Testing Laboratory 1190

# Maximum Permissible Exposure

| | | |
|---|---|---|
| **FCC ID** | : | **HV4PTH460** |
| **Equipment** | : | **Pen tablet** |
| **Brand Name** | : | **Wacom** |
| **Model Name** | : | **PTH-460*******(*) may be alphanumeric/symbol or blanck" as usual.** |
| **Applicant/ Manufacturer** | : | **Wacom Co., Ltd. 2-510-1, Toyonodai, Kazo-shi, Saitama, 349-1148 Japan** |
| **Standard** | : | **47 CFR Part 2.1091** |

**The product was received on Dec. 03, 2018, and testing was started from Dec. 13, 2018 and completed on Dec. 13, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in KDB680106 D01 RF Exposure Wireless Charging Apps v03 and shown compliance with the applicable technical standards.**

**The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of United States government.**

**The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.**

**Approved by: Phoenix Chen**

*SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory*

*No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)*

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# History of this test report

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FA8N2621 | 01 | Initial issue of report | Jan. 11, 2019 |
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# Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---|---|---|---|---|
| 1.6 | - | Maximum Permissible Exposure | PASS | - |

| **Declaration of Conformity:** |
|---|
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| **Comments and Explanations:** |
| None. |

**Reviewed by: Sam Tsai**

**Report Producer: Jenny Yang**

# 1 Human Exposure Assessment

## 1.1 Maximum Permissible Exposure

### 1.1.1 Limit of Maximum Permissible Exposure

| Limits for Occupational / Controlled Exposure | | | | |
|---|---|---|---|---|
| **Frequency Range (MHz)** | **Electric Field Strength (E) (V/m)** | **Magnetic Field Strength (H) (A/m)** | **Power Density (S) (mW/ cm²)** | **Averaging Time \|E\|²,\|H\|² or S (minutes)** |
| 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 |
| **Limits for General Population / Uncontrolled Exposure** | | | | |
| **Frequency Range (MHz)** | **Electric Field Strength (E) (V/m)** | **Magnetic Field Strength (H) (A/m)** | **Power Density (S) (mW/ cm²)** | **Averaging Time \|E\|²,\|H\|² or S (minutes)** |
| 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<br>Note 2: For the applicable limit, see FCC 1.1310 | | | | |

## 1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2.1091
- KDB680106 D01 RF Exposure Wireless Charging Apps v03

## 1.3 Testing Location Information

| Testing Location | | | | | |
|---|---|---|---|---|---|
| ☒ | HWA YA | ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. | | | |
| | | TEL : 886-3-327-3456 FAX : 886-3-327-0973 | | | |
| Test site Designation No. TW1190 with FCC. | | | | | |
| **Test Condition** | **Test Site No.** | **Test Engineer** | **Test Environment** | **Test Date** | |
| RF Conducted | TH01-HY | Streak | 23.3°C / 63% | 13/Dec/2018 | |

## 1.4 Accessories

| Accessories Information | | | | |
|---|---|---|---|---|
| Battery | **Brand Name** | Wacom | **Model Name** | APP00203 |
| | **Manufacturer** | APACK | **SN** | APP-12F-A45D4I-ACE-1 |
| | **Power Rating** | 3.7Vdc, 1350 mAh | **Type** | Li-ion, Y |
| Pen Stand | **Brand Name** | Wacom | **Model Name** | PST-A066 |
| Digital Pen | **Brand Name** | Wacom | **Model Name** | KP-504E |
| USB Type-C Cable | **In/Out door** | In door | | |
| | **Power Cord** | 2meter, shielded cable, w/o ferrite core | | |

Note: Regarding to more detail and other information, please refer to user manual.

## 1.5 Support Equipment

| Support Equipment | | | |
|---|---|---|---|
| **No.** | **Equipment** | **Brand Name** | **Model Name** |
| 1 | Notebook | DELL | E5410 |
| 2 | Adapter for NB | DELL | HA65NM130 |
| 3 | AC Power Source | GW | APS-9102 |

## 1.6 The Worst Condition

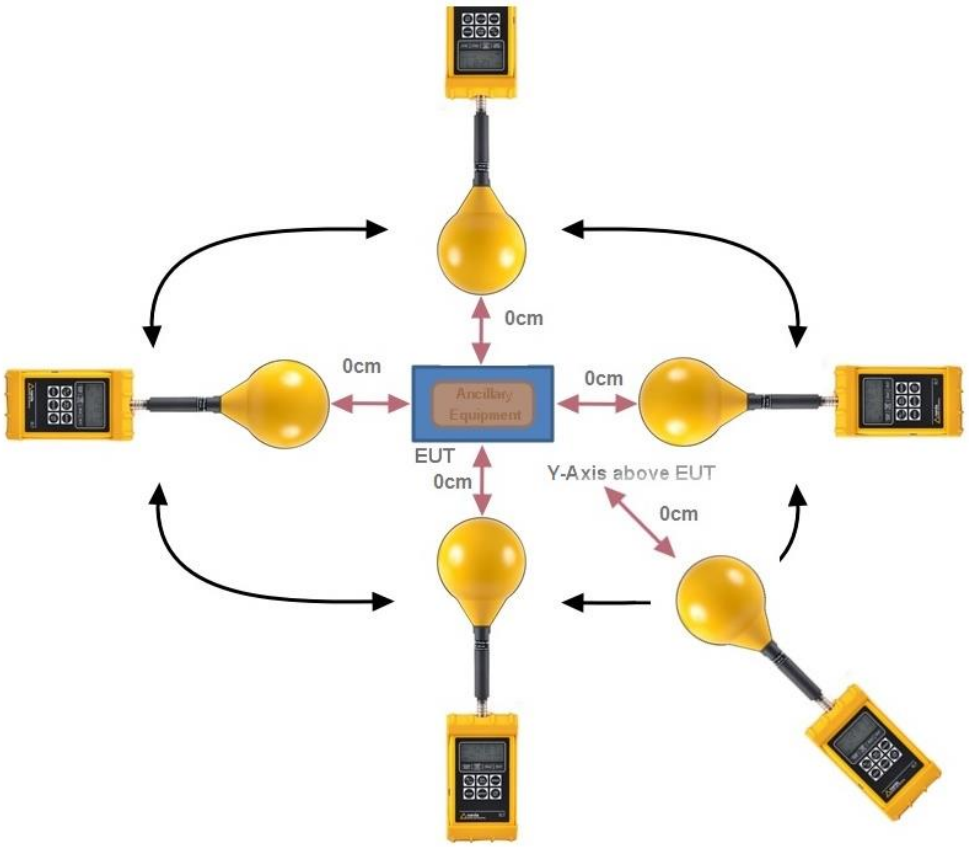
| Ancillary Equipment | Charging Condition | Worst Charging Condition |
|---|---|---|
| Notebook | Operating | Operating |

### 1.6.1 Test Method

| Test Method | |
|---|---|
| ☒ | Performed aggregate both leakage E-field and H-field at surrounding the device from all simultaneous transmitting coils. |
| ☒ | During testing, the EUT was placed on a non-conductive table top and the ancillary equipment (e.g., mobile phone) was placed on the EUT for charging. Maximum E-field and H-field measurements were tested 10cm from each side of the EUT. Along the side of the EUT to center of E-field probe and H-field probe were positioned at the location to search maximum field strength. |
| ☒ | E-field transfer to H-field |
| - | E-field = $Z_0$ × H-field<br>H-field = E-field ÷ $Z_0$<br>Where $Z_0$ = Free Space Impedance = 377Ω |

### 1.6.2 Test Setup

**E-field and H-field Measurement**




Note1 : find worst position for each axis.
Note2 : This shall be measured as the distance from the edge of the device to the center of the measurement probe.

### 1.6.3 Result of Maximum Permissible Exposure

| Maximum Permissible Exposure | | | | |
|---|---|---|---|---|
| **Charging Condition** | **Separation** | **Probe from EUT Side** | **E-field (V/m)** | **H-field (A/m)** |
| Operating | 0cm | Left | 0.67 | 0.002 |
| Operating | 0cm | Right | 0.98 | 0.003 |
| Operating | 0cm | Top | 1.58 | 0.004 |
| Operating | 0cm | Bottom | 0.81 | 0.002 |
| Operating | 0cm | Y-axis above EUT | 3.04 | 0.008 |
| **Limit** | | | 614 | 1.63 |
| **Margin Limit (%)** | | | 0.50% | 0.50% |

# 2 Test Equipment and Calibration Data

**Instrument for Conducted Test**

| Instrument | Manufacturer | Model No. | Serial No. | Spec. | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|---|
| Probe EF | Narda Safety Test Solutions GmbH | 0391 E-Field | D-0667 | 0.1MHz ~ 3GHz | 20/Jul/2018 | 19/Jul/2020 |
| Broadband Field Meter | Narda Safety Test Solutions GmbH | NBM-550 | E-0847 | 0.1MHz ~ 3GHz | 20/Jul/2018 | 19/Jul/2020 |