

RF Exposure Evaluation Report

Report Reference No...... : **MTEB25030157-H**

FCC ID..... : **YMX-EC8638A**

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..... : **Mar.12,2025**

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

Address..... : East A, 1 floor of New Aolin Factory building, Langshan Erlu, North District, Hi-tech Industry Park, Nanshan, Shenzhen, Guangdong, China

Applicant's name..... : **XIAMEN COMFORT SCIENCE & TECHNOLOGY GROUP CO.,LTD.**

Address..... : (5/F)NO.168, QIANPU ROAD, SIMING DISTRICT, XIAMEN, Fujian 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..... : Massage Chair

Trade Mark..... : N/A

Model/Type reference..... : 4D-Escape Duo

Listed Models : EC-8638A, EC-8639B, 4D-Vanguard Duo

Modulation Type..... : ASK

Operation Frequency..... : 110K-205KHz

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

Hardware Version : 1.0

Software Version : 1.0

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

TEST REPORT

Equipment under Test : Massage Chair

Model /Type : 4D-Escape Duo

Listed Models : EC-8638A, EC-8639B, 4D-Vanguard Duo

Remark : Just the model name is different, everything else is the same.

Applicant : XIAMEN COMFORT SCIENCE & TECHNOLOGY GROUP CO.,LTD.

Address : (5/F)NO.168, QIANPU ROAD,SIMING DISTRICT,XIAMEN,Fujian
CHINA

Manufacturer : XIAMEN HEALTHCARE ELECTRONIC CO.,LTD.

Address : 65-66#, 62-63# BUILDING, SIMING ZONE, TONGAN INDUSTRIAL
DISTRICT, XIAMEN CITY, FUJIAN PROVINCE, P.R.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	2025-03-12	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 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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$ 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 RF Exposure Evaluation Result

The worst data for WPT:

Mode (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Limit(50%) A/m	Limit Tests A/m
0.11- 0.205	0.776	/	0.806	/	0.774	0.778	0.815	1.63

Contains FCCID:2A006-WLT8016

Mode	Frequency Range	Antenna Gain		Target Power		Evaluation Distance	Power Density (mw/cm2)	MPE Limit
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mw/cm2)	(mw/cm2)
BLE	2402-2480	3	2	7.5	5.62	20	0.0022	1.0

Contains FCCID:YMX-ATS2853

Mode	Frequency Range	Antenna Gain		Target Power		Evaluation Distance	Power Density (mw/cm2)	MPE Limit
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mw/cm2)	(mw/cm2)
EDR	2402-2480	-0.58	0.87	2.93	1.96	20	0.00034	1.0
BLE	2402-2480	-0.58	0.87	2.878	1.94	20	0.00036	1.0

Simultaneous TX (WPT+BT)

Mode	Power Density		Conclusion
	Results	Limit	
Simultaneous TX	0.494	1.0	PASS

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

Results (WPT+BT) = 0.00022/1 + 0.00036/1 + 0.806/1.63 = 0.494

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