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# TEST REPORT

## FCC Part 27

Report Reference No.....: CTL2411132062-WF02

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Product Name.....: MOBILE PHONE

Model/Type reference.....: Q8-1

List Model(s).....: Q8, Q9, Q9-1, Q9+, Q7, Q7+, Q1, Q2, Q3, Q5, Q6, Q10, K1, K1+, K2, K3, K5, K6, K7, K9, E11, E12, E13, E15, E16, E18, E19

Trade Mark.....: YEEMI

FCC ID.....: 2BMJP-Q8-1

Applicant's name.....: Shenzhen Jinkewei Technology Co., LTD

Address of applicant.....: 5302B, Seg Square, No.1002, Huaqiang North Road, Futian District, Shenzhen City, China

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

Address of Test Firm.....: Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Test specification.....:

Standard.....: FCC CFR Title 47 Part 2, Part 27  
ANSI/TIA/EIA-603-E:2016  
KDB 971168 D01

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

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

Date of receipt of test item.....: Nov. 14, 2024

Date of Test Date.....: Nov. 14, 2024- Dec. 16, 2024

Data of Issue.....: Dec. 17, 2024

Result.....: Pass

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# TEST REPORT

<b>Test Report No. :</b> CTL2411132062-WF02	Dec. 17, 2024 Date of issue
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Equipment under Test : MOBILE PHONE

Sample No. CTL2411132062

Model /Type : Q8-1

Listed Models : Q8, Q9, Q9-1, Q9+, Q7, Q7+, Q1, Q2, Q3, Q5, Q6, Q10, K1, K1+, K2, K3, K5, K6, K7, K9, E11, E12, E13, E15, E16, E18, E19

**Applicant** : Shenzhen Jinkewei Technology Co., LTD

Address : 5302B, Seg Square, No.1002, Huaqiang North Road, Futian District, Shenzhen City, China

**Manufacturer** : Shenzhen Jinkewei Technology Co., LTD

Address : 5302B, Seg Square, No.1002, Huaqiang North Road, Futian District, Shenzhen City, China

<b>Test result</b>	<b>Pass *</b>
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\*In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

## **\*\* Modified History \*\***

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# 1. SUMMARY

## 1.1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Part 27](#) : MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

[ANSI/TIA/EIA-603-E March 2016](#):Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

[FCC Part 2](#): FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

[KDB971168 D01: v03r01](#) MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

[ANSI C63.26-2015](#) American National Standard for Compliance Testing of Licensed 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

### 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, Shaheji 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:

##### **CNAS-Lab Code: L7497**

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

##### **A2LA-Lab Cert. No. 4343.01**

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

##### **IC Registration No.: 9618B**

##### **CAB identifier: CN0041**

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B.

##### **FCC-Registration No.: 399832**

##### **Designation No.: CN1216**

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 399832.

### 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	Measurement Uncertainty	Notes
Transmitter power Radiated	$\pm 2.20$ dB	(1)
Occupied Bandwidth	$\pm 0.02$ ppm	(1)
Radiated Emission 30~1000MHz	$\pm 4.10$ dB	(1)
Radiated Emission Above 1GHz	$\pm 4.32$ dB	(1)

Conducted Disturbance0.15~30MHz	$\pm 2.96\text{dB}$	(1)
20dB Emission Bandwidth	$\pm 1.9\%$	(1)
Carrier Frequency Separation	$\pm 1.9\%$	(1)
Maximum Power Spectral Density Level	$\pm 0.98\text{ dB}$	(1)
Number of Hopping Channel	$\pm 1.9\%$	(1)
Time of Occupancy	$\pm 0.11\%$	(1)
Max Peak Conducted Output Power	$\pm 0.98\text{ dB}$	(1)
Band-edge Spurious Emission	$\pm 1.21\text{dB}$	(1)
Conducted RF Spurious Emission	9kHz-7GHz: $\pm 1.09\text{dB}$ 7GHz-26.5GHz: $\pm 3.27\text{dB}$	(1)

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

## 2. GENERAL INFORMATION

### 2.1. Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

### 2.2. General Description of EUT

Product Name:	MOBILE PHONE	
Model/Type reference:	Q8-1	
Power supply:	Input: DC 5V/0.5A DC 3.7V 16800mAh Rechargeable Li-ion battery	
Hardware version:	SU109C_MB_V1.1	
Software version:	SU109C_JKW_Q8_EN_NV7644-31_240x320_V02_T02-202306012058	
LTE Band 38		
Operation Band:	Band 38	
Modulation Type:	QPSK, 16QAM	
Frequency range:	LTE Band 38(Channel Bandwidth:5MHz)	2572.5~ 2617.5MHz
	LTE Band 38(Channel Bandwidth:10MHz)	2575~ 2615MHz
	LTE Band 38(Channel Bandwidth:15MHz)	2577.5~ 2612.5MHz
	LTE Band 38(Channel Bandwidth:20MHz)	2580~ 2610MHz
Max. EIRP:	LTE Band 38(Channel Bandwidth:5MHz)	0.2056 W
	LTE Band 38(Channel Bandwidth:10MHz)	0.2075 W
	LTE Band 38(Channel Bandwidth:15MHz)	0.2113 W
	LTE Band 38(Channel Bandwidth:20MHz)	0.2061 W
Emission Designator:	LTE Band 38(Channel Bandwidth:5MHz)	4M60W7D
	LTE Band 38(Channel Bandwidth:10MHz)	9M11G7D
	LTE Band 38(Channel Bandwidth:15MHz)	13M6G7D
	LTE Band 38(Channel Bandwidth:20MHz)	18M2W7D
Antenna Type:	Monopole antenna	
Antenna Gain:	0 dBi	

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

### 2.3. Description of Test Modes

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis.

The worst-case was found when positioned as the table below, Following channel(s) was(were) selected for the final test as listed below.

Band	Radiated Emission
LTE Band 38	Y-plane



Test Item	Available Channel	Test Channel	Channel Bandwidth	Modulation	Mode
RF Output Power/EIRP	37775 to 38150	37775, 38000, 38150	5MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/13 RB Offset 1 RB/24 RB Offset 12 RB/0 RB Offset 12 RB/6 RB Offset 12 RB/13 RB Offset 25 RB/0 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/25 RB Offset 1 RB/49 RB Offset 25 RB/0 RB Offset 25 RB/13 RB Offset 25 RB/25 RB Offset 50 RB/0 RB Offset
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/38 RB Offset 1 RB/74 RB Offset 36 RB/0 RB Offset 36 RB/18 RB Offset 36 RB/39 RB Offset 75 RB/0 RB Offset
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/50 RB Offset 1 RB/99 RB Offset 50 RB/0 RB Offset 50 RB/25 RB Offset 50 RB/50 RB Offset 100 RB/0 RB Offset
Peak-to-Average Ratio	37775 to 38150	37775, 38000, 38150	5MHz	QPSK, 16QAM	25 RB/0 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	50 RB/0 RB Offset
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	75 RB/0 RB Offset
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	100 RB/0 RB Offset
Occupied Bandwidth	37775 to 38150	37775, 38000, 38150	5MHz	QPSK, 16QAM	25 RB/0 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	50 RB/0 RB Offset
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	75 RB/0 RB Offset
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	100 RB/0 RB Offset
Conducted Emission	37775 to 38150	37775, 38000, 38150	5MHz	QPSK, 16QAM	1 RB/0 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	1 RB/0 RB Offset
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	1 RB/0 RB Offset
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	1 RB/0 RB Offset
Radiated Emission	37775 to 38150	37775, 38000, 38150	5MHz	QPSK	1 RB/2 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK	1 RB/12 RB Offset

	37850 to 38150	37850, 38000, 38150	20MHz	QPSK	1 RB/49 RB Offset
Band Edge compliance	37775 to 38150	37775, 38150	5MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/24 RB Offset 25 RB/0 RB Offset
	37800 to 38200	37800, 38200	10MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/49 RB Offset 50 RB/0 RB Offset
	37825 to 38175	37825, 38175	15MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/74 RB Offset 75 RB/0 RB Offset
	37850 to 38150	37850, 38150	20MHz	QPSK, 16QAM	1 RB/0 RB Offset 1 RB/99 RB Offset 100 RB/0 RB Offset
Frequency stability	37775 to 38150	37775, 38000, 38150	5MHz	QPSK, 16QAM	25 RB/0 RB Offset
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	50 RB/0 RB Offset
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	75 RB/0 RB Offset
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	100 RB/0 RB Offset

Note: This device was tested under all RB configurations and modulations. The worst case was found in QPSK modulation.

## 2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ESH2-Z5	860014/010	2024/04/30	2025/04/29
Limitator	ROHDE & SCHWARZ	ESH3-Z2	100408	2024/04/30	2025/04/29
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2024/04/30	2025/04/29
Double cone logarithmic antenna	Schwarzbeck	VULB 9168	824	2023/02/13	2026/02/12
EMI Test Receiver	R&S	ESCI	1166.5950.03	2024/04/30	2025/04/29
Spectrum Analyzer	Agilent	N9020A	US46220290	2024/05/02	2025/05/01
Spectrum Analyzer	Keysight	N9020A	MY53420874	2024/05/02	2025/05/01
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2021/12/23	2024/12/22
Active Loop Antenna	Da Ze	ZN30900A	/	2024/04/30	2025/04/29
Amplifier	Agilent	8449B	3008A02306	2024/04/30	2025/04/29
Amplifier	Brief&Smart	LNA-4018	2104197	2024/05/03	2025/05/02
Temperature/Humidity Meter	Ji Yu	MC501	/	2024/05/04	2025/05/03
Power measurement module	TSTPASS	TSPS2023R	TSCB220016	2024/05/03	2025/05/02
Power Sensor	Agilent	U2021XA	MY53340004	2024/05/04	2025/05/03
Power Sensor	Agilent	U2021XA	MY54080012	2024/05/03	2025/05/02
Spectrum Analyzer	RS	FSP	1164.4391.38	2024/05/03	2025/05/02
Test Software					
Name of Software			Version		
TST-PASS			V2.0		
EZ_EMG(Below 1GHz)			V1.1.4.2		
EZ_EMG((Above 1GHz)			V1.1.4.2		

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

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

## 2.6. Modifications

No modifications were implemented to meet testing criteria.

### 3. TEST CONDITIONS AND RESULTS

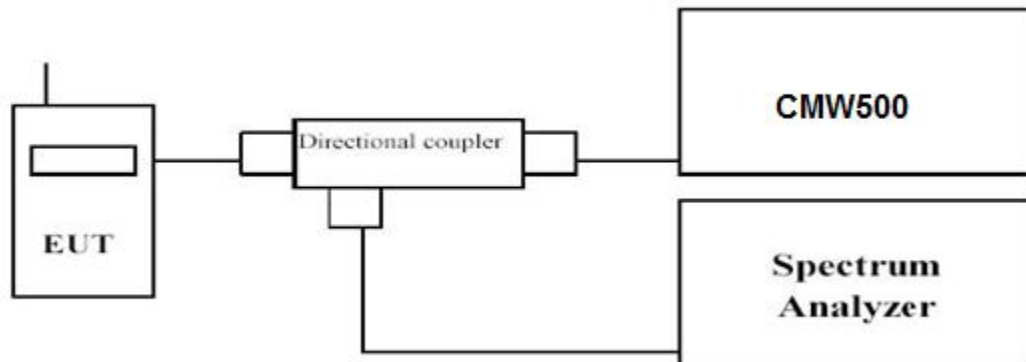
#### 3.1. Output Power

##### LIMIT

1 watt EIRP.

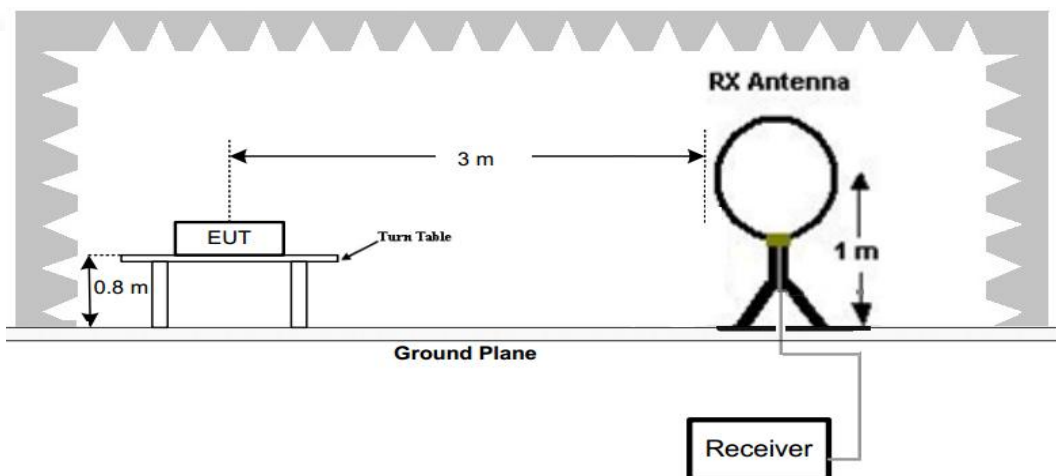
##### TEST CONFIGURATION

Conducted Power Measurement

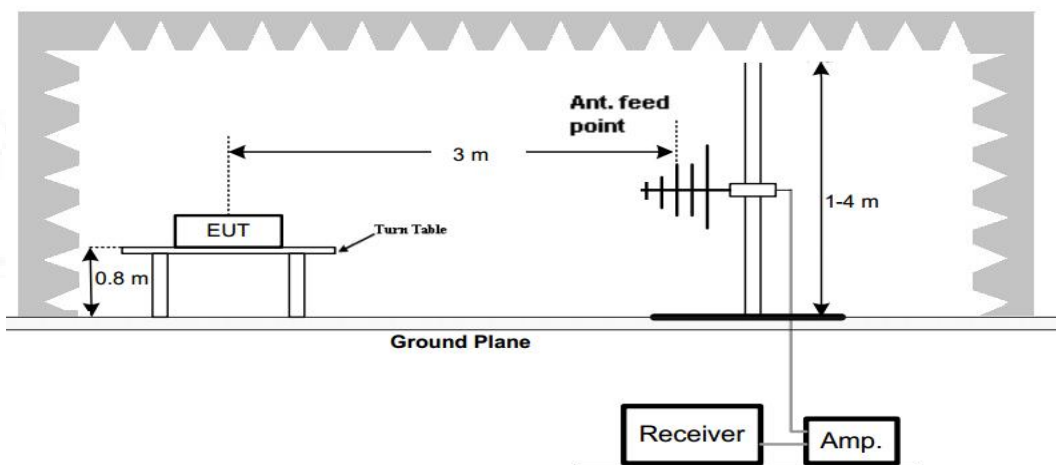


Radiated Power Measurement:

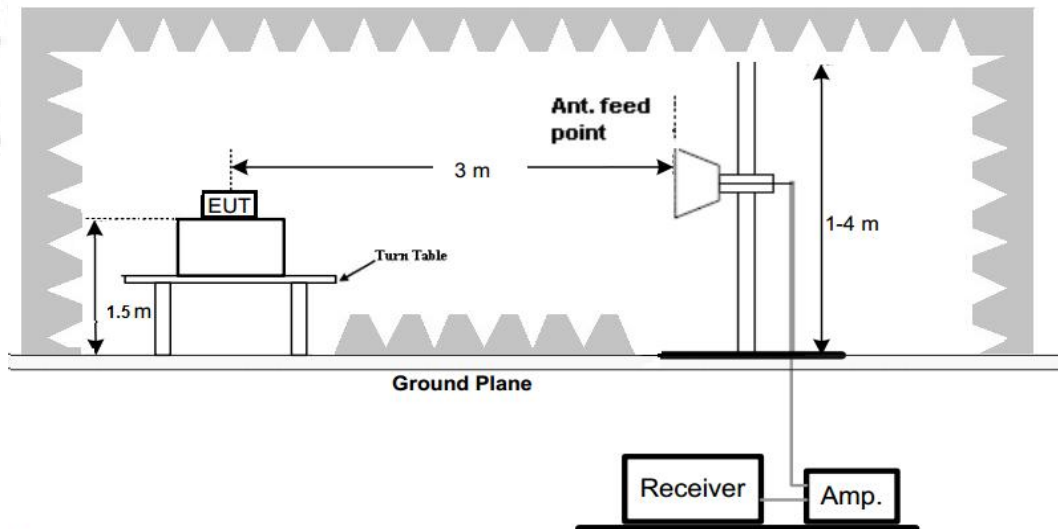
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



## (C) Radiated Emission Test Set-Up, Frequency above 1000MHz

**TEST PROCEDURE**

The EUT was setup according to ANSI/TIA/EIA-603-E

**Conducted Power Measurement:**

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

**Radiated Power Measurement:**

- The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- The output of the test antenna shall be connected to the measuring receiver.
- The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- 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.
- The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- 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.
- The maximum signal level detected by the measuring receiver shall be noted.
- The transmitter shall be replaced by a substitution antenna.
- 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.
- l) 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**

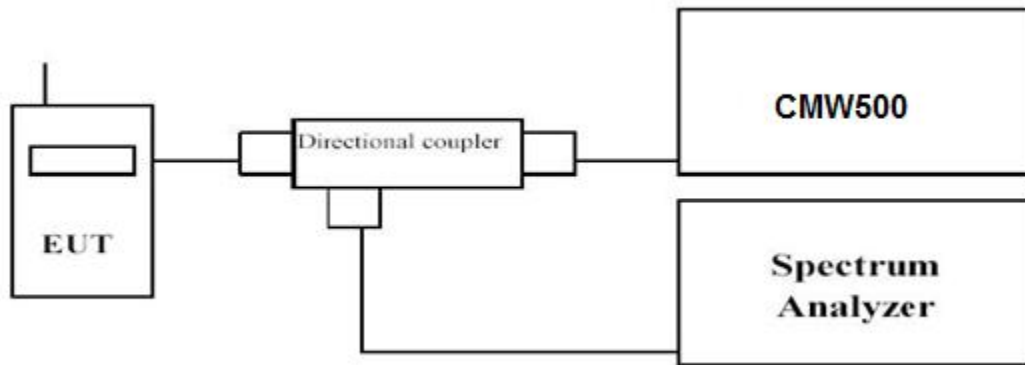
Raw data reference to Annex for FCC LTE Band 38.

### 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

1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
2. Set resolution/measurement bandwidth  $\geq$  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.
5. Record the maximum PAPR level associated with a probability of 0.1%.

#### TEST RESULTS

Raw data reference to Annex for FCC LTE Band 38.

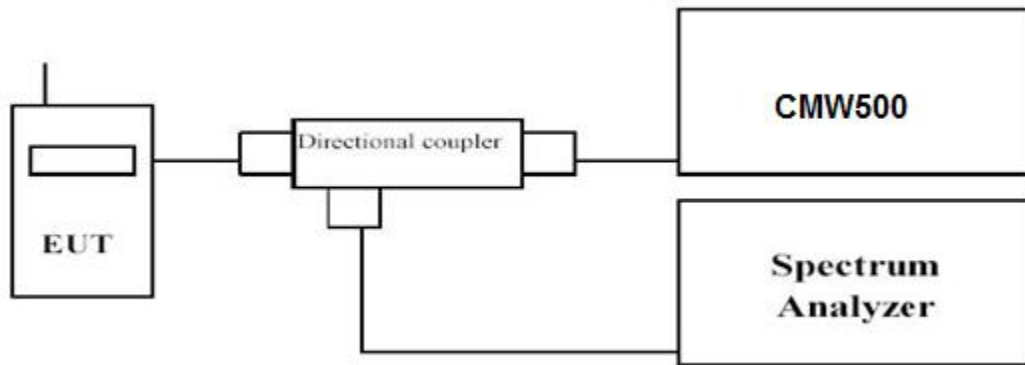


### 3.3. Occupied Bandwidth and Emission Bandwidth

#### LIMIT

N/A

#### TEST CONFIGURATION



#### TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at low, middle and high channel in each band. The -26dBc Emission bandwidth was also measured and recorded.

Set RBW was set to about 1% of emission BW, VBW $\geq$ 3 times RBW.

-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.

#### TEST RESULTS

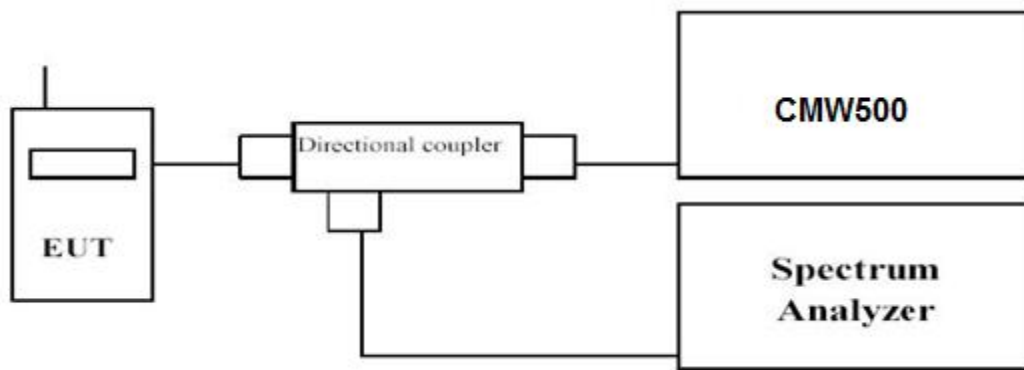
Raw data reference to Annex for FCC LTE Band 38.

### 3.4. Band Edge compliance

#### LIMIT

According to §27.53 (h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB.

#### TEST CONFIGURATION



#### TEST PROCEDURE

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest and highest channels for each band and different modulation.
5. Measure Band edge using RMS (Average) detector by spectrum

#### TEST RESULTS

Raw data reference to Annex for FCC LTE Band 38.

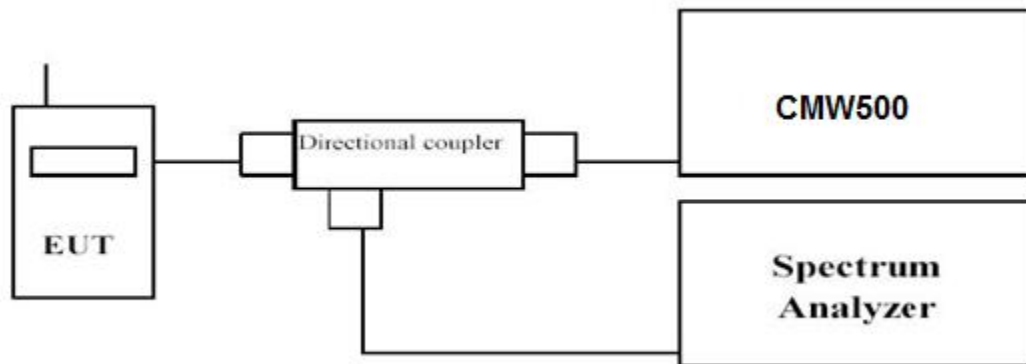
### 3.5. Spurious Emission

#### LIMIT

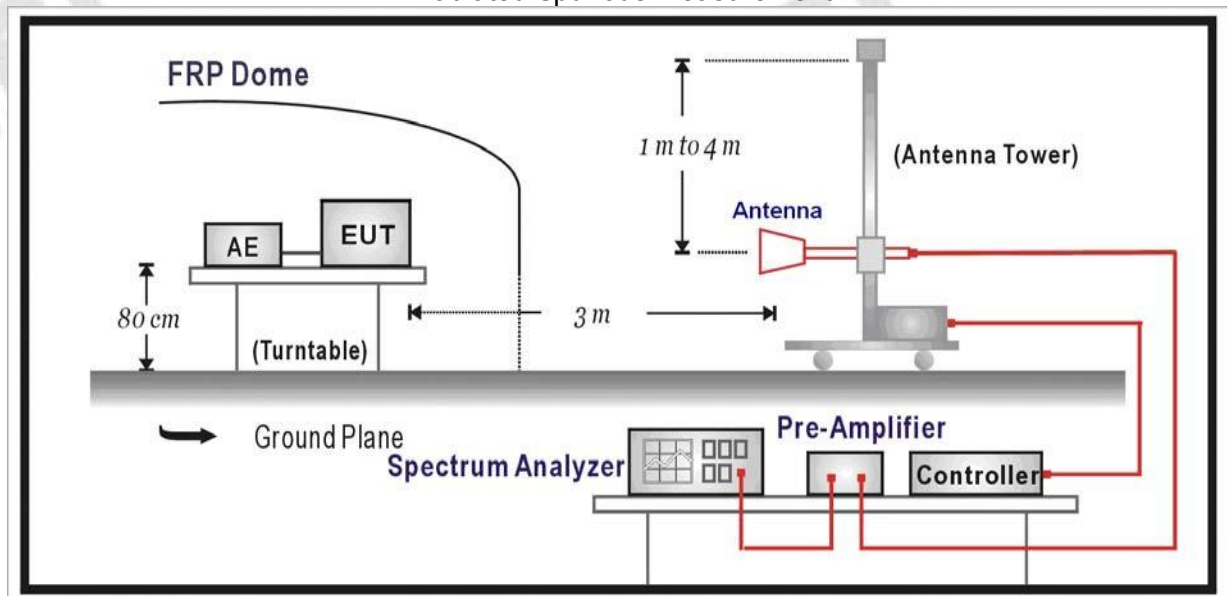
According to §27.53 (h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB.

#### TEST CONFIGURATION

Conducted Spurious Measurement:



Radiated Spurious Measurement:



#### TEST PROCEDURE

The EUT was setup according to ANSI/TIA/EIA-603-E

##### **Conducted Spurious Measurement:**

- Place the EUT on a bench and set it in transmitting mode.
- Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
- EUT Communicate with CMW500 then selects a channel for testing.
- Add a correction factor to the display of spectrum, and then test.
- The resolution bandwidth of the spectrum analyzer was set sufficient scans were taken to show the out of band Emission if any up to 10th harmonic.

**Radiated Spurious 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.
- 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.
- l. 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. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for Part 22 and 1MHz for Part 24. The frequency range was checked up to 10th harmonic.
- r. Test site anechoic chamber refer to ANSI C63.

**TEST RESULTS**

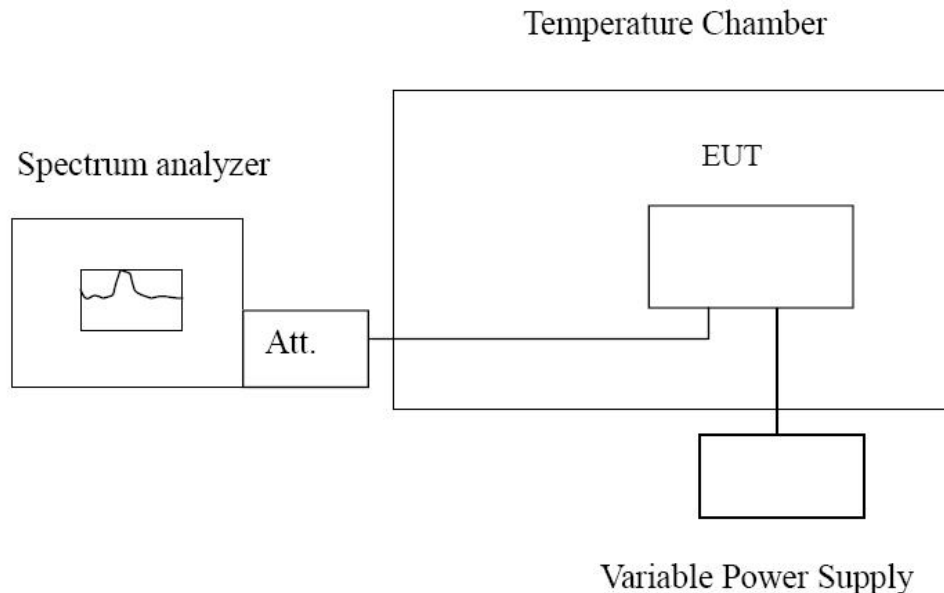
Raw data reference to Annex for FCC LTE Band 38.

### 3.6. Frequency Stability under Temperature & Voltage Variations

#### LIMIT

According to §27.54, §2.1055 requirement, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation and should not exceed 2.5ppm.

#### TEST CONFIGURATION



#### TEST PROCEDURE

The EUT was setup according to ANSI/TIA/EIA-603-E

##### **Frequency Stability under Temperature Variations:**

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel for LTE Band 38, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C increments from +50°C to -30°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

##### **Frequency Stability under Voltage Variations:**

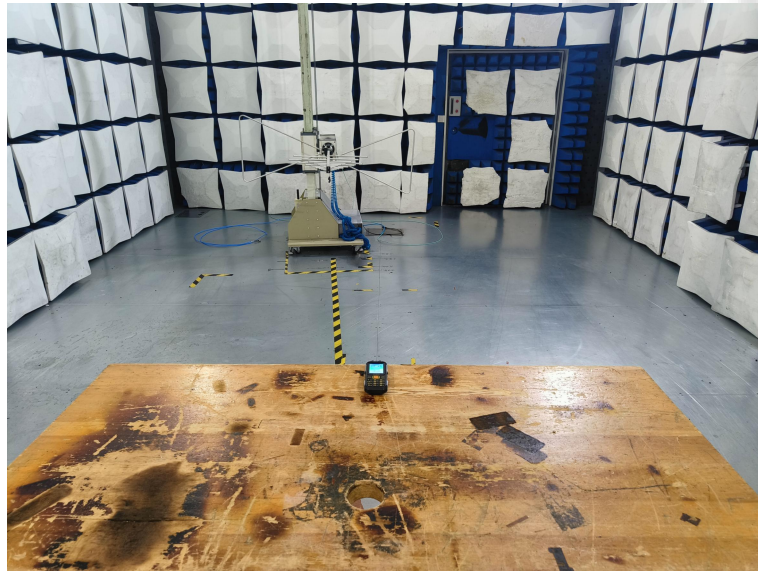
Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

**TEST RESULTS**

Raw data reference to Annex for FCC LTE Band 38.

#### 4. Test Setup Photos of the EUT



## 5. Photos of the EUT

Reference to the test report No. CTL2411132062-WF01

\*\*\*\*\* End of Report \*\*\*\*\*