REPORT No. :SZ17090128S02A

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	Shenzhen Imaginevision Technology Limited
PRODUCT NAME	:	Z CAM S1x Pro
MODEL NAME	:	Z CAM S1x Pro
BRAND NAME	:	Z CAM
FCC ID	:	2AENNS1X
STANDARD(S)	:	47CFR 2.1091 KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE	:	2017-11-14

Tested by: Peng Fuwei (Test engineer)

Approved by: Peng Huarui (Supervisor)

MORLAB

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Change History		
Issue	**Date**	**Reason for change**
1.0	2017-11-14	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Shenzhen Imaginevision Technology Limited
Applicant Address:	1205,Block A,Cadre headquater center,168 tonghua road,xili,Nanshan Shenzhen, China
Manufacturer:	Shenzhen Imaginevision Technology Limited
Manufacturer Address:	1205,Block A,Cadre headquater center,168 tonghua road,xili,Nanshan Shenzhen, China

1.2. Equipment Under Test (EUT) Description

EUT Type:	Z CAM S1x Pro
Hardware Version:	ver1
Software Version:	20170912_0.46
Frequency Bands:	802.11b/g/n-20MHz: 2.412GHz - 2.462GHz
Modulation Mode:	DSSS, OFDM
Antenna type:	Glue rod 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#	ver1	20170912_0.46

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	802.11N 20
Wifi	1	2412	13.78	12.01	10.91
	6	2437	14.08	12.63	11.56
	11	2462	14.35	12.85	11.81

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/cm²)	Limit for MPE (mW/cm²)
2.4GHz	2462	2.0	14.5	44.67	0.0089	1.0

1. MPE calculation method

Power Density = EIRP/4πR²

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.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
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2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
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END OF REPORT