# EMC Test Report

| | | |
|---|---|---|
| Client Name | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Address | : | No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province |
| Product Name | : | Electric Scooter |
| Date | : | Sept. 26, 2021 |

**Anbotek (Guangzhou) Compliance Laboratory Limited**


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# TEST REPORT

| | | |
|---|---|---|
| Applicant | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Manufacturer | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Product Name | : | Electric Scooter |
| Model No. | : | U2, U3, U5 |
| Trade Mark | : | UKAYE |
| Rating(s) | : | Input: 42V⎓, 2A<br>Battery: 36V⎓, 7500mAh, 270Wh |
| **Test Standard(s)** | : | **EN 17128:2020;**<br>**(EN IEC 61000-3-2; EN 61000-3-3; EN 55014-1; EN 55014-2; EN IEC 55012; IEC 61000-4-2; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-11)** |

The device described above is tested by Anbotek (Guangzhou) Compliance Laboratory Limited To determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. This report shows the EUT to be technically compliant with the EN 17128 EMC requirements. The test results are contained in this report and Anbotek (Guangzhou) Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these tests.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Anbotek (Guangzhou) Compliance Laboratory Limited

Date of Receipt: Aug. 18, 2021

Date of Test: Aug. 19 ~ Aug. 24, 2021

Prepared By: Jet Zhao

(Jet Zhao)

Approved & Authorized Signer: Stephen Liu

(Stephen Liu)



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# 1. General Information

## 1.1. Client Information

| | | |
|---|---|---|
| Applicant | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Address | : | No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province |
| Manufacturer | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Address | : | No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province |
| Factory | : | ZHEJIANG YOUQI TECHNOLOGY CO., LTD. |
| Address | : | No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province |

## 1.2. Description of Device (EUT)

| | | | |
|---|---|---|---|
| Product Name | : | Electric Scooter | |
| Model No. | : | U2, U3, U5<br>(Note: All samples are the same except the model number and appearance, so we prepare “U2” for test only.) | |
| Trade Mark | : | UKAYE | |
| Test Power Supply | : | AC 230V, 50Hz / DC 36V | |
| Test Sample No. | : | 1-3-1 | |
| Product Description | : | Adapter: | Model: XVE-4200200<br>Input: 100-240VAC, 50/60Hz, 2.0A Max<br>Output: 42.0V⎓, 2.0A, 84W |
| **Remark:** (1) For a more detailed features description, please refer to the manufacturer’s specifications or the User’s Manual. | | | |

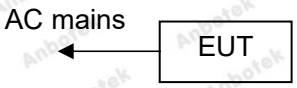
## 1.3. Auxiliary Equipment Used During Test

| | | |
|---|---|---|
| N/A | | |

## 1.4. Description of Test Modes

| Pretest Modes | Descriptions |
|---|---|
| Mode 1 | Charging mode |
| Mode 2 | Riding mode |

For Mode 1 Block Diagram of Test Setup




For Mode 2 Block Diagram of Test Setup

## 1.5. Test Summary

| Test Items | Test Modes | Status |
|---|---|---|
| **Battery charger** | | |
| Power Line Conducted Emission Test (150kHz To 30MHz) | Mode 1 | P |
| Radiated Emission Test (30MHz To 1000MHz) | Mode 1 | P |
| Harmonic Current Test | Mode 1 | P |
| Voltage Fluctuations and Flicker Test | Mode 1 | P |
| Electrostatic Discharge immunity Test | Mode 1 | P |
| RF Field Strength susceptibility Test | / | N |
| Electrical Fast Transient/Burst Immunity Test | Mode 1 | P |
| Surge Immunity Test | Mode 1 | P |
| Injected Currents Susceptibility Test | Mode 1 | P |
| Voltage Dips and Interruptions Test | Mode 1 | P |
| **Electric vehicle** | | |
| Radiated Emissions (30MHz-1GHz) | Mode 2 | P |
| Electrostatic Discharge | Mode 2 | P |
| Radiated Immunity (20MHz-2000MHz) | Mode 2 | P |
| Note:<br>1. Vehicle category: Class 2<br>2. The letter "P" means "Passed" and "N" means "Not applicable". | | |

## 1.6. Test Equipment List

Conducted Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | EMI Test Receiver | Rohde & Schwarz | ESCI | 100990 | Oct. 26, 2020 | 1 Year |
| 2. | L.I.S.N. Artificial Mains Network | Schwarzbeck | NSLK 8127 | 8127386 | Oct. 26, 2020 | 1 Year |
| 3. | L.I.S.N. Artificial Mains Network | Schwarzbeck | NSLK 8126 | 8126377 | Oct. 26, 2020 | 1 Year |
| 4. | Software Name | Ferrari Technology | EZ-EMC | EMC-CON 3A1.1 | N/A | N/A |

Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | EMI Test Receiver | Rohde & Schwarz | ESPI | 101604 | Oct. 26, 2020 | 1 Year |
| 2. | Pre-amplifier | EMtrace | RP01A | 50017 | Oct. 26, 2020 | 1 Year |
| 3. | Pre-amplifier | CD | PAP-0203 | 22008 | Oct. 26, 2020 | 1 Year |
| 4. | TRILOG Broadband Antenna | Schwarzbeck | VULB 9163 | 01417 | Nov. 02, 2020 | 2 Year |
| 5. | Software Name | Ferrari Technology | EZ-EMC | Anbo-3A1 | N/A | N/A |

Harmonic and Flicker Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Programmable AC Power source | IVYTECH | APS-5005A | 632734 | Oct. 26, 2020 | 1 Year |
| 2. | Harmonic and Flicker Analyzer | EMC-PARTNER | HMONICS 1000-1P | 164 | Oct. 26, 2020 | 1 Year |
| 3. | Harmonics-1000 | N/A | Ed.3.0+4.0 | N.A | N/A | N/A |

Electrostatic Discharge Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | ESD Simulators | 3Ctest | EDS-30T | ES0131505 | Oct. 28, 2020 | 1 Year |

Electrical Fast Transient/Burst Immunity Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1.1 | EFT Burst Simulator | PRIMA | EFT61004B | PR10114282 | Oct. 26, 2020 | 1 Year |
| 1.2 | EFT-Clamp | PRIMA | EFT-Clamp | / | Oct. 26, 2020 | 1 Year |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Surge Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Surge Generator | EMPEK | LSG-5060G | / | Oct. 26, 2020 | 1 Year |
| 2. | CDN | EMPEK | CDN-5110G | 06110005N | Oct. 26, 2020 | 1 Year |

Injected Currents Susceptibility Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | C/S Conducted Immunity Test System | FRANKONIA | CIT-10 | 126A1196/2012 | Oct. 26, 2020 | 1 Year |
| 2. | CDN | FRANKONIA | CDN - M2+ M3 | A2210178/2012 | Oct. 26, 2020 | 1 Year |
| 3. | 6dB Attenuator | FRANKONIA | DAM 26W | 1172202 | Oct. 26, 2020 | 1 Year |
| 4. | CIT-10 | FRANKONIA | Version1.1.7 | N/A | N.A | N/A |
| 5. | EM-Clamp | FRANKONIA | EMCL-20 | 18101728-0103 | May 17, 2021 | 1 Year |

Voltage Dips and Interruptions Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Voltage DIPS and Up Generator | 3ctest | VDG-1105G | EC0171306 | Jul. 05, 2021 | 1 Year |

Radiated Immunity Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | 764 Anechoic Chamber | CRT | N/A | SEM001-12 | 2019-10-10 | 2 Year |
| 2. | Measurement Software | BAT | BAT | N/A | N/A | N/A |
| 3. | Solid State Amplifier | TESEQ | CBA 1G-1200B | SEM005-20 | 2020-11-02 | 1 Year |
| 4. | Solid State Amplifier | TESEQ | CBA 6G-200D | SEM005-21 | 2020-11-02 | 1 Year |
| 5. | USB Power Sensor | Keysight | U2042XA | SEM009-18 | 2020-11-02 | 1 Year |
| 6. | USB Power Sensor | Keysight | U2042XA | SEM009-19 | 2020-11-02 | 1 Year |
| 7. | MXG Analog Signal Generator | Agilent | N5181A | SEM006-16 | 2020-09-24 | 1 Year |
| 8. | Log.-Per. Antenna | Schwarzbeck | STLP 9128 Esp-7/16 | SEM003-29 | N/A | N/A |
| 9. | Broadband Horn Antenna | Schwarzbeck | BBHA 9120J | SEM003-30 | N/A | N/A |


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## 1.7. Description of Test Facility

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

**Test Location**

Anbotek (Guangzhou) Compliance Laboratory Limited.
Room 508, Building 2, No.232, Kezhu Road, Science City, Guangzhou Economic & Technology Development Area, Guangzhou, Guangdong, China.510663

## 1.8. Performance Criteria

**Battery Charger:**

Performance criterion A: The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion B: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after the test. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion C: Temporary loss of function is allowed, provided the function is selfrecoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

**Electric vehicles:**

Class A: all functions of vehicle perform as designed during and after exposure to a disturbance.

Class B: all functions of vehicle perform as designed during exposure; however, one or more of them may go beyond the specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.

Class C: one or more functions of vehicle do not perform as designed during exposure but return automatically to normal operation after exposure is removed.

# 2. BATTERY CHARGER TEST RESULTS

## 2.1. Power Line Conducted Emission Test

### 2.1.1 Test Standard and Limit

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-1 |

Limits for conducted emissions

| | Frequency (MHz) | At mains terminals (dBμV) | |
|---|---|---|---|
| | | Quasi-peak Level | Average Level |
| Test Limit | 0.15 ~ 0.50 | 66.0 ~ 56.0* | 59.0 ~ 46.0* |
| | 0.50 ~ 5.00 | 56.0 | 46.0 |
| | 5.00 ~ 30.00 | 60.0 | 50.0 |
| Remark:<br>(1) The lower limit shall apply at the transition frequencies.<br>(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz. | | | |

### 2.1.2. Test Setup


### 2.1.3. EUT Configuration on Measurement

The following equipment are installed on Conducted Emission Measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.1.4. Operating Condition of EUT

2.1.4.1. Setup the EUT as shown in Section 2.1.2.

2.1.4.2. Turn on the power of all equipment.

2.4.3. Let the EUT work in test mode and measure it.

### 2.1.5. Test Procedure

The EUT is put on the plane 0.1 m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 17128 regulations during conducted emission measurement.

The bandwidth of the field strength meter (R&S Test Receiver) is set at 9 kHz in 150 kHz~30MHz.

The frequency range from 150 kHz to 30MHz is investigated for AC mains.

All the test results are listed in Section 2.1.6.

### 2.1.6. Test Results

**PASS**

The test curves are shown in the following pages.

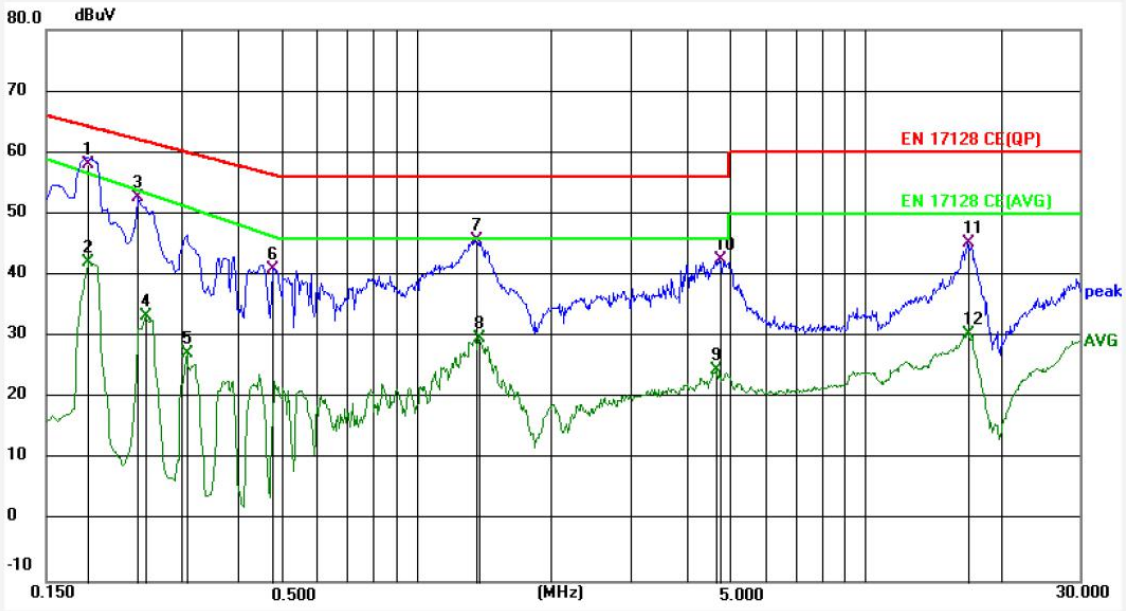
## Conducted Emission Test Data

Test Site: 1# Shielded Room

Test Specification: AC 230V, 50Hz

Comment: Live Line

Temp.: 23.5℃ Hum.: 54%




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit (dBuV) | Over Limit (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1860 | 57.35 | 0.76 | 58.11 | 64.21 | -6.10 | QP | |
| 2 | 0.1860 | 41.36 | 0.76 | 42.12 | 56.68 | -14.56 | AVG | |
| 3 | 0.2400 | 51.93 | 0.77 | 52.70 | 62.10 | -9.40 | QP | |
| 4 | 0.2490 | 32.52 | 0.77 | 33.29 | 53.53 | -20.24 | AVG | |
| 5 | 0.3075 | 26.42 | 0.79 | 27.21 | 51.25 | -24.04 | AVG | |
| 6 | 0.4785 | 40.13 | 0.79 | 40.92 | 56.37 | -15.45 | QP | |
| 7 | 1.3560 | 44.81 | 0.80 | 45.61 | 56.00 | -10.39 | QP | |
| 8 | 1.3785 | 28.97 | 0.80 | 29.77 | 46.00 | -16.23 | AVG | |
| 9 | 4.6590 | 23.63 | 0.85 | 24.48 | 46.00 | -21.52 | AVG | |
| 10 | 4.7220 | 41.78 | 0.85 | 42.63 | 56.00 | -13.37 | QP | |
| 11 | 16.8720 | 44.40 | 0.89 | 45.29 | 60.00 | -14.71 | QP | |
| 12 | 16.8720 | 29.45 | 0.89 | 30.34 | 50.00 | -19.66 | AVG | |

**Note: Result=Reading+Factor Over Limit=Result-Limit**

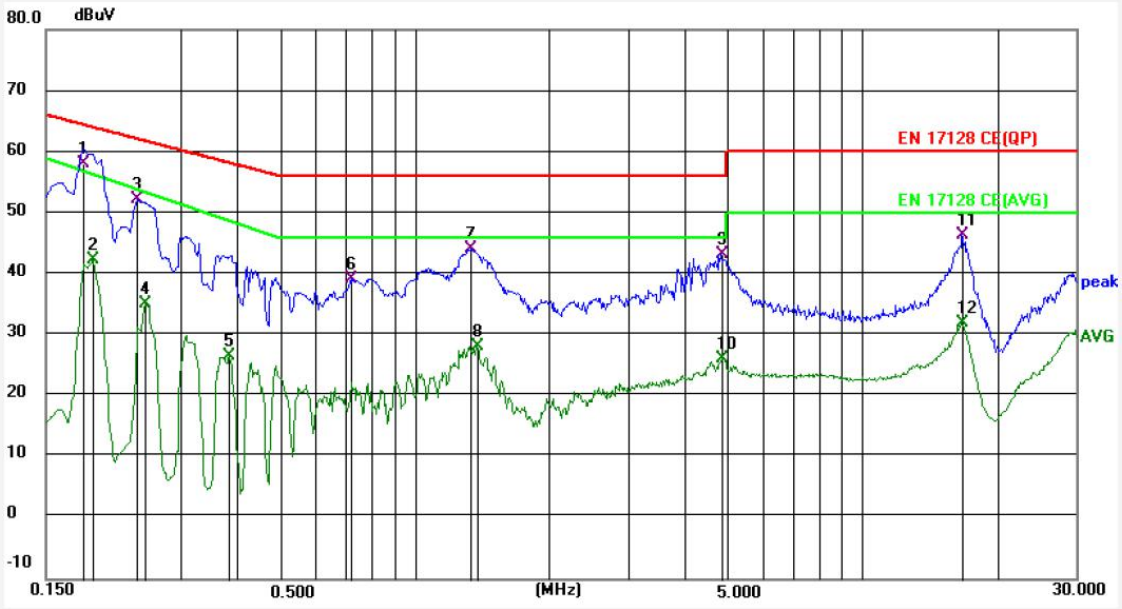
## Conducted Emission Test Data

Test Site: 1# Shielded Room

Test Specification: AC 230V, 50Hz

Comment: Neutral Line

Temp.: 23.5℃ Hum.: 54%




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit (dBuV) | Over Limit (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1815 | 57.22 | 0.76 | 57.98 | 64.42 | -6.44 | QP | |
| 2 | 0.1905 | 41.54 | 0.75 | 42.29 | 56.42 | -14.13 | AVG | |
| 3 | 0.2400 | 51.53 | 0.77 | 52.30 | 62.10 | -9.80 | QP | |
| 4 | 0.2490 | 34.38 | 0.77 | 35.15 | 53.53 | -18.38 | AVG | |
| 5 | 0.3840 | 25.80 | 0.77 | 26.57 | 48.85 | -22.28 | AVG | |
| 6 | 0.7215 | 38.46 | 0.78 | 39.24 | 56.00 | -16.76 | QP | |
| 7 | 1.3335 | 43.22 | 0.80 | 44.02 | 56.00 | -11.98 | QP | |
| 8 | 1.3785 | 27.40 | 0.80 | 28.20 | 46.00 | -17.80 | AVG | |
| 9 | 4.8435 | 42.38 | 0.85 | 43.23 | 56.00 | -12.77 | QP | |
| 10 | 4.8570 | 25.17 | 0.85 | 26.02 | 46.00 | -19.98 | AVG | |
| 11 | 16.6920 | 45.39 | 0.89 | 46.28 | 60.00 | -13.72 | QP | |
| 12 | 16.6920 | 31.00 | 0.89 | 31.89 | 50.00 | -18.11 | AVG | |

**Note: Result=Reading+Factor Over Limit=Result-Limit**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## 2.2. Radiated Emission Test

### 2.2.1. Test Standard and Limit

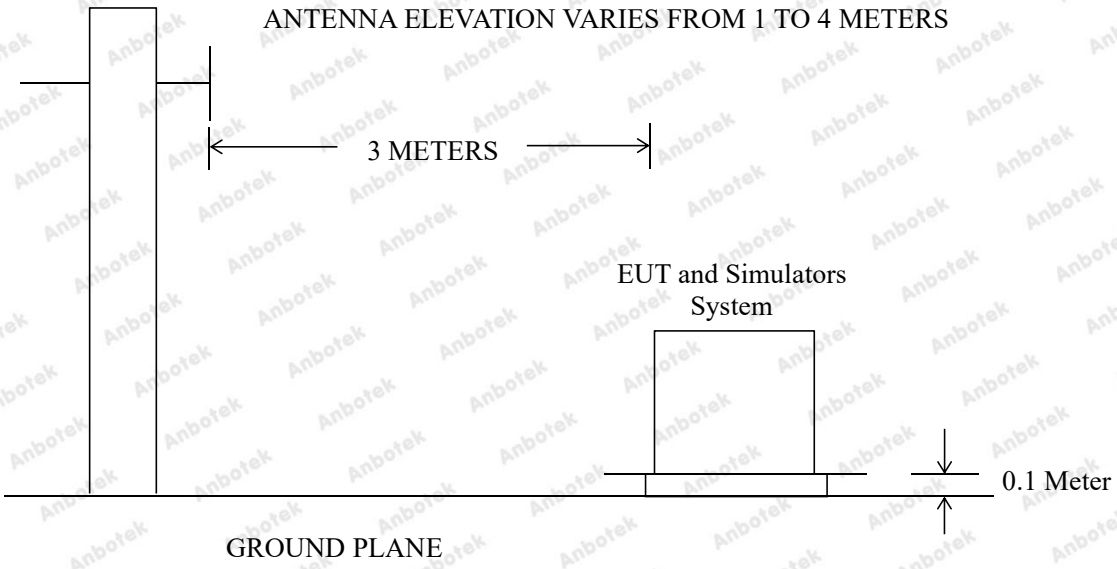
| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-1 |

Radiated Emission Test Limit

| Test Limit | Frequency (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMIT (dBμV/m) |
|---|---|---|---|
| | 30 ~ 230 | 3 | 40 |
| | 230 ~ 1000 | 3 | 47 |

**Remark:**
(1) The smaller limit shall apply at the combination point between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

### 2.2.2. Test Setup




### 2.2.3. EUT Configuration on Measurement

The EN 17128 regulations test method must be used to find the maximum emission during radiated emission measurement.

### 2.2.4. Operating Condition of EUT

2.2.4.1. Setup the EUT as shown in Section 2.2.2.

2.2.4.2. Turn on the power of all equipment.

2.2.4.3. Let the EUT work in test mode and measure it.

### 2.2.5. Test Procedure

The EUT is placed on a turn table which is 0.1 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver is set at 120 kHz.

The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 2.2.6.

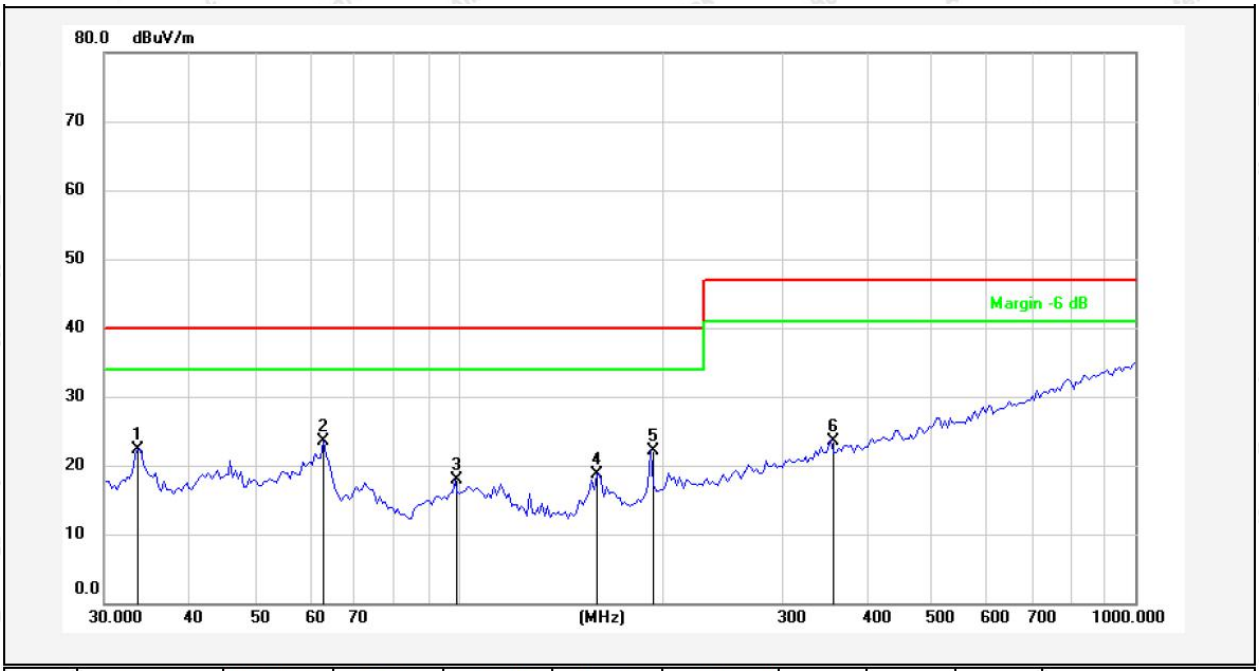
### 2.2.6. Test Results

**PASS**

The frequency range from 30MHz to 1000MHz is investigated.

The test curves are shown in the following pages.

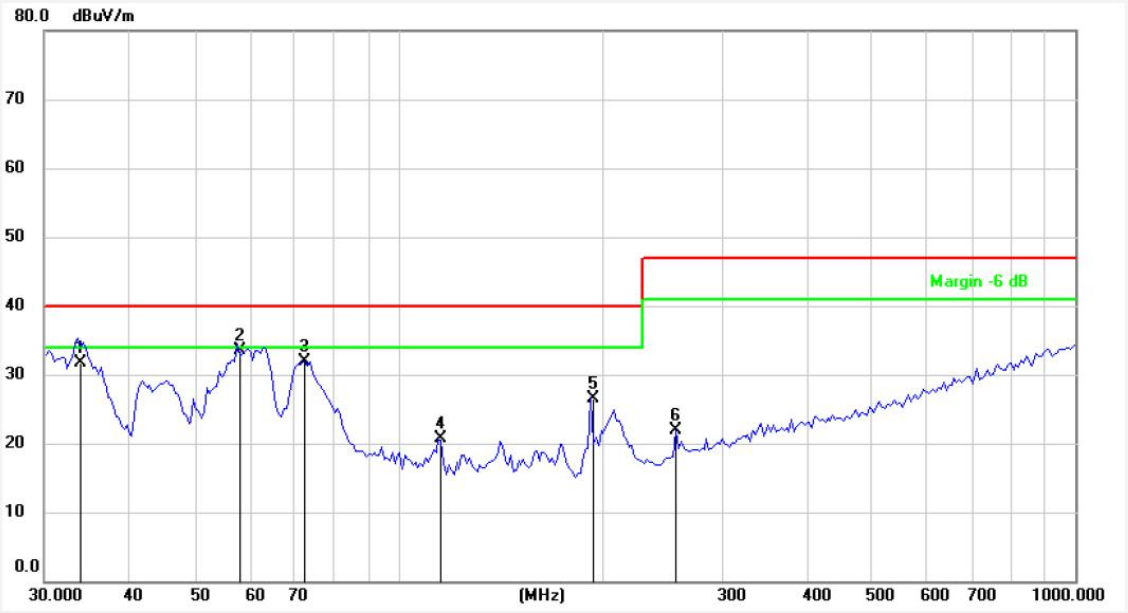
| | | | |
|---|---|---|---|
| **Test item:** | **Radiation Test** | **Polarization:** | **Horizontal** |
| **Standard:** | **(RE)EN 17128** | **Power Source:** | **AC 230V, 50Hz** |
| **Distance:** | **3m** | **Temp.(℃)/Hum.(%RH):** | **26( ℃)/54%RH** |




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33.6213 | 41.07 | -18.70 | 22.37 | 40.00 | -17.63 | peak | | | |
| 2 | 63.2023 | 41.05 | -17.56 | 23.49 | 40.00 | -16.51 | peak | | | |
| 3 | 98.8326 | 35.40 | -17.52 | 17.88 | 40.00 | -22.12 | peak | | | |
| 4 | 160.0648 | 38.78 | -20.04 | 18.74 | 40.00 | -21.26 | peak | | | |
| 5 | 192.4186 | 39.47 | -17.44 | 22.03 | 40.00 | -17.97 | peak | | | |
| 6 | 355.4273 | 34.89 | -11.29 | 23.60 | 47.00 | -23.40 | peak | | | |

**Note:** **Result=Reading+Factor** **Over Limit=Result-Limit**

| | | | |
|---|---|---|---|
| **Test item:** | **Radiation Test** | **Polarization:** | **Vertical** |
| **Standard:** | **(RE)EN 17128** | **Power Source:** | **AC 230V, 50Hz** |
| **Distance:** | **3m** | **Temp.(℃)/Hum.(%RH):** | **26( ℃)/54%RH** |




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33.7963 | 50.34 | -18.67 | 31.67 | 40.00 | -8.33 | QP | 100 | 360 | |
| 2 | 57.8977 | 50.35 | -16.90 | 33.45 | 40.00 | -6.55 | QP | 100 | 0 | |
| 3 | 72.7190 | 52.73 | -20.87 | 31.86 | 40.00 | -8.14 | peak | | | |
| 4 | 114.7156 | 38.84 | -18.09 | 20.75 | 40.00 | -19.25 | peak | | | |
| 5 | 192.4186 | 44.01 | -17.44 | 26.57 | 40.00 | -13.43 | peak | | | |
| 6 | 256.9712 | 36.48 | -14.64 | 21.84 | 47.00 | -25.16 | peak | | | |

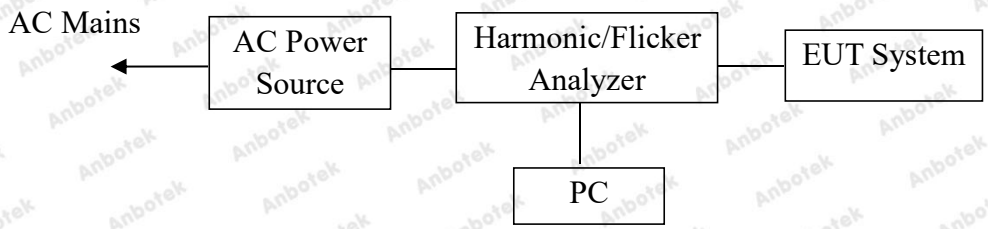
**Note:** **Result=Reading+Factor** **Over Limit=Result-Limit**

## 2.3. Harmonic Current Emission Test

### 2.3.1. Test Standard

| Test Standard | EN IEC 61000-3-2 |
|---|---|

### 2.3.2. Test Setup




### 2.3.3. Operating Condition of EUT

2.3.3.1. Setup the EUT as shown on Section 2.3.2.

2.3.3.2. Turn on the power of all equipment.

2.3.3.3. After that, let the EUT work in test mode measure it.

### 2.3.4. Test Results

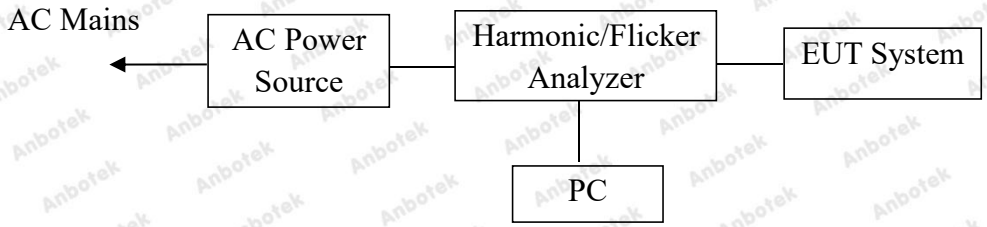
**PASS**

## 2.4. Voltage Fluctuations & Flicker Test

### 2.4.1. Test Standard

| | |
|---|---|
| Test Standard | EN 61000-3-3 |

### 2.4.2. Test Setup




### 2.4.3. Operating Condition of EUT

2.4.3.1. Setup the EUT as shown on Section 2.4.2.

2.4.3.2. Turn on the power of all equipment.

2.4.3.3. After that, let the EUT work in test mode measure it.

### 2.4.4. Test Results

**PASS**

## 2.5. Electrostatic Discharge Immunity Test

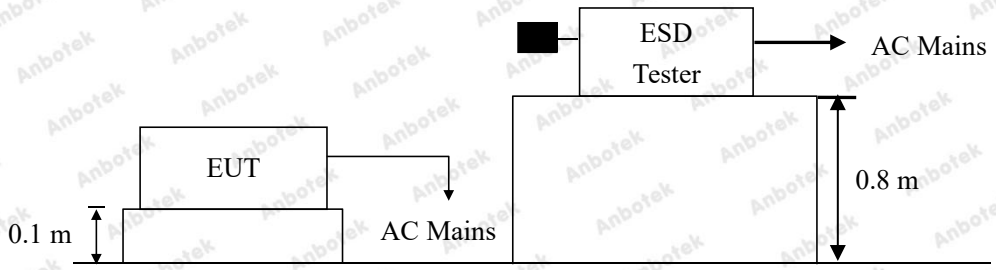
### 2.5.1. Test Standard and Level

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-2, IEC 61000-4-2 |
| Performance Criterion: | B |
| Severity Level: 3 / Air Discharge: ±8kV, Level: 2 / Contact Discharge: ±4kV | |

Test Level

| Level | Test Voltage Contact Discharge (kV) | Test Voltage Air Discharge (kV) |
|---|---|---|
| 1. | ±2 | ±2 |
| 2. | ±4 | ±4 |
| 3. | ±6 | ±8 |
| 4. | ±8 | ±15 |
| X | Special | Special |

### 2.5.2. Test Setup




### 2.5.3. EUT Configuration on Measurement

The following equipment are installed on Electrostatic Discharge immunity Measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.5.4. Operating Condition of EUT

2.5.4.1. Setup the EUT as shown on Section 2.5.2.

2.5.4.2. Turn on the power of all equipment.

2.5.4.3. After that, let the EUT work in test mode measure it.

### 2.5.5. Test Procedure

#### 2.5.5.1. Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

#### 2.5.5.2. Contact Discharge:

All the procedure shall be same as Section 2.5.5.1 except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

#### 2.5.5.3. Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

#### 2.5.5.4. Indirect discharge for vertical coupling plane

At least 20 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m × 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

### 2.5.6. Test Results

**PASS**

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# Electrostatic Discharge Test Results

| | | | |
|---|---|---|---|
| Air discharge : | ±8.0kV | Temperature : | 23.3℃ |
| Contact discharge : | ±4.0kV | Humidity : | 50% |
| Power Supply : | AC 230V, 50Hz | Expert conclusion : | A |
| Number of discharge: | 10 | Test Result: | ☒ Pass ☐ Fail |

| **Location** | | **Kind**<br>A-Air Discharge<br>C-Contact Discharge | **Result** |
|---|---|---|---|
| Slot | 4 points | A | ☑ A ☐ B ☐ C |
| Metal | 4 points | C | ☑ A ☐ B ☐ C |
| Screws | 4 points | C | ☑ A ☐ B ☐ C |
| DC Port | 4 points | A | ☑ A ☐ B ☐ C |
| Screen | 4 points | A | ☑ A ☐ B ☐ C |
| Light | 4 points | A | ☑ A ☐ B ☐ C |
| VCP of the front | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the rear | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the left | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the right | 1 points | C | ☑ A ☐ B ☐ C |
| | | | |
| | | | |

**Remark:** Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).


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## 2.6. Electrical Fast Transient/Burst Immunity Test

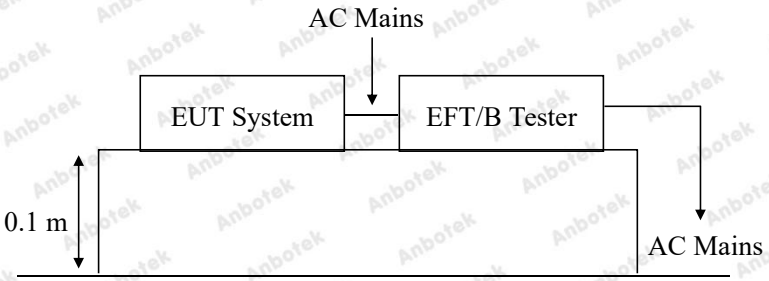
### 2.6.1. Test Standard and Level

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-2, IEC 61000-4-4 |
| Performance criterion: | B |
| Severity Level 2: 1.00kV | |

Test Level

| Open Circuit Output Test Voltage ± 10% | | |
|---|---|---|
| Level | On Power Supply Lines | On I/O (Input/Output) Signal data and control lines |
| 1. | 0.50 kV | 0.25 kV |
| 2. | 1.00 kV | 0.50 kV |
| 3. | 2.00 kV | 1.00 kV |
| 4. | 4.00 kV | 2.00 kV |
| X. | Special | Special |

### 2.6.2. Test Setup




### 2.6.3. EUT Configuration on Measurement

The following equipment are installed on Electrical Fast Transient/Burst Immunity Measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.6.4. Operating Condition of EUT

2.6.4.1. Setup the EUT as shown in Section 2.6.2.

2.6.4.2. Turn on the power of all equipment.

2.6.4.3. Let the EUT work in test mode and measure it.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### 2.6.5. Test Procedure

The EUT is put on the table which is 0.1 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

#### 2.6.5.1. For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

#### 2.6.5.2. For signal lines and control lines ports:

Select tests based on product characteristics.

#### 2.6.5.3. For DC output line ports:

Select tests based on product characteristics.

### 2.6.6. Test Results

**PASS**

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# Electrical Fast Transient/Burst Test Results

| | | | |
|---|---|---|---|
| Ambient Condition : 23.3℃ / 50% RH | | Expert conclusion : A | |
| Power Supply .: AC 230V, 50Hz | | Test Result : ☒ Pass ☐ Fail | |
| | | | |
| Inject Line : AC Mains | Inject Method: Direct | Inject Time(s): 120 | |
| Line | Polarity | Test Voltage (kV) | Result |
| AC Line | ± | 1.00kV | ☑ A ☐ B ☐ C |
| DC Line | | | |
| Signal Line | | | |
| | | | |


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## 2.7. Surge Immunity Test

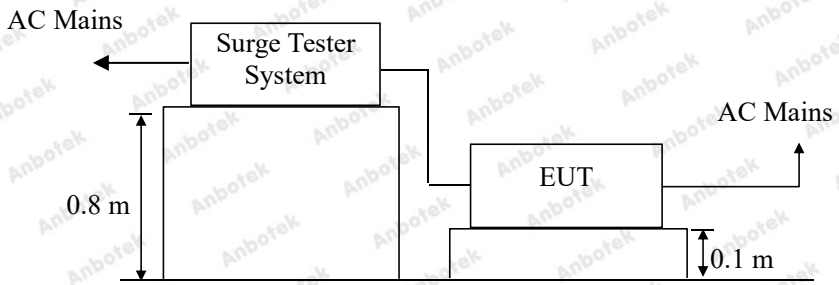
### 2.7.1. Test Standard and Level

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-2, IEC 61000-4-5 |
| Performance criterion: | B |
| Severity Level 2, Line to Line: 1.0kV | |

Test Level

| Severity Level | Open-Circuit Test Voltage (kV) |
|---|---|
| 1. | 0.5 |
| 2. | 1.0 |
| 3. | 2.0 |
| 4. | 4.0 |
| X. | Special |

### 2.7.2. Test Setup




### 2.7.3. EUT Configuration on Measurement

The following equipment are installed on surge immunity Measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.7.4. Operating Condition of EUT

2.7.4.1. Setup the EUT as shown in Section 2.7.2.

2.7.4.2. Turn on the power of all equipment.

2.7.4.3. Let the EUT work in test mode and measure it.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### 2.7.5. Test Procedure

2.7.5.1. Set up the EUT and test generator as shown on Section 2.7.2.

2.7.5.2. For line to line coupling mode, provide a 1.0kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

2.7.5.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

2.7.5.4. Different phase angles are done individually.

2.7.5.5. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

### 2.7.6. Test Results

**PASS**

Please refer to the following page.

# Surge Immunity Test Results

| | | | |
|---|---|---|---|
| Humidity : | 50% | Temperature : | 23.3℃ |
| Power Supply : | AC 230V, 50Hz | Expert conclusion: | A |
| Test Result : | ☒ Pass ☐ Fail | | |

| Location | Polarity | Phase Angle | Number of Pulse | Pulse Voltage (kV) | Result |
|---|---|---|---|---|---|
| L-N | + | ☐ 0° ☒ 90° ☐ 180° ☐ 270° | 5 | 1.0kV | ☑ A ☐ B ☐ C |
| L-N | - | ☐ 0° ☐ 90° ☐ 180° ☒ 270° | 5 | 1.0kV | ☑ A ☐ B ☐ C |
| L-GND | | | | | |
| L-GND | | | | | |
| N-GND | | | | | |
| N-GND | | | | | |
| | | | | | |


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## 2.8. Injected Currents Susceptibility Test

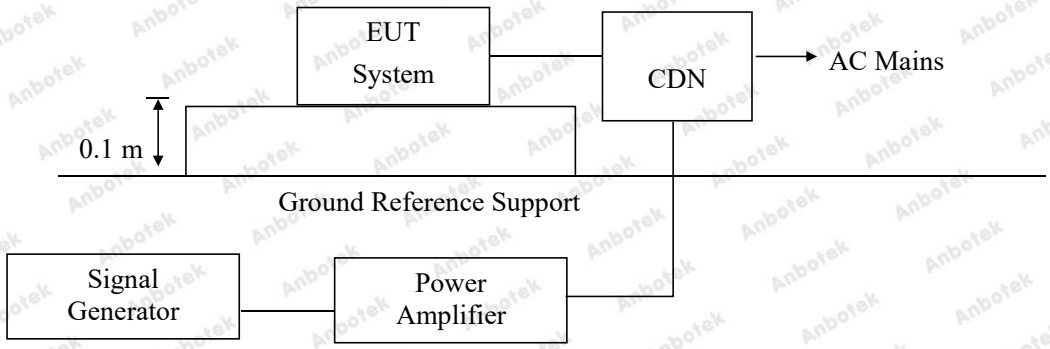
### 2.8.1. Test Standard and Level

| | |
|---|---|
| Test Standard | EN 17128 |
| Test Method: | EN 55014-2, IEC 61000-4-6 |
| Performance criterion | A |
| Severity Level 2: 3V (rms), (0.15MHz ~230MHz) | |

Test Level

| Level | Field Strength V |
|---|---|
| 1. | 1 |
| 2. | 3 |
| 3. | 10 |
| X. | Special |

### 2.8.2. Test Setup




### 2.8.3. EUT Configuration

The following equipment are installed on currents susceptibility measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.8.4. Operating Condition of EUT

2.8.4.1. Setup the EUT as shown in Section 2.8.2.

2.8.4.2. Turn on the power of all equipment.

2.8.4.3. Let the EUT work in test mode and measure it.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### 2.8.5. Test Procedure

1) Set up the EUT, CDN and test generators as shown on section 2.8.2.
2) Let the EUT work in test mode and measure it.
3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4) The disturbance signal described below is injected to EUT through CDN.
5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
6) The frequency range is swept from 150 kHz to 230MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
7) The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

#### 2.8.5.1. For signal lines and control lines ports:

Select tests based on product characteristics.

#### 2.8.5.2. For DC output line ports:

Select tests based on product characteristics.

### 2.8.6. Test Results

**PASS**

Please refer to the following page.

# Injected Currents Susceptibility Test Results

| | | | |
|---|---|---|---|
| Humidity : 50% | | Temperature : 23.3℃ | |
| Power Supply : AC 230V, 50Hz | | Expert conclusion: A | |
| Test Result : ☒ Pass ☐ Fail | | | |
| | | | |
| Frequency Range (MHz) | Injected Position | Strength (Unmodulated) | Result |
| 0.15 ~ 230 | AC Mains | 3V | ☑ A ☐ B ☐ C |
| | | | |

**Remark :** 1. Modulation Signal:1KHz 80% AM


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## 2.9. Voltage Dips and Interruptions Test

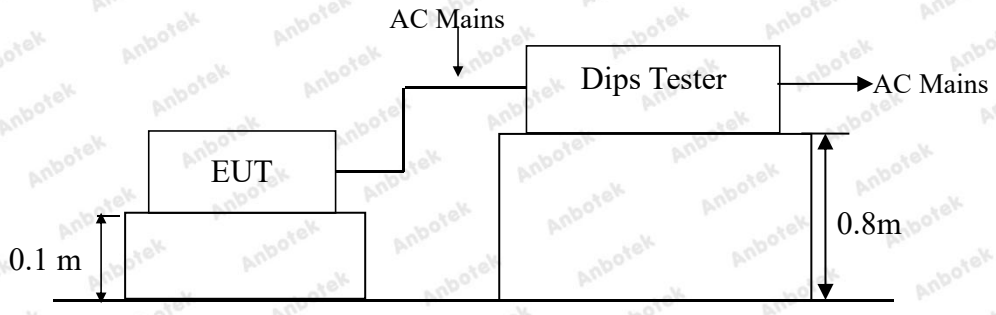
### 2.9.1. Test Standard and Level

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | EN 55014-2, IEC 61000-4-11 |
| Performance Criterion: | C |

Test Level

| Test Level %UT | Voltage dip and short interruptions %UT | Duration (in period) |
|---|---|---|
| 0 | 100 | 0.5 |
| 40 | 60 | 1<br>5 |
| 70 | 30 | 10<br>25 |
| / | / | 50<br>* |

### 2.9.2. Test Setup




### 2.9.3. EUT Configuration on Measurement

The following equipment are installed on Voltage dips and interruptions measurement to meet EN 17128 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

### 2.9.4. Operating Condition of EUT

2.9.4.1. Setup the EUT as shown in Section 2.9.2.

2.9.4.2. Turn on the power of all equipment.

2.9.4.3. Let the EUT work in test mode and measure it.

### 2.9.5. Test Procedure

1) Set up the EUT and test generator as shown on Section 2.9.2.
2) The interruption is introduced at selected phase angles with specified duration.
3) Record any degradation of performance.

### 2.9.6. Test Results

**PASS**

Please refer to the following page.

# Voltage Dips and Interruptions Test Results

| | | | |
|---|---|---|---|
| Temperature : 23.3℃ | | Humidity : 50% | |
| Power Supply : AC 230V, 50Hz | | Expert conclusion : C | |
| Test Result : ☒ Pass ☐ Fail | | | |
| | | | |
| Test Level<br>% UT | Voltage Dips & Short Interruptions<br>% UT | Duration (in periods) | Result |
| 0 | 100 | 0.5P | ☐ A ☐ B ☑ C |
| 40 | 60 | 10P | ☐ A ☐ B ☑ C |
| 70 | 30 | 25P | ☐ A ☐ B ☑ C |
| | | | |
| | | | |
| Test Level<br>% UT | Voltage Dips & Short Interruptions<br>% UT | Duration (in periods) | Result |
| | | | |
| | | | |
| | | | |
| | | | |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# 3. Electric vehicle test results

## 3.1. Radiated Emission Test

### 3.1.1. Test Standard and Limit

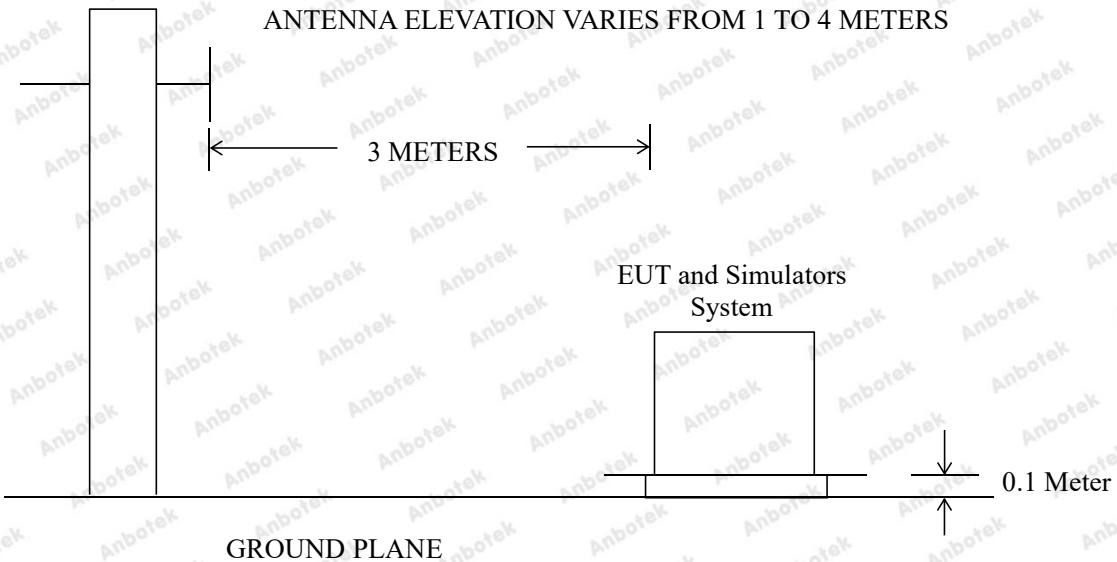
| | |
|---|---|
| Test Standard | EN 17128 |
| Test Method | EN IEC 55012 |

Radiated Emission Test Limit

| | Frequency (MHz) | DISTANCE (Meters) | Broad-band (dBμV/m) | Narrow-band (dBμV/m) |
|---|---|---|---|---|
| Test Limit | 30 ~ 75 | 3 | 44 | 34 |
| | 30 ~ 400 | 4 | 44+15.13log(f/75) | 34+15.13log(f/75) |
| | 400 ~ 1000 | 3 | 55 | 45 |

**Remark:**
The measured values expressed in dB (μV/m) shall be 2 dB below the reference limit for the EPAC submitted for testing

### 3.1.2. Test Setup




### 3.1.3. EUT Configuration on Measurement

The EN 17128 regulations test method must be used to find the maximum emission during radiated emission measurement.

### 3.1.4. Operating Condition of EUT

3.1.4.1. Setup the EUT as shown in Section 3.1.2.

3.1.4.2. Turn on the power of all equipment.

3.1.4.3. Let the EUT work in test mode and measure it.

### 3.1.5. Test Procedure

The EUT is placed on a turn table which is 0.1 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver is set at 120 kHz.

The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 3.1.6.

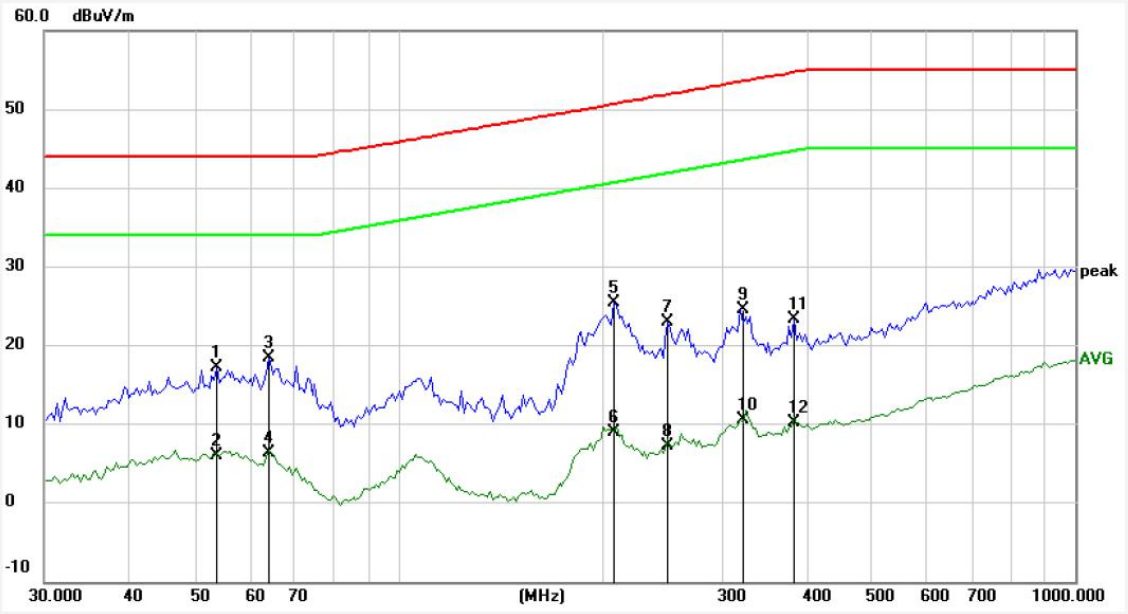
### 3.1.6. Test Results

**PASS**

The frequency range from 30MHz to 1000MHz is investigated.

The test curves are shown in the following pages.

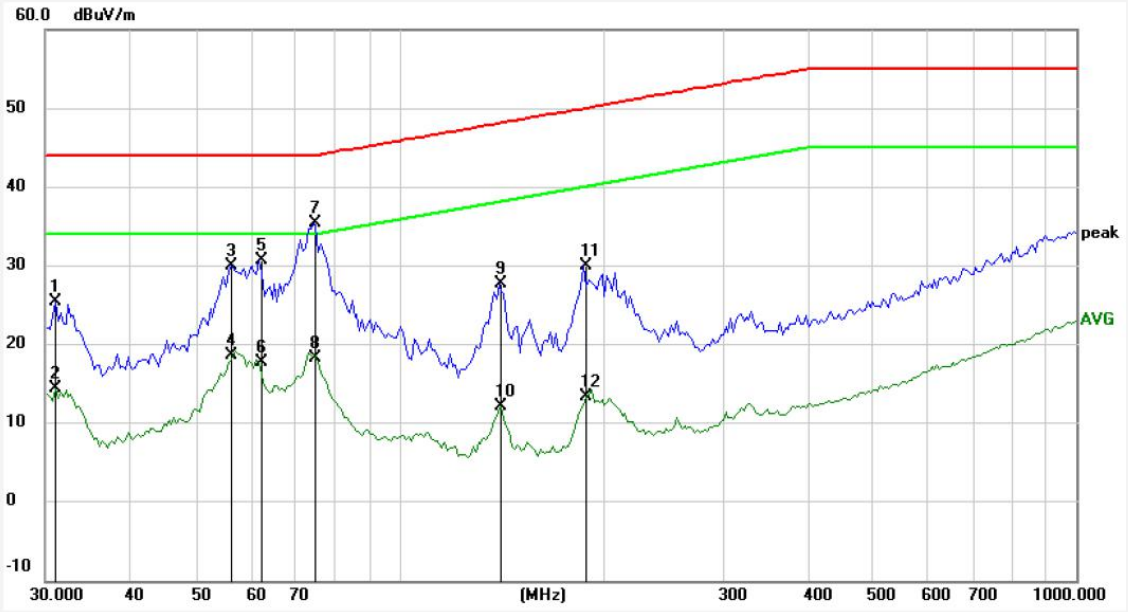
| | | | |
|---|---|---|---|
| **Test item:** | **Radiation Test** | **Polarization:** | **Horizontal** |
| **Standard:** | **(RE)EN 17128** | **Power Source:** | **DC 36V** |
| **Distance:** | **3m** | **Temp.(℃)/Hum.(%RH):** | **26( ℃)/54%RH** |




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 53.9763 | 33.09 | -15.84 | 17.25 | 44.00 | -26.75 | peak | | | |
| 2 | 53.9763 | 21.84 | -15.84 | 6.00 | 34.00 | -28.00 | AVG | | | |
| 3 | 64.3201 | 36.16 | -17.68 | 18.48 | 44.00 | -25.52 | peak | | | |
| 4 | 64.3201 | 24.00 | -17.68 | 6.32 | 34.00 | -27.68 | AVG | | | |
| 5 | 208.2148 | 42.41 | -16.93 | 25.48 | 50.71 | -25.23 | peak | | | |
| 6 | 208.2148 | 25.98 | -16.93 | 9.05 | 40.71 | -31.66 | AVG | | | |
| 7 | 250.3011 | 37.81 | -14.88 | 22.93 | 51.92 | -28.99 | peak | | | |
| 8 | 250.3011 | 22.14 | -14.88 | 7.26 | 41.92 | -34.66 | AVG | | | |
| 9 | 319.9370 | 37.28 | -12.69 | 24.59 | 53.53 | -28.94 | peak | | | |
| 10 | 319.9370 | 23.31 | -12.69 | 10.62 | 43.53 | -32.91 | AVG | | | |
| 11 | 384.6055 | 34.14 | -10.75 | 23.39 | 54.74 | -31.35 | peak | | | |
| 12 | 384.6055 | 20.88 | -10.75 | 10.13 | 44.74 | -34.61 | AVG | | | |

**Note:** **Result=Reading+Factor** **Over Limit=Result-Limit**

| | | | |
|---|---|---|---|
| **Test item:** | **Radiation Test** | **Polarization:** | **Vertical** |
| **Standard:** | **(RE)EN 17128** | **Power Source:** | **DC 36V** |
| **Distance:** | **3m** | **Temp.(℃)/Hum.(%RH):** | **26( ℃)/54%RH** |




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31.0706 | 44.40 | -18.99 | 25.41 | 44.00 | -18.59 | peak | | | |
| 2 | 31.0706 | 33.36 | -18.99 | 14.37 | 34.00 | -19.63 | AVG | | | |
| 3 | 56.3948 | 46.39 | -16.47 | 29.92 | 44.00 | -14.08 | peak | | | |
| 4 | 56.3948 | 35.13 | -16.47 | 18.66 | 34.00 | -15.34 | AVG | | | |
| 5 | 62.1039 | 48.17 | -17.53 | 30.64 | 44.00 | -13.36 | peak | | | |
| 6 | 62.1039 | 35.28 | -17.53 | 17.75 | 34.00 | -16.25 | AVG | | | |
| 7 | 74.6569 | 56.76 | -21.37 | 35.39 | 44.00 | -8.61 | peak | | | |
| 8 | 74.6569 | 39.69 | -21.37 | 18.32 | 34.00 | -15.68 | AVG | | | |
| 9 | 140.3421 | 48.67 | -20.88 | 27.79 | 48.12 | -20.33 | peak | | | |
| 10 | 140.3421 | 33.04 | -20.88 | 12.16 | 38.12 | -25.96 | AVG | | | |
| 11 | 187.4241 | 48.12 | -18.05 | 30.07 | 50.02 | -19.95 | peak | | | |
| 12 | 187.4241 | 31.37 | -18.05 | 13.32 | 40.02 | -26.70 | AVG | | | |

**Note:** **Result=Reading+Factor Over Limit=Result-Limit**

## 3.2. Electrostatic Discharge Immunity Test

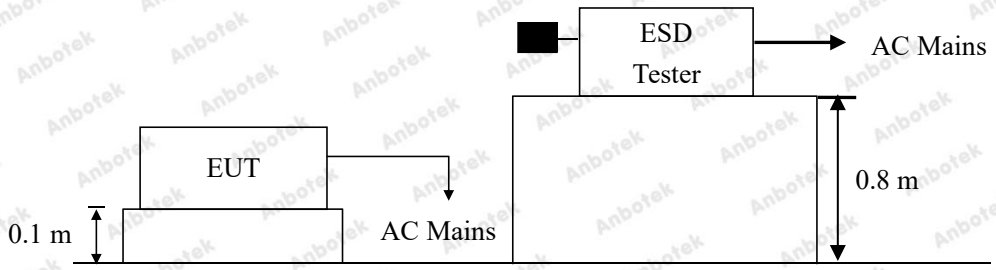
### 3.2.1. Test Standard and Level

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | IEC 61000-4-2 (EN 61000-4-2) |
| Performance Criterion: | B |
| Severity Level: 3 / Air Discharge: ±8kV, Level: 2 / Contact Discharge: ±4kV | |

Test Level

| Level | Test Voltage Contact Discharge (kV) | Test Voltage Air Discharge (kV) |
|---|---|---|
| 1. | ±2 | ±2 |
| 2. | ±4 | ±4 |
| 3. | ±6 | ±8 |
| 4. | ±8 | ±15 |
| X | Special | Special |

### 3.2.2. Test Setup




### 3.2.3. Operating Condition of EUT

3.2.3.1. Setup the EUT as shown on Section 3.2.2.

3.2.3.2. Turn on the power of all equipment.

3.2.3.3. After that, let the EUT work in test mode measure it.

### 3.2.4. Test Procedure

#### 3.2.4.1. Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

#### 3.2.4.2. Contact Discharge:

All the procedure shall be same as Section 3.2.4.1 except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

#### 3.2.4.3. Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

#### 3.2.4.4. Indirect discharge for vertical coupling plane

At least 20 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m × 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

### 3.2.5. Test Results

**PASS**

Please refer to the following page.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# Electrostatic Discharge Test Results

| | | | |
|---|---|---|---|
| Air discharge : | ±8.0kV | Temperature : | 23.3℃ |
| Contact discharge : | ±4.0kV | Humidity : | 50% |
| Power Supply : | DC 36V | Expert conclusion : | A |
| Number of discharge : | 10 | Test Result: | ☒ Pass ☐ Fail |

| **Location** | | **Kind** A-Air Discharge C-Contact Discharge | **Result** |
|---|---|---|---|
| Slot | 4 points | A | ☑ A ☐ B ☐ C |
| Metal | 4 points | C | ☑ A ☐ B ☐ C |
| Screws | 4 points | C | ☑ A ☐ B ☐ C |
| DC Port | 4 points | A | ☑ A ☐ B ☐ C |
| Screen | 4 points | A | ☑ A ☐ B ☐ C |
| Light | 4 points | A | ☑ A ☐ B ☐ C |
| VCP of the front | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the rear | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the left | 1 points | C | ☑ A ☐ B ☐ C |
| VCP of the right | 1 points | C | ☑ A ☐ B ☐ C |

**Remark:** Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).


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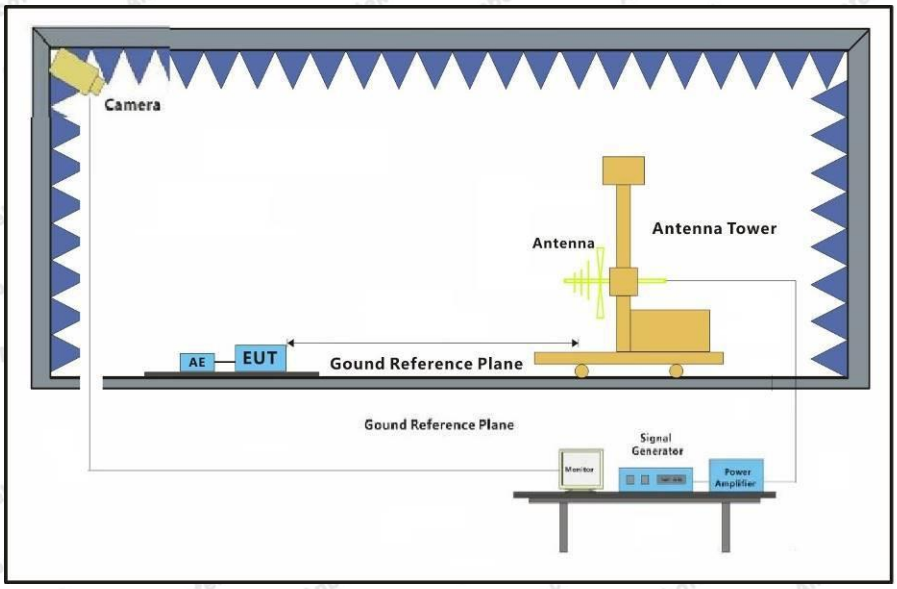
## 3.3. Radiated Immunity Test

### 3.3.1. Test Standard

| | |
|---|---|
| Test Standard: | EN 17128 |
| Test Method: | Annex B.4 of EN 17128 & ISO11542-1 |

### 3.3.2. Test Setup Diagram




### 3.3.3 Test Procedure

1) The field strength level was 30V/m.
2) The frequency range is swept from 20 MHz to 2000 MHz with the signal 80% amplitude modulated with a 1 kHz sine wave.
3) The dwell time is 2 seconds

## 8.6. Measuring Results

**PASS**

Please refer to the following page.

# Radiated Immunity Test Results

| | | | |
|---|---|---|---|
| Field Strength : | 30 V/m | Temperature : | 22.5℃ |
| Expert conclusion : | A | Humidity : | 43.6% |
| Power Supply : | DC 36V | Test Result : | ☒ Pass ☐ Fail |
| Dwell Time: | 2s | | |

| Frequency Range (MHz) | Antenna Polarity | R.F. Field Strength | Azimuth | Result |
|---|---|---|---|---|
| 20~2000 | H/V | 30 V/m (rms) | Front | ☑ A ☐ B ☐ C |
| | | | Rear | |
| | | | Left | |
| | | | Right | |
| Note: No degradation in the performance of the EUT was observed. | | | | |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# APPENDIX I -- TEST SETUP PHOTOGRAPH

**Battery Charger:**

Photo of Power Line Conducted Emission Test

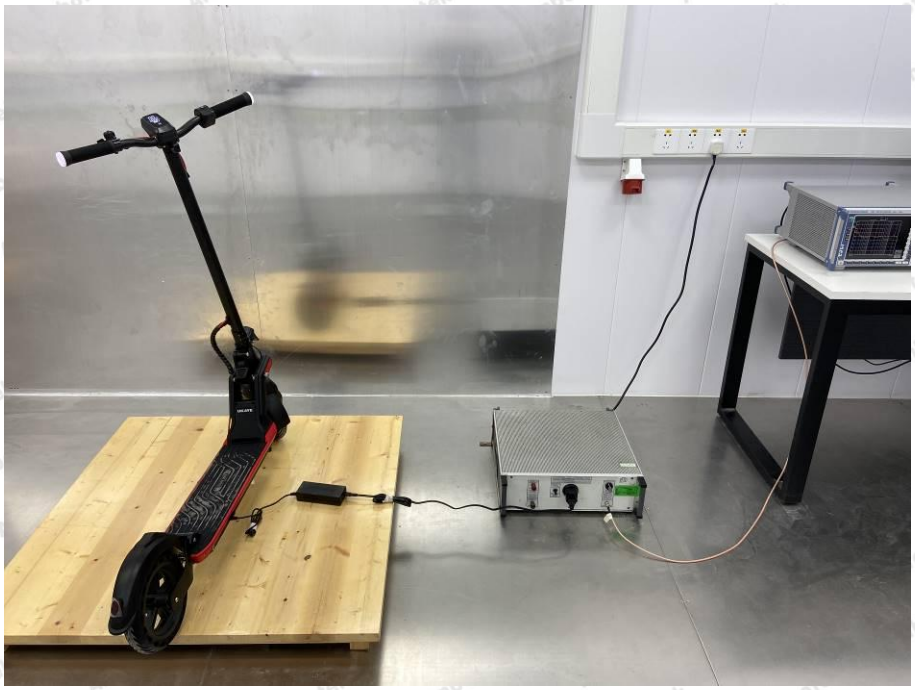


Photo of Radiated Emission Test

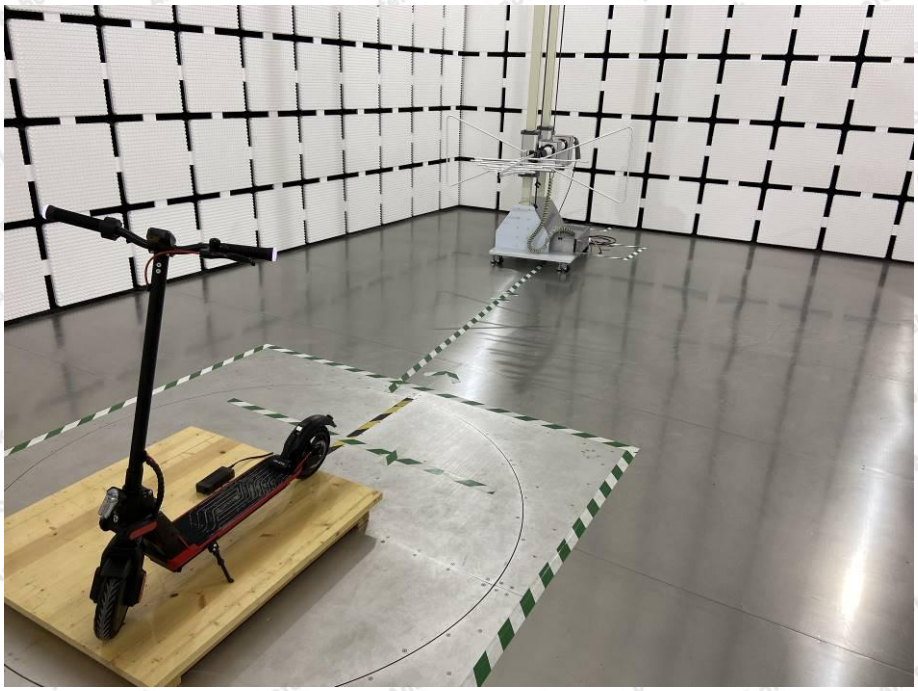


Photo of Electrostatic Discharge Immunity Test

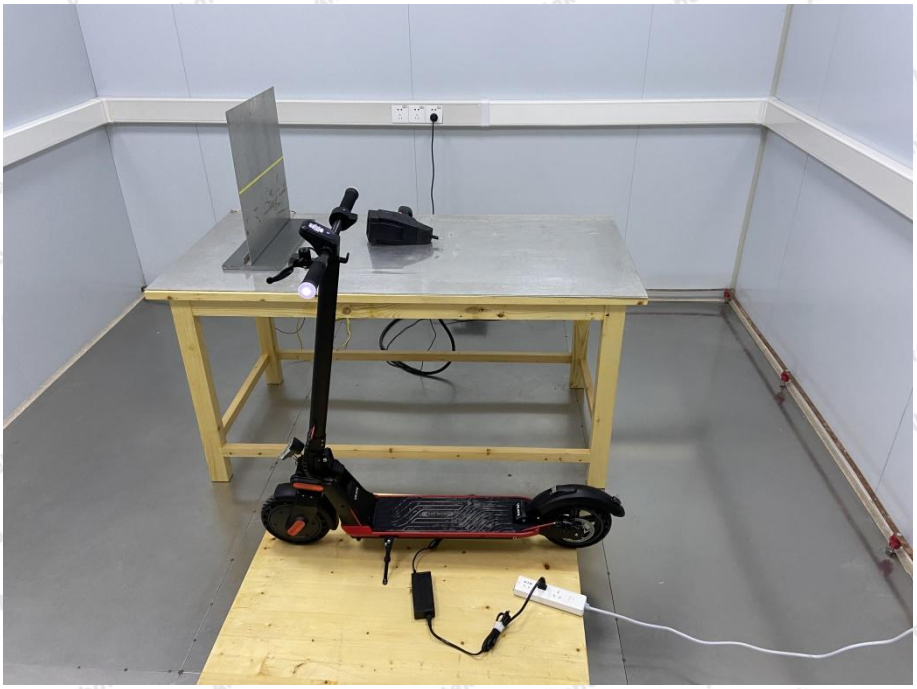


Photo of Electrical Fast Transient/Burst Immunity Test

Photo of Surge Immunity Test

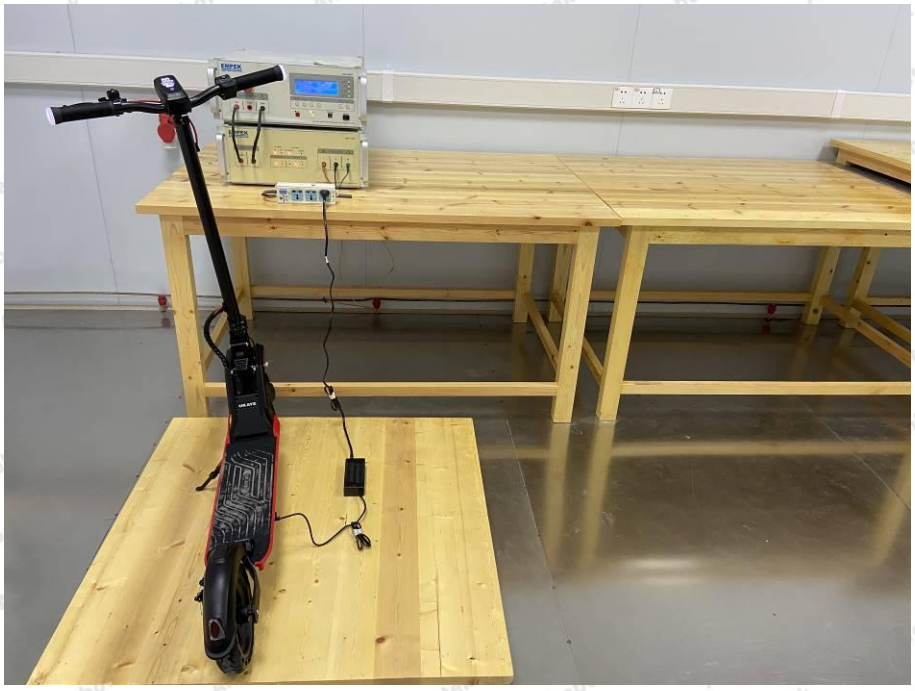


Photo of Voltage Dips and Interruptions Test

**Electric vehicle:**

Photo of Radiated Emission Test

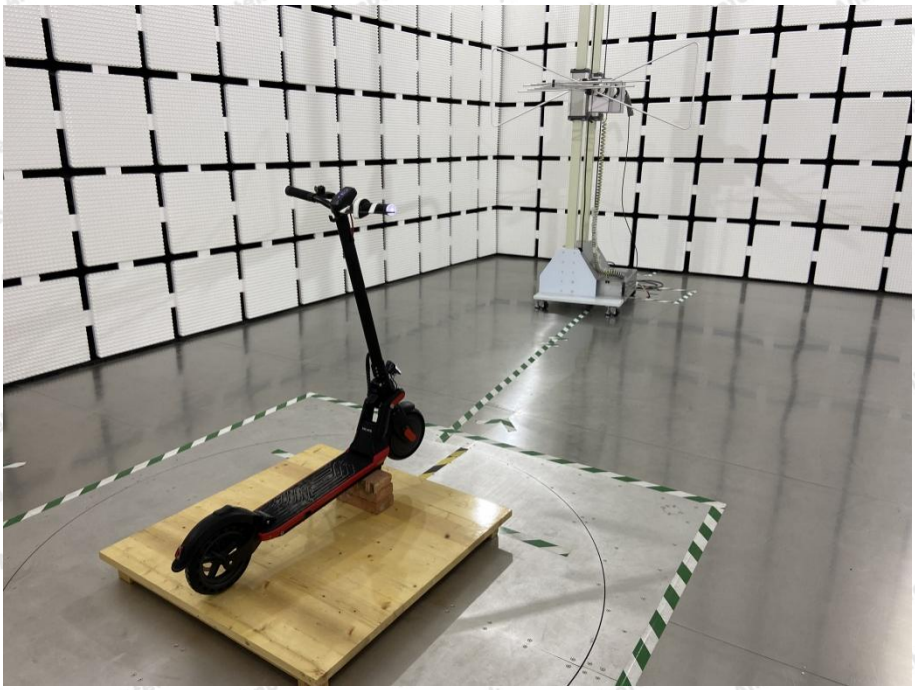
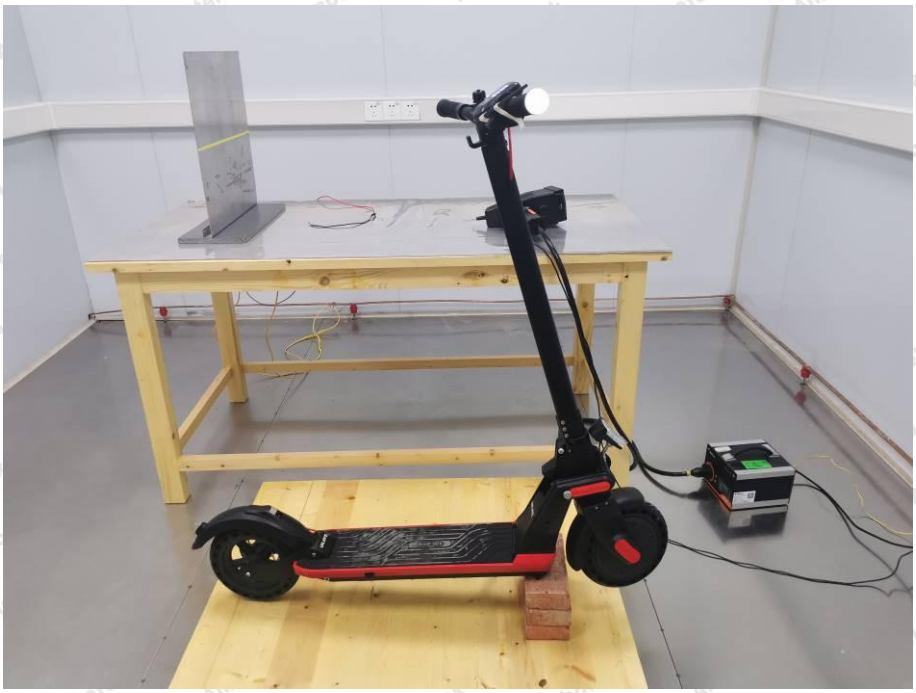


Photo of Electrostatic Discharge Immunity Test



# APPENDIX II -- EXTERNAL PHOTOGRAPH

**Sample serial number: 1-3-1**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AC/DC Charger
MODEL:XVE-4200200
INPUT:100-240VAC
50/60Hz 2.0A Max
OUTPUT:DC42.0V⎓2.0A
84W
RED LIGHT MEANS CHARGING
GREEN LIGHT MEANS CHARGE FULL OR DISCONNECT
No serviceable parts inside.
Refer to product owners manual for application of this adapter
MANUFACTURER: JIN XIN YU POWER (SHENZHEN) SUPPLY CO.,LTD.
MADE IN CHINA
XV-2007290151

**Sample serial number: 1-3-2**

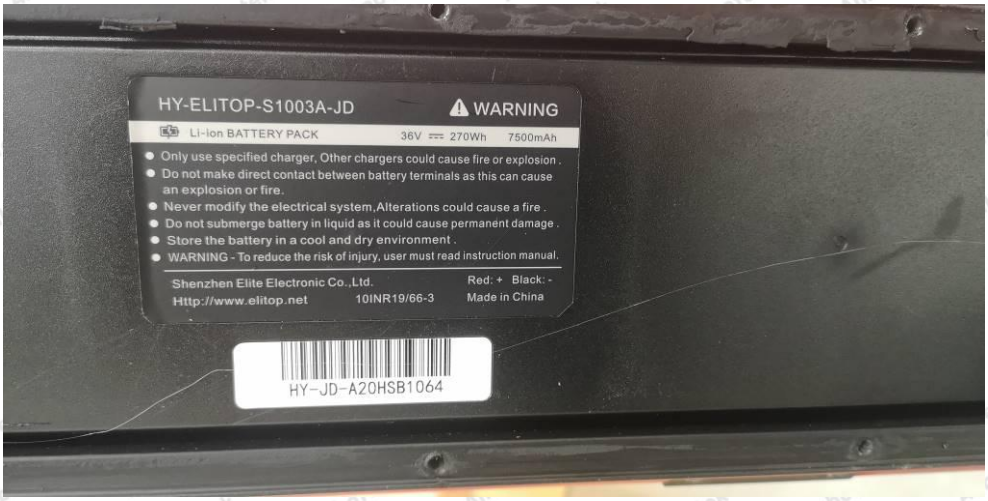

**Sample serial number: 1-3-3**



UKAYE

# APPENDIX III -- INTERNAL PHOTOGRAPH

**Sample serial number: 1-3-1**


HY-ELITOP-S1003A-JD
WARNING
Li-ion BATTERY PACK
36V 270Wh 7500mAh
Only use specified charger, Other chargers could cause fire or explosion .
Do not make direct contact between battery terminals as this can cause an explosion or fire.
Never modify the electrical system,Alterations could cause a fire .
Do not submerge battery in liquid as it could cause permanent damage .
Store the battery in a cool and dry environment .
WARNING - To reduce the risk of injury, user must read instruction manual.
Shenzhen Elite Electronic Co.,Ltd.
Http://www.elitop.net
10INR19/66-3
Red: + Black: -
Made in China
HY-JD-A20HSB1064

# CE Label

1. The CE conformity marking must consist of the initials ‘CE’ taking the following form:
   If the CE marking is reduced or enlarged, the proportions given in the above graduated drawing must be respected.
2. The CE marking must have a height of at least 5 mm except where this is not possible on account of the nature of the apparatus.
3. The CE marking must be affixed to the product or to its data plate. Additionally it must be affixed to the packaging, if any, and to the accompanying documents.
4. The CE marking must be affixed visibly, legibly and indelibly.
   It must have the same height as the initials ‘CE’.

---------- End of Report ----------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