



JEISOON KANG
HANWHA TECHWIN CO LTD
6, PANGYO-RO 319BEON-GIL, BUNDANG-GU
SEONGNAM-SI GYEONGGI-DO 13488 KOREA

Date: 2020/08/17
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File No: E158873
Project No: 4789532587
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PO Number: KANG, JEISOON

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
	X13		Index Page(s)	
2020/07/28	X13	A6028	Cert of Compliance	
2020/07/28	X13	A6028	Revised Proc/Rpt Section	
2020/08/13	X13	A6031	Cert of Compliance	
2020/08/13	X13	A6031	Add New Proc/Report Sect	

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Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

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NBK File

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E158873	Index	X13	1	13-Aug-20

Index

<u>Product Type</u>	<u>Model/Type Reference</u>	<u>Report Reference #</u>	<u>Status</u>
NETWORK VIDEO RECORDER	XRN-6410B4, XRN-3210B4	E158873-A6027-UL	
NETWORK VIDEO RECORDER	PRN-6410B4, PRN-3210B4, XRP-4210B4	E158873-A6028-UL	
NETWORK VIDEO RECORDER	XRN-6410DB4	E158873-A6029-UL	
NETWORK VIDEO RECORDER	PRN-6410DB4, XRP-4310DB4	E158873-A6030-UL	
NETWORK CAMERA	PNM-9002VQ	E158873-A6031-UL	

CERTIFICATE OF COMPLIANCE

Certificate Number E158873
Report Reference E158873-A6028-UL
Issue Date 2020-AUGUST-17

Issued to: Hanwha Techwin Co Ltd
6, Pangyo-ro 319beon-gil, Bundang-gu
Seongnam-si Gyeonggi-do 13488 KOREA

**This certificate confirms that
representative samples of**

AUDIO/VIDEO, INFORMATION AND COMMUNICATION
TECHNOLOGY EQUIPMENT
NETWORK VIDEO RECORDER
PRN-6410B4, PRN-3210B4, XRP-4210B4

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 62368-1 & CAN/CSA C22.2 No. 62368-1-14 -
Audio/video, information and communication technology
equipment Part 1: Safety requirements

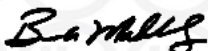
Additional Information:

See the UL Online Certifications Directory at
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This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK VIDEO RECORDER
Model:	PRN-6410B4, PRN-3210B4, XRP-4210B4
Rating:	100-240Vac, 50/60 Hz, 2.9 A (for model PRN-6410B4) 100-240Vac, 50/60 Hz, 2.9 A (for model PRN-3210B4) 100-240Vac, 50/60 Hz, 2.7 A (for model XRP-4210B4)
Applicant Name and Address:	HANWHA TECHWIN CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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Prepared By: Lawrence Lee / Project Handler Reviewed By: ByeongUk Lee / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

NETWORK VIDEO RECORDER.

This unit consist of R/C (QQJQ2/8) power supply, DC Fan, main board, maximum 16 hard disk-drives (optional) and numerous components mounted on PWB.

This unit connect CCTV cameras using 64 or 32 channels through Network ports.

Model Differences

Model PRN-6410B4 is basic model.

Model PRN-3210B4 is identical to basic model except for Camera channel and model designation.

(Model with 64 channels: PRN-6410B4, with 32 channels: PRN-3210B4)

Model XRP-4210B4 is identical to basic model except for rating.

Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	pluggable equipment type A - appliance coupler
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	movable rack-mounting
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	40
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less

Mass of equipment (kg)	HDD Mounted (1 EA): 14.55 Kg HDD Full Mounted (16 EA): 23.95 Kg								
Technical Considerations - The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40 °C - The product is intended for use on the following power systems : TN - Considered current rating of protective device as part of the building installation (A) : 20 - Mains supply tolerance (%) or absolute mains supply values : +10%/-10% - The equipment disconnect device is considered to be : Appliance inlet - The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All accessible connectors - The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual									
Additional Information 4789490670 - Max. Normal Load: Continuous operation with the followings. 1. Hard disk-drive 16 EA connected and record video data as manufacturer provided. 2. Front USB port (2 EA): 0.5 A each 3. Rear USB port (2 EA): 0.9 A each 4. 64 Channel network Camera connected and as manufacturer provided. 4789532587 - Model name correction from XRP-4310B4 to XRP-4210B4.									
Additional Standards The product fulfills the requirements of: N/A									
Markings and Instructions <table border="1"> <thead> <tr> <th>Clause Title</th><th>Marking or Instruction Details</th></tr> </thead> <tbody> <tr> <td>Equipment identification marking – Manufacturer identification</td><td>Listee's or Recognized companys name, Trade Name, Trademark or File Number</td></tr> <tr> <td>Equipment identification marking – model identification</td><td>Model Number</td></tr> <tr> <td>Equipment rating marking – ratings</td><td>"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"</td></tr> </tbody> </table>		Clause Title	Marking or Instruction Details	Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number	Equipment identification marking – model identification	Model Number	Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
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Equipment identification marking – model identification	Model Number								
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"								

Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."/"ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions." (Marking) Alternatively, symbol   (ISO 7000-0434 and/or ISO 7000-1641) on product where visible, with the above wording in the instruction manual.
Class I equipment -Terminal for main protective earthing	Provided adjacent to the main protective earthing terminal  (IEC 60417-5019)
Special Instructions to UL Representative N/A	

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	N/A					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	N/A					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	N/A					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Power cord set	Weihai Hong Lin Electronic Co., Ltd.	HL-002S + SVT 18AWG X 3C + HL- 004	Detachable, Min 1.5 m, Max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 105 deg.C, SVT type flexible cord. One end with NEMA 5-15P other end with appliance coupler.	ELBZ	UL (E254927)	
Power cord set - Alternate	Longwell	LP-30B + SVT 18AWG X 3C+ LS-13	Detachable, Min. 1.5 m, Max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 60 deg.C, SVT type flexible cord. One end with NEMA 5-15P other end with appliance coupler.	ELBZ	UL (E55349)	
Power cord set - Alternate	CHANGZHOU HONG CHANG ELECTRONICS CO LTD	DTII-3P-11 + UL SVT 18AWG/3C + DTII-3P-04	Detachable, Min. 1.5 m, Max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 105 deg.C, SVT type flexible cord. One end with NEMA 5-15P other end with appliance coupler.	ELBZ	UL (E205766)	
Power cord set - Alternate	KOREA KDK CO LTD	KKP-30 + SVT 3/18AWG + KKS- 16A	Detachable, Min. 1.5 m, Max. 4.5 m long, rated 125 V, 7 A, 18/3 AWG, 105 deg.C, SVT type flexible cord. One end with NEMA 1-15 other end with appliance coupler.	ELBZ	UL (E58075)	

SMPS	DELTA ELECTRONICS INC	DPS-500AB-33 XX (X = 0-9, A-Z or blank)	Input: 100-240 V~, 47- 63 Hz, 8.0 A; Output: +5Vdc, 20.0A, +3.3Vdc, 24.0 A, +12Vdc1, 25.0A, +12Vdc2 25A , -12Vdc, 0.5A25.0 A, - 5Vdc, 0.3A, -5Vdcsb, 3.0A, Total power for all Output: 500W.	QQJQ2/8	UL (E131881)	
Metal Enclosure (Top) (Fire / Mech / Elec)	Interchangeable	Interchangeable	Steel, Min. 1.0 mm thickness, see enclosure for more dimension.	-	-	
Metal Enclosure (Bottom) (Fire / Mech / Elec)	Interchangeable	Interchangeable	Steel, Min. 1.2 mm thickness, see enclosure for more dimension.	-	-	
Metal Enclosure (Bracket) (Fire / Mech / Elec)	Interchangeable	Interchangeable	Steel, Min. 1.0 mm thickness, see enclosure for more dimension.	-	-	
Metal Enclosure (Rear) (Fire / Mech / Elec)	Interchangeable	Interchangeable	Steel, Min. 1.0 mm thickness, opening size Max.4.8 mm, see enclosure for more dimension.	-	-	
Front Enclosure (Plastic) (Deco)	LOTTE ADVANCED MATERIALS CO LTD	NH-1035(+)	Min. 1.5 mm thickness, rated V-0, 80 deg.C, No openings, see enclosure for dimension.	QMFZ2/8	UL (E115797)	

Lithium Battery (BAT1)	WUHAN LIXING (TORCH) POWER SOURCE CO LTD	CR2032	Lithium/manganese dioxide (Coin), Max. Abnormal Charging Current: 10 mA, Max. Abnormal Charging Voltage: 5 Vdc	BBCV2	UL (MH26236)	
Lithium Battery (BAT1) - Alternate	ShenZhen Gaonengda Battery Co., LTD.	CR2032	Lithium/manganese dioxide (Coin), Max. Abnormal Charging Current: 10 mA, Max. Abnormal Charging Voltage: 3.5 Vdc	BBVC2	UL (MH30114)	
Lithium Battery (BAT1) - Alternate	Interchangeable	CR2032	Max. abnormal charging current: 10 mA	BBCV2	UL	
Reverse Current Protection Circuit for Lithium Coin Battery (BAT1)	Interchangeable	Interchangeable	Diode (D22, Max. reverse voltage 30 V, Max. reverse current 10 mA) and resistor (R944, 1.0 kohm) in series.	-	-	
USB Protection IC (USB 2.0 : U59, U60 / USB 3.0 :U50, U53)	Texas Instruments Inc	TPS2062	Rated 2.7–5.5 Vdc, 1 A	QVGS2	UL (E169910)	
USB Protection IC (USB 2.0 : U59, U60 / USB 3.0 :U50, U53) - Alternate	DIODES HONG KONG LIMITED	AP2162, AP2172	Rated 2.7–5.5 Vdc, 1 A	QVGS2	UL (E322375)	
Hard Disk Driver (HDD) (Optional)	Interchangeable	Interchangeable	Max. 12 Vdc	NWGQ2 or AZOT2	UL	
Hard disk driver frame (Plastic)	LOTTE ADVANCED MATERIALS CO LTD	NH-1035(+)	Min. 1.5 mm thickness, rated V-0, 80 deg.C	QMFZ2/8	UL (E115797)	
Internal Plastic Part Materials	Interchangeable	Interchangeable	Rated Min. V-2	QMFZ2	UL	

DC BRUSHLESS FAN (Two provided) for HDD	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MG(a)12012(j)(e)-(f)25(MGT12012XR-W25)	Rated voltage: DC12 V, Rated current: 0.52 A, speed: 2700±10 %RPM	GPWV2	UL (E187236)	
DC BRUSHLESS FAN (Two provided) for HDD -Alternate	MINEBEAMITSUMI INC.	11925SA-12P-XY(11925SA12PAUDY)	Rated voltage: DC12 V, Rated Maximum current: 0.50 A, speed: 2800±15 %RPM	GPWV2	UL(E89936)	
DC BRUSHLESS FAN for CPU	FOXCONN TECHNOLOGY CO LTD	PVA080G12Q-(X)yy-yy(PVA080G12Q)	Rated voltage: DC12 V, Rated current: 0.45 A, speed: 4500±8 %RPM	GPWV2	UL (E231557)	
Internal Wiring (secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg.C	AVLV2	UL	
Connectors and Receptacles (Secondary circuits)	Interchangeable	Interchangeable	Min. V-2	ECBT2	UL	
Connectors and Receptacles (Secondary circuits) - Alternate	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated Min. V-2	QMFZ2	UL	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	V-0, Min. 6.0 mm thickness.	QMFZ2/8	UL (E245303)	
Label	Interchangeable	Interchangeable	Min.40 deg. C, if Max. surface temperature not specified.	PGDQ2 or PGJI2	UL	
PCB	Interchangeable	Interchangeable	V-0, Min. 105 deg.C	ZPMV2/8	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Front
Photographs	03-02	Rear
Photographs	03-03	Port Front
Photographs	03-04	Port Rear
Photographs	03-05	Internal
Photographs	03-06	SMPS
Photographs	03-07	Main Board
Photographs	03-08	Sub Board for HDD
Schematics + PWB	05-01	RTC battery protection circuit
Miscellaneous	07-01	CRD for Dual Language Requirement
Miscellaneous	07-02	Enclosure Drawing
Miscellaneous	07-03	Rear Opening Drawing
Miscellaneous	07-04	Manual
Miscellaneous	07-05	Label (for model PRN-6410B4)
Miscellaneous	07-06	Label (for model PRN-3210B4)
Miscellaneous	07-07	Label (for model XRP-4210B4)

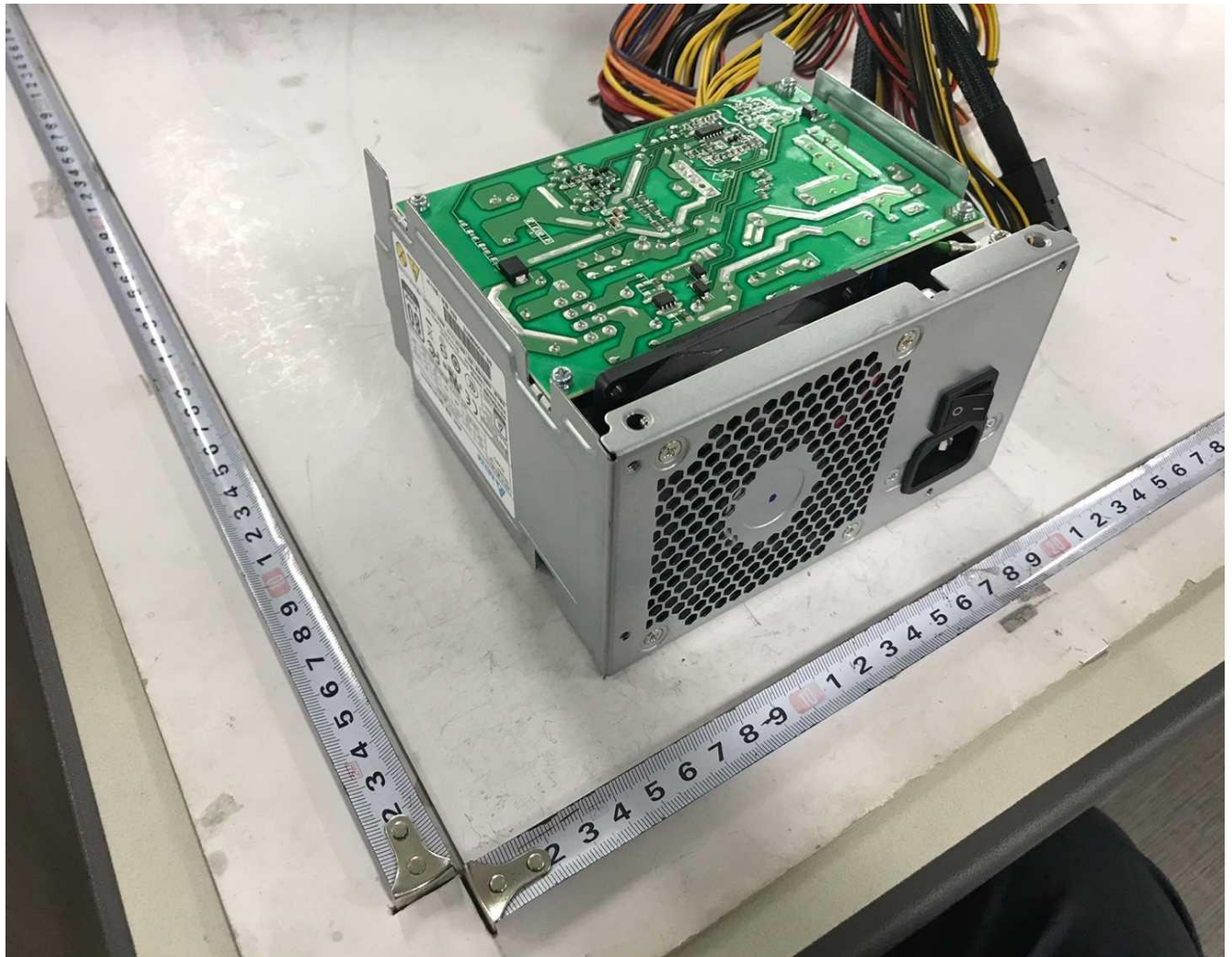


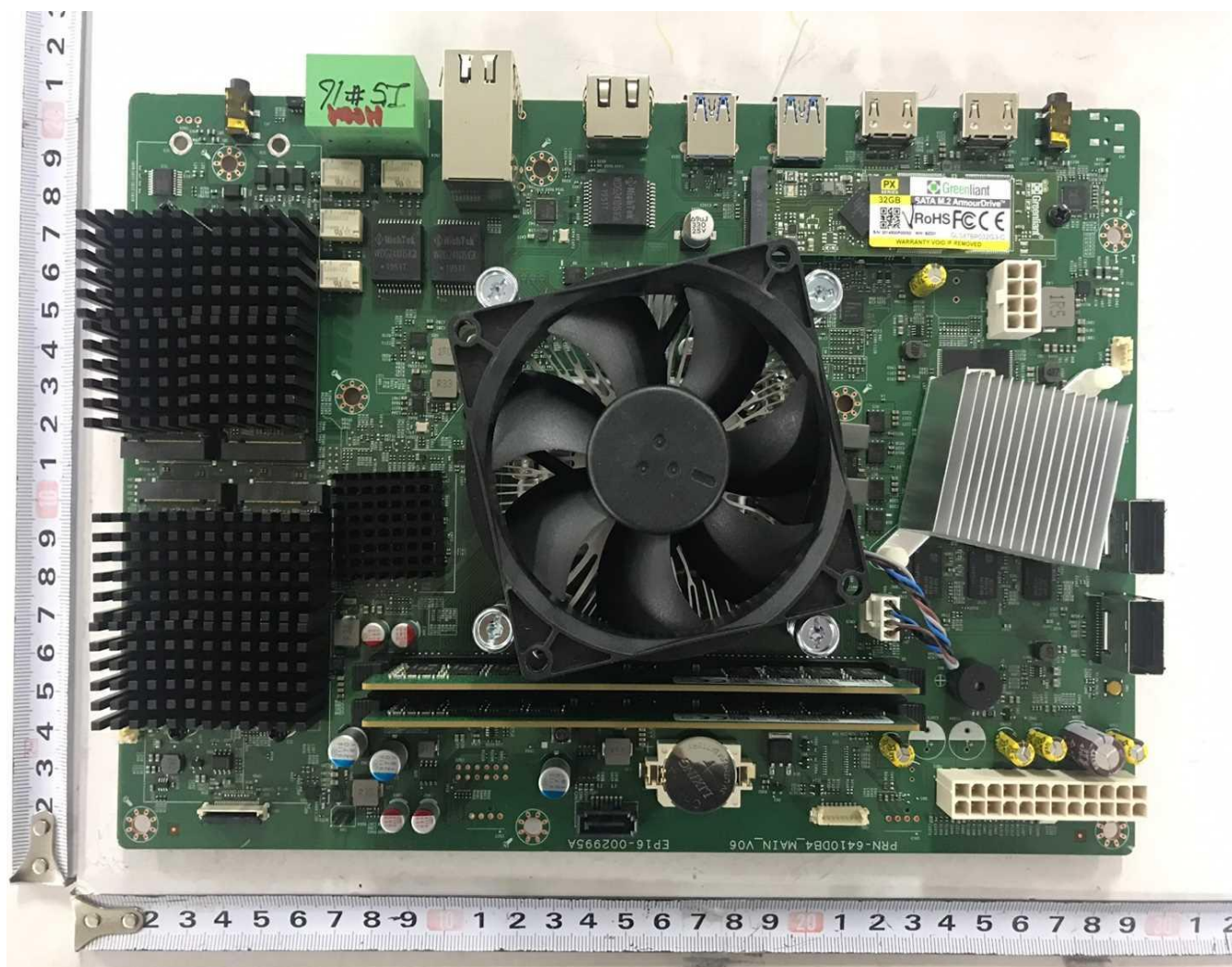


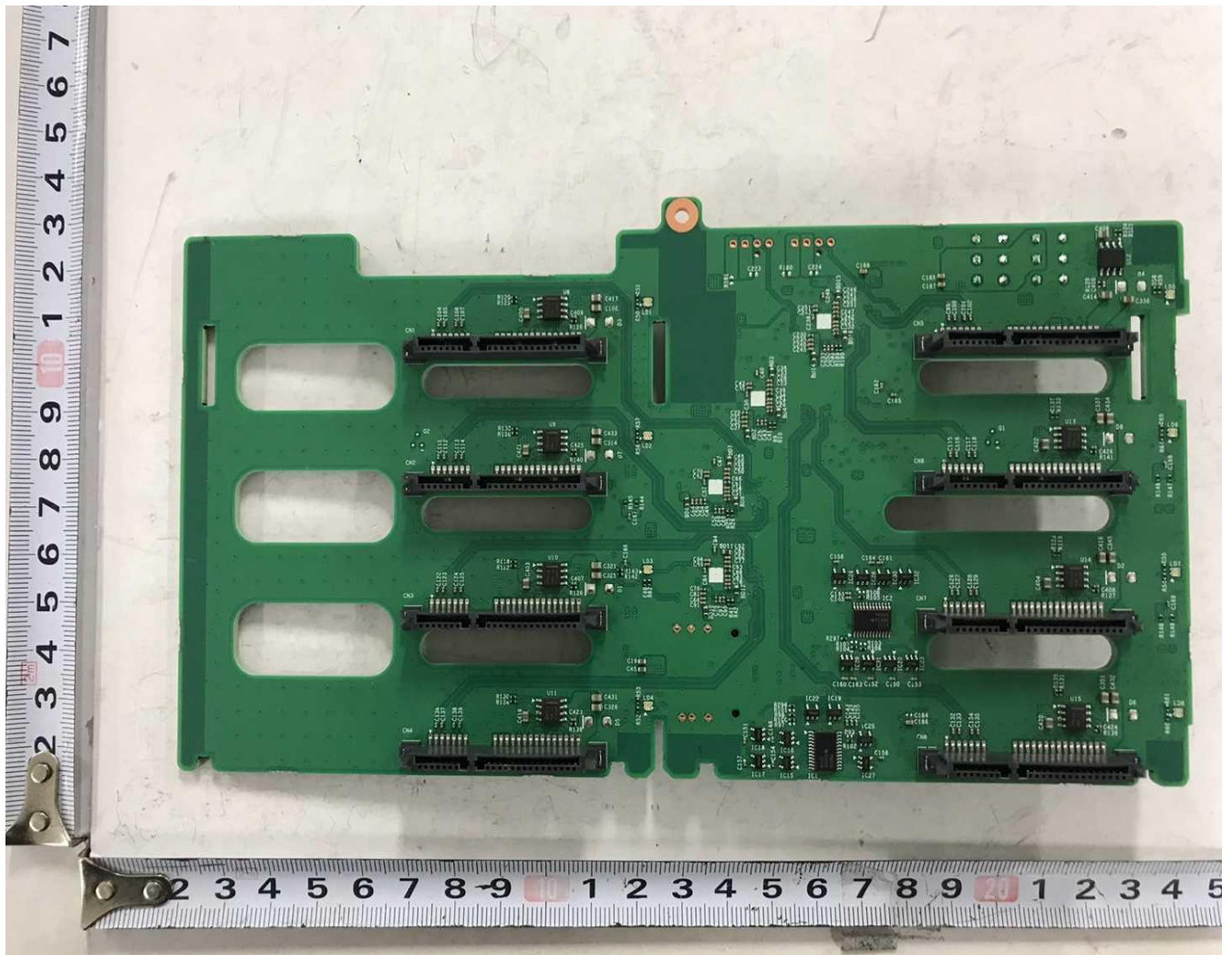


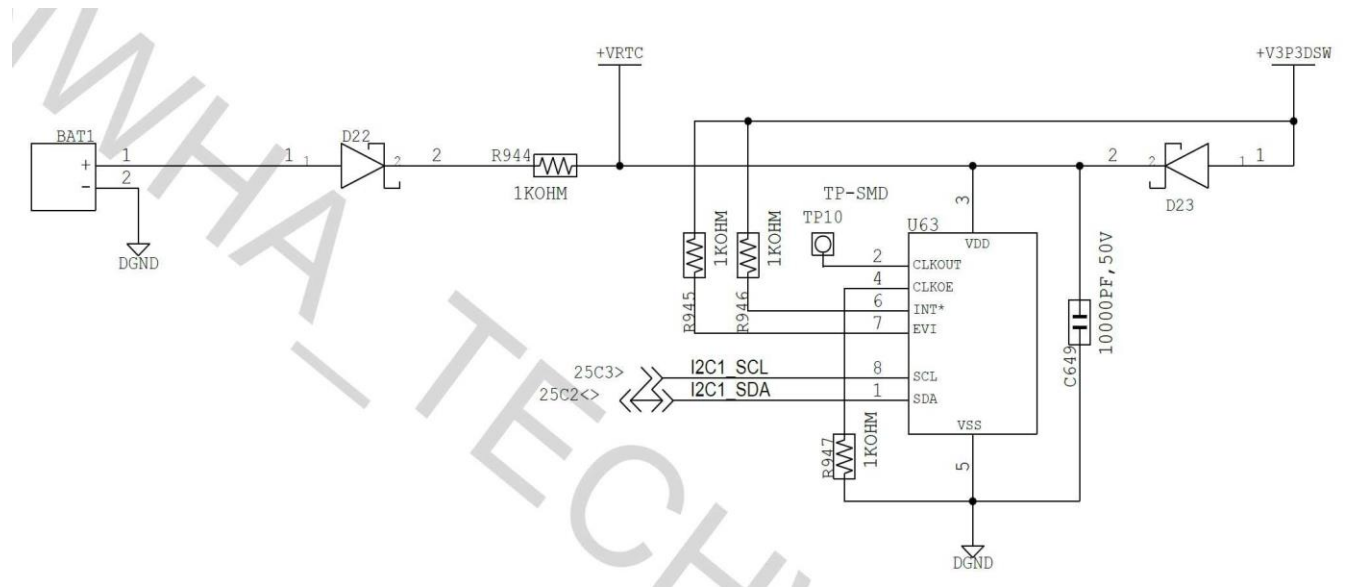












Project No. 4789490670

File E158873

Page 2

Compliance

Review

Conducted by:

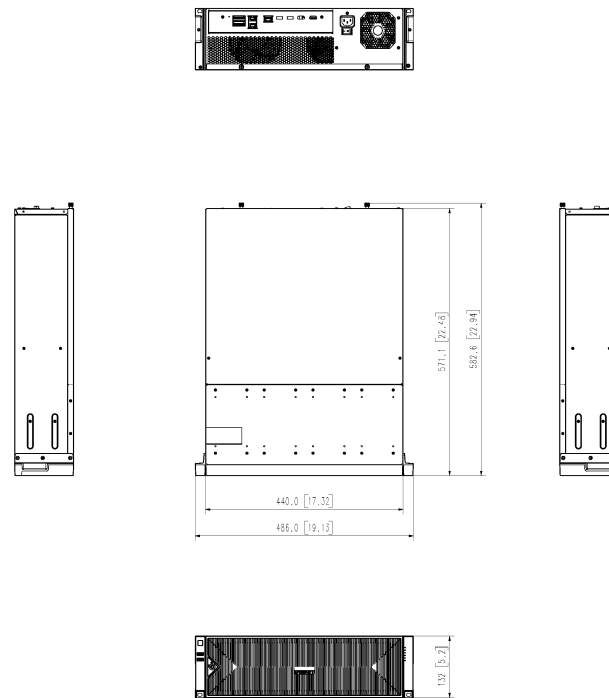
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Signature

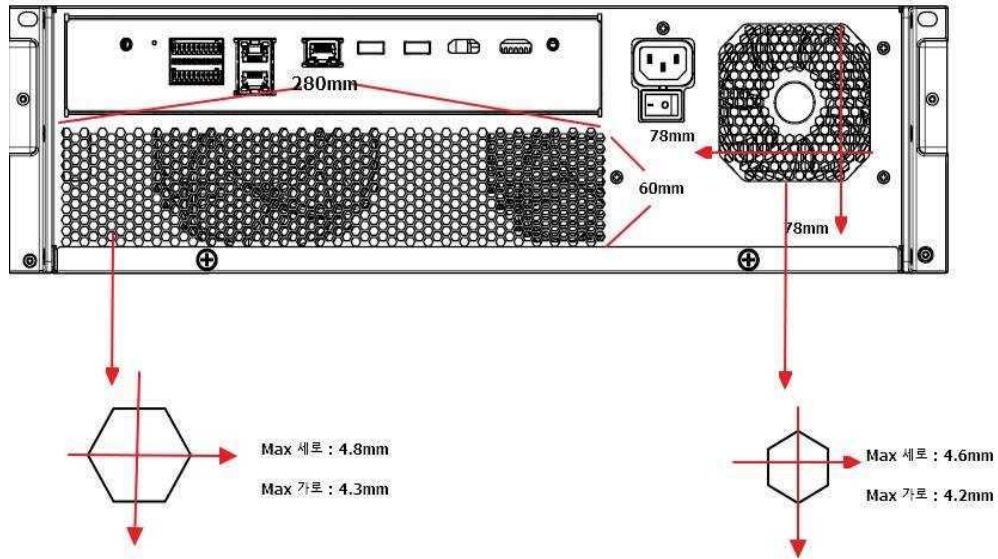
Date

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language.	X			Evaluation staff are to only verify that the manufacturer has a method to control distribution. Evaluation staff do not have to record the method of control nor are the evaluation staff expected to verify the effectiveness of the method of control. This requirement to verify that a method exists will be noted in the FUS Procedure. The UL Field Engineer will verify the method during surveillance. If the manufacturer is going to include the dual language on all products with the Canadian certification mark, then this item is N/A; no further action required.	N/A

This parts should not contain any substances which are specified in A800-00338



Appearance Drawing
PRN-6410B4, PRN-3210B4, XRN-6410B4, XRN-3210B4
Unit : mm[inches]



overview

WISENET

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit.
Follow all the safety instructions listed below.
Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Standards Approvals



- * Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- * This device complies with part 15 of the FCC Rules. Operation is subject to the 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.
- * This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- * Reorient or relocate the receiving antenna.
- * Increase the separation between the equipment and receiver.
- * Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- * Consult the dealer or an experienced radio/TV technician for help.

BEFORE START

This manual provides operational information necessary for using the product and contains a description about each component part and its function as well as menu or network settings.
You have to keep in mind the following notices:

- Hanwha Techwin retains the copyright on this manual.
- This manual cannot be copied without Hanwha Techwin's prior written approval.
- We are not liable for any or all losses to the product incurred by your use of non-standard product or violation of instructions mentioned in this manual.
- Prior to opening the case, please consult a qualified technician first. Whenever this is needed power must be removed from the unit.
- Before adding a hard disk drive or external storage (USB memory, USB HDD, etc), check if it is compliant with this product. For the compatibility list, contact the retailer.

Warning

Battery

It is essential that when changing the battery in the unit, the replacement battery must be of the same type otherwise there may be a possibility of an explosion.

The following are the specifications of the battery you are using now.

- Normal voltage : 3V
- Normal capacity : 210mAh
- Continuous standard load : 0.4mA
- Operating temperature : -20°C ~ +60°C
(-4°F ~ +140°F)

CALIFORNIA USA ONLY

This Perchlorate warning applies only to primary CR (Manganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA. Perchlorate Material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

Caution

- Connect the power cord into a grounded outlet.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.
- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- When the HDD reaches its end of life, the stored video data may be damaged, and not be able to be recovered.
- The HDD status LED on the front of the system continuously blinks to indicate that the system's connection to the HDD is normal. Check the HDD status LED regularly to see if it blinks continuously. Recording may not be possible when there is an HDD failure.
Periodically check the recording status and backup important data regularly.

ATTENTION

- IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
MÉTTE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

installation

WISENET

Please take note of the followings before using this product.

- Do not use the product outdoor.
- Do not spill water or liquid in the connection part of the product.
- Do not impose the system to excessive shock or force.
- Do not pull out the power plug forcefully.
- Do not disassemble the product on your own.
- Do not exceed the rated input/output range.
- Use a certified power cord only.
- For the product with an input ground, use a grounded power plug.

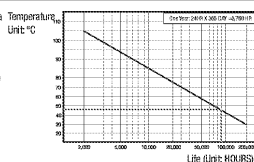


* Depending on the hard disk configuration and the surrounding temperature, there may be some noise from the product.

CHECKING THE INSTALLATION ENVIRONMENT

This product is a top-notch security device that is equipped with a high-capacity HDD and other key circuit boards.

Note that an excessive internal temperature of the product may cause a system failure or a shortened product life (see the right figure). Keep in mind the following instructions before installing the product.



(Figure 1)

When mounting the product on a rack, comply with the following instructions.

1. Please ensure that the rack inside is not sealed.
2. Please ensure the air is circulated through the inlet/outlet as shown in the picture.
3. If you pile up the products or other rack-mount devices as shown in figure 2, secure room for ventilation or install a vent.
4. For natural air convection, place the inlet at the bottom of the rack and the outlet on top.
5. It is strongly recommended that a fan motor is installed at the inlet and the outlet for air circulation.
(Please fit a filter at the inlet to screen dust or foreign substances.)
6. It is recommended to keep the temperature inside the rack or around the product at 25°C.



(Figure 2)

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions :

- A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
- B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

INSTALLING THE HDD

Make sure to unplug the power cord from the wall outlet to prevent possible electric shock, injury or product damage.

Please consult your provider for further information on HDD installation since improper installation or settings may damage the product.

* Number of HDDs supported : Max. 16 EA

* Make sure to unplug the power cord from the wall outlet before proceeding with the installation.



* Cautions for data loss (HDD care)

Please pay attention so that the data inside the HDD is not damaged.

Before adding a HDD, please check the compatibility with this product.

HDD is vulnerable to malfunction due to its sensitive nature especially against shock when operating. Please ensure that the HDD is free from such shock.

We are not liable for any damage to the HDD incurred by user's carelessness or miss use.

* Cases might cause damage to HDD or recorded data

To minimize the risk of data loss from a damaged HDD, please backup data as often as possible.

If exposed to shock when disassembling or installing, data stored in the hard disk may be damaged.

A sudden power failure or turning off the product while in HDD operation may damage the hard disk drive.

HDD or files stored inside may be damaged if the main body is moved or impacted during the HDD operation.

Cautions when installing a HDD

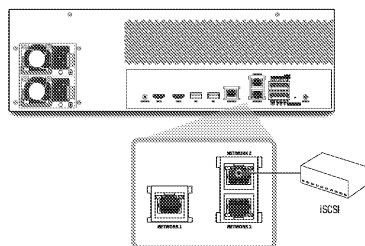
1. Do not apply excessive force to the HDD.
2. Pay attention so as not to lose the disassembly screws or accessories.
 - * If the screws or accessories are not put together correctly, the product may breakdown or not operate properly.
3. Please check the HDD compatibility before adding a HDD.
 - * Please contact your nearest dealer to obtain the list of compatible devices.
4. If you wish to replace or add an HDD, contact your dealer or our customer service first.
 - * Only the product administrator can open the HDD door on the front side.

connecting with other device

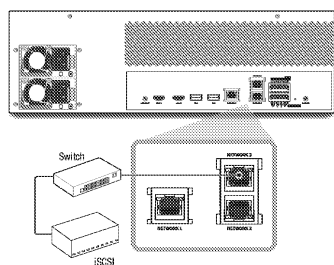
WISENET

Connecting the iSCSI

Directly connecting to the Recorder



A switch can be used for connection



※ Use only switches that are designed exclusively for iSCSI.



Hanwha Techwin cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products.
The Eco mark represents Hanwha Techwin's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.



Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.
To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

NETWORK VIDEO RECORDER

MODEL: PRN-6410B4

AC 100-240V~ 50/60Hz 2.9A

M/C: PRN-6410B4/KAP Fac. ID: D



DATE S/N: XXXXXXXXXXXXXXXX

MAC ADDRESS 1: XX-XX-XX-XX-XX-01

MAC ADDRESS 2: XX-XX-XX-XX-XX-02

MAC ADDRESS 3: XX-XX-XX-XX-XX-03

CAN ICES-3(A)/NMB-3(A)

MADE IN KOREA

Hanwha Techwin Co., Ltd.



NETWORK VIDEO RECORDER**MODEL: PRN-3210B4****AC 100-240V~ 50/60Hz 2.9A****M/C: PRN-3210B4/KAP Fac. ID: D****DATE S/N: XXXXXXXXXXXXXXXX****MAC ADDRESS 1: XX-XX-XX-XX-XX-01****MAC ADDRESS 2: XX-XX-XX-XX-XX-02****MAC ADDRESS 3: XX-XX-XX-XX-XX-03****CAN ICES-3(A)/NMB-3(A)****MADE IN KOREA****Hanwha Techwin Co., Ltd.**

NETWORK VIDEO RECORDER**MODEL: XRP-4210B4****AC 100-240V~ 50/60Hz 2.7A****M/C: XRP-4210B4/KUS** Fac. ID: D**DATE** S/N: Serial No.

MAC ADDRESS 1: XX-XX-XX-XX-XX-01

MAC ADDRESS 2: XX-XX-XX-XX-XX-02

MAC ADDRESS 3: XX-XX-XX-XX-XX-03

CAN ICES-3(A)/NMB-3(A)

MADE IN KOREA**Hanwha Techwin Co., Ltd.**

Revision Date: 2020-08-13

Test Record No. 1

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of Network Video Recorder, PRN-6410B4.
3. Only the test listed were considered necessary.

The following tests were conducted:

Tests performed (name of test and test clause):	Testing location: CTK Co., Ltd., 386-1 Ho-dong Yongin-shi, Kyungki-do, 449-100, Korea
STEADY FORCE TEST, 250 N (4.4.4.2, ANNEX T.5)	
IMPACT TEST (4.4.4.4, ANNEX T.6)	
MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)	
ELECTRIC STRENGTH TEST (5.4.9)	
SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR (5.5.2.2)	
RESISTANCE OF THE PROTECTIVE BONDING SYSTEM (5.6.6.2)	
PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7)	
PROTECTIVE CONDUCTOR CURRENT (5.7.5)	
STATIC STABILITY (8.6.2)	
INPUT TEST: SINGLE PHASE (B.2.5)	
SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)	
SIMULATED SINGLE FAULT CONDITIONS (B.4)	
LIMITED POWER SOURCE (ANNEX Q.1)	
The following tests were waived:	Rationale for Waiving

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description
Datasheet	02-01	Datasheet

Revision Date: 2020-08-13

Test Record No. 2

No test was considered necessary in order to below revision.

- Model name correction from XRP-4310B4 to XRP-4210B4.

The following tests were conducted:

Tests performed (name of test and test clause): None	Testing location: None
The following tests were waived: None	Rationale for Waiving

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description

CERTIFICATE OF COMPLIANCE

Certificate Number E158873
Report Reference E158873-A6031-UL
Issue Date 2020-AUGUST-17

Issued to: Hanwha Techwin Co Ltd
6, Pangyo-ro 319beon-gil, Bundang-gu
Seongnam-si Gyeonggi-do 13488 KOREA

This certificate confirms that
representative samples of

AUDIO/VIDEO, INFORMATION AND COMMUNICATION
TECHNOLOGY EQUIPMENT
NETWORK CAMERA : PNM-9002VQ

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 62368-1 : Audio/video, information and communication
technology equipment Part 1: Safety requirements
CAN/CSA C22.2 No. 62368-1-14 : Audio/video, information
and communication technology equipment Part 1: Safety
requirements

Additional Information:

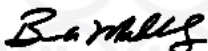
See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK CAMERA
Model:	PNM-9002VQ
Rating:	PoE(53 Vdc), 0.45 A
Applicant Name and Address:	HANWHA TECHWIN CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Lawrence Lee / Project Handler Reviewed By: ByeongUk Lee / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

Network camera has been designed for Indoor use and integrated a bracket for wall or ceiling mount.

It is a commercial equipment supplied from PoE (Power over Ethernet) and installed by service personnel.

Model Differences

N/A

Test Item Particulars

Classification of use by	Instructed person
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	PoE (Power over Ethernet)
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	wall-mounted
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	55
IP protection class	IPX0
Power Systems	N/A
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	2.98

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

4789531187

Maximum Normal Load: Continuous operation.

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."/"ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebut les batteries usagées selon les instructions." (Marking) Alternatively, symbol   (ISO 7000-0434 and/or ISO 7000-1641) on product where visible, with the above wording in the instruction manual.
Hard Copy	A. IMPORTANT B. Please check 'Manuals' from our website, before connecting to the supply. C. Company website URL (https://www.~~)
Website Manual -1	This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (53Vdc), 0.45A.
Website Manual -2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.
Special Instructions to UL Representative	
N/A	

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All models					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All models					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	All models					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Transparent Dome Cover Enclosure (Plastic)	Sabic Innovative Plastic US L L C	HF1130R(f2)	Min. 2.5 mm thick, rated V-2, 130 deg. C. No openings.	QMFZ2	UL (E121562)	
External Side Enclosure (Metal)	Interchangeable	Interchangeable	Aluminium, Min. 2.5 mm thickness.	-	-	
External Bottom Enclosure (Metal)	Interchangeable	Interchangeable	Aluminium, Min. 4.0 mm thickness.	-	-	
Camera Cover parts (Plastic)	LOTTE CHEMICAL CORPORATION	NH-1035(+)	Min. 1.5 mm thickness, rated Min. V-0, 80 deg. C.	QMFZ2	UL (E115797)	
Internal body part (Plastic)	LOTTE CHEMICAL CORPORATION	NH-1035(+)	Min. 1.5 mm thickness, rated Min. V-0, 80 deg. C.	QMFZ2	UL (E115797)	
Transformer (T4)	SHENZHEN GROUP-TEK ELECTONICS TECHNOLOGY CO LTD	PDT25125SR	130 deg.C, See enclosure for more detail.	-	-	
Line Filter (L6)	TNC CO LTD	CV320070SB	7.0 mH, 130 deg.C, See enclosure for more detail.	-	-	
Photo coupler (LS2)	LITE-ON TECHNOLOGY CORP	LTV-816	Isolation Voltage: 5300. Max. Operation Temperature:110 deg. C	FPQU2/8	UL (E113898)	
Photo coupler (LS2) - Alternate	COSMO ELECTRONICS CORP	K1010X*	Isolation Voltage: 5000. Max. Operation Temperature:115 deg. C	FPQU2/8	UL (E169586)	

Lithium Battery (BAT1, BAT2, BAT3, BAT4, BAT5)	SEIKO INSTRUMENTS INC MICRO- ENERGY DIV	ML414H	Lithium (Coin), Rechargeable, Max. 3.4 Vdc, Nominal Capacity 1.0 mAh, Maximum charging current 300 mAh	BBCV2	UL (MH15628)	
Lens module (Max 4 provided)	Hanwha Techwin Co Ltd	SLA-2M2400Q or SLA-2M2800Q or SLA-2M3600Q or SLA-2M6000Q or SLA-5M3700Q or SLA-5M4600Q or SLA-5M7000Q	4.0 Vdc, 300 mA	NWGQ2/8	UL (E158873)	
Connectors and Receptacles (Secondary circuits)	Interchangeable	Interchangeable	Min. V-2	ECBT2	UL	
Connectors and Receptacles (Secondary circuits) - Alternate	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated Min. V-2	QMFZ2	UL	
Internal Wiring (Secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg.C	AVLV2	UL	
Cable	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
FFC	Interchangeable	Interchangeable	Marked VW-1, 60 V, 105 deg.C.	AVLV2	UL	
Label	Interchangeable	Interchangeable	Min. 50 deg.C if max. surface temperature not specified.	PGDQ2 or PGJ12	UL	
PWB	Interchangeable	Interchangeable	Min. V-0, 130 deg. C.	ZPMV2/8	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall View -1
Photographs	03-02	Overall View -2
Photographs	03-03	Lens Module
Photographs	03-04	Internal View -1
Photographs	03-05	Internal View -2
Photographs	03-06	Main Board (Top)
Photographs	03-07	Main Board (Bottom)
Diagrams	04-01	Enclosure Dimension
Manuals	06-01	Manual
Miscellaneous	07-01	PoE Transformer (T4) spec
Miscellaneous	07-02	Dual language safety labeling CRD
Miscellaneous	07-03	Label

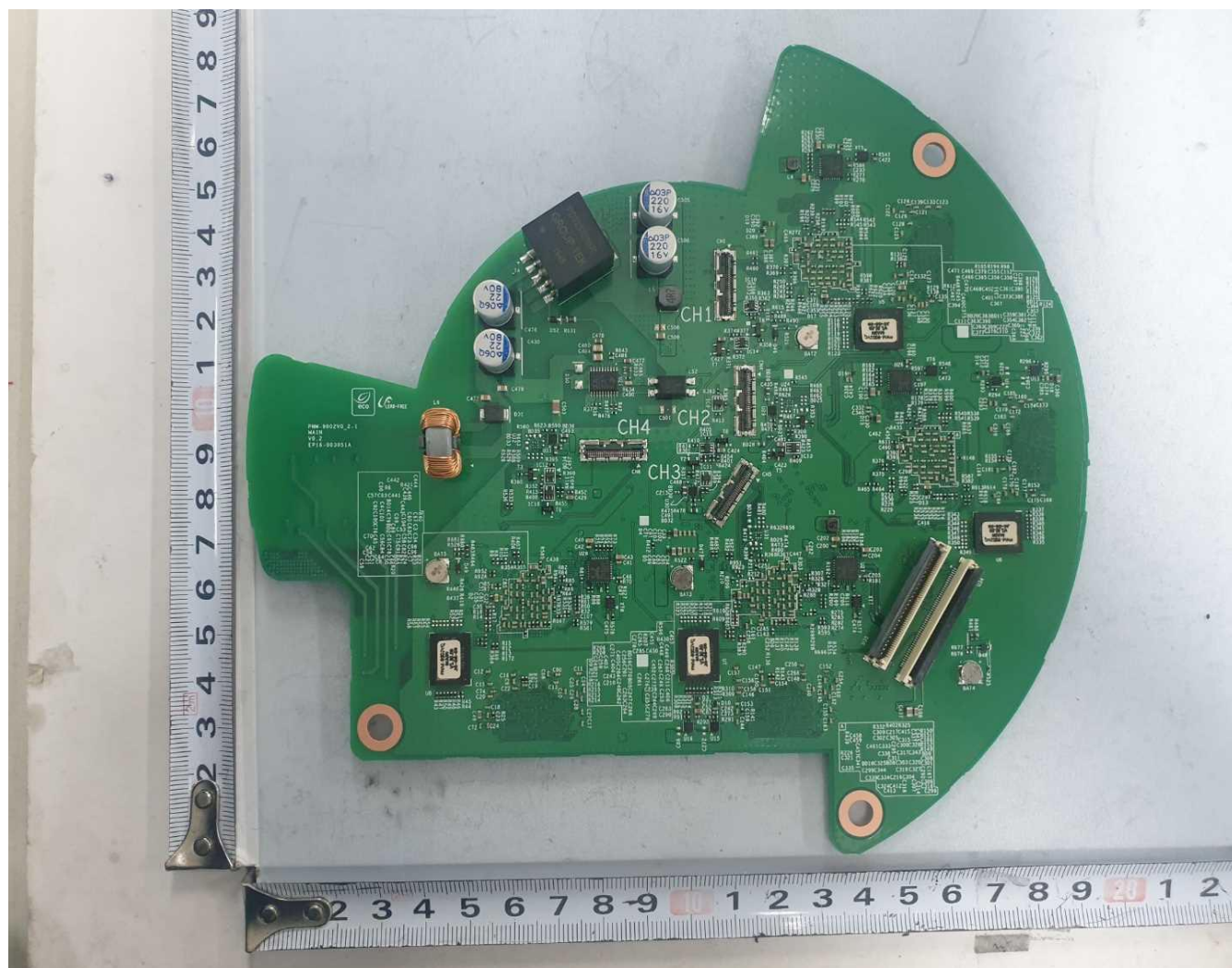


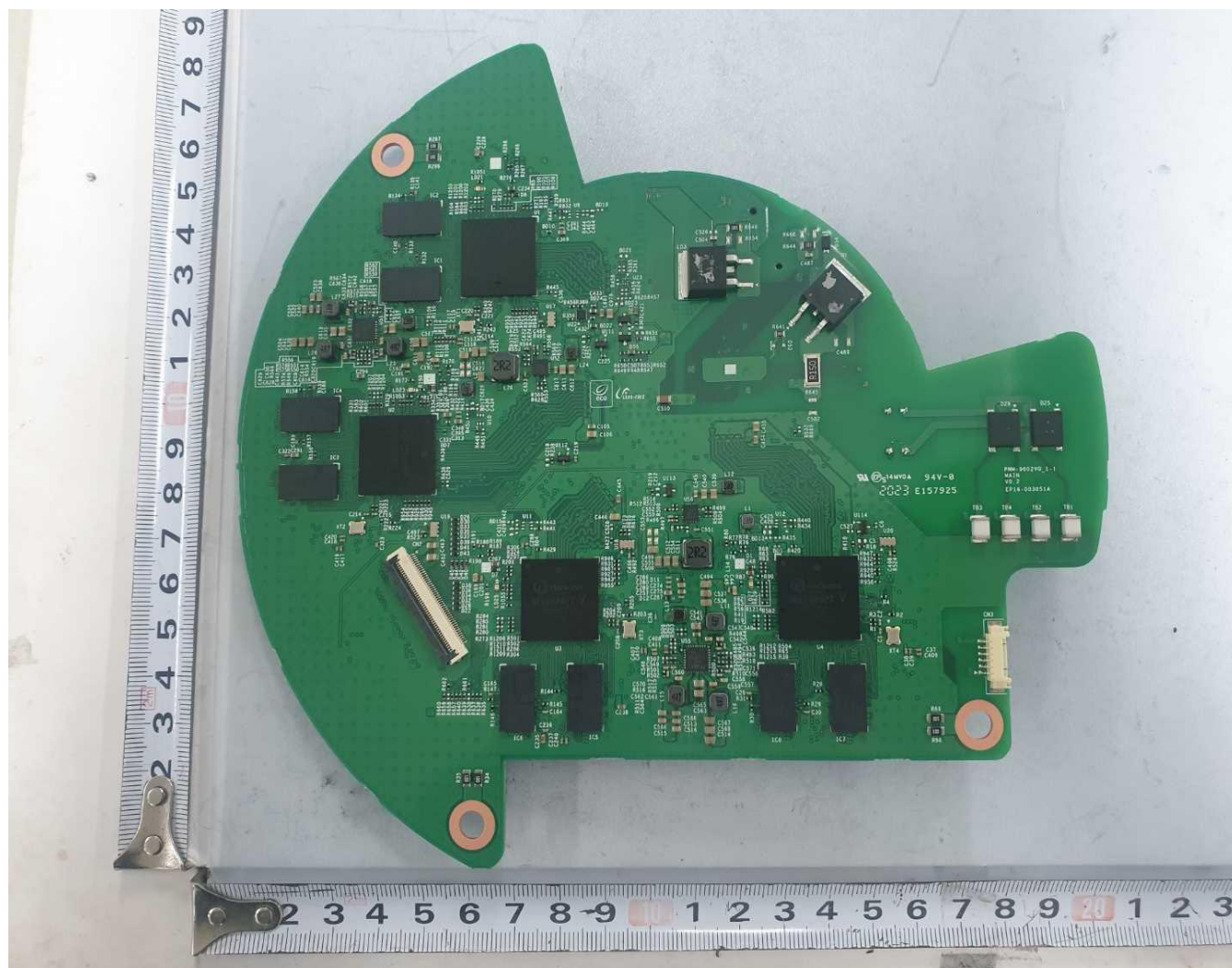




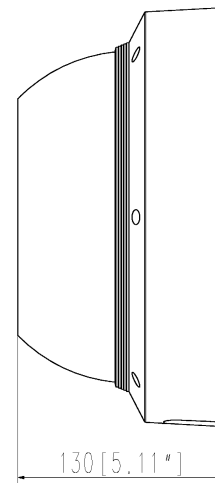
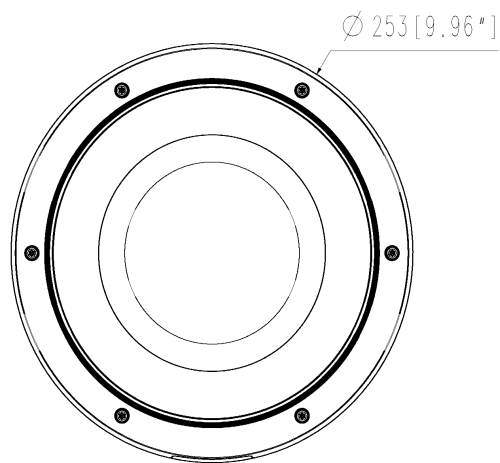








PNM-9000VQ
UNIT : mm[inch]



overview

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" and rated from PoE, 0.45A, (PNM-9002VQ).
16. This Lens module has to be connected with equipment, which supplied by a power supply unit marked "Class 2" or "LPS". (SLA-2M2400Q/2M2800Q/2M3800Q/2M6000Q/5M3700Q/5M4800Q/5M7000Q).
17. This product is intended to be supplied by isolation power.
18. If you use excessive force when installing the product, the camera may be damaged and malfunction.
If you forcibly install the product using non-compliant tools, the product may be damaged.
19. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.
20. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
21. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
Install the product by referring to "Installation & connection" in the user manual.
22. Installing or using the product in water can cause serious damage to the product.



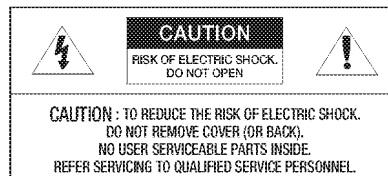
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

overview

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The battery cannot be replaced.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The Test Monitor Out port of the product is provided for easier installation, and is not recommended for monitoring purposes.

Please use the input power with just one camera and other devices must not be connected.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102.
As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
The high temperature of the product surface may cause a burn.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

installation & connection

INSTALLATION

- ✖ This camera is waterproof and in compliance with the IP66 spec, but the jack connected to the external cable is not. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

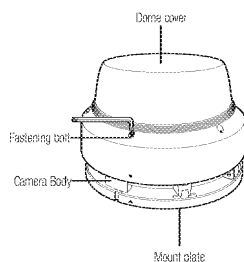
Precautions before installation

Ensure you read out the following instructions before installing the camera:

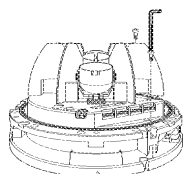
- Select an installation site that can hold at least 5 times the camera's weight.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- If the product is installed with excessive force, it may cause damage to the camera due to malfunction. Forcing assembly using non-compliant tools may damage the product.
- Do not remove the lens module while the power is on.

Disassembling

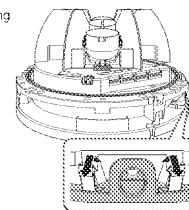
1. Remove the dome cover by loosening the fastening bolt of the dome cover. This can be done by turning it counterclockwise using the Torx L Wrench or screw bit provided.



2. Loosen the fastening screw on the camera body

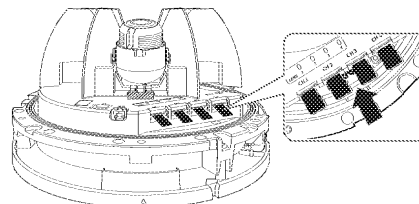


3. Remove the camera body and mounting plate by pulling the mounting clip, as shown in the figure.



Inserting a Micro SD card

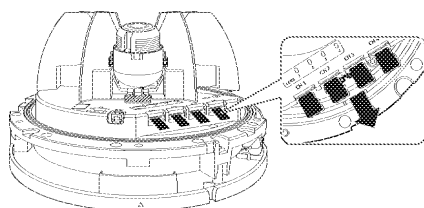
1. Remove the dome cover of the camera.
2. Insert a Micro SD card in the arrow direction shown in the figure



- ✖ Disconnect the power cable from the camera before inserting the Micro SD card.
- ✖ Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.
- ✖ When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- ✖ Disassembly of the product cover should be finished within 5 minutes, or there will be the risk of internal dew condensation.

Removing a Micro SD card

Gently press down on the exposed end of the Micro SD card as shown in the diagram to eject the Micro SD card from the slot.

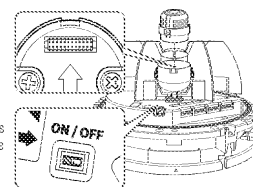


- ▣ You should save an SD card for each channel.
- ✱ Before removing the Micro SD card, in <Storage>, set the device to <Off> and press the **Apply** button and turn the camera off.
- ✱ If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

Mounting lens module

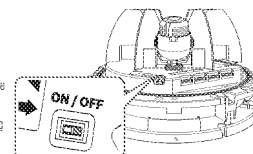
1. Align and fasten the connector of the lens module with the connector of the camera body.

- ▣ ✱ Install the lens module while power is not connected (PoE+).
- ✱ Check if the power switch is "OFF" before installing the lens module.
- ✱ You are recommended to avoid touching the lens separately, as it is shipped from the factory with the focus adjusted during the manufacturing inspection.



2. Complete the lens mounting process.
3. Connect power to the product (PoE+).

- ▣ ✱ If you want to replace the lens module while connecting power to the product (PoE+), turn the power switch "OFF", replace the lens module, and then turn the power switch "ON".
- ✱ Be careful not to use any tool with a sharp point when handling the switch since it might be damaged.
- ✱ Be careful not to forcefully handle the switch since it might be damaged.

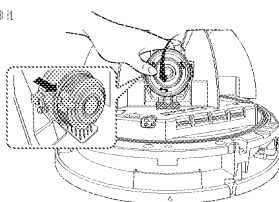


installation & connection

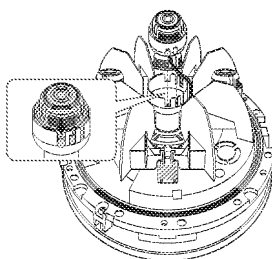
How to install using the perpendicular falling method

You can move the lens for only one channel to see the video after installing it in the direct-tilt manner. In this case, the lens direction of the moved channel can be tilted up to 90 degrees.

1. Tilt the lens module part forward-facing and then pull it.

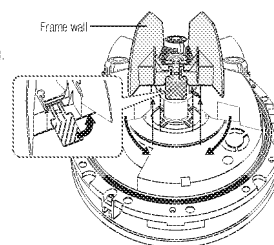


2. Align the groove with the center of the rotating part.



3. Lift the part with diagonal lines to release the frame wall.

4. Move the three channel lenses along the bottom rail.

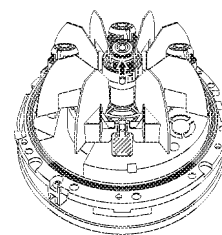


How to install using the tilting method

You can move the lenses of CH1 - CH4 along the bottom rail to view videos by installing them using the tilting method.

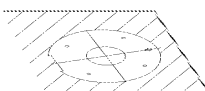
In this case, the orientation of the lens cannot be tilted by 90 degrees.

1. Mount the frame wall.
2. Remove the direct-tilt lens from the rotation center.
3. Move the four channel lenses along the bottom rail.

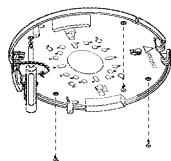


Installation on a ceiling or wall

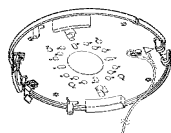
1. Use the provided template to drill holes for installation (diameter: 6 mm and minimum depth 45mm) and insert the supplied plastic anchors to the end.



2. Align the holes of the mount plate for installation with the holes inserted with plastic anchors, and fasten the tapping screws.



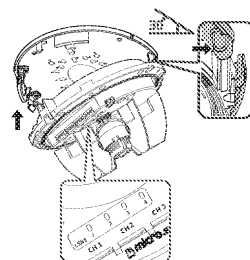
3. Connect the safety wire.



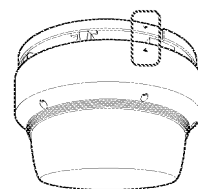
4. Mount the camera body to the mount plate.
 ◀ Mount it to fit the hinges as shown in the image.
5. Connect the terminal inside camera with the required cable.

- ◀ If the lens module is not attached correctly, the lens module status light will illuminate red, as shown in the figure. If this occurs, turn off the power switch and reattach the lens module. If attached normally, it will illuminate green and then turn off after approximately 40 seconds.

6. Push in the mounting clip.
7. Adjust the lens to the desired direction by referring to "Adjusting the monitoring direction for the camera". (Page 17)
 ▶ If you tilt the lens, you may need to adjust the lens as this may block the screen.



8. Assemble the dome cover.
 ▶ Align the arrows when assembling the dome cover.
 ▶ To ensure there are no issues with waterproofing, tighten the fastening bolts tightly using the Torx L wrench or screw bit.

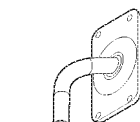


installation & connection

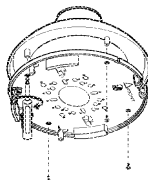
Attaching to the unbundled adapter

Choose and purchase a necessary one of the following options (unbundled) that is suitable to the installation site or for your convenience.

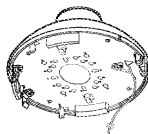
1. Install the hanging mount to the wall mount adapter.
 - ✦ Wall mount adapters and hanging mounts are sold separately.



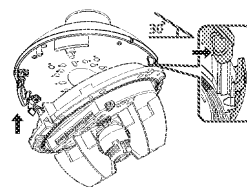
2. Connect the mounting plate and the hanging mount.



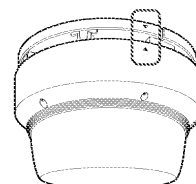
3. Connect the safety wire.



4. Mount the camera body to the mount plate.
 - ✦ Mount it to fit the hinges as shown in the image.
5. Connect the terminal inside camera with the required cable.
6. Push in the mounting clip.
7. Adjust the lens to the desired direction by referring to "Adjusting the monitoring direction for the camera" (Page 17).
 - ✦ If you tilt the lens, you may need to adjust the lens as this may block the screen.



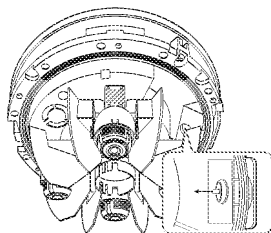
8. Assemble the dome cover.
 - ✦ Align the arrows when assembling the dome cover.
 - ✦ To ensure there are no issues with waterproofing, tighten the fastening bolts tightly using the Torx L wrench or screw bit.



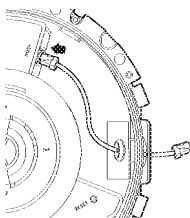
Method 1. Connecting the LAN cable

1. Remove the dome cover and the case.
2. Pull out the long projected part of the rubber plug on the bottom and remove it as shown in the figure.

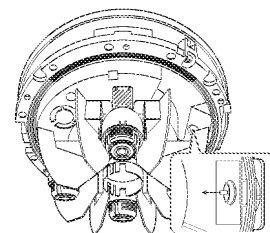
- Use an appropriate cable bushing for the LAN cable to be connected.
- Basic camera : Use the cable with a diameter of $\phi 6-6.5$.
 - Components provided : Use the cable with a diameter of $\phi 7-8.5$.



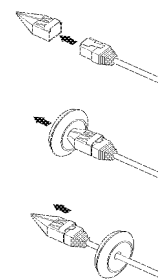
3. Insert the LAN cable through the hole appeared after removing the projected part in step 2 above.
4. Remove the sheath with a cable cutter, and align the cables.
5. Connect the LAN cable with a LAN connector, and insert it into the LAN tool.
6. Connect the finished cable to the Ethernet port.

**Method 2. Connecting the LAN cable**

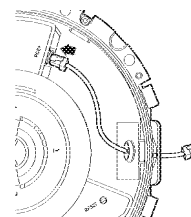
1. Remove the dome cover and the case.
2. Pull out the long projected part of the rubber plug on the bottom and remove it as shown in the figure.
3. Pull the rubber cover over the hole to remove it.



4. Use the Cap Installer to allow the RJ45 cable to pass through.



5. Insert the rubber stopper again and connect the LAN cable to the Ethernet terminal.



installation & connection

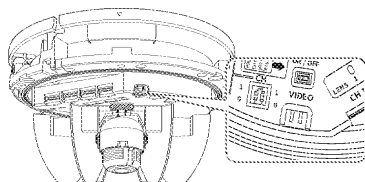
How to set up channels to monitor for installation

The camera body has a channel DIP switch, as shown in the figure.

You can change the channel of the camera using the channel DIP switches.

CH1	CH2	CH3	CH4
00	01	10	11

- ✖ If a DIP switch is not fully On/Off, the product may malfunction. After installation, check the DIP switches at the back.
- ✖ Be careful, as you will risk damaging a DIP switch if you manipulate it using a sharp tool.
- ✖ Be careful, as a DIP switch may be damaged if you operate it with excessive force.



Outdoor installation

When you install it outside of the building, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect the PoE cable.

2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.



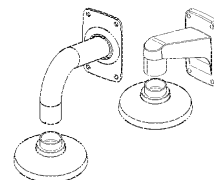
- ✖ If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- ✖ Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

Optional Accessories for Installation

For your easier installation, you can purchase appropriate optional accessories available.

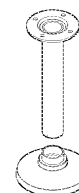
1. WALL MOUNT ADAPTOR (SBP-300WM/SBP-300WM1)/HANGING MOUNT (SBP-276HM)

This adaptor is used when installing the dome camera onto a wall.

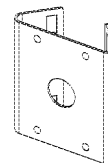


2. CEILING MOUNT ADAPTOR (SBP-300CM)/HANGING MOUNT (SBP-276HM)

This adaptor is used when installing the dome camera on a concrete ceiling.

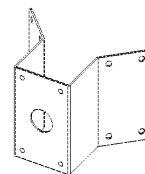


3. The POLE MOUNT ADAPTOR (SBP-300PM) is the adapter to be used when installing the WALL MOUNT ADAPTOR (SBP-300WM or SBP-300WM1) on an 80mm or larger column.



4. CORNER MOUNT ADAPTOR (SBP-300KM)

This is an adaptor for WALL MOUNT ADAPTOR (SBP-300WM or SBP-300WM1) installation on the corner of wall joint.





Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the 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.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Hanwha Techwin cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products.

The Eco mark represents Hanwha Techwin's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g., charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.



Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

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承认书

SPECIFICATION FOR APPROVAL

CUSTOMER	
MODEL NO.	EP23-001075A
PART NAME	POWER TRANSFORMER
PART TYPE	PDT25125SR
REV	X7
SIGNATURE	制图: Drawn by 2020-01-07 Lei Wan 审核: Checked by 2020-01-07 G.A. Song 批准: Approved by 2020-01-07 Jiang Wang
CUSTOMER APPROVAL	 阮志斌: SIGNET 嘸0 : SIGNATURE

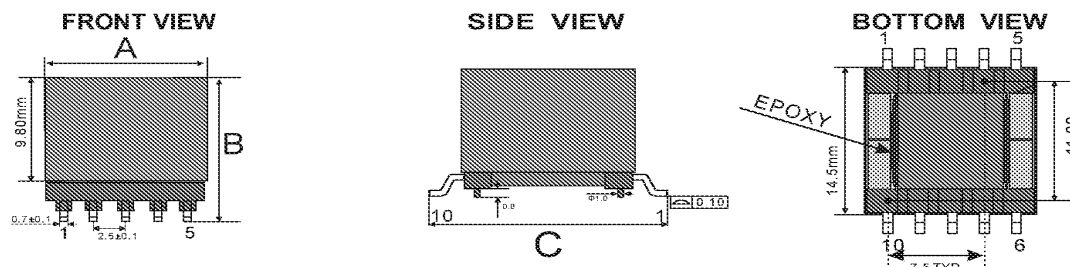
拐提攢旒壘某隼槐梟毒泐涓漈漈
 SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD
 地 址 : 深圳市宝安区石岩街道应人石工业区伟泰路 1 栋 (P. C: 518108)
 ADD: No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen.
 TEL: +86-755-29810619 29810976 FAX: +86-755-29810159
 Http://www.group-tek.com E-mail:sale1@group-tek.com

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PDT25125SR

2. Mechanical Dimensions:



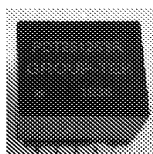
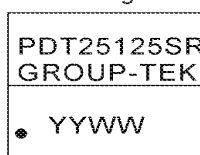
Note:

1. Wrap 2Ts of 7mm kapton tape around the finished part.
2. Fixed the cores with glue, and fixed the case with glue.

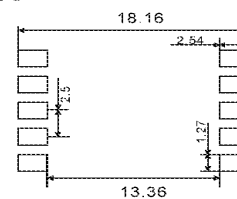
Unit: mm

A MAX	B MAX	C MAX
15.0	14.8	17.8

Laser Marking information



Suggested PCB Pad Layout



3. Electrical Characteristics :

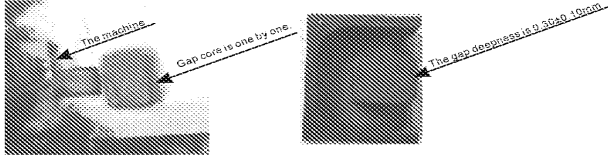
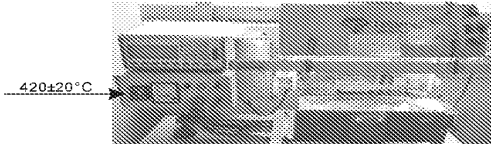
Specifications: at 25°C.		Operating Temperature -40 to +105°C*	
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(1-3) @100KHz, 1.0V	41.0uH ±10%.
2	Leakage Inductance	(1-3) @100KHz, 1.0V with shorted other pins.	0.67uH Max.
3	DCR	(1-3) @ 25°C	62.0mΩ Max.
4		(9-6) @ 25°C	20.0mΩ Max..
5		(10-7) @ 25°C	23.0mΩ Max.
6		(4-5) @ 25°C	120.0mΩ Max.
7	HI-POT	PRI TO SEC	2250Vac 5mA 3Sec.
8	TURN RATIO	(1-3):(9-6):(10-7)	2.67:1.0:1.0±2%.
9	TURN RATIO	(1-3):(4-5)	2.67:1.0±2%.
10	INSULATION RESISTANCE	PRI--SEC DC500V	100MΩ Min.
11		PRI--CORE DC500V	100MΩ Min.
12		SEC--CORE DC500V	100MΩ Min.

*Remark: Product surface temperature: -40 to +125°C, at 25°C.

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PDT25125SR**4.Overhauling List.**

NO.	ITEM	SPECIFICATION
1	Tape turns	2T
2	Winding turns	P1-1:16T S1-1:6T P1-2:16T S1-2:6T P2:6T
3	Pins order/Pin connection .	1T
4	Marking Information	PDT25125SR GROUP-TEK ● DATE CODE
5	Gap the center leg	
6	Solder Temperature	

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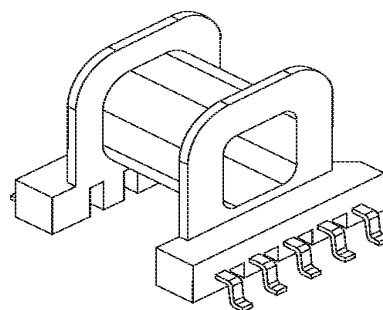
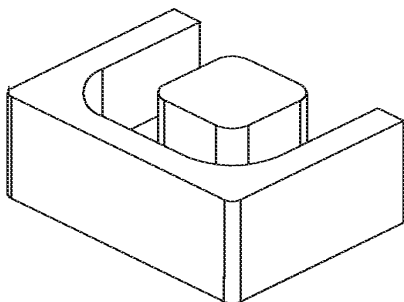
PDT25125SR

5. Winding Information:

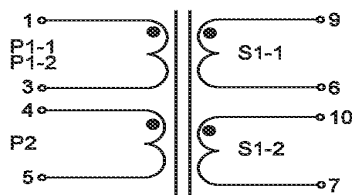
WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
P1-1	1--3	4*0.21mm 2UEW	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-1	9--6	4*0.27mm 2UEW (Red)	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P1-2	1--3	2*0.21mm 2UEW (Natural)	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-2	10--7	4*0.27mm 2UEW	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P2	4--5	3*0.17mm 2UEW	6	2T w8.0mm (kapton tape)	N/A	N/A	1

NOTE :

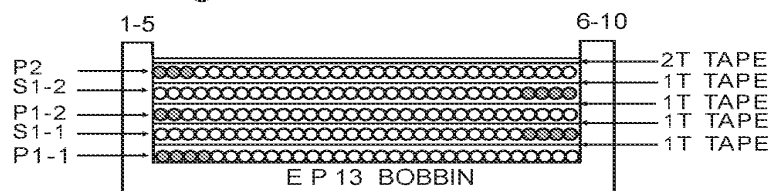
1. - Place the bobbin pin 1 left side of operator.



6. Schematic:



7. Winding construction



: Start terminal

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PDT25125SR**8. Material List:**

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFACTURERS	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481
2	CORE	TP2A	TTS Technology Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO. 2UEW THERMAL RATING: 180°C	ZHUHAI SUNTEK WIRE CO LTD	OBMW2.E234867
4	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.: CT*(c)(g) THERMAL RATING: 130°C yellow tape for inner coils	JingJiang yahua pressure sensitive glue Co.,Ltd	E165111
5	SOLDER	SN/CU: 99.3/0.7	Gao Xin stannum industry Co.,Ltd	N/A
6	Glue	E-500(xx)	Dong Guan city eatto electronic material Co.,Ltd	E218090
7	CASE	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481

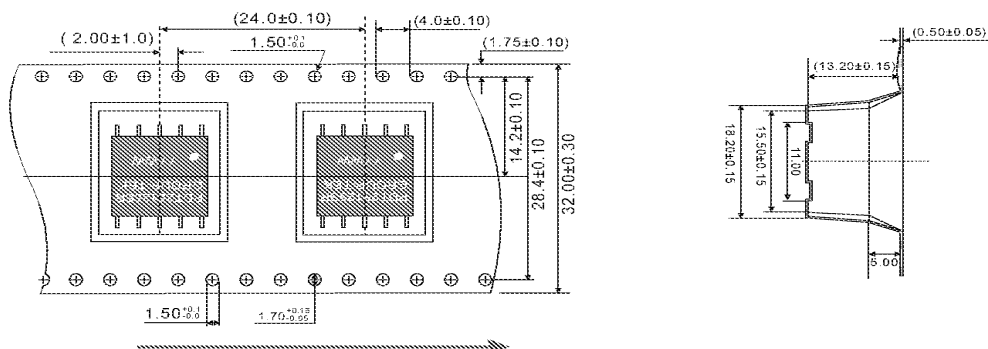
9. PACKING INFORMATION:

DESCRIPTION	QTY
PIECES PER REEL	150
PIECES PER POCKET	1
PIECES PER BOX	450
REEL PER BOX	3
GROSS WEIGHT PER BOX(KG)	TBD
NET WEIGHT PER BOX(KG)	TBD

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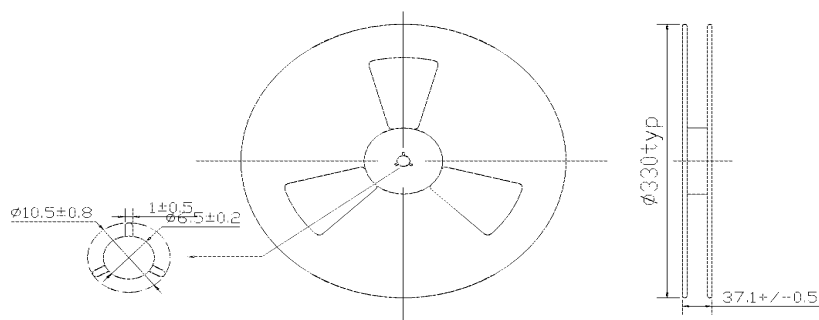
PDT25125SR

1. Tape Size: Tape and Reel Package (包装图)



2. Reel Size:

Part Orientation>>Feed Direcyion>>



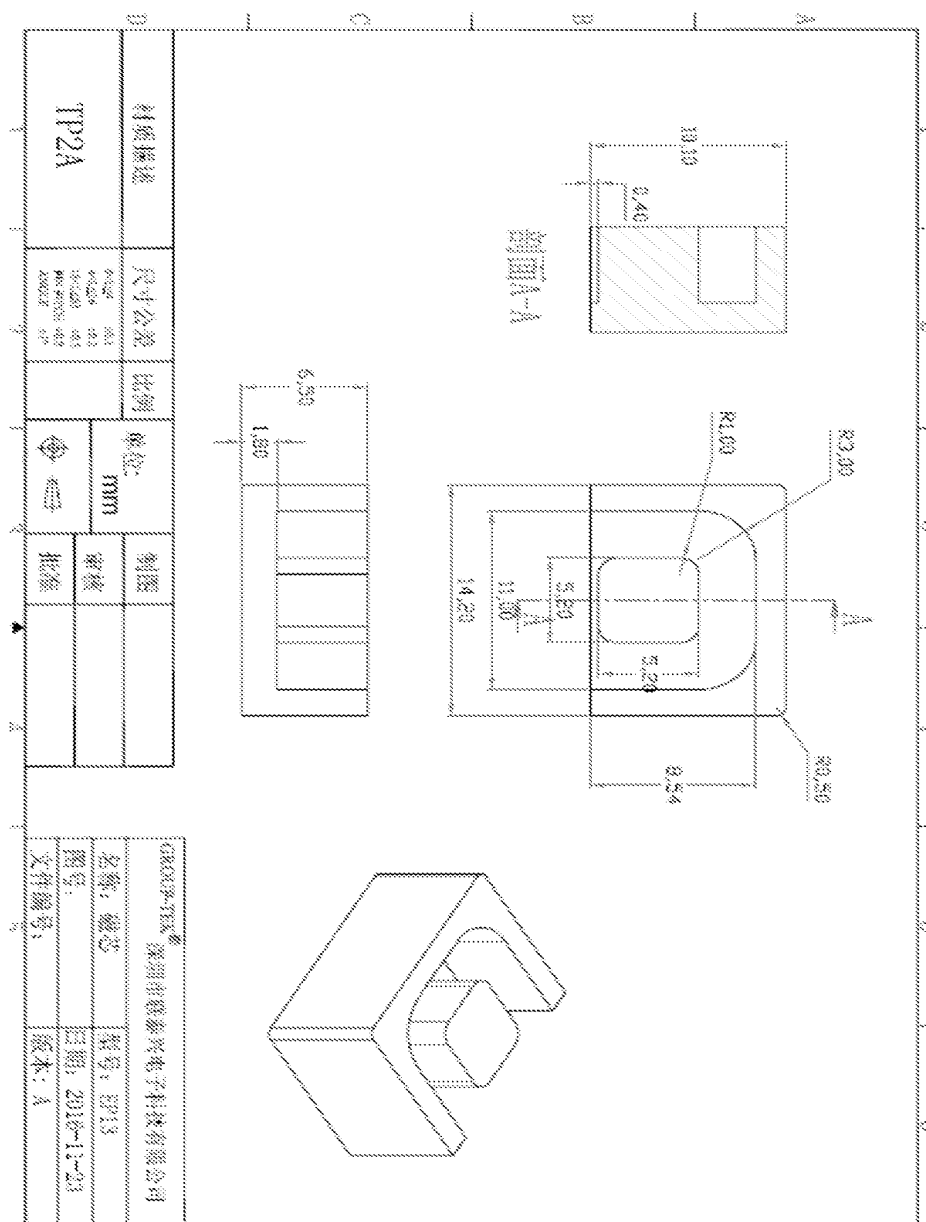
3. Packaging:

- 3.1 Quantity per reel: 150pcs.
- 3.2 Quantity per carton: 450pcs.
- 3.3 Carton size: 37.3*37.3*21.2cm.
- 3.4 Unit weight: TBD.
- 3.5 Carton weight: TBD.

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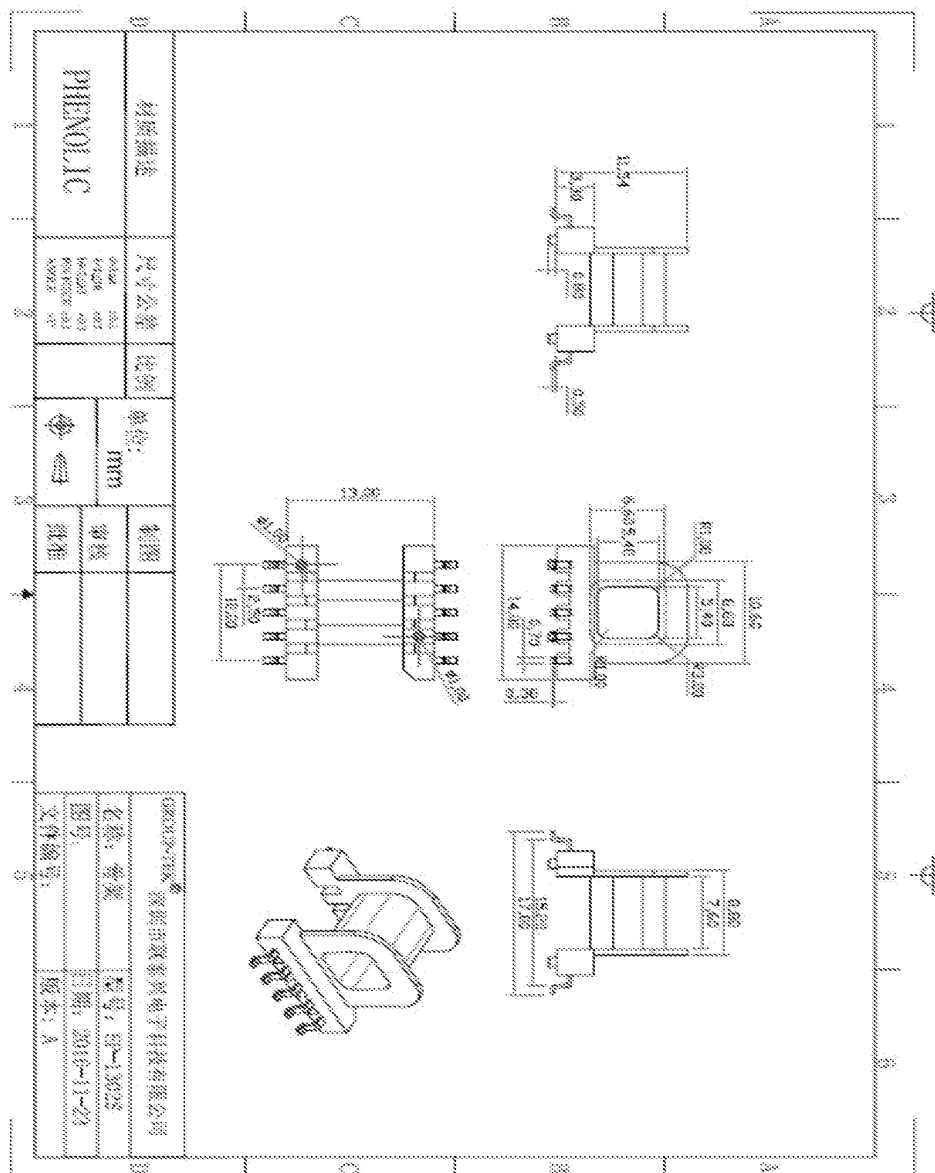
PDT25125SR



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PDT25125SR



Clause/Par.	Reference	and	Comply			Comments/Measurements	Inst. ID No.
			Yes	No	N/A		
9.2.3 CBs shall include dual language safety labeling within their product certification requirements, if so required by the standard or by the authority having jurisdiction.							
The manufacturer has confirmed they have the ability to include English and French safety labeling exactly as specified in the product standard; or, if NOT specified in the product standard, the ability to include English and French safety labelling consisting of markings associated with the signal words DANGER, WARNING, and CAUTION when required.		X				The ability of the manufacturer to include these markings was verified by either (1) visual inspection of the markings on the actual product or (2) draft of labels that will be applied to the product or (3) written confirmation from the customer of the markings that will appear on the product. If the product standard provides the exact translation, the evidence must match the exact translation. If the product standard does NOT provide the exact translation, the evidence must simply include both the English and French text (no verification of translation is required).	N/A

Project No. 4789532587

File E158873

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Compliance

Review

Conducted by:

Printed Name

Signature

Date

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language.	X			Evaluation staff are to only verify that the manufacturer has a method to control distribution. Evaluation staff do not have to record the method of control nor are the evaluation staff expected to verify the effectiveness of the method of control. This requirement to verify that a method exists will be noted in the FUS Procedure. The UL Field Engineer will verify the method during surveillance. If the manufacturer is going to include the dual language on all products with the Canadian certification mark, then this item is N/A; no further action required.	N/A



NETWORK CAMERA
MODEL: PNM-9002VQ
PoE(53V ) 0.45A



M/C: PNM-9002VQ/KUS Fac. ID: D



2020.08 S/N: XXXXXXXXXXXXXXXXX

MAC ADDRESS: XX-XX-XX-XX-XX-XX

CAN ICES-3(A)/NMB-3(A)

HANWHA TECHWIN CO.,LTD.

MADE IN KOREA



Test Record No. 1

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of IP CAMERA, PNM-9002VQ.
3. Only the test listed were considered necessary.

The following tests were conducted:

Tests performed (name of test and test clause):	Testing location: None
MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)	
DETERMINATION OF WORKING VOLTAGE (5.4.1.8)	
WALL OR CEILING MOUNTING TESTS (8.7)	
INPUT TEST: SINGLE PHASE (B.2.5)	
SIMULATED SINGLE FAULT CONDITIONS (B.4)	
PROTECTION CIRCUITS FOR BATTERIES (ANNEX M.3.2)	
The following tests were waived:	Rationale for Waiving

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description
Datasheet	02-01	Datasheet