

# RF EXPOSURE EVALUATION REPORT

FCC ID : 2AZULRS8682  
Equipment : 5G n48 RRU 4x4 5W/Ch Outdoor  
Brand Name : LIONS  
Model Name : RS8682  
Applicant : LIONS Twiwan Technology Inc.  
3F.-2, No. 120, Sec. 2, Gongdao 5th Rd., East  
Dist., Hsinchu City 300031 , Taiwan (R.O.C.)  
Manufacturer : LIONS Twiwan Technology Inc.  
3F.-2, No. 120, Sec. 2, Gongdao 5th Rd., East  
Dist., Hsinchu City 300031 , Taiwan (R.O.C.)  
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



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## History of this test report

Report No.	Version	Description	Issued Date
FA3N0925	Rev. 01	Initial issue of report	Jan. 04, 2024

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	5G n48 RRU 4x4 5W/Ch Outdoor
Brand Name	LIONS
Model Name	RS8682
FCC ID	2AZULRS8682
Wireless Technology and Frequency Range	5G NR n48 : 3550 MHz ~ 3700 MHz
Mode	5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM
EUT Stage	Identical Prototype

**Reviewed by: Jason Wang****Report Producer: Daisy Peng****2. Maximum RF average output power among production units**

Radio Tech	Band Number	Maximum Transmit Power Level (dBm)
FR1	n48	37

**Note:**

1. This device is equipped with 4 WWAN antennas, and the maximum combined output power of these four antennas is 37 dBm.

### **3. 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 <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

The MPE was calculated at 150 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



## **4. Radio Frequency Radiation Exposure Evaluation**

### **4.1. Standalone Power Density Calculation**

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 150cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5G NR n48	17.5	37.0	54.5	281.84	281838.29	0.997	1.000

### **Conclusion:**

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