

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 / 788550 / TW0003
Designation Number (1):

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



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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

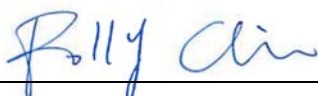
Applicant: SparkLAN Communications, Inc.

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 ²)	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 ²)*	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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 ²)	Limit (mW/cm ²)
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:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 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.
3. 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.

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