



RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2108020897AT((SGS SZ No.: T52110270202EM))
Applicant: SCX DESIGN
Address of Applicant: 68 bis Boulevard Pereire 75017 Paris, France
Manufacturer: SCX DESIGN
Address of Manufacturer: 68 bis Boulevard Pereire 75017 Paris, France
Equipment Under Test (EUT):
EUT Name: SCX Design 10W Induction Mousepad
Model No.: O25/32473
Standard(s) : 47 CFR PART 1, Subpart I, Section 1.1310
47 CFR PART 2, Subpart J, Section 2.1093
Date of Receipt: 2021-08-04
Date of Evaluation: 2021-08-15 to 2021-08-25
Date of Issue: 2022-07-29

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		2021-09-03		Original
02		2022-07-29		Updated the test results from 0-20cm

Authorized for issue by				
				
		Curry Wu/Project Engineer		
				
		Ricky Liu/Reviewer		

2 Evaluation Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR PART 1, Subpart I, Section 1.1310	KDB 680106 D01 TCB Workshop Presentation November 2019 RF Exposure	CFR 47 Part 1.1310	Pass

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: Input: 5Vdc/2A, 9Vdc/2A;
Wireless Output: 5Vdc/1A, 7.5Vdc/1A, 9Vdc/1.12A
USB-A Output: 5Vdc/2A

Operation Frequency: 114.0kHz to 150kHz

Modulation Type: Load modulation

Antenna Type: Loop antenna

4.2 Test modes description:

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)
Final test	03	Idle mode_Keep the EUT standby

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
iPhone 8	Apple	A1863	REF. No.SEA16J00
Mobile Phone	Nexus	MRA58K	REF. No.SEA16P00
Mobile Phone	SAMSUNG	SM-G9500	REF. No.SEA16J00
Adapter	XIAOMI	MDY-08	REF. No.SEA05M02F
Mini USB Cable	SANBO	SU-T21	REF. No.SEA07B01
E-loading	SGS	N/A	REF. No.SEA42A00

4.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
RF Exposure Evaluation	MF: 0.13dB, EF: 0.4dB

5 Equipment Used during Test

RF Exposure					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
743 Compact 3m Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	EMC0525	2019-10-20	2022-10-19
Electric and Magnetic Field Analyzer	Narda	NBM-550/EHP-50F	EMC2143	2021-01-06	2022-01-05
				2022-01-05	2023-01-04

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-08	2022-07-07



5.1 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.

5.2 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.



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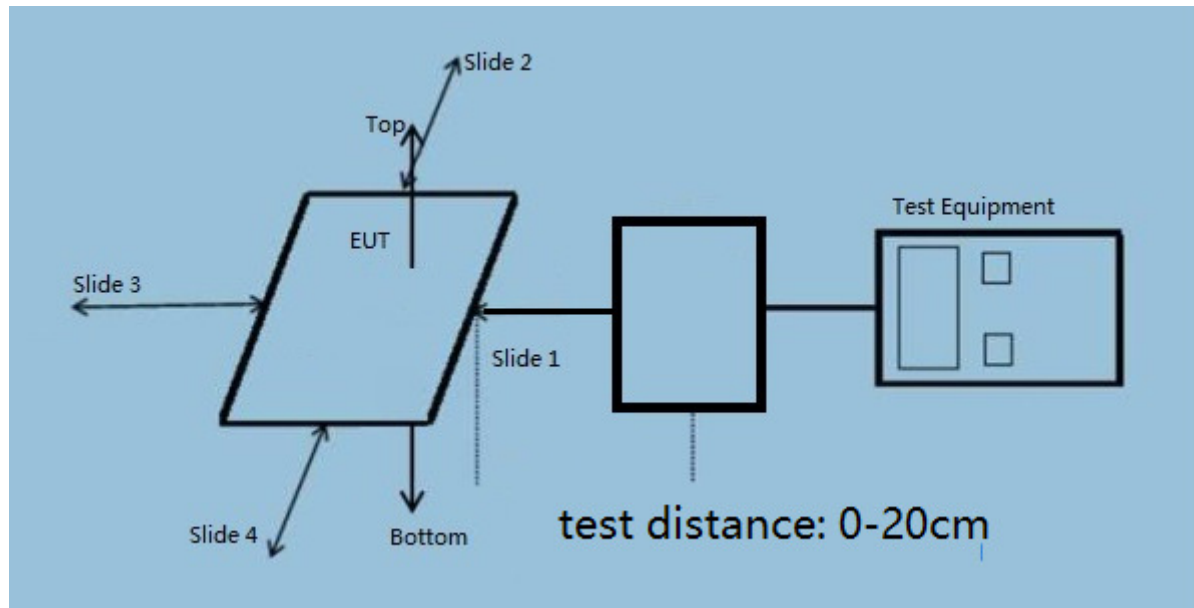
5.3 Deviation from Standards

None

5.4 Abnormalities from Standard Conditions

None

5.5 Test Block Diagram



6 Test Results

6.1 RF Exposure test

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

Measurement Distance: 0/2/4/6/8/10/12/14/16/18/20cm

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 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

*=Plane-wave equivalent power density

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).

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)

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.4 °C Humidity: 53.5% RH Atmospheric Pressure: 1015 mbar

EUT Operation:

This device has been tested at the unload, half load and full load and the device has been tested with load at zero charge, intermediate charge, and full charge.

6.1.2 Measurement Data

Test mode: 02 The max output power =10W

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	0	Side 1	0.222	0.248	0.299	0.815	0.163
		Side 2	0.265	0.298	0.353		
		Side 3	0.228	0.257	0.304		
		Side 4	0.264	0.295	0.351		
		Top	0.296	0.329	0.394		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	0	Side 1	0.319	0.267	0.217	0.815	0.163
		Side 2	0.373	0.312	0.254		
		Side 3	0.322	0.269	0.219		
		Side 4	0.376	0.315	0.256		
		Top	0.422	0.353	0.287		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	2	Side 1	0.196	0.217	0.265	0.815	0.163
		Side 2	0.220	0.248	0.293		
		Side 3	0.198	0.220	0.262		
		Side 4	0.224	0.250	0.301		
		Top	0.253	0.285	0.335		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	2	Side 1	0.274	0.228	0.185	0.815	0.163
		Side 2	0.318	0.264	0.215		
		Side 3	0.277	0.230	0.187		
		Side 4	0.322	0.268	0.218		
		Top	0.360	0.300	0.244		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	4	Side 1	0.167	0.189	0.228	0.815	0.163
		Side 2	0.194	0.218	0.263		
		Side 3	0.171	0.194	0.233		
		Side 4	0.194	0.218	0.257		
		Top	0.214	0.240	0.289		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	4	Side 1	0.226	0.189	0.157	0.815	0.163
		Side 2	0.265	0.222	0.185		
		Side 3	0.232	0.194	0.161		
		Side 4	0.266	0.223	0.186		
		Top	0.297	0.249	0.207		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	6	Side 1	0.135	0.151	0.180	0.815	0.163
		Side 2	0.151	0.169	0.203		
		Side 3	0.132	0.148	0.178		
		Side 4	0.156	0.176	0.211		
		Top	0.168	0.190	0.223		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	6	Side 1	0.183	0.154	0.124	0.815	0.163
		Side 2	0.215	0.181	0.146		
		Side 3	0.186	0.156	0.126		
		Side 4	0.215	0.181	0.146		
		Top	0.239	0.201	0.162		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	8	Side 1	0.131	0.149	0.181	0.815	0.163
		Side 2	0.137	0.157	0.183		
		Side 3	0.134	0.150	0.178		
		Side 4	0.138	0.157	0.189		
		Top	0.148	0.168	0.200		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	8	Side 1	0.179	0.149	0.121	0.815	0.163
		Side 2	0.190	0.158	0.129		
		Side 3	0.187	0.155	0.126		
		Side 4	0.199	0.165	0.134		
		Top	0.211	0.176	0.143		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	10	Side 1	0.116	0.134	0.157	0.815	0.163
		Side 2	0.119	0.136	0.158		
		Side 3	0.117	0.130	0.161		
		Side 4	0.119	0.136	0.163		
		Top	0.134	0.148	0.183		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	10	Side 1	0.153	0.128	0.106	0.815	0.163
		Side 2	0.157	0.132	0.110		
		Side 3	0.157	0.132	0.109		
		Side 4	0.164	0.137	0.114		
		Top	0.176	0.147	0.123		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	12	Side 1	0.092	0.107	0.133	0.815	0.163
		Side 2	0.095	0.105	0.130		
		Side 3	0.098	0.112	0.132		
		Side 4	0.097	0.111	0.131		
		Top	0.106	0.119	0.144		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	12	Side 1	0.123	0.103	0.083	0.815	0.163
		Side 2	0.128	0.107	0.086		
		Side 3	0.130	0.109	0.088		
		Side 4	0.134	0.112	0.091		
		Top	0.146	0.123	0.099		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	14	Side 1	0.083	0.099	0.115	0.815	0.163
		Side 2	0.087	0.100	0.120		
		Side 3	0.081	0.091	0.114		
		Side 4	0.097	0.110	0.136		
		Top	0.088	0.100	0.120		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	14	Side 1	0.111	0.092	0.075	0.815	0.163
		Side 2	0.125	0.104	0.085		
		Side 3	0.109	0.090	0.073		
		Side 4	0.135	0.112	0.091		
		Top	0.118	0.098	0.080		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	16	Side 1	0.069	0.081	0.096	0.815	0.163
		Side 2	0.081	0.091	0.112		
		Side 3	0.072	0.087	0.102		
		Side 4	0.090	0.104	0.120		
		Top	0.075	0.086	0.103		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	16	Side 1	0.094	0.079	0.066	0.815	0.163
		Side 2	0.106	0.089	0.074		
		Side 3	0.093	0.078	0.065		
		Side 4	0.116	0.097	0.081		
		Top	0.101	0.084	0.070		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	18	Side 1	0.059	0.067	0.085	0.815	0.163
		Side 2	0.064	0.077	0.087		
		Side 3	0.058	0.069	0.079		
		Side 4	0.074	0.082	0.100		
		Top	0.064	0.072	0.087		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	18	Side 1	0.077	0.065	0.052	0.815	0.163
		Side 2	0.089	0.075	0.060		
		Side 3	0.079	0.066	0.053		
		Side 4	0.096	0.081	0.065		
		Top	0.086	0.072	0.058		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			unload	Half load	full load		
117.2 kHz which is the worst case within the operation frequency range	20	Side 1	0.050	0.062	0.070	0.815	0.163
		Side 2	0.057	0.066	0.081		
		Side 3	0.050	0.057	0.070		
		Side 4	0.058	0.071	0.081		
		Top	0.055	0.063	0.076		

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50 % Limit (A/m)	10 % Limit (A/m)
			zero charge	intermediate charge	full charge		
134.8 kHz which is the worst case within the operation frequency range	20	Side 1	0.070	0.059	0.047	0.815	0.163
		Side 2	0.073	0.062	0.049		
		Side 3	0.069	0.058	0.046		
		Side 4	0.077	0.065	0.052		
		Top	0.074	0.062	0.049		

Test mode: 03

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)	50 % Limit (A/m)	10 % Limit (A/m)
126.7KHz which is the worst case within the operation frequency range	0	Side 1	0.037	0.815	0.163
		Side 2	0.039		
		Side 3	0.035		
		Side 4	0.032		
		Top	0.031		

7 Photographs- RF exposure Setup photos

Refer to Appendix – RF Exposure Setup Photos for GZCR2108020897AT

- End of the Report -