

## RF Exposure Report

**Report No.:** SA180913C25

**FCC ID:** RYK-WPEA252NIRB

**Test Model:** WPEA-252NIRB

**Received Date:** Sep. 13, 2018

**Test Date:** Oct. 03 ~ Oct. 11, 2018

**Issued Date:** Oct. 24, 2018

**Applicant:** SparkLAN Communications, Inc.

**Address:** 8F., No. 257, Sec. 2, Tiding Blvd., Neihu District, Taipei City 11493, Taiwan (R.O.C.)

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

**FCC Registration /** 788550 / TW0003  
**Designation Number:**



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## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
<b>3 Calculation Result of Maximum Conducted Power</b> .....	<b>6</b>

### Release Control Record

Issue No.	Description	Date Issued
SA180913C25	Original release	Oct. 24, 2018

## 1 Certificate of Conformity

**Product:** 802.11a/b/g/n 2T2R Industrial Grade Mini PCIe Module

**Brand:** SparkLAN

**Test Model:** WPEA-252NIRB

**Sample Status:** R & D sample

**Applicant:** SparkLAN Communications, Inc.

**Test Date:** Oct. 03 ~ Oct. 11, 2018

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 General RF Exposure Guidance v06  
IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Oct. 24, 2018  
Celine Chou / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Oct. 24, 2018  
Bruce Chen / Project Engineer

## 2 RF Exposure

### 2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

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

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	1TX	20.24	5.00	20	0.066	1
	2TX	19.26	8.01	20	0.106	1
5180-5240	1TX	15.49	5.80	20	0.027	1
	2TX	16.24	8.81	20	0.064	1
5260-5320	1TX	15.72	5.80	20	0.028	1
	2TX	16.40	8.81	20	0.066	1
5500-5700	1TX	15.49	5.80	20	0.027	1
	2TX	16.46	8.81	20	0.067	1
5745-5825	1TX	15.48	5.80	20	0.027	1
	2TX	16.50	8.81	20	0.068	1

Note:

2.4GHz: Directional gain = 5dBi + 10log(2) = 8.01dBi

5GHz: Directional gain = 5.8dBi + 10log(2) = 8.81dBi

\* WLAN 2.4G and 5G technology cannot transmit simultaneously.

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