



REPORT No. : SZ17100181S06

RF EXPOSURE EVALUATION REPORT

APPLICANT : ShenZhen Gospell Smarthome Electronic Co., Ltd.
PRODUCT NAME : HD WiFi Camera
MODEL NAME : T5820HCA
BRAND NAME : N/A
FCC ID : TW5T5820HCA
STANDARD(S) : 47CFR 2.1091
KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE : 2017-11-24

Tested by: Peng Fuwei
Peng Fuwei (Test engineer)

Approved by: Peng Huarui
Peng Huarui (Supervisor)

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MORLAB

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Change History		
Issue	Date	Reason for change
1.0	2017-11-24	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	ShenZhen Gospell Smarthome Electronic Co., Ltd.
Applicant Address:	5Floor/Block 2, Vision (SZ) Park, Hi-Tech Industrial Park, Shenzhen, China
Manufacturer:	ShenZhen Gospell Smarthome Electronic Co., Ltd.
Manufacturer Address:	East of 01st-04st Floor,Block A,No.1 Industrial park,Fenghuanggang,South of No.1 Baotian Road,Xixiang street,Bao'an District,Shenzhen City,Guangdong Province 518126,P.R.China

1.2. Equipment Under Test (EUT) Description

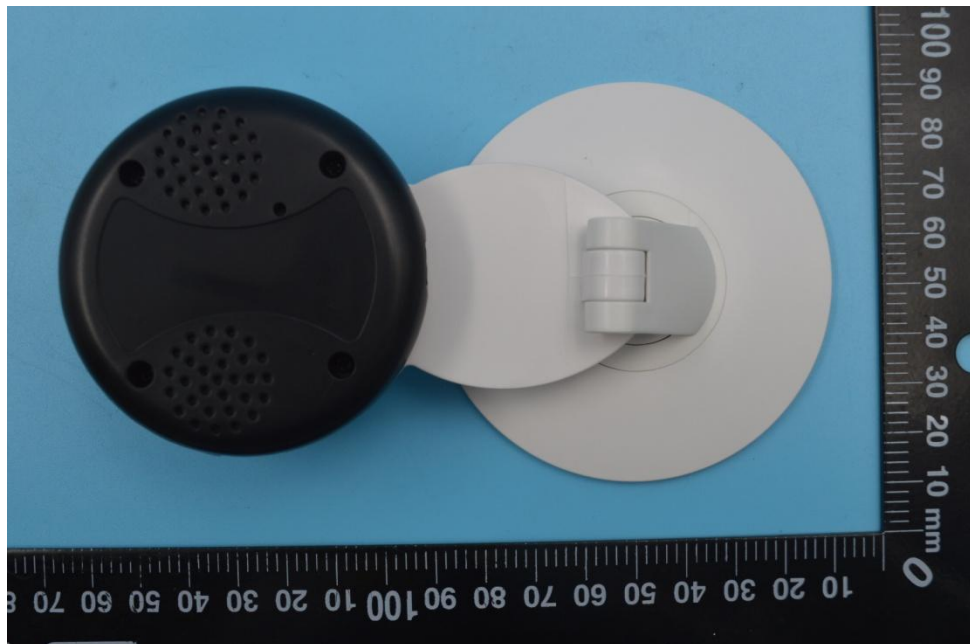
EUT Type:	HD WiFi Camera
Hardware Version:	T5820HCA_M02
Software Version:	E_900.T5820HCA.010.318
Frequency Bands:	802.11b/g/n-20MHz: 2.412GHz - 2.462GHz 802.11n-40MHz: 2.422GHz - 2.452GHz
Modulation Mode:	802.11b :DSSS; 802.11g/n:OFDM;
Antenna type:	Dipole Antenna

1.3. Photographs of the EUT

1. EUT front view



2. EUT rear view





1.3.1. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	T5820HCA_M02	E_900.T5820HCA.010.318

1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1091	Radiofrequency Radiation Exposure Evaluation: mobile devices
2	KDB 447498 D01v06	General RF Exposure Guidance



2. Device Category And RF Exposure Limit

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

TABLE 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)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

3. Measurement Of conducted Peak Output Power

1. Wifi Average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			802.11b	802.11g	802.11n20
Wifi	1	2412	17.61	17.35	17.72
	6	2437	16.37	17.93	17.87
	11	2462	16.57	17.76	17.79

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11n40
Wifi	3	2422	17.16
	6	2437	17.50
	9	2452	17.33

4. RF Exposure Evaluation

Standalone transmission MPE evaluation

Bands	Frequency (MHz)	Antenna Gain (dBi)	Conducted Average Power (dBm)	Time-averaging EIRP (mW)	Power density (mW/cm ²)	Limit for MPE (mW/cm ²)
2.4GHz	2437	1.0	18	79.43	0.016	1.0

1. MPE calculation method

$$\text{Power Density} = \text{EIRP}/4\pi R^2$$

Where: EIRP = P·G

P = Peak out power

G = Antenna gain

R = Separation distance (20cm)



Annex A General Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
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