

## RADIO TEST REPORT

For

Mid Ocean Brands B.V.

Bamboo wireless charger

Test Model: MO9434

|                                |   |                                                                                                        |
|--------------------------------|---|--------------------------------------------------------------------------------------------------------|
| Prepared for                   | : | Mid Ocean Brands B.V.                                                                                  |
| Address                        | : | 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan,<br>Kowloon, Hong Kong                          |
| Prepared by                    | : | Shenzhen SIT Testing Technology Co., Ltd.                                                              |
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| Date of receipt of test sample | : | September 30, 2024                                                                                     |
| Number of tested samples       | : | 1                                                                                                      |
| Serial number                  | : | Prototype                                                                                              |
| Date of Test                   | : | September 30, 2024~October 11, 2024                                                                    |
| Date of Report                 | : | October 11, 2024                                                                                       |



**RADIO TEST REPORT**  
**ETSI EN 303 417 V1.1.1 (2017-09)**

Wireless power transmission systems, using technologies other than radio frequency beam, in the 19-21 kHz, 59-61 kHz, 79-90 kHz, 100-300 kHz, 6765-6795 kHz ranges; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

**Report Reference No. .... : SIT240918160501ER-2**

Date Of Issue ..... : October 11, 2024

**Testing Laboratory Name ..... : Shenzhen SIT Testing Technology Co., Ltd.**

Address ..... : Room 401, Building A2, The 2nd Industrial Zone of Zhu'ao, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure ..... : Full application of Harmonised standards ☒  
Partial application of Harmonised standards ☐  
Other standard testing method ☐**Applicant's Name ..... : Mid Ocean Brands B.V.**

Address ..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

**Test Specification**

Standard ..... : ETSI EN 303417 V1.1.1 (2017-09)

Test Report Form No. .... : SITEMC-1.0

TRF Originator ..... : Shenzhen SIT Testing Technology Co., Ltd.

Master TRF ..... : Dated 2017-09

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**Test Item Description. .... : Bamboo wireless charger**

Trade Mark ..... : N/A

Test Model ..... : MO9434

Ratings ..... : Input: 5V $\overline{\text{---}}$ 2A  
Output (Wireless): 5W**Result ..... : Positive****Compiled by:**

Project Engineer

**Supervised by:**

Project Supervisor

**Approved by:**

Technical Director

## Radio -- TEST REPORT

**Test Report No. : SIT240918160501ER-2**October 11, 2024

Date of issue

Test Model..... : MO9434

EUT..... : Bamboo wireless charger

**Applicant..... : Mid Ocean Brands B.V.**Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan,  
Kowloon, Hong Kong

Telephone..... : /

Fax..... : /

**Manufacturer..... : 114628**

Address..... : /

Telephone..... : /

Fax..... : /

### Test Result

### Positive

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.

Revision History

| Revision | Issue Date       | Revisions     | Revised By |
|----------|------------------|---------------|------------|
| 00       | October 10, 2024 | Initial Issue | Kevin Sun  |
|          |                  |               |            |
|          |                  |               |            |

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|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT                  | : Bamboo wireless charger                                                                                                                                                                                       |
| Test Model           | : MO9434                                                                                                                                                                                                        |
| Additional Model No. | : N/A                                                                                                                                                                                                           |
| Model Declaration    | : /                                                                                                                                                                                                             |
| Power Supply         | : Input: 5V---2A<br>Output (Wireless): 5W                                                                                                                                                                       |
| Hardware version     | : /                                                                                                                                                                                                             |
| Operating Frequency  | : 110~205 KHz, 100KHz for pairing<br>100.00KHz for pairing;<br>111.00~117.00KHz, Channel Frequency=111+(K-1)KHz,<br>K=1, 2, 3.....7;<br>120.00~139.00KHz, Channel Frequency=120+(K-1) KHz,<br>K=1, 2, 3.....20; |
| Channel Frequency    | : 141.00~148.00KHz, Channel Frequency=141+(K-1)KHz,<br>K=1, 2, 3.....8;<br>150.00~204.00KHz, Channel Frequency=150+(K-1)KHz,<br>K=1, 2, 3.....55<br>177.50KHz for Low power mode                                |
| Channel Number       | : 1                                                                                                                                                                                                             |
| Modulation Type      | : GSKF                                                                                                                                                                                                          |
| Antenna Description  | : Ferrite Antenna, 2 dBi(Max.)                                                                                                                                                                                  |
| Product class        | : I                                                                                                                                                                                                             |

| Manufacturer | Description | Model | Serial Number | Certificate |
|--------------|-------------|-------|---------------|-------------|
| --           | --          | --    | --            | --          |

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| USB Port             | 1        | N/A   |

#### 1.4. Objective

The following report of is prepared on behalf of the **Shenzhen Jincheng Weiye Technology Co., Ltd.** In accordance with ETSI EN 303 417 V1.1.1 (2017-09): Wireless power transmission systems, using technologies other than radio frequency beam, in the 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz ranges; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

The objective is to determine compliance with ETSI EN 303 417 V1.1.1 (2017-09).

#### 1.5. Test Methodology

All measurements contained in this report were conducted with ETSI EN 303 417 V1.1.1 (2017-09).

#### 1.6. Measurement Uncertainty (95% confidence levels, k=2)

| Test Item                     | Uncertainty            |
|-------------------------------|------------------------|
| Radio Frequency               | 0.9 x 10 <sup>-4</sup> |
| Total RF Power, Conducted     | 1.0 dB                 |
| RF Power Density, Conducted   | 1.8 dB                 |
| Spurious Emissions, Conducted | 1.8 dB                 |
| All Emissions, Radiated       | 3.1 dB                 |
| Temperature                   | 0.5°C                  |
| Humidity                      | 1 %                    |
| DC And Low Frequency Voltages | 1 %                    |

#### 1.7. Description Of Test Mode

The EUT has been tested under typical operating condition. No software used to control the EUT for staying in transmitting mode for testing.

\*\*\*Note: The EUT has been tested under normal condition(Temperature: 25°C & Nominal Voltage: DC 5.0V) in this report , and only recorded the worst test data in the report.

## **2. SYSTEM TEST CONFIGURATION**

### **2.1. Justification**

The system was configured for testing in engineering mode.

### **2.2. EUT Exercise Software**

N/A.

### **2.3. Special Accessories**

N/A.

### **2.4. Block Diagram/Schematics**

Please refer to the related document.

### **2.5. Equipment Modifications**

Shenzhen SIT Testing Technology Co., Ltd. has not done any modification on the EUT.

### **2.6. Configuration of Test Setup**

Please refer to the test setup photo.

### 3. SUMMARY OF TEST RESULTS

| Reference Clause No. | Description Of Test Item                 | Result    |
|----------------------|------------------------------------------|-----------|
| §4.3.2               | Permitted range of operating frequencies | Compliant |
| §4.3.3               | Operating frequency range(s) (OFR)       | Compliant |
| §4.3.4               | H-field requirements                     | Compliant |
| §4.3.5               | Transmitter spurious emissions           | Compliant |
| §4.3.6               | Transmitter out of band (OOB) emissions  | Compliant |
| §4.3.7               | WPT system unwanted conducted emissions  | N/A       |
| §4.4.2               | Receiver blocking                        | Compliant |

Note: N/A means not applicable

## 4. PERMITTED RANGE OF OPERATING FREQUENCIES

### 4.1. Definition

The permitted range of operating frequencies denotes the frequency ranges set out in Table 1. It likewise denotes the respective frequency range for accommodation of the fundamental WPT frequency of the EUT within its operating frequency range (OFR).

Table 1: WPT systems within the permitted frequency bands below 30MHz

|                      | WPT frequency range | Frequency Bands      | WPT systems |
|----------------------|---------------------|----------------------|-------------|
| Transmit and Receive | 1                   | 19 kHz to 21 kHz     | WPT systems |
| Transmit and Receive | 2                   | 59 kHz to 61 kHz     | WPT systems |
| Transmit and Receive | 3                   | 79 kHz to 90 kHz     | WPT systems |
| Transmit and Receive | 4                   | 100 kHz to 119 kHz   | WPT systems |
| Transmit and Receive |                     | 119 kHz to 140 kHz   | WPT systems |
|                      |                     |                      |             |
| Transmit and Receive |                     | 140 kHz to 148,5 kHz | WPT systems |
| Transmit and Receive | 5                   | 148.5 kHz to 300 kHz | WPT systems |
| Transmit and Receive |                     | 6765kHz to 6795 kHz  | WPT systems |

### 4.2. Limit

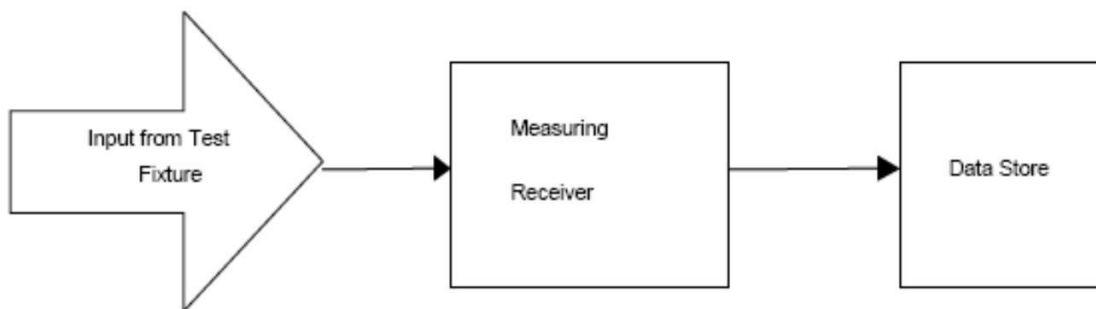
The permitted range of operating frequency range(s) for intentional emissions shall be within 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz.

Table 2: Overview of operational modes within a WPT system

| Operational Mode                                                              | Set-up               | Function of base station | Function of mobile device | Test scenario                                                                                                                                                                                                                                                                                                                            | Conformance Requirements                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------|----------------------|--------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode 1:<br>base station in stand-by, idle mode                                | Single device        | Transmitter              | Not applicable            | Single radiation test (TX) with the base station/charging pad. The test set-up as described in clause 6.1.2 shall be used.                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Operating frequency range (clause 4.3.3)</li> <li>H-Field emission (clause 4.3.4)</li> <li>TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7)</li> <li>Performance criteria test (RX test) (clause 4.4)</li> </ul>                                                                  |
| Mode 2:<br>Communication before charging, adjustment charging mode / position | In combination       | TX and RX                | TX and RX                 | Specific test setup, declared by the manufacturer. Manufacturer shall declare the maximal distance between base station and mobile device the WPT system is able to communicate (distance D). The test setup- up shall be performed with the largest communication distance. The test set-up as described in clause 6.1.3 shall be used. | <ul style="list-style-type: none"> <li>Operating frequency range (clause 4.3.3)</li> <li>H-Field emission (clause 4.3.4)</li> <li>TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7)</li> <li>Performance criteria test (RX test) (clause 4.4)</li> <li>Wanted performance criteria test (RX test) (clause 4.4)</li> </ul> |
| Mode 3:<br>Communication                                                      | WPT system alignment | TX and RX                | TX and RX                 | Worst case alignment                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Operating frequency range (clause 4.3.3)</li> <li>H-Field emission (clause 4.3.4)</li> <li>TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7)</li> <li>Performance criteria test (RX test) (clause 4.4)</li> <li>Wanted performance criteria test (RX test) (clause 4.4)</li> </ul> |
| Mode 4: energy transmission                                                   | WPT system alignment | TX and RX                | TX and RX                 | Both tests can be performed within one set-up, worst-case alignment. The test set-up as described in clause 6.1.4 shall be used.                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Performance criteria test (RX test) (clause 4.4)</li> <li>Wanted performance criteria test (RX test) (clause 4.4)</li> </ul>                                                                                                                                                  |

### 4.3. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6 for the measurement method.



#### 4.4. Test Result

**Pass**

| Test Result           |                    |                       |                       |                 |
|-----------------------|--------------------|-----------------------|-----------------------|-----------------|
| Test Temperature (°C) | Test Voltage (Vdc) | Lower Frequency (KHz) | Upper Frequency (KHz) | Limit           |
| 25°C                  | 5.0                | 102.23                | 115.07                | 100KHz<f<300KHz |
| 25°C                  | 5.0                | 117.46                | 205.24                | 100KHz<f<300KHz |

## 5. OPERATING FREQUENCY RANGE(S) (OFR)

### 5.1. Definition

The operating frequency range is the frequency range over which the WPT system is intentionally transmitting (all operational modes, see clause 4.2.3, Table 2).

The operating frequency range(s) of the WPT system are determined by the lowest ( $f_L$ ) and highest frequency ( $f_H$ ) as occupied by the power envelope.

The WPT system could have more than one operating frequency range.

For a single frequency systems the OFR is equal to the occupied bandwidth (OBW) of the WPT system.

For multi-frequency systems the OFR is described in figures 2 and 3.

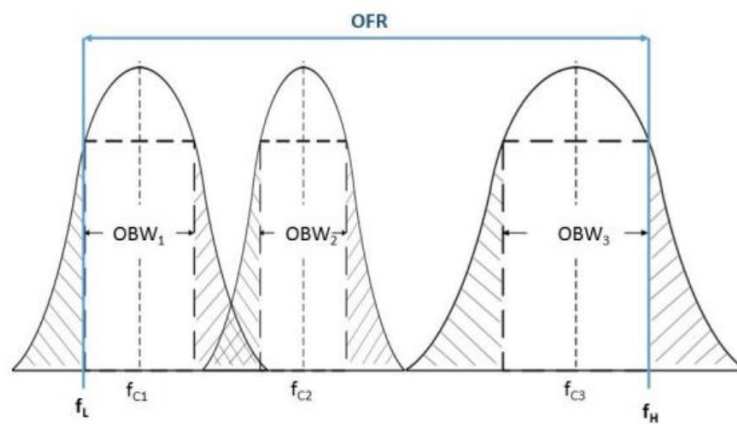


Figure 2: OFR of a multi - frequency WPT system within one frequency range of Table 2 and within one WPT system cycle time

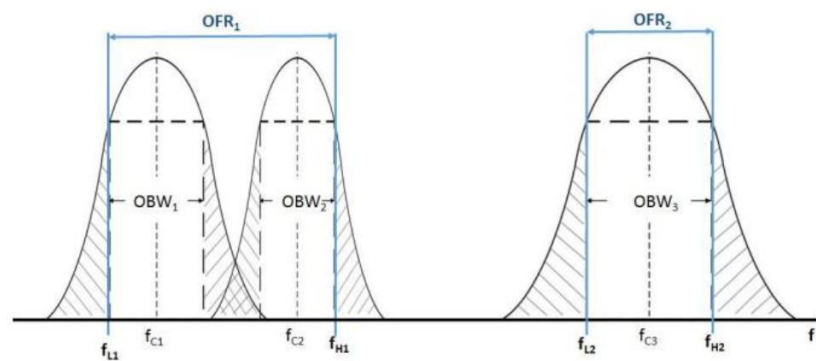


Figure 3: OFR of a multi - frequency WPT system within two frequency ranges of Table 2 and within one WPT system cycle time

### 5.2. Limit

The operating frequency range for emissions shall be within one of the following limits: 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz.

5.3. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6 for the measurement method.

5.4. Test Result

Pass

| Test Result           |                    |                       |                       |               |
|-----------------------|--------------------|-----------------------|-----------------------|---------------|
| Test temperature (°C) | Test voltage (Vdc) | Lower Frequence (kHz) | Upper Frequence (kHz) | Limit         |
| 25°C                  | 5.0                | 103.42                | 125.17                | 100Hz<f<300Hz |
| 25°C                  | 5.0                | 115.27                | 204.36                | 100Hz<f<300Hz |

## 6. H-FIELD REQUIREMENTS

### 6.1. Definition

The radiated H-field is defined in the direction of maximum field strength under specified conditions of measurement.

### 6.2. Limit

The H-field limits are provided in Table 3.

They have been specified for control of any radiated emissions within the OFR originating from the WPT system (power transmission and accompanying data communication).

The H-field limits in Table 3 are EU wide harmonised according to EC Decision 2013/752/EU [i.2]. Further information is available in ERC/REC 70-03 [i.1].

**Table 3 H-field limits at 10 m**

| Frequency range [MHz]   | H-field strength limit [dB $\mu$ A/m at 10 m] | Comments   |
|-------------------------|-----------------------------------------------|------------|
| $0,019 \leq f < 0,021$  | 72                                            |            |
| $0,059 \leq f < 0,061$  | 69,1 descending 10 dB/dec above 0,059 MHz     | See note 1 |
| $0,079 \leq f < 0,090$  | 67,8 descending 10 dB/dec above 0,079 MHz     | See note 2 |
| $0,100 \leq f < 0,119$  | 42                                            |            |
| $0,119 \leq f < 0,135$  | 66 descending 10 dB/dec above 0,119 MHz       | See note 1 |
| $0,135 \leq f < 0,140$  | 42                                            |            |
| $0,140 \leq f < 0,1485$ | 37,7                                          |            |
| $0,1485 \leq f < 0,30$  | -5                                            |            |
| $6,765 \leq f < 6,795$  | 42                                            |            |

NOTE 1: Limit is 42 dB $\mu$ A/m for the following spot frequencies: 60 kHz  $\pm$  250 Hz and 129,1 kHz  $\pm$  500 Hz.

NOTE 2: At the time of preparation of the present document the feasibility of increased limits for high power wireless power transmission systems to charge vehicles [i.4] was prepared. New specific requirements for such systems (e.g. higher H-field emission limits in the 79 - 90 kHz band) will be reflected within a future revision of the present document.

### 6.3. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6.1&6.2 for the measurement method.

### 6.4. Test Result

**Pass**

| Frequency(KHz)         | Antenna Polarity | Measure Level At 3m (dBuA/m) | Calculated Factor (dB, -C3) | Result At 10m (dBuA/m) | Limit At 10m (dBuA/m)                 |
|------------------------|------------------|------------------------------|-----------------------------|------------------------|---------------------------------------|
| 110.00 (Pairing)       | --               | 11.52                        | -31.4                       | -19.88                 | 42                                    |
| 111.00                 | --               | 10.34                        | -31.4                       | -21.06                 | 42                                    |
| 114.00                 | --               | 9.35                         | -31.4                       | -22.05                 | 42                                    |
| 117.00                 | --               | 9.57                         | -31.4                       | -21.83                 | 42                                    |
| 120.00                 | --               | 9.68                         | -31.4                       | -21.72                 | 66 descending 3 dB/oct above 0.119MHz |
| 129.05                 | --               | 9.95                         | -31.4                       | -21.45                 | 42                                    |
| 129.15                 | --               | 8.67                         | -31.4                       | -22.73                 | 42                                    |
| 135.00                 | --               | 8.45                         | -31.4                       | -22.95                 | 42                                    |
| 139.00                 | --               | 11.89                        | -31.4                       | -19.51                 | 42                                    |
| 141.00                 | --               | 10.67                        | -31.4                       | -20.73                 | 37.7                                  |
| 148.00                 | --               | 11.53                        | -31.4                       | -19.87                 | 37.7                                  |
| 150.00                 | --               | 10.58                        | -31.4                       | -20.82                 | -5                                    |
| 177.50(Low power Mode) | --               | 8.42                         | -31.4                       | -22.98                 | -5                                    |
| 204.00                 | --               | 9.36                         | -31.4                       | -22.04                 | -5                                    |

\*\*\*Note:

$$H_{10m}=H_{3m}-C_3$$

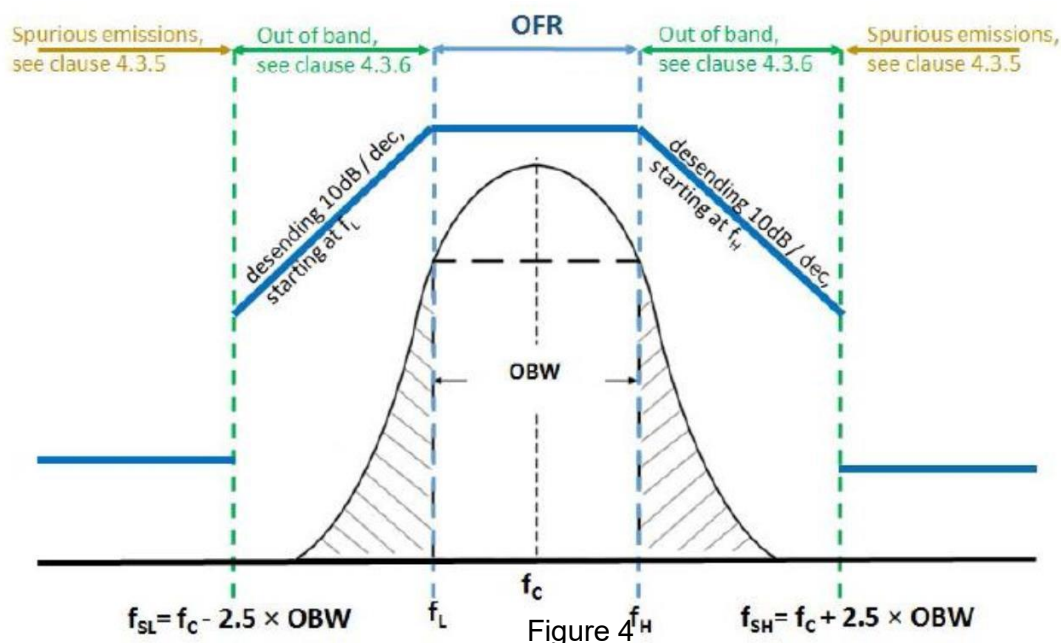
The correct factor  $C_3$  is equal to or approximately equal to 31.4dB

All test modes have been tested and only record the worst result.

## 7. TRANSMITTER SPURIOUS EMISSIONS

### 7.1. Definition

The transmitter spurious emissions for a single frequency system are to be considered in frequency ranges defined in Figure 4 ( $f < f_{SL}$  and  $f > f_{SH}$ ).



### 7.2. Limit

The radiated field strength of spurious emissions below 30 MHz shall not exceed the generated H-field given in Table 4.

Table 4

| State (see note) | Frequency $9 \text{ kHz} \leq f < 10 \text{ MHz}$ | Frequency $10 \text{ MHz} \leq f < 30 \text{ MHz}$ |
|------------------|---------------------------------------------------|----------------------------------------------------|
| <b>Operating</b> | 27 dB $\mu$ A/m at 9 kHz descending 10 dB/dec     | -3,5 dB $\mu$ A/m                                  |
| <b>Standby</b>   | 5,5 dB $\mu$ A/m at 9 kHz descending 10 dB/dec    | -25 dB $\mu$ A/m                                   |

NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.

The power of any radiated spurious emission between 30 MHz and 1 GHz shall not exceed the values given in Table 5.

Table 5

| State (see note) | 47 MHz to 74 MHz<br>87,5 MHz to 118 MHz<br>174 MHz to 230 MHz<br>470 MHz to 790 MHz | Other frequencies between 30 MHz to 1 000 MHz |
|------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Operating</b> | 4 nW                                                                                | 250 nW                                        |
| <b>Standby</b>   | 2 nW                                                                                | 2 nW                                          |

NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2

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### 7.3. Test Setup

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6.

### 7.4. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6.1&6.2 for the measurement method.

### 7.5. Test Result

| Test Result for Operating Mode (9KHz~30MHz) |                        |                                                              |             |
|---------------------------------------------|------------------------|--------------------------------------------------------------|-------------|
| Frequency (MHz)                             | Measure Level (dBuA/m) | Limit (dBuA/m)                                               | Margin (dB) |
| --                                          | --                     | 27 dBμA/m at 9 kHz<br>descending 3 dB/oct<br>(9KHz – 10MHz)  | --          |
| --                                          | --                     |                                                              | --          |
| --                                          | --                     | -3,5 dBμA/m<br>(10MHz – 30MHz)                               | --          |
| --                                          | --                     |                                                              | --          |
| Test Result for Standby Mode (9KHz~30MHz)   |                        |                                                              |             |
| Frequency (MHz)                             | Measure Level (dBuA/m) | Limit (dBuA/m)                                               | Margin (dB) |
| --                                          | --                     | 5.5 dBμA/m at 9 kHz<br>descending 3 dB/oct<br>(9KHz – 10MHz) | --          |
| --                                          | --                     |                                                              | --          |
| --                                          | --                     | -25 dBμA/m<br>(10MHz – 30MHz)                                | --          |
| --                                          | --                     |                                                              | --          |

#### Remark:

Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. Measured in frequency range from 9k~10th harmonic or 1GHz(which is greater).

| The Test Result for Operating Mode,Tx-150KHz(Above 30MHz) |                     |             |             |            |        |
|-----------------------------------------------------------|---------------------|-------------|-------------|------------|--------|
| Frequency (MHz)                                           | Measure Level (dBm) | Limit (dBm) | Margin (dB) | Pol/Phase  | Remark |
| 80.24                                                     | -51.44              | -36         | -15.44      | Horizontal | Peak   |
| 145.57                                                    | -52.38              | -36         | -16.38      | Horizontal | Peak   |
| 349.39                                                    | -49.33              | -36         | -13.33      | Horizontal | Peak   |
| 52.34                                                     | -68.27              | -54         | -14.27      | Vertical   | Peak   |
| 125.56                                                    | -53.45              | -36         | -17.45      | Vertical   | Peak   |
| 459.56                                                    | -54.79              | -36         | -18.79      | Vertical   | Peak   |

The Test Result for Operating Mode,Tx-150KHz(Above 30MHz)

| Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Margin (dB) | Pol/Phase  | Remark |
|-----------------|---------------------|-------------|-------------|------------|--------|
| 81.2            | -52.46              | -36         | -16.46      | Horizontal | Peak   |
| 143.28          | -51.45              | -36         | -15.45      | Horizontal | Peak   |
| 354.56          | -53.69              | -36         | -17.69      | Horizontal | Peak   |
| 50.69           | -71.22              | -54         | -17.22      | Vertical   | Peak   |
| 126.63          | -59.38              | -36         | -23.38      | Vertical   | Peak   |
| 457.91          | -58.72              | -36         | -22.72      | Vertical   | Peak   |

The Test Result for Operating Mode,Tx-204KHz(Above 30MHz)

| Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Margin (dB) | Pol/Phase  | Remark |
|-----------------|---------------------|-------------|-------------|------------|--------|
| 76.91           | -53.78              | -36         | -17.78      | Horizontal | Peak   |
| 144.91          | -54.12              | -36         | -18.12      | Horizontal | Peak   |
| 351.51          | -49.66              | -36         | -13.66      | Horizontal | Peak   |
| 52.25           | -67.28              | -54         | -13.28      | Vertical   | Peak   |
| 129.08          | -50.27              | -36         | -14.27      | Vertical   | Peak   |
| 455.83          | -53.14              | -36         | -17.14      | Vertical   | Peak   |

The Test Result for Operating Mode,Tx-100KHz(Above 30MHz)

| Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Margin (dB) | Pol/Phase  | Remark |
|-----------------|---------------------|-------------|-------------|------------|--------|
| 76.5            | -53.74              | -36         | -17.74      | Horizontal | Peak   |
| 146.22          | -48.65              | -36         | -12.65      | Horizontal | Peak   |
| 352.69          | -53.37              | -36         | -17.37      | Horizontal | Peak   |
| 53.67           | -64.02              | -54         | -10.02      | Vertical   | Peak   |
| 128.92          | -56.82              | -36         | -20.82      | Vertical   | Peak   |
| 460.3           | -51.29              | -36         | -15.29      | Vertical   | Peak   |

The Test Result for Operating Mode,Tx-177.5KHz(Above 30MHz)

| Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Margin (dB) | Pol/Phase  | Remark |
|-----------------|---------------------|-------------|-------------|------------|--------|
| 52.59           | -62.05              | -57         | -5.05       | Horizontal | Peak   |
| 101.63          | -63.41              | -57         | -6.41       | Horizontal | Peak   |
| 223.49          | -72.23              | -57         | -15.23      | Horizontal | Peak   |
| 54.36           | -70.58              | -57         | -13.58      | Vertical   | Peak   |
| 114.54          | -71.35              | -57         | -14.35      | Vertical   | Peak   |
| 224.3           | -72.45              | -57         | -15.45      | Vertical   | Peak   |

Note:We have test all modes and only record the worst result.

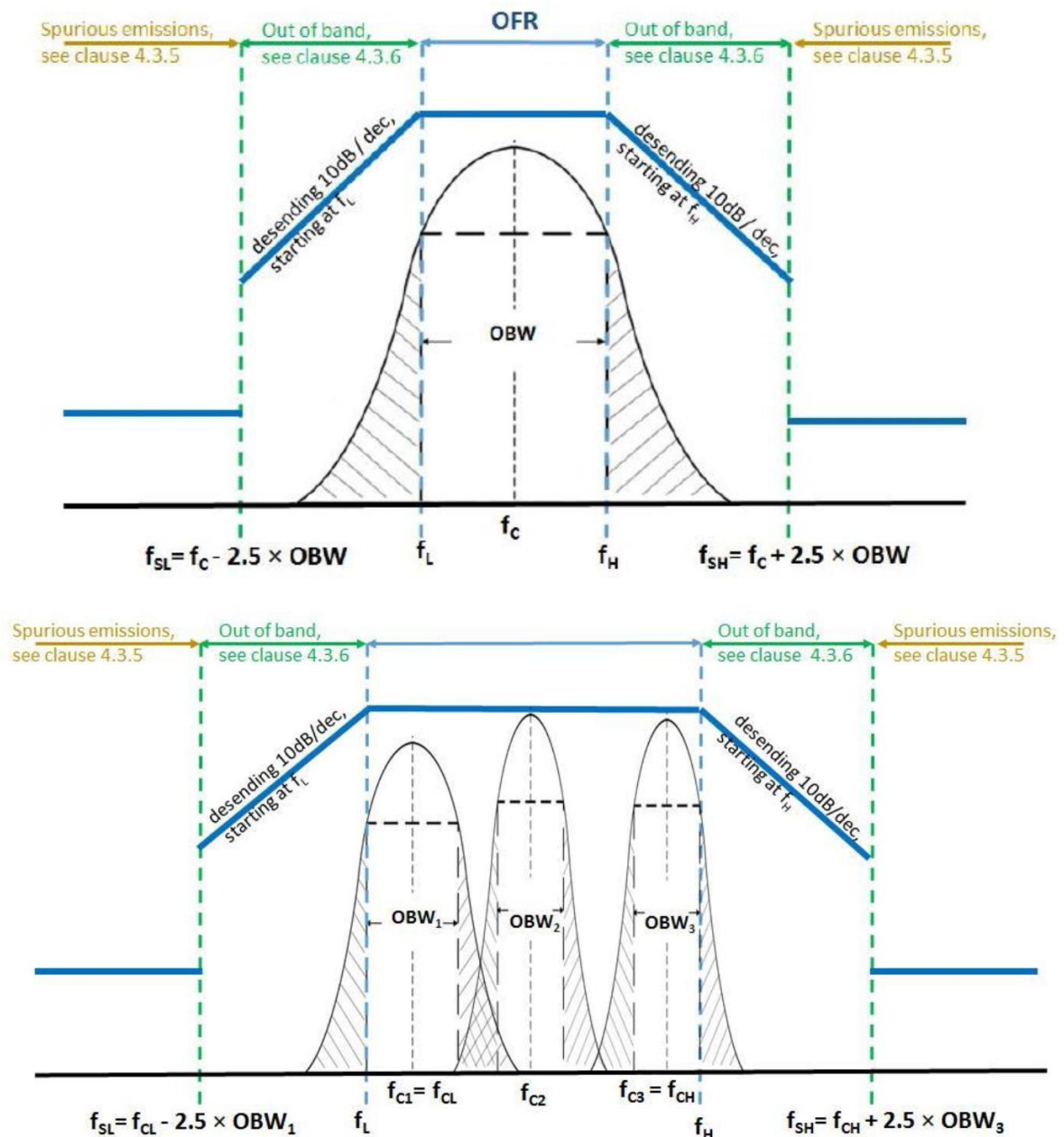
## 8. TRANSMITTER OUT OF BAND (OOB) EMISSIONS

### 8.1. Definition

The WPT system out of band emissions are to be considered in frequency ranges defined in Figure 4 and Figure 5 (between  $f_{SL}$  and  $f_L$  and between  $f_H$  and  $f_{SH}$ ).

### 8.2. Limit

The OOB limits are visualized in figures 4 and 5; they are descending from the intentional limits from Table 3 at  $f_H/f_L$  with 10 dB/decade.



### 8.3. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6.1&6.2 for the measurement method.

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## 8.4. Test Result

### PASS

Test Mode: MO9434

| Frequency<br>(KHz)           | Antenna<br>Polarity | Measure Level At<br>3m | Result At 10m | Limit At 10m                                 |
|------------------------------|---------------------|------------------------|---------------|----------------------------------------------|
|                              |                     | (dBuA/m)               | (dBuA/m)      | (dBuA/m)                                     |
| 110.00<br>(Pairing)          | --                  | 7.43                   | -23.24        | 32.0                                         |
| 111.00                       | --                  | 10.42                  | -20.76        | 32.0                                         |
| 114.00                       | --                  | 9.37                   | -20.97        | 32.0                                         |
| 117.00                       | --                  | 10.42                  | -20.41        | 32.0                                         |
| 120.00                       | --                  | 9.55                   | -21.65        | 56 descending 3<br>dB/oct above<br>0,119 MHz |
| 129.05                       | --                  | 1.33                   | -30.06        | 32.0                                         |
| 129.15                       | --                  | 1.64                   | -29.47        | 32.0                                         |
| 135.00                       | --                  | 8.41                   | -22.59        | 32.0                                         |
| 139.00                       | --                  | 8.86                   | -22.57        | 32.0                                         |
| 141.00                       | --                  | 7.98                   | -22.36        | 27.7                                         |
| 148.00                       | --                  | 8.42                   | -21.24        | 27.7                                         |
| 150.00                       | --                  | 8.53                   | -21.79        | -15.0                                        |
| 177.50(Low<br>power<br>Mode) | --                  | 2.83                   | -27.26        | -15.0                                        |
| 204.00                       | --                  | 3.83                   | -26.32        | -15.0                                        |

## 9. WPT SYSTEM UNWANTED CONDUCTED EMISSIONS

### 9.1. Applicability

This applies to all WPT systems where the cable to the primary coil exceeds a length of 3 m and where the cable is not installed in the ground or any metallic structures.

### 9.2. Definition

WPT system unwanted conducted emissions are based on the emissions of the unwanted common mode current on the cable between the off board power supply and the primary coil seen as a monopole radiator driven against the power supply.

### 9.3. Limit

The common mode current (ICM) between 1 MHz and 30 MHz shall not exceed the following limit:

$$\text{ICM} = 47 - 8 \times \log(f) \text{ dB}\mu\text{A}$$

NOTE: f is the frequency in MHz.

### 9.4. Test Procedure

Please refer to ETSI EN 303 417 V1.1.1 (2017-09) clause 6.2.4 for the measurement method.

### 9.4. Test Result

NOT Applicable.

Note: The EUT cable to the primary coil is less than a length of 3 m.

10. RECEIVER BLOCKING

10.1. Definition

Blocking is a measure of the capability of the receiver to receive a wanted signal without exceeding a given degradation due to the presence of an unwanted input signal at any frequencies other than those of the receiver spurious responses.

The test shall be performed in the relevant operational modes (see clause 4.2.3).

The wanted performance criteria from clause 4.2.2 shall be used as criterion for the receiver blocking tests.

10.2. Limit

| Table 6: Receiver blocking limits      |                                                            |                            |                                      |
|----------------------------------------|------------------------------------------------------------|----------------------------|--------------------------------------|
|                                        | In-band signal                                             | OOB signal                 | Remote-band signal                   |
| Frequency                              | Centre frequency (fc) of the WPT system (see clause 4.3.3) | $f = f_c \pm F$ (see note) | $f = f_c \pm 10 \times F$ (see note) |
| Signal level field strength at the EUT | 72 dBμA/m                                                  | 72 dBμA/m                  | 82 dBμA/m                            |
| NOTE: F = OFR see clause 4.3.3.        |                                                            |                            |                                      |

10.3. Test Setup

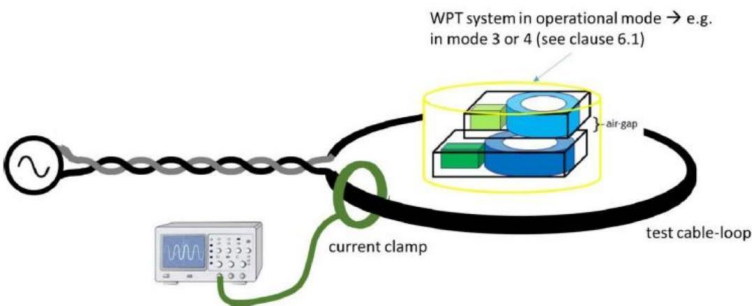


Figure 11: Schematic test set-up for the RX-blocking test

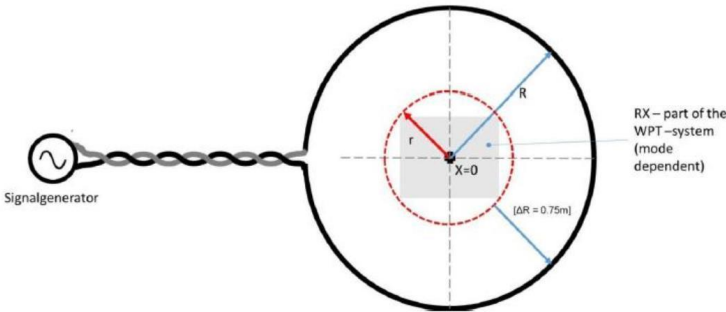


Figure 12: Schematic test set-up for the RX-blocking test

#### 10.4. Test Procedure

- a) The fulfilment of the WPT system performance criterion in all possible operational modes (see clause 4.2.3) shall be tested in presence of the inference signals according to Table 6.
- b) The manufacturer shall declare in which device orientation(s) (worst case) the test shall be performed.
- c) The WPT system shall initially operate without interference according to its specified sensitivity (detecting an specific object in the maximum depth as declared by the manufacturer (see clause 4.2.2 on wanted performance criteria)).
- d) The test setup is visualized in the following Figures 11 and 12.
- e) The tool shall be operated as intended (e.g. some tools might require to be moved across the object, some tool can be used stationary).
- f) The test shall be carried out inside a test chamber according to clauses C.1.1 and C.1.2 in ETSI EN 300 330 [1].
- g) A test loop with a radius  $r$  shall be used to create the magnetic field; the test loop shall lie on a non-metallic ground and the minimum distance to metallic objects (e.g. ground plane) shall be 0,75 m.
- h) The EUT shall be placed to the centre of the test-loop (e.g. see Figures 11 and 12).
- i) The test loop shall be sufficiently large so that the test loop itself does not influence the WPT system; The radius  $R$  of the test-loop shall be in minimum  $\Delta R = 0,75$  m larger than the maximum dimension  $r$  of the EUT.
- j) (See Figure 12):  $R \geq r + \Delta R$ .
- k) The maximum H-Field can be calculated from the loop current  $I$  (into the test-loop) with the following formula:
- l) The required output current to achieve the required magnetic field from Table 12 at the WPT system shall be generated with a signal generator (unmodulated signal) at the test frequencies from Table 6.
- m) For each test frequency the "reaction" of the device shall be recorded and checked against the performance criterion from clause 4.2.2.
- n)

#### 10.5. Test Result

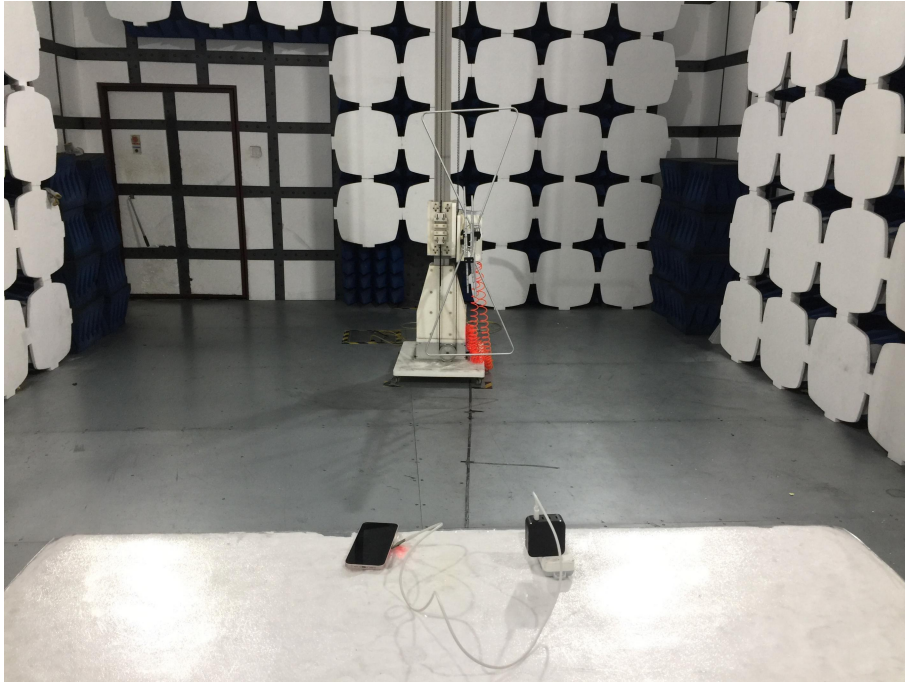
PASS.

**11. LIST OF MEASURING EQUIPMENT**

| Manufacturer      | Description              | Model        | Serial Number | Cal. Date  | Due Date   |
|-------------------|--------------------------|--------------|---------------|------------|------------|
| SIDT FRANKONIA    | 3m Semi Anechoic Chamber | SAC-3M       | 03CH03-HY     | 2023/12/18 | 2024/12/17 |
| EMI Test Receiver | ROHDE& SCHWARZS          | ESCI         | 101142        | 2023/12/18 | 2024/12/17 |
| Agilent           | Spectrum Analyzer        | E4407B       | MY41440292    | 2023/12/16 | 2024/12/15 |
| Agilent           | MXA Signal Analyzer      | N9020A       | MY50510140    | 2023/12/27 | 2024/12/26 |
| SCHWARZBECK       | Loop Antenna             | FMZB 1519    | /             | 2023/12/16 | 2024/12/15 |
| SCHWARZBECK       | By-log Antenna           | VULB9163     | 9163-470      | 2023/12/10 | 2024/12/09 |
| EMCO              | Horn Antenna             | 3115         | 6741          | 2023/12/10 | 2024/12/09 |
| Jye Bao           | RF Cable-R03m            | RG142        | CB021         | 2023/12/18 | 2024/12/17 |
| SUCOFLEX          | RF Cable-HIGH            | SUCOFLEX 106 | 03CH03-HY     | 2023/12/18 | 2024/12/17 |

## 12. TEST SETUP PHOTOGRAPHS

**Photo of Radiated Emissions Measurement**

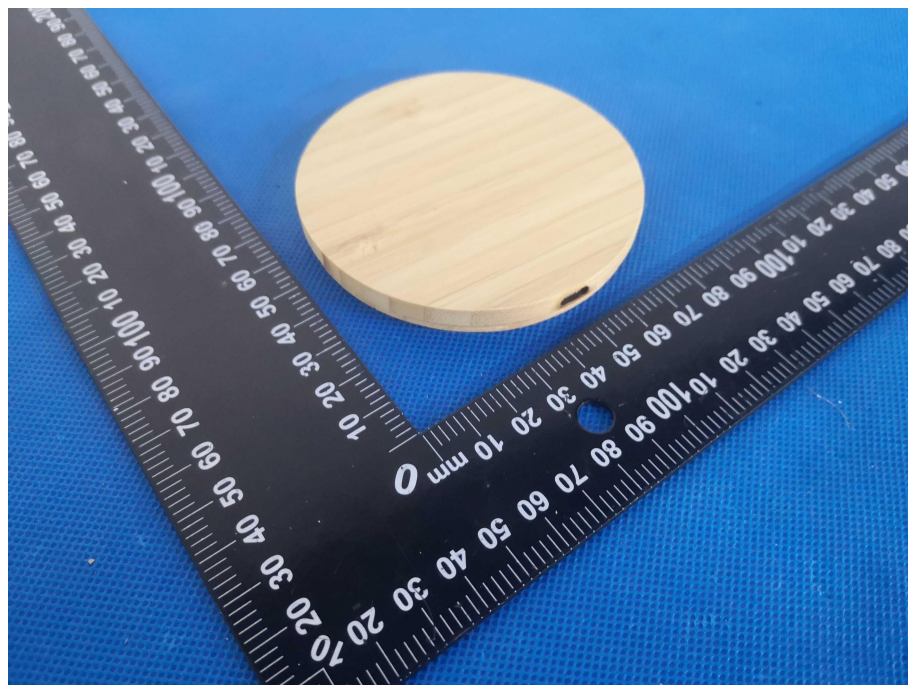


## 12. EXTERIOR AND INTERIOR PHOTOGRAPHS OF EUT

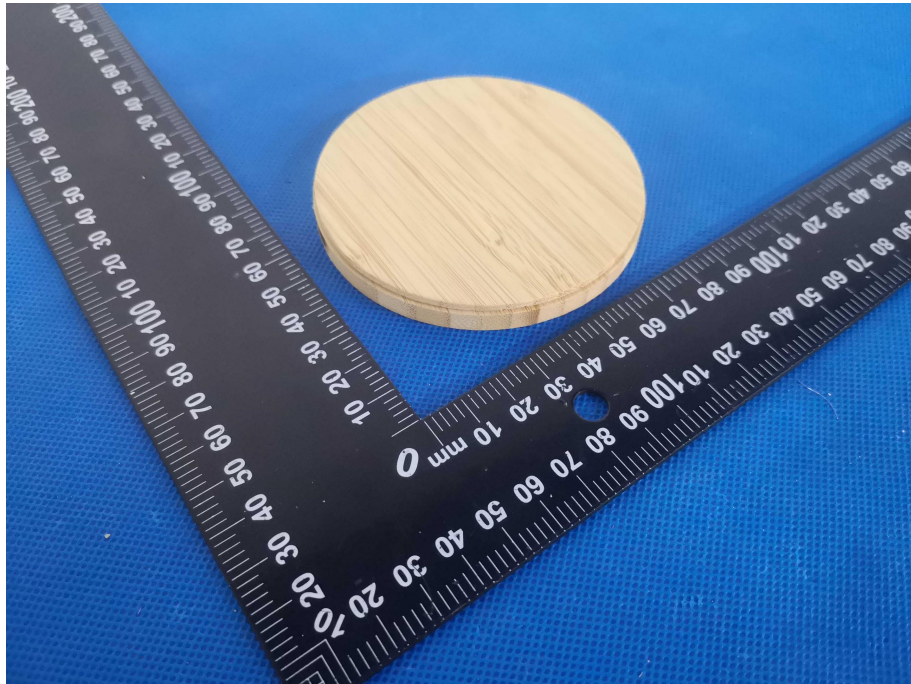
Appearance photograph of EUT



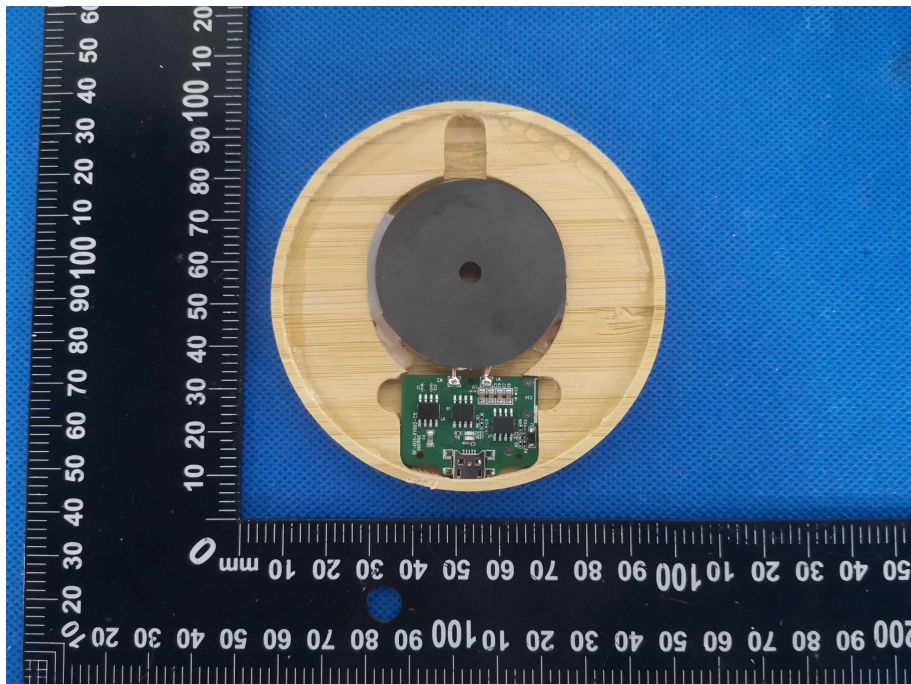
Appearance photograph of EUT



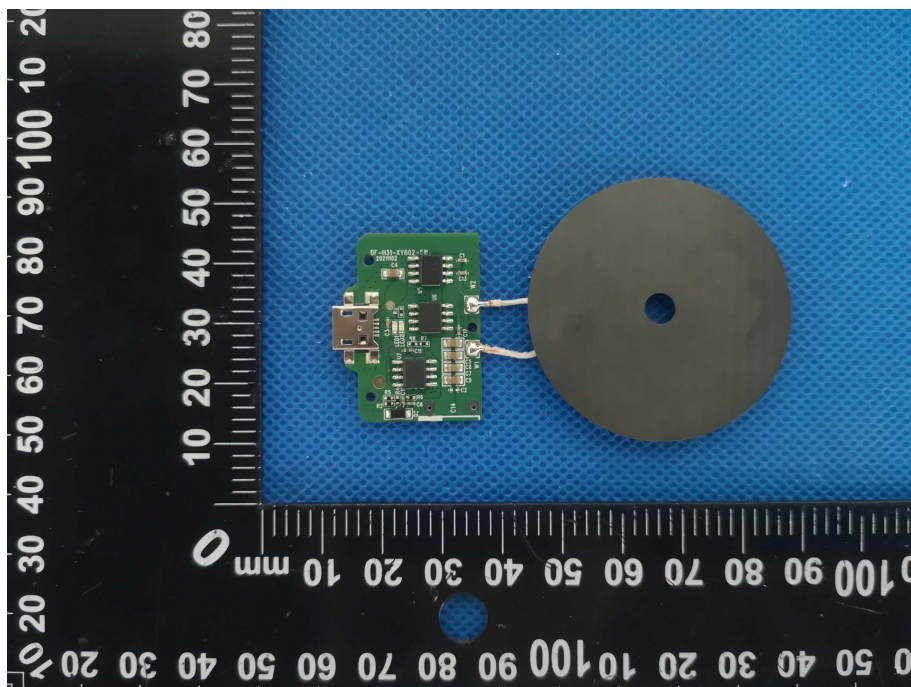
Appearance photograph of EUT



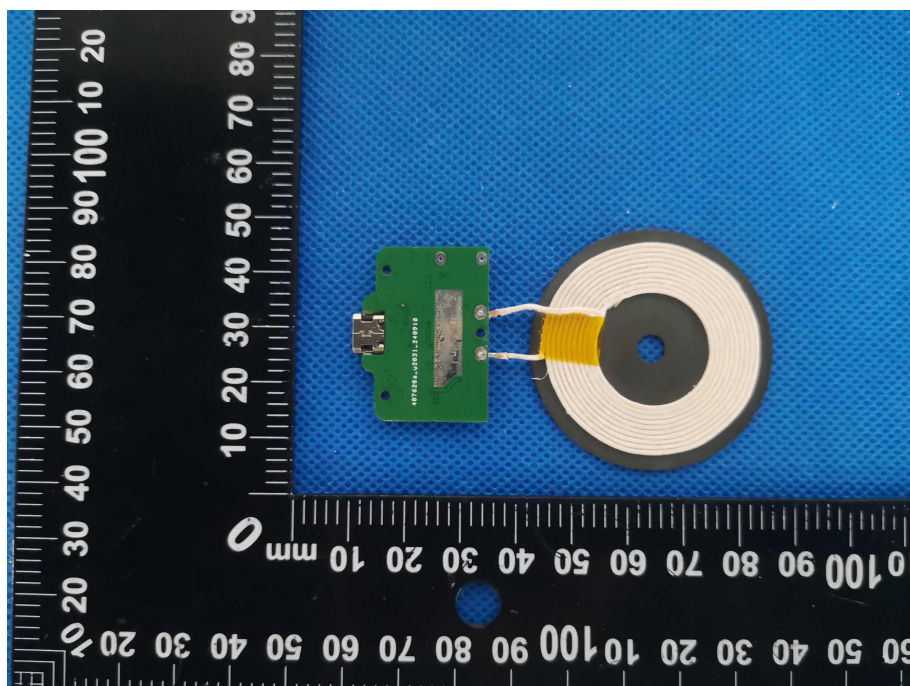
Appearance photograph of EUT



Appearance photograph of EUT



Appearance photograph of EUT



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



# Health Test Report

**Prepared for :**

**Mid Ocean Brands B.V.**

**7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong  
Kong**

**Product: Bamboo wireless charger**

**Trade Name: N/A**

**Model Name: MO9434**

**Date of Test: September 30, 2024- October 11, 2024**

**Date of Report: October 11, 2024**

**Report Number: SIT240918160501HR**

**Prepared By :**

**Shenzhen SIT Testing Technology Co., Ltd**

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Applicant : Mid Ocean Brands B.V.  
 Address : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong  
 Manufacturer : 114628  
 EUT Description : Bamboo wireless charger  
 (A) Model No. : MO9434  
 (B) Serial Model : N/A  
 (C) Power Supply : Input: 5V $\overline{\text{---}}$ 2A  
 Output (Wireless): 5W

**Standards**..... EN IEC 62311:2020  
 EN 50665:2017

This device described above has been tested by SIT LAB, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.2 requirements. And it is applicable only to the tested sample identified in the report.

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Test Result..... **Pass**

Date of Test: September 30, 2024 - October 11, 2024

Prepared by: Debe Yu  
 Project Engineer

Reviewed by: Jessica  
 Project Supervisor

Approved by: Kevin San  
 Technical Director



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## 1. GENERAL INFORMATION

### 1.2. GENERAL DESCRIPTION OF EUT

|                     |                                                                                                                                                                                                                                                                                                                                                           |                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Equipment           | Bamboo wireless charger                                                                                                                                                                                                                                                                                                                                   |                 |
| Model Name.         | MO9434                                                                                                                                                                                                                                                                                                                                                    |                 |
| Serial Model        | N/A                                                                                                                                                                                                                                                                                                                                                       |                 |
| Model Difference    | All types of circuits and RF modules are the same, this report only test mode name: MO9434 .                                                                                                                                                                                                                                                              |                 |
| Product Description | The EUT is Bamboo wireless charger:                                                                                                                                                                                                                                                                                                                       |                 |
|                     | Bit Rate of Transmitter                                                                                                                                                                                                                                                                                                                                   | N/A             |
|                     | Antenna Designation:                                                                                                                                                                                                                                                                                                                                      | Ferrite Antenna |
|                     | Antenna Gain(Peak)                                                                                                                                                                                                                                                                                                                                        | 2 dBi           |
|                     | Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.<br>Note: This radio test report only applies for wireless, For Other transmitters is tested and reported in another radio test report. |                 |
| Channel List        | Refer to below                                                                                                                                                                                                                                                                                                                                            |                 |
| Power               | Input: 5V---2A<br>Output (Wireless): 5W                                                                                                                                                                                                                                                                                                                   |                 |
| Hardware Version    | N/A                                                                                                                                                                                                                                                                                                                                                       |                 |
| Software Version    | N/A                                                                                                                                                                                                                                                                                                                                                       |                 |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

IEEE 802.11b/g/n HT20/Nht40: Thirteen channels are provided to the EUT.

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 1       | <b>2412</b>    | 8       | 2447           |
| 2       | 2417           | 9       | 2452           |
| 3       | 2422           | 10      | 2457           |
| 4       | 2427           | 11      | 2462           |
| 5       | 2432           | 12      | 2467           |
| 6       | 2437           | 13      | <b>2472</b>    |
| 7       | <b>2442</b>    |         |                |

### Test Frequency List

| Modulation Type | Test Frequency |                 |         |                 |         |                 |
|-----------------|----------------|-----------------|---------|-----------------|---------|-----------------|
|                 | Lowest         |                 | Middle  |                 | Highest |                 |
|                 | Channel        | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 802.11b         | 1              | 2412            | 7       | 2442            | 13      | 2472            |
| 802.11g         | 1              | 2412            | 7       | 2442            | 13      | 2472            |
| 802.11n(H20)    | 1              | 2412            | 7       | 2442            | 13      | 2472            |
| 802.11n(H40)    | 3              | 2422            | 7       | 2442            | 11      | 2462            |

## 2. EN 50665 REQUIREMENT

### 2.1. GENERAL INFORMATION

The essential requirements of Directive 99/5/ec in the article 3.1(a) and the limits must be taken from Council Recommendation 99/519/EC for General Population or from the ICNIRP Guidelines for Occupational Exposure, EN 50665 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)

### 2.2. LIMIT

| Exposure limits                                          | SAR Limit(W/kg)                                      |                                              |
|----------------------------------------------------------|------------------------------------------------------|----------------------------------------------|
|                                                          | General population/uncontrolled exposure environment | Occupational/controlled exposure environment |
| Spatial Average(averaged over the whole body)            | 0.08                                                 | 0.4                                          |
| Spatial peak(averaged over any 1g of tissue)             | 2.0                                                  | 10                                           |
| Spatial peak(hands/wrists/feet/ankles averaged over 10g) | 4.0                                                  | 20.0                                         |

### 3. RESULT

The maximum results of specific absorption rate found during testing for MO9434 are as follows(with expanded uncertainty 6.4%)

Table1

| Exposure Configuration              | Frequency | Highest Measured SAR 1g(W/Kg) | Highest Measured SAR 10g(W/Kg) |
|-------------------------------------|-----------|-------------------------------|--------------------------------|
| Head<br>(Separation Distance 20cm)  | 2412 MHz  | 0.1045                        | 0.1013                         |
|                                     | 2442 MHz  | 0.1089                        | <b>0.1035</b>                  |
|                                     | 2472 MHz  | 0.1067                        | 0.1087                         |
| Body-worn(Separation Distance 20cm) | 2412 MHz  | 0.1228                        | 0.1236                         |
|                                     | 2442 MHz  | 0.1125                        | <b>0.1339</b>                  |
|                                     | 2472 MHz  | 0.1262                        | 0.1318                         |

The maximum sar value is obtained at the case of (table1), and the maximum value is **0.1339** W/Kg(10g) for Head and **0.1035** W/Kg(10g)for body.

Test result : pass

-----The end of the report-----