

RF Exposure Evaluation Report

Report Reference No......: **MTWG22040348-H**

FCC ID.....: **2A4VU-SL-A200-1**

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Date of issue.....: **May 06,2022**

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

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Applicant's name: **iRest Health Science and Technology Co., Ltd.**

Address: No.468 Shibali East Road, Daqiao Town, Nanhu District, Jiaxing,
Zhejiang, 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: Massage Chair

Trade Mark: iRest

Model/Type reference.....: SL-A200-1

Listed Models: SL-A200-3,SL-A200-8,SL-A200-10,SL-A202-2,SL-A202-10,SL-A203,Titan 3D Quantum,3D LTX,SL-A201-3,SL-A201-6,BM-A201,SL-A200,SL-A200-2,SL-A201,SL-A201-2,SL-A201-5,SL-A202, SL-A2001-2, SL-A2002-2

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

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

Rating: 110-120V~, 60Hz, 90W

Hardware version: V1.1

Software version: V1.0

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

TEST REPORT

Equipment under Test : Massage Chair

Model /Type : SL-A200-1

Listed Models : SL-A200-3,SL-A200-8,SL-A200-10,SL-A202-2,SL-A202-10,SL-A203,Titan 3D Quantum,3D LTX,SL-A201-3,SL-A201-6,BM-A201,SL-A200,SL-A200-2,SL-A201,SL-A201-2,SL-A201-5,SL-A202, SL-A2001-2, SL-A2002-2

Remark : The model names are different

Applicant : **iRest Health Science and Technology Co., Ltd.**

Address : No.468 Shibali East Road, Daqiao Town, Nanhu District, Jiaxing, Zhejiang, China

Manufacturer : **iRest Health Science and Technology Co., Ltd.**

Address : No.468 Shibali East Road, Daqiao Town, Nanhu District, Jiaxing, Zhejiang, 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	2022.05.06	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)	-0.986	-0.986 ± 1	0.014	1.00
Middle(2440MHz)	0.497	0.497 ± 1	1.497	1.41
Highest(2480MHz)	-2.112	-2.112 ± 1	-1.112	0.77

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(2440 MHz)	1.497	1.4	-1.39	0.002	1.0	Pass

Note: 1) Refer to report **MTWG22040348-R2** for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (1.4 \cdot 0.7) / (4 \cdot 3.1416 \cdot 20^2) = 0.002$

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)	-0.926	-0.926 ± 1	0.074
Middle(2441MHz)	0.611	0.611 ± 1	1.611
Highest(2480MHz)	-2.062	-2.062 ± 1	-1.062

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	-0.957	-0.957 ± 1	0.043
Middle(2441MHz)	0.595	0.595 ± 1	1.595
Highest(2480MHz)	-2.054	-2.054 ± 1	-1.054

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	-0.961	-0.961 ± 1	0.039
Middle(2441MHz)	0.599	0.599 ± 1	1.599
Highest(2480MHz)	-2.065	-2.065 ± 1	-1.062

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(2441 MHz)	1.611	1.44	-1.39	0.002	1.0	Pass

Note: 1) Refer to report **MTWG22040348-R1** for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (1.44 \cdot 0.7) / (4 \cdot 3.1416 \cdot 20^2) = 0.002$

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

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