

## RF Exposure Report

**Report No.:** SA160321D09B

**FCC ID:** K7SF9K1124V1

**Test Model:** F9K1124V1

**Series Model:** F9K1119V2

**Received Date:** Jun. 28, 2016

**Test Date:** Jun. 28 ~ Jul. 4, 2016

**Issued Date:** Jul. 28, 2016

**Applicant:** Belkin International, Inc.

**Address:** 12045 East Waterfront Drive, Playa Vista, CA 90094 USA

**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.)



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### Report Issue History Record

Issue No.	Description	Date Issued
SA160321D09	Original release.	Apr. 1, 2016
SA160321D09A	Addition of model name: F9K1119V2.	May 30, 2016
SA160321D09B	Upgraded the standard to section 15.407 under new rule (16-24) for U-NII-3 band.	Jul. 28, 2016

### Release Control Record

Issue No.	Description	Date Issued
SA160321D09B	Original release.	Jul. 28, 2016

## 1 Certificate of Conformity

**Product:** AC1900 DB Wi-Fi Dual-Band AC+ Gigabit Router,  
AC1600 DB Wi-Fi Dual-Band AC+ Gigabit Router

**Brand:** Belkin

**Test Model:** F9K1124V1

**Series Model:** F9K1119V2

**Sample Status:** Engineering sample

**Applicant:** Belkin International, Inc.

**Test Date:** Jun. 28 ~ Jul. 4, 2016

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

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 :**



( Celia Chen / Supervisor )

**Date:** Jul. 28, 2016

**Approved by :**



( Rex Lai / Assistant Manager )

**Date:** Jul. 28, 2016

## 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 32cm 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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	28.99	7.48	32	0.3447	1
5180-5240	24.67	7.82	32	0.1379	1
5745-5825	26.70	7.82	32	0.2200	1

#### NOTE:

1. 2.4GHz: Directional gain = 2.71dBi + 10log(3) = 7.48dBi

2. 5.0GHz: Directional gain = 3.05dBi + 10log(3) = 7.82dBi

3. The more version detail as below table:

Model	F9K1124V1	F9K1119V2
Model Difference	For Model: F9K1119V2 only used software to control and disable antenna 3 (chain 2) of 2.4G Stream, the others to RF output power, RF parameter and hardware as same as Model: F9K1124V1.	
Product Name	AC1900 DB Wi-Fi Dual-Band AC+ Gigabit Router	AC1600 DB Wi-Fi Dual-Band AC+ Gigabit Router
Driver Version	V1.04.03	V2.02.01
Product SW Version	V1.04.03	V2.02.01
Product HW Version	V1.0	V1.0
Radio SW Version	V1.04.03	V2.02.01
Radio HW Version	V1.0	V1.0

#### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5180-5240MHz + WLAN 5745-5825MHz =  $0.3447/1 + 0.1379/1 + 0.2200/1 = 0.7026$

**Therefore the maximum calculations of above situations are less than the "1" limit.**

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