

## RF Exposure Report

**Report No.:** SA120328C12J

**FCC ID:** RYK-WPEA127NI

**Test Model:** WPEA-127NI

**Received Date:** Apr. 13, 2016

**Test Date:** Apr. 25 ~ May 12, 2016

**Issued Date:** May 16, 2016

**Applicant:** SparkLAN Communications, Inc.

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

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



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### Release Control Record

Issue No.	Description	Date Issued
SA120328C12J	Original release	May 16, 2016

## 1 Certificate of Conformity

**Product:** 802.11a/b/g/n 3T3R Mini PCIe Module

**Brand:** SparkLAN

**Test Model:** WPEA-127NI

**Sample Status:** Engineering Sample

**Applicant:** SparkLAN Communications, Inc.

**Test Date:** Apr. 25 ~ May 12, 2016

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 (October 23, 2015)  
IEEE C95.1

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 EMC characteristics under the conditions specified in this report.

**Prepared by :**  , **Date:** May 16, 2016  
Polly Chien / Specialist

**Approved by :**  , **Date:** May 16, 2016  
Ken Liu / Senior Manager

## 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

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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)	Modulation Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	802.11b	16.52	3	20	0.018	1
	802.11g	16.30	3	20	0.017	1
	802.11n (20MHz)	19.60	7.77	20	0.109	1
	802.11n (40MHz)	19.40	7.77	20	0.104	1
5180-5240	802.11a	14.41	5	20	0.017	1
	802.11n (20MHz)	11.26	9.77	20	0.025	1
	802.11n (40MHz)	12.78	9.77	20	0.036	1
5260-5320	802.11a	15.67	5	20	0.023	1
	802.11n (20MHz)	17.10	9.77	20	0.097	1
	802.11n (40MHz)	16.82	9.77	20	0.091	1
5500-5700	802.11a	15.14	5	20	0.021	1
	802.11n (20MHz)	16.90	9.77	20	0.092	1
	802.11n (40MHz)	16.88	9.77	20	0.092	1
5745-5825	802.11a	15.53	5	20	0.022	1
	802.11n (20MHz)	21.10	9.77	20	0.243	1
	802.11n (40MHz)	20.53	9.77	20	0.213	1

Note:

**2.4GHz:**

**802.11n (20MHz) & 802.11n (40MHz):** Directional gain = 3dBi + 10log(3) = 7.77dBi

**5.0GHz:**

**802.11n (20MHz) & 802.11n (40MHz):** Directional gain = 5dBi + 10log(3) = 9.77dBi

\* Both of the 2.4GHz and 5GHz can not transmit simultaneously

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