

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT**

*OF*

**Compact Clock with Wireless Charging**

**Model No.: iW18, iW18B, iW18BG, iW18G, iW18GG, iW18W, iW18X (X  
would be any 1 or 2 alphabet(s) combination denote different cabinet  
color)**

**Trademark: iHome**

**FCC ID: EMOIW18A**

**Report No.: ES191115021E**

**Issue Date: November 26, 2019**

*Prepared for*

**SDI TECHNOLOGIES INC.  
1299, Main Street, Rahway, NJ 07065, U.S.A.**

*Prepared by*

**EMTEK(SHENZHEN) CO., LTD.**

**Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen,  
Guangdong, China.**

**TEL: 86-769-22807078  
FAX: 86-769-22807079**

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EMTEK(SHENZHEN) CO., LTD.**

## VERIFICATION OF COMPLIANCE

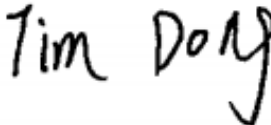
|                      |                                                                                                                                                                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant:           | SDI Technologies Inc.<br>1299, Main Street, Rahway, NJ 07065, U.S.A.                                                                                                                                                                                              |
| Manufacturer:        | Hotel Technologies, Inc<br>1299 Main Street, Rahway, NJ 07065, U.S.A                                                                                                                                                                                              |
| Product Description: | Compact Clock with Wireless Charging                                                                                                                                                                                                                              |
| Trade Mark:          | iHome                                                                                                                                                                                                                                                             |
| Model Number:        | iW18, iW18B, iW18BG, iW18G, iW18GG, iW18W, iW18X (X would be any 1 or 2 alphabet(s) combination denote different cabinet color)<br>(Note: The samples are the same except difference color of appearance and model number, Here iW18 was selected for full test.) |

### We hereby certify that:

The above equipment was tested by EMTEK(SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15C.

Date of Test : November 15, 2019 to November 26,2019

Prepared by :   
Loren Luo /Editor

Reviewer :   
Tim Dong /Supervisor

Approved & Authorized Signer :   
Lisa Wang /Manager

## Modified Information

| Version | Summary         | Revision Date | Report No.   |
|---------|-----------------|---------------|--------------|
| Ver.1.0 | Original Report | /             | ES191115021E |
|         |                 |               |              |
|         |                 |               |              |
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|         |                 |               |              |
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## 1 General Information

### 1.1 Product Description

| Characteristics          | Description                                                                                                                        |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Product Name             | Compact Clock with Wireless Charging                                                                                               |
| Model number             | iW18, iW18B, iW18BG, iW18G, iW18GG, iW18W, iW18X<br>(X would be any 1 or 2 alphabet(s) combination denote different cabinet color) |
| Input Rating             | DC 9V from adapter                                                                                                                 |
| Power Supply             | AC120V/60Hz for adapter                                                                                                            |
| Adapter                  | Model number:BQ30A-0902500-U<br>Input rating: 100-240V~, 50/60Hz, 800mA Max.<br>Output rating: DC 9.0V, 2500mA                     |
| Operating Frequency      | 110-148kHz                                                                                                                         |
| Wireless Charging Power  | 5W, 9W                                                                                                                             |
| Product Software Version | V1.0                                                                                                                               |
| Product Hardware version | V2.0                                                                                                                               |
| Modulation Technique     | Induction                                                                                                                          |
| Antenna Type             | Induction coil                                                                                                                     |

## 1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: EMOIW18A filing to comply with the FCC Part 15, Subpart C Rules.

## 1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

## 1.4 Special Accessories

Not available for this EUT intended for grant.

## 1.5 Equipment Modifications

Not available for this EUT intended for grant.

## 1.6 Test Facility

Site Description  
EMC Lab.

: Accredited by CNAS, 2016.10.24  
The certificate is valid until 2022.10.28  
The Laboratory has been assessed and proved to be in compliance with  
CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)  
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2016.5.19  
The Laboratory has been assessed according to the requirements ISO/IEC  
17025.

Accredited by FCC, August 03, 2017  
Designation Number: CN1204  
Test Firm Registration Number: 882943

Accredited by Industry Canada, November 24, 2015  
The Certificate Registration Number is 4480A.

Accredited by A2LA, July 31, 2017  
The Certificate Number is 4321.01.

Name of Firm : EMTEK(SHENZHEN) CO., LTD.  
Site Location : Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen,  
Guangdong, China.

## **2 System Test Configuration**

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2 EUT Exercise**

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

### **2.3 Test Procedure**

#### **2.3.1 Conducted Emissions**

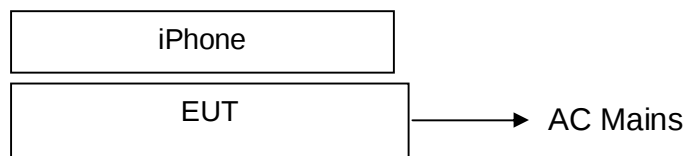
The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

#### **2.3.2 Radiated Emissions**

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the fixed in a particular direction according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013.

## 2.4 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**



**Table 2-1 Equipment Used in Tested System**

| Item | Equipment                            | Trade Mark | Model No.           | FCC ID   | Note                            |
|------|--------------------------------------|------------|---------------------|----------|---------------------------------|
| 1.   | Compact Clock with Wireless Charging | iHome      | iW18                | EMOIW18A | <b><i>EUT</i></b>               |
| 2.   | Adapter                              | iHome      | BQ30A-09025<br>00-U | N/A      | <b><i>Support EUT</i></b>       |
| 3.   | iPhone                               | Apple      | A1524               | N/A      | <b><i>Support Equipment</i></b> |

**Note:**

- (1) Unless otherwise denoted as EUT in 『Remark』 column, device(s) used in tested system is a support equipment.

## 3 Summary of Test Results

| FCC Rules | Description Of Test         | Result    |
|-----------|-----------------------------|-----------|
| §15.207   | AC Power Conducted Emission | Compliant |
| §15.209   | Radiated Emission           | Compliant |
| §2.1049   | 20dB Bandwidth              | Compliant |
| §15.203   | Antenna Requirement         | Compliant |

#### 4 Description of test modes

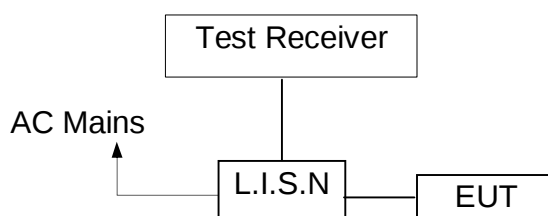
| Channel        | Frequency(KHz) |
|----------------|----------------|
| Low frequency  | 110            |
| Mid frequency  | 129            |
| High frequency | 148            |

## 5 Conducted Emissions Test

### 5.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

### 5.2 Test SET-UP (Block Diagram of Configuration)



### 5.3 Measurement Equipment Used

| Conducted Emission Test Site |                 |              |               |            |            |
|------------------------------|-----------------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR             | MODEL NUMBER | SERIAL NUMBER | Last Cal.  | Due date   |
| Test Receiver                | Rohde & Schwarz | ESCS30       | 100018        | 05/23/2019 | 05/22/2020 |
| L.I.S.N                      | Rohde & Schwarz | ENV216       | 100017        | 05/23/2019 | 05/22/2020 |
| RF Switching Unit            | CDS             | RSU-M2       | 38401         | 05/23/2019 | 05/22/2020 |
| Coaxial Cable                | CDS             | 79254        | 46107086      | 05/23/2019 | 05/22/2020 |

### 5.4 Conducted Emission Limit

#### Conducted Emission

#### Frequency(MHz)

#### Quasi-peak

#### Average

0.15-0.5

66-56

56-46

0.5-5.0

56

46

5.0-30.0

60

50

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

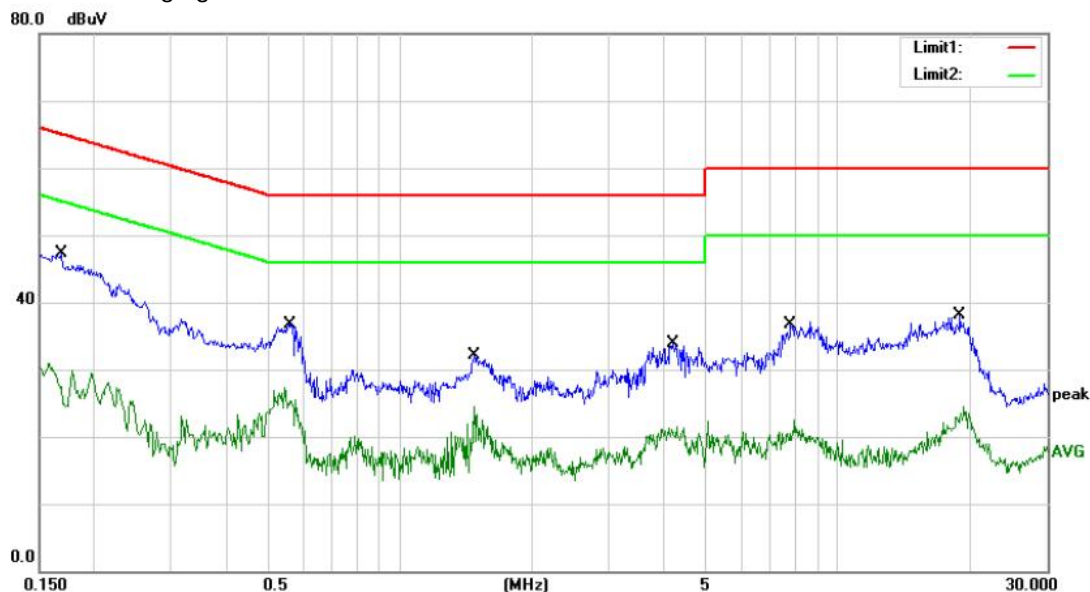
## 5.5 Measurement Result

|                  |               |               |                   |
|------------------|---------------|---------------|-------------------|
| Operation Mode:  | TX            | Test Date :   | November 19, 2019 |
| Frequency Range: | 0.15MHz~30MHz | Temperature : | 28℃               |
| Test Result:     | PASS          | Humidity :    | 65 %              |
| Test By:         | Loren         |               |                   |

Pass

We pretested three modes (max load, mid load, min load) for EUT. The worst mode (max load) test data see follow the table.

## Qi-5W Wireless Charging



Site site #1

Phase: **L1**

Temperature: 25

Limit: (CE)FCC PART 15 C\_QP

Power: AC 120V/60Hz

Humidity: 55 %

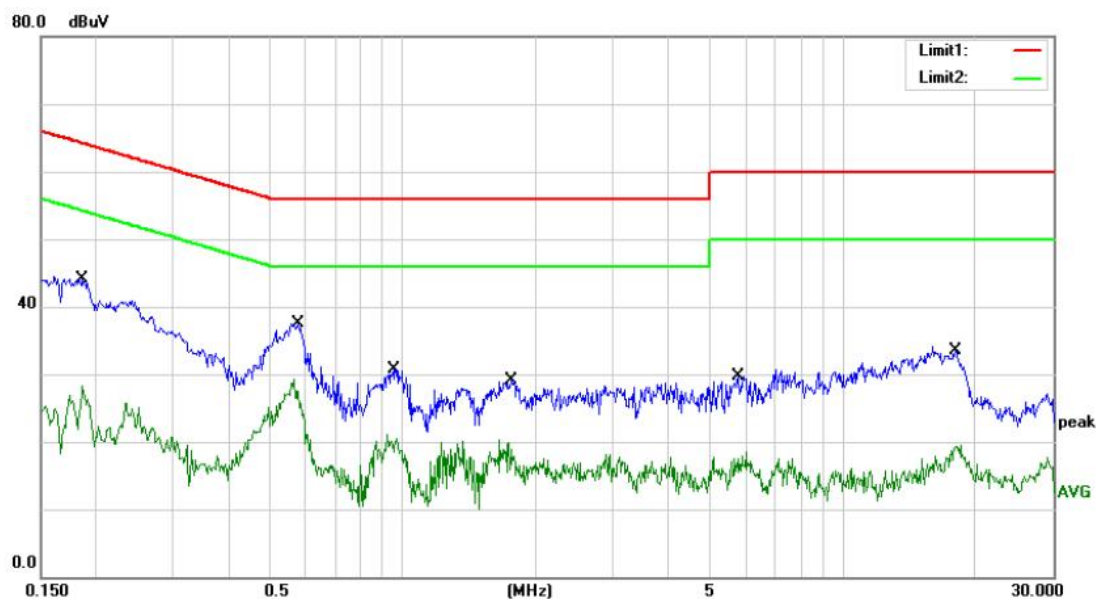
Mode: Qi-5W Wireless Charging

Note:

| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1   | *   | 0.1685  | 36.34         | 10.02          | 46.36       | 65.03 | -18.67 | QP       |         |
| 2   |     | 0.1685  | 14.37         | 10.02          | 24.39       | 55.03 | -30.64 | AVG      |         |
| 3   |     | 0.5620  | 25.67         | 10.18          | 35.85       | 56.00 | -20.15 | QP       |         |
| 4   |     | 0.5620  | 12.58         | 10.18          | 22.76       | 46.00 | -23.24 | AVG      |         |
| 5   |     | 1.4737  | 21.64         | 10.18          | 31.82       | 56.00 | -24.18 | QP       |         |
| 6   |     | 1.4737  | 11.38         | 10.18          | 21.56       | 46.00 | -24.44 | AVG      |         |
| 7   |     | 4.1980  | 21.64         | 10.18          | 31.82       | 56.00 | -24.18 | QP       |         |
| 8   |     | 4.1980  | 9.81          | 10.18          | 19.99       | 46.00 | -26.01 | AVG      |         |
| 9   |     | 7.7900  | 24.68         | 10.20          | 34.88       | 60.00 | -25.12 | QP       |         |
| 10  |     | 7.7900  | 10.61         | 10.20          | 20.81       | 50.00 | -29.19 | AVG      |         |
| 11  |     | 18.9497 | 26.56         | 10.27          | 36.83       | 60.00 | -23.17 | QP       |         |
| 12  |     | 18.9497 | 12.27         | 10.27          | 22.54       | 50.00 | -27.46 | AVG      |         |

\*:Maximum data x:Over limit l:over margin

Operator:HUANG



Site site #1

Phase: **N**

Temperature: 25

Limit: (CE)FCC PART 15 C\_QP

Power: AC 120V/60Hz

Humidity: 55 %

Mode: Qi-5W Wireless Charging

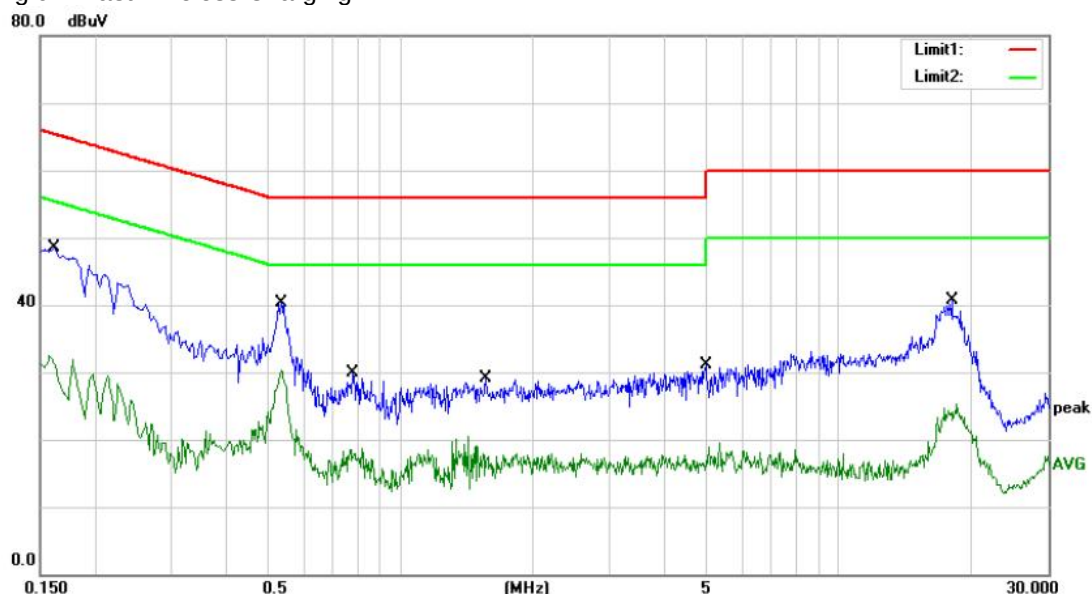
Note:

| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.1862  | 32.11         | 10.03          | 42.14       | 64.20 | -22.06 | QP       |         |
| 2   |     | 0.1862  | 12.08         | 10.03          | 22.11       | 54.20 | -32.09 | AVG      |         |
| 3   | *   | 0.5778  | 25.93         | 10.18          | 36.11       | 56.00 | -19.89 | QP       |         |
| 4   |     | 0.5778  | 12.64         | 10.18          | 22.82       | 46.00 | -23.18 | AVG      |         |
| 5   |     | 0.9578  | 19.37         | 10.18          | 29.55       | 56.00 | -26.45 | QP       |         |
| 6   |     | 0.9578  | 7.91          | 10.18          | 18.09       | 46.00 | -27.91 | AVG      |         |
| 7   |     | 1.7580  | 18.77         | 10.18          | 28.95       | 56.00 | -27.05 | QP       |         |
| 8   |     | 1.7580  | 3.45          | 10.18          | 13.63       | 46.00 | -32.37 | AVG      |         |
| 9   |     | 5.7580  | 19.38         | 10.18          | 29.56       | 60.00 | -30.44 | QP       |         |
| 10  |     | 5.7580  | 4.78          | 10.18          | 14.96       | 50.00 | -35.04 | AVG      |         |
| 11  |     | 17.9780 | 22.65         | 10.26          | 32.91       | 60.00 | -27.09 | QP       |         |
| 12  |     | 17.9780 | 7.24          | 10.26          | 17.50       | 50.00 | -32.50 | AVG      |         |

\*:Maximum data x:Over limit l:over margin

Operator:HUANG

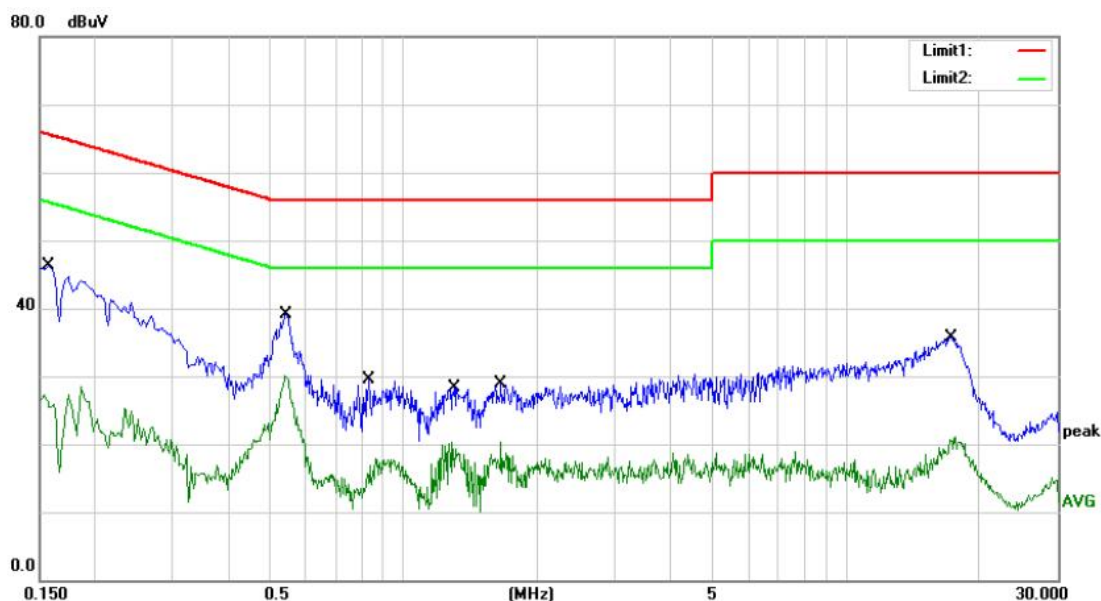
## Sumsung 9W Fast Wireless Charging



Site site #1 Phase: **L1** Temperature: 25  
 Limit: (CE)FCC PART 15 C\_QP Power: AC 120V/60Hz Humidity: 55 %  
 Mode: Sumsung 9W Wireless Charging  
 Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.1620       | 38.45                    | 10.02                   | 48.47                    | 65.36         | -16.89     | QP       |         |
| 2   |     | 0.1620       | 22.39                    | 10.02                   | 32.41                    | 55.36         | -22.95     | AVG      |         |
| 3   |     | 0.5340       | 30.11                    | 10.18                   | 40.29                    | 56.00         | -15.71     | QP       |         |
| 4   | *   | 0.5340       | 20.12                    | 10.18                   | 30.30                    | 46.00         | -15.70     | AVG      |         |
| 5   |     | 0.7780       | 19.66                    | 10.18                   | 29.84                    | 56.00         | -26.16     | QP       |         |
| 6   |     | 0.7780       | 8.62                     | 10.18                   | 18.80                    | 46.00         | -27.20     | AVG      |         |
| 7   |     | 1.5660       | 18.84                    | 10.18                   | 29.02                    | 56.00         | -26.98     | QP       |         |
| 8   |     | 1.5660       | 10.25                    | 10.18                   | 20.43                    | 46.00         | -25.57     | AVG      |         |
| 9   |     | 4.9660       | 20.89                    | 10.18                   | 31.07                    | 56.00         | -24.93     | QP       |         |
| 10  |     | 4.9660       | 9.32                     | 10.18                   | 19.50                    | 46.00         | -26.50     | AVG      |         |
| 11  |     | 18.0820      | 30.39                    | 10.26                   | 40.65                    | 60.00         | -19.35     | QP       |         |
| 12  |     | 18.0820      | 15.12                    | 10.26                   | 25.38                    | 50.00         | -24.62     | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:Hu



Site: site #1 Phase: **N** Temperature: 25  
 Limit: (CE)FCC PART 15 C\_QP Power: AC 120V/60Hz Humidity: 55 %  
 Mode: Sumsung 9W Wireless Charging  
 Note:

| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.1580  | 36.30         | 10.01          | 46.31       | 65.57 | -19.26 | QP       |         |
| 2   |     | 0.1580  | 18.51         | 10.01          | 28.52       | 55.57 | -27.05 | AVG      |         |
| 3   |     | 0.5420  | 28.93         | 10.18          | 39.11       | 56.00 | -16.89 | QP       |         |
| 4   | *   | 0.5420  | 19.86         | 10.18          | 30.04       | 46.00 | -15.96 | AVG      |         |
| 5   |     | 0.8340  | 19.30         | 10.18          | 29.48       | 56.00 | -26.52 | QP       |         |
| 6   |     | 0.8340  | 7.78          | 10.18          | 17.96       | 46.00 | -28.04 | AVG      |         |
| 7   |     | 1.3020  | 18.21         | 10.18          | 28.39       | 56.00 | -27.61 | QP       |         |
| 8   |     | 1.3020  | 10.19         | 10.18          | 20.37       | 46.00 | -25.63 | AVG      |         |
| 9   |     | 1.6540  | 18.65         | 10.18          | 28.83       | 56.00 | -27.17 | QP       |         |
| 10  |     | 1.6540  | 10.05         | 10.18          | 20.23       | 46.00 | -25.77 | AVG      |         |
| 11  |     | 17.2180 | 25.47         | 10.26          | 35.73       | 60.00 | -24.27 | QP       |         |
| 12  |     | 17.2180 | 10.88         | 10.26          | 21.14       | 50.00 | -28.86 | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:Hu

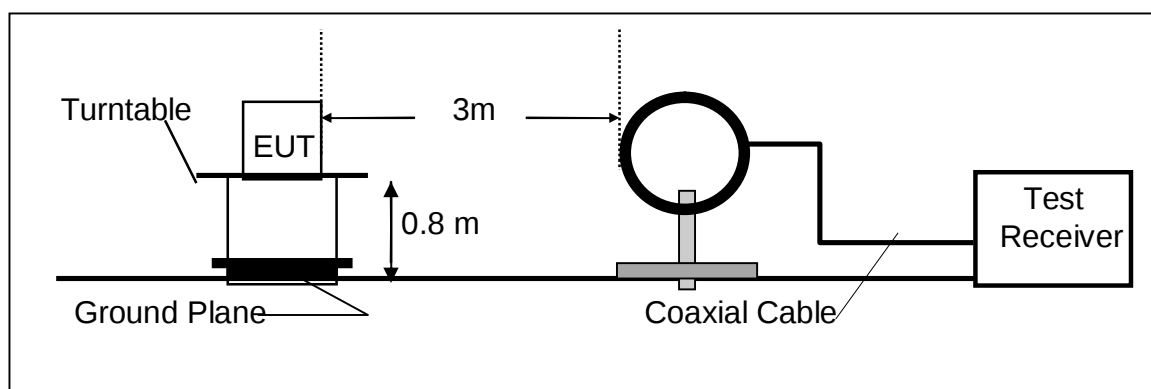
## 6 Radiated Emission Test

### 6.1 Measurement Procedure

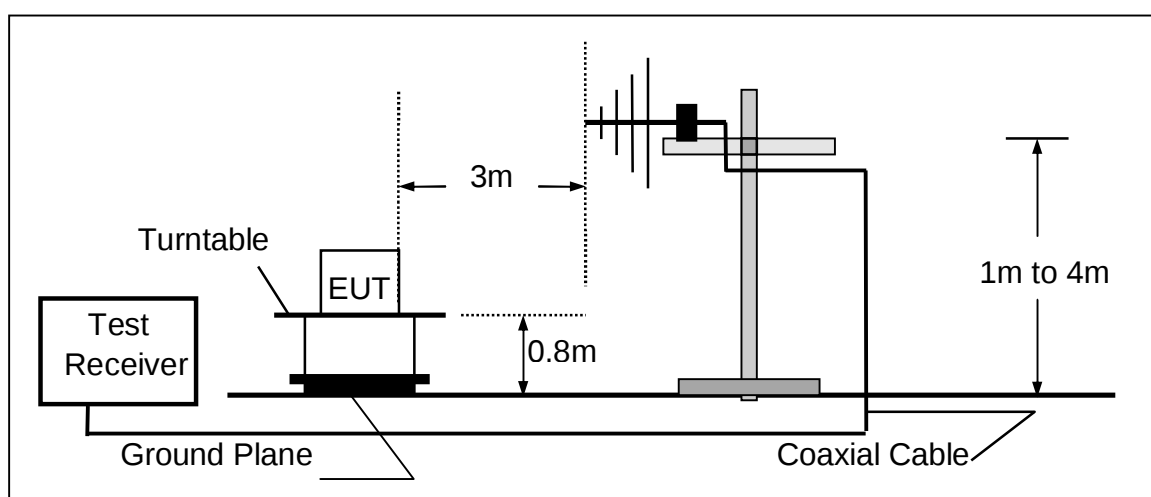
1. The EUT was placed on a turntable which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



### 6.3 Measurement Equipment Used

| Equipment                      | Manufacturer    | Model No. | Serial No.   | Last Cal.  | Due date   |
|--------------------------------|-----------------|-----------|--------------|------------|------------|
| Test Receiver                  | Rohde & Schwarz | ESCI      | 1166.5950.03 | 05/23/2019 | 05/22/2020 |
| Signal Analyzer                | Rohde & Schwarz | FSV30     | 103040       | 05/23/2019 | 05/22/2020 |
| Loop Antenna                   | Schwarzbeck     | FMZB 1519 | 012          | 05/23/2019 | 05/22/2020 |
| Bilog Antenna                  | Schwarzbeck     | VULB9163  | 000141       | 05/23/2019 | 05/22/2020 |
| Power Amplifier                | CDS             | RSU-M352  | 818          | 05/23/2019 | 05/22/2020 |
| Power Amplifier                | HP              | 8447F     | OPT H64      | 05/23/2019 | 05/22/2020 |
| Color Monitor                  | SUNSP0          | SP-140A   | N/A          | 05/23/2019 | 05/22/2020 |
| Single Line Filter             | JIANLI          | XL-3      | N/A          | 05/23/2019 | 05/22/2020 |
| Single Phase Power Line Filter | JIANLI          | DL-2X100B | N/A          | 05/23/2019 | 05/22/2020 |
| 3 Phase Power Line Filter      | JIANLI          | DL-4X100B | N/A          | 05/23/2019 | 05/22/2020 |
| DC Power Filter                | JIANLI          | DL-2X50B  | N/A          | 05/23/2019 | 05/22/2020 |
| Cable                          | Schwarzbeck     | PLF-100   | 549489       | 05/23/2019 | 05/22/2020 |
| Cable                          | Rosenberger     | CIL02     | A0783566     | 05/23/2019 | 05/22/2020 |
| Cable                          | Rosenberger     | RG 233/U  | 525178       | 05/23/2019 | 05/22/2020 |

### 6.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

| FCC Part 15.209 |                           |      |                                                                 |                         |
|-----------------|---------------------------|------|-----------------------------------------------------------------|-------------------------|
| Frequency (MHz) | Field Strength Limitation |      | Field Strength Limitation Frequency tion at 3m Measurement Dist |                         |
|                 | (uV/m)                    | Dist | (uV/m)                                                          | (dBuV/m)                |
| 0.009 – 0.490   | 2400 / F(KHz)             | 300m | 10000 * 2400/F(KHz)                                             | 20log 2400/F(KHz) + 80  |
| 0.490 – 1.705   | 24000 / F(KHz)            | 30m  | 100 * 24000/F(KHz)                                              | 20log 24000/F(KHz) + 40 |
| 1.705 – 30.00   | 30                        | 30m  | 100* 30                                                         | 20log 30 + 40           |
| 30.0 – 88.0     | 100                       | 3m   | 100                                                             | 20log 100               |
| 88.0 – 216.0    | 150                       | 3m   | 150                                                             | 20log 150               |
| 216.0 – 960.0   | 200                       | 3m   | 200                                                             | 20log 200               |
| Above 960.0     | 500                       | 3m   | 500                                                             | 20log 500               |

## 15.205 Restricted bands of operation

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |

Remark: 1. Emission level in dBuV/m=20 log (uV/m)  
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.  
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

## 6.5 Measurement Result

We pretested three modes (max load, mid load, min load) for EUT. The worst mode (max load) and worst test frequency(frequency: 127KHz)test data see follow the table.

|                    |               |               |                   |
|--------------------|---------------|---------------|-------------------|
| Operation Mode:    | Low frequency | Test Date :   | November 19, 2019 |
| Frequency Range:   | 9KHz~30MHz    | Temperature : | 20°C              |
| Test Result:       | PASS          | Humidity :    | 55 %              |
| Measured Distance: | 3m            | Test By:      | Loren             |

### Qi-5W Wireless Charging

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV/m) | Limit 3m<br>(dBuV/m) | Over<br>(dB) | Note |
|----------------|-----------------|----------------------------|----------------------|--------------|------|
| 0.12734(F)     | H               | 74.69                      | 105.49               | -30.80       | PK   |
| 0.160          | H               | 67.23                      | 103.48               | -36.25       | PK   |
| 0.258          | H               | 65.19                      | 99.35                | -34.16       | PK   |
| 0.406          | H               | 67.34                      | 95.43                | -28.09       | PK   |
| 0.542          | H               | 64.58                      | 72.92                | -8.34        | PK   |
| 0.12734(F)     | V               | 75.93                      | 105.49               | -29.56       | PK   |
| 0.215          | V               | 66.59                      | 100.95               | -34.36       | PK   |
| 0.346          | V               | 65.49                      | 96.81                | -31.32       | PK   |
| 0.466          | V               | 64.04                      | 94.23                | -30.19       | PK   |
| 0.626          | V               | 65.37                      | 71.68                | -6.31        | PK   |

### Sumsung 9W Wireless Charging

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV/m) | Limit 3m<br>(dBuV/m) | Over<br>(dB) | Note |
|----------------|-----------------|----------------------------|----------------------|--------------|------|
| 0.12734(F)     | H               | 75.34                      | 105.49               | -30.15       | PK   |
| 0.255          | H               | 68.64                      | 99.47                | -30.83       | PK   |
| 0.383          | H               | 67.96                      | 95.94                | -27.98       | PK   |
| 0.510          | H               | 68.54                      | 93.45                | -24.91       | PK   |
| 0.638          | H               | 67.21                      | 91.50                | -24.29       | PK   |
| 0.12734(F)     | V               | 76.15                      | 105.49               | -29.34       | PK   |
| 0.255          | V               | 67.68                      | 99.47                | -31.79       | PK   |
| 0.383          | V               | 66.53                      | 95.94                | -29.41       | PK   |
| 0.510          | V               | 65.42                      | 93.45                | -28.03       | PK   |
| 0.638          | V               | 64.59                      | 91.50                | -26.91       | PK   |

- Note:**
- (1) All Readings are Peak Value.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
  - (3) The average measurement was not performed when the peak measured data under the limit of average detection.
  - (4) EUT lying on the table position is the worst case result in the report.

## Qi-5W Wireless Charging



Site site #1

Polarization: **Vertical**

Temperature: 25

Limit: (RE)FCC PART 15 C 3m

Power: AC 120V/60Hz

Humidity: 55 %

Mode: Qi-5W Wireless Charging

Note:

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   | Antenna Height | Table Degree |         |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------------|--------------|---------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | cm             | degree       | Comment |
| 1   | !   | 37.5478  | 49.73         | -15.68         | 34.05        | 40.00  | -5.95  | QP             |              |         |
| 2   | *   | 41.2764  | 51.09         | -15.38         | 35.71        | 40.00  | -4.29  | QP             |              |         |
| 3   |     | 175.5000 | 56.43         | -18.94         | 37.49        | 43.50  | -6.01  | QP             |              |         |
| 4   |     | 398.6000 | 38.26         | -10.12         | 28.14        | 46.00  | -17.86 | QP             |              |         |
| 5   |     | 496.5700 | 35.64         | -7.95          | 27.69        | 46.00  | -18.31 | QP             |              |         |
| 6   |     | 661.4699 | 36.91         | -3.98          | 32.93        | 46.00  | -13.07 | QP             |              |         |

\*:Maximum data x:Over limit !:over margin

Operator: HUANG

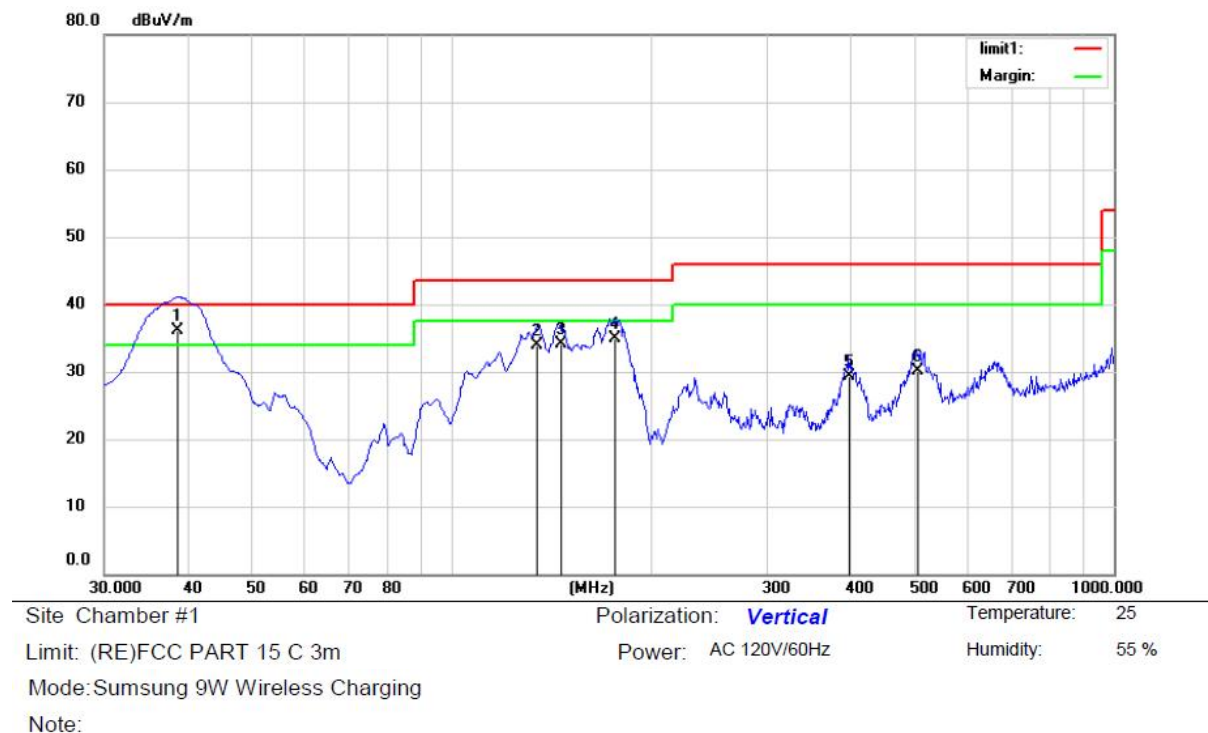


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Antenna<br>Height<br>cm | Table<br>Degree | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|-------------------------|-----------------|---------|
| 1   |     | 38.0782      | 43.67                    | -15.26                  | 28.41                      | 40.00           | -11.59     | QP                      |                 |         |
| 2   | *   | 157.0700     | 52.11                    | -18.87                  | 33.24                      | 43.50           | -10.26     | QP                      |                 |         |
| 3   |     | 177.5089     | 50.67                    | -17.71                  | 32.96                      | 43.50           | -10.54     | QP                      |                 |         |
| 4   |     | 244.3700     | 40.69                    | -13.61                  | 27.08                      | 46.00           | -18.92     | QP                      |                 |         |
| 5   |     | 471.3500     | 40.67                    | -8.71                   | 31.96                      | 46.00           | -14.04     | QP                      |                 |         |
| 6   |     | 819.5800     | 31.29                    | -2.15                   | 29.14                      | 46.00           | -16.86     | QP                      |                 |         |

\*:Maximum data x:Over limit !:over margin

Operator: HUANG

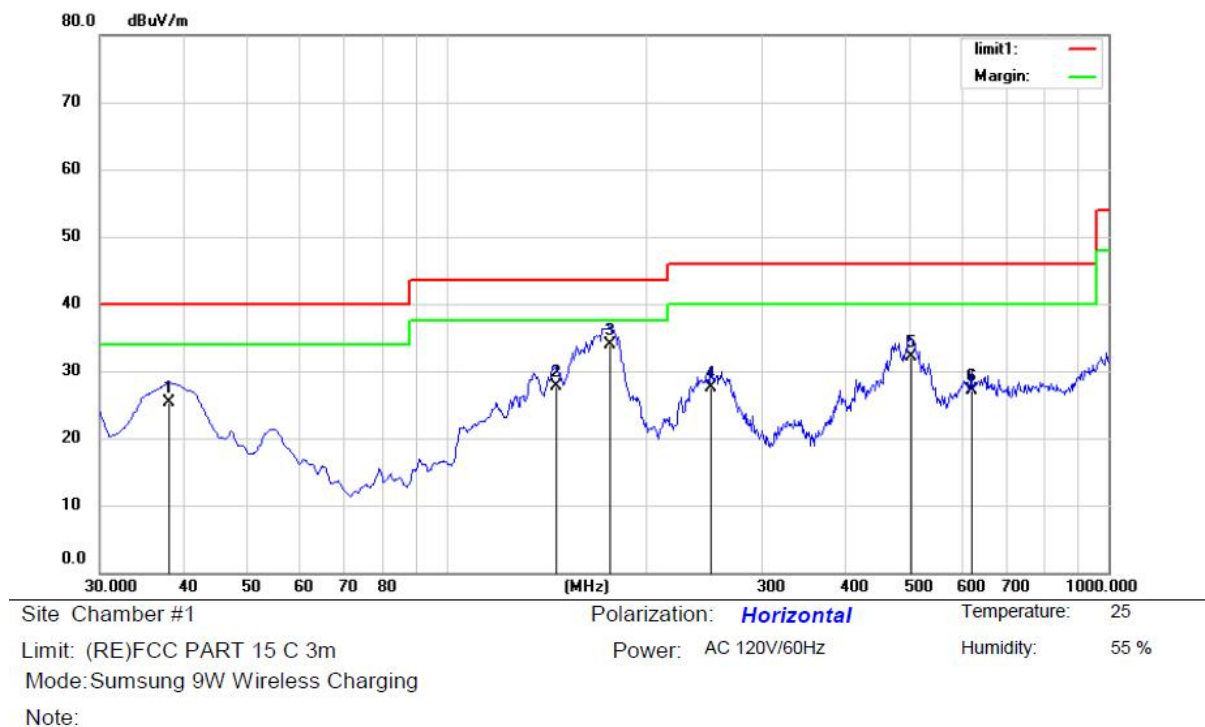
## Sumsung 9W Wireless Charging



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Antenna<br>Height<br>cm | Table<br>Degree | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|-------------------------|-----------------|---------|
| 1   | *   | 38.7300      | 51.60                    | -15.44                  | 36.16                      | 40.00           | -3.84      | QP                      |                 |         |
| 2   |     | 134.7600     | 54.46                    | -20.55                  | 33.91                      | 43.50           | -9.59      | QP                      |                 |         |
| 3   |     | 146.4000     | 53.76                    | -19.66                  | 34.10                      | 43.50           | -9.40      | QP                      |                 |         |
| 4   |     | 176.4700     | 53.70                    | -18.82                  | 34.88                      | 43.50           | -8.62      | QP                      |                 |         |
| 5   |     | 398.6000     | 39.35                    | -10.12                  | 29.23                      | 46.00           | -16.77     | QP                      |                 |         |
| 6   |     | 505.3000     | 37.89                    | -7.74                   | 30.15                      | 46.00           | -15.85     | QP                      |                 |         |

\*:Maximum data x:Over limit !:over margin

Operator: HUANG



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   | Antenna Height | Table Degree |        |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------------|--------------|--------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | Detector       | cm           | degree |
| 1   |     | 38.0782  | 40.52         | -15.26         | 25.26        | 40.00  | -14.74 | QP             |              |        |
| 2   |     | 146.4000 | 48.13         | -20.38         | 27.75        | 43.50  | -15.75 | QP             |              |        |
| 3   | *   | 176.4700 | 51.67         | -17.82         | 33.85        | 43.50  | -9.65  | QP             |              |        |
| 4   |     | 251.1600 | 41.10         | -13.54         | 27.56        | 46.00  | -18.44 | QP             |              |        |
| 5   |     | 502.3900 | 39.84         | -7.78          | 32.06        | 46.00  | -13.94 | QP             |              |        |
| 6   |     | 622.6700 | 31.85         | -4.70          | 27.15        | 46.00  | -18.85 | QP             |              |        |

\*:Maximum data    x:Over limit    !:over margin

Operator: HUANG

## 7 20db Bandwidth

### 7.1 20dB Bandwidth Limit

None: for reporting purposed only.

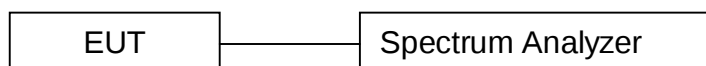
### 7.2 Test Instruments

Refer a test equipment and calibration data table in this test report.

### 7.3 Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10Hz RBW and 30Hz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB. The working mode (9W wireless charging)

### 7.4 Test Setup

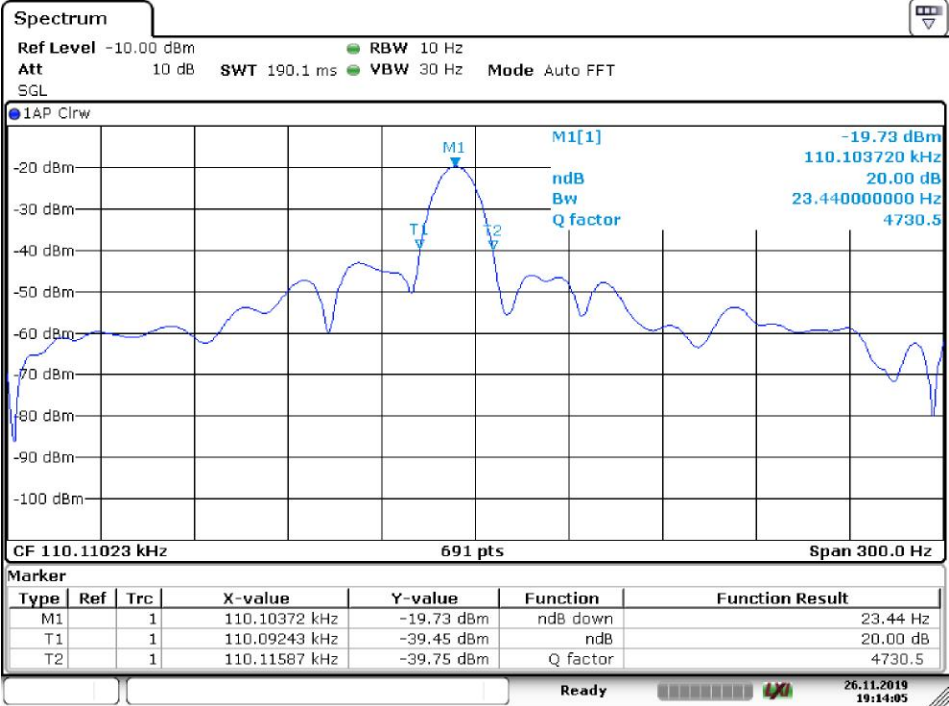


### 7.5 Test Result

#### Sumsung 9W Wireless Charging

| Lowest frequency<br>(KHz) | 20dB Bandwidth<br>(Hz) | Results |
|---------------------------|------------------------|---------|
| 110.10                    | 23.44                  | PASS    |

20 dB Bandwidth Test plot



## **8 Antenna Application**

### **8.1 Antenna requirement**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### **8.2 Result**

The EUT's antenna, permanent attached antenna, used an Induction coil and integrated on PCB, The antenna's gain meets the requirement.

## **9 Photos of EUT**

Please refer to external photos and internal photos.