

TEST REPORT

Application No.: SZEM1904012508CR
Applicant: MINISO Corporation
Address of Applicant: Room 2501, No. 486 Heye Square Kangwang Middle Road, Liwan District, Guangzhou, Guangdong, 510140, China
Manufacturer: Shenzhen Besiter Power Bank Co., Ltd
Address of Manufacturer: Building 66, Longwangmiao Industrial Park, Baishixia Community, Fuyong Subdistrict, BaoAn District, Shenzhen, Guangdong, China
Factory: Shenzhen Besiter Power Bank Co., Ltd
Address of Factory: Building 66, Longwangmiao Industrial Park, Baishixia Community, Fuyong Subdistrict, BaoAn District, Shenzhen, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Wireless charging panel
Model No.: MC-018 ♣
 ♣ Please refer to section 2 of this report which indicates which sample was actually tested and which were electrically identical.
Trade mark: MINISO
FCC ID: 2ART4-MC018
Standard(s) : 47 CFR Part 18
Date of Receipt: 2019-04-08
Date of Test: 2019-04-12 to 2019-07-17
Date of Issue: 2019-07-22

| | |
|---------------------|--------------|
| Test Result: | Pass* |
|---------------------|--------------|


* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



| Revision Record | | | | |
|-----------------|---------|------------|----------|----------|
| Version | Chapter | Date | Modifier | Remark |
| 01 | | 2019-07-22 | | Original |
| | | | | |
| | | | | |

| | | | |
|---------------------------------|--|---|--|
| Authorized for issue by: | | | |
| | |  | |
| | | Leo Li /Project Engineer | |
| | |  | |
| | | Eric Fu /Reviewer | |



2 Test Summary

| Radio Spectrum Matter Part | | | | |
|----------------------------|----------------|----------|-------------|--------|
| Item | Standard | Method | Requirement | Result |
| Conducted disturbance | 47 CFR Part 18 | FCC MP-5 | Part 18.307 | Pass |
| Radiated emission | 47 CFR Part 18 | FCC MP-5 | Part 18.305 | Pass |

Remark:

Model No.: MC-018

Only the sample black widow was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above samples, with only difference on colour and decorations.



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4 General Information

4.1 Details of E.U.T.

| | |
|----------------------|--|
| Power supply: | DC 5V from USB port Input: DC 5V/2A; DC 9V/2A Output: WPC: 5W(DC 5V/1A), 7.5W(DC 5V1.5A), 10W(DC 9V/1.1A) |
| Antenna Type: | Loop Antenna |
| Modulation Type: | Load Modulation |
| Operation Frequency: | 111.54kHz to 148.08kHz |
| Remark: | Tests were conducted in all three load modes and the worst case 10W(DC 9V/1.1A) is reported only. |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|--------------|--------------|-----------|----------------|
| Adapter | SAMSUNG | EP-TA200 | R37J8YA7W71DK3 |
| iPhone 8 | Apple | A1863 | F4GVQ656JC6D |
| Mobile Phone | SAMSUNG | SM-G9500 | R28J9140LPB |

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---------------------------------|--------------------------------------|
| 1 | Conduction emission | $\pm 3.0\text{dB}$ (150kHz to 30MHz) |
| 2 | Radiated Spurious emission test | $\pm 4.5\text{dB}$ (Below 1GHz) |
| | | $\pm 4.8\text{dB}$ (Above 1GHz) |
| 3 | Temperature test | $\pm 1^\circ\text{C}$ |
| 4 | Humidity test | $\pm 3\%$ |
| 5 | Supply voltages | $\pm 1.5\%$ |
| 6 | Time | $\pm 3\%$ |

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

| Conducted disturbance | | | | | |
|-----------------------|-------------------|-----------------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Shielding Room | ChangZhou ZhongYu | GB-88 | SEM001-06 | 2017-05-10 | 2020-05-09 |
| | | | | 2019-06-13 | 2024-06-12 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM024-01 | 2019-07-11 | 2020-07-10 |
| LISN | Rohde & Schwarz | ENV216 | SEM007-01 | 2018-09-25 | 2019-09-24 |
| LISN | ETS-LINDGREN | 3816/2 | SEM007-02 | 2019-04-01 | 2020-03-31 |
| EMI Test Receiver | Rohde & Schwarz | ESCI | SEM004-02 | 2019-04-01 | 2020-03-31 |

| Radiated emission | | | | | |
|--------------------------------|----------------------|-----------------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| 10m Semi-Anechoic Chamber | SAEMC | FSAC1018 | SEM001-03 | 2018-03-31 | 2021-03-30 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM029-01 | 2018-07-12 | 2019-07-11 |
| | | | | 2019-07-11 | 2020-07-10 |
| EMI Test Receiver (9kHz-7GHz) | Rohde & Schwarz | ESR | SEM004-03 | 2019-04-01 | 2020-03-31 |
| BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEM003-02 | 2018-05-25 | 2019-05-24 |
| | | | | 2019-05-24 | 2022-05-23 |
| Pre-amplifier | Sonoma Instrument Co | 310N | SEM005-04 | 2019-04-12 | 2020-04-11 |
| Active Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2017-08-22 | 2020-08-21 |

| General used equipment | | | | | |
|---------------------------------|---|----------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-03 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-04 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Mingle | N/A | SEM002-08 | 2018-09-27 | 2019-09-26 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2019-04-04 | 2020-04-03 |



6 Radio Spectrum Matter Test Results

6.1 Conducted disturbance

Test Requirement Part 18.307
Test Method: FCC MP-5
Limit:

| Frequency of emission (MHz) | Conducted limit (dBμV) | |
|-----------------------------|------------------------|-----------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

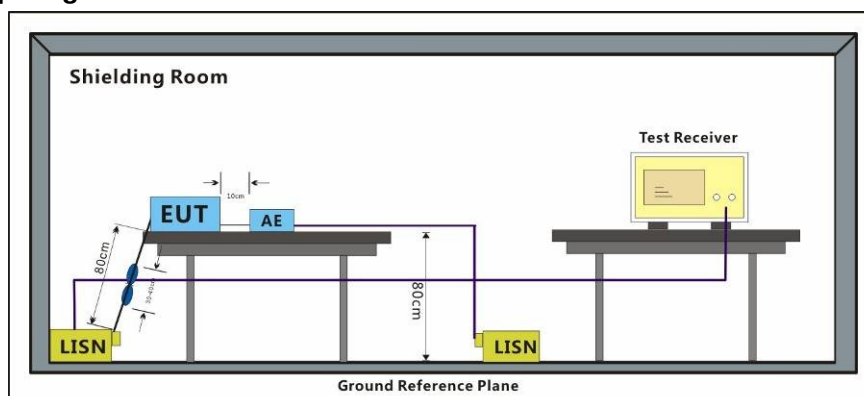


6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 19.2 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar
Test mode a: Charge mode_Keep the EUT charging

6.1.2 Test Setup Diagram

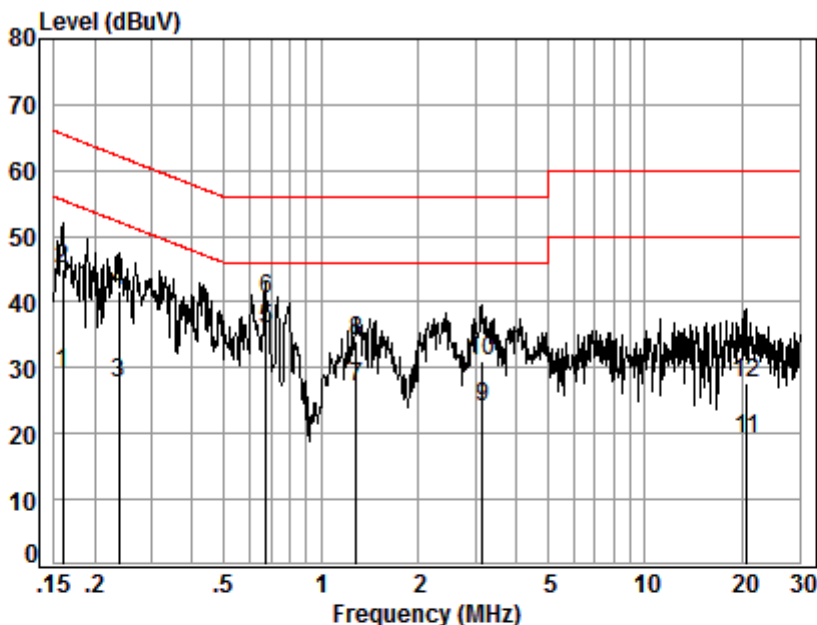


6.1.3 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor

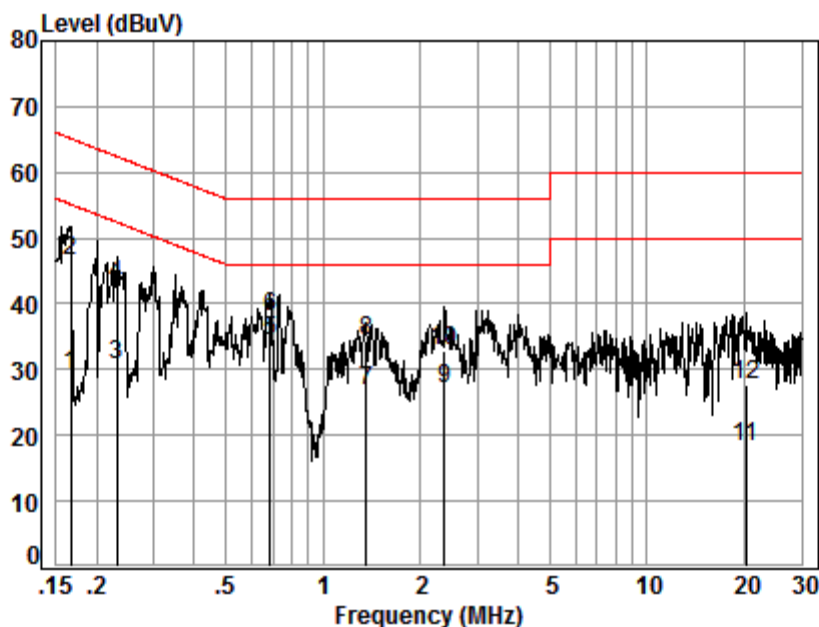
Mode:a; Line:Live Line



Site : Shielding Room
Condition: Line
Job No. : 12508CR
Test mode: a

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|----|-------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.16 | 0.01 | 9.66 | 19.53 | 29.20 | 55.52 | -26.32 | Average |
| 2 | 0.16 | 0.01 | 9.66 | 35.26 | 44.93 | 65.52 | -20.59 | QP |
| 3 | 0.24 | 0.03 | 9.67 | 17.89 | 27.59 | 52.17 | -24.58 | Average |
| 4 | 0.24 | 0.03 | 9.67 | 31.85 | 41.55 | 62.17 | -20.62 | QP |
| 5 | 0.68 | 0.07 | 9.68 | 26.09 | 35.84 | 46.00 | -10.16 | Average |
| 6 | 0.68 | 0.07 | 9.68 | 30.78 | 40.53 | 56.00 | -15.47 | QP |
| 7 | 1.28 | 0.11 | 9.73 | 17.12 | 26.96 | 46.00 | -19.04 | Average |
| 8 | 1.28 | 0.11 | 9.73 | 24.13 | 33.97 | 56.00 | -22.03 | QP |
| 9 | 3.16 | 0.16 | 9.71 | 14.22 | 24.09 | 46.00 | -21.91 | Average |
| 10 | 3.16 | 0.16 | 9.71 | 21.05 | 30.92 | 56.00 | -25.08 | QP |
| 11 | 20.59 | 0.24 | 10.09 | 8.89 | 19.22 | 50.00 | -30.78 | Average |
| 12 | 20.59 | 0.24 | 10.09 | 17.32 | 27.65 | 60.00 | -32.35 | QP |

Mode:a; Line:Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 12508CR
Test mode: a

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit | Over Limit | Remark |
|----|-------|------------|-------------|------------|-------|-------|------------|---------|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.17 | 0.01 | 9.64 | 19.46 | 29.11 | 55.12 | -26.01 | Average |
| 2 | 0.17 | 0.01 | 9.64 | 37.01 | 46.66 | 65.12 | -18.46 | QP |
| 3 | 0.23 | 0.03 | 9.64 | 20.99 | 30.66 | 52.39 | -21.73 | Average |
| 4 | 0.23 | 0.03 | 9.64 | 33.19 | 42.86 | 62.39 | -19.53 | QP |
| 5 | 0.69 | 0.07 | 9.65 | 24.65 | 34.37 | 46.00 | -11.63 | Average |
| 6 | 0.69 | 0.07 | 9.65 | 28.42 | 38.14 | 56.00 | -17.86 | QP |
| 7 | 1.36 | 0.12 | 9.70 | 16.98 | 26.80 | 46.00 | -19.20 | Average |
| 8 | 1.36 | 0.12 | 9.70 | 24.54 | 34.36 | 56.00 | -21.64 | QP |
| 9 | 2.37 | 0.16 | 9.68 | 17.17 | 27.01 | 46.00 | -18.99 | Average |
| 10 | 2.37 | 0.16 | 9.68 | 22.98 | 32.82 | 56.00 | -23.18 | QP |
| 11 | 20.16 | 0.24 | 10.11 | 7.91 | 18.26 | 50.00 | -31.74 | Average |
| 12 | 20.16 | 0.24 | 10.11 | 17.40 | 27.75 | 60.00 | -32.25 | QP |

6.2 Radiated emission

Test Requirement Part 18.305
Test Method: FCC MP-5
Measurement Distance: 3m
Limit:

(b) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

| Equipment | Operating frequency | RF Power generated by equipment (watts) | Field strength limit (uV/m) | Distance (meters) |
|---|--|---|--|---------------------------|
| Any type unless otherwise specified (miscellaneous) | Any ISM frequency | Below 500 | 25 | 300 |
| | | 500 or more | $25 \times \text{SQRT}(\text{power}/500)$ | ¹ 300 |
| | Any non-ISM frequency | Below 500 | 15 | 300 |
| | | 500 or more | $15 \times \text{SQRT}(\text{power}/500)$ | ¹ 300 |
| Industrial heaters and RF stabilized arc welders | On or below 5,725 MHz Above 5,725 MHz | Any Any | 10 (²) | 1,600 (²) |
| Medical diathermy | Any ISM frequency | Any | 25 | 300 |
| | Any non-ISM frequency | Any | 15 | 300 |
| Ultrasonic | Below 490 kHz | Below 500 | 2,400/F(kHz) | 300 |
| | | 500 or more | $2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$ | ³ 300 |
| | 490 to 1,600 kHz | Any | 24,000/F(kHz) | 30 |
| | Above 1,600 kHz | Any | 15 | 30 |
| Induction cooking ranges | Below 90 kHz | Any | 1,500 | ⁴ 30 |
| | On or above 90 kHz | Any | 300 | ⁴ 30 |

¹Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

²Reduced to the greatest extent possible.

³Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

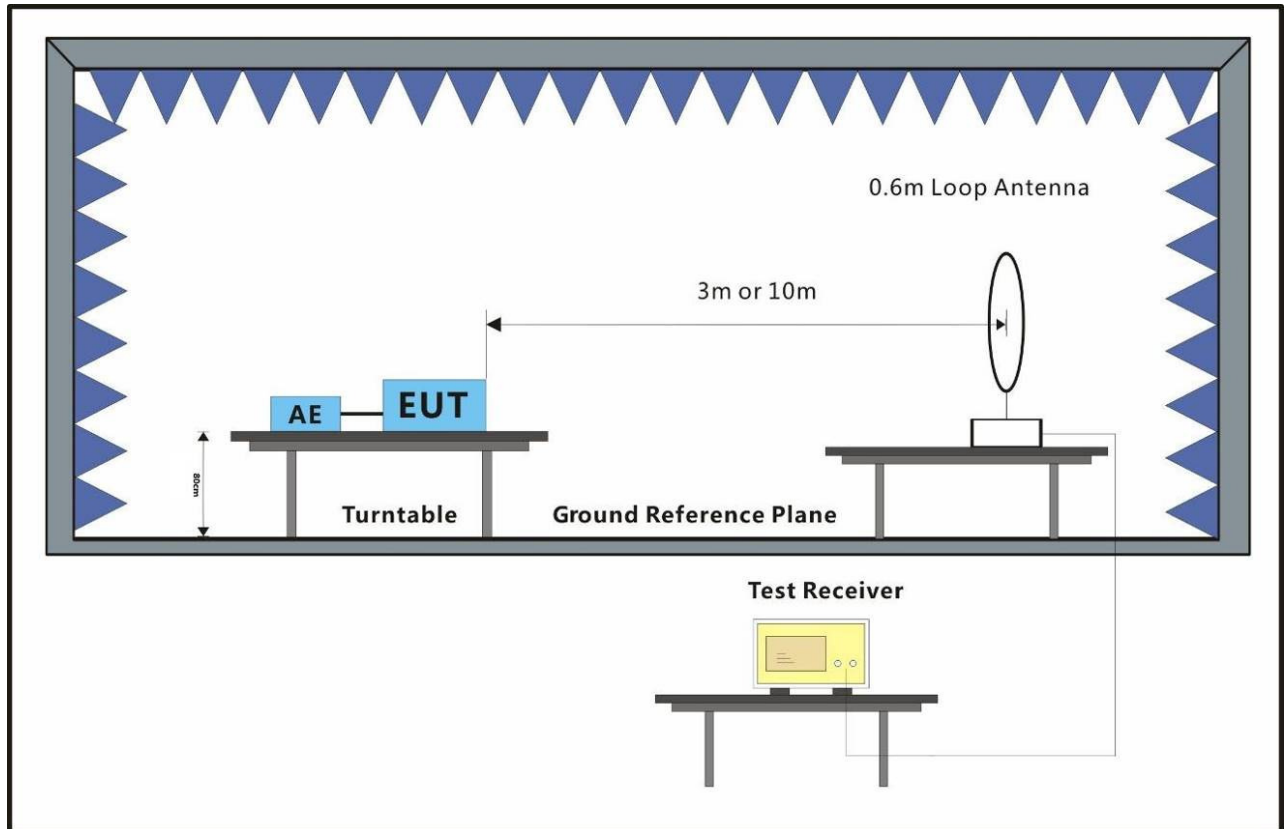
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1020 mbar

Test mode a: Charge mode_Keep the EUT charging

6.2.2 Test Setup Diagram

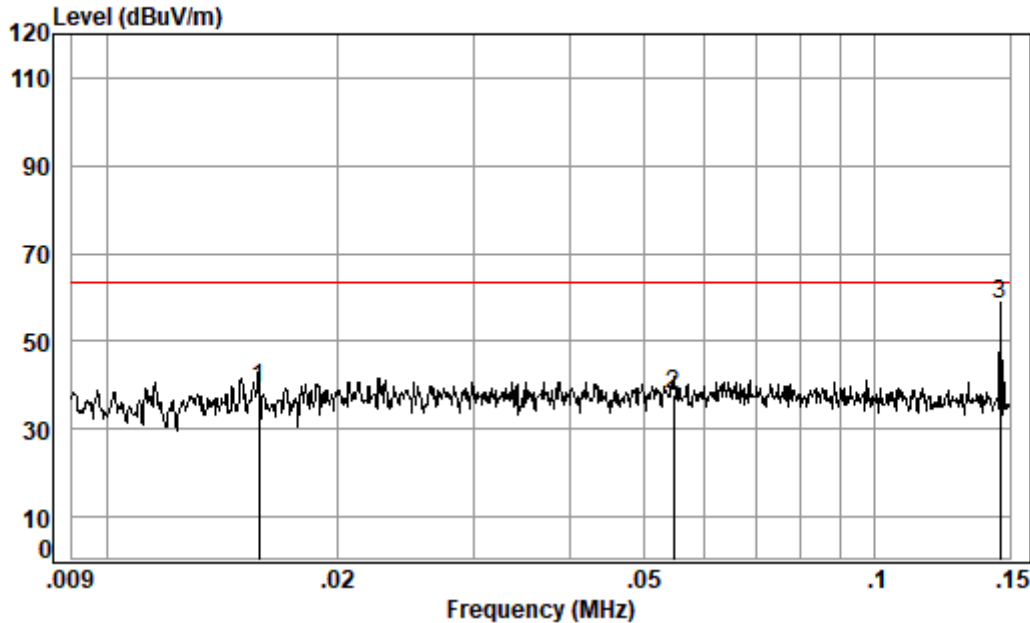


6.2.3 Measurement Procedure and Data

- Test Procedure:
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber(30MHz-1000MHz) and 3 meter semi-anechoic chamber(9kHz-30MHz). The table was rotated 360 degrees to determine the position of the highest radiation.
 - The EUT was set 10 meters(30MHz-1000MHz) and 10 meter (9kHz-30MHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - Above 30MHz: The Analyzer/Receiver scanned from 30MHz to 1000MHz. The antenna 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.
 - Below 30MHz: The Analyzer/Receiver scanned from 9kHz to 30MHz. The antenna height is 2 meters above the ground to determine the maximum value of the field strength.
 - 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 2 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
 - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
 - If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
 - Repeat above procedures until all frequencies measured was complete.
 - Measurement Requirement:
 - 1) This product belongs to non-ISM equipment, the field strength limit is 15uV/m at 300 meter distance.
 - 2) Limit: $20\log(15\mu\text{V/m}) + 20\log(300/3) = 23.52 + 40 = 63.52\text{dBuV/m}$ at 3 meters distance.

Mode a:

9kHz-150kHz



Condition: 3m

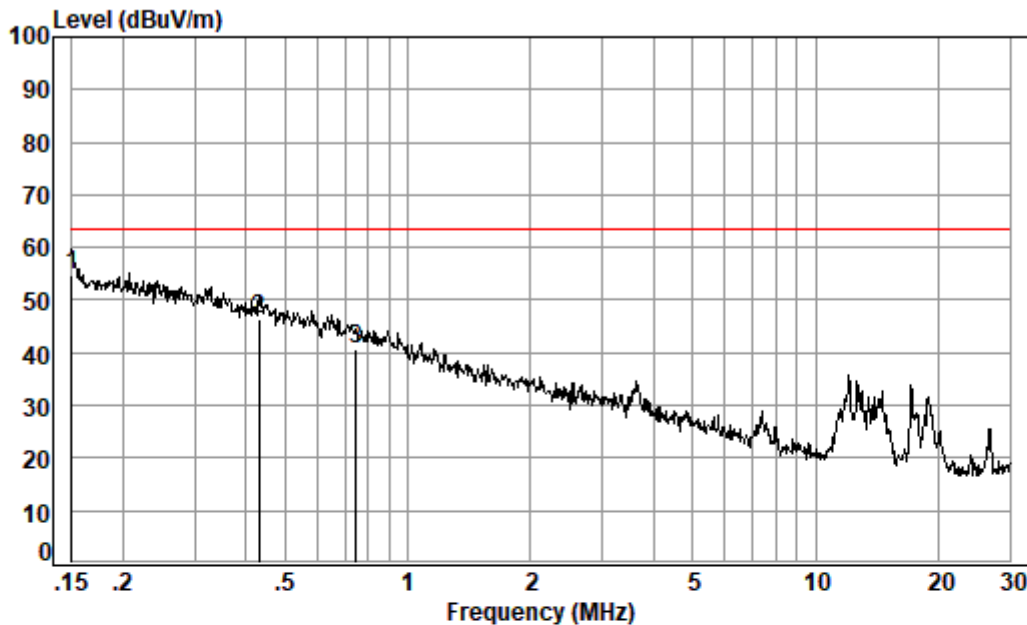
Job No. : 12508CR

Test Mode: plan 2

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|------|------|------------|------------|---------------|------------|--------|------------|------------|---------|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 0.02 | 0.24 | 16.48 | 32.55 | 54.85 | 39.02 | 63.52 | -24.50 | Average |
| 2 | 0.05 | 0.11 | 12.33 | 32.56 | 58.05 | 37.93 | 63.52 | -25.59 | Average |
| 3 pp | 0.15 | 0.06 | 11.72 | 32.56 | 79.10 | 58.32 | 63.52 | -5.20 | Average |



150kHz-30MHz



Condition: 3m

Job No. : 12508CR

Test Mode: plan 2

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit | Over Limit | Remark |
|---|------|------------|------------|---------------|------------|--------|--------|------------|----------------|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | pp | 0.15 | 0.07 | 11.70 | 32.56 | 75.49 | 54.70 | 63.52 | -8.82 Average |
| 2 | | 0.43 | 0.10 | 11.76 | 32.56 | 67.19 | 46.49 | 63.52 | -17.03 Average |
| 3 | | 0.75 | 0.18 | 12.00 | 32.56 | 60.93 | 40.55 | 63.52 | -22.97 Average |





7 Photographs

7.1 Test Setup

Please refer to setup photos.

7.2 EUT Constructional Details (EUT Photos)

Please refer to external and internal photos for details.

- End of the Report -

