



Report No.: SZEM190101041202

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Human Exposure Report

Application No.: SZEM1901010412CR
Applicant: Tech21 UK Ltd
Address of Applicant: Syd's Quay, Eel Pie Island, London, TW1 3DY, England
Manufacturer: Tech21 UK Ltd
Address of Manufacturer: Syd's Quay, Eel Pie Island, London, TW1 3DY, England
Factory: ShenZhen VLG wireless technology Co., Ltd
Address of Factory: 3-4F, 1st Bldg, 1st sub-park of Taohuayuan hi-tech park, Xixiang, Baoan, Shenzhen
Equipment Under Test (EUT):
EUT Name: Charge Pod
Model No.: T21-6998
Trade mark: Charge Pod
FCC ID: 2ASRZ-T21-6998
Standards: 47 CFR PART 1, Subpart I, Section 1.1310
Date of Receipt: 2019-01-18
Date of Test: 2019-01-21 to 2019-01-30
Date of Issue: 2019-02-15

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

Keny Xu

Keny Xu
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-02-15		Original

Authorized for issue by:			
			
		<hr/>	
		Bill Chen /Project Engineer	
			
		<hr/>	
		Eric Fu /Reviewer	



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2 General Information

2.1 Details of E.U.T.

Power supply: Output by cable:5V-3A/9V-2A/12V-1.5A MAX 18W
Output by wireless:5V-1A/9V-1.1A MAX10W
Rechargeable battery: DC 3.85V 18.86Wh(Charge by type C)

Cable: Type C cable:100cm unshielded

Antenna Type: Loop Antenna

Modulation Type: Load Modulation

Operation Frequency: 112.66kHz to 204.34kHz

Remark: 1)Tests were conducted in both load modes and the worst case (10W) is reported only.
2)Applicant provided two ways. The one is battery and the other one is with a AC/DC adapter. Both power supplies has been evaluated and the worst case(with AC/DC adapter) has been reported only.

2.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
AC/DC adapter	UGREEN (provided by client)	CD122	20839
iPhone 8	Apple	A1863	F4GVQ656JC6D
Mobile Phone	SAMSUNG	SM-G9500	R28J9140LPB
Micro USB Cable	PHILIPS	SWR2101	REF. No.SEA0700
E-charging load	Provided by client	N/A	5W



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2.3 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.

2.4 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.

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.



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3 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	2019-02-06



4 Test Results

4.1 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/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).

4.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °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 load at zero charge, intermediate charge, and full charge.





4.1.2 Measurement Data

15CM

Output Voltage=DC 5V; The max output power =10W;Calculation of resistor value=2.5Ω

Electric Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (V/m)	50% Limit (V/m)
147.2 kHz	15	Side 1	1.35	307
		Side 2	1.28	307
		Side 3	1.55	307
		Side 4	1.12	307
		Top	1.45	307

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (A/m)	50% Limit (A/m)
147.2 kHz	15	Side 1	0.0095	0.815
		Side 2	0.0097	0.815
		Side 3	0.0121	0.815
		Side 4	0.0082	0.815
		Top	0.0110	0.815



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

Electric Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(V/m)			50%Limit (V/m)
			zero charge	intermediate charge	full charge	
147.2 kHz	15	Side 1	1.38	1.34	1.23	307
		Side 2	1.32	1.36	1.25	307
		Side 3	1.52	1.48	1.34	307
		Side 4	1.18	1.12	1.09	307
		Top	1.41	1.27	1.18	307

Magnetic Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(A/m)			50%Limit (A/m)
			zero charge	intermediate charge	full charge	
147.2 kHz	15	Side 1	0.0097	0.0082	0.0083	0.815
		Side 2	0.0094	0.0098	0.0082	0.815
		Side 3	0.0125	0.0112	0.0105	0.815
		Side 4	0.0080	0.0082	0.0077	0.815
		Top	0.0116	0.0101	0.0098	0.815



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5 Photographs- RF exposure Setup photos

Refer to RF Exposure Setup Photos.

- End of the Report -



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