

# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

**Test Report No.** : W15DR-D015

**AGR No** : A15NA-011

**Applicant** : IGC Co., Ltd.

**Address** : Halla SigmaValley 6F-Room. 606, 1 gongdan-ro 212, Gumi-si, Gyeongsangbuk-do, 39376, Korea

**Manufacturer** : IGC Co., Ltd.

**Address** : Halla SigmaValley 6F-Room. 606, 1 gongdan-ro 212, Gumi-si, Gyeongsangbuk-do, 39376, Korea

**Type of Equipment** : Wireless Charger Wi-Pi

**FCC ID.** : 2AGOU-WIPL15B-A

**Model Name** : WIPL15B-A

**Multiple Model Name** : WIPL15B-C, WIPL15W-A

**Serial number** : N/A

**Total page of Report** : 9 pages (including this page)

**Date of Incoming** : November 18, 2015

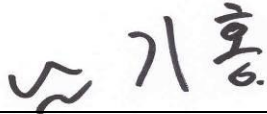
**Date of issue** : December 18, 2015

## SUMMARY

The equipment complies with the regulation; **FCC CFR 47 PART 1.1310**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Reviewed by:   
Ki-Hong, Nam / Asst, Chief Engineer  
ONETECH Corp.

Approved by:   
Sung-Ik, Han/ Managing Director  
ONETECH Corp.

## CONTENTS

### PAGE

|                                                              |          |
|--------------------------------------------------------------|----------|
| <b>1. VERIFICATION OF COMPLIANCE .....</b>                   | <b>4</b> |
| <b>2. GENERAL INFORMATION .....</b>                          | <b>5</b> |
| <b>2.1 PRODUCT DESCRIPTION.....</b>                          | <b>5</b> |
| <b>2.2 MODEL DIFFERENCES.....</b>                            | <b>5</b> |
| <b>3. EUT MODIFICATIONS.....</b>                             | <b>5</b> |
| <b>4. RADIO FREQUENCY EXPOSURE .....</b>                     | <b>6</b> |
| <b>4.1 ENVIRONMENTAL EVALUATION AND EXPOSURE LIMIT .....</b> | <b>6</b> |
| <b>4.2 H / E FIELD STRENGTH.....</b>                         | <b>7</b> |
| <b>4.3 LIST OF TEST EQUIPMENT .....</b>                      | <b>9</b> |

**Revision History**

| Issue Report No. | Issued Date       | Revisions       | Effect Section |
|------------------|-------------------|-----------------|----------------|
| W15DR-D015       | December 18, 2015 | Initial Release | All            |
|                  |                   |                 |                |
|                  |                   |                 |                |

## 1. VERIFICATION OF COMPLIANCE

APPLICANT : IGC Co., Ltd.  
 ADDRESS : Halla SigmaValley 6F-Room. 606, 1 gongdan-ro 212, Gumi-si, Gyeongsangbuk-do, 39376, Korea  
 CONTACT PERSON : InKyu, Kim / Chief Executive Officer  
 TELEPHONE NO : +82-70-8248-9198  
 FCC ID : 2AGOU-WIPL15B-A  
 MODEL NAME : WIPL15B-A  
 BRAND NAME : N/A  
 SERIAL NUMBER : N/A  
 DATE : December 18, 2015

|                                                         |                                                            |
|---------------------------------------------------------|------------------------------------------------------------|
| EQUIPMENT CLASS                                         | <b>DCD – Part 15 Low Power Transmitter Below 1 705 kHz</b> |
| KIND OF EQUIPMENT                                       | Wireless Charger Wi-Pl                                     |
| THIS REPORT CONCERNS                                    | Original Grant                                             |
| MEASUREMENT PROCEDURES                                  | ANSI C63.10: 2013                                          |
| TYPE OF EQUIPMENT TESTED                                | Pre-Production                                             |
| KIND OF EQUIPMENT<br>AUTHORIZATION REQUESTED            | Certification                                              |
| EQUIPMENT WILL BE OPERATED<br>UNDER FCC RULES PART(S)   | FCC CFR 47 PART 1.1310                                     |
| MODIFICATIONS ON THE EQUIPMENT<br>TO ACHIEVE COMPLIANCE | No                                                         |
| FINAL TEST WAS CONDUCTED ON                             | 3 m, Semi Anechoic Chamber                                 |

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

## 2. GENERAL INFORMATION

### 2.1 Product Description

The IGC Co., Ltd., Model: WIPL15B-A (referred to as the EUT in this report) is an Wireless Charger Wi-Pl. Product specification information described herein was obtained from product data sheet or user's manual.

|                                                    |                   |
|----------------------------------------------------|-------------------|
| DEVICE TYPE                                        | Wireless Charger  |
| OPERATING FREQUENCY                                | 110 kHz ~ 205 kHz |
| RATED RF OUTPUT POWER                              | 75.90 dBμV/m      |
| ANTENNA TYPE                                       | Coil Antenna      |
| MODULATION                                         | ASK               |
| LIST OF EACH OSC. OR<br>CRY. FREQ.(FREQ. >= 1 MHz) | 110 kHz ~ 205 kHz |
| RATED SUPPLY VOLTAGE                               | DC 5.0 V          |

### 2.2 Model Differences

The following lists consist of the added model and their differences.

| Model Name | Differences                                                                                                        | Tested                              |
|------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| WIPL15B-A  | Basic Model (Black / Stand Type)                                                                                   | <input checked="" type="checkbox"/> |
| WIPL15B-C  | This model is identical to basic model except for stationary type and enclosure's color.<br>(Black / CD Slot Type) | <input type="checkbox"/>            |
| WIPL15W-A  | This model is identical to basic model except for stationary type and enclosure's color.<br>(White / Stand Type)   | <input type="checkbox"/>            |

Note: 1. Applicant consigns only basic model to test, therefore this test report just guarantees the units which have been tested.

2. The Applicant/manufacture is responsible for the compliance of all variants.

## 3. EUT MODIFICATIONS

-. None

## 4. RADIO FREQUENCY EXPOSURE

### 4.1 Environmental evaluation and exposure limit

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter

| Frequency Range<br>[MHz]                                | Electric Field<br>Strength [V/m] | Magnetic Field<br>Strength [A/m] | Power Density<br>[mW/cm <sup>2</sup> ] | Average Time<br>[minutes] |
|---------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------------|---------------------------|
| (A) Limits for Occupational / Control Exposures         |                                  |                                  |                                        |                           |
| 0.3 – 3.0                                               | 614                              | 1.63                             | *(100)                                 | 6                         |
| 3.0 – 30                                                | 1 842/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                         |
| (B) Limits for General Population/Uncontrolled Exposure |                                  |                                  |                                        |                           |
| 0.3 – 3.0                                               | 614                              | 1.63                             | *(100)                                 | 30                        |
| 3.0 – 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/1 500                                | 30                        |
| 1 500 – 100 000                                         |                                  |                                  | 1.0                                    | 30                        |

f = frequency in MHz

\* = Plane wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

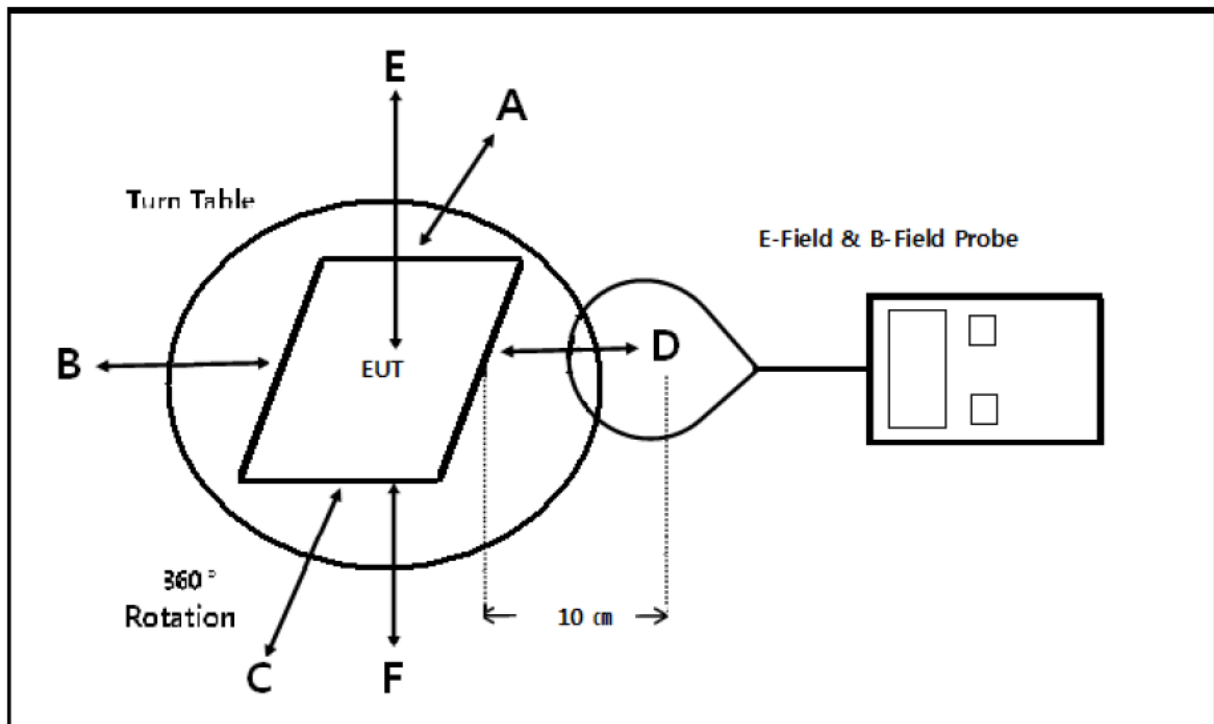
Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

## 4.2 H / E field strength

### 4.2.1 EUT Operating condition

| Mode                       | Charging current | Description    |
|----------------------------|------------------|----------------|
| Charging Mode<br>With load | 1 000 mA         | Using Max load |
|                            | 500 mA           | Using Mid load |
|                            | 100 mA           | Using Min load |

### 4.2.2 EUT Operating condition



### 4.2.3 Measurement procedure

- The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- The measurement probe was placed at test distance (10 cm) which is between the edge of the charger and the geometric center of probe.
- The turn table was rotated 360 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, F) were completed.
- The EUT were measured according to the dictates of KDB 680106 D01v02.

#### 4.2.4 E - field strength at 10 cm from each edges the EUT

| Mode                            | Position A<br>[V/m] | Position B<br>[V/m] | Position C<br>[V/m] | Position D<br>[V/m] | Position E<br>[V/m] | Position F<br>[V/m] | Limits<br>[V/m] |
|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------|
| Charging Mode<br>With Max. load | 0.92                | 0.88                | 1.05                | 1.11                | 1.84                | 1.52                | 614.00          |
| Charging Mode<br>With Mid. load | 0.88                | 0.91                | 0.99                | 1.06                | 1.75                | 1.45                | 614.00          |
| Charging Mode<br>With Min. load | 0.86                | 0.84                | 1.02                | 1.02                | 1.60                | 1.32                | 614.00          |

#### 4.2.5 H - field strength at 10 cm from each edges the EUT

| Mode                            | Position A<br>[A/m] | Position B<br>[A/m] | Position C<br>[A/m] | Position D<br>[A/m] | Position E<br>[A/m] | Position F<br>[A/m] | Limits<br>[A/m] |
|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------|
| Charging Mode<br>With Max. load | 0.31                | 0.33                | 0.35                | 0.34                | 0.42                | 0.33                | 1.63            |
| Charging Mode<br>With Mid. load | 0.33                | 0.34                | 0.35                | 0.36                | 0.45                | 0.31                | 1.63            |
| Charging Mode<br>With Min. load | 0.31                | 0.32                | 0.32                | 0.37                | 0.45                | 0.32                | 1.63            |



Tested by: Tae-Ho, Kim / Senior Engineer

#### 4.3 LIST OF TEST EQUIPMENT

| No. | EQUIPMENTS                     | MFR.              | MODEL   | SER. NO. | LAST CAL     | DUE CAL  | USE |
|-----|--------------------------------|-------------------|---------|----------|--------------|----------|-----|
| 1.  | Isotropic Electric Field Probe | Amplifer research | FP7003  | 311520   | 2015 .03. 11 | One Year | ■   |
| 3   | Exposure Level Meter           | Narde             | ELP-400 | H-0013   | 2015. 05. 06 | One Year | ■   |