

## RF Exposure Report

**Report No.:** SA141229E04E R1

**FCC ID:** Q87-WRT1200AC

**Test Model:** WRT1200AC

**Series Model:** WRT1200AC V2

**Received Date:** Mar. 25, 2016

**Test Date:** Mar. 25 ~ May 11, 2016

**Issued Date:** Jun. 14, 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

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

**Test Location (1):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

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### Report Issue History Record

Issue No.	Reason for Change	Date Issued
SA141229E04	Original release.	Mar. 13, 2015
SA141229E04D	1. Upgrade the standard to section 15.407 under new rule for U-NII-3 band. 2. Removed the original adapter "Model : MU30-5120250-A1 and MU30-P120250-A1" 3. Added one Model No.: WRT1200ACV2	May 04, 2016
SA141229E04E	Upgrade the standard to section 15.407 under new rule (16-24) for U-NII-3 band.	May 19, 2016
SA141229E04E R1	Modified the series model from WRT1200ACV2 to WRT1200AC V2.	Jun. 14, 2016

### Release Control Record

Issue No.	Description	Date Issued
SA141229E04E	Original release	May 19, 2016
SA141229E04E R1	Modified the series model from WRT1200ACV2 to WRT1200AC V2.	Jun. 14, 2016

## 1 Certificate of Conformity

**Product:** 802.11ac Router  
**Brand:** Linksys  
**Test Model:** WRT1200AC  
**Series Model:** WRT1200AC V2  
**Sample Status:** Engineering sample  
**Applicant:** Linksys LLC  
**Test Date:** Mar. 25 ~ May 11, 2016  
**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 (October 23, 2015)  
IEEE C95.1

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: Jun. 14, 2016  
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Approved by :  , Date: Jun. 14, 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 <sup>2</sup> )	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

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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**.

## 3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

Transmitter Circuit	Brand	Gain (dBi)	Cable Loss (dB)	Net Gain (dBi)	Frequency Range (GHz to GHz)	Antenna Type	Connector Type
Chain (0)	LINKSYS	2.5	1	1.5	2.4 ~ 2.4835	DIPOLE	R-SMA
		2.6	1.6	1	5.15 ~ 5.25		
		3.8	1.9	1.9	5.725 ~ 5.85		
Chain (1)	LINKSYS	2.5	1	1.5	2.4 ~ 2.4835	DIPOLE	R-SMA
		2.6	1.5	1.1	5.15 ~ 5.25		
		3.8	2.1	1.7	5.725 ~ 5.85		

#### 4 Calculation Result Of Maximum Conducted Power

For WLAN (2.4GHz) & WLAN (5GHz - U-NII-1) data was copied from the original test report (Report No.: SA141229E04).

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	938.114	4.51	22	0.43571	1
5180-5240	928.803	4.06	22	0.38893	1
5745-5825	961.541	4.81	22	0.47853	1

Note:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.51\text{dBi}$

5GHz (5180-5240MHz): Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.06\text{dBi}$

5GHz (5745-5825MHz): Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.81\text{dBi}$

#### Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.43571/1 + 0.47853/1 = 0.91424$

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

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