RF Exposure Evaluation Declaration

Product Name	:	Kasa Cam
Model No.	:	KC120
FCC ID	:	TE7KC120

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	:	Feb. 10th, 2017
Test Date		Feb. 10th, 2017~ Apr. 25th, 2017
Issued Date	:	July. 14th, 2017
Report No.	:	1722031R-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.

Test Report Certification

Issued Date : July. 14th, 2017
Report No. : 1722031R-RF-US-P20V01

Product Name	:	Kasa Cam
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.	:	KC120
FCC ID	:	TE7KC120
EUT Voltage	:	DC 5V,1A
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: 800392

Documented By : Kitty Li

(Adm. Specialist: Kitty Li)

Reviewed By : Frank he

(Senior Engineer: Frank He)

Approved By : Harry Zhao

(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/cm2)	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: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2

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

Pd 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	:	Kasa Cam
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

2.4G:

Antenna manufacturer	N/A					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+3*RX
Antenna technology	☒	SISO				
	☐	MIMO	☐	Basic		
			☐	Sectorized antenna systems		
			☐	Cross-polarized antennas		
			☐	Unequal antenna gains, with equal transmit powers		
			☐	Spatial Multiplexing		
			☐	CDD		
			☐	Beam-forming		
Antenna Type	☐	External	☐	Dipole		
	☒	Internal	☒	PIFA		
			☐	PCB		
			☐	Ceramic Chip Antenna		
			☐	Metal plate type F antenna		
			☐	Cross-polarize Antenna		
Antenna Gain #0	4.42dBi					

5G：

Antenna Model No.	N/A					
Antenna Manufacturer	tp-link					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+4*RX
Antenna Technology	☒	SISO				
	☐	MIMO	☐	Basic methodology with NANT transmit antennas		
			☐	Sectorized antenna systems		
			☐	Cross-polarized antennas		
			☐	Unequal antenna gains, with equal transmit powers		
			☐	Spatial Multiplexing		
			☐	Cyclic Delay Diversity (CDD)		
Antenna Type	PIFA Antenna					
Antenna Gain						
Antenna Technology	Ant Gain (dBi)					
☐ Basic MIMO	Ant1: 4.77					

- Output Power into Antenna & RF Exposure Evaluation Distance
- Standlone modes

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Power Density Limit at R = 20 cm (mW/cm2)
802.11b/g/n(20MHz)	2412 ~ 2462 MHz	22.35	4.42	0.0946	1.0
802.11n(40MHz)	2422 ~ 2452 MHz	16.06	4.42	0.0222	1.0
802.11a/n/ac(20MHz)	5180-5240MHz 5745-5825 MHz	23.43	4.77	0.1314	1.0
802.11n/ac (40MHz)	5190-5230MHz 5755-5795 MHz	23.27	4.77	0.1267	1.0
802.11ac(80MHz)	5210MHz 5775MHz	17.41	4.77	0.0329	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	22.35	4.42	0.0946	1.0
5180-5240 5745-5825	23.43	4.77	0.1314	1.0
Simultaneous transmission power density			0.2260	1.0

Note: The simultaneous transmission power density is 0.2260mW/cm^2 for Kasa Cam without any other radio equipment.

The End