



RF Exposure Evaluation

1 Measuring Standard

KDB 680106 RF Exposure Wireless Charging Apps v03r01

2 Requirements

According to the item 5 of KDB 680106 v03r01:

Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

- (1) Power transfer frequency is less than 1MHz.
- (2) Output power from each primary coil is less than or equal to 15 watts.
- (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 same time.
- (4) Client device is placed directly in contact with the transmitter.
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- (6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm 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.

Remark: Meet all the above requirements.

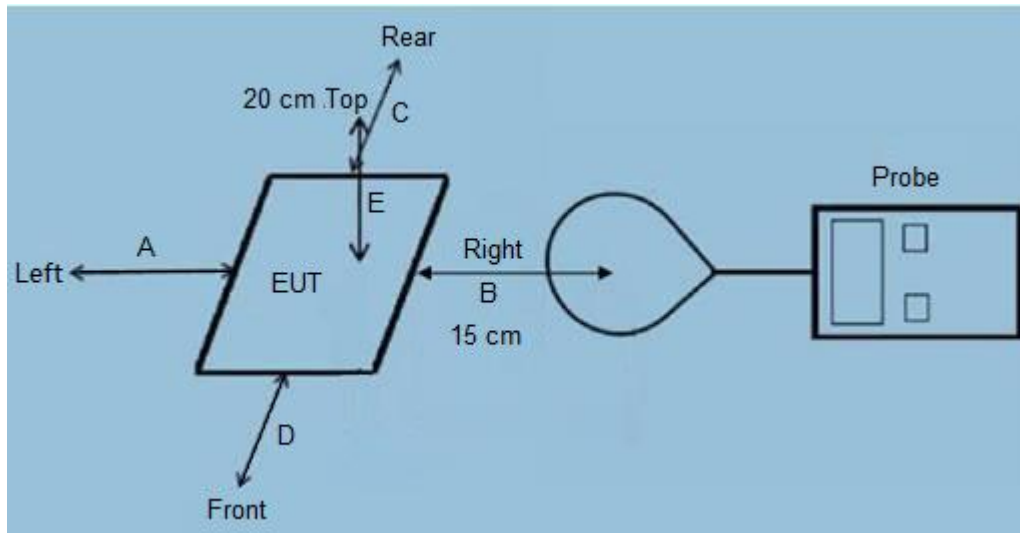
Limits

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)

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 |
| F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m). | | | | |

3 Test Setup



4 Test Procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The measurement probe was placed at test distance (15 cm from all sides and 20 cm from the top) which is between the edge of the charger and the geometric center of probe.
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- 4) The EUT was measured according to the dictates of KDB 680106 D01v03.

Remark: The EUT's test position A, B, C, D and E is valid for the E and H field measurements.

5 Description of the test mode

Equipment under test was operated during the measurement under the following conditions:

| Test Mode | Description | |
|-----------|--|------------|
| Mode 1 | AC Adapter + EUT + Mobile phone + Earphone + Watch + USB | Record |
| Mode 2 | AC Adapter + EUT + Mobile phone + Earphone + USB | Pre-tested |
| Mode 3 | AC Adapter + EUT + Mobile phone + Watch + USB | Pre-tested |
| Mode 4 | AC Adapter + EUT + Earphone + Watch + USB | Pre-tested |
| Mode 5 | AC Adapter + EUT + Mobile phone + USB | Pre-tested |
| Mode 6 | AC Adapter + EUT + Earphone + USB | Pre-tested |
| Mode 7 | AC Adapter + EUT + Watch + USB | Pre-tested |
| Mode 8 | Test the EUT in idle mode. | Pre-tested |

Note: 1. All test modes were pre-tested, but we only recorded the worst case in this report.

2. Unfolded and folded mode were tested, but we only recorded the worst case.

6 Peripheral List

| No. | Equipment | Manufacturer | Model No. | Serial No. | Power cord | signal cable |
|-----|---------------|--------------|-----------|------------|------------|--------------|
| 1 | Adapter | XIAOMI | MDY-10-EH | N/A | N/A | N/A |
| 2 | Mobile Iphone | XIAOMI | MI 11 | N/A | N/A | N/A |
| 3 | Airpod | Apple | Airpod 3 | N/A | N/A | N/A |
| 4 | Watch | Apple | S6 | N/A | N/A | N/A |

7 Test Instruments list

| Test Equipment | Manufacturer | Model No. | SN. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
|--------------------------------------|--------------|-----------|------------|---------------------|-------------------------|
| Electric and Magnetic Field Analyzer | Narda | EHP-200A | 180ZX10505 | 21.06.2022 | 20.06.2024 |

8 Test Result

E-Filed Strength at 15 cm from the edges surrounding the EUT (V/m)

| Unit | Test mode | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | 50% Limits (V/m) | Limits (V/m) |
|------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|--------------|
| | | Unfolded mode | | | | | | |
| V/m | TM1 | 89.70 | 101.18 | 94.62 | 93.74 | 88.39 | 307 | 614 |

H-Filed Strength at 15 cm from the edges surrounding the EUT (A/m)

| Unit | Test mode | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | 50% Limits (A/m) | Limits (A/m) |
|------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|--------------|
| | | Unfolded mode | | | | | | |
| A/m | TM1 | 0.221 | 0.154 | 0.121 | 0.132 | 0.137 | 0.815 | 1.63 |

H-Filed Strength at 20 cm from the top of the EUT (A/m)

| Unit | Test mode | Test Position E | 50% Limits (A/m) | Limits (A/m) |
|------|-----------|-----------------|------------------|--------------|
| | | Folded Mode | | |
| A/m | TM1 | 0.176 | 0.815 | 1.63 |

Note: All test modes were pre-tested, but we only recorded the worst case in this report.

9 Test Setup photo



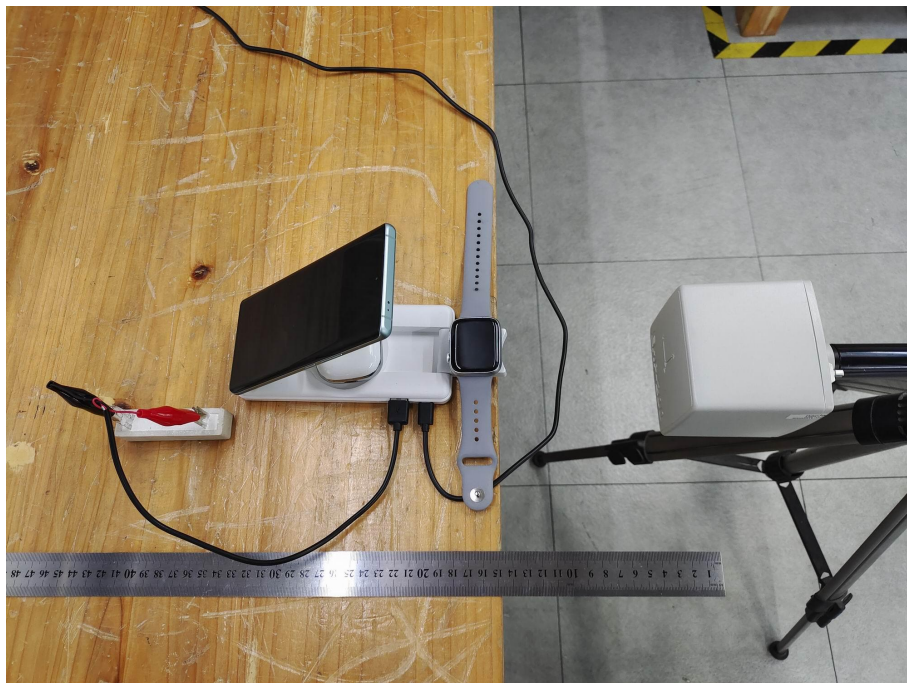
Test Position A-15cm from the edge of EUT to the geometric center of the probe



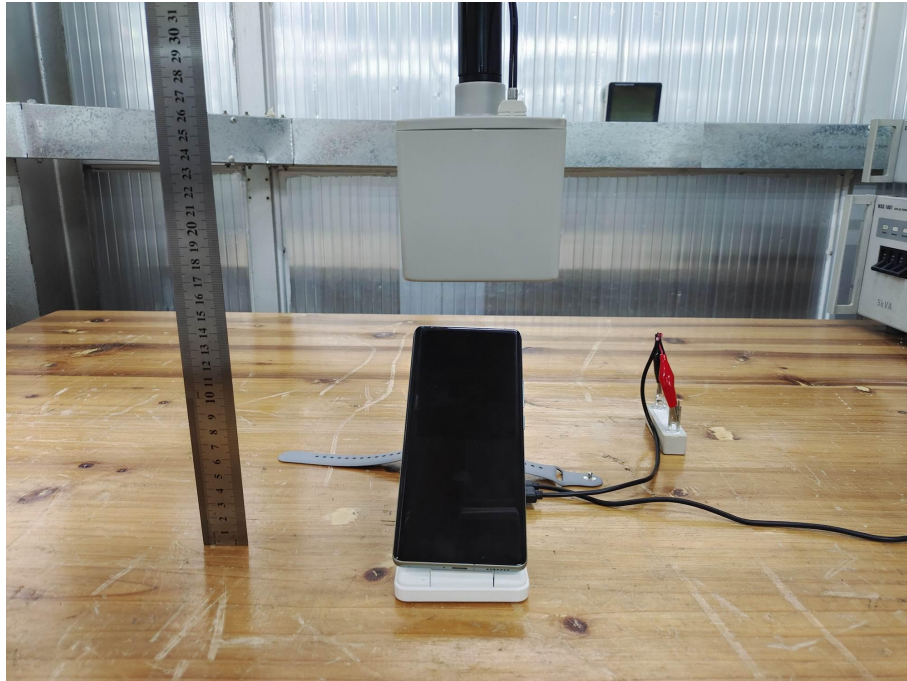
Test Position B-15cm from the edge of EUT to the geometric center of the probe



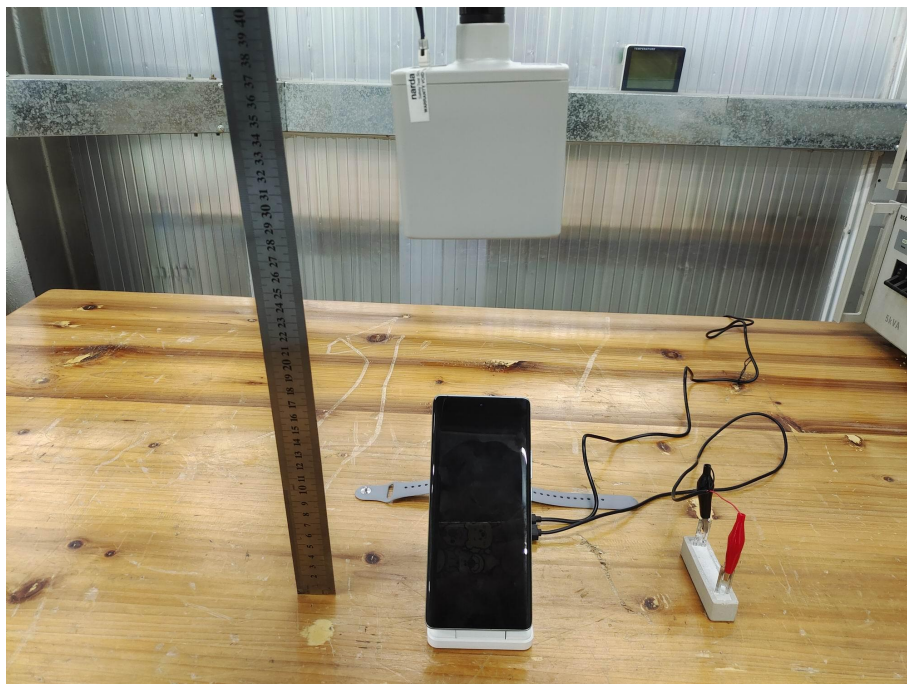
Test Position C-15cm from the edge of EUT to the geometric center of the probe



Test Position D-15cm from the edge of EUT to the geometric center of the probe



Test Position E-15cm from the edge of EUT to the geometric center of the probe



Test Position E-20cm from the edge of EUT to the geometric center of the probe

End of report