



**FCC Test Report**

Report Reference No.: **HK2407314284-9E**  
FCC ID : **2BBBN-VISIONSYNC**  
Compiled by  
( position+printed name+signature) .: RF Department Manager Len Liao

*Len Liao*  
*Sliver Wan*  
*Jason Zhou*

Supervised by  
( position+printed name+signature) .: Technical Manager Sliver Wan

Approved by  
( position+printed name+signature) .: General Manager Jason Zhou

Date of issue .....: Aug. 20, 2024

**Testing Laboratory Name.....: Shenzhen HUAK Testing Technology Co., Ltd.**

Address .....: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park,  
Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

**Applicant's name .....: Hangzhou Tanlink Technology Co.,Ltd.**

Address .....: Room 701, South Building, Building 3, No.16, Longtan Road,  
Cangqian Street, Yuhang District, Hangzhou, Zhejiang, China

**Test specification .....:**

**Standard.....: FCC Part 90**

**Shenzhen HUAK 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 HUAK Testing Technology Co., Ltd.as copyright owner and source of the material. Shenzhen HUAK 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 item description .....: 4G driving recorder**

Trade Mark .....: Redtiger

**Manufacturer .....: Hangzhou Tanlink Technology Co.,Ltd.**

Model/Type reference .....: VisionSync 10

Series Models .....: VisionSync 30, VisionSync 30 Pro, VisionSync 50, VisionSync 50 Pro,  
VisionSync 70, VisionSync 70 Pro, VisionSync 90, VisionSync 90 Pro,  
LinkStream 10, LinkStream 30

Ratings .....: DC 5V from Type-C

Modulation .....: QPSK, 16QAM

Hardware version .....: V2.0

Software version .....: V2.0

Frequency .....: LTE Band 26

Result .....: **PASS**



**TEST REPORT**

<b>Test Report No. :</b>	<b>HK2407314284-9E</b>	Aug. 20, 2024
		Date of issue

Equipment under Test : 4G driving recorder

Model /Type : VisionSync 10

Series Models : VisionSync 30, VisionSync 30 Pro, VisionSync 50, VisionSync 50 Pro, VisionSync 70, VisionSync 70 Pro, VisionSync 90, VisionSync 90 Pro, LinkStream 10, LinkStream 30

**Applicant** : **Hangzhou Tanlink Technology Co.,Ltd.**

Address : Room 701, South Building, Building 3, No.16, Longtan Road, Cangqian Street, Yuhang District, Hangzhou, Zhejiang, China

**Manufacturer** : **Hangzhou Tanlink Technology Co.,Ltd.**

Address : Room 701, South Building, Building 3, No.16, Longtan Road, Cangqian Street, Yuhang District, Hangzhou, Zhejiang, China

<b>Test result</b>	<b>Pass</b>
--------------------	-------------

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.



**TABLE OF CONTENTS**

**1. SUMMARY ..... 4**

**1.1 Test Standards..... 4**

**1.2 Test Description..... 5**

**2. EUT DESCRIPTION ..... 6**

**3. GENERAL INFORMATION ..... 7**

**3.1. Test environment and mode..... 7**

**3.2. Test Mode..... 8**

**3.3. Description of Support Units..... 8**

**3.4. Configuration of Tested System ..... 9**

**3.5. Measurement Results Explanation Example..... 9**

**3.6. Equipments Used during the Test ..... 10**

**4. FACILITIES AND ACCREDITATIONS ..... 12**

**4.1. Information of The Test Laboratory ..... 12**

**4.2. Measurement Uncertainty..... 12**

**5. TEST RESULTS AND MEASUREMENT DATA ..... 13**

**5.1. Conducted Output Power Measurement ..... 13**

**5.2. Radiated Output Power ..... 15**

**5.3. Peak to Average Ratio..... 18**

**5.4. 99% Occupied Bandwidth and 26dB Bandwidth Measurement ..... 23**

**5.5. Band Edge and Conducted Spurious Emission Measurement ..... 28**

**5.6. Field Strength of Spurious Radiation Measurement ..... 42**

**5.7. Frequency Stability Measurement ..... 48**

**6. PHOTOGRAPHS OF TEST SETUP..... 50**

**7. PHOTOGRAPHS OF EUT..... 51**



# 1. SUMMARY

## 1.1 Test Standards

The tests were performed according to following standards:

[FCC Part 90](#) : PRIVATE LAND MOBILE RADIO SERVICES

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

47 CFR FCC Part 15 Subpart B: - Unintentional Radiators

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

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





### 1.2 Test Description

Requirement	CFR 47 Section	Result
Conducted Output Power	§2.1046; §90.635;	PASS
Peak-to-Average Ratio	§2.1046;	PASS
Effective Radiated Power	§2.1046; §90.635;	PASS
Occupied Bandwidth	§2.1049;	PASS
Band Edge	§2.1051; §90.691	PASS
Conducted Spurious Emission	§2.1051; §90.691	PASS
Field Strength of Spurious Radiation	§2.1053; §90.691	PASS
Frequency Stability for Temperature & Voltage	§2.1055; §90.231	PASS

**Note:**

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.



## 2. EUT DESCRIPTION

<b>Product Name:</b>	4G driving recorder
<b>Model :</b>	VisionSync 10
<b>Series Models:</b>	VisionSync 30, VisionSync 30 Pro, VisionSync 50, VisionSync 50 Pro, VisionSync 70, VisionSync 70 Pro, VisionSync 90, VisionSync 90 Pro, LinkStream 10, LinkStream 30
<b>Trade Mark:</b>	Redtiger
<b>Tx Frequency:</b>	LTE Band 26: 814 MHz ~ 824 MHz
<b>Rx Frequency:</b>	LTE Band 26: 859MHz ~ 869 MHz
<b>Bandwidth:</b>	LTE Band 26: 1.4MHz /3MHz /5MHz /10MHz
<b>Type of Modulation:</b>	QPSK/16QAM
<b>Antenna Type:</b>	Internal Antenna
<b>Antenna Gain:</b>	LTE Band 26: -1.43dBi
<b>Power Supply:</b>	DC 5V from Type-C



### 3. GENERAL INFORMATION

#### 3.1. Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation
<p>The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y &amp; Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

#### Description Operation Frequency

LTE Band 26(1.4MHz)		LTE Band 26(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26697	814.7	26705	815.5
26740	819.0	26740	819.0
26783	823.3	26775	822.5
LTE Band 26(5MHz)		LTE Band 26(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
26715	816.5	26740	819.0
26740	819.0	-	-
26765	821.5	-	-



### 3.2. Test Mode

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Mode		
Band	Radiated TCs	Conducted TCs
LTE Band 26	QPSK Link (1.4MHz / 3MHz / 5MHz / 10MHz)	16QAM Link (1.4MHz / 3MHz / 5MHz / 10MHz)

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power. Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

### 3.3. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

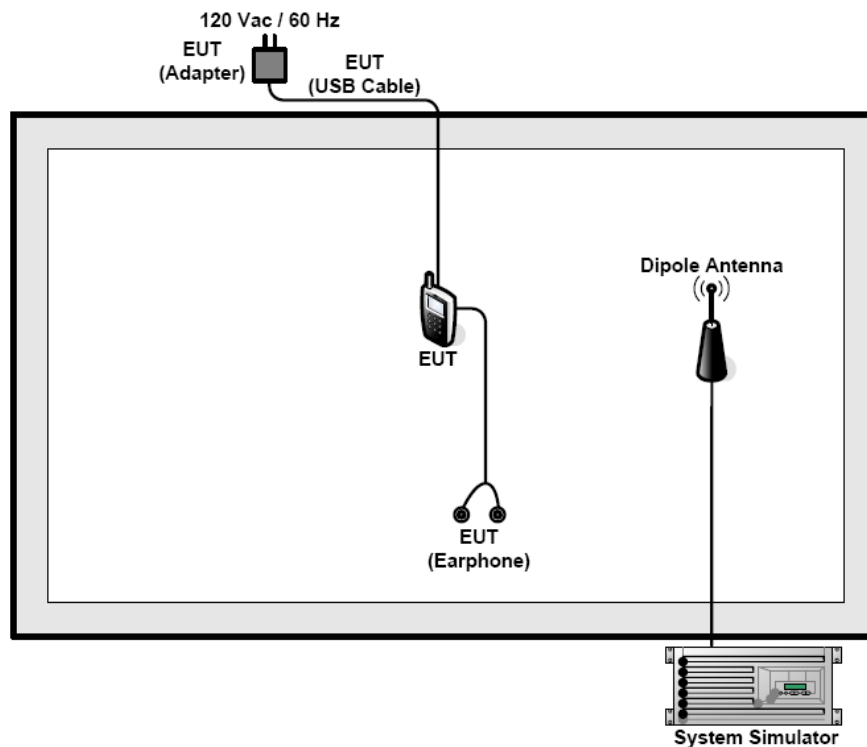
Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



### 3.4. Configuration of Tested System



### 3.5. Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level. The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

$$\text{Offset} = \text{RF cable loss} + \text{attenuator factor}.$$



**3.6. Equipments Used during the Test**

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	L.I.S.N.	R&S	ENV216	HKE-002	2024/02/20	2025/02/19
2	L.I.S.N.	R&S	ENV216	HKE-059	2024/02/20	2025/02/19
3	EMI Test Receiver	R&S	ESR	HKE-005	2024/02/20	2025/02/19
4	Spectrum analyzer	Agilent	N9020A	HKE-048	2024/02/20	2025/02/19
5	Spectrum	R&S	FSV3044	HKE-126	2024/02/20	2025/02/19
6	Preamplifier	EMCI	EMC05184 5S	HKE-006	2024/02/20	2025/02/19
7	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	2024/02/20	2025/02/19
8	Preamplifier	A.H. Systems	SAS-574	HKE-182	2024/02/20	2025/02/19
9	6d Attenuator	Pasternack	6db	HKE-184	2024/02/20	2025/02/19
10	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	2024/02/20	2025/02/19
11	Broadband Antenna	Schwarzbeck	VULB916 8	HKE-167	2024/02/21	2026/02/20
12	Loop Antenna	COM-POWER	AL-130R	HKE-014	2024/02/21	2026/02/20
13	Horn Antenna	Schwarzbeck	9120D	HKE-013	2024/02/21	2026/02/20
14	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16	RF Automatic control unit	Tonscend	JS0806-1	HKE-096	2024/02/20	2025/02/19
17	High pass filter unit	Tonscend	JS0806-F	HKE-055	2024/02/20	2025/02/19
18	Wireless Communication Test Set	R&S	CMU200	HKE-026	2024/02/20	2025/02/19

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : [service@cer-mark.com](mailto:service@cer-mark.com)

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



19	Wireless Communication Test Set	R&S	CMW500	HKE-027	2024/02/20	2025/02/19
20	High-low temperature chamber	Guangke	HT-80L	HKE-118	2024/06/10	2025/06/09
21	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2024/06/10	2025/06/09
22	RF Test Software	Tonscend	JS1120 Version 3.1.46	HKE-183	/	/

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : [service@cer-mark.com](mailto:service@cer-mark.com)

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



## 4. FACILITIES AND ACCREDITATIONS

### 4.1. Information of The Test Laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization :

A2LA Accreditation Code is 4781.01.

FCC Designation Number is CN1229.

Canada IC CAB identifier is CN0045.

CNAS Registration Number is L9589.

### 4.2. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

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  $k=2$ .

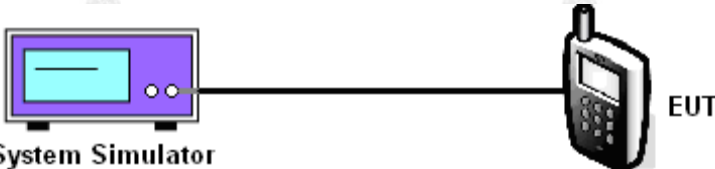




### 5. TEST RESULTS AND MEASUREMENT DATA

#### 5.1. Conducted Output Power Measurement

##### 5.1.1. Test Specification

<b>Test Requirement:</b>	FCC part 90.635
<b>Test Method:</b>	FCC part 2.1046
<b>Limits:</b>	LTE Band 26: 100W
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left is a purple rectangular box labeled 'System Simulator' with a blue screen and two small circles. A black line connects the right side of the simulator to the left side of a black mobile phone labeled 'EUT'.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The transmitter output port was connected to the system simulator.</li> <li>2. Set EUT at maximum power through system simulator.</li> <li>3. Select lowest, middle, highest channels for each band and different modulation.</li> <li>4. Measure and record the power level from the system simulator.</li> </ol>
<b>Test Result:</b>	PASS

### TEST RESULTS



Conducted Measurement:

LTE FDD Band 26				
TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	
			QPSK	16QAM
1.4 MHz	1 RB low	814.7	23.04	22.58
		819.0	23.06	22.59
		823.3	22.98	22.58
	1 RB high	814.7	23.07	21.85
		819.0	23.07	21.74
		823.3	23.05	21.86
	50% RB mid	814.7	22.05	21.29
		819.0	23.11	22.38
		823.3	22.99	22.31
	100% RB	814.7	22.97	22.26
		819.0	22.98	21.56
		823.3	22.98	21.54
3 MHz	1 RB low	815.5	23.17	21.91
		819.0	23.06	21.78
		822.5	23.07	21.80
	1 RB high	815.5	22.14	21.25
		819.0	22.14	21.37
		822.5	22.08	21.37
	50% RB mid	815.5	22.14	21.08
		819.0	23.12	21.63
		822.5	23.05	21.51
	100% RB	815.5	23.06	21.55
		819.0	22.11	21.72
		822.5	22.11	21.72
5 MHz	1 RB low	816.5	23.20	21.54
		819.0	23.18	21.68
		821.5	23.26	21.50
	1 RB high	816.5	22.05	21.11
		819.0	22.04	21.16
		821.5	22.03	21.10
	50% RB mid	816.5	22.04	21.34
		819.0	23.18	22.18
		821.5	23.16	22.09
	100% RB	816.5	23.05	22.18
		819.0	22.17	21.26
		821.5	22.01	21.31
10 MHz	1 RB low	819.0	22.92	22.15
	1 RB high	819.0	22.85	22.05
	50% RB mid	819.0	22.86	/
	100% RB	819.0	22.00	/

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

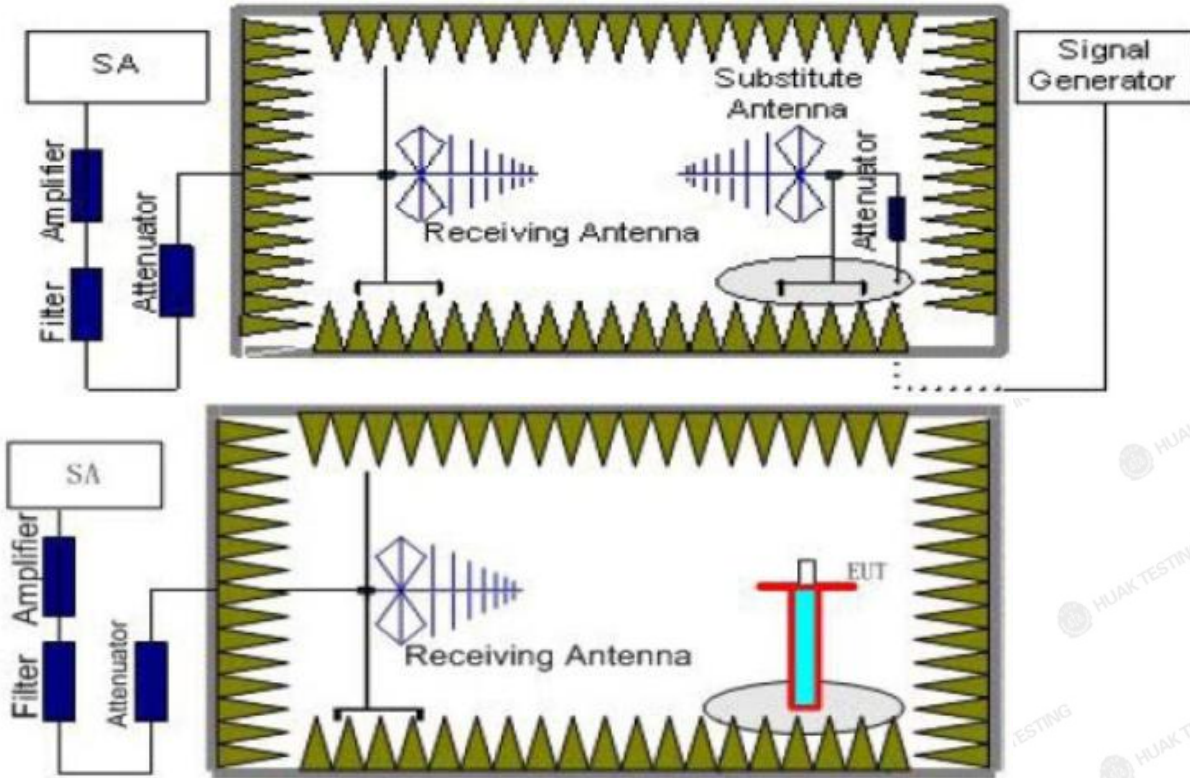
## 5.2. Radiated Output Power

### LIMIT

This is the test for the maximum radiated power from the EUT.

Rule Part 90 specifies, " The maximum output power of the transmitter for mobile stations is 100 watts. "

### TEST CONFIGURATION



### TEST PROCEDURE

1. EUT was placed on a 0.1 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 0.1m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, And the maximum value of the receiver should be recorded as ( $P_r$ ).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver.





- 5. reach the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss ( $P_{cl}$ ), the Substitution Antenna Gain ( $G_a$ ) and the Amplifier Gain ( $P_{Ag}$ ) should be recorded after test.

The measurement results are obtained as described below:  $Power(EIRP)=P_{Mea}-P_{Ag}-P_{cl}+G_a$

We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power

Amplifier for substitution test; The measurement results are amend as described below:

$Power(EIRP)=P_{Mea}-P_{cl}+G_a$

- 7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
- 8. ERP can be calculated from EIRP by subtracting the gain of the dipole,  $ERP = EIRP-2.15dBi$ .

**TEST RESULTS**

**Radiated Measurement:**

Remark:

- 1. We measured all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case for each Channel Bandwidth of LTE FDD Band 26.
- 2.  $EIRP=P_{Mea}(dBm)-P_{cl}(dB)+P_{Ag}(dB)+G_a(dBi)$
- 3. We measured both Horizontal and Vertical direction, recorded worst case direction.

*LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_QPSK*

Frequency (MHz)	$P_{Mea}$ (dBm)	$P_{cl}$ (dB)	$G_a$ Antenna Gain(dB)	$P_{Ag}$ (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
814.7	-18.72	2.42	8.45	36.82	24.13	21.98	50.00	28.02	V
819.0	-16.72	2.46	8.45	36.82	26.09	23.94	50.00	26.06	V
823.3	-18.6	2.53	8.36	36.82	24.05	21.9	50.00	28.1	V

*LTE FDD Band 26\_Channel Bandwidth 3MHz\_QPSK*

Frequency (MHz)	$P_{Mea}$ (dBm)	$P_{cl}$ (dB)	$G_a$ Antenna Gain(dB)	$P_{Ag}$ (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
815.5	-18.45	2.42	8.45	36.82	24.4	22.25	50.00	27.75	V
819.0	-17.13	2.46	8.45	36.82	25.68	23.53	50.00	26.47	V
822.5	-17.91	2.53	8.36	36.82	24.74	22.59	50.00	27.41	V

*LTE FDD Band 26\_Channel Bandwidth 5MHz\_QPSK*

Frequency (MHz)	$P_{Mea}$ (dBm)	$P_{cl}$ (dB)	$G_a$ Antenna Gain(dB)	$P_{Ag}$ (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.5	-18.45	2.42	8.45	36.82	24.4	22.25	50.00	27.75	V
819.0	-16.85	2.46	8.45	36.82	25.96	23.81	50.00	26.19	V
821.5	-18.08	2.53	8.36	36.82	24.57	22.42	50.00	27.58	V

*LTE FDD Band 26\_Channel Bandwidth 10MHz\_QPSK*

Frequency (MHz)	$P_{Mea}$ (dBm)	$P_{cl}$ (dB)	$G_a$ Antenna Gain(dB)	$P_{Ag}$ (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.0	-16.32	2.46	8.45	36.82	26.49	24.34	50.00	25.66	V

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.





LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_16QAM

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	G <sub>a</sub> Antenna Gain(dB)	P <sub>Aq</sub> (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
814.7	-17.95	2.42	8.45	36.82	24.9	22.75	50.00	27.25	V
819.0	-17.07	2.46	8.45	36.82	25.74	23.59	50.00	26.41	V
823.3	-18.01	2.53	8.36	36.82	24.64	22.49	50.00	27.51	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_16QAM

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	G <sub>a</sub> Antenna Gain(dB)	P <sub>Aq</sub> (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
815.5	-18.81	2.42	8.45	36.82	24.04	21.89	50.00	28.11	V
819.0	-17.25	2.46	8.45	36.82	25.56	23.41	50.00	26.59	V
822.5	-18.44	2.53	8.36	36.82	24.21	22.06	50.00	27.94	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_16QAM

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	G <sub>a</sub> Antenna Gain(dB)	P <sub>Aq</sub> (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.5	-18.29	2.42	8.45	36.82	24.56	22.41	50.00	27.59	V
819.0	-17.08	2.46	8.45	36.82	25.73	23.58	50.00	26.42	V
821.5	-17.84	2.53	8.36	36.82	24.81	22.66	50.00	27.34	V

LTE FDD Band 26\_Channel Bandwidth 10MHz\_16QAM

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	G <sub>a</sub> Antenna Gain(dB)	P <sub>Aq</sub> (dB)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.0	-17.08	2.46	8.45	36.82	25.73	23.58	50.00	26.42	V

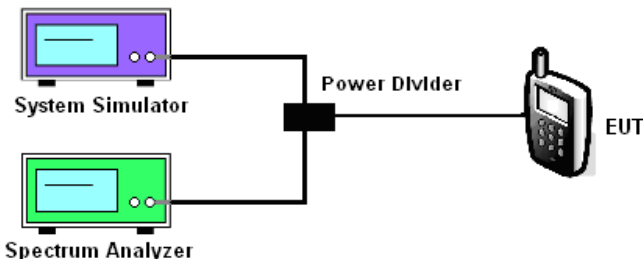
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : [service@cer-mark.com](mailto:service@cer-mark.com)

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

### 5.3. Peak to Average Ratio

#### 5.3.1. Test Specification

<b>Test Method:</b>	FCC KDB 971168 D01v03
<b>Limit:</b>	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
<b>Test Setup:</b>	
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 5.7.1.</li> <li>2. The EUT was connected to spectrum analyzer and system simulator via a power divider.</li> <li>3. Set EUT to transmit at maximum output power.</li> <li>4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.</li> </ol>
<b>Test Result:</b>	PASS

#### TEST RESULTS

##### Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case for each Channel Bandwidth of LTE FDD Band 26.

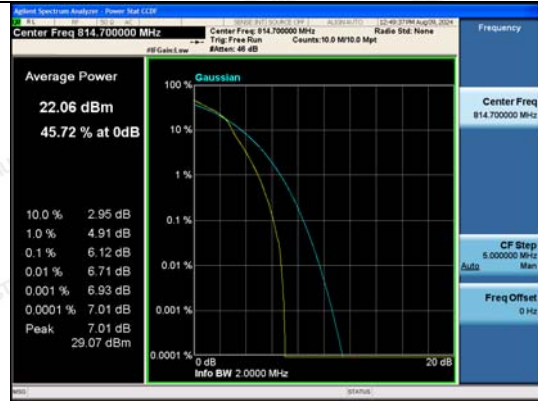
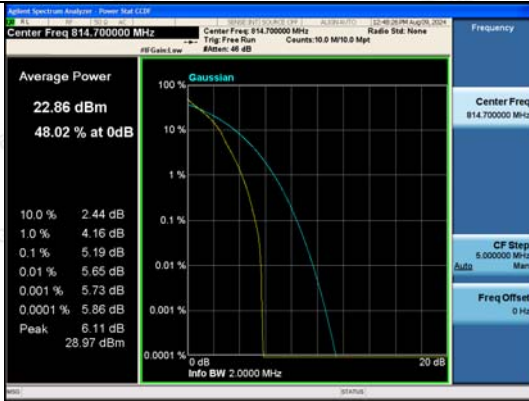
LTE FDD Band 26				
TX Channel Bandwidth	Frequency (MHz)	RB Size/Offset	PAPR (dB)	
			QPSK	16QAM
1.4 MHz	814.7	1RB#0	5.19	6.12
	819.0		5.40	6.34
	823.3		5.37	6.13
3 MHz	815.5	1RB#0	5.24	6.19
	819.0		5.43	6.37
	822.5		5.46	6.17
5 MHz	816.5	1RB#0	5.03	5.67
	819.0		5.41	5.87
	821.5		5.44	6.15
10 MHz	819.0	1RB#0	5.22	5.69



LTE FDD Band 26-1.4MHz Channel Bandwidth PAPR

QPSK

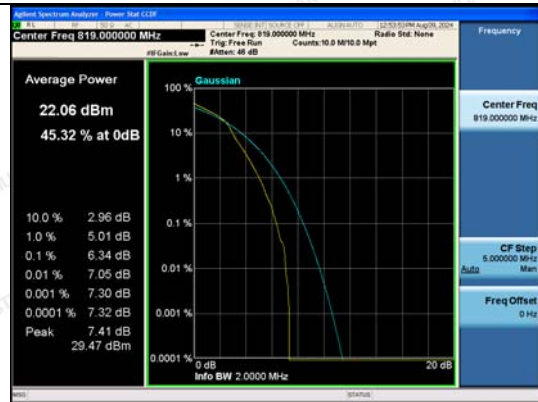
16QAM



1RB#0

1RB#0

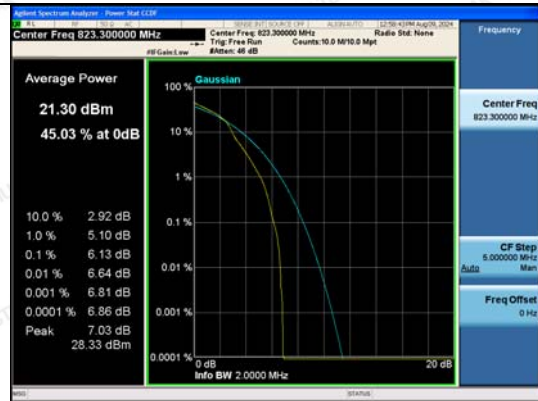
Low Channel



1RB#0

1RB#0

Middle Channel



1RB#0

1RB#0

High Channel

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

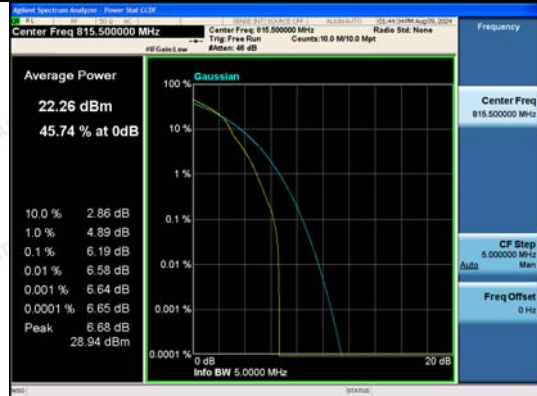
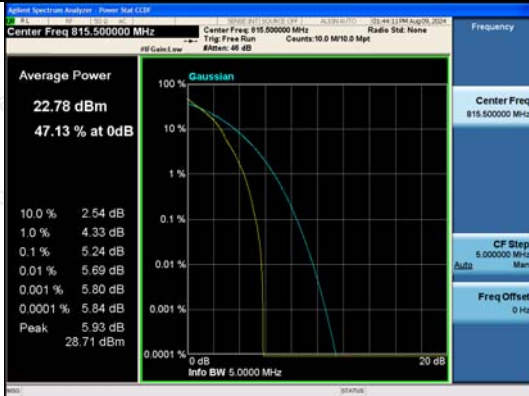




LTE FDD Band 26-3MHz Channel Bandwidth PAPR

QPSK

16QAM



1RB#0

1RB#0

Low Channel



1RB#0

1RB#0

Middle Channel



1RB#0

1RB#0

High Channel

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

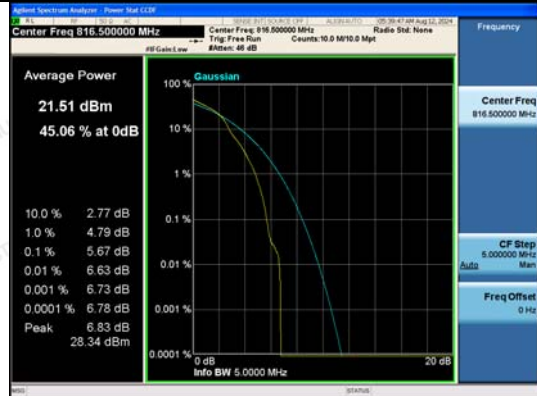
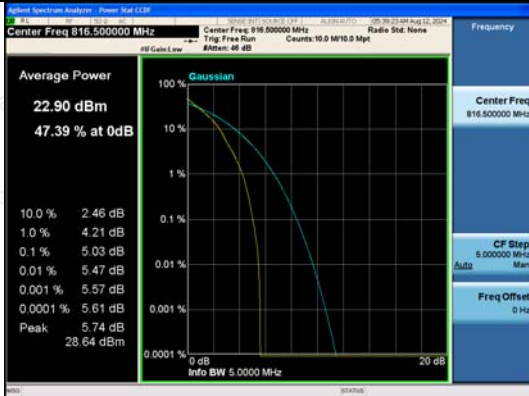




LTE FDD Band 26-5MHz Channel Bandwidth PAPR

QPSK

16QAM



1RB#0

1RB#0

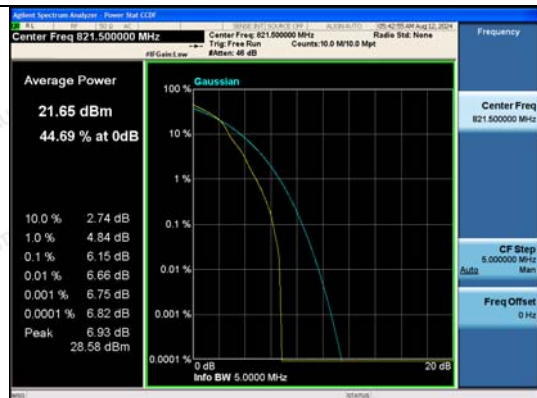
Low Channel



1RB#0

1RB#0

Middle Channel



1RB#0

1RB#0

High Channel

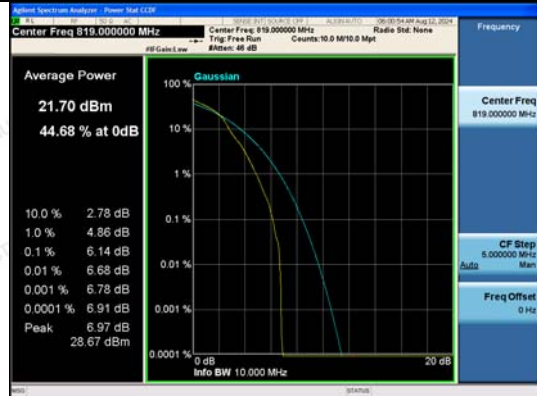
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 counts only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.



LTE FDD Band 26-10MHz Channel Bandwidth PAPR

QPSK

16QAM



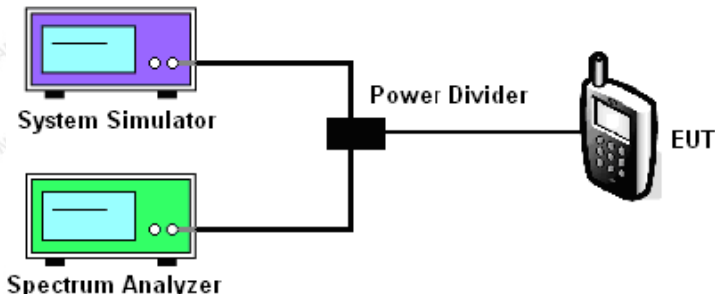
1RB#0

1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

### 5.4. 99% Occupied Bandwidth and 26dB Bandwidth Measurement

#### 5.4.1. Test Specification

<b>Test Method:</b>	FCC part 2.1049
<b>Limit:</b>	N/A
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left, there are two computer monitors: a purple one labeled 'System Simulator' and a green one labeled 'Spectrum Analyzer'. Both are connected to a central black box labeled 'Power Divider'. From the 'Power Divider', a cable connects to a mobile phone labeled 'EUT' (Equipment Under Test).</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 4.2.</li> <li>2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.</li> <li>3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>4. The 99% occupied bandwidth were measured, set RBW= 1% of OBW, VBW= 3*RBW, sample detector, trace maximum hold.</li> <li>5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.</li> </ol>
<b>Test Result:</b>	PASS

### TEST RESULTS

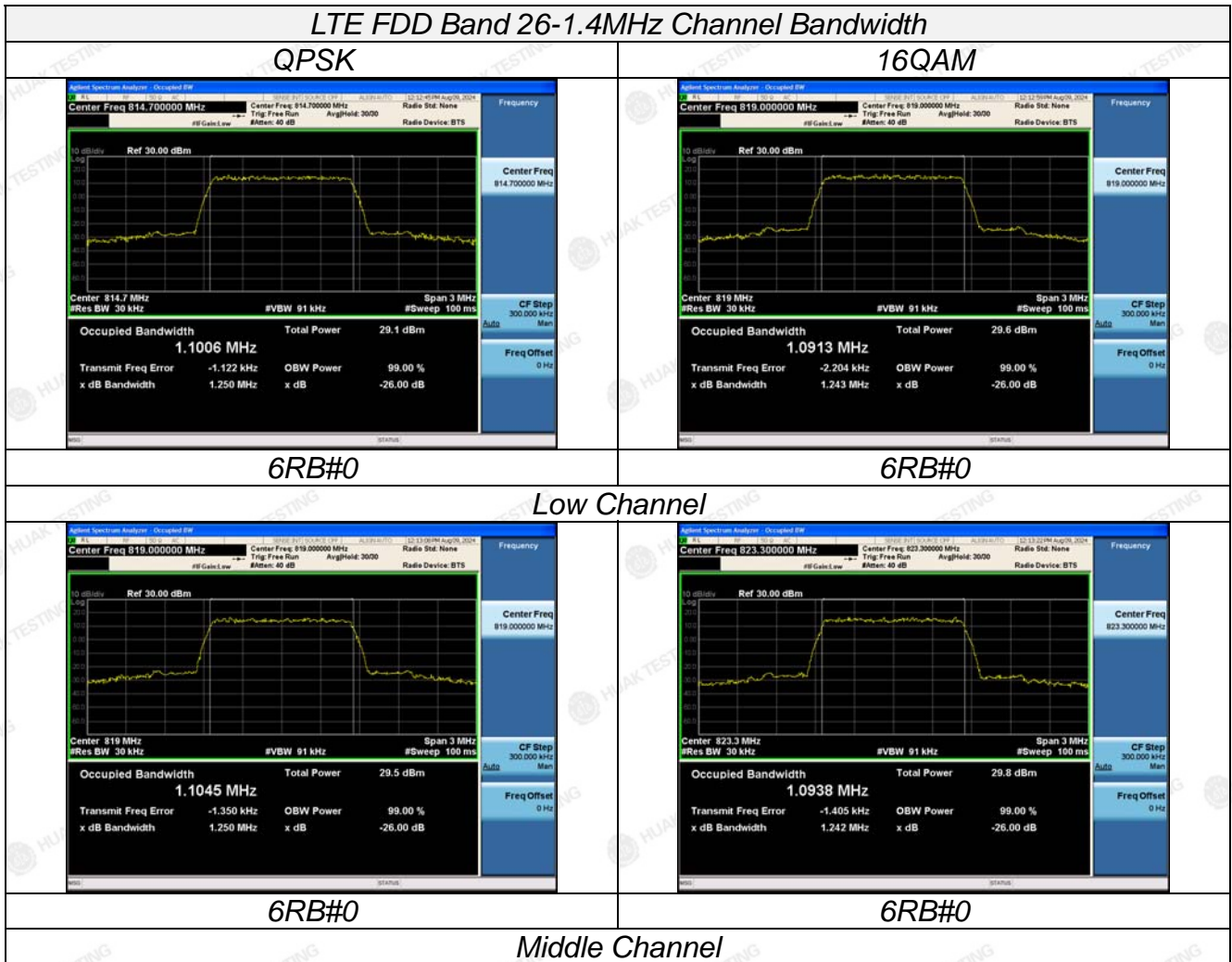
**Remark:**

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case for each Channel Bandwidth of LTE FDD Band 26.





LTE FDD Band 26						
TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	-26dBc Emission bandwidth (MHz)		99% Occupied bandwidth (MHz)	
			QPSK	16QAM	QPSK	16QAM
1.4 MHz	6RB#0	814.7	1.242	1.250	1.0917	1.1006
		819.0	1.243	1.250	1.0913	1.1045
		823.3	1.242	1.244	1.0938	1.0949
3 MHz	15RB#0	815.5	3.031	3.012	2.7162	2.6997
		819.0	3.026	3.052	2.7023	2.7056
		822.5	3.020	3.030	2.7054	2.7060
5 MHz	25RB#0	816.5	4.983	4.962	4.5070	4.5052
		819.0	4.989	5.003	4.5082	4.5170
		821.5	4.998	5.017	4.5085	4.5211
10 MHz	50RB#0	819.0	9.902	9.933	8.9927	8.9948

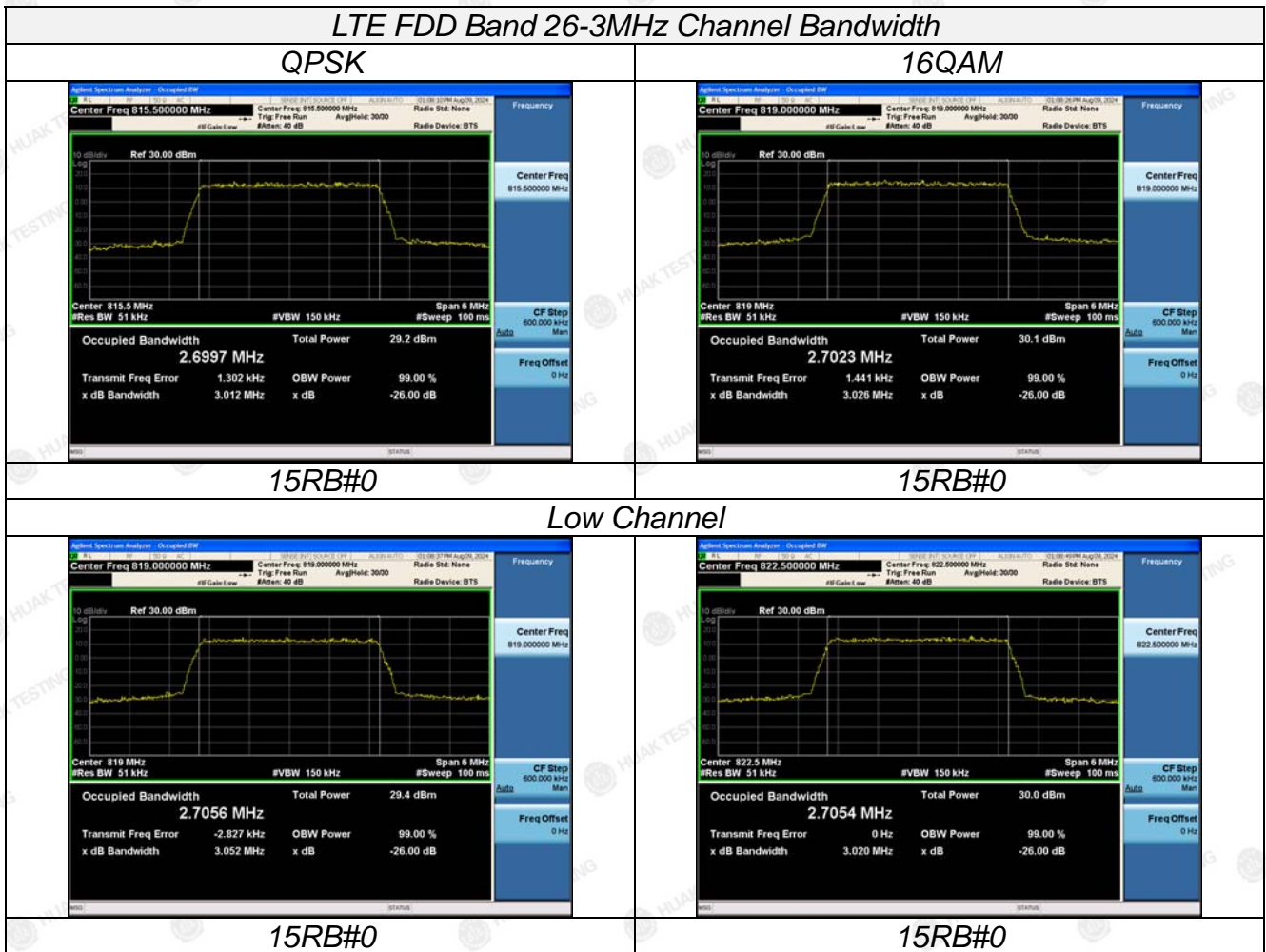
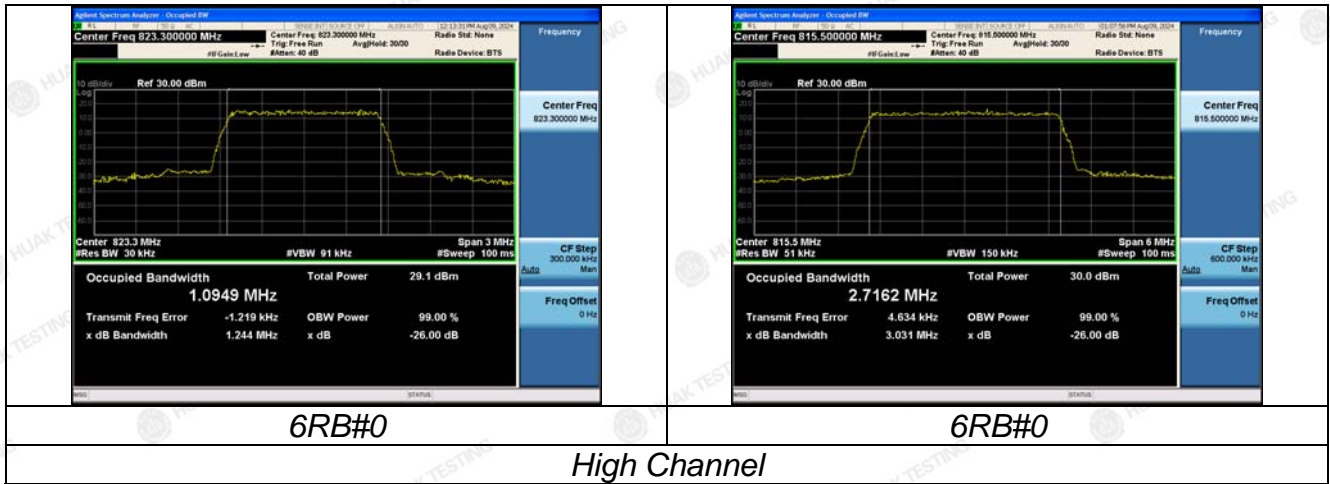


The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Addr: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China





The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



Middle Channel



15RB#0



15RB#0

High Channel



25RB#0



25RB#0

High Channel

LTE FDD Band 26-5MHz Channel Bandwidth

QPSK

16QAM



25RB#0



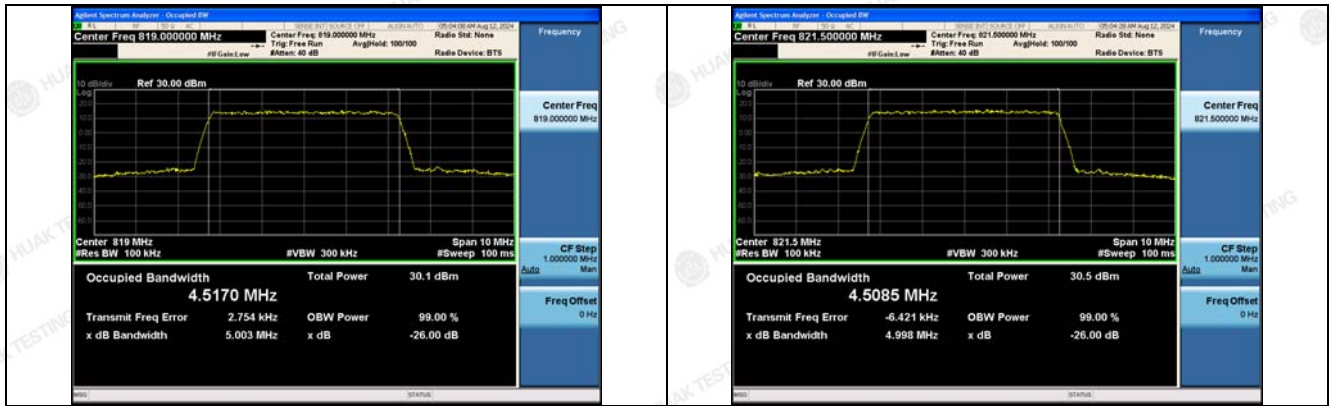
25RB#0

Low Channel

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



25RB#0

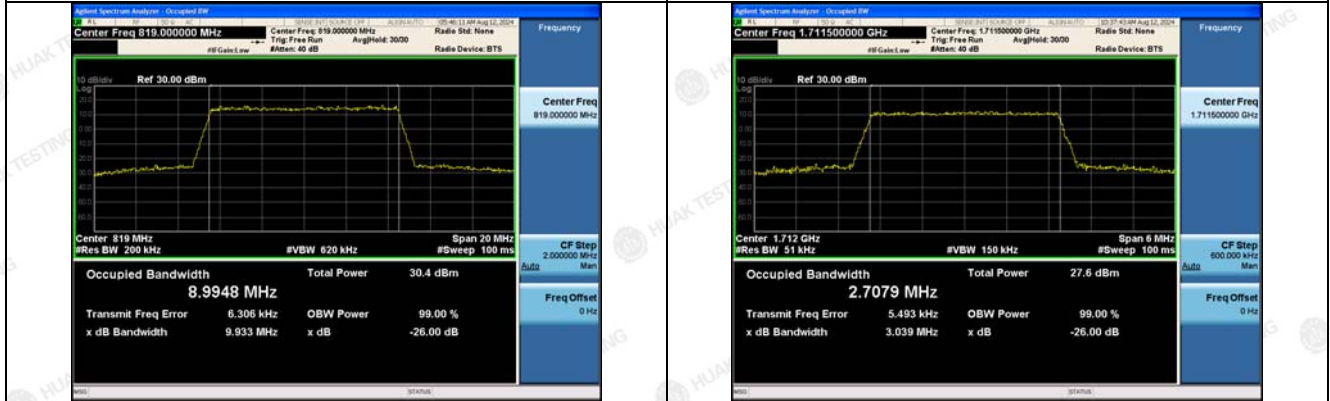
25RB#0

Middle Channel

LTE FDD Band 26-10MHz Channel Bandwidth

QPSK

16QAM



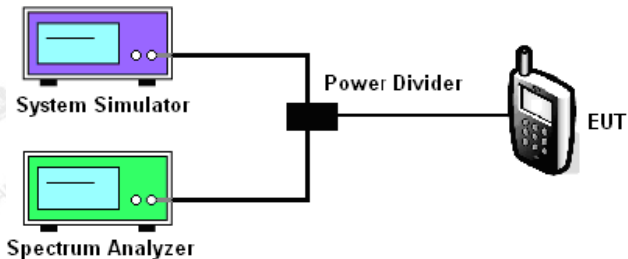
50RB#0

50RB#0



## 5.5. Band Edge and Conducted Spurious Emission Measurement

### 5.5.1. Test Specification

<b>Test Requirement:</b>	FCC part 90.691
<b>Test Method:</b>	FCC part 2.1051
<b>Limit:</b>	For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
<b>Test Setup:</b>	 <p>The diagram shows a System Simulator (top left) and a Spectrum Analyzer (bottom left) connected to a central Power Divider. The Power Divider is also connected to the EUT (Equipment Under Test) on the right.</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 6.0.</li> <li>2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.</li> <li>3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>4. The band edges of low and high channels for the highest RF powers were measured.</li> <li>5. The conducted spurious emission for the whole frequency range was taken.</li> <li>6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>
<b>Test Result:</b>	PASS

## TEST RESULTS

### Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case for each Channel Bandwidth of LTE FDD Band 26.

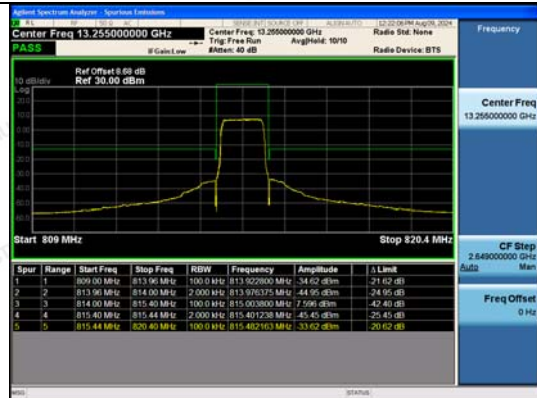
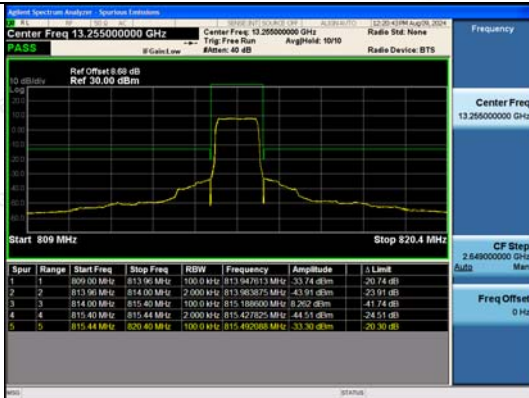




LTE FDD Band 26-1.4MHz Channel Bandwidth Band Edge Compliance

QPSK

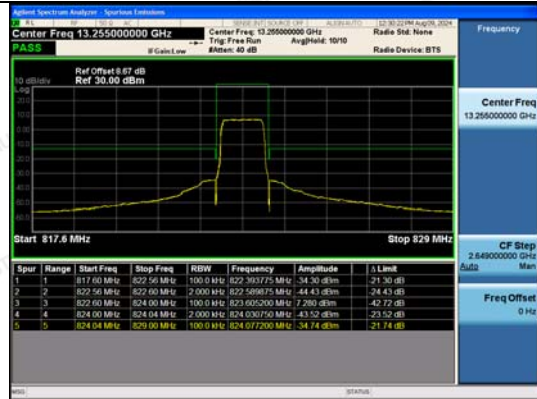
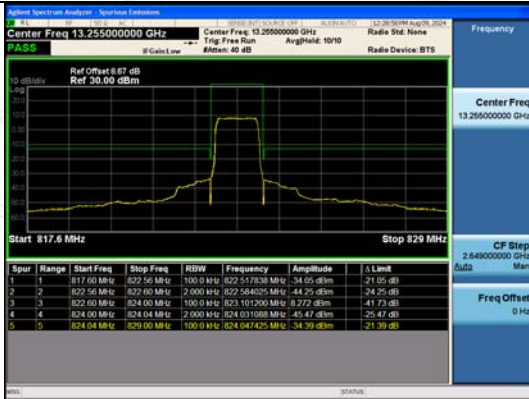
16QAM



6RB#0

6RB#0

Low Channel



6RB#0

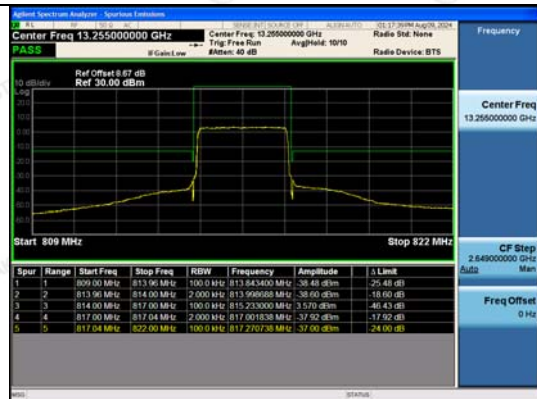
6RB#0

High Channel

LTE FDD Band 26-3MHz Channel Bandwidth Band Edge Compliance

QPSK

16QAM



15RB#0

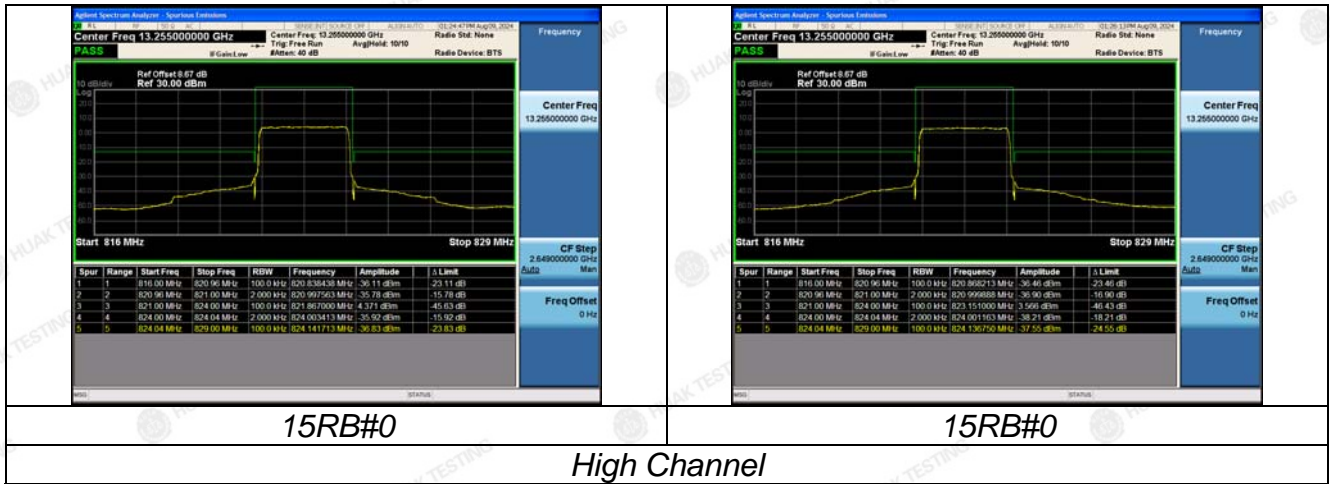
15RB#0

Low Channel

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

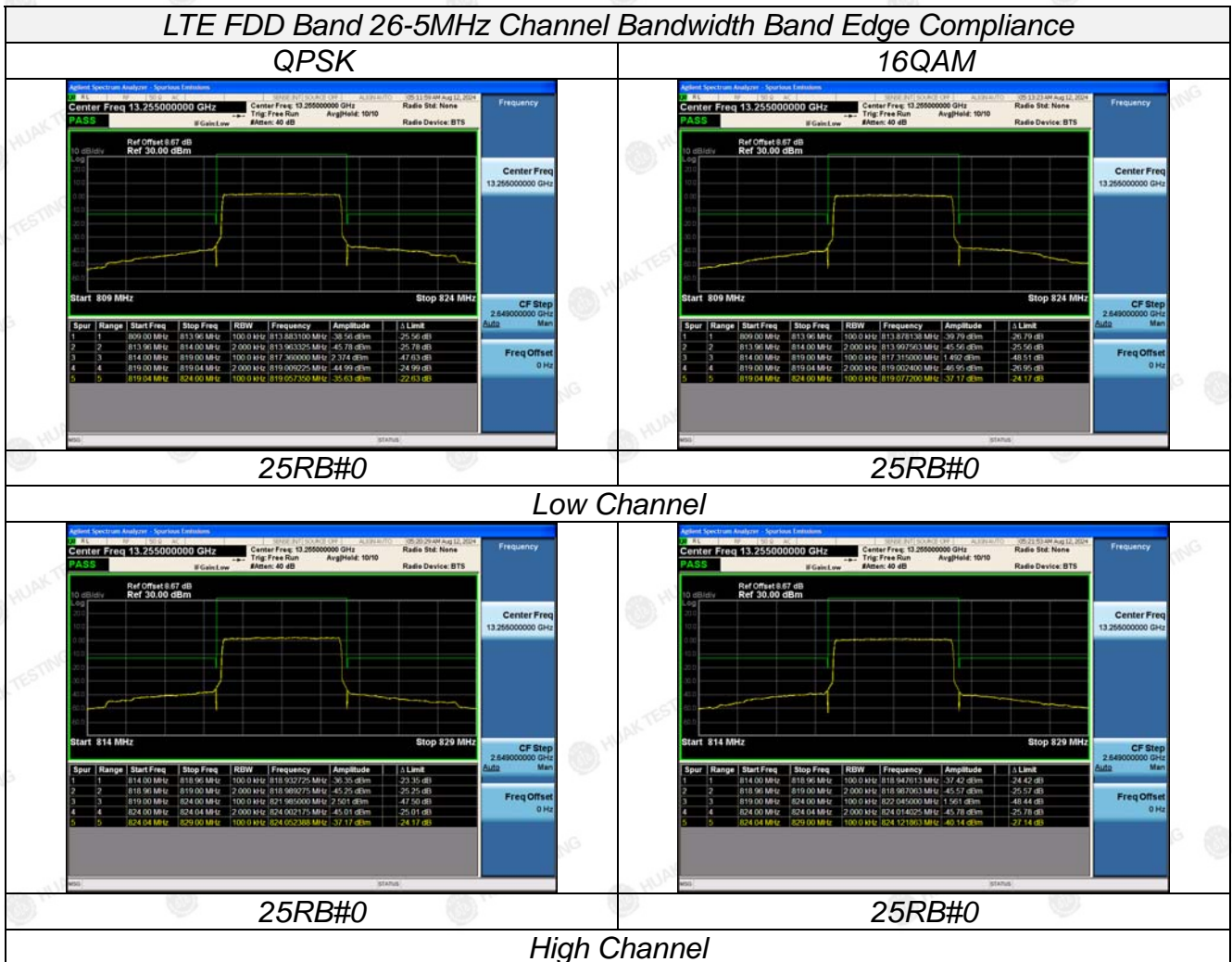
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



15RB#0

15RB#0

High Channel



25RB#0

25RB#0

Low Channel

25RB#0

25RB#0

High Channel





LTE FDD Band 26-10MHz Channel Bandwidth Band Edge Compliance  
QPSK 16QAM



50RB#0

50RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



Conducted Measurement:

LTE FDD Band 26-1.4MHz Channel Bandwidth	
Low Channel	
QPSK	16QAM
30MHz~1GHz	30MHz~1GHz
1GHz~3GHz	1GHz~3GHz
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China





LTE FDD Band 26-1.4MHz Channel Bandwidth Middle Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 815.2 MHz -58.604 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 815.2 MHz -58.778 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.000000000 GHz Mkr1 2.66845 GHz -39.647 dBm</p>	<p>Center Freq 2.000000000 GHz Mkr1 2.65665 GHz -38.562 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.500000000 GHz Mkr1 3.274225 GHz -41.057 dBm</p>	<p>Center Freq 6.500000000 GHz Mkr1 3.274225 GHz -41.419 dBm</p>
3GHz~10GHz 1RB#0	3GHz~10GHz 1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



LTE FDD Band 26-1.4MHz Channel Bandwidth	
High Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 826.9 MHz -57.135 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 826.9 MHz -57.944 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.00000000 GHz Mkr1 2.68585 GHz -38.635 dBm</p>	<p>Center Freq 2.00000000 GHz Mkr1 2.68580 GHz -38.642 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.50000000 GHz Mkr1 3.291375 GHz -39.605 dBm</p>	<p>Center Freq 6.50000000 GHz Mkr1 3.291350 GHz -40.395 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



LTE FDD Band 26-3MHz Channel Bandwidth Low Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 824.4 MHz -58.600 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 824.4 MHz -59.140 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.000000000 GHz Mkr1 2.68035 GHz -38.718 dBm</p>	<p>Center Freq 2.000000000 GHz Mkr1 2.65625 GHz -38.786 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.500000000 GHz Mkr1 3.257875 GHz -40.397 dBm</p>	<p>Center Freq 6.500000000 GHz Mkr1 3.25890 GHz -40.824 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China





LTE FDD Band 26-3MHz Channel Bandwidth Middle Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 827.8 MHz -58.644 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 827.8 MHz -59.212 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.00000000 GHz Mkr1 2.68060 GHz -38.612 dBm</p>	<p>Center Freq 2.00000000 GHz Mkr1 2.67380 GHz -38.697 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.50000000 GHz Mkr1 3.271875 GHz -40.640 dBm</p>	<p>Center Freq 6.50000000 GHz Mkr1 3.271875 GHz -41.234 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China





LTE FDD Band 26-3MHz Channel Bandwidth High Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 831.2 MHz -59.445 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 831.2 MHz -59.842 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.00000000 GHz Mkr1 2.67560 GHz -38.775 dBm</p>	<p>Center Freq 2.00000000 GHz Mkr1 2.66470 GHz -38.736 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.50000000 GHz Mkr1 3.285075 GHz -40.600 dBm</p>	<p>Center Freq 6.50000000 GHz Mkr1 3.285250 GHz -41.779 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



LTE FDD Band 26-5MHz Channel Bandwidth Low Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 830.7 MHz -59.647 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 830.7 MHz -59.556 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.000000000 GHz Mkr1 2.66215 GHz -38.518 dBm</p>	<p>Center Freq 2.000000000 GHz Mkr1 2.66305 GHz -38.405 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.500000000 GHz Mkr1 3.257825 GHz -39.824 dBm</p>	<p>Center Freq 6.500000000 GHz Mkr1 3.257800 GHz -40.806 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China





LTE FDD Band 26-5MHz Channel Bandwidth Middle Channel	
QPSK	16QAM
<p>Center Freq 515.000000 MHz Mkr1 841.4 MHz -59.944 dBm</p>	<p>Center Freq 515.000000 MHz Mkr1 837.5 MHz -60.133 dBm</p>
30MHz~1GHz	30MHz~1GHz
<p>Center Freq 2.00000000 GHz Mkr1 2.848 90 GHz -38.514 dBm</p>	<p>Center Freq 2.00000000 GHz Mkr1 2.849 00 GHz -38.532 dBm</p>
1GHz~3GHz	1GHz~3GHz
<p>Center Freq 6.50000000 GHz Mkr1 3.287 225 GHz -40.131 dBm</p>	<p>Center Freq 6.50000000 GHz Mkr1 3.287 480 GHz -40.865 dBm</p>
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



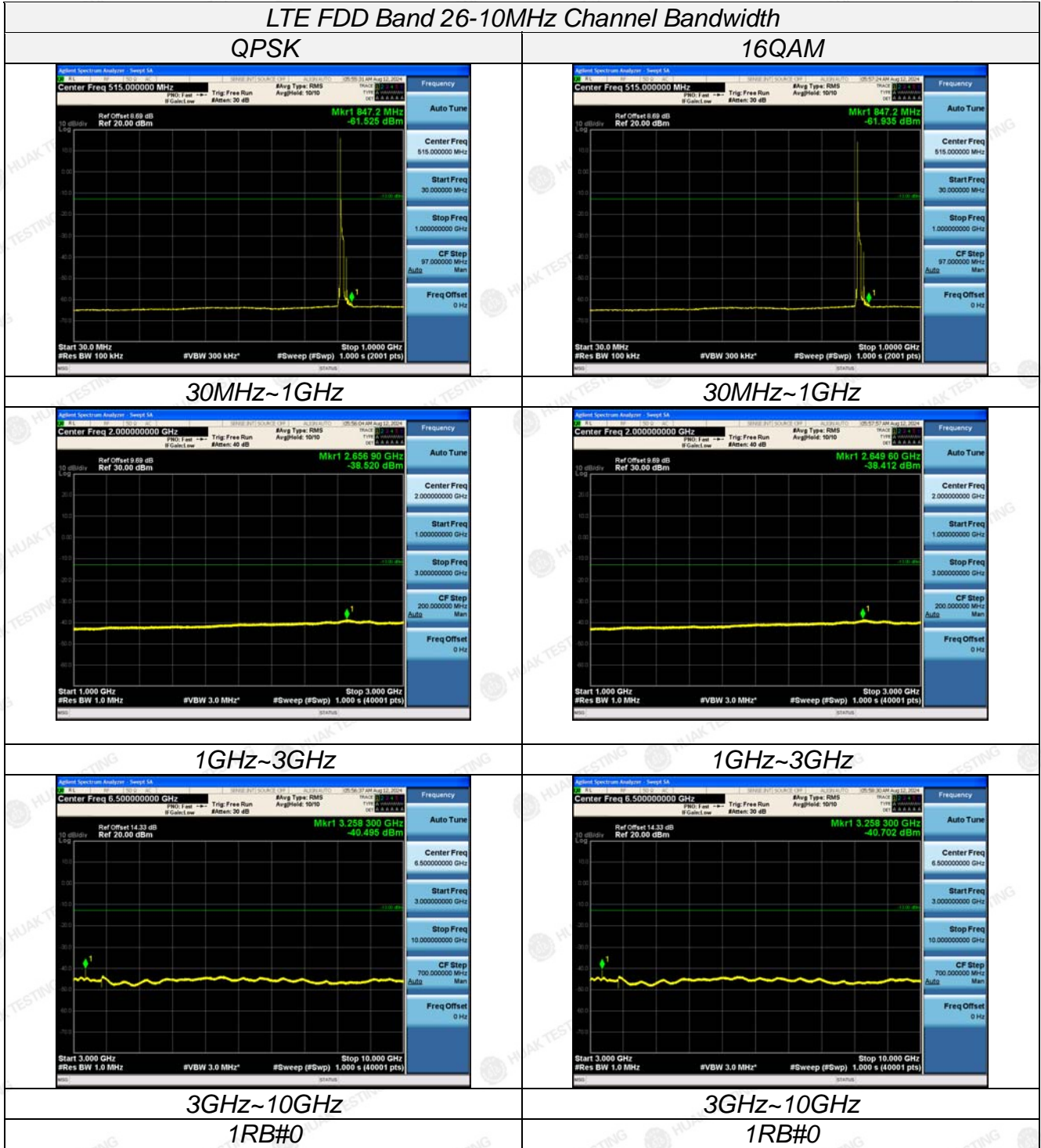


LTE FDD Band 26-5MHz Channel Bandwidth High Channel	
QPSK	16QAM
30MHz~1GHz	30MHz~1GHz
1GHz~3GHz	1GHz~3GHz
3GHz~10GHz	3GHz~10GHz
1RB#0	1RB#0

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



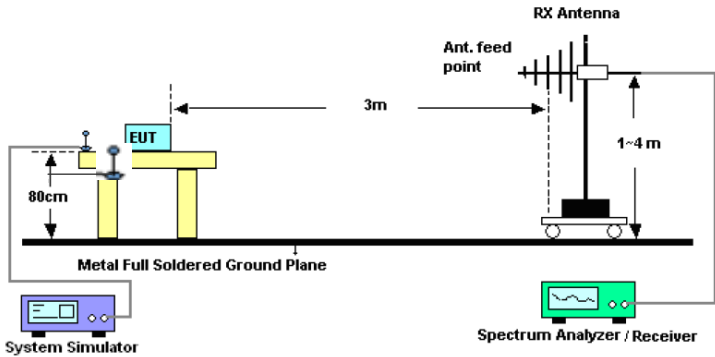
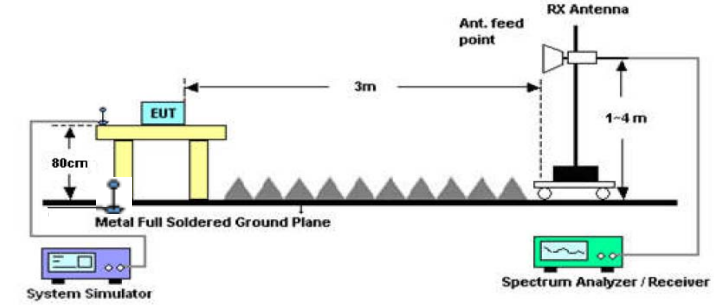
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAJ, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

## 5.6. Field Strength of Spurious Radiation Measurement

### 5.6.1. Test Specification

<p><b>Test Requirement:</b></p>	<p>FCC part90.691</p>
<p><b>Test Method:</b></p>	<p>FCC part 2.1053</p>
<p><b>Limit:</b></p>	<p>30MHz~20GHz -13dBm</p>
<p><b>Test setup:</b></p>	<p>From 30MHz to 1GHz</p>  <p>Above 1GHz</p> 
<p><b>Test Procedure:</b></p>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 5.8 and ANSI / TIA-603-D-2010Section 2.2.12.</li> <li>2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.</li> <li>3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.</li> <li>4. The table was rotated 360 degrees to determine the position of the highest spurious emission.</li> <li>5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.</li> </ol>





	6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission. 7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.  8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission. 9. Taking the record of output power at antenna port. 10. Repeat step 7 to step 8 for another polarization. 11. $EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$ 12. $ERP (dBm) = EIRP - 2.15$ 13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
<b>Test results:</b>	PASS

**Radiated Measurement:**

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case for each Channel Bandwidth of LTE FDD Band 26.
2.  $EIRP = P_{Mea}(dBm) - P_{cl}(dB) + G_a(dBi)$
3. We were not recorded other points as values lower than limits.
4.  $Margin = Limit - EIRP$

**LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_QPSK\_Low Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1629.4	-35.22	2.86	3.00	7.25	-30.83	-13.00	17.83	H
2444.1	-43.48	2.94	3.00	9.53	-36.89	-13.00	23.89	H
1629.4	-44.02	2.86	3.00	7.25	-39.63	-13.00	26.63	V
2444.1	-47.2	2.94	3.00	9.53	-40.61	-13.00	27.61	V

**LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_QPSK\_Middle Channel**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-35.75	2.86	3.00	7.25	-31.36	-13.00	18.36	H
2457	-43.45	2.94	3.00	9.53	-36.86	-13.00	23.86	H
1638	-43.94	2.86	3.00	7.25	-39.55	-13.00	26.55	V
2457	-46.81	2.94	3.00	9.53	-40.22	-13.00	27.22	V

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.



LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_QPSK\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1646.6	-45.72	2.86	3.00	7.82	-42.91	-13.00	29.91	H
2469.9	-46.49	2.94	3.00	9.35	-42.23	-13.00	29.23	H
1646.6	-45.26	2.86	3.00	7.82	-42.45	-13.00	29.45	V
2469.9	-48.02	2.94	3.00	9.35	-43.76	-13.00	30.76	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_QPSK\_Low Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1631	-46.9	2.86	3.00	7.25	-44.66	-13.00	31.66	H
2446.5	-44.31	2.94	3.00	9.53	-39.87	-13.00	26.87	H
1631	-45.91	2.86	3.00	7.25	-43.67	-13.00	30.67	V
2446.5	-47.97	2.94	3.00	9.53	-43.53	-13.00	30.53	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_QPSK\_Middle Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-45.31	2.86	3.00	7.25	-43.07	-13.00	30.07	H
2457	-44	2.94	3.00	9.53	-39.56	-13.00	26.56	H
1638	-46.82	2.86	3.00	7.25	-44.58	-13.00	31.58	V
2457	-48.54	2.94	3.00	9.53	-44.1	-13.00	31.1	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_QPSK\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1645	-45.72	2.86	3.00	7.82	-42.91	-13.00	29.91	H
2467.5	-46.49	2.94	3.00	9.35	-42.23	-13.00	29.23	H
1645	-45.26	2.86	3.00	7.82	-42.45	-13.00	29.45	V
2467.5	-48.02	2.94	3.00	9.35	-43.76	-13.00	30.76	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_QPSK\_Low Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1633	-45.08	2.86	3.00	7.25	-42.84	-13.00	29.84	H
2449.5	-45.3	2.94	3.00	9.53	-40.86	-13.00	27.86	H
1633	-45.87	2.86	3.00	7.25	-43.63	-13.00	30.63	V
2449.5	-47.78	2.94	3.00	9.53	-43.34	-13.00	30.34	V

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



LTE FDD Band 26\_Channel Bandwidth 5MHz\_QPSK\_Middle Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-46.22	2.86	3.00	7.25	-43.98	-13.00	30.98	H
2457	-45.99	2.94	3.00	9.53	-41.55	-13.00	28.55	H
1638	-45.49	2.86	3.00	7.25	-43.25	-13.00	30.25	V
2457	-47.72	2.94	3.00	9.53	-43.28	-13.00	30.28	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_QPSK\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1643	-46.97	2.86	3.00	7.82	-44.16	-13.00	31.16	H
2464.5	-44.67	2.94	3.00	9.35	-40.41	-13.00	27.41	H
1643	-46.34	2.86	3.00	7.82	-43.53	-13.00	30.53	V
2464.5	-47.96	2.94	3.00	9.35	-43.7	-13.00	30.7	V

LTE FDD Band 26\_Channel Bandwidth 10MHz\_QPSK

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-44.64	2.86	3.00	7.25	-42.4	-13.00	29.4	H
2457	-46.45	2.94	3.00	9.53	-42.01	-13.00	29.01	H
1638	-45.57	2.86	3.00	7.25	-43.33	-13.00	30.33	V
2457	-47.28	2.94	3.00	9.53	-42.84	-13.00	29.84	V





LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_16QAM\_Low Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1629.4	-45.44	2.86	3.00	7.25	-43.2	-13.00	30.2	H
2444.1	-44.32	2.94	3.00	9.53	-39.88	-13.00	26.88	H
1629.4	-45.48	2.86	3.00	7.25	-43.24	-13.00	30.24	V
2444.1	-49.31	2.94	3.00	9.53	-44.87	-13.00	31.87	V

LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_16QAM\_Middle Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-46.06	2.86	3.00	7.25	-43.82	-13.00	30.82	H
2457	-45.54	2.94	3.00	9.53	-41.1	-13.00	28.1	H
1638	-46.58	2.86	3.00	7.25	-44.34	-13.00	31.34	V
2457	-47.69	2.94	3.00	9.53	-43.25	-13.00	30.25	V

LTE FDD Band 26\_Channel Bandwidth 1.4MHz\_16QAM\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1646.6	-44.67	2.86	3.00	7.82	-41.86	-13.00	28.86	H
2469.9	-46.19	2.94	3.00	9.35	-41.93	-13.00	28.93	H
1646.6	-45.24	2.86	3.00	7.82	-42.43	-13.00	29.43	V
2469.9	-50.09	2.94	3.00	9.35	-45.83	-13.00	32.83	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_16QAM\_Low Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1631	-46.11	2.86	3.00	7.25	-43.87	-13.00	30.87	H
2446.5	-43.52	2.94	3.00	9.53	-39.08	-13.00	26.08	H
1631	-47.73	2.86	3.00	7.25	-45.49	-13.00	32.49	V
2446.5	-47.75	2.94	3.00	9.53	-43.31	-13.00	30.31	V

LTE FDD Band 26\_Channel Bandwidth 3MHz\_16QAM\_Middle Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-46.06	2.86	3.00	7.25	-43.82	-13.00	30.82	H
2457	-45.54	2.94	3.00	9.53	-41.1	-13.00	28.1	H
1638	-46.58	2.86	3.00	7.25	-44.34	-13.00	31.34	V
2457	-47.69	2.94	3.00	9.53	-43.25	-13.00	30.25	V



LTE FDD Band 26\_Channel Bandwidth 3MHz\_16QAM\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1645	-44.67	2.86	3.00	7.82	-41.86	-13.00	28.86	H
2467.5	-46.19	2.94	3.00	9.35	-41.93	-13.00	28.93	H
1645	-45.24	2.86	3.00	7.82	-42.43	-13.00	29.43	V
2467.5	-50.09	2.94	3.00	9.35	-45.83	-13.00	32.83	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_16QAM\_Low Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1633	-45.48	2.86	3.00	7.25	-43.24	-13.00	30.24	H
2449.5	-45.24	2.94	3.00	9.53	-40.8	-13.00	27.8	H
1633	-46.51	2.86	3.00	7.25	-44.27	-13.00	31.27	V
2449.5	-48.68	2.94	3.00	9.53	-44.24	-13.00	31.24	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_16QAM\_Middle Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-45.36	2.86	3.00	7.25	-43.12	-13.00	30.12	H
2457	-46.41	2.94	3.00	9.53	-41.97	-13.00	28.97	H
1638	-45.11	2.86	3.00	7.25	-42.87	-13.00	29.87	V
2457	-47.24	2.94	3.00	9.53	-42.8	-13.00	29.8	V

LTE FDD Band 26\_Channel Bandwidth 5MHz\_16QAM\_High Channel

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1643	-45.35	2.86	3.00	7.82	-42.54	-13.00	29.54	H
2464.5	-45.22	2.94	3.00	9.35	-40.96	-13.00	27.96	H
1643	-47.43	2.86	3.00	7.82	-44.62	-13.00	31.62	V
2464.5	-49.53	2.94	3.00	9.35	-45.27	-13.00	32.27	V

LTE FDD Band 26\_Channel Bandwidth 10MHz\_16QAM

Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Diatance	G <sub>a</sub> Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638	-45.48	2.86	3.00	7.25	-43.24	-13.00	30.24	H
2457	-45.24	2.94	3.00	9.53	-40.8	-13.00	27.8	H
1638	-46.51	2.86	3.00	7.25	-44.27	-13.00	31.27	V
2457	-48.68	2.94	3.00	9.53	-44.24	-13.00	31.24	V

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.


TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



### 5.7. Frequency Stability Measurement

#### 5.7.1. Test Specification

<b>Test Requirement:</b>	FCC part 90.213
<b>Test Method:</b>	FCC Part 2.1055
<b>Limit:</b>	±2.5 ppm
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left is a 'System Simulator' represented by a purple rectangular device with a screen and buttons. A line connects it to a 'Thermal Chamber' on the right, which is a blue rectangular enclosure. Inside the chamber is an 'EUT' (Equipment Under Test), depicted as a mobile phone.</p>
<b>Test Procedure:</b>	<p><b>Test Procedures for Temperature Variation</b></p> <ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 9.0.</li> <li>2. The EUT was set up in the thermal chamber and connected with the system simulator.</li> <li>3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.</li> <li>4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.</li> </ol> <p><b>Test Procedures for Voltage Variation</b></p> <ol style="list-style-type: none"> <li>1. The testing follows FCC KDB 971168 D01v03 Section 9.0.</li> <li>2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.</li> <li>3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.</li> <li>4. The variation in frequency was measured for the worst case.</li> </ol>
<b>Test Result:</b>	PASS





**TEST RESULTS**

Remark:

1. We tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 26; recorded worst case.

LTE Band 26, 1.4MHz bandwidth (worst case of all bandwidths)

**Frequency Error vs Voltage**

Voltage (V)	Frequency error (Hz)		Frequency error (ppm)		Limit (ppm)
	QPSK	16QAM	QPSK	16QAM	
4.25	17.12	27.19	0.021014	0.033374	2.50
5.0	14.91	27.84	0.018301	0.034172	2.50
5.75	17.97	27.62	0.022057	0.033902	2.50

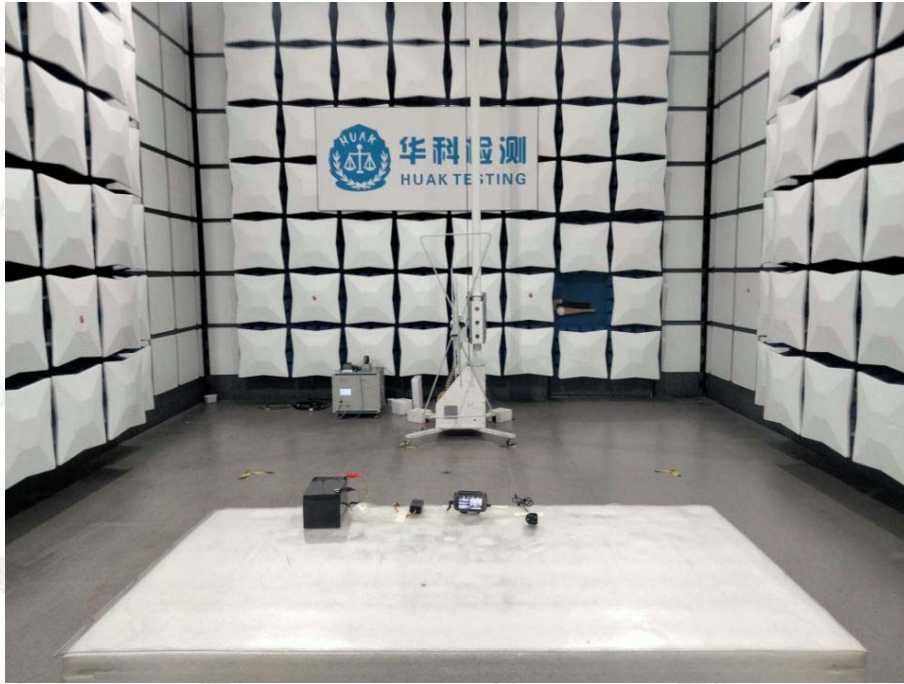
**Frequency Error vs Temperature**

Temperature (°C)	Frequency error (Hz)		Frequency error (ppm)		Limit (ppm)
	QPSK	16QAM	QPSK	16QAM	
-30°	14.55	29.30	0.017859	0.035964	2.50
-20°	12.73	31.43	0.015625	0.038579	2.50
-10°	10.23	23.27	0.012557	0.028413	2.50
0°	10.67	21.41	0.013097	0.026142	2.50
10°	8.44	18.83	0.010360	0.022991	2.50
20°	7.44	16.26	0.009132	0.019853	2.50
30°	7.93	13.76	0.009734	0.016801	2.50
40°	12.92	14.16	0.015859	0.017289	2.50
50°	16.25	13.50	0.019946	0.016484	2.50



## 6. PHOTOGRAPHS OF TEST SETUP

### Radiated Emission



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : [service@cer-mark.com](mailto:service@cer-mark.com)

Address: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



## 7. PHOTOGRAPHS OF EUT

Refer to test report ANNEX A of external photos and ANNEX B of internal photos

**.....End of Report.....**