

## RF Exposure Evaluation Report

**Report Reference No.**.....: **MTWG22030126-H**

**FCC ID**.....: **2A4HF-F4-1**

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**Representative Laboratory Name .:** **Shenzhen Most Technology Service Co., Ltd.**

Address .....: No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,  
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**Applicant's name**.....: **ZHEJIANG YOUBU SPORTS GOODS CO., LTD**

Address .....: No.9 Liunan Road, Niubeijin Industrial Zone, Wuyi County, Jinhua  
City, Zhejiang Province, China

**Test specification/ Standard** .....: **47 CFR Part 1.1307**

**47 CFR Part 1.1310**

**KDB447498D01 General RF Exposure Guidance v06**

TRF Originator.....: Shenzhen Most Technology Service Co., Ltd.

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**Test item description** .....: Electric Treadmill

Trade Mark .....: N/A

Manufacturer .....: **ZHEJIANG YOUBU SPORTS GOODS CO., LTD**

Model/Type reference.....: F4-1

Listed Models .....: F4-2

Modulation Type .....: GFSK,  $\pi/4$ DQPSK, 8DPSK

Operation Frequency.....: From 2402MHz to 2480MHz

Hardware Version.....: FS-BT-D2

Software Version .....: V4.2

Rating .....: AC 100-125V , 60Hz,1000W

Result.....: **PASS**

**TEST REPORT**

Equipment under Test : Electric Treadmill

Model /Type : F4-1

Listed Models : F4-2

Remark : Only with different model names.

Applicant : **ZHEJIANG YOUBU SPORTS GOODS CO., LTD.**

Address : No.9 Liunan Road, Niubeijin Industrial Zone, Wuyi County, Jinhua City, Zhejiang Province, China

Manufacturer : **ZHEJIANG YOUBU SPORTS GOODS CO., LTD.**

Address : No.9 Liunan Road, Niubeijin Industrial Zone, Wuyi County, Jinhua City, Zhejiang Province, China

<b>Test Result:</b>	<b>PASS</b>
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The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## 1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2022-03-25	Initial Issue	Alisa Luo

## 2. SAR Evaluation

### 2.1 RF Exposure Compliance Requirement

#### 2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 2.1.2 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	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:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$  Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.

**2.1.3 EUT RF Exposure**

Antenna Gain: -0.58dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna &amp; RF Exposure Evaluation Distance:

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402 MHz)	-1.06	$-1.06 \pm 1$	-0.06
Middle(2441MHz)	-1.22	$-1.22 \pm 1$	-0.22
Highest(2480MHz)	-1.14	$-1.14 \pm 1$	-0.14

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402 MHz)	0.62	$0.62 \pm 1$	1.62
Middle(2441MHz)	0.24	$0.24 \pm 1$	1.24
Highest(2480MHz)	0.21	$0.21 \pm 1$	1.21

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402 MHz)	0.72	$0.72 \pm 1$	1.72
Middle(2441MHz)	0.13	$0.13 \pm 1$	1.13
Highest(2480MHz)	0.15	$0.15 \pm 1$	1.15

**EDR**

Worst case: 8DPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Highest(2402 MHz)	1.72	1.49	-0.58	0.0003	1.0	Pass

Note: 1) Refer to report MTWG22020120-R1 for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (1.49 * 10.87) / (4 * 3.1416 * 20^2) = 0.0003$ 

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

.....THE END OF REPORT.....