



RF Exposure Evaluation Declaration

Product Name : 1. Smart Wi-Fi Plug Mini
2. Kasa Wi-Fi Smart Plug -Slim Edition
Model No. : 1. HS105
2. KP100
FCC ID : TE7HS105

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 : Jul. 18, 2017
Issued Date : Nov. 17, 2017
Report No. : 1772096R-RF-US-P20V01
Report Version : V1.0

Note: This report was based on DEKRA report (Report No. 1672088R), the EUT only changes the model of CCWS socket, and delete a capacitance. And add a new EUT model KP100 and it is the same as HS105.

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, A2LA 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.

Test Report Certification

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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. : 1.HS105
2.KP100

FCC ID : TE7HS105

EUT Voltage : 100V~120V 60Hz 15A (0.1A product only)

Test Voltage : AC 120V/60Hz

Brand Name : tp-link

Applicable Standard : KDB 447498D01V06
FCC Part1.1310

Test Result : Complied

Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006,
Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: CN1199

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(Engineering Manager: Harry Zhao)

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°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Smart Wi-Fi Plug Mini
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

Model No.		N/A								
Antenna manufacturer		N/A								
Antenna Delivery		☒	1*TX+1*RX		☐	2*TX+2*RX		☐	3*TX+3*RX	
Antenna technology		☒	SISO							
		☐	MIMO	☐	Basic					
				☐	CDD					
				☐	Sectorized					
				☐	Beam-forming					
Antenna Type		☐	External	☐	Dipole					
				☐	Sectorized					
		☒	Internal	☒	PIFA					
				☐	PCB					
				☐	Ceramic Chip Antenna					
				☐	Metal plate type F antenna					
Antenna Technology		Ant Gain (dBi)				Directional Gain (dBi)				
						For Power		For PSD		
☒	SISO	2				2		2		

- 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/g/n(20MHz)	2412 ~ 2462	22.67	2	0.058	1.0
802.11n(40MHz)	2422 ~ 2452	16.95	2	0.016	1.0

Note: The simultaneous transmission power density is 0.058 mW/cm² for Smart Wi-Fi Plug Mini without any other radio equipment.

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