SAR Evaluation Report

Applicant:	Guangzhou Juan Optical & Electronical Tech Joint Stock Co., LTD.
Address of Applicant:	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
Manufacturer:	Guangzhou Juan Optical & Electronical Tech Joint Stock Co., LTD.
Address of Manufacturer:	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
Product name:	Add-on Indoor Wireless 1080P AC Powered Camera with PIR
Model:	WCM-SD2PIN-JUN, CAM-WNVR2P-IN
Rating(s):	Rated Input: 5Vdc, 1A (For main); 100V-240V ~ , 50/60Hz, 0.25A (For AC Adapter); Rated Output: 5Vdc, 1A (For AC Adapter)
Trademark:	NIGHT OWL
Standards:	47 CFR Part 1.1307 (2013) 47 CFR Part 2.1093 (2013) KDB447498D01 General RF Exposure Guidance v06
FCC ID:	2AFPL-WCM-SD2PIN
Date of Receipt:	2017-07-01
Date of Test:	2017-07-01~2017-07-10
Date of Issue:	2017-07-11
Test Result	**Pass***

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

Authorized for issue by:

Test by:			***Reviewed by:***		
Jul.11, 2017	Eleven Liang Project Engineer	Eleven Liang	Jul.11, 2017	Pauler Li Project Manager	Pauler Li
Date	*Name/Position*	*Signature*	*Date*	*Name/Position*	*Signature*

Possible test case verdicts:

test case does not apply to the test object ..:	N/A
test object does meet the requirement .....:	P (Pass)
test object does not meet the requirement ..:	F (Fail)

Testing Laboratory information:

Testing Laboratory Name ..... :		I-Test Laboratory
Address ..... :		1-2 floor, South Block, Building A2 , No 3 Keyan Lu, Science City, Guangzhou, Guangdong Province, P.R. China
Testing location	:	Same as above
Tel	:	0086-20-32209330
Fax	:	0086-20-62824387
E-mail	:	itl@i-testlab.com

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

General product information:

The models CAM-WNVR2P-IN and WCM-SD2PIN-JUN are identical to each other except for the model designations

All tests were performed on the model WCM-SD2PIN-JUN as representative.

1 Contents

2 General Information

2.1 Client Information

Applicant:	Guangzhou Juan Optical & Electronical Tech Joint Stock Co., LTD.
Address of Applicant:	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China

2.2 General Description of E.U.T.

Name:	Add-on Indoor Wireless 1080P AC Powered Camera with PIR
Model No.:	WCM-SD2PIN-JUN
Trade Mark:	NIGHT OWL
Operating Frequency:	802.11b/g/n-HT20: 2412 MHz to 2462 MHz 802.11n-HT40: 2422 MHz to 2452 MHz
Channels:	802.11b/g/n(HT20): 11 channels with 5MHz step
Modulation Technique:	Frequency Hopping Spread Spectrum (FHSS)
Type of Modulation:	802.11b/g/n: CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Antenna Reference	FPCB antennas with 3.5dBi peak gain
Function:	Add-on Indoor Wireless 1080P AC Powered Camera with PIR

2.3 Details of E.U.T.

EUT Power Supply:	Rated Input: 5Vdc, 1A (For main); 100V-240V ~ , 50/60Hz, 0.25A (For AC Adapter); Rated Output: 5Vdc, 1A (For AC Adapter)
Test mode for WIFI:	The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List

Test Mode	Description	Remark
TM1	802.11b	2412MHz, 2437MHz, 2462MHz,
TM2	802.11g	2412MHz, 2437MHz, 2462MHz,
TM3	802.11n(HT20)	2412MHz, 2437MHz, 2462MHz,

Power cord:	3m DC power cord

2.4 Description of Support Units

The EUT has been tested as an independent unit for fixed frequency by testing lab.

2.5 Test Location

All tests were performed at:

I-Test Laboratory

1-2 floor, South Block, Building A2 , No 3 Keyan Lu, Science City, Guangzhou, Guangdong Province, P.R. China

0086-20-32209330

itl@i-testlab.com

No tests were sub-contracted.

2.6 Deviation from Standards

Biconical and log periodic antennas were used instead of dipole antennas.

2.7 Abnormalities from Standard Conditions

None.

2.8 Other Information Requested by the Customer

None.

2.9 Test Facility

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

- **CNAS(Lab code:L4957)**
- **FCC (Registration No.:935596)**
- **IC (Registration NO.:8368A)**

3 SAR Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

3.1.2 Limits

1. The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR,

So,

Numeric Threshold= (max. power of channel) / (Min Test separation Distance) × [√f(GHz)]

max. power of channel= (Numeric Threshold)×(Min Test separation Distance) / [√f(GHz)]

Where,

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

2. For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

{[Power allowed at numeric threshold for 50 mm in step 1)] + [(test separation distance – 50 mm)·10]} mW, for > 1500 MHz and ≤ 6 GHz

3.1.3 EUT RF Exposure

For WIFI:

The Max Conducted peak Output Power is 13.99dBm in 802.11g Lowest channel (2.412GHz);

The best case gain of the antenna is 3.5dBi

EIRP= 13.99 + 3.5=17.49dBm

17.49dBm logarithmic terms convert to numeric result is nearly 56.11 mW

EIRP= 56.11 mW

According to the formula, calculate the EIRP test result:

{[Power allowed at numeric threshold for 50 mm)] + [(test separation distance – 50 mm)·10]}

SAR Exclusion Threshold = (3.0×50) / √2.412+[(200-50)×10] = 1596.58 mW

So the SAR report is not required.