Allen Wang
Nice Nong

1. Nie



TEST REPORT

FCC Part 27

| Report Reference | No: | CTL1702156501-WF0 |
|------------------|-----|-------------------|
|------------------|-----|-------------------|

Compiled by: Allen Wang (position+printed name+signature) (File administrators)

Tested by: Nice Nong (position+printed name+signature) (Test Engineer)

Ivan Xie Approved by: (position+printed name+signature) (Manager)

Product Name 8 inch 4G Tablet

Model/Type reference: TT800Q

List Model(s)..... N/A

Trade Mark.....: N/A

FCC ID..... 2AGCDJACS800Q

Applicant's name JACS SOLUTIONS LLC

Address of applicant...... 8808 Centre Park Drive Suite 305 Columbia, MD 21045, USA

Test Firm..... Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Address of Test Firm

Nanshan District, Shenzhen, China 518055

Test specification:

Standard FCC CFR Title 47 Part 2, Part 27

EIA/TIA 603-D: 2010 KDB 971168 D01

TRF Originator...... Shenzhen CTL Testing Technology Co., Ltd.

Master TRF.....: Dated 2011-01

Date of Receipt...... Jun. 15, 2017

Date of Test Date Jun. 16, 2017–Jul. 11, 2017

Data of Issue...... Jul. 12, 2017

Result..... Pass

Shenzhen CTL Testing Technology Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen CTL Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen CTL Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

TEST REPORT

Report No.: CTL1702156501-WF03

| Toot Poport No. | CTL1702156501-WF03 | Jul. 12, 2017 |
|-------------------|--------------------|---------------|
| Test Report No. : | C1L1702130301-WF03 | Date of issue |

Equipment under Test : 8 inch 4G Tablet

Model /Type : TT800Q

Listed Models : N/A

Applicant : JACS SOLUTIONS LLC

Address : 8808 Centre Park Drive Suite 305 Columbia, MD

21045, USA

Manufacturer : SHENZHEN JIZHAO INFORMATION

TECHNOLOGY CO., LTD.

Address : BUILDING NO.1 ZHONGKENUO INDUSTRIAL

PARK HEZHOU ROAD XIXIANG STREET BAOAN

DISTRICT SHENZHEN, CHINA

| Test result Pass * |
|--------------------|
|--------------------|

^{*}In the configuration tested, the EUT complied with the standards specified page 5.

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

** Modified History **

| Revisions | Description | Issued Data | Report No. | Remark |
|-------------|-----------------------------|-------------|--------------------|----------|
| Version 1.0 | Initial Test Report Release | 2017-07-12 | CTL1702156501-WF03 | Tracy Qi |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



| | Table of Contents | Page |
|--------|--|------|
| 1. SU | MMARY | 5 |
| 1.1. | TEST STANDARDS | 5 |
| 1.2. | Test Description | |
| 1.3. | TEST FACILITY | |
| 1.4. | STATEMENT OF THE MEASUREMENT UNCERTAINTY | |
| 2. GE | NERAL INFORMATION | |
| 2.1. | Environmental conditions | |
| 2.2. | GENERAL DESCRIPTION OF EUT | |
| 2.3. | DESCRIPTION OF TEST MODES | |
| 2.4. | EQUIPMENTS USED DURING THE TEST | |
| 2.5. | RELATED SUBMITTAL(S) / GRANT (S) | 8 |
| 2.6. | Modifications | 8 |
| 3. TES | ST CONDITIONS AND RESULTS | g |
| 3.1. | Output Power | g |
| 3.2. | Peak-to-Average Ratio (PAR) | 15 |
| 3.3. | OCCUPIED BANDWIDTH AND EMISSION BANDWIDTH | |
| 3.4. | BAND EDGE COMPLIANCE | 30 |
| 3.5. | Spurious Emission | |
| 3.6. | FREQUENCY STABILITY UNDER TEMPERATURE & VOLTAGE VARIATIONS | |
| 4. TES | ST SETUP PHOTOS OF THE EUT | 63 |
| 5. PH | OTOS OF THE EUT | 64 |



V1.0 Page 5 of 64 Report No.: CTL1702156501-WF03

1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

FCC Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

TIA/EIA 603 D June 2010:Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

KDB971168 D01: v02r02 MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

ANSI C63.10: 2013: American National Standard for Testing Unlicensed Wireless Devices

ANSI C63.4: 2014: –American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz Range of 9 kHz to 40GHz

1.2. Test Description

| Test Item | Section in CFR 47 | Result |
|--|---------------------------------|--------|
| RF Output Power | Part 2.1046 Part 27.50(d)(4) | Pass |
| Peak-to-Average Ratio | Part 27.50(d)(4) | Pass |
| 99% & -26 dB Occupied Bandwidth | Part 2.1049 Part 27.53(h) | Pass |
| Spurious Emissions at Antenna Terminal | Part 2.1051 Part 27.53(h) | Pass |
| Field Strength of Spurious Radiation | Part 2.1053 Part 27.53(h) | Pass |
| Out of band emission, Band Edge | Part 2.1051 Part 27.53(h) | Pass |
| Frequency stability | Part 2.1055 Part 27.54 | Pass |

V1.0 Page 6 of 64 Report No.: CTL1702156501-WF03

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

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

IC Registration No.: 9618B

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 9618B on November 13, 2013.

FCC-Registration No.: 970318

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 970318, December 19, 2013.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods — Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

| Test | Range | Measurement Uncertainty | Notes |
|--------------------------|------------|----------------------------|-------|
| Radiated Emission | 30~1000MHz | 4.10dB | (1) |
| Radiated Emission | Above 1GHz | 4.32dB | (1) |
| Conducted Disturbance | 0.15~30MHz | 3.20dB | (1) |

⁽¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

V1.0 Page 7 of 64 Report No.: CTL1702156501-WF03

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | O . |
|---------------------|---------|
| Normal Temperature: | 25°C |
| Relative Humidity: | 55 % |
| Air Pressure: | 101 kPa |

2.2. General Description of EUT

| Product Name: | 8 inch 4G Tablet |
|-----------------------|------------------------|
| Model/Type reference: | TT800Q |
| Power supply: | DC 3.7V from battery |
| LTE | |
| Operation Band: | FDD-LTE: Band 2/4/5/12 |
| Modulation Type: | QPSK, 16QAM |
| Release Version: | Release 9 |
| Category: | Cat 4 |
| Antenna Type: | PIFA antenna |

Note: For more details, please refer to the user's manual of the EUT.

2.3. Description of Test Modes

The EUT has been tested under typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing. Regards to the frequency band operation: the lowest middle and highest frequency of channel were selected to perform the test, then shown on this report.

2.4. Equipments Used during the Test

| Test Equipment | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Due Date |
|------------------------|-------------------------|-----------------------|------------|---------------------|----------------------|
| Bilog Antenna | Sunol Sciences Corp. | JB1 | A061713 | 2017/06/02 | 2018/06/01 |
| Bilog Antenna | Sunol Sciences Corp. | JB1 | A061714 | 2017/06/02 | 2018/06/01 |
| EMI Test Receiver | R&S | ESCI | 103710 | 2017/06/02 | 2018/06/01 |
| Spectrum Analyzer | Agilent | E4407B | MY41440676 | 2017/05/21 | 2018/05/20 |
| Spectrum Analyzer | Agilent | N9020 | US46220290 | 2018/01/16 | 2018/01/17 |
| Controller | EM Electronics | Controller EM 1000 | N/A | 2017/05/21 | 2018/05/20 |
| Horn Antenna | Sunol Sciences Corp. | DRH-118 | A062013 | 2017/05/19 | 2018/05/18 |
| Horn Antenna | Sunol Sciences Corp. | DRH-118 | A062014 | 2017/05/19 | 2018/05/18 |
| Active Loop Antenna | SCHWARZBEC K | FMZB1519 | 1519-037 | 2017/05/19 | 2018/05/18 |
| Amplifier | Agilent | 8349B | 3008A02306 | 2017/05/19 | 2018/05/18 |

Report No.: CTL1702156501-WF03

2017/05/19

2018/05/18

| Amplifier | Agilent | 8447D | 2944A10176 | 2017/05/19 | 2018/05/18 |
|---|------------------|---------------------------|------------|------------|------------|
| Temperature/Humi dity Meter | Gangxing | CTH-608 | 02 | 2017/05/20 | 2018/05/19 |
| Wideband Radio Communication Tester | R&S | CMW500 | 101814 | 2016/11/21 | 2017/11/20 |
| High-Pass Filter | K&L | 9SH10-2700/X1 2750-O/O | N/A | 2017/05/20 | 2018/05/19 |
| High-Pass Filter | K&L | 41H10-1375/U1 2750-O/O | N/A | 2017/05/20 | 2018/05/19 |
| RF Cable | HUBER+SUHN ER | RG214 | N/A | 2017/06/02 | 2018/06/01 |
| Climate Chamber | ESPEC | EL-10KA | A20120523 | 2017/05/19 | 2018/05/18 |
| SIGNAL GENERATOR | Agilent | E4421B | US40051744 | 2017/05/19 | 2018/05/18 |

87300B

3116A03638

The calibration interval was one year

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with of the Part 27 Rules.

2.6. Modifications

Directional Coupler

No modifications were implemented to meet testing criteria.

Agilent



V1.0 Page 9 of 64 Report No.: CTL1702156501-WF03

3. TEST CONDITIONS AND RESULTS

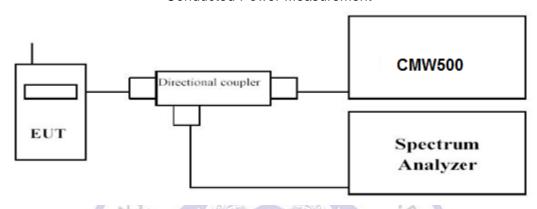
3.1. Output Power

LIMIT

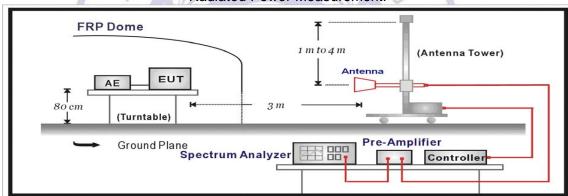
According to §27.50 (d) (4): Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

TEST CONFIGURATION

Conducted Power Measurement



Radiated Power Measurement:



TEST PROCEDURE

The EUT was setup according to EIA/TIA 603D

Conducted Power Measurement:

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
- c) EUT Communicate with CMW500 then selects a channel for testing.
- d) Add a correction factor to the display of spectrum, and then test.

Radiated Power Measurement:

- a) The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- b) The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- c) The output of the test antenna shall be connected to the measuring receiver.

V1.0 Page 10 of 64 Report No.: CTL1702156501-WF03

d) The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.

- e) The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- f) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- g) The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- h) The maximum signal level detected by the measuring receiver shall be noted.
- i) The transmitter shall be replaced by a substitution antenna.
- j) The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- k) The substitution antenna shall be connected to a calibrated signal generator.
- If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- m) The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
- n) The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
- o) The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
- p) The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
- q) Test site anechoic chamber refer to ANSI C63.4.

TEST RESULTS

Conducted Measurement:

| T) (0) | | E FDD Band 4 | | |
|-----------------|-----------------|----------------|------------|-------|
| TX Channel | Frequency | RB Size/Offset | Average Po | |
| Bandwidth | (MHz) | | QPSK | 16QAM |
| | | 1 RB low | 21.62 | 21.21 |
| | 1710.7 | 1 RB high | 22.62 | 22.42 |
| | 1710.7 | 50% RB mid | 22.47 | 22.02 |
| | | 100% RB | 22.89 | 22.87 |
| | | 1 RB low | 22.65 | 22.60 |
| 1.4 MHz | 1732.5 | 1 RB high | 22.24 | 21.58 |
| | 1732.5 | 50% RB mid | 22.27 | 22.80 |
| | | 100% RB | 22.66 | 21.85 |
| | | 1 RB low | 22.37 | 21.61 |
| | 1754.3 | 1 RB high | 22.06 | 21.25 |
| | 1754.5 | 50% RB mid | 22.18 | 21.47 |
| | | 100% RB | 22.77 | 22.26 |
| | | 1 RB low | 23.06 | 22.48 |
| | 1711.5 | 1 RB high | 22.57 | 22.45 |
| | 1711.5 | 50% RB mid | 22.16 | 22.81 |
| | 1 | 100% RB | 22.99 | 22.92 |
| | | 1 RB low | 22.95 | 22.91 |
| 3 MHz | 1732.5 | 1 RB high | 21.92 | 21.24 |
| 3 1/11/12 | 1/32.5 | 50% RB mid | 22.82 | 22.53 |
| | | 100% RB | 22.86 | 22.75 |
| | 100 100 | 1 RB low | 21.76 | 21.08 |
| | 1753.5 | 1 RB high | 21.52 | 20.76 |
| | 1/53.5 | 50% RB mid | 22.47 | 22.69 |
| | 9 | 100% RB | 23.10 | 22.61 |
| | | 1 RB low | 22.48 | 22.13 |
| | 1710 5 | 1 RB high | 22.26 | 21.74 |
| | 1712.5 | 50% RB mid | 22.83 | 22.28 |
| | CO | 100% RB | 23.13 | 22.73 |
| | | 1 RB low | 22.99 | 22.88 |
| 5 M I | 1700 5 | 1 RB high | 22.85 | 22.85 |
| 5 MHz | 1732.5 | 50% RB mid | 22.62 | 21.98 |
| | 1 × × | 100% RB | 22.37 | 21.75 |
| | 16 | 1 RB low | 21.67 | 21.27 |
| | 4750.5 | 1 RB high | 22.92 | 22.18 |
| | 1752.5 | 50% RB mid | 22.79 | 22.72 |
| | | 100% RB | 21.69 | 21.14 |
| | | 1 RB low | 22.42 | 21.93 |
| | 4 | 1 RB high | 22.03 | 21.63 |
| | 1715.0 | 50% RB mid | 21.74 | 20.96 |
| | | 100% RB | 21.64 | 20.84 |
| | | 1 RB low | 22.19 | 21.53 |
| | 4 - 06 - | 1 RB high | 22.76 | 22.18 |
| 10 MHz | 1732.5 | 50% RB mid | 22.05 | 21.38 |
| | | 100% RB | 23.08 | 22.49 |
| | | 1 RB low | 22.61 | 22.19 |
| | | 1 RB high | 22.10 | 21.42 |
| | 1750.0 | 50% RB mid | 23.00 | 22.24 |
| | | 100% RB | 23.18 | 22.56 |
| | | 1 RB low | 21.97 | 21.59 |
| | | 1 RB high | 22.24 | 21.81 |
| 15 MHz | 1717.5 | 50% RB mid | 22.40 | 21.55 |
| | • | 100% RB | 22.31 | 21.65 |

Report No.: CTL1702156501-WF03

| - | , | 1 | | | | |
|----------|--------|--|---|---|--|--|
| | | 1 RB low | 22.81 | 22.27 | | |
| | 1732.5 | 1 RB high | 22.82 | 22.79 | | |
| | 1732.5 | 50% RB mid | 21.69 | 21.00 | | |
| | | 100% RB | 22.40 | 22.01 | | |
| | | 1 RB low | 22.58 | 22.12 | | |
| | 4747.5 | 1 RB high | 22.03 | 21.38 | | |
| | 1747.5 | 50% RB mid | 22.48 | 21.73 | | |
| | | 100% RB | 22.20 | 21.36 | | |
| | | 1 RB low | 21.52 | 21.11 | | |
| | 1720.0 | 1 RB high | 21.97 | 21.60 | | |
| | 1720.0 | 50% RB mid | 22.59 | 21.81 | | |
| | | 100% RB | 21.89 | 22.79 21.00 22.01 22.12 21.38 21.73 21.36 21.11 21.60 | | |
| | | 1 RB low | 23.06 | 22.54 | | |
| 20 MHz | 1732.5 | 1 RB high | 21.78 | 20.94 | | |
| ZU IVITZ | 1732.5 | 50% RB mid | B high 22.82 22.79 RB mid 21.69 21.00 % RB 22.40 22.01 B low 22.58 22.12 B high 22.03 21.38 RB mid 22.48 21.73 % RB 22.20 21.36 B low 21.52 21.11 B high 21.97 21.60 RB mid 22.59 21.81 % RB 21.89 21.22 B low 23.06 22.54 B high 21.78 20.94 RB mid 23.30 22.90 % RB 22.78 22.36 B low 22.07 21.55 B high 21.62 20.82 RB mid 23.21 22.99 | | | |
| | | 100% RB | 22.78 | 22.36 | | |
| | | 1 RB low | 22.07 | 21.55 | | |
| | 1745.0 | 1 RB high | 21.62 | 20.82 | | |
| | 1745.0 | 1 RB low 22.58 22. 1 RB high 22.03 21. 50% RB mid 22.48 21. 100% RB 22.20 21. 1 RB low 21.52 21. 1 RB high 21.97 21. 50% RB mid 22.59 21. 100% RB 21.89 21. 1 RB low 23.06 22. 1 RB high 21.78 20. 50% RB mid 23.30 22. 1 RB low 22.78 22. 1 RB low 22.07 21. 1 RB high 21.62 20. 50% RB mid 23.21 22. | | | | |
| | 40 | 100% RB | 21.53 | 20.69 | | |



V1.0 Page 13 of 64 Report No.: CTL1702156501-WF03

Radiated Measurement:

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.

2. $EIRP=P_{Mea}(dBm)-P_{cl}(dB)+P_{Ag}(dB)+G_a(dBi)$

LTE FDD Band 4_Channel Bandwidth 1.4MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G₃ Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1710.7 | -20.68 | 2.75 | 8.98 | 35.70 | 21.25 | 30.00 | 8.75 | V |
| 1732.5 | -19.68 | 2.81 | 9.15 | 35.70 | 22.36 | 30.00 | 7.64 | V |
| 1754.3 | -20.64 | 2.85 | 9.47 | 35.70 | 21.68 | 30.00 | 8.32 | V |

LTE FDD Band 4_Channel Bandwidth 3MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1711.5 | -19.78 | 2.75 | 8.98 | 35.70 | 22.15 | 30.00 | 7.85 | V |
| 1732.5 | -19.60 | 2.81 | 9.15 | 35.70 | 22.44 | 30.00 | 7.56 | V |
| 1753.5 | -20.43 | 2.85 | 9.47 | 35.70 | 21.89 | 30.00 | 8.11 | V |

LTE FDD Band 4_Channel Bandwidth 5MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|----------------------|---------------|----------------|----------------|--------------|
| 1712.5 | -19.78 | 2.75 | 8.98 | 35.70 | 22.15 | 30.00 | 7.85 | V |
| 1732.5 | -19.48 | 2.81 | 9.15 | 35.70 | 22.56 | 30.00 | 7.44 | V |
| 1752.5 | -19.98 | 2.85 | 9.47 | 35.70 | 22.34 | 30.00 | 7.66 | V |

LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1715.0 | -20.06 | 2.75 | 8.98 | 35.70 | 21.87 | 30.00 | 8.13 | V |
| 1732.5 | -19.59 | 2.81 | 9.15 | 35.70 | 22.45 | 30.00 | 7.55 | V |
| 1750.0 | -19.66 | 2.85 | 9.47 | 35.70 | 22.66 | 30.00 | 7.34 | V |

LTE FDD Band 4_Channel Bandwidth 15MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1717.5 | -19.78 | 2.75 | 8.98 | 35.70 | 22.15 | 30.00 | 7.85 | V |
| 1732.5 | -19.49 | 2.81 | 9.15 | 35.70 | 22.55 | 30.00 | 7.45 | V |
| 1747.5 | -19.58 | 2.85 | 9.47 | 35.70 | 22.74 | 30.00 | 7.26 | V |

LTE FDD Band 4_Channel Bandwidth 20MHz_QPSK

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1720.0 | -20.57 | 2.75 | 8.98 | 35.70 | 21.36 | 30.00 | 8.64 | V |
| 1732.5 | -19.15 | 2.81 | 9.15 | 35.70 | 22.89 | 30.00 | 7.11 | V |
| 1745.0 | -19.65 | 2.85 | 9.47 | 35.70 | 22.67 | 30.00 | 7.33 | V |

LTE FDD Band 4_Channel Bandwidth 1.4MHz_16QAM

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1710.7 | -20.68 | 2.75 | 8.98 | 35.70 | 21.25 | 30.00 | 8.75 | V |
| 1732.5 | -20.71 | 2.81 | 9.15 | 35.70 | 21.33 | 30.00 | 8.67 | V |
| 1754.3 | -20.91 | 2.85 | 9.47 | 35.70 | 21.41 | 30.00 | 8.59 | V |

LTE FDD Band 4_Channel Bandwidth 3MHz_16QAM

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1711.5 | -20.28 | 2.75 | 8.98 | 35.70 | 21.65 | 30.00 | 8.35 | V |
| 1732.5 | -20.56 | 2.81 | 9.15 | 35.70 | 21.48 | 30.00 | 8.52 | V |
| 1753.5 | -21.96 | 2.85 | 9.47 | 35.70 | 20.36 | 30.00 | 9.64 | V |

LTE FDD Band 4_Channel Bandwidth 5MHz_16QAM

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|----------------------|---------------|----------------|----------------|--------------|
| 1712.5 | -20.69 | 2.75 | 8.98 | 35.70 | 21.24 | 30.00 | 8.76 | V |
| 1732.5 | -20.68 | 2.81 | 9.15 | 35.70 | 21.36 | 30.00 | 8.64 | V |
| 1752.5 | -21.43 | 2.85 | 9.47 | 35.70 | 20.89 | 30.00 | 9.11 | V |

LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|----------------------|---------------|----------------|----------------|--------------|
| 1715.0 | -21.25 | 2.75 | 8.98 | 35.70 | 20.68 | 30.00 | 9.32 | V |
| 1732.5 | -20.80 | 2.81 | 9.15 | 35.70 | 21.24 | 30.00 | 8.76 | V |
| 1750.0 | -20.79 | 2.85 | 9.47 | 35.70 | 21.53 | 30.00 | 8.47 | V |

LTE FDD Band 4_Channel Bandwidth 15MHz_16QAM

| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|--------------------|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|
| 1717.5 | -20.61 | 2.75 | 8.98 | 35.70 | 21.32 | 30.00 | 8.68 | V |
| 1732.5 | -21.06 | 2.81 | 9.15 | 35.70 | 20.98 | 30.00 | 9.02 | V |
| 1747.5 | -20.83 | 2.85 | 9.47 | 35.70 | 21.49 | 30.00 | 8.51 | V |
| | | | 00 | MING | 1 | | | |

LTE FDD Band 4 Channel Bandwidth 20MHz 16QAM

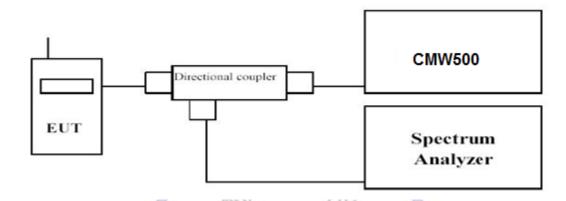
| 2121 22 2414 1_01411101 24114 1141 12 11 14 11 11 11 11 11 11 11 11 11 11 11 | | | | | | | | | | |
|--|---------------------------|----------------------|---------------------------------------|-------------------------|---------------|----------------|----------------|--------------|--|--|
| Frequency (MHz) | P _{Mea} (dBm) | P _{cl} (dB) | G _a Antenna Gain(dB) | P _{Ag} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization | | |
| 1720.0 | -20.16 | 2.75 | 8.98 | 35.70 | 21.77 | 30.00 | 8.23 | V | | |
| 1732.5 | -20.35 | 2.81 | 9.15 | 35.70 | 21.69 | 30.00 | 8.31 | V | | |
| 1745.0 | -20.50 | 2.85 | 9.47 | 35.70 | 21.82 | 30.00 | 8.18 | V | | |

3.2. Peak-to-Average Ratio (PAR)

LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

- Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- 2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
- 3. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 4. Set the measurement interval as follows:
 - 1). for continuous transmissions, set to 1 ms,
 - 2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

Testing Tech

5. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.

| LTE FDD Band 4 | | | | | | | | |
|----------------|-----------|----------------|-----------|-------|--|--|--|--|
| TX Channel | Frequency | RB Size/Offset | PAPR (dB) | | | | | |
| Bandwidth | (MHz) | RB Size/Offset | QPSK | 16QAM | | | | |
| 1.4 MHz | 1710.7 | | 4.03 | 4.88 | | | | |
| | 1732.5 | 1RB#0 | 3.73 | 4.44 | | | | |
| | 1754.3 | | 4.31 | 5.06 | | | | |
| 3 MHz | 1711.5 | | 3.94 | 4.71 | | | | |
| | 1732.5 | 1RB#0 | 3.57 | 3.98 | | | | |
| | 1753.5 | | 4.13 | 4.86 | | | | |
| 5 MHz | 1712.5 | | 4.02 | 4.85 | | | | |
| | 1732.5 | 1RB#0 | 3.55 | 3.67 | | | | |
| | 1752.5 | | 4.41 | 5.06 | | | | |
| 10 MHz | 1715.0 | | 3.98 | 4.73 | | | | |
| | 1732.5 | 1RB#0 | 3.41 | 3.66 | | | | |
| | 1750.0 | . 1 41 | 4.30 | 5.11 | | | | |
| | 1717.5 | 松 | 4.82 | 5.46 | | | | |
| 15 MHz | 1732.5 | 1RB#0 | 4.38 | 4.77 | | | | |
| | 1747.5 | | 5.26 | 6.11 | | | | |
| 20 MHz | 1720.0 | | 8.43 | 9.53 | | | | |
| | 1732.5 | 1RB#0 | 8.81 | 9.22 | | | | |
| | 1745.0 | | 10.55 | 10.57 | | | | |



Report No.: CTL1702156501-WF03

High Channel

Report No.: CTL1702156501-WF03



