



RF EXPOSURE REPORT

REPORT NO.: SA120807C11
MODEL NO.: TL-WDR3600
FCC ID: TE7WDR3600
RECEIVED: Aug. 07, 2012
TESTED: Aug. 08 ~ Aug. 22, 2012
ISSUED: Aug. 30, 2012

APPLICANT: TP-LINK TECHNOLOGIES CO., LTD.

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120807C11	Original release	Aug. 30, 2012

1. CERTIFICATION

PRODUCT: N600 Wireless Dual Band Gigabit Router
MODEL NO.: TL-WDR3600
BRAND: TP-LINK
APPLICANT: TP-LINK TECHNOLOGIES CO., LTD.
TESTED: Aug. 08 ~ Aug. 22, 2012
TEST SAMPLE: PROTOTYPE
STANDARDS: **FCC Part 2 (Section 2.1091)**
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (model: TL-WDR3600) 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.

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APPROVED BY : Gary Chang , DATE : Aug. 30, 2012
Gary Chang / Technical 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 Calculation result of maximum conducted power

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	802.11b	21.36	5.01	20	0.086	1
	802.11g	28.39	5.01	20	0.435	1
	802.11n (20MHz)	28.44	5.01	20	0.440	1
	802.11n (40MHz)	27.08	5.01	20	0.322	1
5180-5240	802.11a	14.65	6.01	20	0.012	1
	802.11n (20MHz)	15.12	6.01	20	0.013	1
	802.11n (40MHz)	16.76	6.01	20	0.019	1
5745-5825	802.11a	26.58	6.01	20	0.361	1
	802.11n (20MHz)	26.27	6.01	20	0.336	1
	802.11n (40MHz)	26.41	6.01	20	0.348	1

NOTE:

FOR 2.4GHz: Directional gain = 2dBi + 10log(2) = 5.01dBi

FOR 5.0GHz: Directional gain = 3dBi + 10log(3) = 6.01dBi

CONCLUSION:

Both of the WLAN 2.4G & 5.0G 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

WLAN 2.4G + WLAN 5.0G = 0.440 + 0.361 = 0.801

Therefore, the maximum calculation of this situation is 0.801, which is less than the "1" limit.