

RF Exposure Evaluation Report

Product : Pulse Oximeter
Trade mark : N/A
Model/Type reference : WS20A, WS20A1, WS20A2, WS20A3
Serial Number : N/A
Report Number : EED32P81261302
FCC ID : 2AZDVWS2XX
Date of Issue : Sep. 01, 2023
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1093
447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

Hunan Accurate Bio-Medical Technology Co., Ltd.
Accurate Industrial Park, No.108, Zhixian Road, Xuelian Community,
Xueshi Street of Yuelu District, 410208 Changsha, Hunan Province,
PEOPLE'S REPUBLIC OF China

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385



Compiled by:

mark.chen

Mark Chen

Approved by:

Aaron Ma

Aaron Ma

Reviewed by:

Tom Chen

Tom Chen

Date:

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2 Version

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4 General Information

4.1 Client Information

Applicant:	Hunan Accurate Bio-Medical Technology Co., Ltd.
Address of Applicant:	Accurate Industrial Park, No.108, Zhixian Road, Xuelian Community, Xueshi Street of Yuelu District, 410208 Changsha, Hunan Province, PEOPLE'S REPUBLIC OF China
Manufacturer:	Hunan Accurate Bio-Medical Technology Co., Ltd.
Address of Manufacturer:	Accurate Industrial Park, No.108, Zhixian Road, Xuelian Community, Xueshi Street of Yuelu District, 410208 Changsha, Hunan Province, PEOPLE'S REPUBLIC OF China
Factory:	Hunan Accurate Bio-Medical Technology Co., Ltd.
Address of Factory:	Accurate Industrial Park, No.108, Zhixian Road, Xuelian Community, Xueshi Street of Yuelu District, 410208 Changsha, Hunan Province, PEOPLE'S REPUBLIC OF China

4.2 General Description of EUT

Product Name:	Pulse Oximeter
Model No.:	WS20A, WS20A1, WS20A2, WS20A3
Test Model No.:	WS20A
Trade Mark:	N/A
Device type:	Portable

4.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz
Modulation Type:	GFSK
Test Power Grade:	Default
Test Software of EUT:	BK3432_FCC_TEST
Antenna Type:	PCB antenna
Antenna Gain:	-2.87dBi
Power Supply:	Battery DC 3.7V
Sample Received Date:	Aug. 14, 2023
Sample tested Date:	Aug. 14, 2023 to Aug. 22, 2023
Remark:	<p>Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.</p> <p>Model No.: WS20A, WS20A1, WS20A2, WS20A3</p> <p>WS20A is the main test model and apart from the color of the product appearance the product structure, circuit and functions are completely the same.</p>

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 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

5.1.2 Test Procedure

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

5.1.3 EUT RF Exposure Evaluation

For Stand alone:

For BLE

Frequency (MHz)	Separation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2440	0.50	2.95	-2.87	0.08	-2.07	0.621	2.753	PASS

Note:

- ① EIRP=conducted power+antenna gain;
- ② ERP=EIRP-2.15
- ③ Only the worst case data was recorded in the report.

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 CTI, this report can't be reproduced except in full.

*** End of Report ***