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Report No.: SHEM170900612101
Page: 1 of 25

TEST REPORT

Application No.: SHEM1709006121HS
Applicant: PEPEGREEN IMPORT-EXPORT S.L.U.
Address of Applicant: Ctra. San Cugat, 63 Rubi. Barcelona 08191 Spain
Manufacturer: Cixi Yushi Communication Electric Power Equipment Co.,Ltd
Address of Manufacturer:

Factory: RESERVED DATA
Address of Factory:

Equipment Under Test (EUT):

EUT Name: Fan Installed In Network Cabinet(Network Cabinet)
Model No.: RAC-156xx-HQ
Add Model No.: RAC-046xx-HQ, RAC-066xx-HQ, RAC-096xx-HQ, RAC-126xx-HQ, RAC-186xx-HQ, RAC-226xx-HQ, RAC-276xx-HQ, RAC-326xx-HQ, RAC-376xx-HQ, RAC-426xx-HQ, RAC-428xx-HQ, RAC-476xx-HQ, RAC-478xx-HQ
☞ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Standards: EN 55014-1:2006+A1:2009+A2:2011, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013.

Date of Receipt: 2017-08-10
Date of Test: 2017-08-10 to 2017-08-23
Date of Issue: 2017-10-16

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

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

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



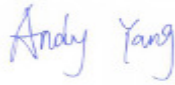

Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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| Revision Record | | | | |
|------------------------|----------------|-------------|-----------------|--------------------------------|
| Version | Chapter | Date | Modifier | Remark |
| 00 | Co-license | 2017-10-16 | / | Copy Based on SHEM170800527101 |
| | | | | |
| | | | | |

| | | | |
|---------------------------------|--|------------------------------------|-------------|
| Authorized for issue by: | | | |
| Tested By |  | | 2017-08-10 |
| | <hr/> | Andy_Yang /Project Engineer | Date |
| Checked By |  | | 2017-08-23 |
| | <hr/> | Zenger_zhang /Reviewer | Date |



2 Test Summary

| Emission Part | | | | |
|---|-----------------------------------|-------------------|--------------------------|--------|
| Item | Standard | Method | Requirement | Result |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | EN 55014-1:2006 +A1:2009 +A2:2011 | CISPR 16-2-1 | N/A | Pass |
| Disturbance Power | EN 55014-1:2006 +A1:2009 +A2:2011 | CISPR 16-2-2 | N/A | Pass |
| Harmonic Current Emission | EN 61000-3-2:2014 | EN 61000-3-2:2014 | Class A | Pass |
| Voltage Fluctuations and Flicker | EN 61000-3-3:2013 | EN 61000-3-3:2013 | Clause 5 of EN 61000-3-3 | Pass |
| Electromagnetic Susceptibility(EMS) | | | | |
| Immunity | EN 55014-2:2015 | N/A | N/A | N/A* |

N/A: Not applicable

N/A*: Please refer to section 7 of this report for more details.

There is no EMS test requirement, since the EUT belongs to Category I of EN 55014-2:2015

Declaration of EUT Family Grouping:

Note1: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model RAC-156xx-HQ was tested since their differences were the model number, appearance and size deviation.

Note2: The report is co-license based on SHEM170800527101 and the applicant information and model number are changed.



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 2200-240V, 50-60Hz
Test voltage: AC 230V
Cable: AC cable 1.1m (3 wire)

4.2 Description of Support Units

None.

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|--|-------------------------|
| 1 | Conducted Emission at mains port using AMN | 3.2dB (9kHz to 150kHz) |
| | | 3.0dB (150kHz to 30MHz) |
| | Conducted Emission at mains port using VP | 1.9 dB(9kHz to 30MHz) |
| | Conducted Emission at telecommunication port using AAN | 2.4 dB(150kHz to 30MHz) |
| 2 | Radiated Power | 3.5dB |
| 3 | Radiated emission | 4.4dB (30MHz-1GHz) |
| | | 4.6dB (1GHz-6GHz) |
| 4 | Radiated Immunity | 1.64dB |
| 5 | Conducted Immunity | 0.96dB |
| 6 | ESD | 6 % |
| 7 | EFT (Electrical Fast Transients) | 5 % |
| 8 | Surge Immunity | 5 % |
| 9 | Voltage Dips and Interruptions | 4 % |
| 10 | 20 system | 1.5dB |
| 11 | Temperature test | 1 °C |
| 12 | Humidity test | 3% |
| 13 | DC power test | 0.5 % |



4.4 Standards Applicable for Testing

Table 1 : Tests Carried Out Under EN 55014-1:2006 +A1:2009 +A2:2011

| Item | Status |
|---|--------|
| Conducted Emissions at Mains Terminals (9kHz-30MHz) | × |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | √ |
| Conducted Emissions at Load Terminals and Additional Terminals | × |
| Discontinuous Disturbance (150kHz-30MHz) | × |
| Disturbance Power | √ |
| Radiated Emissions (30MHz-1GHz) | × |
| Radiated Emissions (Magnetic field Induced Current)(9kHz-30MHz) | × |

Table 2 : Tests Carried Out Under EN 61000-3-2:2014

| Item | Status |
|---------------------------|--------|
| Harmonic Current Emission | √ |

Table 3 : Tests Carried Out Under EN 61000-3-3:2013

| Item | Status |
|----------------------------------|--------|
| Voltage Fluctuations and Flicker | √ |

Table 4 : Tests Carried Out Under EN 55014-2:2015

| Item | Status |
|---|--------|
| Electrostatic Discharge | × |
| Radiated Immunity (80MHz-1GHz) | × |
| Electrical Fast Transients/Burst at Power Port | × |
| Electrical Fast Transients/Burst at Signal Port | × |
| Surge at Power Port | × |
| Conducted Immunity at Power Port (150kHz-80MHz) | × |
| Conducted Immunity at Signal Port (150kHz-80MHz) | × |
| Voltage Dips and Interruptions | × |
| Conducted Immunity at Power Port (150kHz-230MHz) | × |
| Conducted Immunity at Signal Port (150kHz-230MHz) | × |
| Electrical Fast Transients/Burst at DC port | × |
| Conducted Immunity at DC Port (150kHz-80MHz) | × |

- × Indicates that the test is not applicable
√ Indicates that the test is applicable



4.5 Test Location

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

Tests were sub-contracted.

Ningbo Joysun Product Testing Service Co., Ltd.

No. 66, Qingyi Road, Hi-Tech Distric, Ningbo, Zhejiang, China

4.6 Test Facility

- **CNAS (No. CNAS L0599)**

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

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868,C-4336,T-2221,G-830 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

4.9 Monitoring of EUT for All Immunity Test

Visual: Working Status of the EUT



5 Equipment List

CE

| Equipment | Model No | Inventory No | Manufacturer | Cal Due Date |
|--------------------------|----------------|--------------|--------------|--------------|
| EMI receiver | ESCI | 100708 | R&S | 2018/2/24 |
| Artificial mains network | ENV216 | 101022 | R&S | 2018/2/24 |
| Artificial mains network | ESH2-Z5 | 100198 | R&S | 2018/2/24 |
| Pulse Limiter | ESH3-Z2 | 100847 | R&S | 2018/2/24 |
| Control Room2 | (11.2*5.2*3.3) | | Albatross | 2020/3/2 |

DP

| Equipment | Model No | Inventory No | Manufacturer | Cal Due Date |
|-----------------|--------------|--------------|--------------|--------------|
| EMI receiver | ESCI | 101213 | R&S | 2018/2/24 |
| orbit | KMS 6000 | | R&S | 2018/2/24 |
| Absorbing clamp | MSD-21 | 100309 | R&S | 2018/2/24 |
| Shielding Room1 | (10*6.1*3.3) | | Albatross | 2020/3/2 |

Harmonic & Flicker

| Equipment | Model No | Inventory No | Manufacturer | Cal Due Date |
|--|----------------|--------------|--------------|--------------|
| Harmonic and flicker test system | DPA500 | V0746103124 | EM TEST | 2018/2/24 |
| AC Power Source | 500lix-400-413 | 58311 | CI | 2018/2/24 |
| Shielding Room1 | (10*6.1*3.3) | | Albatross | 2020/3/2 |
| Harmonic and flicker test system(3phase) | DPA503 | V0828104013 | EM TEST | 2018/2/24 |
| AC Power Source | 61705 | 617050000124 | Chroma | 2018/2/24 |
| Shielding Room2 | (10*4.9*3.0) | | Albatross | 2020/3/2 |

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

| | |
|-------------------|--|
| Test Requirement: | EN 55014-1:2006 +A1:2009 +A2:2011 |
| Test Method: | CISPR 16-2-1 |
| Frequency Range: | 150kHz to 30MHz |
| Limit: | |
| 0.15M-0.5MHz | 66dB(μV)-56dB(μV) quasi-peak, 59dB(μV)-46dB(μV) average |
| 0.5M-5MHz | 56dB(μV) quasi-peak, 46dB(μV) average |
| 5M-30MHz | 60dB(μV) quasi-peak, 50dB(μV) average |
| Detector: | Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

6.1.1 E.U.T. Operation

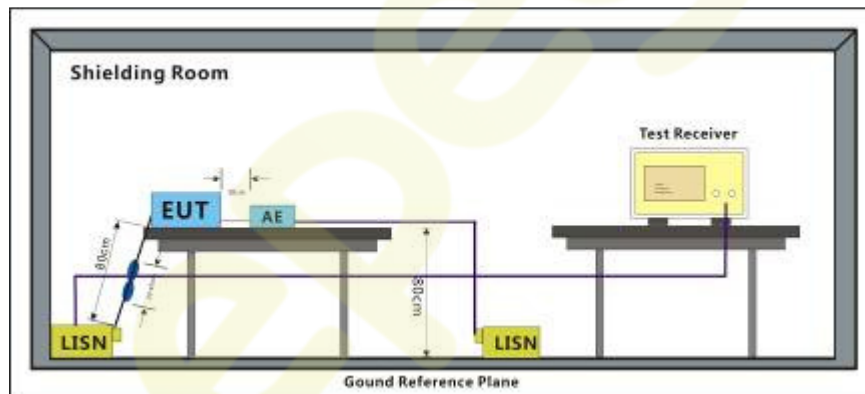
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

The worst case for
final test:

a: Keep EUT running continuously.

6.1.2 Test Setup Diagram



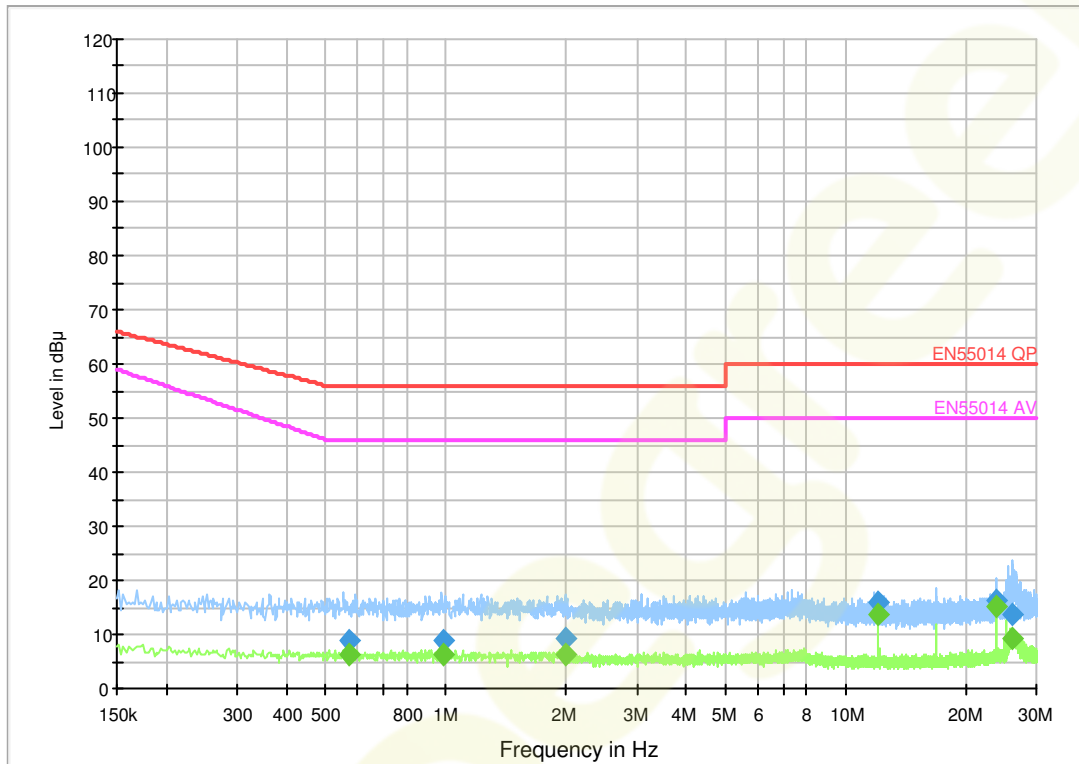
6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



Mode:a; Line:Live Line

Voltage with 2-Line-LISN



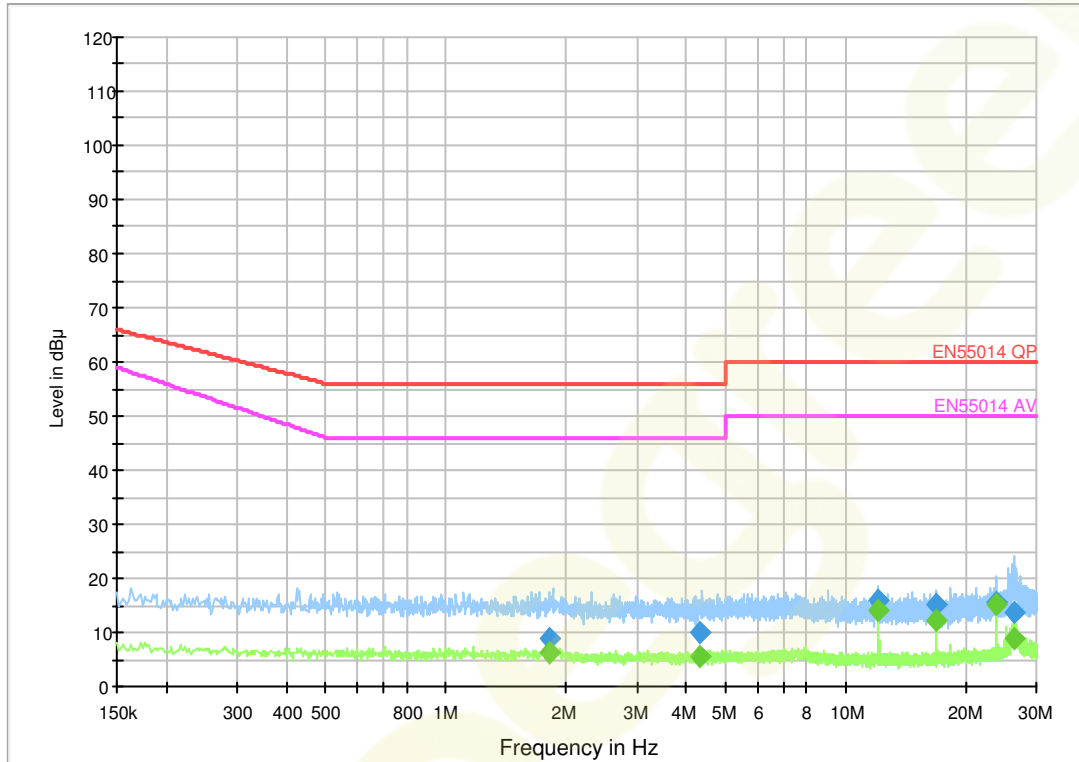
| Frequency (MHz) | QuasiPeak (dB µV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dB µV) |
|-----------------|-------------------|-----------------|-----------------|--------|------|------------|-------------|---------------|
| 0.570000 | 8.9 | 1000.0 | 9.000 | Off | L1 | 10.8 | 47.1 | 56.0 |
| 0.990000 | 8.8 | 1000.0 | 9.000 | Off | L1 | 10.8 | 47.2 | 56.0 |
| 1.980000 | 9.1 | 1000.0 | 9.000 | Off | L1 | 10.8 | 46.9 | 56.0 |
| 12.000000 | 15.8 | 1000.0 | 9.000 | Off | L1 | 10.9 | 44.2 | 60.0 |
| 23.832000 | 16.5 | 1000.0 | 9.000 | Off | L1 | 10.9 | 43.5 | 60.0 |
| 26.091000 | 13.8 | 1000.0 | 9.000 | Off | L1 | 11.0 | 46.2 | 60.0 |

| Frequency (MHz) | CAverage (dB µV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dB µV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|---------------|
| 0.570000 | 6.3 | 1000.0 | 9.000 | Off | L1 | 10.8 | 39.7 | 46.0 |
| 0.990000 | 6.2 | 1000.0 | 9.000 | Off | L1 | 10.8 | 39.8 | 46.0 |
| 1.980000 | 6.3 | 1000.0 | 9.000 | Off | L1 | 10.8 | 39.7 | 46.0 |
| 12.000000 | 13.7 | 1000.0 | 9.000 | Off | L1 | 10.9 | 36.3 | 50.0 |
| 23.832000 | 15.1 | 1000.0 | 9.000 | Off | L1 | 10.9 | 34.9 | 50.0 |
| 26.091000 | 9.1 | 1000.0 | 9.000 | Off | L1 | 11.0 | 40.9 | 50.0 |



Mode:a; Line:Neutral Line

Voltage with 2-Line-LISN



| Frequency (MHz) | QuasiPeak (dB µV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dB µV) |
|-----------------|-------------------|-----------------|-----------------|--------|------|------------|-------------|---------------|
| 1.820000 | 8.9 | 1000.0 | 9.000 | Off | N | 10.7 | 47.1 | 56.0 |
| 4.319000 | 10.1 | 1000.0 | 9.000 | Off | N | 10.8 | 45.9 | 56.0 |
| 12.000000 | 16.1 | 1000.0 | 9.000 | Off | N | 11.0 | 43.9 | 60.0 |
| 16.838000 | 15.1 | 1000.0 | 9.000 | Off | N | 11.0 | 44.9 | 60.0 |
| 23.826000 | 15.6 | 1000.0 | 9.000 | Off | N | 11.1 | 44.4 | 60.0 |
| 26.471000 | 13.6 | 1000.0 | 9.000 | Off | N | 11.2 | 46.4 | 60.0 |

| Frequency (MHz) | CAverage (dB µV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dB µV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|---------------|
| 1.820000 | 6.1 | 1000.0 | 9.000 | Off | N | 10.7 | 39.9 | 46.0 |
| 4.319000 | 5.5 | 1000.0 | 9.000 | Off | N | 10.8 | 40.5 | 46.0 |
| 12.000000 | 14.0 | 1000.0 | 9.000 | Off | N | 11.0 | 36.0 | 50.0 |
| 16.838000 | 12.2 | 1000.0 | 9.000 | Off | N | 11.0 | 37.8 | 50.0 |
| 23.826000 | 15.1 | 1000.0 | 9.000 | Off | N | 11.1 | 34.9 | 50.0 |
| 26.471000 | 9.0 | 1000.0 | 9.000 | Off | N | 11.2 | 41.0 | 50.0 |

6.2 Disturbance Power

| | |
|-------------------|---|
| Test Requirement: | EN 55014-1:2006 +A1:2009 +A2:2011 |
| Test Method: | CISPR 16-2-2 |
| Frequency Range: | 30MHz to 300MHz |
| Limit: | |
| 30MHz- 300MHz | 45dB(pw)-55dB(pw) quasi-peak, 35dB(pw)-45dB(pw) average |
| Detector: | Peak for pre-scan (120kHz resolution bandwidth) 30M to 300MHz |

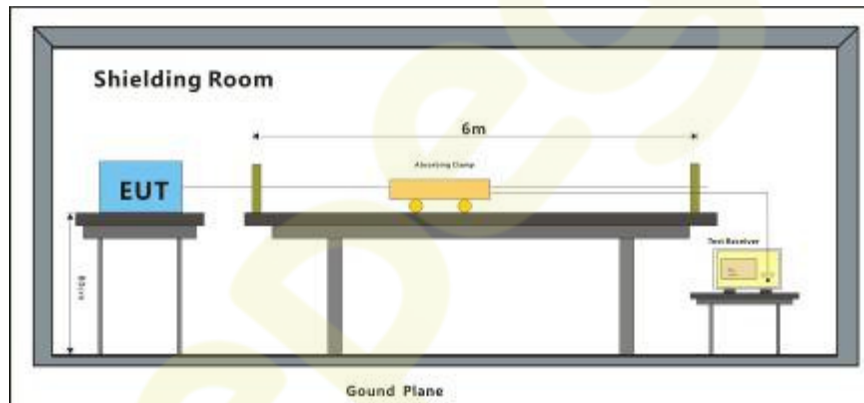
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

The worst case for final test:
a: Keep EUT running continuously.

6.2.2 Test Setup Diagram



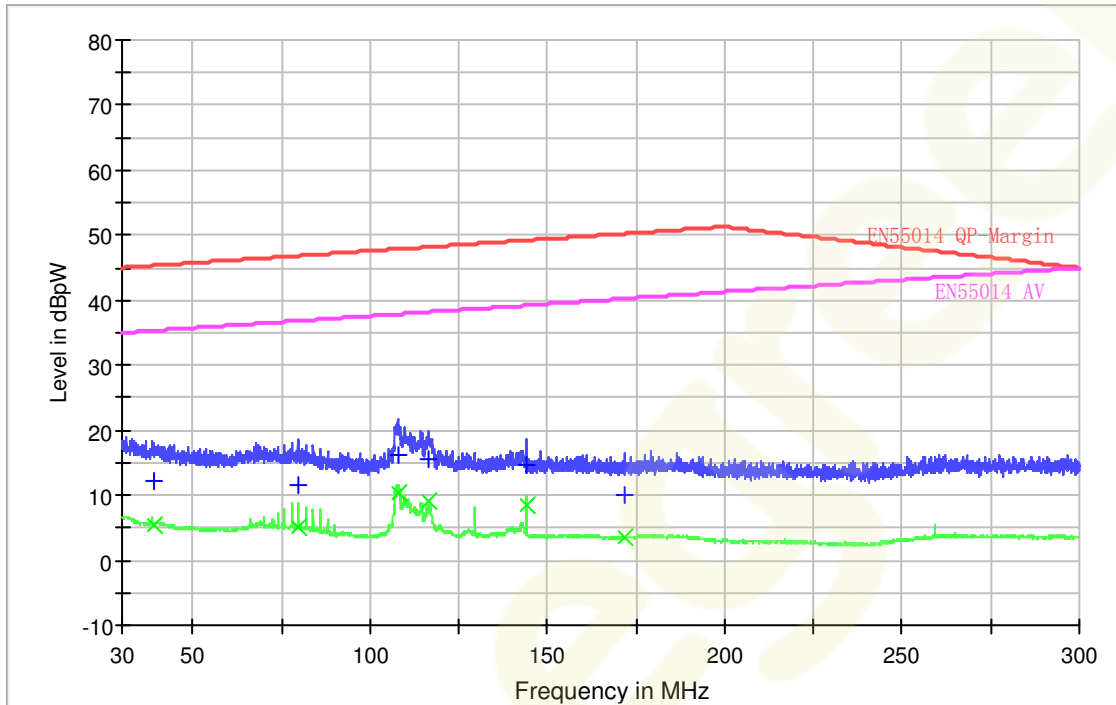
6.2.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



Mode:a

Power EMI pre



| Frequency (MHz) | QuasiPeak (dBpW) | Meas. Time (ms) | Bandwidth (kHz) | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBpW) |
|-----------------|------------------|-----------------|-----------------|------------|-------------------|--------------------|
| 38.820000 | 12.1 | 1000.0 | 120.000 | 8.1 | 33.2 | 45.3 |
| 79.440000 | 11.6 | 1000.0 | 120.000 | 7.4 | 35.2 | 46.8 |
| 107.700000 | 16.2 | 1000.0 | 120.000 | 6.6 | 31.7 | 47.9 |
| 116.400000 | 15.5 | 1000.0 | 120.000 | 6.7 | 32.7 | 48.2 |
| 144.000000 | 14.7 | 1000.0 | 120.000 | 6.2 | 34.5 | 49.2 |
| 171.780000 | 10.1 | 1000.0 | 120.000 | 5.2 | 40.2 | 50.3 |

| Frequency (MHz) | Average (dBpW) | Meas. Time (ms) | Bandwidth (kHz) | Corr. (dB) | Margin - AVG (dB) | Limit - AVG (dBpW) |
|-----------------|----------------|-----------------|-----------------|------------|-------------------|--------------------|
| 38.820000 | 5.6 | 1000.0 | 120.000 | 8.1 | 29.7 | 35.3 |
| 79.440000 | 5.1 | 1000.0 | 120.000 | 7.4 | 31.7 | 36.8 |
| 107.700000 | 10.4 | 1000.0 | 120.000 | 6.6 | 27.5 | 37.9 |
| 116.400000 | 9.0 | 1000.0 | 120.000 | 6.7 | 29.2 | 38.2 |
| 144.000000 | 8.4 | 1000.0 | 120.000 | 6.2 | 30.8 | 39.2 |
| 171.780000 | 3.5 | 1000.0 | 120.000 | 5.2 | 36.8 | 40.3 |

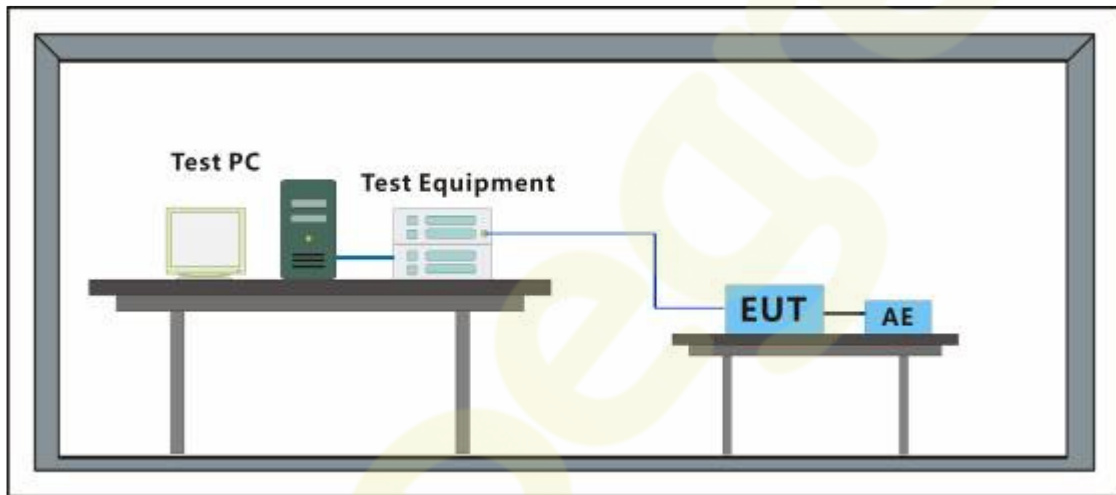
6.3 Harmonic Current Emission

Test Requirement: EN 61000-3-2:2014
Test Method: EN 61000-3-2:2014
Frequency Range: 100Hz to 2kHz

6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1010 mbar
Test mode a: Keep EUT running continuously.

6.3.2 Test Setup



6.3.3 Measurement Data



Mode:a

Power and THD results - DS: 1

| | | | |
|-------------------|---------|-------------------|-------|
| True power P: | 88.81W | Apparent power S: | 105VA |
| Reactiv power Q: | 56.1var | Power factor: | 0.845 |
| THD (U): | 0.002 | THD (I): | 0.147 |
| Crest Factor (U): | 1.413 | Crest Factor (I): | 1.555 |

Average harmonic current results

| Hn | Ieff [A] | Ieff [%] | Limit [A] | Result |
|----|------------|----------|-----------|--------|
| 1 | 423.747E-3 | 100.000 | | |
| 2 | 835.303E-6 | 0.197 | 1.08 | PASS |
| 3 | 59.308E-3 | 13.996 | 2.30 | PASS |
| 4 | 1.442E-3 | 0.340 | 430.00E-3 | PASS |
| 5 | 16.847E-3 | 3.976 | 1.14 | PASS |
| 6 | 822.904E-6 | 0.194 | 300.00E-3 | PASS |
| 7 | 4.910E-3 | 1.159 | 770.00E-3 | PASS |
| 8 | 791.266E-6 | 0.187 | 230.00E-3 | PASS |
| 9 | 3.065E-3 | 0.723 | 400.00E-3 | PASS |
| 10 | 782.627E-6 | 0.185 | 184.00E-3 | PASS |
| 11 | 1.776E-3 | 0.419 | 330.00E-3 | PASS |
| 12 | 749.942E-6 | 0.177 | 153.33E-3 | PASS |
| 13 | 1.162E-3 | 0.274 | 210.00E-3 | PASS |
| 14 | 1.419E-3 | 0.335 | 131.43E-3 | PASS |
| 15 | 860.200E-6 | 0.203 | 150.00E-3 | PASS |
| 16 | 751.264E-6 | 0.177 | 115.00E-3 | PASS |
| 17 | 755.336E-6 | 0.178 | 132.35E-3 | PASS |
| 18 | 1.396E-3 | 0.330 | 102.22E-3 | PASS |
| 19 | 842.952E-6 | 0.199 | 118.42E-3 | PASS |
| 20 | 758.672E-6 | 0.179 | 92.00E-3 | PASS |
| 21 | 740.218E-6 | 0.175 | 160.71E-3 | PASS |
| 22 | 750.992E-6 | 0.177 | 83.64E-3 | PASS |
| 23 | 1.392E-3 | 0.328 | 146.74E-3 | PASS |
| 24 | 784.610E-6 | 0.185 | 76.66E-3 | PASS |
| 25 | 711.290E-6 | 0.168 | 135.00E-3 | PASS |
| 26 | 766.811E-6 | 0.181 | 70.77E-3 | PASS |
| 27 | 785.589E-6 | 0.185 | 124.99E-3 | PASS |
| 28 | 1.254E-3 | 0.296 | 65.71E-3 | PASS |
| 29 | 744.652E-6 | 0.176 | 116.39E-3 | PASS |
| 30 | 751.593E-6 | 0.177 | 61.33E-3 | PASS |
| 31 | 756.089E-6 | 0.178 | 108.87E-3 | PASS |
| 32 | 1.204E-3 | 0.284 | 57.50E-3 | PASS |
| 33 | 769.680E-6 | 0.182 | 102.27E-3 | PASS |
| 34 | 752.489E-6 | 0.178 | 54.12E-3 | PASS |
| 35 | 687.789E-6 | 0.162 | 96.44E-3 | PASS |
| 36 | 780.220E-6 | 0.184 | 51.11E-3 | PASS |
| 37 | 1.116E-3 | 0.263 | 91.21E-3 | PASS |
| 38 | 781.133E-6 | 0.184 | 48.42E-3 | PASS |
| 39 | 694.314E-6 | 0.164 | 86.53E-3 | PASS |
| 40 | 757.086E-6 | 0.179 | 46.00E-3 | PASS |



Maximum harmonic current results

| Hn | I _{eff} [A] | I _{eff} [%] | Limit [A] | Result |
|----|----------------------|----------------------|-----------|--------|
| 1 | 448.303E-3 | 100.000 | | |
| 2 | 1.002E-3 | 0.224 | 1.62 | PASS |
| 3 | 63.255E-3 | 14.110 | 3.45 | PASS |
| 4 | 1.674E-3 | 0.374 | 645.00E-3 | PASS |
| 5 | 17.685E-3 | 3.945 | 1.71 | PASS |
| 6 | 939.634E-6 | 0.210 | 450.00E-3 | PASS |
| 7 | 5.196E-3 | 1.159 | 1.15 | PASS |
| 8 | 926.464E-6 | 0.207 | 345.00E-3 | PASS |
| 9 | 3.276E-3 | 0.731 | 600.00E-3 | PASS |
| 10 | 906.952E-6 | 0.202 | 276.00E-3 | PASS |
| 11 | 1.925E-3 | 0.429 | 495.00E-3 | PASS |
| 12 | 978.953E-6 | 0.218 | 229.99E-3 | PASS |
| 13 | 1.341E-3 | 0.299 | 315.00E-3 | PASS |
| 14 | 1.576E-3 | 0.352 | 197.15E-3 | PASS |
| 15 | 951.773E-6 | 0.212 | 225.00E-3 | PASS |
| 16 | 901.190E-6 | 0.201 | 172.50E-3 | PASS |
| 17 | 856.280E-6 | 0.191 | 198.52E-3 | PASS |
| 18 | 1.557E-3 | 0.347 | 153.33E-3 | PASS |
| 19 | 959.201E-6 | 0.214 | 177.63E-3 | PASS |
| 20 | 904.267E-6 | 0.202 | 138.00E-3 | PASS |
| 21 | 868.079E-6 | 0.194 | 160.71E-3 | PASS |
| 22 | 911.499E-6 | 0.203 | 125.46E-3 | PASS |
| 23 | 1.551E-3 | 0.346 | 146.74E-3 | PASS |
| 24 | 916.530E-6 | 0.204 | 114.99E-3 | PASS |
| 25 | 863.480E-6 | 0.193 | 135.00E-3 | PASS |
| 26 | 898.509E-6 | 0.200 | 106.16E-3 | PASS |
| 27 | 905.732E-6 | 0.202 | 124.99E-3 | PASS |
| 28 | 1.536E-3 | 0.343 | 98.57E-3 | PASS |
| 29 | 984.599E-6 | 0.220 | 116.39E-3 | PASS |
| 30 | 979.709E-6 | 0.219 | 92.00E-3 | PASS |
| 31 | 980.604E-6 | 0.219 | 108.87E-3 | PASS |
| 32 | 1.364E-3 | 0.304 | 86.25E-3 | PASS |
| 33 | 902.544E-6 | 0.201 | 102.27E-3 | PASS |
| 34 | 887.673E-6 | 0.198 | 81.18E-3 | PASS |
| 35 | 791.130E-6 | 0.176 | 96.44E-3 | PASS |
| 36 | 1.008E-3 | 0.225 | 76.66E-3 | PASS |
| 37 | 1.233E-3 | 0.275 | 91.21E-3 | PASS |
| 38 | 934.861E-6 | 0.209 | 72.63E-3 | PASS |
| 39 | 958.453E-6 | 0.214 | 86.53E-3 | PASS |
| 40 | 955.326E-6 | 0.213 | 69.00E-3 | PASS |



Maximum harmonic voltage results

| Hn | Ueff [V] | Ueff [%] | Limit [%] | Result |
|----|-----------|----------|-----------|--------|
| 1 | 230.61 | 100.264 | | |
| 2 | 67.72E-3 | 0.029 | 0.2 | PASS |
| 3 | 471.92E-3 | 0.205 | 0.9 | PASS |
| 4 | 54.97E-3 | 0.024 | 0.2 | PASS |
| 5 | 45.67E-3 | 0.020 | 0.4 | PASS |
| 6 | 48.49E-3 | 0.021 | 0.2 | PASS |
| 7 | 26.43E-3 | 0.011 | 0.3 | PASS |
| 8 | 17.23E-3 | 0.007 | 0.2 | PASS |
| 9 | 30.71E-3 | 0.013 | 0.2 | PASS |
| 10 | 10.21E-3 | 0.004 | 0.2 | PASS |
| 11 | 9.38E-3 | 0.004 | 0.1 | PASS |
| 12 | 11.16E-3 | 0.005 | 0.1 | PASS |
| 13 | 12.12E-3 | 0.005 | 0.1 | PASS |
| 14 | 9.76E-3 | 0.004 | 0.1 | PASS |
| 15 | 13.99E-3 | 0.006 | 0.1 | PASS |
| 16 | 15.38E-3 | 0.007 | 0.1 | PASS |
| 17 | 7.13E-3 | 0.003 | 0.1 | PASS |
| 18 | 13.65E-3 | 0.006 | 0.1 | PASS |
| 19 | 10.70E-3 | 0.005 | 0.1 | PASS |
| 20 | 11.64E-3 | 0.005 | 0.1 | PASS |
| 21 | 11.03E-3 | 0.005 | 0.1 | PASS |
| 22 | 10.27E-3 | 0.004 | 0.1 | PASS |
| 23 | 9.57E-3 | 0.004 | 0.1 | PASS |
| 24 | 8.12E-3 | 0.004 | 0.1 | PASS |
| 25 | 6.97E-3 | 0.003 | 0.1 | PASS |
| 26 | 8.04E-3 | 0.003 | 0.1 | PASS |
| 27 | 9.01E-3 | 0.004 | 0.1 | PASS |
| 28 | 7.11E-3 | 0.003 | 0.1 | PASS |
| 29 | 10.65E-3 | 0.005 | 0.1 | PASS |
| 30 | 7.02E-3 | 0.003 | 0.1 | PASS |
| 31 | 10.06E-3 | 0.004 | 0.1 | PASS |
| 32 | 6.96E-3 | 0.003 | 0.1 | PASS |
| 33 | 9.67E-3 | 0.004 | 0.1 | PASS |
| 34 | 8.65E-3 | 0.004 | 0.1 | PASS |
| 35 | 7.49E-3 | 0.003 | 0.1 | PASS |
| 36 | 8.07E-3 | 0.004 | 0.1 | PASS |
| 37 | 8.23E-3 | 0.004 | 0.1 | PASS |
| 38 | 8.40E-3 | 0.004 | 0.1 | PASS |
| 39 | 10.46E-3 | 0.005 | 0.1 | PASS |
| 40 | 8.50E-3 | 0.004 | 0.1 | PASS |



Harmonic current results - DS: 1

| Hn | I _{eff} [A] | I _{eff} [%] | Limit [A] | Result |
|----|----------------------|----------------------|-----------|--------|
| 1 | 444.093E-3 | 100.000 | | |
| 2 | 800.594E-6 | 0.180 | 1.08 | PASS |
| 3 | 62.509E-3 | 14.076 | 2.30 | PASS |
| 4 | 1.380E-3 | 0.311 | 430.00E-3 | PASS |
| 5 | 17.221E-3 | 3.878 | 1.14 | PASS |
| 6 | 857.648E-6 | 0.193 | 300.00E-3 | PASS |
| 7 | 5.087E-3 | 1.145 | 770.00E-3 | PASS |
| 8 | 752.422E-6 | 0.169 | 230.00E-3 | PASS |
| 9 | 3.089E-3 | 0.696 | 400.00E-3 | PASS |
| 10 | 754.494E-6 | 0.170 | 184.00E-3 | PASS |
| 11 | 1.807E-3 | 0.407 | 330.00E-3 | PASS |
| 12 | 730.452E-6 | 0.164 | 153.33E-3 | PASS |
| 13 | 1.089E-3 | 0.245 | 210.00E-3 | PASS |
| 14 | 1.448E-3 | 0.326 | 131.43E-3 | PASS |
| 15 | 855.997E-6 | 0.193 | 150.00E-3 | PASS |
| 16 | 709.460E-6 | 0.160 | 115.00E-3 | PASS |
| 17 | 801.942E-6 | 0.181 | 132.35E-3 | PASS |
| 18 | 1.365E-3 | 0.307 | 102.22E-3 | PASS |
| 19 | 894.053E-6 | 0.201 | 118.42E-3 | PASS |
| 20 | 721.681E-6 | 0.163 | 92.00E-3 | PASS |
| 21 | 766.336E-6 | 0.173 | 107.14E-3 | PASS |
| 22 | 761.238E-6 | 0.171 | 83.64E-3 | PASS |
| 23 | 1.338E-3 | 0.301 | 97.83E-3 | PASS |
| 24 | 784.708E-6 | 0.177 | 76.66E-3 | PASS |
| 25 | 767.828E-6 | 0.173 | 90.00E-3 | PASS |
| 26 | 755.147E-6 | 0.170 | 70.77E-3 | PASS |
| 27 | 804.780E-6 | 0.181 | 83.33E-3 | PASS |
| 28 | 1.259E-3 | 0.284 | 65.71E-3 | PASS |
| 29 | 838.680E-6 | 0.189 | 77.59E-3 | PASS |
| 30 | 808.765E-6 | 0.182 | 61.33E-3 | PASS |
| 31 | 693.582E-6 | 0.156 | 72.58E-3 | PASS |
| 32 | 1.217E-3 | 0.274 | 57.50E-3 | PASS |
| 33 | 752.409E-6 | 0.169 | 68.18E-3 | PASS |
| 34 | 711.257E-6 | 0.160 | 54.12E-3 | PASS |
| 35 | 725.279E-6 | 0.163 | 64.29E-3 | PASS |
| 36 | 781.916E-6 | 0.176 | 51.11E-3 | PASS |
| 37 | 1.147E-3 | 0.258 | 60.81E-3 | PASS |
| 38 | 793.795E-6 | 0.179 | 48.42E-3 | PASS |
| 39 | 707.119E-6 | 0.159 | 57.69E-3 | PASS |
| 40 | 744.760E-6 | 0.168 | 46.00E-3 | PASS |



Harmonic voltage results - DS: 1

| Hn | Ueff [V] | Ueff [%] | Limit [%] | Result |
|----|-----------|----------|-----------|--------|
| 1 | 230.59 | 100.255 | | |
| 2 | 52.69E-3 | 0.023 | 0.2 | PASS |
| 3 | 462.71E-3 | 0.201 | 0.9 | PASS |
| 4 | 44.99E-3 | 0.020 | 0.2 | PASS |
| 5 | 39.31E-3 | 0.017 | 0.4 | PASS |
| 6 | 4.40E-3 | 0.002 | 0.2 | PASS |
| 7 | 19.50E-3 | 0.008 | 0.3 | PASS |
| 8 | 8.57E-3 | 0.004 | 0.2 | PASS |
| 9 | 25.44E-3 | 0.011 | 0.2 | PASS |
| 10 | 5.01E-3 | 0.002 | 0.2 | PASS |
| 11 | 1.73E-3 | 0.001 | 0.1 | PASS |
| 12 | 2.83E-3 | 0.001 | 0.1 | PASS |
| 13 | 1.08E-3 | 0.000 | 0.1 | PASS |
| 14 | 2.93E-3 | 0.001 | 0.1 | PASS |
| 15 | 10.38E-3 | 0.005 | 0.1 | PASS |
| 16 | 7.23E-3 | 0.003 | 0.1 | PASS |
| 17 | 3.67E-3 | 0.002 | 0.1 | PASS |
| 18 | 5.90E-3 | 0.003 | 0.1 | PASS |
| 19 | 1.39E-3 | 0.001 | 0.1 | PASS |
| 20 | 6.70E-3 | 0.003 | 0.1 | PASS |
| 21 | 6.27E-3 | 0.003 | 0.1 | PASS |
| 22 | 2.04E-3 | 0.001 | 0.1 | PASS |
| 23 | 1.58E-3 | 0.001 | 0.1 | PASS |
| 24 | 4.12E-3 | 0.002 | 0.1 | PASS |
| 25 | 3.90E-3 | 0.002 | 0.1 | PASS |
| 26 | 2.05E-3 | 0.001 | 0.1 | PASS |
| 27 | 1.32E-3 | 0.001 | 0.1 | PASS |
| 28 | 2.41E-3 | 0.001 | 0.1 | PASS |
| 29 | 4.03E-3 | 0.002 | 0.1 | PASS |
| 30 | 2.79E-3 | 0.001 | 0.1 | PASS |
| 31 | 1.25E-3 | 0.001 | 0.1 | PASS |
| 32 | 2.49E-3 | 0.001 | 0.1 | PASS |
| 33 | 3.93E-3 | 0.002 | 0.1 | PASS |
| 34 | 2.52E-3 | 0.001 | 0.1 | PASS |
| 35 | 2.24E-3 | 0.001 | 0.1 | PASS |
| 36 | 1.53E-3 | 0.001 | 0.1 | PASS |
| 37 | 455.89E-6 | 0.000 | 0.1 | PASS |
| 38 | 1.84E-3 | 0.001 | 0.1 | PASS |
| 39 | 4.30E-3 | 0.002 | 0.1 | PASS |
| 40 | 625.85E-6 | 0.000 | 0.1 | PASS |

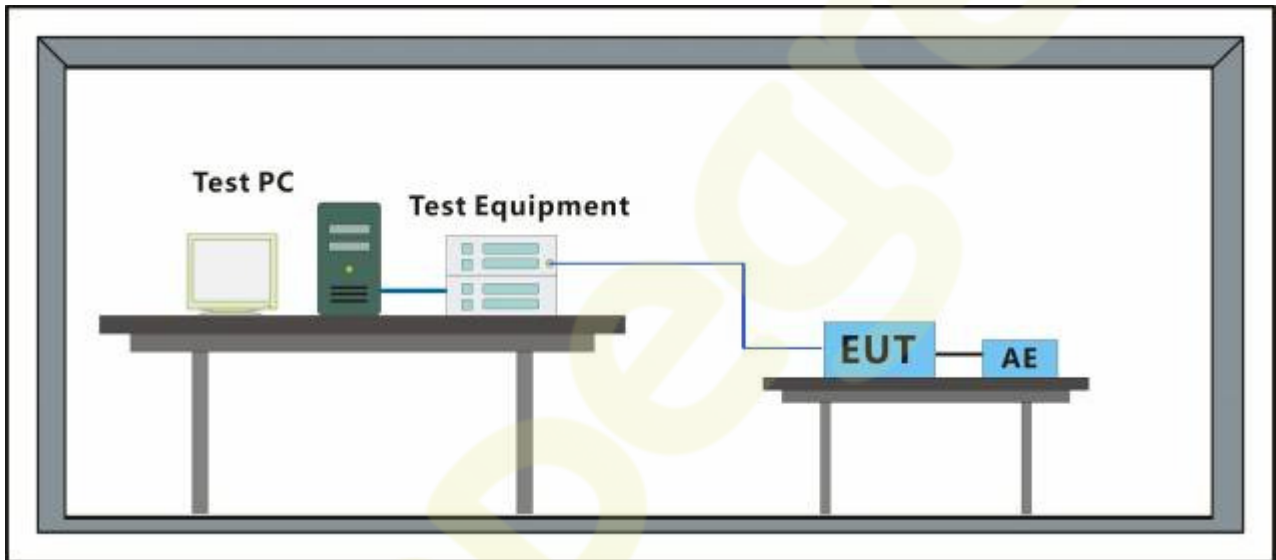
6.4 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013
Test Method: EN 61000-3-3:2013

6.4.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1003 mbar
The worst case for final test: a: Keep EUT running continuously.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Mode:a

Maximum Flicker results

| | EUT values | Limit | Result |
|----------|------------|-------|--------|
| Pst | 0.038 | 1.00 | PASS |
| Plt | 0.037 | 0.65 | PASS |
| dc [%] | 0.118 | 3.30 | PASS |
| dmax [%] | 0.292 | 4.00 | PASS |
| dt [s] | 0.000 | 0.50 | PASS |



7 Electromagnetic Susceptibility Test Results

Test Requirement: EN 55014-2

Test Method: Hence the EUT is defined as category I of EN 55014-2 and see the below

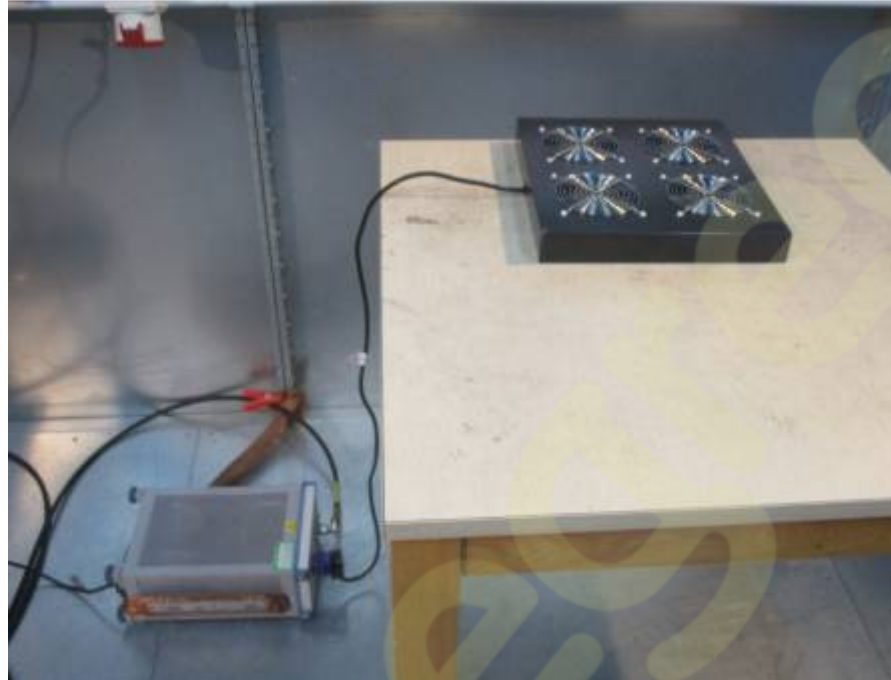
Category I: apparatus containing no electronic control circuitry.

All appliances having no electronic control circuitry are considered to be category I.

Electric circuits consisting of passive components (such as radio interference suppression capacitors or inductors, mains transformers, mains frequency rectifiers and heating elements) are not considered to be electronic control circuitry. EXAMPLES Appliances operated with a motor and mechanical switch only; lighting toys with a battery and a LED or incandescent lamp without additional electronic control circuitry; track sets without electronic control circuitry; heating or cooling appliances without electronic control circuitry; tools without electronic controls and all other apparatus containing only electromechanical components (e. g. switches or thermostats).

8 Photographs

8.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



8.2 Disturbance Power Test Setup



8.3 Harmonic & Voltage Fluctuations and Flicker Test Setup



8.4 EUT Constructional Details





--End of the Report--