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RF Exposure Evaluation Report

Report No.: CQASZ20240601091E-02
Applicant: KERCHAN TECHNOLOGY GROUP LIMITED
Address of Applicant: FLAT/RM A&B, 15/F, NEICH TOWER 128 GLOUCESTER ROAD WANCHAI 999077 HongKong China
Equipment Under Test (EUT):
Product: Wireless Charging Sound Machine
Model No.: R9, R9BT, R9WG
Test Model No.: R9
Brand Name: Reacher
FCC ID: 2BHLT-R9
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB 680106 D01 RF Exposure Wireless Charging Base App v04r01
Date of Receipt: 2024-6-17
Date of Test: 2024-6-17 to 2024-6-26
Date of Issue: 2024-7-22
Test Result : **PASS***

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

Tested By: _____

(Joe Wang)

Reviewed By: _____

(Timo Lei)

Approved By: _____

(Alex Wang)



1 Version

Revision History Of Report

| Report No. | Version | Description | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20240601091E-02 | Rev.01 | Initial report | 2024-7-22 |

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3 General Information

3.1 Client Information

| | |
|--------------------------|---|
| Applicant: | KERCHAN TECHNOLOGY GROUP LIMITED |
| Address of Applicant: | FLAT/RM A&B, 15/F, NEICH TOWER 128 GLOUCESTER ROAD WANCHAI 999077 HongKong China |
| Manufacturer: | Shenzhen Hi-FiD Electronics Tech Co.,Ltd |
| Address of Manufacturer: | 4-5F, B7 Building, Hengfeng Industrial Town, Zhoushi Rd, Bao'an District, Shenzhen City, Guangdong Province |
| Factory: | Shenzhen Hi-FiD Electronics Tech Co.,Ltd |
| Address of Factory: | 4-5F, B7 Building, Hengfeng Industrial Town, Zhoushi Rd, Bao'an District, Shenzhen City, Guangdong Province |

3.2 General Description of EUT

| | |
|-------------------|--|
| Product Name: | Wireless Charging Sound Machine |
| Model No.: | R9, R9BT, R9WG |
| Test Model No.: | R9 |
| Brand Name: | Reacher |
| Software Version: | V1.0 |
| Hardware Version: | V1.0 |
| EUT Power Supply: | Charge by adapter MODEL: KA18F-0902000US INPUT: 100-240V~50/60Hz 0.55A Max OUTPUT: 9V $\overline{=}$ 2000mA |

3.3 NProduct Specification subjective to this standard

| | |
|----------------------------|-------------------|
| Equipment Category: | Non-ISM frequency |
| Operation Frequency range: | 115kHz~205kHz |
| Modulation Type: | Induction |
| Antenna Type: | Induction coil |
| Antenna Gain: | 0dBi |
| Power: | Output: 15W(Max) |

Note:

1. In section 15.31(m), regards to the operating frequency range less 1 MHz.

3.4 Test Environment

| Operating Environment: | |
|--|--|
| Temperature: | 25.5 °C |
| Humidity: | 53 % RH |
| Atmospheric Pressure: | 100.9 mbar |
| Test Mode: | |
| Mode a: | Keep the EUT Wireless Out Put for Wireless charge load 5W |
| Mode b: | Keep the EUT Wireless Out Put for Wireless charge load 7.5W |
| Mode c: | Keep the EUT Wireless Out Put for Wireless charge load 10W |
| Mode d: | Keep the EUT Wireless Out Put for Wireless charge load 15W (Max) |
| Note: The above test modes all include full load,empty load,and half load, The worst-case state reflected in this report is the fully loaded state | |

3.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

| Description | Manufacturer | Model No. | Certification | Supplied by |
|----------------------|--------------|-----------|---------------|-------------|
| Wireless charge load | / | / | / | CQA |

2) Cable

| Cable No. | Description | Manufacturer | Cable Type/Length | Supplied by |
|-----------|-------------|--------------|-------------------|-------------|
| / | / | / | / | / |

3.6 Test Location

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

3.7 Test Facility

• **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

3.8 Equipment List

| Test Equipment | Manufacturer | Model No. | Instrument No. | Calibration Date | Calibration Due Date |
|--------------------------------|--------------|-----------|----------------|------------------|----------------------|
| Electromagnetic field analyzer | Narda | EHP-200A | AC-012 | 2024/3/12 | 2025/3/12 |

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

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 |

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v04

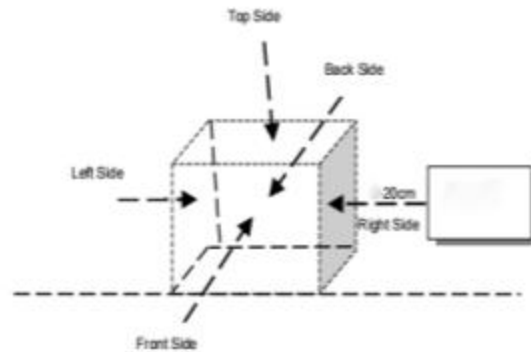
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: The aggregate H-field strengths 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit .

4.1.2 Test Procedure

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 15cm(Edge). E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 20 cm(Top) and 15cm(Edge) measured from the center of the probe(s) to the edge of the device.

4.1.3 Test Setup



Note: Position A: Front of EUT; Position B: Left of EUT; Position C: back of EUT; Position D: Right of EUT; Position E: Top of EUT(20 cm measure distance);

4.1.4 Test Results

The EUT does comply with item 5 KDB680106 D01 v04r01.

| Requirement | Device |
|---|--|
| 1.Power transfer frequency is less than 1 MHz | Yes. The operating frequency range are.Operating frequency range: 115 kHz - 205KHz |
| 2. Output power from each primary coil is less than or equal to 15 watts. | Yes. The maximum output power is:Wireless Output: 15W(Max) |
| 3. The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present,the coil pairs may be powered on at the sametime. | Yes. EUT has a source primary coil |
| 4. Client device is placed directly in contact with the transmitter. | Yes. The client device is placed directly in contact with the transmitter. |
| 5.Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion) | Yes. Mobile exposure conditions only. |

| | |
|---|---|
| <p>6. The aggregate H-field strengths anywhere at or beyond 20 cm surrounding the device, and 20cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.</p> | <p>Yes. See the test result in item 4.1.5</p> |
|---|---|

4.1.5 Test Results

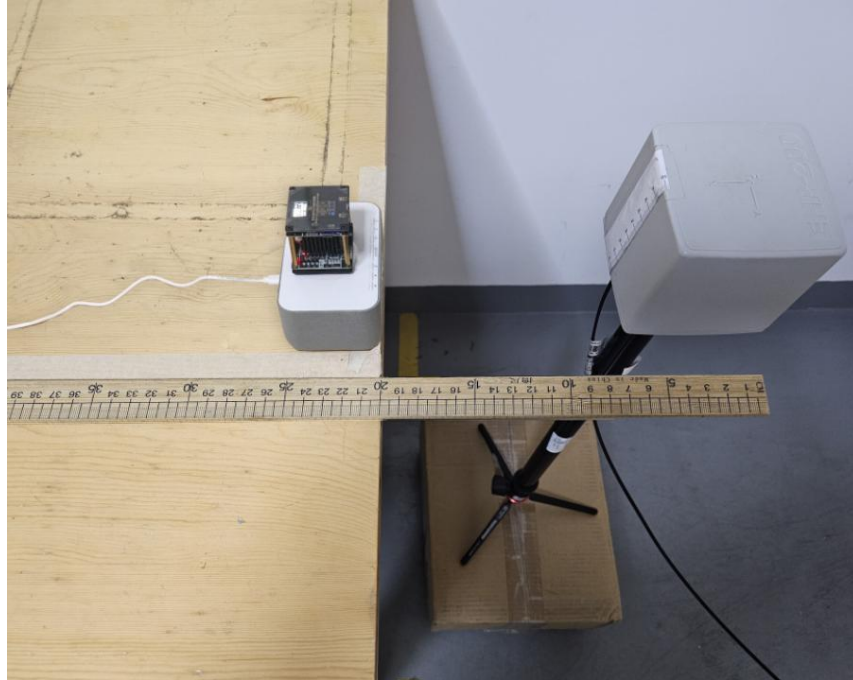
Test condition: Mode d 115KHz-205KHz

| Maximum permissible Exposure | | | | |
|------------------------------|------------|-------------------|---------------|--------------|
| Battery levels | Test sides | Test distance(cm) | E -field(V/m) | H-field(A/m) |
| <1% | Top | 20 | 0.7791 | 0.0441 |
| <1% | Left | 20 | 0.6656 | 0.0336 |
| <1% | Right | 20 | 0.2353 | 0.0341 |
| <1% | Front | 20 | 1.2137 | 0.0686 |
| <1% | Back | 20 | 0.3781 | 0.0521 |
| Limit | | | 614 | 1.63 |
| test result | | | PASS | PASS |

| Maximum permissible Exposure | | | | |
|------------------------------|------------|-------------------|---------------|--------------|
| Battery levels | Test sides | Test distance(cm) | E -field(V/m) | H-field(A/m) |
| <50% | Top | 20 | 0.6451 | 0.0331 |
| <50% | Left | 20 | 0.6565 | 0.0342 |
| <50% | Right | 20 | 0.4456 | 0.0312 |
| <50% | Front | 20 | 1.1421 | 0.0847 |
| <50% | Back | 20 | 0.4284 | 0.0501 |
| Limit | | | 614 | 1.63 |
| test result | | | PASS | PASS |

| Maximum permissible Exposure | | | | |
|------------------------------|------------|-------------------|---------------|--------------|
| Battery levels | Test sides | Test distance(cm) | E -field(V/m) | H-field(A/m) |
| <99% | Top | 20 | 0.8714 | 0.0344 |
| <99% | Left | 20 | 0.6562 | 0.0231 |
| <99% | Right | 20 | 0.4421 | 0.0252 |
| <99% | Front | 20 | 1.4431 | 0.0414 |
| <99% | Back | 20 | 0.3175 | 0.0412 |
| Limit | | | 614 | 1.63 |
| test result | | | PASS | PASS |

APPENDIX A: PHOTOGRAPHS OF TEST SETUP



*** END OF REROPT ***