## - RF Exposure

### 1. Introduction

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC Rules and Regulations.

The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 1-1. According to FCC §1.1310: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

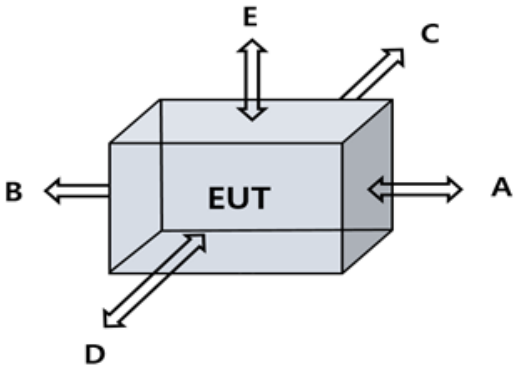
**Table 1—Limits for Maximum Permissible Exposure (MPE)**

| Frequency Range (MHz) | Electric field strength (V/m) | Magnetic field Strength (A/m) | Power density (mW/cm2) | Averaging time (minutes) |
|---|---|---|---|---|
| (A) Limits for Occupational/Controlled Exposure | | | | |
| 0.3-3.0 | 614 | 1.63 | *100 | 6 |
| 3.0-30 | 1842/f | 4.89/f | *900/f2 | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1,500 | | | f/300 | 6 |
| 1,500-100,000 | | | 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/f2 | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1,500 | | | f/1500 | 30 |
| 1,500-100,000 | | | 1.0 | 30 |

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

Per the guidance of KDB 680106, the E-field and H-field limits shown in the table above are extended down to 100kHz.

## 2. Test Set-up




### 2.1. Test configurations

In order to check all kinds of possible configurations, EUT was evaluated with appropriate client and under each charging condition as below table.

| EUT Mode | Description |
|---|---|
| Charging Mode<br>(Model : BioCon-900S, FCC ID : N/A) | Less than 1 % of Battery |
| | Less than 50 % of Battery |
| | 100 % full charging of Battery |

Note : The above EUT information was declared by the manufacturer.

### 2.2. Support Equipment

| Client device | Model | FCC ID |
|---|---|---|
| Bladder Volume Measurement System | BioCon-900S | N/A |

Note : Client device supports only receiver function of WPT system and it is consisted of a set with EUT.

## 2.2 Measurement procedure

a) The RF exprosure test was performed on the table in anechoic chamber.
b) The measurement was investigated between the edge of the charger and center of the field probe in the closest state.
c) Maximum E-field and H-field measurements were made on each of five sides of the EUT that could come in contact with a user. Five sides are defined as follows: Right (B), Top (E), Left (A), Rear (D) and Front (C). Refer to the test position diagram above.
d) According to the guidance of KDB 680106 D01 v03 test distance was 15 cm on the surrounding sides from the EUT.
e) Equipment approval considerations item 5.b) of KDB 680106 D01 v03

(1) Power transfer frequency is less than 1 MHz.
- The device operates at a frequency of 149 ㎑ ~ 156 ㎑

(2) Output power from each primary coil is less than or equal to 15 watts.
- Refer to following section 2.2
Output power from primary coil : 5 Watts.

(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.
- The transfer system including a charging system with one primary coils is to detect and allow only between individual pairs of coils.

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

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

(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.
- Refer to following worst test result (For more detail, please refer to section 3)
1) The worst E-field Strength level at 15cm < 50% of the MPE E-Field Strenth limit 614 V/m
Charging Mode ( Less than 50 % of Battery ) : 1.120 V/m < 307 V/m
2) The worst H-field Strength level at 15cm < 50% of the MPE H-Field Strenth limit 1.63 A/m
Charging Mode ( 100 % full charging of Battery ) : 0.231 A/m < 0.815 A/m

# 3. Test Result

## - Complied

The probe was positioned at the location where there is maximum field strength on each side of the EUT. The maximum E-field and H-field is reported below.

**- Charging Mode (Less than 1 % of Battery)**

E-field Measurements

| Distance (cm) | Position A (V/m) | Position B (V/m) | Position C (V/m) | Position D (V/m) | Position E (V/m) | Around A to E (V/m) | Limit (V/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.700 | 0.680 | 0.750 | 0.740 | 1.080 | 1.100 | 614.00 |
| 20 | | | | | 1.010 | | 614.00 |

H-field Measurements

| Distance (cm) | Position A (A/m) | Position B (A/m) | Position C (A/m) | Position D (A/m) | Position E (A/m) | Around A to E (A/m) | Limit (A/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.096 | 0.066 | 0.116 | 0.123 | 0.200 | 0.204 | 1.63 |
| 20 | | | | | 0.064 | | 1.63 |

**- Charging Mode (Less than 50 % of Battery)**

E-field Measurements

| Distance (cm) | Position A (V/m) | Position B (V/m) | Position C (V/m) | Position D (V/m) | Position E (V/m) | Around A to E (V/m) | Limit (V/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.710 | 0.680 | 0.760 | 0.750 | 1.110 | 1.120 | 614.00 |
| 20 | | | | | 0.050 | | 614.00 |

H-field Measurements

| Distance (cm) | Position A (A/m) | Position B (A/m) | Position C (A/m) | Position D (A/m) | Position E (A/m) | Around A to E (A/m) | Limit (A/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.100 | 0.075 | 0.111 | 0.114 | 0.219 | 0.225 | 1.63 |
| 20 | | | | | 0.085 | | 1.63 |

**- Charging Mode (100 % full charging of Battery)**

E-field Measurements

| Distance (cm) | Position A (V/m) | Position B (V/m) | Position C (V/m) | Position D (V/m) | Position E (V/m) | Around A to E (V/m) | Limit (V/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.710 | 0.670 | 0.770 | 0.760 | 1.120 | 1.110 | 614.00 |
| 20 | | | | | 1.110 | | 614.00 |

H-field Measurements

| Distance (cm) | Position A (A/m) | Position B (A/m) | Position C (A/m) | Position D (A/m) | Position E (A/m) | Around A to E (A/m) | Limit (A/m) |
|---|---|---|---|---|---|---|---|
| 15 | 0.088 | 0.067 | 0.096 | 0.124 | 0.228 | 0.231 | 1.63 |
| 20 | | | | | 0.070 | | 1.63 |

## 4. Test equipment used for test

| | Equipment Name | Manufacturer | Model No. | Serial No. | Next Cal. Date |
|---|---|---|---|---|---|
| ■ | DC Power Supply | AGILENT | E3632A | MY40004399 | 19.01.05 |
| ■ | MAGNETIC FIELD TESTER | HIOKI | FT3470-52 | 171129500 | 18.12.26 |
| ■ | Isotropic Electric Field | ETS Lindgren | HI-6105 | 00202714 | 19.04.25 |
| ■ | Laser data Interface | ETS Lindgren | HI-6113 | 00150924 | - |