

RF Exposure Evaluation Report

Report Reference No...... : **MTWG22040322-H**

FCC ID..... : **2A2JA-SL-A710**

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.....: April 29,2022

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 Haozhonghao Health Product Co., Ltd.**

Address.....: No.18 Xinglong Road, Furniture Garden, Wanquan Industry
Base, Pingyang, China

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

47 CFR Part 2.1093

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

Shenzhen Most Technology Service Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Most Technology Service Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Most Technology Service Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description.....: Massage Chair

Trade Mark.....: iRest

Model/Type reference.....: SL-A710

Listed Models: SL-A710-1,SL-A710-2,SL-A710-3,SL-A710-5,SL-A710-6,SL-A710-7,SL-A710-8,SL-A710-9,SL-A710-10,SL-A710-11,SL-A710-12

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

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

Rating.....: 110-120V~, 60Hz, 220W

Hardware version.....: V1.1

Software version: V1.0

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

TEST REPORT

Equipment under Test : Massage Chair

Model /Type : SL-A710

Listed Models : SL-A710-1,SL-A710-2,SL-A710-3,SL-A710-5,SL-A710-6, SL-A710-7,SL-A710-8,SL-A710-9,SL-A710-10,SL-A710-11,SL-A710-12

Remark : All models are identical, except model name and color.

Applicant : **Zhejiang Haozhonghao Health Product Co., Ltd.**

Address : No.18 Xinglong Road, Furniture Garden, Wanquan Industry Base, Pingyang, China

Manufacturer : **Zhejiang Haozhonghao Health Product Co., Ltd.**

Address : No.18 Xinglong Road, Furniture Garden, Wanquan Industry Base, Pingyang, China

Test Result:	PASS
---------------------	-------------

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	2022.04.29	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)	(mW)
Lowest(2402MHz)	0.129	0.129 ± 1	1.129	1.29
Middle(2440MHz)	4.056	4.056 ± 1	5.056	2.54
Highest(2480MHz)	4.023	4.023 ± 1	5.023	2.52

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Highest(2462 MHz)	5.056	3.2	-1.72	0.004	1.0	Pass

Note: 1) Refer to report **MTWG22040322-R2** for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (3.2 \cdot 0.7) / (4 \cdot 3.1416 \cdot 20^2) = 0.004$

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

Measurement Data

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	1.212	1.212 ± 1	2.212
Middle(2441MHz)	1.049	1.049 ± 1	2.049
Highest(2480MHz)	0.746	0.746 ± 1	1.746

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	2.994	2.994 ± 1	3.994
Middle(2441MHz)	2.941	2.941 ± 1	3.941
Highest(2480MHz)	2.666	2.666 ± 1	3.666

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	3.262	3.262 ± 1	4.262
Middle(2441MHz)	3.194	3.194 ± 1	3.194
Highest(2480MHz)	2.913	2.913 ± 1	3.913

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 ²)	Limit	Result
Highest(2462 MHz)	4.262	2.7	-1.72	0.004	1.0	Pass

Note: 1) Refer to report **MTWG22040322-R1** for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (2.7 \cdot 0.7) / (4 \cdot 3.1416 \cdot 20^2) = 0.004$

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

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