

Verification of Compliance

Verification No.: MK23110140P01-C01
Name and address of Applicant: **Zhongshan Guzhen Dikas lighting factory**
 Beihai Industrial Park, Guzhen Town, Zhongshan City, China
Name and address of Manufacturer: **Zhongshan Guzhen Dikas lighting factory**
 Beihai Industrial Park, Guzhen Town, Zhongshan City, China
Product name: **Fan lights**
Product model(s): FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3
Product trademark: N/A

This verification confirms that the product meets the requirements of the following standard. The conformity was demonstrated based on following standard(s) listed by European Commission as harmonized with Directive RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU

| | |
|----------------------------|--------------------|
| IEC 62321-1:2013 | IEC 62321-3-1:2013 |
| IEC 62321-4:2013/AMD1:2017 | IEC 62321-5:2013 |
| IEC 62321-6:2015 | IEC 62321-7-1:2015 |
| IEC 62321-7-2:2017 | IEC 62321-8:2017 |

The verification has been carried out in accordance with individual rules and conditions agreed with the applicant. Evaluation has been carried out in accordance with:

Test report(s) No.: MK23110140P01-C01
Test conducted by: TMC Testing Services (Shenzhen) Co., Ltd.
Verification issue date: December 7, 2023

Notes:

This verification refers to the above mentioned product and its conformity in regards of above mentioned standard(s) was proven on test sample.
This verification does not imply meeting all essential requirements, assessment of the series-production or any other restricted Notified Bodies conformity assessment procedure appropriate for the product.

This verification holder shall use this verification in connection to verification of conformity and technical data relevant for the product the verification was issued.

TMC Testing Services (Shenzhen) Co., Ltd.

t:86-755-86642861 cert@tmc-lab.com www.tmc-lab.com
 1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen, China



Verification of Compliance

Verification No.: MK23110140P01-C01

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Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Name and address of Manufacturer: **Zhongshan Guzhen Dikas lighting factory**
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Product trademark: N/A

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| IEC 62321-7-2:2017 | IEC 62321-8:2017 |

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1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen, China



FCC Part 15

Supplier's Declaration of Conformity

Product Name: Fan lights

Brand Name: N/A

Model Number: FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300,
FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3

Report Number: BSL23110140P01-E01

FCC Compliance Statement (for products subject to Part 15)

This device complies with Part 15 of the FCC Rules. Operation is subject to following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Test Laboratory

BSL Testing Co., Ltd.

Street Address: 1/F, Building B, Xinshidai GR Park, Shiyuan Street, Bao'an District,
Shenzhen, Guangdong, 518052, People's Republic of China

City, State: Shenzhen

Postal Code: 518502

Country: China

For and on behalf of
Testing Laboratory

Vivian Jiang

(General Manager)

Date: December 7, 2023

Responsible Party:

Street Address:

City, State:

Postal Code:

Country:

For and on behalf of
Responsible Party

Tel:

E-mail:

()

Date: December 7, 2023

FCC Part 15

Supplier's Declaration of Conformity

Product Name: Fan lights

Brand Name: N/A

Model Number: FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300,
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Street Address: 1/F, Building B, Xinshidai GR Park, Shiyuan Street, Bao'an District,
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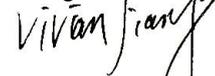
City, State: Shenzhen

Postal Code: 518502

Country: China

For and on behalf of

Testing Laboratory



(General Manager)

Date: December 7, 2023

Responsible Party:

Street Address:

City, State:

Postal Code:

Country:

For and on behalf of
Responsible Party

Tel:

E-mail:

()

Date: December 7, 2023

Verification of Compliance

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| Verification No.: | MK23110140P01-S01 |
| Name and address of Applicant: | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Name and address of Manufacturer: | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Product name: | Fan lights |
| Rated: | 85-250V~, 50/60Hz, Max.40W |
| Product model(s): | FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3 |
| Product trademark: | N/A |

This verification confirms that the product meets the requirements of the following standard.
The conformity was demonstrated based on following standard(s) listed by European Commission as harmonized with LVD Directive 2014/35/EU.

EN 62560:2012+A1:2015+A11:2019

The verification has been carried out in accordance with individual rules and conditions agreed with the applicant. Evaluation has been carried out in accordance with:

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| Test report(s) No.: | MK23110140P01-S01 |
| Test conducted by: | TMC Testing Services (Shenzhen) Co., Ltd. |
| Verification issue date: | December 7, 2023 |

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Dawen Xu

Lab Director
Dawen Xu



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Dawen Xu

Lab Director
Dawen Xu





APPLICATION FOR EMC DIRECTIVE

On Behalf of

Zhongshan Guzhen Dikas lighting factory

Fan lights

Trade Name: N/A

Model: FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3

Prepared For : **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Prepared By : **TMC Testing Services (Shenzhen) Co., Ltd.**
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Tel: +86-755- 86642861
Web: www.tmc-lab.com
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Date of Test: November 28, 2023- December 6, 2023

Date of Report: December 7, 2023

Report Number: MK23110140P01-E01

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TEST REPORT DECLARATION

| | | |
|-----------------|---|---|
| Applicant | : | Zhongshan Guzhen Dikas lighting factory |
| Address | : | Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| EUT Description | : | Fan lights |
| Model Number | : | FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3 |
| Trade Name | : | N/A |

Test Standards:

EN IEC 55015:2019+A11:2020
 IEC 61547:2020
 EN IEC 61000-3-2:2019+A1:2021
 EN 61000-3-3:2013/A2:2021

The EUT described above is tested by TMC Testing Services (Shenzhen) Co., Ltd. EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. TMC Testing Services (Shenzhen) Co., Ltd. EMC Laboratory is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the 2014/30/EU directive and its amendment requirements.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Prepared by :



Judy Chen/ Assistant

Approved & Authorized Signer :



Vivian Jiang/Manager

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

| Test Items | Test Results |
|---------------------------------------|--------------|
| Conducted emission test | PASS |
| Radiated Emission | PASS |
| Magnetic test | PASS |
| Harmonic Current | PASS |
| Voltage Fluctuation and Flicker | PASS |
| Electrostatic Discharge Test | PASS |
| RF Field Strength susceptibility Test | PASS |
| Electrical Fast Transient/Burst Test | PASS |
| Surge Test | PASS |
| Injected currents susceptibility test | PASS |
| Voltage dips and interruptions test | PASS |

2. GENERAL INFORMATION

2.1. Report information

2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are applicable to the similar items. In addition, such results must not be used to indicate or imply that TMC approves, recommends or endorses the manufacture, supplier or use of such product/equipment, or that TMC in any way guarantees the later performance of the product/equipment.

2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, TMC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third party can obtain a copy of this report through TMC, unless the applicant has authorized TMC in writing to do so.

2.2. Measurement Uncertainty

Available upon request.

3. PRODUCT DESCRIPTION

3.1. EUT Description

| | | |
|--------------|---|---|
| Description | : | Fan lights |
| Applicant | : | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Manufacturer | : | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Model Number | : | FS-HX-R520 |

3.2. Block Diagram of EUT Configuration



3.3. Operating Condition of EUT

Test mode 1: Lighting

3.4. Test Conditions

Temperature: 23-26°C

Relative Humidity: 55-68 %

3.5. Modifications

No modification was made.

3.6. Abbreviations

| | |
|-----|--------------------------------|
| AC | Alternating Current |
| AMN | Artificial Mains Network |
| DC | Direct Current |
| EM | ElectroMagnetic |
| EMC | ElectroMagnetic Compatibility |
| EUT | Equipment Under Test |
| IF | Intermediate Frequency |
| RF | Radio Frequency |
| rms | root mean square |
| EMI | Electromagnetic Interference |
| EMS | Electromagnetic Susceptibility |

3.7. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------|-----------------|------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde & Schwarz | ESPI3 | 101396 | Oct.27, 23 | Oct.26, 24 |
| 2. | L.I.S.N. | Rohde & Schwarz | ENV216 | 102723 | Oct.27, 23 | Oct.26, 24 |
| 3. | loop antenna | DAZE | ZN30401 | 19036 | Oct.27, 23 | Oct.26, 24 |
| 4. | Wet and dry thermometer | M&G | ARC92569 | N/A | Oct.27, 23 | Oct.26, 24 |
| 5. | Shielding room | SKET | 2021082301 | N/A | Aug.23,21 | Aug.22,24 |

4.2. For Magnetic Test (In Shielding Room)

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|----------------|-----------------|------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde & Schwarz | ESPI3 | 101396 | Oct.27, 23 | Oct.26, 24 |
| 2. | loop antenna | ZHINAN | ZN30401 | 19036 | Oct.27, 23 | Oct.26, 24 |
| 3. | Shielding room | SKET | 2021082301 | N/A | Aug.23,21 | Aug.22,24 |

4.3. For Harmonic / Flicker Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------|--------------|-----------|------------|------------------|--------------------|
| 1. | Harmonic Flicker Tester | BOSUOTE | 5001ix | 080419-03 | Apr.06,23 | Apr.05,24 |

4.4. For Electrostatic Discharge Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|--------------------------------|--------------|-----------|------------|------------------|--------------------|
| 1. | Electrostatic analog generator | LIONCEL | ESD-203B | 0210502 | Oct.27, 23 | Oct.26, 24 |

4.5. For Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|---------------------------------|---------------|------------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde&Schwarz | ESC17(9kHz-7GHz) | 100336 | Oct.27, 23 | Oct.26, 24 |
| 2. | Broadband antenna | Schwarzbeck | VULB9168 | 01222 | Oct.27, 23 | Oct.26, 24 |
| 3. | Horn antenna | Schwarzbeck | BBHA9120D | 02476 | Oct.27, 23 | Oct.26, 24 |
| 4. | Preamplifier | Schwarzbeck | BBV9745 | 00250 | Oct.27, 23 | Oct.26, 24 |
| 5. | Preamplifier | N/A | TRLA-01018G440B | 21081001 | Oct.27, 23 | Oct.26, 24 |
| 6. | 3M method semi anechoic chamber | SKET | 9m*6m*6m | 2021082304 | Oct.14,21 | Oct.13,24 |
| 7. | Pointer hygrometer | M&G | ARC92570 | N/A | Oct.27, 23 | Oct.26, 24 |

4.6. For RF Strength Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Recalibration time |
|------|-------------------------|--------------|-------------|------------|------------|--------------------|
| 1. | Signal Generator | HP | 8648A | 3633A02081 | Oct.27, 23 | Oct.26, 24 |
| 2. | Amplifier | A&R | 500A100 | 17034 | NCR | NCR |
| 3. | Amplifier | A&R | 100W/1000M1 | 17028 | NCR | NCR |
| 4. | Isotropic Field Monitor | A&R | FM2000 | 16829 | NCR | NCR |
| 5. | Isotropic Field Probe | A&R | FLW220100 | 16755 | Oct.27, 23 | Oct.26, 24 |
| 6. | Biconic Antenna | EMCO | 3108 | 9507-2534 | NCR | NCR |
| 7. | Log-periodic Antenna | A&R | AT1080 | 16812 | NCR | NCR |
| 8. | PC | N/A | 486DX2 | N/A | N/A | N/A |

4.7. For Electrical Fast Transient/Burst Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

4.8. For Surge Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

4.9. For Voltage Dips and Interruptions Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

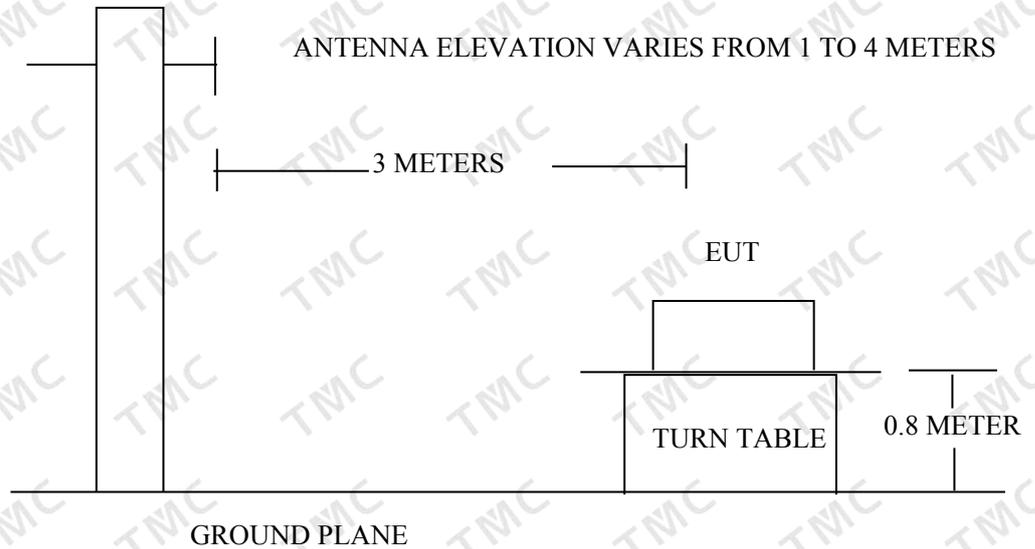
4.10. For Injected Currents Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Recalibration time |
|------|-----------------|--------------|-------------|--------------|------------|--------------------|
| 1. | Simulator | EMTEST | CWS 500C | 0900-12 | Oct.27, 23 | Oct.26, 24 |
| 2. | CDN | EMTEST | CDN-M2 | 510010010010 | Oct.27, 23 | Oct.26, 24 |
| 3. | VDN | EMTEST | CDN-M3 | 0900-11 | Oct.27, 23 | Oct.26, 24 |
| 4. | Injection Clamp | EMTEST | F-2031-23MM | 368 | Oct.27, 23 | Oct.26, 24 |
| 5. | Attenuator | EMTEST | ATT6 | 0010222A | Oct.27, 23 | Oct.26, 24 |

5 RADIATED EMISSION TEST

Open Site Setup Diagram

ANTENNA TOWER



5.1 Test Standard

EN IEC 55015:2019+A11:2020

1.1 Radiated Emission Limit

All emanations from a Class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

| FREQUENCY (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMITS (dB μ V/m) |
|-----------------|-------------------|---------------------------------------|
| 30 ~ 230 | 3 | 40 |
| 230 ~ 1000 | 3 | 47 |

Note:(1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instruments antenna and the closed point of any part of the EUT.

| FREQUENCY (GHz) | DISTANCE (Meters) | Average limit (dB μ V/m) | Peak limit (dB μ V/m) |
|-----------------|-------------------|------------------------------|---------------------------|
| 1 ~ 3 | 3 | 50 | 70 |
| 3 ~ 6 | 3 | 54 | 74 |

Note :The lower limit applies at the transition frequency.

1.2 EUT Configuration on Test

The EN55015 Class B regulations test method must be used to find the maximum emission during radiated emission test.

1.3 Operating Condition of EUT

1.3.1 Setup the EUT as shown on Section 5.1.

1.3.2 Turn on the power of all equipments.

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

1.4 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above 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 move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCS20) is 120 KHz.

The EUT is tested in Anechoic Chamber. and all the scanning waveform is put in

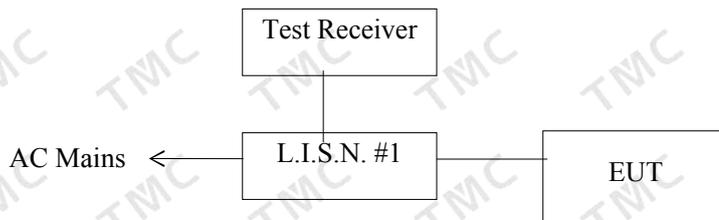
Appendix I.

1.5 Test Results

PASS.

6. POWER LINE CONDUCTED EMISSION TEST

6.1. Block Diagram of Test Setup



6.2. Test Standard

EN IEC 55015:2019+A11:2020

6.3. Power Line Conducted Emission Limit

| Frequency | At mains terminals (dB μ V) | |
|------------------|---------------------------------|---------------|
| | Quasi-peak Level | Average Level |
| 9KHz ~ 50KHz | 110 | -- |
| 50KHz ~ 150KHz | 90 ~ 80* | -- |
| 150KHz ~ 0.5MHz | 66 ~ 56* | 56 ~ 46* |
| 0.5MHz ~ 2.51MHz | 56 | 46 |
| 2.51MHz ~ 3.0MHz | 73 | 63 |
| 3.0MHz ~ 5.0MHz | 56 | 46 |
| 5.0MHz ~ 30MHz | 60 | 50 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

6.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN55015 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

6.4.1. EUT information

Model Number: FS-HX-R520

Manufacturer: Zhongshan Guzhen Dikas lighting factory

6.5. Operating Condition of EUT

- 6.5.1. Setup the EUT and simulators as shown in Section 3.2.
- 6.5.2. Turn on the power of all equipments.
- 6.5.3. Let the EUT work in test modes (EUT WORKING) and test it.

6.6. Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground and connected to the AC mains through a Line Impedance Stabilization Network (L.I.S.N.). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission according to the EN55015 regulations during conducted emission test. And the voltage probe had been used for the load terminals test according to the EN55015 standard.

The bandwidth of the test receiver (R&S ESHS20) is set at 10KHz. in 150KHz~30MHz and 200Hz bandwidth in 9KHz~150KHz.

The frequency range from 9KHz to 30MHz is checked.

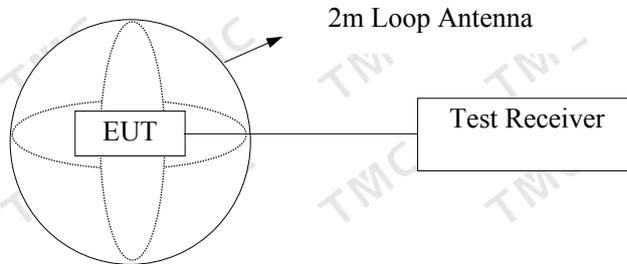
All the test results are listed in Section 6.7. and all the scanning waveform is put in **Appendix II.**

6.7. Test Result

PASS

7. MAGNETIC TEST

7.1. Block Diagram of Test Setup



(EUT: Fan lights)

7.2. Test Standard

EN IEC 55015:2019+A11:2020

7.3. Magnetic Field Emission Limits

| Frequency | Limits for loop diameter (dB μ A) |
|-----------------|---------------------------------------|
| | 2m |
| 9KHz ~ 70KHz | 69 |
| 70KHz ~ 150KHz | 69~39* |
| 150KHz ~ 4.0MHz | 39'3* |
| 4.0MHz ~ 30MHz | 3 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

7.4. EUT Configuration on Test

The configuration of the EUT is same as Section 3.2..

7.5. Operating Condition of EUT

- 7.5.1. Setup the EUT as shown in Section 6.1.
- 7.5.2. Turn on the power of all equipments.
- 7.5.3. Let the EUT work in test mode (ON) and test it.

7.6. Test Procedure

The EUT is placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver. Three field components is checked by means of a coax switch.

The frequency range from 9KHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 9KHz to 150KHz, the bandwidth of the field strength meter (R&S test receiver ESHS20) is set at 200Hz. For frequency band 150KHz to 30MHz, the bandwidth is set at 10KHz.

All the test results are listed in Section 7.7. and all the scanning waveform is put in **Appendix III.**

7.7. Test Results

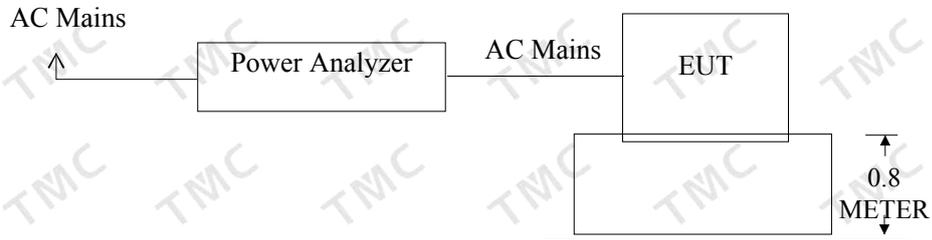
PASS.

The frequency range from 9KHz to 30MHz is investigated.

As the peak value is too low against the limit, so the Quasi-peak value has been omitted.

8. HARMONIC CURRENT EMISSION TEST

8.1. Block Diagram of Test Setup



(EUT: Fan lights)

8.2. Test Standard

EN IEC 61000-3-2:2019+A1:2021

8.3. Operating Condition of EUT

- 8.3.1. Setup the EUT as shown in Section 5.1.
- 8.3.2. Turn on the power of all equipments.
- 8.3.3. Let the EUT work in test mode (ON) and test it.

8.4. Test Procedure

The power cord of the EUT is connected to the output of the test system. Turn on the Power of the EUT and use the test system to test the harmonic current level.

8.5. Test Results

PASS

9. VOLTAGE FLUCTUATIONS & FLICKER TEST

9.1. Block Diagram of Test Setup

Same as Section 7.1..

9.2. Test Standard

EN 61000-3-3:2013/A2:2021

9.3. Operating Condition of EUT

Same as Section 7.3.. The power cord of the EUT is connected to the output of the test system. Turn on the power of the EUT and use the test system to test the harmonic current level.

Flicker Test Limit

| Test items | Limits |
|------------|---------------------------|
| Pst | 1.0 |
| dc | 3.3% |
| dmax | 4.0% |
| dt | Not exceed 3.3% for 500ms |

9.4. Test Data

Flicker test Data

Model No.: FS-HX-R520

Test Mode: 1

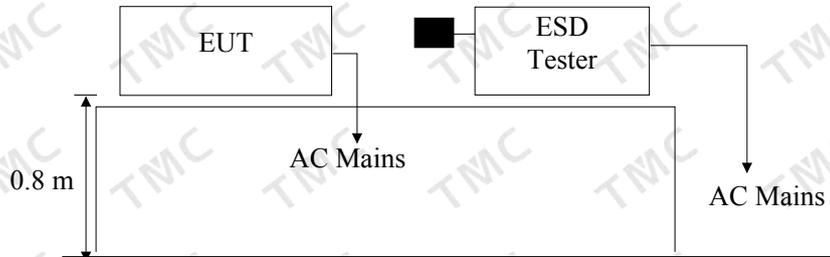
| Items | Reading | Limit |
|-------|---------|---------------------------|
| dmax | 0.00 | 4.0% |
| dc | 0.00 | 3.3% |
| dt | 0.00 | Not exceed 3.3% for 500ms |
| Pst | 0.001 | 1.0 |

9.5. Test Results

PASS.

10. ELECTROSTATIC DISCHARGE TEST

10.1. Block Diagram of ESD Test Setup



Remark: ■ is Discharge Electrode

10.2. Test Standard

IEC 61547:2020 (EN61000-4-2:2009)
 Severity Level 3 for Air Discharge at 8KV
 Severity Level 2 for Contact Discharge at 4KV

10.3. Severity Levels and Performance Criterion

10.3.1. Severity 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 |

10.3.2. Performance criterion: B

10.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

10.5. Operating Condition of EUT

10.5.1. Setup the EUT as shown in Section 9.1.

10.5.2. Turn on the power of all equipments.

10.5.3. Let the EUT work in test mode (full load) and test it.

10.6. Test Procedure

10.6.1. Air Discharge:

This test is done on a non-conductive surfaces. 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 Jasesones for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

10.6.2. Contact Discharge:

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

10.6.3. 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.

10.6.4. Indirect discharge for vertical coupling plane

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 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.

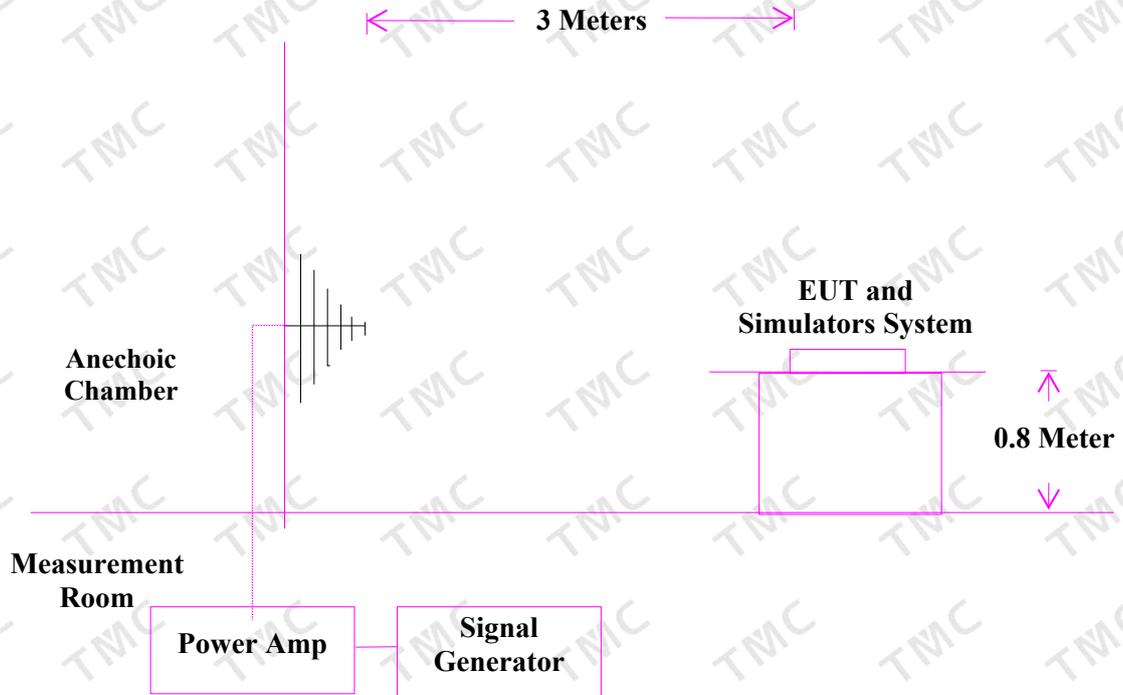
10.7. Test Results

PASS.

Please refer to the following page.

11. RF FIELD STRENGTH SUSCEPTIBILITY TEST

11.1. R/S Test Setup



11.2. Test Standard

IEC 61547:2020 (EN61000-4-3:2006+A1:2008+A2:2010)
 Severity Level 2 at 3V / m

11.3. Severity Levels and Performance Criterion

11.3.1. Severity level

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

11.3.2. Performance criterion : A

11.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

11.5. Operating Condition of EUT

Setup the EUT as shown in Section 10.1.. The operating condition of EUT are listed in section 3.3.

11.6. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor the EUT. All the scanning conditions are as follows :

| Condition of Test | Remarks |
|------------------------------|--------------------------|
| Fielded Strength | 3 V/m (Severity Level 2) |
| Radiated Signal | Modulated |
| Scanning Frequency | 80 - 1000 MHz |
| Sweeping Jassone of radiated | 0.0015 decade/s |
| Dwell Jassone | 1 Sec. |

11.7. Test Results

PASS.

Please refer to the following page.

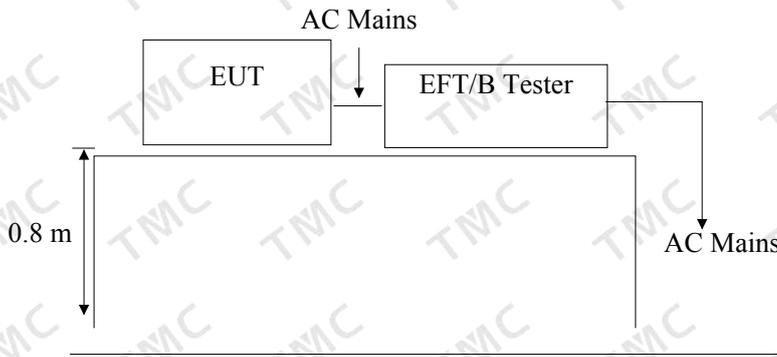
RF Field Strength Susceptibility Test Results

TMC Testing Services (Shenzhen) Co., Ltd.

| | |
|---|--------------------------------------|
| Applicant : Zhongshan Guzhen Dikas lighting factory | Test Date : November 30, 2023 |
| EUT : Fan lights | Temperature : 22 °C |
| M/N : FS-HX-R520 | Humidity : 50 % |
| Power Supply : AC230V,50Hz | Test Mode : Lighting |
| Test Engineer : George | Frequency Range : 80 MHz to 1000 MHz |
| Modulation: <input checked="" type="checkbox"/> AM <input type="checkbox"/> Pulse <input type="checkbox"/> none 1 KHz 80% | |
| Criterion : A | |
| Frequency Rang : 80-1000 | |
| Steps | 1% |
| | Horizontal |
| | Vertical |
| Front | Pass |
| Right | Pass |
| Rear | Pass |
| Left | Pass |

12. ELECTRICAL FAST TRANSIENT/BURST TEST

12.1. EFT Test Setup



12.2. Test Standard

IEC 61547:2020 (EN61000-4-4:2012)
 Severity Level 2 at 1KV

12.3. Severity Levels and Performance Criterion

12.3.1. Severity level

| Open Circuit Output Test Voltage $\pm 10\%$ | | |
|---|-----------------------|---|
| Level | On Power Supply Lines | On I/O (Input/Output) Signal data and control lines |
| 1. | 0.5 KV | 0.25 KV |
| 2. | 1 KV | 0.5 KV |
| 3. | 2 KV | 1 KV |
| 4. | 4 KV | 2 KV |
| X | Special | Special |

12.3.2. Performance criterion : B

12.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

12.5. Operating Condition of EUT

Setup the EUT as shown in Section 11.1.. The operating condition of EUT are listed in section 3.3.

12.6. Test Procedure

The EUT is put on the table which is 0.8 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 the EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

12.6.1. 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.

12.6.2. For signal lines and control lines ports:

It's necessary to test.

12.6.3. For DC output line ports:

It's unnecessary to test.

12.7. Test Results

PASS.

Please refer to the following page.

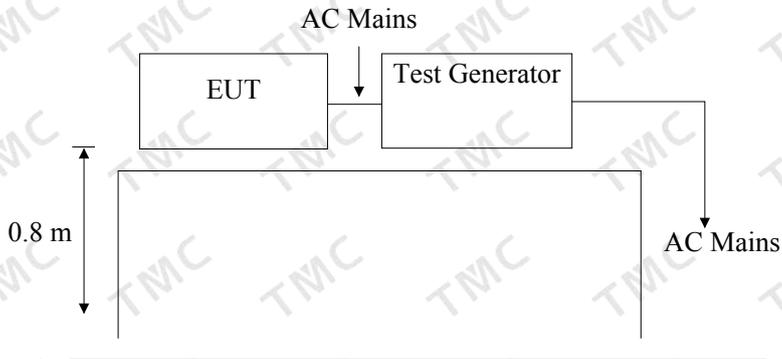
Electrical Fast Transient/Burst Test Results

TMC Testing Services (Shenzhen) Co., Ltd.

| | | | | | | | | | |
|--------------------------------|---|-----------------------|----------------------|----------------|--------------------|-------------------|-----------------------|----------------------|----------------|
| <i>Applicant</i> | : Zhongshan Guzhen Dikas lighting factory | <i>Test Date</i> | : November 30, 2023 | | | | | | |
| <i>EUT</i> | : Fan lights | <i>Temperature</i> | : 22 °C | | | | | | |
| <i>M/N</i> | : FS-HX-R520 | <i>Humidity</i> | : 50 % | | | | | | |
| <i>Power Supply</i> | : AC230V,50Hz | <i>Test Mode</i> | : Lighting | | | | | | |
| <i>Test Engineer</i> | : Simon | | | | | | | | |
| <i>Inject Place</i> : AC Mains | | | | | | | | | |
| <i>Inject Line</i> | <i>Voltage KV</i> | <i>Inject Time(s)</i> | <i>Inject Method</i> | <i>Results</i> | <i>Inject Line</i> | <i>Voltage KV</i> | <i>Inject Time(s)</i> | <i>Inject Method</i> | <i>Results</i> |
| L | ±1 | 120 | Direct | PASS | | | | | |
| N | ±1 | 120 | Direct | PASS | | | | | |
| L N | ±1 | 120 | Direct | PASS | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

13. SURGE TEST

13.1. Surge Test Setup



13.2. Test Standard

IEC 61547:2020 (EN61000-4-5:2017)
Severity Level 2 for Line to Neutral at 1.0KV

13.3. Severity Levels and Performance Criterion

13.3.1. Severity level

| Severity Level | Open-Circuit Test Voltage KV |
|----------------|---------------------------------|
| 1 | 2. 5 |
| 2 | 3. 0 |
| 3 | 4. 0 |
| 4 | 4.0 |
| * | Special |

Performance criterion : C

13.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

13.5. Operating Condition of EUT

13.5.1. Setup the EUT as shown in Section 12.1..

13.5.2. Turn on the power of all equipments.

13.5.3. Let the EUT work in test mode (Full load) and test it.

13.6. Test Procedure

- 1) Set up the EUT and test generator as shown on Section 12.1
- 2) For line to line coupling mode, provide a 0.5KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

13.7. Test Results

PASS.

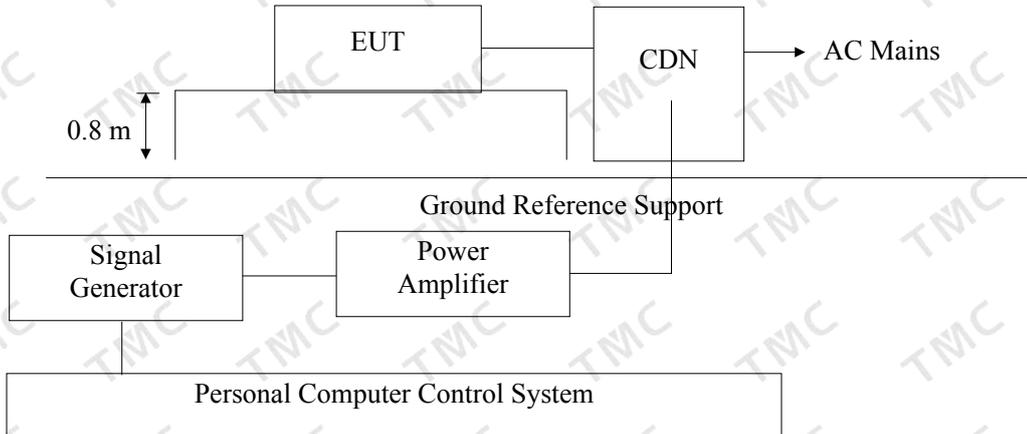
Please refer to the following page.

Surge Immunity Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant</i> : Zhongshan Guzhen Dikas lighting factory | | | | <i>Test Date</i> : November 30, 2023 | |
|--|-----------------|--------------------|--------------------|--------------------------------------|---------------|
| <i>EUT</i> : Fan lights | | | | <i>Temperature</i> : 22 °C | |
| <i>M/N</i> : FS-HX-R520 | | | | <i>Humidity</i> : 50 % | |
| <i>Power Supply</i> : AC230V,50Hz | | | | <i>Test Mode</i> : Lighting | |
| <i>Test Engineer</i> : Simon | | | | | |
| <i>Location</i> | <i>Polarity</i> | <i>Phase Angle</i> | <i>No of Pulse</i> | <i>Pulse Voltage (KV)</i> | <i>Result</i> |
| <i>L-N</i> | + | 0 | 5 | 1.0 | / |
| | + | 90 | 5 | 1.0 | PASS |
| | + | 180 | 5 | 1.0 | / |
| | + | 270 | 5 | 1.0 | PASS |

14. INJECTED CURRENTS SUSCEPTIBILITY TEST

14.1. Block Diagram of Test AC Mains Setup



14.2. Test Standard

IEC 61547:2020 (EN61000-4-6:2014/AC:2015)
Severity Level 2 at 3 V (rms), 0.15MHz ~ 80MHz

14.3. Severity Levels and Performance Criterion

14.3.1. Severity level

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

14.3.2. Performance criterion: A

14.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

14.5. Operating Condition of EUT

Setup the EUT as shown in Section 13.1.. The operating condition of EUT are listed in section 3.3.

14.6. Test Procedure

- 1) Set up the EUT, CDN and test generators as shown on Section 13.1.
- 2) Let the EUT work in test mode and test it.
- 3) The EUT are placed on an insulating support 0.8m 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 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
- 7) The rate of sweep shall not exceed 1.5×10^{-3} decades/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.

14.7. Test Results

PASS.

Please refer to the following page.

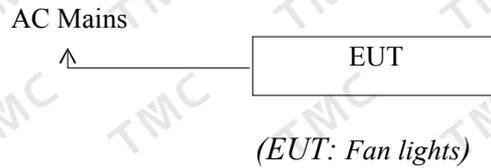
Injected Currents Susceptibility Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant</i> : Zhongshan Guzhen Dikas lighting <i>factory</i> | | <i>Test Date</i> : November 30, 2023 | | |
|--|--------------------------|--------------------------------------|------------------|---------------|
| <i>EUT</i> : Fan lights | | <i>Temperature</i> : 22°C | | |
| <i>M/N</i> : FS-HX-R520 | | <i>Humidity</i> : 50% | | |
| <i>Power Supply</i> : AC230V,50Hz | | <i>Test Mode</i> : Lighting | | |
| <i>Test Engineer</i> : Simon | | | | |
| <i>Frequency Range (MHz)</i> | <i>Injected Position</i> | <i>Strength</i> | <i>Criterion</i> | <i>Result</i> |
| 0.15 ~ 20 | AC Line | 3V(rms), Unmodulated | A | PASS |
| 20 ~ 80 | AC Line | 3V(rms), Unmodulated | A | PASS |
| <i>Remark</i> : 1. Modulation Signal:1KHz 80% AM 2. Standard Applied : EN61000-4-6:1996 | | <i>Note</i> : | | |

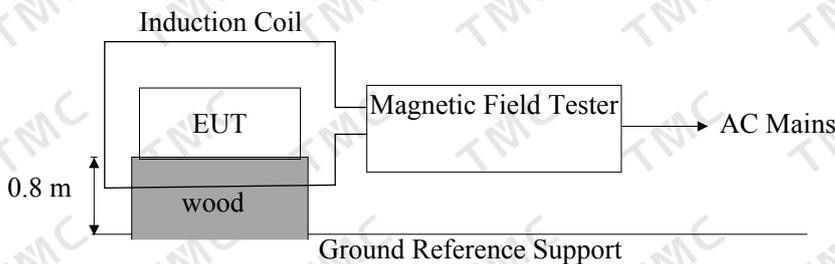
15. MAGNETIC FIELD IMMUNITY TEST

15.1. Block Diagram of Test Setup

15.1.1. Block Diagram of the EUT



15.1.2. Block Diagram of Test Setup



15.2. Test Standard

EN61547: 2009 (EN61000-4-8: 2010)
 Severity Level 2 at 3A/m

15.3. Severity Levels and Performance Criterion

15.3.1. Severity level

| Level | Magnetic Field Strength A/m |
|-------|-----------------------------|
| 1. | 1 |
| 1. | 3 |
| 2. | 10 |
| 3. | 30 |
| 4. | 100 |
| X. | Special |

15.3.2. Performance criterion: A

15.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

15.5. Operating Condition of EUT

15.5.1. Setup the EUT as shown in Section 14.1

15.5.2. Turn on the power of all equipments.

15.5.3. Let the EUT work in test mode (ON) and test it.

15.6. Test Procedure

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1m*1m) and shown in Section 14.1. The induction coil shall then be rotated by 90° in order to expose the EUT to the test field with different orientations.

15.7. Test Results

PASS.

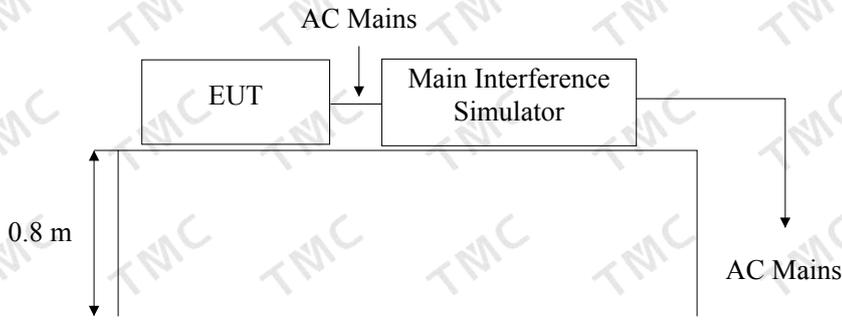
Please refer to the following page.

Magnetic Field Immunity Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| | | | | |
|---|-------------------------|-------------------------------------|------------------|---------------|
| <i>Applicant: Zhongshan Guzhen Dikas lighting factory</i> | | <i>Test Date :November 30, 2023</i> | | |
| <i>EUT : Fan lights</i> | | <i>Temperature : 26 °C</i> | | |
| <i>M/N : FS-HX-R520</i> | | <i>Humidity : 60 %</i> | | |
| <i>Power Supply : AC230V,50Hz</i> | | <i>Test Engineer : Simon</i> | | |
| <i>Test Model: Lighting</i> | | | | |
| <i>Test Level</i> | <i>Testing Duration</i> | <i>Coil Orientation</i> | <i>Criterion</i> | <i>Result</i> |
| <i>3A/M</i> | <i>5 mins</i> | <i>Horizontal</i> | <i>A</i> | <i>PASS</i> |
| <i>3A/M</i> | <i>5 mins</i> | <i>Vertical</i> | <i>A</i> | <i>PASS</i> |

16. VOLTAGE DIPS AND INTERRUPTIONS TEST

16.1. Voltage Dips and Interruptions Test Setup



Remark: Combination wave generator and decoupling network are included in test generator.

16.2. Test Standard

IEC 61547:2020 (EN61000-4-11:2019)

16.3. Severity Levels and Performance Criterion

16.3.1. Severity level

| Test Level %UT | Voltage dip and short interruptions %UT | Duration (in period) |
|-------------------|---|-------------------------|
| 0 | 100 | 250p |
| 40 | 60 | 5p |
| 70 | 30 | 0.5p |

16.3.2. Performance criterion : C & B

16.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

16.5. Operating Condition of EUT

16.5.1. Setup the EUT as shown in Section 15.1..

16.5.2. Turn on the power of all equipments.

16.5.3. Let the EUT work in test mode (SPEAKERS Playing) and test it.

16.6. Test Procedure

- 1) Set up the EUT and test generator as shown on Section 15.1.
- 2) The interruptions is introduced at selected phase angles with specified duration.
- 3) Record any degradation of performance.

16.7. Test Result

PASS.

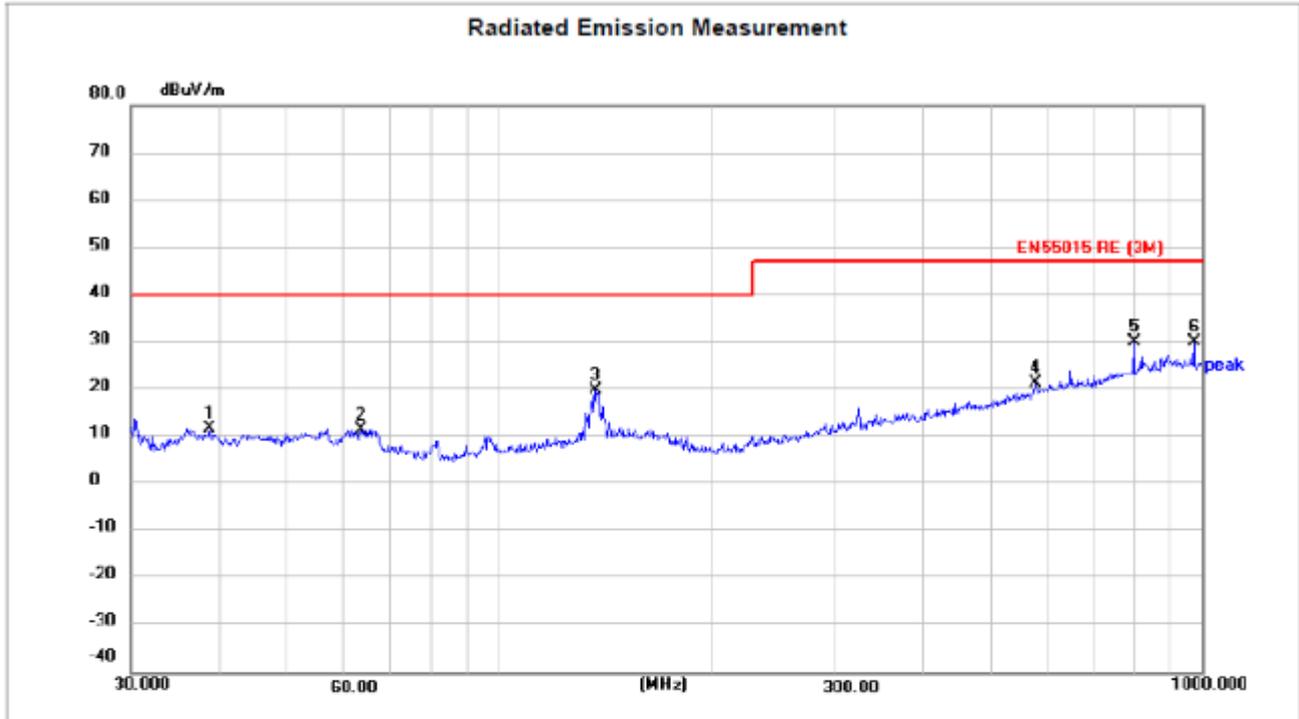
Please refer to the following page.

Voltage Dips And Interruptions Test Results

TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant: Zhongshan Guzhen Dikas lighting factory</i> | | | <i>Test Date :November 30, 2023</i> | | |
|---|---|-----------------------------|-------------------------------------|------------------|---------------|
| <i>EUT : Fan lights</i> | | | <i>Temperature : 26 °C</i> | | |
| <i>M/N : FS-HX-R520</i> | | | <i>Humidity : 64 %</i> | | |
| <i>Power Supply : AC230V,50Hz</i> | | | <i>Test Engineer : Simon</i> | | |
| <i>Test Model: Lighting</i> | | | | | |
| <i>Test Level</i> <i>% U_T</i> | <i>Voltage Dips & Short Interruptions</i> <i>% U_T</i> | <i>Duration (in period)</i> | <i>Phase Angle</i> | <i>Criterion</i> | <i>Result</i> |
| <i>70</i> | <i>30</i> | <i>10P</i> | <i>90°</i> | <i>C</i> | <i>PASS</i> |
| <i>0</i> | <i>100</i> | <i>0.5P</i> | <i>180°</i> | <i>B</i> | <i>PASS</i> |
| <p><i>Remark: U_T is the rated voltage for the equipment.</i></p> | | | | | |

APPENDIX I



Site LAB

 Polarization: *Horizontal*

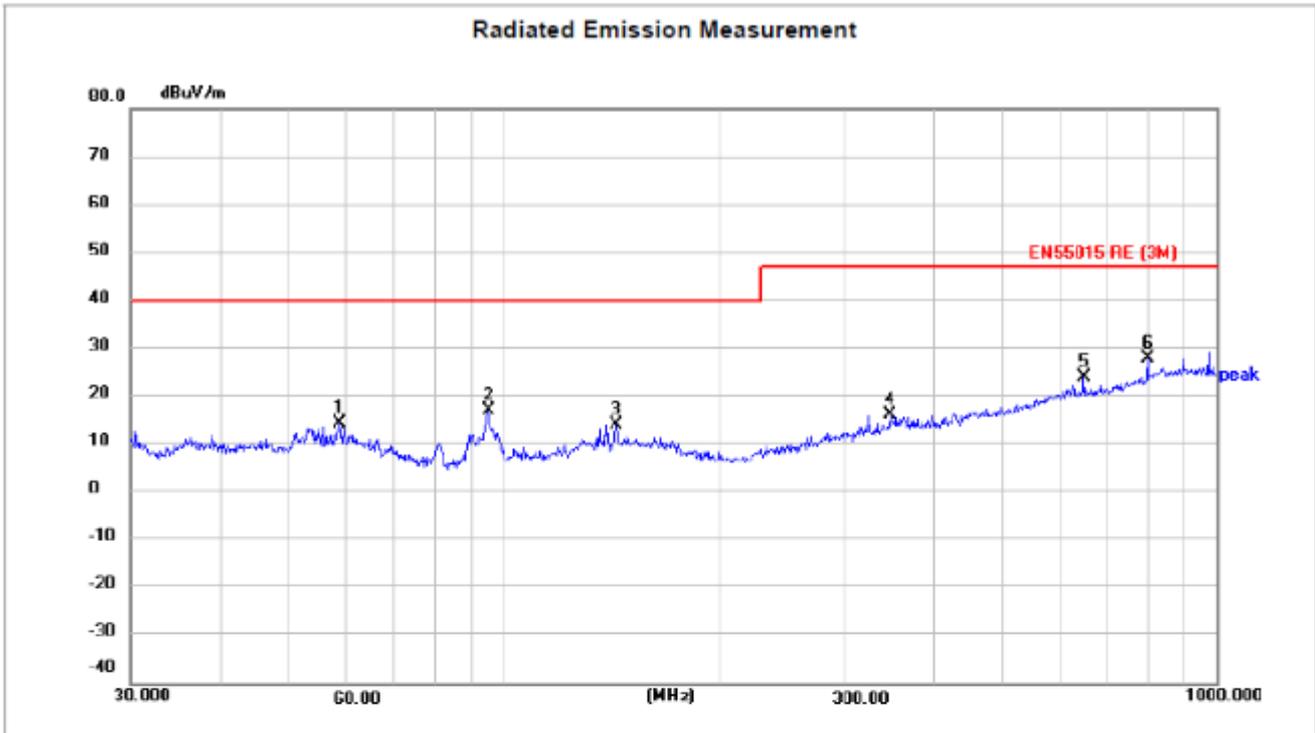
Temperature: 26(C)

Limit: EN55015 RE (3M)

Power: AC230V/50Hz

Humidity: 54 %

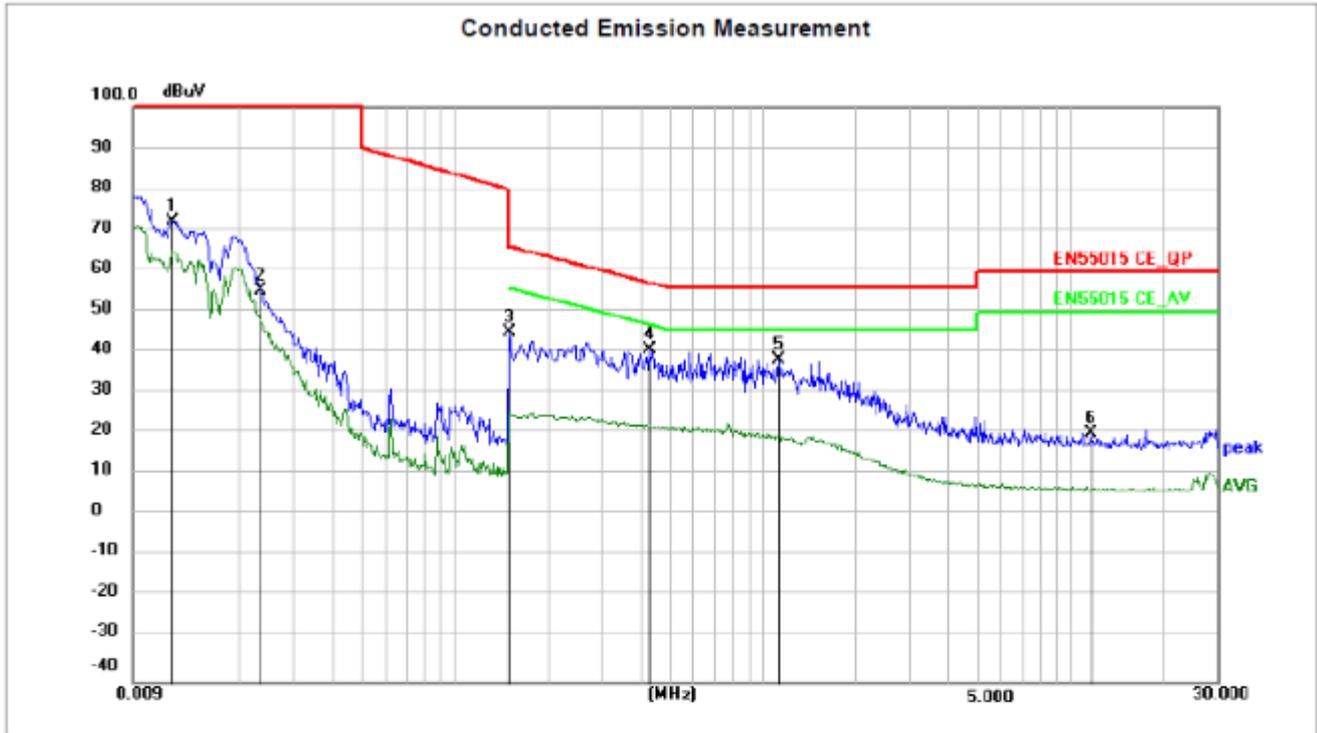
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1 | 38.8878 | 28.26 | -16.45 | 11.81 | 40.00 | -28.19 | peak | 100 | 360 | P | |
| 2 | 63.7588 | 29.08 | -17.65 | 11.43 | 40.00 | -28.57 | peak | 100 | 360 | P | |
| 3 | 137.4202 | 36.76 | -16.88 | 19.88 | 40.00 | -20.12 | peak | 100 | 360 | P | |
| 4 | 578.6699 | 29.76 | -8.47 | 21.29 | 47.00 | -25.71 | peak | 100 | 360 | P | |
| 5 * | 798.9797 | 34.72 | -4.61 | 30.11 | 47.00 | -16.89 | peak | 100 | 360 | P | |
| 6 | 972.3374 | 33.19 | -3.12 | 30.07 | 47.00 | -16.93 | peak | 100 | 360 | P | |



| | | |
|------------------------|-------------------------------|--------------------|
| Site LAB | Polarization: Vertical | Temperature: 26(C) |
| Limit: EN55015 RE (3M) | Power: AC230V/50Hz | Humidity: 54 % |

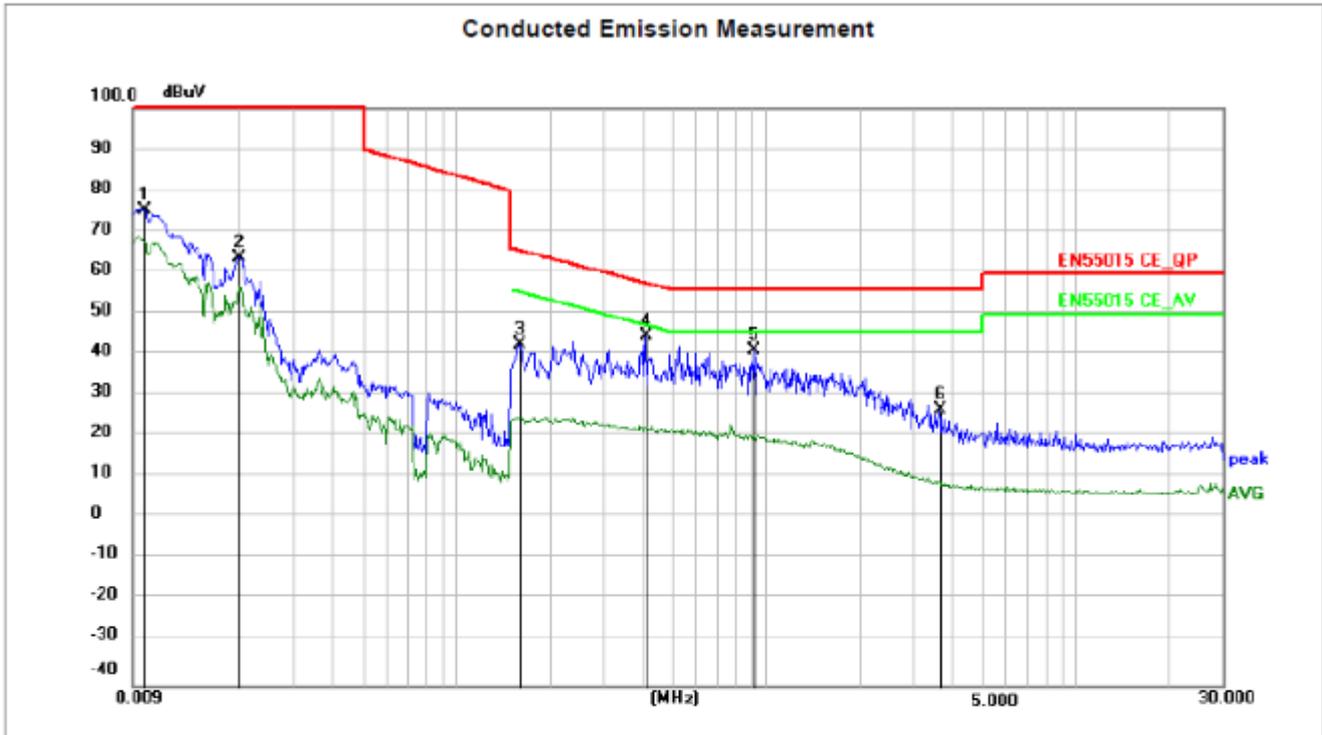
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1 | 59.0251 | 31.47 | -16.99 | 14.48 | 40.00 | -25.52 | peak | 100 | 0 | P | |
| 2 | 95.0930 | 37.29 | -20.26 | 17.03 | 40.00 | -22.97 | peak | 100 | 0 | P | |
| 3 | 143.8295 | 30.61 | -16.45 | 14.16 | 40.00 | -25.84 | peak | 100 | 0 | P | |
| 4 | 348.0274 | 30.59 | -14.40 | 16.19 | 47.00 | -30.81 | peak | 100 | 0 | P | |
| 5 | 649.6597 | 31.02 | -7.05 | 23.97 | 47.00 | -23.03 | peak | 100 | 0 | P | |
| 6 * | 798.9797 | 32.60 | -4.61 | 27.99 | 47.00 | -19.01 | peak | 100 | 0 | P | |

APPENDIX II



Site LAB Phase: **L1** Temperature: 26(C)
 Limit: EN55015 CE_QP Power: AC230V/50Hz Humidity: 54 %RH

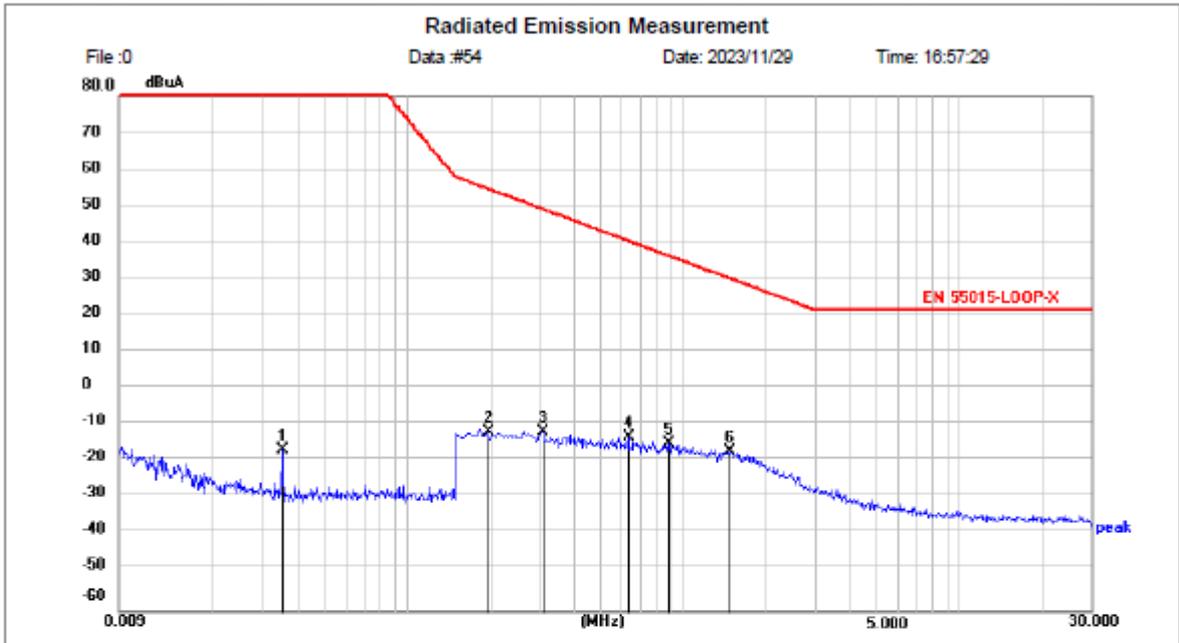
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0122 | 62.29 | 9.99 | 72.28 | 110.00 | -37.72 | peak | P | |
| 2 | 0.0235 | 45.34 | 9.99 | 55.33 | 110.00 | -54.67 | peak | P | |
| 3 | 0.1500 | 35.12 | 10.03 | 45.15 | 66.00 | -20.85 | peak | P | |
| 4 * | 0.4290 | 31.06 | 10.03 | 41.09 | 57.27 | -16.18 | peak | P | |
| 5 | 1.1265 | 28.64 | 10.04 | 38.68 | 56.00 | -17.32 | peak | P | |
| 6 | 11.6430 | 10.52 | 10.14 | 20.66 | 60.00 | -39.34 | peak | P | |



Site LAB: Phase: N Temperature: 26(C)
 Limit: EN55015 CE_QP Power: AC230V/50Hz Humidity: 54 %RH

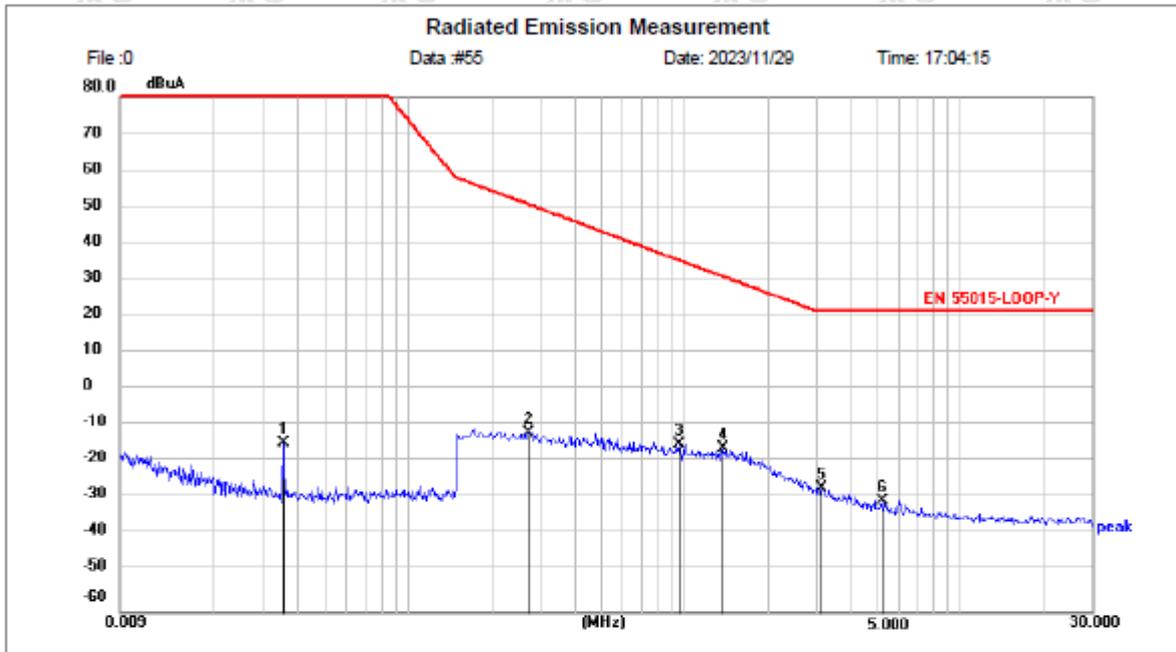
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0099 | 65.34 | 10.02 | 75.36 | 110.00 | -34.64 | peak | P | |
| 2 | 0.0200 | 53.88 | 10.02 | 63.90 | 110.00 | -46.10 | peak | P | |
| 3 | 0.1590 | 32.78 | 10.00 | 42.78 | 65.52 | -22.74 | peak | P | |
| 4 * | 0.4065 | 35.00 | 10.00 | 45.00 | 57.72 | -12.72 | peak | P | |
| 5 | 0.9240 | 31.42 | 10.01 | 41.43 | 56.00 | -14.57 | peak | P | |
| 6 | 3.6195 | 16.92 | 10.03 | 26.95 | 56.00 | -29.05 | peak | P | |

APPENDIX III



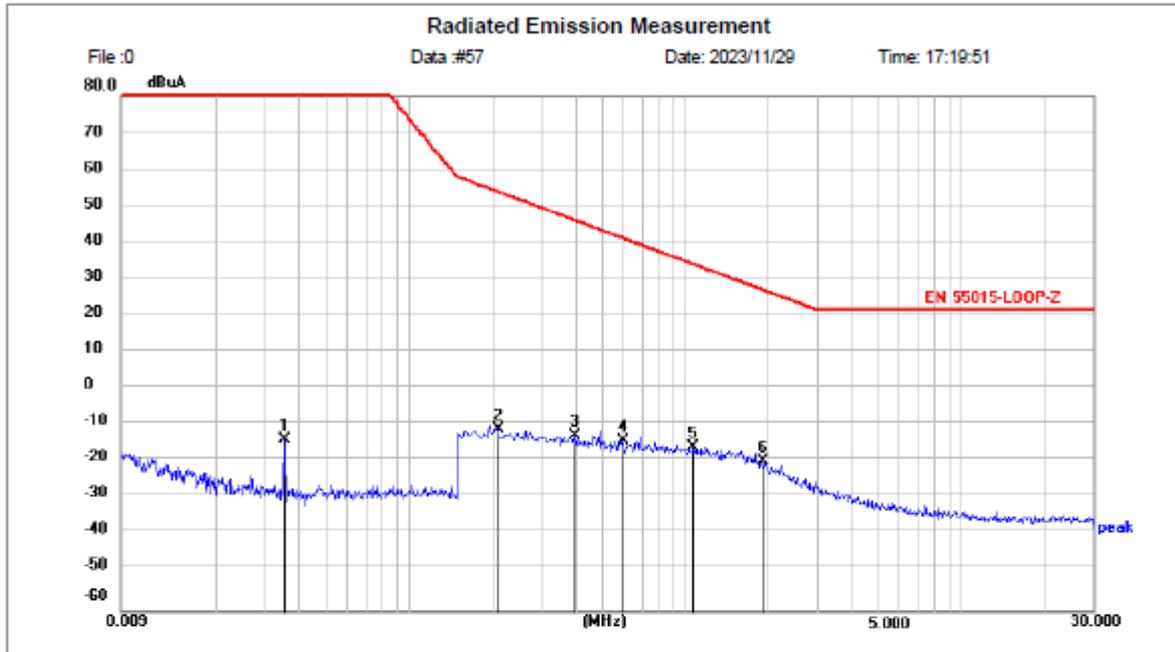
Site LAB: _____ Polarization: **X** Temperature: 26(C)
 Limit: EN 55015-LOOP-X Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -16.17 | 0.20 | -15.97 | 88.00 | -103.97 | peak | P | |
| 2 | 0.1949 | -11.34 | 0.18 | -11.16 | 54.85 | -66.01 | peak | P | |
| 3 | 0.3075 | -11.33 | 0.19 | -11.14 | 49.37 | -60.51 | peak | P | |
| 4 | 0.6315 | -12.83 | 0.18 | -12.65 | 40.73 | -53.38 | peak | P | |
| 5 | 0.8880 | -14.46 | 0.17 | -14.29 | 36.63 | -50.92 | peak | P | |
| 6 * | 1.4685 | -16.66 | 0.16 | -16.50 | 30.58 | -47.08 | peak | P | |



Site LAB Polarization: **Y** Temperature: 26(C)
 Limit: EN 55015-LOOP-Y Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -14.27 | 0.20 | -14.07 | 88.00 | -102.07 | peak | P | |
| 2 | 0.2714 | -11.32 | 0.19 | -11.13 | 50.87 | -62.00 | peak | P | |
| 3 | 0.9555 | -14.42 | 0.16 | -14.26 | 35.75 | -50.01 | peak | P | |
| 4 * | 1.3650 | -15.56 | 0.16 | -15.40 | 31.46 | -46.86 | peak | P | |
| 5 | 3.1514 | -26.30 | 0.17 | -26.13 | 22.00 | -48.13 | peak | P | |
| 6 | 5.2350 | -29.79 | 0.17 | -29.62 | 22.00 | -51.62 | peak | P | |



Site LAB Polarization: **Z** Temperature: 26(C)
 Limit: EN 55015-LOOP-Z Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -13.42 | 0.20 | -13.22 | 88.00 | -101.22 | peak | P | |
| 2 | 0.2085 | -10.59 | 0.18 | -10.41 | 54.04 | -64.45 | peak | P | |
| 3 | 0.3975 | -12.42 | 0.19 | -12.23 | 46.29 | -58.52 | peak | P | |
| 4 | 0.5955 | -13.84 | 0.18 | -13.66 | 41.43 | -55.09 | peak | P | |
| 5 | 1.0725 | -15.60 | 0.16 | -15.44 | 34.36 | -49.80 | peak | P | |
| 6 * | 1.8960 | -19.22 | 0.16 | -19.06 | 27.51 | -46.57 | peak | P | |

APPENDIX IV

Photo 1 General appearance of the EUT

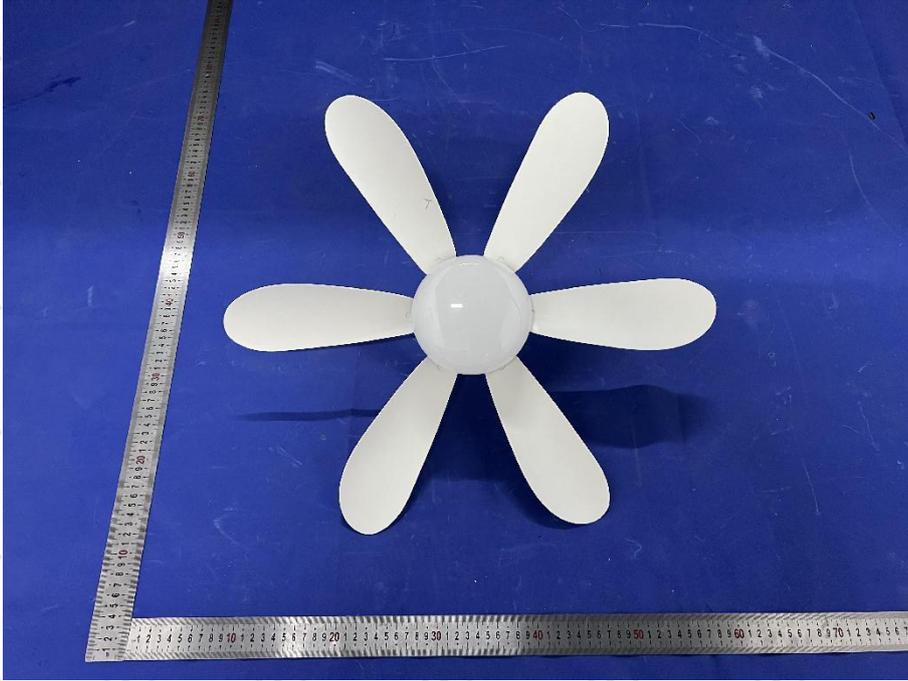


Photo 2 General appearance of the EUT

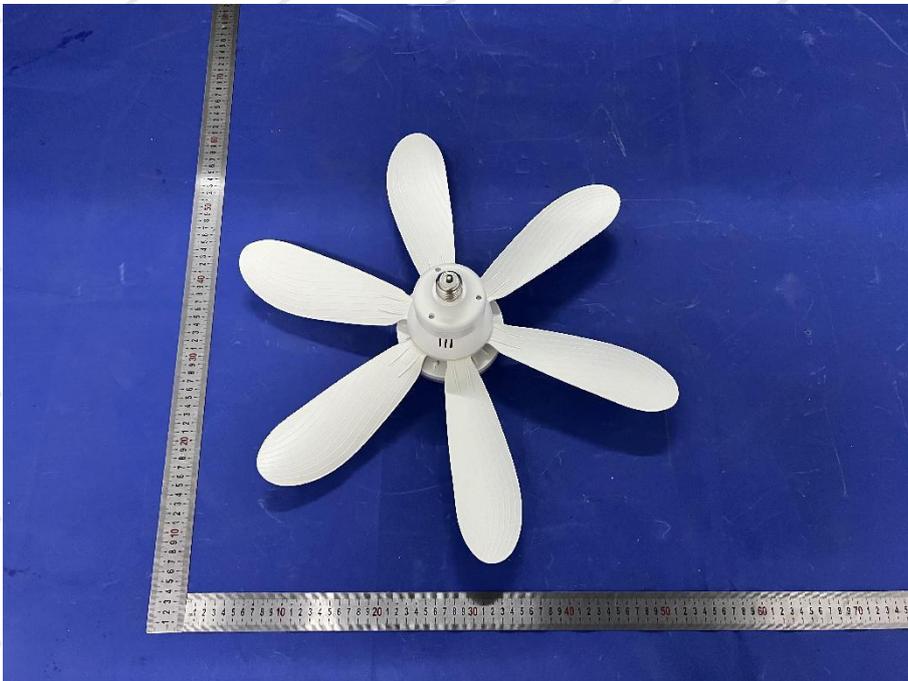


Photo 3 Radiated Emission Test

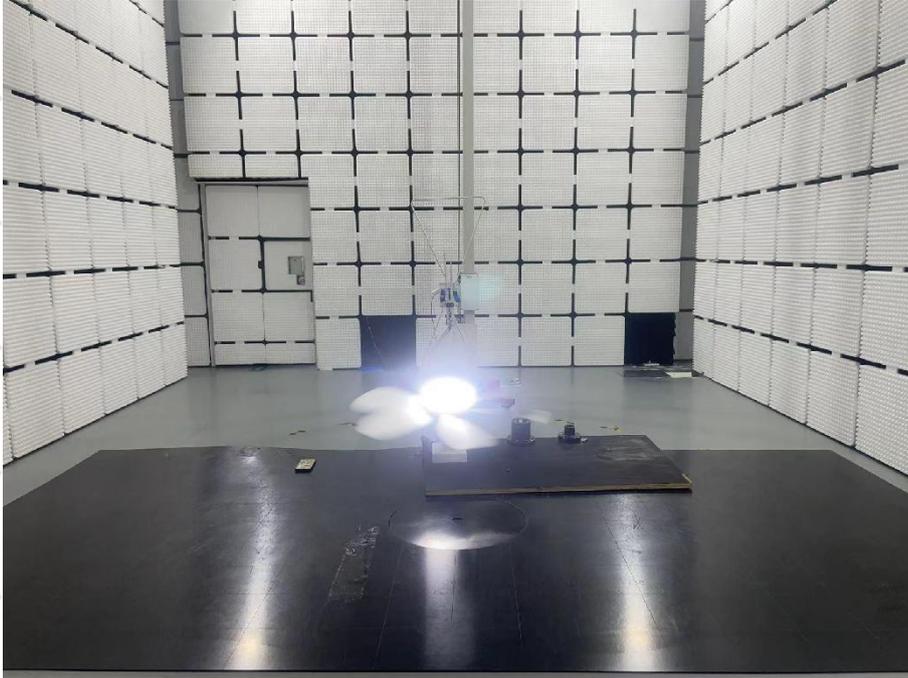


Photo 4 Conducted emission Test



Photo 5 Magnetic test



Photo 6 Electrostatic Discharge Test



END OF REPORT



APPLICATION FOR EMC DIRECTIVE

On Behalf of

Zhongshan Guzhen Dikas lighting factory

Fan lights

Trade Name: N/A

Model: FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3

Prepared For : **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Prepared By : **TMC Testing Services (Shenzhen) Co., Ltd.**
1/F., Block A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shilong Community, Shiyuan Street, Baoan District, Shenzhen, China
Tel: +86-755- 86642861
Web: www.tmc-lab.com
E-mail: Cert@tmc-lab.com

Date of Test: November 28, 2023- December 6, 2023

Date of Report: December 7, 2023

Report Number: MK23110140P01-E01

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TEST REPORT DECLARATION

| | | |
|-----------------|---|---|
| Applicant | : | Zhongshan Guzhen Dikas lighting factory |
| Address | : | Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| EUT Description | : | Fan lights |
| Model Number | : | FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3 |
| Trade Name | : | N/A |

Test Standards:

EN IEC 55015:2019+A11:2020
 IEC 61547:2020
 EN IEC 61000-3-2:2019+A1:2021
 EN 61000-3-3:2013/A2:2021

The EUT described above is tested by TMC Testing Services (Shenzhen) Co., Ltd. EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. TMC Testing Services (Shenzhen) Co., Ltd. EMC Laboratory is assumed full responsibility for the accuracy of the test results. Also, this report shows that the EUT technically complies with the 2014/30/EU directive and its amendment requirements.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Prepared by :



Judy Chen/ Assistant

Approved & Authorized Signer :



Vivian Jiang/Manager

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

| Test Items | Test Results |
|---------------------------------------|--------------|
| Conducted emission test | PASS |
| Radiated Emission | PASS |
| Magnetic test | PASS |
| Harmonic Current | PASS |
| Voltage Fluctuation and Flicker | PASS |
| Electrostatic Discharge Test | PASS |
| RF Field Strength susceptibility Test | PASS |
| Electrical Fast Transient/Burst Test | PASS |
| Surge Test | PASS |
| Injected currents susceptibility test | PASS |
| Voltage dips and interruptions test | PASS |

2. GENERAL INFORMATION

2.1. Report information

2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are applicable to the similar items. In addition, such results must not be used to indicate or imply that TMC approves, recommends or endorses the manufacture, supplier or use of such product/equipment, or that TMC in any way guarantees the later performance of the product/equipment.

2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, TMC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third party can obtain a copy of this report through TMC, unless the applicant has authorized TMC in writing to do so.

2.2. Measurement Uncertainty

Available upon request.

3. PRODUCT DESCRIPTION

3.1. EUT Description

| | | |
|--------------|---|---|
| Description | : | Fan lights |
| Applicant | : | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Manufacturer | : | Zhongshan Guzhen Dikas lighting factory Beihai Industrial Park, Guzhen Town, Zhongshan City, China |
| Model Number | : | FS-HX-R520 |

3.2. Block Diagram of EUT Configuration



3.3. Operating Condition of EUT

Test mode 1: Lighting

3.4. Test Conditions

Temperature: 23-26°C

Relative Humidity: 55-68 %

3.5. Modifications

No modification was made.

3.6. Abbreviations

| | |
|-----|--------------------------------|
| AC | Alternating Current |
| AMN | Artificial Mains Network |
| DC | Direct Current |
| EM | ElectroMagnetic |
| EMC | ElectroMagnetic Compatibility |
| EUT | Equipment Under Test |
| IF | Intermediate Frequency |
| RF | Radio Frequency |
| rms | root mean square |
| EMI | Electromagnetic Interference |
| EMS | Electromagnetic Susceptibility |

3.7. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------|-----------------|------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde & Schwarz | ESPI3 | 101396 | Oct.27, 23 | Oct.26, 24 |
| 2. | L.I.S.N. | Rohde & Schwarz | ENV216 | 102723 | Oct.27, 23 | Oct.26, 24 |
| 3. | loop antenna | DAZE | ZN30401 | 19036 | Oct.27, 23 | Oct.26, 24 |
| 4. | Wet and dry thermometer | M&G | ARC92569 | N/A | Oct.27, 23 | Oct.26, 24 |
| 5. | Shielding room | SKET | 2021082301 | N/A | Aug.23,21 | Aug.22,24 |

4.2. For Magnetic Test (In Shielding Room)

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|----------------|-----------------|------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde & Schwarz | ESPI3 | 101396 | Oct.27, 23 | Oct.26, 24 |
| 2. | loop antenna | ZHINAN | ZN30401 | 19036 | Oct.27, 23 | Oct.26, 24 |
| 3. | Shielding room | SKET | 2021082301 | N/A | Aug.23,21 | Aug.22,24 |

4.3. For Harmonic / Flicker Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------|--------------|-----------|------------|------------------|--------------------|
| 1. | Harmonic Flicker Tester | BOSUOTE | 5001ix | 080419-03 | Apr.06,23 | Apr.05,24 |

4.4. For Electrostatic Discharge Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|--------------------------------|--------------|-----------|------------|------------------|--------------------|
| 1. | Electrostatic analog generator | LIONCEL | ESD-203B | 0210502 | Oct.27, 23 | Oct.26, 24 |

4.5. For Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|---------------------------------|---------------|------------------|------------|------------------|--------------------|
| 1. | Test Receiver | Rohde&Schwarz | ESC17(9kHz-7GHz) | 100336 | Oct.27, 23 | Oct.26, 24 |
| 2. | Broadband antenna | Schwarzbeck | VULB9168 | 01222 | Oct.27, 23 | Oct.26, 24 |
| 3. | Horn antenna | Schwarzbeck | BBHA9120D | 02476 | Oct.27, 23 | Oct.26, 24 |
| 4. | Preamplifier | Schwarzbeck | BBV9745 | 00250 | Oct.27, 23 | Oct.26, 24 |
| 5. | Preamplifier | N/A | TRLA-01018G440B | 21081001 | Oct.27, 23 | Oct.26, 24 |
| 6. | 3M method semi anechoic chamber | SKET | 9m*6m*6m | 2021082304 | Oct.14,21 | Oct.13,24 |
| 7. | Pointer hygrometer | M&G | ARC92570 | N/A | Oct.27, 23 | Oct.26, 24 |

4.6. For RF Strength Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Recalibration time |
|------|-------------------------|--------------|-------------|------------|------------|--------------------|
| 1. | Signal Generator | HP | 8648A | 3633A02081 | Oct.27, 23 | Oct.26, 24 |
| 2. | Amplifier | A&R | 500A100 | 17034 | NCR | NCR |
| 3. | Amplifier | A&R | 100W/1000M1 | 17028 | NCR | NCR |
| 4. | Isotropic Field Monitor | A&R | FM2000 | 16829 | NCR | NCR |
| 5. | Isotropic Field Probe | A&R | FLW220100 | 16755 | Oct.27, 23 | Oct.26, 24 |
| 6. | Biconic Antenna | EMCO | 3108 | 9507-2534 | NCR | NCR |
| 7. | Log-periodic Antenna | A&R | AT1080 | 16812 | NCR | NCR |
| 8. | PC | N/A | 486DX2 | N/A | N/A | N/A |

4.7. For Electrical Fast Transient/Burst Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

4.8. For Surge Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

4.9. For Voltage Dips and Interruptions Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibration time | Recalibration time |
|------|-------------------------------|--------------|-------------|------------|------------------|--------------------|
| 1 | Full-featured immunity tester | N/A | HV1P16T | 080107-04 | Otc.16,23 | Otc.15,24 |
| 2 | Test System | N/A | EMCPRO PLUS | 080107-06 | / | / |
| 3 | Group Pulse Coupling Clip | N/A | H3C | 080107-07 | Apr.06,23 | Apr.05,24 |

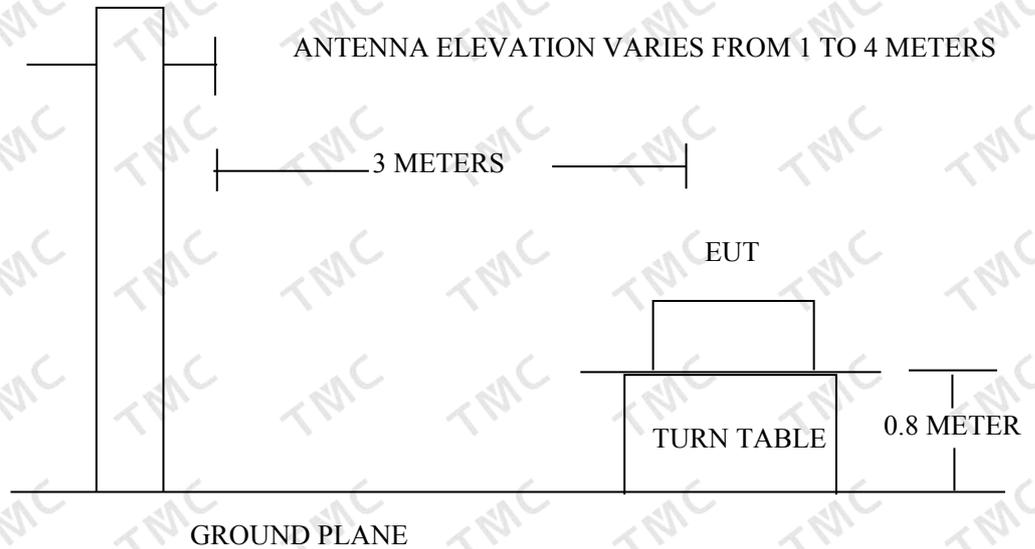
4.10. For Injected Currents Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Recalibration time |
|------|-----------------|--------------|-------------|--------------|------------|--------------------|
| 1. | Simulator | EMTEST | CWS 500C | 0900-12 | Oct.27, 23 | Oct.26, 24 |
| 2. | CDN | EMTEST | CDN-M2 | 510010010010 | Oct.27, 23 | Oct.26, 24 |
| 3. | VDN | EMTEST | CDN-M3 | 0900-11 | Oct.27, 23 | Oct.26, 24 |
| 4. | Injection Clamp | EMTEST | F-2031-23MM | 368 | Oct.27, 23 | Oct.26, 24 |
| 5. | Attenuator | EMTEST | ATT6 | 0010222A | Oct.27, 23 | Oct.26, 24 |

5 RADIATED EMISSION TEST

Open Site Setup Diagram

ANTENNA TOWER



5.1 Test Standard

EN IEC 55015:2019+A11:2020

1.1 Radiated Emission Limit

All emanations from a Class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

| FREQUENCY (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMITS (dB μ V/m) |
|-----------------|-------------------|---------------------------------------|
| 30 ~ 230 | 3 | 40 |
| 230 ~ 1000 | 3 | 47 |

Note:(1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instruments antenna and the closed point of any part of the EUT.

| FREQUENCY (GHz) | DISTANCE (Meters) | Average limit (dB μ V/m) | Peak limit (dB μ V/m) |
|-----------------|-------------------|------------------------------|---------------------------|
| 1 ~ 3 | 3 | 50 | 70 |
| 3 ~ 6 | 3 | 54 | 74 |

Note :The lower limit applies at the transition frequency.

1.2 EUT Configuration on Test

The EN55015 Class B regulations test method must be used to find the maximum emission during radiated emission test.

1.3 Operating Condition of EUT

1.3.1 Setup the EUT as shown on Section 5.1.

1.3.2 Turn on the power of all equipments.

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

1.4 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above 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 move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCS20) is 120 KHz.

The EUT is tested in Anechoic Chamber. and all the scanning waveform is put in

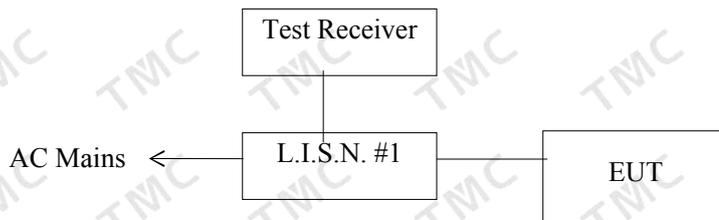
Appendix I.

1.5 Test Results

PASS.

6. POWER LINE CONDUCTED EMISSION TEST

6.1. Block Diagram of Test Setup



6.2. Test Standard

EN IEC 55015:2019+A11:2020

6.3. Power Line Conducted Emission Limit

| Frequency | At mains terminals (dB μ V) | |
|------------------|---------------------------------|---------------|
| | Quasi-peak Level | Average Level |
| 9KHz ~ 50KHz | 110 | -- |
| 50KHz ~ 150KHz | 90 ~ 80* | -- |
| 150KHz ~ 0.5MHz | 66 ~ 56* | 56 ~ 46* |
| 0.5MHz ~ 2.51MHz | 56 | 46 |
| 2.51MHz ~ 3.0MHz | 73 | 63 |
| 3.0MHz ~ 5.0MHz | 56 | 46 |
| 5.0MHz ~ 30MHz | 60 | 50 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

6.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN55015 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

6.4.1. EUT information

Model Number: FS-HX-R520

Manufacturer: Zhongshan Guzhen Dikas lighting factory

6.5. Operating Condition of EUT

- 6.5.1. Setup the EUT and simulators as shown in Section 3.2.
- 6.5.2. Turn on the power of all equipments.
- 6.5.3. Let the EUT work in test modes (EUT WORKING) and test it.

6.6. Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground and connected to the AC mains through a Line Impedance Stabilization Network (L.I.S.N.). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission according to the EN55015 regulations during conducted emission test. And the voltage probe had been used for the load terminals test according to the EN55015 standard.

The bandwidth of the test receiver (R&S ESHS20) is set at 10KHz. in 150KHz~30MHz and 200Hz bandwidth in 9KHz~150KHz.

The frequency range from 9KHz to 30MHz is checked.

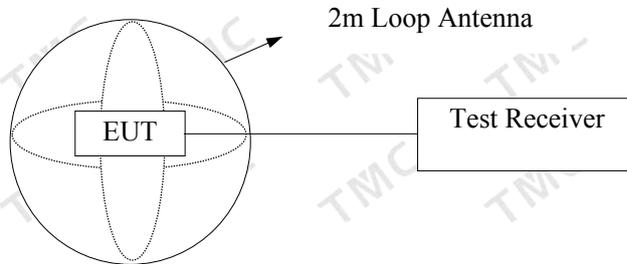
All the test results are listed in Section 6.7. and all the scanning waveform is put in **Appendix II.**

6.7. Test Result

PASS

7. MAGNETIC TEST

7.1. Block Diagram of Test Setup



(EUT: Fan lights)

7.2. Test Standard

EN IEC 55015:2019+A11:2020

7.3. Magnetic Field Emission Limits

| Frequency | Limits for loop diameter (dB μ A) |
|-----------------|---------------------------------------|
| | 2m |
| 9KHz ~ 70KHz | 69 |
| 70KHz ~ 150KHz | 69-39* |
| 150KHz ~ 4.0MHz | 39'3* |
| 4.0MHz ~ 30MHz | 3 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

7.4. EUT Configuration on Test

The configuration of the EUT is same as Section 3.2..

7.5. Operating Condition of EUT

- 7.5.1. Setup the EUT as shown in Section 6.1.
- 7.5.2. Turn on the power of all equipments.
- 7.5.3. Let the EUT work in test mode (ON) and test it.

7.6. Test Procedure

The EUT is placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver. Three field components is checked by means of a coax switch.

The frequency range from 9KHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 9KHz to 150KHz, the bandwidth of the field strength meter (R&S test receiver ESHS20) is set at 200Hz. For frequency band 150KHz to 30MHz, the bandwidth is set at 10KHz.

All the test results are listed in Section 7.7. and all the scanning waveform is put in **Appendix III.**

7.7. Test Results

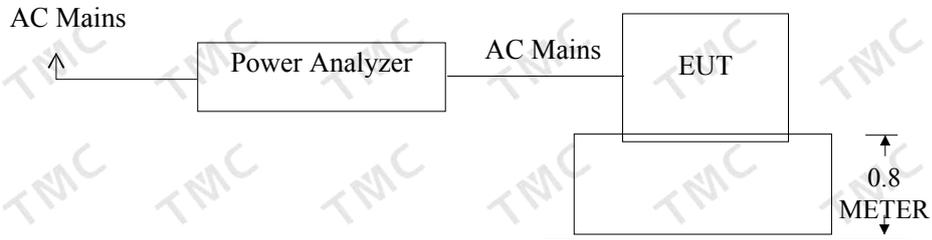
PASS.

The frequency range from 9KHz to 30MHz is investigated.

As the peak value is too low against the limit, so the Quasi-peak value has been omitted.

8. HARMONIC CURRENT EMISSION TEST

8.1. Block Diagram of Test Setup



(EUT: Fan lights)

8.2. Test Standard

EN IEC 61000-3-2:2019+A1:2021

8.3. Operating Condition of EUT

- 8.3.1. Setup the EUT as shown in Section 5.1.
- 8.3.2. Turn on the power of all equipments.
- 8.3.3. Let the EUT work in test mode (ON) and test it.

8.4. Test Procedure

The power cord of the EUT is connected to the output of the test system. Turn on the Power of the EUT and use the test system to test the harmonic current level.

8.5. Test Results

PASS

9. VOLTAGE FLUCTUATIONS & FLICKER TEST

9.1. Block Diagram of Test Setup

Same as Section 7.1..

9.2. Test Standard

EN 61000-3-3:2013/A2:2021

9.3. Operating Condition of EUT

Same as Section 7.3.. The power cord of the EUT is connected to the output of the test system. Turn on the power of the EUT and use the test system to test the harmonic current level.

Flicker Test Limit

| Test items | Limits |
|------------|---------------------------|
| Pst | 1.0 |
| dc | 3.3% |
| dmax | 4.0% |
| dt | Not exceed 3.3% for 500ms |

9.4. Test Data

Flicker test Data

Model No.: FS-HX-R520

Test Mode: 1

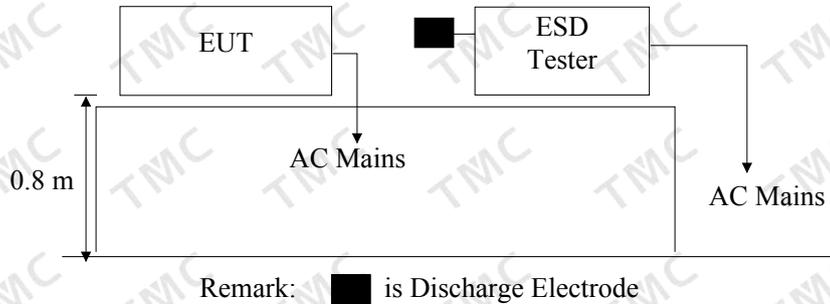
| Items | Reading | Limit |
|-------|---------|---------------------------|
| dmax | 0.00 | 4.0% |
| dc | 0.00 | 3.3% |
| dt | 0.00 | Not exceed 3.3% for 500ms |
| Pst | 0.001 | 1.0 |

9.5. Test Results

PASS.

10. ELECTROSTATIC DISCHARGE TEST

10.1. Block Diagram of ESD Test Setup



10.2. Test Standard

IEC 61547:2020 (EN61000-4-2:2009)
 Severity Level 3 for Air Discharge at 8KV
 Severity Level 2 for Contact Discharge at 4KV

10.3. Severity Levels and Performance Criterion

10.3.1. Severity 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 |

10.3.2. Performance criterion: B

10.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

10.5. Operating Condition of EUT

10.5.1. Setup the EUT as shown in Section 9.1.

10.5.2. Turn on the power of all equipments.

10.5.3. Let the EUT work in test mode (full load) and test it.

10.6. Test Procedure

10.6.1. Air Discharge:

This test is done on a non-conductive surfaces. 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 Jasesones for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

10.6.2. Contact Discharge:

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

10.6.3. 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.

10.6.4. Indirect discharge for vertical coupling plane

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 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.

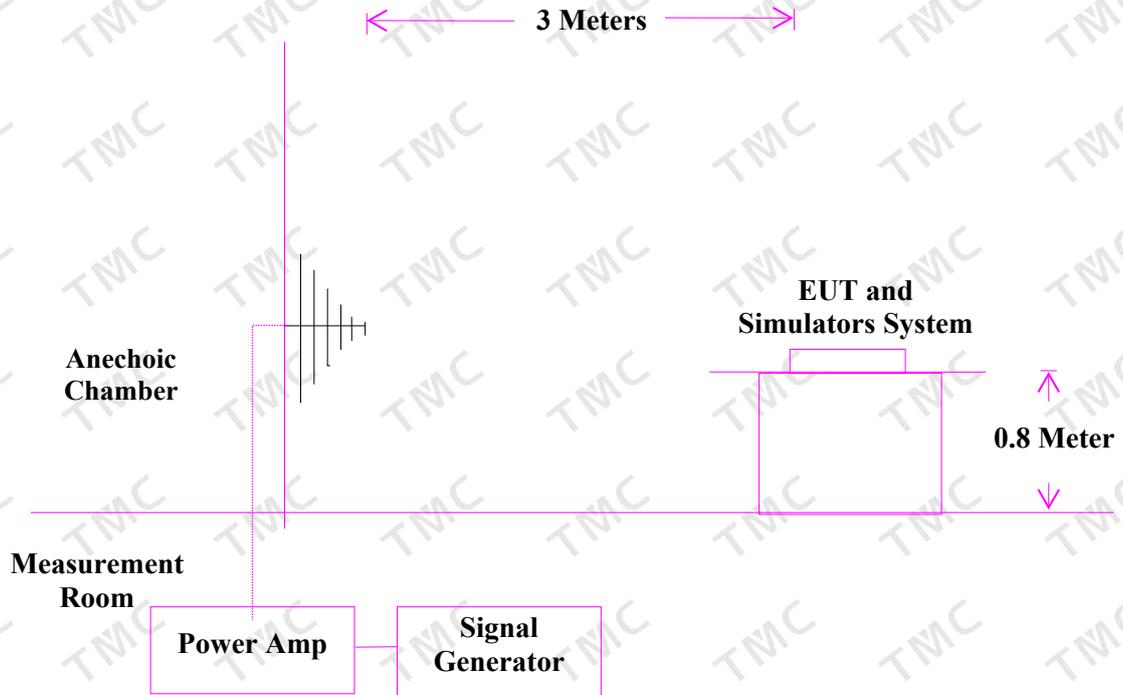
10.7. Test Results

PASS.

Please refer to the following page.

11. RF FIELD STRENGTH SUSCEPTIBILITY TEST

11.1. R/S Test Setup



11.2. Test Standard

IEC 61547:2020 (EN61000-4-3:2006+A1:2008+A2:2010)
 Severity Level 2 at 3V / m

11.3. Severity Levels and Performance Criterion

11.3.1. Severity level

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

11.3.2. Performance criterion : A

11.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

11.5. Operating Condition of EUT

Setup the EUT as shown in Section 10.1.. The operating condition of EUT are listed in section 3.3.

11.6. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor the EUT. All the scanning conditions are as follows :

| Condition of Test | Remarks |
|------------------------------|--------------------------|
| Fielded Strength | 3 V/m (Severity Level 2) |
| Radiated Signal | Modulated |
| Scanning Frequency | 80 - 1000 MHz |
| Sweeping Jassone of radiated | 0.0015 decade/s |
| Dwell Jassone | 1 Sec. |

11.7. Test Results

PASS.

Please refer to the following page.

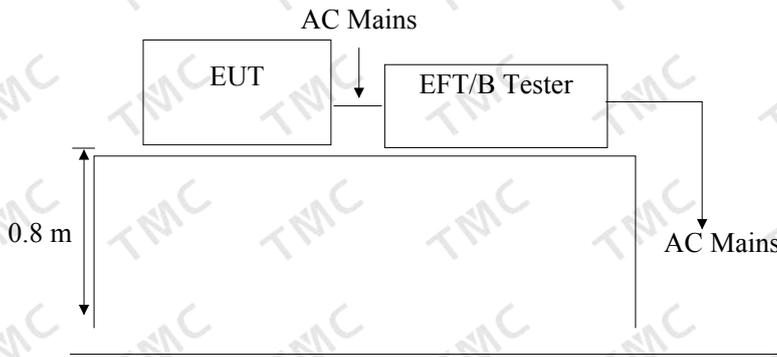
RF Field Strength Susceptibility Test Results

TMC Testing Services (Shenzhen) Co., Ltd.

| | |
|---|--------------------------------------|
| Applicant : Zhongshan Guzhen Dikas lighting factory | Test Date : November 30, 2023 |
| EUT : Fan lights | Temperature : 22 °C |
| M/N : FS-HX-R520 | Humidity : 50 % |
| Power Supply : AC230V,50Hz | Test Mode : Lighting |
| Test Engineer : George | Frequency Range : 80 MHz to 1000 MHz |
| Modulation: <input checked="" type="checkbox"/> AM <input type="checkbox"/> Pulse <input type="checkbox"/> none 1 KHz 80% | |
| Criterion : A | |
| Frequency Rang : 80-1000 | |
| Steps | 1% |
| | Horizontal |
| | Vertical |
| Front | Pass |
| Right | Pass |
| Rear | Pass |
| Left | Pass |

12. ELECTRICAL FAST TRANSIENT/BURST TEST

12.1. EFT Test Setup



12.2. Test Standard

IEC 61547:2020 (EN61000-4-4:2012)
 Severity Level 2 at 1KV

12.3. Severity Levels and Performance Criterion

12.3.1. Severity level

| Open Circuit Output Test Voltage $\pm 10\%$ | | |
|---|-----------------------|---|
| Level | On Power Supply Lines | On I/O (Input/Output) Signal data and control lines |
| 1. | 0.5 KV | 0.25 KV |
| 2. | 1 KV | 0.5 KV |
| 3. | 2 KV | 1 KV |
| 4. | 4 KV | 2 KV |
| X | Special | Special |

12.3.2. Performance criterion : B

12.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2..

12.5. Operating Condition of EUT

Setup the EUT as shown in Section 11.1.. The operating condition of EUT are listed in section 3.3.

12.6. Test Procedure

The EUT is put on the table which is 0.8 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 the EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

12.6.1. 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.

12.6.2. For signal lines and control lines ports:

It's necessary to test.

12.6.3. For DC output line ports:

It's unnecessary to test.

12.7. Test Results

PASS.

Please refer to the following page.

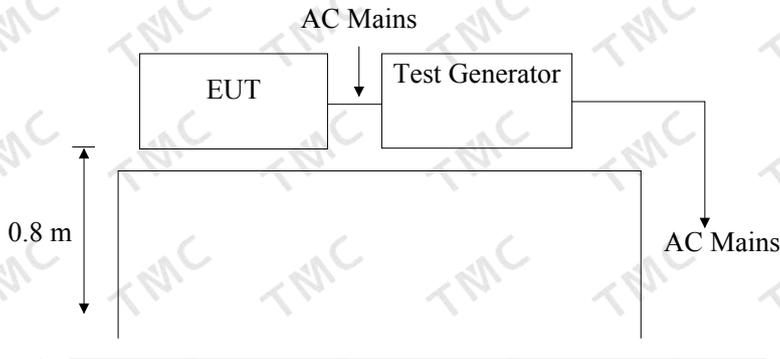
Electrical Fast Transient/Burst Test Results

TMC Testing Services (Shenzhen) Co., Ltd.

| | | | | | | | | | |
|--------------------------------|---|-----------------------|----------------------|----------------|--------------------|-------------------|-----------------------|----------------------|----------------|
| <i>Applicant</i> | : Zhongshan Guzhen Dikas lighting factory | <i>Test Date</i> | : November 30, 2023 | | | | | | |
| <i>EUT</i> | : Fan lights | <i>Temperature</i> | : 22 °C | | | | | | |
| <i>M/N</i> | : FS-HX-R520 | <i>Humidity</i> | : 50 % | | | | | | |
| <i>Power Supply</i> | : AC230V,50Hz | <i>Test Mode</i> | : Lighting | | | | | | |
| <i>Test Engineer</i> | : Simon | | | | | | | | |
| <i>Inject Place</i> : AC Mains | | | | | | | | | |
| <i>Inject Line</i> | <i>Voltage KV</i> | <i>Inject Time(s)</i> | <i>Inject Method</i> | <i>Results</i> | <i>Inject Line</i> | <i>Voltage KV</i> | <i>Inject Time(s)</i> | <i>Inject Method</i> | <i>Results</i> |
| L | ±1 | 120 | Direct | PASS | | | | | |
| N | ±1 | 120 | Direct | PASS | | | | | |
| L N | ±1 | 120 | Direct | PASS | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

13. SURGE TEST

13.1. Surge Test Setup



13.2. Test Standard

IEC 61547:2020 (EN61000-4-5:2017)
Severity Level 2 for Line to Neutral at 1.0KV

13.3. Severity Levels and Performance Criterion

13.3.1. Severity level

| Severity Level | Open-Circuit Test Voltage KV |
|----------------|---------------------------------|
| 1 | 2. 5 |
| 2 | 3. 0 |
| 3 | 4. 0 |
| 4 | 4.0 |
| * | Special |

Performance criterion : C

13.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

13.5. Operating Condition of EUT

13.5.1. Setup the EUT as shown in Section 12.1..

13.5.2. Turn on the power of all equipments.

13.5.3. Let the EUT work in test mode (Full load) and test it.

13.6. Test Procedure

- 1) Set up the EUT and test generator as shown on Section 12.1
- 2) For line to line coupling mode, provide a 0.5KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

13.7. Test Results

PASS.

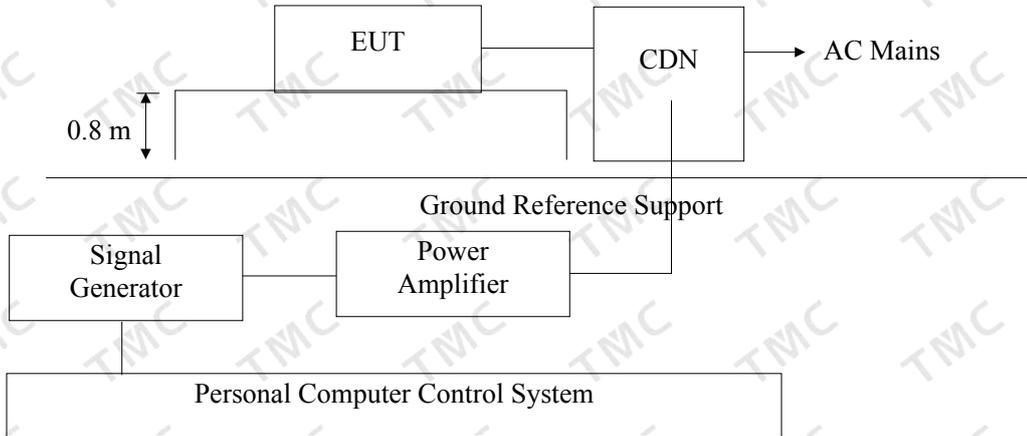
Please refer to the following page.

Surge Immunity Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant</i> : Zhongshan Guzhen Dikas lighting factory | | | | <i>Test Date</i> : November 30, 2023 | |
|---|-----------------|--------------------|--------------------|--------------------------------------|---------------|
| <i>EUT</i> : Fan lights | | | | <i>Temperature</i> : 22 °C | |
| <i>M/N</i> : FS-HX-R520 | | | | <i>Humidity</i> : 50 % | |
| <i>Power Supply</i> : AC230V,50Hz | | | | <i>Test Mode</i> : Lighting | |
| <i>Test Engineer</i> : Simon | | | | | |
| <i>Location</i> | <i>Polarity</i> | <i>Phase Angle</i> | <i>No of Pulse</i> | <i>Pulse Voltage (KV)</i> | <i>Result</i> |
| L-N | + | 0 | 5 | 1.0 | / |
| | + | 90 | 5 | 1.0 | PASS |
| | + | 180 | 5 | 1.0 | / |
| | + | 270 | 5 | 1.0 | PASS |

14. INJECTED CURRENTS SUSCEPTIBILITY TEST

14.1. Block Diagram of Test AC Mains Setup



14.2. Test Standard

IEC 61547:2020 (EN61000-4-6:2014/AC:2015)
Severity Level 2 at 3 V (rms), 0.15MHz ~ 80MHz

14.3. Severity Levels and Performance Criterion

14.3.1. Severity level

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

14.3.2. Performance criterion: A

14.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

14.5. Operating Condition of EUT

Setup the EUT as shown in Section 13.1.. The operating condition of EUT are listed in section 3.3.

14.6. Test Procedure

- 1) Set up the EUT, CDN and test generators as shown on Section 13.1.
- 2) Let the EUT work in test mode and test it.
- 3) The EUT are placed on an insulating support 0.8m 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 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
- 7) The rate of sweep shall not exceed 1.5×10^{-3} decades/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.

14.7. Test Results

PASS.

Please refer to the following page.

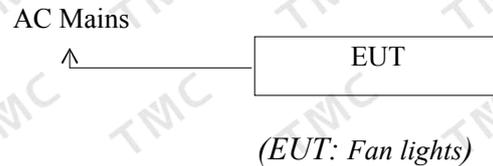
Injected Currents Susceptibility Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant</i> : Zhongshan Guzhen Dikas lighting <i>factory</i> | | <i>Test Date</i> : November 30, 2023 | | |
|--|--------------------------|--------------------------------------|------------------|---------------|
| <i>EUT</i> : Fan lights | | <i>Temperature</i> : 22°C | | |
| <i>M/N</i> : FS-HX-R520 | | <i>Humidity</i> : 50% | | |
| <i>Power Supply</i> : AC230V,50Hz | | <i>Test Mode</i> : Lighting | | |
| <i>Test Engineer</i> : Simon | | | | |
| <i>Frequency Range (MHz)</i> | <i>Injected Position</i> | <i>Strength</i> | <i>Criterion</i> | <i>Result</i> |
| 0.15 ~ 20 | AC Line | 3V(rms), Unmodulated | A | PASS |
| 20 ~ 80 | AC Line | 3V(rms), Unmodulated | A | PASS |
| <i>Remark</i> : 1. Modulation Signal:1KHz 80% AM 2. Standard Applied : EN61000-4-6:1996 | | <i>Note</i> : | | |

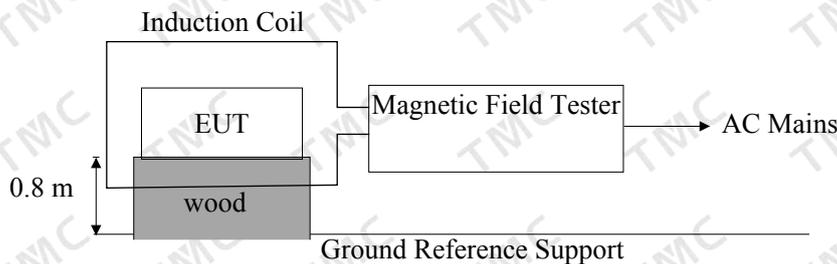
15. MAGNETIC FIELD IMMUNITY TEST

15.1. Block Diagram of Test Setup

15.1.1. Block Diagram of the EUT



15.1.2. Block Diagram of Test Setup



15.2. Test Standard

EN61547: 2009 (EN61000-4-8: 2010)
 Severity Level 2 at 3A/m

15.3. Severity Levels and Performance Criterion

15.3.1. Severity level

| Level | Magnetic Field Strength A/m |
|-------|-----------------------------|
| 1. | 1 |
| 1. | 3 |
| 2. | 10 |
| 3. | 30 |
| 4. | 100 |
| X. | Special |

15.3.2. Performance criterion: A

15.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

15.5. Operating Condition of EUT

15.5.1. Setup the EUT as shown in Section 14.1

15.5.2. Turn on the power of all equipments.

15.5.3. Let the EUT work in test mode (ON) and test it.

15.6. Test Procedure

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1m*1m) and shown in Section 14.1. The induction coil shall then be rotated by 90° in order to expose the EUT to the test field with different orientations.

15.7. Test Results

PASS.

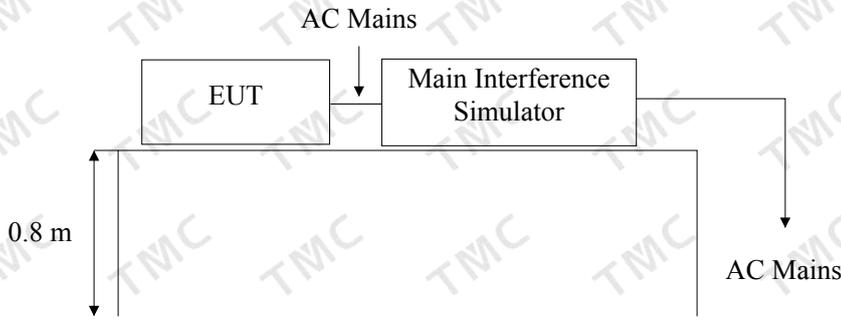
Please refer to the following page.

Magnetic Field Immunity Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| | | | | |
|---|-------------------------|-------------------------------------|------------------|---------------|
| <i>Applicant: Zhongshan Guzhen Dikas lighting factory</i> | | <i>Test Date :November 30, 2023</i> | | |
| <i>EUT : Fan lights</i> | | <i>Temperature : 26 °C</i> | | |
| <i>M/N : FS-HX-R520</i> | | <i>Humidity : 60 %</i> | | |
| <i>Power Supply : AC230V,50Hz</i> | | <i>Test Engineer : Simon</i> | | |
| <i>Test Model: Lighting</i> | | | | |
| <i>Test Level</i> | <i>Testing Duration</i> | <i>Coil Orientation</i> | <i>Criterion</i> | <i>Result</i> |
| <i>3A/M</i> | <i>5 mins</i> | <i>Horizontal</i> | <i>A</i> | <i>PASS</i> |
| <i>3A/M</i> | <i>5 mins</i> | <i>Vertical</i> | <i>A</i> | <i>PASS</i> |

16. VOLTAGE DIPS AND INTERRUPTIONS TEST

16.1. Voltage Dips and Interruptions Test Setup



Remark: Combination wave generator and decoupling network are included in test generator.

16.2. Test Standard

IEC 61547:2020 (EN61000-4-11:2019)

16.3. Severity Levels and Performance Criterion

16.3.1. Severity level

| Test Level %UT | Voltage dip and short interruptions %UT | Duration (in period) |
|-------------------|---|-------------------------|
| 0 | 100 | 250p |
| 40 | 60 | 5p |
| 70 | 30 | 0.5p |

16.3.2. Performance criterion : C & B

16.4. EUT Configuration on Test

The configuration of EUT are listed in Section 3.2.

16.5. Operating Condition of EUT

16.5.1. Setup the EUT as shown in Section 15.1..

16.5.2. Turn on the power of all equipments.

16.5.3. Let the EUT work in test mode (SPEAKERS Playing) and test it.

16.6. Test Procedure

- 1) Set up the EUT and test generator as shown on Section 15.1.
- 2) The interruptions is introduced at selected phase angles with specified duration.
- 3) Record any degradation of performance.

16.7. Test Result

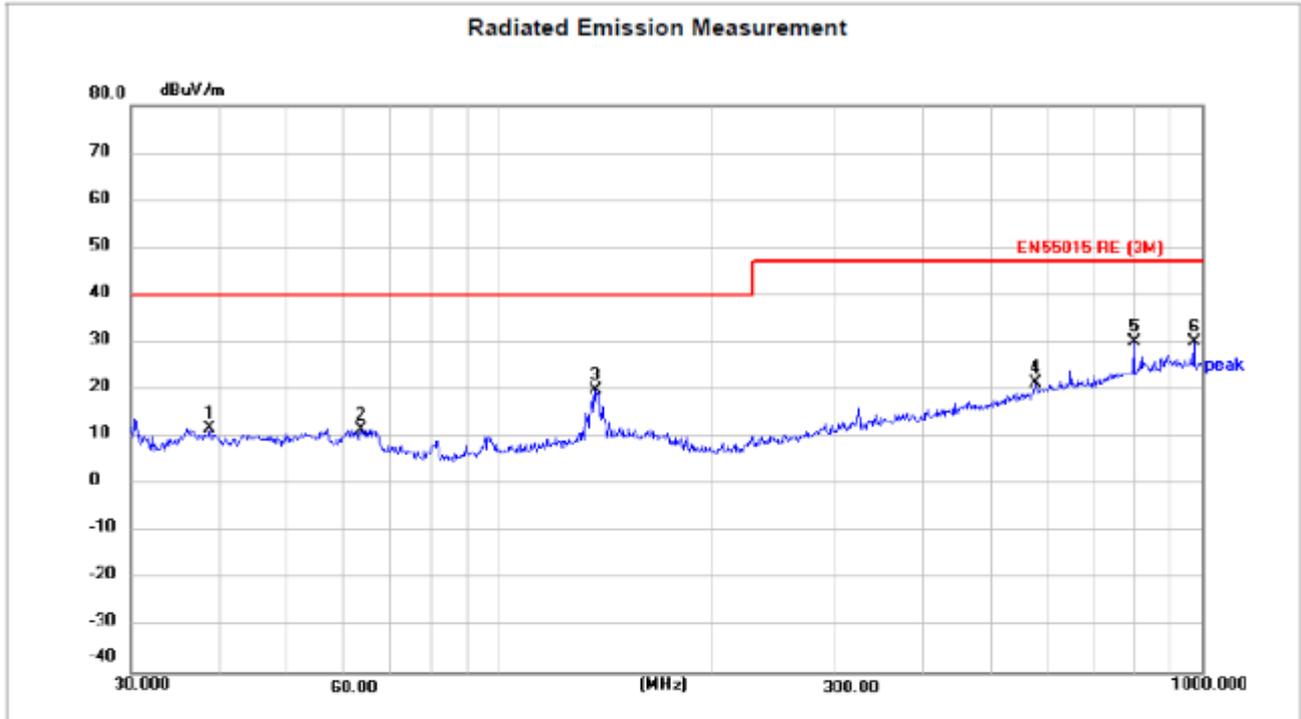
PASS.

Please refer to the following page.

Voltage Dips And Interruptions Test Results
 TMC Testing Services (Shenzhen) Co., Ltd.

| <i>Applicant: Zhongshan Guzhen Dikas lighting factory</i> | | | <i>Test Date :November 30, 2023</i> | | |
|--|---|-----------------------------|-------------------------------------|------------------|---------------|
| <i>EUT : Fan lights</i> | | | <i>Temperature : 26 °C</i> | | |
| <i>M/N : FS-HX-R520</i> | | | <i>Humidity : 64 %</i> | | |
| <i>Power Supply : AC230V,50Hz</i> | | | <i>Test Engineer : Simon</i> | | |
| <i>Test Model: Lighting</i> | | | | | |
| <i>Test Level</i> <i>% U_T</i> | <i>Voltage Dips & Short Interruptions</i> <i>% U_T</i> | <i>Duration (in period)</i> | <i>Phase Angle</i> | <i>Criterion</i> | <i>Result</i> |
| <i>70</i> | <i>30</i> | <i>10P</i> | <i>90°</i> | <i>C</i> | <i>PASS</i> |
| <i>0</i> | <i>100</i> | <i>0.5P</i> | <i>180°</i> | <i>B</i> | <i>PASS</i> |
| <i>Remark: U_T is the rated voltage for the equipment.</i> | | | | | |

APPENDIX I



Site LAB

 Polarization: *Horizontal*

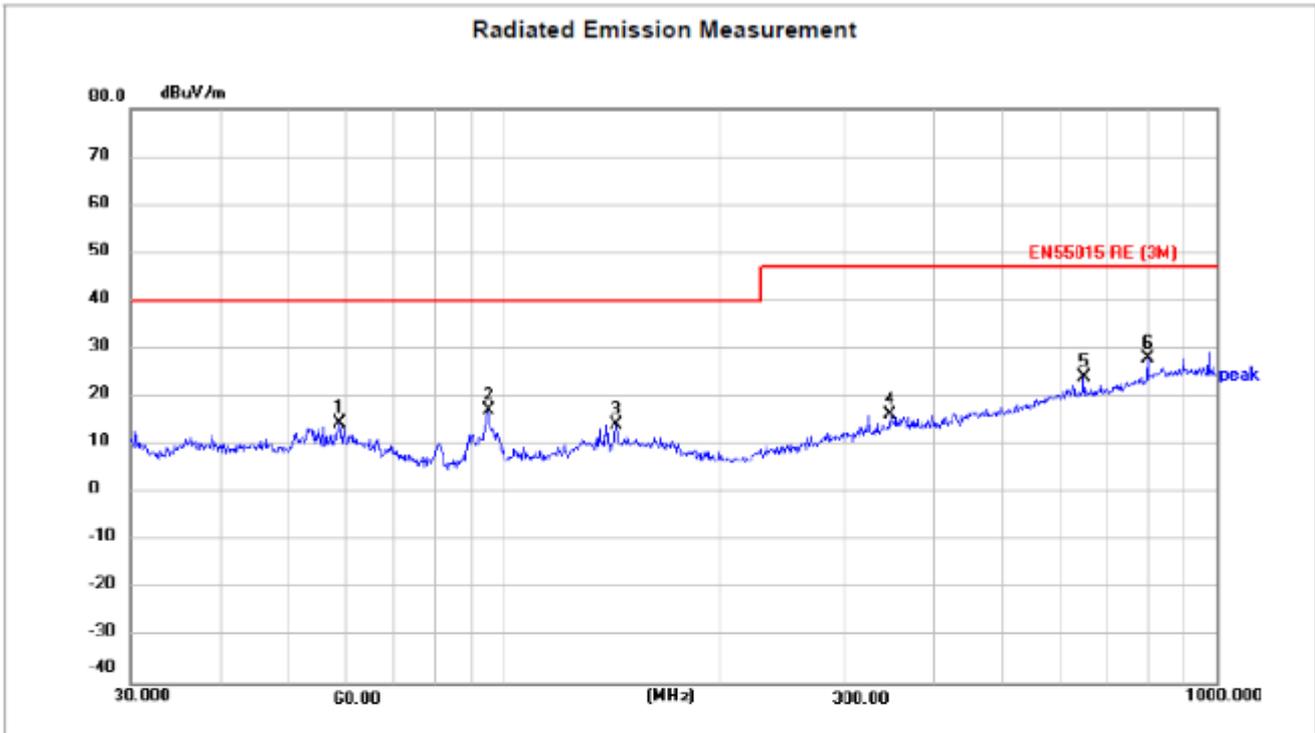
Temperature: 26(C)

Limit: EN55015 RE (3M)

Power: AC230V/50Hz

Humidity: 54 %

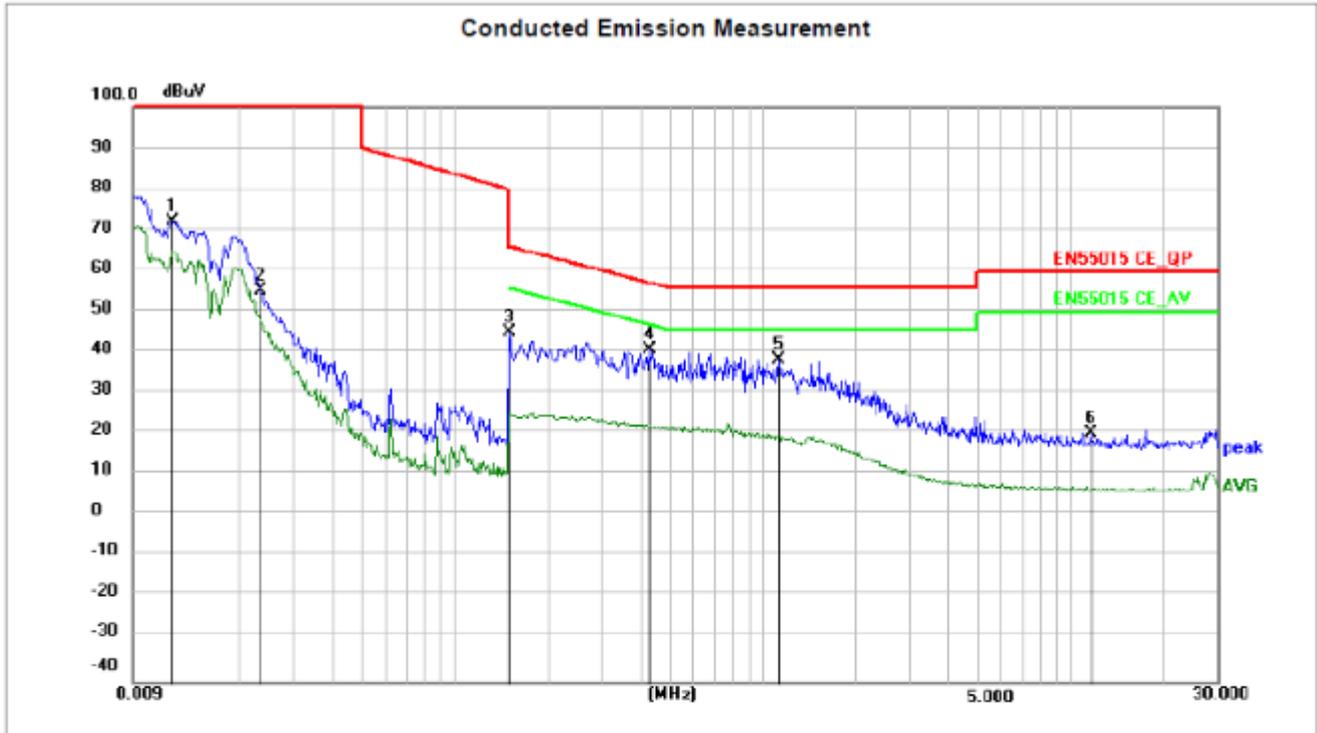
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1 | 38.8878 | 28.26 | -16.45 | 11.81 | 40.00 | -28.19 | peak | 100 | 360 | P | |
| 2 | 63.7588 | 29.08 | -17.65 | 11.43 | 40.00 | -28.57 | peak | 100 | 360 | P | |
| 3 | 137.4202 | 36.76 | -16.88 | 19.88 | 40.00 | -20.12 | peak | 100 | 360 | P | |
| 4 | 578.6699 | 29.76 | -8.47 | 21.29 | 47.00 | -25.71 | peak | 100 | 360 | P | |
| 5 * | 798.9797 | 34.72 | -4.61 | 30.11 | 47.00 | -16.89 | peak | 100 | 360 | P | |
| 6 | 972.3374 | 33.19 | -3.12 | 30.07 | 47.00 | -16.93 | peak | 100 | 360 | P | |



| | | |
|------------------------|-------------------------------|--------------------|
| Site LAB | Polarization: Vertical | Temperature: 26(C) |
| Limit: EN55015 RE (3M) | Power: AC230V/50Hz | Humidity: 54 % |

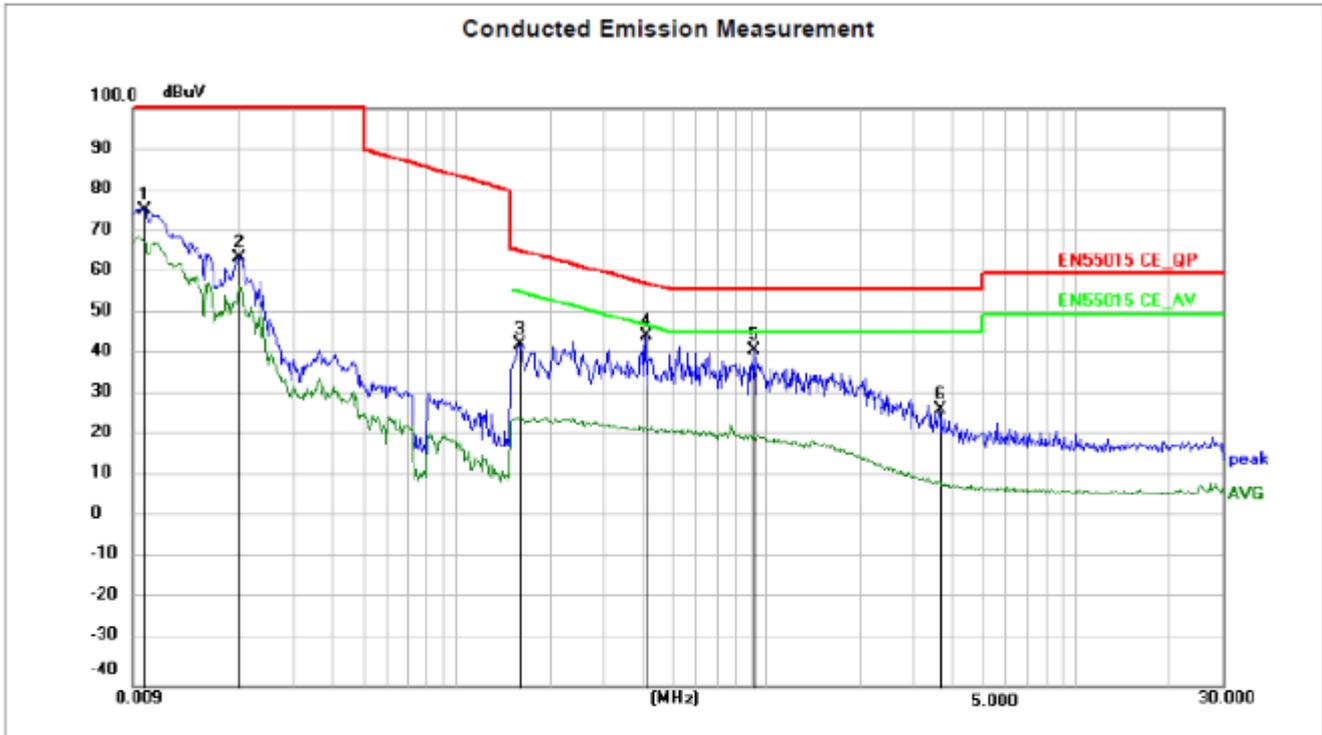
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg.) | P/F | Remark |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|-------------|----------------|-----|--------|
| 1 | 59.0251 | 31.47 | -16.99 | 14.48 | 40.00 | -25.52 | peak | 100 | 0 | P | |
| 2 | 95.0930 | 37.29 | -20.26 | 17.03 | 40.00 | -22.97 | peak | 100 | 0 | P | |
| 3 | 143.8295 | 30.61 | -16.45 | 14.16 | 40.00 | -25.84 | peak | 100 | 0 | P | |
| 4 | 348.0274 | 30.59 | -14.40 | 16.19 | 47.00 | -30.81 | peak | 100 | 0 | P | |
| 5 | 649.6597 | 31.02 | -7.05 | 23.97 | 47.00 | -23.03 | peak | 100 | 0 | P | |
| 6 * | 798.9797 | 32.60 | -4.61 | 27.99 | 47.00 | -19.01 | peak | 100 | 0 | P | |

APPENDIX II



Site LAB Phase: **L1** Temperature: 26(C)
 Limit: EN55015 CE_QP Power: AC230V/50Hz Humidity: 54 %RH

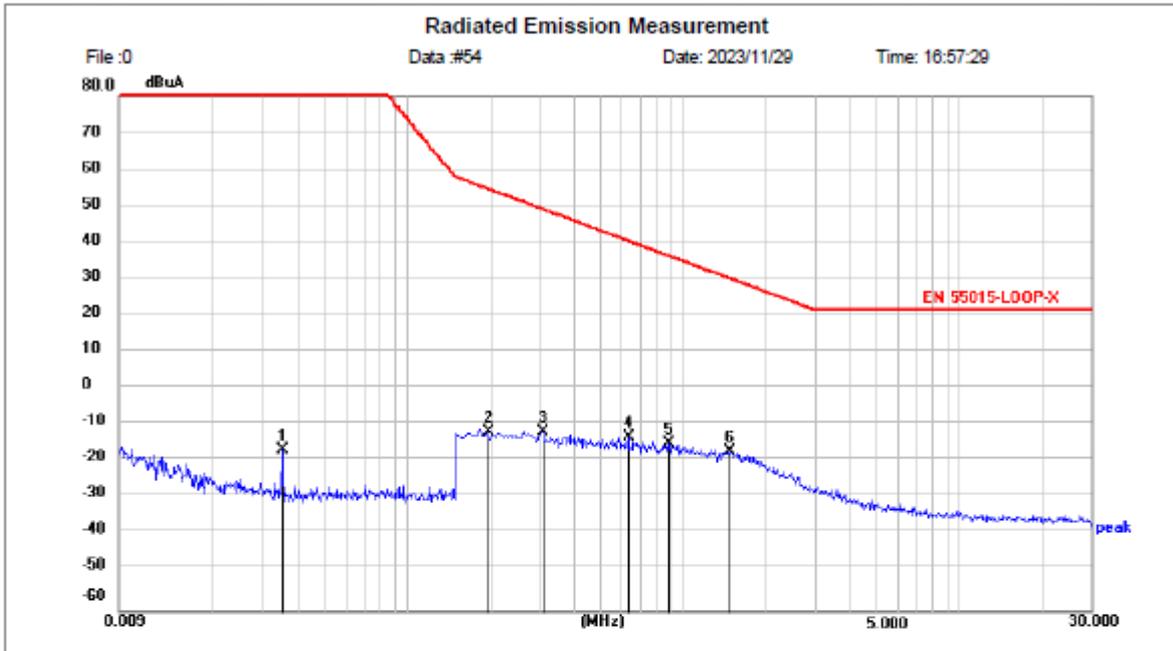
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0122 | 62.29 | 9.99 | 72.28 | 110.00 | -37.72 | peak | P | |
| 2 | 0.0235 | 45.34 | 9.99 | 55.33 | 110.00 | -54.67 | peak | P | |
| 3 | 0.1500 | 35.12 | 10.03 | 45.15 | 66.00 | -20.85 | peak | P | |
| 4 * | 0.4290 | 31.06 | 10.03 | 41.09 | 57.27 | -16.18 | peak | P | |
| 5 | 1.1265 | 28.64 | 10.04 | 38.68 | 56.00 | -17.32 | peak | P | |
| 6 | 11.6430 | 10.52 | 10.14 | 20.66 | 60.00 | -39.34 | peak | P | |



| | | |
|----------------------|--------------------|--------------------|
| Site LAB | Phase: N | Temperature: 26(C) |
| Limit: EN55015 CE_QP | Power: AC230V/50Hz | Humidity: 54 %RH |

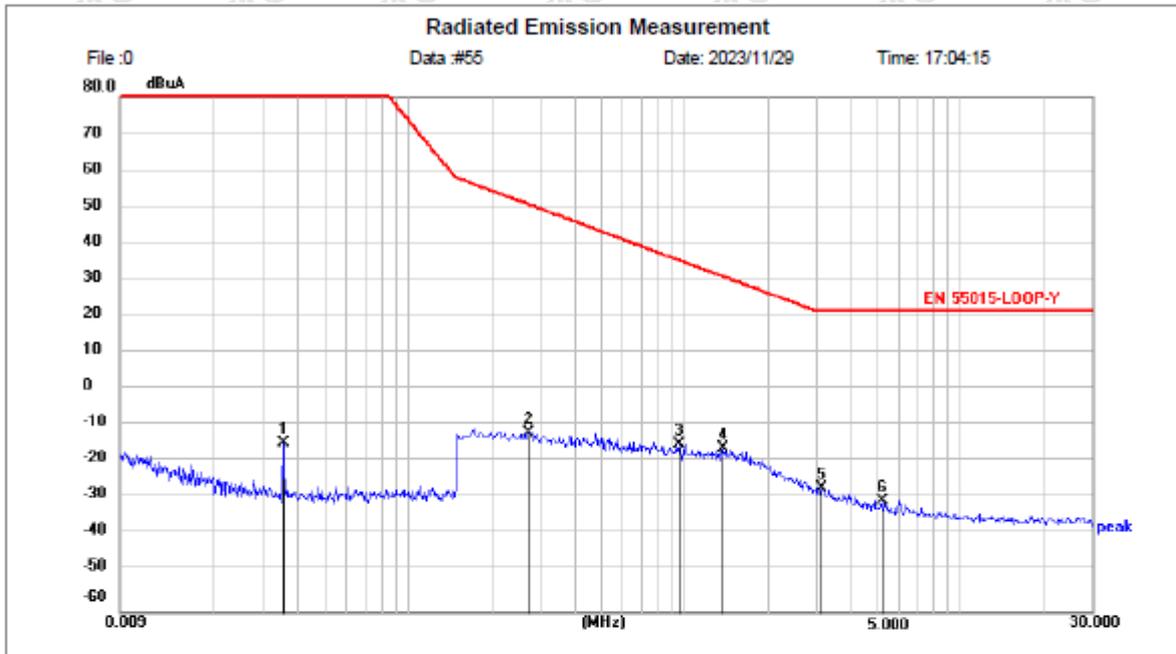
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0099 | 65.34 | 10.02 | 75.36 | 110.00 | -34.64 | peak | P | |
| 2 | 0.0200 | 53.88 | 10.02 | 63.90 | 110.00 | -46.10 | peak | P | |
| 3 | 0.1590 | 32.78 | 10.00 | 42.78 | 65.52 | -22.74 | peak | P | |
| 4 * | 0.4065 | 35.00 | 10.00 | 45.00 | 57.72 | -12.72 | peak | P | |
| 5 | 0.9240 | 31.42 | 10.01 | 41.43 | 56.00 | -14.57 | peak | P | |
| 6 | 3.6195 | 16.92 | 10.03 | 26.95 | 56.00 | -29.05 | peak | P | |

APPENDIX III



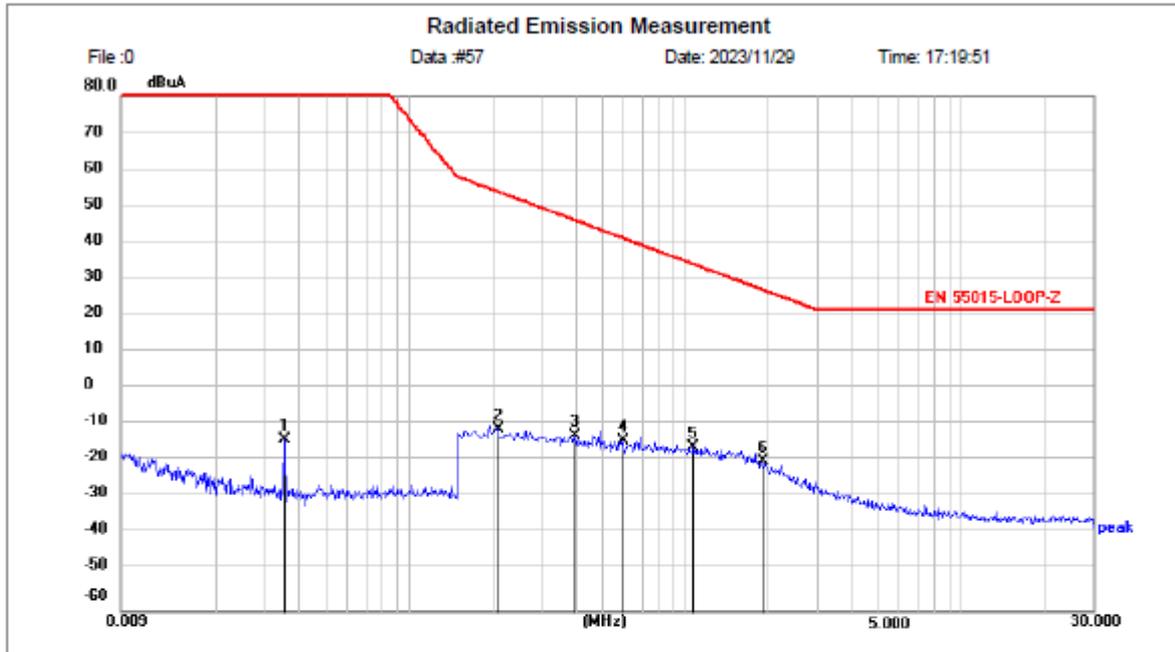
Site LAB Polarization: X Temperature: 26(C)
 Limit: EN 55015-LOOP-X Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -16.17 | 0.20 | -15.97 | 88.00 | -103.97 | peak | P | |
| 2 | 0.1949 | -11.34 | 0.18 | -11.16 | 54.85 | -66.01 | peak | P | |
| 3 | 0.3075 | -11.33 | 0.19 | -11.14 | 49.37 | -60.51 | peak | P | |
| 4 | 0.6315 | -12.83 | 0.18 | -12.65 | 40.73 | -53.38 | peak | P | |
| 5 | 0.8880 | -14.46 | 0.17 | -14.29 | 36.63 | -50.92 | peak | P | |
| 6 * | 1.4685 | -16.66 | 0.16 | -16.50 | 30.58 | -47.08 | peak | P | |



Site LAB Polarization: **Y** Temperature: 26(C)
 Limit: EN 55015-LOOP-Y Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -14.27 | 0.20 | -14.07 | 88.00 | -102.07 | peak | P | |
| 2 | 0.2714 | -11.32 | 0.19 | -11.13 | 50.87 | -62.00 | peak | P | |
| 3 | 0.9555 | -14.42 | 0.16 | -14.26 | 35.75 | -50.01 | peak | P | |
| 4 * | 1.3650 | -15.56 | 0.16 | -15.40 | 31.46 | -46.86 | peak | P | |
| 5 | 3.1514 | -26.30 | 0.17 | -26.13 | 22.00 | -48.13 | peak | P | |
| 6 | 5.2350 | -29.79 | 0.17 | -29.62 | 22.00 | -51.62 | peak | P | |



Site LAB Polarization: **Z** Temperature: 26(C)
 Limit: EN 55015-LOOP-Z Power: AC230V/50Hz Humidity: 54 %RH

| No. | Frequency (MHz) | Reading (dBuA) | Factor (dB) | Level (dBuA) | Limit (dBuA) | Margin (dB) | Detector | P/F | Remark |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1 | 0.0354 | -13.42 | 0.20 | -13.22 | 88.00 | -101.22 | peak | P | |
| 2 | 0.2085 | -10.59 | 0.18 | -10.41 | 54.04 | -64.45 | peak | P | |
| 3 | 0.3975 | -12.42 | 0.19 | -12.23 | 46.29 | -58.52 | peak | P | |
| 4 | 0.5955 | -13.84 | 0.18 | -13.66 | 41.43 | -55.09 | peak | P | |
| 5 | 1.0725 | -15.60 | 0.16 | -15.44 | 34.36 | -49.80 | peak | P | |
| 6 * | 1.8960 | -19.22 | 0.16 | -19.06 | 27.51 | -46.57 | peak | P | |

APPENDIX IV

Photo 1 General appearance of the EUT

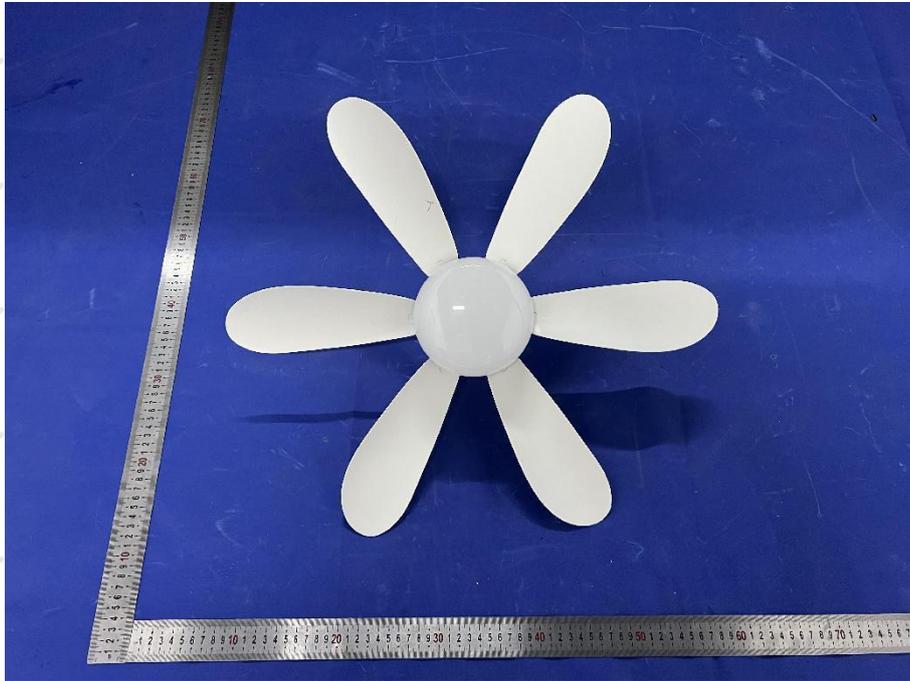


Photo 2 General appearance of the EUT

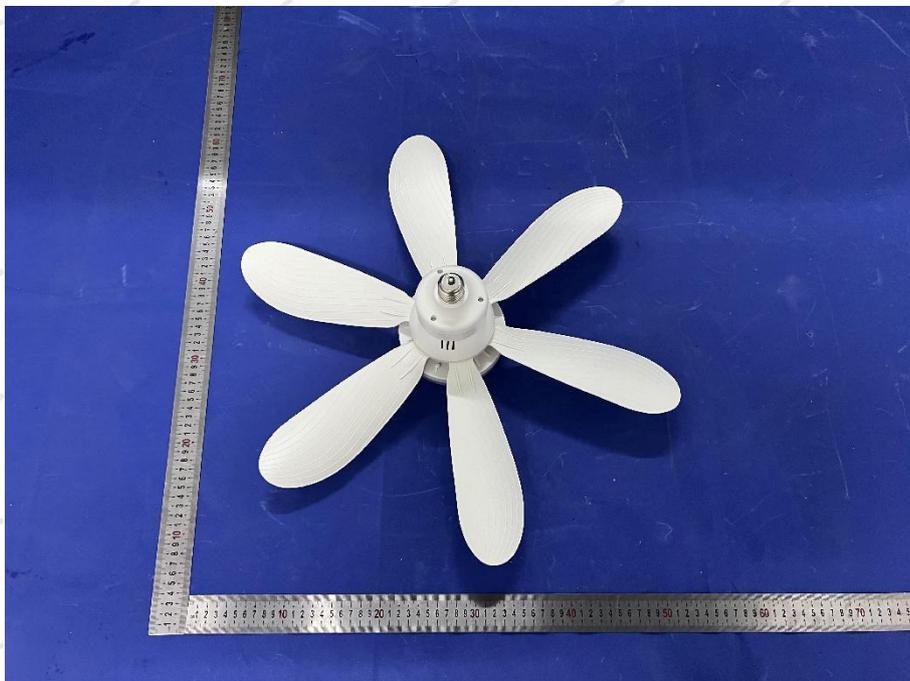


Photo 3 Radiated Emission Test

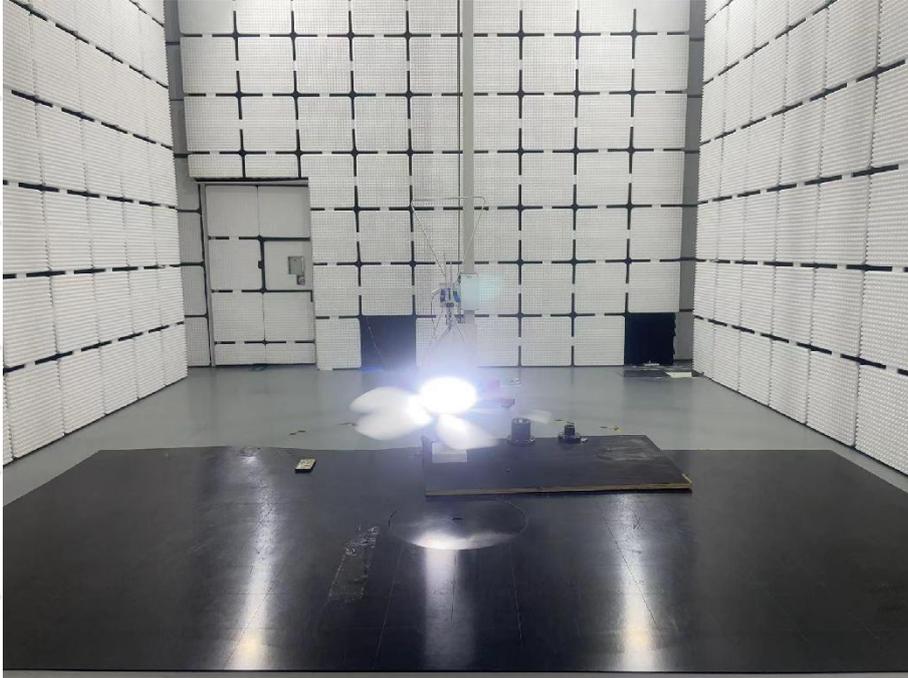


Photo 4 Conducted emission Test



Photo 5 Magnetic test



Photo 6 Electrostatic Discharge Test



END OF REPORT

Verification of Compliance

Verification No.: MK23110140P01-E01

Name and address of Applicant: **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Name and address of Manufacturer: **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Product name: **Fan lights**

Rated: 85-265V~, 50/60Hz, Max.40W

Product model(s): FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3

Product trademark: N/A

This verification confirms that the product meets the requirements of the following standard. The conformity was demonstrated based on following standard(s) listed by European Commission as harmonized with EMC Directive 2014/30/EU.

| | |
|-------------------------------|---------------------------|
| EN IEC 55015:2019+A11:2020 | IEC 61547:2020 |
| EN IEC 61000-3-2:2019+A1:2021 | EN 61000-3-3:2013/A2:2021 |

The verification has been carried out in accordance with individual rules and conditions agreed with the applicant. Evaluation has been carried out in accordance with:

Test report(s) No.: MK23110140P01-E01

Test conducted by: TMC Testing Services (Shenzhen) Co., Ltd.

Verification issue date: December 7, 2023

Notes:

This verification refers to the above mentioned product and its conformity in regards of above mentioned standard(s) was proven on test sample.

This verification does not imply meeting all essential requirements, assessment of the series-production or any other restricted Notified Bodies conformity assessment procedure appropriate for the product.

This verification holder shall use this verification in connection to verification of conformity and technical data relevant for the product the verification was issued.

TMC Testing Services (Shenzhen) Co., Ltd.

t:86-755-86642861 cert@tmc-lab.com www.tmc-lab.com

1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen, China



Verification of Compliance

Verification No.: MK23110140P01-E01

Name and address of Applicant: **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Name and address of Manufacturer: **Zhongshan Guzhen Dikas lighting factory**
Beihai Industrial Park, Guzhen Town, Zhongshan City, China

Product name: **Fan lights**

Rated: 85-265V~, 50/60Hz, Max.40W

Product model(s): FS-HX-R520, FS-HX-R420, FS-HX-E27, FS-FW-R260, FS-FW-R300, FS-FW-R350, FS-XD-R1, FS-XD-R2, FS-XD-R3

Product trademark: N/A

This verification confirms that the product meets the requirements of the following standard.
The conformity was demonstrated based on following standard(s) listed by European Commission as harmonized with EMC Directive 2014/30/EU.

| | |
|-------------------------------|---------------------------|
| EN IEC 55015:2019+A11:2020 | IEC 61547:2020 |
| EN IEC 61000-3-2:2019+A1:2021 | EN 61000-3-3:2013/A2:2021 |

The verification has been carried out in accordance with individual rules and conditions agreed with the applicant. Evaluation has been carried out in accordance with:

Test report(s) No.: MK23110140P01-E01

Test conducted by: TMC Testing Services (Shenzhen) Co., Ltd.

Verification issue date: December 7, 2023

Notes:

This verification refers to the above mentioned product and its conformity in regards of above mentioned standard(s) was proven on test sample.

This verification does not imply meeting all essential requirements, assessment of the series-production or any other restricted Notified Bodies conformity assessment procedure appropriate for the product.

This verification holder shall use this verification in connection to verification of conformity and technical data relevant for the product the verification was issued.

TMC Testing Services (Shenzhen) Co., Ltd.

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1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen, China

