

RF Exposure Report

Report No.: SA190625C25

FCC ID: RYK-WPEQ450AC

Test Model: WPEQ-450AC

Series Model: WPEQ-450ACI

Received Date: Jun. 25, 2019

Test Date: Jul. 09 ~ Aug. 05, 2019

Issued Date: Aug. 20, 2019

Applicant: SparkLAN Communications, Inc.

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

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

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



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Release Control Record

Issue No.	Description	Date Issued
SA190625C25	Original release.	Aug. 20, 2019

1 Certificate of Conformity

Product: 802.11ac/a/n Mini PCIe Module(4T4R)

Brand: SparkLAN

Test Model: WPEQ-450AC

Series Model: WPEQ-450ACI

Sample Status: R&D sample

Applicant: SparkLAN Communications, Inc.

Test Date: Jul. 09 ~ Aug. 05, 2019

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.3 -2002

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 : Polly Chien , **Date:** Aug. 20, 2019
Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Aug. 20, 2019
Bruce Chen / Senior 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				
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)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 5180~5240	23.92	11.02	20	0.620	1
WLAN 5260~5320	22.00	11.02	20	0.399	1
WLAN 5500~5700	21.98	11.02	20	0.397	1
WLAN 5720~5825	24.73	11.02	20	0.748	1

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

Note:

5180~5240MHz Directional Gain = 5dBi + 10log(4) = 11.02dBi

5260~5320MHz Directional Gain = 5dBi + 10log(4) = 11.02dBi

5500~5700MHz Directional Gain = 5dBi + 10log(4) = 11.02dBi

5745~5825MHz Directional Gain = 5dBi + 10log(4) = 11.02dBi

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