



RF Exposure Evaluation Report

Application No.: GZEM2101000202CR
Applicant: R.F.E. ASIA PACIFIC LTD
Address of Applicant: Room 2608 – 2609, 1 Hung To Road, Kwun Tong, Hong Kong
Manufacturer: RFE EUROPA LTD.
Address of Manufacturer: 8 Clarendon Drive, Wymbush, Milton Keynes, MK8 8ED, England, United Kingdom
Factory: Zhejiang Arcana Power Sports Tech. CO., LTD
Address of Factory: Nr.618 Xinxing Avenue, Zonghan, Emerging Industrial Area, Cixi, Zhejiang, China, 315301

Equipment Under Test (EUT):
EUT Name: Rower
Model No.: AVUS-10511 X-21FD Cross Trainer, AVUS-10411 X21 Cross Trainer
 * Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Trade mark: Adidas
Standard(s) : 47 CFR Part 1.1310
 KDB447498 D01 General RF Exposure Guidance v06

Date of Receipt: 2021-01-12
Date of Test: 2021-01-28 to 2021-02-04
Date of Issue: 2021-02-09

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

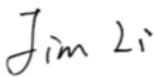

Kobe Jian
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-03-24		Original

Authorized for issue by:			
Tested By			
	Jim Li /Project Engineer		
Reviewed By			
	Ricky Liu/Reviewer		



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 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

2 Test 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:

Remark for original report GZEM210100020202:

Model No.: AVUS-10411 X-21 Cross Trainer, AVUS-10511 X-21FD Cross Trainer

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 appearance.

Therefore only one model **AVUS-10511 X-21FD Cross Trainer** was evaluated in this report.



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 10.5V=7 x DC 1.5V size "AA" batteries.
Cable(s):	N/A
Function:	Rower with BLE function
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi declared by applicant
Hardware:	EW-BLE-02-V13
Software:	SV01
S/N:	20121400014
Test Software	BTTTest.exe
Power Setting	3 dBm can not be changed by user

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Test 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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4.4 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 C-Tick mark as a result of our NVLAP accreditation.

- **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 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

- **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, Jul 13, 2017.

- **Industry Canada (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 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-10449 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.

4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Technical Requirement

5.1 RF Exposure

5.1.1 Test Requirement:

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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5.1.2 Conclusion

Normal use condition for Distance between antenna and body: $\leq 5\text{mm}$ declared by applicant
 Antenna Gain: 0 dBi declared by applicant.

The Max Conducted Peak Output Power is 3.16 dBm on the channel 2.480 GHz
 3.16 dBm logarithmic terms convert to numeric result is nearly 2.07 mW
 According to the formula. calculate the test exclusion thresholds:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f}(\text{GHz})]}{\text{General RF Exposure} = (2.07 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 0.452 \quad (1)}$$

SAR requirement:
 $S = 3 \quad (2)$

(1) < (2)
 So the SAR report is not required.

Note: Refer to report No. GZEM210100020202 for EUT test Max Conducted Peak Output Power value.



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6 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for GZEM2101000202CR.

- End of the Report -



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