



# SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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Report No.: SHEM170100039104  
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## 1 Cover Page

# RF MPE REPORT

Application No.:	SHEM1701000391CR
Applicant:	UTC FIRE & SECURITY AMERICAS CORPORATION, INC
FCC ID:	2AENJ-RS325X
<b>Equipment Under Test (EUT):</b> <b>NOTE:</b> The following sample(s) was/were submitted and identified by the client as	
Product Name:	Camera
Model No.(EUT):	RS-3250
Add Model No.:	RS-3251, TVB-8101
Standards:	FCC Rules 47 CFR §2.109 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2016-03-16
Date of Test:	2016-03-22 to 2016-04-25
Date of Issue:	2017-02-14
Test Result:	<b>Pass*</b>

\* In the configuration tested, the EUT detailed in this report complied with the standards specified above.



**Parlam Zhan**  
**E&E Section Manager**  
**SGS-CSTC (Shanghai) Co., Ltd.**

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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### 3 General Information

#### 3.1 Client Information

Applicant:	UTC FIRE & SECURITY AMERICAS CORPORATION, INC
Address of Applicant:	4001Fairview Industrial Drive Salem, OR 97302 USA
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Factory:	1. Hangzhou Hikvision Technology Co., Ltd. 2. Hangzhou Hikvision Electronics Co., Ltd.
Address of Factory:	1. No.700, Dongliu Road, Binjiang District, Hangzhou Ctiy,Zhejiang, 310052, China 2. No.299, Qiushi Road,Tonglu Economic Development Zone,Tonglu County, Hangzhou,Zhejiang,310052,China.

#### 3.1 General Description of E.U.T.

Product Description:	Fixed product with 2.4G WiFi function
Rated Input:	DC 12V or PoE
Test Voltage:	AC 230V, 50Hz For adapter

#### 3.2 Technical Specifications

Operation Frequency:	802.11 b/g/n(HT20): 2412MHz-2462MHz 802.11 n(HT40): 2422MHz-2452MHz
Modulation Type:	802.11 b DSSS(CCK, DQPSK, DBPSK) 802.11 g/n(HT20)/n(HT40) OFDM(64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	802.11 b/g/n(HT20): 11 802.11 n(HT40) 7
Data Rate:	802.11 b: 1/2/5.5/11Mbps 802.11 g: 6/9/12/18/24/36/48/54Mbps 802.11n(HT20)/n(HT40): MCS0-MCS7
Antenna Type:	Integral
Antenna Gain:	2.4 dBi

### 3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

### 3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2017-07-14.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868, C-4336, T-2221, G-830 respectively. Date of Expiry: 2017-11-16.

## 4 Test Standards and Limits

### 4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm <sup>2</sup> )	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

## 5 Measurement and Calculation

### 5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM170100039103.

Test mode	Test Frequency (MHz)	Output Power (dBm)	Output Power (mW)
802.11b	2412	15.71	37.24
	2437	15.73	<b>37.41</b>
	2462	15.14	32.66
802.11g	2412	13.93	24.72
	2437	14.35	27.23
	2462	14.20	26.30
802.11 n(HT20)	2412	13.85	24.27
	2437	13.97	24.95
	2462	13.72	23.55
802.11 n(HT40)	2422	12.96	19.77
	2437	12.97	19.82
	2452	12.92	19.59

## 5.2 MPE Calculation

The Max Conducted Peak Output Power is 37.41mW(0.03741W) in lowest channel;

The best case gain of the antenna is 2.4dBi. 2.4dB logarithmic terms convert to numeric result is nearly 1.738.

For FCC:

According to the formula  $S = \frac{PG}{4R^2\pi}$ , we can calculate S which is MPE.

Note:

1) P (Watts) =Power Input to antenna =  $10^{\frac{dBm}{10}} / 1000$

2) G (Antenna gain in numeric) =  $10^{(Antenna\ gain\ in\ dBi / 10)}$

3) R = distance to the center of radiation of antenna (in meter) = 20cm

4) MPE limit = 1mW/cm<sup>2</sup>

$$S = \frac{PG}{4R^2\pi} = \frac{37.41 \times 1.738}{4 \times 0.2^2 \times 3.14} = 0.0129\text{ mW/cm}^2$$

## 6 EUT Constructional Details

Refer to the < RS-3250\_External Photos > & < RS-3250\_Internal Photos >.

**--End of the Report--**