



RF EXPOSURE REPORT

REPORT NO.: SA140107C27

MODEL NO.: Archer D7

FCC ID: TE7D7V1

RECEIVED: Jan. 07, 2014

TESTED: Jul. 11 ~ Aug. 15, 2014

ISSUED: Aug. 20, 2014

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
SA140107C27	Original release	Aug. 20, 2014



1. CERTIFICATION

PRODUCT: AC1750 Wireless Dual Band Gigabit ADSL2+ Modem Router

MODEL NO.: Archer D7

BRAND: TP-LINK

APPLICANT: TP-LINK TECHNOLOGIES CO., LTD.

TESTED: Jul. 11 ~ Aug. 15, 2014

TEST SAMPLE: PROTOTYPE

STANDARDS: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

The above equipment (model: Archer D7) 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** : Aug. 20, 2014
Polly Chien / Specialist

APPROVED BY : , **DATE** : Aug. 20, 2014
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

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

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 25cm away from the body of the user. So, this device is classified as **Mobile Device**.



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2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FREQUENCY BAND (MHz)	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	28.91	6.77	25	0.471	1
5180-5240	17.56	7.77	25	0.043	1
5745-5825	28.07	7.77	25	0.489	1

NOTE:

2.4GHz: Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi}$

5.0GHz: Directional gain = $3\text{dBi} + 10\log(3) = 7.77\text{dBi}$

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 = $0.471 + 0.489 = 0.960$

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