



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

Report No.: ZEWA2310000147RG09
Page: 1 of 9

TEST REPORT

Application No.: ZEWA2310000147RG
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: 5G Sub-6 GHz M.2 Module
Model No.: RM520N-GL
Trade Mark: Quectel
FCC ID: XMR2023RM520NGLM
Standards: 47 CFR Part 96.47
Date of Receipt: 2022/05/15 (for report KSCR220700130701 & KSCR220700130702)
2023/04/19 (for report ZEWM2306000841RG03)
2023/09/26 (for report ZEWA2310000147RG03)
2023/11/10 (for report ZEWA2310000147RG09)
Date of Test: 2022/05/22 to 2022/07/27 (for report KSCR220700130701)
2022/08/22 to 2022/08/27 (for report KSCR220700130702)
Date of Issue: 2023/11/10

Test Result :

PASS *

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

Authorized Signature:

Keny Xu
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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 2 of 9

1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/11/10		Original

Prepared By	 (Jack Huang) / Test Engineer
Checked By	 (Flora Wang) / Reviewer



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 3 of 9

Contents

1	Version	2
2	Test Summary	4
3	General Information	5
3.1	Details of Client	5
3.2	Test Location	5
3.3	Test Facility	5
3.4	General Description of EUT	6
3.5	Test Environment	7
3.6	Description of Support Units	7
4	Description of Tests	8
4.1	End User Device additional requiemment	8
5	Main Test Instruments	9
6	Measurement Uncertainty	9
7	Appendixes	9



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 4 of 9

2 Test Summary

Test Item	FCC Rule No.	Test Result	Verdict
End User Device additional requirement	§96.47	Reference report KSCR220700130701 & KSCR220700130702	Pass

Remark for report ZEWM2306000841RG03 issue on 2023/07/06:

This test report (Report No.: ZEWM2306000841RG03 issue on 2023/07/06) is based on the original test report (Report No.: KSCR220700130701 issue on 2022/07/27 and KSCR220700130702 issue on 2022/08/29).

Review this report and original report, this report just changing the parts according to the declaration letter from client.

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report all items do not need to retest and other items data please refer to the test report KSCR220700130701 and KSCR220700130702. The FCC ID is XMR222RM520NGL has been certified, and the test report issued by Compliance Certification Services (Kunshan) Inc. on 2022/07/27 and 2022/08/29.

Remark for report ZEWA2310000147RG03 issue on 2023/10/31:

This test report (Report No.: ZEWA2310000147RG03 issue on 2023/10/31) is based on the original test report (Report No.: ZEWM2306000841RG03 issue on 2023/06/21).

Review this report and original report, this report just changing the parts according to the declaration letter from client.

Therefore in this report all items do not need to retest and other test data in this report are based on the previous report with report number ZEWM2306000841RG03 issue on 2023/07/06.

Remark for report ZEWA2310000147RG09 issue on 2023/11/10:

This test report (Report No.: ZEWA2310000147RG09 issue on 2023/11/10) is based on the original test report (Report No.: ZEWA2310000147RG03 issue on 2023/10/31).

Review this report and original report, this report just changing FCC ID.

Therefore in this report all items do not need to retest and all test data in this report are based on the previous report with report number ZEWA2310000147RG03 issue on 2023/10/31.



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 5 of 9

3 General Information

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

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.

• **VCCI**

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



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 6 of 9

3.4 General Description of EUT

EUT Description:	5G Sub-6 GHz M.2 Module
Model No.:	RM520N-GL
Trade Mark:	Quectel
Hardware Version:	R1.0
Software Version:	RM520NGLAAR03A01M4G
Power Supply:	DC 3.7V
Antenna Type:	PIFA Antenna
Transmitter Frequency Band:	LTE Band 48 LTE CA_48C NR Band n48
Transmitter Frequency Range:	3550 to 3700 MHz
Antenna Gain:	LTE Band 48: 1dBi (Ant2)
	LTE CA_48C 1dBi (Ant2)
	NR Band n48 1dBi (Ant0) 1dBi (Ant2)
	Note: The antenna gain are derived from the gain information report provided by 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.	



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 7 of 9

3.5 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	58.4 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	24.3	3.7
Remark: NV: Normal Voltage NT: Normal Temperature		

3.6 Description of Support Units

Please reference report KSCR220700130701 and KSCR220700130702.



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch, Accredited Wireless Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



4 Description of Tests

4.1 End User Device additional requirement

Test Requirement:	FCC Part 96.47
Test Method:	WINNF-18-IN-00178 CBRS End User Devices as UUT Test Guidelines
Requirement:	<p>(a)End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.</p> <p>(1)An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.</p>
Test Procedure:	<ol style="list-style-type: none"> 1. Setup with frequency 3550-3570MHz and power level 17dBm/MHz 2. Enable AP service from Ruckus Cloud management 3. Check EUD Tx Frequency and power 4. Disable AP service from Ruckus Cloud management 5. Check EUD stops transmission within 10seconds. 6. Setup with 3590-3610MHz & power level 13dBm/MHz 7. Enable AP service from Ruckus Cloud management 8. Check EUD Tx Frequency and power 9. Disable AP service from Ruckus Cloud management 10. Check EUD stops transmission within 10seconds.
Test setup:	<p>The diagram illustrates the test setup. A Spectrum Analyzer (green box) is connected to an ATT (Attenuator, black box). The ATT is connected to a Direct Coupler (black box). The Direct Coupler is connected to a Companion Device (white box) and an EUT (End User Device, yellow box). The Companion Device is also connected to the Direct Coupler via a wireless signal (represented by a vertical line with a horizontal bar at the top).</p>
Test Result:	Please reference report KSCR220700130701 and KSCR220700130702.



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com
 中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com



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

Report No.: ZEWA2310000147RG09
Page: 9 of 9

5 Main Test Instruments

Please reference report KSCR220700130701 and KSCR220700130702.

6 Measurement Uncertainty

Please reference report KSCR220700130701 and KSCR220700130702.

7 Appendixes

Setup Photos

Please reference report KSCR220700130701 and KSCR220700130702.

---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 <https://www.sgs.com/en/Terms-and-Conditions>. 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

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch, Accredited Wireless Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 www.sgs.com
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 sgs.china@sgs.com