**Shenzhen Huaxia Testing Technology Co., Ltd.**

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Report Template Version: V05
Report Template Revision Date: 2021-11-03

# RF Exposure Evaluation Report

| | |
|---|---|
| **Report No.:** | CQASZ20221202175E-02 |
| **Applicant:** | Shenzhen Itian Technology Co.,LTD |
| **Address of Applicant:** | 6F,Building D, Phase 2nd , Anfeng Industrial Park , Dalang Street , Longhua District,Shenzhen , China |
| **Equipment Under Test (EUT):** | |
| **Product:** | Fast Wireless Charger |
| **Model No.:** | U8A,U8S |
| **Test Model No.:** | U8A |
| **Brand Name:** | ITIAN |
| FCC ID: | 2AUDO-U8AU8S |
| **Standards:** | 47 CFR Part 1.1307 |
| | 47 CFR Part 1.1310 |
| | KDB 680106 D01 RF Exposure Wireless Charging Base App v03r01 |
| **Date of Receipt**: | 2022-12-15 |
| **Date of Test:** | 2022-12-15 to 2022-12-22 |
| **Date of Issue:** | 2022-12-27 |
| **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:*** _____
***( Jack Ai )***

# 1 Version

**Revision History Of Report**

| Report No. | Version | Description | Issue Date |
|---|---|---|---|
| CQASZ20221202175E-02 | Rev.01 | Initial report | 2022-12-27 |

# 2 Contents

# 3 General Information

## 3.1 Client Information

| | |
|---|---|
| Applicant: | Shenzhen Itian Technology Co.,LTD |
| Address of Applicant: | 6F,Building D, Phase 2nd , Anfeng Industrial Park , Dalang Street , Longhua District,Shenzhen , China |
| Manufacturer: | Shenzhen Itian Technology Co.,LTD |
| Address of Manufacturer: | 6F,Building D, Phase 2nd , Anfeng Industrial Park , Dalang Street , Longhua District,Shenzhen , China |
| Factory: | Shenzhen Itian Technology Co.,LTD |
| Address of Factory: | 6F,Building D, Phase 2nd , Anfeng Industrial Park , Dalang Street , Longhua District,Shenzhen , China |

## 3.2 General Description of EUT

| | |
|---|---|
| Product Name: | Fast Wireless Charger |
| Model No.: | U8A,U8S |
| Test Model No.: | U8A |
| Brand Name: | ITIAN |
| Software Version: | U8A-V1 |
| Hardware Version: | U8A-V1 |
| EUT Power Supply: | DC 5V/1A |

## 3.3 Product Specification subjective to this standard

| | |
|---|---|
| Equipment Category: | Non-ISM frequency |
| Operation Frequency range: | 110kHz~205kHz |
| Modulation Type: | Induction |
| Antenna Type: | Induction coil |
| Antenna Gain: | 0dBi |

Note:

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

2.Model No.: U8A,U8S

Only the model U8A was tested, since the circuit design, layout, components used and internal wiring are all the same, except for the color difference.

## 3.4 Test Environment

| | |
|---|---|
| **Operating Environment:** | |
| Temperature: | 25.5 °C |
| Humidity: | 53 % RH |
| Atmospheric Pressure: | 1009 mbar |
| **Test Mode:** | |
| Mode a: | Keep the EUT Wireless Out Put 3W |

## 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 |
|---|---|---|---|---|
| Apple Watch | Apple | / | / | CQA |
| PC | APPLE | MacBook Pro | / | 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 |
|---|---|---|---|---|---|
| Broadband Field Meter | Narda Safety Test Solutions GmbH | NBM-520 | SB9873 | 2022/9/9 | 2023/9/8 |
| Magnetic field probe | HIOKI | 3470 | SB9058/04 | 2022/9/9 | 2023/9/8 |
| E-field probe | Narda | EF0391 | SB9059 | 2022/9/9 | 2023/9/8 |

# 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 v03

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.

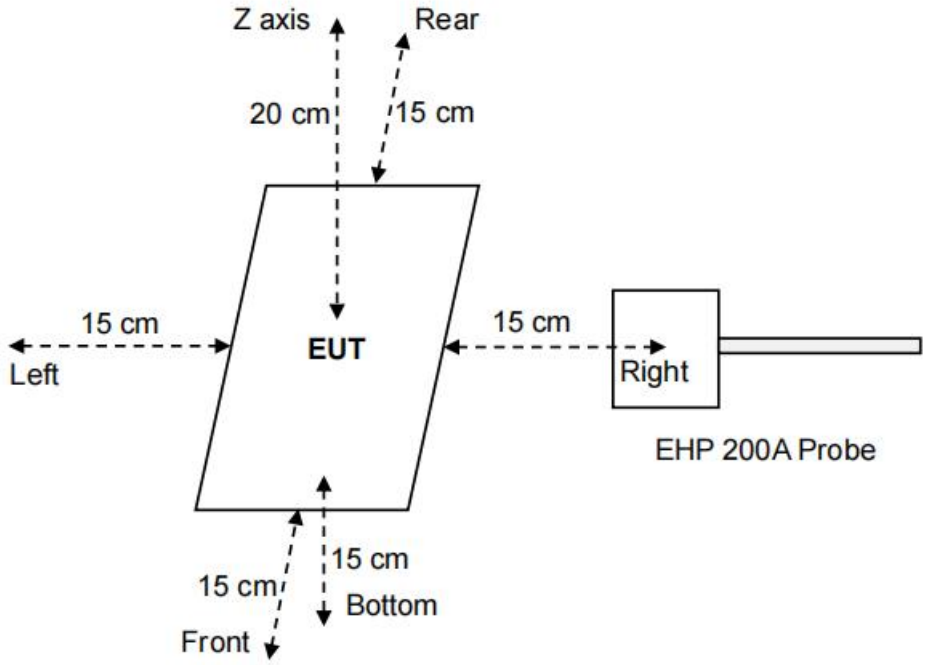
Note 4: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit .

### 4.1.2 Test Procedure

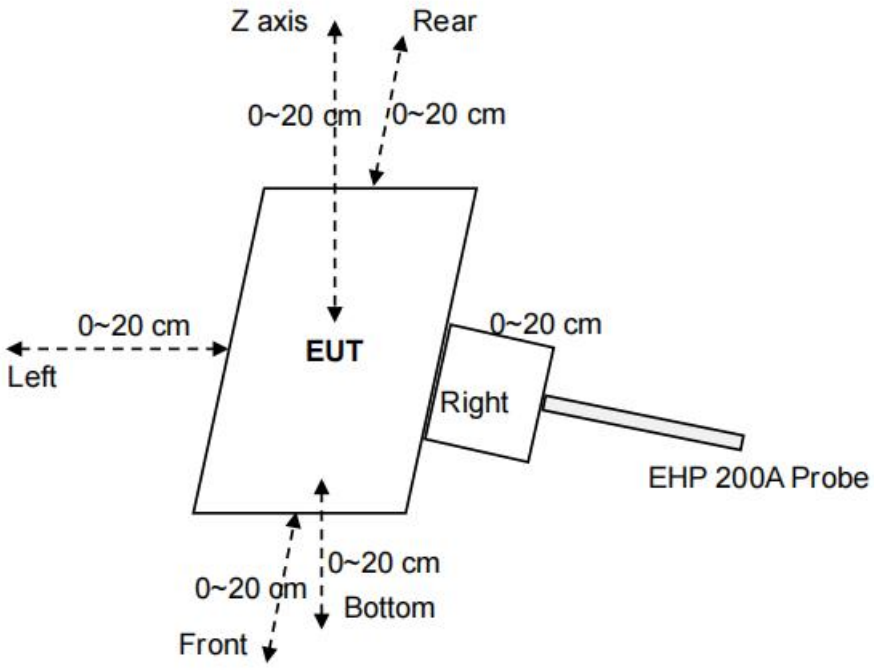
For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 15cm(Edge). E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements 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

For mobile exposure conditions:




For portable exposure conditions:




Note: Perform H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting

from as close as possible out to 20 cm

### 4.1.4 Test Results

The EUT does comply with item 5 KDB680106 D01 v03r01.

(1) Power transfer frequency is less than 1 MHz.
(Conform)

(2) Output power from each primary coil is less than or equal to 15 watts.
(Conform)

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
(Conform)

(4) Client device is placed directly in contact with the transmitter.
(Conform)

(5) . Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
(Conform)

(7) the H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 20 cm were also evaluated for portable use condition.

Test condition: Mode a

H-field strength test result:

test distance: 0cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.7854 | 1.63 | 74.5% |
| | Left | 0.84587 | | |
| | Right | 0.75415 | | |
| | Front | 0.48535 | | |
| | Rear | 1.2145 | | |
| | Bottom | 0.8974 | | |

test distance: 2cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.5851 | 1.63 | 67.6% |
| | Left | 0.7412 | | |
| | Right | 0.5487 | | |
| | Front | 0.3125 | | |
| | Rear | 1.1021 | | |
| | Bottom | 0.6584 | | |

test distance: 4cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.1252 | 1.63 | 60.5% |
| | Left | 0.2158 | | |
| | Right | 0.1557 | | |
| | Front | 0.095 | | |
| | Rear | 0.9854 | | |
| | Bottom | 0.4123 | | |

test distance: 6cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.1015 | 1.63 | 51.9% |
| | Left | 0.1871 | | |
| | Right | 0.1241 | | |
| | Front | 0.074 | | |
| | Rear | 0.8452 | | |
| | Bottom | 0.2541 | | |

test distance: 8cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0874 | 1.63 | 27.9% |
| | Left | 0.0984 | | |
| | Right | 0.0852 | | |
| | Front | 0.0451 | | |
| | Rear | 0.4541 | | |
| | Bottom | 0.0897 | | |

test distance: 10cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0741 | 1.63 | 25.4% |
| | Left | 0.0841 | | |
| | Right | 0.0412 | | |
| | Front | 0.0410 | | |
| | Rear | 0.4142 | | |
| | Bottom | 0.0741 | | |

test distance: 12cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0412 | 1.63 | 5.2% |
| | Left | 0.0487 | | |
| | Right | 0.0450 | | |
| | Front | 0.0411 | | |
| | Rear | 0.0854 | | |
| | Bottom | 0.0415 | | |

test distance: 14cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0398 | 1.63 | 2.77% |
| | Left | 0.0412 | | |
| | Right | 0.0452 | | |
| | Front | 0.0384 | | |
| | Rear | 0.0445 | | |
| | Bottom | 0.0435 | | |

test distance: 16cm

| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0421 | 1.63 | 2.77% |
| | Left | 0.0401 | | |
| | Right | 0.0411 | | |
| | Front | 0.0344 | | |
| | Rear | 0.0451 | | |
| | Bottom | 0.0418 | | |

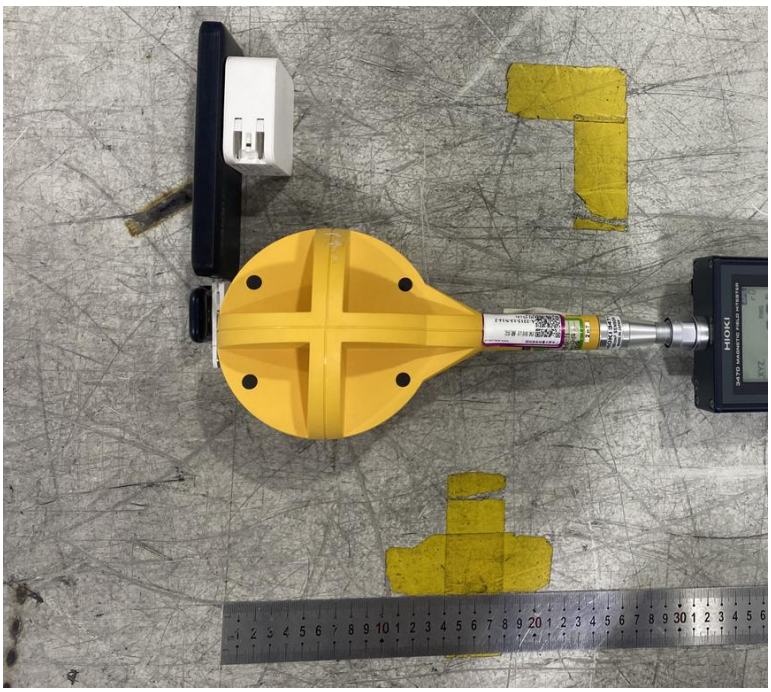
test distance: 18cm

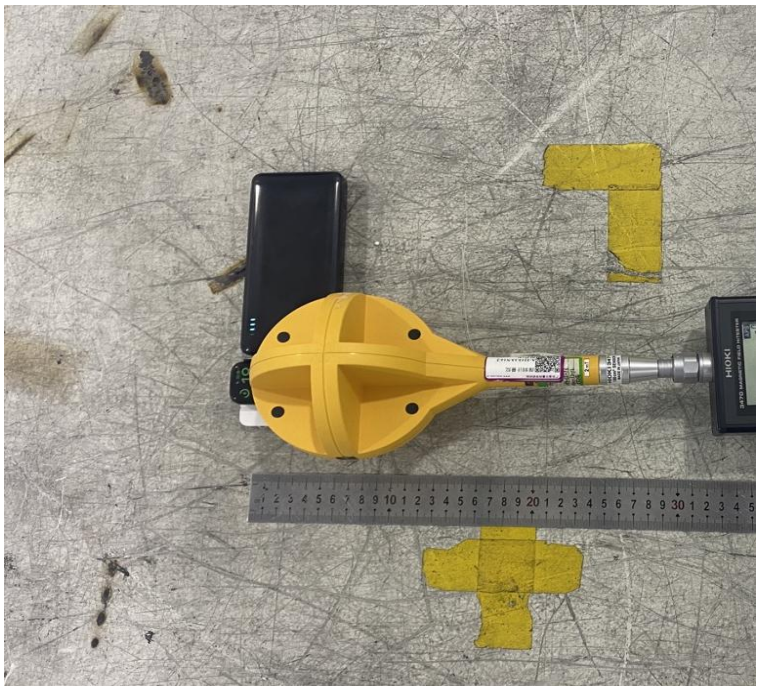
| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0415 | 1.63 | 2.56% |
| | Left | 0.0401 | | |
| | Right | 0.0412 | | |
| | Front | 0.0409 | | |
| | Rear | 0.0418 | | |
| | Bottom | 0.0401 | | |

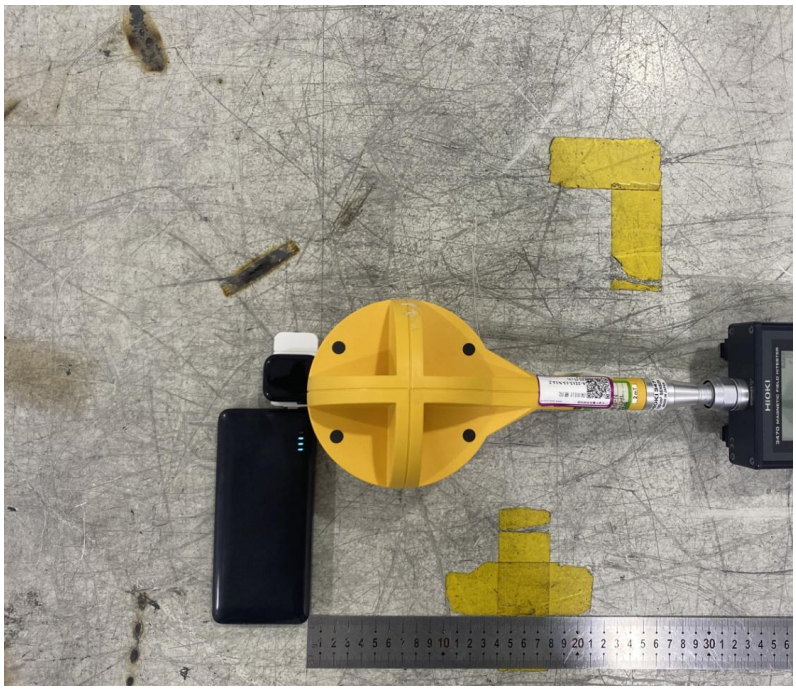
test distance: 20cm

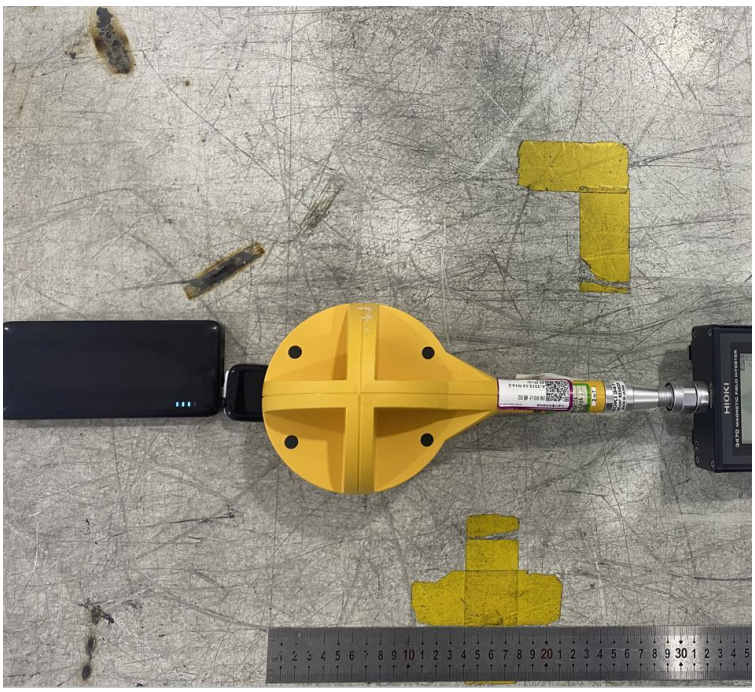
| Antenna | Probe Position | H–field (A/m) | | |
|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0421 | 1.63 | 2.58% |
| | Left | 0.0384 | | |
| | Right | 0.0374 | | |
| | Front | 0.0389 | | |
| | Rear | 0.0315 | | |
| | Bottom | 0.0317 | | |

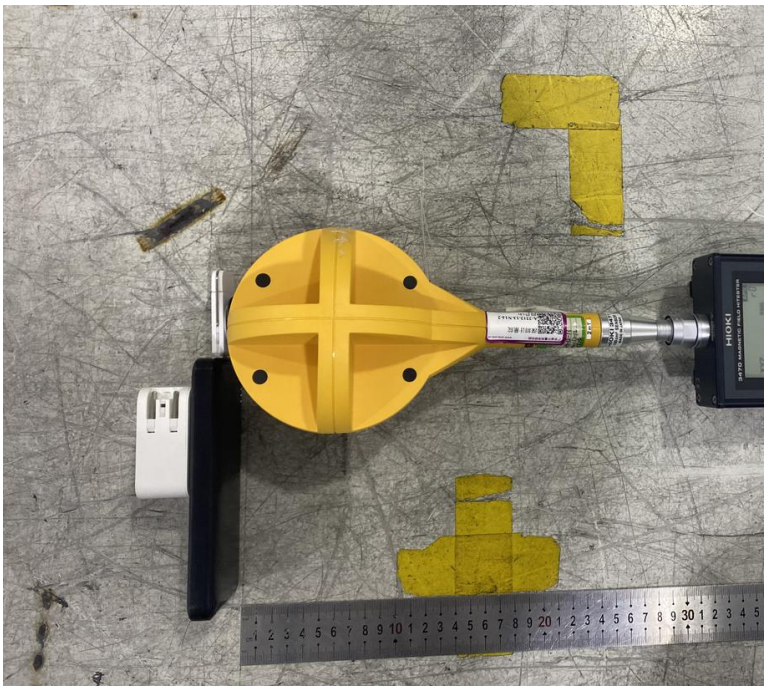
# APPENDIX A: PHOTOGRAPHS OF TEST SETUP

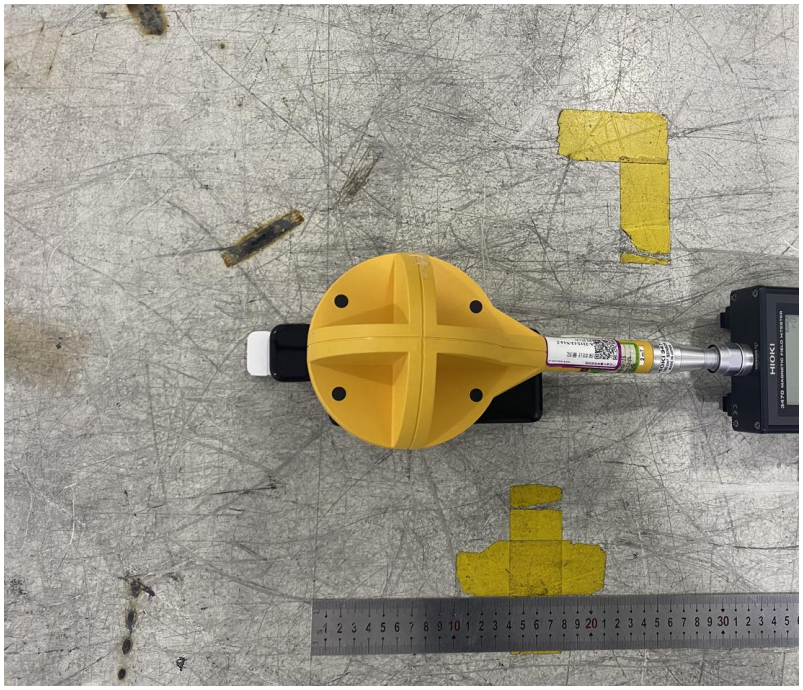












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