

RF Exposure Evaluation Report

APPLICANT : Rolling Wireless S.a r.l.
EQUIPMENT : 5G Module
BRAND NAME : Rolling Wireless
MODEL NAME : RW151-GL
FCC ID : 2AX2URW151GL
STANDARD : 47 CFR Part 2.1091
FCC KDB 447498 D01 v06

The product was received on Jun. 01, 2026. The product evaluation date was started from Aug. 28, 2026 and completed on Aug. 28, 2026. We, Sporton International Inc. (Shenzhen), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

Hank Huang



Approved by: Hank Huang

Sporton International Inc. (Shenzhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA642220-R01	Rev. 01	Initial issue of report.	Sep. 23, 2026



1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR01-SZ	CN1256	421272

Applicant	
Company Name	Rolling Wireless S.a r.l.
Address	8-10, rue Mathias Hardt 1717, Luxembourg
Contact Name	Gene Santana
TEL	+1-561-9098960

Manufacturer	
Company Name	Rolling Wireless S.a r.l.
Address	8-10, rue Mathias Hardt 1717, Luxembourg



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	5G Module
Brand Name	Rolling Wireless
Model Name	RW151-GL
FCC ID	2AX2URW151GL
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3550 MHz ~ 3600 MHz LTE Band 43: 3600 MHz ~ 3700MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 70: 1695 MHz ~ 1710 MHz LTE Band 71: 663 MHz ~ 698 MHz LTE Band 106: 897.5 MHz ~ 900.5 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13 : 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77 : 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78 : 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz NTN Band 23 : 2000 MHz ~ 2020 MHz NTN Band 255 : 1626.5 MHz ~ 1660.5 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM NTN: BPSK/QPSK
Antenna Gain	WCDMA Band II: 4.00 dBi WCDMA Band IV: 3.00 dBi WCDMA Band V: 3.00 dBi LTE Band 2 : 4.0 dBi LTE Band 4 : 3.0 dBi

	LTE Band 5 : 3.0 dBi LTE Band 7 : 3.0 dBi LTE Band 12 : 3.0 dBi LTE Band 13 : 3.0 dBi LTE Band 14 : 3.0 dBi LTE Band 17 : 3.0 dBi LTE Band 25 : 4.0 dBi LTE Band 26 : 3.0 dBi LTE Band 30 : 1.0 dBi LTE Band 38 : 3.0 dBi LTE Band 41 : 3.0 dBi LTE Band 42 : 3.0 dBi LTE Band 43 : 3.0 dBi LTE Band 48 : 1.0 dBi LTE Band 66 : 3.0 dBi LTE Band 70 : 3.0 dBi LTE Band 71 : 3.0 dBi LTE Band 106 : 3.0 dBi 5G NR n2 : 4.0 dBi 5G NR n5 : 3.0 dBi 5G NR n7 : 3.0 dBi 5G NR n12 : 3.0 dBi 5G NR n13 : 3.0 dBi 5G NR n14 : 3.0 dBi 5G NR n25 : 4.0 dBi 5G NR n26 : 3.0 dBi 5G NR n30 : 1.0 dBi 5G NR n38 : 3.0 dBi 5G NR n41 : 3.0 dBi 5G NR n48 : 1.0 dBi 5G NR n66 : 3.0 dBi 5G NR n70 : 3.0 dBi 5G NR n71 : 3.0 dBi 5G NR n77 : 1.0 dBi 5G NR n78 : 1.0 dBi NTN Band 255: 3.00 dBi NTN Band 23: 3.00 dBi
Antenna Type	External PIFA Antenna
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The intra-band/inter-band ULCA, and EN-DC mode combination could be referred to the product spec.
3. This device supports intra-band ULCA. Since the power is the same for intra-band ULCA and non-CA, the non-CA MPE analysis is representative of the ULCA MPE analysis.
4. The device supports HPUE (power class 2) under SISO mode and HPUE (power class 1.5) under UL MIMO mode for 5G NR n41/77/78, so HPUE (power class 1.5) has been performed MPE calculation.
5. 5G NR n41/48/77/78 support SISO/MIMO mode, and 5G NR n41/48/77/78 UL MIMO support HPUE mode, we only chose MIMO tune up power to perform MPE calculation conservatively for MIMO power is higher.
6. 5G NR n2/5/7/12/13/14/25/26/30/38/41/48/66/70/71/77/78 supports SA mode.
7. 5G NR n2/5/7/12/14/25/26/30/38/41/48/66/71/77/78 supports NSA mode.
8. This device supports HPUE mode for 5G NR n41/77/78 with class 2 power level, so HPUE has been performed to do MPE analysis.
9. For 5G NR FDD/TDD supports SCS15KHz and SCS30KHz, chose higher power which is for FDD/TDD bands to perform MPE analysis.
10. Chose the maximum RF output tune up power and the maximum antenna gain of all antennas among same frequency WWAN/NTN bands to perform MPE calculation conservatively.

Comments and Explanations:

1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.



3. The applicant is solely responsible for the accuracy and correctness of all applicant-provided information, specifications, and data in this report.

Reviewed by: David Dai

3. Maximum RF average output tune up power among production units

<WCDMA>

Mode		Maximum Average power(dBm)
WCDMA	Band II	24.50
	Band IV	24.50
	Band V	24.50

<LTE>

Mode		Maximum Average power(dBm)
LTE	Band 2	25.00
	Band 4	25.00
	Band 5	25.00
	Band 7	25.00
	Band 12	25.00
	Band 13	25.00
	Band 14	25.00
	Band 17	25.00
	Band 25	25.00
	Band 26	25.00
	Band 30	23.00
	Band 38	25.00
	Band 41	25.00
	Band 42	25.00
	Band 43	25.00
	Band 48	22.00
	Band 66	25.00
	Band 70	25.00
	Band 71	25.00
	Band 106	25.00

<5G NR>

Mode		Maximum Average power(dBm)
5G NR	n2	25.00
	n5	25.00
	n7	25.00
	n12	25.00
	n13	25.00
	n14	25.00
	n25	25.00
	n26	25.00
	n30	23.00
	n38	25.00
	n41	25.00
	n41 HPUE	28.00
	n48	22.00
	n66	25.00
	n70	25.00
	n71	25.00
	n77	25.00
	n77 HPUE	28.00
	n78	25.00
	n78 HPUE	28.00

<MIMO>

Mode		Maximum Average power(dBm)
5G NR	n41	30.0
	n48	22.0
	n77	29.0
	n78	29.0

<NTN>

Mode		Maximum Average power(dBm)
NTN	Band 255	25.00
	Band 23	25.00

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	4.00	24.50	28.500	707.946	0.141	1.000	0.141
WCDMA Band 4	1712.4	3.00	24.50	27.500	562.341	0.112	1.000	0.112
WCDMA Band 5	826.4	3.00	24.50	27.500	562.341	0.112	0.551	0.203
LTE Band 2	1850.0	4.00	25.00	29.000	794.328	0.158	1.000	0.158
LTE Band 4	1710.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 5	824.0	3.00	25.00	28.000	630.957	0.126	0.549	0.229
LTE Band 7	2500.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 12	699.0	3.00	25.00	28.000	630.957	0.126	0.466	0.270
LTE Band 13	777.0	3.00	25.00	28.000	630.957	0.126	0.518	0.242
LTE Band 14	788.0	3.00	25.00	28.000	630.957	0.126	0.525	0.239
LTE Band 17	704.0	3.00	25.00	28.000	630.957	0.126	0.469	0.268
LTE Band 25	1850.0	4.00	25.00	29.000	794.328	0.158	1.000	0.158
LTE Band 26	814.0	3.00	25.00	28.000	630.957	0.126	0.543	0.231
LTE Band 30	2305.0	1.00	23.00	24.000	251.189	0.050	1.000	0.050
LTE Band 38	2570.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 41	2496.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 42	3450.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 43	3600.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 48	3550.0	1.00	22.00	23.000	199.526	0.040	1.000	0.040
LTE Band 66	1710.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 70	1695.0	3.00	25.00	28.000	630.957	0.126	1.000	0.126
LTE Band 71	663.0	3.00	25.00	28.000	630.957	0.126	0.442	0.284
LTE Band 106	897.5	3.00	25.00	28.000	630.957	0.126	0.598	0.210
5G NR n2	1850.0	4.00	25.00	29.000	794.328	0.158	1.000	0.158
5G NR n5	824.00	3.00	25.00	28.000	630.957	0.126	0.549	0.229
5G NR n7	2500.00	3.00	25.00	28.000	630.957	0.126	1.000	0.126
5G NR n12	699.00	3.00	25.00	28.000	630.957	0.126	0.466	0.270
5G NR n13	777.00	3.00	25.00	28.000	630.957	0.126	0.518	0.242
5G NR n14	788.00	3.00	25.00	28.000	630.957	0.126	0.525	0.239
5G NR n25	1850.00	4.00	25.00	29.000	794.328	0.158	1.000	0.158
5G NR n26	814.00	3.00	25.00	28.000	630.957	0.126	0.543	0.231
5G NR n30	2305.00	1.00	23.00	24.000	251.189	0.050	1.000	0.050
5G NR n38	2570.00	3.00	25.00	28.000	630.957	0.126	1.000	0.126
5G NR n41	2496.00	3.00	28.00	31.000	1258.925	0.251	1.000	0.251
5G NR n41 MIMO	2496.00	3.00	30.00	33.000	1995.262	0.397	1.000	0.397
5G NR n48	3550.00	1.00	22.00	23.000	199.526	0.040	1.000	0.040
5G NR n66	1710.00	3.00	25.00	28.000	630.957	0.126	1.000	0.126
5G NR n70	1695.00	3.00	25.00	28.000	630.957	0.126	1.000	0.126
5G NR n71	663.00	3.00	25.00	28.000	630.957	0.126	0.442	0.284
5G NR n77	3450.00	1.00	28.00	29.000	794.328	0.158	1.000	0.158
5G NR n77 MIMO	3450.00	1.00	29.00	30.000	1000.000	0.199	1.000	0.199
5G NR n78	3450.00	1.00	28.00	29.000	794.328	0.158	1.000	0.158
5G NR n78 MIMO	3450.00	1.00	29.00	30.000	1000.000	0.199	1.000	0.199
NTN Band 255	1626.50	1.00	25.00	26.000	398.107	0.079	1.000	0.079
NTN Band 23	2000.00	1.00	25.00	26.000	398.107	0.079	1.000	0.079

Note:

- For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
- Chose the maximum RF output tune up power and the maximum antenna gain of all antennas among same frequency WWAN/NTN bands to perform MPE calculation conservatively.

**5.1. Collocated Power Density Calculations****<ULCA>**

Maximum WWAN LTE Power Density / Limit	Maximum WWAN LTE Power Density / Limit	Σ (Power Density / Limit) of WWAN LTE + WWAN LTE
0.284	0.284	0.568

Maximum WWAN 5GNR Power Density / Limit	Maximum WWAN 5GNR Power Density / Limit	Σ (Power Density / Limit) of WWAN 5GNR + WWAN 5GNR
0.284	0.284	0.568

<EN-DC>

Maximum WWAN LTE Power Density / Limit	Maximum WWAN 5GNR Power Density / Limit	Σ (Power Density / Limit) of WWAN LTE + WWAN 5GNR
0.284	0.284	0.568

Note:

1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN LTE + WWAN 5GNR and inter-band ULCA.
2. Considering the WWAN and 5GNR module collocation transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----