



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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR231200401102

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Human Exposure Report

Application No.: SZCR2312004011AT
Applicant: Annex Products Pty Ltd
Address of Applicant: Level 3 Suite 6A, 299 Toorak Road, South Yarra, VIC, Australia 3141
Manufacturer: Annex Products Pty Ltd
Address of Manufacturer: Level 3 Suite 6A, 299 Toorak Road, South Yarra, VIC, Australia 3141
Factory: Shenzhen Huagon Technology Co., Ltd
Address of Factory: 401-403, Building B, Weihuada Industrial Park, No. 5, Lirong Road, Xinshi community, Dalang street, Longhua District, Shenzhen

Equipment Under Test (EUT):

EUT Name: OEM WCM 2.0 - 12V-18V
Model No.: QL-6585, QL-6416 ♣
 ♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade Mark: QUAD LOCK
FCC ID: 2AOU9-QLO2
Standards: 47 CFR PART 1, Subpart I, Section 1.1310
 47 CFR PART 2, Subpart J, Section 2.1091

Date of Receipt: 2023-12-08
Date of Test: 2024-01-23 to 2024-01-30
Date of Issue: 2024-02-02

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

Keny Xu
EMC Laboratory Manager



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Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-02-02		Original

Authorized for issue by:			
		Leo Li/Project Engineer	
		Eric Fu/Reviewer	



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3 General Information

3.1 Details of E.U.T.

Power supply:	For model QL-6416: Input: DC 12-18V, 1.0A Max Output: 5W/7.5W For model QL-6585: Input: DC 12-18V, 1.8A Max Output: 5W/7.5W/10W/15W
Operation frequency:	116.00kHz to 159.36kHz
Modulation type:	Load modulation
Antenna type:	Loop Antenna

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

Declaration of EUT Family Grouping:

Model No.: QL-6585, QL-6416

All models QL-6585 and WL-6416 were 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 as below.

1. Input Current QL-6585: 1.8A QL-6416: 1.0A
2. Output Power QL-6585: 5W / 7.5W / 10W / 15W QL-6416: 5W / 7.5W
3. Firmware QL-6585: A.1.1 QL-6416: B.1.1





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3.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power supply	ZHAOXIN	PS-3005D	REF. No.SEA27B01
E-loading	N/A	N/A	REF. No.SEA42A00
Mobile Phone	SAMSUNG	SM-G9810	REF. No.SEA16K00
iPhone 8	Apple	A1863	REF. No.SEA16J00
Mobile Phone	Nexus	MRA58K	REF. No.SEA16P00
Mobile Phone	SAMSUNG	SM-G9500	REF. No.SEA16J00



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3.3 Test Location

All tests were performed at:

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

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, 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:

- **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 (Member No. 1937)**

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.

Shenzhen EMC laboratory 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: CN1336**

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

Designation Number: CN1336. Test Firm Registration Number: 787754.

- **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.

4 Equipments Used during Test

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Due date
1	3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2026-03-31
2	Electric and Magnetic Field Analyzer	Narda	EHP-200AC	SEM022-20	2024-03-31



5 Test Results

5.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310
 47 CFR PART 2, Subpart J, Section 2.1091

Measurement Distance: 20cm

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).

5.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.3 °C Humidity: 52.9 % RH Atmospheric Pressure: 1020 mbar

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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5.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charging mode_Keep the EUT charging (5W)(QL6585:DC12V)
Pre-scan	01	Charging mode_Keep the EUT charging (7.5W)(QL6585:DC12V)
Pre-scan	02	Charging mode_Keep the EUT charging (10W)(QL6585:DC12V)
Pre-scan	03	Charging mode_Keep the EUT charging (15W)(QL6585:DC12V)
Pre-scan	04	Charging mode_Keep the EUT charging (5W)(QL6585:DC18V)
Pre-scan	05	Charging mode_Keep the EUT charging (7.5W)(QL6585:DC18V)
Pre-scan	06	Charging mode_Keep the EUT charging (10W)(QL6585:DC18V)
Final test	07	Charging mode_Keep the EUT charging (15W)(QL6585:DC18V)
Pre-scan	08	Charging mode_Keep the EUT charging (5W)(QL6416:DC12V)
Pre-scan	09	Charging mode_Keep the EUT charging (7.5W)(QL6416:DC12V)
Pre-scan	10	Charging mode_Keep the EUT charging (5W)(QL6416:DC18V)
Pre-scan	11	Charging mode_Keep the EUT charging (7.5W)(QL6416:DC18V)



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5.1.3 Measurement Data

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		
			129.2 kHz which is the worst case within the operation frequency range	20	Side 1		
Side 2	0.034	0.085	0.102				
Side 3	0.037	0.134	0.151				
Side 4	0.033	0.173	0.198				
Top	0.036	0.212	0.241				

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		
147.8 kHz which is the worst case within the operation frequency range	20	Side 1	0.188	0.158	0.082	0.815	0.163
		Side 2	0.119	0.100	0.052		
		Side 3	0.187	0.157	0.080		
		Side 4	0.251	0.211	0.107		
		Top	0.304	0.256	0.131		



Electric Field Emissions

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result (V/m)			50 % Limit (V/m)	10 % Limit (V/m)
			unload	Half load	full load		
129.2 kHz which is the worst case within the operation frequency range	20	Side 1	0.041	0.163	0.217	307	61.4
		Side 2	0.036	0.154	0.202		
		Side 3	0.034	0.173	0.229		
		Side 4	0.030	0.206	0.271		
		Top	0.031	0.265	0.351		

Operation frequency	Test Distance (cm)	Test Position	Probe Measure Result(V/m)			50 % Limit (V/m)	10 % Limit (V/m)
			zero charge	intermediate charge	full charge		
147.8 kHz which is the worst case within the operation frequency range	20	Side 1	0.191	0.157	0.092	307	61.4
		Side 2	0.177	0.147	0.082		
		Side 3	0.201	0.166	0.098		
		Side 4	0.239	0.199	0.116		
		Top	0.309	0.255	0.148		



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6 Test Setup Photos

Refer to Appendix - Test Setup Photo for SZCR2312004011AT

- End of the Report -



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