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

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
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 : _____ , **Date:** _____May 19, 2016_____
Wendy Wu / Specialist

Approved by : _____ , **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/cm^2

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 = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 5.83dBi

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

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

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 = 0.16056 / 1 + 0.75926 / 1 = 0.91982

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

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