

RF Exposure Report

Report No.: SA130103E06C

FCC ID: Q87-EA6400

Test Model: EA6400

Series Model: EA6300V1

Received Date: May 09, 2016

Test Date: May 13, 2016

Issued Date: Oct. 25, 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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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Table of Contents

Report Issue History Record	3
Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	6
2.5 Calculation Result Of Maximum Conducted Power	7

Report Issue History Record

Issue No.	Reason for Change	Date Issued
SA130103E06	Original	Feb. 26, 2013
SA130103E06B	1. Upgrade the standard to section 15.407 under new rule for U-NII-1, U-NII-3 band. 2. Added the LV6 adapter.	May 19, 2016
SA130103E06C	Upgraded the standard to section 15.407 under new (16-24) rule for U-NII-3 band.	Oct. 25, 2016

Release Control Record

Issue No.	Description	Date Issued
SA130103E06C	Original release.	Oct. 25, 2016

1 Certificate of Conformity

Product: Linksys Smart Wi-Fi Router AC1600, Linksys Smart Wi-Fi Router AC1200

Brand: Linksys

Test Model: EA6400

Series Model: EA6300V1

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:** Oct. 25, 2016
Midoli Peng / Specialist

Approved by : May Chen , **Date:** Oct. 25, 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

$$Pd = (P_{out} * G) / (4 * \pi * r^2)$$

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 20cm 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	02100073-05389A3	Dipole	1.515	2400~2483.5	NA
Front side Chain (0)	Galtronics	02100073-05389B2	Dipole	3.745	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	02102142-05389A4	Dipole	4.339	5150~5250	NA
Right side Chain (0)	Galtronics	02102142-05389A1	Dipole	2.734	5150~5250	NA
Front side Chain (2)	Galtronics	02102142-05389B1	Dipole	3.178	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	4.162	5725~5850	NA
Right side Chain (0)	Galtronics	02102142-05389A3	Dipole	5.314	5725~5850	NA
Front side Chain (2)	Galtronics	02102142-05389B1	Dipole	3.463	5725~5850	NA

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	195.489	5.72	20	0.14516	1
5180-5240	346.868	6.58	20	0.31397	1
5745-5825	627.806	7.76	20	0.74568	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.72\text{dBi}$

5GHz(5180-5240MHz): Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.58\text{dBi}$

5GHz(5745-5825MHz): Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 7.76\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.14516 / 1 + 0.74568 / 1 = 0.891$

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

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