RF EXPOSURE REPORT

REPORT NO.:	SA120816C23
MODEL NO.:	TL-WDR3500
FCC ID:	TE7WDR3500
RECEIVED:	Aug. 16, 2012
TESTED:	Aug. 24 ~ Sep. 04, 2012
ISSUED:	Sep. 10, 2012

APPLICANT:	TP-LINK TECHNOLOGIES CO., LTD.
ADDRESS:	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120816C23	Original release	Sep. 10, 2012

1. CERTIFICATION

PRODUCT:	N600 Wireless Dual Band Router
MODEL NO.:	TL-WDR3500
BRAND:	TP-LINK
APPLICANT:	TP-LINK TECHNOLOGIES CO., LTD.
TESTED:	Aug. 24 ~ Sep. 04, 2012
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 2 (Section 2.1091)**
	FCC OET Bulletin 65, Supplement C (01-01)
	IEEE C95.1

The above equipment (model: TL-WDR3500) 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 : Sep. 10, 2012
Pettie Chen / Senior Specialist

APPROVED BY : _____ , DATE : Sep. 10, 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

$Pd = (Pout*G) / (4*pi*r^2)$
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 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	21.88	5.01	20	0.097	1
	802.11g	29.20	5.01	20	0.524	1
	802.11n (20MHz)	29.12	5.01	20	0.515	1
	802.11n (40MHz)	27.13	5.01	20	0.326	1
5180-5240	802.11a	14.04	6	20	0.020	1
	802.11n (20MHz)	14.72	6	20	0.023	1
	802.11n (40MHz)	16.75	6	20	0.037	1
5745-5825	802.11a	26.69	6	20	0.370	1
	802.11n (20MHz)	26.78	6	20	0.377	1
	802.11n (40MHz)	26.78	6	20	0.377	1

NOTE:

For 2.4GHz Band: Directional gain = 2dBi + 10log(2) = 5.01dBi
For 5.0GHz Band: Directional gain = 3dBi + 10log(2) = 6dBi

CONCULSION:

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.524 + 0.377 = 0.901

Therefore, the maximum calculation of this situation is 0.901, which is less than the “1” limit.