Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637   Report Template Version: V03
Website: www.cqa-cert.com   Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. :	CQASZ20190500017EX-02
Applicant:	Hangzhou Meari Technology Co., Ltd.
Address of Applicant:	No.91, Chutian Road,Xixing Block, Binjiang, Hangzhou, 310051 Zhejiang, CHINA
Manufacturer:	Hangzhou Meari Technology Co., Ltd.
Address of Manufacturer:	No.91, Chutian Road,Xixing Block, Binjiang, Hangzhou, 310051 Zhejiang, CHINA

Equipment Under Test (EUT):

Product:	IP Camera
All Models:	Bullet 2S, Bullet 2
Test Model No.:	Bullet 2S
Brand Name:	N/A
FCC ID:	2AG7C-SPEED5S
Standards:	47 CFR Part 1.1307
	47 CFR Part 1.1310
	KDB447498D01 General RF Exposure Guidance v06
Date of Test:	May 06, 2019 to May 30, 2019
Date of Issue:	May 30, 2019
Test Result :	**PASS***

Tested By：

(Martin Lee)

Reviewed By:

(Aaron Ma)

Approved By:

(Jack Ai)

---

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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190500017EX-02	Rev.01	Initial report	May 30, 2019

3   Contents

4 General Information

4.1 Client Information

Applicant:	Hangzhou Meari Technology Co., Ltd.
Address of Applicant:	No.91, Chutian Road,Xixing Block, Binjiang, Hangzhou, 310051 Zhejiang, CHINA
Manufacturer:	Hangzhou Meari Technology Co., Ltd.
Address of Manufacturer:	No.91, Chutian Road,Xixing Block, Binjiang, Hangzhou, 310051 Zhejiang, CHINA

4.2 General Description of EUT

Product Name:	IP Camera
Model No.:	Bullet 2S
Trade Mark:	N/A
Hardware version：	V1.1
Software version：	V1.0
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
	IEEE 802.11n(H40): 2422MHz~2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
	IEEE 802.11n HT40: 7
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK)
	IEEE for 802.11g : OFDM
	IEEE for 802.11n(HT20): OFDM
	IEEE for 802.11n(HT40): OFDM
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Test Software of EUT:	RF test (manufacturer declare)
Antenna Type	Internal Antenna
Antenna Gain	2.5dBi
Power Supply:	DC 12V from adapter
Adapter Information:	MODEL: KA1201A-1201000US
	INPUT:100~240V ~50/60Hz 0.4A Max
	OUTPUT: 12V 1000mA
Product Name:	IP Camera

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

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)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(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

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4* Pi * R^2)$

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

5.2 1.1.3 EUT RF Exposure Evaluation

1) For WIFI

Antenna Gain: 2.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.78 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

802.11b				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	14.114	14.5	16	39.811
Middle(2437MHz)	14.355	14.5	16	39.811
Highest(2462MHz)	15.270	15.5	16	39.811
802.11g				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	14.170	14.5	14.5	28.184
Middle(2437MHz)	12.847	13.0	14	25.119
Highest(2462MHz)	12.987	13.0	14	25.119
802.11n(HT20)				
Test channel	Peak Output Power (dBm)	Tune up t16olerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	13.282	13.5	14	25.119
Middle(2437MHz)	13.284	13.5	14	25.119
Highest(2462MHz)	13.341	13.5	14	25.119
802.11n(HT40)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2422MHz)	13.743	14.0	14	25.119
Middle(2437MHz)	12.763	13.0	14	25.119
Highest(2452MHz)	12.568	13.0	14	25.119

Shenzhen Huaxia Testing Technology Co., Ltd

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm^2)	Limit	Result
39.811	2.5	0.0141	1.0	PASS

Note: 1) Refer to report No. CQASZ20190500017EX-01 for EUT test Max Conducted Peak Output Power value.

2) Pd = (Pout*G)/(4* Pi * R^2)=(39.811*1.78)/(4*3.1416*20^2)=0.0141