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

588 West Jindu Road,Songjiang District,Shanghai,China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
ee.shanghai@sgs.com

1 Cover Page

FCC MPE REPORT

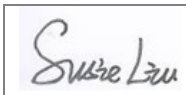
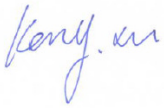
Application No.:	SHEM1503000726CR
Applicant:	UTC FIRE & SECURITY AMERICAS CORPORATION, INC.
FCC ID:	2AENJ-WEDGE180
Equipment Under Test (EUT): **NOTE:** The following sample(s) was/were submitted and identified by the client as	
Product Name:	IR Network Camera
Model No.(EUT):	TVW-3130
Add Model No.:	TVW-1130
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v05r02
Date of Receipt:	March 20, 2015
Date of Test:	April 07, 2015 to April 17, 2015
Date of Issue:	July 13, 2015
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

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

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00	/	July 13, 2015	/	Original

Authorized for issue by:				
Engineer		Eddy Zong **Print Name**		
Clerk		Susie Liu **Print Name**		
Reviewer		Keny Xu **Print Name**		

3 Contents

Page

4 General Information

4.1 Client Information

Applicant:	UTC FIRE & SECURITY AMERICAS CORPORATION, INC.
Address of Applicant:	2955 Red Hill Ave., Costa Mesa, CA92626, USA
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	700 Dongliu Road, Binjiang, Hangzhou, 310052 Zhejiang, China
Factory:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Factory:	700 Dongliu Road, Binjiang, Hangzhou, 310052 Zhejiang, China

4.2 General Description of E.U.T.

Product Description:	Fixed product with WiFi function	
Power Supply:	DC 12V 1A	
Adapter:	Rated Input:	AC 100V-240V 50/60Hz 500mA
	Rated Output:	DC 12V 1A
	Cable Length:	AC port: 2 Wires
		DC port: 140cm

4.3 Details of E.U.T.

Operation Frequency:	802.11 b/g/n20: 2412MHz-2462MHz 802.11 n40: 2422MHz-2452MHz
Modulation Technique:	802.11 b: DSSS(CCK, DQPSK, DBPSK) 802.11 g/n20/n40: OFDM(64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	802.11 b/g/n20: 11 802.11 n40: 7
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n20: 13/26/39/52/78/104/117/135Mbps 802.11n40: 27/54/81/108/162/216/243/270Mbps
Antenna Type:	Integral
Antenna Gain:	2.24dBi

4.4 Test Location

All tests were performed at SGS E&E EMC lab

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

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666
Fax: +86 21 6191 5678

4.5 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.

5 Test Standards and Limits

According to§1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

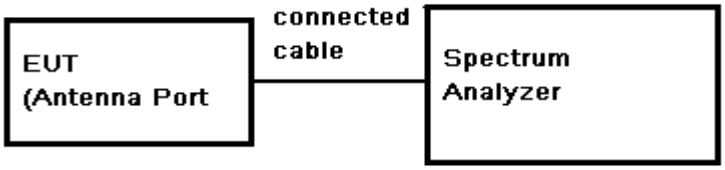
Frequency	Power density(mW/cm^2)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

6 Measurement and Calculation

6.1 Maximum transmit power

EUT Operation: Test in fixing frequency operating mode at lowest, middle and highest frequency.

Test Configuration:



Test Data:

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
802.11b	Low	19.18	0.5	19.68	92.90	30	PASS
	Mid	19.85	0.5	20.35	108.39		PASS
	High	19.92	0.5	20.42	110.15		PASS
802.11g	Low	19.15	0.5	19.65	92.26		PASS
	Mid	19.75	0.5	20.25	105.93		PASS
	High	**20.04**	**0.5**	**20.54**	**113.24**		PASS
802.11n20	Low	18.13	0.5	18.63	72.95		PASS
	Mid	18.46	0.5	18.96	78.70		PASS
	High	18.69	0.5	19.19	82.99		PASS
802.11n40	Low	18.54	0.5	19.04	80.17		PASS
	Mid	19.06	0.5	19.56	90.36		PASS
	High	19.45	0.5	19.95	98.86		PASS

6.2 MPE Calculation

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/cm²

The Max Conducted Peak Output Power is 113.24mW in Highest channel of 802.11g;

The best case gain of the antenna is 2.24dBi. 2.24dB logarithmic terms convert to numeric result is nearly 1.6749

So, S= $\frac{PG}{4R^2\pi} = \frac{113.24 \times 1.6749}{4 \times 400 \times 3.14}$ =0.03775 mW/cm^2 < 1 mW/cm^2

So the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < TVW-3130_External Photos > & < TVW-3130_Internal Photos>.

--End of the Report--