

## RF Exposure Report

**Report No.:** SABENL-WTW-P21080259

**FCC ID:** RYK-WPEA252NIRB

**Test Model:** WPEA-252NIRB

**Received Date:** Aug. 09, 2021

**Test Date:** Aug. 12 ~ Aug. 20, 2021

**Issued Date:** Sep. 14, 2021

**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  
Lin Kou Laboratories

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

**Test Location (1):** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN

**Test Location (2):** No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

**FCC Registration / Designation Number (1):** 788550 / TW0003

**FCC Registration / Designation Number (2):** 281270 / TW0032



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### Release Control Record

Issue No.	Description	Date Issued
SABENL-WTW-P21080259	Original release	Sep. 14, 2021

## 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:** Aug. 12 ~ Aug. 20, 2021

**Standards:** FCC Part 2 (Section 2.1091)

**References Test Guidance:** KDB 447498 D01 General RF Exposure Guidance v06

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 :**  , **Date:** Sep. 14, 2021  
Polly Chien / Specialist

**Approved by :**  , **Date:** Sep. 14, 2021  
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				
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

F = Frequency in MHz

### 2.2 MPE Calculation Formula

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

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	20.01	5.00	20	0.063	1
	2TX	19.03	8.01	20	0.101	1
5180-5240	1TX	15.26	5.80	20	0.025	1
	2TX	16.04	8.81	20	0.061	1
5260-5320	1TX	15.41	5.80	20	0.026	1
	2TX	16.06	8.81	20	0.061	1
5500-5700	1TX	15.23	5.80	20	0.025	1
	2TX	16.18	8.81	20	0.063	1
5745-5825	1TX	15.14	5.80	20	0.025	1
	2TX	16.17	8.81	20	0.063	1

**Note:**

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
- Max. antenna:  
 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.

**---END---**