

ACCREDITED
CERT #3816.01

Report No.: SZEM181200003602

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## **Human Exposure Report**

Application No.:SZEM1812000036CRApplicant:Shearwater Research Inc.

Address of Applicant: Unit 250 13155 Delf Place Richmond, British Columbia, Canada

**Manufacturer:** Shearwater Research Inc.

Address of Manufacturer: Unit 250 13155 Delf Place Richmond, British Columbia, Canada

Factory: Shenzhen Itian Technology Co., Ltd

Address of Factory: 501, Building C, Hongde Industrial Area, Lianrun Road, Dalang Street,

Longhua District, Shenzhen

**Equipment Under Test (EUT):** 

**EUT Name:** Teric Charger Dock-IT

**Model No.:** 55095-02

Trade Mark:

**SHEARWATER** 

FCC ID: 2AO24-55095-02

Standards: 47 CFR PART 1, Subpart I, Section 1.1310

**Date of Receipt:** 2018-12-18

**Date of Test**: 2018-12-20 to 2019-03-14

**Date of Issue:** 2019-03-21

Test Result : Pass\*

Keny Xu EMC Laboratory Manager

Ceny. Ku



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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above



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### 3 General Information

#### 3.1 Details of E.U.T.

Power supply: Powered by adapter with model: EQ-24BCN

Input: AC100-240V, 50/60Hz, 0.8A Max; Output: DC3.6V-8V, 3.0A/ DC12V, 2.0A

Cable: USB Cable(Unshielded, 104cm)
Antenna Type: Inductive Loop Coil Antenna

Working Power: 5W

Modulation Type: Load Modulation

Operation Frequency: 113.269kHz to 204.423kHz

Remark: This device has been tested with the Gear S3 and the device has been

tested with load at zero charge, intermediate charge, and full charge, the

worst status at zero charge had been recorded in the report.

### 3.2 Description of Support Units

The EUT has been tested as an independent unit.



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#### 3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

#### 3.4 Test Facility

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

#### • CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### · A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

#### · vcci

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### • FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

### Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

#### 3.5 Deviation from Standards

None.

#### 3.6 Abnormalities from Standard Conditions

None.



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## 4 Equipments Used during Test

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Due date
1	Shielding Room	SAEMC	MSR733	SEM001-09	2020-05-09
2	Electric and Magnetic Field Analyzer	Narda	EHP-50F	EMC092	2019-05-06



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### 5 Test Results

#### 5.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310

Measurement Distance: 15cm

Limit:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	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/f²)	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/f²)	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

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

#### 5.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.5 °C Humidity: 52 % RH Atmospheric Pressure: 1015 mbar

**EUT Operation:** 

This device has been tested the worst status of full load and the device has been tested with mobile phone at zero charge, intermediate charge, and full charge.



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<sup>\*=</sup>Plane-wave equivalent power density



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#### 5.1.2 Measurement Data

#### Output Voltage=DC 5V; The max output power =5W

#### **Magnetic Field Emissions**

Operation frequency			Probe Measure Result (A/m)	50% Limit (A/m)
	łz 15	Side 1	0.0045	0.815
		Side 2	0.0036	0.815
164.6 kHz		Side 3	0.0051	0.815
		Side 4	0.0038	0.815
		Тор	0.0022	0.815

Mobile phone has been charge at zero charge, intermediate charge, and full charge.

#### **Magnetic Field Emissions**

Operation	Test		Probe Measure Result(A/m)			50%Limit
frequency	Distance	15	zero charge	intermediate charge	full charge	(A/m)
	(cm)		onarge	onarge	onarge	(7 0 111)
	15	Side 1	0.0052	0.0041	0.0025	0.815
		Side 2	0.0041	0.0033	0.0022	0.815
164.6 kHz		Side 3	0.0059	0.0045	0.0037	0.815
		Side 4	0.0043	0.0034	0.0026	0.815
		Тор	0.0028	0.0021	0.0014	0.815



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## 6 Photographs

### 6.1 Test setup photos

Please refer to RF exposure setup.

- End of the Report -



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