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

Midoli Peng / Specialist

Approved by : _____ , **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^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 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)	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).						

2.5 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	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] = 5.83dBi
5GHz(5180-5240MHz): Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20}{}^{0})^2$ / 2] = 6.94dBi
5GHz(5745-5825MHz): 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 =0.14690 / 1 +0.81111 / 1 =0.96

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

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