

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2105020317AT
Applicant: Echelon Fitness Multimedia, LLC
Address of Applicant: 605 Chestnut Street, Suite 700, Chattanooga, TN 37450 USA
Manufacturer: Echelon Fitness Multimedia, LLC
Address of Manufacturer: 605 Chestnut Street, Suite 700, Chattanooga, TN 37450 USA
Factory: TES Touch Embedded Solutions (Xiamen) Co., Ltd.
Address of Factory: No. 60, Xinglin South Rd., Jimei District, Xiamen, Fujian 361022, China
Equipment Under Test (EUT):
EUT Name: ECHELON TOUCH SCREEN
Model No.: ECHTES-101
Trade Mark: ECHELON
Standard(s) : 47 CFR Part 1.1310
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2021-05-25
Date of Evaluation: 2021-05-27 to 2021-07-12
Date of Issue: 2021-07-22

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.



Kobe Jian
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-07-22		Original

Authorized for issue by:			
Tested By	<i>Jim Li</i>		

	Jim Li/Project Engineer		
Reviewed By	<i>Ricky Liu</i>		

	Ricky Liu/Reviewer		



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2 Evaluation Summary

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply:	SWITCHING POWER SUPPLY MODEL: XH1200-3000 INPUT:100-240VAC, 50/60Hz, 0.8A OUTPUT:12.0V, 3.0A, 36.0W
Cable(s):	AC mains for adapter:1.8m, unshielded DC input for main unit:1.2m, with ferrite bead DC IN Jack USB Port USB/OTG Port TF Card Slot HDMI Port LAN Port LINE OUT Port 3.5mm Headphone Jack
RF Character:	Refer to report GZCR210502031702 for 2.4G Wi-Fi. Refer to report GZCR210502031703 for 5G Wi-Fi. Refer to report GZCR210502031704 for 2.4G BT BLE. Refer to report GZCR210502031705 for 2.4G BT Classic.

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.3 Test Facility

The facility is recognized, certified, or accredited by the following organizations:

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Matter Test Results

5.1 RF Exposure Evaluation

CFR 47 Part 1.1310

Limit:

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30
f = frequency in MHz				
* = Plane-wave equivalent power density				

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)
P = the net power delivered to the antenna (mW)
G = gain of the antenna in linear scale
d = distance between observation point and center of the radiator (cm)



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5.1.1 Conclusion and Result.

Normal use condition for Distance between antenna and body:	≥ 20 cm declared by applicant.
Remark	The device cannot transmit 2.4G BT BLE and Classic, 2.4G Wi-Fi and 5G Wi-Fi synchronously, only BT and Wi-Fi can.
	Refer to report No. GZCR210502031702, GZCR210502031703, GZCR210502031704, GZCR210502031705 for test max conducted power value.

Test Mode	Frequency (MHz)	Antenna	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4G BT BLE	2480	BT Ant1	1.585	4.51	2.82	0.00089	1	Complies
2.4G BT Classic	2480	BT Ant1	1.585	6.88	4.88	0.00154	1	Complies
2.4G Wi-Fi	2412	Wi-Fi Ant1+2	1.585	11.93	15.59	0.00492	1	Complies
5G Wi-Fi	5580	Wi-Fi Ant1+2	1.585	9.38	8.67	0.00273	1	Complies

The Bluetooth and Wi-Fi can be transmitted together, the result is $0.00154/1 + 0.00492/1 = 0.00646 < 1.0$

Conclusion:

The device meets the maximum permissible exposure requirement, So the SAR report is not required.



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6 EUT Constructional Details (EUT Photos)

Refer to Appendix _ Photographs of EUT Constructional Details for GZCR2105020317AT

- End of the Report -



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