



# TEST REPORT

## FCC PART 15 SUBPART C RSS-216 ISSUE 2

Test report  
On Behalf of  
Orient Link Limited  
For  
Wireless Charger  
Model No.: 5502267(SW0042-BK), 5502269(SW0042-WE)  
FCC ID: 2AIMJ-SW0042  
IC ID: 21538-SW0042

Prepared for : Orient Link Limited  
9/F, 1063 King's Road, Quarry Bay, Hong Kong, China

Prepared By : Shenzhen HUAKE Testing Technology Co., Ltd.  
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China

Date of Test: Jan. 08, 2019 to Jan. 15, 2019  
Date of Report: Jan. 15, 2019  
Report Number: HK1901140089E



## TEST RESULT CERTIFICATION

**Applicant's name** .....: Orient Link Limited

Address.....: 9/F, 1063 King's Road, Quarry Bay, Hong Kong, China

**Manufacture's Name**.....: Sweda (Shen Zhen) Electronics Company Limited

Address.....: Block C, Lian Tang Chun Wei Ind. Bldg., Lian Tang, ShenZhen,  
PRC. Postal Code=518004

**Factory's Name** .....: Sweda (Shen Zhen) Electronics Company Limited

Address.....: Block C, Lian Tang Chun Wei Ind. Bldg., Lian Tang, ShenZhen,  
PRC. Postal Code=518004

### Product description

Trade Mark: SWAROVSKI

Product name.....: Wireless Charger

Model and/or type reference : 5502267(SW0042-BK), 5502269(SW0042-WE)

Model Difference All the same except for the model name and appearance color  
FCC Rules and Regulations Part 15 Subpart C Section 15.207,  
15.209, 15.203

**Standards**.....: RSS-216 issue 2  
ANSI C63.10: 2013

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**Date of Test** .....:

Date (s) of performance of tests .....: Jan. 08, 2019 to Jan. 15, 2019

Date of Issue.....: Jan. 15, 2019

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

Testing Engineer :

(Gary Qian)

Technical Manager :

(Eden Hu)

Authorized Signatory :

(Jason Zhou)



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## 1. TEST SUMMARY

### 1.1 TEST PROCEDURES AND RESULTS

| RULES                                          | DESCRIPTION OF TEST | RESULT    |
|------------------------------------------------|---------------------|-----------|
| FCC §15.203<br>RSS-Gen 6.7                     | Antenna Requirement | Compliant |
| FCC §15.209<br>RSS-Gen 8.9<br>ICES-001 issue 4 | Radiated Emission   | Compliant |
| FCC §15.215<br>RSS-Gen 6.8                     | Bandwidth           | Compliant |
| FCC §15.207<br>RSS-Gen 8.8<br>ICES-001 issue 4 | Conducted Emission  | Compliant |

### 1.2 TEST FACILITY

Test Firm : Shenzhen HUAK Testing Technology Co., Ltd.

Address : 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road,  
Heping Community, Fuhai Street, Bao'an District, Shenzhen,  
Guangdong, China

IC Registration No.: 21210

FCC Registration No.: CN1229

Test Firm Registration Number : 616276

### 1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty

|                                                       |               |
|-------------------------------------------------------|---------------|
| Conducted Emission Expanded Uncertainty               | = 2.23dB, k=2 |
| Radiated emission expanded uncertainty(9kHz-30MHz)    | = 3.08dB, k=2 |
| Radiated emission expanded uncertainty(30MHz-1000MHz) | = 4.42dB, k=2 |
| Radiated emission expanded uncertainty(Above 1GHz)    | = 4.06dB, k=2 |



## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| <b>Operation Frequency</b>    | 123.4kHz                                            |
| <b>Maximum field strength</b> | 53.54dBuV/m(Peak)@3m                                |
| <b>Number of channels</b>     | 1                                                   |
| <b>Antenna Designation</b>    | Integrated Antenna (Met 15.203 Antenna requirement) |
| <b>Hardware Version</b>       | Sweda-v9                                            |
| <b>Software Version</b>       | V1.0                                                |
| <b>Power Supply</b>           | DC 5V or DC 9V                                      |

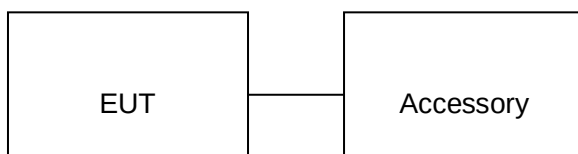


## 2.2 OPERATION OF EUT DURING TESTING

| NO.                                                                                                  | TEST MODE DESCRIPTION             |
|------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1                                                                                                    | Wireless charging Mode(Full load) |
| 2                                                                                                    | Wireless charging Mode(half load) |
| 3                                                                                                    | Wireless charging Mode(Null load) |
| Note:<br>1. The mode 1 was the worst case and only the data of the worst case record in this report. |                                   |

## 2.3 DESCRIPTION OF TEST SETUP

Configure :



| Item | Equipment     | Model No. | ID or Specification | Remark    |
|------|---------------|-----------|---------------------|-----------|
| 1    | Adapter       | RP-PC007  | DC 5V3A or DC 9V/2A | Accessory |
| 2    | Wireless Load | N/A       | 10W                 | Support   |

**2.4 MEASUREMENT INSTRUMENTS LIST**

| Item | Equipment                               | Manufacturer    | Model No.           | Serial No. | Last Cal.     | Cal. Interval |
|------|-----------------------------------------|-----------------|---------------------|------------|---------------|---------------|
| 1.   | L.I.S.N.<br>Artificial Mains<br>Network | R&S             | ENV216              | HKE-002    | Dec. 27, 2018 | 1 Year        |
| 2.   | Receiver                                | R&S             | ESCI 7              | HKE-010    | Dec. 27, 2018 | 1 Year        |
| 3.   | Spectrum<br>analyzer                    | Agilent         | N9020A              | HKE-048    | Dec. 27, 2018 | 1 Year        |
| 4.   | Preamplifier                            | Schwarzbeck     | BBV 9743            | HKE-006    | Dec. 27, 2018 | 1 Year        |
| 5.   | EMI Test<br>Receiver                    | Rohde & Schwarz | ESCI 7              | HKE-010    | Dec. 27, 2018 | 1 Year        |
| 6.   | Bilog Broadband<br>Antenna              | Schwarzbeck     | VULB9163            | HKE-012    | Dec. 27, 2018 | 1 Year        |
| 7.   | Loop Antenna                            | Schwarzbeck     | FMZB 1519 B         | HKE-014    | Dec. 27, 2018 | 1 Year        |
| 8.   | EMI Test<br>Software<br>EZ-EMC          | Tonscend        | JS1120-B<br>Version | HKE-083    | Dec. 27, 2018 | N/A           |
| 9.   | Shielded room                           | Shiel Hong      | 4*3*3               | HKE-039    | Dec. 27, 2018 | 3 Year        |



### 3. RADIATED EMISSION

#### 3.1 TEST LIMIT

Standard FCC 15.209 and RSS-GEN

| Frequency<br>(MHz) | Distance<br>Meters | Field Strengths Limit                                                                                 |                                   |
|--------------------|--------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------|
|                    |                    | $\mu\text{V/m}$                                                                                       | $\text{dB}(\mu\text{V})/\text{m}$ |
| 0.009 ~ 0.490      | 300                | 2400/F(kHz)                                                                                           | ---                               |
| 0.490 ~ 1.705      | 30                 | 24000/F(kHz)                                                                                          | ---                               |
| 1.705 ~ 30         | 30                 | 30                                                                                                    | ---                               |
| 30 ~ 88            | 3                  | 100                                                                                                   | 40.0                              |
| 88 ~ 216           | 3                  | 150                                                                                                   | 43.5                              |
| 216 ~ 960          | 3                  | 200                                                                                                   | 46.0                              |
| 960 ~ 1000         | 3                  | 500                                                                                                   | 54.0                              |
| Above 1000         | 3                  | Other: 74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) |                                   |

Remark: (1) Emission level  $\text{dB}\mu\text{V} = 20 \log$  Emission level  $\mu\text{V/m}$   
 (2) The smaller limit shall apply at the cross point between two frequency bands.  
 (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

The electric field radiated emissions within 0.009 – 1000 MHz shall comply with the Class B limits for group 2 equipment, as set out in the CISPR 11.

0.009-30MHz

| Frequency range<br>MHz | Limits at 3 m distance<br>Quasi-peak<br>$\text{dB}(\mu\text{A/m})$ |
|------------------------|--------------------------------------------------------------------|
| 0,009 – 0,070          | 69                                                                 |
| 0,070 – 0,148 5        | 69<br>Decreasing linearly with logarithm of frequency to<br>39     |
| 0,148 5 – 4,0          | 39<br>Decreasing linearly with logarithm of frequency to<br>3      |
| 4,0 – 30               | 3                                                                  |

The limits of this table apply to induction cooking appliances intended for commercial use and those for domestic use with a diagonal diameter of more than 1,6 m.

The measurements are performed at 3 m distance with a 0,6 m loop antenna as described in 4.2.1 of CISPR 16-1-4.

The antenna shall be vertically installed, with the lower edge of the loop at 1 m height above the floor.



## 30MHz-1000MHz

| Frequency range<br>MHz                                                                                                                                                                                                                                                                                    | Limits for a measuring distance $D$ in m |                      |                              |                      |                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------------------------|----------------------|----------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                           | Electric field                           |                      |                              |                      | Magnetic field                                                       |
|                                                                                                                                                                                                                                                                                                           | $D = 10$ m                               |                      | $D = 3$ m <sup>b</sup>       |                      | $D = 3$ m                                                            |
|                                                                                                                                                                                                                                                                                                           | Quasi-peak<br>dB( $\mu$ V/m)             | Average <sup>a</sup> | Quasi-peak<br>dB( $\mu$ V/m) | Average <sup>a</sup> | Quasi-peak<br>dB( $\mu$ A/m)                                         |
| 0,15 – 30                                                                                                                                                                                                                                                                                                 | –                                        | –                    | –                            | –                    | 39<br>Decreasing linearly with the<br>logarithm of frequency to<br>3 |
| 30 – 80,872                                                                                                                                                                                                                                                                                               | 30                                       | 25                   | 40                           | 35                   | –                                                                    |
| 80,872 – 81,848                                                                                                                                                                                                                                                                                           | 50                                       | 45                   | 60                           | 55                   | –                                                                    |
| 81,848 – 134,786                                                                                                                                                                                                                                                                                          | 30                                       | 25                   | 40                           | 35                   | –                                                                    |
| 134,786 – 136,414                                                                                                                                                                                                                                                                                         | 50                                       | 45                   | 60                           | 55                   | –                                                                    |
| 136,414 – 230                                                                                                                                                                                                                                                                                             | 30                                       | 25                   | 40                           | 35                   | –                                                                    |
| 230 – 1 000                                                                                                                                                                                                                                                                                               | 37                                       | 32                   | 47                           | 42                   | –                                                                    |
| On a test site, class B equipment can be measured at a nominal distance of 3 m or 10 m. A measuring distance less than 10 m is allowed only for equipment which complies with the definition given in 3.10.                                                                                               |                                          |                      |                              |                      |                                                                      |
| At the transition frequency, the more stringent limit should apply.                                                                                                                                                                                                                                       |                                          |                      |                              |                      |                                                                      |
| <sup>a</sup> The average limits apply to magnetron driven equipment only. If magnetron driven equipment exceeds the quasi-peak limit at certain frequencies, then the measurement shall be repeated at these frequencies with the average detector, and the average limits specified in this table apply. |                                          |                      |                              |                      |                                                                      |
| <sup>b</sup> The limits specified for the 3 m separation distance apply only to small equipment meeting the size criterion defined in 3.10.                                                                                                                                                               |                                          |                      |                              |                      |                                                                      |



### 3.2. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

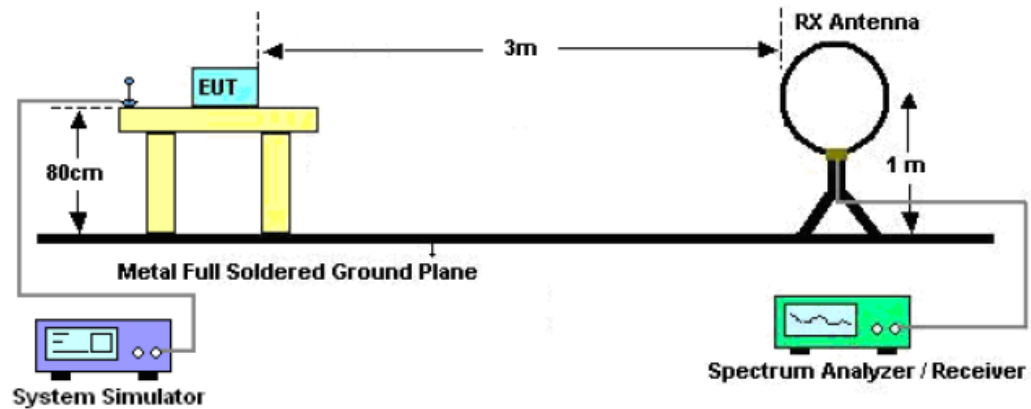
  

| Receiver Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

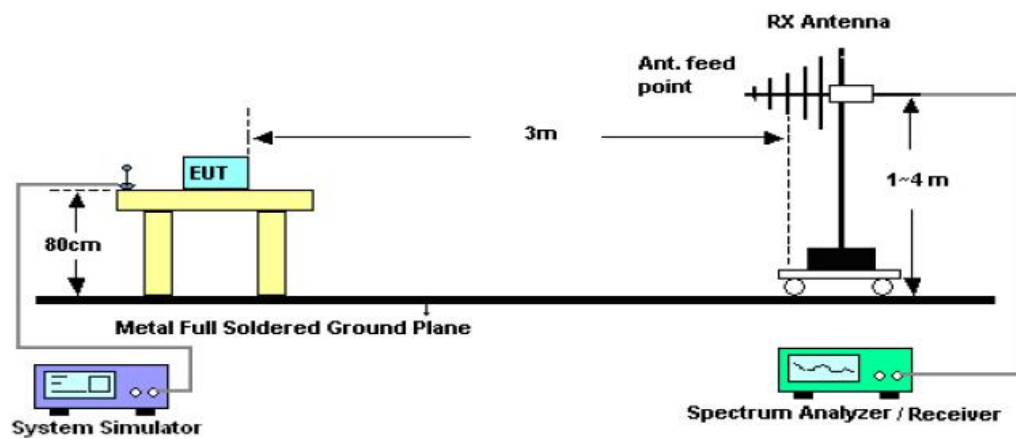


### 3.3. TEST SETUP

#### Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



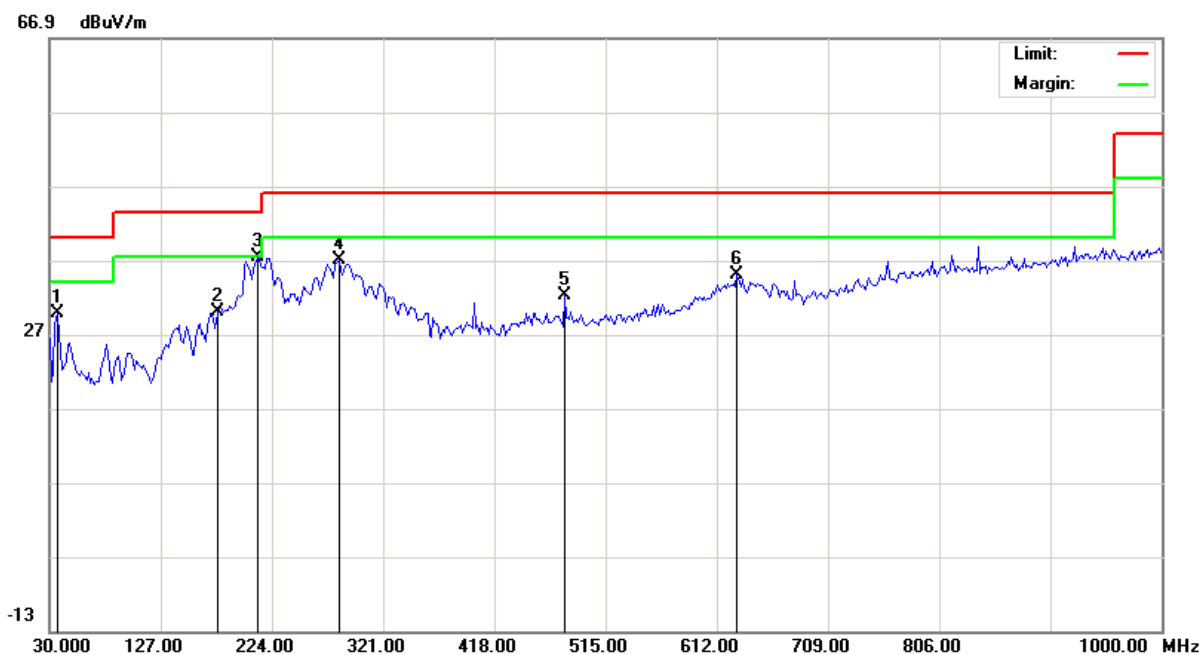
**3.4. TEST RESULT****RADIATED EMISSION BELOW 30MHZ**

| Frequency<br>MHz | Polarization | Reading<br>dB(uV) | Factor<br>dB<br>(1/m) | Level<br>dB(uV/m)<br>Peak | Limit<br>dB(uV/m)<br>Average | Margin<br>dB | Pass/Fail |
|------------------|--------------|-------------------|-----------------------|---------------------------|------------------------------|--------------|-----------|
| 0.1234           | Face         | 43.14             | 10.4                  | 53.54                     | 105.78                       | 52.24        | Pass      |
| 0.1234           | Side         | 36.55             | 10.4                  | 46.95                     | 105.78                       | 58.83        | Pass      |

Note: No other emissions found between lowest internal used/generated frequencies to 30MHz. The peak level of the emission is less than the average limit, so the average level shall be less than the limit without test.

**RADIATED EMISSION 30MHz- 1GHZ**

|               |                  |                    |            |
|---------------|------------------|--------------------|------------|
| EUT :         | Wireless Charger | Model Name. :      | SW0042     |
| Temperature : | 20 °C            | Relative Humidity: | 48%        |
| Pressure :    | 1010 hPa         | Test Voltage :     | Normal     |
| Test Mode :   | Mode 1           | Polarization :     | Horizontal |

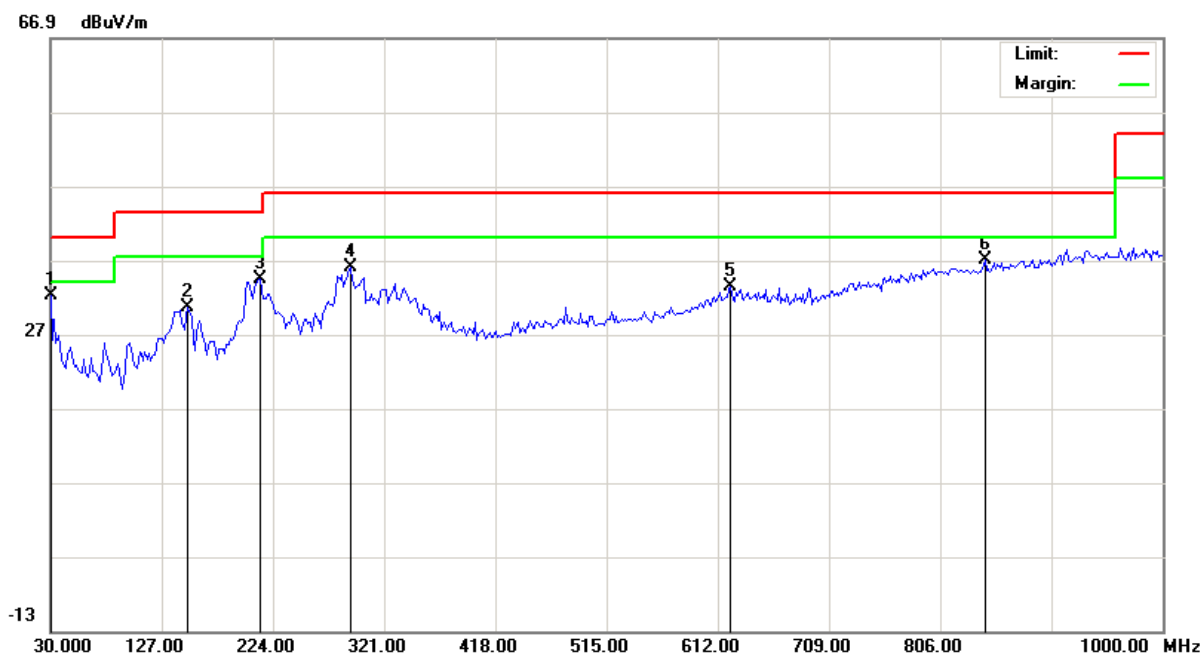


| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 36.4667  | 9.72    | 20.06  | 29.78       | 40.00  | -10.22 | peak     |                |              |         |
| 2   |    | 177.1167 | 11.39   | 18.60  | 29.99       | 43.50  | -13.51 | peak     |                |              |         |
| 3   | *  | 211.0667 | 19.38   | 18.07  | 37.45       | 43.50  | -6.05  | peak     |                |              |         |
| 4   |    | 282.2000 | 15.55   | 21.39  | 36.94       | 46.00  | -9.06  | peak     |                |              |         |
| 5   |    | 479.4333 | 5.50    | 26.67  | 32.17       | 46.00  | -13.83 | peak     |                |              |         |
| 6   |    | 629.7833 | 5.40    | 29.67  | 35.07       | 46.00  | -10.93 | peak     |                |              |         |

**RESULT: PASS**



|               |                  |                     |          |
|---------------|------------------|---------------------|----------|
| EUT :         | Wireless Charger | Model Name. :       | SW0042   |
| Temperature : | 20 °C            | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa         | Test Voltage :      | Normal   |
| Test Mode :   | Mode 1           | Polarization :      | Vertical |



| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   | *  | 30.0000  | 13.70   | 18.60  | 32.30       | 40.00  | -7.70  | peak     |                |              |         |
| 2   |    | 149.6333 | 10.42   | 20.26  | 30.68       | 43.50  | -12.82 | peak     |                |              |         |
| 3   |    | 212.6833 | 16.25   | 18.17  | 34.42       | 43.50  | -9.08  | peak     |                |              |         |
| 4   |    | 291.9000 | 14.72   | 21.24  | 35.96       | 46.00  | -10.04 | peak     |                |              |         |
| 5   |    | 623.3167 | 3.79    | 29.57  | 33.36       | 46.00  | -12.64 | peak     |                |              |         |
| 6   |    | 844.8000 | 3.14    | 33.84  | 36.98       | 46.00  | -9.02  | peak     |                |              |         |

## RESULT: PASS

### Note:

Factor=Antenna Factor + Cable loss, Margin=Result-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

The mode 1 which operate with maximum output power was the worst case and only the data of the worst case record in this report.



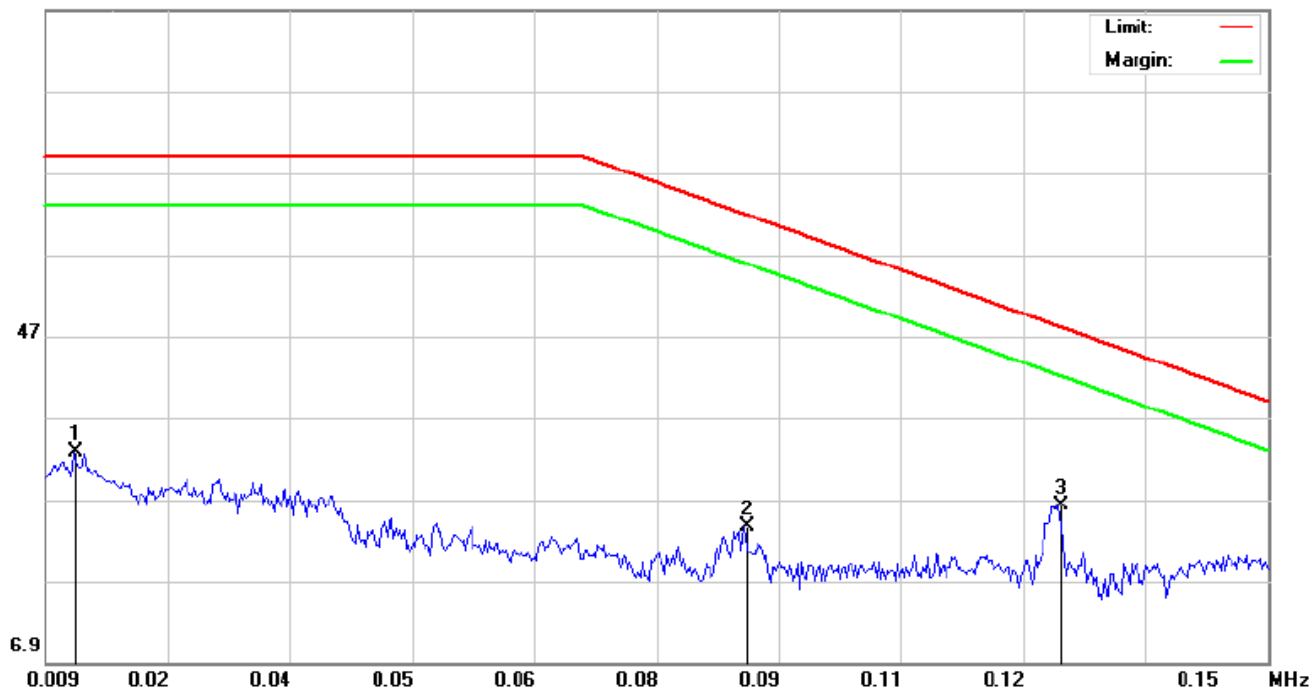
ICES-001 of WPT (subassembly of the source)

**RADIATED EMISSION BELOW 30MHZ**

|               |                  |                    |        |
|---------------|------------------|--------------------|--------|
| EUT :         | Wireless Charger | Model Name. :      | SW0042 |
| Temperature : | 20 °C            | Relative Humidity: | 48%    |
| Pressure :    | 1010 hPa         | Test Voltage :     | Normal |
| Test Mode :   | Mode 1           | Polarization :     | Face   |

0.009-0.1485MHz

86.9 dBuA/m



| No. | Mk | Freq.  | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|--------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz    | dBuA    | dB/m   | dBuA/m      | dBuA/m | dB     |          | cm             | degree       |         |
| 1   |    | 0.0123 | -6.03   | 38.83  | 32.80       | 69.00  | -36.20 | peak     |                |              |         |
| 2   |    | 0.0887 | -2.91   | 26.60  | 23.69       | 61.90  | -38.21 | peak     |                |              |         |
| 3   | *  | 0.1246 | -0.48   | 26.60  | 26.12       | 48.27  | -22.15 | peak     |                |              |         |



0.1485-30MHz

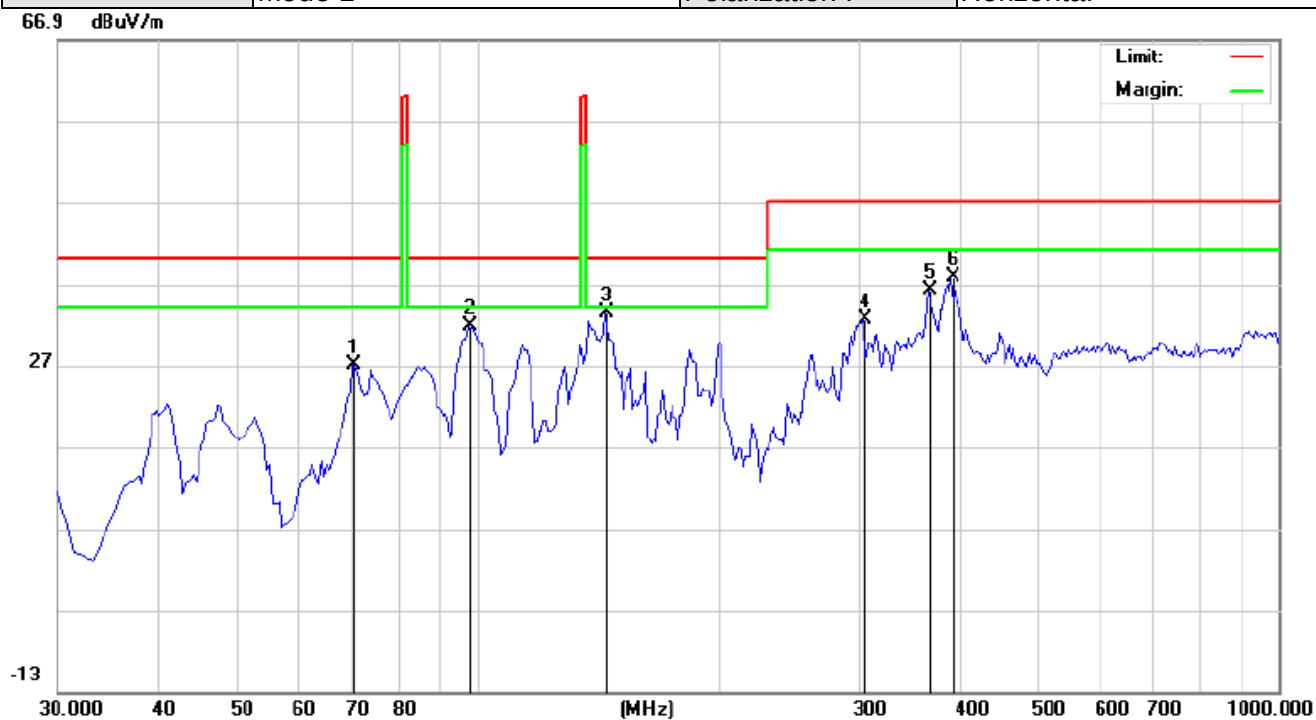
46.0 dBuA/m



| No. | Mk | Freq.   | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|---------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz     | dBuA    | dB/m   | dBuA/m      | dBuA/m | dB     |          | cm             | degree       |         |
| 1   |    | 0.1743  | -20.72  | 22.76  | 2.04        | 37.24  | -35.20 | peak     |                |              |         |
| 2   |    | 0.5210  | -16.82  | 22.22  | 5.40        | 25.28  | -19.88 | peak     |                |              |         |
| 3   |    | 0.7616  | -22.32  | 22.46  | 0.14        | 21.13  | -20.99 | peak     |                |              |         |
| 4   |    | 1.5428  | -25.05  | 22.31  | -2.74       | 13.41  | -16.15 | peak     |                |              |         |
| 5   |    | 2.6872  | -30.53  | 21.85  | -8.68       | 7.35   | -16.03 | peak     |                |              |         |
| 6   | *  | 21.9404 | -26.44  | 21.06  | -5.38       | 3.00   | -8.38  | peak     |                |              |         |

**RADIATED EMISSION 30MHz- 1GHZ**

|               |                  |                    |            |
|---------------|------------------|--------------------|------------|
| EUT :         | Wireless Charger | Model Name. :      | SW0042     |
| Temperature : | 20 °C            | Relative Humidity: | 48%        |
| Pressure :    | 1010 hPa         | Test Voltage :     | Normal     |
| Test Mode :   | Mode 1           | Polarization :     | Horizontal |



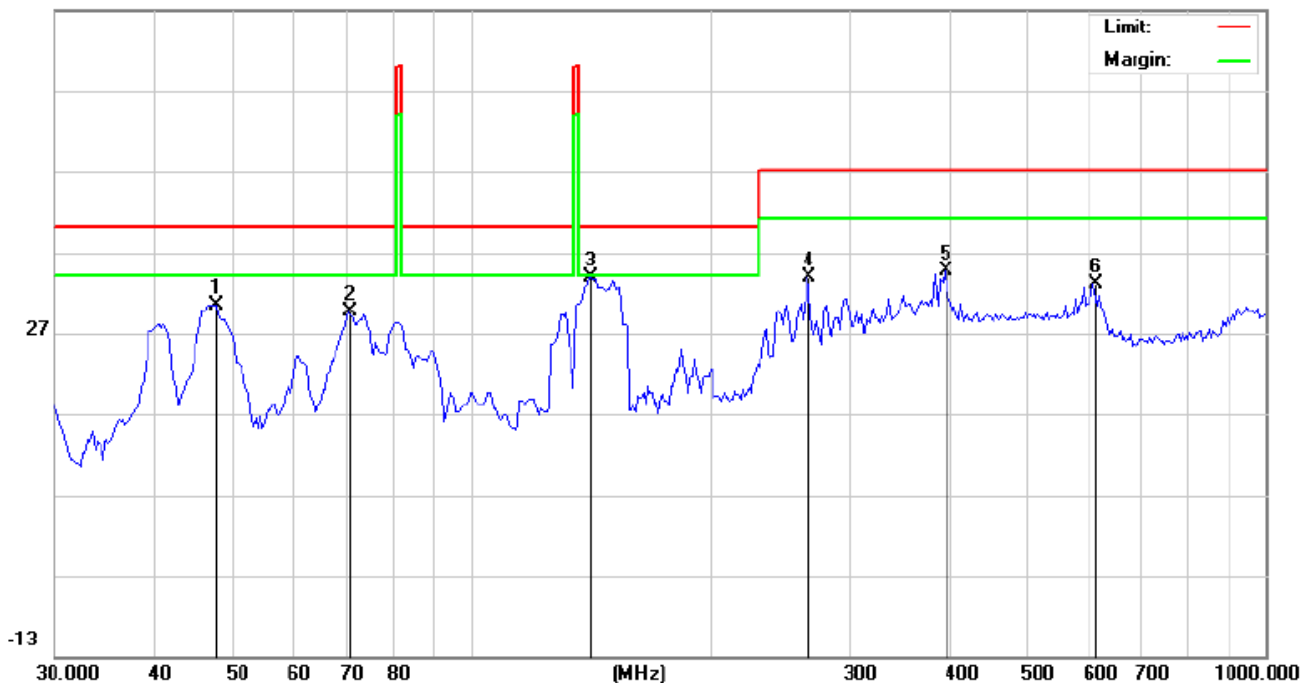
| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dBuV/m | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 70.4167  | 17.21   | 9.85   | 27.06       | 40.00  | -12.94 | peak     |                |              |         |
| 2   |    | 97.9000  | 23.46   | 8.38   | 31.84       | 40.00  | -8.16  | peak     |                |              |         |
| 3   | *  | 144.7829 | 19.38   | 14.04  | 33.42       | 40.00  | -6.58  | peak     |                |              |         |
| 4   |    | 304.8333 | 16.88   | 15.73  | 32.61       | 47.00  | -14.39 | peak     |                |              |         |
| 5   |    | 366.2667 | 17.30   | 18.85  | 36.15       | 47.00  | -10.85 | peak     |                |              |         |
| 6   |    | 390.5167 | 18.78   | 19.01  | 37.79       | 47.00  | -9.21  | peak     |                |              |         |

**RESULT: PASS**



|               |                  |                     |          |
|---------------|------------------|---------------------|----------|
| EUT :         | Wireless Charger | Model Name. :       | SW0042   |
| Temperature : | 20 °C            | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa         | Test Voltage :      | Normal   |
| Test Mode :   | Mode 1           | Polarization :      | Vertical |

66.9 dBuV/m



| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dBuV/m | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 47.7832  | 22.06   | 8.39   | 30.45       | 40.00  | -9.55  | peak     |                |              |         |
| 2   |    | 70.4188  | 25.39   | 4.16   | 29.55       | 40.00  | -10.45 | peak     |                |              |         |
| 3   | *  | 141.5500 | 18.55   | 15.21  | 33.76       | 40.00  | -6.24  | peak     |                |              |         |
| 4   |    | 266.0332 | 19.35   | 14.38  | 33.73       | 47.00  | -13.27 | peak     |                |              |         |
| 5   |    | 395.3666 | 15.60   | 19.04  | 34.64       | 47.00  | -12.36 | peak     |                |              |         |
| 6   |    | 610.3831 | 10.02   | 22.96  | 32.98       | 47.00  | -14.02 | peak     |                |              |         |

**RESULT: PASS****Note:**

Factor=Antenna Factor + Cable loss, Margin=Result-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

The mode 1 which operate with maximum output power was the worst case and only the data of the worst case record in this report.

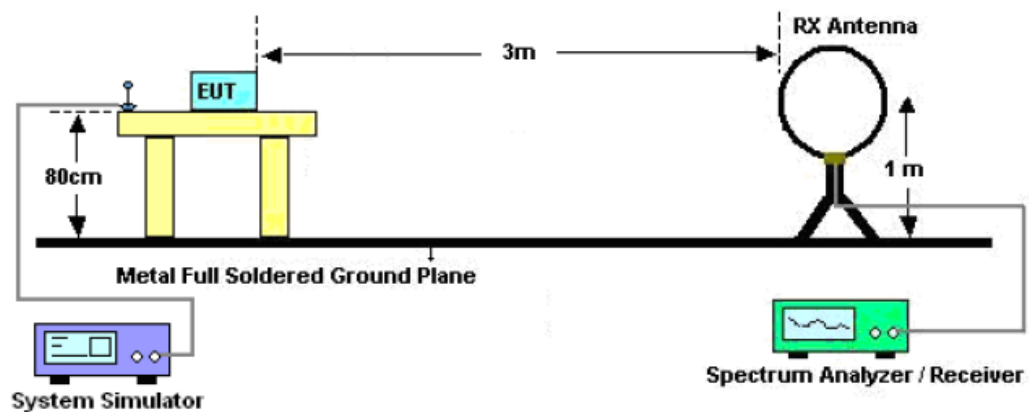


## 4. BANDWIDTH

### 4.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Set the EUT Work on operation frequency.
3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a channel  
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

### 4.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)





#### 4.3. MEASUREMENT RESULTS

| TEST ITEM       | BANDWIDTH |
|-----------------|-----------|
| TEST MODULATION | FSK       |

| Frequency (KHz) | Test Data (Hz)<br>99% Bandwidth | Test Data (Hz)<br>-20dB Bandwidth | Criteria |
|-----------------|---------------------------------|-----------------------------------|----------|
| 123.4           | 733                             | 830                               | PASS     |

TEST PLOT OF BANDWIDTH





## 5. LINE CONDUCTED EMISSION TEST

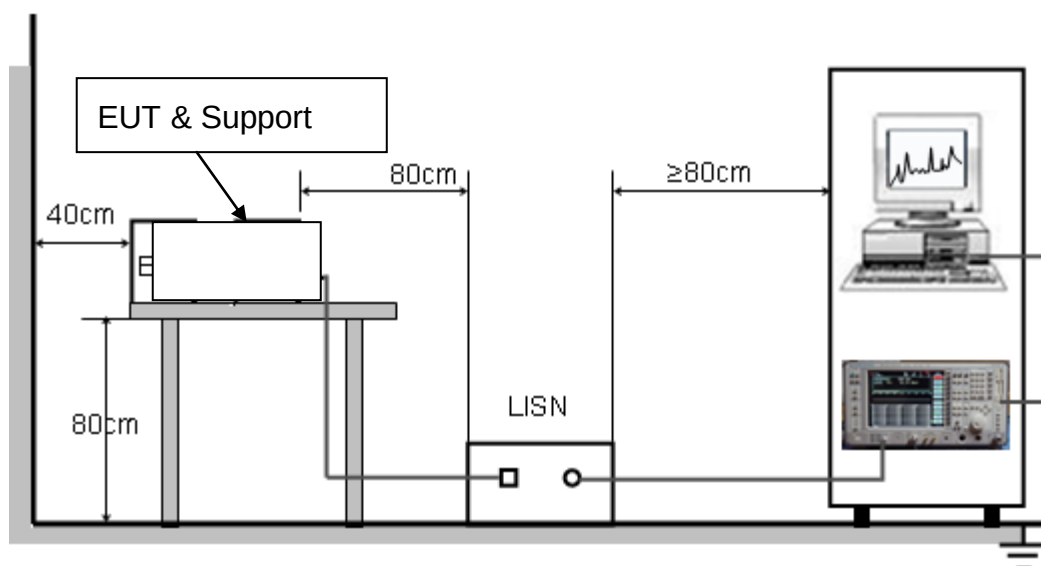
### 5.1. LIMITS OF LINE CONDUCTED EMISSION TEST

| Frequency     | Maximum RF Line Voltage |                |
|---------------|-------------------------|----------------|
|               | Q.P.( dBuV)             | Average( dBuV) |
| 150kHz~500kHz | 66-56                   | 56-46          |
| 500kHz~5MHz   | 56                      | 46             |
| 5MHz~30MHz    | 60                      | 50             |

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

### 5.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





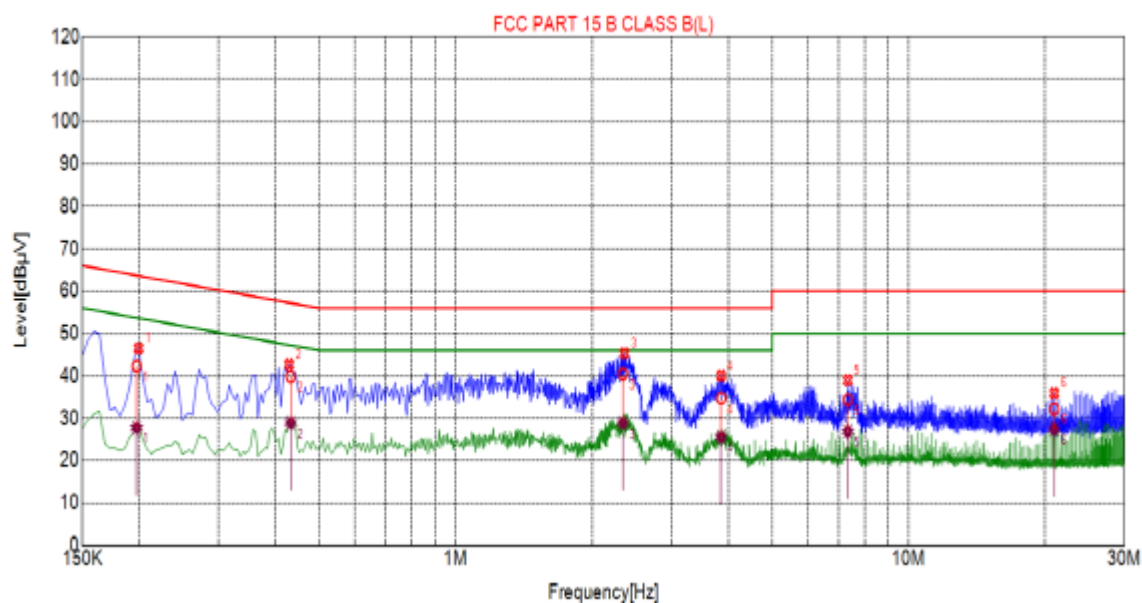
### 5.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 and CISPR 11 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10 and CISPR 11.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10 and CISPR 11.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hz power by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### 5.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

**5.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST****LINE CONDUCTED EMISSION TEST-L****Suspected List**

| NO. | Freq.<br>[MHz] | Level<br>[dBμV] | Factor<br>[dB] | Limit<br>[dBμV] | Margin<br>[dB] | Detector |
|-----|----------------|-----------------|----------------|-----------------|----------------|----------|
| 1   | 0.1995         | 46.53           | 10.03          | 63.63           | 17.10          | PK       |
| 2   | 0.4290         | 42.69           | 10.05          | 57.27           | 14.58          | PK       |
| 3   | 2.3695         | 45.30           | 10.18          | 56.00           | 10.70          | PK       |
| 4   | 3.8580         | 40.06           | 10.25          | 56.00           | 15.94          | PK       |
| 5   | 7.3455         | 38.95           | 10.18          | 60.00           | 21.05          | PK       |
| 6   | 20.9850        | 35.94           | 10.13          | 60.00           | 24.06          | PK       |

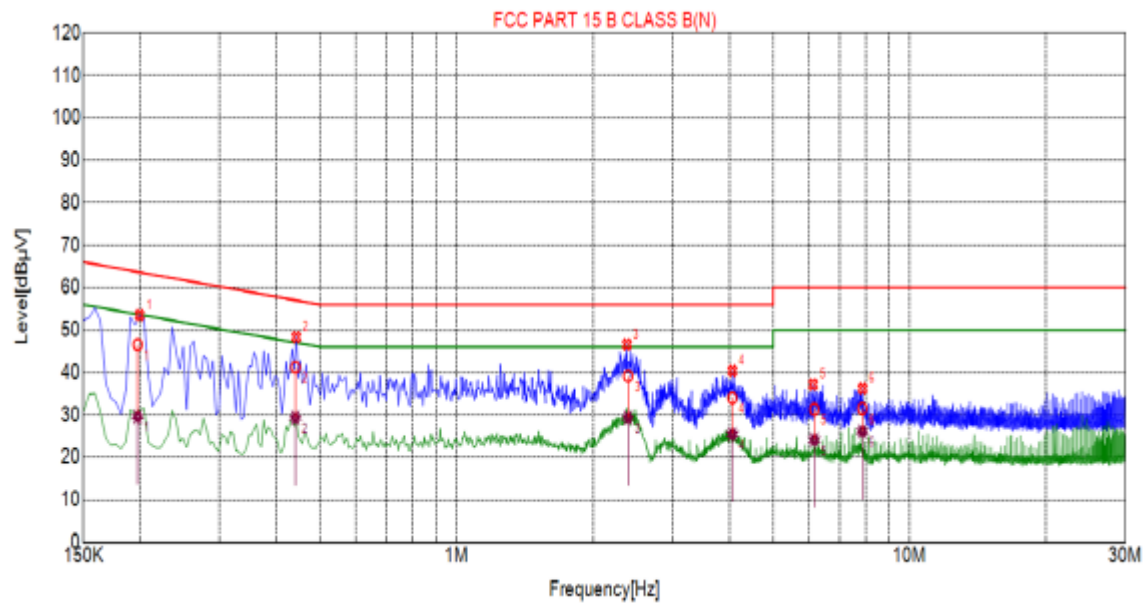
**Final Data List**

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.1975         | 10.03          | 42.36                 | 63.71                 | 21.35                | 27.71                 | 53.71                 | 26.00                |
| 2   | 0.4323         | 10.05          | 39.85                 | 57.21                 | 17.36                | 28.94                 | 47.21                 | 18.27                |
| 3   | 2.3409         | 10.18          | 40.46                 | 56.00                 | 15.54                | 28.92                 | 46.00                 | 17.08                |
| 4   | 3.8576         | 10.25          | 34.74                 | 56.00                 | 21.26                | 25.51                 | 46.00                 | 20.49                |
| 5   | 7.3466         | 10.18          | 34.33                 | 60.00                 | 25.67                | 26.90                 | 50.00                 | 23.10                |
| 6   | 20.9844        | 10.13          | 32.19                 | 60.00                 | 27.81                | 27.39                 | 50.00                 | 22.61                |

**RESULT: PASS**



## LINE CONDUCTED EMISSION TEST-N



## Suspected List

| NO. | Freq.<br>[MHz] | Level<br>[dBμV] | Factor<br>[dB] | Limit<br>[dBμV] | Margin<br>[dB] | Detector |
|-----|----------------|-----------------|----------------|-----------------|----------------|----------|
| 1   | 0.1995         | 53.53           | 10.03          | 63.63           | 10.10          | PK       |
| 2   | 0.4425         | 48.36           | 10.05          | 57.01           | 8.65           | PK       |
| 3   | 2.3775         | 46.63           | 10.18          | 56.00           | 9.37           | PK       |
| 4   | 4.0650         | 40.39           | 10.25          | 56.00           | 15.61          | PK       |
| 5   | 6.1260         | 37.21           | 10.23          | 60.00           | 22.79          | PK       |
| 6   | 7.8810         | 36.22           | 10.16          | 60.00           | 23.78          | PK       |

## Final Data List

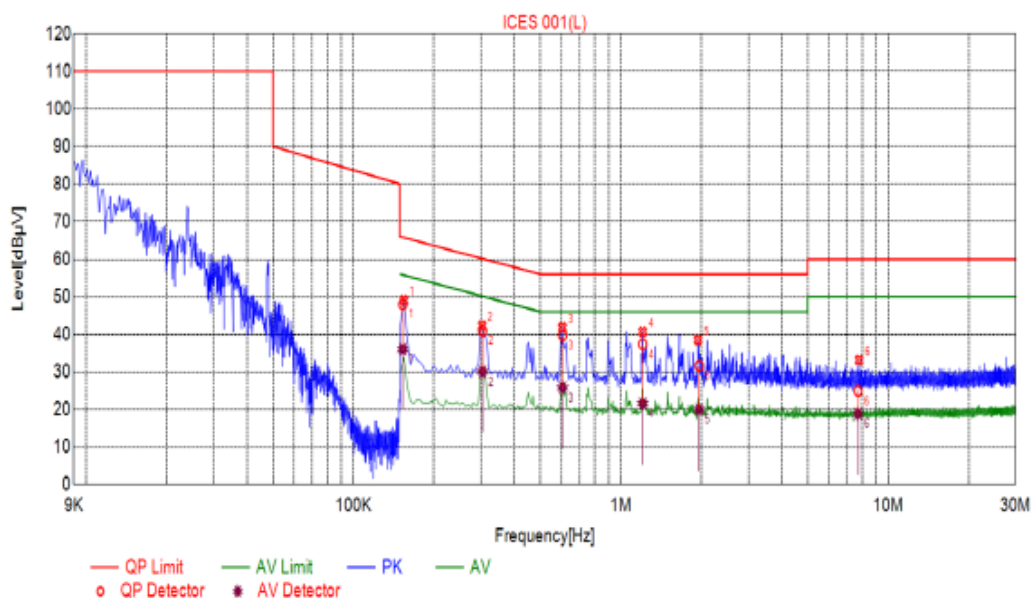
| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.1975         | 10.03          | 46.59                 | 63.71                 | 17.12                | 29.59                 | 53.71                 | 24.12                |
| 2   | 0.4405         | 10.05          | 41.22                 | 57.05                 | 15.83                | 29.38                 | 47.05                 | 17.67                |
| 3   | 2.3902         | 10.18          | 39.18                 | 56.00                 | 16.82                | 29.38                 | 46.00                 | 16.62                |
| 4   | 4.0622         | 10.25          | 33.99                 | 56.00                 | 22.01                | 25.45                 | 46.00                 | 20.55                |
| 5   | 6.1624         | 10.23          | 31.36                 | 60.00                 | 28.64                | 24.18                 | 50.00                 | 25.82                |
| 6   | 7.8678         | 10.16          | 31.54                 | 60.00                 | 28.46                | 26.16                 | 50.00                 | 23.84                |

**RESULT: PASS**

Note: The mode 1 which operate with maximum output power was the worst case and only the data of the worst case record in this report.



ICES-001 of WPT (subassembly of the source)  
LINE CONDUCTED EMISSION TEST-L



### Suspected List

| NO. | Freq.<br>[MHz] | Level<br>[dBμV] | Factor<br>[dB] | Limit<br>[dBμV] | Margin<br>[dB] | Detector |
|-----|----------------|-----------------|----------------|-----------------|----------------|----------|
| 1   | 0.1545         | 49.08           | 10.03          | 65.75           | 16.67          | PK       |
| 2   | 0.3030         | 42.31           | 10.04          | 60.16           | 17.85          | PK       |
| 3   | 0.6045         | 41.81           | 10.05          | 56.00           | 14.19          | PK       |
| 4   | 1.2075         | 40.69           | 10.09          | 56.00           | 15.31          | PK       |
| 5   | 1.9455         | 38.50           | 10.14          | 56.00           | 17.50          | PK       |
| 6   | 7.7900         | 33.12           | 10.16          | 60.00           | 26.88          | PK       |

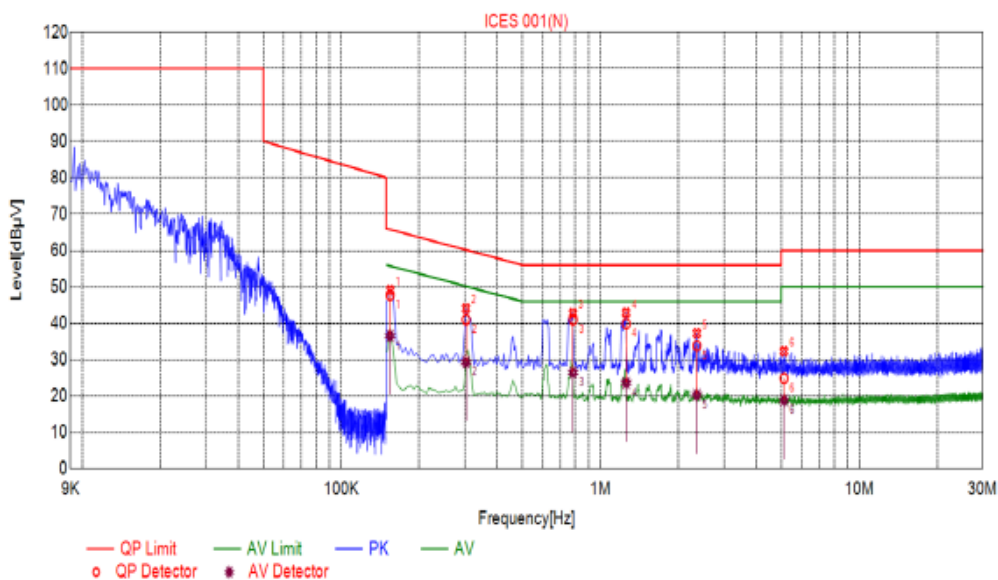
### Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.1530         | 10.03          | 47.98                 | 65.84                 | 17.86                | 38.05                 | 55.84                 | 19.79                |
| 2   | 0.3041         | 10.05          | 40.95                 | 60.13                 | 19.18                | 30.04                 | 50.13                 | 20.09                |
| 3   | 0.6056         | 10.05          | 39.73                 | 56.00                 | 16.27                | 25.76                 | 46.00                 | 20.24                |
| 4   | 1.2077         | 10.09          | 37.36                 | 56.00                 | 18.64                | 21.55                 | 46.00                 | 24.45                |
| 5   | 1.9640         | 10.14          | 31.61                 | 56.00                 | 24.39                | 19.96                 | 46.00                 | 26.04                |
| 6   | 7.7206         | 10.17          | 24.93                 | 60.00                 | 35.07                | 18.78                 | 50.00                 | 31.22                |

RESULT: PASS



## LINE CONDUCTED EMISSION TEST-N



## Suspected List

| NO. | Freq.<br>[MHz] | Level<br>[dBμV] | Factor<br>[dB] | Limit<br>[dBμV] | Margin<br>[dB] | Detector |
|-----|----------------|-----------------|----------------|-----------------|----------------|----------|
| 1   | 0.1545         | 49.12           | 10.03          | 65.75           | 16.63          | PK       |
| 2   | 0.3030         | 44.06           | 10.04          | 60.16           | 16.10          | PK       |
| 3   | 0.7845         | 42.76           | 10.05          | 56.00           | 13.24          | PK       |
| 4   | 1.2570         | 42.88           | 10.09          | 56.00           | 13.12          | PK       |
| 5   | 2.3595         | 37.19           | 10.18          | 56.00           | 18.81          | PK       |
| 6   | 5.1170         | 32.24           | 10.26          | 60.00           | 27.76          | PK       |

## Final Data List

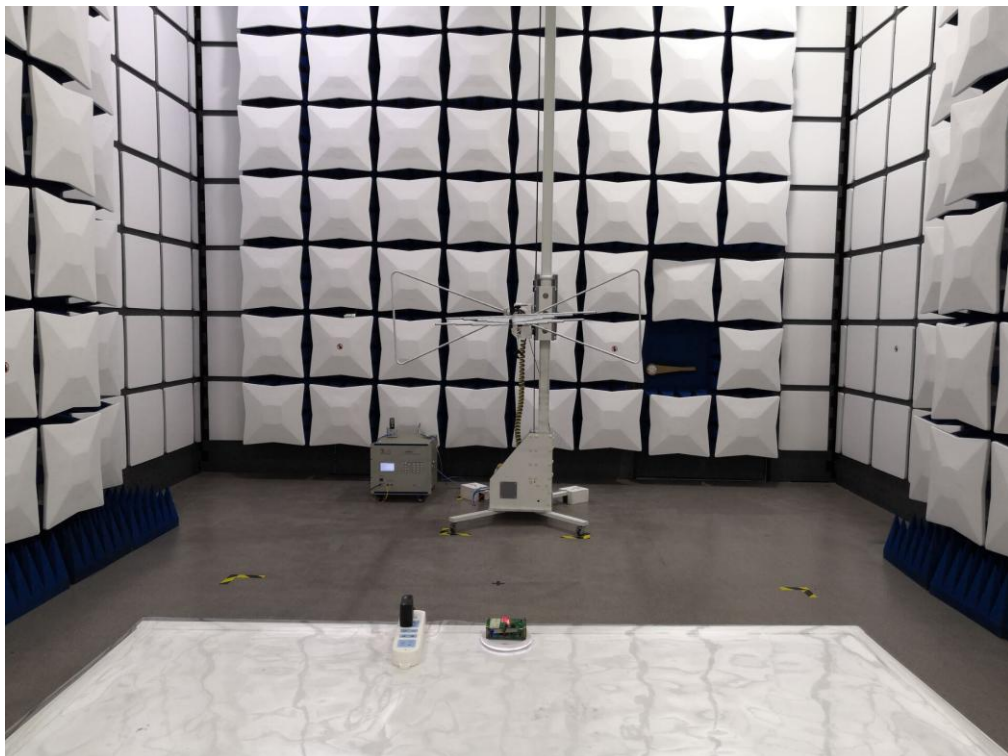
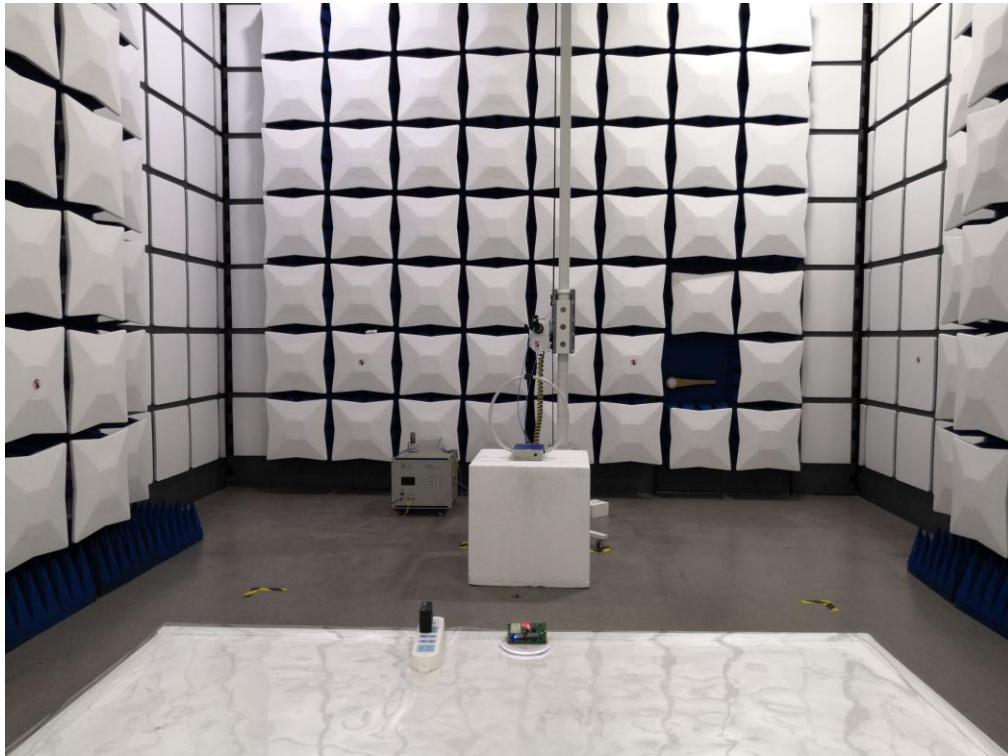
| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.1543         | 10.03          | 47.88                 | 65.76                 | 18.08                | 36.52                 | 55.76                 | 19.24                |
| 2   | 0.3033         | 10.04          | 41.01                 | 60.15                 | 19.14                | 29.30                 | 50.15                 | 20.85                |
| 3   | 0.7853         | 10.05          | 40.96                 | 56.00                 | 15.04                | 26.44                 | 46.00                 | 19.56                |
| 4   | 1.2583         | 10.09          | 39.82                 | 56.00                 | 16.18                | 23.58                 | 46.00                 | 22.42                |
| 5   | 2.3597         | 10.18          | 33.84                 | 56.00                 | 22.16                | 20.34                 | 46.00                 | 25.66                |
| 6   | 5.1221         | 10.26          | 24.85                 | 60.00                 | 35.15                | 18.79                 | 50.00                 | 31.21                |

## RESULT: PASS

Note: The mode 1 which operate with maximum output power was the worst case and only the data of the worst case record in this report.

## 6. PHOTOGRAPH OF TEST

### Radiated Emission





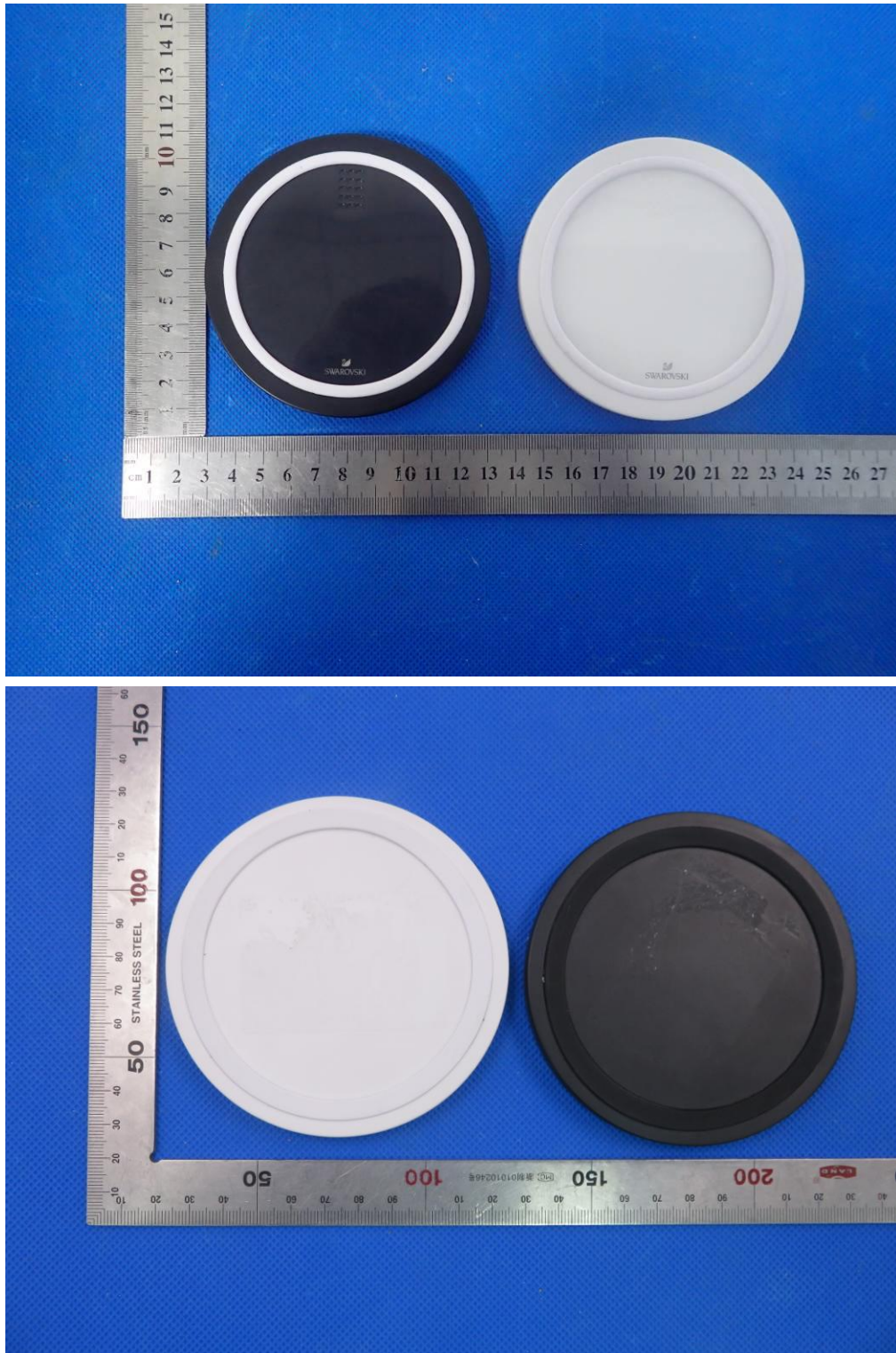
## Conducted Emission



## 7. PHOTOGRAPHS OF EUT

### ALL VIEW OF EUT

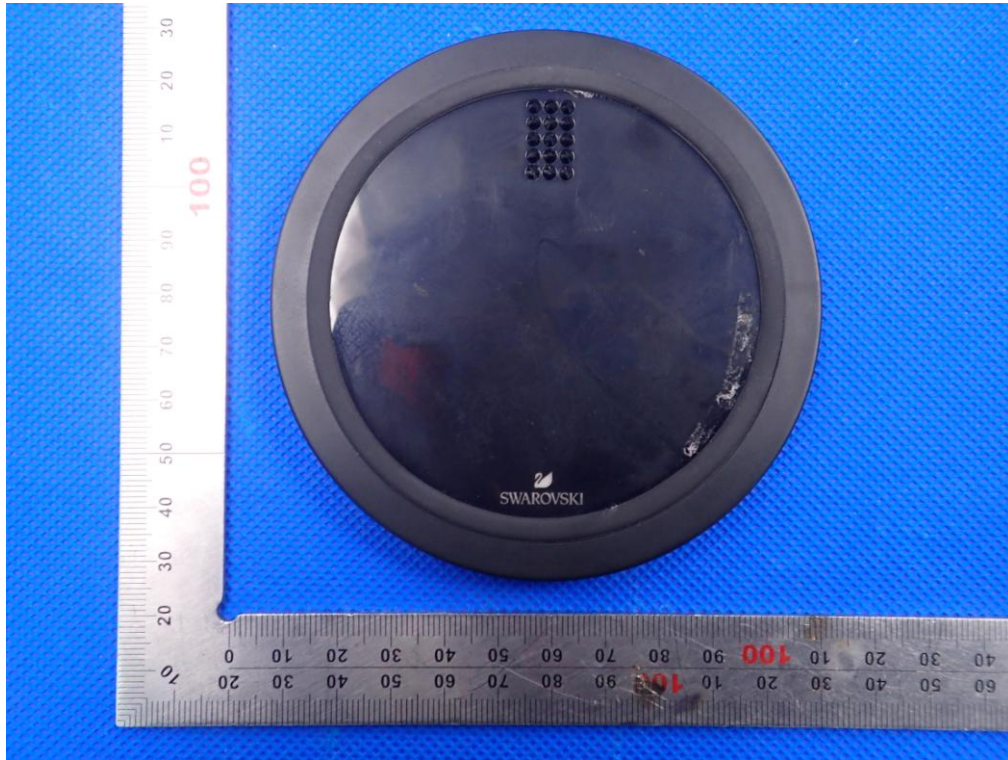
5502267(SW0042-BK), 5502269(SW0042-WE)



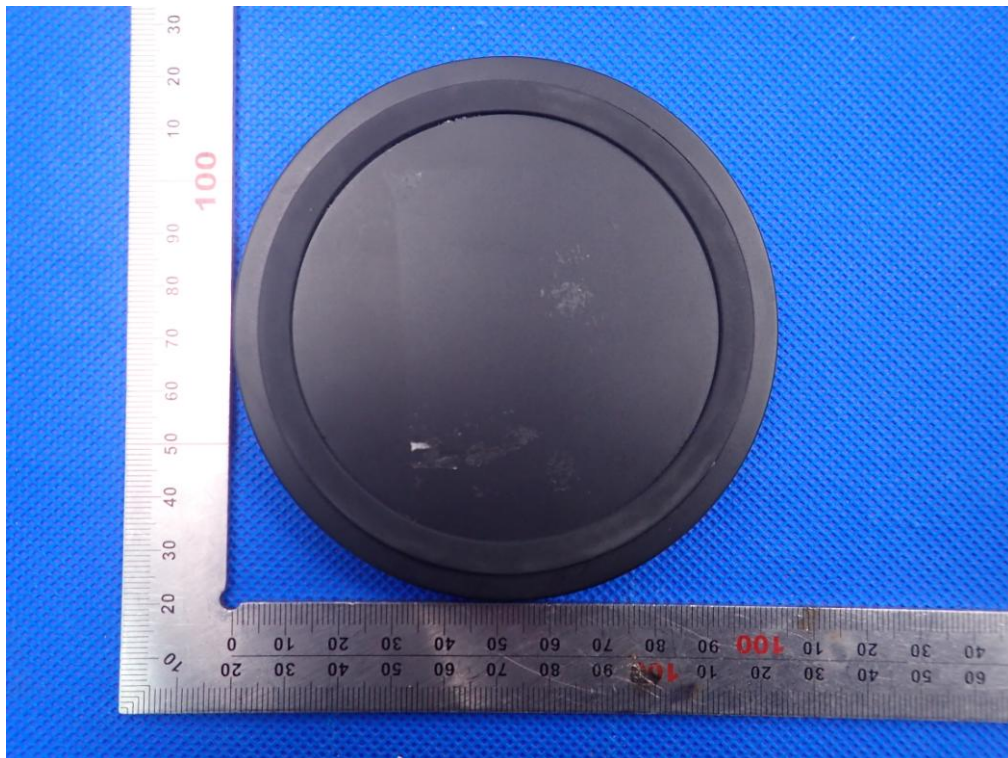


5502267(SW0042-BK)

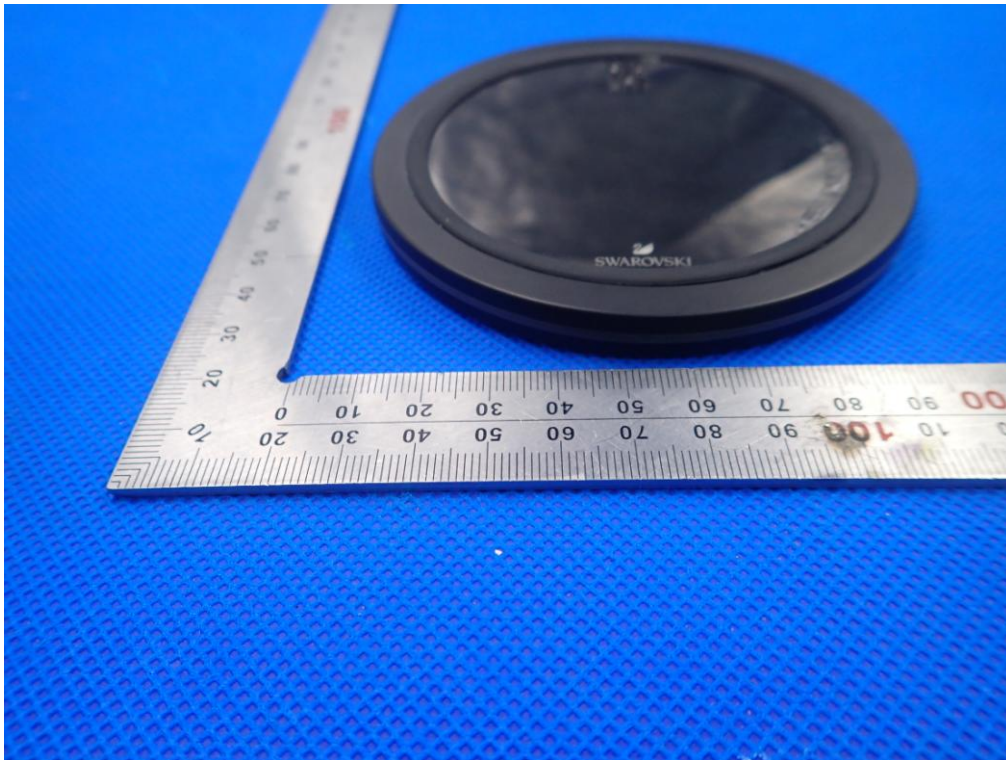
TOP VIEW OF EUT



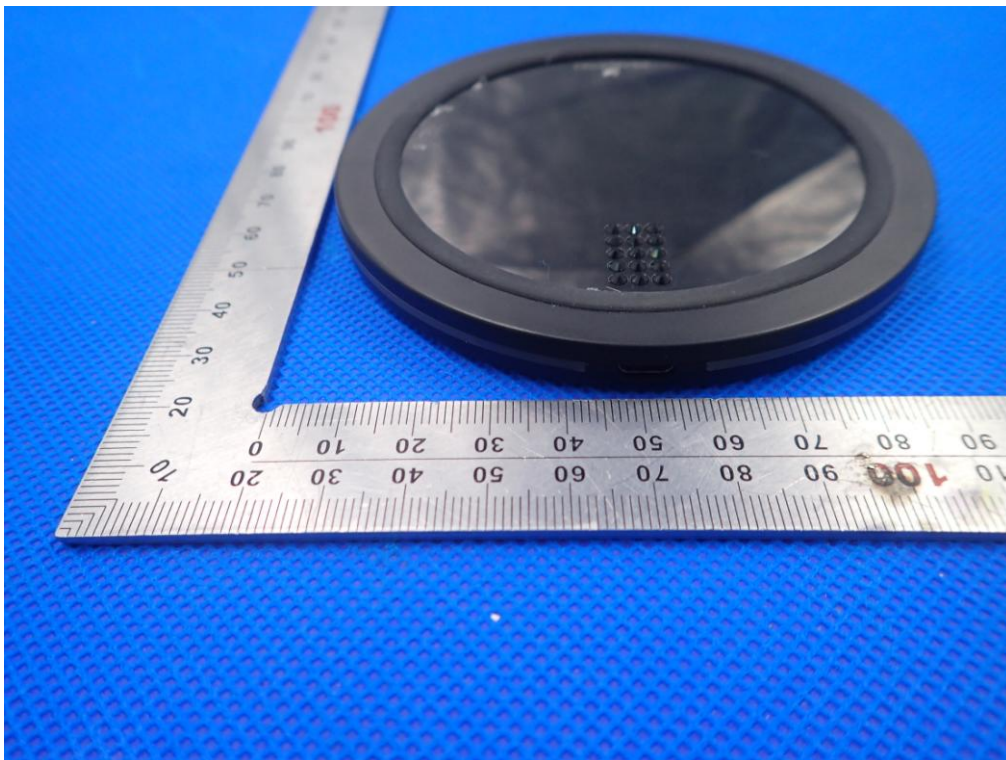
BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT

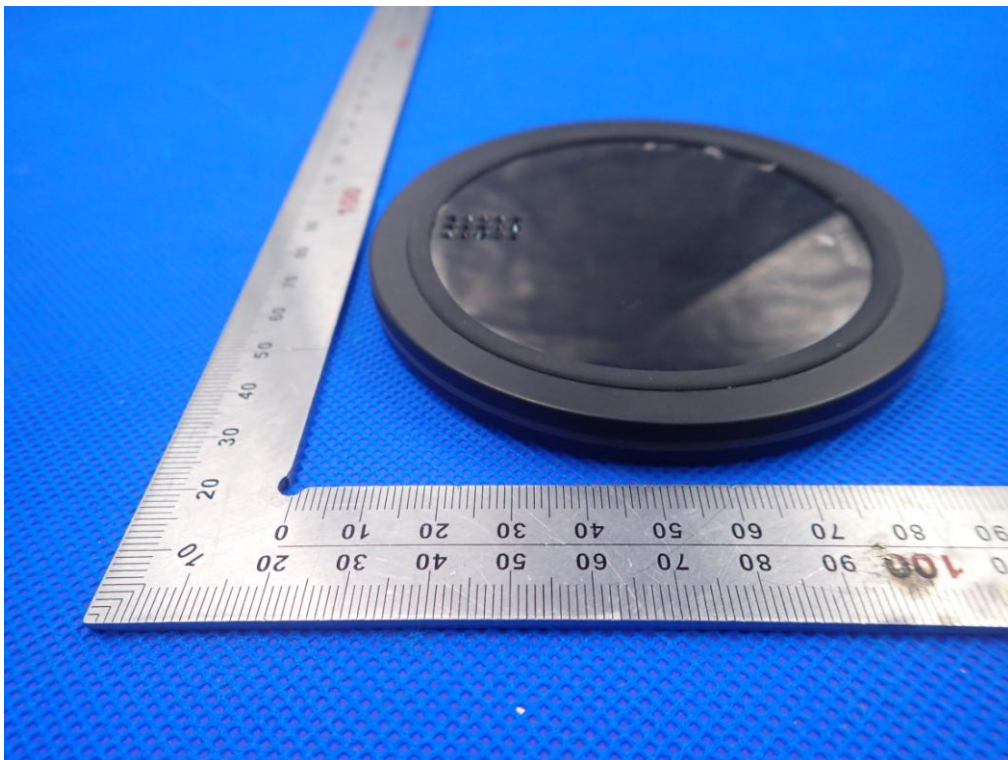




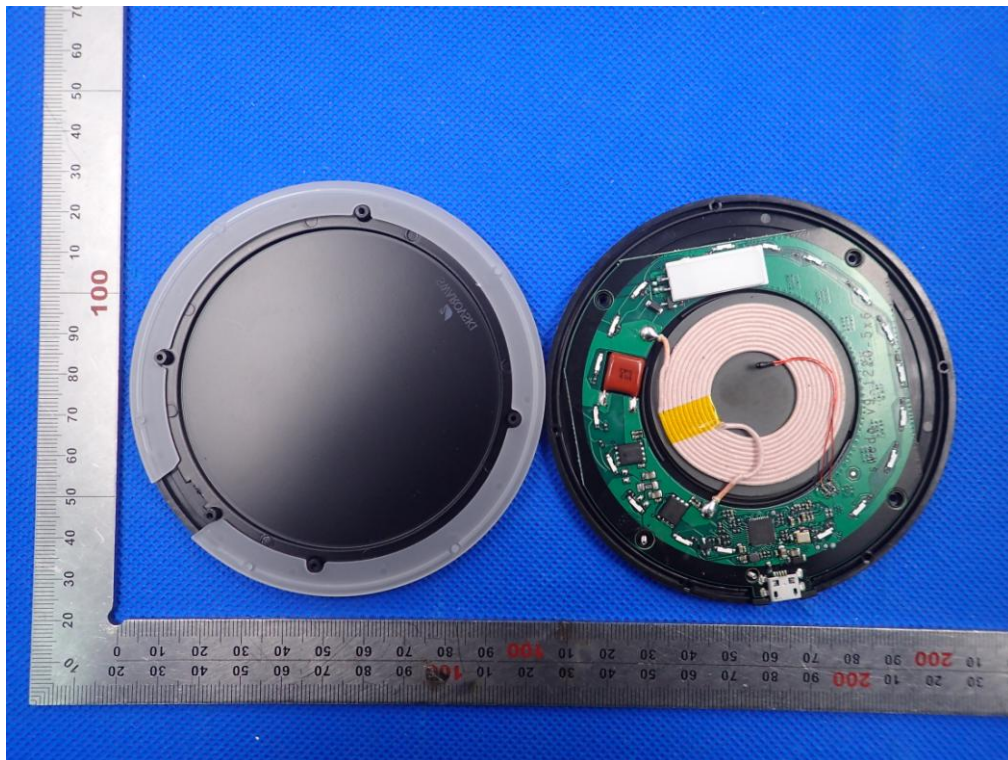
LEFT VIEW OF EUT



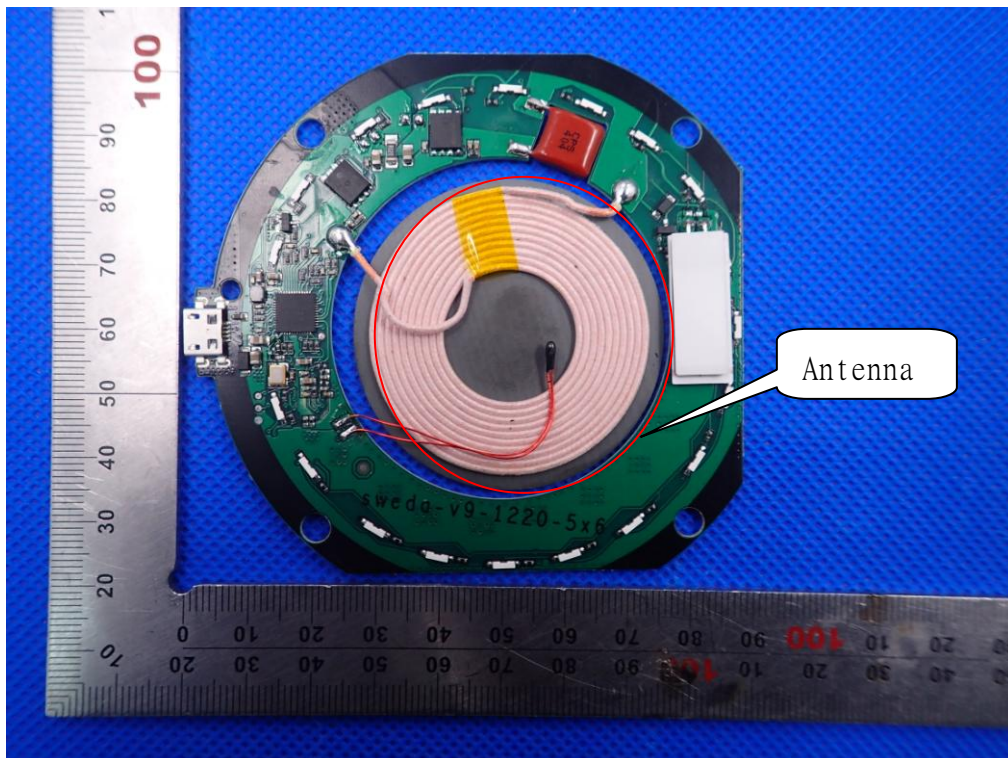
RIGHT VIEW OF EUT



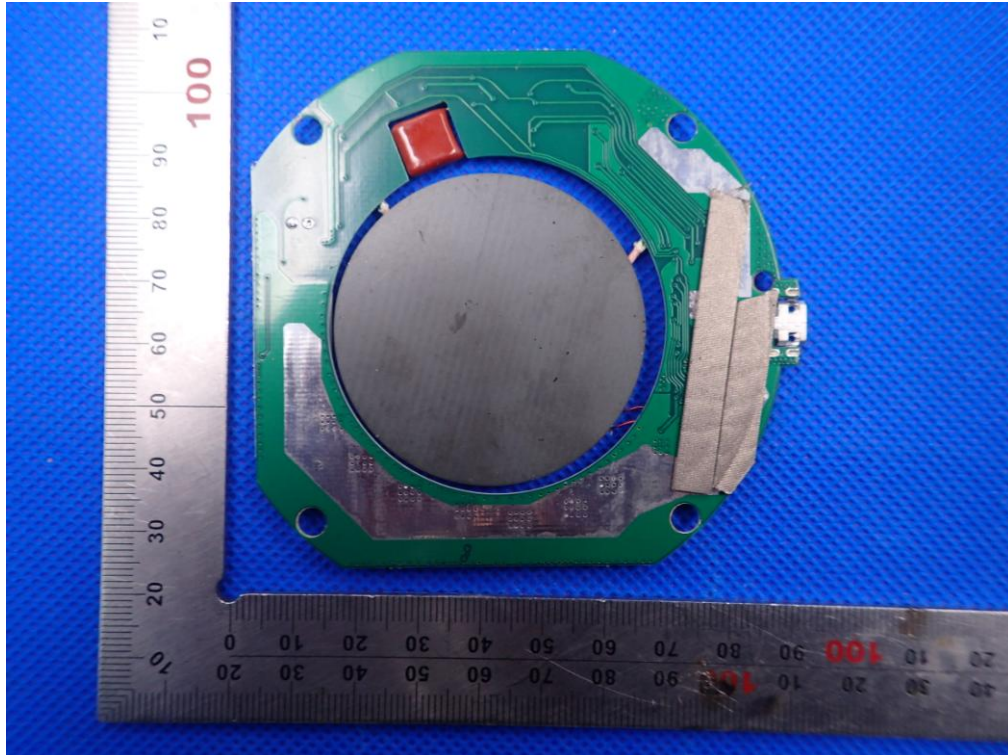
## OPEN VIEW-1 OF EUT



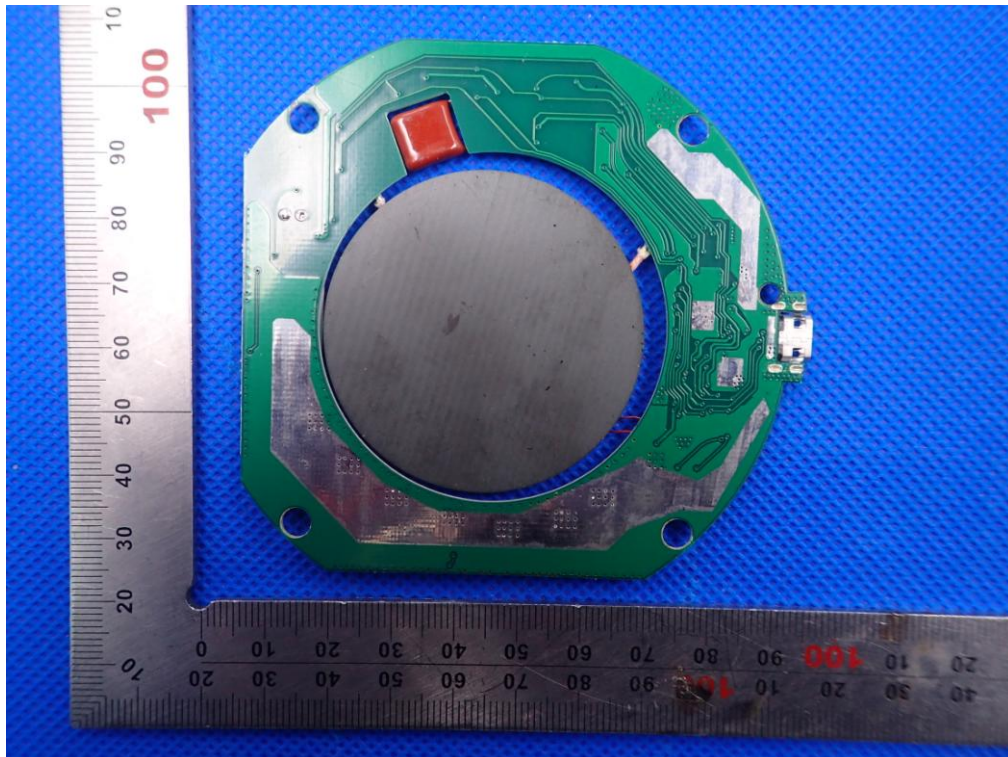
## INTERNAL VIEW-1 OF EUT



INTERNAL VIEW-2 OF EUT



INTERNAL VIEW-3 OF EUT

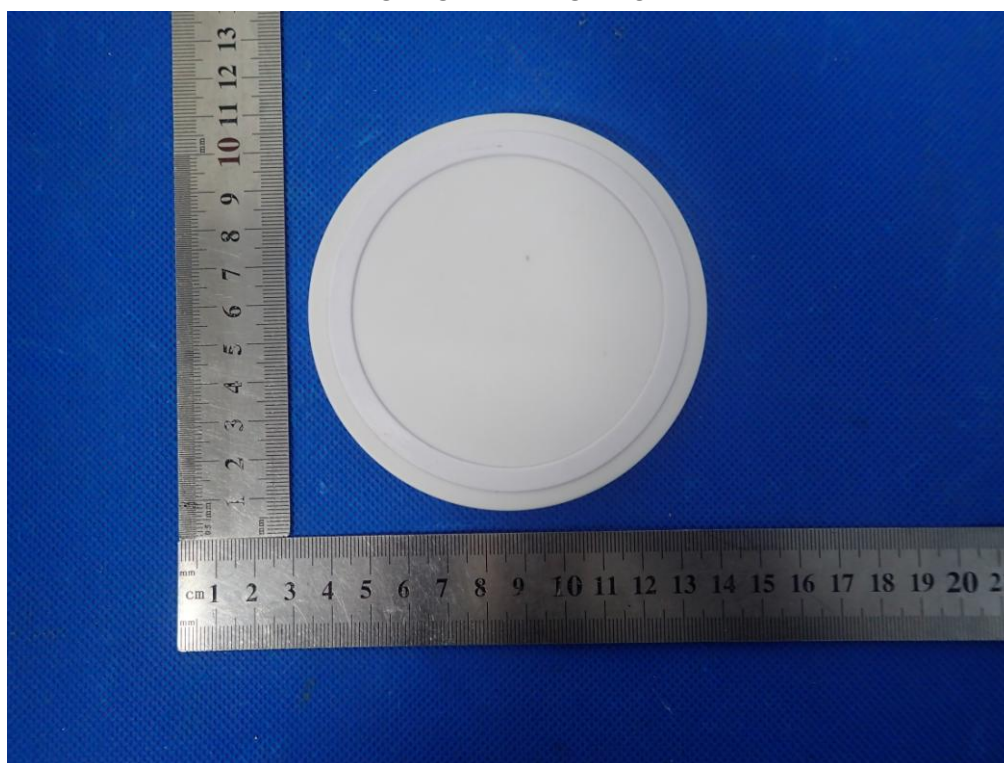


5502269(SW0042-WE)

TOP VIEW OF EUT



BOTTOM VIEW OF EUT





FRONT VIEW OF EUT

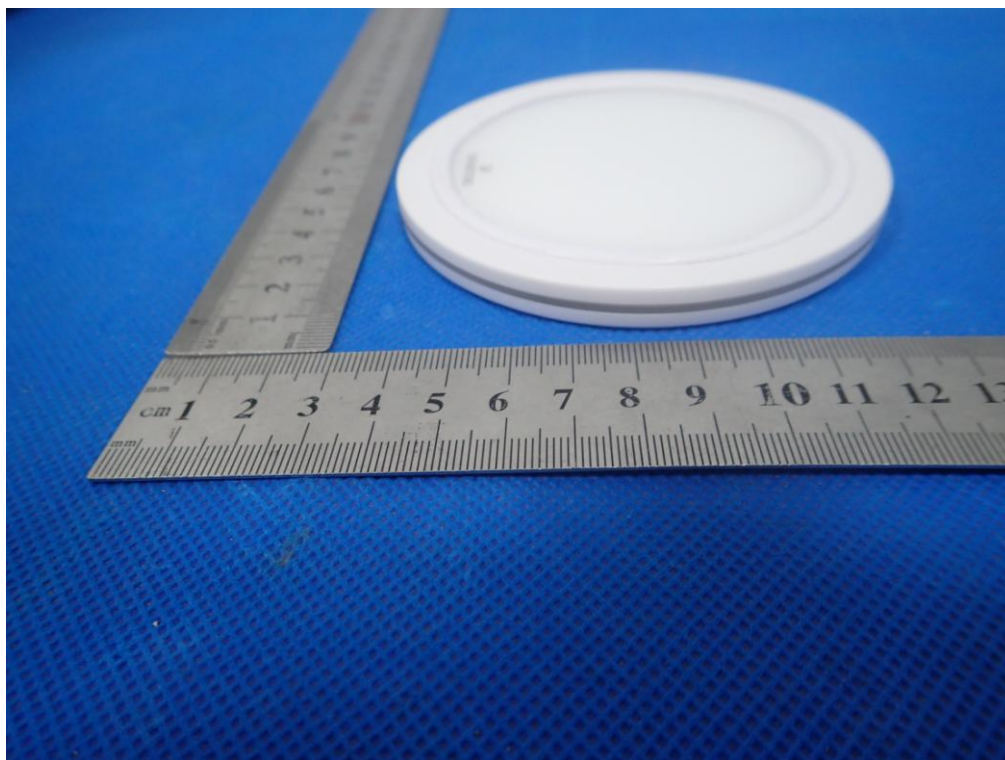


BACK VIEW OF EUT

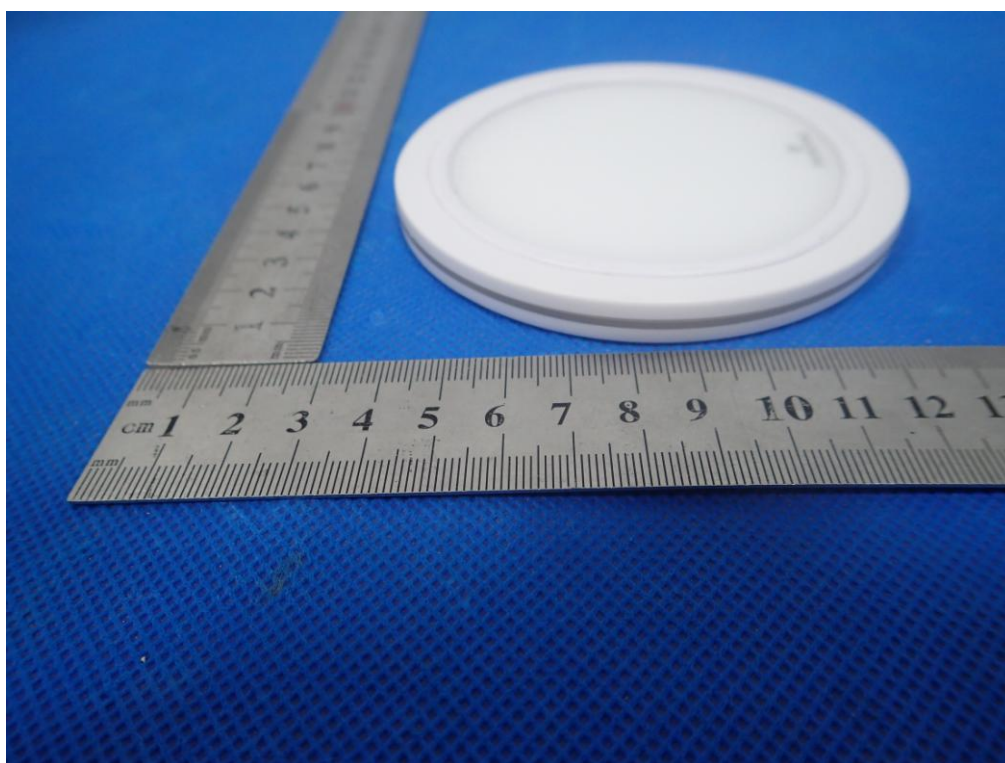




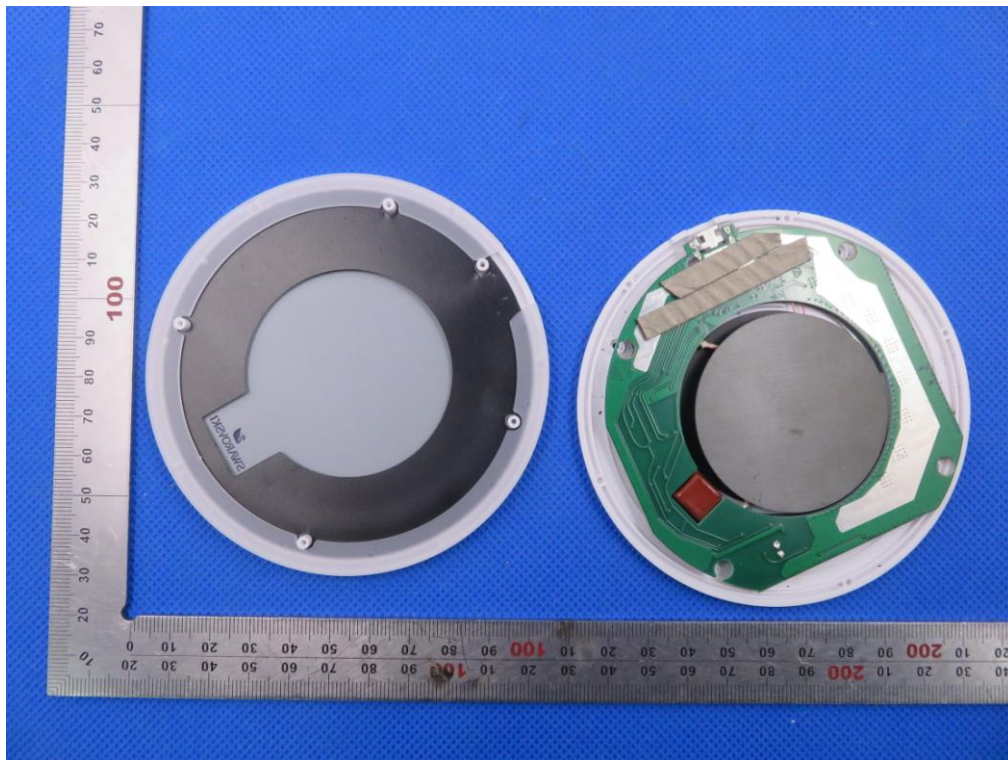
LEFT VIEW OF EUT



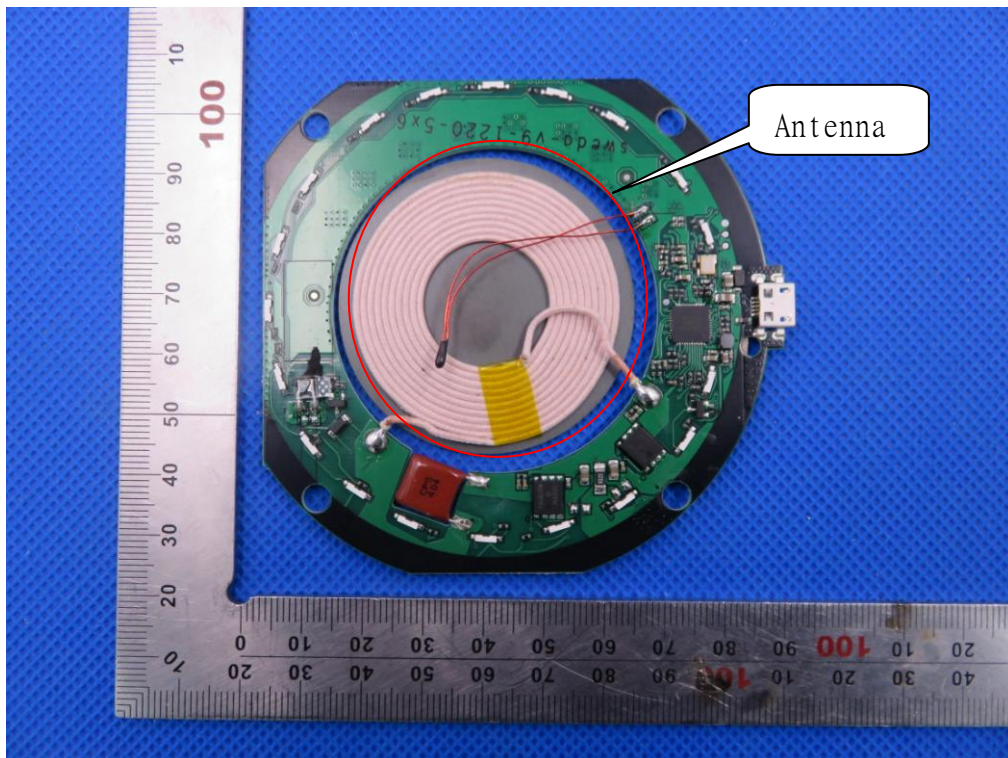
RIGHT VIEW OF EUT



## OPEN VIEW-1 OF EUT

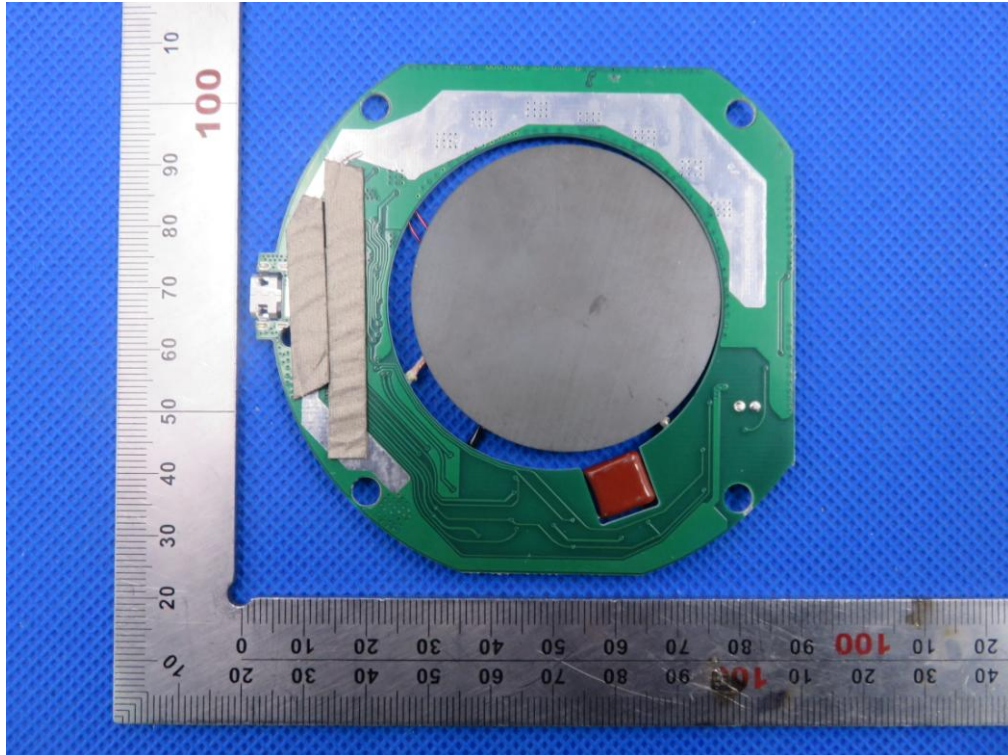


## INTERNAL VIEW-1 OF EUT





INTERNAL VIEW-2 OF EUT



----END OF REPORT----