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RF Exposure Report

Report No.: SA130702E05B R1

FCC ID: Q87-E2500V3

Test Model: E2500

Received Date: Feb. 22, 2016

Test Date: Mar. 22, 2016

Issued Date: Apr. 21, 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
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Report Issue History Record

Issue No.	Reason for Change	Date Issued
SA130702E05	Original	Aug. 09, 2013
SA130702E05B R1	Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.	Apr. 21, 2016

Release Control Record

Issue No.	Description	Date Issued
SA130702E05B	Original release.	Apr. 07, 2016
SA130702E05B R1	Modified the applicant's address.	Apr. 21, 2016



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1 Certificate of Conformity

Product: Linksys E2500 Dual-Band Wireless-N Router

Brand: Linksys

Test Model: E2500

Sample Status: ENGINEERING SAMPLE

Applicant: Linksys LLC

Test Date: Mar. 22, 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:** Apr. 21, 2016
Wendy Wu / Specialist

Approved by : May Chen , **Date:** Apr. 21, 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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

2.4GHz			
Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Connector
Chain (0)	PIFA	2.5	NA
Chain (1)	PIFA	4	NA
5GHz			
Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Connector
Chain (0)	PIFA	4	NA
Chain (1)	PIFA	5	NA

3 Calculation Result Of Maximum Conducted Power

For 2.4GHz data was copied from the original test report (Report No.: SA130702E05).

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	570.997	6.29	20	0.28534	1
5180-5240	194.939	7.52	20	0.21909	1
5745-5825	153.824	7.52	20	0.17288	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.29\text{dBi}$

5GHz: 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 = $0.28534 / 1 + 0.21909 / 1 = 0.504$

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

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