

RF Exposure Evaluation Report

Report Reference No......: **MTWC21110879-H**

FCC ID.....: **2A4HF-YB-F3**

Compiled by

(position+printed name+signature)...: File administrators Alisa Luo

Supervised by

(position+printed name+signature)...: Test Engineer Sunny Deng

Approved by

(position+printed name+signature)...: Manager Yvette Zhou

Date of issue.....: **December 15, 2021**

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

Address: No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,
Nanshan, Shenzhen, Guangdong, China.

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 2.1093

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.....: YB-F3

Listed Models: N/A

Modulation Type: GFSK

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

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

Software Version: V4.2

Rating: AC 100-125V, 50-60Hz, 800W

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

TEST REPORT

Equipment under Test : Electric treadmill

Model /Type : YB-F3

Listed Models : N/A

Remark : N/A

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

Test Result:	PASS
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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	2021.12.15	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$ Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is 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.

2.1.3 EUT RF Exposure

Measurement Data

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	4.521	4.521 ± 1	5.521
Middle(2440MHz)	5.810	5.810 ± 1	6.810
Highest(2480MHz)	5.823	5.823 ± 1	6.823

Worst case: GFSK				
Maximum Peak Conducted Output Power (mW)	Antenna gain (dBi)	Calculated value	Exclusion threshold	SAR Test Exclusion
4.812	-0.58	0.000838	1.0	Yes

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	5.462	5.462 ± 1	6.462
Middle(2440MHz)	6.742	6.742 ± 1	7.742
Highest(2480MHz)	6.732	6.732 ± 1	7.732

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	4.261	4.261 ± 1	5.261
Middle(2440MHz)	5.601	5.601 ± 1	6.601
Highest(2480MHz)	5.813	5.813 ± 1	6.813

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	3.951	3.951 ± 1	4.951
Middle(2440MHz)	5.562	5.562 ± 1	6.562
Highest(2480MHz)	5.712	5.712 ± 1	6.712

Worst case: GFSK				
Maximum Peak Conducted Output Power (mW)	Antenna gain (dBi)	Calculated value	Exclusion threshold	SAR Test Exclusion
5.946	-0.58	0.001	1.0	Yes

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