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RF Exposure Report

Report No.: SA121222E03C

FCC ID: Q87-EA6700

Test Model: EA6700

Received Date: Feb. 23, 2016

Test Date: Apr. 01, 2016

Issued Date: May 19, 2016

Applicant: Linksys LLC

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

Release Control Record

| Issue No. | Description | Date Issued |
|--------------|-------------------|--------------|
| SA121222E03C | Original release. | May 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: Mar. 29 to Apr. 01, 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
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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 ²) | 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/cm²

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 22cm 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) | Connecter 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) | Connecter 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) | Connecter 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).

3 Calculation Result Of Maximum Conducted Power

| Frequency Band (MHz) | Max Power (mW) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|----------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412-2462 | 255.092 | 5.83 | 22 | 0.16056 | 1 |
| 5180-5240 | 525.336 | 6.94 | 22 | 0.42695 | 1 |
| 5745-5825 | 817.427 | 7.52 | 22 | 0.75926 | 1 |

NOTE:

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

5.18-5.24GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.94\text{dBi}$

5.745-5.825GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 7.52\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.16056 / 1 + 0.75926 / 1 = 0.91982$

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

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