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## RF Exposure Report

**Report No.:** SA130725E01E

**FCC ID:** Q87-EA6900V11

**Test Model:** EA6900 V1.1

**Received Date:** Mar. 17, 2016

**Test Date:** Mar. 29, 2016

**Issued Date:** May 19, 2016

**Applicant:** Linksys LLC

**Address:** 121 Theory Drive Irvine California 92617 United State

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

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**Report Issue History Record**

Issue No.	Reason for Change	Date Issued
SA130725E01E	Original	Feb. 17, 2014
SA130725E01E	Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.	May 19, 2016

**Release Control Record**

Issue No.	Description	Date Issued
SA130725E01E	Original release.	May 19, 2016

## 1 Certificate of Conformity

**Product:** Linksys Smart Wi-Fi Router AC1900

**Brand:** Linksys

**Test Model:** EA6900 V1.1

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Linksys LLC

**Test Date:** Mar. 29, 2016

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

KDB 447498 D01 General RF Exposure Guidance v06

ANSI/ 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 :** Wendy Wu, **Date:** May 19, 2016  
Wendy Wu / Specialist

**Approved by :** May Chen, **Date:** May 19, 2016  
May Chen / 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 26cm away from the body of the user.

So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

Transmitter Circuit	Brand	Antenna Type	Peak Gain(dBi) (Include cable loss )		Connector Type	Cable Loss (dB)	Cable Length (mm)
			For 2.4GHz (2.4GHz to 2.4835GHz)	For 5GHz (Band 1: 5.15 to 5.25GHz Band 4: 5.725 to 5.85GHz)			
Right Side Chain (0)	Galtronics	Dipole	1.3	5G Band1: 0.87 5G Band4: 1.95	R-SMA	NA	168
In center Chain (1)	Galtronics	Dipole	1.1	5G Band1: 0.47 5G Band4: 1.55	R-SMA	NA	262
Left Side Chain (2)	Galtronics	Dipole	1.1	5G Band1: 0.47 5G Band4: 1.55	R-SMA	NA	260

Note: From the above antennas, Chain (0) was selected as representative antenna for the 802.11a/b/g test and its data was recorded in this report.

### 3 Calculation Result Of Maximum Conducted Power

For 2.4GHz data was copied from the original test report (Report No.: SA130725E01A).

#### For 2.4GHz

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	986.826	5.94	26	0.45612	1

#### For 5GHz

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240	562.98	0.87	26	0.22874	1
5745-5825	989.626	1.95	26	0.51560	1

#### NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 5.94 \text{ dBi}$

5.18-5.24GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 5.38 \text{ dBi}$

5.745-5.825GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 6.46 \text{ dBi}$

#### Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.45612 / 1 + 0.51560 / 1 = 0.97172

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

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