

RF Exposure Report

Report No.: SA150427C42

FCC ID: TE7TDW9970V1

Test Model: TD-W9970

Received Date: Apr. 27, 2015

Test Date: May 25 ~ May 30, 2015

Issued Date: Jun. 05, 2015

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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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits For Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result Of Maximum Conducted Power	5



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Release Control Record

Issue No.	Description	Date Issued
SA150427C42	Original release	Jun. 05, 2015

1 Certificate of Conformity

Product: 300Mbps Wireless N USB VDSL2 Modem Router

Brand: TP-LINK

Test Model: TD-W9970

Sample Status: PROTOTYPE

Applicant: TP-LINK TECHNOLOGIES CO., LTD.

Test Date: May 25 ~ May 30, 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:** Jun. 05, 2015
Ivy Lin / Specialist

Approved by :  , **Date:** Jun. 05, 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

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

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**.

3 Calculation Result Of Maximum Conducted Power

Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
802.11b	22.56	3.81	20	0.086	1
802.11g	24.07	3.81	20	0.122	1
802.11n (HT20)	23.38	7.30	20	0.233	1
802.11n (HT40)	19.01	7.30	20	0.085	1

Note:

802.11b, 802.11g: gain = 3.81dBi

802.11n (HT20), 802.11n (HT40): Directional gain = $10 \log[10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20}] = 7.30\text{dBi}$

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