



Test Report

FCC ID: 2BNPG-MH101

Applicant: Shenzhen XuHangDa Electronic Co., Ltd

Address: 3rd Floor, B Zone, Xuezi Wei, Yabian Community, Shajing Street, Bao'an District, Shenzhen City

Manufacturer: Shenzhen XuHangDa Electronic Co., Ltd

Address: 3rd Floor, B Zone, Xuezi Wei, Yabian Community, Shajing Street, Bao'an District, Shenzhen City

EUT: Portable AC Outlet Power Bank

Trade Mark: N/A

Model Number: MH101
MH102

Date of Receipt: Jan. 06, 2025

Test Date: Jan. 06, 2025 - Jan. 18, 2025

Date of Report: Jan. 18, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.
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Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.
2. The test results in this test report are only responsible for the samples submitted
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5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



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| Test Result Certification | |
|----------------------------------|--|
| Applicant: | Shenzhen XuHangDa Electronic Co., Ltd |
| Address: | 3rd Floor, B Zone, Xuezi Wei, Yabian Community, Shajing Street, Bao'an District, Shenzhen City |
| Manufacturer: | Shenzhen XuHangDa Electronic Co., Ltd |
| Address: | 3rd Floor, B Zone, Xuezi Wei, Yabian Community, Shajing Street, Bao'an District, Shenzhen City |
| Product description | |
| Product name: | Portable AC Outlet Power Bank |
| Trademark: | N/A |
| Model name: | MH101 |
| Series Model: | MH102 |
| Standards: | FCC CFR 47 PART 1, § 1.1310 FCC CFR 47 PART 2, § 2.1093 |
| Test method: | KDB 680106 D01 Wireless Power Transfer v04 |
| Date of Test | |
| Date of test: | Jan. 06, 2025 - Jan. 18, 2025 |
| Test result: | Pass |



1 General Description

1.1 Description of the EUT

| | |
|--------------------------|---|
| Product Name: | Portable AC Outlet Power Bank |
| Trade Mark: | N/A |
| Model No.: | MH101 |
| Series Model: | MH102 |
| Model difference: | All models are same as the samples except model name and appearance color, they have the same structure and circuit. |
| Electrical rating: | <p>Battery Capacity: 10000mAh/3.85V/38.5Wh</p> <p>Rated Capacity: 5300mAh(5V---3A)</p> <p>Adapter Mode:</p> <p>AC Input: 100-240VAC, 50/60Hz 0.5A(Max)</p> <p>USB/Type-C/Lightning Output: 5V---2.4A (Max)</p> <p>Wireless Output: 5W(Max)</p> <p>Mobile Power Mode:</p> <p>Type-C Input: 5V---3A, 9V---2A, 12V---1.5A</p> <p>Type-C Output: 5V---3A, 9V---2.22A, 12V---1.67A 20W(Max)</p> <p>Lightning Input: 5V---2.4A, 9V---2A</p> <p>Lightning Output: 5V---3A, 9V---2.22A, 12V---1.67A 20W(Max)</p> <p>USB Output: 5V---3A, 9V---2A, 12V---1.5A 22.5W(Max)</p> <p>Wireless Output: 5W/7.5W/10W/15W(Max)</p> <p>Gross Output: 5V---3A (Max)</p> |
| Accessories: | / |
| RF specification: | |
| Operation frequency: | 115-205kHz |
| Modulation type: | MSK |
| Antenna type: | Coil |

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(15W) |
| Mode2 | Charging+Wireless Output(15W) |
| Mode3 | Standby |

Note: All of the listed test mode were tested, only the data of the worst mode (Mode1) is recorded in the report



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 |
| XIAOMI Laptop Portable adapter(65W) | AD65G | / | XIAOMI |
| Mobile phone (Provide by test lab) | Galaxy S21 5G | / | SAMSUNG |

2 Measurement uncertainty

| Parameter | Expanded Uncertainty |
|--|----------------------|
| Magnetic field measurement (9kHz~30MHz) | ±7.8% |
| Electric field measurements (9kHz~30MHz) | ±7.8% |

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 DL Testing Technology Co., Ltd. |
| Test site location: | 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| FCC Test Firm Registration Number: | 854456 |
| Designation Number: | CN1307 |
| IC Registered No.: | 27485 |
| CAB ID.: | CN0118 |



4 List of test equipment

| Equipment | Manufacturer | Model | Serial No. | Cal. date | Cal. Due |
|--|--------------|----------|------------|----------------|----------------|
| Electric and Magnetic Field Probe – Analyzer | Narda | EHP-200A | 101166 | June. 24, 2024 | June. 25, 2025 |



5 Test result

5.1 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

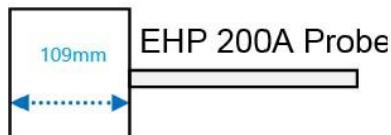
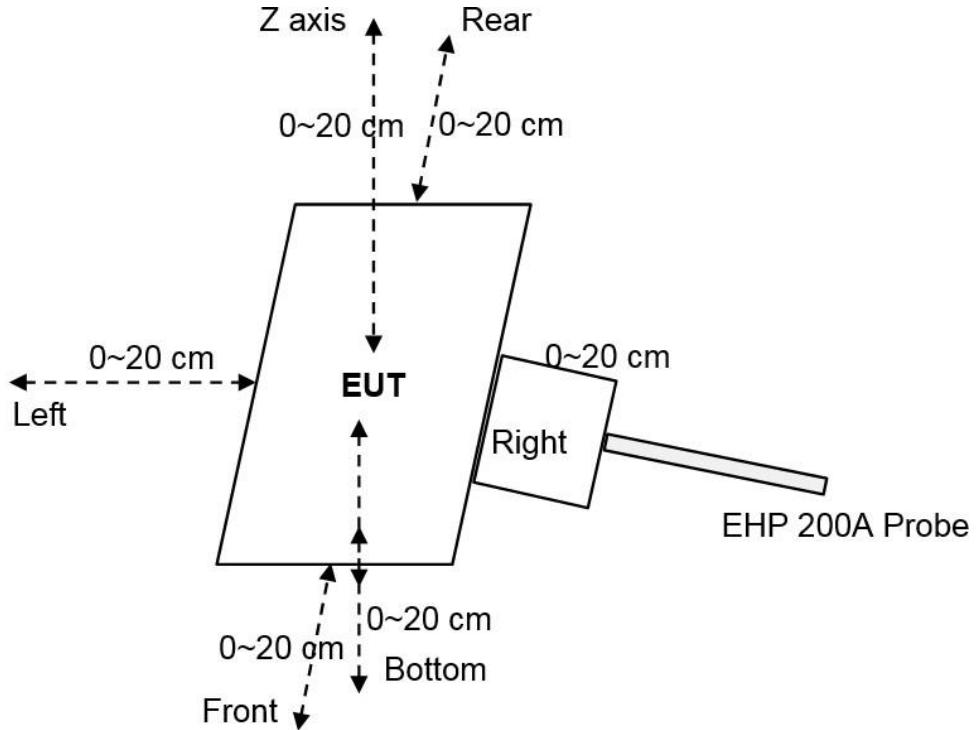
* = Plane-wave equivalent power density

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

For portable exposure conditions:



Notes: The EHP 200A Probe has a diameter of 10.9cm and a radius of 5.45cm.



5.3 Test Procedures

For portable exposure conditions:

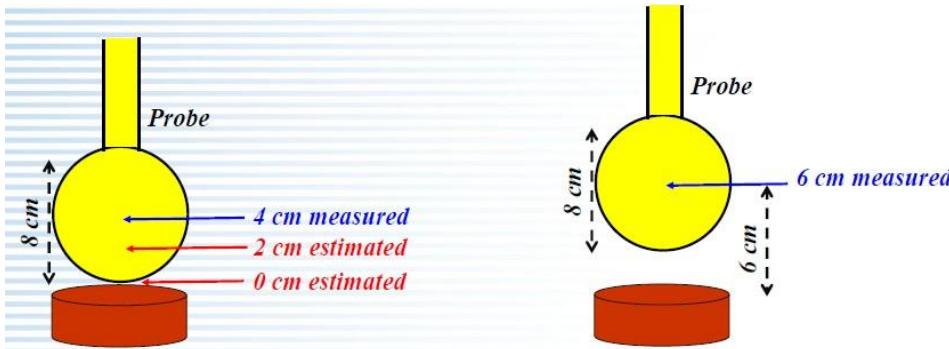
- a. The RF exposure test was performed in anechoic chamber.
- b. Perform H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 20 cm
- c. The highest emission level was recorded and compared with limit.

Notes: The EUT was setted to transmit continuously with the duty cycle of 100%.

5.4 Test results

For portable exposure condition: Note:

- (1). The portable test modes have covered the considerations of the mobile test, only record the test data of the portable conditions in this report.
- (2) Operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.
- (3) 20-2cm is the actual test value, and 0 cm is the estimated value.
- (4) Perform H-field/E-field measurements are taken along all three axes the device from 0cm~20cm in 2cm minimum increment for each edge surface of the host/client pair. If the center of the probe sensing element is more than 5mm from the probe outer edge, the field strengths need to be estimated for the positions that are not reachable.



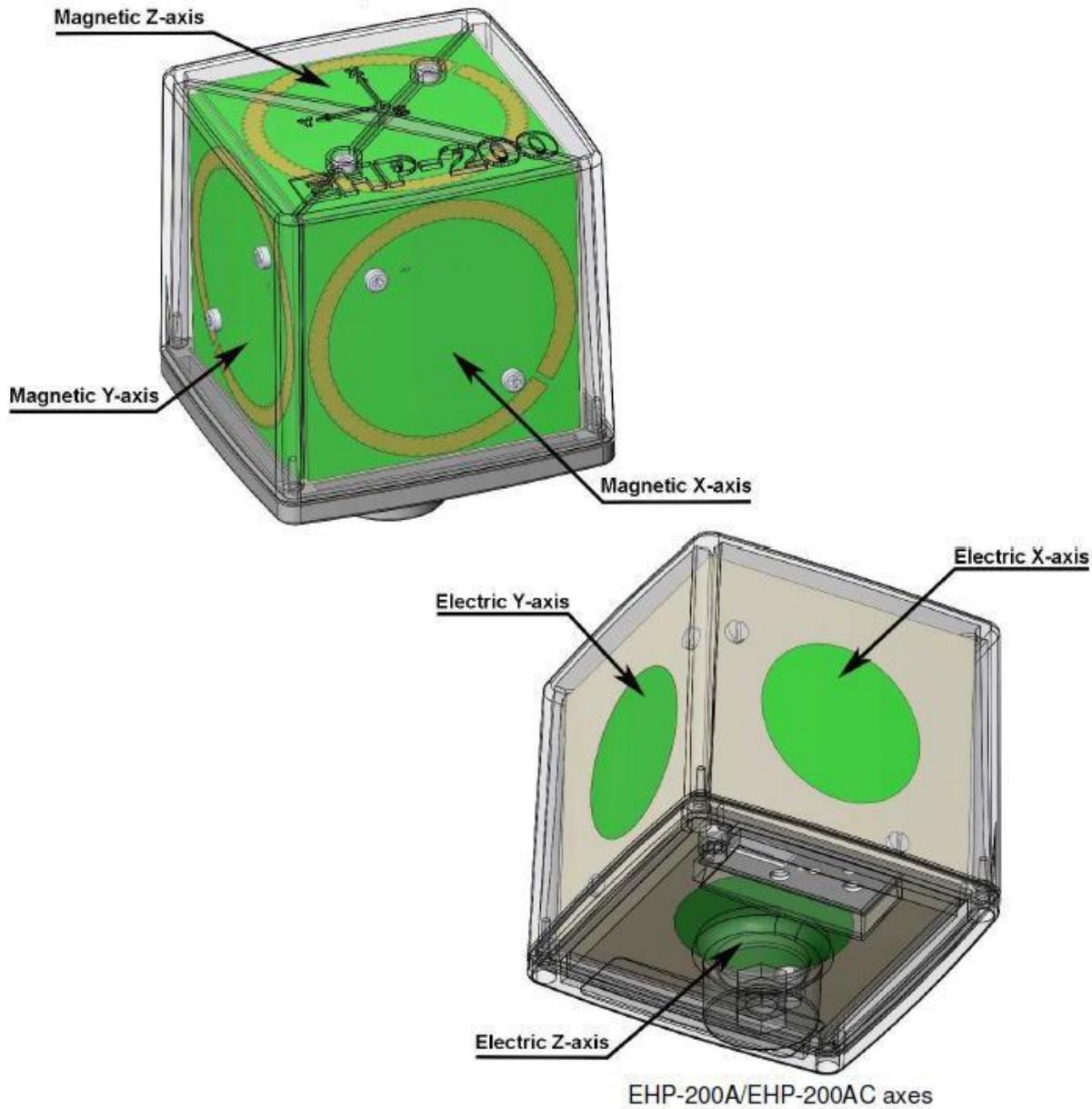
*Example of probe measurements in points close to the device surface:
estimates compared with measurements at 4 and 6 cm provide validation*

According to Calibration information and specification about EHP-200A, The Probe EHP-200A's sensitive elements center are 8mm below the external surface, and the dimensions is 92x92x109mm. so the actual 0cm field strengths need to be estimated for the positions that are not reachable. The Extrapolated Value Calculation Method please below). And the result of test distance 2cm~20cm was measured value.

| Probe | Length | Width | Height |
|-------|--------|-------|--------|
| | 109mm | 92mm | 92mm |



Note: EUT is a loop/coil emitting structure, so E-field not required. Just recorded the H-field value.

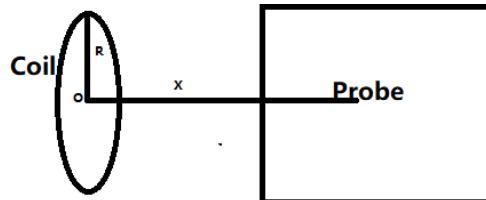


The sensitive elements are located approximately 8 mm below the external surface

(5) Estimated method for portable RF Exposure condition:

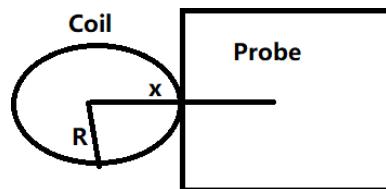
We use Biot-Savart formula theory to estimate the strength of the magnetic field that the measuring instrument cannot measure. According to Biot-Savart formula:

Top & Bottom Side:



$$B = \frac{\mu_0 * I * N * R^2}{2 * (R^2 + x^2)^{3/2}}$$

Front, left, right & rear Side:



$$B = \frac{\mu_0 * I * N}{2 * x}$$

B: means H-field value;

μ_0 is space permeability; $\mu_0=4\pi*10^{-7}$;

I: A current element passing through a coil;

R: means the Radius of coil(According to provided Antenna specification: We can get the minimum $R=38/2=19\text{mm}=0.019\text{m}$);

Test Distance: The distance from the sensing element of the probe to the edge of the device surface.

x: means the center of the coil to the sensing elements of the probe. (For top & bottom side: $x=\text{test distance}$; For other side: $x=\text{test distance}+R$)

N: Number of turns, according to providing "Antenna specification" files: $N=10$.

(6) For validation purposes: If the value to show a **30% agreement** between the mode and the (E- and/or H-field) probe measurements for the two closest points to the device surface, and with 2cm increments. Then this extrapolation method is reasonable.

Note: The percent ratio of agreement is the difference between the estimated and measured values divided by the average of the estimated and measured values.

**Validation:**

| Magnetic Field Emissions | | | | | | | |
|---------------------------------|---|---------------|---------------|---------------|---------------|---------------|--------------------------------|
| Test Distance(cm) | Top | Left | Right | Rear | Front | Bottom | Conclusion |
| | Unit: Agreement (%); H-field (A/m) | | | | | | |
| Agreement -2cm | 12.41 | 20.52 | 23.41 | 24.25 | 12.14 | 11.57 | |
| 2cm(estimated) | 0.3135 | 0.1241 | 0.1236 | 0.1147 | 0.1236 | 0.3214 | Compliance (Within 30%) |
| 2cm(measured) | 0.3035 | 0.1141 | 0.1236 | 0.1254 | 0.1354 | 0.2125 | |

| Magnetic Field Emissions | | | | | | | |
|---------------------------------|---|---------------|---------------|---------------|---------------|---------------|--------------------------------|
| Test Distance(cm) | Top | Left | Right | Rear | Front | Bottom | Conclusion |
| | Unit: Agreement (%); H-field (A/m) | | | | | | |
| Agreement -2cm | 12.35 | 11.52 | 22.52 | 11.58 | 22.41 | 24.58 | |
| 4cm(estimated) | 0.1214 | 0.0142 | 0.0141 | 0.0241 | 0.0214 | 0.1415 | Compliance (Within 30%) |
| 4cm(measured) | 0.1236 | 0.0236 | 0.0236 | 0.0236 | 0.0123 | 0.0362 | |

**Test condition 1: Mode1 operating mode with client device (1 % battery status of client device)****-estimated value: 0cm****Estimated value for H-Filed Strength at 0 cm from the edges surrounding the EUT (A/m)**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 1.0136 | 1.63 | 73.11% |
| | Left | 1.0415 | | |
| | Right | 1.1362 | | |
| | Front | 1.0214 | | |
| | Rear | 0.9214 | | |
| | Bottom | 0.5214 | | |

Test condition 2: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance: 2cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.3362 | 1.63 | 21.48% |
| | Left | 0.1415 | | |
| | Right | 0.1254 | | |
| | Front | 0.1632 | | |
| | Rear | 0.1214 | | |
| | Bottom | 0.2236 | | |

**Test condition 3: Mode1 operating mode with client device (1 % battery status of client device)****- Test distance 4cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.1214 | 1.63 | 6.81% |
| | Left | 0.0632 | | |
| | Right | 0.0415 | | |
| | Front | 0.0254 | | |
| | Rear | 0.0214 | | |
| | Bottom | 0.0263 | | |

Test condition 4: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 6cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0214 | 1.63 | 6.27% |
| | Left | 0.0521 | | |
| | Right | 0.0174 | | |
| | Front | 0.0521 | | |
| | Rear | 0.0361 | | |
| | Bottom | 0.0412 | | |

Test condition 5: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 8cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0412 | 1.63 | 5.76% |
| | Left | 0.0362 | | |
| | Right | 0.0521 | | |
| | Front | 0.0417 | | |
| | Rear | 0.0254 | | |
| | Bottom | 0.0214 | | |

**Test condition 6: Mode1 operating mode with client device (1 % battery status of client device)****- Test distance 10cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0362 | 1.63 | 5.17% |
| | Left | 0.0521 | | |
| | Right | 0.0241 | | |
| | Front | 0.0256 | | |
| | Rear | 0.0413 | | |
| | Bottom | 0.0521 | | |

Test condition 7: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 12cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0325 | 1.63 | 4.74% |
| | Left | 0.0414 | | |
| | Right | 0.0214 | | |
| | Front | 0.0632 | | |
| | Rear | 0.0254 | | |
| | Bottom | 0.0521 | | |

Test condition 8: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 14cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0362 | 1.63 | 4.50% |
| | Left | 0.0521 | | |
| | Right | 0.0631 | | |
| | Front | 0.0541 | | |
| | Rear | 0.0524 | | |
| | Bottom | 0.0632 | | |

**Test condition 9: Mode1 operating mode with client device (1 % battery status of client device)****- Test distance 16cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0521 | 1.63 | 4.11% |
| | Left | 0.0214 | | |
| | Right | 0.0631 | | |
| | Front | 0.0514 | | |
| | Rear | 0.0631 | | |
| | Bottom | 0.0258 | | |

Test condition 10: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 18cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0632 | 1.63 | 4.07% |
| | Left | 0.0412 | | |
| | Right | 0.0362 | | |
| | Front | 0.0415 | | |
| | Rear | 0.0214 | | |
| | Bottom | 0.0364 | | |

Test condition 11: Mode1 operating mode with client device (1 % battery status of client device)**- Test distance 20cm**

| Antenna | Probe Position | H-field (A/m) | | |
|---------|----------------|---------------|-------|---------------------|
| | | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.0214 | 1.63 | 3.83% |
| | Left | 0.0632 | | |
| | Right | 0.0214 | | |
| | Front | 0.0521 | | |
| | Rear | 0.0362 | | |
| | Bottom | 0.0521 | | |

Photographs of the Test Setup

Portable exposure conditions(0cm)

| Front | Left |
|---|--|
|  |  |
| Right | Rear |
|  |  |
| Top | Below |
|  |  |



Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----