RF Exposure Report

Report No.: SA150727C01A

FCC ID: TE7D5V2

Test Model: Archer D5

Received Date: Aug. 05, 2015

Test Date: Aug. 24 ~ Oct. 29, 2015

Issued Date: Nov. 02, 2015

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. 47-2, 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 Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
SA150727C01A	Original release	Nov. 02, 2015

1 Certificate of Conformity

Product:	AC1200 Wireless Dual Band Gigabit ADSL2+Modem Router
Brand:	TP-LINK
Test Model:	Archer D5
Sample Status:	Prototype
Applicant:	TP-LINK TECHNOLOGIES CO., LTD.
Test Date:	Aug. 24 ~ Oct. 29, 2015
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D03 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:** Nov. 02, 2015

Ivy Lin / Specialist

Approved by :  , **Date:** Nov. 02, 2015

Ken Liu / Senior 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.

3 Calculation Result of Maximum Conducted Power

CDD Mode

Frequency Band (MHz)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	802.11b	21.44	2	20	0.044	1
	802.11g	24.56	5.01	20	0.180	1
	802.11n (HT20)	24.39	5.01	20	0.173	1
	802.11n (HT40)	17.77	5.01	20	0.038	1
5180-5240	802.11a	22.07	3	20	0.064	1
	802.11n (HT20)	25.28	6.01	20	0.268	1
	802.11n (HT40)	24.34	6.01	20	0.216	1
	802.11ac (VHT80)	20.44	6.01	20	0.088	1
5745-5825	802.11a	22.22	3	20	0.066	1
	802.11n (HT20)	22.89	6.01	20	0.154	1
	802.11n (HT40)	22.12	6.01	20	0.129	1
	802.11ac (VHT80)	18.87	6.01	20	0.061	1

Beamforming Mode

Frequency Band (MHz)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
5180-5240	802.11n (HT20)	23.51	6.01	20	0.178	1
	802.11n (HT40)	24.34	6.01	20	0.216	1
	802.11ac (VHT80)	19.32	6.01	20	0.068	1
5745-5825	802.11n (HT20)	21.99	6.01	20	0.126	1
	802.11n (HT40)	21.62	6.01	20	0.115	1
	802.11ac (VHT80)	18.12	6.01	20	0.051	1

Note:

2412-2462MHz: Directional gain = 2dBi + 10log(2) = 5.01dBi.

5GHz band: Directional gain = 3dBi + 10log(2) = 6.01dBi

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 = 0.180 + 0.216 = 0.396
Therefore all the maximum calculations of above situations are less than the “1” limit.

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