Certificate Number: 5055.02

MPE REPORT

Report No.: SRTC2019-9004(F)-19070805(I)

Product Name: BACnet WiFi Adapter

Product Model: BACA-A

Applicant: Honeywell (Beijing) Technology Solutions Lab Co., Ltd.

Manufacturer: Honeywell (Beijing) Technology Solutions Lab Co., Ltd.

Specification: FCC Part §2.1091, §2.1093, §1.1307(b)

FCC ID: 2ARTN-00004

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

Beijing, P.R.China

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1 GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.
The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, P.R.China
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu Jia
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Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	Honeywell (Beijing) Technology Solutions Lab Co., Ltd.
Address:	A1 Building, C&W Industry Zone, No.14 Jiuxianqiao Road, Chaoyang District, Beijing, 100015, P.R. China
City:	Beijing
Country or Region:	China
Contacted person:	Liu Qian
Tel:	56696681
Fax:	---
Email:	qian.Liu1@Honeywell.com

1.4 Manufacturer's details

Company:	Honeywell (Beijing) Technology Solutions Lab Co., Ltd.
Address:	A1 Building, C&W Industry Zone, No.14 Jiuxianqiao Road, Chaoyang District, Beijing, 100015, P.R. China
City:	Beijing
Country or Region:	China
Contacted person:	Liu Qian
Tel:	56696681
Fax:	---
Email:	qian.Liu1@Honeywell.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2019-07-08
Testing Start Date:	2019-07-08
Testing End Date:	2019-12-11

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40

Normal Supply Voltage (V d.c.):	5.0

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Frequency Band	2.412GHz~2.462GHz
Number of Channel For 20MHz	11
Duplex Mode	TDD
Channel Spacing	5MHz
Data Rate	802.11b:1Mbps-11Mbps 802.11g:6Mbps-54Mbps 802.11n HT20:MCS0-MCS7
Power Supply	Charge
Hardware Version	Rev A
Software Version	1.1.0
IMEI or Sample	Sample #1
Antenna type	Refer to Note
Antenna connector	Refer to Note

Note:
The antenna provide to the EUT, please refer to the following table:

Brand	Model	Antenna gain	Frequency range(GHz)	Antenna type	Connecter Type
N/A	N/A	2.0dBi	2.412GHz~2.462GHz	Fixed External Antenna	N/A
Manufacturers ensure that their designs will not be modified by the user or third parties arbitrary antenna parameters and performance.					

3 REFERENCE SPECIFICATION

Specification	Version	Title
2.1091	2019	Radiofrequency radiation exposure evaluation: mobile devices.
2.1093	2019	Radiofrequency radiation exposure evaluation: portable devices.
1.1307(b)	2019	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
KDB447498	October 23, 2015	General RF Exposure Guidance

4 RESULT SUMMARY

No.	Test case	FCC reference
1	MPE Calculation	FCC Part §2.1091, FCC Part §2.1093, FCC Part §1.1307(b) KDB447498 D01

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr.Tong Daocheng	Issued date: 20210113

5 Test Results

5.1 Average Power Output Test Result

Modulation type	Average power output (dBm)		
	2412MHz	2437MHz	2462MHz
802.11b	14.83	15.72	14.56
802.11g	11.81	12.68	11.64
11n HT20	10.27	11.38	10.18

5.2 Calculation result

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure ☐

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time |E|2, |H|2 or S (minutes)
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 ☑

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time |E|2, |H|2 or S (minutes)
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

Calculation procedure:

According to §2.1091, §2.1093, §1.1307(b) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
The MPE was calculated at 20 cm to show compliance with the power density limit.
The following formula was used to calculate the Power Density:

The $S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2
P = transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Modulation type	Freq (GHz)	Power		Antenna Gain		R (cm)	S (mW/cm^2)	Limits (mW/cm^2)
		(dBm)	(mW)	(dBi)	(Numeric)			
802.11b	2.437	15.72	37.33	2.0	1.58	20	0.047	1.00

Note: $1mW/cm^2$ from 1.1310 Table 1.

---End of Test Report---