



中国认可  
国际互认  
检测  
TESTING  
CNAS L5313



# RF Exposure Evaluation Declaration

Product Name : Smart Motion Sensor

Model No. : MS100

FCC ID : TE7MS100

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 : Jan. 17th, 2017

Test Date : Jan. 17th, 2017~ Feb. 20th, 2017

Issued Date : Mar. 10th, 2017

Report No. : 1712081R-RF-US-P20V01

Report Version : V2.0

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 CNAS, TAF or any agency of the government.


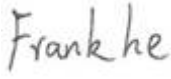
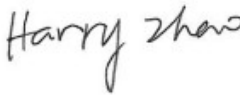
The test report shall not be reproduced without the written approval of DEKRA Testing & Certification (Suzhou) Co., Ltd.

# Test Report Certification

Issued Date : Mar. 10th, 2017

Report No. : 1712081R-RF-US-P20V01



Product Name : Smart Motion Sensor  
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. : MS100  
FCC ID : TE7MS100  
EUT Voltage : DC 3V  
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  
IC Lab Code: 4075B  
Documented By :   
(Adm. Specialist: Kathy Feng)  
Reviewed By :   
(Senior Engineer: Frank He )  
Approved By :   
(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 <sup>2</sup> )	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/ cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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 Motion Sensor
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

### ● Antenna Information

Antenna manufacturer	TP-Link				
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/> 3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO			
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic	
			<input type="checkbox"/>	CDD	
			<input type="checkbox"/>	Beam-forming	
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole	
	<input checked="" type="checkbox"/>	Internal	<input checked="" type="checkbox"/>	PIFA	
			<input type="checkbox"/>	PCB	
			<input type="checkbox"/>	Ceramic Chip Antenna	
			<input type="checkbox"/>	Metal plate type F antenna	
Antenna Gain	2.84dBi				

### ● Power Density:

#### Standalone modes:

Test Mode	Frequency Band (MHz)	EIRP (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit of Power Density S(mW/cm <sup>2</sup> )
Zigbee	2405 ~ 2480	7.89	0.0012	1

Note: The Simultaneous transmission power density is 0.0012 mW/cm<sup>2</sup> for Smart Motion Sensor without any other radio equipment.

\_\_\_\_\_ The End \_\_\_\_\_