



## RF Exposure Evaluation

For

The Gem Group, Inc.

Newton Foldable Compact Wireless Charger

Test Model: 102455-021B

Prepared for : The Gem Group, Inc.  
Address : 9 International Way, Lawrence, MA 01843, USA

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : March 25, 2025  
Number of tested samples : 2  
Sample No. : A250325004-1, A250325004-2  
Serial number : Prototype  
Date of Test : March 25, 2025 ~ April 15, 2025  
Date of Report : April 16, 2025



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## RF Exposure Evaluation

**Report Reference No.** : LCSA03135034EB

**Date Of Issue** : April 16, 2025

**Testing Laboratory Name** : Shenzhen LCS Compliance Testing Laboratory Ltd.

**Address** : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Shajing Street, Baoan District, Shenzhen, China

**Testing Location/ Procedure** :  Full application of Harmonised standards  Partial application of Harmonised standards  Other standard testing method

**Applicant's Name** : The Gem Group, Inc.

**Address** : 9 International Way, Lawrence, MA 01843, USA

### Test Specification

FCC KDB publication 680106 D01 Wireless Power Transfer v04

**Standard** : FCC CFR 47 part1 1.1310  
FCC CFR 47 part2 2.1091  
FCC CFR 47 part 18.107

**Test Report Form No.** : TRF-4-E-214 A/0

**TRF Originator** : Shenzhen LCS Compliance Testing Laboratory Ltd.

**Master TRF** : Dated 2011-03

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**Test Item Description** : Newton Foldable Compact Wireless Charger

**Trade Mark** : Gemline

**Test Model** : 102455-021B

**Ratings** : Please Refer to Page 6

**Result** : Pass

Compiled by:

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Supervised by:

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Approved by:

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## FCC TEST REPORT

|   |   |
|---|---|
| <b>Test Report No. :</b> LCSA03135034EB | <u>April 16, 2025</u><br><b>Date of issue</b> |
|---|---|

|                           |  |
|---------------------------|--|
| <b>Test Model</b> .....   | : 102455-021B  |
| <b>EUT</b> .....          | : Newton Foldable Compact Wireless Charger   |
| <b>Applicant</b> .....    | : <b>The Gem Group, Inc.</b>   |
| Address.....              | : 9 International Way, Lawrence, MA 01843, USA   |
| Telephone.....            | : /  |
| Fax.....                  | : /  |
| <b>Manufacturer</b> ..... | : <b>NINGBO CSTAR IMPRINT E-COMMERCE CO.,LTD</b>   |
| Address.....              | : Building E, No.90, Lane 655, Qiming Road, Yinzhou District, Ningbo, China  |
| Telephone.....            | : /  |
| Fax.....                  | : /  |
| <b>Factory</b> .....      | : <b>Shenzhen SHD Electronic Tech.co.,Ltd</b>  |
| Address.....              | : 3/F, building B, Bada Industrial Park, Yongfu Road, Heping Community, Fuyong Town, Baoan District, Shenzhen City. (518103) |
| Telephone.....            | : /  |
| Fax.....                  | : /  |

|                    |             |
|--------------------|-------------|
| <b>Test Result</b> | <b>Pass</b> |
|--------------------|-------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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## Revision History

| Report Version | Issue Date     | Revision Content | Revised By |
|----------------|----------------|------------------|------------|
| 000            | April 16, 2025 | Initial Issue    | --         |
|                |                |                  |            |
|                |                |                  |            |





## TABLE OF CONTENTS

| Description                                | Page |
|--|------|
| 1. PRODUCT INFORMATION .....               | 6    |
| 2. EVALUATION METHOD .....                 | 6    |
| 3. EVALUATION LIMIT .....                  | 9    |
| 4. TEST SETUP DIAGRAM .....                | 11   |
| 5. TEST EQUIPMENT .....                    | 11   |
| 6. MEASUREMENT PROCEDURE .....             | 11   |
| 7. EQUIPMENT APPROVAL CONSIDERATIONS ..... | 12   |
| 8. AND H FIELD STRENGTH .....              | 13   |
| 9. TEST SETUP PHOTOS .....                 | 18   |
| 10. CONCLUSION .....                       | 21   |
| 11. DESCRIPTION OF TEST FACILITY .....     | 21   |
| 12. MEASUREMENT UNCERTAINTY .....          | 21   |





## 1. Product Information

|                   |   |
|-------------------|---|
| Product Name      | Newton Foldable Compact Wireless Charger  |
| Model Number      | 102455-021B   |
| Ratings           | Input: DC 5V/2A, 9V/2A, 12V/2A<br>Output power: 5W/7.5W/10W/15W(Mobile phone)<br>3W(Earbuds)<br>2.5W(Smart watch) |
| Modulation Type   | ASK   |
| Frequency Range   | 110.1~205KHz, 325~350KHz  |
| Antenna Type      | Coil Antenna  |
| Hardware version  | HY-020-A/HY-020-B/HY-020-C/U23 Rev1.0   |
| Software version  | IP6826_H_MAG_VCSPN_VGEUL__9V<br>12V(20220319).bin/IP6806_5_VCUIJ__X7R_VDUTS.bin/3A_20230107_VAG<br>PJ.bin         |
| Accessories       | /   |
| Exposure category | General population/uncontrolled environment   |
| EUT Type          | Production Unit   |
| Device Type       | Mobile Device   |

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.

## 2. Evaluation Method

Per KDB 680106 D01 Section 3. RF Exposure Requirements;

- 1) Wireless power transfer devices must comply with RF exposure requirements for all design configurations in which they can operate. At a minimum, RF exposure must be evaluated for the worst-case scenario, typically when the transmitter, while delivering energy to a client device, is operating at maximum output power. RF exposure compliance for equipment authorization must be determined following the guidance of KDB447498, which includes consideration of the different test requirements for *Mobile Device* and *Portable Device* exposure categories, as defined in §§ 2.1091 and 2.1093 of the Rules.
- 2) The RF exposure limits, as set forth in § 1.1310, do not cover the frequency range below 100 kHz for Specific Absorption Rate (SAR) and below 300 kHz for Maximum Permitted Exposure (MPE). In addition, present limitations of RF exposure evaluation systems prevent an accurate evaluation of SAR below 4 MHz. For these reasons, a specific MPE-based RF Exposure compliance procedure for devices operating in the aforementioned low-frequency ranges has been set in place. This procedure is applicable to Equipment Authorization of all RF devices, thus including, but not limited to, Part 18 and WPT devices. Accordingly, for § 2.1091-*Mobile* devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-*Portable* devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

Furthermore, consistent with FCC's equipment authorization RF exposure guidance, any device (both portable and mobile) operating at frequencies below 100 kHz is considered compliant for the purpose of equipment authorization when the external (unperturbed) temporal peak field strengths do not exceed the following reference levels:

83 V/m for the electric field strength (*E*)

and 90 A/m for the magnetic field strength (*H*)



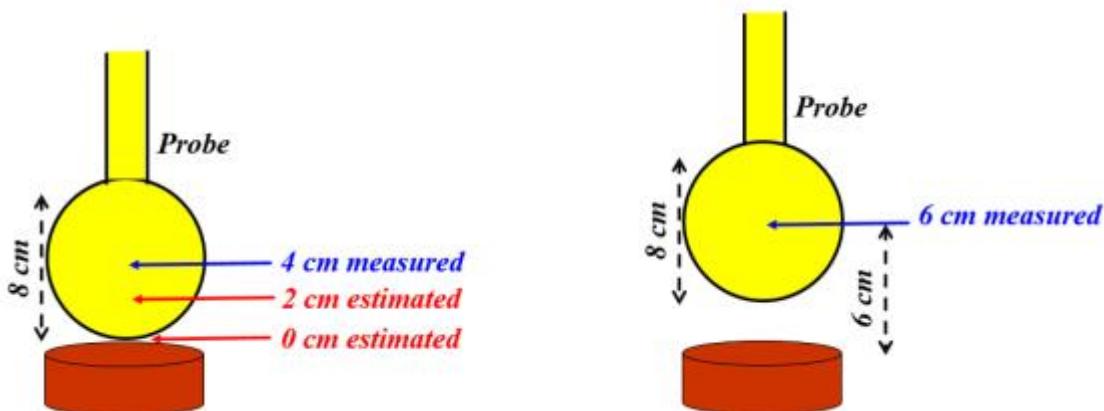
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These data may be provided through measurements and/or numerical simulations, and for all the positions in space relevant for any possible body exposure.

3) "Large size" probes may prevent the measurement of E- and/or H-fields near the surface of the radiating structure (e.g., a WPT source coil), as in the example shown in Figure 1.

If the center of the probe sensing element is located more than 5 mm from the probe outer surface, the field strengths need to be estimated through modeling for those positions that are not reachable. The estimates may be done either via numerical calculation, or via analytic model: e.g., approximated formulas for circular coils, dipoles, etc., may be acceptable if it is shown that the model is applicable for the design parameters considered. A typical example is the use of a quasi-static approximation formula for a low-frequency magnetic field source. These estimates shall include points spaced no more than 2 cm from each other. Thus, in the example of

Figure 1, at least the estimates at 0 cm and 2 cm are required, while only one point would not be sufficient. In addition, the model needs to be validated through the probe measurements for the two closest points to the device surface, and with 2-cm increments, as indicated in Figure 1. In that example, the same model must also be applied to the 4 cm and 6 cm positions, and then compared with the measured data, for validation purposes. The validation is considered sufficient if a 30% agreement between the model and the (E- and/or H-field) probe measurements is demonstrated. If such a level of agreement cannot be shown, a more accurate model (and/or a smaller probe) shall be used.

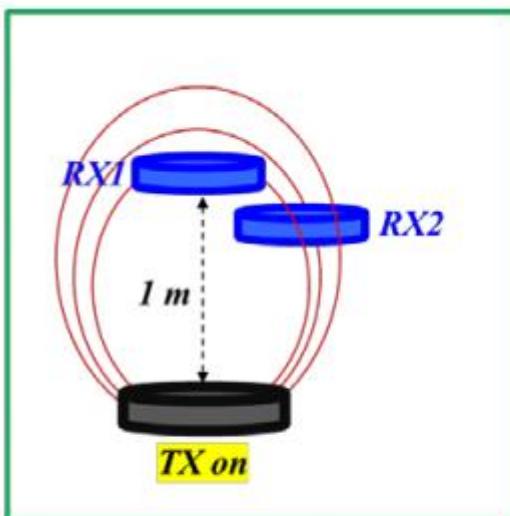


**Figure 1. Example of probe (in yellow) measurements in points close to the WPT device (in red/brown). The probe radius is 4 cm, thus the closest point to the device where the field can be measured is at 4 cm from the surface (this example assumes that the probe calibration refers to the center of the sensing element structure, in this case a sphere of 4 cm radius). Data at 0 cm and 2 cm must be estimated through a model, and then the same model must be validated via comparison with the actual measurements at 4 cm and 6 cm, where the probe center can be positioned and collect valid data.**

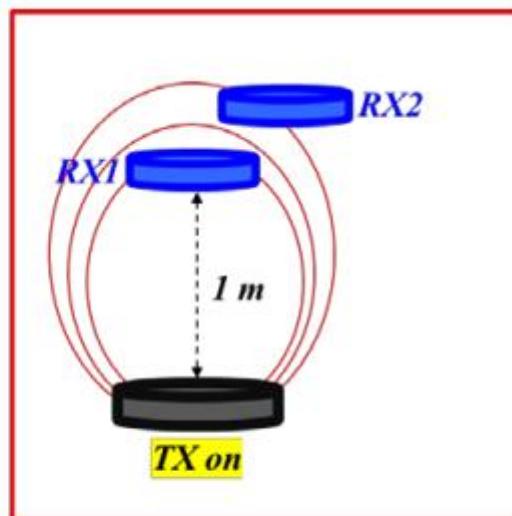
4) Part 18 Wireless Power Transfer up to One-Meter Distance. This section applies only to WPT transmitters that, by design, can provide power to a load located at a distance no greater than one meter. This distance shall be measured between the closest points between the transmitter and the receiver enclosure surfaces. For instance, two coils positioned as in Figure 2-a may be operated and considered under the provisions of this section, because both receivers are within one-meter distance from the transmitter. However, the case in Figure 2-b cannot be considered in the same way, and it is treated according to the prescription of Section 5.3.

For WPT designs with more than one radiating structure the distance to the load shall be considered as in Figure 3, thus measured between the receiver and the closest transmitting structure.





a) Not considered as WPT  
“at-a-distance”



b) WPT “at-a-distance”  
because RX2 position

Figure 2-a) For multiple-receiver systems (here shown with two receivers, indicated with RX1 and RX2) the one-meter distance limit must apply for all the receivers that are engaged in the charging process. b) The WPT system is considered “at-a-distance” because it can function when the RX2 is further away than one meter from the transmitter.

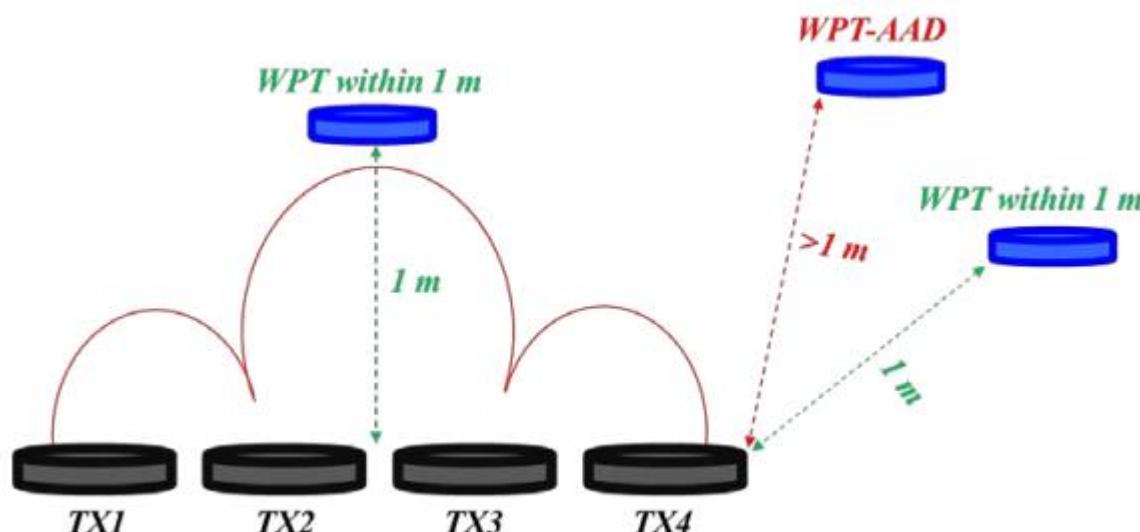


Figure 3. For multiple-coil transmitter systems, the one-meter distance limit is measured from the closest coil edge. A WPT within one meter operates with loads configured as those labeled in green font, if a load can be powered beyond one meter (in red), then it shall be considered “at-a-distance”

There might be situations where the WPT RF emissions are limited enough that even operations in a “crowded” environment, where many similar WPT devices are present, do not pose significant EMC and RF exposure concerns. In this scenario, and for devices operating within a one-meter distance from the receiver, as defined above, a manufacturer will not have to submit an “Equipment Compliance Review” KDB, and receive FCC concurrence before proceeding with equipment authorization. This exception to the requirement of submitting the ECR to obtain FCC concurrence only applies when all the following criteria (1) through (6) are met:

- (1) The power transfer frequency is below 1 MHz.





- (2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.
- (3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
- (4) Only § 2.1091- Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093 – Portable exposure conditions).
- (5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

5) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested

### 3. Evaluation Limit

#### 3.1 Refer evaluation method

[ANSI C95.1–1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB publication 680106 D01 Wireless Power Transfer v04](#): EQUIPMENT AUTHORIZATION OF WIRELESS POWER TRANSFER DEVICES

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices

[FCC CFR 47 part 18.107](#): Indusial, Scientific, and Medical Equipment





### 3.2 Limit

#### Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

| Frequency Range(MHz)                        | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                              |                              |                                     |                         |
| 0.3-3.0                                     | 614                          | 1.63                         | *100                                | 6                       |
| 3.0-30                                      | 1842/f                       | 4.89/f                       | *900/f <sup>2</sup>                 | 6                       |
| 30-300                                      | 61.4                         | 0.163                        | 1.0                                 | 6                       |
| 300-1,500                                   | /                            | /                            | f/300                               | 6                       |
| 1,500-100,000                               | /                            | /                            | 5                                   | 6                       |

#### Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

| Frequency Range(MHz)                                | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| 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 <sup>2</sup>                 | 30                      |
| 30-300  | 27.5                         | 0.073                        | 0.2                                 | 30                      |
| 300-1,500   | /                            | /                            | f/1500                              | 30                      |
| 1,500-100,000                                       | /                            | /                            | 1.0                                 | 30                      |

F=frequency in MHz

\*=Plane-wave equivalent power density

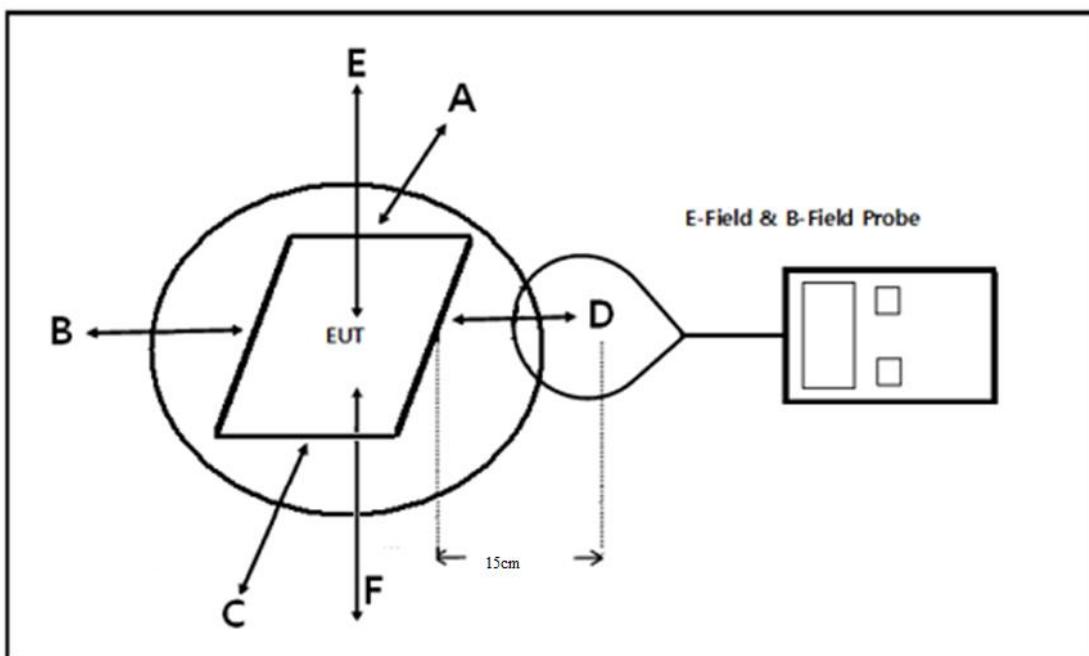
According to FCC KDB 680106 D01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 KHz to 300 KHz should be assessed versus the limits at 300 KHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

|                   | E-Field                         | */*                               | B-Field |
|-------------------|---------------------------------|-----------------------------------|---------|
| Frequency         | V/m                             | A/m                               | uT      |
| 0.3 MHz – 3.0 MHz | 614                             | 1.613                             | 2.0     |
| 3.0 MHz – 30 MHz  | 824/f (=27.5 <sub>30MHz</sub> ) | 2.19/f (=0.073 <sub>30MHz</sub> ) | --      |

A KDB inquire was required to determine/confirm the applicable limits below 100 KHz.



#### 4. Test Setup Diagram



#### 5. Test Equipment

| Item | Equipment             | Manufacturer | Model No. | Serial No. | Cal Date   | Due Date   |
|------|-----------------------|--------------|-----------|------------|------------|------------|
| 1    | Exposure Level Tester | Narda        | ELT-400   | N-0713     | 2024-11-11 | 2025-11-10 |
| 2    | B-Field Probe         | Narda        | ELT-400   | M-1154     | 2024-10-08 | 2025-10-07 |
| 3    | Electric field probe  | Narda        | EP601     | 611WX70332 | N/A        | N/A        |

#### 6. Measurement Procedure

- The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- The measurement probe was placed at test distance (15cm and 20cm) which is between the edges of the charger and the geometric center of probe.
- The turn table was rotated 360d degree to search of highest strength.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- The EUT were measured according to the dictates of KDB 680106D01v03.



## 7. Equipment Approval Considerations

The EUT does comply with item 5.2 of KDB 680106 D01v04 as follows table;

| Requirements of KDB 680106 D01   | Yes / No | Description   |
|--|----------|---|
| Power transfer frequency is less than 1 MHz  | Yes      | The device operates in the frequency range 110.1~205KHz, 325~350KHz   |
| The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.  | Yes      | For Mobile phone The maximum output power of the primary coil is 15W.<br>For Earbuds maximum output power of the primary coil is 3W.<br>For Smart watch maximum output power of the primary coil is 2.5W. |
| A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)  | Yes      | Client device is placed directly in contact with the transmitter.   |
| Only § 2.1091- Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).   | Yes      | Mobile exposure conditions only   |
| The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power. | Yes      | The EUT 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.                 |
| For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same  | Yes      | Only one radiating structure and tested at maximum Output Power   |





|  |  |  |
|--|--|--|
| time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 10 W: in this case, both scenarios shall be tested |  |  |
|--|--|--|

There might be situations where the WPT RF emissions are limited enough that even operations in a “crowded” environment, where many similar WPT devices are present, do not pose significant EMC and RF exposure concerns. In this scenario, and for devices operating within a one-meter distance from the receiver, as defined above, a manufacturer will not have to submit an “Equipment Compliance Review” KDB, and receive FCC concurrence before proceeding with equipment authorization. This exception to the requirement of submitting the ECR to obtain FCC concurrence only applies when all the following criteria (1) through (6) are met.

## 8. and H field Strength

| Test Modes |   |            |
|------------|---|------------|
| Mode 1     | AC/DC Adapter(12V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <1%)   | Record     |
| Mode 2     | AC/DC Adapter (12V/2A)+ EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <50%)  | Record     |
| Mode 3     | AC/DC Adapter (12V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: 100%) | Record     |
| Mode 4     | AC/DC Adapter (9V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <1%)   | Pre-tested |
| Mode 5     | AC/DC Adapter (9V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <50%)  | Pre-tested |
| Mode 6     | AC/DC Adapter (9V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: 100%)  | Pre-tested |
| Mode 7     | AC/DC Adapter (5V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <1%)   | Pre-tested |
| Mode 8     | AC/DC Adapter (5V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: <50%)  | Pre-tested |
| Mode 9     | AC/DC Adapter (5V/2A) + EUT + Mobile phone + TWS Earphone + Watch (Battery Status: 100%)  | Pre-tested |

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



**For Mobile phone**

Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values |                 |                 |                 |                 | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|-----------------|-----------------|-----------------|-----------------|------------|--------|
|           |                       |                | Test Position A                | Test Position B | Test Position C | Test Position D | Test Position E |            |        |
| Mode 1    | 110.1~205             | uT             | 0.127                          | 0.135           | 0.140           | 0.127           | 0.149           | --         | --     |
| Mode 1    | 110.1~205             | A/m            | 0.102                          | 0.108           | 0.112           | 0.102           | 0.119           | 0.815      | 1.63   |
| Mode 1    | 110.1~205             | V/m            | 38.263                         | 40.654          | 42.071          | 38.278          | 44.753          | 307.0      | 614.0  |
| Mode 2    | 110.1~205             | uT             | 0.122                          | 0.131           | 0.139           | 0.125           | 0.141           | --         | --     |
| Mode 2    | 110.1~205             | A/m            | 0.097                          | 0.105           | 0.111           | 0.100           | 0.113           | 0.815      | 1.63   |
| Mode 2    | 110.1~205             | V/m            | 36.593                         | 39.366          | 41.725          | 37.620          | 42.528          | 307.0      | 614.0  |
| Mode 3    | 110.1~205             | uT             | 0.121                          | 0.131           | 0.135           | 0.125           | 0.145           | --         | --     |
| Mode 3    | 110.1~205             | A/m            | 0.097                          | 0.105           | 0.108           | 0.100           | 0.116           | 0.815      | 1.63   |
| Mode 3    | 110.1~205             | V/m            | 36.386                         | 39.339          | 40.701          | 37.530          | 43.523          | 307.0      | 614.0  |

**For Earbuds**

Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values |                 |                 |                 |                 | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|-----------------|-----------------|-----------------|-----------------|------------|--------|
|           |                       |                | Test Position A                | Test Position B | Test Position C | Test Position D | Test Position E |            |        |
| Mode 1    | 110.1~205             | uT             | 0.126                          | 0.138           | 0.141           | 0.135           | 0.148           | --         | --     |
| Mode 1    | 110.1~205             | A/m            | 0.101                          | 0.111           | 0.113           | 0.108           | 0.119           | 0.815      | 1.63   |
| Mode 1    | 110.1~205             | V/m            | 37.972                         | 41.578          | 42.440          | 40.572          | 44.633          | 307.0      | 614.0  |
| Mode 2    | 110.1~205             | uT             | 0.126                          | 0.133           | 0.138           | 0.133           | 0.145           | --         | --     |
| Mode 2    | 110.1~205             | A/m            | 0.101                          | 0.106           | 0.110           | 0.106           | 0.116           | 0.815      | 1.63   |
| Mode 2    | 110.1~205             | V/m            | 37.825                         | 39.987          | 41.375          | 39.948          | 43.739          | 307.0      | 614.0  |
| Mode 3    | 110.1~205             | uT             | 0.125                          | 0.129           | 0.136           | 0.126           | 0.145           | --         | --     |
| Mode 3    | 110.1~205             | A/m            | 0.100                          | 0.103           | 0.109           | 0.101           | 0.116           | 0.815      | 1.63   |
| Mode 3    | 110.1~205             | V/m            | 37.485                         | 38.787          | 41.024          | 37.850          | 43.595          | 307.0      | 614.0  |



**For Smart watch**

Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values |                 |                 |                 |                 | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|-----------------|-----------------|-----------------|-----------------|------------|--------|
|           |                       |                | Test Position A                | Test Position B | Test Position C | Test Position D | Test Position E |            |        |
| Mode 1    | 325~350               | uT             | 0.130                          | 0.139           | 0.144           | 0.134           | 0.146           | --         | --     |
| Mode 1    | 325~350               | A/m            | 0.104                          | 0.111           | 0.115           | 0.107           | 0.117           | 0.815      | 1.63   |
| Mode 1    | 325~350               | V/m            | 39.020                         | 41.876          | 43.221          | 40.321          | 44.040          | 307.0      | 614.0  |
| Mode 2    | 325~350               | uT             | 0.127                          | 0.137           | 0.141           | 0.130           | 0.144           | --         | --     |
| Mode 2    | 325~350               | A/m            | 0.102                          | 0.109           | 0.113           | 0.104           | 0.115           | 0.815      | 1.63   |
| Mode 2    | 325~350               | V/m            | 38.320                         | 41.131          | 42.308          | 39.223          | 43.162          | 307.0      | 614.0  |
| Mode 3    | 325~350               | uT             | 0.123                          | 0.129           | 0.140           | 0.125           | 0.138           | --         | --     |
| Mode 3    | 325~350               | A/m            | 0.098                          | 0.103           | 0.112           | 0.100           | 0.110           | 0.815      | 1.63   |
| Mode 3    | 325~350               | V/m            | 36.990                         | 38.890          | 42.115          | 37.699          | 41.505          | 307.0      | 614.0  |



**For Mobile Phone**

Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|------------|--------|
|           |                       |                | Test Position E                |            |        |
| Mode 1    | 110.1~205             | uT             | 0.146                          | --         | --     |
| Mode 1    | 110.1~205             | A/m            | 0.117                          | 0.815      | 1.63   |
| Mode 1    | 110.1~205             | V/m            | 43.950                         | 307        | 614    |
| Mode 2    | 110.1~205             | uT             | 0.142                          | --         | --     |
| Mode 2    | 110.1~205             | A/m            | 0.114                          | 0.815      | 1.63   |
| Mode 2    | 110.1~205             | V/m            | 42.796                         | 307        | 614    |
| Mode 3    | 110.1~205             | uT             | 0.139                          | --         | --     |
| Mode 3    | 110.1~205             | A/m            | 0.111                          | 0.815      | 1.63   |
| Mode 3    | 110.1~205             | V/m            | 41.880                         | 307        | 614    |

**For Earbuds**

Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|------------|--------|
|           |                       |                | Test Position E                |            |        |
| Mode 1    | 110.1~205             | uT             | 0.148                          | --         | --     |
| Mode 1    | 110.1~205             | A/m            | 0.118                          | 0.815      | 1.63   |
| Mode 1    | 110.1~205             | V/m            | 44.494                         | 307        | 614    |
| Mode 2    | 110.1~205             | uT             | 0.145                          | --         | --     |
| Mode 2    | 110.1~205             | A/m            | 0.116                          | 0.815      | 1.63   |
| Mode 2    | 110.1~205             | V/m            | 43.512                         | 307        | 614    |
| Mode 3    | 110.1~205             | uT             | 0.143                          | --         | --     |
| Mode 3    | 110.1~205             | A/m            | 0.114                          | 0.815      | 1.63   |
| Mode 3    | 110.1~205             | V/m            | 42.867                         | 307        | 614    |



**For Smart watch**

Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

| Load mode | Frequency Range (kHz) | Field Strength | Measured Field Strength Values | 50% Limits | Limits |
|-----------|-----------------------|----------------|--------------------------------|------------|--------|
|           |                       |                | Test Position E                |            |        |
| Mode 1    | 325~350               | uT             | 0.149                          | --         | --     |
| Mode 1    | 325~350               | A/m            | 0.119                          | 0.815      | 1.63   |
| Mode 1    | 325~350               | V/m            | 44.662                         | 307        | 614    |
| Mode 2    | 325~350               | uT             | 0.143                          | --         | --     |
| Mode 2    | 325~350               | A/m            | 0.115                          | 0.815      | 1.63   |
| Mode 2    | 325~350               | V/m            | 43.090                         | 307        | 614    |
| Mode 3    | 325~350               | uT             | 0.140                          | --         | --     |
| Mode 3    | 325~350               | A/m            | 0.112                          | 0.815      | 1.63   |
| Mode 3    | 325~350               | V/m            | 42.019                         | 307        | 614    |

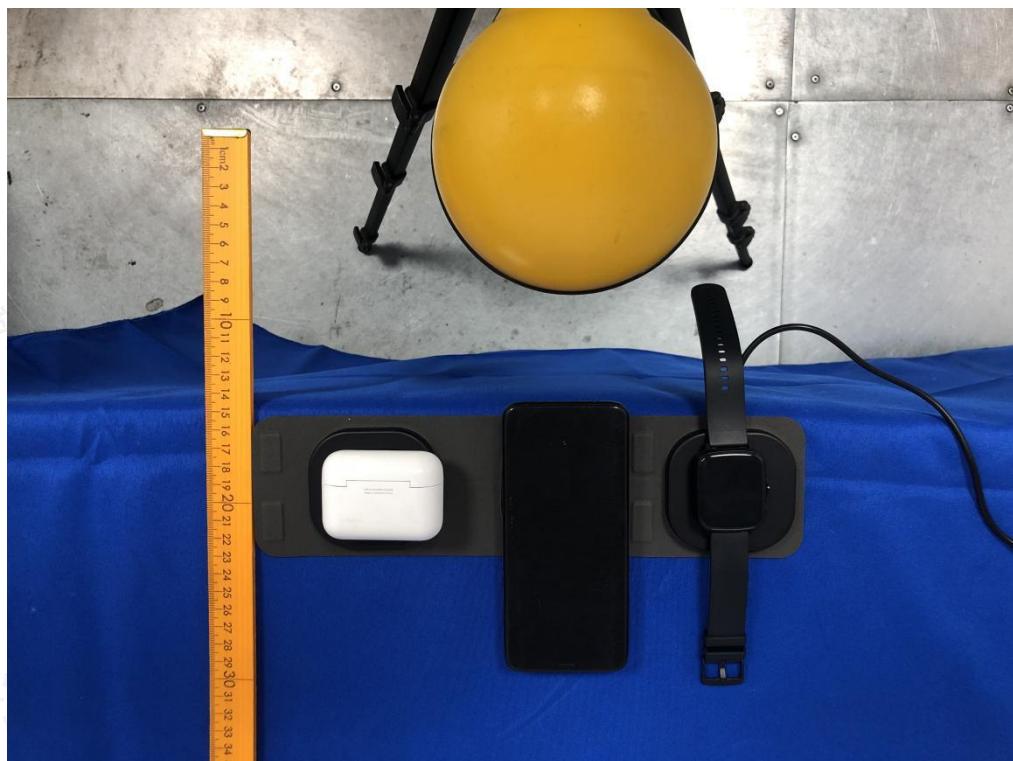
Note:V/m=10(((20lg(A/m\*10^6)+51.5)-120)/20)

Note:A/m=uT/1.25



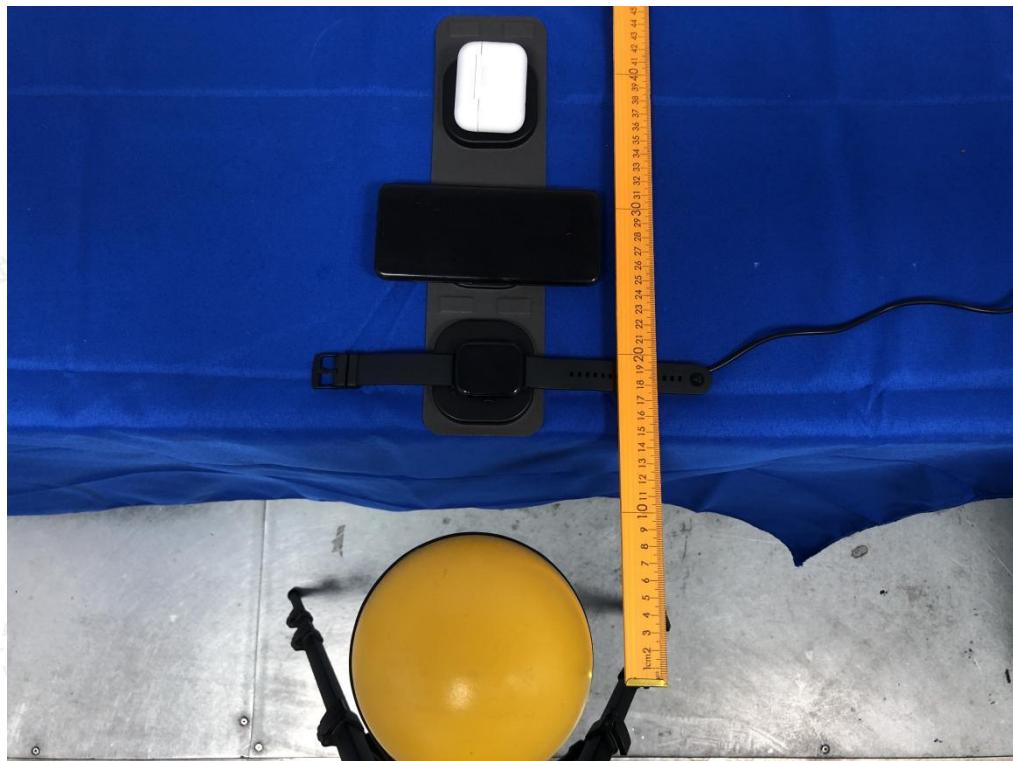
## 9. Test Setup Photos

### 9.1. Test Position A - Exposure photo from side edge surface-Rear(15cm)



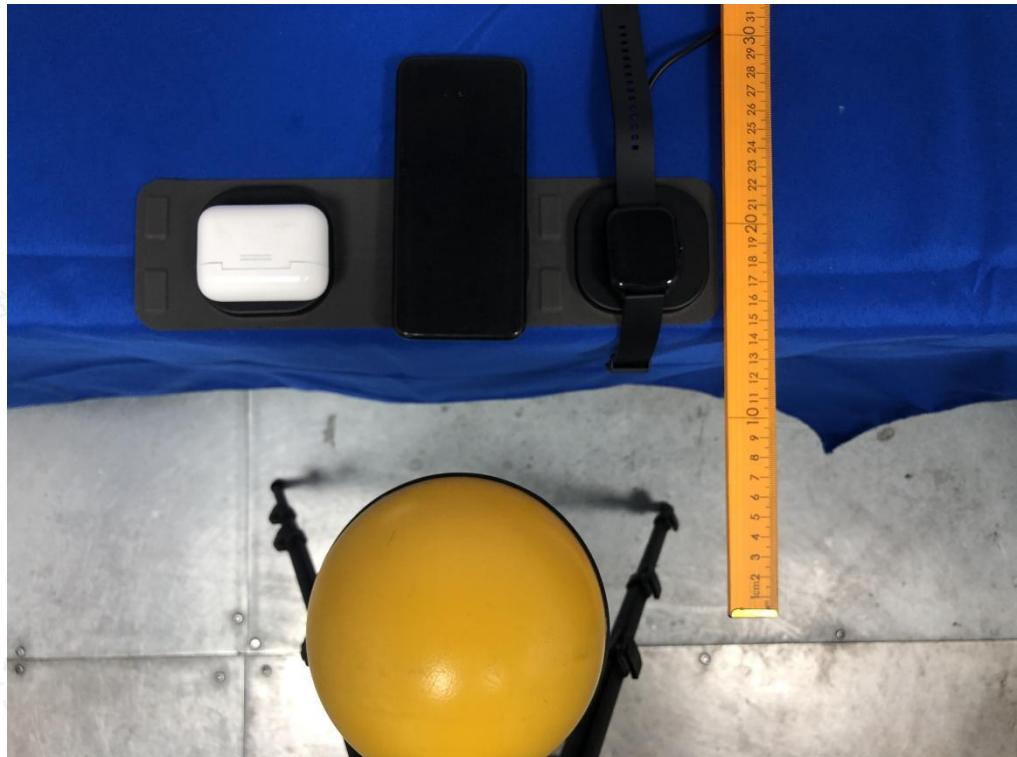
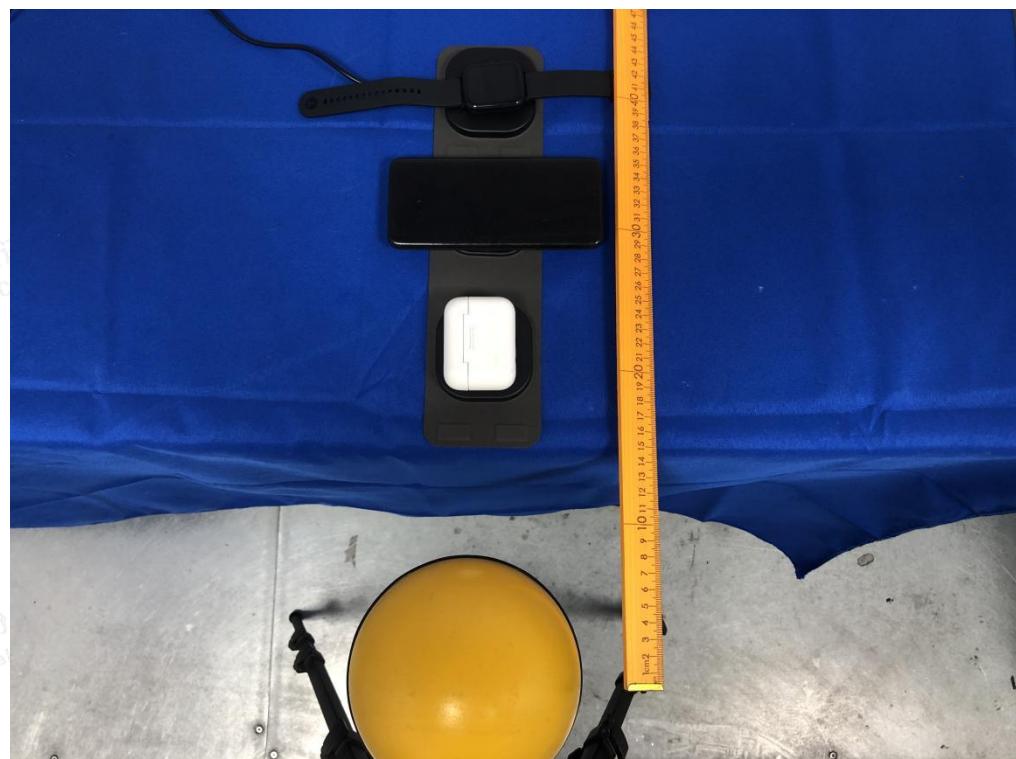
(TM1)

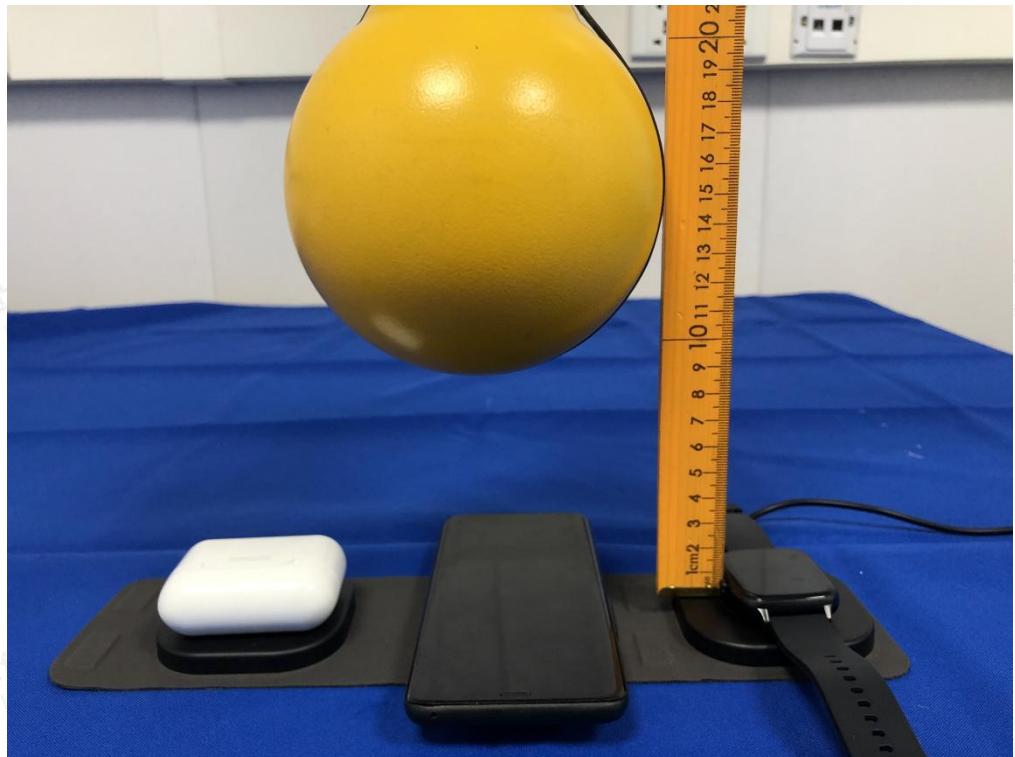
### 9.2. Test Position B - Exposure photo from side edge surface-Left(15cm)



(TM1)



**9.3. Test Position C - Exposure photo from side edge surface-Front(15cm)****(TM1)****9.4. Test Position D - Exposure photo from side edge surface-Right(15cm)****(TM1)**

**9.5. Test Position E - Exposure photo from top surface (20cm)****(TM1)****9.6. Test Position E- Exposure photo from top surface (15cm)****(TM1)**



## 10. Conclusion

A minimum safety distance of at 15 cm surrounding the device and 20 cm above the top surface of the device is required when the device is charging a smart phone. The detected emissions with a distance of 15 cm surrounding the device and 20 cm above the top surface of the device are below the limitations according to FCC KDB 680106 D01 Section 3. RF Exposure Requirement Clause 3.

## 11. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

## 12. Measurement Uncertainty

| Test Item                  | Frequency Range | Uncertainty | Note |
|----------------------------|-----------------|-------------|------|
| Field Strength Uncertainty | 1Hz~400KHz      | 1%          | (1)  |

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

-----THE END OF REPORT-----

