



# RF EXPOSURE EVALUATION REPORT

**FCC ID** : PKRISGFX4210  
**Equipment** : Indoor Mobile Router  
**Brand Name** : Inseego  
**Model Name** : FX4210  
**Applicant** : Inseego Corp.  
9710 Scranton Road Suite 200, San Diego, CA 92121  
**Manufacturer** : Inseego Corp.  
9710 Scranton Road Suite 200, San Diego, CA 92121  
**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: 3786) and the FCC designation No. TW3786 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



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

Product Feature & Specification	
EUT Type	Indoor Mobile Router
Brand Name	Inseego
Model Name	FX4210
FCC ID	PKRISGFX4210
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160
HW Version	Production Representative
EUT Stage	Production Representative

Reviewed by: Jason Wang

Report Producer: Carlie Tsai

## 2. Maximum RF average output power among production units

### <WLAN>

	Mode	Maximum Average power(dBm)
WLAN	2.4GHz	28.0
	5.2GHz	24.5
	5.3GHz	24.0
	5.5GHz	24.0
	5.8GHz	27.0



### 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 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



#### 4. Radio Frequency Radiation Exposure Evaluation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum PG (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
2.4GHz WLAN	3.5	28.0	31.5	1412.54	0.281	1.000	0.281
5.2GHz WLAN	5.8	24.5	30.3	1071.52	0.213	1.000	0.213
5.3GHz WLAN	5.5	24.0	29.5	891.25	0.177	1.000	0.177
5.5GHz WLAN	5.5	24.0	29.5	891.25	0.177	1.000	0.177
5.8GHz WLAN	5.1	27.0	32.1	1621.81	0.323	1.000	0.323

WWAN Power Density / Limit	WLAN Power Density / Limit	$\Sigma$ (Power Density / Limit) of WWAN + WLAN
0.594	0.323	0.917

**Note:**

1. The WWAN operation is also integrated into this host, the highest Sim-Tx ratio is 0.594 refer to FCC ID: PKRISGRM4210, RF Exspoure report No.: FA4N2547-01 and using for Sim-Tx analysi with WiFi operation.
2.  $\Sigma$  (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN.
3. Considering the WWAN module collocation with the WLAN 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.