

# TEST REPORT

**Application No.:** GZCR2112021553AT (SGS SZ No.: T52110310059EM)  
**Applicant:** SCX DESIGN  
**Address of Applicant:** 68 bis Boulevard Pereire 75017 Paris, France  
**Manufacturer:** SCX DESIGN  
**Address of Manufacturer:** 68 bis Boulevard Pereire 75017 Paris, France  
**Equipment Under Test (EUT):**  
**EUT Name:** 5k mAh Wood Wireless Power Bank Maple wood  
**Model No.:** P36/32494  
**Standard(s) :** 47 CFR Part 15, Subpart C  
**Date of Receipt:** 2021-10-16  
**Date of Test:** 2021-11-05 to 2021-12-22  
**Date of Issue:** 2021-12-27

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

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

Kobe Jian  
EMC Laboratory Manager



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| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2021-12-27 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                                |   |  |  |
|--------------------------------|---|--|--|
| <b>Authorized for issue by</b> |   |  |  |
| <b>Tested By</b>               |  |  |  |
|                                | <hr/>   |  |  |
|                                | <b>Curry Wu/Project Engineer</b>  |  |  |
| <b>Reviewed By</b>             |  |  |  |
|                                | <hr/>   |  |  |
|                                | <b>Ricky Liu/Reviewer</b>   |  |  |



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## 2 Test Summary

| Radio Spectrum Technical Requirement |                           |        |                                  |        |
|--------------------------------------|---------------------------|--------|----------------------------------|--------|
| Item                                 | Standard                  | Method | Requirement                      | Result |
| Antenna Requirement                  | 47 CFR Part 15, Subpart C | N/A    | 47 CFR Part 15, Subpart C 15.203 | Pass   |

| Radio Spectrum Matter Part                                |                           |                                   |   |        |
|---|---------------------------|-----------------------------------|---|--------|
| Item  | Standard                  | Method                            | Requirement                               | Result |
| 20dB Bandwidth  | 47 CFR Part 15, Subpart C | ANSI C63.10 (2013) Section 6.9.2  | 47 CFR Part 15, Subpart C 15.215          | Pass   |
| Conducted Emissions at AC Mains Power Port (150kHz-30MHz) |                           | ANSI C63.10 (2013) Section 6.2    | 47 CFR Part 15, Subpart C 15.207          | Pass   |
| Radiated Emissions (30MHz-1GHz)                           |                           | ANSI C63.10 (2013) Section 6.5    | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |
| Radiated Emissions (9kHz-30MHz)                           |                           | ANSI C63.10 (2013) Section 6.4    | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |
| Restricted band   |                           | ANSI C63.10 (2013) Section 6.10.5 | 47 CFR Part 15, Subpart C 15.205          | Pass   |

**Note:**

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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## 4 General Information

### 4.1 Details of E.U.T.

Power supply: Input 5Vdc, 2A; USB Output 5V, 2A, Wireless Output 5Vdc, 1A  
 Operation Frequency: 110.22KHz-129.4KHz  
 Modulation Type: Load modulation  
 Antenna Type: Loop antenna

### 4.2 Description of Support Units

| Description       | Manufacturer | Model No. | Serial No.        |
|-------------------|--------------|-----------|-------------------|
| SAMSUNG Galaxy S8 | SAMSUNG      | SM-G9500  | REF. No.SEA16M01  |
| Adapter           | Apple        | A2167     | REF. No.SEA05B04D |
| USB Cable         | PHILIPS      | SWR2101   | REF. No.SEA07C00  |

### 4.3 Measurement Uncertainty

| Test Item  | Measurement Uncertainty     |
|--|-----------------------------|
| 20dB Bandwidth   | +/-3%                       |
| Conducted Emissions at AC Mains Power Port<br>(150kHz-30MHz) | 3.12dB                      |
| Radiated Emissions (30MHz-1GHz)                              | 5.06dB (3m)<br>4.46dB (10m) |
| Radiated Emissions (9kHz-30MHz)                              | ± 4.5dB                     |
| Restricted band  | ± 3%                        |

Remark:  
 The  $U_{lab}$  (lab Uncertainty) is less than  $U_{CISPR}$  (CISPR Uncertainty), so the test results  
 – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;  
 – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

#### 4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None



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## 5 Equipment List

| 20dB Bandwidth              |                 |          |              |            |              |
|-----------------------------|-----------------|----------|--------------|------------|--------------|
| Equipment                   | Manufacturer    | Model No | Inventory No | Cal Date   | Cal Due Date |
| EMI Test Receiver(1Hz-8GHz) | Rohde & Schwarz | ESW8     | EMC2220      | 2021-05-26 | 2022-05-25   |
| 6dB Attenuator              | HP              | 8491A    | EMC2062      | 2020-04-15 | 2022-04-14   |
| MI CABLE                    | SGS-EMC         | 0.8M     | EMC2136      | 2021-11-01 | 2023-10-31   |

| Conducted Emissions at AC Mains Power Port (150kHz-30MHz) |                   |                |              |            |              |
|---|-------------------|----------------|--------------|------------|--------------|
| Equipment   | Manufacturer      | Model No       | Inventory No | Cal Date   | Cal Due Date |
| Shielding Room  | ChangZhou ZhongYu | 8m x 3m x 3.8m | EMC0306      | N/A        | N/A          |
| Two-Line V-Network  | Rohde & Schwarz   | ENV216         | EMC0118      | 2021-01-08 | 2022-01-06   |
| Two-Line V-Network-GZ                                     | Rohde & Schwarz   | ENV216         | EMC2135      | 2021-09-24 | 2022-09-23   |
| Coaxial Cable   | HangTianXing      | 2m             | EMC0107      | 2020-09-09 | 2022-09-08   |
| Test Software E3c   | Audix             | Ver. 5.4.1221b | GZE100-62    | N/A        | N/A          |
| EMI Test Receiver(9kHz-3.6GHz)                            | Rohde & Schwarz   | ESR4           | EMC2221      | 2021-06-01 | 2022-05-31   |

| Radiated Emissions (30MHz-1GHz)          |                             |               |              |            |              |
|--|-----------------------------|---------------|--------------|------------|--------------|
| Equipment                                | Manufacturer                | Model No      | Inventory No | Cal Date   | Cal Due Date |
| Chamber cable                            | HangTianXing                | N/A           | EMC0542      | 2020-09-09 | 2022-09-08   |
| Trilog Broadband Antenna(25MHz-1GHz)-Lab | SCHWARZBECK MESS-ELEKTRONIK | VULB 9168     | SEM003-18    | 2019-02-22 | 2022-02-22   |
| Amplifier(9kHz-1.3GHz)                   | HP                          | 8447F         | EMC2065      | 2021-05-19 | 2022-05-18   |
| 10m Semi-Anechoic Chamber                | ETS                         | N/A           | EMC0530      | 2019-10-20 | 2022-10-19   |
| Test Software E3                         | Audix                       | Ver.6.120110a | GZE100-61    | N/A        | N/A          |
| EMI Test Receiver(1Hz-8GHz)              | Rohde & Schwarz             | ESW8          | EMC2220      | 2021-05-26 | 2022-05-25   |



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| <b>Radiated Emissions (9kHz-30MHz)</b> |                 |               |              |            |              |
|--|-----------------|---------------|--------------|------------|--------------|
| Equipment                              | Manufacturer    | Model No      | Inventory No | Cal Date   | Cal Due Date |
| Chamber cable                          | HangTianXing    | N/A           | EMC0542      | 2020-09-09 | 2022-09-08   |
| Amplifier(9kHz-1.3GHz)                 | HP              | 8447F         | EMC2065      | 2021-05-19 | 2022-05-18   |
| Active Loop Antenna-RED                | ETS-Lindgren    | 6502          | EMC2190      | 2019-12-27 | 2021-12-26   |
| 10m Semi-Anechoic Chamber              | ETS             | N/A           | EMC0530      | 2019-10-20 | 2022-10-19   |
| Test Software E3                       | Audix           | Ver.6.120110a | GZE100-61    | N/A        | N/A          |
| EMI Test Receiver(1Hz-8GHz)            | Rohde & Schwarz | ESW8          | EMC2220      | 2021-05-26 | 2022-05-25   |

| <b>Restricted band</b>      |                 |          |              |            |              |
|-----------------------------|-----------------|----------|--------------|------------|--------------|
| Equipment                   | Manufacturer    | Model No | Inventory No | Cal Date   | Cal Due Date |
| EMI Test Receiver(1Hz-8GHz) | Rohde & Schwarz | ESW8     | EMC2220      | 2021-05-26 | 2022-05-25   |
| 6dB Attenuator              | HP              | 8491A    | EMC2062      | 2020-04-15 | 2022-04-14   |
| MI CABLE                    | SGS-EMC         | 0.8M     | EMC2136      | 2021-11-01 | 2023-10-31   |

| <b>General used equipment</b> |              |          |              |            |              |
|-------------------------------|--------------|----------|--------------|------------|--------------|
| Equipment                     | Manufacturer | Model No | Inventory No | Cal Date   | Cal Due Date |
| DMM                           | Fluke        | 73       | EMC0006      | 2021-07-05 | 2022-07-05   |
| DMM                           | Fluke        | 73       | EMC0007      | 2021-07-05 | 2022-07-05   |



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## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

#### 6.1.2 Conclusion

Standard 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 use an unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

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.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement.

Please refer to internal photos.



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## 7 Radio Spectrum Matter Test Results

### 7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215  
 Test Method: ANSI C63.10 (2013) Section 6.9.2  
 Limit:

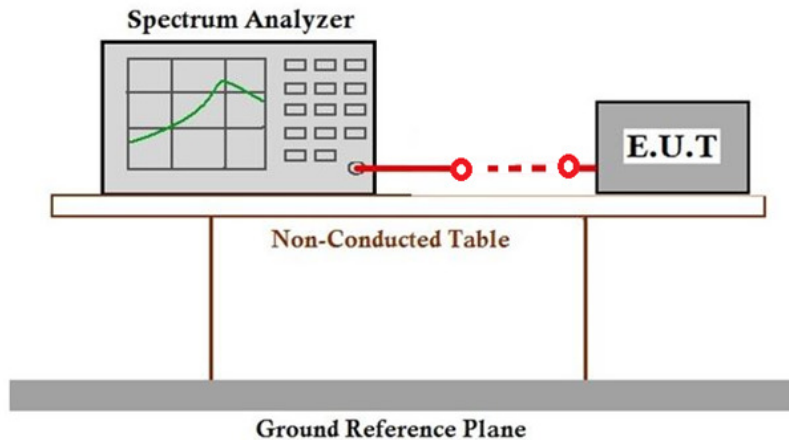
#### 7.1.1 E.U.T. Operation

Operating Environment:  
 Temperature: 23.8 °C Humidity: 56.3 % RH Atmospheric Pressure: 1003 mbar

#### 7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description   |
|-----------------------|-----------|---|
| Final test            | 00        | Charge & Discharge mode_Keep the battery of the EUT charging and keep the EUT wireless charging(5W) |
| Pre-scan              | 01        | Discharge mode_Keep the EUT wireless charging(5W)   |

#### 7.1.3 Test Setup Diagram



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### 7.1.4 Measurement Procedure and Data

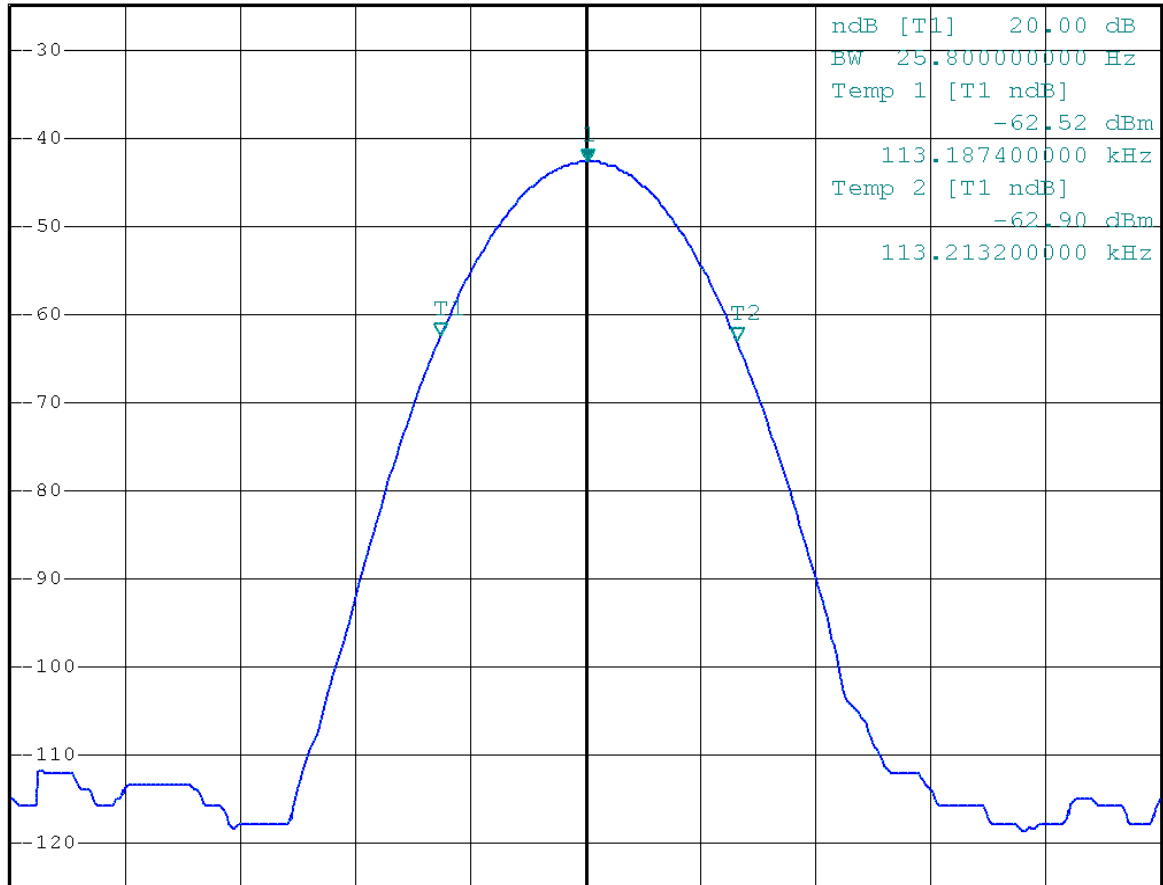
Mode 00:

| Test Frequency(kHz) | 20dB bandwidth(KHz) | Limit(kHz) | Results |
|---------------------|---------------------|------------|---------|
| 113.20              | 0.0258              | N/A        | Pass    |



\*RBW 10 Hz      Marker 1 [T1 ]  
 \*VBW 30 Hz      -42.75 dBm  
 Ref -25 dBm      Att 10 dB      SWT 1 s      113.200200000 kHz

1 PK  
VIEW



Center 113.2 kHz      10 Hz/      Span 100 Hz



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## 7.2 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

| Frequency of emission(MHz) | Conducted limit(dB $\mu$ V) |           |
|----------------------------|-----------------------------|-----------|
|                            | 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.

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C

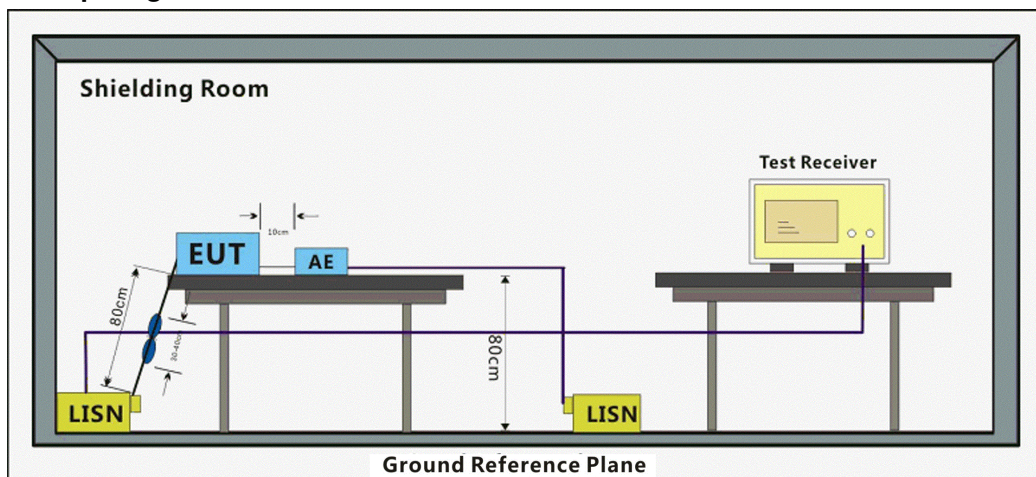
Humidity: 56.9 % RH

Atmospheric Pressure: 1003 mbar

### 7.2.2 Test Mode Description

| Pre-scan / Mode | Code | Description   |
|-----------------|------|---|
| Final test      | 00   | Charge & Discharge mode_Keep the battery of the EUT charging and keep the EUT wireless charging(5W) |

### 7.2.3 Test Setup Diagram



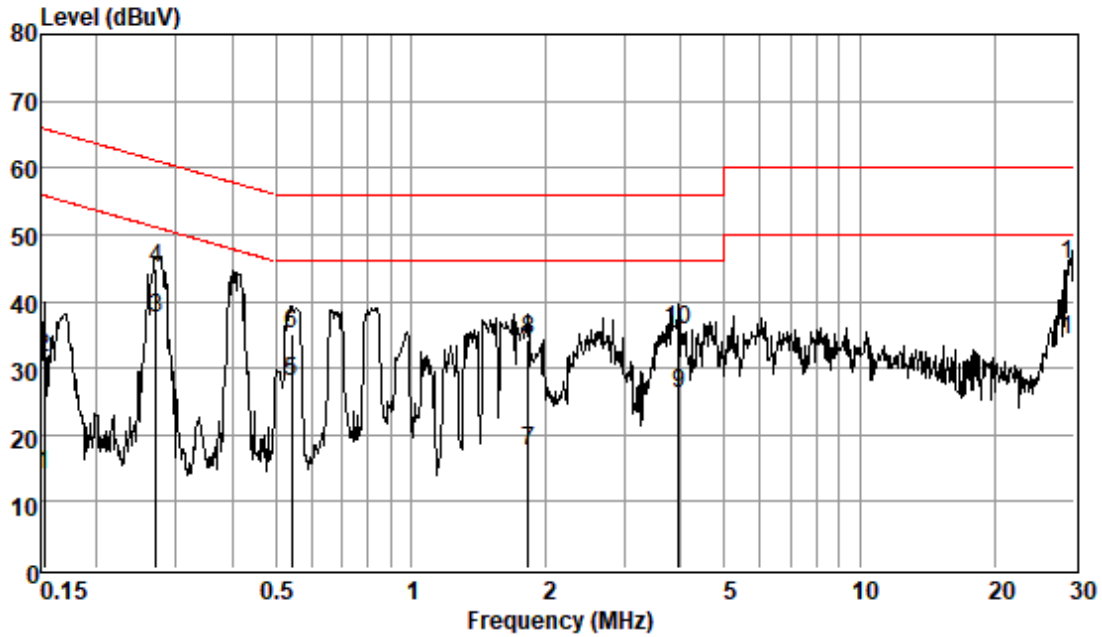
**7.2.4 Measurement Procedure and Data**

- 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



Test Mode: 00; Line: Neutral Line



Pol : NEUTRAL  
Mode :  
Model :

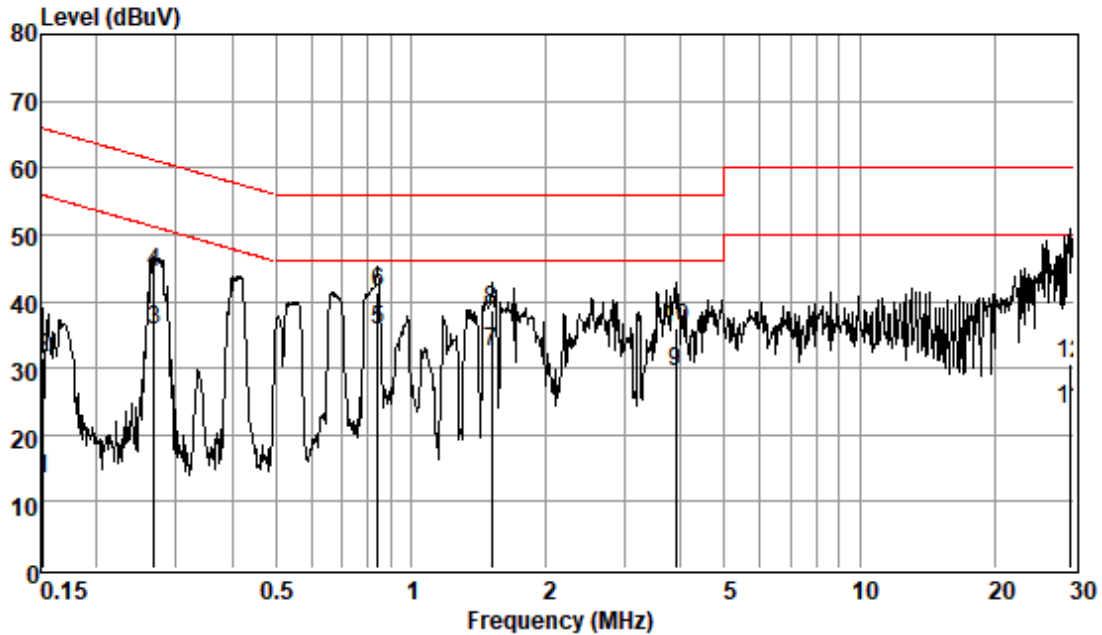
| Frequenc<br>MHz | Read<br>Level<br>dBuV | Cable<br>Loss<br>dB | LISN<br>Factor<br>dB | Measured<br>Level<br>dBuV | Limit<br>Line<br>dBuV | Over<br>Limit<br>dB | Remark  |
|-----------------|-----------------------|---------------------|----------------------|---------------------------|-----------------------|---------------------|---------|
| 0.15            | 4.31                  | 0.06                | 9.55                 | 13.92                     | 55.87                 | -41.95              | Average |
| 0.15            | 21.88                 | 0.06                | 9.55                 | 31.49                     | 65.87                 | -34.38              | QP      |
| 0.27            | 27.77                 | 0.06                | 9.55                 | 37.38                     | 51.07                 | -13.69              | Average |
| 0.27            | 35.42                 | 0.06                | 9.55                 | 45.03                     | 61.07                 | -16.04              | QP      |
| 0.54            | 18.37                 | 0.07                | 9.55                 | 27.99                     | 46.00                 | -18.01              | Average |
| 0.54            | 25.59                 | 0.07                | 9.55                 | 35.21                     | 56.00                 | -20.79              | QP      |
| 1.83            | 7.94                  | 0.11                | 9.54                 | 17.59                     | 46.00                 | -28.41              | Average |
| 1.83            | 24.66                 | 0.11                | 9.54                 | 34.31                     | 56.00                 | -21.69              | QP      |
| 3.94            | 16.51                 | 0.17                | 9.56                 | 26.24                     | 46.00                 | -19.76              | Average |
| 3.94            | 26.09                 | 0.17                | 9.56                 | 35.82                     | 56.00                 | -20.18              | QP      |
| 30.00           | 23.88                 | 0.44                | 9.92                 | 34.24                     | 50.00                 | -15.76              | Average |
| 30.00           | 35.06                 | 0.44                | 9.92                 | 45.42                     | 60.00                 | -14.58              | QP      |



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Test Mode: 00; Line: Live line



Pol :LINE  
Mode :  
Model :

| Frequenc<br>MHz | Read<br>Level<br>dBuV | Cable<br>Loss<br>dB | LISN<br>Factor<br>dB | Measured<br>Level<br>dBuV | Limit<br>Line<br>dBuV | Over<br>Limit<br>dB | Remark  |
|-----------------|-----------------------|---------------------|----------------------|---------------------------|-----------------------|---------------------|---------|
| 0.15            | 3.77                  | 0.06                | 9.62                 | 13.45                     | 55.91                 | -42.46              | Average |
| 0.15            | 21.91                 | 0.06                | 9.62                 | 31.59                     | 65.91                 | -34.32              | QP      |
| 0.27            | 25.99                 | 0.06                | 9.62                 | 35.67                     | 51.16                 | -15.49              | Average |
| 0.27            | 34.60                 | 0.06                | 9.62                 | 44.28                     | 61.16                 | -16.88              | QP      |
| 0.84            | 25.95                 | 0.07                | 9.63                 | 35.65                     | 46.00                 | -10.35              | Average |
| 0.84            | 31.68                 | 0.07                | 9.63                 | 41.38                     | 56.00                 | -14.62              | QP      |
| 1.51            | 22.81                 | 0.10                | 9.61                 | 32.52                     | 46.00                 | -13.48              | Average |
| 1.51            | 28.97                 | 0.10                | 9.61                 | 38.68                     | 56.00                 | -17.32              | QP      |
| 3.88            | 19.63                 | 0.16                | 9.62                 | 29.41                     | 46.00                 | -16.59              | Average |
| 3.88            | 26.11                 | 0.16                | 9.62                 | 35.89                     | 56.00                 | -20.11              | QP      |
| 29.37           | 13.45                 | 0.44                | 9.98                 | 23.87                     | 50.00                 | -26.13              | Average |
| 29.37           | 20.25                 | 0.44                | 9.98                 | 30.67                     | 60.00                 | -29.33              | QP      |



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### 7.3 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209  
 Test Method: ANSI C63.10 (2013) Section 6.5  
 Measurement Distance: 3m  
 Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| 30-88          | 100                              | 3                            |
| 88-216         | 150                              | 3                            |
| 216-960        | 200                              | 3                            |
| Above 960      | 500                              | 3                            |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

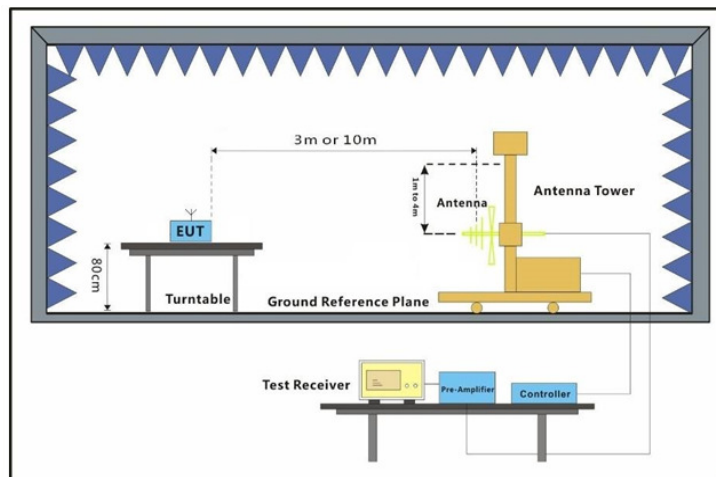
#### 7.3.1 E.U.T. Operation

Operating Environment:  
 Temperature: 23.7 °C Humidity: 56.1 % RH Atmospheric Pressure: 1003 mbar

#### 7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description   |
|-----------------------|-----------|---|
| Final test            | 00        | Charge & Discharge mode_Keep the battery of the EUT charging and keep the EUT wireless charging(5W) |
| Pre-scan              | 01        | Discharge mode_Keep the EUT wireless charging(5W)   |

#### 7.3.3 Test Setup Diagram



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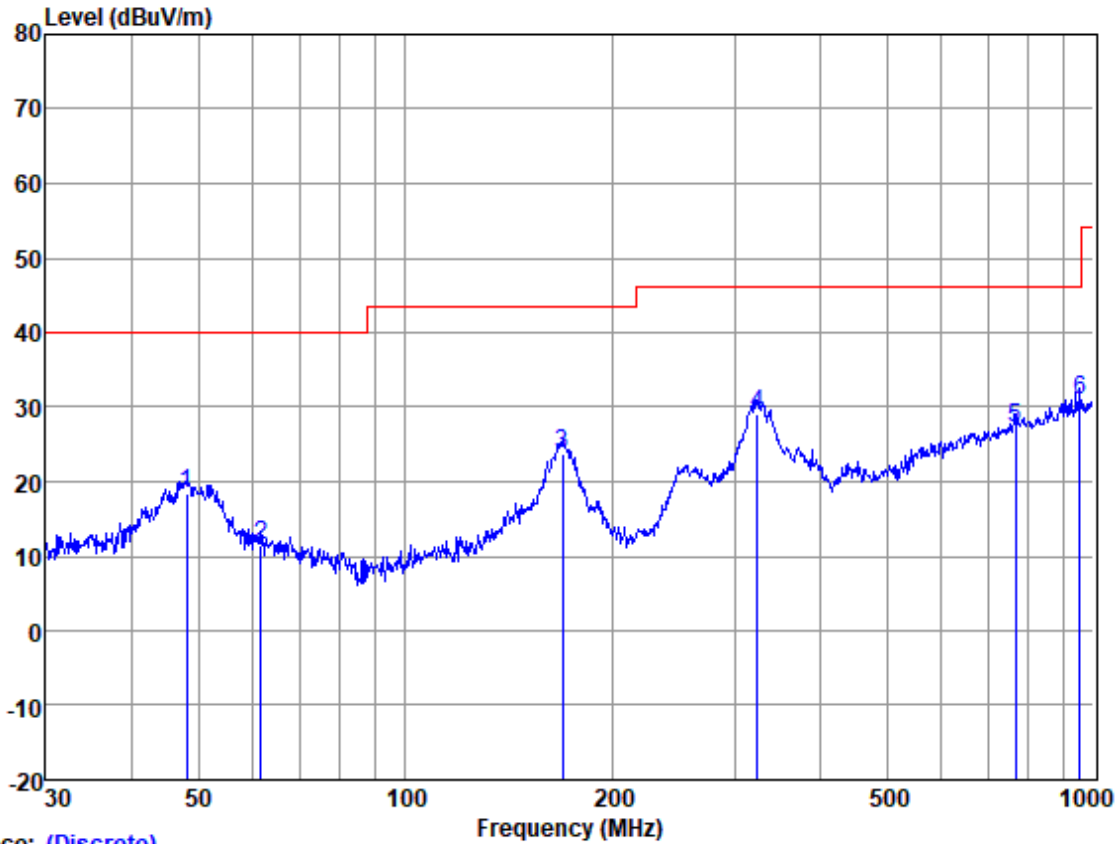
**7.3.4 Measurement Procedure and Data**

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark: Level=Read Level+Cable Loss+Antenna Factor-Preamp Factor



Test Mode: 00; Polarity: Horizontal



Trace: (Discrete)

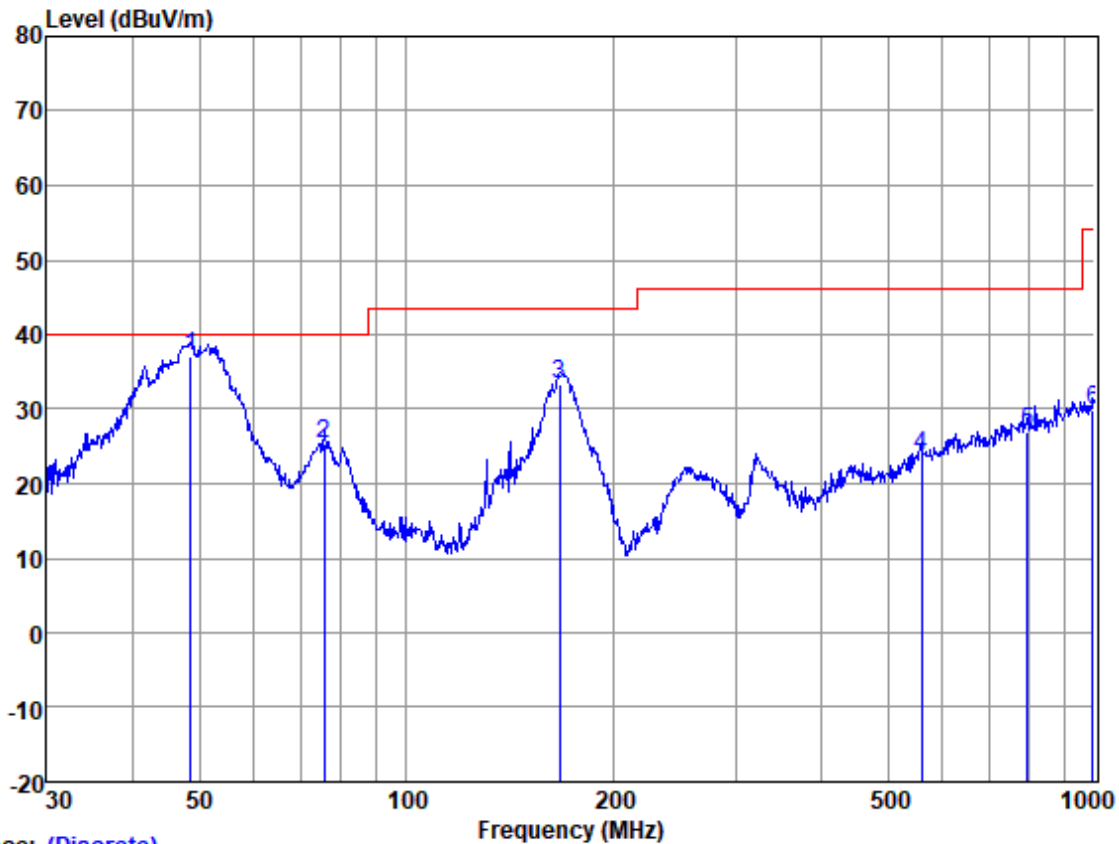
Site : SGS  
Job :  
Model :  
Power :  
Test Mode :

|   | Freq   | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Measured Level | Limit Line | Over Limit | Pol/Phase  | Remark |
|---|--------|------------|----------------|------------|---------------|----------------|------------|------------|------------|--------|
|   | MHz    | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dBuV       |            |        |
| 1 | 47.99  | 30.49      | 14.00          | 1.13       | 27.17         | 18.45          | 40.00      | -21.55     | HORIZONTAL | QP     |
| 2 | 61.56  | 24.30      | 13.15          | 1.28       | 27.15         | 11.58          | 40.00      | -28.42     | HORIZONTAL | QP     |
| 3 | 169.01 | 35.02      | 13.20          | 2.39       | 26.77         | 23.84          | 43.50      | -19.66     | HORIZONTAL | QP     |
| 4 | 324.46 | 37.90      | 14.40          | 3.35       | 26.69         | 28.96          | 46.00      | -17.04     | HORIZONTAL | QP     |
| 5 | 768.75 | 27.10      | 22.20          | 6.05       | 28.06         | 27.29          | 46.00      | -18.71     | HORIZONTAL | QP     |
| 6 | 952.09 | 27.48      | 23.90          | 7.18       | 27.74         | 30.82          | 46.00      | -15.18     | HORIZONTAL | QP     |



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Test Mode: 00; Polarity: Vertical



Trace: (Discrete)

Site : SGS  
Job :  
Model :  
Power :  
Test Mode :

|   | Freq   | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Measured Level | Limit Line | Over Limit | Pol/Phase | Remark |
|---|--------|------------|----------------|------------|---------------|----------------|------------|------------|-----------|--------|
|   | MHz    | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dBuV       |           |        |
| 1 | 48.50  | 49.19      | 13.98          | 1.14       | 27.17         | 37.14          | 40.00      | -2.86      | VERTICAL  | QP     |
| 2 | 75.98  | 40.71      | 10.30          | 1.45       | 27.10         | 25.36          | 40.00      | -14.64     | VERTICAL  | QP     |
| 3 | 166.65 | 44.25      | 13.37          | 2.38       | 26.78         | 33.22          | 43.50      | -10.28     | VERTICAL  | QP     |
| 4 | 558.73 | 28.28      | 18.78          | 4.88       | 28.13         | 23.81          | 46.00      | -22.19     | VERTICAL  | QP     |
| 5 | 796.18 | 26.30      | 22.57          | 6.14       | 28.03         | 26.98          | 46.00      | -19.02     | VERTICAL  | QP     |
| 6 | 993.01 | 25.81      | 24.23          | 7.37       | 27.67         | 29.74          | 54.00      | -24.26     | VERTICAL  | QP     |



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**7.4 Radiated Emissions (9kHz-30MHz)**

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209  
 Test Method: ANSI C63.10 (2013) Section 6.4  
 Measurement Distance: 3m  
 Limit:

| Frequency(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                           |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than  $\lambda/2\pi$  and the limit distance is greater than  $\lambda/2\pi$ , the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the  $\lambda/2\pi$  distance, and at a 20 dB/decade of distance rate beyond  $\lambda/2\pi$ . This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near\ field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near\ field)}\} \quad (2)$$

If the single point measured is at a distance greater than  $\lambda/2\pi$ , then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\} \quad (3)$$

If both the single point and the limit distance are equal to or closer to the EUT than  $\lambda/2\pi$ , then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\} \quad (4)$$

Remark:

$$d_{near\ field} = 47.77 / f_{MHz}$$

where  $f_{MHz}$  is the frequency of the emission being measured in MHz.

**7.4.1 E.U.T. Operation**

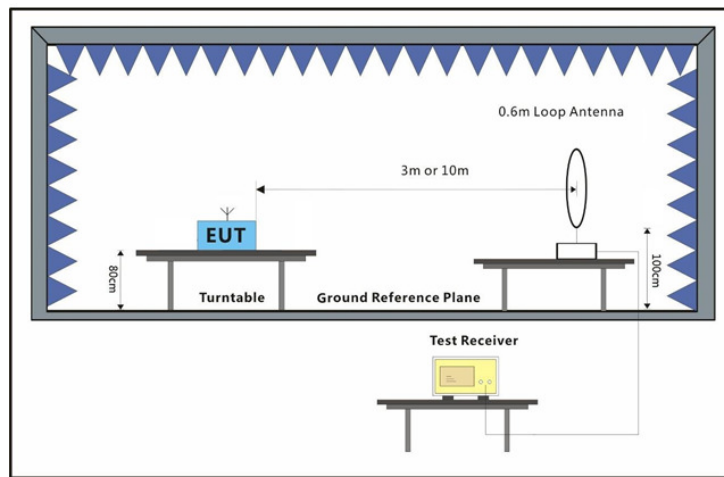
Operating Environment:

Temperature: 23.5 °C Humidity: 56.5 % RH Atmospheric Pressure: 1003 mbar

**7.4.2 Test Mode Description**

| Pre-scan /<br>Final test | Mode<br>Code | Description   |
|--------------------------|--------------|---|
| Final test               | 00           | Charge & Discharge mode_Keep the battery of the EUT charging and keep the EUT wireless charging(5W) |
| Pre-scan                 | 01           | Discharge mode_Keep the EUT wireless charging(5W)   |

**7.4.3 Test Setup Diagram**



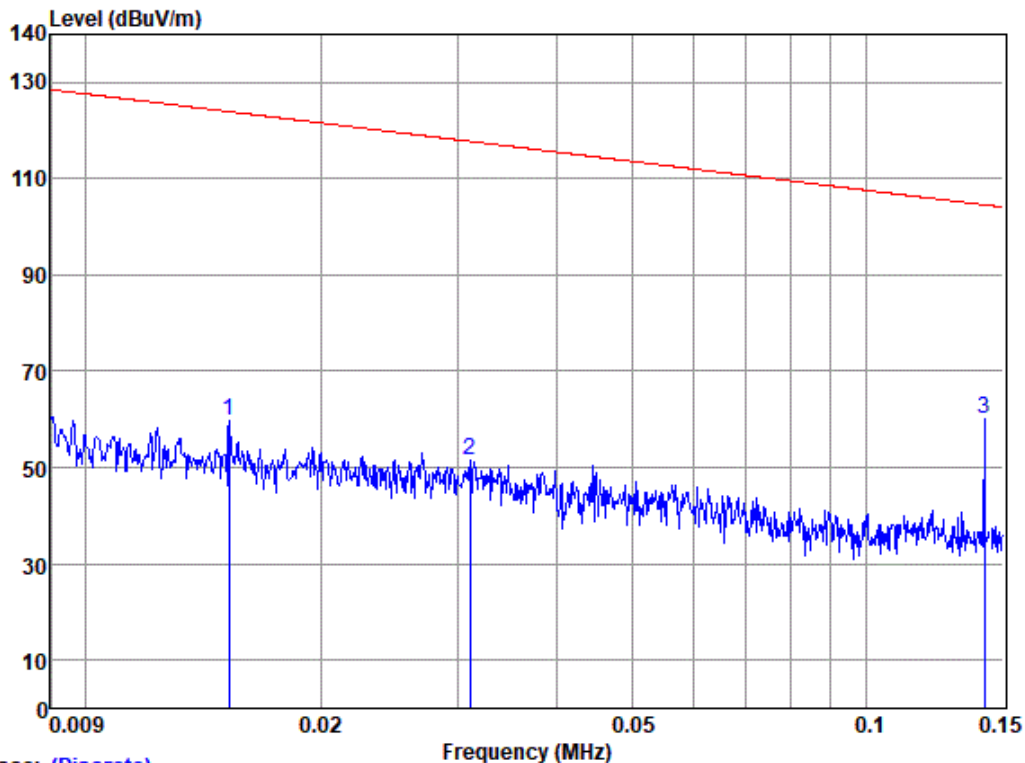
**7.4.4 Measurement Procedure and Data**

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

**Remark: the test was conducted in all polarities, and the worst case of Coplanar was reported only.**



Test Mode: 00; Polarity: Coplanar



Trace: (Discrete)

Site : SGS  
Job :  
Model :  
Power :  
Test Mode :

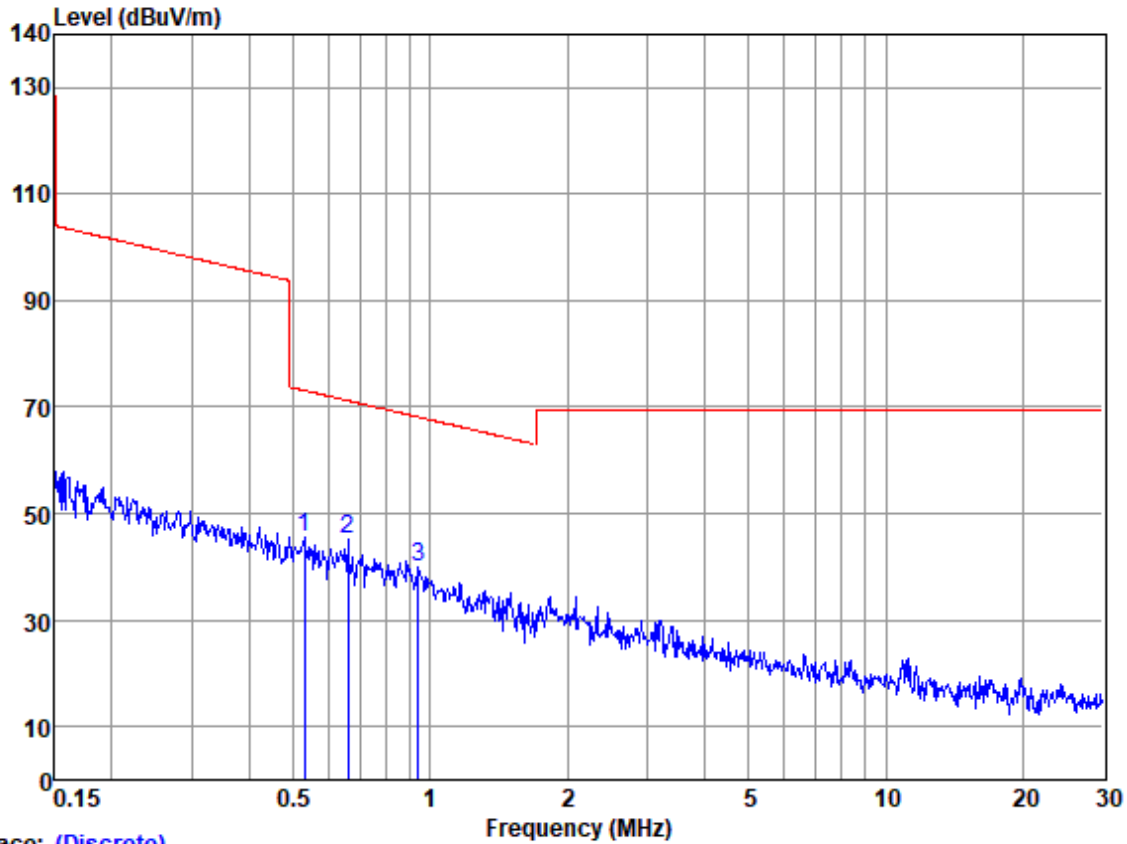
|   | Freq  | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Measured Level | Limit Line | Over Limit | Pol/Phase  | Remark  |
|---|-------|------------|----------------|------------|---------------|----------------|------------|------------|------------|---------|
|   | MHz   | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dBuV       |            |         |
| 1 | 0.015 | 74.10      | 13.85          | 0.05       | 28.28         | 59.72          | 123.95     | -64.23     | HORIZONTAL | Average |
| 2 | 0.031 | 67.87      | 12.48          | 0.05       | 28.91         | 51.49          | 117.77     | -66.28     | HORIZONTAL | Average |
| 3 | 0.114 | 79.26      | 10.41          | 0.05       | 29.47         | 60.25          | 107.26     | -47.01     | HORIZONTAL | Average |



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Test Mode: 00; Polarity: Coplanar



Trace: (Discrete)

Site : SGS  
 Job :  
 Model :  
 Power :  
 Test Mode :

|   | Freq  | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Measured Level | Limit Line | Over Limit | Pol/Phase  | Remark |
|---|-------|------------|----------------|------------|---------------|----------------|------------|------------|------------|--------|
|   | MHz   | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dBuV       |            |        |
| 1 | 0.529 | 64.20      | 10.69          | 0.08       | 29.42         | 45.55          | 73.13      | -27.58     | HORIZONTAL | QP     |
| 2 | 0.661 | 63.93      | 10.60          | 0.11       | 29.42         | 45.22          | 71.20      | -25.98     | HORIZONTAL | QP     |
| 3 | 0.943 | 59.00      | 10.41          | 0.13       | 29.41         | 40.13          | 68.11      | -27.98     | HORIZONTAL | QP     |



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**7.5 Restricted band**

Test Requirement 47 CFR Part 15, Subpart C 15.205  
 Test Method: ANSI C63.10 (2013) Section 6.10.5  
 Limit:

The fundamental wave can't fall in the restricted band 90KHz-110KHz

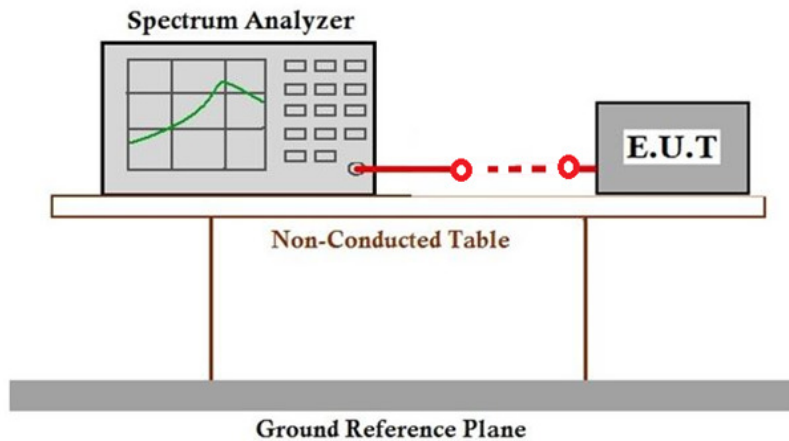
**7.5.1 E.U.T. Operation**

Operating Environment:  
 Temperature: 23.2 °C Humidity: 56.8 % RH Atmospheric Pressure: 1003 mbar

**7.5.2 Test Mode Description**

| Pre-scan / Final test | Mode Code | Description   |
|-----------------------|-----------|---|
| Final test            | 00        | Charge & Discharge mode_Keep the battery of the EUT charging and keep the EUT wireless charging(5W) |
| Pre-scan              | 01        | Discharge mode_Keep the EUT wireless charging(5W)   |

**7.5.3 Test Setup Diagram**



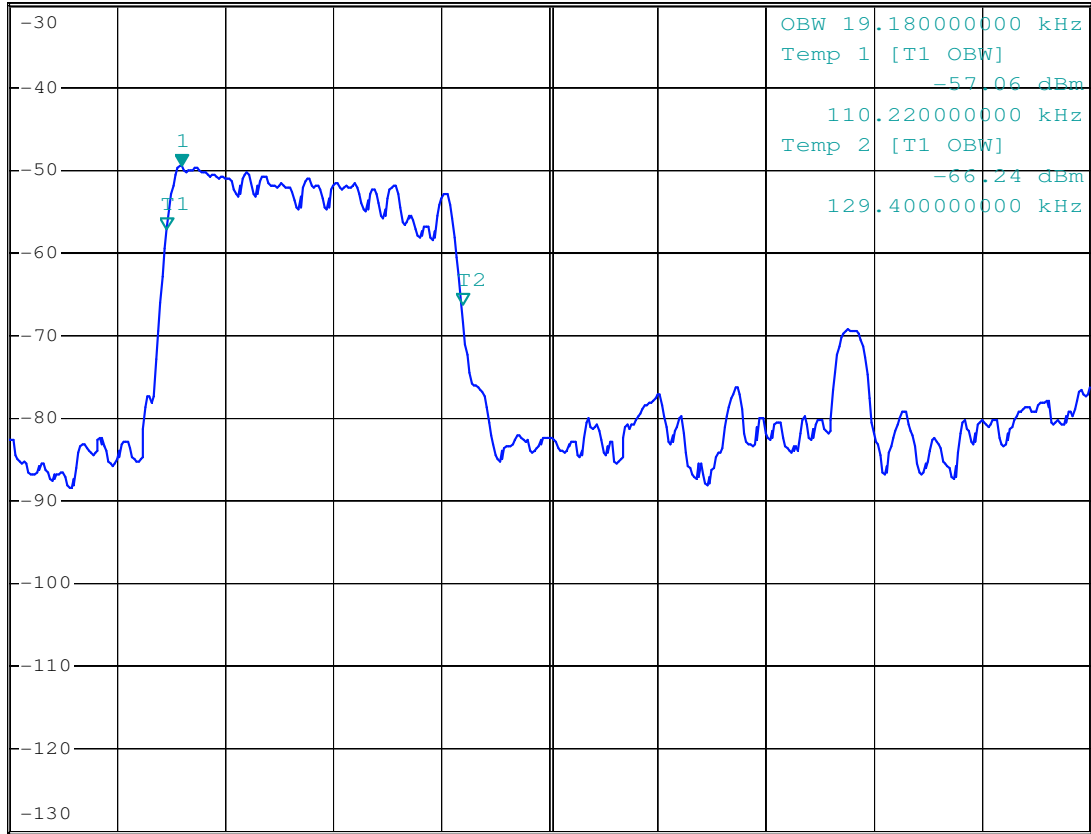
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### 7.5.4 Measurement Procedure and Data



\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 3 kHz      -49.54 dBm  
 Ref -30 dBm      Att 10 dB      SWT 70 ms      111.20000000 kHz

1 PK  
VIEW



Center 135 kHz      7 kHz/      Span 70 kHz



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## 8 Test Setup Photo

Refer to Appendix – Setup Photos for GZCR2112021553AT

## 9 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for GZCR2112021553AT

- End of the Report -

