

Report No.: SEWA2304000051RG02  
 Rev.: 01  
 Page: 1 of 7

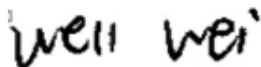
# TEST REPORT

**Application No.:** SEWA2304000051RG  
**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  
**EUT Description:** LTE-A Cat 6 M.2 Module  
**Model No.:** EM060K-NA  
**Trade Mark:** Quectel  
**FCC ID:** XMR202307EM060KNA  
**Standards:** 47 CFR Part 2.1091  
 FCC KDB 447498 D01 v06  
**Date of Receipt:** 2023/05/12  
**Date of Issue:** 2023/08/30

<b>Test Result:</b>	<b>PASS*</b>
---------------------	--------------

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Well Wei  
 Wireless Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.  
**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 62992980 www.sgs.com.cn  
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com


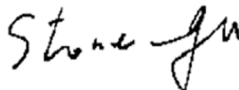
Report No.: SEWA2304000051RG02

Rev.: 01

Page: 2 of 7

# 1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/08/30		Original

<b>Prepared By</b>		 <hr/> <b>(Nick Hu) / Test Engineer</b>
<b>Checked By</b>		 <hr/> <b>(Stone Gu) / Reviewer</b>



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000  
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
 t (86-512) 62992980 sgs.china@sgs.com

## Contents

1	Version .....	2
2	General Information .....	4
2.1	Client Information .....	4
2.2	Test Facility .....	4
2.3	General Description of EUT .....	5
3	RF Exposure Evaluation .....	6
3.1	RF Exposure Compliance Requirement .....	6
3.1.1	Limits .....	6
3.1.2	Test Procedure .....	7
3.1.3	EUT RF Exposure Evaluation .....	7



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.  
**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone	215000	t (86-512) 62992980	www.sgsgroup.com.cn
中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部	邮编: 215000	t (86-512) 62992980	sgs.china@sgs.com

## 2 General Information

### 2.1 Client Information

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

### 2.2 Test Facility

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

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

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

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.  
**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000  
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
 t (86-512) 62992980 sgs.china@sgs.com

### 2.3 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)			
Antenna Type:	<input checked="" type="checkbox"/> External, <input type="checkbox"/> Integrated			
Antenna Gain:	LTE Band 2:	0.06dBi	LTE Band 4:	1.47dBi
	LTE Band 5:	2.26dBi	LTE Band 7:	0.55dBi
	LTE Band 12:	-0.33dBi	LTE Band 13:	0.08dBi
	LTE Band 14:	1.54dBi	LTE Band 17:	-0.33dBi
	LTE Band 25:	0.09dBi	LTE Band 26:	2.26dBi
	LTE Band 30:	-5.7dBi	LTE Band 41:	-0.71dBi
	LTE Band 42:	-2.00dBi	LTE Band 43:	-2.00dBi
	LTE Band 48:	-2.00dBi	LTE Band 66:	0.95dBi
	LTE Band 71:	0.43dBi		
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.			
RF Cable:	4.2dB(Below 1GHz)	4.5dB(1.0~2.4GHz)	4.8dB(2.4~3.4GHz)	
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.			



### 3 RF Exposure Evaluation

#### 3.1 RF Exposure Compliance Requirement

##### 3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz  
 \*=Plane-wave equivalent power density  
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula:  $Pd = (Pout * G) / (4 * \pi * R^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.  
**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 62992980 www.sgs.com.cn  
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com

### 3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

### 3.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Average Output Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
LTE B2	1850.7	0.06	25.00	25.06	33.00	0.0638	1.0000	8.00	12.01	8.00	Pass
LTE B4	1710.7	1.47	25.00	26.47	30.00	0.0883	1.0000	5.00	12.01	5.00	Pass
LTE B5	824.7	2.26	25.00	25.11	38.45	0.1059	0.5498	15.60	9.41	9.41	Pass
LTE B7	2502.5	0.55	25.00	25.55	33.00	0.0714	1.0000	8.00	12.01	8.00	Pass
LTE B12	699.7	-0.33	25.00	22.52	34.77	0.0583	0.4665	11.92	8.70	8.70	Pass
LTE B13	779.5	0.08	25.00	22.93	34.77	0.0641	0.5197	11.92	9.16	9.16	Pass
LTE B14	790.5	1.54	25.00	24.39	34.77	0.0897	0.5270	11.92	9.23	9.23	Pass
LTE B17	706.5	-0.33	25.00	22.52	34.77	0.0583	0.4710	11.92	8.74	8.74	Pass
LTE B25	1850.7	0.09	25.00	25.09	33.00	0.0642	1.0000	8.00	12.01	8.00	Pass
LTE B26 (814-824)	814.7	2.26	25.00	25.11	NA	0.1059	0.5431	NA	9.36	9.36	Pass
LTE B26 (824-849)	824.7	2.26	25.00	25.11	38.45	0.1059	0.5498	15.60	9.41	9.41	Pass
LTE B30	2307.5	-5.70	25.00	19.30	23.98	0.0169	1.0000	-1.02	12.01	-1.02	Pass
LTE B41	2498.5	-0.71	25.00	24.29	33.00	0.0534	1.0000	8.00	12.01	8.00	Pass
LTE B42 (3450-3550)	3452.5	-2.00	25.00	23.00	30.00	0.0397	1.0000	5.00	12.01	5.00	Pass
LTE B42 (3550-3600)	3552.5	-2.00	25.00	23.00	23.00	0.0397	1.0000	-2.00	12.01	-2.00	Pass
LTE B43 (3600-3700)	3602.5	-2.00	25.00	23.00	23.00	0.0397	1.0000	-2.00	12.01	-2.00	Pass
LTE B48	3552.5	-2.00	25.00	23.00	23.00	0.0397	1.0000	-2.00	12.01	-2.00	Pass
LTE B66	1710.7	0.95	25.00	25.95	30.00	0.0783	1.0000	5.00	12.01	5.00	Pass
LTE B71	665.5	0.43	25.00	23.28	34.77	0.0695	0.4437	11.92	8.48	8.48	Pass

---End of Report---



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000  
 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南面 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
 t (86-512) 62992980 sgs.china@sgs.com