



Human Exposure Report

Application No.: GZCR2108020918AT
Applicant: Peak Design
Address of Applicant: 2325 3rd St Suite 410 San Francisco CA 94107 United States
Manufacturer: Peak Design
Address of Manufacturer: 2325 3rd St Suite 410 San Francisco CA 94107 United States
Factory: E-Power Technology Global Co. Ltd.
Address of Factory: No.10, Fenghuangshan Road, Yantian Village, Fenggang District, Dongguan City, Guangdong Province, 523700, China.

Equipment Under Test (EUT):

EUT Name: Wireless Charging Car Mount
Model No.: M-CM-AA-BK-1, M-CM-AD-BK-1
Please refer to section 3 of this report which indicates which model was actually tested and which were electrically identical.

Trade Mark: Peak Design

Standards: 47 CFR PART 1, Subpart I, Section 1.1310
47 CFR PART 2, Subpart J, Section 2.1093

Date of Receipt: 2021-08-06
Date of Test: 2021-08-06 to 2021-08-09
Date of Issue: 2021-08-30

Table with 2 columns: Test Result, Pass*

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

Handwritten signature of Kobe Jian

Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-09-06		Original

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



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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.

Declaration of EUT Family Grouping:

Model No.: M-CM-AA-BK-1, M-CM-AD-BK-1

Only the model M-CM-AD-BK-1 was tested, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring and functions were identical for the above models, with only difference on color.





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4 General Information

4.1 Details of E.U.T.

Power supply:	Powered by car charger with Model:SN-543-1PD Input:DC12-24V Output:DC5V,3A; DC9V,2.22A;DC12V,1.67A
Output Power:	5W/7.5W/10W/15W
Cable(s):	Type C cable(Unshielded, 113cm)
Operation frequency:	110.08kHz to 129.26kHz
Modulation type:	Load modulation
Antenna type:	Loop Antenna
Remark:	This device has been tested the worst status of full load and the device has been tested with load at 5W(Nexus mobile phone), 7.5W(Apple mobile phone) and 10W(E-Loading), 15W(SAMSUNG mobile phone), the worst case 15W is reported only.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Mobile Phone	Nexus	MRA58K	REF. No.SEA16P00
iPhone 8	Apple	A1863	REF. No.SEA16J00
SAMSUNG Galaxy S8	SAMSUNG	SM-G9500	REF. No.SEA16M01
E-loading	SGS	N/A	REF. No.SEA42A00

4.1 Measurement Uncertainty

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





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4.2 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.



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch EMC Laboratory

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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 Equipments Used during Test

RF Exposure					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Electric and Magnetic Field Analyzer	Narada	EHP-200A	180ZX00603	2021-01-25	2022-01-24

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-08	2022-07-07
DMM	Fluke	73	EMC0007	2021-07-08	2022-07-07



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6 Test Results

6.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310
47 CFR PART 2, Subpart J, Section 2.1093

Measurement Distance: 4/6/8/10/15cm

Remark: According to KDB publication 680106 section 3.c, the separation distance shall be measured from the geometric center of the probe head to the edge of the device, so test distance as above.

Limit:

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).

6.1.1 E.U.T. Operation

Operating Environment:



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Guangzhou Branch Technical Center EEC Laboratory

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Temperature: 22.3 °C Humidity: 52.9 % RH Atmospheric Pressure: 1015 mbar

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

6.1.2 Measurement Data

The max output power =15W

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		
114.23 kHz which is the worst case within the operation frequency range	4	Side 1	0.332	0.276	0.226	0.815	0.163
		Side 2	0.483	0.407	0.328		
		Side 3	0.427	0.357	0.290		
		Side 4	0.457	0.381	0.314		
		Top	0.508	0.426	0.346		

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		
114.23 kHz which is the worst case within the operation frequency range	6	Side 1	0.285	0.237	0.193	0.815	0.163
		Side 2	0.412	0.343	0.281		
		Side 3	0.369	0.307	0.249		
		Side 4	0.394	0.328	0.266		
		Top	0.438	0.365	0.296		



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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		
114.23kHz which is the worst case within the operation frequency range	8	Side 1	0.231	0.200	0.168	0.815	0.163
		Side 2	0.342	0.286	0.237		
		Side 3	0.304	0.255	0.212		
		Side 4	0.320	0.268	0.223		
		Top	0.361	0.303	0.252		

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		
114.23 kHz which is the worst case within the operation frequency range	10	Side 1	0.193	0.162	0.131	0.815	0.163
		Side 2	0.274	0.231	0.188		
		Side 3	0.246	0.206	0.165		
		Side 4	0.259	0.217	0.174		
		Top	0.286	0.242	0.197		



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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		
114.23 kHz which is the worst case within the operation frequency range	15	Side 1	0.113	0.095	0.078	0.815	0.163
		Side 2	0.166	0.139	0.111		
		Side 3	0.149	0.128	0.109		
		Side 4	0.156	0.126	0.102		
		Top	0.169	0.143	0.115		

- End of the Report -

