

Report No.: SEWA2310000121RG03

Rev.: 01

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TEST REPORT

Application No.: SEWA2310000121RG
Applicant: Rolling Wireless S.à r.l.
Address of Applicant: 15, rue Edward Steichen, 2540 Luxembourg
Manufacturer: Rolling Wireless S.à r.l.
Address of Manufacturer: 15, rue Edward Steichen, 2540 Luxembourg
EUT Description: RN934A
Model No.: RN934A
Trade Mark: Rolling Wireless
FCC ID: 2AX2URN934A
Standards: 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2023/09/28
Date of Issue: 2023/10/31

Test Result:**PASS***

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

Authorized Signature:

Well Wei

Well Wei
Wireless Laboratory Manager



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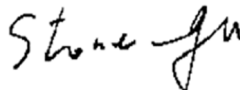
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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/10/31		Original

Prepared By	
	(Nick Hu) / Test Engineer
Checked By	
	(Stone Gu) / Reviewer



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2 General Information

2.1 Client Information

Applicant:	Rolling Wireless S.à r.l.
Address of Applicant:	15, rue Edward Steichen, 2540 Luxembourg
Manufacturer:	Rolling Wireless S.à r.l.
Address of Manufacturer:	15, rue Edward Steichen, 2540 Luxembourg

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



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2.3 General Description of EUT

EUT Description:	RN934A
Model No.:	RN934A
Trade Mark:	Rolling Wireless
Hardware Version:	1
Software Version:	AFPQ52XA_00.11.01.00
Antenna Type:	☒ External, ☐ Integrated
Antenna Gain:	LTE Band 7: -2.5dBi
	LTE Band CA_7C: -2.5dBi
	NR Band n78: 2.9dBi
	LTE CA: LTE Band CA_7C ENDC: DC_7A_n78A;
	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.	



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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.



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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
LTE/CABand 7	2502.5	-2.50	24.50	22.00	33.00	0.0315	1.0000	8.50	12.51	8.50	Pass
NR Band n78 (3450-3550) (PC2)	3455.0	2.90	27.00	29.90	30.00	0.1944	1.0000	3.00	10.01	3.00	Pass



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Due to the EUT support NR ENDC and CA

$$\sum_{i=1}^n \frac{S_{E_i}(\text{duty factor})}{MPE_{E_i}} < 1$$

Both LTE and NR/LTE band can transmit simultaneously, the formula of the calculated the MPE is:

NOTE The corresponding MEs must be expressed in terms of power density in the above summation
Therefore, the worst-case(DC_7A_n78A) situation is $0.0315+0.1944=0.2259$, which is less than "1",
this confirmed that the device comply with MPE limit.

---End of Report---



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