

RF Exposure Evaluation Report

Product : Wireless Vibration Temperature
Smart Sensor
Trade mark : MHCC™
Model/Type reference : WS500
Serial Number : N/A
Report Number : EED32K00269602
FCC ID : 2ARK7WS001
Date of Issue : Dec. 20, 2018
47 CFR Part 1.1307
Test Standards : 47 CFR Part 1.1310
KDB447498D01v06
Test result : PASS

Prepared for:

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2 Version

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4 General Information

4.1 Client Information

Applicant:	Guanwei Monitoring Technology Wuxi Co., Ltd.
Address of Applicant:	Level 6 Building A Jingyuzuo iPark III, Xinwu District, Wuxi, Jiangsu, China
Manufacturer:	Guanwei Monitoring Technology Wuxi Co., Ltd.
Address of Manufacturer:	Level 6 Building A Jingyuzuo iPark III, Xinwu District, Wuxi, Jiangsu, China
Factory:	Guanwei Monitoring Technology Wuxi Co., Ltd.
Address of Factory:	Level 6 Building A Jingyuzuo iPark III, Xinwu District, Wuxi, Jiangsu, China

4.2 General Description of EUT

Product Name:	Wireless Vibration Temperature Smart Sensor
Model No.(EUT):	WS500
Trade Mark:	MHCC™
EUT Supports Radios application	WiFi 802.11b/g/n(HT20): 2412MHz to 2462MHz

4.3 Product Specification subjective to this standard

Frequency Range:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Modulation Type:	DSSS, OFDM
Sample Type:	Fixed production
Test Power Grade:	N/A
Test Software of EUT:	CC3100/CC3200 Radio Tool v1.2.5942.19689(manufacturer declare)
Antenna Type:	PCB Antenna
Antenna Gain:	1dBi
Power Supply:	Battery: 3.6V 4800mAh
Conducted Peak Output Power:	17.31dBm
	The Conducted Peak Output Power data refer to the report EED32K00269601
Software version:	WS500: Ver 62.04(manufacturer declare)
Hardware version:	RevG(manufacturer declare)
Sample Received Date:	Oct. 08, 2018
Sample tested Date:	Nov. 07, 2018 to Dec. 03, 2018
The tested sample(s) and the sample information are provided by the client.	

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

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

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R= distance to the centre of radiation of the antenna

EIRP = P*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user.

Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

5.1.2 Test Procedure

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

5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 1dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Peak Output Power(dBm)	Gain (dBi)	EIRP* (dBm)	EIRP (mW)	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)	Result
Highest	2462	17.31	1	18.31	67.76	20	0.013	1.0	Pass

Note: Refer to report No. EED32K00269601 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32K00269601 for EUT external and internal photos.

*** End of Report ***

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