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Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

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Please find attached the related material

For your convenience, the below describes the related updates:

Section(s) A6159 were added.

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E158873-20230417A-CertificateofCompliance
E158873-A6159-DescriptionUL
Figure-33-Total
E158873-A6159-TestRecordUL

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Times change, Trust Remains™

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-2316692-0  
**Report Reference** E158873-20230417  
**Date** 19-Apr-2023

**Issued to:** Hanwha Vision Co Ltd  
6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si,  
Gyeonggi-do 13488  
Republic of Korea

**This is to certify that representative samples of** AZOT - Audio/Video, Information and Communication Technology Equipment

See Addendum Page for Product Designation(s).

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

**Standard(s) for Safety:** UL 62368-1, 3rd Ed., Issue Date: 2019-12-13, Revision Date: 2021-10-22

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

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance 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.

  
Deborah Jennings-Conner, VP Regulatory Services

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# CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2316692-0  
Report Reference E158873-20230417  
Date 19-Apr-2023

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

Model	Category Description
XNP-C6403R	NETWORK CAMERA
XNP-C8253R	NETWORK CAMERA
XNP-C9253R	NETWORK CAMERA



*Deborah Jennings-Conner*  
Deborah Jennings-Conner, VP Regulatory Services

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-CA-2314625-0  
**Report Reference** E158873-20230417  
**Date** 19-Apr-2023

**Issued to:** Hanwha Vision Co Ltd  
6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si,  
Gyeonggi-do 13488  
Republic of Korea

**This is to certify that representative samples of** AZOT7 - Audio/Video, Information and Communication Technology Equipment Certified for Canada  
See Addendum Page for Product Designation(s).

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

**Standard(s) for Safety:** CSA C22.2 No. 62368-1:19, 3rd Ed., Issue Date: 2019-12-13, Revision Date: 2021-10-22

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

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance 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.

  
Deborah Jennings-Conner, VP Regulatory Services

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# CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2314625-0  
Report Reference E158873-20230417  
Date 19-Apr-2023

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

Model	Category Description
XNP-C6403R	NETWORK CAMERA
XNP-C8253R	NETWORK CAMERA
XNP-C9253R	NETWORK CAMERA

  
Deborah Jennings-Conner, VP Regulatory Services



UL LLC

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## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
<b>Certification Type:</b>	Listing
<b>CCN:</b>	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
<b>Complementary CCN:</b>	N/A
<b>Product:</b>	NETWORK CAMERA
<b>Model:</b>	XNP-C9253R, XNP-C8253R, XNP-C6403R
<b>Rating:</b>	PoE(55 Vdc), 0.72 A
<b>Applicant Name and Address:</b>	HANWHA VISION 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: Seohwan Kim / Project Handler      Reviewed By: SeungTae Kim / 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 outdoor use and integrated a hole for mount.

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

### Model Differences

XNP-C9253R is basic model.

XNP-C8253R, XNP-C6403R are identical to basic model except model designation, resolution Specification, temperature spec.

XNP-C9253R

Resolution Specification: 4K

Tma : 55°C (Minimum-40°C)

XNP-C8253R

Resolution Specification: 6M

Tma : 55°C (Minimum-40°C)

XNP-C6403R

Resolution Specification: 2M

Tma : 50°C (Minimum-40°C)

### Test Item Particulars

Product group	end product
Classification of use by	Instructed person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	PoE (Power over Ethernet-55Vdc)
Considered current rating of protective device	N/A
Equipment mobility	wall/ceiling-mounted
Over voltage category (OVC)	OVC I

Class of equipment	Class III
Special installation location	Outdoor location
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	55 Outdoor: minimum -40
IP protection class	IP 66
Power systems	not AC mains
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	3.23

#### 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 product is intended for use on the following power systems : No direct connection
- Considered current rating of protective device as part of the building installation (A) : N/A
- Mains supply tolerance (%) or absolute mains supply : No direct connection
- The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The outdoor equipment/enclosure was evaluated for use in an ambient temperature range of: -40 °C to +55 °C

#### Additional Information

4790780131

Continuous operation (IR LED on, fan operating), (Optional features: Heater on)

#### 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)
Outdoor enclosure type	"Rainproof", IP66
Installation Manual	These servicing instructions are for use by qualified service personnel only.
Hard Copy	A. IMPORTANT or ATTENTION or similar wording.B. Please check 'Manuals' from our website, before connecting to the supply.C. Company website URL ( <a href="https://www.~~">https://www.~~</a> ) or QR code.

(Website) Manual - 1	This product is intended to be supplied by UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (55 Vdc), 0.72A
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3bt 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.
<b>Special Instructions to UL Representative</b> N/A	

<b>BD1.0</b>						
<b>TABLE: Production-Line Testing Requirements</b>						
<b>BD1.1</b>						
<b>Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.</b>						
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
<b>BD1.2</b>						
<b>Earthing Continuity Test Exemptions – This test is not required for the following models:</b>						
All models						
<b>BD1.3</b>						
<b>Electric Strength Test Exemptions – This test is not required for the following models:</b>						
All models						
<b>BD1.4</b>						
<b>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.</b>						
All models						

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

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
FIBER PoE Injector	CREATIVE LIANJIE NETWORK TECHNOLOGY CO LTD	PT-PSE106GBR- AH-S	Rated output 55 Vdc, 1.1 A, marked "LPS" or "Class 2"	AZOT	UL (E487558)	
Enclosure Main cover (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1) (S2000VUR)	Min. 2.0 mm thickness, rated Min. V-2	QMFZ2	UL (E41179)	
Enclosure Micro SD Card Cover (Plastic)	LOTTE CHEMICAL CORPORATION	QC-122(+)(f1) (QC-1220UR)	Min. 2.0 mm thickness, rated Min. V-2	QMFZ2	UL (E115797)	
Enclosure Bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 1.7 mm thickness.	-	-	
Enclosure PoE connect cover (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 1.7 mm thickness.	-	-	
Bottom Enclosure (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness.	-	-	
Internal Metal	Interchangeable	Interchangeable	Aluminum, Min. 1.7 mm thickness.	-	-	
Internal Plastic	SAMYANG CORPORATION	TRIREX 3500G20	Min. 2.0 mm thickness, rated Min. V-0	QMFZ2	UL (E121254)	
Internal Plastic	Interchangeable	Interchangeable	Min. 2.0 mm thickness, rated Min. V-0	QMFZ2	UL	
Line Filter (LF2)	TNC CO., LTD	CVA6011RNF2	11 uH, 105 deg. C, See enclosure for more detail.	-	-	
Line Filter (LF2) - Alternate	HEFEI PHOENIX ELECTRONICS TECHNOLOGY CO LTD	CVA60111RNF2	11.0 uH, 100 deg. C, See enclosure for more detail.	-	-	

Line Filter (LF1)	TNC CO., LTD	QV181610A	7.0mH, 120 deg. C, See enclosure for more detail.	-	-	
Opto-coupler (PC1)	LITE-ON TECHNOLOGY CORP	LTV-1DXX(&)	Isolation Voltage: 5000. Max. Operation Temperature:110 deg. C	FPQU2	UL (E113898)	
Opto-coupler (PC1) -Alternate	CT Microelectronics Far East Ltd	CT-101(X1)(X2)	Isolation Voltage: 5 000. Max. Operation Temperature: 110 deg. C	FPQU2	UL (E364000)	
Transformer(T1)	CLOVER Hi-Tech co., LTD.	PN042HTCA-9080VQ	130 deg. C, See enclosure for more detail.	-	-	
Transformer(T1) - Alternate	COREPLUS CO LTD	1400651	130 deg. C, See enclosure for more detail.	-	-	
Heatsink (HS1, HS2)	Interchangeable	Aluminum	Approx. 45.0mm by 20.0 mm by 10.0 mm, Min. 0.05 mm thickness, secured on PCB by soldering	-	-	
DC Fan 1	HUI TONG ELECTRONIC CO LTD	HTD-040(X)12M (HTD040D12M)	12 Vdc, 0.07 A, 4000 RPM (N/15000+K/2400 = 0.275738 < 1, N=4000, K=21.7728)	GPWV2	UL (E311396)	
DC Fan 2	HUI TONG ELECTRONIC CO LTD	HTD-025(X)12L (HTD-025D12L)	12 Vdc, 0.06 A, 9500 RPM (N/15000+K/2400 = 0.275738 < 1, N=9500, K=21.7728)	GPWV2	UL (E311396)	
Pan / Tilt Motor (Stepping motor)	DONGGUAN SHINANO MOTOR CO., LTD.	STH-42C2010	Rated 12 Vdc, 1.0 A Hybrid stepping type.	-	-	
Pan / Tilt Motor (Stepping motor)	ASPINA DONGGUAN	STH-36C0068-01	Rated 12 Vdc, 0.4 A Hybrid stepping type.	-	-	

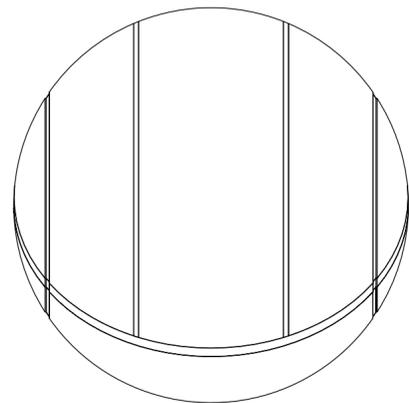
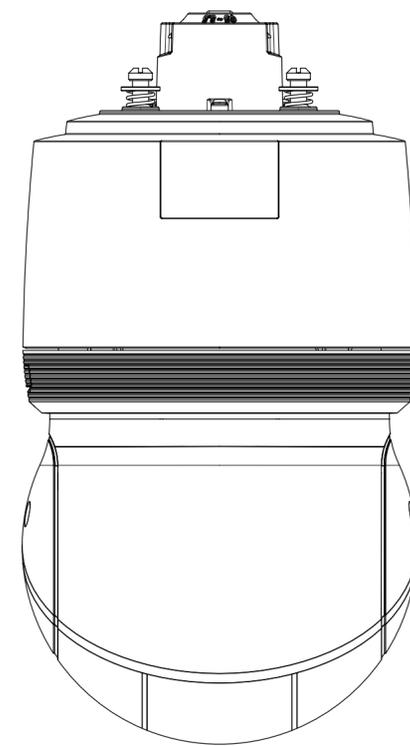
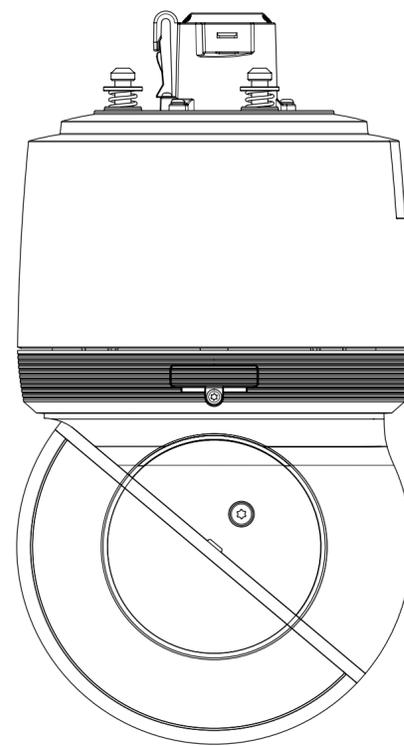
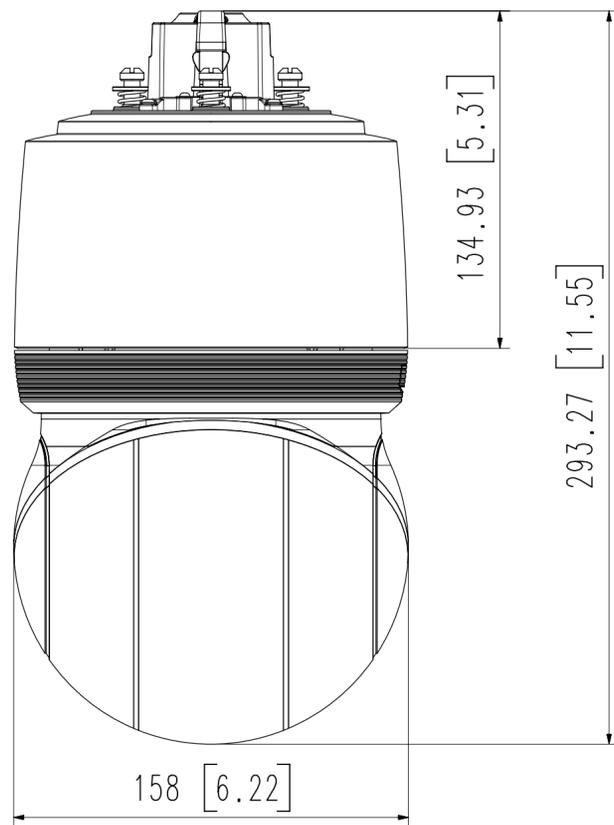
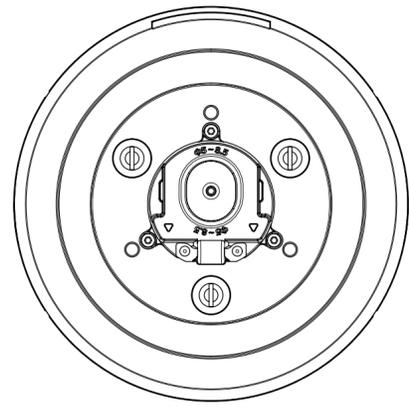
	SHINANO MOTOR CO., LTD.					
Iris motor (Stepping motor)	NEW ASIA OPTICAL INDUSTRY CO.,LTD	CL7-IRIS	Rated 4.0+2Vdc	-	-	
Zoom/lens motor 1(Stepping motor)	NIDEC SANKYO CORPORATION	MSEV020G65	Rated 5.0Vdc, pulse rate 80 pps	-	-	
Day/Night motor (Stepping motor)	NEW ASIA OPTICAL INDUSTRY CO.,LTD	CL7-VCL-C	Rated 3.0+0.5 Vdc, Max pulse rate 300 pps	-	-	
Stepping motor	VIDE TECHNOLOGY CO.,LTD	VGSM1558	Rated 12 Vdc, Max pulse rate 1200 pps	-	-	
Focus motor(Stepping motor) (3ea)	TOKYO MICRO INC.	8S-486L99	Rated 5.0 Vdc, Max pulse rate 1500 pps	-	-	
Rechargeable battery(BAT1)	FDK CORPORATION	ML614R-TT31	Lithium, Rechargeable, Max ChargingVoltage, 5 V dc, Max Charging current: 300 mA	BBCV2	UL (MH13421)	
Lithium Battery Protection Circuit	Interchangeable	Interchangeable	Diode(D4, 80 V, 100 mA) and Resistor(R22, 3.3Kohm) in series	-	-	
Heater (R2 to R22) (21ea)	Interchangeable	Interchangeable	5.6 ohm, 0.14W each	-	-	
LED (LED Right board, LED (LD1, LD2, LD3), Left board (LD1, LD2, LD3) (Total 6ea)	OSRAM	SFH4715AS	VF =Max. 4.7 V, IF=Max.3 A	-	-	
Gasket – Dome cover	Namyang Vina	O-VMQ-40-BK	Gasket Test was conducted under E158873-A6034	-	-	

Gasket- Between Top Enclosure and Bottom Enclosure	Namyang Vina	O-VMQ-40-GR	Gasket Test was conducted under E158873-A6034	-	-	
Gasket – Mirco Cover	Namyang Vina	O-VMQ-50-GR	Gasket Test was conducted under E158873-A6034	-	-	
Gasket – Power board Eclosure	Namyang Vina	O-VMQ-60-BL	Gasket Test was conducted under E158873-A6034	-	-	
Gasket – PoE cover	Namyang Vina	O-VMQ-50-TR	Gasket Test was conducted under E158873-A6034	-	-	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Cable – Between Network board and Power board	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
Cable – Between Network board and Motion board	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
PCB	EXPRESS ELECTRONICS LTD	14MV0	Min. V-0, 130 deg. c	ZPMV2	UL (E157925)	
PCB (Alternate)	Interchangeable	Interchangeable	Min. V-0, 130 deg. c	ZPMV2	UL	
FPCB	Interchangeable	Interchangeable	Min. V-0, 130 deg. C.	ZPXK2 or ZPMV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Min. 55 deg. C if max. Surface temperature not specified.	PGJ12	UL	

## Enclosures

Type	Supplement Id	Description
Photographs	03-01	Over view 1
Photographs	03-02	Over view 2
Photographs	03-03	Dome-cover open
Photographs	03-04	Heater board top
Photographs	03-05	Heater board bot
Photographs	03-06	DC motor with cover top
Photographs	03-07	DC motor with cover inner
Photographs	03-08	IR Control board top
Photographs	03-09	Hall board top
Photographs	03-10	Hall board bot
Photographs	03-11	Camera Module
Photographs	03-12	Camera Module inner view
Photographs	03-13	Sensor board
Photographs	03-14	Driver board top
Photographs	03-15	Driver board bot
Photographs	03-16	SD card slot board
Photographs	03-17	DC fan
Photographs	03-18	IR LED board left
Photographs	03-19	IR LED board right
Photographs	03-20	Motion board
Photographs	03-21	Network board top
Photographs	03-22	Network board bot
Photographs	03-23	Power board top
Photographs	03-24	Power board bot
Photographs	03-25	Adapter
Diagrams	04-01	Diagram
Manuals	06-01	Manual
Miscellaneous	07-03	Line Filter Specification 1
Miscellaneous	07-04	Transformar Specification
Miscellaneous	07-06	Label XNP-C9253R
Miscellaneous	07-07	Label XPN-C8253R
Miscellaneous	07-08	Label XPN-C6403R
Miscellaneous	07-09	Line Filter Specification 2

The following Page(s) are related to Diagrams-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



3	XNP-C6403(R)	
2	XNP-C8253(R)	
1	XNP-C9253(R)	'23.02.27
No.	MODEL NAME	DATE
Unit:mm[inch]		SCALE:1/2
© Hanwha Techwin		

The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

# NETWORK CAMERA

User Manual

XNP-C9253R/XNP-C9253

XNP-C8253R/XNP-C8253

XNP-C6403R/XNP-C6403

# Network Camera

## User Manual

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### Disclaimer

Hanwha Vision makes the best to verify the integrity and correctness of the contents in this document, but no formal guarantee shall be provided. Use of this document and the subsequent results shall be entirely on the user's own responsibility. Hanwha Vision reserves the right to change the contents of this document without prior notice.

※ Design and specifications are subject to change without prior notice.

※ The initial administrator ID is "admin" and the password should be set when logging in for the first time.

Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.  
Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.

## 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 UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE(55V), 0.72A.(XNP-C9253R/XNP-C8253R/XNP-C6403R)
16. This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE(53V), 0.49A.(XNP-C9253/XNP-C8253/XNP-C6403)
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.



23. If your product works normal, the degree of preset precision is 0.1°. In the case of reboot due to outage, firmware upgrade, etc., its tolerance might have to be adjusted after checking for any changes in Preset setup.
24. The operating temperature of the product is -40°C to +55°C (-40°F ~ +131°F). (XNP-C9253R/XNP-9253/ XNP-8253R/XNP-8253)
25. The operating temperature of the product is -40°C to +50°C (-40°F ~ +122°F). (XNP-C6403R/XNP-C6403)
26. The heater turns on when the ambient temperature is below 12°C(53.6°F) and off when it is above 15°C(59°F).

## WARNING

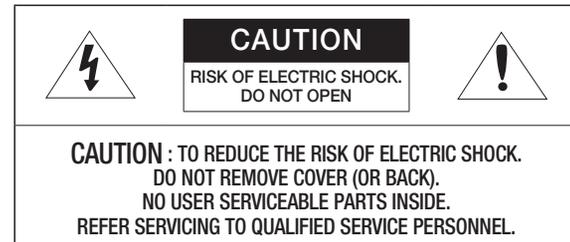
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

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.

**Pan/Tilt/Zoom motors and slip ring are warranted for one year under continuous operation.**

## 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.

## 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.

## CAUTION

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.

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 802.3bt 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.(XNP-C9253R/XNP-C8253R/XNP-C6403R)**

**The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3at 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.(XNP-C9253/XNP-C8253/XNP-C6403)**

**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.
- When connecting the HPoE injector to the external Internet, use either one of network cable port (LAN) or fiber optic port (SFP) but not both.

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.

In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

## RECOMMENDED PC SPECIFICATIONS

---

- CPU : Intel(R) Core(TM) i7 3.4 GHz or higher
  - RAM : 8G or higher
  - Recommended browser: Chrome
  - Supported browsers: Chrome, Safari, Firefox, MS Edge(chromium based)
  - Supported OS : Windows, Mac, Linux, Android, iOS, Chrome
  - Verification environment
    - Windows 10: Google Chrome version 80 or later, Firefox version 72 or later, MS Edge version 83 or later
    - Mac 10.13/14: Safari version 11.0.1 or later
- ※ The video play performance of the web viewer depends on the performance of the user's CPU and GPU.

## RECOMMENDED MICRO SD/SDHC/SDXC MEMORY CARD SPECIFICATIONS

---

- Recommended capacity : 16GB to 1TB (MLC type required)
  - Recommended Manufacturers : SanDisk, Transcend
  - Product Type : High endurance
  - The compatibility varies depending on the card manufacturers and types.
-  ■ Micro SD card can support up to 1 TB if two slots are used. Each slot supports up to 512 GB, and one slot cannot support 1 TB by itself.

## NAS RECOMMENDED SPECS

---

- Recommended capacity : 200GB or higher is recommended.
- For this camera, you are recommended to use a NAS with the following manufacturer's specs.  
Recommended products : QNAP NAS, Synology NAS

## WHAT'S INCLUDED

Please check if your camera and accessories are all included in the product package.  
(As for each sales country, accessories are not the same.)

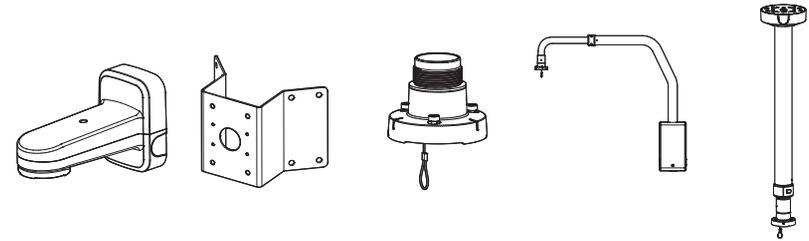
Appearance	Item Name	Quantity	Description	Model Name	
	Main Body	1		XNP-C9253R/XNP-C9253/ XNP-C8253R/XNP-C8253/ XNP-C6403R/XNP-C6403	
	Quick Guide (Optional)	1			
	Cap Installer	1	Used to connect the network cable		
	Bushing clip	1	Used as a means of preventing cable bushing from being separated or falling apart from the hole.		
	Cable Bushing	1	Extra cable bushing for network cable installation.		
 (SPO-6011)	HPoE injector	1	Connects power supply and network		XNP-C9253R/ XNP-C8253R/ XNP-C6403R
	Power cord	1	Connects to HPoE injector		

## NETWORK I/O BOX - SEPARATELY SOLD PRODUCT

Appearance	Item Name	Description	Model Name
	Network I/O box	External connection device for camera's alarm and audio I/O	SPM-4210

## OPTIONAL ACCESSORIES FOR INSTALLATION

You can purchase appropriate optional accessories available.



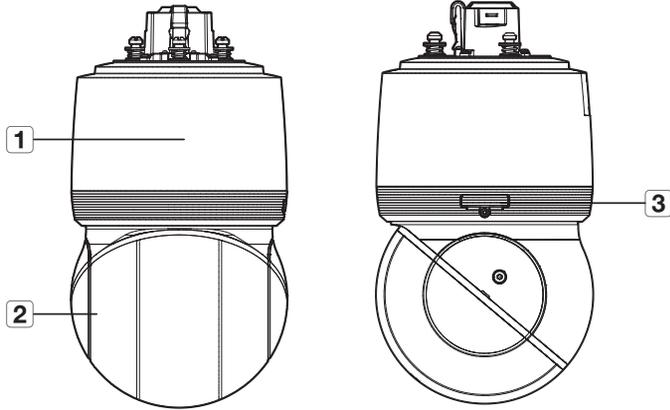
Wall & Pole Mount	Corner Mount	Hanging Mount	Parapet Mount	Ceiling Mount
SBP-156WMW	SBP-156KMW	SBP-156HMW	SBP-156LMW	SBP-156CMW

**\* This mount can be used after being attached to hanging mount**

SBP-300LMW (Parapet Mount)  
SBP-300CMW (Ceiling Mount)  
SBP-300WMW (Wall Mount)  
SBP-300WMW1 (Wall Mount)  
SBP-300PMW (Pole Mount)  
SBP-300KMW (Corner Mount)

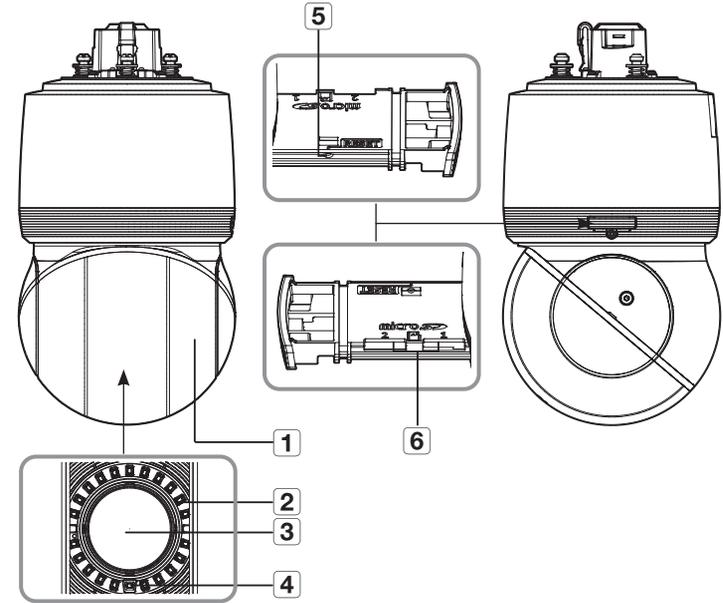
AT A GLANCE

Appearance



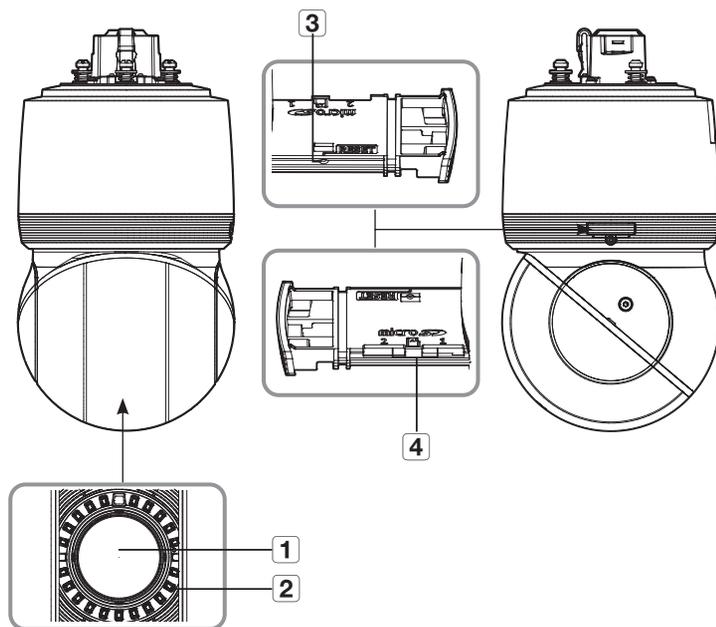
Item	Description
<b>1</b> Main cover	Protects the internal PTZ mechanism from the direct sunlight, rain or external impact.
<b>2</b> Dome cover	Shield cover for the lens and unit protection.
<b>3</b> Micro SD Card cover	The Micro SD card slot and reset button are located inside and can be opened using Torx drivers, etc.

Inside(XNP-C9253R/XNP-C8253R/XNP-C6403R)



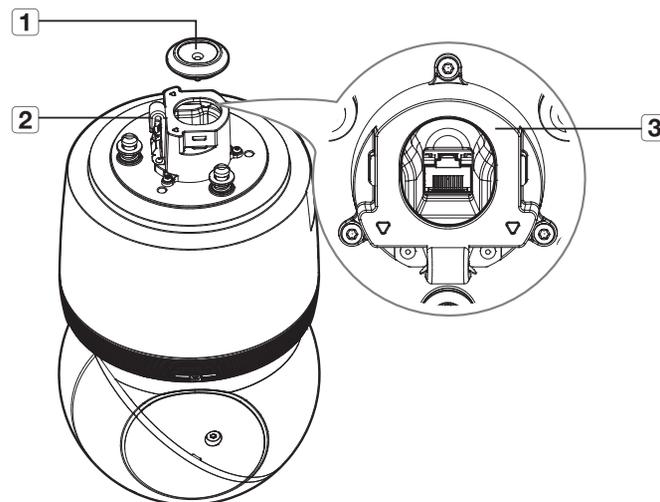
Item	Description
<b>1</b> IR LED	These infrared LED's are controlled by the illumination sensor.
<b>2</b> Heater	At a certain temperature below the threshold, it automatically operates, or you can turn it on manually in the web viewer.
<b>3</b> Lens	Lens for the camera.
<b>4</b> Illumination Sensor	Detects incoming light to control the IR LED.
<b>5</b> Reset button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. <b>!</b> If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the Device Manager program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.
<b>6</b> Micro SD Card slot	Compartment for the Micro SD card.

## Inside(XNP-C9253/XNP-C8253/XNP-C6403)



Item	Description
<b>1</b> Lens	Lens for the camera.
<b>2</b> Heater	At a certain temperature below the threshold, it automatically operates, or you can turn it on manually in the web viewer.
<b>3</b> Reset button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. <b>!</b> If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the Device Manager program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.
<b>4</b> Micro SD Card slot	Compartment for the Micro SD card.

## Mounting surface



Item	Description
<b>1</b> Cable bushing	A waterproof rubber cap, which allows a network cable to go through it.
<b>2</b> Safety wire hook	Hang this hook on the safety wire of the mount when installing this product to prevent it from falling.
<b>3</b> Network port	A port that connects to the HPoE injector and network cable for power and network connection.(XNP-C9253R/XNP-C8253R/XNP-C6403R) A port that connects to the PoE+ router and network cable for power and network connection.(XNP-C9253/XNP-C8253/XNP-C6403)

## 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.

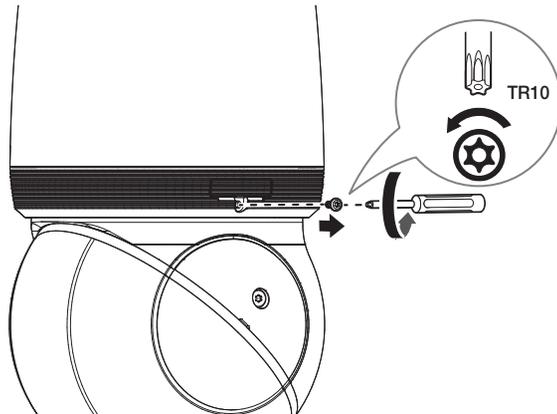
### Precautions before installation

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.

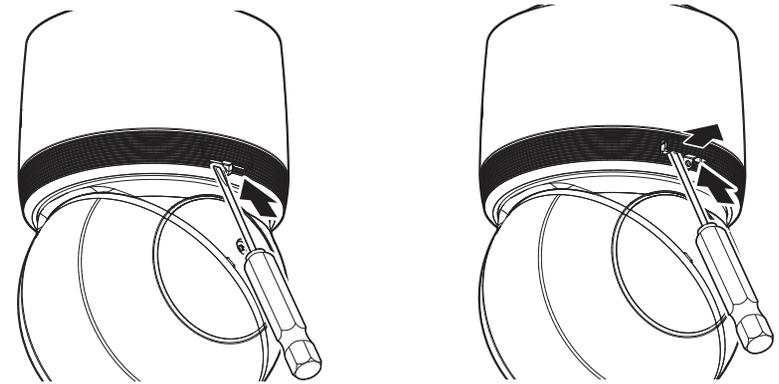
### Inserting a Micro SD card

1. Unfasten screw on the Micro SD card cover by turning them counterclockwise using the Torx screwdriver.

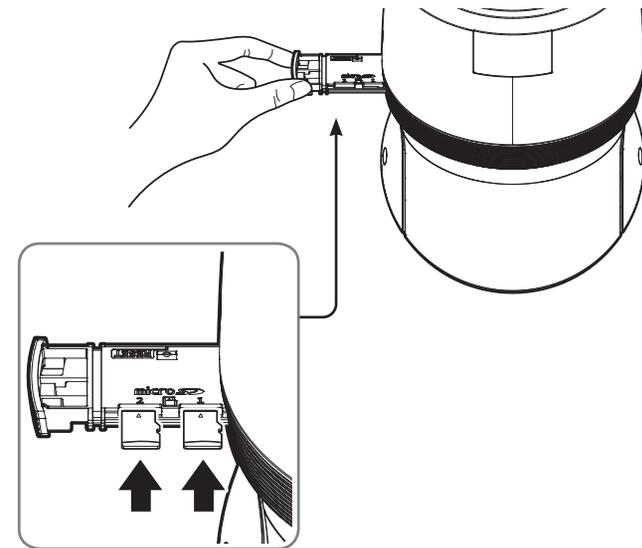


- ! Disconnect the power cable from the camera before inserting the Micro SD card.
- ! When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- ! When installing/removing the Micro SD card, make sure you put the product body on a flat ground before working on it in order to prevent accidents due to loss or drop of any parts.
- ! Do not remove the screws.

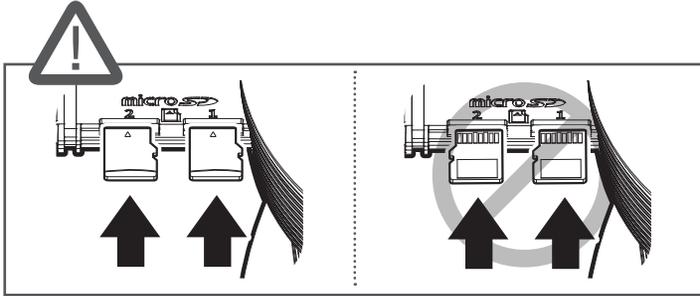
2. Push in a flathead screwdriver under the slot to pull out the Micro SD card slot.



3. Insert Micro SD cards in the direction of the arrows as shown in the figure.



- ! Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.

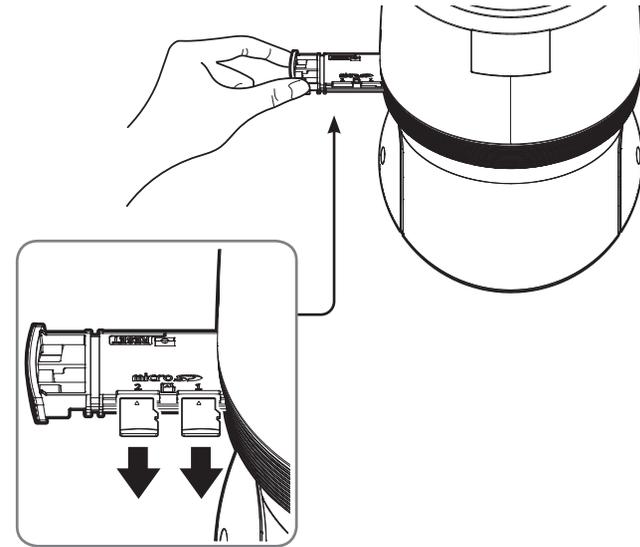


- After inserting the Micro SD cards, push the Micro SD card slot until it clicks into place.
- Fix the Micro SD card slot using screws.

- ! Tighten the screws when assembling the Micro SD card cover to prevent moisture penetration.

## 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.



- ! Before removing the Micro SD card, in **<Setup (⚙)>** **<Event>** **<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.

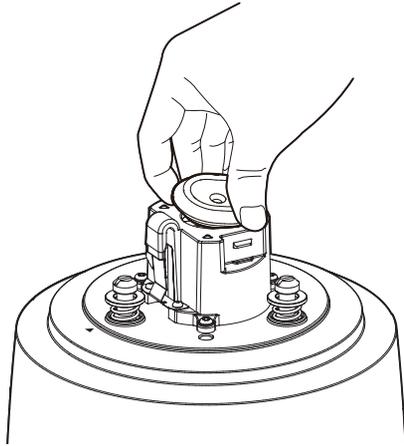
## Preparing & Installing Camera Mount

For installation guidelines for mounts, refer to the installation manual that is enclosed with the mount.

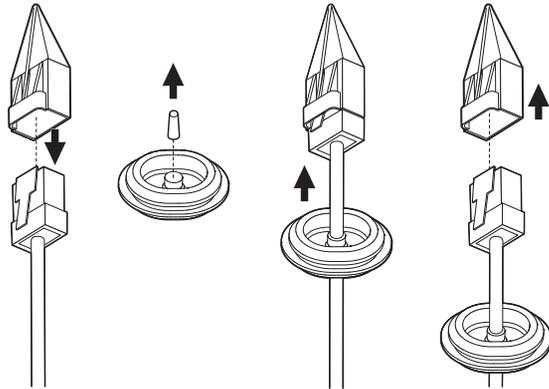
- 📄 See **"Optional Accessories for Installation"** for the appearance of each mount (unbundled). (page 7)

### Getting ready for network cable installation

1. Remove the cable bushing.

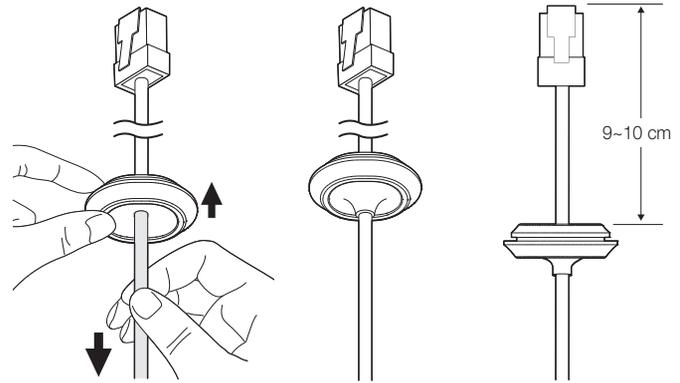


2. Pull off the extruded part of the removed cable bushing.
3. Use the cap installer to route the network cable through the cable bushing.



- ☑ ■ If the cable bushing is torn, use the extra cable bushing provided.

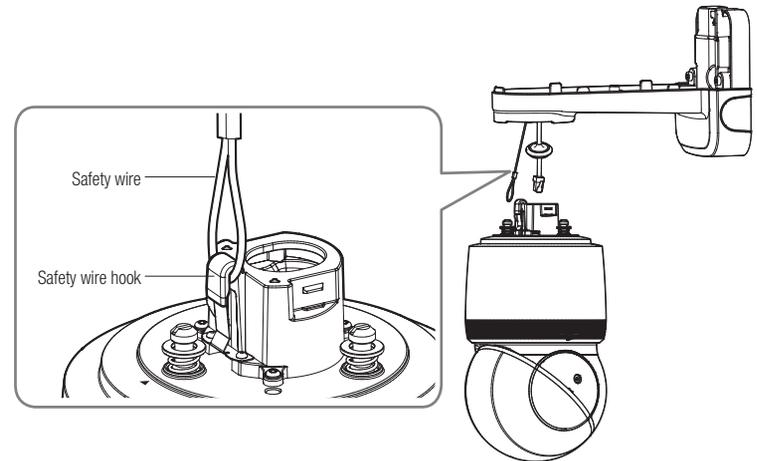
4. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.



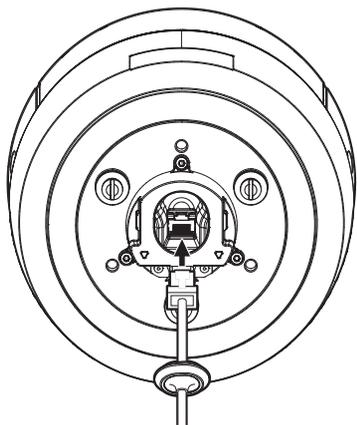
### Installing using wall & pole mount

- ! ■ Connect the power only after installation is complete. Supplying power while the installation is in progress may cause fire or damage the product.

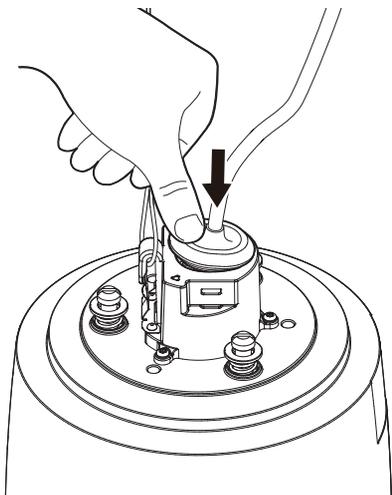
1. Hang the safety wire of the wall & pole mount on the safety wire hook of the product.



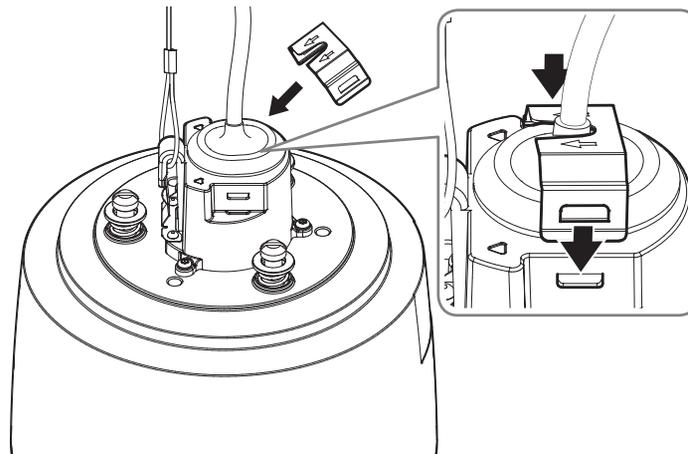
2. Connect the network cable to the network port.



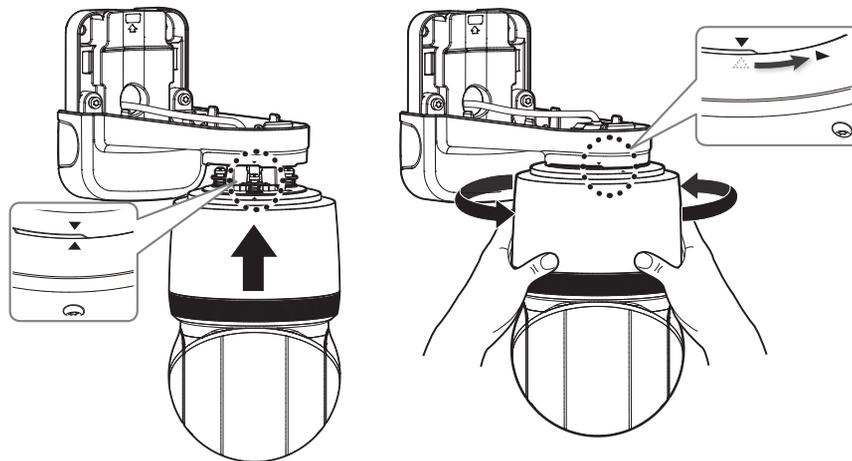
3. Plug the cable bushing of the network cable in the hole.  
When plugging it in, press the whole bushing area evenly so that it is properly plugged in.



4. Install the bushing clip.  
Let the arrow mark on the clip point in the direction of the safety wire hook, and click each side into place one at a time.

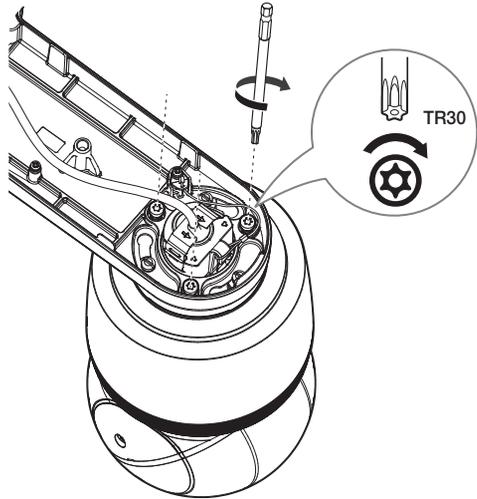


5. After aligning the installation direction guides of the camera and wall & pole mount, push the main cover upward and turn it counterclockwise until it is secured.

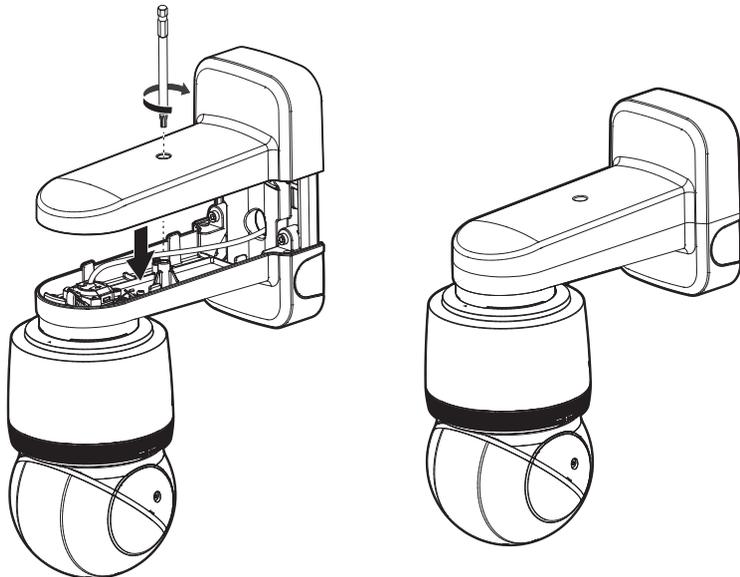


! The length and width of the cable bushing are different. Check the shape and plug it in the right direction.

6. Tightly fasten the 3 mounting screws on the inside of the Wall & Pole Mount.

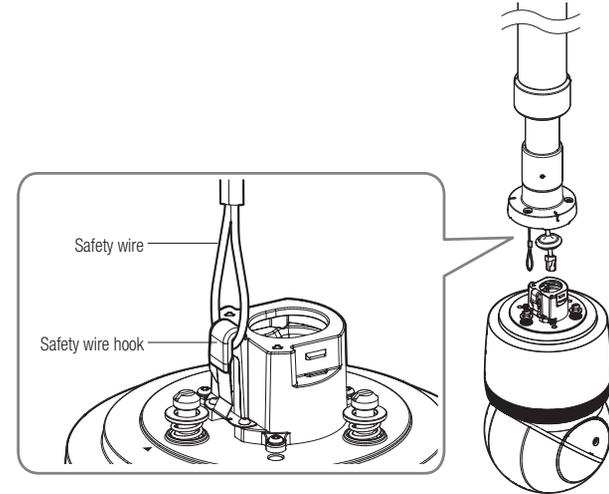


7. Join the top cover of the wall & pole mount.

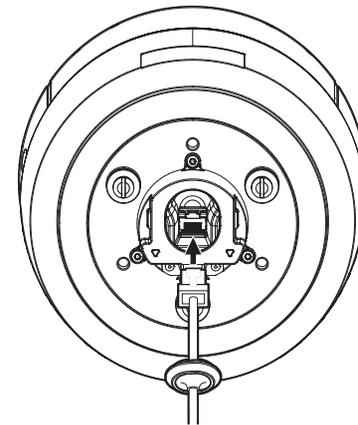


## Installing using ceiling or parapet mount

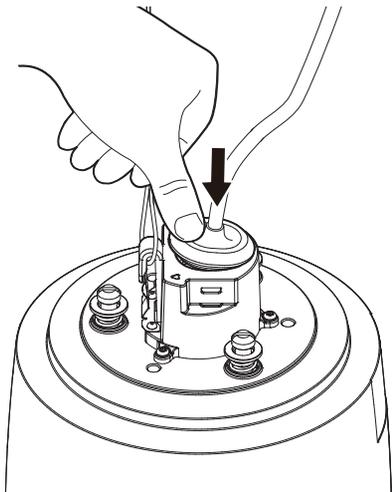
1. Hang the safety wire of the mount on the safety wire hook of the product.



2. Connect the network cable to the network port.

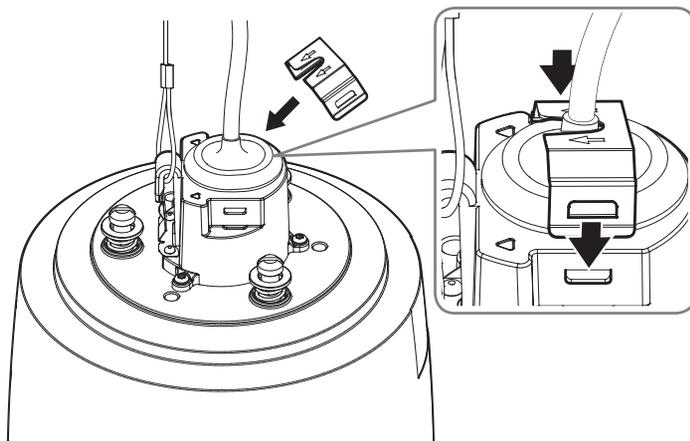


3. Plug the cable bushing of the network cable in the hole.  
When plugging it in, press the whole bushing area evenly so that it is properly plugged in.

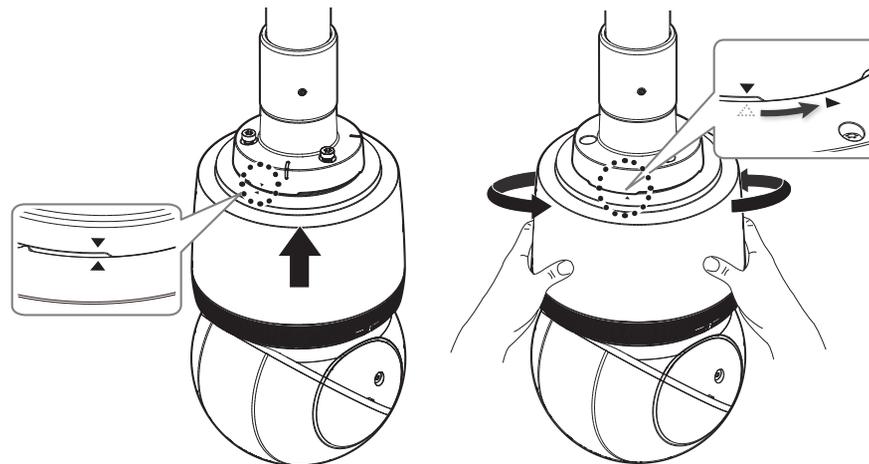


 The length and width of the cable bushing are different. Check the shape and plug it in the right direction.

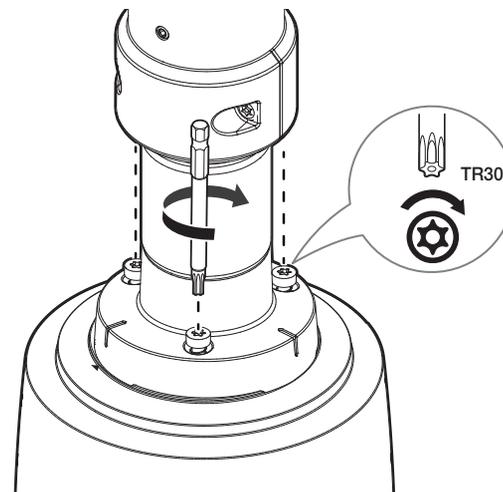
4. Install the bushing clip.  
Let the arrow mark on the clip point in the direction of the safety wire hook, and click each side into place one at a time.



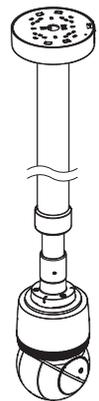
5. After aligning the installation direction guides of the hanging mount, push the main cover upward and turn it counterclockwise until it is secured.



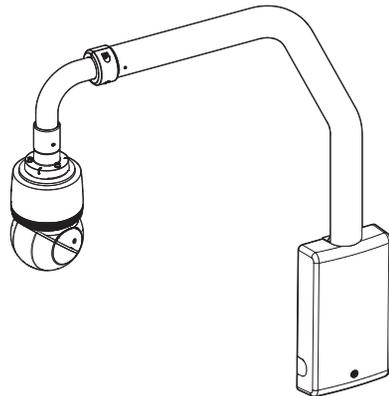
6. Tightly fasten the 3 mounting screws on the top side of the mount.



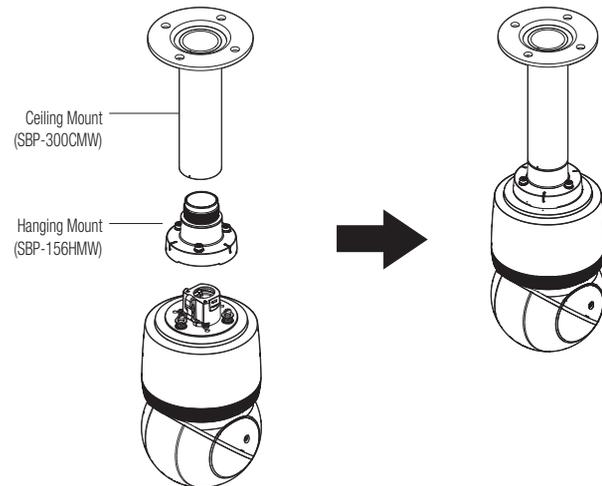
## ▪ Joined with official product mounts (ceiling/parapet)



Ceiling Mount  
(SBP-156CMW)

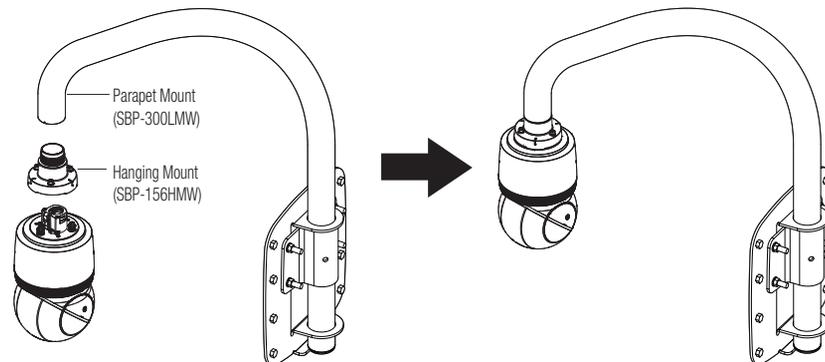
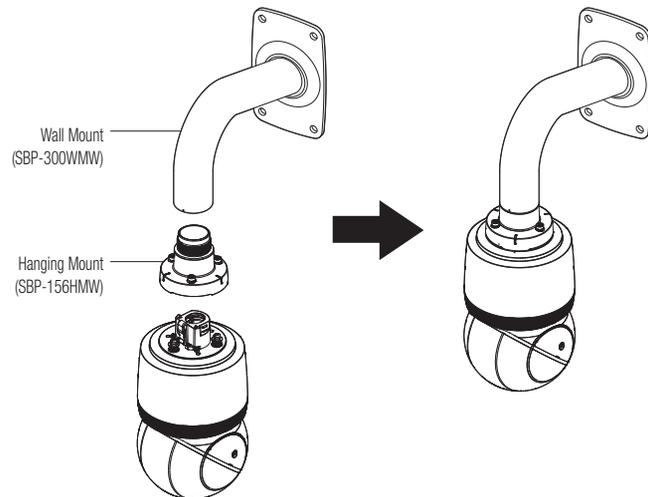


Parapet Mount  
(SBP-156LMW)



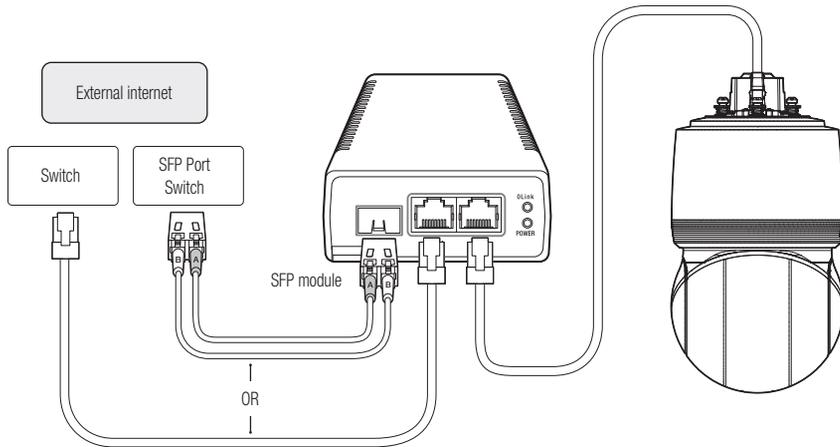
## ▪ Joined with mounts other than official product mounts

If you use hanging mount, you can install the camera onto any mount other than the official product mount.



## POWERING AND NETWORKING

To use XNP-C9253R/XNP-C8253R/XNP-C6403R models, connect the HPoE injector shipped together.  
To use XNP-C9253/XNP-C8253/XNP-C6403 models, connect a PoE+-supported router or PoE+ injector.



- ❗ The product cannot be used at  $-40^{\circ}\text{C}$  or below ambient temperature.
- The product may not be defrosted depending on the installation area at  $-40^{\circ}\text{C}$ .
- After the product is left alone under a low temperature environment, it will take up to 2 hours to normally operate.
- If the product is turned on after being exposed to  $-20^{\circ}\text{C}$  or below environment for some time, reset the time.
- Use the provided HPoE injector when connecting power and network. (XNP-C9253R/XNP-C8253R/XNP-C6403R)
- Use a PoE+ device that complies with the IEEE 802.3at standard. (XNP-C9253/XNP-C8253/XNP-C6403)
- If you connect using an PoE+ -enabled router, you don't need a separate power supply cable to power it on.(XNP-C9253/XNP-C8253/XNP-C6403)
- Use only either one of network cable or fiber optic cable for connection.

## Network Cable Specification

Item	Contents	Remark
Connector	RJ45 (10/100BASE-T)	
Ethernet	10/100BASE-T	
Cable	UTP Category 5e	
Max Distance	100 m	DC Resistance $\leq 0.125 \Omega/\text{m}$
PoE Support	HPoE (XNP-C9253R/XNP-C8253R/XNP-C6403R) PoE+ (XNP-C9253/XNP-C8253/XNP-C6403)	

- ⚡ Use an STP cable to increase the protection from thunderstroke damage.

## SFP port Specification

Support SFP Voltage	3.3 V Typical
Support SFP Current	300 mA Max.
Support SFP Cage	Standard mini-SFP Cage(for 6.5 mm pitch SFP)
Support SFP Port Type	LC Type
Required SFP Speed	1250 Mbps(For 1000 Mbps Ethernet)
Required SFP's BER(Bit Error Rate)	Max $10^{-12}$
Transmission Method(Optical)	Mode Depends on SFP Module
Optical Mode(Long/Short Wave)	Mode Depends on SFP Module
Cable Insertion Loss(dB)	Mode Depends on SFP Module

- ❗ The connection/disconnection of the SFP module must be made only when the power is off.
- A kink in the optical cable may disrupt the connection for communication.
- Do not directly look at the optical cable. It can damage your eyes.



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.



Hanwha Vision 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 Vision'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.



The following Page(s) are related to Miscellaneous-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

## 2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	2.0A			
3	INDUCTANCE	START-FINISH	16KHz	7.0mH	MIN.	HP-4194A 1V (25°C±2°C)
4	TEMPERATURE RISE	AT RATED CURRENT	55°C MAX			
5	DC RESISTANCE	START-FINISH	156.0 mΩ MAX			HIOKI 3540 (25°C±2°C)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)

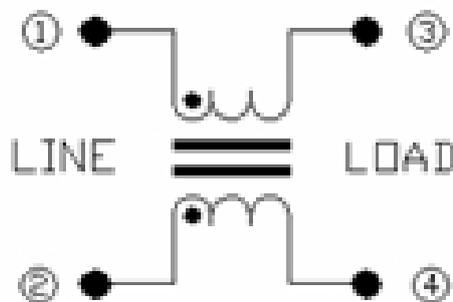
## 3. OPERATING TEMPERATURE RANGE

-30°C TO +120°C INCLUDING TEMPERATURE RISE.

## 4. KEEP TEMPERATURE RANGE

-30°C ~ +60°C.

## 5. CIRCUIT DIAGRAM



**TNC** TNC CO.,LTD

DESIGN

RYU.H.E  
R&D

CHECK

KANG.S.W  
R&D

APPROVAL

KOO.J.H  
R&D

PAGE

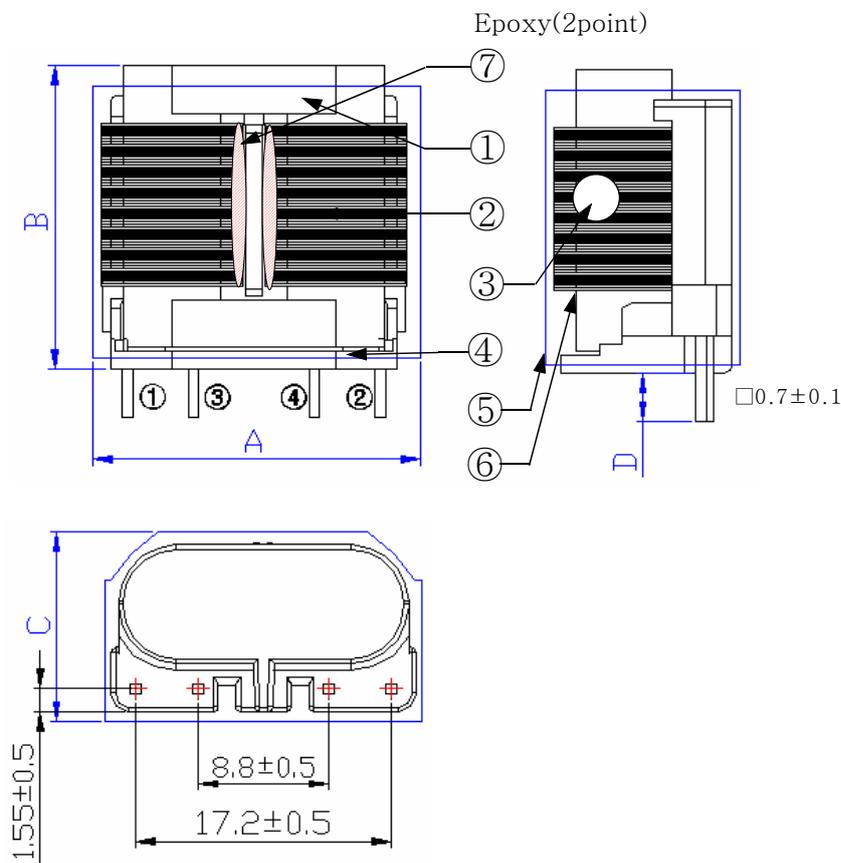
3/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

## 6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.20X1.0mm	44Ts Ref	AUTO WINDING	BETWEEN L1 AND L2 (0.23mH MAX)
L2	2	4				

## 7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	25.0mm MAX	19.5mm MAX	16.0mm MAX	Not include solder fillet $2.8 \pm 0.5$ mm

**TNC** TNC CO.,LTD

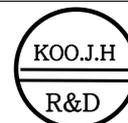
DESIGN



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APPROVAL



PAGE

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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

## 8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	COLOR	UL No.
1	Core Cover	LCP GA130(r)		POLYPLASTICS CO LTD	BLACK	E106764
2	Rectangular Copper Wire	UEW 0.20X1.0mm / 44Ts Ref	SFT- UEWH	WELL ASCENT ELECTRONIC CO LTD	YELLOW	E318511
			1UEWF /180	SHANDONG PENGTAI STOCK CO LTD	YELLOW	E166187
3	Ferrite Core	R12KF SQ1816 HL12 1816SQ		LAIWU CHAINWELL ELECTRONIC&MATERIAL.CO.,Ltd RUYUAN DONGYANGGUANG MAGNETIC MATERIAS CO.,LTD	BLACK	
4	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class		Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class		CHANG CHUN Plastics Co.,Ltd	BLACK	E59481
5	Insulation tube	Heat Shrink Tube HKCT2(HF)		HAN KYUNG COMPONENT	BLACK	E222852
6	Impregnant	DVB-2177(M)		NOROO PAINT & COATING CO.,LTD	Transparent	E93947
7	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE BLACK	
			EA610A / EA610B	Chem Tech	WHITE	
A	Marking	Bon Mar Que		T&K Toka	SILVER	
		IR-254WTSPB/MC-254WT		DOMINO	WHITE	

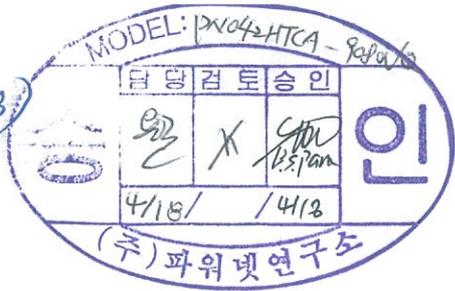
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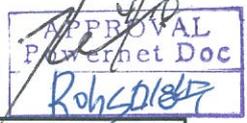
The following Page(s) are related to Miscellaneous-04. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

PN개발-승- 17110 (최권민승)



NO. \_\_\_\_\_

# SPECIFICATIONS



DESCRIPTION	TRANS-POWER S/W
SPECIFICATION	EER3019(HE4,PC40,PL-7) / 100uH±7%
MAKER SPECIFICATION	EER3019 10PIN(5+5)
PART NO.	1400651
MODEL NO.	PN042HTCA-9080VQ
SPECIAL ARTICLES	UL INSULATION SYSTEM(CLASS-B) CIS.04 SYSTEM(SC-05B)



DESIGN	CHECK	APPROVAL
Y.H CHA	G.T KIM	D.K PARK
2017. 03. 13.	2017. 03. 13.	2017. 03. 13.
A TERM OF VALIDITY	YEAR	

**Indemnification**  
Clover Hi-Tech will indemnify, hold harmless, and at POWERNET's request, defend POWERNET and POWERNET's directors, officers, employees, agents and independent contractors from and against any loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) arising out of or resulting from any third party claim that any Products and/or Components provided by Clover Hi-Tech infringes patent, copyright, trade secret right or other intellectual property right. If Clover Hi-Tech receives notice of an alleged patent, copyright, trade secret or other intellectual property right infringement or if POWERNET's use of the Products and/or the Components provided by Clover Hi-Tech shall be prevented by permanent injunction for reasons of patent, copyright or trade secret infringement, Clover Hi-Tech may, at its sole option and expense, procure for POWERNET the right to continued use of the Products and/or the Components as provided hereunder, or modify the allegedly infringing item such that it is no longer infringing, or replace the allegedly infringing item.

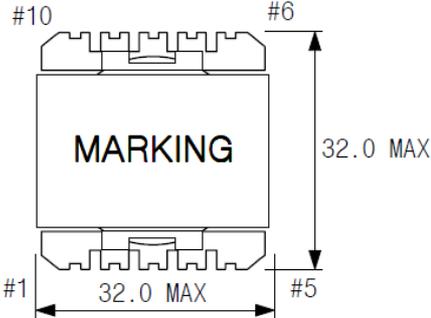
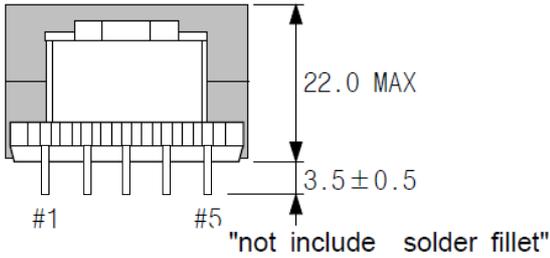
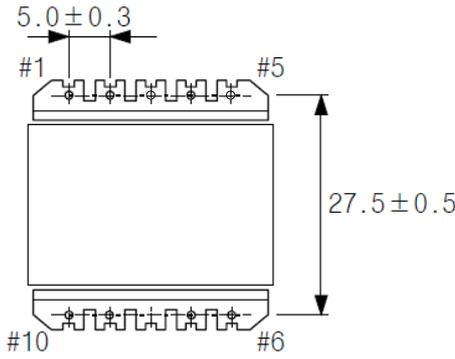
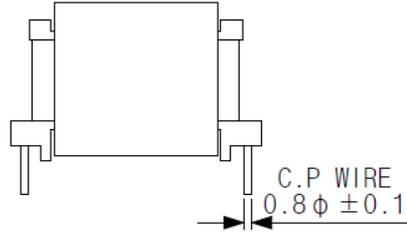
REQUEST CUSTOMER	CLOVER Hi-Tech CO., LTD.	TEL	02)453-0488
ADDRESS	HEAD QUARTER : CLOVER BLDG., 131, Samjeon-Dong, Songpa-Gu, Seoul, Korea. FACTORY 1: 268, Munhwa-Dong, Chungju-City, Chungbuk-Do, Korea FACTORY 2: 62, Shenzhen Road, Mansanzhen, Wendeng-City, Shan Dong, China. FACTORY 3: Chang Fa Management Area, Fu Shan Liad Bu Town, Dong Guan-City, Guang Dong P.R.China.		

*Handwritten signature and date: 2017.04.18*

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13		
PART NAME	TRANS-POWER S/W	PART NO	1400651		
<p><b>1. APPLICATION</b>  This Specification is applied to Inspection and Approval of the TRANSFORMER for <b>POWERNET TECHNOLOGIES.</b></p>					
<p><b>2. GENERAL PREFERENCE</b>  The reinspection &amp; re approval is required to change the structure, quality, progress of this Specification.</p>					
<p><b>3. ABSOLUTE REGULARITY</b></p> <ol style="list-style-type: none"> <li>1) Keep Temperature : -40℃ ~ 100℃</li> <li>2) Keep Humidity : 20% ~ 95%</li> <li>3) Use Temperature : -10℃ ~ 70℃</li> <li>4) Use Humidity : 20% ~ 85%</li> </ol>					
<p><b>4. MECHANICAL CHARACTERISTIC</b></p> <ol style="list-style-type: none"> <li>1) TERMINAL TENSION INTENSITY  After fix the Body The Terminal Shall withstand for 5 seconds without losing when a static load of 2.0kg is applied to drawing direction of the Terminal.</li> <li>2) TERMINAL BEND INTENSITY  The Terminal shall withstand without losing and shortage when return after bend 1 time to the left side and 1 time right side with a static load.</li> <li>3) VIBRATION TEST  After fix a Body of the Vibration Board The Terminal shall withstand without losing and bend when operate Vibration Test of 3 directions(X,Y,Z) for 2hours.  - Frequency : 10 - 55Hz  - Amplitude : 0.75mm</li> </ol>					
<p><b>5. ELECTRICAL CHARACTERISTIC</b></p> <ol style="list-style-type: none"> <li>1) INSULATION RESISTANCE <ol style="list-style-type: none"> <li>① Primary COIL TO CORE : Shall be more than 100MΩ when measured with DC500V.</li> <li>② Primary COIL to Secondary COIL : Shall be more than 100MΩ when measured with DC500V.</li> <li>③ Secondary COIL TO CORE ; Shall be more than 100MΩ when measured with DC500V.</li> </ol> </li> <li>2) WITHSTAND VOLTAGE <ol style="list-style-type: none"> <li>① Primary COIL TO Secondary COIL : Shall be no damage when measured AC1.5KV, 5mA for 1 Min.</li> <li>② Primary COIL TO CORE: Shall be no damage when measured AC1.5KV, 5mA for 1 Min.</li> <li>③ Secondary COIL TO CORE : Shall be no damage when measured AC1.5KV, 5mA for 1 Min.</li> </ol> </li> <li>3) LAYER SHORT TEST  Shall be no damage when compare a film-insulation condition with standard sample after measured Surge Voltage (AC1.5KV) on the both ends of the Winding.</li> </ol>					
CLOVER Hi-Tech CO., LTD.		DESIGN	CHECK	APPROVAL	PAGE
		Y.H CHA	K.T KIM	D.K PARK	1/19

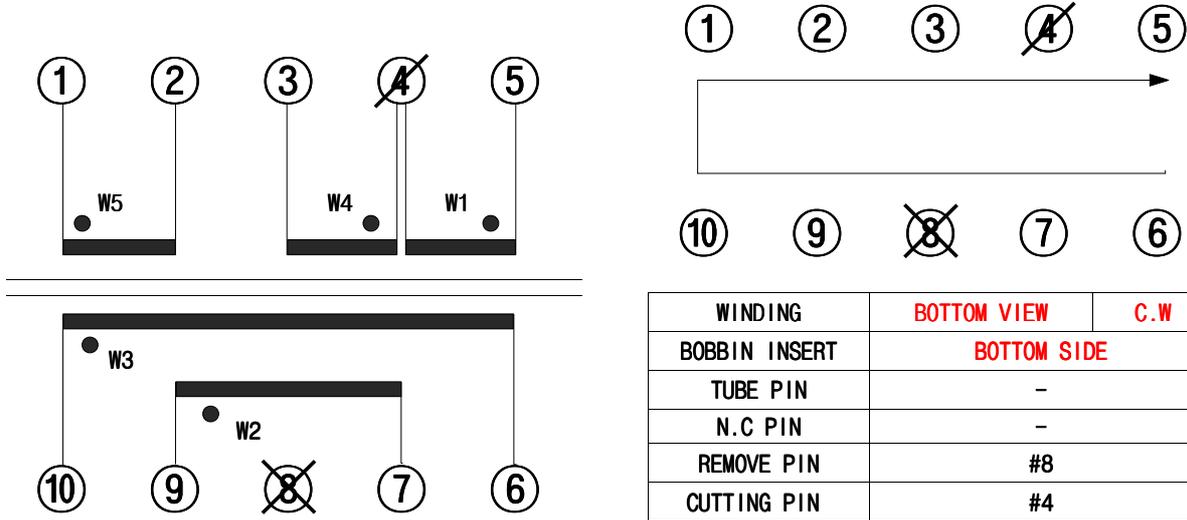
CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13																	
PART NAME	TRANS-POWER S/W	PART NO	1400651																	
<p>6. DIMENSION (UNIT:mm)</p>  <p>◆TOP VIEW◆</p>  <p>◆FRONT VIEW◆</p>  <p>◆BOTTOM VIEW◆</p>		<p><b>*MARKING(BLACK)*</b></p> <p>1400651 -- PART NO.</p> <p>SC-05B SC-AABBCCDE-- LOT NO.</p> <p>MAKER( TRADENAME)</p> <p>INSULATION SYSTEM DESIGN NO(CLASS-B)</p> <p><b>LOT NO</b></p> <table border="1"> <thead> <tr> <th>YEAR(AA)</th> <th>MONTH(BB)</th> <th>DAY(CC)</th> </tr> </thead> <tbody> <tr> <td>2016Y→16</td> <td>JAN→01</td> <td>1st DAY→01</td> </tr> <tr> <td>2017Y→17</td> <td>FEB→02</td> <td>2nd DAY→02</td> </tr> <tr> <td>2018Y→18</td> <td>DEC→12</td> <td>31thDAY→31</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>PRODUCT CODE(D)</th> <th>MANUFACTURER OF CORE(E)</th> </tr> </thead> <tbody> <tr> <td>A:KOREA PRODUCT C:CHINA(WENDENG) D:CHINA(DONGGUAN) E:CHINA(ZAOZHUANG)</td> <td>K:DONGYANGGUANG N:JISHUN S:SAMHWA</td> </tr> </tbody> </table>  <p>◆SIDE VIEW◆</p>			YEAR(AA)	MONTH(BB)	DAY(CC)	2016Y→16	JAN→01	1st DAY→01	2017Y→17	FEB→02	2nd DAY→02	2018Y→18	DEC→12	31thDAY→31	PRODUCT CODE(D)	MANUFACTURER OF CORE(E)	A:KOREA PRODUCT C:CHINA(WENDENG) D:CHINA(DONGGUAN) E:CHINA(ZAOZHUANG)	K:DONGYANGGUANG N:JISHUN S:SAMHWA
YEAR(AA)	MONTH(BB)	DAY(CC)																		
2016Y→16	JAN→01	1st DAY→01																		
2017Y→17	FEB→02	2nd DAY→02																		
2018Y→18	DEC→12	31thDAY→31																		
PRODUCT CODE(D)	MANUFACTURER OF CORE(E)																			
A:KOREA PRODUCT C:CHINA(WENDENG) D:CHINA(DONGGUAN) E:CHINA(ZAOZHUANG)	K:DONGYANGGUANG N:JISHUN S:SAMHWA																			
		<p>* REMOVE PIN : #8</p> <p>* CUTTING PIN : #4</p> <p>* GAP CORE : TOP</p> <p>* CENTER BOND : SW-860HF</p>																		
CLOVER Hi-Tech CO., LTD.		DESIGN	CHECK	APPROVAL	PAGE															
		Y.H CHA	K.T KIM	D.K PARK	2/19															

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

7. SCHEMATIC DIAGRAM



8. WINDING SPECIFICATION

NO	NAME	TERMINAL NO.		WINDING		
		START	FINISH	WIRE	TURNS	WINDING METHOD
1	W1	5	4	1UEW 0.50 φ ×2	7	SOLENOID
2	W2	9	7	1UEW 0.50 φ ×2	7	SOLENOID
3	W3	10	6	1UEW 0.50 φ ×2	7	SOLENOID
4	W4	4	3	1UEW 0.50 φ ×2	7	SOLENOID
5	W5	1	2	1UEW 0.40 φ	12	SOLENOID
WIRE SPECIFICATION				CONDUCTOR		
				WIRE	DIAMETER[mm]	TOLERANCE OF DIAMETER[mm]
				1UEW	0.40	±0.004
				1UEW	0.50	±0.005

\* REGARDING ABOVE TABLE STANDARD, THICKNESS OF WIRE MUST BE OVER SPECIFICATION.

CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	3/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13			
PART NAME	TRANS-POWER S/W		PART NO	1400651		
16. LIST OF MATERIAL						
NO	COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE NO		
1	CORE	HE4 EER 3019 (EC30-4R)	RUYUAN DONGYANGGUANG MAGNETICS MATERIALS CO.,LTD.			
		PC40 EER 3019	SHANGHAI JISHUN MAGNETIC MATERIAL CO.,LTD.			
		PL-7 EER 3019S	SAMWHA ELECTORNICS CO., LTD.			
2	BOBBIN	PHENOLIC 94V-0 EER3019 V"TYPE 10PIN(5+5)	SUMITOMO BAKELITE CO.,LTD.(PM-9820)	E41429		
3	WIRE	1UEW 0.40 φ	CNI ELECTRONICS CO.,LTD. (ANSI TYPE(RATED 130℃)=MW28, MW75) SHANONG PENGTAI STOCK CO.,LTD.	E210918		
		1UEW 0.50 φ		E166187		
4	INSULATION TAPE	POLYESTER TAPE 0.025T×10.0mm(W)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD. (CT*(b)(g))	E165111		
5	CORE FIXING TAPE	POLYESTER TAPE 0.025T×20.0mm(W)				
6	BARRIER	PNW(BUSIKPO) TAPE 0.45T×2.0mm	TAE HWA INDUSTRIAL CO.,LTD.(H-5673*) JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD.(WF)	E92677 E165111		
7	ADHESIVE	EPOXY RESIN SW-860HF	SUNGWOO CHEMICAL CO.,LTD.			
8	SOLDER	BAR, WIRE	ALPHA METALS CO.,LTD.			
	FLUX	JS-7000S-2	KOKI SANEI KOREA CO.,LTD.			
9	VARNISH	DVB-2085(+)	NOROO PAINT & COATINGS CO.,LTD.	E93947		
10	MARKING	INK(Black)	HITACHI CHEMICAL CO.,LTD.			
CLOVER Hi-Tech CO., LTD.			DESIGN	CHECK	APPROVAL	PAGE
			Y.H CHA	K.T KIM	D.K PARK	13/19



PN개발-승-17111 (최준민)

MODEL: PN042HTCA-9080VQ

담당	검토	승인
원	X	승인
4/18/		4/18/

(주) 파워넷 연구소

# SPECIFICATIONS

APPROVAL  
Powernet Doc  
Rohs 마킹

DESCRIPTION	MAIN TRANS
SPECIFICATION	100uH / EER3019 (PL-7,TP4,ZP40)
MAKER SPECIFICATION	EER3019 P10 (5+5)
CODE NO	1400651
MODEL NO	PN042HTCA-9080VQ
SPECIAL ARTICLES	CLASS 130(B) TRANSFORMER INSULATION SYSTEM DESIGNATED CP-130 (YOUNG CHANG SILICONE)

## CUSTOMER APPROVED

검토	확인	승인



작성	검토	심사	승인
2017. 03. 13.	2017. 03. 13.	2017. 03. 13.	2017. 03. 13.

REQUEST CUSTOMER	<b>CORE Plus+</b>	TEL	TEL : 031)224-6030 FAX : 031)224-6066
ADDRESS	<p>* HEAD OFFICE : RM606,SAMHO TOWER 1122-10 INGYE-DONG PALDAL-GU GYEONGGI-DO KOREA.</p> <p>* CHINA FACTORY : 43 LANTANG ROAD,SHOUSHAN DUSTRIAL PARK, LIAOYANG COUNTY, LIAONING PROVINCE, CHINA</p> <p>* INDONESIA FACTORY : KP. SINDANG RESMI RT.03 RW.07 DESA KUTAJAYA KEC. CICURUG KAB. SUKABUMI 43359 INDONESIA</p>		

*Handwritten notes and signatures at the bottom right of the page.*

<h1>SPECIFICATIONS</h1>		SHEET NO.	1 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

**1. APPLICATION**

This specification applied to inspection and approval of the S/W TRANS for POWERNET TECHNOLOGIES.

**2. GENERAL PREFERENCE**

The reinspection & reapproval is required to change the structure, quality, progress of this specification.

**3. ABSOLUTE REGULARITY**

- (1) Keep temperature : -40℃ ~ 100℃
- (2) Keep humidity : 20% ~ 95%
- (3) Use temperature : -10℃ ~ 70℃
- (4) Use humidity : 20% ~ 85%

**4. MECHANICAL CHARACTERISTIC**

(1) TERMINAL TENSION INTENSITY

After fix the body the terminal shall withstand for 5 seconds without losing when a static load of 2.0Kg is applied to drawing direction of the terminal.

(2) TERMINAL BEND INTENSITY

The terminal shall withstand without losing and shortage when return after bend 1 time to the left side and 1 time right side with a static load.

(3) VIBRATION TEST

After fix a body of the vibration board the terminal shall withstand without losing and bend when operate vibration test of 3 direction (X,Y,Z) for 2 hours

- Frequency : 10 ~ 55Hz
- Amplitude : 0.75mm

**5. ELECTRICAL CHARACTERISTIC**

(1) INSULATION RESISTANCE

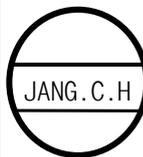
- ① Primary coil to secondary coil : Shall be more than 100MΩ when measured with DC0.5KV
- ② Primary coil to core : Shall be more than 100MΩ when measured with DC0.5KV
- ③ Secondary coil to core : Shall be more than 100MΩ when measured with DC0.5KV

(2) WITHSTAND VOLTAGE

- ① Primary coil to core : Shall be no damage when measured AC1.5KV, 5mA, for 1MIN
- ② Primary coil to secondary coil : Shall be no damage when measured AC1.5KV, 5mA, for 1MIN
- ③ Secondary coil to core : Shall be no damage when measured AC1.5KV, 5mA, for 1MIN

(3) LAYER SHORT TEST

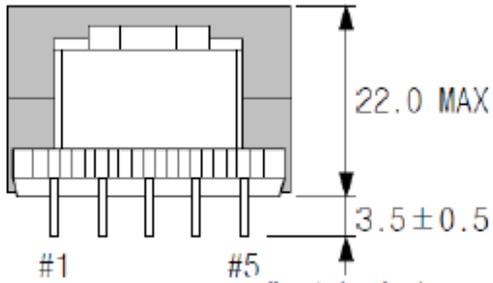
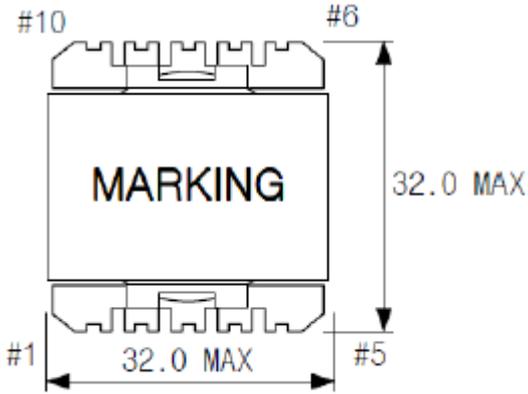
Shall be no damage when compare a film-insulation condition with standard sample after measured surge voltage (AC1.5KV) on the both ends of the winding.

<b>CUSTOMER CHECK</b>		DESIGN	CHECK	CONFIRM	APPROVAL
					

<h1>SPECIFICATIONS</h1>		SHEET NO.	2 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

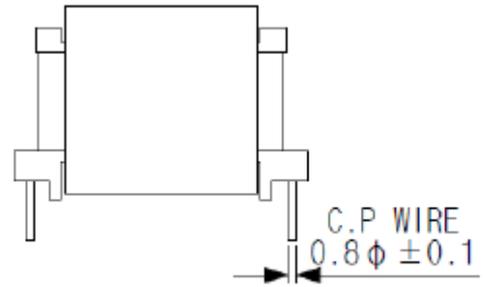
**6. DIMENSIONS (UNIT: m/m)**

**TOP VIEW**

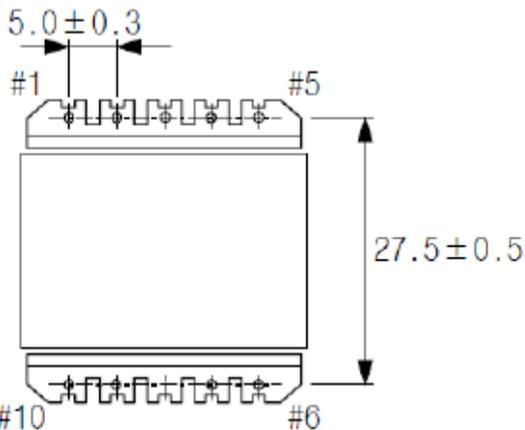


**FRONT VIEW**

"not include solder fillet"



**SIDE VIEW**



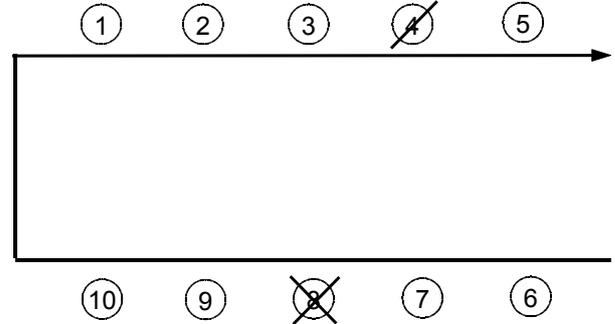
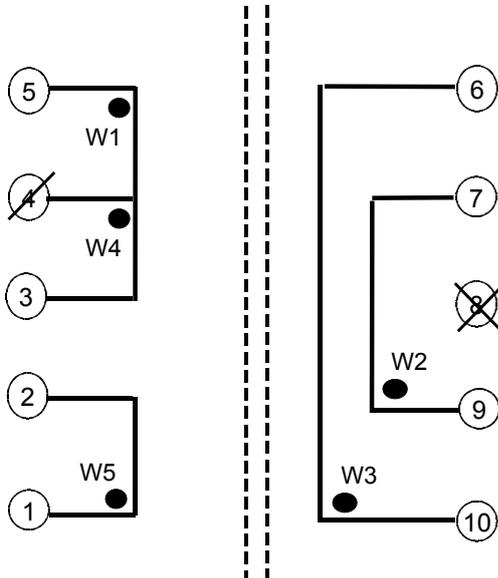
**BOTTOM VIEW**

MARKING	
PART NO.	1400651
TRADE NAME	CP(COREPLUS)
CHINA FACTORY	LY(LIAOYANG)
CP-130	COREPLUS 'CLASS B' SYSTEM
Year	2016 → 16 2017 → 17...
Week	First Week → 1 Second Week → 2...
Product Area	A: KOREA C: CHINA I :INDONESIA
MANUFACTURE R OF CORE	S: SMAWHA T: TDG N: NANTONG
1400651 CP LY CP-130 1612CT	

<b>CUSTOMER CHECK</b>		DESIGN	CHECK	CONFIRM	APPROVAL

<h1>SPECIFICATIONS</h1>		SHEET NO.	3 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

**7. SCHEMATIC DIAGRAM**



WINDING	<b>BOTTOM VIEW</b>	<b>C.W</b>
BOBBIN INSERT	<b>BOTTOM</b>	
REMOVE PIN	#8	
N.C PIN	NONE	
CUT PIN	#4	
TEFLON TUBE	NONE	

**8. WINDING SPECIFICATION**

WINDING ORDER	TERMINAL NO		WIRE	TURNS	WINDING METHOD	REMARKS
	S	F				
W1	5	4	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W2	9	7	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W3	10	6	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W4	4	3	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W5	1	2	1UEW 0.40Ø	12	SOLENOID	1 LAYERS

\* REGARDING ABOVE TABLE STANDARD, THICKNESS OF WIRE MUST BE OVER SPECIFICATION RANGE.

<b>CUSTOMER CHECK</b>		DESIGN	CHECK	CONFIRM	APPROVAL

<h1>SPECIFICATIONS</h1>		SHEET NO.	12 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

**19. MATERIAL LIST**

No	COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE No
1	CORE	EER3019 PL-7	SAM WHA ELECTRONICS CO., LTD	
		EER3019 TP-4	TDG HOLDING CO.,LTD	
		EER3019 ZP40	NANTONG ZHONGXING MAGNETIC INDUSTRIAL CO., LTD	
2	BOBBIN	"V"TYPE , PHENOLIC (PM 9820) EER3019 "V" 5+5PIN	SUMITOMO BAKELITE CO., LTD	E41429
3	WIRE	POLYURETHANE 1UEW 0.40Ø 1UEW 0.50Ø	CNI ELECTRONICS CO LTD	E210918
			LIAONING WANXINGDA SPECIAL ENAMELLED WIRE(GROUP) CO.LTD	E220501
4	INSULATION TAPE	POLYESTER FILM TAPE 0.025t X 10.0mm (WHITE)	JINGJIANG JINGYI ADHESIVE PRODUCT CO., LTD	E246950
5	CORE FIXING TAPE	POLYESTER FILM TAPE 0.025t X 20.0mm (WHITE)	JINGJIANG YAHUA PRESSURESENSITIVE GLUE CO., LTD(CT*)	E165111
6	ADHESIVE	SK-011	SE KYE CHEMICAL CO.,LTD	
		UNI-BOND #812	GREEN STAR CO., LTD.	
7	BARRIER TAPE	P.N.W TAPE 0.45t x 2.0mm	JINGJIANG JINGYI ADHESIVE PRODUCT CO., LTD	E246950
			JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD(WF)	E165111
8	VARNISH	SR-337A,B	SE KYE CHEMICAL CO.,	E257443
9	SOLDER	LEAD FREE	TIANJIN HENKO TECHNOLOGY CO., LTD.	
10	FLUX	319-5F	JIANGYIN CITY DENG FENG ELECTRICAL MATERAIL CO.,LTD	
11	MARKING	INK	BON MARQUE.	

<b>CUSTOMER CHECK</b>		DESIGN	CHECK	CONFIRM	APPROVAL
					



NETWORK CAMERA,XNP-C9253R

PoE(55V ) 0.72A

M/C: XNP-C9253R/KEX Fac.ID:D



DATE S/N: Serial No.

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

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

HANWHA VISION CO.,LTD.

MADE IN KOREA



Rainproof/ Étanche  
IP66



NETWORK CAMERA,XNP-C8253R

PoE(55V ) 0.72A

M/C: XNP-C8253R/KEX Fac.ID:D



DATE S/N: Serial No.

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

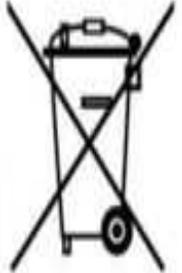
CAN ICES-3(A)/NMB-3(A)

HANWHA VISION CO.,LTD.

MADE IN KOREA



Rainproof/ Étanche  
IP66



NETWORK CAMERA,XNP-C6403R

PoE(55V ) 0.72A

M/C: XNP-C6403R/KEX Fac.ID:D



DATE S/N: Serial No.

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

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

HANWHA VISION CO.,LTD.

MADE IN KOREA

Rainproof/ Étanche  
IP66

The following Page(s) are related to Miscellaneous-09. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

## 2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	DC 50V			
2	RATED CURRENT	START-FINISH	6.0A			
3	INDUCTANCE	START-FINISH	160KHz	11.0uH	+50%,-30%	HP-4194A 1V (25°C±2°C)
4	TEMPERATURE RISE	AT RATED CURRENT	55°C MAX			
5	DC RESISTANCE	START-FINISH	16.0 mΩ MAX			HIOKI 3540 (25°C±2°C)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 100V 1 MINUNE.			TOS-5101 CUN OFF CURRENT (5mA)

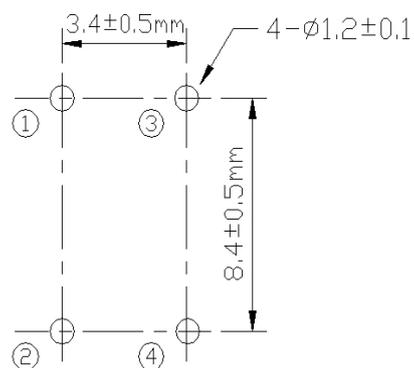
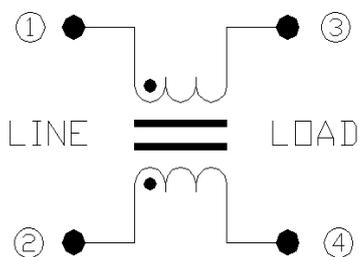
## 3. OPERATING TEMPERATURE RANGE

-30°C TO +105°C INCLUDING TEMPERATURE RISE.

## 4. KEEP TEMPERATURE RANGE

-30°C ~ +60°C.

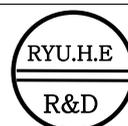
## 5. CIRCUIT DIAGRAM



Minimum PCB Piercing HOLE

**TNC** TNC CO.,LTD

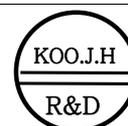
DESIGN



CHECK



APPROVAL



PAGE

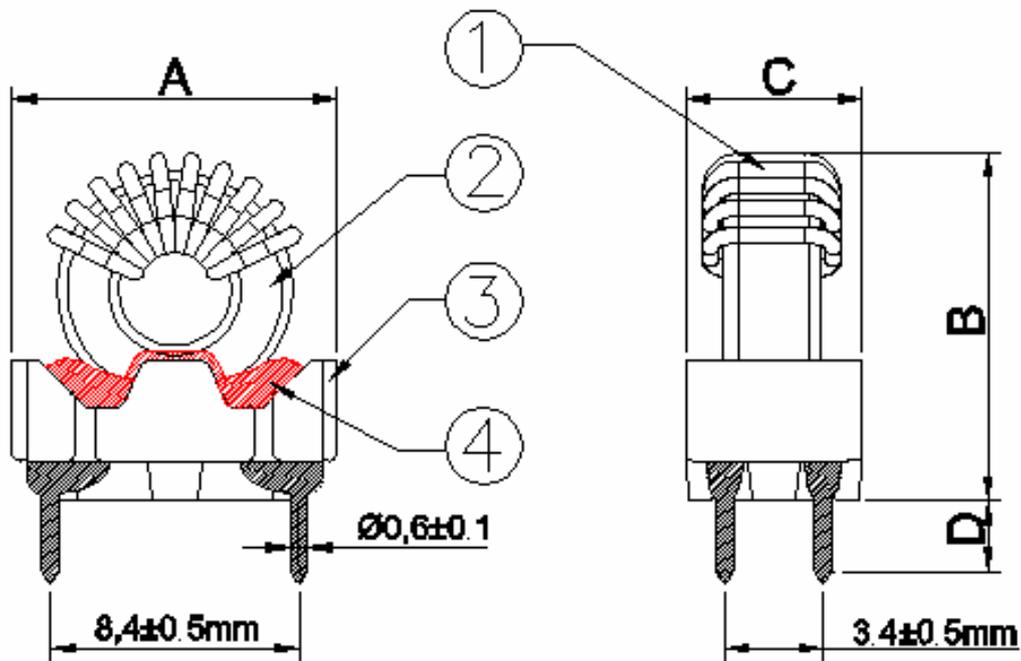
3/12

SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

### 6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.55Φ (RED)	6 ±1Ts	HANDMADE	BETWEEN L1 AND L2 (1.99uH MAX)
L2	2	4	UEW 0.55Φ (NATURAL)			

### 7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	11.5mm MAX	13.0mm MAX	6.5mm MAX	Not include solder fillet 2.8 ± 0.5mm

	DESIGN	CHECK	APPROVAL	PAGE
				4/12

SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

## 8. MATERIAL LIST

No.	NAME	SPECIFICATION	MANUFACTURER	COLOR	UL No.
1	Enamel Wire	UEW 0.55Φ / 6±1Ts	UEW Hwa Il Electronics Co.,Ltd	YELLOW RED	E140246
			UEW SHANDONG PENGTAI STOCK CO LTD	YELLOW RED	E166187
2	Ferrite Core	L7H T 8x3x4-K K081 T 8X4X3UC	Korea TDK Co., Ltd ACME Electronics Corporation	WHITE	
3	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class	Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class	CHANG CHUN Plastics Co.,Ltd	BLACK	E59481
4	Epoxy	EPOXY RESIN	NA-010 ND Chemical	WHITE	
			EA610A / EA610B Chem Tech	Transparent	

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				5/12



# SPECIFICATIONS

DESCRIPTION	COMMON FILTER
SPECIFICATION	11.0uH / T8Φ (HP-10, L800)
MAKER SPECIFICATION	CVA60111RNF2 / PH
CODE NO	1420830
MODEL NO	A3514_RPN
SPECIAL ARTICLES	

DESIGN	CHECK	APPROVAL
QQ.GAO	SJ.KIM	HL.PARK
2018. 11. 16.	2018. 11. 16.	2018. 11. 16.
A TERM OF VALIDITY	YEAR	

REQUEST CUSTOMER	HEFEI PHOENIX ELECTRONICS TECHNOLOGY CO LTD	TEL	0551-82153520
		FAX	0551-82153585
ADDRESS	QiShan Road Juchao Economy development area ChaoHu Hefei, Anhui 230000 CHINA		
REQUEST CUSTOMER	TOP NATION(KOREA) ELECTRONIC LIMITED	TEL	82-031-205-6475
		FAX	82-031-206-6477
ADDRESS	4Floor, KT Bldg. 3, Cheongmyeongnam-ro, Yeong tong-Gu, Suwon-si, Gyunggi-do, Korea		

SPECIFICATIONS		SHEET NO.	5 OF 26		
		DATE	2018. 11. 16.		
DESCRIPTION	COMMON FILTER		MODEL	A3514_RPN	
CODE NO.	1420830		TYPE	T8Φ	
<p><b>1. APPLICATION</b> This specification is applied to inspection and approval of the COMMON FILTER for POWERNET TECHNOLOGIES.</p> <p><b>2. GENERAL PREFERENCE</b> The reinspection &amp; reapproval is required to change the structure, quality, progress of this specification</p> <p><b>3. ABSOLUTE REGULARITY</b>            1) Keep temperature : -40℃ ~ 100℃            2) Keep humidity : 20% ~ 95%            3) Use temperature : -10℃ ~ 70℃            4) Use humidity : 20% ~ 85%</p> <p><b>4. MECHANICAL CHARACTERISTIC</b>            1) TERMINAL TENSION INTENSITY            After fix the body the terminal shall withstand for <u>5</u> seconds without losing when a static load of <u>2.0</u>Kg is applied to drawing direction of the terminal.            2) TERMINAL BEND INTENSITY            The terminal shall withstand without losing and shortage when return after bend 1 time to the left side and 1 time right side with a static load.            3) VIBRATION TEST            After fix a body of the vibration board the terminal shall withstand without losing and bend when operate vibration test of 3 direction (X,Y,Z) for 2 hours            - Frequency : 10 ~ 55Hz            - Amplitude : 0.75mm</p> <p><b>5. ELECTRICAL CHARACTERISTIC</b>            1) INSULATION RESISTANCE            ① coil to core : Shall be more than 100Mohm when measured with DC 0.5KV             2) HI-POT TEST            ① AC<u>0.1</u>KV, 1 MINUTE,5mA, (COIL TO CORE)             3) LAYER SHORT TEST            Shall be no damage when compare a film-insulation condition with standard sample after measured surge voltage (AC<u>1.5</u>KV) on the both ends of the winding.</p>					
 <b>HEFEI PHOENIX ELECTRONICS TECHNOLOGY CO LTD</b> QiShan Road Juchao Economy development area ChaoHu Hefei, Anhui 230000 CHINA			DESIGN	CHECK	APPROVAL
			QQ.GAO	SJ.KIM	HL.PARK
			FILE NO.		

<h1>SPECIFICATIONS</h1>		SHEET NO.	8 OF 26
		DATE	2018. 11. 16.
DESCRIPTION	COMMON FILTER	MODEL	A3514_RPN
CODE NO.	1420830	TYPE	T8Φ

**8. SCHEMATIC DIAGRAM**

① ● ———— ● ③  
LINE    **||**    LOAD  
② ● ———— ● ④

WINDING	BASE VIEW C.W
CUTTING PIN	-
N.C PIN	-
TUBE PIN	-

**9. WINDING SPECIFICATION**

WINDING ORDER	SYMBOL	TERMINAL NO		WIRE	TURNS	WINDING METHOD	REMARKS
		START	FINISH				
W1	L1	1	3	1UEW 0.55φ (RED)	$6 \pm 1$	BIFILAR	HANDMADE
W2	L2	2	4	1UEW 0.55φ (NATURAL)			
WIRE SPECIFICATION		CONDUCTOR					
		WIRE	DIAMETER(mm)	TOLERANCE OF DIAMETER(mm)			
		1UEW	0.55	$\pm 0.004$			

\* REGARDING ABOVE TABLE STANDARD THICKNESS OF WIRE MUST BE OVER SPECIFICATION RANGE.

<p style="margin-left: 20px;"><b>HEFEI PHOENIX ELECTRONICS TECHNOLOGY CO LTD</b></p> <p style="font-size: small; margin-left: 20px;">QiShan Road Juchao Economy development area ChaoHu Hefei, Anhui 230000 CHINA</p>	DESIGN	CHECK	APPROVAL
	QQ.GAO	SJ.KIM	HL.PARK
	FILE NO.		

<h1>SPECIFICATIONS</h1>		SHEET NO.	9 OF 26
		DATE	2018. 11. 16.
DESCRIPTION	COMMON FILTER	MODEL	A3514_RPN
CODE NO.	1420830	TYPE	T8Φ

**10.ELECTRICAL CHARACTERISTIC**

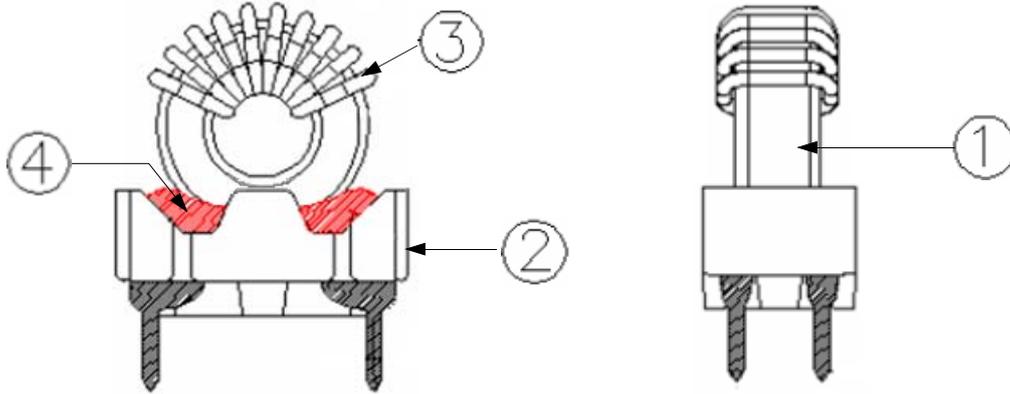
No	ITEM	TERMINAL		SPECIFICATION	REMARKS
		START	FINISH		
1	INDUCTANCE	1	3	11.0 uH +5.5uH -3.3uH	TEST-T3000A LCR-METER at <b>160 KHz</b> 1.0 Vrms (25°C)
		2	4	11.0 uH +5.5uH -3.3uH	
2	DIFFERENCE INDUCTANCE	L1 - L2		1.99 uH MAX	
3	DC RESISTANCE	1	3	16.0 mΩ MAX	TH-2516 at 25°C
		2	4	16.0 mΩ MAX	
5	HI-POT TEST	COIL TO COIL		AC0.1 KVrms, 1 MINUTE.	CUT OFF CURRENT <u>5</u> mA (CH-19053)
6	INSULATION RESISTANCE	COIL - CORE COIL - COIL		DC 500V, 100MΩ MIN.	CH-19053
7	LAYER SHORT	AC 1.5 KV, 60Hz			T-7900 IMPULSE TESTER

\* TEST CONDITION : TEMPERATURE 20°C±5°C, HUMIDITY 65%±20%

 <b>HEFEI PHOENIX ELECTRONICS TECHNOLOGY CO LTD</b> QiShan Road Juchao Economy development area ChaoHu Hefei, Anhui 230000 CHINA	DESIGN	CHECK	APPROVAL
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	FILE NO.		

<h1>SPECIFICATIONS</h1>		SHEET NO.	12 OF 26
		DATE	2018. 11. 16.
DESCRIPTION	COMMON FILTER	MODEL	A3514_RPN
CODE NO.	1420830	TYPE	T8Φ

15. MATERIAL LIST



No	Component	Name of Material	Manufacturer Component	Manufacturer of Site	Class	UL file No
1	Core	T8x4x3 HP-10	HUZHOU HANGYU ELECTRONICS CO.,LTD	CHINA		
		T8x4x3 L800	HAININ LIANFENG MAGNET INDUSTRY CO.,LTD	CHINA		
2	BASE	94V-0 PHENOLIC (T375HF), 4p	CHANG CHUN Plastics Co.,Ltd	CHINA		E59481
		94V-0 PHENOLIC (PF 2736(a)(b)), 4p	HEXION GMBH	GERMANY		E61040
3	Wire	POLYURETHANE 1UEW 0.55Φ	HANGZHOU HONGTONG WIRE & CABLE CO.,LTD	CHINA		E326617
			SHANDONG SAINT ELECTRIC CO.,LTD	CHINA		E194410
			GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	CHINA		E167402
4	EPOXY	H907-HF	DONG GUAN HUA CHUANG ELECTRONIC MATERIAL FACTORY			
5	Solder	LEAD FREE	ZHEJIANG QIANGLI ELECTRONIC MATERIAL CO.,LTD			
6	Flux	DA-800A	HUI ZHOU QIANGDA ELECTRONICS INDUSTRY CO.,LTD	CHINA		

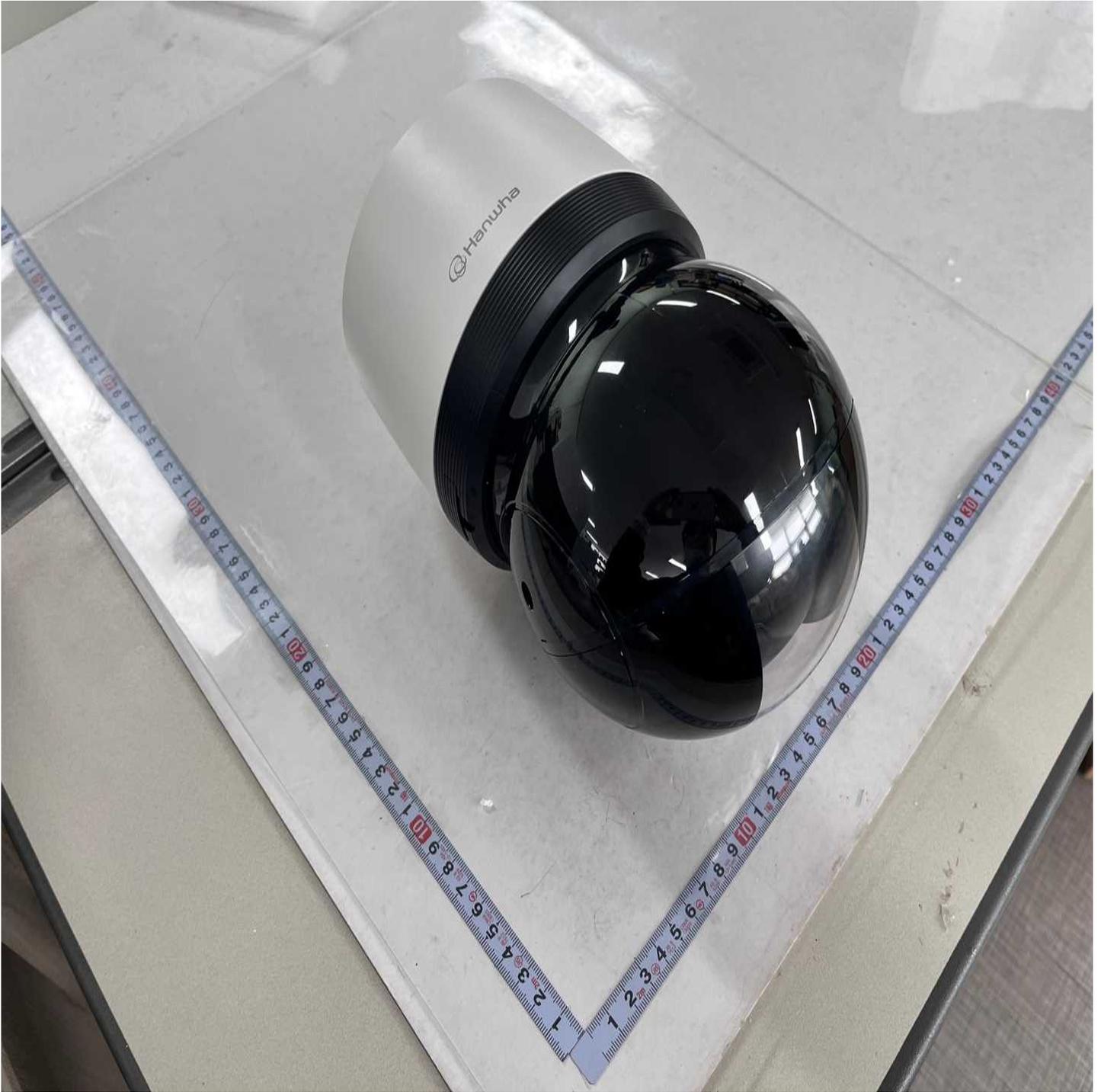


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Hefei, Anhui 230000 CHINA

DESIGN	CHECK	APPROVAL
QQ.GAO	SJ.KIM	HL.PARK
FILE NO.		





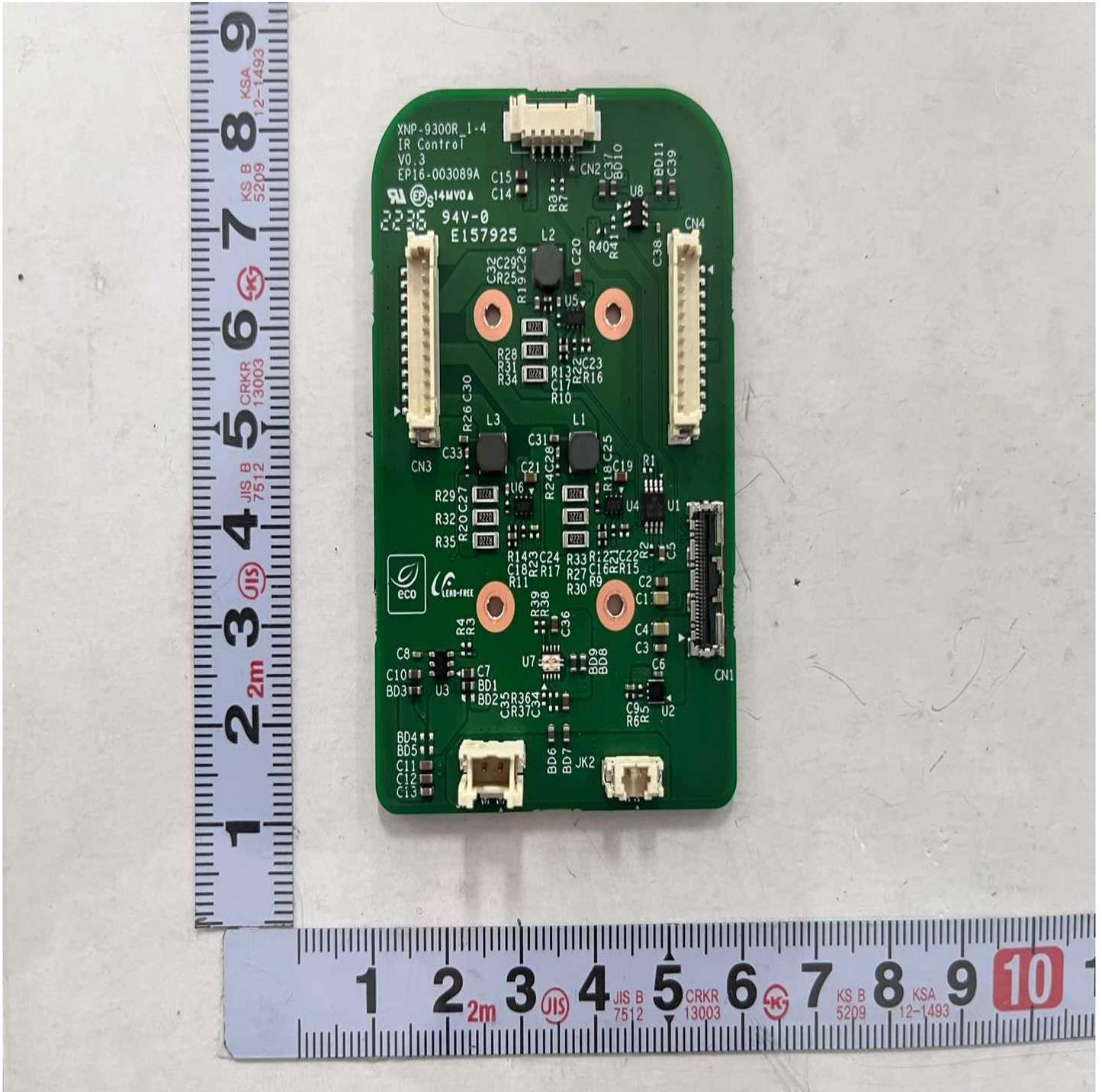


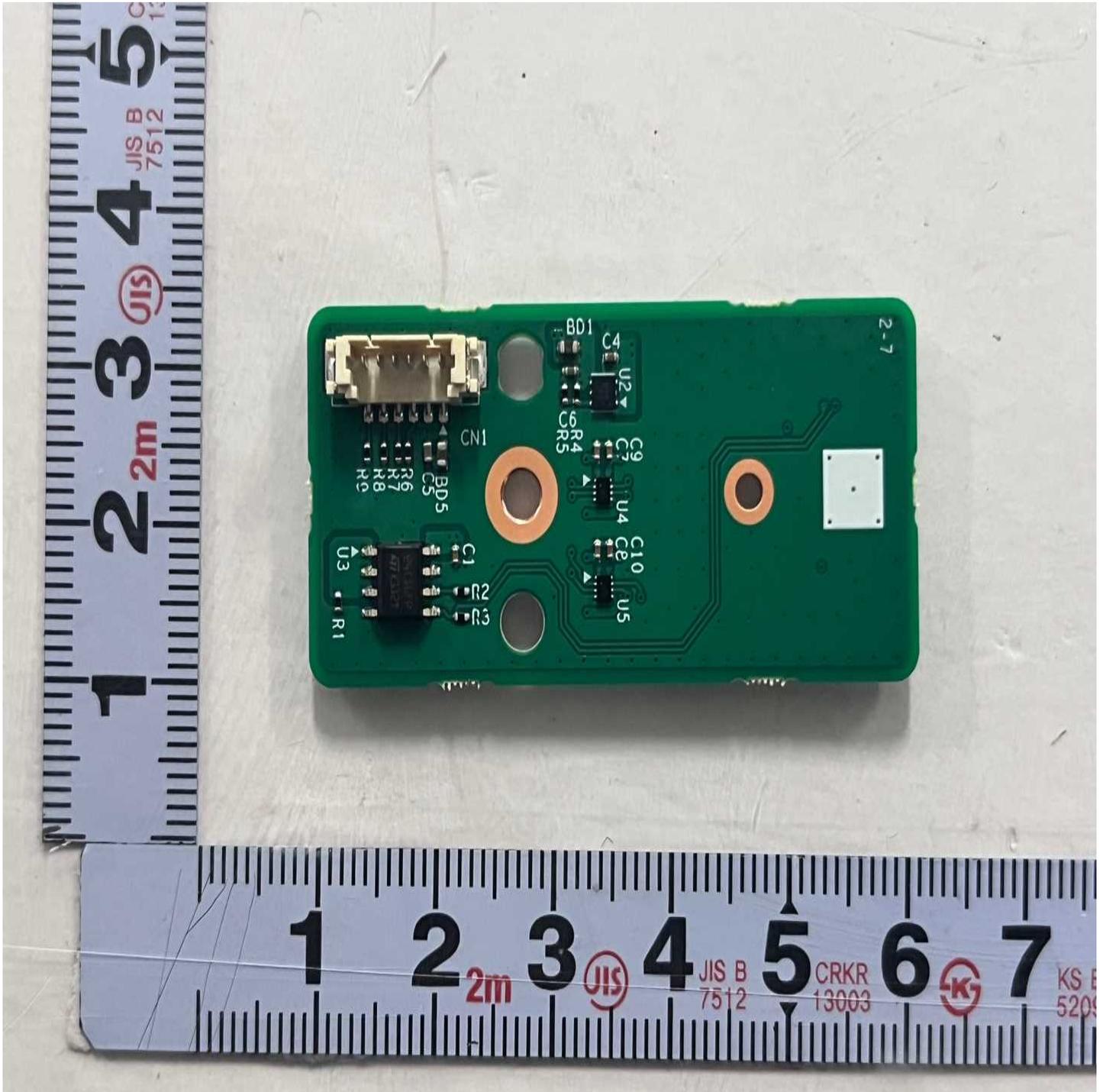




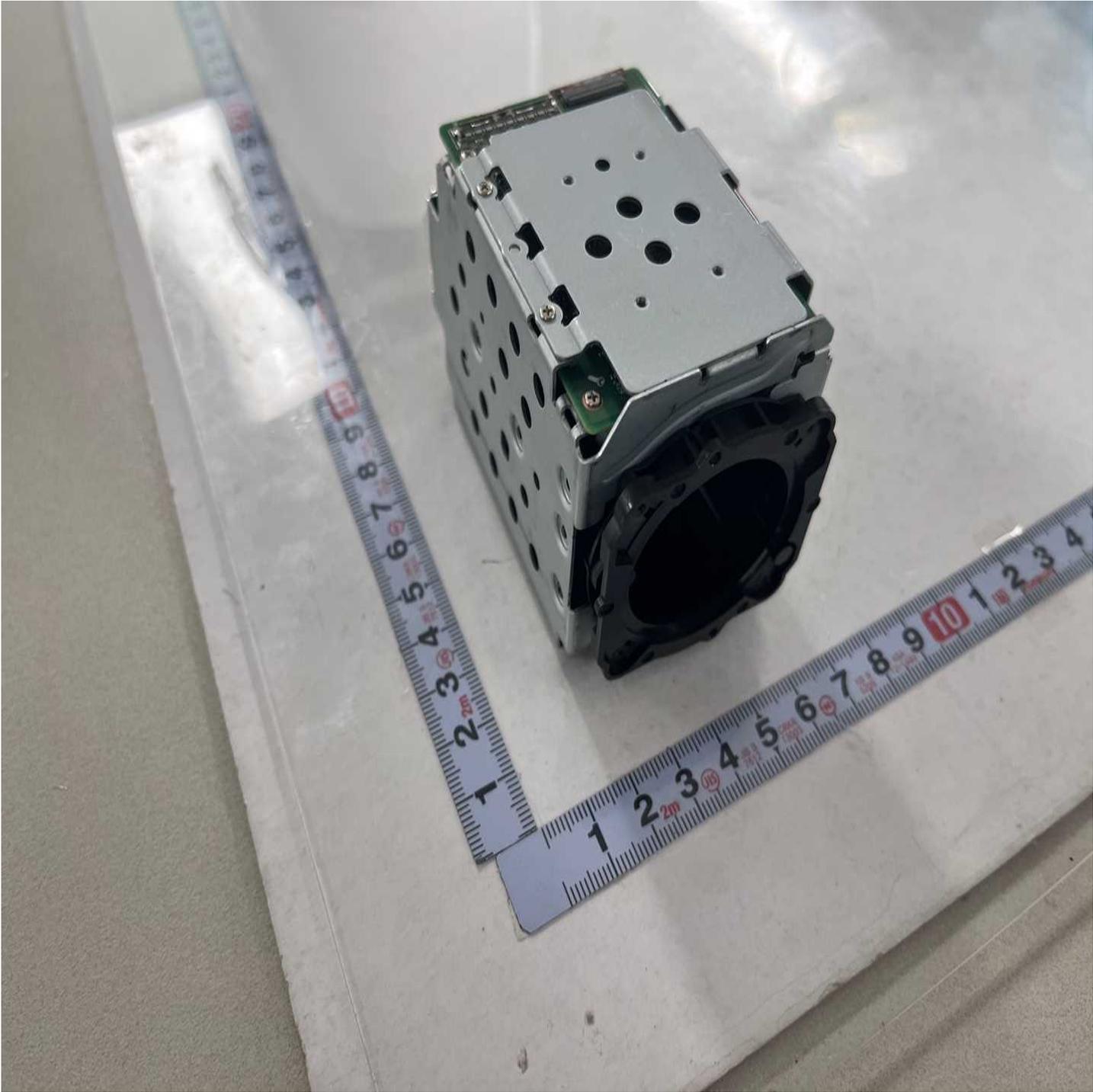


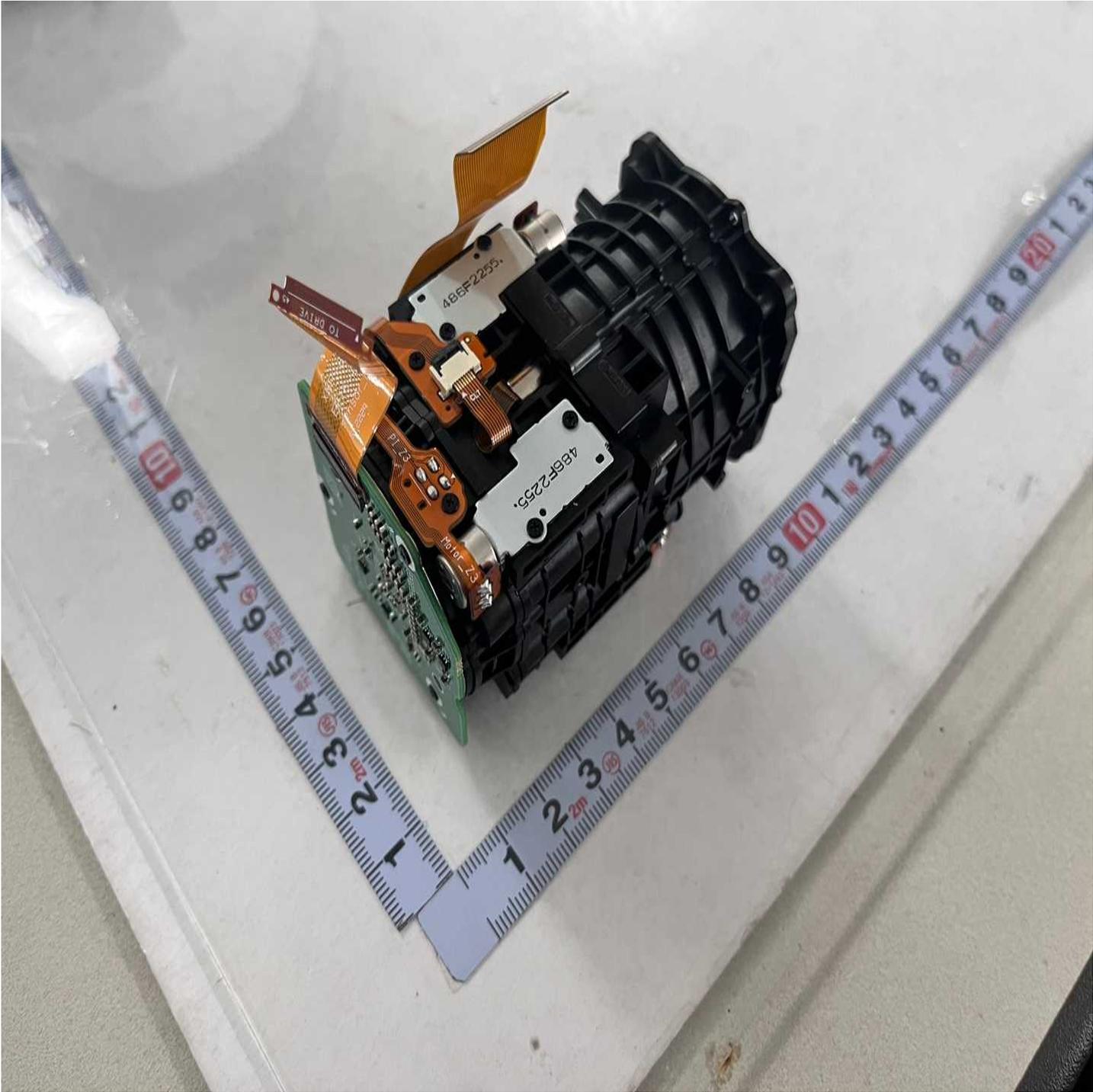


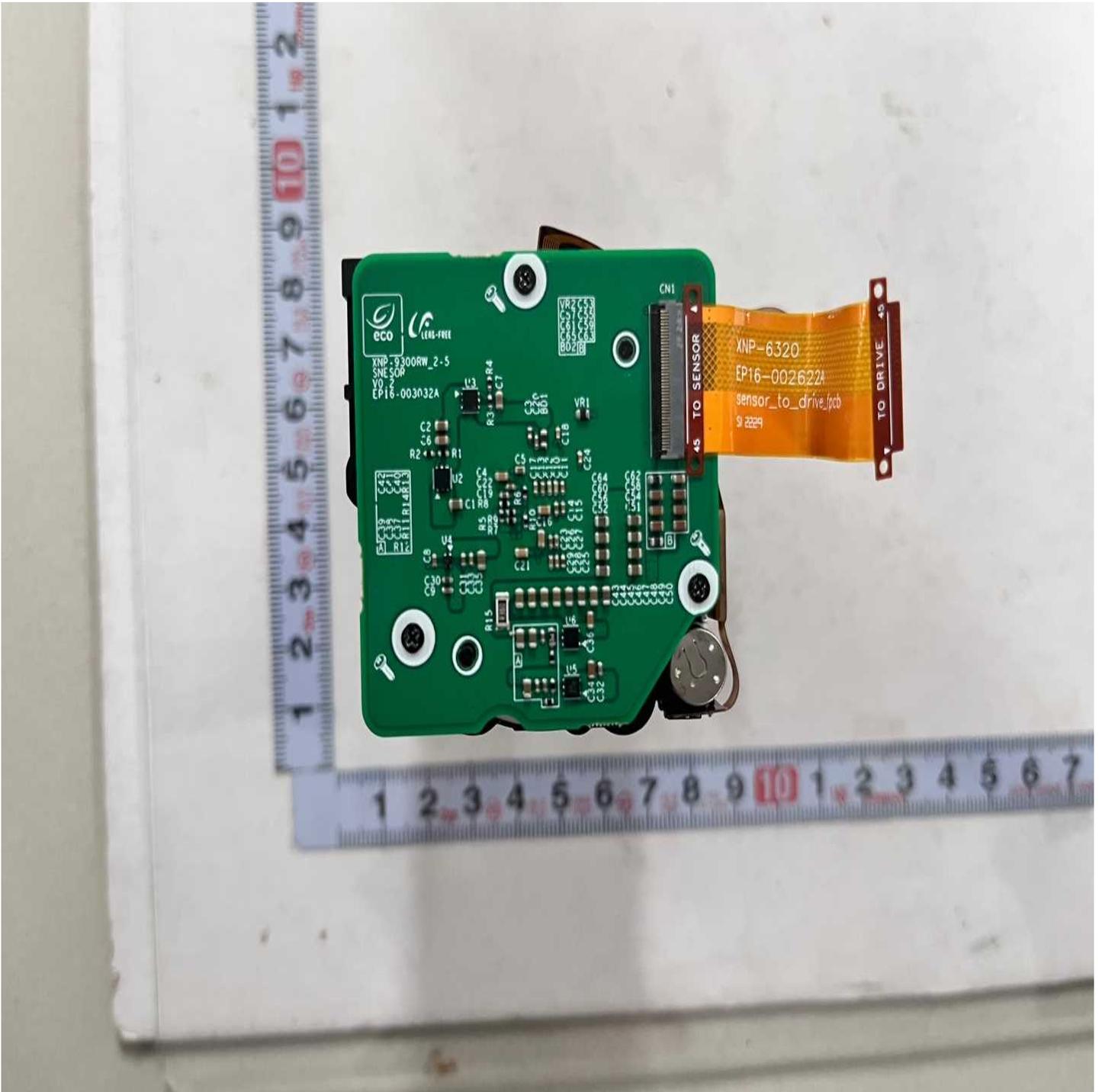


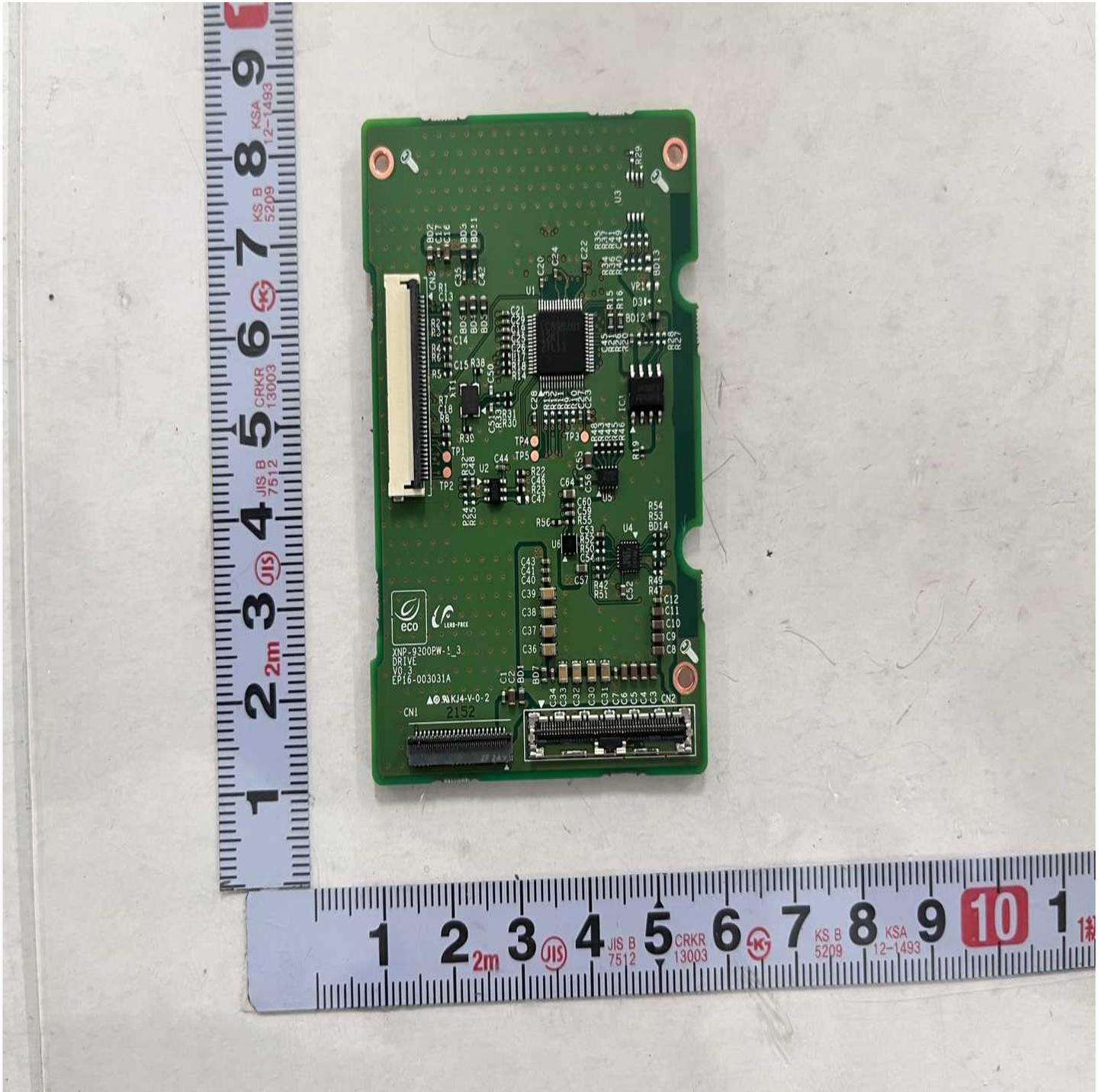




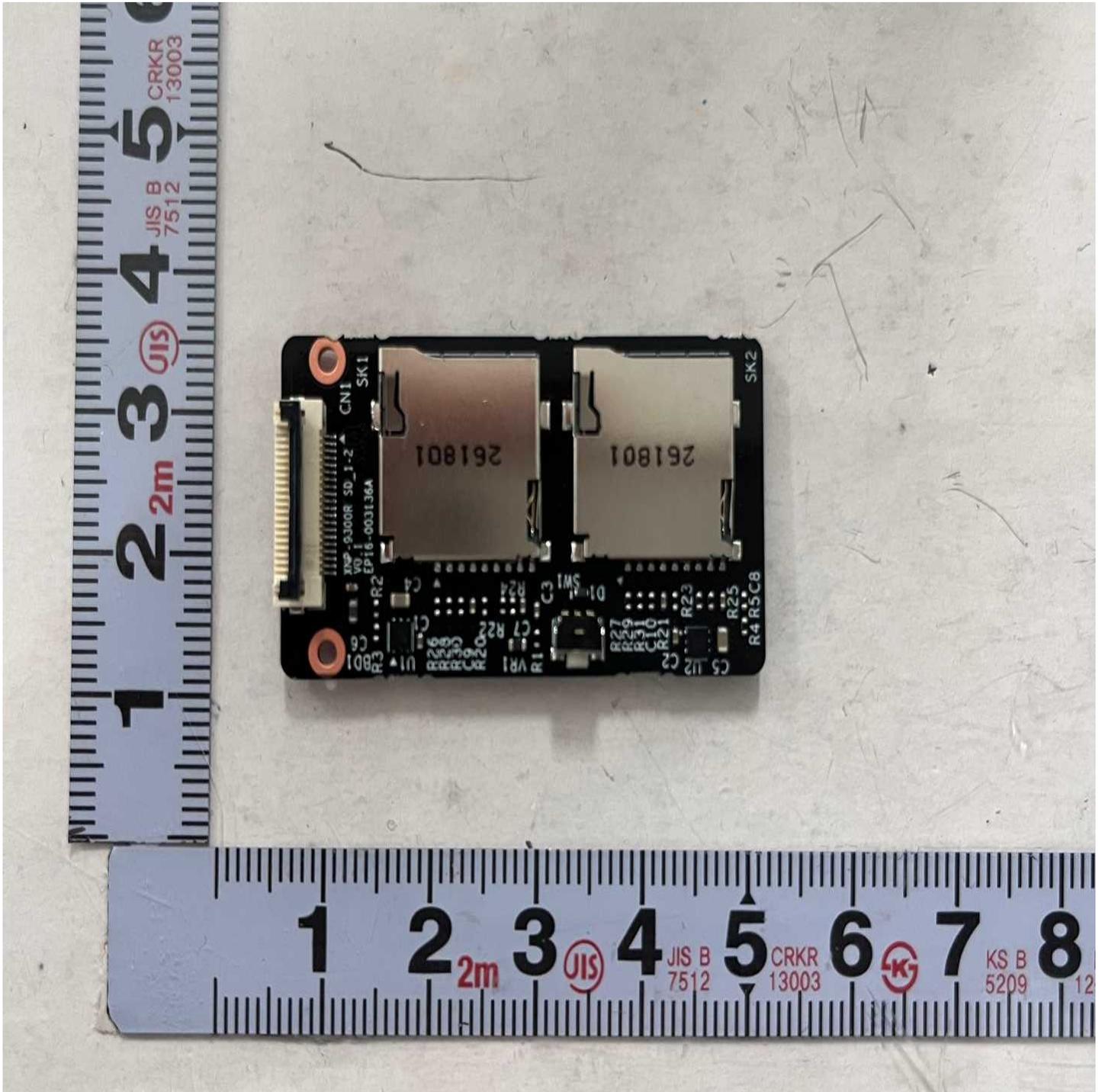


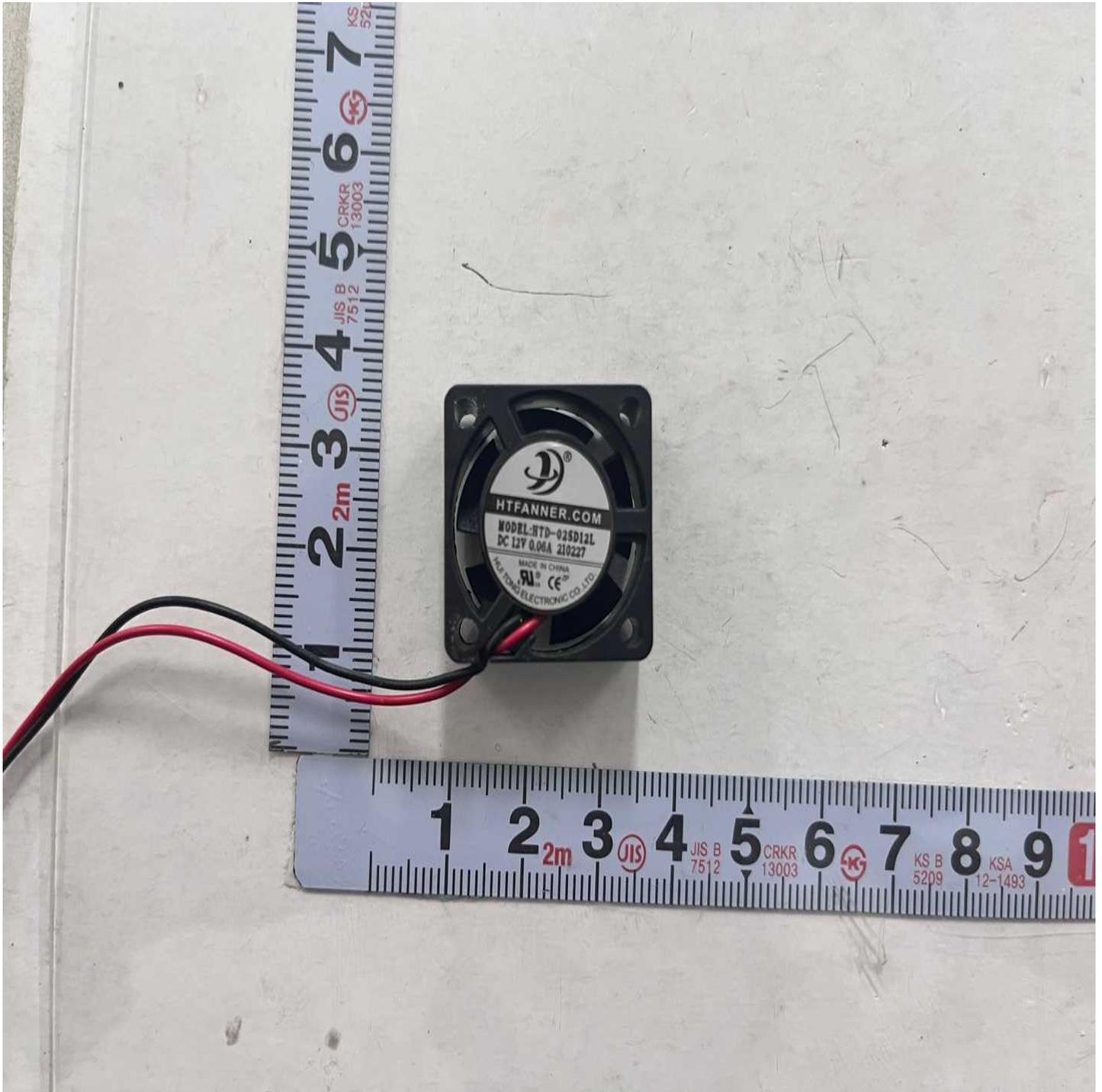


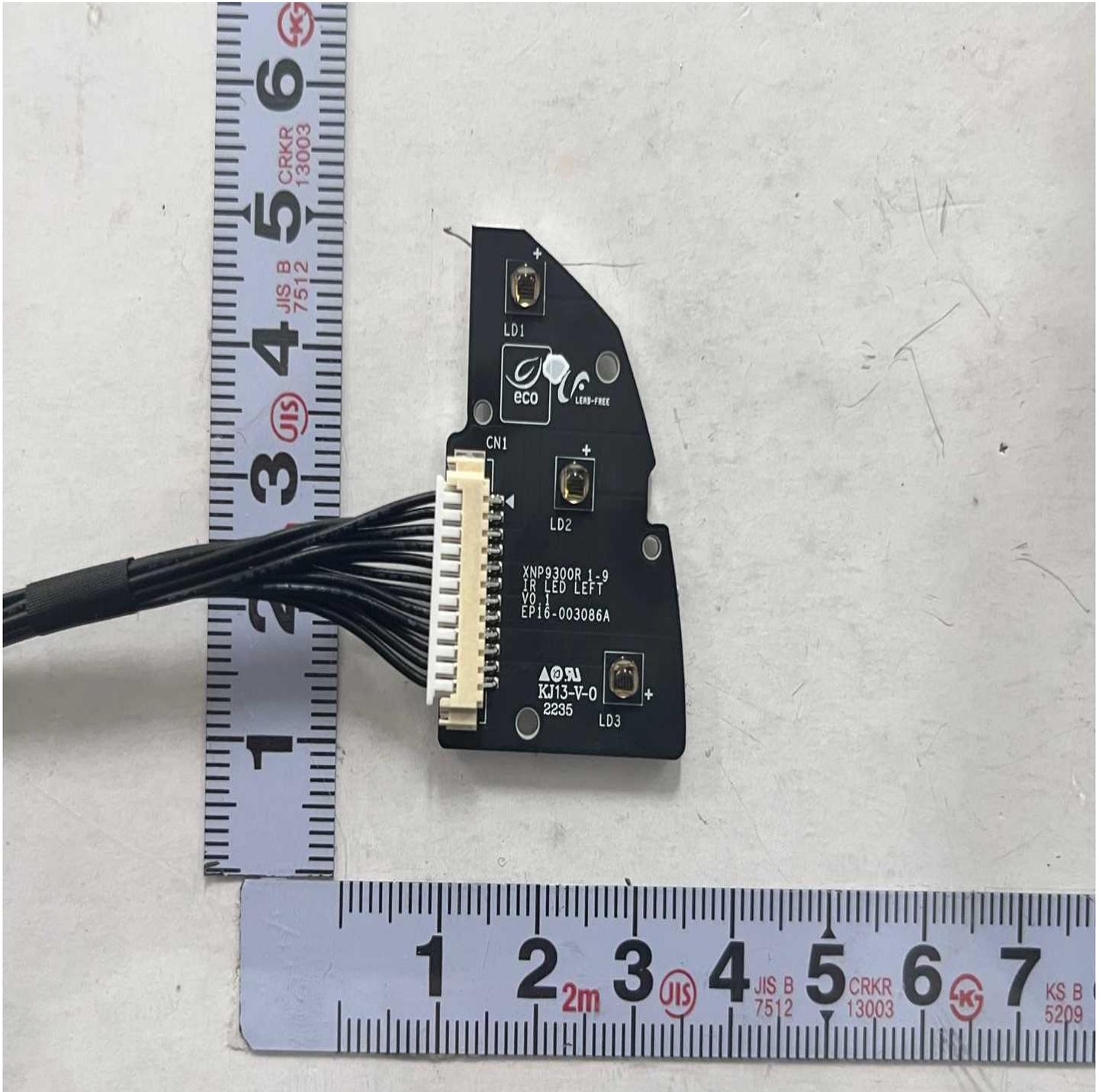


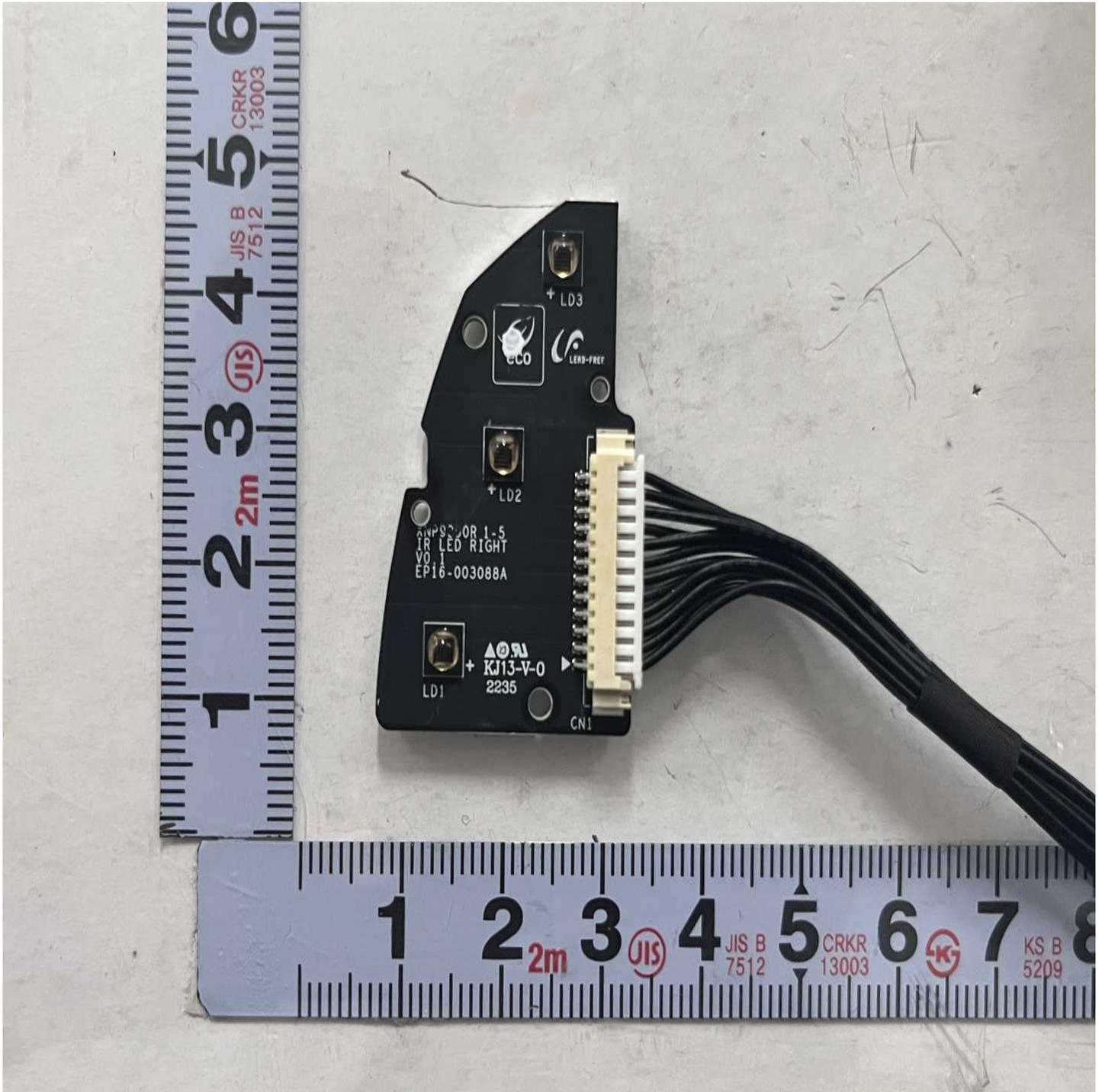


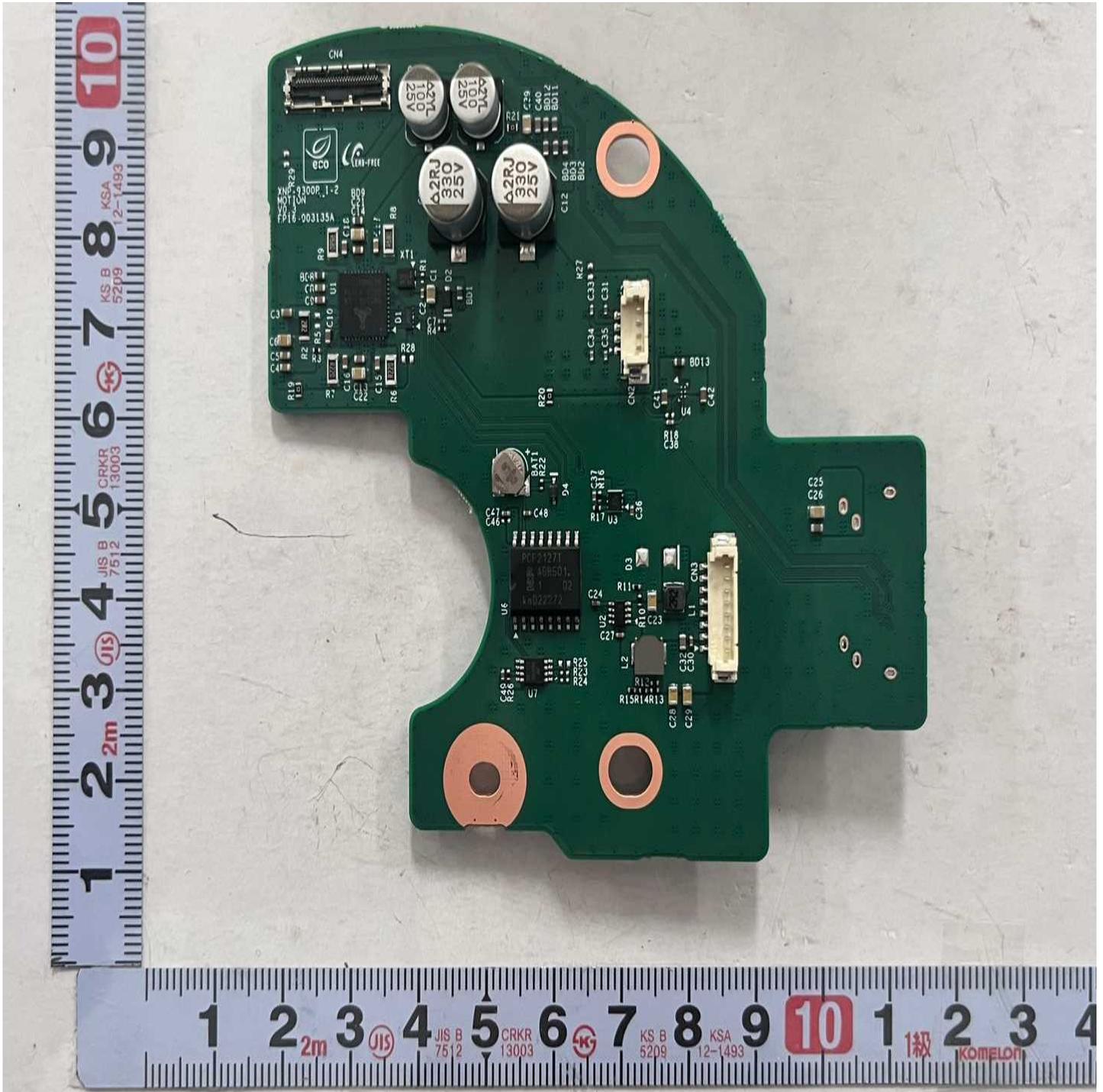


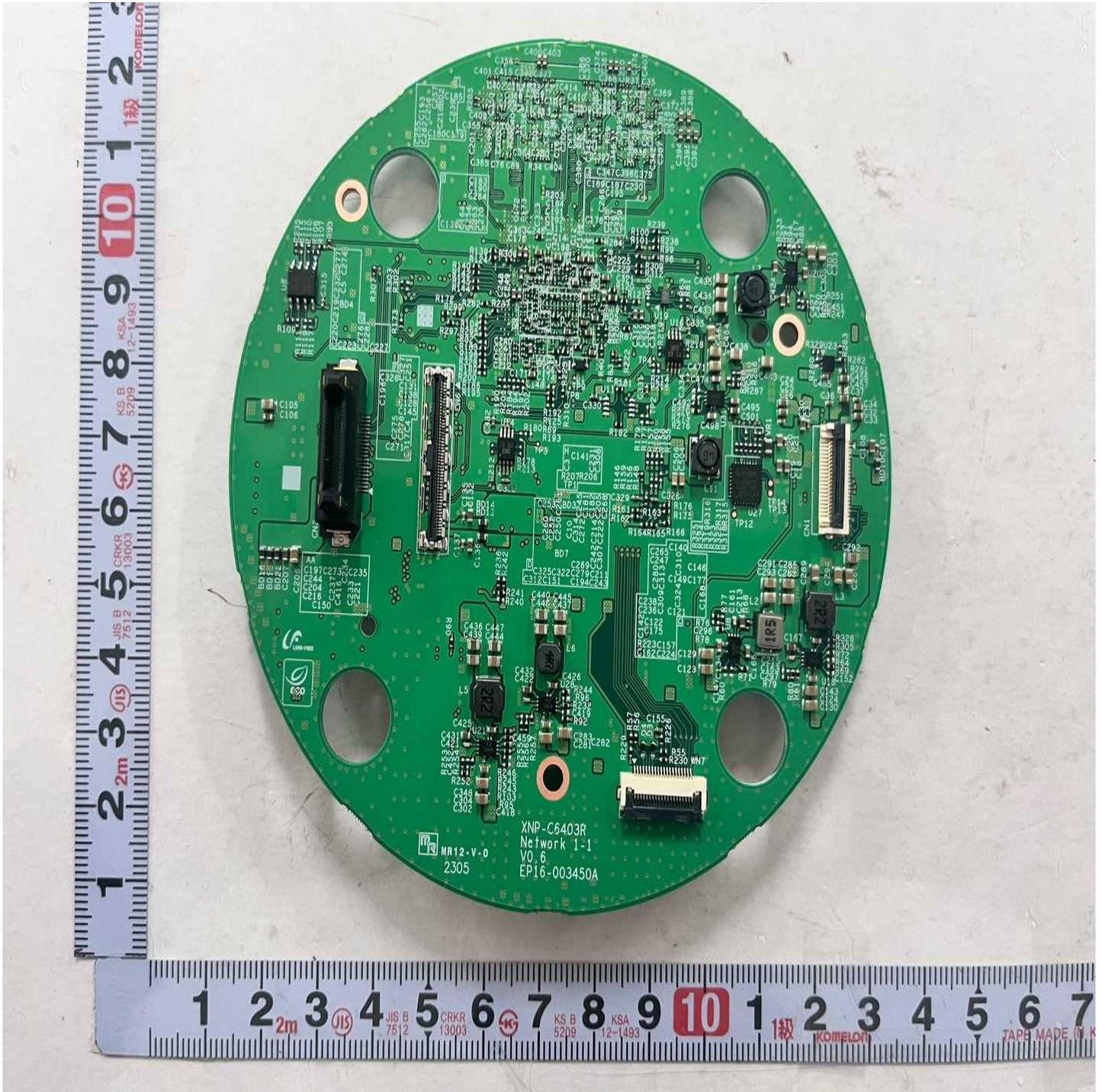


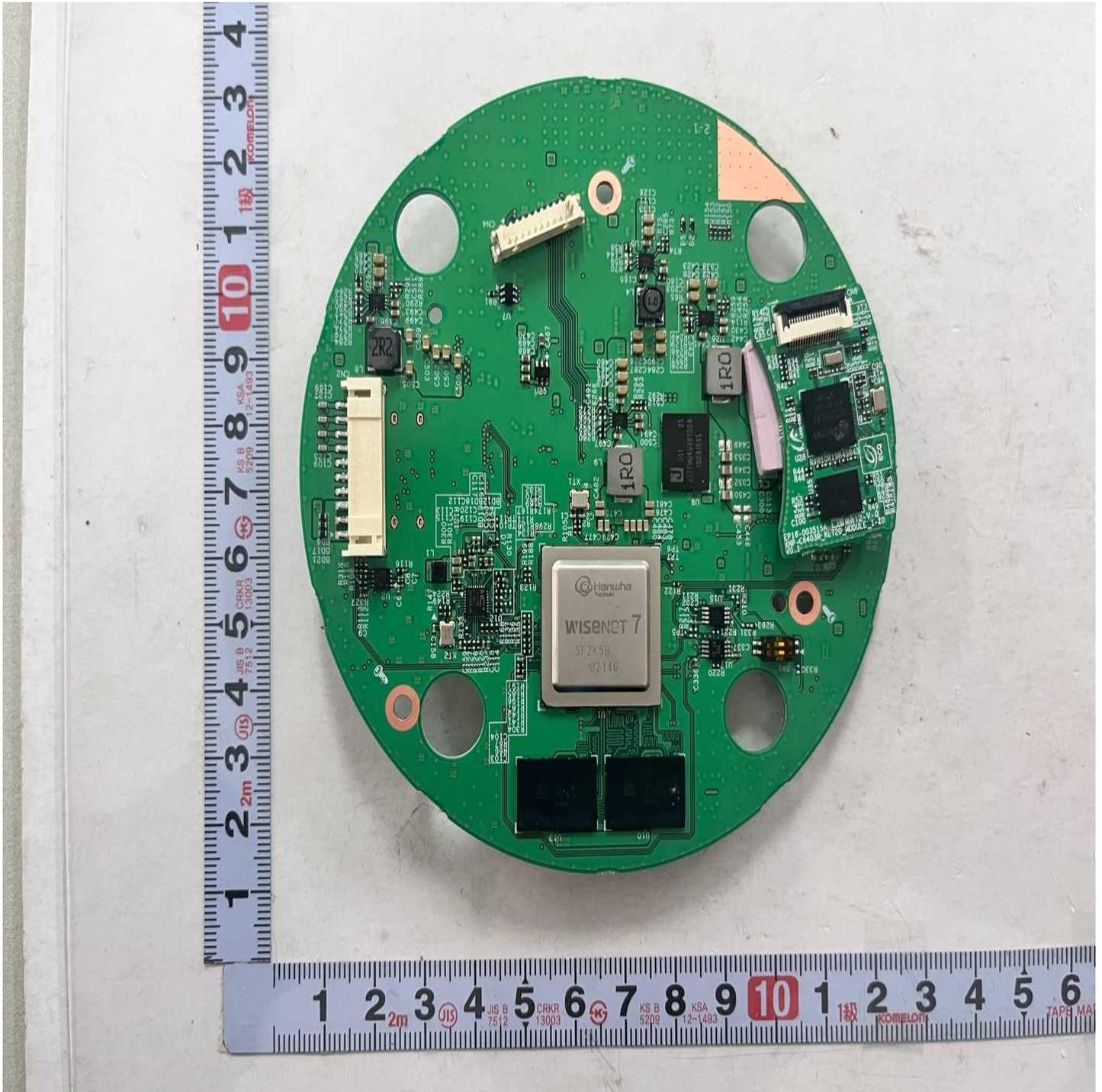




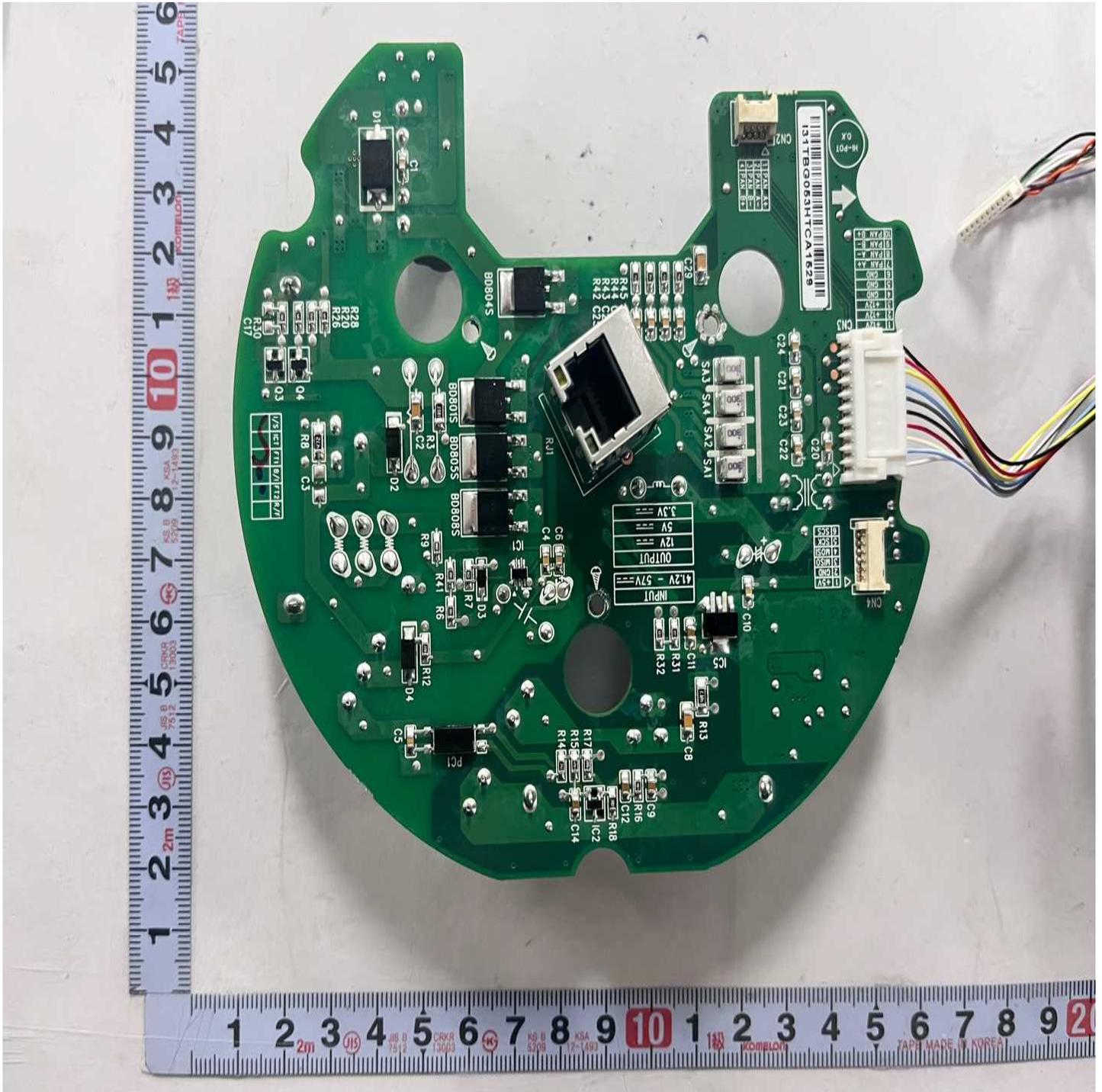














**Test Record No. 1**

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of NETWORK CAMERA, XNP-C9253R
3. Only the test listed were considered necessary.

The following tests were conducted:

<b>Tests performed (name of test and test clause):</b>	<b>Testing location:</b> CTK Co., Ltd 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17141, Korea WTDP
4.4.3.2, T.5 – STEADY FORCE TEST, 250 N	
4.4.3.4, T.6 - IMPACT TEST	
4.4.3.8, T.8 – STRESS RELIEF TEST	
5.4.1.8 – DETERMINATION OF WORKING VOLTAGE	
8.7 – WALL, CEILING, OR OTHER STRUCTURE MOUNTING TESTS	
B.2.5 – INPUT TEST: SINGLE PHASE	
B.2.6, 5.4.1.4, 6.3, 9.3, B.1.5 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT	
B.3 – SIMULATED ABNORMAL OPERATING CONDITIONS	
B.4 – SIMULATED SINGLE FAULT CONDITIONS	
M.3.2 – PROTECTION CIRCUITS FOR BATTERIES	
Y.5.3 - WATER SPRAY TEST	
Y.6.2 - POLYMERIC OUTDOOR ENCLOSURE IMPACT	
<b>The following tests were waived:</b>	<b>Rationale for Waiving</b>
Y.4.3 – TENSILE STRENGTH AND ELONGATION-Alternate	Gasket Test was conducted under E158873-A6034 (PART 22, 8.5, ANNEX D.2 – TENSILE STRENGTH AND ELONGATION)
Y.4.4 - COMPRESSION TEST - GASKETS, CLOSED CELL CONSTRUCTION	Gasket Test was conducted under E158873-A6034 (PART 22, 8.5.1, ANNEX D.3 – COMPRESSION TEST – GASKETS, CLOSED CELL CONSTRUCTION)

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
Attachment	02-02	Dual language safety labeling CRD
Attachment	02-03	Dual Language Letter of Assurance (C-UL)