

Test Report

Report No.: MTi240614007-11E2

Date of issue: 2024-07-24

Applicant: Electronic Silk Road (Shenzhen) Tech Co., Ltd

Product: ESR Qi2 Wireless Car Charger with CryoBoost (HaloLock)

Model(s): 2B518

FCC ID: 2APEW-2B518

Shenzhen Microtest Co., Ltd.
<http://www.mtitest.cn>

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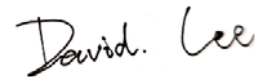
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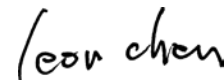
| Test Result Certification | |
|----------------------------------|---|
| Applicant: | Electronic Silk Road (Shenzhen) Tech Co., Ltd |
| Address: | Room 1601, Building 1D, Creative City, Liu Xian Avenue, Nan Shan District, Shenzhen, Guangdong, China |
| Manufacturer: | Electronic Silk Road (Shenzhen) Tech Co., Ltd |
| Address: | Room 1601, Building 1D, Creative City, Liu Xian Avenue, Nan Shan District, Shenzhen, Guangdong, China |
| Product description | |
| Product name: | ESR Qi2 Wireless Car Charger with CryoBoost (HaloLock) |
| Trademark: | ESR |
| Model name: | 2B518 |
| Series Model: | N/A |
| Standards: | FCC CFR 47 PART 1, § 1.1310 |
| Test method: | KDB 680106 D01 Wireless Power Transfer v04 |
| Date of Test | |
| Date of test: | 2024-07-04 to 2024-07-22 |
| Test result: | Pass |

Test Engineer :

(Maleah Deng)

Reviewed By :

(David Lee)

Approved By :

(Leon Chen)

1 General Description

1.1 Description of the EUT

| | |
|--------------------------|--|
| Product name: | ESR Qi2 Wireless Car Charger with CryoBoost (HaloLock) |
| Model name: | 2B518 |
| Series Model: | N/A |
| Model difference: | N/A |
| Electrical rating: | Input: DC 9V 2.2A Wireless Output:5W,7.5W,15W |
| Accessories: | Cable: USB-C to USB-C cable 100cm |
| Hardware version: | V1.0 |
| Software version: | V1.0 |
| Test sample(s) number: | MTi240614007-11S1001 |
| RF specification: | |
| Operation frequency: | 115-205kHz(5W, 7.5W), 360kHz(15W) |
| Modulation type: | ASK |
| Antenna type: | Coil Antenna |

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

| No. | Emission test modes |
|-------|-----------------------|
| Mode1 | Wireless Output(5W) |
| Mode2 | Wireless Output(7.5W) |
| Mode3 | Wireless Output(15W) |
| Mode4 | stand by |

1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Support equipment list | | | |
|------------------------|--------------|----------------|--------------|
| Description | Model | Serial No. | Manufacturer |
| HUAWEI QUICK CHARGE | HW-200200ZP1 | JN67LSN7N03451 | HUAWEI |
| PHONE | iPhone 15 | IOS17.3 | Apple |
| PHONE | iPhone 12 | IOS16.6 | Apple |
| Support cable list | | | |
| Description | Length (m) | From | To |
| / | / | / | / |

2 Measurement uncertainty

| Parameter | Expanded Uncertainty |
|---|----------------------|
| Magnetic field measurements(3kHz~10MHz) | ± 14.8% |
| Electric field measurements(3kHz~10MHz) | ± 17.5% |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 Test facilities and accreditations

3.1 Test laboratory

| | |
|------------------------|---|
| Test laboratory: | Shenzhen Microtest Co., Ltd. |
| Test site location: | 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| Telephone: | (86-755)88850135 |
| Fax: | (86-755)88850136 |
| CNAS Registration No.: | CNAS L5868 |
| FCC Registration No.: | 448573 |
| IC Registration No.: | 21760 |
| CABID: | CN0093 |

4 List of test equipment

| No. | Equipment | Manufacturer | Model | Serial No. | Cal. date | Cal. Due |
|----------|--|--------------|--------------------|------------|------------|------------|
| MTI-E143 | Near-field Electric and Magnetic Field Sensor System | SPEAG | MAGPy-8H3D +ED3 V2 | 3101 | 2024/03/12 | 2026/03/11 |

| No. | Equipment | Manufacturer | Model | Software version: | Cal. date | Cal. Due |
|-----------|-------------------|--------------|-----------|-------------------|-----------|----------|
| MTI-E016S | MPE test software | SPEAG | MAGPY 2.6 | 2.6 | / | / |

5 Test result

5.1.1 Requirement

§1.1310: 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 §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(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) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (i) Limits for Occupational/Controlled Exposure | | | | |
| 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 |
| 1500-100000 | | | 5 | <6 |
| (ii) 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 |
| 1500-100000 | | | 1.0 | <30 |

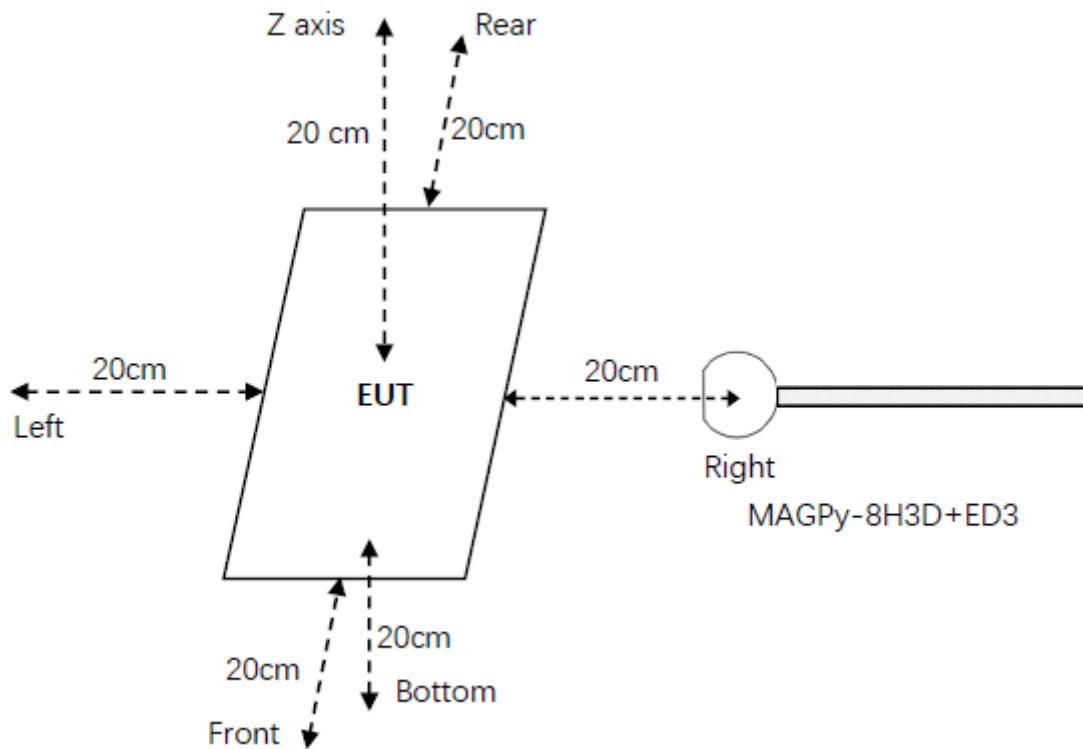
f = frequency in MHz

* = Plane-wave equivalent power density

Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

5.2 Test setup

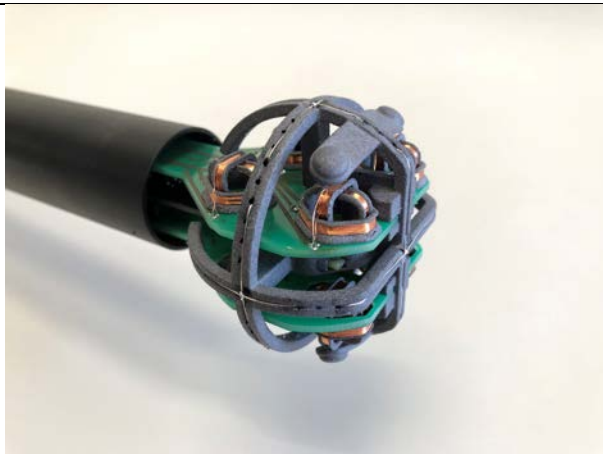


5.3 Test Procedures

- The RF exposure test was performed in anechoic chamber.
- E and H-field measurements should be made with these devices considered to meet the § 2.1091-Mobile conditions (“generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and [the nearest person]”).
- The highest emission level was recorded and compared with limit.
- The EUT was measured according to the dictates of KDB 680106 D01 Wireless Power Transfer v04.

5.4 Information of test equipment

| | |
|--------------------------------|---|
| Test equipment: MAGPy-8H3D+ED3 | |
| Diameter | 60mm |
| 8 isotropic H-field sensors | Concentric loops of 1cm ² arranged at the corner of a cube of 22mm side length |
| 1 isotropic E-field sensor | Orthogonal dipole/monopole (arm length: 50mm) |
| Measurement center | 18.5mm from the probe tip |
| Dimensions | 110*635*35mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2) |



5.5 Test results

Test condition 1: Mode 2 operating mode with client device (1 % battery status of client device)

| Probe Position | E -field (V/m) | | | H-field (A/m) | | |
|----------------|----------------|-------|----------------|---------------|-------|----------------|
| | Measurement | Limit | Percentage (%) | Measurement | Limit | Percentage (%) |
| Z axis | 1.74 | 614 | 0.28% | 0.03 | 1.63 | 1.84% |
| Left | 1.52 | | | 0.02 | | |
| Right | 1.46 | | | 0.01 | | |
| Front | 1.34 | | | 0.03 | | |
| Rear | 1.31 | | | 0.02 | | |
| bottom | 1.24 | | | 0.01 | | |

Test condition 2: Mode 2 operating mode with client device (50 % battery status of client device)

| Probe Position | E -field (V/m) | | | H-field (A/m) | | |
|----------------|----------------|-------|---------------------|---------------|-------|---------------------|
| | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| Z axis | 1.79 | 614 | 0.29% | 0.04 | 1.63 | 2.45% |
| Left | 1.55 | | | 0.02 | | |
| Right | 1.44 | | | 0.01 | | |
| Front | 1.34 | | | 0.03 | | |
| Rear | 1.36 | | | 0.03 | | |
| Bottom | 1.27 | | | 0.02 | | |

Test condition 3: Mode 2 operating mode with client device (99 % battery status of client device)

| Probe Position | E -field (V/m) | | | H-field (A/m) | | |
|----------------|----------------|-------|----------------|---------------|-------|----------------|
| | Measurement | Limit | Percentage (%) | Measurement | Limit | Percentage (%) |
| Z axis | 1.77 | 614 | 0.29% | 0.02 | 1.63 | 1.84% |
| Left | 1.53 | | | 0.02 | | |
| Right | 1.47 | | | 0.01 | | |
| Front | 1.36 | | | 0.03 | | |
| Rear | 1.32 | | | 0.02 | | |
| bottom | 1.25 | | | 0.01 | | |

Test condition 1: Mode 3 operating mode with client device (1 % battery status of client device)

| Probe Position | E-field (V/m) | | | H-field (A/m) | | |
|----------------|---------------|-------|----------------|---------------|-------|----------------|
| | Measurement | Limit | Percentage (%) | Measurement | Limit | Percentage (%) |
| Z axis | 1.64 | 614 | 0.27% | 0.02 | 1.63 | 1.84% |
| Left | 1.38 | | | 0.03 | | |
| Right | 1.26 | | | 0.02 | | |
| Front | 1.54 | | | 0.01 | | |
| Rear | 1.43 | | | 0.02 | | |
| bottom | 1.35 | | | 0.01 | | |

Test condition 2: Mode 3 operating mode with client device (50 % battery status of client device)

| Probe Position | E-field (V/m) | | | H-field (A/m) | | |
|----------------|---------------|-------|---------------------|---------------|-------|---------------------|
| | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| Z axis | 1.62 | 614 | 0.26% | 0.01 | 1.63 | 1.84% |
| Left | 1.37 | | | 0.03 | | |
| Right | 1.27 | | | 0.01 | | |
| Front | 1.55 | | | 0.01 | | |
| Rear | 1.43 | | | 0.02 | | |
| Bottom | 1.34 | | | 0.02 | | |

Test condition 3: Mode 3 operating mode with client device (99 % battery status of client device)

| Probe Position | E-field (V/m) | | | H-field (A/m) | | |
|----------------|---------------|-------|----------------|---------------|-------|----------------|
| | Measurement | Limit | Percentage (%) | Measurement | Limit | Percentage (%) |
| Z axis | 1.65 | 614 | 0.27% | 0.01 | 1.63 | 1.23% |
| Left | 1.40 | | | 0.02 | | |
| Right | 1.27 | | | 0.02 | | |
| Front | 1.53 | | | 0.02 | | |
| Rear | 1.42 | | | 0.01 | | |
| bottom | 1.37 | | | 0.02 | | |

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----