

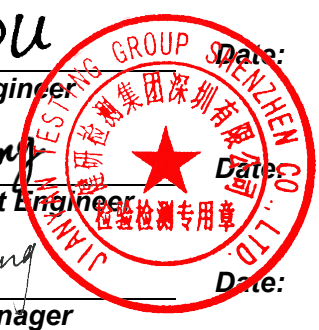
FCC RF Test Report

Applicant: Baicells Technologies Co., Ltd.
Address of Applicant: 9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China
Equipment Under Test (EUT)
Product Name: LTE Base Station
Model No.: pBS41010
Trade mark: Baicells
FCC ID: 2AG32PBS41010
Applicable standards: FCC CFR Title 47 Part 2, Part 96
Date of sample receipt: 24 Aug., 2022
Date of Test: 25 Aug., to 28 Sep., 2022
Date of report issued: 11 Oct., 2022
Test Result: PASS

Tested by: Mike Ou **Date:** 11 Oct., 2022
Mike Ou / Test Engineer

Reviewed by: Winner Zhang **Date:** 11 Oct., 2022
Winner Zhang / Project Engineer

Approved by: Bruce Zhang **Date:** 11 Oct., 2022
Bruce Zhang / Manager



This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

| Version No. | Date | Description |
|-------------|---------------|--|
| 00 | 29 Sep., 2022 | Original |
| 01 | 11 Oct., 2022 | 1. Updated section 5.7 2. Updated Page 6. |
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| | | |

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3 General Information

3.1 Client Information

| | |
|--------------|---|
| Applicant: | Baicells Technologies Co., Ltd. |
| Address: | 9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China |
| Manufacturer | Baicells Technologies Co., Ltd. |
| Address: | 9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China |

3.2 General Description of E.U.T.

| | | |
|----------------------------|---|---|
| Product Name: | LTE Base Station | |
| Model No.: | pBS41010 | |
| HVIN: | Ver.E01 | |
| FVIN: | BaiBS_QRTB_2.11.2_V4 | |
| Operation Frequency range: | LTE band 48: | 3550MHz~3700MHz |
| Modulation type: | <input checked="" type="checkbox"/> QPSK | <input checked="" type="checkbox"/> 16QAM <input checked="" type="checkbox"/> 64QAM |
| Antenna type: | Internal antenna | |
| Antenna gain: | LTE band 48: 13.50 dBi (declare by Applicant) | |
| Antenna Transmit Mode: | MIMO (2TX, 2RX) | |
| Category device: | Category B device | |
| AC adapter: | Model: G0566-480-100 Input: 100-240V~50/60Hz, 1.5A Output: 48.0V, 1.0A | |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. | |

3.3 Test Mode and Environment

| | |
|--|--|
| Test Mode: | |
| QPSK mode: | Keep the EUT in QPSK modulation mode to communication |
| 16QAM mode: | Keep the EUT in 16QAM modulation mode to communication |
| 64QAM mode: | Keep the EUT in 64QAM modulation mode to communication |
| <i>Remark: Pre-scan all modulation type (QPSK, 16-QAM, 64-QAM), and found the QPKS and 64-QAM were the worst case. so this report shows only the worst case test data.</i> | |
| Operating Environment: | |
| Temperature: | Normal: 15°C ~ 35°C, Extreme: -40°C ~ +55°C |
| Humidity: | 5% ~ 95 % RH |
| Atmospheric Pressure: | 1008 mbar |
| Voltage: | Nominal: 120 Vac, Extreme: Low 102 Vac, High 138 Vac |

3.4 Description of Test Auxiliary Equipment

| |
|---|
| The EUT has been tested as an independent unit. |
|---|

3.5 Measurement Uncertainty

| Parameter | Expanded Uncertainty (Confidence of 95%(U = 2Uc(y))) |
|--|---|
| Radiated Emission (30MHz ~ 1GHz) (3m SAC) | ±4.45 dB |
| Radiated Emission (1GHz ~ 18GHz) (3m SAC) | ±5.34 dB |
| Radiated Emission (18GHz ~ 40GHz) (3m SAC) | ±5.34 dB |
| <i>Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.</i> | |

3.6 Additions to, Deviations, or Exclusions from the Method

| |
|----|
| No |
|----|

3.7 Laboratory Facility

| |
|--|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC - Designation No.: CN1211 JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551. ● ISED – CAB identifier.: CN0021 The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L15527 JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527. ● A2LA - Registration No.: 4346.01 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf |
|--|

3.8 Laboratory Location

| |
|--|
| <p>JianYan Testing Group Shenzhen Co., Ltd. Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info-JYTee@lets.com, Website: http://jyt.lets.com</p> |
|--|

3.9 Test Instruments list

| Radiated Emission(3m SAC): | | | | | |
|-------------------------------|-----------------|-----------------|------------------|----------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Manage No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 3m SAC | ETS | 9m*6m*6m | WXJ001-1 | 04-14-2021 | 04-13-2024 |
| Loop Antenna | Schwarzbeck | FMZB 1519 B | WXJ002-4 | 03-07-2022 | 03-06-2023 |
| BiConiLog Antenna | Schwarzbeck | VULB9163 | WXJ002 | 03-08-2022 | 03-07-2023 |
| Biconical Antenna | Schwarzbeck | VUBA9117 | WXJ002-1 | 07-02-2021 | 07-01-2024 |
| Horn Antenna | Schwarzbeck | BBHA9120D | WXJ002-2 | 03-08-2022 | 03-07-2023 |
| Horn Antenna | Schwarzbeck | BBHA9120D | WXJ002-3 | 04-07-2022 | 04-06-2023 |
| Horn Antenna | Schwarzbeck | BBHA9170 | WXJ002-5 | 04-07-2022 | 04-06-2023 |
| Horn Antenna | Schwarzbeck | BBHA9170 | WXJ002-6 | 04-07-2022 | 04-06-2023 |
| Pre-amplifier (30MHz ~ 1GHz) | Schwarzbeck | BBV9743B | WXJ001-2 | 01-20-2022 | 01-19-2023 |
| Pre-amplifier (1GHz ~ 18GHz) | SKET | LNPA_0118G-50 | WXJ001-3 | 01-20-2022 | 01-19-2023 |
| Pre-amplifier (18GHz ~ 40GHz) | RF System | TRLA-180400G45B | WXJ002-7 | 03-30-2022 | 03-29-2023 |
| EMI Test Receiver | Rohde & Schwarz | ESRP7 | WXJ003-1 | 03-05-2022 | 03-04-2023 |
| Spectrum Analyzer | Rohde & Schwarz | FSP 30 | WXJ004 | 01-20-2022 | 01-19-2023 |
| Spectrum Analyzer | KEYSIGHT | N9010B | WXJ004-2 | 10-27-2021 | 10-26-2022 |
| Coaxial Cable (30MHz ~ 1GHz) | JYTSZ | JYT3M-1G-NN-8M | WXG001-4 | 01-20-2022 | 01-19-2023 |
| Coaxial Cable (1GHz ~ 18GHz) | JYTSZ | JYT3M-18G-NN-8M | WXG001-5 | 01-20-2022 | 01-19-2023 |
| Coaxial Cable (18GHz ~ 40GHz) | JYTSZ | JYT3M-40G-SS-8M | WXG001-7 | 01-20-2022 | 01-19-2023 |
| Band Reject Filter Group | Tonscend | JS0806-F | WXJ089 | N/A | |
| Test Software | Tonscend | TS+ | Version: 3.0.0.1 | | |

| Conducted method: | | | | | |
|--------------------------|--------------|-----------|---------------------|----------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Manage No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| Spectrum Analyzer | KEYSIGHT | N9010B | WXJ081-1 | 06-29-2022 | 06-28-2023 |
| Vector Signal Generator | Keysight | N5182B | WXJ091-1 | 06-29-2022 | 06-28-2023 |
| Vector Signal Generator | Keysight | N5182B | WXJ091-2 | 06-29-2022 | 06-28-2023 |
| Signal Generator | Keysight | N5173B | WXJ091-3 | 06-29-2022 | 06-28-2023 |
| Network Analyzer | Keysight | E5071C | WXJ091 | 03-30-2022 | 03-29-2023 |
| RF Control Unit | Tonscend | JS0806-1 | WXG010-2 | N/A | N/A |
| RF Control Unit | Tonscend | JS0806-1 | WXG010-3 | N/A | N/A |
| Band Reject Filter Group | Tonscend | JS0806-F | WXG010-4 | N/A | N/A |
| Test Software | Tonscend | TS+ | Version: 2.6.9.0526 | | |

4 Measurement Setup and Procedure

4.1 Test Channel

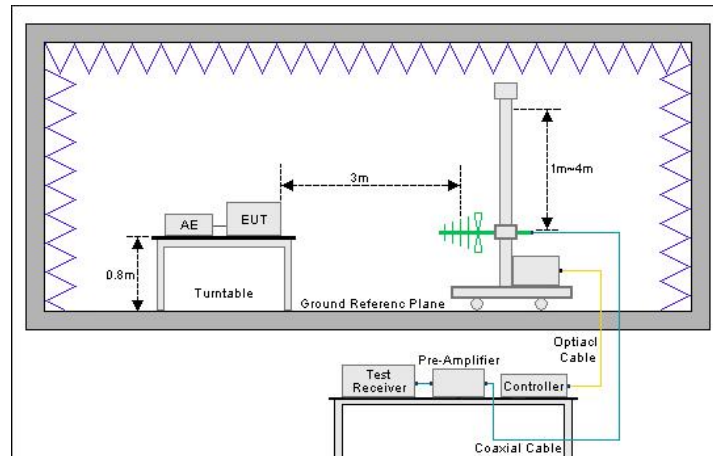
According to ANSI C63.26-2015 chapter 5.1.2.1 Table 2 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

| LTE band 48 | | | | | |
|-----------------|-------|-----------------|-----------------|-------|-----------------|
| Channels | | Frequency (MHz) | Channels | | Frequency (MHz) |
| 10 MHz | | | 20 MHz | | |
| Lowest channel | 55290 | 3555.0 | Lowest channel | 55340 | 3560.0 |
| Middle channel | 55990 | 3625.0 | Middle channel | 55990 | 3625.0 |
| Highest channel | 56690 | 3695.0 | Highest channel | 56640 | 3690.0 |

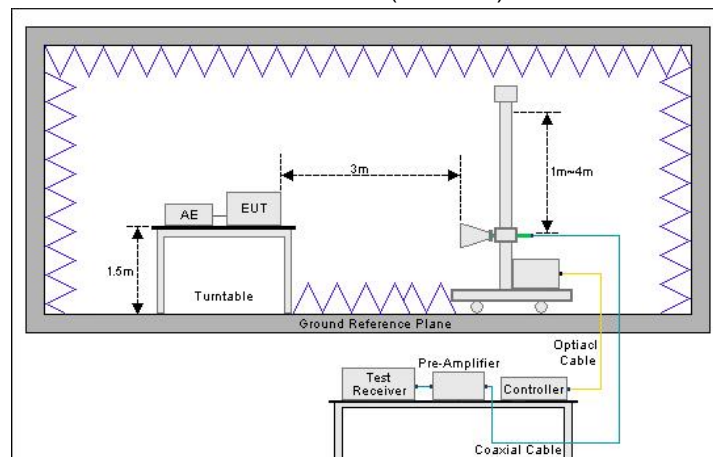
4.2 Test Setup

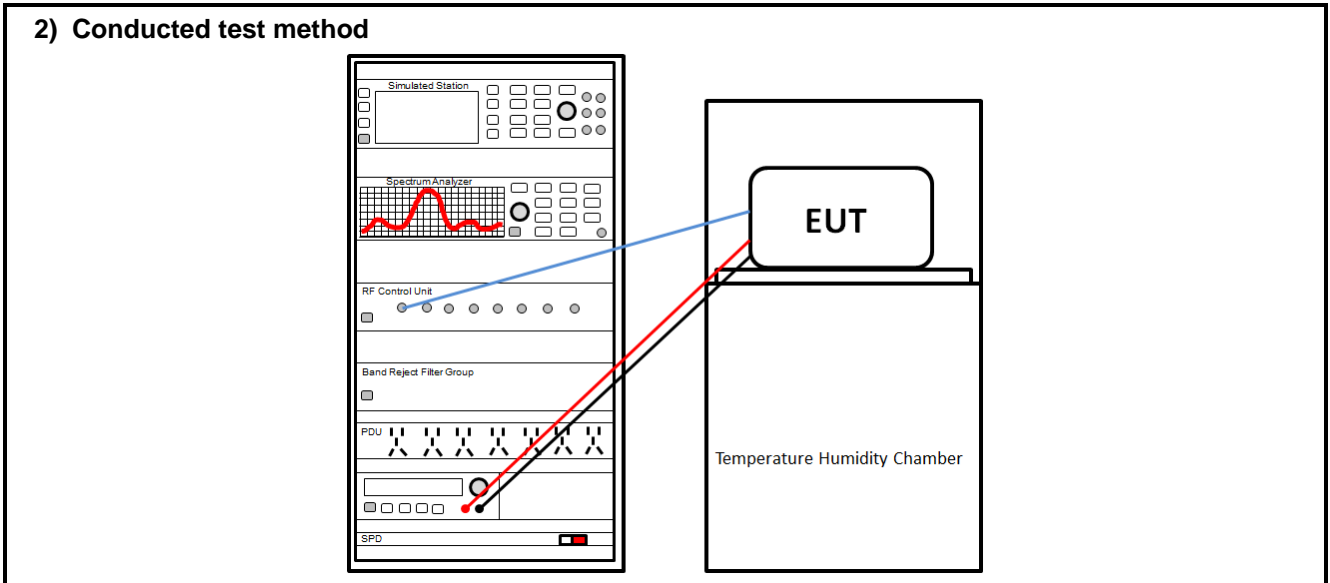
1) Radiated emission measurement:

Below 1GHz (3m SAC)



Above 1GHz (3m SAC)





4.3 Test Procedure

| Test method | Test step |
|-----------------------|---|
| Radiated emission | <p>For below 1GHz:</p> <ol style="list-style-type: none"> The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. <p>For above 1GHz:</p> <ol style="list-style-type: none"> The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. |
| Conducted test method | <ol style="list-style-type: none"> The antenna port of EUT was connected to the test port of the test system through an RF cable. The EUT is keeping in continuous transmission mode and tested in all modulation modes. Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software. |

5 Test Results

5.1 Summary

5.1.1 Clause and Data Summary

| Test items | Standard clause | Test data | Result |
|---|--|---|--------|
| Effective Isotropic Radiated Power (EIRP) | Part 2.1046 Part 96.41(b) | See Section 5.2 Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| Power Spectral Density (PSD) | Part 2.1046 Part 96.41(b) | See Section 5.3 Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| Peak-to-average power ratio (PAPR) | Part 96.41(g) | See Section 5.4 Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| 99% Occupied Bandwidth -26 dB Occupied Bandwidth | Part 2.1049 | See Section 5.5 Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| Emission Mask | Part 96.41(e)(1) | Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| Spurious Emissions at Antenna Terminal | Part 2.1051 Part 96.41(e)(2) | Appendix – LTE band 48 ANT1 Appendix – LTE band 48 ANT2 | Pass |
| Field Strength of Spurious Radiation | Part 2.1053 Part 96.41(e)(2) | See Section 5.6 | Pass |
| Frequency stability | Part 2.1055(a)(b) | See Section 5.7 | Pass |
| Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (Fundamental Frequency below 1GHz)/1.0dB (Fundamental Frequency above 1GHz) (provided by the customer). | | | |
| Test Method: | ANSI/TIA-603-E-2016 ANSI C63.26-2015 KDB 971168 D01 Power Meas License Digital Systems v03r01 KDB 940660 D01 Part 96 CBRS Eqpt v03 KDB 662911 D01 Multiple Transmitter Output v02r01 | | |

5.1.2 Test Limit

| Test items | Limit | | | | | | | | | | | | |
|---|--|-----------------------|---------------------------|-----------------------|-----------------|----|-----|-----------------|----|----|-----------------|----|----|
| Effective Isotropic Radiated Power (EIRP) Power Spectral Density (PSD) | <table border="1"> <thead> <tr> <th data-bbox="684 300 916 349">Device</th> <th data-bbox="916 300 1177 349">Maximum EIRP (dBm/10 MHz)</th> <th data-bbox="1177 300 1425 349">Maximum PSD (dBm/MHz)</th> </tr> </thead> <tbody> <tr> <td data-bbox="684 349 916 383">End User Device</td> <td data-bbox="916 349 1177 383">23</td> <td data-bbox="1177 349 1425 383">N/A</td> </tr> <tr> <td data-bbox="684 383 916 416">Category A CBSD</td> <td data-bbox="916 383 1177 416">30</td> <td data-bbox="1177 383 1425 416">20</td> </tr> <tr> <td data-bbox="684 416 916 450">Category B CBSD</td> <td data-bbox="916 416 1177 450">47</td> <td data-bbox="1177 416 1425 450">37</td> </tr> </tbody> </table> | Device | Maximum EIRP (dBm/10 MHz) | Maximum PSD (dBm/MHz) | End User Device | 23 | N/A | Category A CBSD | 30 | 20 | Category B CBSD | 47 | 37 |
| Device | Maximum EIRP (dBm/10 MHz) | Maximum PSD (dBm/MHz) | | | | | | | | | | | |
| End User Device | 23 | N/A | | | | | | | | | | | |
| Category A CBSD | 30 | 20 | | | | | | | | | | | |
| Category B CBSD | 47 | 37 | | | | | | | | | | | |
| Peak-to-Average Power Ratio | The peak-to-average power ratio (PAPR) of any CBSD transmitter output power must not exceed 13 dB | | | | | | | | | | | | |
| 26dB Emission Bandwidth 99% Occupied Bandwidth | N/A | | | | | | | | | | | | |
| Emission Mask | <p>(i) Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by the SAS to CBSDs, the conducted power of any CBSD emission outside the fundamental emission bandwidth as specified in paragraph (e) (3) of this section (whether the emission is inside or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any CBSD emission shall not exceed -25 dBm/MHz. The upper and lower SAS assigned channel edges are the upper and lower limits of any channel assigned to a CBSD by an SAS, or in the case of multiple contiguous channels, the upper and lower limits of the combined contiguous channels.</p> <p>(ii) Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.</p> | | | | | | | | | | | | |
| Out of Band Emission at Antenna Terminals | Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz. | | | | | | | | | | | | |
| Field Strength of Spurious Radiation | Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz. | | | | | | | | | | | | |
| Frequency Stability | The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. | | | | | | | | | | | | |

5.2 Effective Isotropic Radiated Power (EIRP)

| For 10MHz measurement bandwidth | | | | | | | |
|--|--------------|-----------|--------------------------|-------------------------|------------------------|------------------|-------------------|
| Modulation | Test channel | ANT. Port | Output Power (dBm/10MHz) | Total Power (dBm/10MHz) | Directional gain (dBi) | EIRP (dBm/10MHz) | Limit (dBm/10MHz) |
| QPSK (10MHz) | Lowest | ANT 1 | 26.58 | 29.89 | 13.50 | 43.39 | 47.00 |
| | | ANT 2 | 27.16 | | | | |
| | Middle | ANT 1 | 26.60 | 29.51 | | 43.01 | |
| | | ANT 2 | 26.40 | | | | |
| | Highest | ANT 1 | 26.38 | 29.32 | | 42.82 | |
| | | ANT 2 | 26.24 | | | | |
| 64QAM (10MHz) | Lowest | ANT 1 | 27.07 | 30.13 | 13.50 | 43.63 | |
| | | ANT 2 | 27.17 | | | | |
| | Middle | ANT 1 | 26.60 | 29.50 | | 43.00 | |
| | | ANT 2 | 26.38 | | | | |
| | Highest | ANT 1 | 26.28 | 29.29 | | 42.79 | |
| | | ANT 2 | 26.28 | | | | |
| QPSK (20MHz) | Lowest | ANT 1 | 24.61 | 27.56 | 13.50 | 41.06 | 47.00 |
| | | ANT 2 | 24.48 | | | | |
| | Middle | ANT 1 | 24.38 | 27.44 | | 40.94 | |
| | | ANT 2 | 24.48 | | | | |
| | Highest | ANT 1 | 24.87 | 27.51 | | 41.01 | |
| | | ANT 2 | 24.10 | | | | |
| 64QAM (20MHz) | Lowest | ANT 1 | 24.20 | 27.06 | 13.50 | 40.56 | |
| | | ANT 2 | 23.89 | | | | |
| | Middle | ANT 1 | 24.19 | 27.07 | | 40.57 | |
| | | ANT 2 | 23.93 | | | | |
| | Highest | ANT 1 | 24.44 | 27.00 | | 40.5 | |
| | | ANT 2 | 23.48 | | | | |
| Remark: 1. All transmit signals are completely uncorrelated with each other, Directional gain = GANT =13.50 dBi. | | | | | | | |

| For 20Mz bandwidth measurement bandwidth | | | | | | | |
|--|--------------|-----------|--------------------------|-------------------------|------------------------|------------------|-------------------|
| Modulation | Test channel | ANT. Port | Output Power (dBm/20MHz) | Total Power (dBm/20MHz) | Directional gain (dBi) | EIRP (dBm/20MHz) | Limit (dBm/20MHz) |
| QPSK (20MHz) | Lowest | ANT 1 | 27.10 | 30.02 | 13.50 | 43.52 | N/A |
| | | ANT 2 | 26.91 | | | | |
| | Middle | ANT 1 | 26.92 | 29.92 | | 43.42 | |
| | | ANT 2 | 26.90 | | | | |
| | Highest | ANT 1 | 27.51 | 30.22 | | 43.72 | |
| | | ANT 2 | 26.88 | | | | |
| 64QAM (20MHz) | Lowest | ANT 1 | 27.06 | 29.83 | 13.50 | 43.33 | |
| | | ANT 2 | 26.57 | | | | |
| | Middle | ANT 1 | 27.02 | 29.76 | | 43.26 | |
| | | ANT 2 | 26.46 | | | | |
| | Highest | ANT 1 | 26.98 | 29.70 | | 43.20 | |
| | | ANT 2 | 26.37 | | | | |

Remark:
 1. All transmit signals are completely uncorrelated with each other, Directional gain = GANT =13.50 dBi.

5.3 Power Spectral Density (PSD)

| Modulation | Test channel | ANT. Port | PSD (dBm/MHz) | Total PSD (dBm/MHz) | Directional gain (dBi) | PSD (e.i.r.p) (dBm/MHz) | Limit (dBm/MHz) |
|--|--------------|-----------|---------------|---------------------|------------------------|-------------------------|-----------------|
| QPSK (10MHz) | Lowest | ANT 1 | 18.13 | 20.70 | 13.50 | 34.20 | 37.00 |
| | | ANT 2 | 17.21 | | | | |
| | Middle | ANT 1 | 16.69 | 19.70 | | | |
| | | ANT 2 | 16.69 | | | | |
| | Highest | ANT 1 | 16.95 | 19.66 | | | |
| | | ANT 2 | 16.32 | | | | |
| 64QAM (10MHz) | Lowest | ANT 1 | 17.10 | 20.11 | 13.50 | 33.61 | 37.00 |
| | | ANT 2 | 17.10 | | | | |
| | Middle | ANT 1 | 16.73 | 19.74 | | | |
| | | ANT 2 | 16.73 | | | | |
| | Highest | ANT 1 | 16.53 | 19.54 | | | |
| | | ANT 2 | 16.53 | | | | |
| QPSK (20MHz) | Lowest | ANT 1 | 13.71 | 17.34 | 13.50 | 30.84 | 37.00 |
| | | ANT 2 | 14.87 | | | | |
| | Middle | ANT 1 | 15.50 | 18.57 | | | |
| | | ANT 2 | 15.62 | | | | |
| | Highest | ANT 1 | 15.74 | 18.55 | | | |
| | | ANT 2 | 15.34 | | | | |
| 64QAM (20MHz) | Lowest | ANT 1 | 14.28 | 17.37 | 13.50 | 30.87 | 37.00 |
| | | ANT 2 | 14.43 | | | | |
| | Middle | ANT 1 | 15.34 | 18.37 | | | |
| | | ANT 2 | 15.37 | | | | |
| | Highest | ANT 1 | 15.28 | 18.45 | | | |
| | | ANT 2 | 15.60 | | | | |
| Remark: 1. All transmit signals are completely uncorrelated with each other, Directional gain = GANT =13.50 dBi. | | | | | | | |

5.4 Peak-to-average power ratio (PAPR)

| Modulation | Test channel | ANT. Port | PAPR(dB) | Limit (dB) |
|------------------|--------------|-----------|----------|------------|
| QPSK (10MHz) | Lowest | ANT 1 | 9.19 | 13 |
| | | ANT 2 | 9.03 | |
| | Middle | ANT 1 | 9.06 | |
| | | ANT 2 | 9.09 | |
| | Highest | ANT 1 | 9.15 | |
| | | ANT 2 | 9.01 | |
| 64QAM (10MHz) | Lowest | ANT 1 | 9.13 | |
| | | ANT 2 | 9.09 | |
| | Middle | ANT 1 | 9.02 | |
| | | ANT 2 | 9.23 | |
| | Highest | ANT 1 | 9.10 | |
| | | ANT 2 | 9.19 | |
| QPSK (20MHz) | Lowest | ANT 1 | 9.28 | |
| | | ANT 2 | 8.70 | |
| | Middle | ANT 1 | 8.85 | |
| | | ANT 2 | 9.02 | |
| | Highest | ANT 1 | 9.27 | |
| | | ANT 2 | 9.03 | |
| 64QAM (20MHz) | Lowest | ANT 1 | 9.21 | |
| | | ANT 2 | 8.25 | |
| | Middle | ANT 1 | 9.25 | |
| | | ANT 2 | 9.26 | |
| | Highest | ANT 1 | 9.33 | |
| | | ANT 2 | 8.78 | |

5.5 Occupied Bandwidth

| Modulation | Test channel | ANT. Port | 26dB Occupy bandwidth (MHz) | 99% Occupy bandwidth (MHz) |
|------------------|--------------|-----------|-----------------------------|----------------------------|
| QPSK (10MHz) | Lowest | ANT 1 | 9.363 | 8.9184 |
| | | ANT 2 | 9.360 | 8.9200 |
| | Middle | ANT 1 | 9.325 | 8.9208 |
| | | ANT 2 | 9.358 | 8.9132 |
| | Highest | ANT 1 | 9.316 | 8.9280 |
| | | ANT 2 | 9.347 | 8.9328 |
| 64QAM (10MHz) | Lowest | ANT 1 | 9.350 | 8.9428 |
| | | ANT 2 | 9.324 | 8.9273 |
| | Middle | ANT 1 | 9.361 | 8.9188 |
| | | ANT 2 | 9.368 | 8.9231 |
| | Highest | ANT 1 | 9.429 | 8.9290 |
| | | ANT 2 | 9.334 | 8.9291 |
| QPSK (20MHz) | Lowest | ANT 1 | 18.60 | 17.869 |
| | | ANT 2 | 18.58 | 17.839 |
| | Middle | ANT 1 | 18.57 | 17.842 |
| | | ANT 2 | 18.51 | 17.856 |
| | Highest | ANT 1 | 18.60 | 17.850 |
| | | ANT 2 | 18.54 | 17.861 |
| 64QAM (20MHz) | Lowest | ANT 1 | 18.50 | 17.861 |
| | | ANT 2 | 18.54 | 17.858 |
| | Middle | ANT 1 | 18.58 | 17.867 |
| | | ANT 2 | 18.52 | 17.859 |
| | Highest | ANT 1 | 18.50 | 17.870 |
| | | ANT 2 | 18.57 | 17.872 |

5.6 Field Strength of Spurious Radiation

Remark: During the test, pre-scan the QPSK, 64QAM modulation, and found the QPSK modulation is the worst case.

| LTE band 48 (10 MHz) - QPSK | | | | | | |
|---|---------------------|-------------|-------------|-------------|-------------|--------------|
| Lowest channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7105.00 | -53.59 | 3.56 | -50.03 | -40.00 | 10.03 | Vertical |
| 10657.50 | -53.61 | 11.88 | -41.73 | -40.00 | 2.75 | Vertical |
| 7105.00 | -53.42 | 3.11 | -50.31 | -40.00 | 10.31 | Horizontal |
| 10657.50 | -52.83 | 10.31 | -42.52 | -40.00 | 2.62 | Horizontal |
| Middel channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7250.00 | -53.52 | 4.00 | -49.52 | -40.00 | 9.52 | Vertical |
| 10875.00 | -53.90 | 11.19 | -42.71 | -40.00 | 2.71 | Vertical |
| 7250.00 | -52.94 | 3.50 | -49.44 | -40.00 | 9.44 | Horizontal |
| 10875.00 | -53.20 | 10.72 | -42.48 | -40.00 | 2.48 | Horizontal |
| Highest channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7395.00 | -53.69 | 4.27 | -49.42 | -40.00 | 9.42 | Vertical |
| 11092.50 | -53.87 | 11.21 | -42.66 | -40.00 | 2.66 | Vertical |
| 7395.00 | -52.51 | 3.43 | -49.08 | -40.00 | 9.08 | Horizontal |
| 11092.50 | -53.68 | 11.00 | -42.68 | -40.00 | 2.68 | Horizontal |
| Remark: The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. | | | | | | |

| LTE band 48 (20 MHz) - QPSK | | | | | | |
|---|---------------------|-------------|-------------|-------------|-------------|--------------|
| Lowest channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7120.00 | -53.55 | 3.70 | -49.85 | -40.00 | 9.85 | Vertical |
| 10680.00 | -53.91 | 11.74 | -42.17 | -40.00 | 2.17 | Vertical |
| 7120.00 | -53.24 | 3.26 | -49.98 | -40.00 | 9.98 | Horizontal |
| 10680.00 | -53.35 | 10.25 | -43.10 | -40.00 | 3.10 | Horizontal |
| Middel channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7250.00 | -53.64 | 4.00 | -49.64 | -40.00 | 9.64 | Vertical |
| 10875.00 | -53.41 | 11.10 | -42.31 | -40.00 | 2.31 | Vertical |
| 7250.00 | -53.20 | 3.50 | -49.70 | -40.00 | 9.70 | Horizontal |
| 10875.00 | -53.48 | 10.72 | -42.76 | -40.00 | 2.76 | Horizontal |
| Highest channel | | | | | | |
| Frequency (MHz) | Reading Level (dBm) | Factor (dB) | Level (dBm) | Limit (dBm) | Margin (dB) | Polarization |
| 7380.00 | -53.69 | 3.87 | -49.82 | -40.00 | 9.82 | Vertical |
| 11070.00 | -53.99 | 11.42 | -42.57 | -40.00 | 2.57 | Vertical |
| 7380.00 | -53.09 | 3.36 | -49.73 | -40.00 | 9.73 | Horizontal |
| 11070.00 | -53.72 | 11.06 | -42.66 | -40.00 | 2.66 | Horizontal |
| Remark: | | | | | | |
| The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. | | | | | | |

5.7 Frequency stability

Remark: During the test, pre-test all the channels and modulation mode, found the following channels and modulation were the worst case, and reflected in this report.

| Voltage measurement | | | | | | | | |
|---------------------|-----------|------------|---------|---------------|------------------|----------------|-----------------|-----------------------------|
| Band | Bandwidth | Modulation | Channel | Voltage [Vac] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| Band48 | 10MHz | QPSK | Middle | 102 | 25 | 45 | 0.012414 | within the authorized bands |
| Band48 | 10MHz | QPSK | Middle | 120 | 25 | 43 | 0.011862 | |
| Band48 | 10MHz | QPSK | Middle | 138 | 25 | 67 | 0.018483 | |
| Band48 | 10MHz | 64QAM | Middle | 102 | 25 | 68 | 0.018759 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 25 | 55 | 0.015172 | |
| Band48 | 10MHz | 64QAM | Middle | 138 | 25 | 66 | 0.018207 | |
| Band48 | 20MHz | QPSK | Middle | 102 | 25 | 62 | 0.017103 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 25 | 49 | 0.013517 | |
| Band48 | 20MHz | QPSK | Middle | 138 | 25 | 53 | 0.014621 | |
| Band48 | 20MHz | 64QAM | Middle | 102 | 25 | 64 | 0.017655 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 25 | 59 | 0.016276 | |
| Band48 | 20MHz | 64QAM | Middle | 138 | 25 | 48 | 0.013241 | |

| Temperature measurement | | | | | | | | |
|-------------------------|-----------|------------|---------|---------------|------------------|----------------|-----------------|-----------------------------|
| Band | Bandwidth | Modulation | Channel | Voltage [Vac] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| Band48 | 10MHz | QPSK | Middle | 120 | -30 | 41 | 0.011310 | within the authorized bands |
| Band48 | 10MHz | QPSK | Middle | 120 | -20 | 49 | 0.013517 | |
| Band48 | 10MHz | QPSK | Middle | 120 | -10 | 62 | 0.017103 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 0 | 59 | 0.016276 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 10 | 54 | 0.014897 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 20 | 64 | 0.017655 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 30 | 61 | 0.016828 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 40 | 45 | 0.012414 | |
| Band48 | 10MHz | QPSK | Middle | 120 | 50 | 50 | 0.013793 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | -30 | 63 | 0.017379 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | -20 | 57 | 0.015724 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | -10 | 44 | 0.012138 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 0 | 46 | 0.012690 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 10 | 47 | 0.012966 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 20 | 60 | 0.016552 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 30 | 63 | 0.017379 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 40 | 51 | 0.014069 | |
| Band48 | 10MHz | 64QAM | Middle | 120 | 50 | 53 | 0.014621 | |

| Temperature measurement | | | | | | | | |
|-------------------------|-----------|------------|---------|---------------|------------------|----------------|-----------------|-----------------------------|
| Band | Bandwidth | Modulation | Channel | Voltage [Vac] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| Band48 | 20MHz | QPSK | Middle | 120 | -30 | 46 | 0.012690 | within the authorized bands |
| Band48 | 20MHz | QPSK | Middle | 120 | -20 | 48 | 0.013241 | |
| Band48 | 20MHz | QPSK | Middle | 120 | -10 | 57 | 0.015724 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 0 | 56 | 0.015448 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 10 | 47 | 0.012966 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 20 | 51 | 0.014069 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 30 | 60 | 0.016552 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 40 | 46 | 0.012690 | |
| Band48 | 20MHz | QPSK | Middle | 120 | 50 | 52 | 0.014345 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | -30 | 62 | 0.017103 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | -20 | 54 | 0.014897 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | -10 | 43 | 0.011862 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 0 | 42 | 0.011586 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 10 | 53 | 0.014621 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 20 | 65 | 0.017931 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 30 | 61 | 0.016828 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 40 | 52 | 0.014345 | |
| Band48 | 20MHz | 64QAM | Middle | 120 | 50 | 58 | 0.016000 | |

-----End of report-----