Report No.: ZEWA2305000087RG02

Page: 1 of 13

## **TEST REPORT**

**Application No.:** ZEWA2305000087RG

Applicant: Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, **Address of Applicant:** 

Minhang District, Shanghai, China 200233

Quectel Wireless Solutions Co., Ltd. Manufacturer:

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Address of Manufacturer:

Minhang District, Shanghai, China 200233

LTE-A Cat 6 M.2 Module **EUT Description:** 

Model No.: EM060K-NA

**Trade Mark:** Quectel

FCC ID: XMR202307EM060KNA

Standards: 47 CFR Part 96.47

**Date of Receipt:** 2023/05/12

**Date of Test:** 2023/06/25 to 2023/06/25

Date of Issue: 2023/06/29

Test Result: PASS \*

In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Erum li

Ervin Li Regulatory Manager



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# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: ZEWA2305000087RG02

Page: 2 of 13

## **Version**

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/06/29		Original

Prepared By	Dee.Zheng  (Dee Zheng) / Test Engineer
Checked By	Daniel Wang  (Daniel Wang) / Reviewer



Report No.: ZEWA2305000087RG02

Page: 3 of 13

## **Contents**

1	Versi	on	
2		Summary	
3		eral Information	
	3.1	Details of Client	
	3.2	Test Location	
	3.3	Test Facility	5
	3.4	General Description of EUT	
	3.5	Test Environment	
	3.6	Description of Support Units	7
4	Desc	ription of Tests	
	4.1	End User Device additional requiement	8
5	Main	Test Instruments	11
6	Meas	surement Uncertainty	12
7		ndixes	



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Report No.: ZEWA2305000087RG02

Page: 4 of 13

**Test Summary** 

Test Item	FCC Rule No.	Test Result	Verdict
End User Device additional requiement	§96.47	Clause 4.1	Pass



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Report No.: ZEWA2305000087RG02

Page: 5 of 13

#### **General Information** 3

### 3.1 Details of Client

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address of Applicant:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

### 3.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China
Post code:	518057
Test engineer:	Dee Zheng

### 3.3 Test Facility

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

#### • A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### • Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

#### FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized as an accredited testing laboratory.

Designation Number: CN1336.

Test Firm Registration Number: 787754



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Report No.: ZEWA2305000087RG02

Page: 6 of 13

## 3.4 General Description of EUT

EUT Description:	LTE-A Cat 6 M.2 Module	
Model No.:	EM060K-NA	
Trade Mark:	Quectel	
Hardware Version:	R1.0	
Software Version:	EM060KNAAAR01A02M2G	
Power Supply:	3.8V(DC Supply)	
IMEI:	863550060001682	
Antenna Type:	⊠ External, ☐ Integrated	
Transmitter Frequnecy Band:	LTE Band 48	
Transmitter Frequnecy Range:	3550 to 3700 MHz	
	LTE Band 48: -2.00dBi	
Antenna Gain:  Note: The antenna gain are derived from the gain information report provide the manufacturer.		
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy,		
suitability, reliability or/and integrity of the information.		



Report No.: ZEWA2305000087RG02

Page: 7 of 13

### 3.5 Test Environment

Environment Parameter	101 kPa Selected Values During Tests	
Relative Humidity	44-46 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	22~23	3.7
Remark:		
NV: Normal Voltage NT: Nor	mal Temperature	

## 3.6 Description of Support Units

Description	Manufacturer	Model No.	
Mother board*	Quectel	N/A	
Router	NETGEAR	R7800	
Remark: the information with"*" are provided by client.			





Report No.: ZEWA2305000087RG02

Page: 8 of 13

## **Description of Tests**

## 4.1 End User Device additional requiement

Test Requirement:	FCC Part 96.47		
Test Method:	WINNF-18-IN-00178 CBRS End User Devices as UUT Test Guidelines		
Requirement:	<ul> <li>(a)End User Devices may operate only if they can positively receive and decode anauthorization signal transmitted by a CBSD, including the frequencies and power limits fortheir operation.</li> <li>(1)An End User Device must discontinue operations, change frequencies, or changeits operational power level within 10 seconds of receiving instructions from its associated CBSD.</li> </ul>		
Test Procedure:	<ol> <li>Setup with frequency 3550-3570MHz and power level 20dBm/MHz</li> <li>Enable AP service from Ruckus Cloud management</li> <li>Check EUD Tx Frequency and power</li> <li>Disable AP service from Ruckus Cloud management</li> <li>Check EUD stops transmission within 10seconds.</li> <li>Setup with 3590-3610MHz &amp; power level 8dBm/MHz</li> <li>Enable AP service from Ruckus Cloud management</li> <li>Check EUD Tx Frequency and power</li> <li>Disable AP service from Ruckus Cloud management</li> <li>Check EUD stops transmission within 10seconds.</li> </ol>		
Test setup:	Companion Device  ATT  Direct. Coupler  EUT		



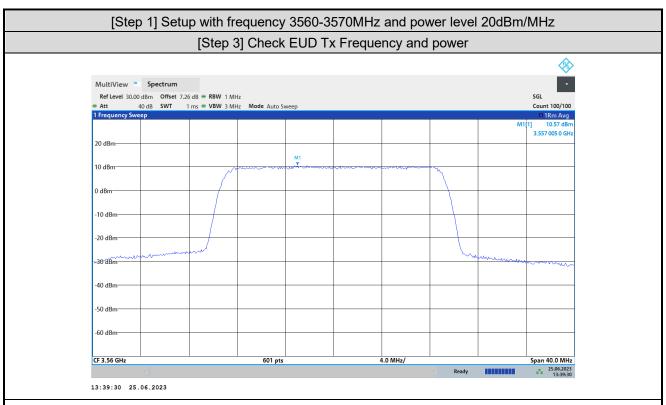
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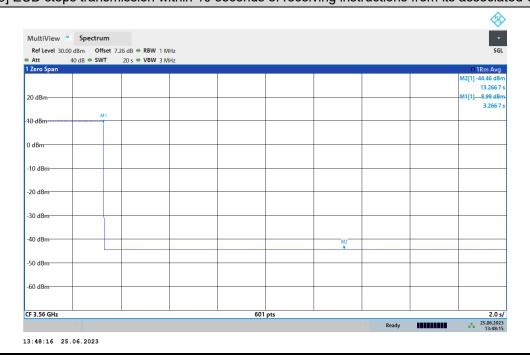
Report No.: ZEWA2305000087RG02

Page: 9 of 13



EIRP PSD=10.57-2=8.57dBm/MHz, Antenna gain is -2.0dBi, the pass loss is 7.26dB

[Step 5] EUD stops transmission within 10 seconds of receiving instructions from its associated CBSD.





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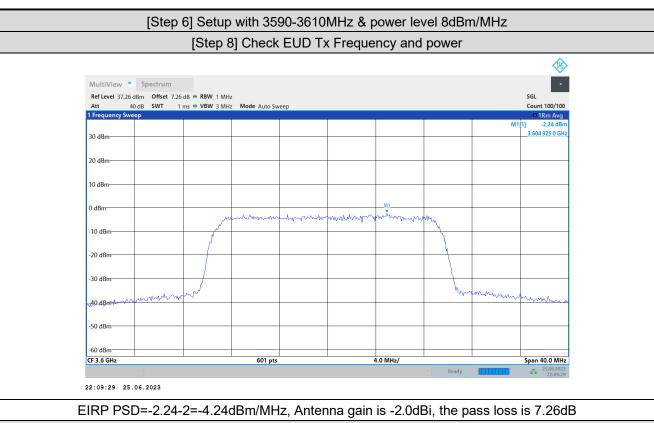
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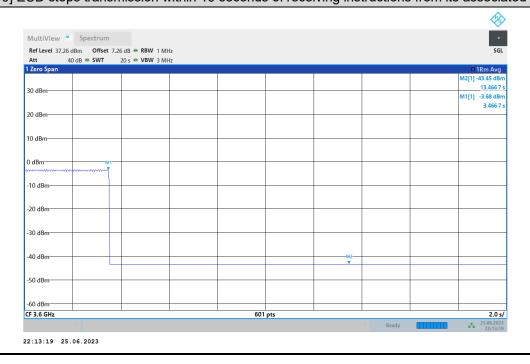
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Report No.: ZEWA2305000087RG02

Page: 10 of 13



[Step 10] EUD stops transmission within 10 seconds of receiving instructions from its associated CBSD.





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Page: 11 of 13

#### 5 **Main Test Instruments**

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy/mm/dd)	Cal.Due date (yyyy/mm/dd)
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	SZ-WRG-M- 032	2023/02/17	2024/02/16
Signal &Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M- 012	2023/02/16	2024/02/15
Base station	Baicells	mBS31001H FCC ID: 2AG32MBS3100196N	SZ-WRG-M- 111	NA	NA



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ZEWA2305000087RG02 Report No.:

Page: 12 of 13

#### **Measurement Uncertainty** 6

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

No.	Item	Measurement Uncertainty
1	Radio Frequency	± 9.84Hz
2	RF conducted power	± 0.42dB

#### Remark:

The U<sub>lab</sub> (lab Uncertainty) is less than U<sub>cispr/ETSI</sub> (CISPR/ETSI Uncertainty), so the test results compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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## 7 Appendixes

Setup Photos Appendix A.4 - Setup Photos-part96.47

---End of Report---



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