



中国认可
国际互认
检测
TESTING
CNAS L5313



DEKRA

RF Exposure Evaluation Declaration

Product Name : AC1200 Wireless Dual Band Gigabit Router

Model No. : Archer C1200

FCC ID : TE7C1200

Applicant : TP-LINK TECHNOLOGIES CO., LTD.

Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central
Science and Technology Park, Shennan Rd,
Nanshan, Shenzhen, China

Date of Receipt : Oct. 17, 2016

Test Date : Oct. 17, 2016~ Feb. 06, 2017

Issued Date : Feb. 16, 2017

Report No. : 16A2038R-RF-US-P20V01

Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, CNAS or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd. Corporation.

Test Report Certification

Issued Date : Feb. 16, 2017

Report No. : 16A2038R-RF-US-P20V01



Product Name : AC1200 Wireless Dual Band Gigabit Router
Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central
Science and Technology Park, Shennan Rd, Nanshan,
Shenzhen, China
Manufacturer : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central
Science and Technology Park, Shennan Rd, Nanshan,
Shenzhen, China
Model No. : Archer C1200
FCC ID : TE7C1200
Brand Name : TP-LINK
EUT Voltage : DC 12V/1.5A
Applicable Standard : KDB 447498D01V06
FCC Part1.1310
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
Corporation
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,
215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

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(Adm. Specialist: Kitty Li)

Reviewed By : Frank He
(Senior Engineer: Frank He)

Approved By : Harry Zhao
(Engineering Manager : Harry Zhao)

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
16A2038R-RF-US-P20V01	V1.0	Initial Issued Report	Feb. 16, 2017

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission 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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18 and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	AC1200 Wireless Dual Band Gigabit Router
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

2.4G:

Antenna manufacturer	N/A		
Antenna Delivery	<input checked="" type="checkbox"/> 1*TX+1*RX	<input checked="" type="checkbox"/> 2*TX+2*RX	<input type="checkbox"/> 3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO for 802.11b	
	<input checked="" type="checkbox"/>	MIMO	<input type="checkbox"/> Basic
			<input type="checkbox"/> Sectorized antenna systems
			<input type="checkbox"/> Cross-polarized antennas
			<input type="checkbox"/> Unequal antenna gains, with equal transmit powers
			<input type="checkbox"/> Spatial Multiplexing
			<input checked="" type="checkbox"/> CDD
	<input type="checkbox"/> Beam-forming		
Antenna Type	<input checked="" type="checkbox"/>	External	<input checked="" type="checkbox"/> Dipole
	<input type="checkbox"/>	Internal	<input type="checkbox"/> PIFA
			<input type="checkbox"/> PCB
			<input type="checkbox"/> Ceramic Chip Antenna
			<input type="checkbox"/> Metal plate type F antenna
			<input type="checkbox"/> Cross-polarize Antenna
Antenna Gain #0	1.95dBi		
Antenna Gain #1	1.96dBi		

5G:

Antenna Model	N/A		
Antenna Delivery	<input type="checkbox"/> 1*TX+1*RX	<input checked="" type="checkbox"/> 2*TX+2*RX	<input type="checkbox"/> 3*TX+3*RX
Antenna Technology	<input type="checkbox"/> SISO		
	<input checked="" type="checkbox"/> MIMO	<input type="checkbox"/>	Basic methodology with NANT transmit antennas
		<input type="checkbox"/>	Sectorized antenna systems
		<input type="checkbox"/>	Cross-polarized antennas
		<input type="checkbox"/>	Unequal antenna gains, with equal transmit powers
		<input checked="" type="checkbox"/>	Spatial Multiplexing
	<input checked="" type="checkbox"/>	Cyclic Delay Diversity (CDD)	
Antenna Type	Dipole Antenna		

Antenna Information			
No.		Ant Gain/ Directional Gain (dBi)	
<input type="checkbox"/> SISO	<input type="checkbox"/> Antenna 0	3.17	
	<input type="checkbox"/> Antenna 1	2.69	
	<input type="checkbox"/> Antenna 2	N/A	
<input type="checkbox"/> Basic	N/A		
<input checked="" type="checkbox"/> CDD	For power: 3.17 For PSD: 5.90		
<input checked="" type="checkbox"/> Beam-forming	For power: 5.90 For PSD: 5.90		

- Output Power into Antenna & RF Exposure Evaluation Distance:

Standalone modes

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
802.11b	2412 ~ 2462 MHz	28.13	1.95	0.2026	1.0
802.11g/n(20MHz) with CDD	2412 ~ 2462 MHz	29.21	1.96	0.2605	1.0
802.11n(40MHz) with CDD	2422 ~ 2452 MHz	23.33	1.96	0.0673	1.0
802.11a/n/ac (20MHz) with CDD	5180-5240MHz 5745-5825 MHz	28.22	3.17	0.2740	1.0
802.11n/ac (40MHz) with CDD	5190-5230MHz 5755-5795 MHz	27.27	3.17	0.2202	1.0
802.11ac(80MHz) with CDD	5210MHz 5775MHz	24.49	3.17	0.1161	1.0
802.11n/ac (20MHz) with Beam-forming	5180-5240MHz 5745-5825 MHz	27.56	5.90	0.4413	1.0
802.11n/ac (40MHz) with Beam-forming	5190-5230MHz 5755-5795 MHz	27.52	5.90	0.4373	1.0
802.11ac(80MHz) with Beam-forming	5210MHz 5775MHz	27.14	5.90	0.4006	1.0

Simultaneous transmission:

Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
2412 ~ 2462	29.21	1.96	0.2605	1.0
5180-5240 5745-5825	27.56	5.90	0.4413	1.0
Simultaneous transmission power density			0.7018	1.0

Note: The simultaneous transmission power density is 0.7018mW/cm² for AC1200 Wireless Dual Band Gigabit Router without any other radio equipment.

_____ The End _____