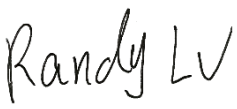
| | |
|---|---|
| **Product Name: Massage Chair** | **Report No: FCC022022-1038RF0** |
| **Product Model: EC-3209K, AM-Juno II** | **Security Classification: Open** |
| **Version: V1.0** | **Total Page: 35** |

# TIRT Testing Report

| **Prepared By:** | **Checked By:** | **Approved By:** | |
|---|---|---|---|
| Stone Tang | Randy Lv | Daniel Chen | |
|  |  |  | |

# RF TEST REPORT

## FCC ID: YMX-EC3209K1

According to

## 47 CFR FCC Part 15, Subpart C

## ANSI C63.10:2013

| | | |
|---|---|---|
| Equipment | : | Massage Chair |
| Model No. | : | EC-3209K, AM-Juno II |
| Trademark | : | / |
| Product No. | : | 20220311003340 |
| Applicant | : | XIAMEN COMFORT SCIENCE & TECHNOLOGY GROUP CO., LTD. |
| Address | : | (5/F) NO.168, QIANPU ROAD, SIMING DISTRICT, XIAMEN, CHINA |

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.
- Test Date: 2022.03.10-2022.03.21
- Receipt Date: 2022.03.10

Lab: Beijing TIRT Technology Service Co.,Ltd Shenzhen
Add: 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
TEL: +86-0755-27087573

# Table of Contents

# History of this test report

Original Report Issue Date: 2022.05.18

● No additional attachment

○ Additional attachments were issued following record

| Attachment No. | Issue Date | Description |
|---|---|---|
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# 1. General Information

## 1.1 Applicant

**XIAMEN COMFORT SCIENCE & TECHNOLOGY GROUP CO., LTD.**

(5/F) NO.168, QIANPU ROAD, SIMING DISTRICT, XIAMEN, CHINA

## 1.2 Manufacturer

**XIAMEN HEALTHCARE ELECTRONIC CO.,LTD**

65-66#, 62-63# BUILDING, SIMING ZONE, TONGAN INDUSTRIAL DISTRICT, XIAMEN CITY, FUJIAN PROVINCE, P.R.CHINA

## 1.3 Factory

**XIAMEN HEALTHCARE ELECTRONIC CO.,LTD**

65-66#, 62-63# BUILDING, SIMING ZONE, TONGAN INDUSTRIAL DISTRICT, XIAMEN CITY, FUJIAN PROVINCE, P.R.CHINA

## 1.4 Basic Description of Equipment Under Test

| Items | Description |
|---|---|
| Equipment Name | Massage Chair |
| Model Number | EC-3209K, AM-Juno II |
| Trademark | / |
| Power supply | 110-120V~ 60Hz |
| Max output power | 10W |
| Standby power | <0.5W |
| Effective Charging Distance | 3.5mm max from Tx-coil to Rx-coil |
| Efficiency | 70% Min |
| Charge area | 10mm*10mm |
| Modulation type | ASK |
| Operating frequency | 110kHz~205kHz |
| Antenna type | Coil Antenna |
| Hardware Vision | 1.0 |
| Software Vision | 1.0 |

Note：

All model: EC-3209K, AM-Juno II

Only the model EC-3209K was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model name.

## 1.5 Application of Standard

47 CFR FCC Part 15, Subpart C and ANSI C63.10:2013

## 1.6 Operating Modes of EUT

The EUT was tested under the following modes the final worst mode was marked in boldface and recorded in this report.

| Test frequency | Test mode | Test voltage |
|---|---|---|
| 111~130kHz | Wireless charging + Transmiting | 120 AC |
| 140~160kHz | Standby + Transmiting | |

# 2. Summary of Test Results

## 2.1 Summary of Test Items

| 47 CFR FCC Part 15, Subpart C | | | |
|---|---|---|---|
| Test Item | FCC Clause | Results | Remarks |
| AC Power Conducted Emission | 15.207 | Pass | Meet the requirement of the limit |
| Radiated Emission | 15.209 | Pass | Meet the requirement of the limit |
| Antenna Requirement | 15.203 | Pass | Meet the requirement of the limit |
| 20dB Bandwidth | 15.215(c) | Pass | Meet the requirement of the limit |
| Note: NA denotes Not Applicable in this part | | | |

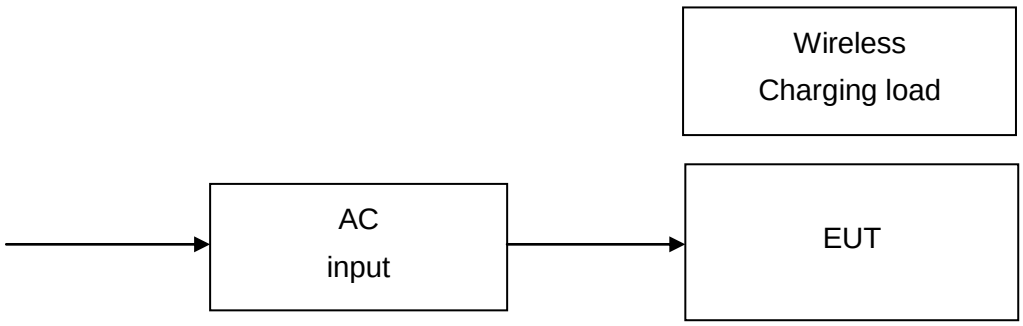
## 2.2 Test Instruments

| No. | Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| Conducted Emission | | | | | |
| 1 | EMI Receiver | Rohde&Schwarz | ESCI | 1166.5950.03 | 2022/11/09 |
| 2 | AMN | Rohde&Schwarz | ENV216 | 3560.6550.05 | 2022/11/09 |
| 3 | AMN | Schwarzbeck | NSLK8127 | #829 | 2022/11/09 |
| 4 | ECSI RF IN RF Cable | Rohde&Schwarz | RP-X1 | \ | 2022/11/09 |
| 5 | ECSI RF IN RF Cable | Rohde&Schwarz | Sapre sm | \ | 2022/11/09 |
| 6 | Testing Software | EZ-EMC | TW-03A2 | \ | \ |
| Radiated Emission | | | | | |
| 1 | EMI Receiver | Rohde&Schwarz | ESR7 | 102013 | 2022/11/09 |
| 2 | Spectrum analyzer | Rohde&Schwarz | FSV30 | 103741 | 2022/11/09 |
| 3 | Spectrum analyzer | KEYSIGHT | N9010A-44 | MY51440158 | 2022/11/09 |
| 4 | Integral Antenna | Schwarzbeck | VULB 9163 | VULB 9163-361 | 2022/11/20 |
| 5 | Integral Antenna | Schwarzbeck | FMZB 1519B | FMZB 1519B-00029 | 2022/11/04 |
| 6 | Integral Antenna | Schwarzbeck | BBHA 9170 | 9170#685 | 2022/11/20 |
| 7 | Preamplifier | CD Systems Inc | PAP-03036-30 | 85060000 | 2022/11/09 |
| 8 | Preamplifier | Schwarzbeck | BBV9721 | 9721-019 | 2022/11/09 |
| 9 | Preamplifier | emci | EMC012630SE | 980417 | 2022/11/09 |
| 10 | ECSI RF IN RF Cable | Rohde&Schwarz | AP-X1 | \ | 2022/11/09 |
| 11 | ECSI RF IN RF Cable | HAOXUN | Z-108 | \ | 2022/11/09 |

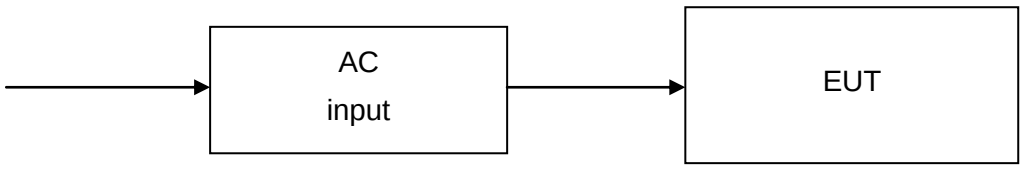
| | | | | | |
|---|---|---|---|---|---|
| 12 | Testing Software | EZ-EMC | TW-03A2 | \ | \ |
| 20dB Bandwidth | | | | | |
| 1 | Spectrum analyzer | Agilent | N9010A | MY52221119 | 2022/11/09 |
| 2 | Temp&Humidity Recorder | Anymetre | JR900 | NA | 2022/11/03 |

## 2.3 Configuration and Connections with EUT

Charging Mode with Load:




Standby Mode:




| No. | Equipment | Model | Brand | FCC ID | Series No |
|---|---|---|---|---|---|
| 1 | Mobile phone | Phone13 | Apple | DoC | / |

Note:
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

## 2.4 Test Condition

| Applicable to | Environmental conditions | Input Power | Tested by |
|---|---|---|---|
| AC Power Conducted Emission | 24.6°C, 56 % RH | 120Vac, 60Hz | Stone Tang |
| Radiated Emission | 24.2°C, 55 % RH | 120Vac, 60Hz | Stone Tang |
| Antenna Requirement | 24.6°C, 56 % RH | 120Vac, 60Hz | Stone Tang |
| 20dB Bandwidth | 24.6°C, 56 % RH | 120Vac, 60Hz | Stone Tang |

## 2.5 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Uncertainty | |
|---|---|
| Parameter | Uncertainty |
| Bandwidth | ±142.12 KHz |
| Spurious emissions, radiated (9KHz~30MHz) | ±2.56dB |
| Spurious emissions, radiated (30MHz～1GHz) | ±4.6dB |
| Spurious emissions, radiated (1GHz ~ 18GHz) | ±4.9dB |
| Conduction Emissions(9kHz~30MHz) | ±3.1 dB |
| Humidity | ±4.6% |
| Temperature | ±0.7°C |
| Time | ±1.25% |

## 2.6 Test Location

| | |
|---|---|
| Company: | Beijing TIRT Technology Service Co.,Ltd Shenzhen |
| Address: | 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China |
| CNAS Registration Number: | CNAS L14158 |
| A2LA Registration Number | 6049.01 |
| Telephone: | +86-0755-27087573 |

## 2.7 Deviation from Standards

**None**

## 2.8 Abnormalities from Standard Conditions

**None**

# 3. Test Procedure And Results

## 3.1 AC Power Line Conducted Emission

### 3.1.1 Limit

| FREQUENCY (MHz) | Conducted limit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 ~ 0.50 | 66 - 56 | 56 - 46 |
| 0.50 ~ 5.00 | 56 | 46 |
| 5.00 ~ 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 0.50 MHz.
3. All emanations from a digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 3.1.2 Test Procedure

a) The EUT was placed 0.8 m from the horizontal ground plane and 0.4 m from the vertical groundplane with EUT being connected to the power mains through a line impedance stabilizationnetwork (AMN). All other support equipment powered from additional AMN. The AMN provide50 Ohm/ 50 uH of coupling impedance for the measuring instrument.

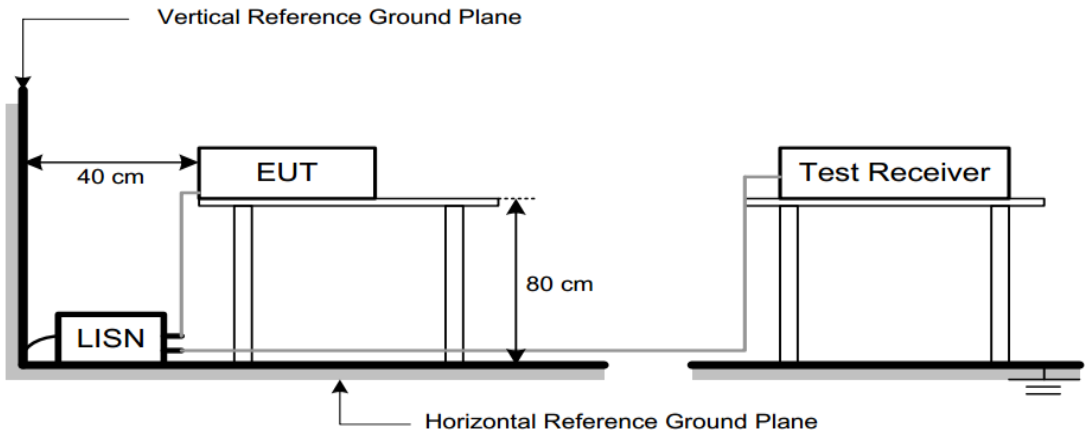
b) Interconnecting cables that hang closer than 0.4 m to the ground plane shall be folded back andforth in the center forming a bundle 0.3 m to 0.4 m long.

c) The frequency range from 150 kHz to 30 MHz was searched.

d) Actual test configuration, please refer to the related Item – EUT Test Photos.

e) The thickness of the insulation shall not be more than 150 mm.

### 3.1.3 Test Setup

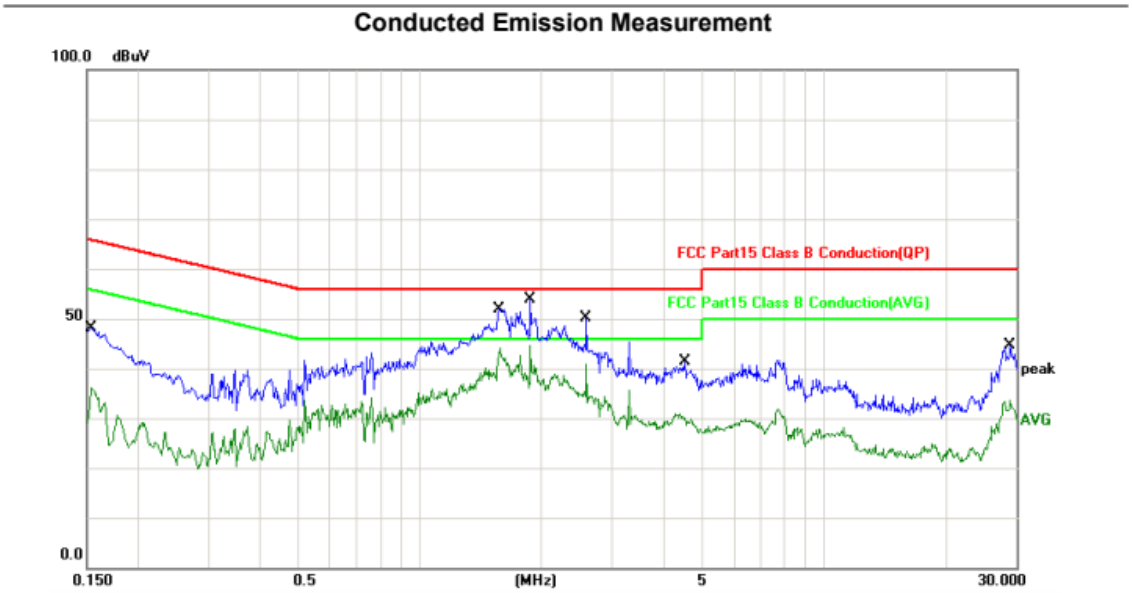



Note：For the actual test configuration, please refer to the related item – Photographs of the test configuration

### 3.1.4 Test Result of AC Power Line Conducted Emission

| 150kHz~30MHz | Test mode: AC 120V/60Hz |
|---|---|

Line



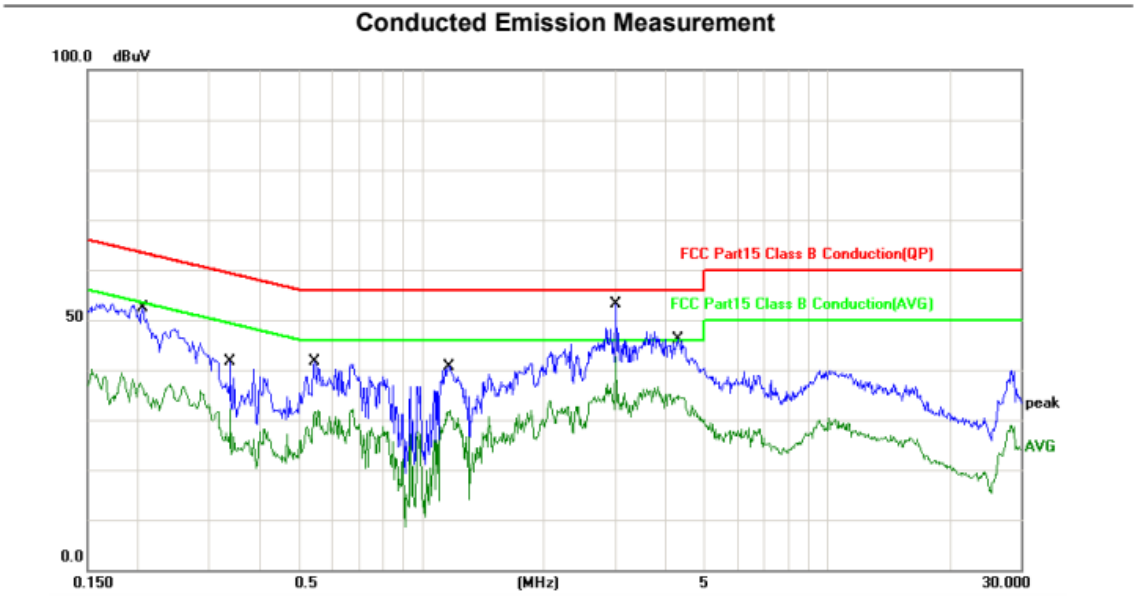

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1540 | 25.35 | 19.50 | 44.85 | 65.78 | -20.93 | QP | |
| 2 | | 0.1540 | 17.35 | 19.50 | 36.85 | 55.78 | -18.93 | AVG | |
| 3 | | 1.5700 | 29.65 | 19.85 | 49.50 | 56.00 | -6.50 | QP | |
| 4 | | 1.5700 | 23.05 | 19.85 | 42.90 | 46.00 | -3.10 | AVG | |
| 5 | | 1.8860 | 29.17 | 20.01 | 49.18 | 56.00 | -6.82 | QP | |
| 6 | | 1.8860 | 23.15 | 20.01 | 43.16 | 46.00 | -2.84 | AVG | |
| 7 | | 2.5820 | 24.36 | 20.45 | 44.81 | 56.00 | -11.19 | QP | |
| 8 | * | 2.5820 | 24.35 | 20.45 | 44.80 | 46.00 | -1.20 | AVG | |
| 9 | | 4.5420 | 17.65 | 20.36 | 38.01 | 56.00 | -17.99 | QP | |
| 10 | | 4.5420 | 9.65 | 20.36 | 30.01 | 46.00 | -15.99 | AVG | |
| 11 | | 28.9820 | 18.32 | 20.80 | 39.12 | 60.00 | -20.88 | QP | |
| 12 | | 28.9820 | 11.32 | 20.80 | 32.12 | 50.00 | -17.88 | AVG | |

**Note:**

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit

| 150kHz~30MHz | Test mode: AC 120V/60Hz |
|---|---|

Neutral




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.2060 | 30.54 | 19.70 | 50.24 | 63.37 | -13.13 | QP | |
| 2 | | 0.2060 | 20.32 | 19.70 | 40.02 | 53.37 | -13.35 | AVG | |
| 3 | | 0.3380 | 19.36 | 19.70 | 39.06 | 59.25 | -20.19 | QP | |
| 4 | | 0.3380 | 12.65 | 19.70 | 32.35 | 49.25 | -16.90 | AVG | |
| 5 | | 0.5460 | 19.65 | 19.75 | 39.40 | 56.00 | -16.60 | QP | |
| 6 | | 0.5460 | 10.32 | 19.75 | 30.07 | 46.00 | -15.93 | AVG | |
| 7 | | 1.1660 | 18.22 | 19.94 | 38.16 | 56.00 | -17.84 | QP | |
| 8 | | 1.1660 | 10.35 | 19.94 | 30.29 | 46.00 | -15.71 | AVG | |
| 9 | | 3.0180 | 31.64 | 20.23 | 51.87 | 56.00 | -4.13 | QP | |
| 10 | * | 3.0180 | 23.35 | 20.23 | 43.58 | 46.00 | -2.42 | AVG | |
| 11 | | 4.2740 | 22.95 | 20.31 | 43.26 | 56.00 | -12.74 | QP | |
| 12 | | 4.2740 | 15.97 | 20.31 | 36.28 | 46.00 | -9.72 | AVG | |

**Note:**

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit

## 3.2 Radiated Emissions up to 1 GHz

### 3.2.1 Limit

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

| Frequencies (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|---|---|---|
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 – 88 | 100 | 3 |
| 88 – 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

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

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

(4) The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

### 3.2.2 Test Procedure

Below 30MHz

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meters Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1.3 meter and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

30MHz~1GHz

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

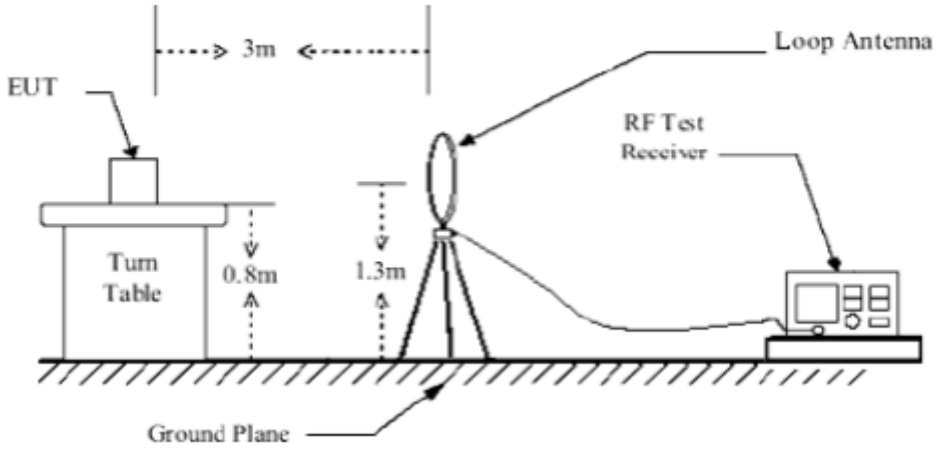
c) The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

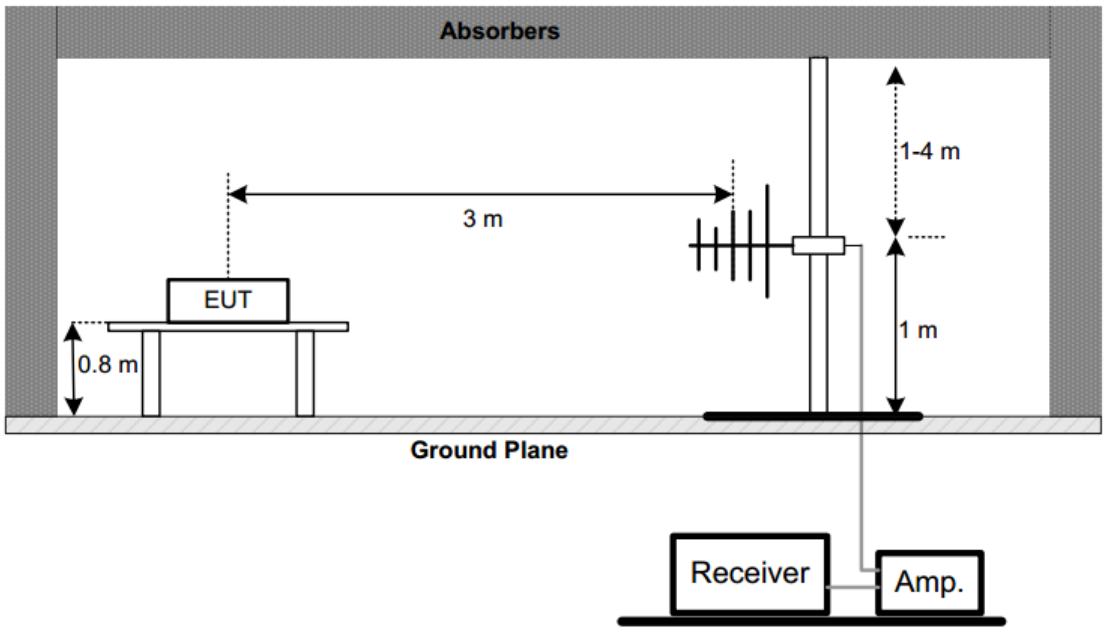
e) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

### 3.2.3 Test Setup

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



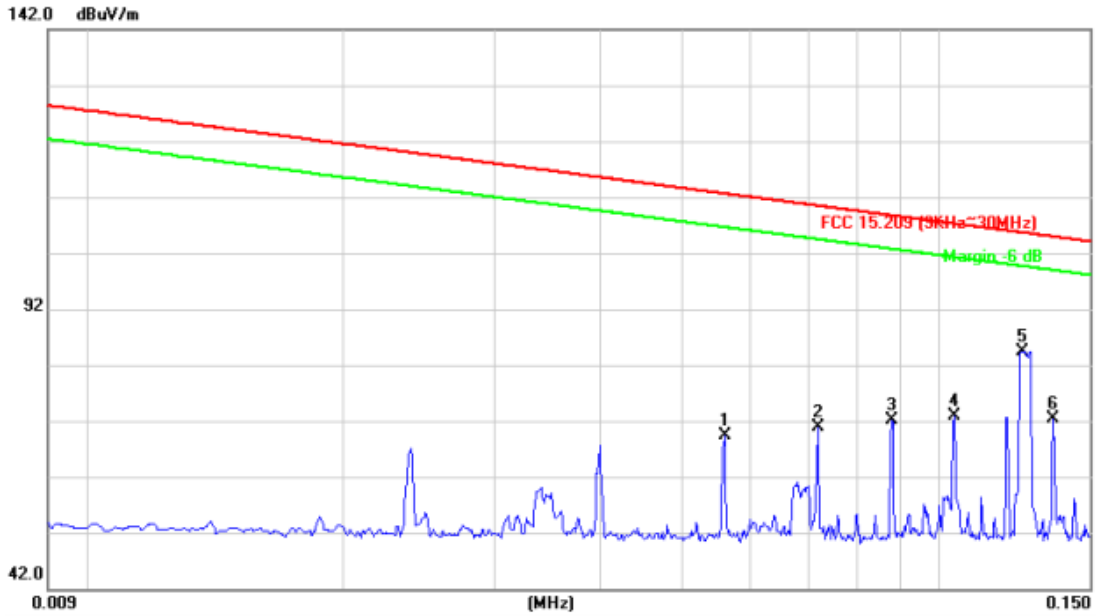

(B) Radiated Emission Test Set-Up Frequency Below 1 GHz



### 3.2.4 Test Result of Radiated Emission

| 0.009MHz~0.150MHz | Test mode: Wireless charging + Transmiting |
|---|---|

Parallel

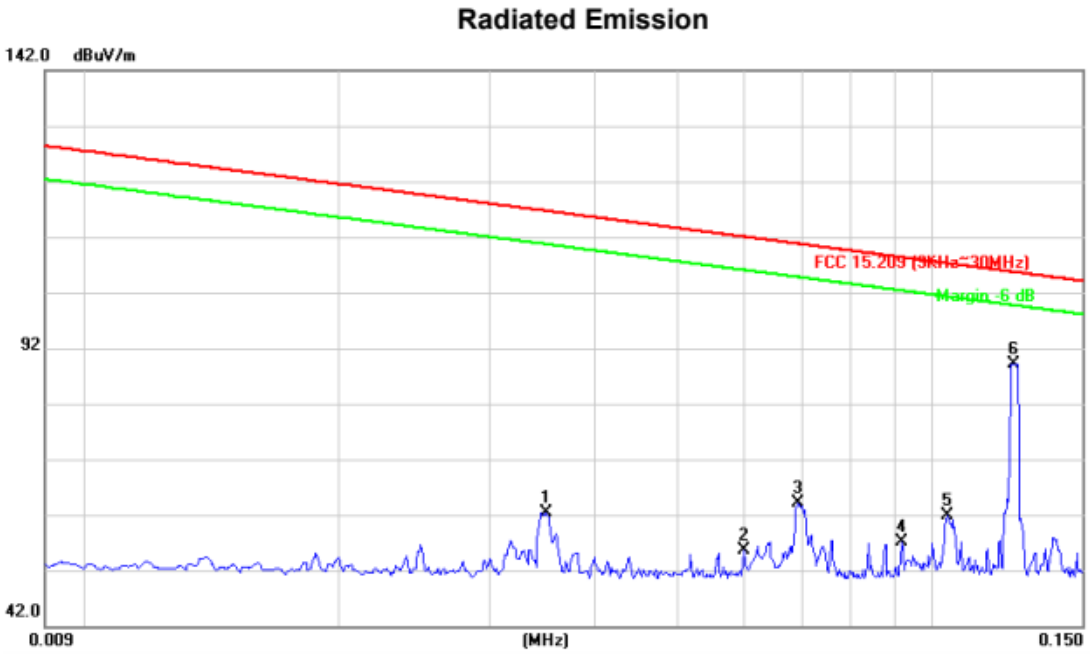



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0560 | 47.63 | 21.67 | 69.30 | 112.62 | -43.32 | 100 | 122 |
| 2 | 0.0720 | 48.93 | 21.89 | 70.82 | 110.45 | -39.63 | 100 | 254 |
| 3 | 0.0880 | 50.08 | 21.93 | 72.01 | 108.71 | -36.7 | 100 | 241 |
| 4 | 0.1041 | 50.75 | 22.06 | 72.81 | 107.26 | -34.45 | 100 | 147 |
| 5 | 0.1252 | 62.27 | 22.19 | 84.46 | 105.66 | -21.2 | 100 | 193 |
| 6 | 0.1361 | 49.9 | 22.38 | 72.28 | 104.93 | -32.65 | 100 | 209 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Perpendicular




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0351 | 40.69 | 21.75 | 62.44 | 116.66 | -54.22 | 100 | 201 |
| 2 | 0.0600 | 33.76 | 21.84 | 55.60 | 112.02 | -56.42 | 100 | 38 |
| 3 | 0.0694 | 42.25 | 21.89 | 64.14 | 110.77 | -46.63 | 100 | 126 |
| 4 | 0.0921 | 35.00 | 22.02 | 57.02 | 108.32 | -51.3 | 100 | 289 |
| 5 | 0.1041 | 39.92 | 22.06 | 61.98 | 107.26 | -45.28 | 100 | 39 |
| 6 | 0.1248 | 66.75 | 22.37 | 89.12 | 105.68 | -16.56 | 100 | 218 |

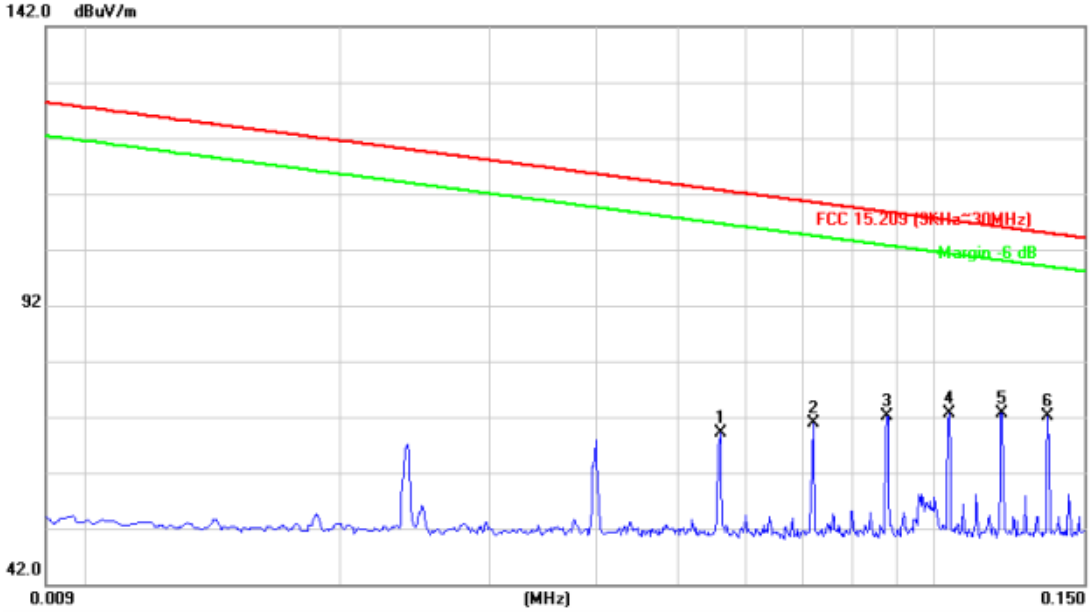
**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

| 0.009MHz~0.150MHz | Test mode: Standby + Transmiting |
|---|---|

Parallel

**Radiated Emission**

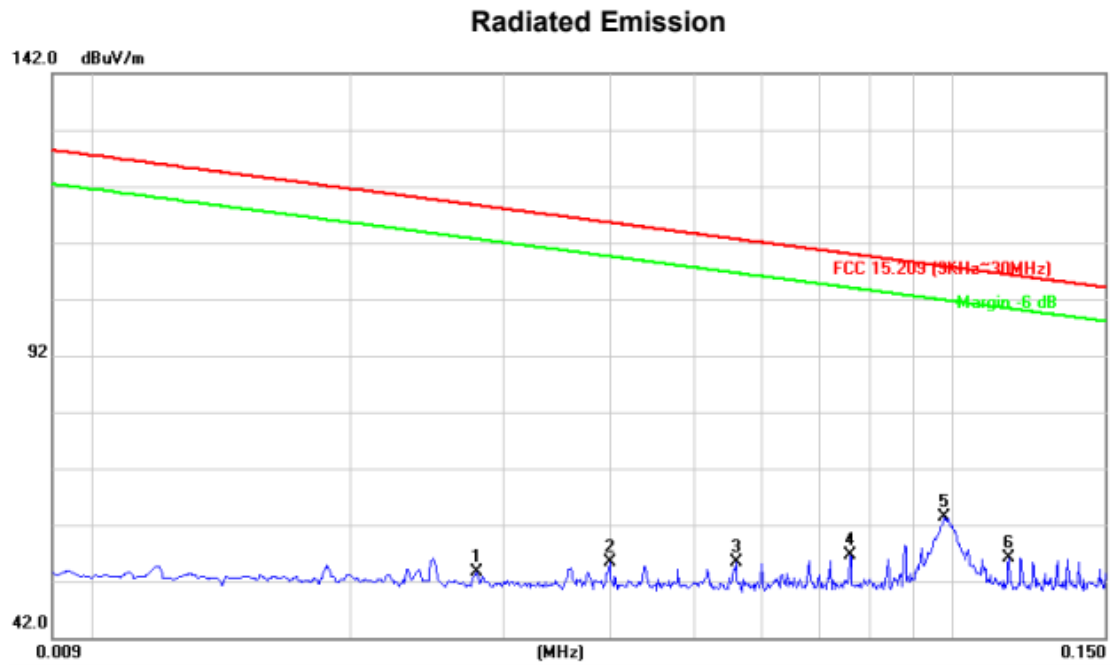



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0560 | 47.48 | 21.67 | 69.15 | 112.62 | -43.47 | 100 | 120 |
| 2 | 0.0720 | 48.89 | 21.89 | 70.78 | 110.45 | -39.67 | 100 | 251 |
| 3 | 0.0880 | 50.23 | 21.93 | 72.16 | 108.71 | -36.55 | 100 | 248 |
| 4 | 0.1041 | 50.66 | 22.06 | 72.72 | 107.26 | -34.54 | 100 | 144 |
| 5 | 0.1202 | 50.59 | 22.12 | 72.71 | 106.01 | -33.3 | 100 | 195 |
| 6 | 0.1361 | 49.85 | 22.38 | 72.23 | 104.93 | -32.7 | 100 | 209 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Perpendicular




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0280 | 31.99 | 21.57 | 53.56 | 118.61 | -65.05 | 100 | 117 |
| 2 | 0.0400 | 33.75 | 21.65 | 55.40 | 115.53 | -60.13 | 100 | 234 |
| 3 | 0.0560 | 33.64 | 21.79 | 55.43 | 112.62 | -57.19 | 100 | 28 |
| 4 | 0.0760 | 34.53 | 22.08 | 56.61 | 109.98 | -53.37 | 100 | 102 |
| 5 | 0.0980 | 41.22 | 22.28 | 63.50 | 107.78 | -44.28 | 100 | 94 |
| 6 | 0.1161 | 33.74 | 22.39 | 56.13 | 106.31 | -50.18 | 100 | 189 |

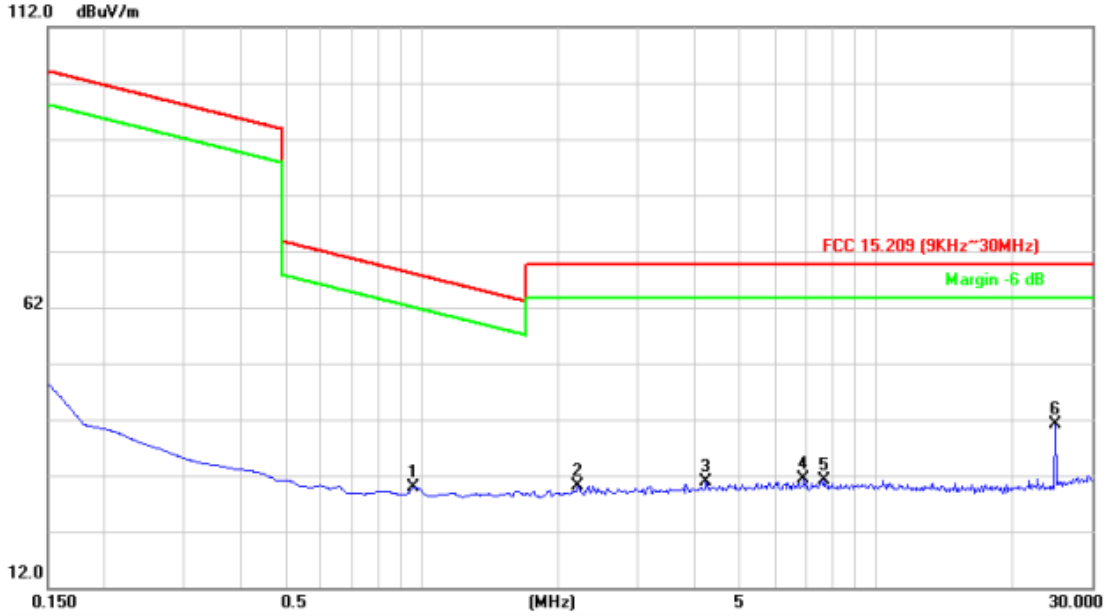
**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

| 0.150MHz~30MHz | Test mode: Wireless charging + Transmiting |
|---|---|

Parallel

**Radiated Emission**

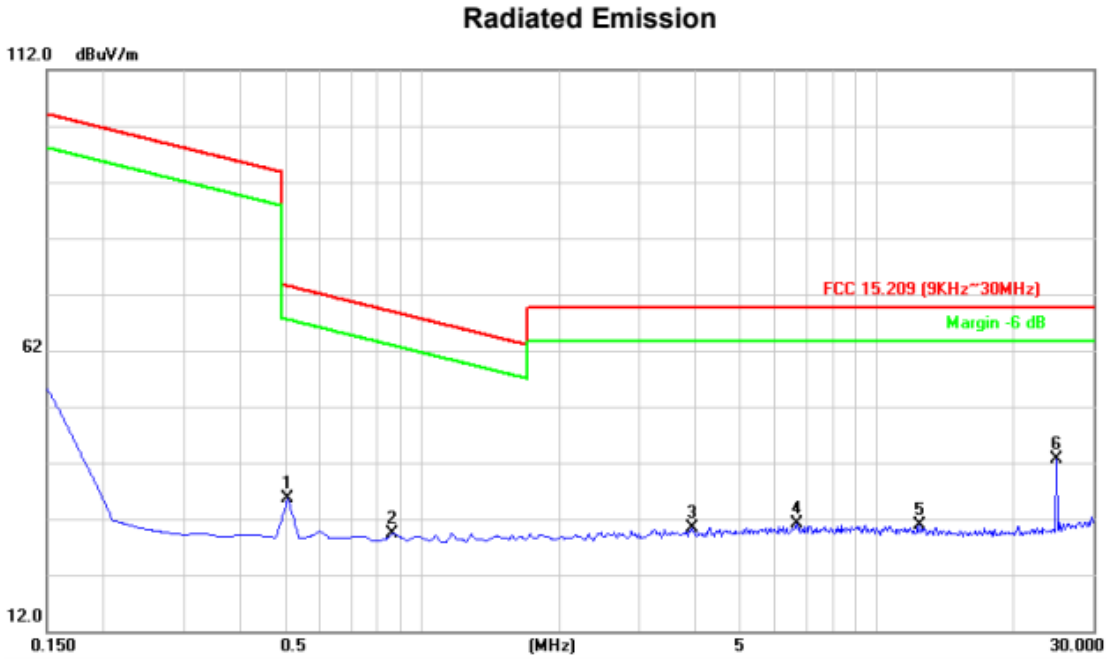



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.9567 | 6.91 | 22.89 | 29.80 | 67.99 | -38.19 | 100 | 56 |
| 2 | 2.2117 | 6.87 | 23.29 | 30.16 | 69.54 | -39.38 | 100 | 114 |
| 3 | 4.2435 | 7.36 | 23.46 | 30.82 | 69.54 | -38.72 | 100 | 208 |
| 4 | 6.9626 | 7.55 | 23.75 | 31.30 | 69.54 | -38.24 | 100 | 175 |
| 5 | 7.6797 | 7.22 | 23.88 | 31.10 | 69.54 | -38.44 | 100 | 32 |
| 6 | 25.0100 | 17.14 | 23.97 | 41.11 | 69.54 | -28.43 | 100 | 287 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Perpendicular



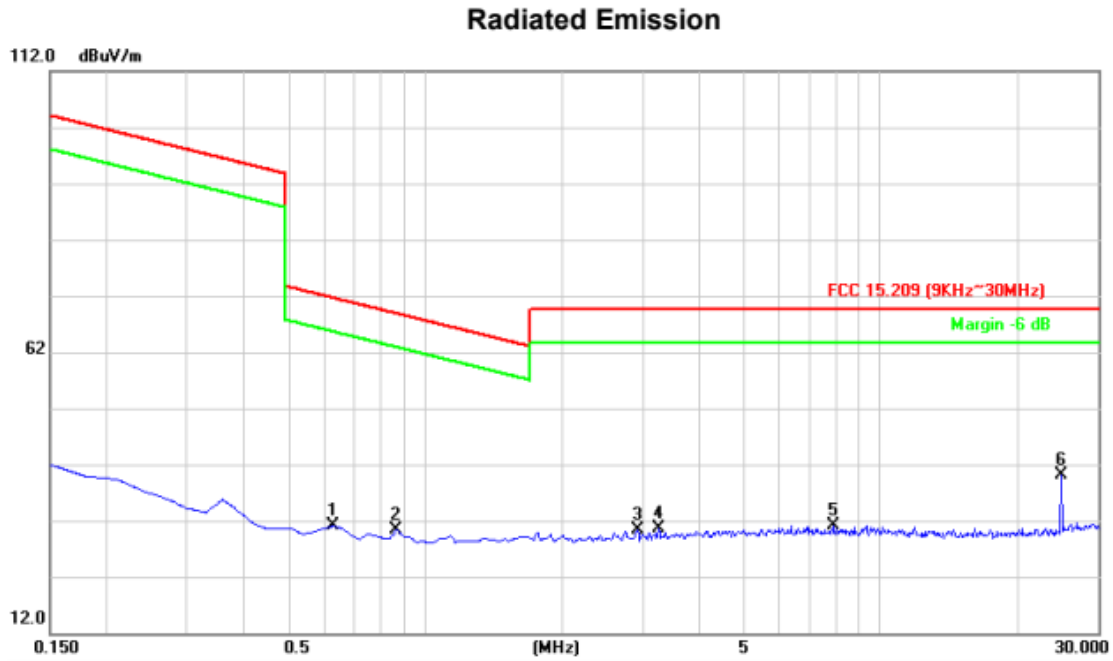

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.5085 | 12.72 | 22.82 | 35.54 | 73.78 | -38.24 | 100 | 64 |
| 2 | 0.8671 | 6.17 | 23.30 | 29.47 | 68.84 | -39.37 | 100 | 157 |
| 3 | 3.9447 | 6.91 | 23.41 | 30.32 | 69.54 | -39.22 | 100 | 175 |
| 4 | 6.6936 | 7.44 | 23.76 | 31.20 | 69.54 | -38.34 | 100 | 202 |
| 5 | 12.4604 | 6.95 | 23.89 | 30.84 | 69.54 | -38.7 | 100 | 81 |
| 6 | 25.0100 | 18.67 | 23.97 | 42.64 | 69.54 | -26.9 | 100 | 300 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

| 0.150MHz~30MHz | Test mode: Standby + Transmiting |
|---|---|

Parallel

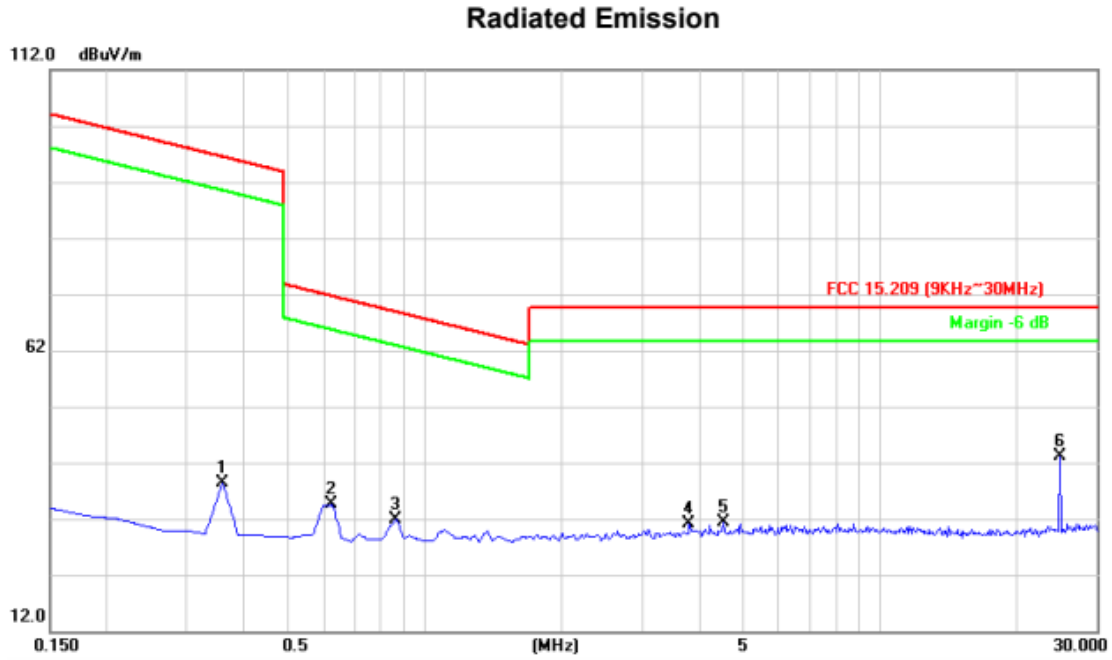



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(m) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.6280 | 8.24 | 22.83 | 31.07 | 71.64 | -40.57 | 100 | 24 |
| 2 | 0.8671 | 7.25 | 23.05 | 30.30 | 68.84 | -38.54 | 100 | 157 |
| 3 | 2.9288 | 7.08 | 23.28 | 30.36 | 69.54 | -39.18 | 100 | 205 |
| 4 | 3.2575 | 7.34 | 23.36 | 30.70 | 69.54 | -38.84 | 100 | 62 |
| 5 | 7.8888 | 7.67 | 23.47 | 31.14 | 69.54 | -38.4 | 100 | 180 |
| 6 | 25.0100 | 16.15 | 23.97 | 40.12 | 69.54 | -29.42 | 100 | 288 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Perpendicular



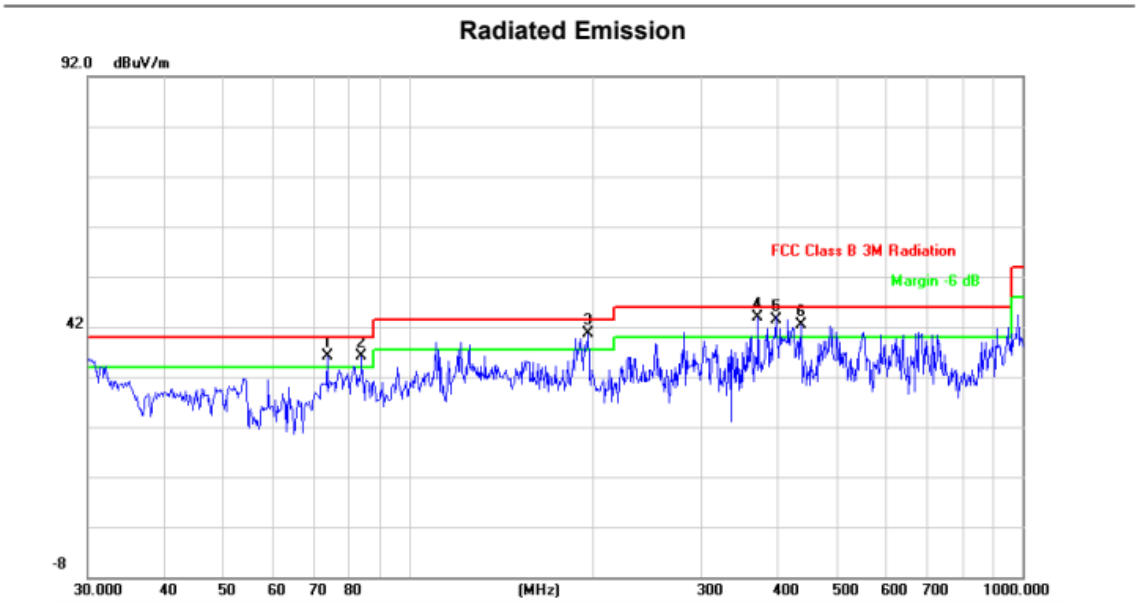

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height(m) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.3591 | 15.68 | 22.82 | 38.50 | 96.50 | -58.00 | 100 | 34 |
| 2 | 0.6280 | 11.47 | 23.04 | 34.51 | 71.64 | -37.13 | 100 | 141 |
| 3 | 0.8671 | 8.67 | 23.32 | 31.99 | 68.84 | -36.85 | 100 | 218 |
| 4 | 3.8252 | 7.86 | 23.29 | 31.15 | 69.54 | -38.39 | 100 | 102 |
| 5 | 4.5423 | 7.87 | 23.48 | 31.35 | 69.54 | -38.19 | 100 | 169 |
| 6 | 25.0100 | 19.14 | 23.97 | 43.11 | 69.54 | -26.43 | 100 | 273 |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

| 30MHz~1GHz | Test mode: Wireless charging + Transmiting |
|---|---|

Vertical

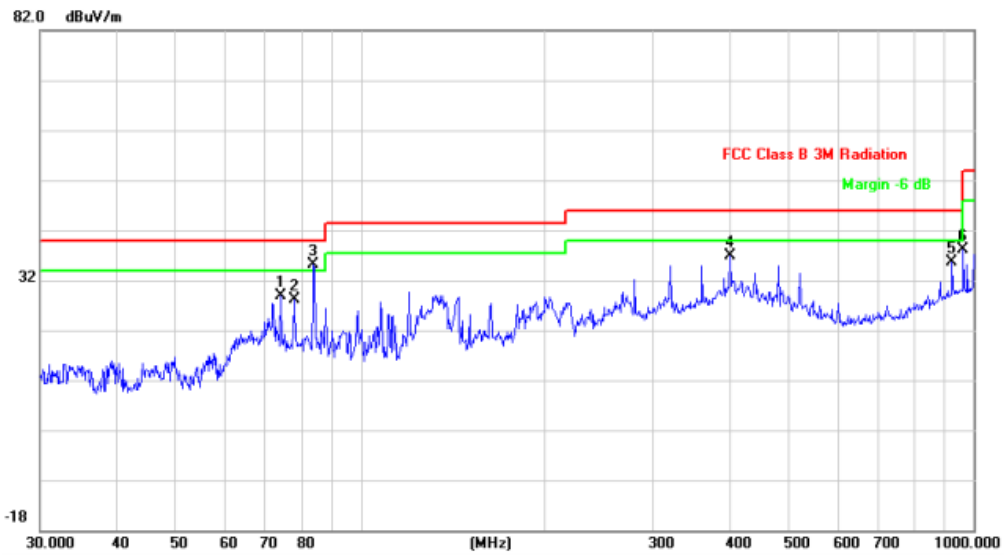



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | ! | 73.6170 | 21.37 | 14.71 | 36.08 | 40.00 | -3.92 | QP | 100 | 35 | |
| 2 | ! | 83.8155 | 21.44 | 14.75 | 36.19 | 40.00 | -3.81 | QP | 100 | 65 | |
| 3 | ! | 195.8220 | 24.91 | 15.61 | 40.52 | 43.50 | -2.98 | QP | 100 | 128 | |
| 4 | * | 370.7022 | 25.04 | 18.90 | 43.94 | 46.00 | -2.06 | QP | 100 | 189 | |
| 5 | ! | 396.2412 | 24.15 | 19.21 | 43.36 | 46.00 | -2.64 | QP | 100 | 360 | |
| 6 | ! | 435.5898 | 22.68 | 19.58 | 42.26 | 46.00 | -3.74 | QP | 100 | 358 | |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Horizontal



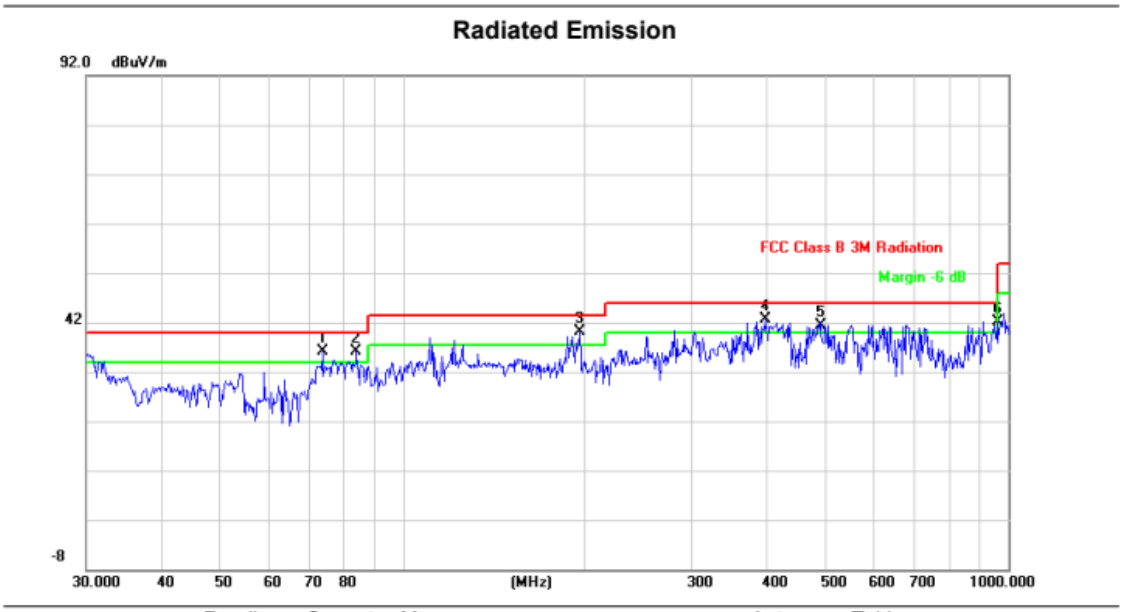

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 74.1351 | 16.74 | 12.21 | 28.95 | 40.00 | -11.05 | QP | 100 | 23 | |
| 2 | | 77.8653 | 15.79 | 12.29 | 28.08 | 40.00 | -11.92 | QP | 100 | 67 | |
| 3 | * | 83.8155 | 22.67 | 12.43 | 35.10 | 40.00 | -4.90 | QP | 100 | 123 | |
| 4 | | 400.4318 | 17.56 | 19.24 | 36.80 | 46.00 | -9.20 | QP | 100 | 247 | |
| 5 | | 922.5157 | 5.94 | 29.71 | 35.65 | 46.00 | -10.35 | QP | 100 | 289 | |
| 6 | | 962.1622 | 7.87 | 30.17 | 38.04 | 54.00 | -15.96 | QP | 100 | 360 | |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

| 30MHz~1GHz | Test mode: Standby + Transmiting |
|---|---|

Vertical

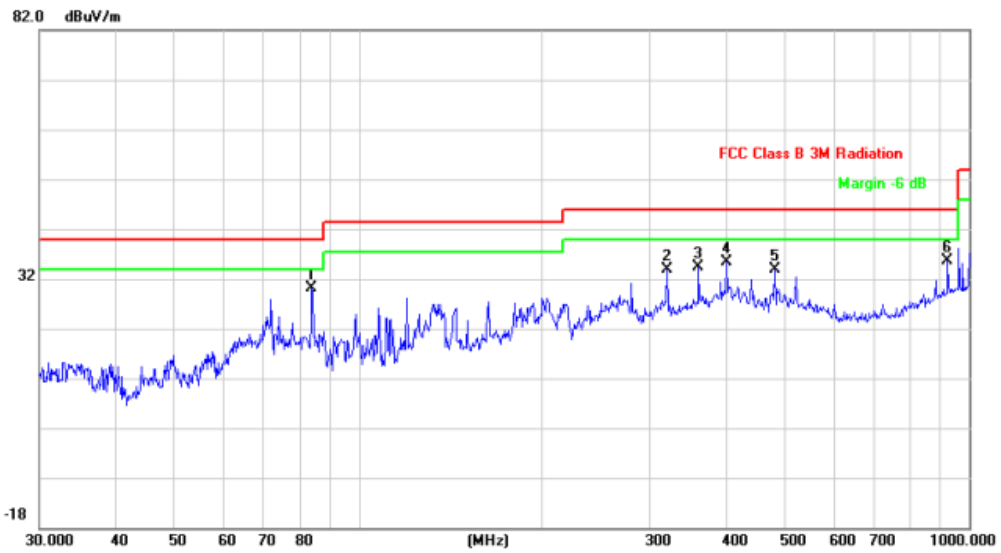



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | ! | 73.6170 | 21.43 | 14.71 | 36.14 | 40.00 | -3.86 | QP | 100 | | |
| 2 | ! | 83.8155 | 21.44 | 14.75 | 36.19 | 40.00 | -3.81 | QP | 100 | | |
| 3 | ! | 195.8220 | 24.41 | 15.61 | 40.02 | 43.50 | -3.48 | QP | 100 | | |
| 4 | * | 396.2412 | 23.52 | 19.21 | 42.73 | 46.00 | -3.27 | QP | 100 | | |
| 5 | ! | 489.0267 | 20.35 | 21.10 | 41.45 | 46.00 | -4.55 | QP | 100 | | |
| 6 | ! | 958.7943 | 12.03 | 30.16 | 42.19 | 46.00 | -3.81 | QP | 100 | | |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Horizontal




| 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 | Comment |
| 1 | * | 83.8155 | 17.67 | 12.43 | 30.10 | 40.00 | -9.90 | QP | 200 | 35 | |
| 2 | | 319.9370 | 15.48 | 18.46 | 33.94 | 46.00 | -12.06 | QP | 200 | 68 | |
| 3 | | 360.4476 | 15.81 | 18.66 | 34.47 | 46.00 | -11.53 | QP | 200 | 159 | |
| 4 | | 400.4318 | 16.06 | 19.24 | 35.30 | 46.00 | -10.70 | QP | 200 | 321 | |
| 5 | | 480.5276 | 13.05 | 20.82 | 33.87 | 46.00 | -12.13 | QP | 200 | 360 | |
| 6 | | 922.5157 | 5.94 | 29.71 | 35.65 | 46.00 | -10.35 | QP | 200 | 255 | |

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

## 3.3 20dB bandwidth measurement

### 3.3.1 Limit

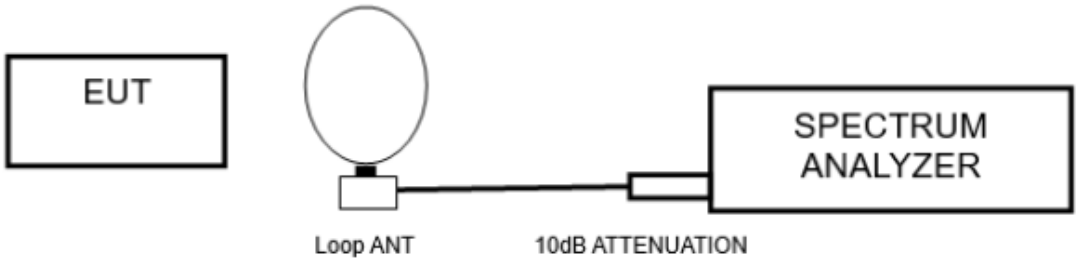
The field strength of any emissions appearing between the band edges and out of band shall be attenuated at least 20 dB below the level of the unmodulated carrier or to the general limits in Section 15.209

### 3.3.2 Test Procedure

| Test Method | |
|---|---|
| ○Conducted Measurement | ●Radiated Measurement |
| Test Mode | |
| ●Wireless charging + Transmiting | ●Standby + Transmiting |
| Environmental Conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

.

### 3.3.3 Test Setup



### 3.3.4 EUT operating condition

a. Turn on the EUT.

b. The EUT tested in charging mode and standby mode respectively.

### 3.3.5 Test results

| Test mode | Channel frequency (kHz) | 20dB bandwidth (kHz) |
|---|---|---|
| Standby mode | 140~160 | 0.485 |

| Lower & Upper Test Frequency Point (MHz) | Test Frequency (KHz) | P/F |
|---|---|---|
| Lower | 146.255 | Pass |
| Upper | 146.740 | Pass |

Standby mode

| Test mode | Channel frequency (kHz) | 20dB bandwidth (kHz) |
|---|---|---|
| Charging + Transmiting | 111~130 | 0.855 |

| Lower & Upper Test Frequency Point (MHz) | Test Frequency (KHz) | P/F |
|---|---|---|
| Lower | 127.359 | Pass |
| Upper | 128.214 | Pass |

Charging + Transmiting

## 3.4 Antenna Requirement

### 3.4.1 Limit

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.4.2 Conclution

The antenna is Induction coil. The best case gain of the antenna is 0dBi.

# 4. Photographs of Test Set-up

See the Appendix of Radiated Test setup Photographs.

# 5. Photographs of EUT

See the Appendix of External Photographs and Internal Photographs.

（END OF REPORT）