| 1.0 Reference and Address | | | |
|---|---|---|---|
| Report Number | 22110254HKG-001 | Original Issued: 9-Dec-2022 | Revised: 2-Apr-2024 |
| Standard(s) | Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements [UL 62368-1:2019 Ed.3+R:22Oct2021]<br><br>Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements [CSA C22.2#62368-1:2019 Ed.3+U1] | | |

| | | | |
|---|---|---|---|
| Applicant | Shenzhen Chip Optech Co., Ltd. | Manufacturer | **Huizhou Mepro Optech Co., Ltd** |
| Address | 5th Floor, Tower C,<br>Baoshi Technological Park,<br>Baoshi Road, Shiyan Street, Bao'an District, Shenzhen Guangdong 518108 | Address | Tower 12, Xinhua Av. No 6,<br>Chenjiang Street, Zhongkai Hi-Tech District, Huizhou Guangdong 516006 |
| Country | China | Country | China |
| Contact | Yongchun Huang | Contact | Yongchun Huang |
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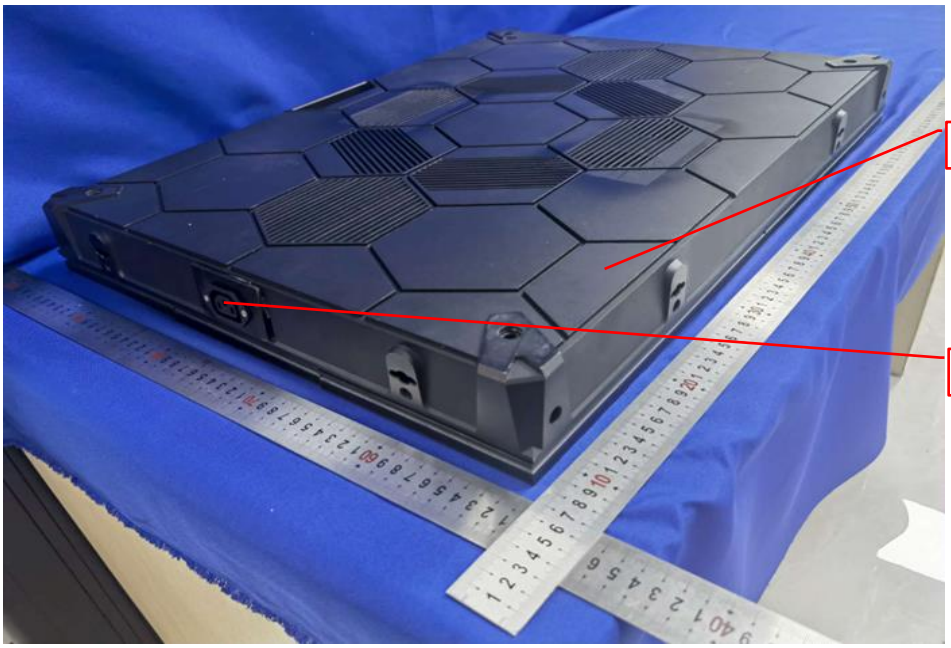
| 2.0 Product Description | |
|---|---|
| Product | LED Display Screen |
| Brand name | Shenzhen Chip Optech Co., Ltd. |
| Description | The product covered by this report is TRANSPARENT LED DISPLAY for indoor use, as build-in equipment installing in a restricted access locations.<br>This product is supplied by one approved built-in switching power supply module via one approved inlets for the connection of detachable power supply cord and classified a Class I apparatus.<br>This product is fixed as stationary type for end use by professional service worker (Skilled Person). It is classified as ES3, PS3, MS2, TS1, RS1.<br>The LEDs of product is classified as Exempt Group according to IEC 62471.<br>The dimension of the EUT is: approx. 640mm x 480mm x 70mm.<br>The max. working temperature is 35°C. |
| Models | P0.9, P1.2, P1.5, P1.6, P1.8, P2, P2.5, P3, P4, P5 |
| Model Similarity | All the models covered in this report are identical to each other except for the lattice distances of LEDs and the model designation, by the following description of models in details:<br>Model P0.9: Distance of pixel pitch 0.9mm;<br>Model P1.2: Distance of pixel pitch 1.2mm;<br>Model P1.5: Distance of pixel pitch 1.5mm;<br>Model P1.6: Distance of pixel pitch 1.6mm;<br>Model P1.8: Distance of pixel pitch 1.8mm;<br>Model P2: Distance of pixel pitch 2.0mm;<br>Model P2.5: Distance of pixel pitch 2.5mm;<br>Model P3: Distance of pixel pitch 3.0mm;<br>Model P4: Distance of pixel pitch 4.0mm;<br>Model P5: Distance of pixel pitch 5.0mm; |
| Ratings | Input: 100-240VAC, 50-60Hz, 10A Class I<br>Output: 100-240VAC, 50-60Hz, 9A |
| Other Ratings | NA |
| Conditions of Acceptability | The products covered in this report are incomplete in construction features or limited in performance capabilities, the tests relied on the protective bonding conductor, the LED luminance and the mechanical constructions should be evaluated in the end-system. The additional consideration should be given to the following when it will intend to use in or with the final system, if applicable. |
| | 1. Suitability of the enclosure should be evaluated when installed in the end product. End System Enclosure should be compliance of protection for the Electrical , Mechanical, Flammability requirements. |
| | 2. Temperature Testing should be performed on this component when installed in the end product. |
| | - Clause 5.6.6.2 Resistance of the protective bonding system (Ground continuity test)<br>- Clauses 5.7.2.2, 5.7.4 Earthed accessible conductive part test<br>- Clause 8.6.2.2 Static stability test<br>- Clause 8.6.2.3 Downward force test<br>- Clause 8.6.3 Relocation stability test<br>- Clause 8.6.4 Glass Slide test<br>- Clause 8.6.5 Horizontal force test<br>- Clause 8.7.2 Wall or ceiling mount loading test<br>- Clause 8.9.2 Wheels or casters attachment test<br>- Clause 8.10.3 Cart, stand or carrier loading test<br>- Clause 8.10.4 Cart, stand or carrier impact test<br>- Clause 8.10.5 Mechanical stability test<br>- Clause 10.2 Light emitting diode (Based on IEC62471)<br>- Clause Annex B 2.5 Input Test<br>- Clause Annex B.3 Simulated abnormal operating conditions<br>- Clause Annex V Determination of accessible part test |

## 3.0 Product Photographs

**Photo 1 -** Overall View

**Photo 2 -** Overall View



## 3.0 Product Photographs

**Photo 3 -** Overall View

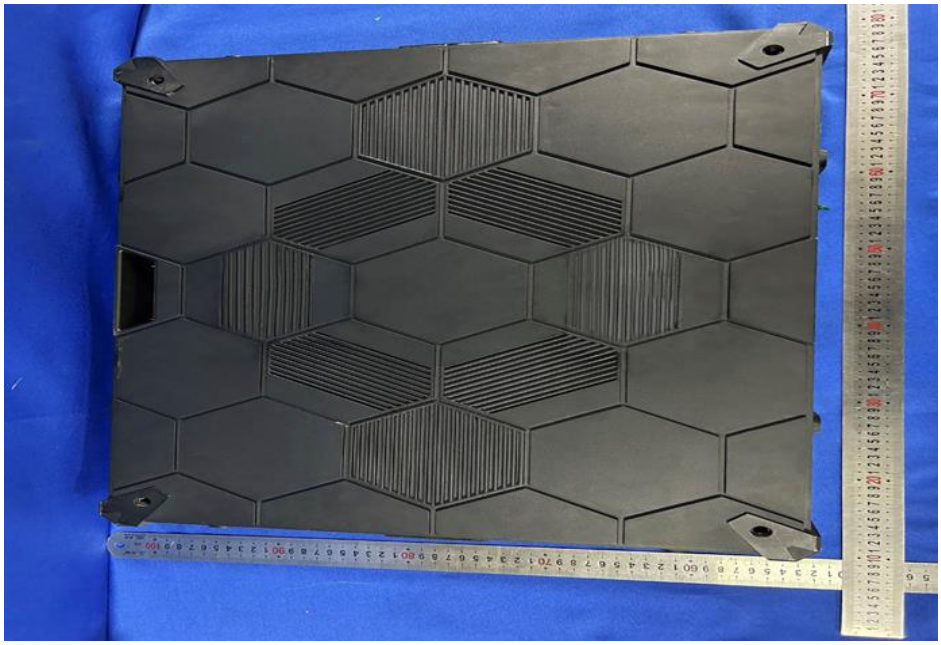
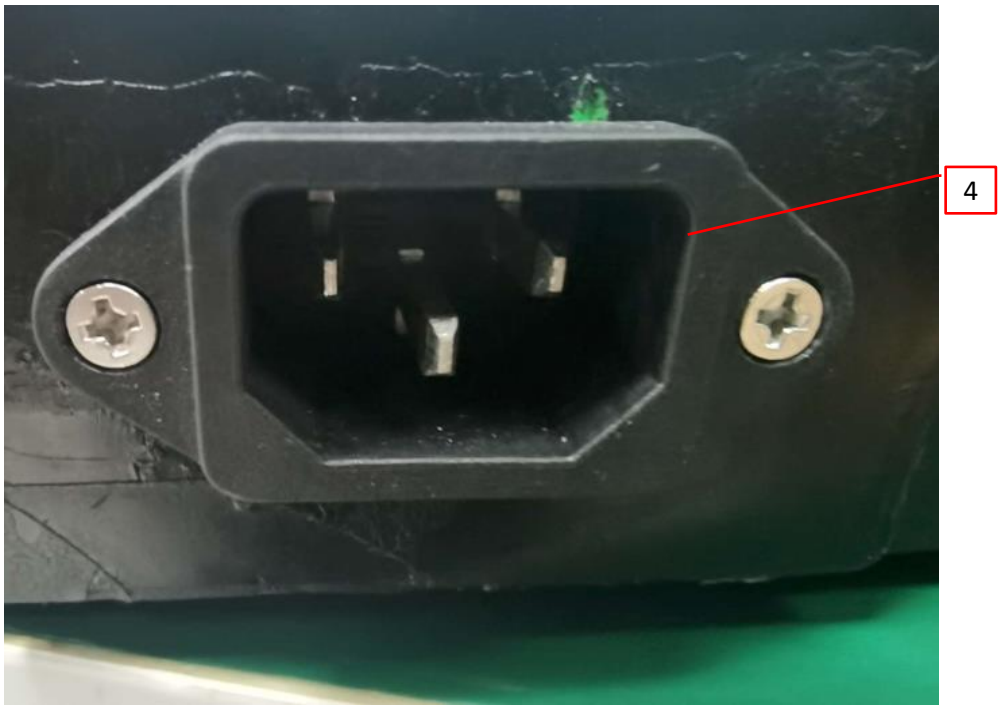


**Photo 4 -** AC Inlet, Location View



## 3.0 Product Photographs

**Photo 5 -** Output Terminal, Location View

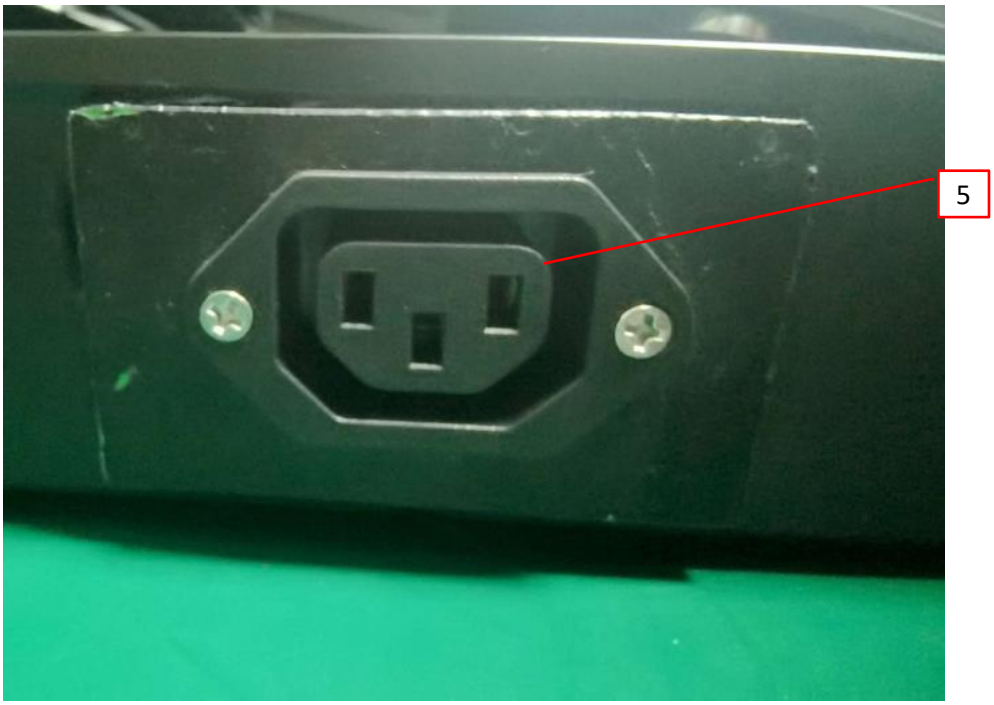
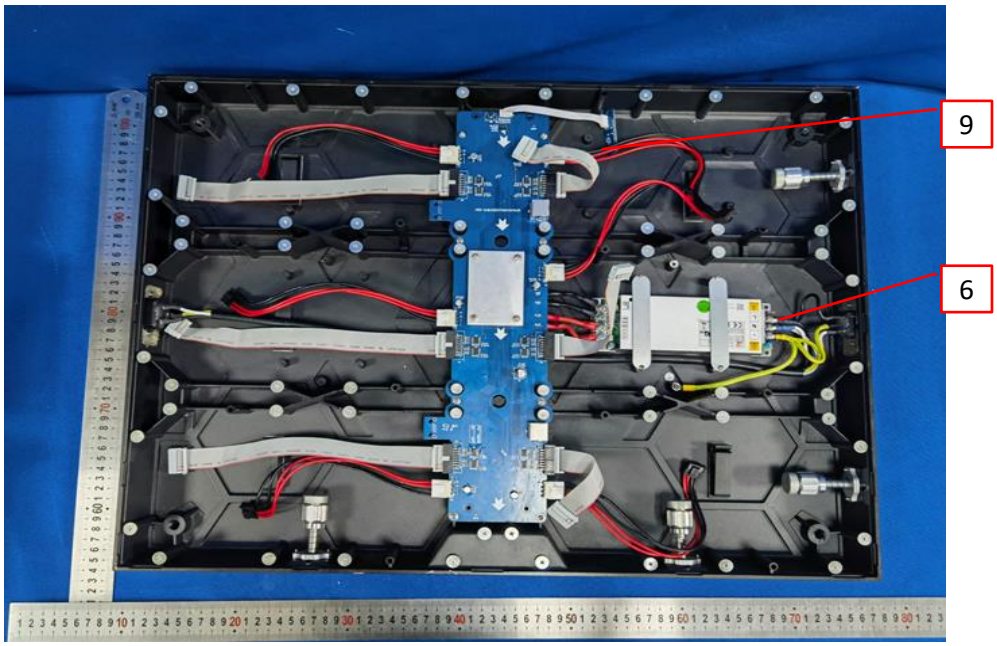



**Photo 6 -** Internal View



## 3.0 Product Photographs

**Photo 7 -** Protective Earthing Terminal view

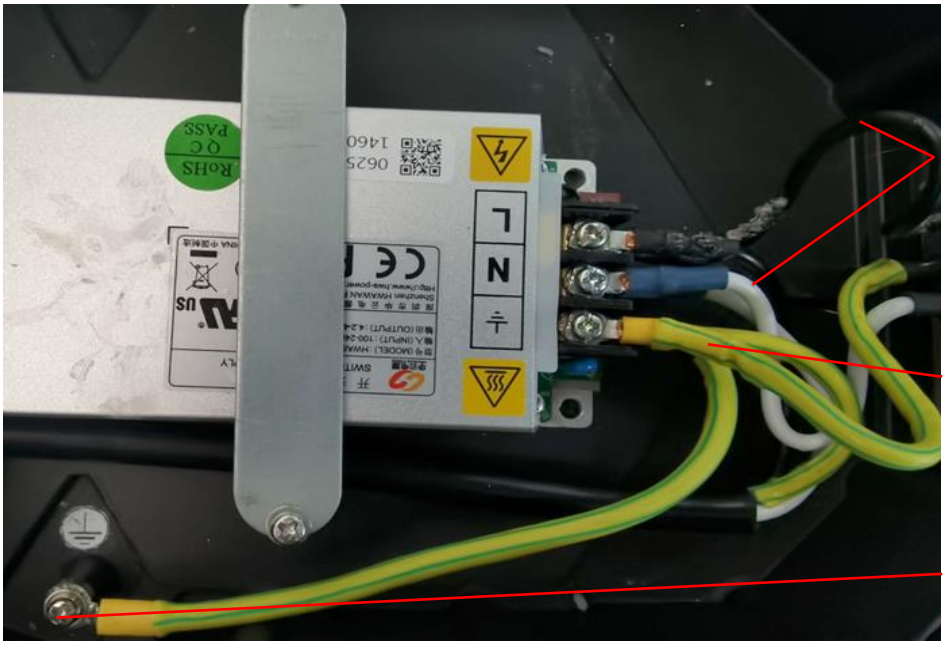
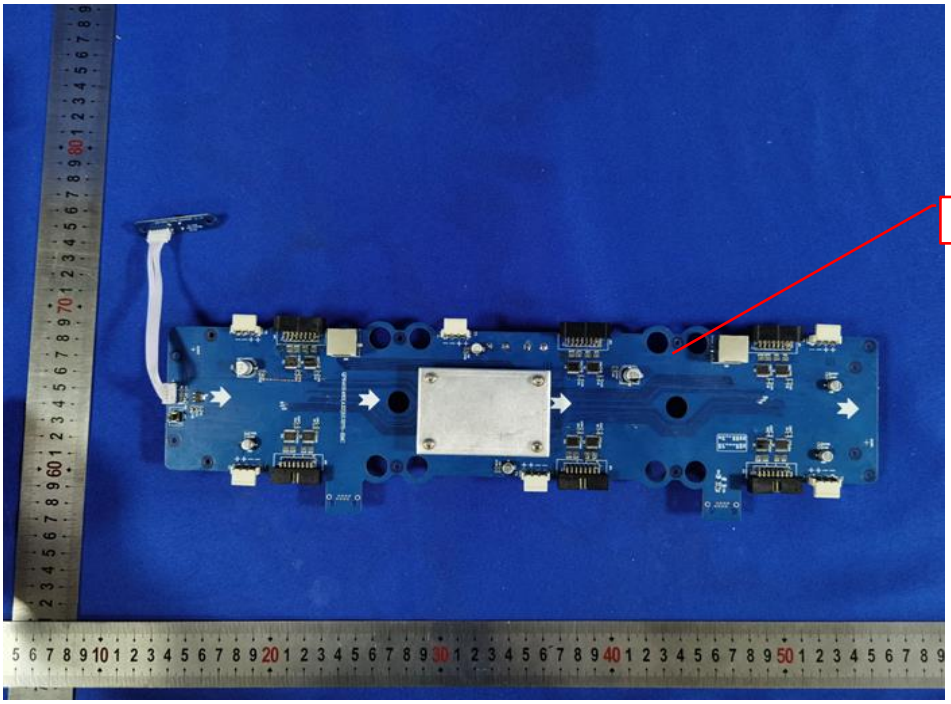



**Photo 8 -** Control PCB, Components View



## 3.0 Product Photographs

**Photo 9 -** Control PCB, Traces View

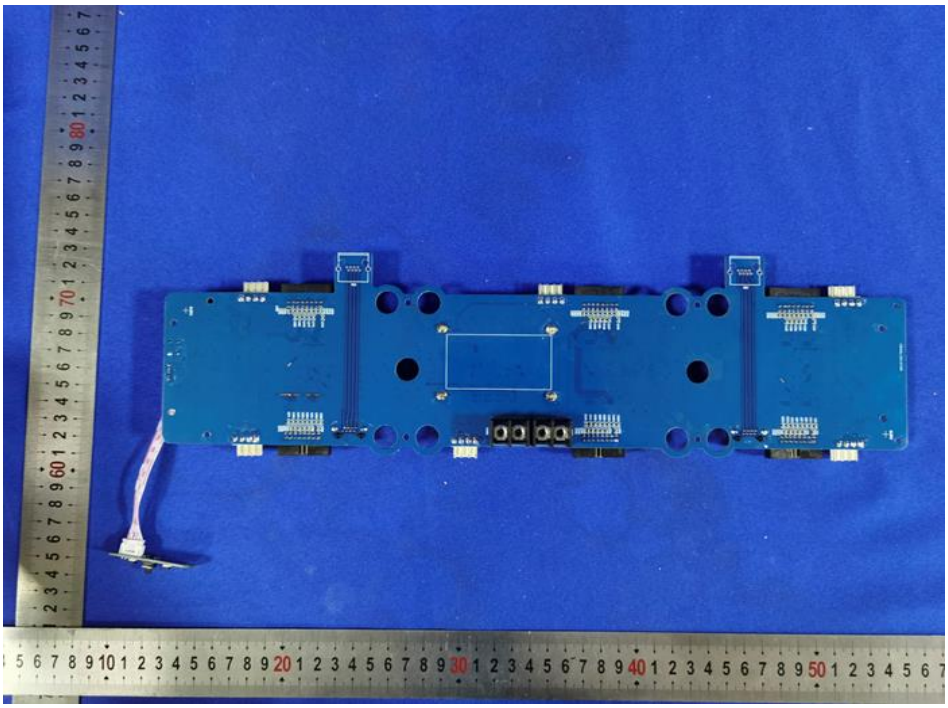
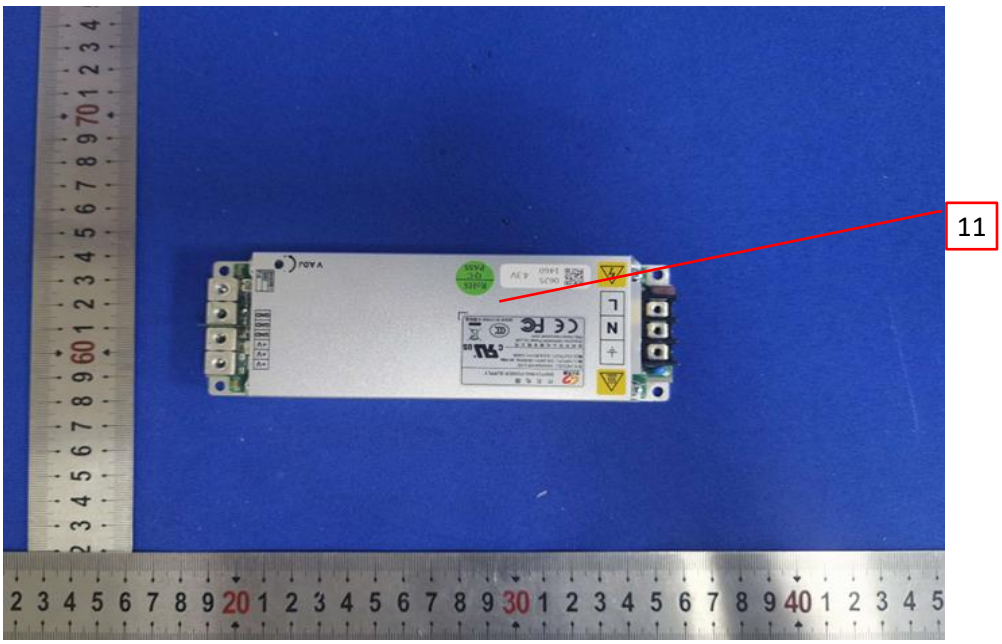
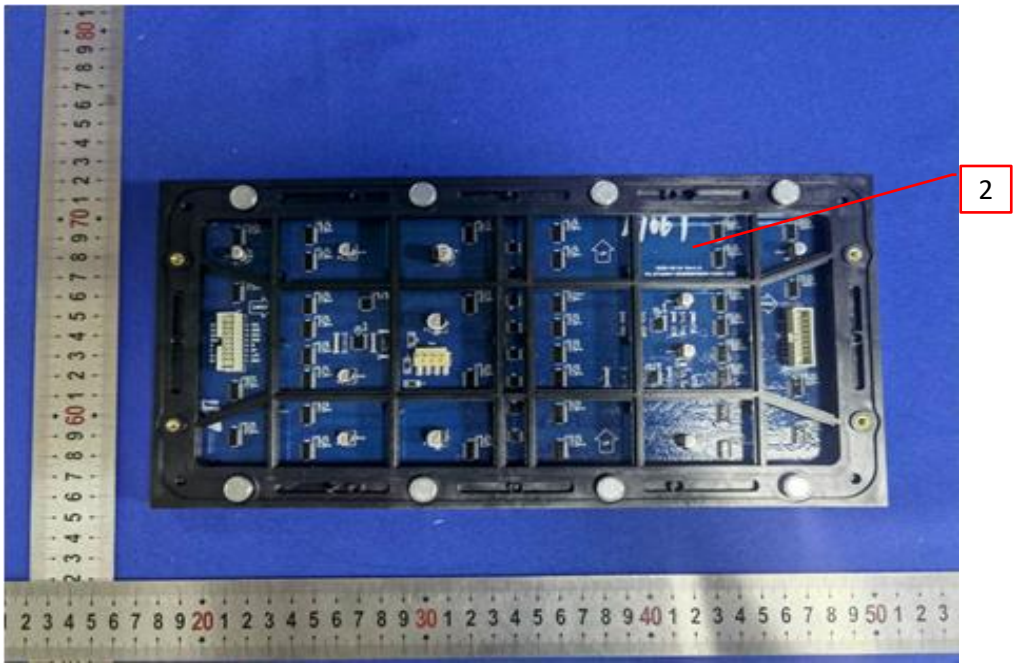


**Photo 10 -** Internal certified power supply, overall view



## 3.0 Product Photographs

**Photo 11-** LED Module



| 4.0 Critical Components | | | | | | |
|---|---|---|---|---|---|---|
| Photo # | Item no.[1] | Name | Manufacturer/ trademark[2] | Type / model[2] | Technical data and securement means | Mark(s) of conformity [3] |
| 1 | 1 | Plastic Enclosure | KINGFA SCI & TECH CO LTD | JH960 HT (M1) (sr)<br>JH960 HT (M1) (ccc) (##)(sr)<br>JH960-HT (M1) (ccc) (##)(sr) | For LED panel, PC/ABS, min. V-0, 80°C, min. thickness 3.0mm. Measured 640mm x 480mm x 15mm. | cURus |
| 1, 11 | 2 | LED | FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD | IMD-M09T | Rated 10mA,<br>1.6-2.4V, 24mW for red LED;<br>2.2-3.2V, 32mW for green LED,<br>2.3-3.2V, 32mW for blue LED.<br><br>Evaluated by IEC62471:2006. Exempt Group. See Illustrations 6-6b for details. | NR |
| 1 | 3 | Metal enclosure | Various | Metal | Min. thickness 1.5mm, secured by clips and screws. Measured 640mm by 480mm by 70mm. See Illustration 1 for details | NR |
| 2 | 3a | Handle | Various | Metal | One Provided. Min. thickness 1.5mm. With overall dimension: 108 x 26 x 44mm. Secured on Metal enclosure. See Illustration 1 for details. | NR |
| 4 | 4 | AC mains appliance inlet | YFC-BONEAGLE ELECTRIC CO LTD | SF-81 | Rated 250VAC, 10A, 70°C. IEC C14 configuration. | cURus |
| 5 | 5 | AC Outlet | YFC-BONEAGLE ELECTRIC CO LTD | SF-82, SF-82A, SF-83 | Rated 250VAC, 10A, 70°C. IEC C13 configuration. | cURus |
| 6, 7 | 6 | Primary lead wirings | Various | 1015 | Min.12AWG, 600V, 105℃,VW-1 | cURus |
| 7 | 7 | Earthing wire | Various | 1015 | Green-and-Yellow in color. Min.12AWG, 600V, 105℃,VW-1 | cURus |
| 7 | 8 | Protective Earthing Terminal | Various | Metal | Terminal: 7.0Φmm, Zn coated Iron; Screw head with washer Φ5.3mm x 9.0mm, Zn coated Iron. | NR |
| 6 | 9 | Internal secondary wirings | Various | 1015 | Min.12AWG, 600V, min. 80°C,VW-1 | cURus |
| 8 | 10 | All PCB | LONG YAN JINSHIYU ELECTRONIC LTD | JSY-1<br>JSY-3<br>MY-M | V-0, 130°C min. thickness: 1.0mm, comply with UL796 | cURus |
| | | | Various | Various | V-0, 130°C min. thickness: 1.0mm, comply with UL796 | |
| 10 | 11 | Switching power supply module | SHENZHEN HWAWAN POWER CO. LTD. | HWA604V6FD-SS | For Single Unit usage. Input: 100-240VAC; 50/60Hz, 4A Max; Output: 4.2-4.6VDC, 0-60A. | cURus |

**4.0 Critical Components**

| Photo # | Item no.[1] | Name | Manufacturer/ trademark[2] | Type / model[2] | Technical data and securement means | Mark(s) of conformity [3] |
|---|---|---|---|---|---|---|
| 2 | 12 | Marking label (not shown) | Various | Various | Laser etching or silk-screen on the enclosure.Include the certification mark,brand name, model number and electrical rating. It was complied with the label rubbing test. | NR |
| | | | CANNING PRINTING CO LTD | 1M MAT CH PET | Printed on the label adhered on the front enclosure include the certification mark,brand name, model,electrical rating and. It was complied with the label rubbing test. | cURus |
| | | | Various | Various | | |

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) “Various“ means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

## 5.0 Critical Unlisted CEC Components

No Unlisted CEC components are used in this report.

## 6.0 Critical Features

Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.

Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

1. Spacing - Between primary and secondary circuit, minimum 3.0mm spacing is maintained through air and minimum 5.0mm spacing is maintained through over surfaces of insulating material. Between primary circuit and accessible Earthed part, minimum 1.5mm spacing is maintained through air and minimum 2.5mm
2. Mechanical Assembly - Components such as PCB, connectors and wiring terminals are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
3. Corrosion Protection - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
4. Grounding - This product is provided with a means of grounding as it is Class I. Protective earthing symbol (IEC 60417-5019) is marked near the protective earthing terminal. Refer to Photo 7 under Section 3.0. Instruction is indicating the following statements: "Class I equipment. The unit should be connected to a socket-outlet with a protective earthing contact." Refer to Illustration 2c under Section 7.0.
5. Internal Wiring - Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets.
6. Accessibility of Live Parts - All uninsulated live parts in primary circuitry are housed within a non-metallic enclosure constructed with no openings other than those specifically described in Sections 4.0 and 5.0.
7. Schematics - Refer to Illustrations 3 - 3c under Section 7.0 for schematics and Illustration 4 under Section 7.0 requiring verification during Field Representative Inspection Audits.
8. Markings - The product is marked (refer to item 12 of Section 4.0) as follows:
   - Nameplate artwork with below items - following item printed on a label adhered onto the bottom enclosure of apparatus. (Illustrations 1 and 1a)
   a) Brand Name,model number
   b) Electrical rating included Voltage, Current or Power
   c) Ratings Label and Trademark Label Locations

   Refer to Illustration 5 under Section 7.0
9. Cautionary Markings - he following marked on the product are required bilingual:
   '- Non-user serviceable marking - Caution marking is printed on a instructional safeguard included wordings as below:
   - Dangerous voltage symbol, IEC 60417-5036 (2002-10).
   - Caution, ISO 7000-434 (2004-01): The exclamation point within an equilateral triangle.

   Refer to Illustrations 2 - 2b under Section 7.0 for details.

**6.0 Critical Features**

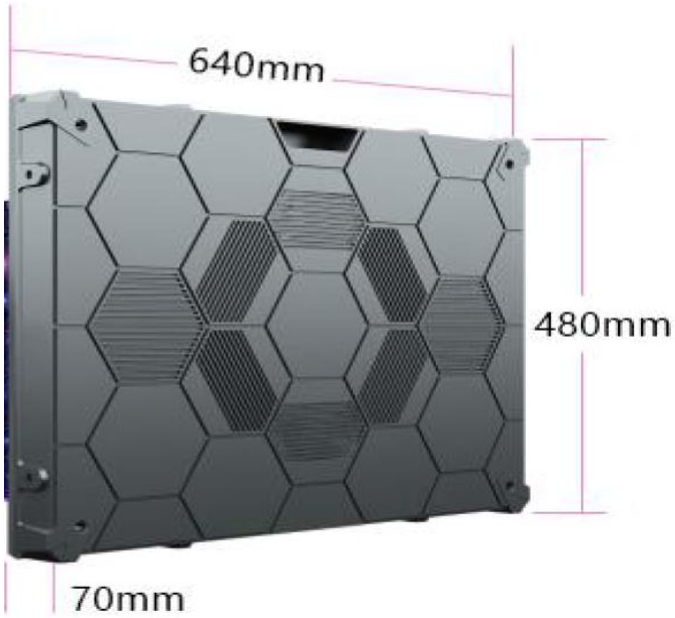
10. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer as required by the standard.

    - Equipment is connected to a socket-outlet with earthing connection by means of a power cord and should be considered in the end system.
    - Always disconnect the unit from the mains supply in the end system. The AC mains plug for the socket always shall remain easily operable.
    - Instructional safeguard of mass.

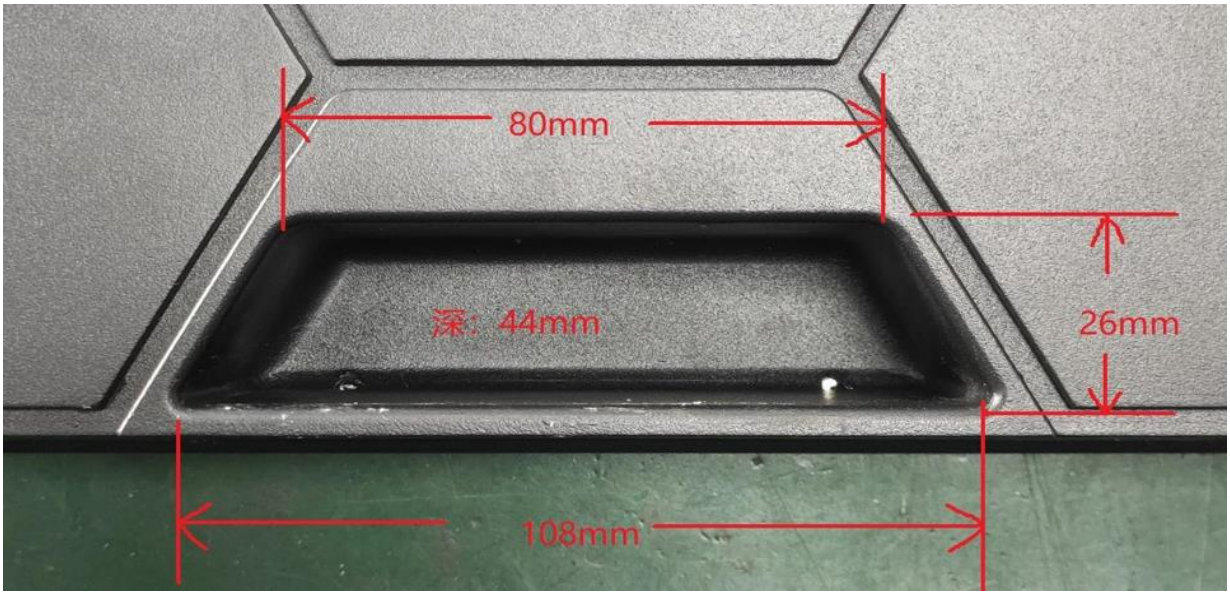
    Refer to Illustration 2c under Section 7.0 for details.

## 7.0 Illustrations

**Illustration 1 -** Dimensions Drawing of the Unit




Panel Dimensions Drawings

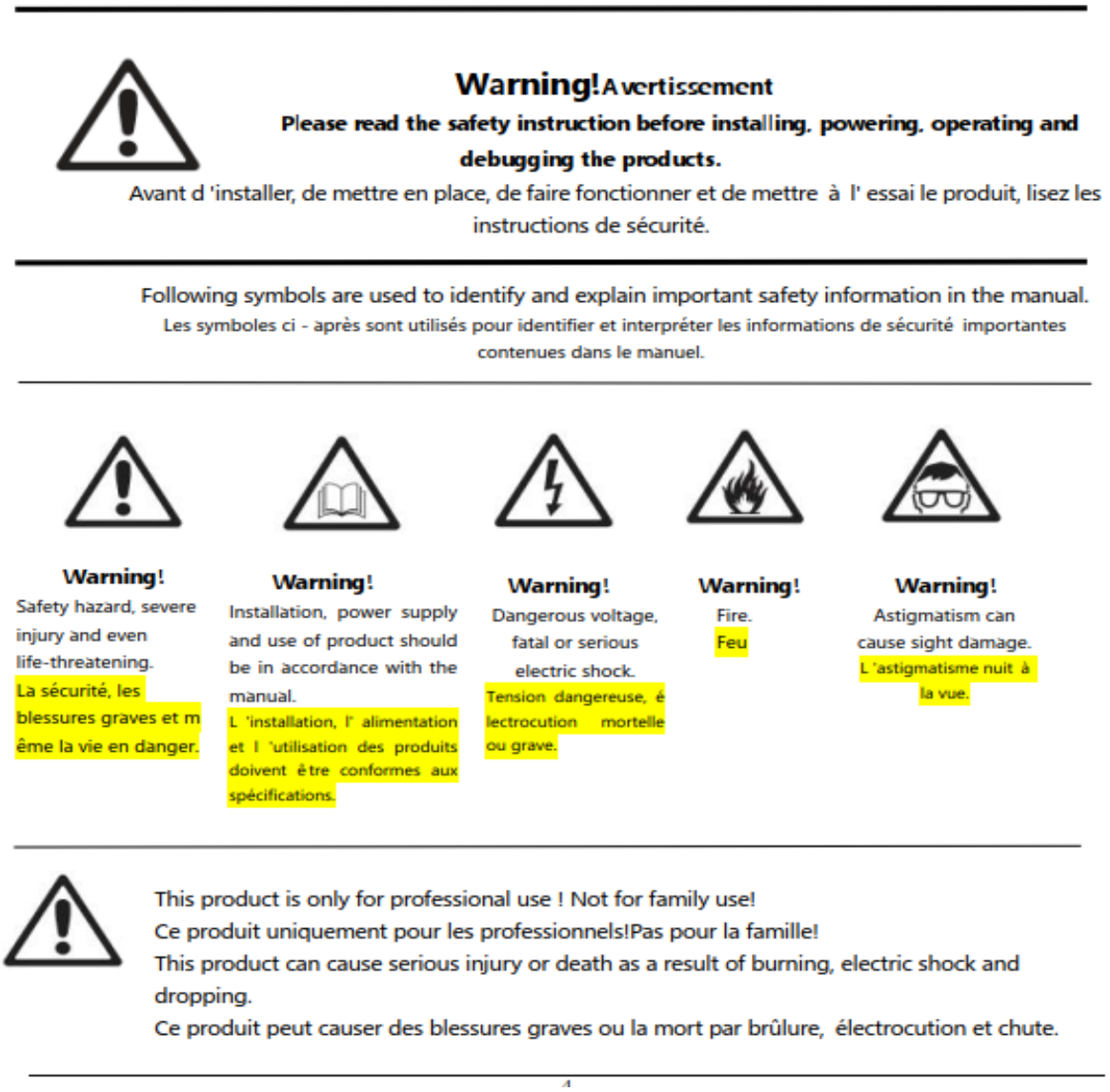



Handle

(Unit: mm)

## 7.0 Illustrations

**Illustration 2 -** Cautionary Marking Explanation and Safety Instructions in manual



## 7.0 Illustrations

**Illustration 2a -** Cautionary Marking Explanation and Safety Instructions in manual (Cont'd)

**Read user manual(Manuel de lecture):**

Please read this manual carefully before installing, supplying, running and debugging this product.

Avant l 'installation, la fourniture, l' exploitation et la mise à l 'essai de ce produit, lisez attentivement ce manuel.

Follow the manuals and safety instructions on the product.

Suivre le manuel et les instructions de sécurité sur le produit.

If you have any questions, please contact Leyard Vteam for technical support.

Si vous avez des questions, contactez leyard vteam pour obtenir un appui technique.

**Avoid electric shock(éviter le contact électrique):**

- Power must be completely shut down before any installation or repair work.
  L'alimentation électrique doit être complètement désactivée avant toute installation ou maintenance.
- Disconnect the product from the AC before using the product or maintaining or installing any part of the product.
  Veuillez déconnecter le produit de la climatisation avant d 'utiliser ce produit ou d' entretenir ou d 'installer une partie quelconque du produit.
- Make sure the product's protective ground is fully grounded.
  Assurer la protection de la terre entière
- Use only DC power cord compatible with local residents, and have overload or leakage protection facilities.
  Seules des lignes d'alimentation en courant alternatif compatibles avec la population locale peuvent être utilisées et des installations de protection contre les surcharges ou les fuites d'électricité sont disponibles.
- The socket for supplying power to the product must be installed close to the product, easily and convenient to cut off the product power supply.
  La prise d 'alimentation du produit doit être installée à proximité du produit afin de faciliter la coupure de l' alimentation du produit.
- Use only wires supplied by Leyard Vteam or the same size wire for product and DC POWER.
  Seuls les fils ou produits fournis par leyard vteam et les fils électriques de la même taille que l 'alimentation en courant alternatif sont utilisés.
- Use only specified plugs of not less than 16A to connect the product and the AC POWER.
  Produit de connexion et alimentation en courant alternatif utilisant uniquement une fiche spécifique ne dépassant pas 16A
- Before using this product, carefully check all the power distribution equipment

Explanation of Cautionary Markings

## 7.0 Illustrations

**Illustration 2b -** Cautionary Marking Explanation and Safety Instructions in manual (Cont'd)

and wires are in the best condition.
Avant d 'utiliser ce produit, vérifiez attentivement tous les équipements de distribution
Le câble est le meilleur.

- Do not use this product if it is damaged, defective, or damp, or if it shows signs of overheating.
  Si ce produit est endommagé, défectueux ou humide, ou s' il existe des signes de surchauffe, ne pas l 'utiliser.
- Do not expose the product to rain or moisture for long periods of time.
  Prière de ne pas exposer le produit à la pluie ou à l 'humidité pendant de longues périodes.
- For the operation which is not involved in the manual, please contact a professional engineer.
  Ne pas exposer le produit pendant longtemps à la pluie ou à l 'humiditéTempsPour les opé rations qui ne sont pas couvertes par ce manuel, Contactez l 'ingénieur professionnel.

**Avoid fire(éviter un incendie):**

- Temperature monitoring switch or fuse must be used. Replace damaged with specified type ecified Fuse.
  Évitez d 'utiliser des interrupteurs ou des fusibles de contrôle de température d' incendie.Remplacer les fusibles endommagés.
- Do not modify the product in any way that is not mentioned in the manual.
  Prière de ne pas modifier le produit de quelque manière que ce soit que ce soit ne soit pas mentionné dans le manuel.
- Use only components recommended by VTEAM to install the product unless other options have been given in the manual.
  Sauf indication contraire dans le manuel, seuls les composants recommandés par vteam peuvent être utilisés pour installer le produit.
- When ambient temperature exceeds 50 °C, do not use this product.\
  Ne pas utiliser ce produit lorsque la température ambiante dépasse 50 °C.

**Avoid injuries(éviter les blessures):**

- Make sure that any hardware used to support, secure, and connect all devices and devices can support at least 5 times the weight.
  Assurer que tout matériel destiné à supporter, protéger et connecter tous les équipements et équipements supporte au moins cinq fois le poids.
- When stacking parts of the product, secure the part plane securely to prevent tilting or collapse of the product.
  Lors de l 'empilement des pièces du produit, il convient de fixer le plan des pièces afin d' emp êcher l 'inclinaison ou l' effondrement du produit.
- Prepare at least two standard spare connectors to ensure the safety of each product. Backup connectors must be able to bear at least 5 times the weight of all gear. And must be installed in accordance with the manual method.

Au moins deux connecteurs de secours standard sont préparés pour assurer la sécurité de chaque produit.Le joint d 'engrenage de secours doit pouvoir supporter au moins cinq engrenages.Il faut l 'installer manuellement.

- Check to ensure that all external hardware and equipment connected well and safe.
  L 'inspection assure une bonne connexion et la sécurité de tous les matériels et é quipements externes.
- Do not allow anyone to enter the work area and working platform during the process of installing, repairing or moving the product.
  Nul ne peut accéder à la zone de travail et à la plate - forme de travail pendant l'installation, la réparation ou le déplacement du produit.

Explanation of Cautionary Markings (Cont'd)

## 7.0 Illustrations

**Illustration 2c -** Cautionary Marking Explanation and Safety Instructions in manual (Cont'd)

2. External power switches or socket outlets used to supply Headers with power must be located near the product and easily acces sible so that the product can easily be disconnected from power.

Les commutateurs d'alimentation ou les prises de courant externes destinés à alimenter les collecteurs doivent être situés à proximité du produit et être facilement accessibles de sorte que celui - ci puisse facilement déconnecter l'alimentation électrique.

- The socket for supplying power to the product must be installed close to the product, easily and convenient to cut off the product power supply.
  La prise d 'alimentation du produit doit être installée à proximité du produit afin de faciliter la coupure de l' alimentation du produit.

Disconnect Device Statement

- Make sure the product's protective ground is fully grounded.
  Assurer la protection de la terre entière

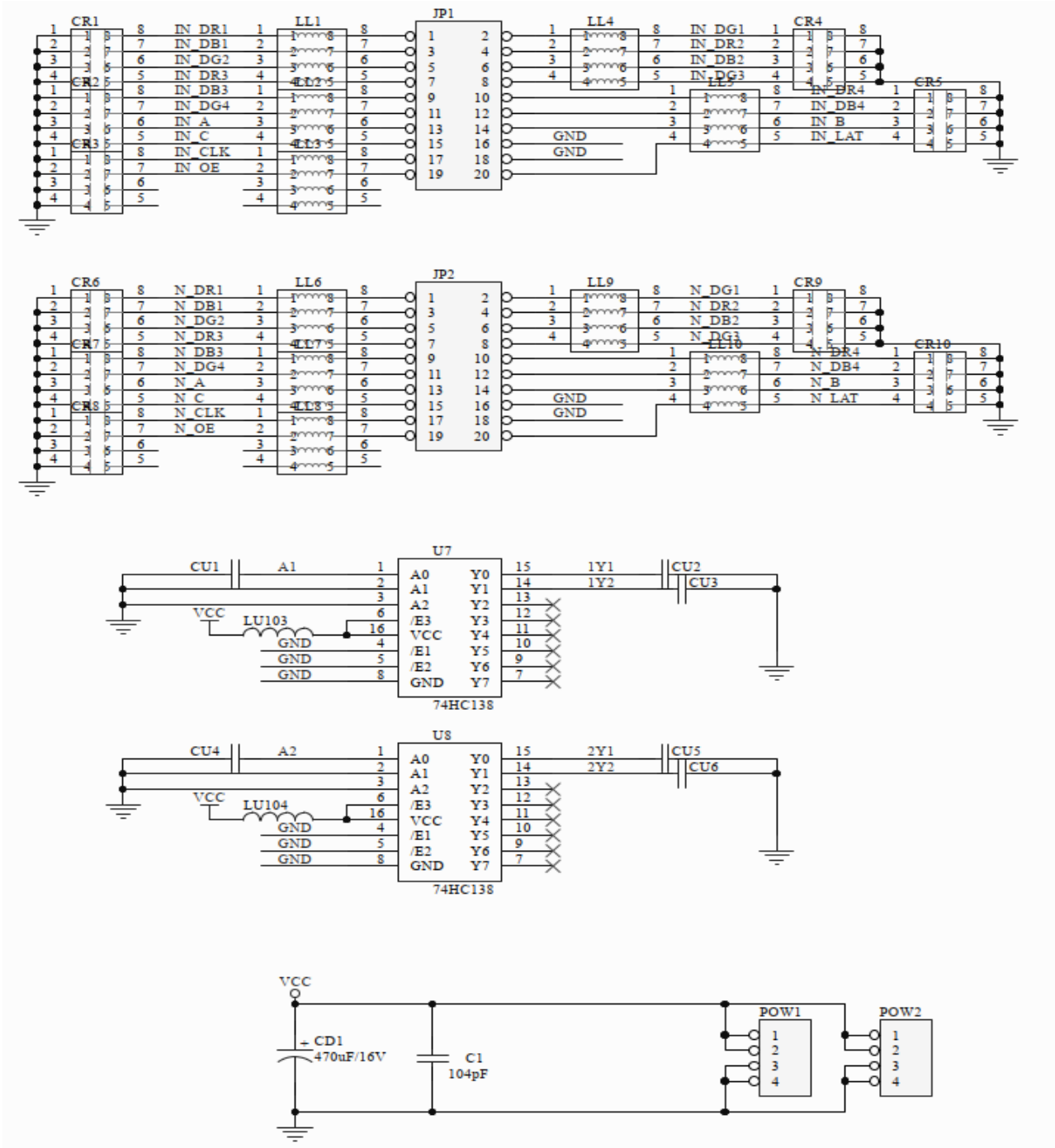
Protective Earthing Connection

| | |
|---|---|
| Material、Cabinet Weight,module Weight | magnesium alloy、7.5kg/Cabinet |

Instructional safeguard of mass

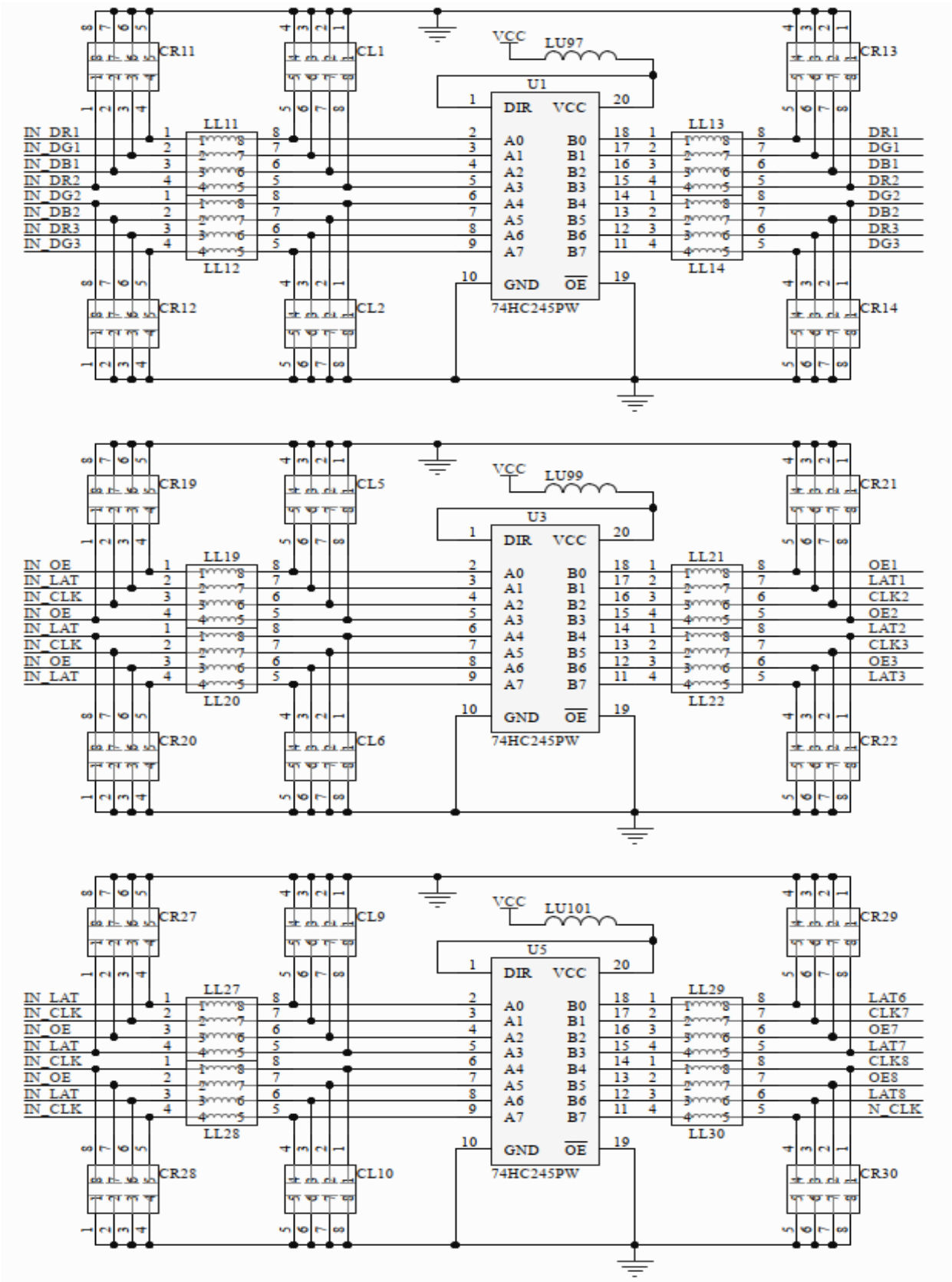
## 7.0 Illustrations

**Illustration 3 -** Schematic Diagram



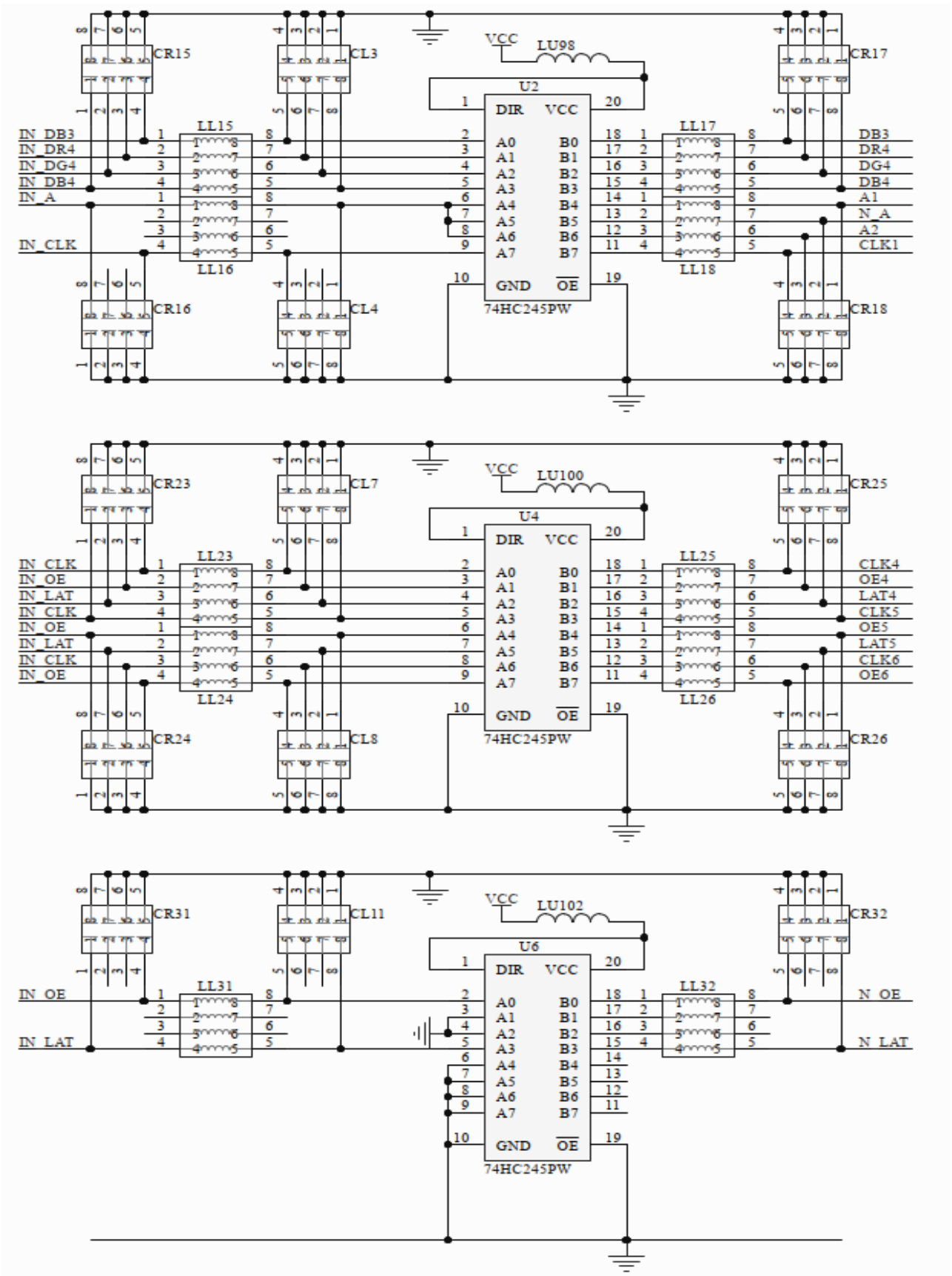
## 7.0 Illustrations

**Illustration 3a -** Schematic Diagram (Cont'd)



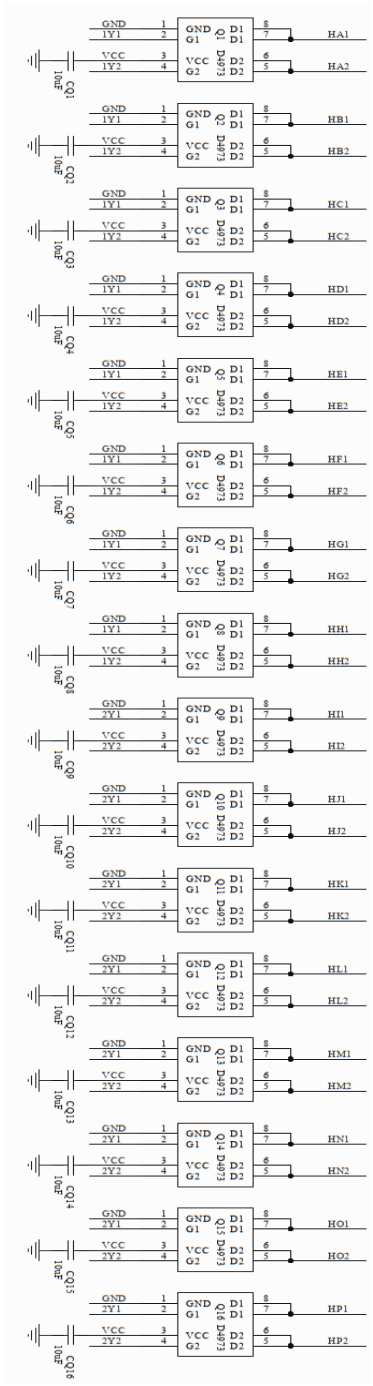
## 7.0 Illustrations

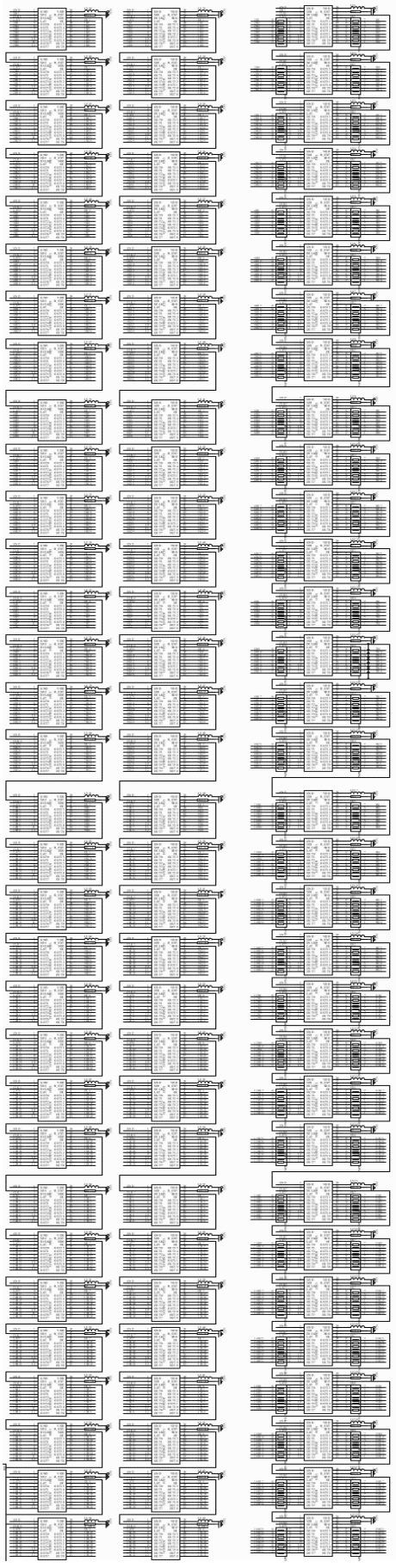
**Illustration 3b -** Schematic Diagram (Cont'd)



## 7.0 Illustrations

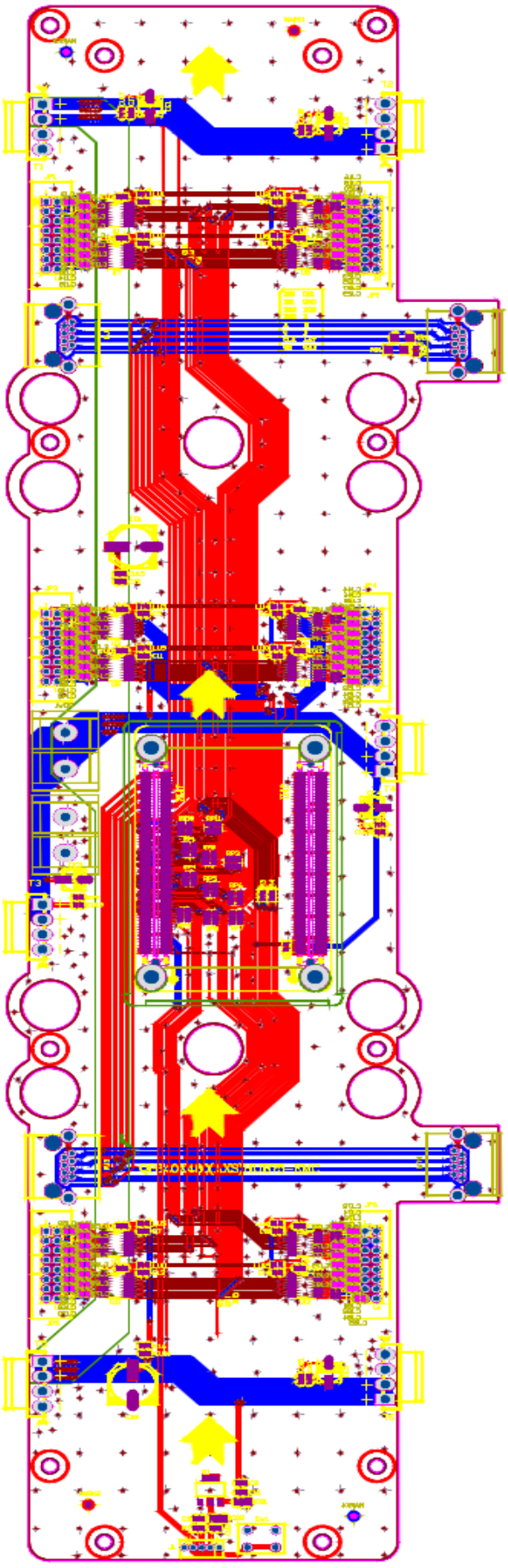
**Illustration 3c -** Schematic Diagram (Cont'd)





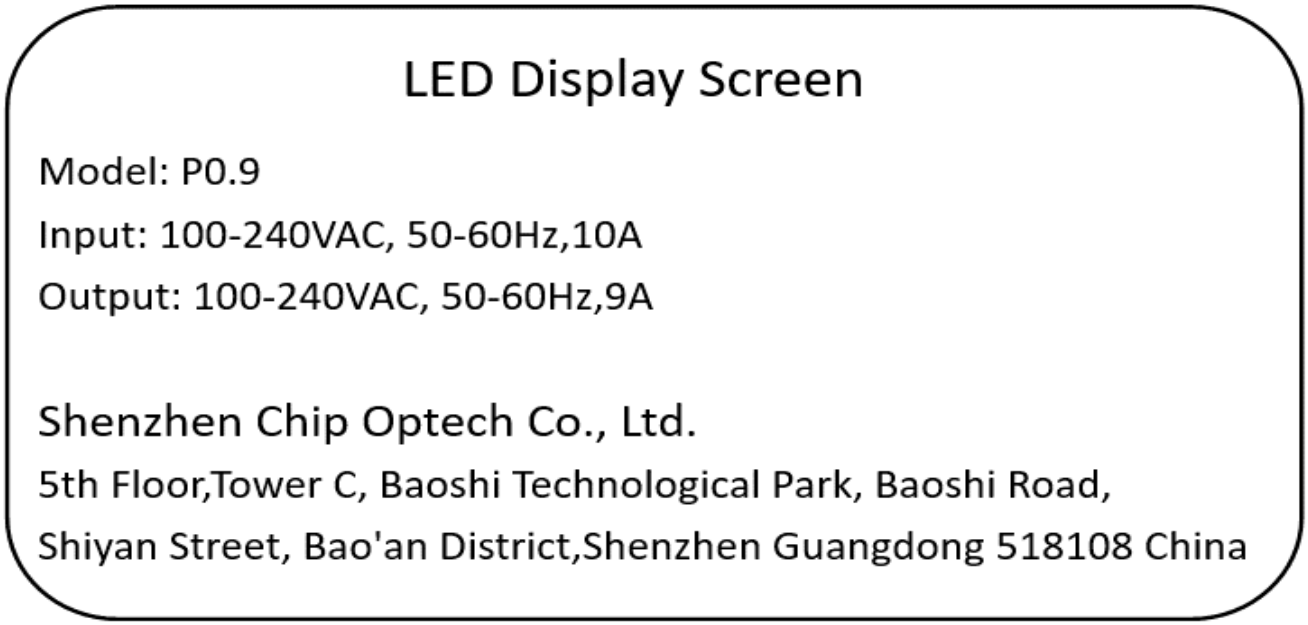
## 7.0 Illustrations

**Illustration 4 -** PWB Layouts



## 7.0 Illustrations

**Illustration 5 -** Marking Plate Artwork




Remarks:

- The above markings are the minimum requirements required by the safety standard. For the final productions samples, the additional markings which do not give rise to misunderstanding may be added.

- All models are using the same layout of artwork as above except with the different of model designation only.

## 7.0 Illustrations

**Illustration 6 -** IEC62471 report - LED type IMD-M09T

中国认可
国际互认
检测
TESTING
CNAS L5488



# Test Report

Report No.: AGC12429221101SS01

| | | |
|---|---|---|
| **PRODUCT DESIGNATION** | : | LED Display Screen |
| **BRAND NAME** | : | N/A |
| **MODEL NAME** | : | P0.9, P1.2, P1.5, P1.6, P1.8, P2, P2.5, P3, P4, P5 |
| **CLIENT** | : | Shenzhen Chip Optech Co.,Ltd |
| **DATE OF ISSUE** | : | Nov. 24, 2022 |
| **STANDARD(S)** | : | IEC 62471:2006 |
| **REPORT VERSION** | : | V1.0 |

***A**ttestation of **G**lobal **C**ompliance (Shenzhen) Co., Ltd.*

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

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Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

## 7.0 Illustrations

**Illustration 6a -** IEC62471 report - LED type IMD-M09T (Cont'd)

AGC®

Report No.: AGC12429221101SS01
Page 2 of 16

**TEST REPORT**
**IEC 62471**
**Photobiological safety of lamps and lamp systems**

| | | |
|---|---|---|
| Report reference No. | AGC12429221101SS01 | |
| Tested by (+ signature) | Mody Mo | mody mo |
| Reviewed by (+ signature) | Phil Zhang | Phil Zy |
| Approved by (+ signature) | Matte He (Authorized officer ) | Matte He |
| Date of issue | Nov. 24, 2022 | |
| Contents | Total 16 pages | |
| **Testing laboratory** | | |
| Name | Attestation of Global Compliance (Shenzhen) Co., Ltd. | |
| Address | 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China | |
| Test location | Same as above | |
| **Applicant** | | |
| Name | Shenzhen Chip Optech Co.,Ltd | |
| Address | 5th Floor, Tower C, Baoshi Technological Park, Baoshi Road, Shiyan Street, Bao'an District, Shenzhen City China | |
| **Manufacturer** | | |
| Name | Shenzhen Chip Optech Co.,Ltd | |
| Address | 5th Floor, Tower C, Baoshi Technological Park, Baoshi Road, Shiyan Street, Bao'an District, Shenzhen City China | |
| **Factory** | | |
| Name | Huizhou Chip Optech Co.,Ltd | |
| Address | Tower 12, Xinhua Av. No 6, Chenjiang Street, Zhongkai Hi-Tech District, Huizhou City China | |
| **Test specification** | | |
| Standard | IEC 62471:2006 | |
| Test procedure | Type test | |
| Non-standard test method | N/A | |
| **Test Report Form/blank test report** | | |
| Test Report Form No. | AGC62471A1 | |
| TRF originator | AGC | |
| Master TTRF | Dated 2009-06 | |

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## 7.0 Illustrations

**Illustration 6b -** IEC62471 report - LED type IMD-M09T (Cont'd)

AGC®

Report No.: AGC12429221101SS01
Page 3 of 16

| | |
|---|---|
| **Test item** | |
| Product designation | LED Display Screen |
| Brand name | N/a |
| Test model | P0.9 |
| Series models | P1.2, P1.5, P1.6, P1.8, P2, P2.5, P3, P4, P5 |
| Rating(s) | Input: 100-240V~, 50/60Hz, 10A;<br>Output: 100-240V~, 50/60Hz, 9A |
| **Test item Particulars** | |
| Tested lamp | ☒continuous wave lamps ☐ pulsed lamp |
| Lamp classification group | ☒exempt ☐risk 1 ☐risk 2 ☐risk 3 |
| Lamp cap | N/A |
| Bulb | N/A |
| Used measurement instrument | SPECTRORADIOMETER |
| Temperature by measurement | 25.1°C |
| Information for safety use | N/A |
| **Test case verdicts** | |
| Test case does not apply to the test object | N(/A) |
| Test item does meet the requirement | P(ass) |
| Test item does not meet the requirement | F(ail) |
| **Testing** | |
| Date of receipt of test item | Nov. 22, 2022 |
| Date(s) of performance of test | Nov. 23, 2022 |
| **Attachments** | |
| Attachment A | Photos of product |

**General remarks**

This report shall not be reproduced except in full without the written approval of the testing laboratory.
The test results presented in this report relate only to the item tested.
"(see remark #)" refers to a remark appended to the report.
"(see Annex #)" refers to an annex appended to the report.
Throughout this report a comma is used as the decimal separator.

Report Revise Record:

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Nov. 24, 2022 | Valid | Initial release |

**General product information**

Test model P0.9 and series models P1.2, P1.5, P1.6, P1.8, P2, P2.5, P3, P4, P5 are design with the same construction and electrical principle except the distance of LED.

| Model | LED distance |
|---|---|
| P0.9 | 0.9mm |
| P1.2 | 1.2mm |
| P1.5 | 1.5mm |
| P1.6 | 1.6mm |
| P1.8 | 1.8mm |
| P2 | 2.0mm |
| P2.5 | 2.5mm |
| P3 | 3.0mm |
| P4 | 4.0mm |
| P5 | 5.0mm |

The LED package specification as follows:

| Model | Manufacturer | Vf(V) | If(mA) |
|---|---|---|---|
| IMD-M09T | Foshan Nationstar Optoelectronics Co.,Ltd | Red: 1.6-2.4<br>Green: 2.2-3.2<br>Blue: 2.3-3.2 | Red: 5<br>Green: 2<br>Blue: 2 |

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

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| **8.0 Test Summary** | | | | | |
|---|---|---|---|---|---|
| Evaluation Period | 18-Nov-2022 to 08-Dec-2022 | | | Project No. | HK22110254 |
| Sample Rec. Date | 18-Nov-2022 | Condition | Prototype | Sample ID. | 1001-1003 |
| Test Location | Intertek Testing Services Hong Kong Limited<br>Intertek, 2/F Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong | | | | |
| Test Procedure | Testing Lab | | | | |
| Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria. | | | | | |
| The following tests were performed: | | | | | |

| Test Description | UL 62368-1:2019 Ed.3+R:22Oct2021 Clause | CSA C22.2#62368-1:2019 Ed.3+U1 Clause |
|---|---|---|
| Classification of electrical energy sources | 5.2 | 5.2 |
| Accessibility to electrical energy sources and safeguards (Accessibility test) | 5.3.2 | 5.3.2 |
| Maximum operating temperature test (Heating test) | 5.4.1.4, 6.3.2, 9.0, B.2.6 | 5.4.1.4, 6.3.2, 9.0, B.2.6 |
| Determination of Working Voltage | 5.4.1.8 | 5.4.1.8 |
| Ball pressure test | 5.4.1.10.3 | 5.4.1.10.3 |
| Clearances and creepage distances measurement | 5.4.2, 5.4.3 | 5.4.2, 5.4.3 |
| Solid insulation | 5.4.4 | 5.4.4 |
| Humidity test | 5.4.8 | 5.4.8 |
| Electric Strength test | 5.4.9 | 5.4.9 |
| Safeguards against capacitance discharge test | 5.5.2.2 | 5.5.2.2 |
| Resistance of the protective bonding system (Ground continuity test) | 5.6.6.2 | 5.6.6.2 |
| Unearthed accessible parts | 5.7.4 | 5.7.4 |
| Earthed accessible conductive parts | 5.7.5 | 5.7.5 |
| Electrical Power Source (PS) measurements for classification | 6.2.2 | 6.2.2 |
| Determination of Potential Ignition Sources (Arcing PIS) | 6.2.3.1 | 6.2.3.1 |
| Determination of Potential Ignition Sources (Resistive PIS) | 6.2.3.2 | 6.2.3.2 |
| Safeguards against fire under single fault conditions | 6.4 | 6.4 |
| Static Stability test | 8.6.2.2 | 8.6.2.2 |
| Glass Slide test | 8.6.4 | 8.6.4 |
| Handle strength test | 8.8 | 8.8 |
| Equipment safeguard for thermal burn (heating test for thermal burn) | 9.2.6 | 9.2.6 |
| Safeguards against visible, infra-red, and ultra-violet radiation | 10.4 | 10.4 |
| Input test | Annex B.2.5 | Annex B.2.5 |
| Simulated single fault conditions | Annex B.4 | Annex B.4 |
| Test for the permanence of markings | Annex F.3.10 | Annex F.3.10 |
| Steady force test, 30 N | 4.4.4.2, Annex T.3 | 4.4.4.2, Annex T.3 |
| Steady force test, 250 N | 4.4.4.2, Annex T.5 | 4.4.4.2, Annex T.5 |
| Enclosure impact test | 4.4.4.4, Annex T.6 | 4.4.4.4, Annex T.6 |
| Stress Relief | 4.4.3.8, Annex T.8 | 4.4.3.8, Annex T.8 |

Remarks:
- Max. ambient tempertaure of Tma is 35ºC was considered.

| Evaluation Period | 18-Mar-2024 to 21-Mar-2024 | | | Project No. | HK24030114 |
|---|---|---|---|---|---|
| Sample Rec. Date | 18-Mar-2024 | Condition | Prototype | Sample ID. | NA |

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

Due to no technical revisions and add the multiple listee as specified below:
- Revise the manufacturer name under Sec.1.0
- Update the address on rating label artwork under Illustration 5

No test was performed.

| **8.0 Test Summary** | | | |
|---|---|---|---|
| **8.1 Signatures** | | | |
| A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0. | | | |
| Completed by: | Lai Yan Lo | Reviewed by: | Henry Ho |
| Title: | Engineer | Title: | Technical Supervisor |
| Signature: | *Signature on file* | Signature: | *Signature on file* |

| **9.0 Correlation Page For Multiple Listings** | |
|---|---|
| The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program. | |
| BASIC LISTEE | Shenzhen Chip Optech Co., Ltd. |
| Address | 5th Floor, Tower C,<br>Baoshi Technological Park,<br>Baoshi Road, Shiyan Street, Bao'an District, Shenzhen Guangdong 518108 |
| Country | China |
| Product | LED Display Screen |

| | |
|---|---|
| MULTIPLE LISTEE 1 | None |
| Address | |
| Country | |
| Brand Name | |
| ASSOCIATED MANUFACTURER | |
| Address | |
| Country | |

| MULTIPLE LISTEE 1 MODELS | BASIC LISTEE MODELS |
|---|---|
| | |

| | |
|---|---|
| MULTIPLE LISTEE 2 | None |
| Address | |
| Country | |
| Brand Name | |
| ASSOCIATED MANUFACTURER | |
| Address | |
| Country | |

| MULTIPLE LISTEE 2 MODELS | BASIC LISTEE MODELS |
|---|---|
| | |

| | |
|---|---|
| MULTIPLE LISTEE 3 | None |
| Address | |
| Country | |
| Brand Name | |
| ASSOCIATED MANUFACTURER | |
| Address | |
| Country | |

| MULTIPLE LISTEE 3 MODELS | BASIC LISTEE MODELS |
|---|---|
| | |

## 10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
3) a control number issued by Intertek
4) a product descriptor that identifies the standards used for certification. Example:

**For US standards**, the words, “Conforms to” shall appear with the standard number along with the word, “Standard” or “Std.” Example: “Conforms to ANSI/UL Std. XX.”

**For Canadian standards**, the words “Certified to CAN/CSA Standard CXX No. XX.” shall be used, or abbreviated, “Cert. to CAN/CSA Std. CXX No. XX.”

Can be used together when both standards are used.

**If all standards on the ATM have the same standard title**, the shared title or its abbreviation may be used in place of the examples above. Example: "Medical Electrical Equipment" or "MEE"; "Information Technology Equipment" or "ITE"; "Audio/Video Information And Communication Technology Equipment" or "A/V ICTE".

**Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use.** The facsimile need not have a control number. A control number will be issued **after signed Certification Agreements** have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

**10.1 Evaluation of Unlisted Components**

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

**The Applicant will be notified, in writing, via the applicable contact methods, as defined in Section 1.0, when these components must be selected and sent to Component Evaluation Center (CEC) for re-evaluation.**

**Due to particular testing requirements, some components may be requested to be shipped to specific labs. Thus, specific shipment destination(s) for each sample will be provided in the written notification.**

Managing CEC Location:
Intertek Testing Services Hong Kong Limited
ETL Component Evaluation Center
Unit H, 3/F., Garment Centre, 576 Castle Peak Road
Kowloon, Hong Kong
Attn: Sample Room
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

## 11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

**Required Tests**

Dielectric Voltage Withstand Test

Grounding Continuity Test

## 11.1 Dielectric Voltage Withstand Test

Method

One hundred percent of production of the products covered by this Report shall be subjected to a routine production line dielectric withstand test.

The test shall be conducted on products, which are fully assembled. Prior to applying the test potential, all switches, contactors, relays, etc., should be closed so that all primary circuits are energized by the test potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test voltage specified below shall be applied between primary circuits and accessible dead-metal parts. The test voltage may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.
The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.
If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either:
1 - a voltmeter in the primary circuit;
2 - a selector switch marked to indicate the test potential; or
3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output.
In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output. All test equipment shall be maintained in current calibration.

**Products Requiring Dielectric Voltage Withstand Test:**

| Product | Test Voltage | Test Time |
|---|---|---|
| All products covered by this Report. | 2500Vpk / dc | 60s |
| AC Mains and the accessible earthed enclosure / Accessible secondary connectors | or | |
| | 2250Vpk / dc | 1s |

**11.2 Grounding Continuity Test**

Method

Each product listed below shall be subjected to a test to determine that there is continuity between accessible dead-metal parts of the product and the grounding pin or blade of the attachment plug.

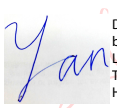
If all accessible dead metal is connected, only a single test need be performed. A visual or audible device (ohmmeter, buzzer, etc.) may be used to indicate grounding continuity.

**Products Requiring Grounding Continuity Test:**

| | **Test Current** | **Test Time** |
|---|---|---|
| All products covered by this Report. (Input and Earthed Metal Part) | 40A | 2 min |

**12.0 Revision Summary**

The following changes are in compliance with the declaration of Section 8.1:

| Date/ Proj # Site ID | Project Handler/ Reviewer | Section | Item | Description of Change |
|---|---|---|---|---|
| 2-Apr-2024 | Yan Lo   | 1.0 | -- | Revise the manufacturer name from "Huizhou Chip Optech Co., Ltd" to "Huizhou Mepro Optech Co., Ltd". |
| | | 7.0 | 5 | Update the address on rating label artwork |
| HK24030114 HKG | Henry Ho | 8.0 | -- | New test block added |