

## RF Exposure Report

**Report No.:** SA121222E03D

**FCC ID:** Q87-EA6700

**Test Model:** EA6700

**Received Date:** May 09, 2016

**Test Date:** May 13, 2016

**Issued Date:** Aug. 19, 2016

**Applicant:** Linksys LLC

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

**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
SA121222E03	Original	Mar. 07, 2013
SA121222E03C	Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.	May 19, 2016
SA121222E03D	Upgraded the standard to section 15.407 under new rule (16-24) for U-NII-3 band.	Aug. 19, 2016

### Release Control Record

Issue No.	Description	Date Issued
SA121222E03D	Original release.	Aug. 19, 2016

## 1 Certificate of Conformity

**Product:** Linksys Smart Wi-Fi Router AC1750

**Brand:** Linksys

**Test Model:** EA6700

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Linksys LLC

**Test Date:** May 13, 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 :** Midoli Peng, **Date:** Aug. 19, 2016

Midoli Peng / Specialist

**Approved by :** May Chen, **Date:** Aug. 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 23cm away from the body of the user.

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

## 2.4 Antenna Gain

For 2.4GHz						
Transmitter Circuit	Brand	Model	Antenna Type	Peak Gain(dBi) (Include cable loss )	Frequency range (MHz to MHz)	Connector Type
Left side Chain (1)	Galtronics	02100073-05389A1	Dipole	2.48	2400~2483.5	NA
Right side Chain (0)	Galtronics	02100073-05389A2	Dipole	3.15	2400~2483.5	NA
Front side Chain (2)	Galtronics	02100073-05389B1	Dipole	1.65	2400~2483.5	NA
For 5GHz (Band 1)						
Transmitter Circuit	Brand	Model	Antenna Type	Peak Gain(dBi) (Include cable loss )	Frequency range (MHz to MHz)	Connector Type
Left side Chain (1)	Galtronics	02102142-05389A2	Dipole	3.55	5150~5250	NA
Right side Chain (0)	Galtronics	02102142-05389A3	Dipole	4.29	5150~5250	NA
Front side Chain (2)	Galtronics	02102142-05389B1	Dipole	3.86	5150~5250	NA
For 5GHz (Band 4)						
Transmitter Circuit	Brand	Model	Antenna Type	Peak Gain(dBi) (Include cable loss )	Frequency range (MHz to MHz)	Connector Type
Left side Chain (1)	Galtronics	02102142-05389A2	Dipole	4.23	5725~5850	NA
Right side Chain (0)	Galtronics	02102142-05389A3	Dipole	4.79	5725~5850	NA
Front side Chain (2)	Galtronics	02102142-05389B1	Dipole	3.68	5725~5850	NA

Note: According to the above antennas, there are three antennas will transmit simultaneously (one is Vertical and the others are Horizontal).

## 2.5 Calculation Result of Maximum Conducted Power

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	255.092	5.83	23	0.14690	1
5180-5240	543.153	6.94	23	0.44143	1
5745-5825	954.431	7.52	23	0.81111	1

NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.83 \text{dBi}$

5GHz(5180-5240MHz): Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.94 \text{dBi}$

5GHz(5745-5825MHz): Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 7.52 \text{dBi}$

### 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 =  $0.14690 / 1 + 0.81111 / 1 = 0.96$

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

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