RF Exposure Report

Report No.:	SA150408C04
FCC ID:	TE7RE580
Test Model:	RE580D
Received Date:	Apr. 08, 2015
Test Date:	Aug. 18 to 21, 2015
Issued Date:	Oct. 22, 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 Hsin Chu Laboratory
Lab Address:	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (3):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA150408C04	Original release.	Oct. 22, 2015

1 Certificate of Conformity

Product:	AC1900 Wi-Fi Range Extender
Brand:	TP-LINK
Test Model:	RE580D
Sample Status:	PROTOTYPE
Applicant:	TP-LINK TECHNOLOGIES CO., LTD.
Test Date:	Aug. 18 to 21, 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:** Oct. 22, 2015

Lori Chung / Specialist

Approved by : _____ , **Date:** Oct. 22, 2015

May Chen / 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 26cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Antenna Gain

Transmitter Circuit	Brand	Model	Antenna Gain (dBi)	Frequency range (GHz to GHz)	Antenna Type	Connecter Type
Chain (0)	NA	NA	1.59	2.4-2.4835	Dipole	RP-SMA-F
			1.03	5.15-5.25		
			1.43	5.725-5.850		
Chain (1)	NA	NA	1.59	2.4-2.4835	Dipole	RP-SMA-F
			1.03	5.15-5.25		
			1.43	5.725-5.850		
Chain (2)	NA	NA	1.59	2.4-2.4835	Dipole	RP-SMA-F
			1.03	5.15-5.25		
			1.43	5.725-5.850		

4 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	985.832	6.36	26	0.50193	1
5180-5240	129.773	5.8	26	0.05808	1
5745-5825	941.704	6.2	26	0.46212	1

NOTE:
For 2412-2462MHz: Directional gain = 1.59dBi + 10log(3) = 6.36dBi
For 5180-5240MHz: Directional gain = 1.03dBi + 10log(3) = 5.8dBi
For 5745-5825MHz: Directional gain = 1.43dBi + 10log(3) = 6.2dBi

Conclusion:

Both of the 2.4GHz/5GHz 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

Therefore, the worst-case situation is 0.50193 / 1 + 0.46212 / 1= 0.964, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.

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