | 23205 | 779.5           | Lowest channel     | 23230 | 782             |
| Middle channel    | 23230 | 782             | Middle channel     | 23230 | 782             |
| Highest channel   | 23255 | 784.5           | Highest channel    | 23230 | 782             |

| LTE Band 66(1.4MHz) |               |                 | LTE Band 66(3MHz)  |            |                 |
|---------------------|---------------|-----------------|--------------------|------------|-----------------|
| Channe              | l:            | Frequency (MHz) | Channel            |            | Frequency (MHz) |
| Lowest channel      | 131979        | 1710.7          | Lowest channel     | 131987     | 1711.5          |
| Middle channel      | 132322        | 1745            | Middle channel     | 132322     | 1745            |
| Highest channel     | 132665        | 1779.3          | Highest channel    | 132657     | 1778.5          |
| LTE                 | E Band 66(5MF | Hz)             | LTE Band 66(10MHz) |            | lHz)            |
| Channel             |               | Frequency (MHz) | Channel            |            | Frequency (MHz) |
| Lowest channel      | 131997        | 1712.5          | Lowest channel     | 132022     | 1715            |
| Middle channel      | 132322        | 1745            | Middle channel     | 132322     | 1745            |
| Highest channel     | 132647        | 1777.5          | Highest channel    | 132622     | 1775            |
| LTE                 | Band 66(15M   | Hz)             | LTE Band 66(20MHz  |            | lHz)            |
| Channel:            |               | Frequency (MHz) | Channe             | e <b>l</b> | Frequency (MHz) |
| Lowest channel      | 132047        | 1717.5          | Lowest channel     | 132072     | 1720            |
| Middle channel      | 132322        | 1745            | Middle channel     | 132322     | 1745            |
| Highest channel     | 132597        | 1772.5          | Highest channel    | 132572     | 1770            |



## 3.2 Test environment and mode

| Operating Environment: |  |
|------------------------|--|
| Temperature:           | Normal: 15℃~ 35℃, Extreme: -30℃ ~ +70℃                         |
| Humidity:              | 20 % ~ 75 % RH   |
| Atmospheric Pressure:  | 1008 mbar  |
| Voltage:               | Nominal: 3.7Vdc  |
| Test mode:             |  |
| LTE QPSK mode          | Keep the EUT communication with simulated station in QPSK mode |

Remark: The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes with power adaptor, earphone and Data cable. Just the worst case position (H mode) shown in report.

## 3.3 Configuration diagram of EUT



## 3.4 Auxiliary equipment

| Device Type                      | Manufacturer | Model Name | Serial No. | Remark                       |
|----------------------------------|--------------|------------|------------|------------------------------|
| Radio<br>communication<br>tester | R&S          | CMW500     | 132429     | From lab<br>(No.BLA-EMC-044) |
|                                  |              | 1          |            |                              |

### Note:

## 3.5 Test environment

| Environment | Temperature | Voltage |
|-------------|-------------|---------|
| Normal      | 25°C        | DC 3.7V |

<sup>&</sup>quot;--" mean no any auxiliary device during testing.



# **4 Laboratory information**

## 4.1 Laboratory and accreditations

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

| The test facility is recognized, certified, or accredited by the following organizations. |   |  |  |  |
|---|---|--|--|--|
| Company name:   | BlueAsia of Technical Services(Shenzhen) Co., Ltd.  |  |  |  |
| Address:  | Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China |  |  |  |
| CNAS accredited No.:  | L9788   |  |  |  |
| A2LA Cert. No.:   | 5071.01   |  |  |  |
| FCC Designation No.:  | CN1252  |  |  |  |
| ISED CAB identifier No.:  | CN0028  |  |  |  |
| Telephone:  | +86-755-28682673  |  |  |  |
| FAX:  | +86-755-28682673  |  |  |  |

## 4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

| Parameter Parameter                            | Expanded Uncertainty |
|--|----------------------|
| Radiated Emission(9kHz-30MHz)                  | ±4.34dB              |
| Radiated Emission(30Mz-1000MHz)                | ±4.24dB              |
| Radiated Emission(1GHz-18GHz)                  | ±4.68dB              |
| AC Power Line Conducted Emission(150kHz-30MHz) | ±3.45dB              |
| Occupied Channel Bandwidth                     | ±5 %                 |
| RF output power, conducted                     | ±1.5 dB              |
| Power Spectral Density, conducted              | ±3.0 dB              |
| Unwanted Emissions, conducted                  | ±3.0 dB              |
| Temperature                                    | ±3 °C                |
| Supply voltages                                | ±3 %                 |
| Time   | ±5 %                 |



# 5 Test equipment

### RF conducted

| Kr Collauctea   |              |           |             |          |            |            |
|-----------------|--------------|-----------|-------------|----------|------------|------------|
| Equipment       | Name         | Model     | Manufacture | S/N      | Cal. Date  | Due. Date  |
| BLA-EMC-003-003 | Shield room  | 5*3*3     | SKET        | N/A      | 2023/11/16 | 2025/11/15 |
| BLA-EMC-016     | Signal       | N5182A    | Agilent     | MY52420  | 2024/06/28 | 2025/06/27 |
| DLA-EIVIC-010   | Generator    | NSTOZA    | Aglient     | 567      | 2025/06/29 | 2026/06/28 |
| BLA-EMC-038     | Spectrum     | N9020A    | Agilent     | MY49100  | 2024/08/08 | 2025/08/07 |
| DLA-EIVIC-036   | Spectrum     | N9020A    | Aglient     | 060      | 2024/00/00 | 2023/06/07 |
| BLA-EMC-042     | Power sensor | RPR3006W  | DARE        | 14100889 | 2024/08/08 | 2025/08/07 |
| DLA-LIVIC-042   | rower sensor | KERSUUUVV | DAIL        | SN042    | 2024/00/00 | 2023/00/07 |
|                 | Radio        |           |             |          |            |            |
| BLA-EMC-044     | communicatio | CMW500    | R&S         | 132429   | 2024/08/08 | 2025/08/07 |
|                 | n tester     |           |             |          |            |            |
| BLA-EMC-064     | Signal       | N5182B    | KEYSIGHT    | MY58108  | 2024/06/28 | 2025/06/27 |
| DLA-LIVIO-004   | Generator    | 1431020   | KETOIOIII   | 892      | 2025/06/29 | 2026/06/28 |
| BLA-EMC-079     | Spectrum     | N9020A    | Agilent     | MY54420  | 2024/08/08 | 2025/08/07 |
| DLA-LIVIO-019   | Орессиин     | 1430207   | Agiiciit    | 161      | 2024/00/00 | 2020/00/01 |
| BLA-EMC-088     | Audio        | ATS-1     | Audio       | ATS1410  | 2024/06/28 | 2025/06/27 |
| DEA-ENIO-000    | Analyzer     | A10-1     | Precision   | 94       | 2024/00/20 | 2020/00/21 |

Radiated Spurious Emissions (Below 1GHz)

| Equipment        | Name          | Model       | Manufacture  | S/N    | Cal. Date  | Due. Date  |
|------------------|---------------|-------------|--------------|--------|------------|------------|
| BLA-EMC-002-01   | Anechoic      | 9*6*6       | SKET         | N/A    | 2024/3/27  | 2027/3/26  |
| DLA-LIVIC-002-01 | chamber       | chamber     | OKLI         | IN/A   | 2024/3/21  | 202113120  |
| BLA-EMC-002-02   | Control room  | 966 control | SKET         | N/A    | 2024/3/27  | 2027/3/26  |
| DLA-EIVIC-002-02 | Control room  | room        | SKET         |        |            | 202113120  |
| BLA-EMC-009      | EMI receiver  | ESR7        | R&S          | 101199 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-043      | Loop antenna  | FMZB1519B   | Schwarzbeck  | 00102  | 2024/06/29 | 2026/06/28 |
| BLA-EMC-065      | Broadband     | VULB9168    | Schwarzbeck  | 01065P | 2024/06/29 | 2026/06/27 |
| DLA-EIVIC-003    | antenna       | VULD9100    | Scriwarzbeck | 01005F | 2024/00/29 | 2020/00/27 |
| BLA-XC-01        | Coaxial Cable | N/A         | BlueAsia     | V01    | N/A        | N/A        |
| BLA-XC-02        | Coaxial Cable | N/A         | BlueAsia     | V02    | N/A        | N/A        |

Radiated Spurious Emissions (Above 1GHz)

| Equipment      | Name                             | Model                  | Manufacture | S/N              | Cal. Date                | Due. Date                |
|----------------|----------------------------------|------------------------|-------------|------------------|--------------------------|--------------------------|
| BLA-EMC-001-01 | Anechoic chamber                 | 9*6*6<br>chamber       | SKET        | N/A              | 2023/11/16               | 2026/11/15               |
| BLA-EMC-001-02 | Control Room                     | 966 control room       | SKET        | N/A              | 2023/11/16               | 2025/11/15               |
| BLA-EMC-008    | Spectrum                         | FSP40                  | R&S         | 100817           | 2024/08/08               | 2025/08/07               |
| BLA-EMC-012    | Broadband antenna                | VULB9168               | Schwarzbeck | 00836<br>P:00227 | 2022/10/12               | 2025/10/11               |
| BLA-EMC-013    | Horn Antenna                     | BBHA9120<br>D          | Schwarzbeck | 01892            | 2024/06/29               | 2026/06/28               |
| BLA-EMC-014    | Amplifier                        | PA_000318<br>G-45      | SKET        | PA20180<br>43003 | 2024/08/08               | 2025/08/07               |
| BLA-EMC-044    | Radio<br>communication<br>tester | CMW500                 | R&S         | 132429           | 2024/08/08               | 2025/08/07               |
| BLA-EMC-046    | Filter bank                      | 2.4G/5G<br>Filter bank | SKET        | N/A              | 2024/06/28 2025/06/29    | 2025/06/27 2026/06/28    |
| BLA-EMC-061    | Receiver                         | ESPI7                  | R&S         | 101477           | 2024/06/28<br>2025/06/29 | 2025/06/27<br>2026/06/28 |
| BLA-EMC-066    | Amplifier                        | LNPA_30M<br>01G-30     | SKET        | SK20210<br>60801 | 2024/06/28<br>2025/06/29 | 2025/06/27<br>2026/06/28 |

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| BLA-EMC-086 | Amplifier     | LNPA_18G<br>40G-50dB | SKET        | SK20220<br>71301 | 2024/06/28<br>2025/06/29 | 2025/06/27<br>2026/06/28 |
|-------------|---------------|----------------------|-------------|------------------|--------------------------|--------------------------|
| BLA-EMC-087 | Horn Antenna  | BBHA 9170            | Schwarzbeck | 1106             | 2024/06/29               | 2026/06/28               |
| BLA-XC-03   | Coaxial Cable | N/A                  | BlueAsia    | V03              | N/A                      | N/A                      |
| BLA-XC-04   | Coaxial Cable | N/A                  | BlueAsia    | V04              | N/A                      | N/A                      |

## **Test Software Record:**

| Test Software Nect | rest doitware Necoru;             |             |                  |           |  |  |  |
|--------------------|-----------------------------------|-------------|------------------|-----------|--|--|--|
| Software No.       | Software Name                     | Manufacture | Software version | Test site |  |  |  |
| BLA-EMC-S001       | EZ-EMC                            | EZ          | EEMC-3A1+        | RE        |  |  |  |
| BLA-EMC-S010       | MTS 8310                          | MW          | 2.0.0.0          | RF        |  |  |  |
| BLA-EMC-S014       | Bluetooth and WiFi<br>Test System | Tonscend    | 2.5.77.0418      | RF        |  |  |  |



## 6 Test results

# **6.1 Conducted Output Power**

| Test Requirement: | Part 22.913(a)(2), Part 27.50(d)(4),   |  |  |  |
|-------------------|--|--|--|--|
| Test Method:      | ANSI/TIA-603-E 2016  |  |  |  |
| Limit:            | Band2: 2W;<br>Band4/Band66:1W;<br>Band5/Band 12/Band13:7W;   |  |  |  |
| Test Setup:       | System simulator ATT EUT   |  |  |  |
| Test Procedure:   | The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMW500. Transmitter output power was read off in dBm. |  |  |  |
| Test Instruments: | Refer to section 5 for details   |  |  |  |
| Test mode:        | Refer to section 3.1 for details   |  |  |  |
| Test results:     | Passed   |  |  |  |

### **Measurement Data:**





## 6.2 Peak-to-Average Ratio

| Test Requirement: | Part 24.232 (d), Part 27.50(d)(5)  |
|-------------------|--|
| Test Method:      | ANSI/TIA-603-E 2016  |
| Limit:            | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.  |
| Test Setup:       | System simulator Spectrum Analyzer  Spectrum Analyzer  |
| Test Procedure:   | <ol> <li>The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.</li> <li>Set the CCDF option in spectrum analyzer, RBW ≥ OBW,</li> <li>Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level.</li> <li>Repeat step 1~3 at other frequency and modulations.</li> </ol> |
| Test Instruments: | Refer to section 5 for details   |
| Test mode:        | Refer to section 3.1 for details   |
| Test results:     | Passed   |

## **Measurement Data:**







# 6.3 Occupy Bandwidth

| Test Requirement: | Part 22.917(b), Part 27.53(h)  |
|-------------------|--|
| Test Method:      | ANSI/TIA-603-E 2016  |
| Test Setup:       | System simulator Spectrum Analyzer  Spectrum Analyzer  |
| Test Procedure:   | <ol> <li>The EUT's output RF connector was connected with a short cable to the spectrum analyzer</li> <li>RBW was set to about 1% ~ 5% of emission BW, VBW= 3 times RBW.</li> <li>-26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.</li> </ol> |
| Test Instruments: | Refer to section 5 for details   |
| Test mode:        | Refer to section 3.1 for details   |
| Test results:     | Passed   |

## **Measurement Data:**





# 6.4 Out of band emission at antenna terminals, Band Edge

| Test Requirement: | Part 24.238 (a), part 27.53(h)   |
|-------------------|--|
| Test Method:      | ANSI/TIA-603-E 2016  |
| Limit:            | LTE Band4: Thepower of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log <sub>10</sub> (P) dB (-13 dBm). frequencies between 5 megahertz and Xmegahertz 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 emissionbandwidth as defined in paragraph (m)(6) of this section. Inaddition, the attenuation factor shall not be less that 43 + 10 log (P) dB on allfrequencies between 2490.5 MHz and 2496 MHzand 55 + 10 log (P) dB at or below 2490.5 MHz.   |
| Test Setup:       | System simulator  Splitter ATT EUT  Spectrum Analyzer  |
| Test Procedure:   | <ol> <li>The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.</li> <li>The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.</li> <li>For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.</li> <li>Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.</li> </ol> |
| Test Instruments: | Refer to section 5 for details   |
| Test mode:        | Refer to section 3.1 for details   |
| Test results:     | Passed   |

## **Measurement Data:**

Please Refer To Appendix 1: LTE RF Test data section 1.3

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## 6.5 ERP, EIRP Measurement

| frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a  | Test Requirement: | Part 22.913(a)(2), Part 27.50 (h)   |
|--|-------------------|---|
| Band 1/2/Band 13:30W;  Below 1GHz  Test Procedure:  1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a | Test Method:      | ANSI/TIA-603-E 2016   |
| Test Procedure:  1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a                                   | Limit:            | Band4/Band66:1W; Band5: 7W;   |
| Above 1GHz  Test Procedure:  1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a                       | Test setup:       | Below 1GHz  |
| Test Procedure:  1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a                                    |                   | AE EUT  Antenna  Antenna  Ground Reference Plane  |
| Test Procedure:  1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a                                    |                   | Above 1GHz  |
| conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a   |                   | AE EUT    Ground Reference Plane  |
|  | Test Procedure:   | conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.  2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.  3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:  ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)  4. EIRP in frequency band above 1GHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated |







|                   | 5. The worse case was relating to the conducted output power. |
|-------------------|---|
| Test Instruments: | Refer to section 5 for details                                |
| Test mode:        | Refer to section 3.1 for details                              |
| Test results:     | Passed  |





### **Measurement Data:**

|                    |                 |            |             | - Danu Z    |                 |           |                |        |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
|--------------------|-----------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|-------|-------|------|------|------|------|------|------|----------|----------|-----|---|-------|-------|-------|
| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
|                    |                 |            | Lowe        | estChannel  |                 |           |                |        |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1850.70            | 18607           | QPSK       | 1 1         | 1 1 1       | 1.4             | н         | V              | 25.66  | 33.00 | Pass  |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1650.70            | 10007           | QF5K       | QPSK        | QPSK   1.4  |                 | 1.4       | П              | Н      | 25.68 | 33.00 | rass |      |      |      |      |      |          |          |     |   |       |       |       |
|                    |                 |            | Midd        | lle Channel |                 |           |                |        |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1880.00            | 18900           | QPSK       | 1.4         | Н           | V               | 25.79     | 33.00          | Pass   |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1000.00            | 10900 QF3K      | 10300 QFSK | QF3N 1.4    | W QFSK      | QFSK            | QPSK      | W QFSK         | QF3N   | QF3N  | QP3N  | QP3N | QPSK | QPSK | QPSK | QFSN | QFSK | UFON 1.4 | 1.4 אפאג | 1.4 | Н | 25.66 | 33.00 | F 455 |
|                    | Highest Channel |            |             |             |                 |           |                |        |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1909.30            | 10102           | OBSK       | 1 /         | Ш           | V               | 25.68     | 23.00          | Page   |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |
| 1909.30            | 19193   QPSK    | 1.4        | Н           | Н           | 25.74           | 33.00     | Pass           |        |       |       |      |      |      |      |      |      |          |          |     |   |       |       |       |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |       |       |      |   |      |   |   |       |       |      |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|-------|-------|------|---|------|---|---|-------|-------|------|
|                    |               |            | Low         | estChannel  |                 |           |                |        |       |       |      |   |      |   |   |       |       |      |
| 1851.50            | 18615         | ODSK       | 2           | 2           | Н               | V         | 24.65          | 22.00  | Dana  |       |      |   |      |   |   |       |       |      |
| 1651.50            | 18015         | 18615      | 18015       | QPSK        | 3 H             | QPSK 3    |                | Н      | 24.54 | 33.00 | Pass |   |      |   |   |       |       |      |
|                    |               |            | Mido        | lle Channel |                 |           |                |        |       |       |      |   |      |   |   |       |       |      |
| 1880.00            | 18900         | QPSK       | 3           | Н           | V               | 24.53     | 33.00          | Pass   |       |       |      |   |      |   |   |       |       |      |
| 1000.00            | 10900         | QF3K       | 3           | 3           | 3               |           |                | 3      | 3     | 3     | 3    | 3 | on 3 | П | Н | 24.75 | 33.00 | Fa55 |
| Highest Channel    |               |            |             |             |                 |           |                |        |       |       |      |   |      |   |   |       |       |      |
| 1009 50            | 10105         | ODSK       | 2           | 41          | V               | 24.74     | 22.00          | Door   |       |       |      |   |      |   |   |       |       |      |
| 1908.50            | 19185 QPSK    | 3          | Н           | Н           | 24.91           | 33.00     | Pass           |        |       |       |      |   |      |   |   |       |       |      |

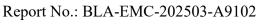






| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm)      | Limit<br>(dBm) | Result |  |  |  |
|--------------------|-----------------|------------|-------------|-------------|-----------------|----------------|----------------|--------|--|--|--|
|                    |                 |            | Low         | estChannel  |                 |                |                |        |  |  |  |
| 1852.50            | 18625           | QPSK       | 5           | Н           | V               | 24.62          | 33.00          | Door   |  |  |  |
| 1652.50            | 10025           | QFSK       | 5           | П           | Н               | 24.93          | 33.00          | Pass   |  |  |  |
|                    |                 |            | Mido        | lle Channel |                 |                |                |        |  |  |  |
| 1880.00            | 18900           | QPSK       | 5           | Н           | V               | 24.93          | 30.00          | Pass   |  |  |  |
| 1000.00            | 10900           | QFSK       | 3           | 11          | Н               | 24.89          | 30.00          | газэ   |  |  |  |
|                    | Highest Channel |            |             |             |                 |                |                |        |  |  |  |
| 1907.50            | 19175           | QPSK       | 5           | Н           | V<br>H          | 24.72<br>24.94 | 33.00          | Pass   |  |  |  |

| Frequency<br>(MHz) | UL<br>Channel      | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |       |       |      |
|--------------------|--------------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|-------|-------|------|
|                    |                    |            | Low         | estChannel  |                 |           |                |        |       |       |      |
| 1855.00            | 18650              | QPSK       | 10          | Н           | V               | 25.17     | 30.00          | Pass   |       |       |      |
| 1655.00            | 10030              | QFSK       | 10          | 10          | 10              | 10        |                | Н      | 24.85 | 30.00 | rass |
|                    |                    |            | Mido        | lle Channel |                 |           |                |        |       |       |      |
| 1880.00            | 18900              | QPSK       | 10          | н           | V               | 24.82     | 33.00          | Pass   |       |       |      |
| 1880.00            | 10900              | QFSK       | 10          | 11          | Н               | 25.15     | 33.00          | F 455  |       |       |      |
| Highest Channel    |                    |            |             |             |                 |           |                |        |       |       |      |
| 1005.00            | 1905.00 19150 QPSK | ODSK       | 40          | Ш           | V               | 24.76     | 22.00          | Door   |       |       |      |
| 1905.00            |                    | QPSK 10    | Н           | Н           | 25.07           | 33.00     | Pass           |        |       |       |      |





| V            |
|--------------|
| S蓝亚BLUE ASIA |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |  |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|--|
|                    |               |            | Low         | estChannel  |                 |           |                |        |  |  |
| 1057.50            | 18675         | QPSK       | 15          | ш           | V               | 24.92     | 22.00          | Door   |  |  |
| 1857.50            | 10075         | QPSK       | 15          | Н           | Н               | 24.71     | 33.00          | Pass   |  |  |
|                    |               |            | Midd        | lle Channel |                 |           |                |        |  |  |
| 1880.00            | 18900         | QPSK       | 15          | Н           | V               | 25.14     | 33.00          | Pass   |  |  |
| 1000.00            | 10900         | QFSK       | 13          |             | Н               | 25.02     | 33.00          | Fa55   |  |  |
| Highest Channel    |               |            |             |             |                 |           |                |        |  |  |
| 1002.50            | 19125         | QPSK       | 15          | ы           | V               | 24.82     | 33.00          | Door   |  |  |
| 1902.50            | 19125         | QF3K       | 75K 15      | 15 H        | Н               | 24.92     |                | Pass   |  |  |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |      |  |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|------|--|
|                    |               |            | Low         | estChannel  |                 |           |                |        |      |  |
| 1860.00            | 18700         | QPSK       | 20          |             | V               | 24.73     | 33.00          | Door   |      |  |
| 1860.00            | 10700         | QFOR 20    | 20          | QPSK 20     | 20 H            | Н         | 25.02          | 33.00  | Pass |  |
|                    |               |            | Mido        | lle Channel |                 |           |                |        |      |  |
| 1880.00            | 18900         | QPSK       | 20          | Н           | V               | 24.92     | 33.00          | Pass   |      |  |
| 1880.00            | 10900         | QFSK       | 20          | 11          | Н               | 25.13     | 33.00          | F 455  |      |  |
| Highest Channel    |               |            |             |             |                 |           |                |        |      |  |
| 1000.00            | 19100         | OBSK       | 20          | Ш           | V               | 24.98     | 22.00          | Door   |      |  |
| 1900.00            | 19100         | QPSK 20    | 20          | 20 H        | Н               | 25.14     | 33.00          | Pass   |      |  |

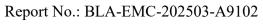






| Frequency<br>(MHz) | UL<br>Channel | Modulation   | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |          |     |     |     |     |     |  |   |       |       |      |
|--------------------|---------------|--------------|-------------|-------------|-----------------|-----------|----------------|--------|----------|-----|-----|-----|-----|-----|--|---|-------|-------|------|
|                    |               |              | Lowe        | estChannel  |                 |           |                |        |          |     |     |     |     |     |  |   |       |       |      |
| 1710.70            | 19957         | QPSK         | 1.4         | Н           | V               | 23.78     | 20.00          | Door   |          |     |     |     |     |     |  |   |       |       |      |
| 1710.70            | 19957         | QFSK         | 1.4         | П           | Н               | 23.81     | 30.00          | Pass   |          |     |     |     |     |     |  |   |       |       |      |
|                    |               |              | Mido        | lle Channel |                 |           |                |        |          |     |     |     |     |     |  |   |       |       |      |
| 1732.50            | 20175         | OBSK         | 1 /         | Н           | V               | 24.15     | 30.00          | Pass   |          |     |     |     |     |     |  |   |       |       |      |
| 1732.50            | 20175 QPSK    | 20175   QPSK | 20175 QP3N  | QPSK 1.4    | QPSK            | QPSK      | QPSK           | QPSK   | QP3K 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |  | Н | 23.95 | 30.00 | Pass |
| Highest Channel    |               |              |             |             |                 |           |                |        |          |     |     |     |     |     |  |   |       |       |      |
| 1754.30            | 20202         | OBSK         | 1.4         | Н           | V               | 23.87     | 30.00 Pa       | Pass   |          |     |     |     |     |     |  |   |       |       |      |
| 1734.30            | 20393         | 393 QPSK     | 1.4         | 17          | Н               | 24.01     | 30.00          | га55   |          |     |     |     |     |     |  |   |       |       |      |

| Frequency<br>(MHz) | UL<br>Channel  | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result  |
|--------------------|----------------|------------|-------------|-------------|-----------------|-----------|----------------|---------|
|                    |                |            | Low         | estChannel  |                 |           |                |         |
| 1711.50            | 19965          | QPSK       | 3           | Н           | V               | 23.81     | 30.00          | Pass    |
| 1711.30            | 19903          | QFSK       | 3           |             | Н               | 23.97     | 30.00          | F a 5 5 |
|                    | Middle Channel |            |             |             |                 |           |                |         |
| 1732.50            | 20175          | QPSK       | 3           | Н           | V               | 24.15     | 30.00          | Pass    |
| 1732.50            | 20175          | QFSK       | 3           | П           | Н               | 24.07     | 30.00          | Fa55    |
|                    |                |            | High        | est Channe  |                 |           |                |         |
| 1752 50            | 20385          | ODSK       | 3           | Н           | V               | 24.18     | 20.00          | Doos    |
| 1753.50            | 20385          | QPSK       | 3           | П           | Н               | 23.9      | 30.00          | Pass    |







| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm)      | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------------|----------------|--------|
|                    |               |            | Low         | estChannel  |                 |                |                |        |
| 1712.50            | 19975         | QPSK       | 5           | Н           | V               | 24.03          | 30.00          | Pass   |
| 1712.50            | 19975         | QFSK       | 3           | П           | Н               | 23.79          | 30.00          | Fa55   |
|                    |               |            | Mido        | lle Channel |                 |                |                |        |
| 1732.50            | 20175         | QPSK       | 5           | Н           | V               | 23.86          | 30.00          | Pass   |
| 1732.30            | 20173         | QFSK       | 5           | 11          | Н               | 24.07          | 30.00          | F 455  |
|                    |               |            | Highe       | est Channe  | I               |                |                |        |
| 1752.50            | 20375         | QPSK       | 5           | Н           | V<br>H          | 23.93<br>24.07 | 30.00          | Pass   |

| Frequency<br>(MHz)                        | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |
|---|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|
| LowestChannel                             |               |            |             |             |                 |           |                |        |  |
| 1715.00 2000 QPSK 10 H V 23.85 30.00 Pass |               |            |             |             |                 |           |                |        |  |
| 17 15.00                                  | 2000          | QFSK       | 10          | П           | Н               | 24.01     | 30.00          | Fa55   |  |
| Middle Channel                            |               |            |             |             |                 |           |                |        |  |
| 1732.50                                   | 20175         | QPSK       | 10          | н           | V               | 23.97     | 30.00          | Pass   |  |
| 1732.30                                   | 20173         | QFSK       | 10          | 11          | Н               | 24.17     | 30.00          | F 455  |  |
|   |               |            | High        | est Channe  | l               |           |                |        |  |
| 1750.00                                   | 20250         | QPSK       | 10          | П           | V               | 23.71     | 20.00          | Pass   |  |
| 1750.00                                   | 20350         | QP5K       | 10          | Н           | Н               | 23.79     | 30.00          | Pass   |  |





| V              |
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| 蓝亚BLUE ASIA    |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|
|                    |               |            | Low         | estChannel  |                 |           |                |        |
| 1717.50            | 20025         | QPSK       | 15          | Н           | V               | 23.82     | 30.00          | Pass   |
| 1717.50            | 20025         | QPSK       | 15          | П           | Н               | 23.8      | 30.00          | Pass   |
|                    |               |            | Mido        | lle Channel |                 |           |                |        |
| 1732.50            | 20175         | QPSK       | 15          | Н           | V               | 23.84     | 30.00          | Pass   |
| 1732.50            | 20175         | QFSK       | 13          |             | Н               | 23.87     | 30.00          | Fa55   |
|                    |               |            | Highe       | est Channe  |                 |           |                |        |
| 1747 50            | 20225         | ODSK       | 15          | ш           | V               | 23.84     | 20.00          | Door   |
| 1747.50            | 20325         | QPSK       | 15          | Н           | Н               | 24.09     | 30.00          | Pass   |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result        |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|---------------|
|                    | LowestChannel |            |             |             |                 |           |                |               |
| 1720.00            | 20050         | QPSK       | 20          | H           | V               | 24.17     | 30.00          | Pass          |
| 1720.00            | 20030         | QFSK       | 20          | Ē           | Н               | 24.02     | 30.00          | Fa55          |
| Middle Channel     |               |            |             |             |                 |           |                |               |
| 1732.50            | 20175         | QPSK       | 20          | Н           | V               | 23.95     | 30.00          | Pass          |
| 1732.30            | 20173         | QFSK       | 20          | 11          | Н               | 24.17     | 30.00          | F a 5 5       |
|                    |               |            | High        | est Channe  | I               |           |                |               |
| 1745.00            | 20300         | QPSK       | 20          | Н           | V               | 22.99     | 30.00          | Pass          |
| 1745.00            | 20300         | QF3N       | 20          | 11          | Н               | 23.15     | 30.00          | га <b>5</b> 5 |







| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    |               |            | Low         | estChannel  |                 |          |                |        |
| 824.7              | 20407         | QPSK       | 1.4         | Ш           | V               | 21.18    | 20.45          | Door   |
| 024.7              | 20407         | QPSK       | 1.4         | Н           | Н               | 21.06    | 38.45          | Pass   |
|                    |               |            | Mido        | lle Channel |                 |          |                |        |
| 836.5              | 20525         | QPSK       | 1.4         | Н           | V               | 20.79    | 38.45          | Pass   |
| 630.5              | 20020         | QFSK       | 1.4         |             | Н               | 20.74    | 30.43          | Fa55   |
|                    |               |            | Highe       | est Channe  | I               |          |                |        |
| 040 2              | 20642         | QPSK       | 1.4         | ы           | V               | 21.15    | 29.45          | Door   |
| 848.3              | 20643         | QF3K       | 1.4         | Н           | Н               | 21.08    | 38.45          | Pass   |

| Frequency<br>(MHz) | UL<br>Channel                           | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |  |  |
|--------------------|---|------------|-------------|-------------|-----------------|----------|----------------|--------|--|--|
|                    |   |            | Low         | estChannel  |                 |          |                |        |  |  |
| 925.5              | 825.5 20415 QPSK 3 H V 20.92 38.45 Pass |            |             |             |                 |          |                |        |  |  |
| 625.5              | 20413                                   | QFSK       | 3           | П           | Н               | 20.78    | 30.43          | Fa55   |  |  |
|                    | Middle Channel                          |            |             |             |                 |          |                |        |  |  |
| 836.5              | 20525                                   | QPSK       | 3           | Н           | V               | 20.79    | 38.45          | Pass   |  |  |
| 630.5              | 20020                                   | QFSK       | 3           | П           | Н               | 20.84    | 30.43          | Pass   |  |  |
|                    |   |            | High        | est Channe  |                 |          |                |        |  |  |
| 0.47 5             | 20625                                   | QPSK       | 3           | ш           | V               | 20.76    | 20 15          | Pass   |  |  |
| 847.5              | 20635                                   | QF3K       | 3           | Н           | Н               | 20.8     | 38.45          | rass   |  |  |



| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    |               |            | Low         | estChannel  | •               | •        |                |        |
| 826.5              | 24025         | QPSK       | 5           | Н           | V               | 21.77    | 38.45          | Pass   |
| 620.5              | 24025         | QFSK       | 5           | П           | Н               | 22.08    | 30.43          | rass   |
|                    |               |            | Mido        | lle Channel |                 |          |                |        |
| 836.5              | 20525         | QPSK       | 5           | Н           | V               | 20.7     | 38.45          | Pass   |
| 630.3              | 20323         | QFSK       | 3           | 11          | Н               | 20.86    | 30.43          | F 455  |
|                    |               |            | Highe       | est Channe  | I               |          |                |        |
| 946 5              | 20625         | ODSK       | 5           | ы           | V               | 20.84    | 29.45          | Door   |
| 846.5              | 20025         | QPSK       | 5           | Н           | Н               | 21.01    | 38.45          | Pass   |

| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    |               |            | Low         | estChannel  |                 |          |                |        |
| 829                | 20450         | QPSK       | 10          | Н           | V               | 21.81    | 38.45          | Pass   |
| 029                | 20430         | QFSK       | 10          |             | Н               | 21.74    | 30.43          | Fass   |
| Middle Channel     |               |            |             |             |                 |          |                |        |
| 836.5              | 20525         | QPSK       | 10          | Н           | V               | 21.78    | 38.45          | Pass   |
| 630.3              | 20323         | QFSK       | 10          |             | Н               | 21.82    | 30.43          | газэ   |
|                    |               |            | High        | est Channe  |                 |          |                |        |
| 844                | 20600         | QPSK       | 10          | Н           | V               | 21.06    | 38.45          | Pass   |
| 044                | 20000         | QFSK       | 10          | П           | Н               | 21.01    | 30.43          | Fass   |

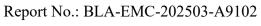






| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    |               |            | Lowe        | est Channel |                 |          |                |        |
| 600.7              | 23017         | QPSK       | 1.4         | ш           | V               | 20.84    | 44.77          | Door   |
| 699.7              | 23017         | QPSK       | 1.4         | Н           | Н               | 20.98    | 44.77          | Pass   |
|                    |               |            | Mido        | lle Channel |                 |          |                |        |
| 707.5              | 23095         | QPSK       | 1.4         | Н           | V               | 20.73    | 44.77          | Pass   |
| 707.5              | 23093         | QFSK       | 1.4         |             | Н               | 21.16    | 44.77          | Fa55   |
|                    |               |            | High        | est Channe  | I               |          |                |        |
| 715.2              | 22172         | QPSK       | 1.1         | ы           | V               | 20.87    | 44.77          | Door   |
| 715.3              | 23173         | QF3K       | 1.4         | Н           | Н               | 20.86    | 44.77          | Pass   |

| Frequency<br>(MHz) | UL<br>Channel  | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|----------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    |                |            | Lowe        | est Channel |                 |          |                |        |
| 700.5              | 23025          | QPSK       | 3           |             | V               | 20.86    | 44.77          | Pass   |
| 700.5              | 23023          | QFSK       | 3           | H           | Н               | 21.04    | 44.77          | Fa55   |
|                    | Middle Channel |            |             |             |                 |          |                |        |
| 707.5              | 23095          | QPSK       | 3           | Н           | V               | 21.14    | 44.77          | Pass   |
| 707.5              | 23093          | QFSK       | 3           | П           | Н               | 20.79    | 44.77          | Fa55   |
|                    |                |            | High        | est Channe  |                 |          |                |        |
| 714.0              | 22465          | QPSK       | 2           | ш           | V               | 21.07    | 44.77          | Door   |
| 714.0              | 23165          | QF3K       | 3           | Н           | Н               | 21.02    | 44.77          | Pass   |





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| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|---------------|------------|-------------|-------------|-----------------|----------|----------------|--------|--|
|                    | LowestChannel |            |             |             |                 |          |                |        |  |
| 770.5              | 22205         | QPSK       | 5           | ы           | V               | 20.73    | 44 77          | Door   |  |
| 779.5              | 23205         | QPSK       | 5           | H           | Н               | 20.86    | 44.77          | Pass   |  |
|                    |               |            | Mido        | lle Channel |                 |          |                |        |  |
| 707.5              | 23095         | QPSK       | 5           | Н           | V               | 21.07    | 44.77          | Pass   |  |
| 707.5              | 23093         | QFSK       | 5           | П           | Н               | 20.71    | 44.77          | Fa55   |  |
|                    |               |            | High        | est Channe  |                 |          |                |        |  |
| 712 5              | 23155         | QPSK       | <b>E</b>    | ы           | V               | 21.09    | 44.77          | Door   |  |
| 713.5              | 23133         | QPSK       | 5           | H           | Н               | 21.34    | 44.77          | Pass   |  |

| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |
|--------------------|-----------------|------------|-------------|-------------|-----------------|----------|----------------|--------|
|                    | LowestChannel   |            |             |             |                 |          |                |        |
| 704                | 23060           | QPSK       | 10          | Н           | V               | 20.83    | 44.77          | Page   |
| 704                | 23000           | QFSK       | 10          | П           | Н               | 21.12    | 44.77          | Pass   |
|                    |                 |            | Midd        | lle Channel |                 |          |                |        |
| 707.5              | 23095           | QPSK       | 10          | Н           | V               | 20.99    | 44.77          | Pass   |
| 707.5              | 23093           | QFSK       | 10          | - ' '       | Н               | 20.86    | 44.77          | Газз   |
|                    | Highest Channel |            |             |             |                 |          |                |        |
| 711                | 23130           | QPSK       | 10          | Н           | V               | 21.24    | 11 77          | Page   |
| '''                | 23130           | QF3N       | 10          | 17          | Н               | 21.17    | 44.77          | Pass   |







| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|-----------------|------------|-------------|-------------|-----------------|----------|----------------|--------|--|
|                    | Lowest Channel  |            |             |             |                 |          |                |        |  |
| 770 F              | 22205           | QPSK       | _           | Ш           | V               | 20.59    | 44.77          | Door   |  |
| 779.5              | 23205           | QPSK       | 5           | Н           | Н               | 20.6     | 44.77          | Pass   |  |
|                    |                 |            | Mido        | lle Channel |                 |          |                |        |  |
| 782                | 23230           | QPSK       | 5           | Н           | V               | 20.95    | 44.77          | Pass   |  |
| 702                | 23230           | QFSK       | 5           |             | Н               | 20.68    | 44.77          | Fa55   |  |
|                    | Highest Channel |            |             |             |                 |          |                |        |  |
| 704 F              | 22255           | ODSK       | _           | ш           | V               | 20.63    | 44.77          | Door   |  |
| 784.5              | 23255           | QPSK       | 5           | Н           | Н               | 20.9     | 44.77          | Pass   |  |

| Frequency<br>(MHz) | UL<br>Channel  | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | ERP(dBm) | Limit<br>(dBm) | Result |  |  |
|--------------------|----------------|------------|-------------|-------------|-----------------|----------|----------------|--------|--|--|
|                    | Middle Channel |            |             |             |                 |          |                |        |  |  |
| 700                | 22220          | ODSK       | 10          |             | ٧               | 20.52    | 44.77          | Doos   |  |  |
| 782                | 23230          | QPSK       | 10          | П           | Н               | 20.73    | 44.77          | Pass   |  |  |

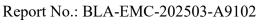






| Frequency<br>(MHz) | UL<br>Channel  | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|----------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|
|                    | Lowest Channel |            |             |             |                 |           |                |        |  |
| 1710.7             | 131979         | QPSK       | 1.4         | Н           | V               | 24.74     | 30.00          | Pass   |  |
| 17 10.7            | 131979         | QFSK       | 1.4         | П           | Н               | 24.78     | 30.00          | Fa55   |  |
|                    |                |            | Mido        | lle Channel |                 |           |                |        |  |
| 1745               | 132322         | QPSK       | 1.4         | Н           | V               | 24.8      | 30.00          | Pass   |  |
| 1745               | 132322         | QFSK       | 1.4         |             | Н               | 24.73     | 30.00          | Fa55   |  |
|                    |                |            | Highe       | est Channe  |                 |           |                |        |  |
| 1779.3             | 132665         | QPSK       | 1.4         | Н           | V               | 24.84     | 30.00          | Pass   |  |
| 1779.3             | 132003         | QF3K       | 1.4         | П           | Н               | 24.8      | 30.00          | rass   |  |

| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|-----------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|
|                    | Lowest Channel  |            |             |             |                 |           |                |        |  |
| 1711.5             | 131987          | QPSK       | 3           | Н           | V               | 24.5      | 30.00          | Pass   |  |
| 1711.5             | 131901          | QFSK       | 3           |             | Н               | 24.77     | 30.00          | F 455  |  |
|                    |                 |            | Mido        | de Channel  |                 |           |                |        |  |
| 1745               | 132322          | QPSK       | 3           | Н           | V               | 24.65     | 30.00          | Pass   |  |
| 1745               | 132322          | QFSK       | 3           | П           | Н               | 24.79     | 30.00          | Pass   |  |
|                    | Highest Channel |            |             |             |                 |           |                |        |  |
| 1770 E             | 122657          | QPSK       | 3           | ш           | V               | 24.63     | 20.00          | Door   |  |
| 1778.5             | 132657          | QF5K       | 3           | Н           | Н               | 24.97     | 30.00          | Pass   |  |

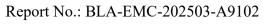




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|---|-------------|
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| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|
|                    | LowestChannel |            |             |             |                 |           |                |        |  |
| 1710 F             | 121007        | QPSK       | 5           | Ш           | V               | 24.95     | 20.00          | Door   |  |
| 1712.5             | 131997        | QPSK       | 5           | H           | Н               | 24.82     | 30.00          | Pass   |  |
|                    |               |            | Mido        | lle Channel |                 |           |                |        |  |
| 1745               | 132322        | QPSK       | 5           | Н           | V               | 24.82     | 30.00          | Pass   |  |
| 1745               | 132322        | QFSK       | 5           | П           | Н               | 24.97     | 30.00          | Fass   |  |
|                    |               |            | High        | est Channe  | l               |           |                |        |  |
| 1777 5             | 132647        | QPSK       | 5           | ы           | V               | 24.95     | 20.00          | Door   |  |
| 1777.5             | 132047        | QF3K       | 5           | H           | Н               | 24.71     | 30.00          | Pass   |  |

| Frequency<br>(MHz) | UL<br>Channel   | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm)     | Limit<br>(dBm) | Result |
|--------------------|-----------------|------------|-------------|-------------|-----------------|---------------|----------------|--------|
|                    | LowestChannel   |            |             |             |                 |               |                |        |
| 1715               | 132022          | QPSK       | 10          | Н           | V               | 24.51         | 30.00          | Pass   |
| 17 15              | 132022          | QFSK       | 10          | П           | Н               | H 24.52 30.00 |                | Fass   |
|                    |                 |            | Midd        | de Channel  |                 |               |                |        |
| 1745               | 132322          | QPSK       | 10          | Н           | V               | 24.73         | 30.00          | Pass   |
| 1745               | 132322          | QFSK       | 10          | - ''        | Н               | 24.78         | 30.00          | Газз   |
|                    | Highest Channel |            |             |             |                 |               |                |        |
| 1775               | 132622          | QPSK       | 10          | Н           | V               | 24.76         | 30.00          | Page   |
| 1775               | 132022          | QFSK       | 10          | 17          | Н               | 24.96         | 30.00          | Pass   |





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| Frequency<br>(MHz) | UL<br>Channel | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |
|--------------------|---------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|
|                    | LowestChannel |            |             |             |                 |           |                |        |  |
| 1717 F             | 132047        | QPSK       | 15          | ш           | V               | 24.81     | 20.00          | Pass   |  |
| 1717.5             | 132047        | QPSK       | 15          | Н           | Н               | 24.6      | 30.00          | Pass   |  |
|                    |               |            | Midd        | lle Channel |                 |           |                |        |  |
| 1745               | 132322        | QPSK       | 15          | Н           | V               | 24.99     | 20.00          | Pass   |  |
| 1745               | 132322        | QFSK       | 15          | П           | Н               | 24.51     | 30.00          | Fa55   |  |
|                    |               |            | Highe       | est Channe  |                 |           |                |        |  |
| 1770 F             | 122507        | QPSK       | 15          | Ш           | V               | 24.89     | 20.00          | Door   |  |
| 1772.5             | 132597        | QF5K       | 15          | Н           | Н               | 24.67     | 30.00          | Pass   |  |

| Frequency<br>(MHz) | UL<br>Channel  | Modulation | BW<br>(MHz) | EUT<br>Pol. | Antenna<br>Pol. | EIRP(dBm) | Limit<br>(dBm) | Result |  |  |
|--------------------|----------------|------------|-------------|-------------|-----------------|-----------|----------------|--------|--|--|
|                    | LowestChannel  |            |             |             |                 |           |                |        |  |  |
| 1720               | 122072         | QPSK       | 20          | Н           | V               | 24.64     | 20.00          | Doos   |  |  |
| 1720               | 132072         | QPSK       | 20          | П           | Н               | 24.89     | 30.00          | Pass   |  |  |
|                    | Middle Channel |            |             |             |                 |           |                |        |  |  |
| 1745               | 132322         | QPSK       | 20          | Н           | V               | 24.74     | 30.00          | Pass   |  |  |
| 1745               | 132322         | QFSK       | 20          | П           | Н               | 24.77     | 30.00          | Fass   |  |  |
|                    |                |            | High        | est Channe  | l               |           |                |        |  |  |
| 1770               | 122572         | QPSK       | 20          |             | V               | 24.92     | 20.00          | Door   |  |  |
| 1770               | 132572         | QFSK       | 20          | Н           | Н               | 24.64     | 30.00          | Pass   |  |  |



# 6.6 Spurious Emissions at Antenna Terminal

| Test Requirement: | Part 24.238 (a),Part 27.53(h)   |
|-------------------|---|
| Test Method:      | ANSI/TIA-603-E 2016   |
| Limit:            | LTE Band 2/4/5/12/13/66: <-13dBm,   |
| Test setup:       | Below 1GHz  ARITHMEN Antenna Tower  Test Receiver Antenna Tower  Test Receiver Antenna Tower  Test Receiver Antenna Tower   |
|                   | Above 1GHz  |
|                   | Ground Reference Plane Test Receiver Test Receiver Test Receiver Test Receiver Test Receiver  |
|                   |   |
| Test Procedure:   | <ol> <li>The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.</li> <li>The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.</li> <li>The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</li> <li>ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) - Cable Loss (dB)</li> </ol> |
| Test Instruments: | Refer to section 5 for details  |
| Test mode:        | Refer to section 3.1 for details  |
| 10001110001       |   |



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Test results: Passed





#### **Measurement Data:**

| ieasurement Data.   |                  |                   |              |        |
|---------------------|------------------|-------------------|--------------|--------|
|                     | LTE Band 2 / 1.4 | MHz / RB size 1 8 | RB offset 0  |        |
| Frequency (MHz)     | Spurious E       | mission           | Limit (dBm)  | Result |
| Frequency (IVII IZ) | Polarization     | Level (dBm)       | Limit (dBin) | Nesuit |
|                     |                  | Lowest            |              |        |
| 2701.4              | Vertical         | -43.05            |              |        |
| 5552.1              | V                | -42.06            | -13.00       | Door   |
| 2701.4              | Horizontal       | -42.32            | -13.00       | Pass   |
| 5552.1              | Н                | -42.14            |              |        |
|                     |                  | Middle            |              |        |
| 3760                | Vertical         | -43.22            |              |        |
| 5640                | V                | -43.39            | -13.00       | Dage   |
| 3760                | Horizontal       | -42.31            | -13.00       | Pass   |
| 5640                | Н                | -42.37            |              |        |
|                     |                  | Highest           |              |        |
| 3818.6              | Vertical         | -43.12            |              |        |
| 5727.9              | V                | -43.15            | 12.00        | Door   |
| 3818.6              | Horizontal       | -42.09            | -13.00       | Pass   |
| 5727.9              | Н                | -42.01            |              |        |

#### Note:

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Band 2 / 20 MHz / RB size 1 & RB offset 0 |              |             |               |         |  |
|---|--------------|-------------|---------------|---------|--|
| Frequency (MHz)                               | Spurious E   |             | Limit (dBm)   | Result  |  |
| Trequency (Wiriz)                             | Polarization | Level (dBm) | Limit (dBiii) | rtesuit |  |
|   | Lowest       |             |               |         |  |
| 3720  | Vertical     | -43.06      |               |         |  |
| 5580  | V            | -42.23      | -13.00        | Pass    |  |
| 3720  | Horizontal   | -42.06      | -13.00        | F 455   |  |
| 5580  | Н            | -41.47      |               |         |  |
|   |              | Middle      |               |         |  |
| 3760  | Vertical     | -43.19      |               | Pass    |  |
| 5640  | V            | -42.12      | -13.00        |         |  |
| 3760  | Horizontal   | -42.46      | -13.00        | F 455   |  |
| 5640  | Н            | -42.19      |               |         |  |
|   | Highest      |             |               |         |  |
| 3800  | Vertical     | -41.26      |               |         |  |
| 5700  | V            | -42.49      | -13.00        | Pass    |  |
| 3800  | Horizontal   | -42.33      |               | Fa55    |  |
| 5700  | Н            | -42.3       |               |         |  |

#### Note:

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



| LTE Band 4 / 1.4 MHz / RB size 1 & RB offset 0 |                   |             |                 |         |
|--|-------------------|-------------|-----------------|---------|
| Frequency (MHz)                                | Spurious Emission |             | Limit (dBm)     | Result  |
| Frequency (MHZ)                                | Polarization      | Level (dBm) | Lilliit (dBill) | Result  |
|  | Lowest            |             |                 |         |
| 3421.40  | Vertical          | -43.08      |                 |         |
| 5132.10  | V                 | -42.32      | 12.00           | Pass    |
| 3421.40  | Horizontal        | -42.3       | -13.00          | Fa55    |
| 5132.10  | Н                 | -42.07      |                 |         |
|  |                   | Middle      |                 |         |
| 3465.00  | Vertical          | -43.22      |                 |         |
| 5197.50  | V                 | -41.18      | -13.00          | Pass    |
| 3465.00  | Horizontal        | -42.35      | -13.00          | Fass    |
| 5197.50  | Н                 | -42.29      |                 |         |
|  |                   | Highest     |                 |         |
| 3508.60  | Vertical          | -43.31      |                 |         |
| 5262.90  | V                 | -42.17      | -13.00          | Pass    |
| 3508.60  | Horizontal        | -42.01      |                 | F d 5 5 |
| 5262.90  | Н                 | -43.33      |                 |         |

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Band 4 / 20 MHz / RB size 1 & RB offset 0 |              |             |                |          |  |
|---|--------------|-------------|----------------|----------|--|
| Frequency (MHz)                               | Spurious Er  | mission     | Limit (dBm)    | Result   |  |
| Frequency (Miriz)                             | Polarization | Level (dBm) | Lillit (dBill) | Nesuit   |  |
|   |              | Lowest      |                |          |  |
| 3440.00                                       | Vertical     | -42.02      |                |          |  |
| 5160.00                                       | V            | -42.01      | -13.00         | Pass     |  |
| 3440.00                                       | Horizontal   | -42.2       | -13.00         | F 455    |  |
| 5160.00                                       | H            | -42.47      |                | <u> </u> |  |
|   |              | Middle      |                |          |  |
| 3465.00                                       | Vertical     | -43.24      |                | Pass     |  |
| 5197.50                                       | V            | -42.11      | -13.00         |          |  |
| 3465.00                                       | Horizontal   | -42.43      | -13.00         | F 455    |  |
| 5197.50                                       | Н            | -42.33      |                |          |  |
|   | Highest      |             |                |          |  |
| 3490.00                                       | Vertical     | -42.17      |                |          |  |
| 5235.00                                       | V            | -42.01      | -13.00         | Pass     |  |
| 3490.00                                       | Horizontal   | -41.26      |                | F 455    |  |
| 5235.00                                       | Н            | -42.16      |                |          |  |

#### Note:

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



| LTE Band 5/ 1.4 MHz / RB size 1 & RB offset 0 |                   |             |             |        |  |
|---|-------------------|-------------|-------------|--------|--|
| Eroguenov (MHz)                               | Spurious Emission |             | Limit (dPm) | Result |  |
| Frequency (MHz)                               | Polarization      | Level (dBm) | Limit (dBm) | Result |  |
|   | Lowest            |             |             |        |  |
| 1649.7  | Vertical          | -42.25      |             |        |  |
| 2474.1  | V                 | -42.05      | 12.00       | Pass   |  |
| 1649.7  | Horizontal        | -40.13      | -13.00      | Fa55   |  |
| 2474.1  | Н                 | -42.36      |             |        |  |
|   |                   | Middle      |             |        |  |
| 1673.0  | Vertical          | -42.44      |             |        |  |
| 2509.5  | V                 | -42.06      | -13.00      | Pass   |  |
| 1673.0  | Horizontal        | -41.45      | -13.00      | Pa55   |  |
| 2509.5  | Н                 | -41.41      |             |        |  |
|   |                   | Highest     |             |        |  |
| 1696.6  | Vertical          | -43.37      |             |        |  |
| 2544.9  | V                 | -42.14      | -13.00      | Door   |  |
| 1696.6  | Horizontal        | -42.03      | -13.00      | Pass   |  |
| 2544.9  | Н                 | -42.27      |             |        |  |

#### Note

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Band 5 / 10 MHz / RB size 1 & RB offset 0 |                   |             |                |         |
|---|-------------------|-------------|----------------|---------|
| Frequency (MHz)                               | Spurious Emission |             | Limit (dBm)    | Result  |
| 1 requericy (Wir 12)                          | Polarization      | Level (dBm) | Lillie (dBill) | rtesuit |
|   | Lowest            |             |                |         |
| 1658  | Vertical          | -42.35      |                |         |
| 2487  | V                 | -42.4       | -13.00         | Pass    |
| 1658  | Horizontal        | -41.23      |                | Pass    |
| 2487  | H                 | -42.17      |                |         |
|   |                   | Middle      |                |         |
| 1673.0  | Vertical          | -42.29      |                | Pass    |
| 2509.5  | V                 | -42.12      | -13.00         |         |
| 1673.0  | Horizontal        | -42.43      | -13.00         | Pass    |
| 2509.5  | Н                 | -42.26      |                |         |
|   |                   | Highest     |                |         |
| 1688  | Vertical          | -42.47      |                |         |
| 2532  | V                 | -42.32      | -13.00         | Poor    |
| 1688  | Horizontal        | -43.23      |                | Pass    |
| 2532  | Н                 | -42.29      |                |         |

### Note:

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



| LTE Band 12 / 1.4 MHz / RB size 1 & RB offset 0 |                   |             |             |        |
|---|-------------------|-------------|-------------|--------|
| Fraguency (MHz)                                 | Spurious Emission |             | Limit (dPm) | Result |
| Frequency (MHz)                                 | Polarization      | Level (dBm) | Limit (dBm) | Nesuit |
|   |                   | Lowest      |             |        |
| 1399.4  | Vertical          | -42.29      |             |        |
| 2099.1  | V                 | -43.01      | -13.00      | Pass   |
| 1399.4  | Horizontal        | -42.23      | -13.00      | Pass   |
| 2099.1  | Н                 | -42.26      |             |        |
|   |                   | Middle      |             |        |
| 1415  | Vertical          | -42.32      |             |        |
| 2122.5  | V                 | -42.45      | -13.00      | Pass   |
| 1415  | Horizontal        | -42.16      | -13.00      | Pa55   |
| 2122.5  | Н                 | -41.34      |             |        |
|   |                   | Highest     |             |        |
| 1430.6  | Vertical          | -43.24      |             |        |
| 2145.9  | V                 | -42.43      | -13.00      | Poor   |
| 1430.6  | Horizontal        | -43.16      |             | Pass   |
| 2145.9  | Н                 | -43.35      |             |        |

- 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2 For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Band 12 / 10 MHz / RB size 1 & RB offset 0 |              |             |             |          |  |
|--|--------------|-------------|-------------|----------|--|
|  | Spurious E   |             |             |          |  |
| Frequency (MHz)                                | Polarization | Level (dBm) | Limit (dBm) | Result   |  |
|  | Lowest       |             |             |          |  |
| 1408   | Vertical     | -42.11      |             |          |  |
| 2112   | V            | -42.27      | 40.00       | <b>D</b> |  |
| 1408   | Horizontal   | -42.12      | -13.00      | Pass     |  |
| 2112   | Н            | -42.31      | -           |          |  |
|  |              | Middle      |             |          |  |
| 1415   | Vertical     | -41.44      |             | Dana     |  |
| 2122.5   | V            | -42.01      | 42.00       |          |  |
| 1415   | Horizontal   | -42.29      | -13.00      | Pass     |  |
| 2122.5   | Н            | -42.2       |             |          |  |
|  | Highest      |             |             |          |  |
| 1422   | Vertical     | -42.28      |             |          |  |
| 2133   | V            | -43.33      | -13.00      | Pass     |  |
| 1422   | Horizontal   | -43.33      |             | F d55    |  |
| 2133   | Н            | -42.26      |             |          |  |

## Note:

- 1 The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2 For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



| LTE Band 13 / 5 MHz / RB size 1 & RB offset 0 |              |             |             |        |
|---|--------------|-------------|-------------|--------|
| Fraguency (MUz)                               | Spurious E   | mission     | Limit (dPm) | Result |
| Frequency (MHz)                               | Polarization | Level (dBm) | Limit (dBm) | Result |
|   |              | Lowest      |             |        |
| 1559  | Vertical     | -42.31      |             |        |
| 2338.5  | V            | -42.01      | 12.00       | Door   |
| 1559  | Horizontal   | -41.27      | -13.00      | Pass   |
| 2338.5  | Н            | -43.28      |             |        |
|   |              | Middle      |             |        |
| 1564  | Vertical     | -40.1       |             |        |
| 2346  | V            | -42.46      | -13.00      | Pass   |
| 1564  | Horizontal   | -42.35      | -13.00      | Fa55   |
| 2346  | Н            | -42.01      |             |        |
|   |              | Highest     |             |        |
| 1569  | Vertical     | -43.46      |             |        |
| 2353.5  | V            | -42.27      | 12.00       | Door   |
| 1569  | Horizontal   | -43.09      | -13.00      | Pass   |
| 2353.5  | Н            | -42.12      |             |        |

<sup>2</sup> For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Band 13 / 10 MHz / RB size 1 & RB offset 0 |              |             |                 |        |
|--|--------------|-------------|-----------------|--------|
| Fraguency (MHz)                                | Spurious E   | mission     | Limit (dBm)     | Result |
| Frequency (MHz)                                | Polarization | Level (dBm) | Lilliit (dBill) | Result |
|  | Middle       |             |                 |        |
| 1564   | Vertical     | -43.14      |                 |        |
| 2346   | V            | -42.13      | -13.00          | Door   |
| 1564   | Horizontal   | -43.4       | -13.00          | Pass   |
| 2346   | Н            | -42.32      |                 |        |

#### Note:

<sup>1</sup> The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

<sup>1</sup> The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

<sup>2</sup> For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



| LTE Band 66 / 1.4 MHz / RB size 1 & RB offset 0 |                   |             |              |        |
|---|-------------------|-------------|--------------|--------|
| Frequency (MHz)                                 | Spurious Emission |             | Limit (dBm)  | Result |
| Frequency (Miriz)                               | Polarization      | Level (dBm) | Limit (dBin) | Nesuit |
|   |                   | Lowest      |              |        |
| 3421.4  | Vertical          | -43.01      |              |        |
| 5132.1  | V                 | -42.04      | -13.00       | Pass   |
| 3421.4  | Horizontal        | -43.09      | -13.00       | Pass   |
| 5132.1  | Н                 | -42.27      |              |        |
|   |                   | Middle      |              |        |
| 3490  | Vertical          | -41.24      |              |        |
| 5235  | V                 | -42.45      | -13.00       | Pass   |
| 3490  | Horizontal        | -43.11      | -13.00       | Pass   |
| 5235  | Н                 | -42.48      |              |        |
|   |                   | Highest     |              |        |
| 3558.6  | Vertical          | -42.48      |              |        |
| 5337.9  | V                 | -42.29      | -13.00       | Poor   |
| 3558.6  | Horizontal        | -43.03      |              | Pass   |
| 5337.9  | Н                 | -42.27      |              |        |

- 1 The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2 For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

| LTE Pand 66 / 20 MHz / DP aiza 1.2 DP affect 0 |                   |             |                |         |  |
|--|-------------------|-------------|----------------|---------|--|
| LTE Band 66 / 20 MHz / RB size 1 & RB offset 0 |                   |             |                |         |  |
| Frequency (MHz)                                | Spurious Emission |             | Limit (dBm)    | Result  |  |
|  | Polarization      | Level (dBm) | Lillit (dBill) | rtesuit |  |
| Lowest   |                   |             |                |         |  |
| 3440   | Vertical          | -43.44      | -13.00         | Pass    |  |
| 5160   | V                 | -42.18      |                |         |  |
| 3440   | Horizontal        | -43.21      |                |         |  |
| 5160   | Н                 | -42.13      |                |         |  |
| Middle   |                   |             |                |         |  |
| 3490   | Vertical          | -42.49      | -13.00         | Pass    |  |
| 5235   | V                 | -42.19      |                |         |  |
| 3490   | Horizontal        | -42.26      |                |         |  |
| 5235   | Н                 | -42.24      |                |         |  |
| Highest  |                   |             |                |         |  |
| 3540   | Vertical          | -42.01      | -13.00         | Pass    |  |
| 5310   | V                 | -41.43      |                |         |  |
| 3540   | Horizontal        | -43.2       |                |         |  |
| 5310   | Н                 | -41.18      |                |         |  |

## Note:

- 1 The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.
- 2 For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



# 6.7 Frequency stability V.S. Temperature measurement

| Test Requirement: | Part 22.355, Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)  |  |
|-------------------|---|--|
| Test Method:      | ANSI/TIA-603-E 2016   |  |
| Limit:            | ±2.5ppm   |  |
| Test setup:       | SS  Divider  Temperature & Humidity Chamber   |  |
| Test procedure:   | <ol> <li>The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>The EUT was placed inside the temperature chamber.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>Turn EUT off and set the chamber temperature to −30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol> |  |
| Test Instruments: | Refer to section 5 for details  |  |
| Test mode:        | Refer to section 3.1 for details  |  |
| Test results:     | Passed  |  |

## **Measurement Data:**







# 6.8 Frequency stability V.S. Voltage measurement

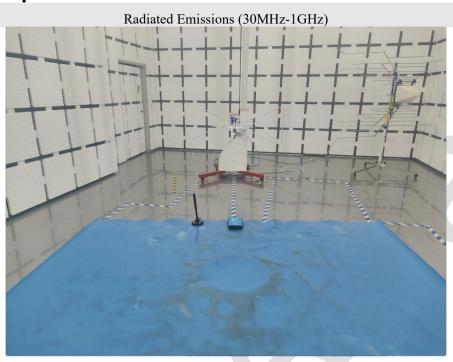
| Test Requirement: | Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)   |  |
|-------------------|---|--|
| Test Method:      | ANSI/TIA-603-E 2016   |  |
| Limit:            | ±2.5ppm   |  |
| Test setup:       | SS Divider  SA  Temperature & Humidity Chamber  |  |
| Test procedure:   | <ol> <li>Set chamber temperature to 25 °C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>Reduce the input voltage to specify extreme voltage variation (+/-15%) and endpoint, record the maximum frequency change.</li> </ol> |  |
| Test Instruments: | Refer to section 5 for details  |  |
| Test mode:        | Refer to section 3.1 for details  |  |
| Test results:     | Passed  |  |

## **Measurement Data:**

Please Refer To Appendix 1: LTE RF Test data section 1.4



# 7 Test Setup Photo

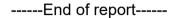






## **8 EUT Constructional Details**

Reference to the test report No. BLA-EMC-202503-A9101



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.

