

## RF Exposure Report

**Report No.:** SA130709C02E

**FCC ID:** RYK-WPEA252NI

**Test Model:** WPEA-252NI

**Received Date:** Jul. 09, 2013

**Test Date:** Jul. 11 ~ Jul. 12, 2013  
Apr. 21 ~ Apr. 24, 2015

**Issued Date:** Apr. 28, 2015

**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 Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.



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### Release Control Record

Issue No.	Description	Date Issued
SA130709C02E	Original release	Apr. 28, 2015

## 1 Certificate of Conformity

**Product:** 802.11abgn Mini PCIe module

**Brand:** SparkLAN

**Test Model:** WPEA-252NI

**Sample Status:** Engineering sample

**Applicant:** SparkLAN Communications, Inc.

**Test Date:** Jul. 11 ~ Jul. 12, 2013  
Apr. 21 ~ Apr. 24, 2015

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03  
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 :**



Pettie Chen / Senior Specialist

**Date:**

Apr. 28, 2015

**Approved by :**



Ken Liu / Senior Manager

**Date:**

Apr. 28, 2015

## 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

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

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)	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	21.30	3	20	0.054	1
	802.11g	24.34	6.01	20	0.216	1
	802.11n (HT20)	26.36	6.01	20	0.343	1
	802.11n (HT40)	25.92	6.01	20	0.310	1
5180-5240	802.11a	13.98	5	20	0.016	1
	802.11n (HT20)	14.87	8.01	20	0.039	1
	802.11n (HT40)	13.74	8.01	20	0.030	1
5260-5320	802.11a	13.94	5	20	0.016	1
	802.11n (HT20)	14.90	8.01	20	0.039	1
	802.11n (HT40)	13.65	8.01	20	0.020	1
5500-5720	802.11a	13.91	5	20	0.015	1
	802.11n (HT20)	14.78	8.01	20	0.038	1
	802.11n (HT40)	13.75	8.01	20	0.030	1
5745-5825	802.11a	13.89	5	20	0.015	1
	802.11n (HT20)	14.59	8.01	20	0.036	1
	802.11n (HT40)	14.05	8.01	20	0.032	1

NOTE:

2.4GHz Band: 802.11n(HT20)/ 802.11n(HT40): Directional gain = 3dBi + 10log(2) = 6.01dBi

5GHz Band: 802.11n(HT20)/ 802.11n(HT40): Directional gain = 5dBi + 10log(2) = 8.01dBi

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