



FCC RADIO TEST REPORT

Applicant : KAIJET TECHNOLOGY INTERNATIONAL CORPORATION

Address : 8F., No 109, Zhongcheng Rd., Tucheng Dist., New Taipei City 236,
Taiwan R.O.C.

Equipment : mightywave Wood Stand 10W 2-Coil Wireless Fast Charge

Model No. : JUPW1102W

Trademark : j5create

FCC ID : 2AD37JUPW2W

I HEREBY CERTIFY THAT :

The sample was received on Nov. 06, 2018 and the test items were conducted during Dec. 04, 2018 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Tested by:

Mark Liao / Assistant Manager

Amos / Engineer

Laboratory Accreditation:



CerpPASS Technology Corporation Test Laboratory

TAF LAB Code:

1439



Contents

| | |
|---|-----------|
| 1. Report of Measurements and Examinations | 4 |
| 1.1 List of Measurements and Examinations | 4 |
| 2. Test Configuration of Equipment under Test | 5 |
| 2.1 Feature of Equipment under Test | 5 |
| 2.2 Carrier Frequency of Channels | 5 |
| 2.3 Description of the test mode | 5 |
| 2.4 Description of Test System | 5 |
| 2.5 General Information of Test | 6 |
| 2.6 Measurement Uncertainty | 6 |
| 3. Test Equipment and Ancillaries Used for Tests | 7 |
| 4. Antenna Requirements | 8 |
| 4.1 Standard Applicable | 8 |
| 4.2 Antenna Construction | 8 |
| 4.3 Result | 8 |
| 5. Test of Conducted Emission | 9 |
| 5.1 Test Limit | 9 |
| 5.2 Test Procedures | 9 |
| 5.3 Typical Test Setup | 10 |
| 5.4 Test Result and Data | 11 |
| 6. Test of Radiated Emission | 13 |
| 6.1 Test Limit | 13 |
| 6.2 Test Procedures | 14 |
| 6.3 Typical Test Setup | 15 |
| 6.4 Test Result and Data | 16 |



■ ORIGINAL

☐ Additional attachment as following record:

[illegible]



1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC CFR Title 47 Part 15 Subpart C Section 15.209

| FCC Rule | . Description of Test | Result |
|-------------|-----------------------|--------|
| § 15.203 | . Antenna Requirement | Pass |
| § 15.207(a) | . Conducted Emission | Pass |
| § 15.209(a) | . Radiated Emission | Pass |



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

| | |
|-----------------|---|
| Product | mightywave Wood Stand 10W 2-Coil Wireless Fast Charge |
| Test Model | JUPW1102W |
| Frequency Range | 110~205KHz |
| Work Frequency | 127.7KHz |
| Antenna Type | Coil antenna |
| Modulation Type | MSK |
| Power Rating | Input: 5V $\overline{=}$ 2A 9V $\overline{=}$ 2A 12V $\overline{=}$ 1.5A Output: 5V $\overline{=}$ 1/1.5A 9V $\overline{=}$ 1.1A |
| Adapter Spec. | Model: JUP11 Input: 100-240V~50/60Hz 0.5A Output: 5V $\overline{=}$ 3A/9V $\overline{=}$ 2A/12 $\overline{=}$ 1.5A |

Note: for more details, please refer to the User's manual of the EUT.

2.2 Carrier Frequency of Channels

| Channel | Frequency (KHz) |
|---------|-----------------|
| 00 | 127.7 |

2.3 Description of the test mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

The following test mode was performed for conduction and radiation test:

Test Mode 1: TX+ Wireless Charging

2.4 Description of Test System

| No | Device | Manufacturer | Model No. | Description |
|----|---------|--------------|-----------|-------------|
| 1 | Adapter | j5 create | JUP11 | R33J08 |
| 2 | Load | N/A | N/A | N/A |

Use Cable:

| No. | Cable | Quantity | Description |
|-----|-----------|----------|--------------------|
| 1 | USB Cable | 1 | 1.0m Non Shielding |



2.5 General Information of Test

| | | |
|-------------------------------|-----------|--|
| ☒ | Test Site | Cerpass Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582 |
| | FCC | TW1079, TW1061, TW1439 |
| | IC | 4934E-1, 4934E-2 |
| | VCCI | T-2205 for Telecommunication Test C-4663 for Conducted emission test R-4399, R-4218 for Radiated emission test G-10812, G-10813 for radiated disturbance above 1GHz |
| Frequency Range Investigated: | | Conducted: from 150kHz to 30 MHz Radiation: from 9KHz to 25000MHz |
| Test Distance: | | The test distance of radiated emission from antenna to EUT is 3 M. |

2.6 Measurement Uncertainty

| Measurement Item | Measurement Uncertainty |
|---------------------------------|-------------------------|
| Conducted Emission | ±2.71 dB |
| Radiation test (10m) below 1GHz | Vertical : ±3.89 dB |
| | Horizontal: ±4.11 dB |
| Radiation test (3m) below 1GHz | Vertical : ±4.11 dB |
| | Horizontal: ±4.10 dB |



3. Test Equipment and Ancillaries Used for Tests

| Instrument | Manufacturer | Model No | Serial No | Calibration Date | Valid Date |
|--------------------------------------|-----------------|--------------------------|-------------|------------------|------------|
| EMI Receiver | R&S | ESCI3 | 100443 | 2018/03/15 | 2019/03/14 |
| LISN | Schwarzbeck | NSLK 8127 | 8127-568 | 2018/02/26 | 2019/02/25 |
| Pulse Limiter | R&S | ESH3-Z2 | 101934 | 2018/02/22 | 2019/02/21 |
| Bilog Antenna | Schwarzbeck | VULB9168 | 275 | 2018/09/17 | 2019/09/16 |
| Loop Antenna | R&S | HFH2-Z2 | 100150 | 2018.10.24 | 2019.10.23 |
| Horn Antenna | EMCO | 3115 | 31589 | 2018/04/02 | 2019/04/01 |
| Horn Antenna | EMCO | 3116 | 31970 | 2018/03/23 | 2019/03/22 |
| Preamplifier | EM | EM330 | 60658 | 2018/09/08 | 2019/09/07 |
| Preamplifier | EMC INSTRUMENTS | EMC051845SE | 980333 | 2018/09/18 | 2019/09/17 |
| Preamplifier | EMC INSTRUMENTS | EMC184045 | 980065 | 2018/10/31 | 2019/10/30 |
| MXG MW Analog Signal Generator | KEYSIGHT | N5183A | MY50142931 | 2018/04/10 | 2019/04/09 |
| Spectrum Analyzer | R&S | FSP40 | 100219 | 2018/07/03 | 2019/07/02 |
| BLUETOOTH TESTER | R&S | CBT | 101133 | 2018/04/02 | 2019/04/01 |
| Attenuator | KEYSIGHT | 8491B | MY39250705 | 2018/09/04 | 2019/09/03 |
| Rotary Attenuator | Agilent | 8495B | MY42146680 | 2018/03/29 | 2019/03/28 |
| Temp & Humi chamber | T-MACHINE | TMJ-9712 | T-12-040111 | 2018/08/30 | 2019/08/29 |
| Series Power Meter | Anritsu | ML2495A | 1224005 | 2018/03/23 | 2019/03/22 |
| Power Sensor | Anritsu | MA2411B | 1207295 | 2018/03/23 | 2019/03/22 |
| Software | Farad | Ez-EMC | ver.ct3a1 | N/A | N/A |
| Software | AUDIX | E3 | V8.2014-8-6 | N/A | N/A |
| Software | Keysight | N7607B Signal Studio | V3.0.0.0 | N/A | N/A |
| Software | Keysight | Inservice MonitorUtility | N/A | N/A | N/A |



4. Antenna Requirements

4.1 Standard Applicable

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.

4.2 Antenna Construction

The antenna is Coil Antenna, and the antenna connector is de-signed with permanent attachment and on consideration of replacement. Please see the EUT photo for details.

4.3 Result

The EUT antenna is a Coil Antenna. It complies with the standard requirement.



5. Test of Conducted Emission

5.1 Test Limit

According to §15.207: For all the consumer devices which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

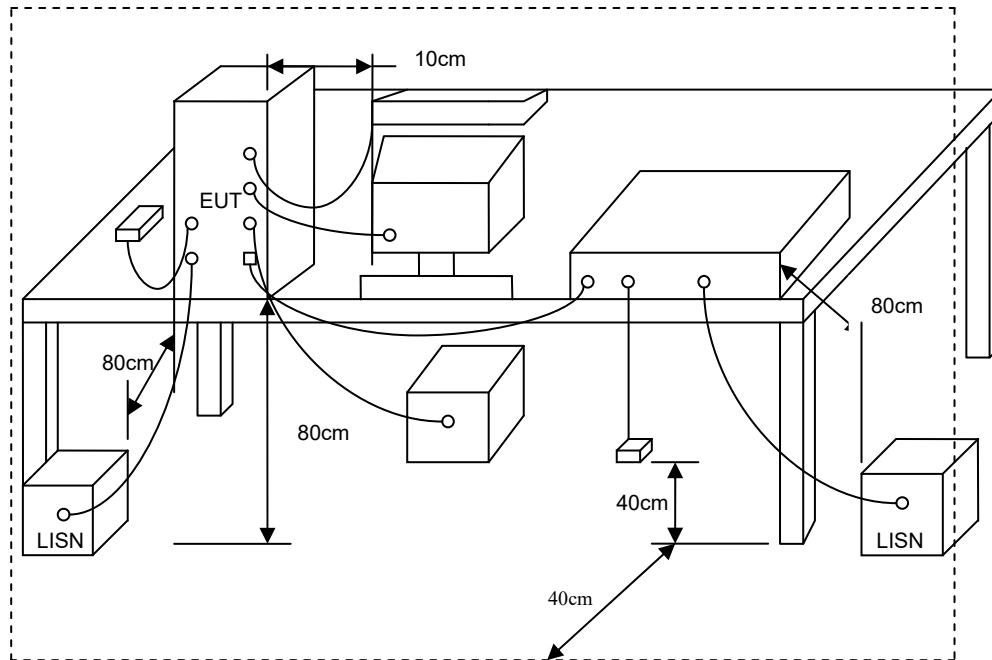
| Frequency (MHz) | Quasi Peak (dB μ V) | Average (dB μ V) |
|-----------------|-------------------------|----------------------|
| 0.15 – 0.5 | 66-56* | 56-46* |
| 0.5 – 5.0 | 56 | 46 |
| 5.0 – 30.0 | 60 | 50 |

Remark: (1)*Decreases with the logarithm of the frequency.

(2)The lower limit shall apply at the transition frequency.

5.2 Test Procedures

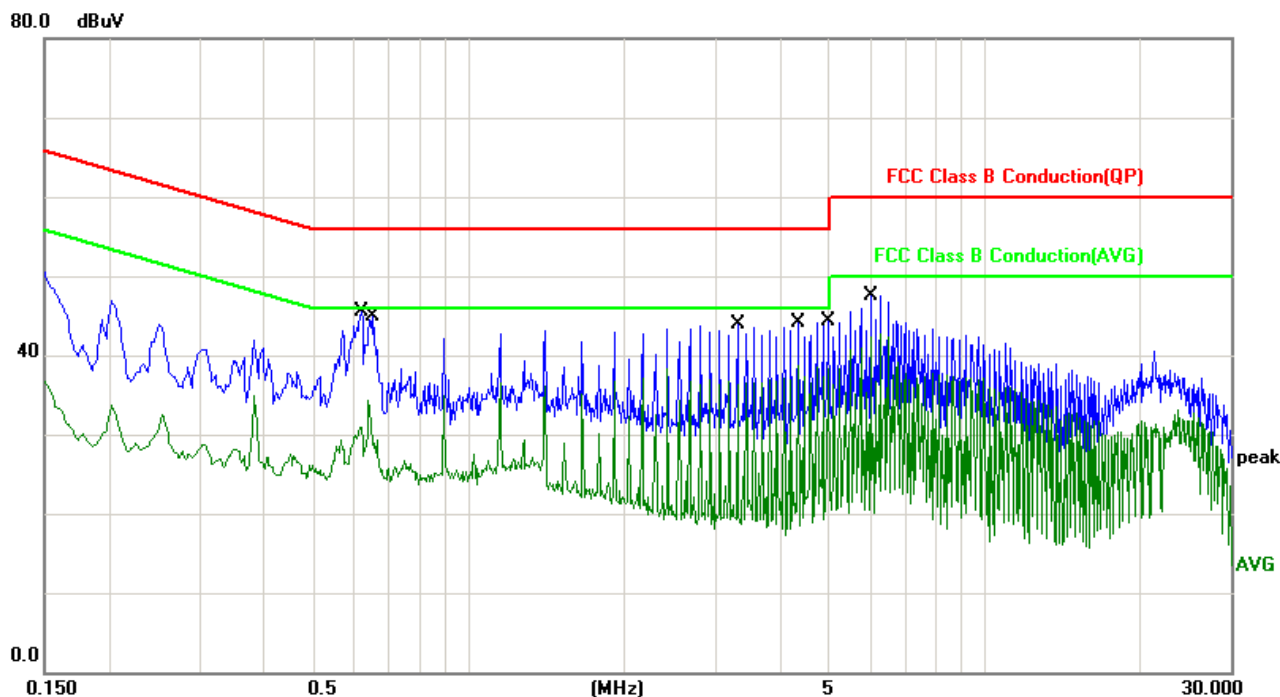
- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.





5.4 Test Result and Data

| | | | |
|-----------------|-----------------------|-----------|---------------|
| Test Mode : | TX+ Wireless Charging | Phase : | Line |
| Temperature : | 20°C | Humidity: | 51% |
| Pressur(mbar) : | 1002 | Date: | Dec. 01, 2018 |

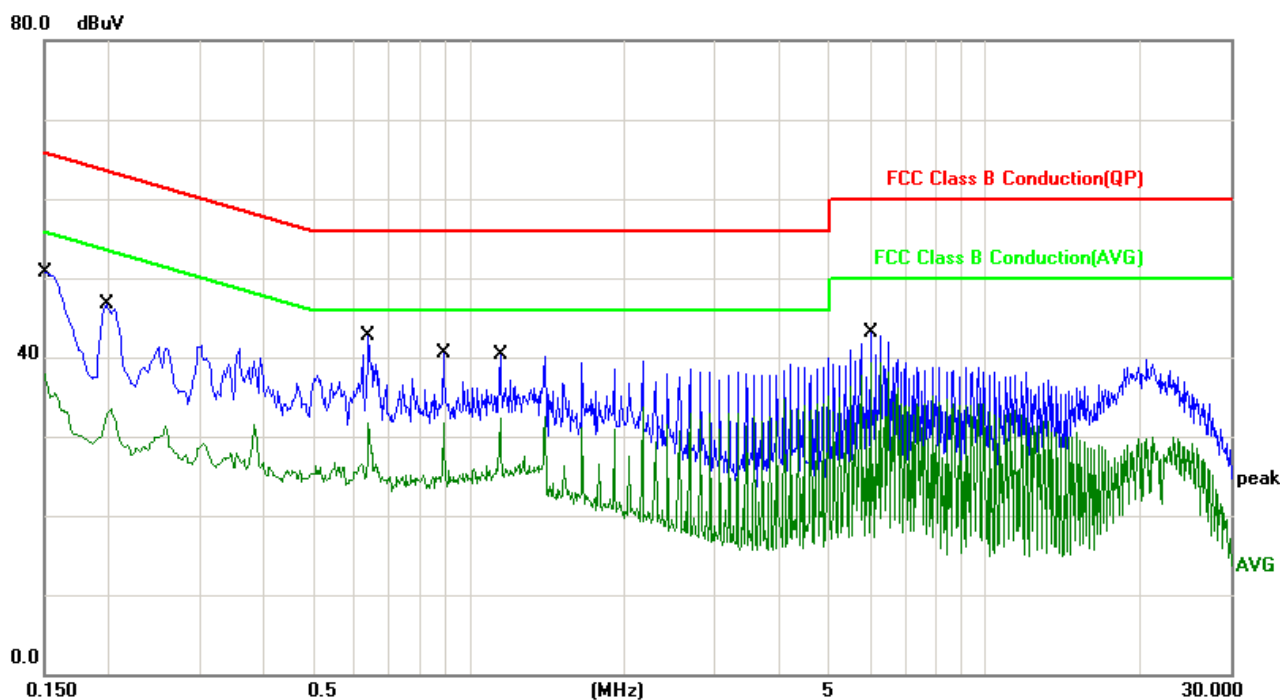


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1 | 0.6180 | 10.00 | 32.95 | 42.95 | 56.00 | -13.05 | QP |
| 2 | 0.6180 | 10.00 | 20.90 | 30.90 | 46.00 | -15.10 | AVG |
| 3 | 0.6540 | 10.03 | 28.92 | 38.95 | 56.00 | -17.05 | QP |
| 4 | 0.6540 | 10.03 | 19.38 | 29.41 | 46.00 | -16.59 | AVG |
| 5 | 3.3220 | 10.71 | 30.54 | 41.25 | 56.00 | -14.75 | QP |
| 6 | 3.3220 | 10.71 | 25.55 | 36.26 | 46.00 | -9.74 | AVG |
| 7 | 4.3420 | 10.43 | 31.69 | 42.12 | 56.00 | -13.88 | QP |
| 8 | 4.3420 | 10.43 | 27.40 | 37.83 | 46.00 | -8.17 | AVG |
| 9 | 4.9820 | 10.25 | 32.16 | 42.41 | 56.00 | -13.59 | QP |
| 10 | 4.9820 | 10.25 | 27.99 | 38.24 | 46.00 | -7.76 | AVG |
| 11 | 6.0020 | 10.24 | 35.73 | 45.97 | 60.00 | -14.03 | QP |
| 12 | 6.0020 | 10.24 | 32.35 | 42.59 | 50.00 | -7.41 | AVG |

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator



| | | | |
|-----------------|-----------------------|-----------|---------------|
| Test Mode : | TX+ Wireless Charging | Phase : | Neutral |
| Temperature : | 20°C | Humidity: | 51% |
| Pressur(mbar) : | 1002 | Date: | Dec. 01, 2018 |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1 | 0.1500 | 10.06 | 36.82 | 46.88 | 65.99 | -19.11 | QP |
| 2 | 0.1500 | 10.06 | 25.70 | 35.76 | 55.99 | -20.23 | AVG |
| 3 | 0.1980 | 10.06 | 32.68 | 42.74 | 63.69 | -20.95 | QP |
| 4 | 0.1980 | 10.06 | 21.93 | 31.99 | 53.69 | -21.70 | AVG |
| 5 | 0.6380 | 10.01 | 28.00 | 38.01 | 56.00 | -17.99 | QP |
| 6 | 0.6380 | 10.01 | 22.01 | 32.02 | 46.00 | -13.98 | AVG |
| 7 | 0.8940 | 10.11 | 26.92 | 37.03 | 56.00 | -18.97 | QP |
| 8 | 0.8940 | 10.11 | 21.73 | 31.84 | 46.00 | -14.16 | AVG |
| 9 | 1.1500 | 10.13 | 27.28 | 37.41 | 56.00 | -18.59 | QP |
| 10 | 1.1500 | 10.13 | 22.12 | 32.25 | 46.00 | -13.75 | AVG |
| 11 | 6.0020 | 10.24 | 31.19 | 41.43 | 60.00 | -18.57 | QP |
| 12 | 6.0020 | 10.24 | 29.03 | 39.27 | 50.00 | -10.73 | AVG |

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator



6. Test of Radiated Emission

6.1 Test Limit

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205 Section 8.10 table 6 must also comply with the radiated emission limits specified as below.

Radiated Emission Limit (9KHz~1000MHz)

| 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 tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level(uV/m)



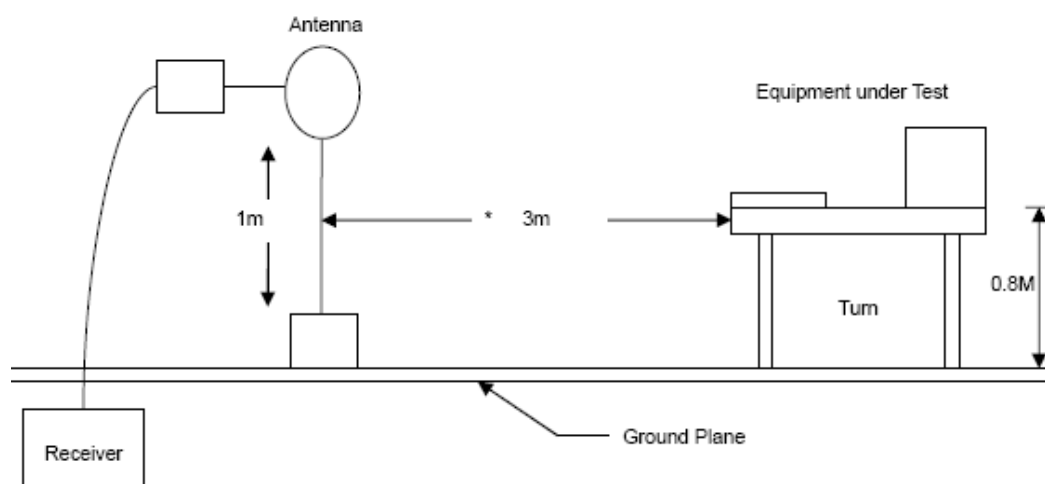
6.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

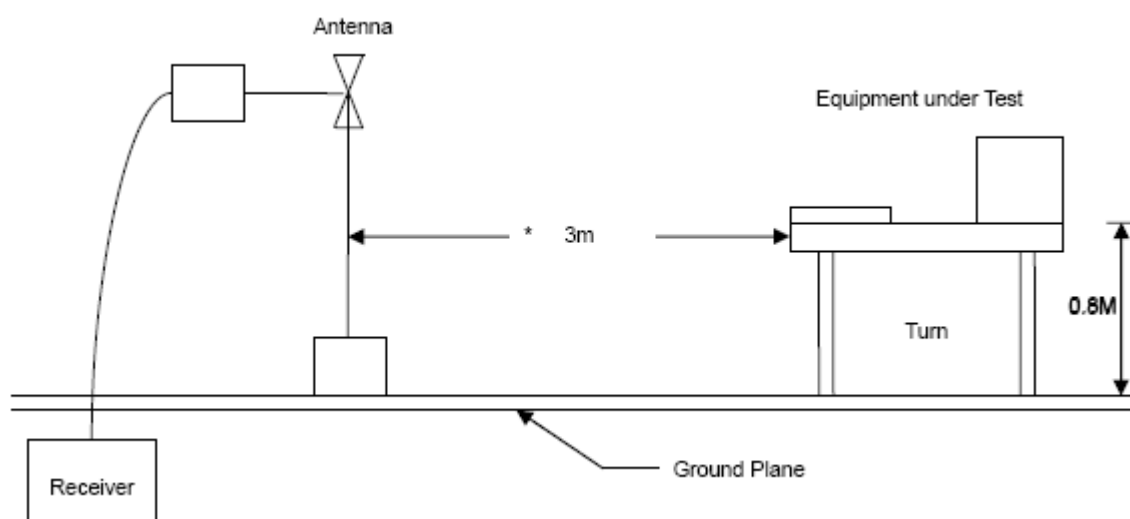


6.3 Typical Test Setup

Below 30MHz Test Setup



30M - 1GHz Test Setup

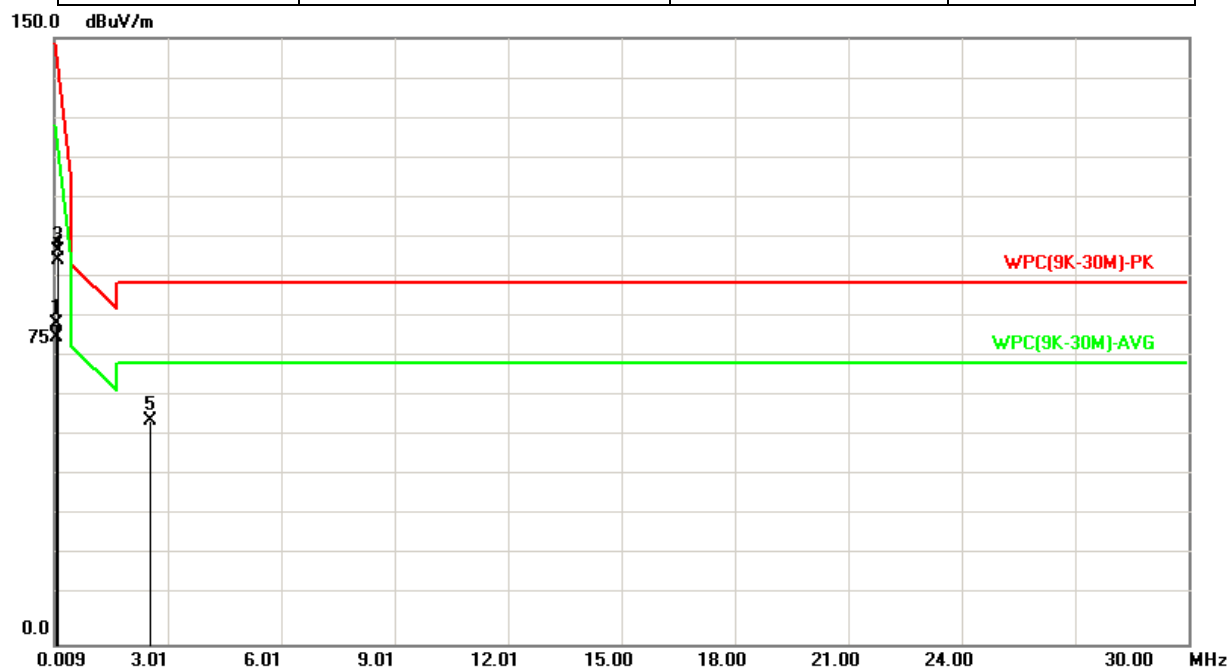




6.4 Test Result and Data

9KHz~30MHz

| | | | |
|-----------|-------------------------|-------------|--------|
| Power | : AC 120V/60Hz | Temperature | : 23°C |
| Test Mode | : TX+ Wireless Charging | Humidity | : 64 % |
| Test Date | : Nov. 10, 2018 | | |



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1 | 0.0639 | 20.70 | 58.63 | 79.33 | 131.49 | -52.16 | peak |
| 2 | 0.0639 | 20.70 | 55.21 | 75.91 | 111.49 | -32.16 | AVG |
| 3 | 0.1276 | 20.53 | 76.92 | 97.45 | 125.49 | -28.04 | peak |
| 4 | 0.1276 | 20.53 | 74.56 | 95.09 | 105.49 | -10.4 | AVG |
| 5 | 2.5544 | 20.78 | 34.55 | 55.33 | 89.54 | -34.21 | QP |

Note: Level = Reading + Factor

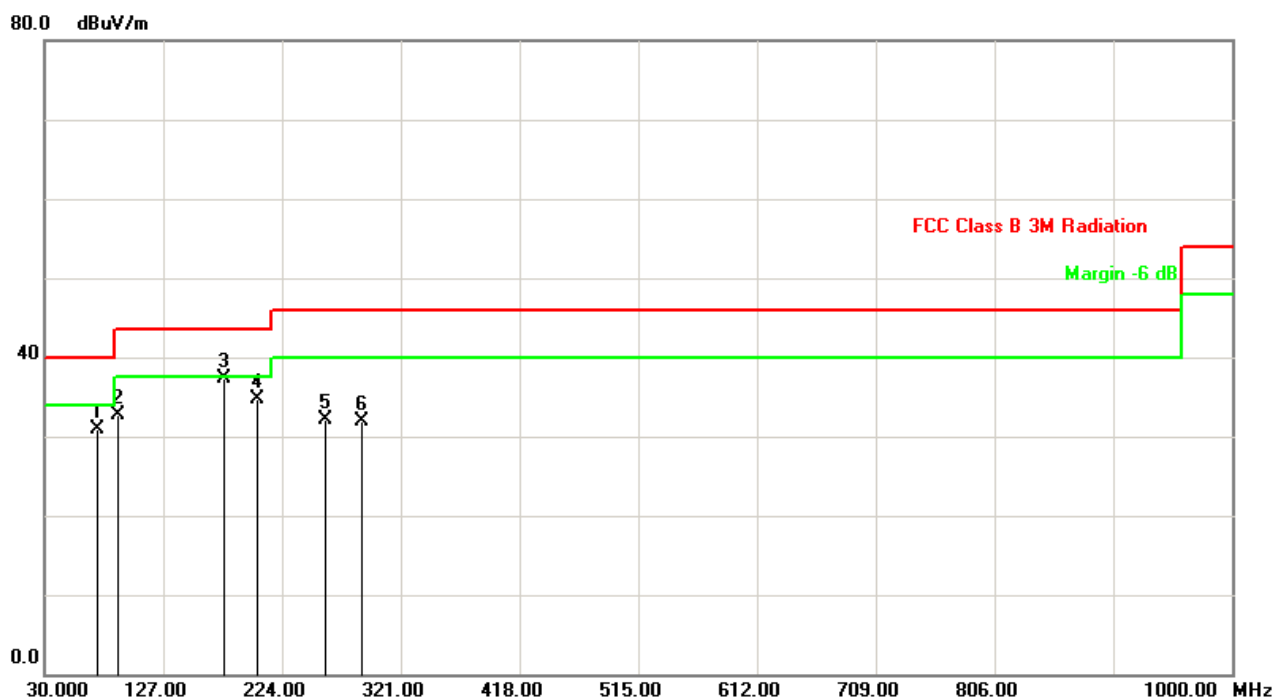
Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor



30MHz~1GHz

| | | | |
|-----------|-------------------------|----------------------|------------|
| Power | : AC 120V/60Hz | Pol/Phase | : VERTICAL |
| Test Mode | : TX+ Wireless Charging | Temperature | : 18 °C |
| Test Date | : Nov. 10, 2018 | Humidity | : 49 % |
| Memo | : CH 00 | Atmospheric Pressure | : 1008 hpa |



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1 | 72.6800 | -16.88 | 47.78 | 30.90 | 40.00 | -9.10 | peak | 100 | 34 |
| 2 | 90.1400 | -13.62 | 46.36 | 32.74 | 43.50 | -10.76 | peak | 100 | 181 |
| 3 | 176.4699 | -13.98 | 51.35 | 37.37 | 43.50 | -6.13 | QP | 100 | 83 |
| 4 | 203.6299 | -8.68 | 43.38 | 34.70 | 43.50 | -8.80 | peak | 100 | 206 |
| 5 | 258.9200 | -9.94 | 41.95 | 32.01 | 46.00 | -13.99 | peak | 100 | 19 |
| 6 | 289.9599 | -9.65 | 41.56 | 31.91 | 46.00 | -14.09 | peak | 100 | 117 |

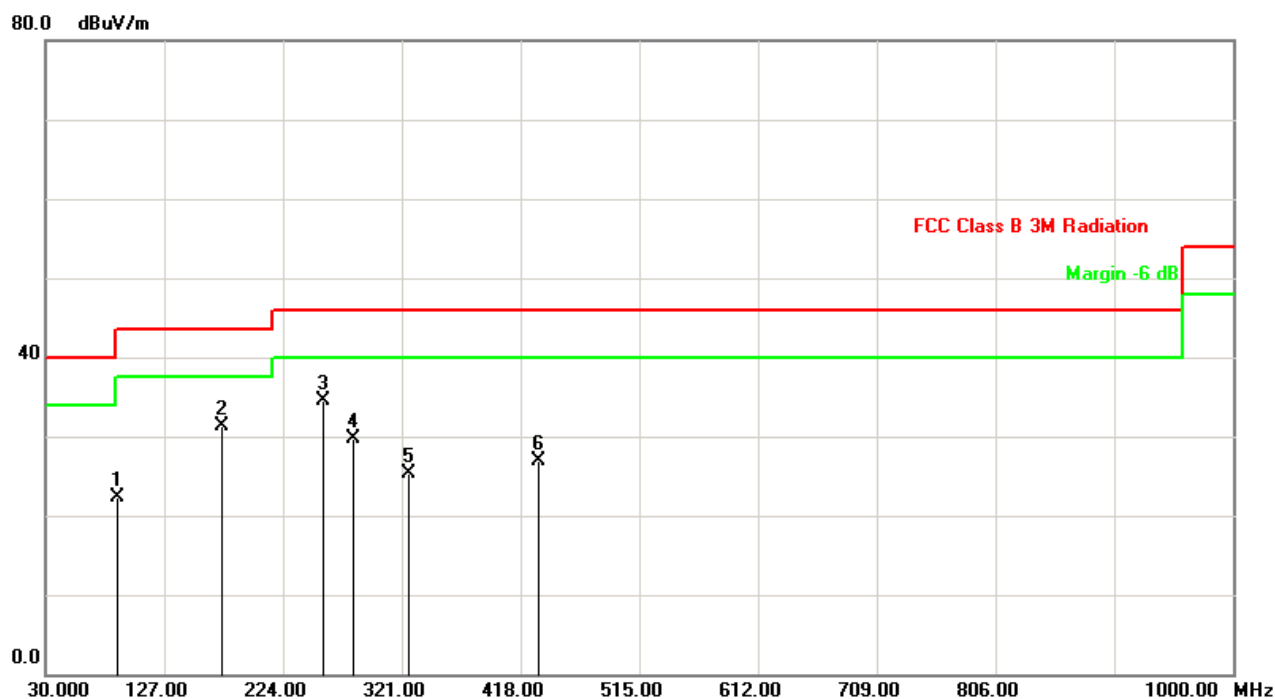
Note: Level = Reading + Factor

Margin = Level - Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor



| | | | |
|-----------|-------------------------|----------------------|--------------|
| Power | : AC 120V/60Hz | Pol/Phase | : HORIZONTAL |
| Test Mode | : TX+ Wireless Charging | Temperature | : 18 °C |
| Test Date | : Nov. 10, 2018 | Humidity | : 49 % |
| Memo | : CH 00 | Atmospheric Pressure | : 1008 hpa |



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1 | 89.1700 | -13.75 | 36.13 | 22.38 | 43.50 | -21.12 | peak | 100 | 76 |
| 2 | 174.5300 | -10.54 | 41.83 | 31.29 | 43.50 | -12.21 | peak | 200 | 249 |
| 3 | 256.9800 | -6.00 | 40.58 | 34.58 | 46.00 | -11.42 | peak | 300 | 53 |
| 4 | 281.2300 | -6.19 | 35.87 | 29.68 | 46.00 | -16.32 | peak | 100 | 108 |
| 5 | 326.8199 | -6.52 | 31.73 | 25.21 | 46.00 | -20.79 | peak | 200 | 92 |
| 6 | 432.5500 | -5.63 | 32.63 | 27.00 | 46.00 | -19.00 | peak | 100 | 304 |

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor

----- End of the report -----