

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2105020327AT
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.
Factory of Manufacturer: No. 60, Xinglin South Rd., Jimei District, Xiamen, Fujian 361022, China
Equipment Under Test (EUT):
EUT Name: Echelon Touch Screen
Model No.: ECHTES-156, ECHTES-215, ECHTES-238 ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standard(s) : 47 CFR Part 1.1310
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2021-05-26
Date of Test: 2021-07-16
Date of Issue: 2021-07-16

Test Result:	Pass*
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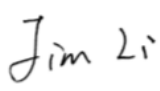

* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-07-16		Original

Authorized for issue by			
Tested By			
	Jim Li/Project Engineer		
Reviewed By			
	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.

✦ Declaration of EUT Family Grouping:

Model No.: ECHTES-156, ECHTES-215, ECHTES-238

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the LCD panel size.

Therefore, only the model ECHTES-156 was tested.



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4 Information

4.1 Details of E.U.T.

Power supply:	For model ECHTES-156 & ECHTES-215 & ECHTES-238 SWITCHING ADAPTER MODEL: SOY-1200500-327 INPUT:100-240VAC~, 50/60Hz, 1.7A Max OUTPUT:12.0V, 5.0A, 60.0W
Cable(s):	AC mains for adapter:3 wires, 1.8m, unshielded DC input for main unit:1.8m, with ferrite bead DC IN Port USB Port USB/OTG Port TF Card Slot HDMI Port LAN Port LINE OUT Port DC OUT Port 3.5mm Headphone Jack
RF Character:	Refer to report GZCR210502032702 for 2.4G BT BLE. Refer to report GZCR210502032703 for 2.4G BT Classic. Refer to report GZCR210502032704 for 2.4G Wi-Fi. Refer to report GZCR210502032705 for U-NII bands Wi-Fi.

4.2 Evaluation 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 test 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 2.1093

Limit:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})} \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.



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5.1.1 Conclusion and Result.

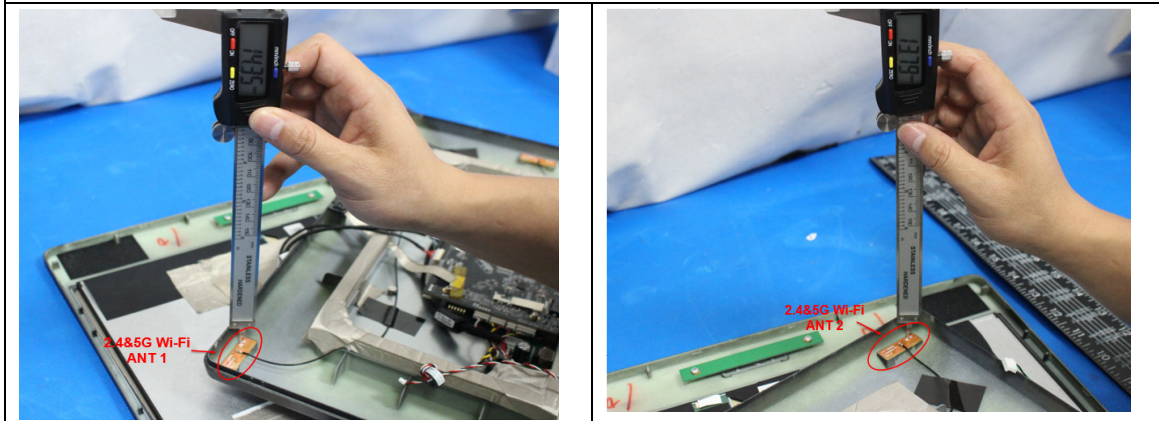
Normal use condition for ≥ 10 mm declared by applicant.

Distance between antenna and body:

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.

The separation distance is ≥ 10 mm as below:



(1). Refer to report No. GZCR210502032702 for EUT BT BLE test max conducted power value.

The Max Conducted Peak Output Power is 4.5 dBm on the channel 2.480 GHz

4.5 dBm logarithmic terms convert to numeric result is nearly 2.82 mW

According to the formula. calculate the test exclusion thresholds:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

General RF Exposure = $(2.82 \text{ mW} / 10 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 0.444$ (1)

SAR requirement:

$S = 7.5$ (2)

(1) < (2)

So the SAR report is not required.



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- (2). Refer to report No. GZCR210502032703 for EUT BT Classic test max conducted power value.

The Max Conducted Peak Output Power is 6.76 dBm on the channel 2.480 GHz

6.76 dBm logarithmic terms convert to numeric result is nearly 4.74 mW

According to the formula. calculate the test exclusion thresholds:

$[(\text{max. power of channel, including tune-up tolerance, mW}) /$

$(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$\text{General RF Exposure} = (4.74 \text{ mW} / 10 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 0.747 \quad (1)$$

SAR requirement:

$$S = 7.5 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

- (3). Refer to report No. GZCR210502032704 for EUT 2.4G Wi-Fi test max conducted power value.

The Max Conducted Peak Output Power is 15.17 dBm on the channel 2.442 GHz

15.17 dBm logarithmic terms convert to numeric result is nearly 32.89 mW

According to the formula. calculate the test exclusion thresholds:

$[(\text{max. power of channel, including tune-up tolerance, mW}) /$

$(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$\text{General RF Exposure} = (32.89 \text{ mW} / 10 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 5.139 \quad (1)$$

SAR requirement:

$$S = 7.5 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

- (4). Refer to report No. GZCR210502032705 for EUT U-NII bands Wi-Fi test max conducted power value.

The Max Conducted Peak Output Power is 10.76 dBm on the channel 5.785 GHz

10.76 dBm logarithmic terms convert to numeric result is nearly 11.91 mW

According to the formula. calculate the test exclusion thresholds:

$[(\text{max. power of channel, including tune-up tolerance, mW}) /$

$(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$\text{General RF Exposure} = (11.91 \text{ mW} / 10 \text{ mm}) \times \sqrt{5.785 \text{ GHz}} = 2.865 \quad (1)$$

SAR requirement:

$$S = 7.5 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

The Bluetooth and Wi-Fi can be transmitted together, the result is

$$5.139/7.5 + 0.747/7.5 = 0.7848 < 1.0$$

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 GZCR2105020327AT.

- End of the Report -



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