

OSIM INTERNATIONAL Pte. LTD.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

OS-890

REPORT NUMBER:

191001575SHA-004

ISSUE DATE:

Dec 17, 2019

DOCUMENT CONTROL NUMBER:

TTRFFCCMPE-01_V1 © 2018 Intertek



Applicant: OSIM INTERNATIONAL Pte. LTD.
65 Ubi Ave 1, OSIM Headquarters, Singapore 408939

Manufacturer: DT-OSIM Healthcare Appliances (Suzhou) Co., Ltd.
China-Singapore Suzhou Industrial Park,
No. 69 Longpu Road, Xinglong Street, Suzhou, China

FCC ID: ARG-OS-890

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:**REVIEWED BY:**

Project Engineer
Stephanie Zhang

Reviewer
Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
191001575SHA-004	Rev. 01	Initial issue of report	Dec 17, 2019

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Massage Chair
Type/Model:	OS-890
Description of EUT:	There is one model only. The device contains wifi as well as Bluetooth functions.
Rating:	110-120V~60Hz
Category of EUT:	Class B
EUT type:	☐ Table top ☒ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	Nov 20, 2019
Date of test:	Nov 20, 2019 – Dec 17, 2019

1.2 Technical Specification

Frequency Range:	2400MHz ~ 2483.5MHz
Support Standards:	Bluetooth 4.2 (BR+EDR)
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Channel Number:	79 (0 - 78)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Channel Separation:	1 MHz
Antenna:	Internal PCB antenna, 0dBi Peak gain

Frequency Range:	2412MHz ~ 2462MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7
Channel Separation:	5 MHz

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

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2.2 Assessment Results

Power density (S) is calculated according to the formula:

$$S = P / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 191001575SHA-002 and 191001575SHA-003:

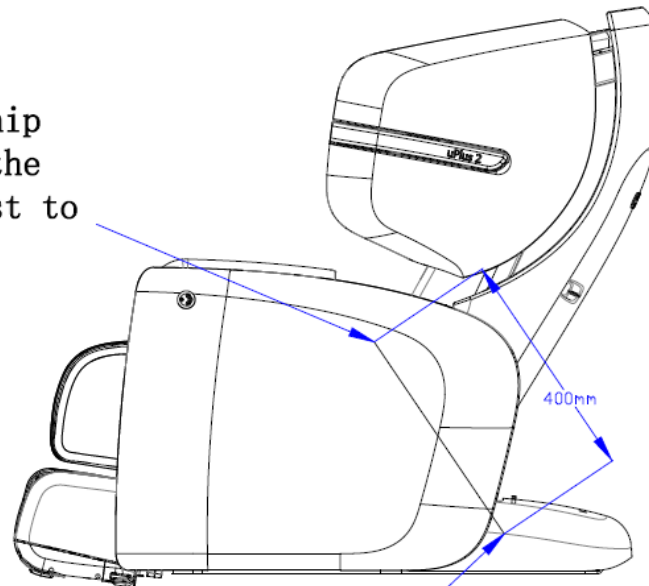
Function	Conducted power (dBm)	Gain (dBi)	Distance (cm)	S (mW/cm ²)
Bluetooth	3.00	0	20	0.0004
Wi-Fi	17.45	2.0	20	0.0175

For the device supporting Bluetooth and Wi-Fi transmit simultaneously, the sum of the MPE ratios = 0.0004 + 0.0175 = 0.0179.

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Here is the nearest position among normal use between the person and Antenna of Wi-Fi:

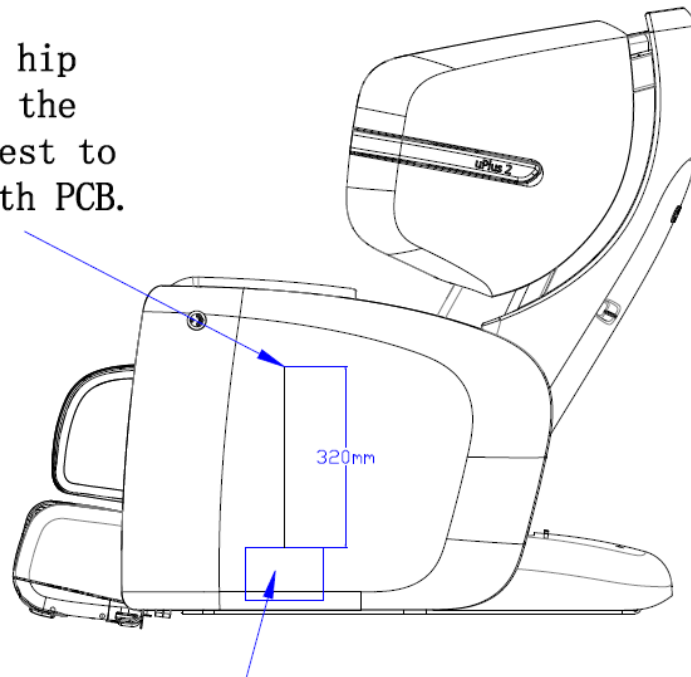
This is the hip position of the person closest to the WiFi PCB.



Here is the WiFi PCB, integrated on the main PCB.

Here is the nearest position among normal use between the person and Antenna of Bluetooth:

This is the hip position of the person closest to the Bluetooth PCB.



Here is the Bluetooth PCB.

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

***** END *****