

TEST REPORT

Applicant: Solcharge
Address of Applicant: Hertzog 7, Rosh Haain 4813953, Israel
Manufacturer: Solcharge
Address of Manufacturer: Hertzog 7, Rosh Haain 4813953, Israel
Equipment Under Test (EUT)
Product Name: Solcharge
Model No.: Solcharge
Trade Mark: Solcharge
FCC ID: 2A7UM-SOL2022
Applicable standards: FCC CFR Title 47 Part 15 Subpart C
Date of sample receipt: August 08, 2022
Date of Test: August 09, 2022-September 07, 2022
Date of report issued: September 07, 2022
Test Result : PASS *

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

Authorized Signature:



Robinson Luo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

| Version No. | Date | Description |
|-------------|--------------------|-------------|
| 00 | September 07, 2022 | Original |
| | | |
| | | |
| | | |
| | | |

Prepared By: Tiger Chen **Date:** September 07, 2022
Project Engineer

Check By: Robinson Lee **Date:** September 07, 2022
Reviewer

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4 Test Summary

| Test Item | Section in CFR 47 | Result |
|----------------------------------|-------------------|--------|
| Antenna requirement | 15.203 | Pass |
| AC Power Line Conducted Emission | 15.207 | Pass |
| Radiated Emission | 15.209 | Pass |
| 20dB Bandwidth | 15.215 | Pass |

Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

| Test Item | Frequency Range | Measurement Uncertainty | Notes |
|----------------------------------|-----------------|-------------------------|-------|
| Radiated Emission | 30MHz-200MHz | 3.8039dB | (1) |
| Radiated Emission | 200MHz-1GHz | 3.9679dB | (1) |
| AC Power Line Conducted Emission | 0.15MHz ~ 30MHz | 3.44dB | (1) |

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

| | |
|----------------------|---|
| Product Name: | Solcharge |
| Model No.: | Solcharge |
| S/N: | N/A |
| Test sample(s) ID: | GTS202208000080-1 |
| Sample(s) Status | Engineer sample |
| Operation Frequency: | 112kHz~205kHz |
| Modulation type: | FSK |
| Antenna Type: | Coil Antenna |
| Power supply: | Output: 5W max(wireless) Input: DC 5V or DC 3.7V battery |

5.2 Test mode

| | |
|------------------------|--|
| Wireless charging mode | Keep the EUT in wireless charging status. Wireless output 10W mode is worse case and reported. |
|------------------------|--|

5.3 Description of Support Units

| Manufacturer | Description | Model | S/N |
|--------------|---|-----------|-----|
| YBZ | Intelligent wireless charging full function test module | 001 | N/A |
| XIAOMI | USB Charger | MDY-10-EH | N/A |

5.4 Deviation from Standards

| |
|-------|
| None. |
|-------|

5.5 Abnormalities from Standard Conditions

| |
|-------|
| None. |
|-------|

5.6 Test Facility

| |
|--|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC—Registration No.: 381383 Designation Number: CN5029 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. ● IC —Registration No.: 9079A CAB identifier: CN0091 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing ● NVLAP (LAB CODE:600179-0) Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). |
|--|

5.7 Test Location

| |
|--|
| All tests were performed at: |
| <p>Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960</p> |

5.8 Other Information Requested by the Customer

| |
|-------|
| None. |
|-------|

6 Test Instruments list

| Radiated Emission: | | | | | | |
|--------------------|-------------------------------------|--------------------------------|-----------------------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | July 02, 2020 | July 01, 2025 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | April 22, 2022 | April 21, 2023 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9168 | GTS640 | March 21, 2022 | March 20, 2023 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120 D | GTS208 | June 12, 2022 | June 11, 2023 |
| 6 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | June 23, 2022 | June 22, 2023 |
| 7 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 8 | Coaxial Cable | GTS | N/A | GTS213 | April 22, 2022 | April 21, 2023 |
| 9 | Coaxial Cable | GTS | N/A | GTS211 | April 22, 2022 | April 21, 2023 |
| 10 | Coaxial cable | GTS | N/A | GTS210 | April 22, 2022 | April 21, 2023 |
| 11 | Coaxial Cable | GTS | N/A | GTS212 | April 22, 2022 | April 21, 2023 |
| 12 | Amplifier(100kHz-3GHz) | HP | 8347A | GTS204 | April 22, 2022 | April 21, 2023 |
| 13 | Amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | June 23, 2022 | June 22, 2023 |
| 14 | Band filter | Amindeon | 82346 | GTS219 | June 23, 2022 | June 22, 2023 |
| 15 | Power Meter | Anritsu | ML2495A | GTS540 | June 23, 2022 | June 22, 2023 |
| 16 | Power Sensor | Anritsu | MA2411B | GTS541 | June 23, 2022 | June 22, 2023 |
| 17 | Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | GTS575 | April 22, 2022 | April 21, 2023 |
| 18 | Splitter | Agilent | 11636B | GTS237 | June 23, 2022 | June 22, 2023 |
| 19 | Loop Antenna | ZHINAN | ZN30900A | GTS534 | Nov. 30, 2021 | Nov. 29, 2022 |
| 20 | Broadband Preamplifier | SCHWARZBECK | BBV9718 | GTS535 | April 22, 2022 | April 21, 2023 |
| 21 | Breitband hornantenna | SCHWARZBECK | BBHA 9170 | GTS579 | Oct. 17, 2021 | Oct. 16, 2022 |
| 22 | Amplifier | TDK | PA-02-02 | GTS574 | Oct. 17, 2021 | Oct. 16, 2022 |
| 23 | Amplifier | TDK | PA-02-03 | GTS576 | Oct. 17, 2021 | Oct. 16, 2022 |
| 24 | PSA Series Spectrum Analyzer | Rohde & Schwarz | FSP | GTS578 | June 23, 2022 | June 22, 2023 |
| 25 | Amplifier(1GHz-26.5GHz) | HP | 8449B | GTS601 | April 22, 2022 | April 21, 2023 |

| Conducted Emission | | | | | | |
|--------------------|---------------------------|-------------------------|----------------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | Shielding Room | ZhongYu Electron | 7.3(L)x3.1(W)x2.9(H) | GTS252 | May 14, 2022 | May 13, 2025 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | April 24, 2022 | April 23, 2023 |
| 3 | Coaxial Switch | ANRITSU CORP | MP59B | GTS225 | June 23, 2022 | June 22, 2023 |
| 4 | ENV216 2-L-V-NETZNACHB.DE | ROHDE&SCHWARZ | ENV216 | GTS226 | April 22, 2022 | April 21, 2023 |
| 5 | Coaxial Cable | GTS | N/A | GTS227 | N/A | N/A |
| 6 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 7 | Thermo meter | JINCHUANG | GSP-8A | GTS639 | April 28, 2022 | April 27, 2023 |
| 8 | Absorbing clamp | Elektronik-Feinmechanik | MDS21 | GTS229 | April 15, 2022 | April 14, 2023 |
| 9 | ISN | SCHWARZBECK | NTFM 8158 | GTS565 | April 22, 2022 | April 21, 2023 |
| 10 | High voltage probe | SCHWARZBECK | TK9420 | GTS537 | April 22, 2022 | April 21, 2023 |

| RF Conducted Test: | | | | | | |
|--------------------|--|--------------|------------------|------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | MXA Signal Analyzer | Agilent | N9020A | GTS566 | April 22, 2022 | April 21, 2023 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | April 22, 2022 | April 21, 2023 |
| 3 | Spectrum Analyzer | Agilent | E4440A | GTS536 | April 22, 2022 | April 21, 2023 |
| 4 | MXG vector Signal Generator | Agilent | N5182A | GTS567 | April 22, 2022 | April 21, 2023 |
| 5 | ESG Analog Signal Generator | Agilent | E4428C | GTS568 | April 22, 2022 | April 21, 2023 |
| 6 | USB RF Power Sensor | DARE | RPR3006W | GTS569 | April 22, 2022 | April 21, 2023 |
| 7 | RF Switch Box | Shongyi | RFSW3003328 | GTS571 | April 22, 2022 | April 21, 2023 |
| 8 | Programmable Constant Temp & Humi Test Chamber | WEWON | WHTH-150L-40-880 | GTS572 | April 22, 2022 | April 21, 2023 |

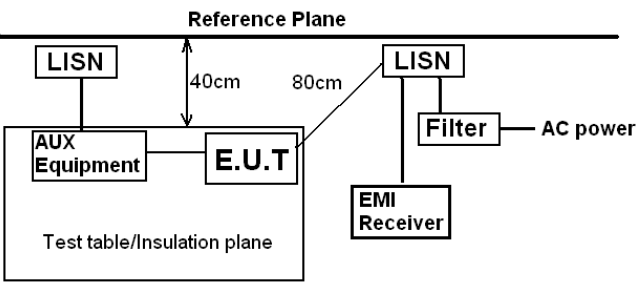
| General used equipment: | | | | | | |
|-------------------------|---------------------------------|--------------|-----------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | Humidity/ Temperature Indicator | KTJ | TA328 | GTS243 | April 25, 2022 | April 24, 2023 |
| 2 | Barometer | KUMAO | SF132 | GTS647 | July 26, 2022 | July 25, 2023 |

7 Test results and Measurement Data

7.1 Antenna requirement:

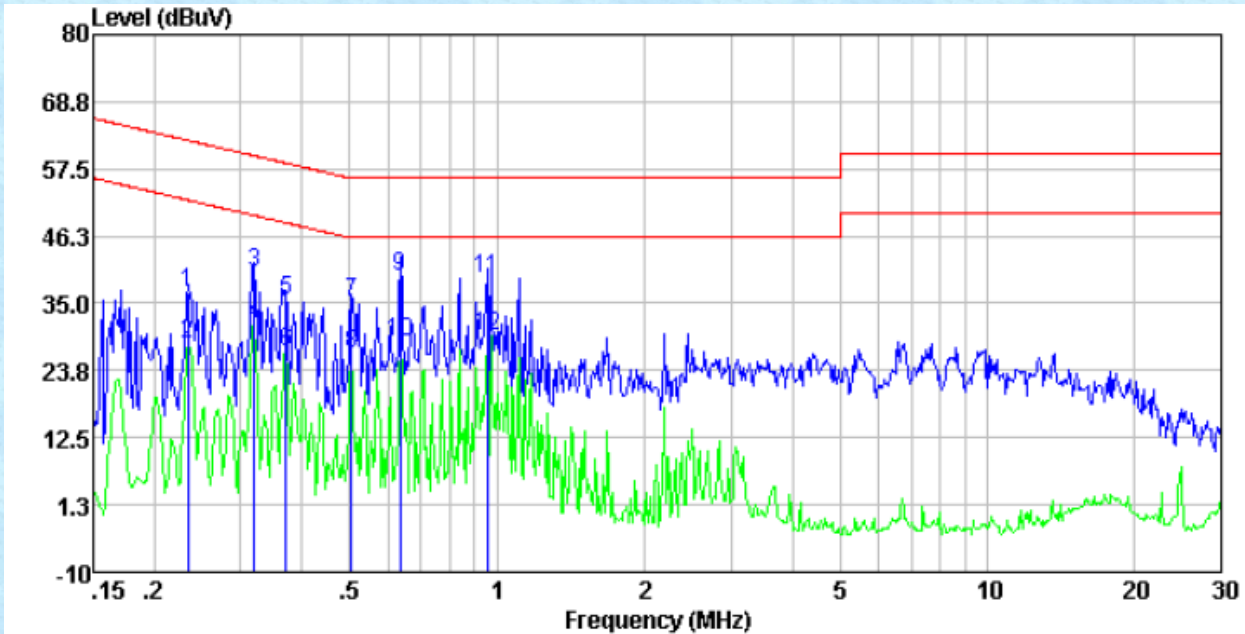
| | |
|--|-----------------------------|
| Standard requirement: | FCC Part15 C Section 15.203 |
| 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached 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. | |
| EUT Antenna: | |
| The ant is Coil Antenna, reference to the appendix II for details. | |

7.2 Conducted Emissions

| | | | | | | |
|--|---|-------|--------------|-----|-----------|----------|
| Test Requirement: | FCC Part15 C Section 15.207 | | | | | |
| Test Method: | ANSI C63.10 | | | | | |
| Test Frequency Range: | 150KHz to 30MHz | | | | | |
| Class / Severity: | Class B | | | | | |
| Receiver setup: | RBW=9KHz, VBW=30KHz, Sweep time=auto | | | | | |
| Limit: | Frequency range (MHz) | | Limit (dBuV) | | | |
| | | | 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. | | | | | | |
| Test setup: |  <p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p> | | | | | |
| Test procedure: | <ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. 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. | | | | | |
| Test Instruments: | Refer to section 6.0 for details | | | | | |
| Test mode: | Refer to section 5.2 for details. Only show the worst cas (Charging with 5W wireless charging load). | | | | | |
| Test environment: | Temp.: | 25 °C | Humid.: | 52% | Press.: | 1012mbar |
| Test voltage: | AC 120V, 60Hz | | | | | |
| Test results: | Pass | | | | | |

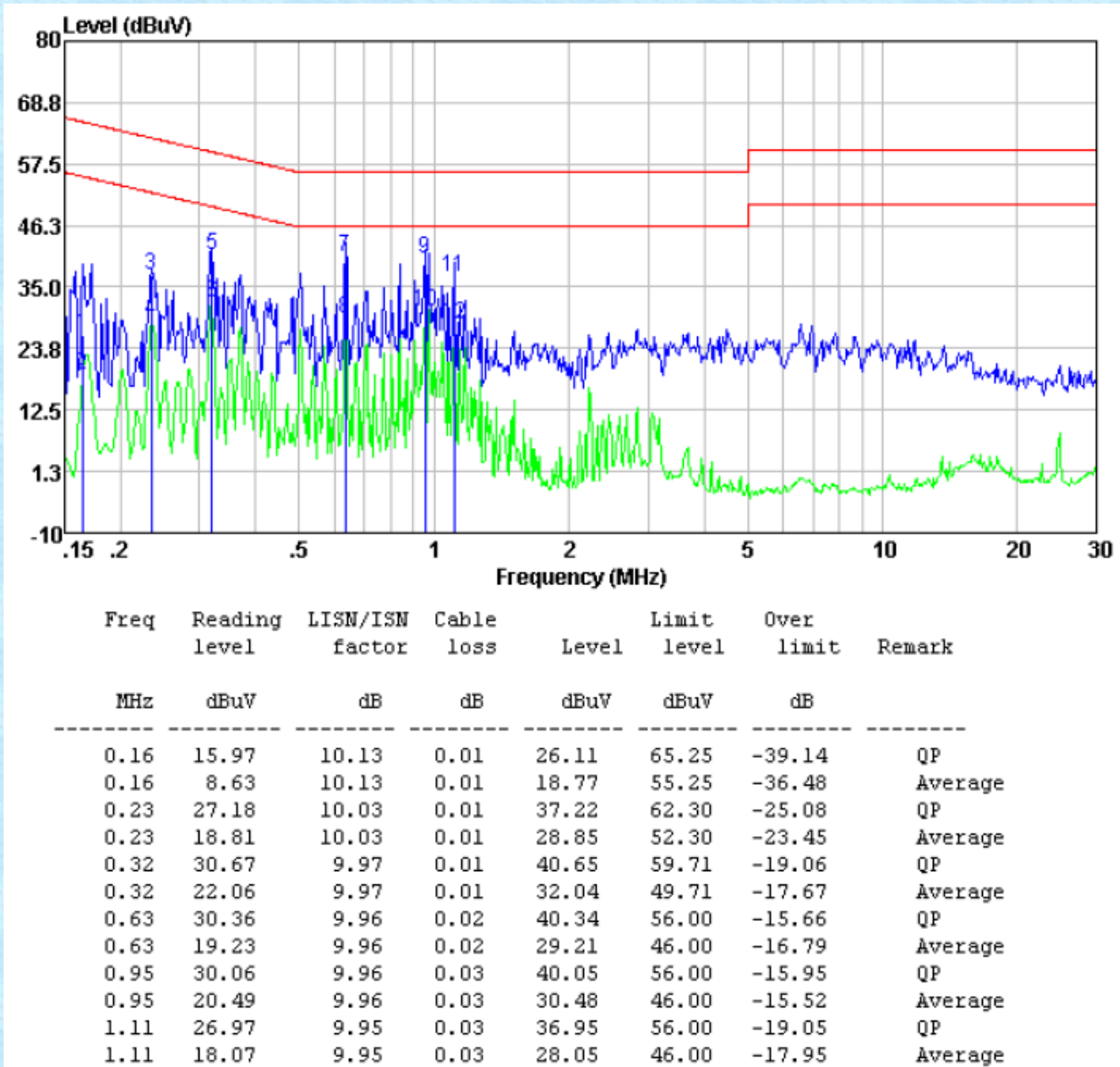
Measurement data:

Line:



| Freq | Reading level | LISN/ISN factor | Cable loss | Level | Limit level | Over limit | Remark |
|------|---------------|-----------------|------------|-------|-------------|------------|---------|
| MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 0.23 | 26.77 | 10.02 | 0.01 | 36.80 | 62.30 | -25.50 | QP |
| 0.23 | 18.24 | 10.02 | 0.01 | 28.27 | 52.30 | -24.03 | Average |
| 0.32 | 30.16 | 9.98 | 0.01 | 40.15 | 59.71 | -19.56 | QP |
| 0.32 | 21.47 | 9.98 | 0.01 | 31.46 | 49.71 | -18.25 | Average |
| 0.37 | 25.38 | 9.97 | 0.01 | 35.36 | 58.47 | -23.11 | QP |
| 0.37 | 16.81 | 9.97 | 0.01 | 26.79 | 48.47 | -21.68 | Average |
| 0.50 | 25.24 | 9.96 | 0.01 | 35.21 | 56.00 | -20.79 | QP |
| 0.50 | 16.71 | 9.96 | 0.01 | 26.68 | 46.00 | -19.32 | Average |
| 0.63 | 29.50 | 9.96 | 0.02 | 39.48 | 56.00 | -16.52 | QP |
| 0.63 | 18.41 | 9.96 | 0.02 | 28.39 | 46.00 | -17.61 | Average |
| 0.95 | 29.24 | 9.96 | 0.03 | 39.23 | 56.00 | -16.77 | QP |
| 0.95 | 19.66 | 9.96 | 0.03 | 29.65 | 46.00 | -16.35 | Average |

Neutral:

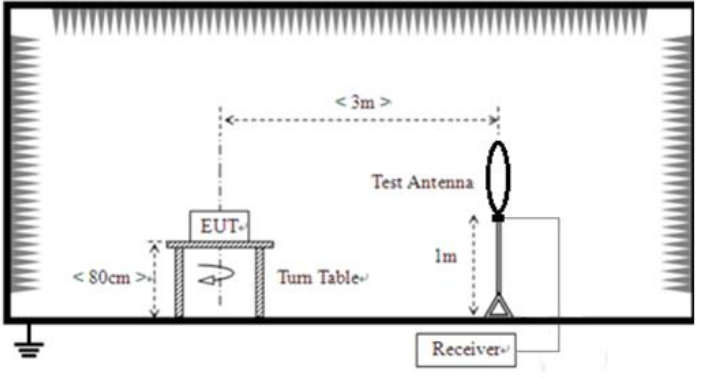
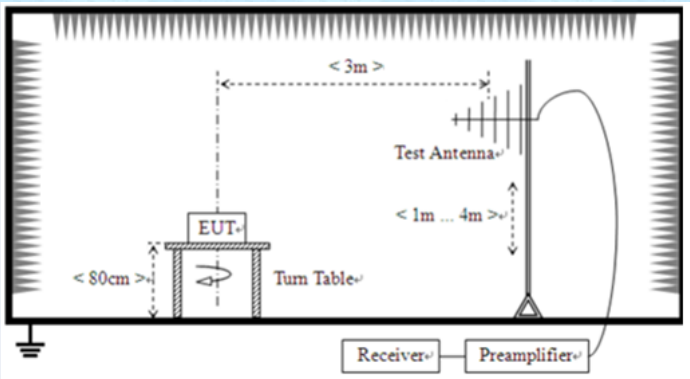


Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

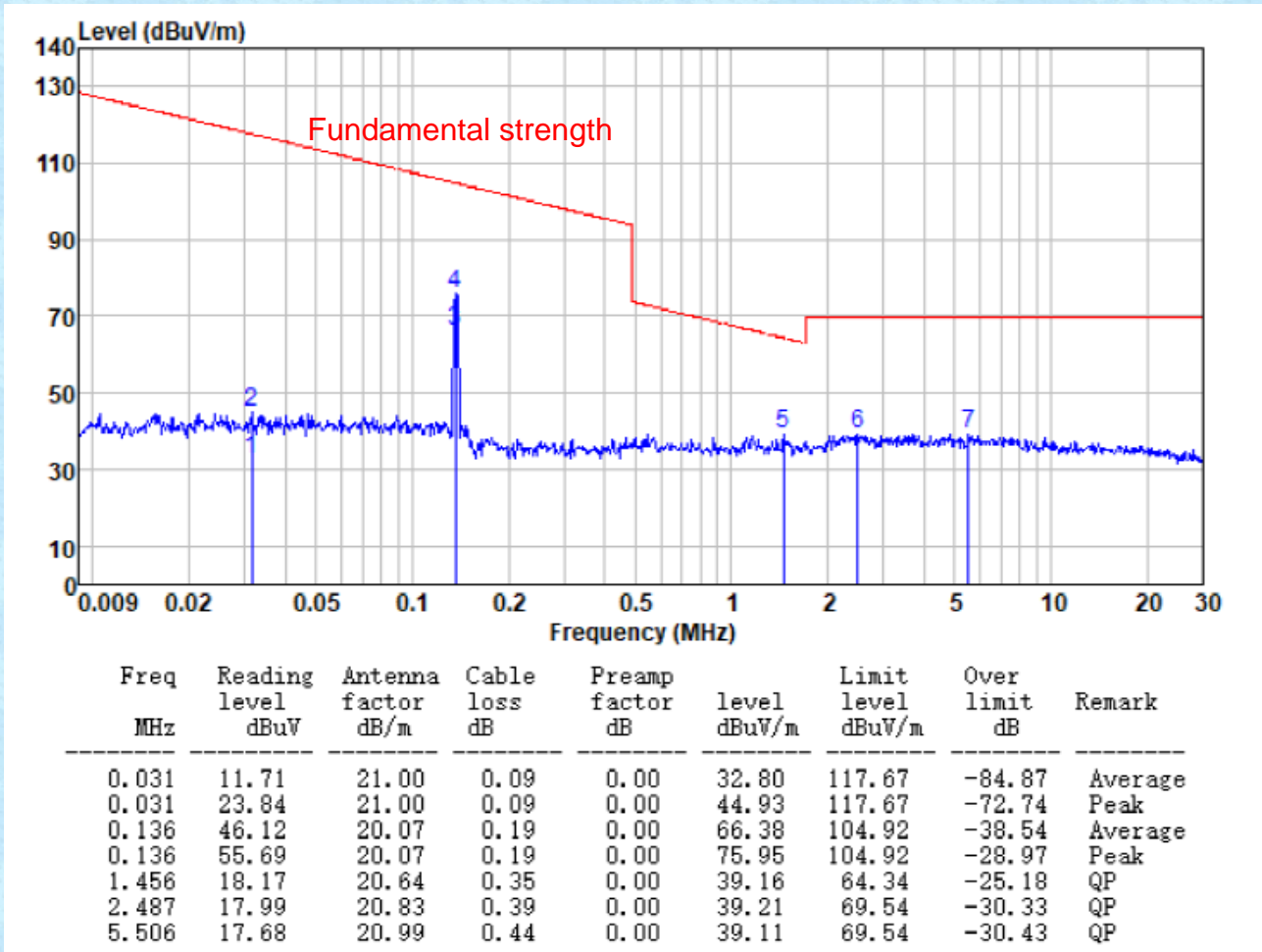
7.3 Radiated Emission Method

| | | | | | |
|--|---|--------------------|-------------------------|------------------|------------------|
| Test Requirement: | FCC Part15 C Section 15.209 | | | | |
| Test Method: | ANSI C63.10 | | | | |
| Test Frequency Range: | 9kHz to 1GHz | | | | |
| Test site: | Measurement Distance: 3m | | | | |
| Receiver setup: | Frequency | Detector | RBW | VBW | Remark |
| | 9kHz - 30MHz | Quasi-peak | 10kHz | 30kHz | Quasi-peak Value |
| | 30MHz-1GHz | Quasi-peak | 120kHz | 300kHz | Quasi-peak Value |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | | AV | 1MHz | 10Hz | Average Value |
| Remark: For the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission test in these three bands are based on measurements employing an average detector. | | | | | |
| Limit: (Spurious Emissions) | Limits for frequency below 30MHz | | | | |
| | Frequency | Limit (uV/m) | Measurement Distance(m) | Remark | |
| | 0.009-0.490 | 2400/F(kHz) | 300 | Quasi-peak Value | |
| | 0.490-1.705 | 24000/F(kHz) | 30 | Quasi-peak Value | |
| | 1.705-30 | 30 | 30 | Quasi-peak Value | |
| | Limits for frequency Above 30MHz | | | | |
| | Frequency | Limit (dBuV/m @3m) | Remark | | |
| | 30MHz-88MHz | 40.00 | Quasi-peak Value | | |
| | 88MHz-216MHz | 43.50 | Quasi-peak Value | | |
| | 216MHz-960MHz | 46.00 | Quasi-peak Value | | |
| 960MHz-1GHz | 54.00 | Quasi-peak Value | | | |
| Above 1GHz | 54.00 | Average Value | | | |
| | 74.00 | Peak Value | | | |
| Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. | | | | | |
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the | | | | |

| | | | | | | | |
|--------------------------|--|---------|-------|---------|----------|---------|----------|
| | <p>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.</p> <p>7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</p> | | | | | | |
| <p>Test setup:</p> | <p>Below 30MHz</p>  <p>30MHz ~ 1000MHz</p>  | | | | | | |
| <p>Test Instruments:</p> | <p>Refer to section 6.0 for details</p> | | | | | | |
| <p>Test mode:</p> | <p>Refer to section 5.2 for details. Only show the worst cas (Charging with 5W wireless charging load).</p> | | | | | | |
| <p>Test environment:</p> | <table border="1"> <tr> <td>Temp.:</td> <td>25 °C</td> <td>Humid.:</td> <td>52%</td> <td>Press.:</td> <td>1012mbar</td> </tr> </table> | Temp.: | 25 °C | Humid.: | 52% | Press.: | 1012mbar |
| Temp.: | 25 °C | Humid.: | 52% | Press.: | 1012mbar | | |
| <p>Test voltage:</p> | <p>AC 120V, 60Hz</p> | | | | | | |
| <p>Test results:</p> | <p>Pass</p> | | | | | | |

Measurement data:

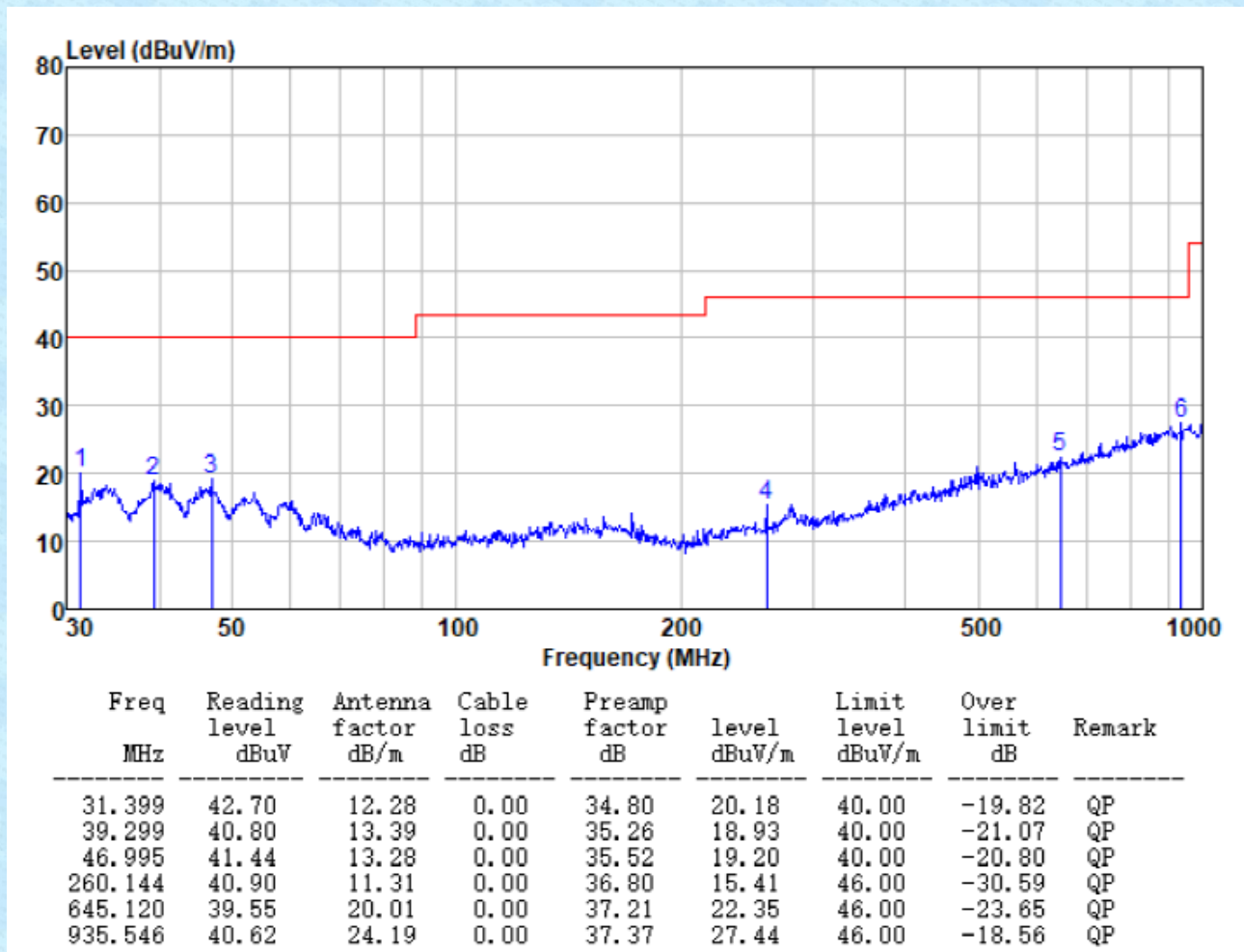
Below 30MHz



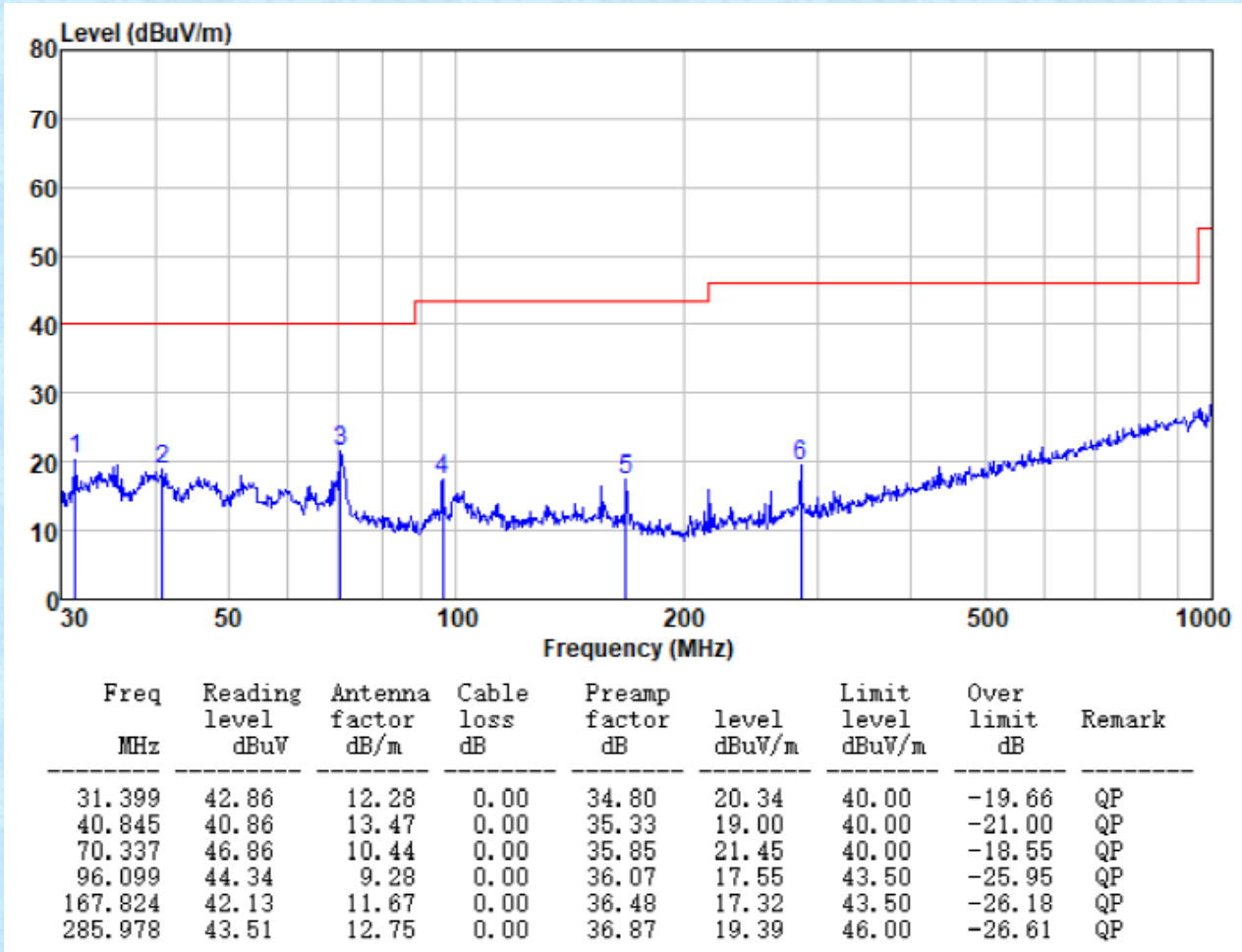
Note: Coplaner and Coaxial polarity all have been tested , only worse case is reported .

30MHz ~ 1GHz

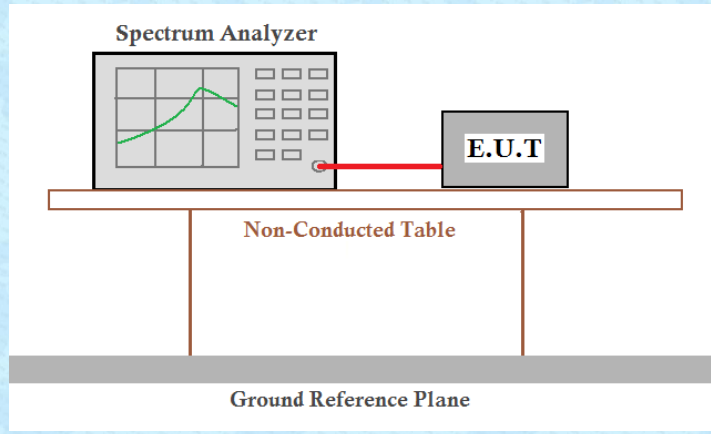
Horizontal



Vertical



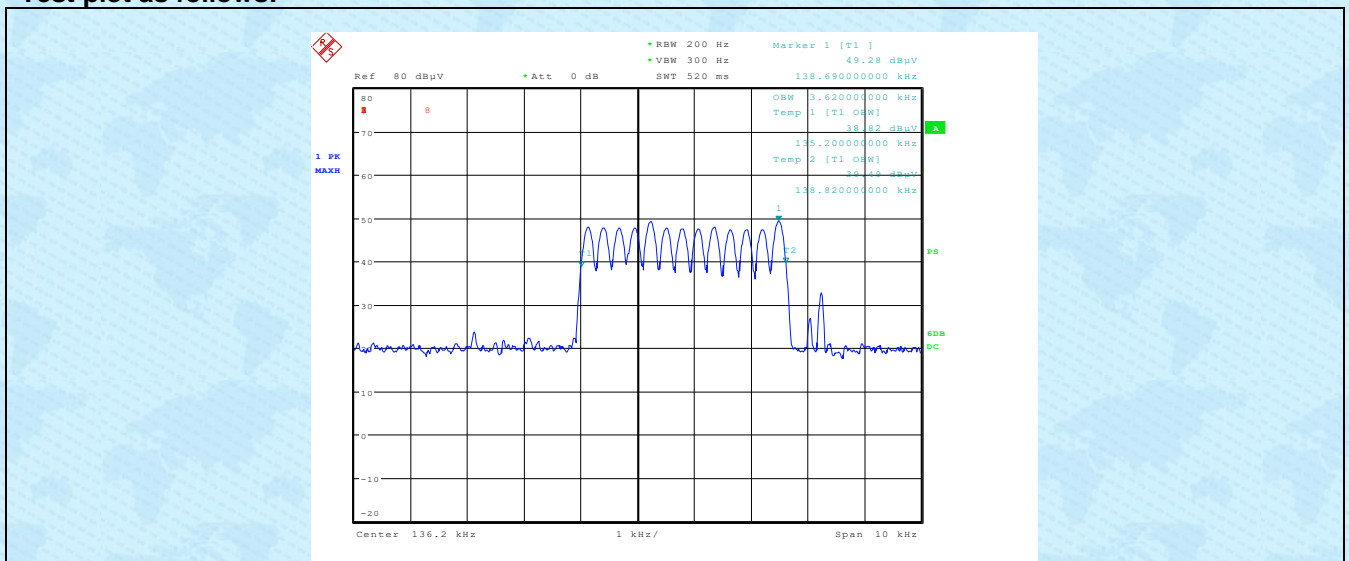
7.4 20dB Occupy Bandwidth

| | |
|-------------------|--|
| Test Requirement: | FCC Part15 C Section 15.215 |
| Test Method: | ANSI C63.10 |
| Test setup: |  |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.2 for details |
| Test results: | Pass |

Measurement Data

| Test frequency(kHz) | 20dB bandwidth(kHz) | Result |
|---------------------|---------------------|--------|
| 136.2 | 3.62 | Pass |

Test plot as follows:



8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----