

TEST REPORT

Application No.: SZCR2407002518MO
Applicant: Rolling Wireless S.a r.l.
Address of Applicant: 8-10, rue Mathias Hardt 1717, Luxembourg
Manufacturer: Rolling Wireless S.a r.l.
Address of Manufacturer: 8-10, rue Mathias Hardt 1717, Luxembourg
EUT Description: LTE Module
Model No.: RW101R-GL
Trade Mark: Rolling Wireless
FCC ID: 2AX2URW101RGL
Standards: FCC 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2024-07-01
Date of Issue: 2024-07-26

Test Result:	PASS*
---------------------	--------------

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

Keny Xu

Keny Xu
EMC 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

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing & EMC Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057
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 f (86-755) 26710594 www.sgsgroup.com.cn
t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-07-26		Original

Authorized for issue by:				
		Donjon Huang		
		Donjon Huang/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



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



2 General Information

2.1 Client Information

Applicant:	Rolling Wireless S.a r.l.
Address of Applicant:	8-10, rue Mathias Hardt 1717, Luxembourg
Manufacturer:	Rolling Wireless S.a r.l.
Address of Manufacturer:	8-10, rue Mathias Hardt 1717, Luxembourg

2.2 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 EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI (Member No. 1937)**

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. Shenzhen EMC laboratory 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.

• **FCC –Designation Number: CN1336**

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

Designation Number: CN1336. Test Firm Registration Number: 787754.

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

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

CAB identifier: CN0006.

IC#: 4620C.



2.3 General Description of EUT

EUT Description:	LTE Module	
Model No.:	RW101R-GL	
Trade Mark:	Rolling Wireless	
Hardware Version:	V1.4	
Software Version:	19512.9000.00.11.02.02	
Power Supply:	DC 3.3V	
Antenna Type:	<input checked="" type="checkbox"/> External, <input type="checkbox"/> Integrated	
Antenna Gain:	WCDMA Band II: 4dBi	WCDMA Band IV: 3dBi
	WCDMA Band V: 3dBi	
	LTE Band 2: 4dBi	LTE Band 4: 3dBi
	LTE Band 5: 3dBi	LTE Band 7: 4dBi
	LTE Band 12: 3dBi	LTE Band 13: 3dBi
	LTE Band 14: 3dBi	LTE Band 17: 3dBi
	LTE Band 25: 4dBi	LTE Band 26: 3dBi
	LTE Band 30: 1dBi	LTE Band 38: 4dBi
	LTE Band 41: 4dBi	LTE Band 48: 1dBi
	LTE Band 66: 3dBi	LTE Band 71: 3dBi
	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.		



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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². 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.



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 Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
WCDMA B2	1852.4	4.00	24.50	28.50	33.00	0.1408	1.0000	8.50	12.51	8.50	Pass
WCDMA B4	1712.4	3.00	24.50	27.50	30.00	0.1119	1.0000	5.50	12.51	5.50	Pass
WCDMA B5	828.4	3.00	24.50	25.35	38.45	0.1119	0.5523	16.10	9.93	9.93	Pass
LTE B2	1850.7	4.00	24.00	28.00	33.00	0.1255	1.0000	9.00	13.01	9.00	Pass
LTE B4	1710.7	3.00	24.00	27.00	30.00	0.0997	1.0000	6.00	13.01	6.00	Pass
LTE B5	824.7	3.00	25.00	25.85	38.45	0.1255	0.5498	15.60	9.41	9.41	Pass
LTE B7	2502.5	4.00	24.00	28.00	33.00	0.1255	1.0000	9.00	13.01	9.00	Pass
LTE B12	699.7	3.00	25.00	25.85	34.77	0.1255	0.4665	11.92	8.70	8.70	Pass
LTE B13	779.5	3.00	25.00	25.85	34.77	0.1255	0.5197	11.92	9.16	9.16	Pass
LTE B14	790.5	3.00	25.00	25.85	34.77	0.1255	0.5270	11.92	9.23	9.23	Pass
LTE B17	706.5	3.00	25.00	25.85	34.77	0.1255	0.4710	11.92	8.74	8.74	Pass
LTE B25	1850.7	4.00	24.00	28.00	33.00	0.1255	1.0000	9.00	13.01	9.00	Pass
LTE B26 (814-824)	814.7	3.00	25.00	NA	NA	0.1255	0.5431	NA	9.36	9.36	pass
LTE B26 (824-849)	824.7	1.00	25.00	23.85	38.45	0.0792	0.5498	15.60	9.41	9.41	Pass
LTE B30	2307.5	1.00	23.00	24.00	23.98	0.0500	1.0000	0.98	14.01	0.98	Pass
LTE B38	2572.5	4.00	24.00	28.00	33.00	0.1255	1.0000	9.00	13.01	9.00	Pass
LTE B41	2498.5	4.00	24.00	28.00	33.00	0.1255	1.0000	9.00	13.01	9.00	Pass
LTE B48	3552.5	1.00	22.00	23.00	23.00	0.0397	1.0000	1.00	15.01	1.00	Pass
LTE B66	1710.7	3.00	24.00	27.00	30.00	0.0997	1.0000	6.00	13.01	6.00	Pass
LTE B71	665.5	3.00	25.00	25.85	34.77	0.1255	0.4437	11.92	8.48	8.48	Pass

---End of Report---

