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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:

For revised/new documentation, please reference 2023-04-14 in the page headings.

Project#4790780136

E158873-volX13-Index
E158873-20230414A-CertificateofCompliance
E158873-A6160-DescriptionUL
Figure-30-Total
E158873-A6160-TestRecordUL

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Times change, Trust Remains™

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-CA-2314354-0  
**Report Reference** E158873-20230414  
**Date** 17-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-2314354-0  
**Report Reference** E158873-20230414  
**Date** 17-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

<b>Model</b>	<b>Category Description</b>
XNP-C6403	NETWORK CAMERA
XNP-C8253	NETWORK CAMERA
XNP-C9253	NETWORK CAMERA

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



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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-2316382-0  
**Report Reference** E158873-20230414  
**Date** 17-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*

Deborah Jennings-Conner, VP Regulatory Services

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# CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2316382-0  
Report Reference E158873-20230414  
Date 17-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-C6403	NETWORK CAMERA
XNP-C8253	NETWORK CAMERA
XNP-C9253	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-C9253, XNP-C8253, XNP-C6403
<b>Rating:</b>	PoE (53 Vdc), 0.49 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 or INDOOR use and integrated a hole for mount. It is a commercial equipment supplied from PoE (Power over Ethernet) and installed by service personnel.

### Model Differences

XNP-C9253 is basic model.

XNP-C8253, XNP-C6403 are identical to basic model except model designation, resolution Specification, temperature spec.

XNP-C9253

Resolution Specification: 4K

Tma : 55°C (Minimum-40°C)

XNP-C8253

Resolution Specification: 6M

Tma : 55°C (Minimum-40°C)

XNP-C6403

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-53Vdc)
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)	3.12
<b>Technical Considerations</b>	
<ul style="list-style-type: none"> <li><input type="checkbox"/> The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55°C</li> <li><input type="checkbox"/> The product is intended for use on the following power systems : No direct connection</li> <li><input type="checkbox"/> Considered current rating of protective device as part of the building installation (A) : N/A</li> <li><input type="checkbox"/> Mains supply tolerance (%) or absolute mains supply : No direct connection</li> <li><input type="checkbox"/> The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual</li> <li><input type="checkbox"/> The outdoor equipment/enclosure was evaluated for use in an ambient temperature range of: -40 °C to +55 °C</li> </ul>	
<b>Additional Information</b>	
4790780136 - Continuous operation (Fan operating), (Optional features: Heater on)	
<b>Additional Standards</b>	
The product fulfills the requirements of: N/A	
<b>Markings and Instructions</b>	
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	"Raintight", 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 (https://www.~~) or QR code.

(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 (53 Vdc), 0.49 A
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.at 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
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 Main cover (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 3500G-20	Min. 2.0 mm thickness, rated Min. V-0	QMFZ2	UL (E121254)	
Line Filter (LF1, NL1)	TNC CO., LTD	CV36045USA2	450 uH, 105 deg. C, See enclosure for more detail.	-	-	
Line Filter (LF2)	TNC CO., LTD	CV320070SB5	7.0 mH, 105 deg. C, See enclosure for more detail.	-	-	
Opto-coupler (PC1)	LITE-ON TECHNOLOGY CORP	LTV-817	Isolation Voltage: 5000. Max. Operation Temperature:110 deg. C	FPQU2	UL (E113898)	

Opto-coupler (PC1) ( Alternate)	RENESAS ELECTRONICS CORPORATION	PS2561DL1-1(W)	Isolation Voltage: 5000. Max. Operation Temperature:110 deg. C	FPQU2	UL (E72422)	
Transformer(T1)	DONG HEUNG ELECTRNICS CO., LTD.	MSS20-001	130 deg. C, See enclosure for more detail.	-	-	
Transformer(T1) - Alternate	DONG IN SYSTEM CO., LTD.	MSS20-001	130 deg. C, See enclosure for more detail.	-	-	
DC Fan 1	HUI TONG ELECTRONIC CO LTD	HTD-040(X)12M (HTD040D12M)	12 Vdc, 0.07 A, 4000 RPM (N/15000+K/2400 = 0.2705 < 1, N=4000, K=9.2928)	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 = 0.6442535 < 1, N=9500, K=26.2086)	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 SHINANO MOTOR CO., LTD.	STH-36C0068-01	Rated 12 Vdc, 0.4 A Hybrid stepping type.	-	-	
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	-	-	

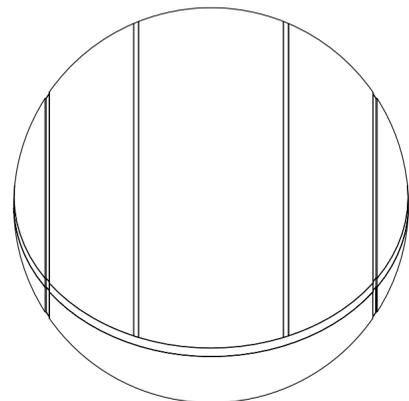
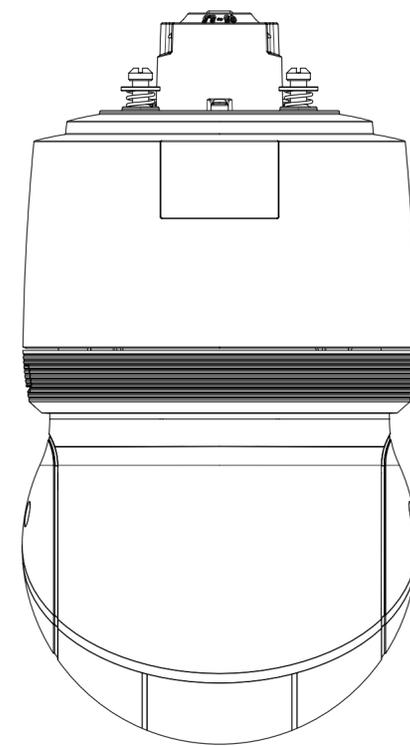
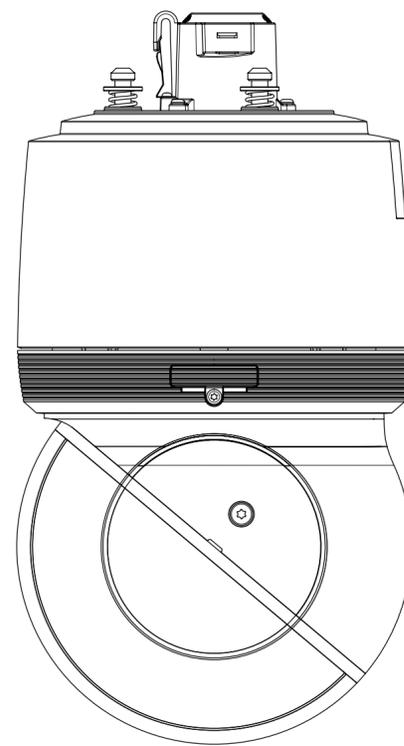
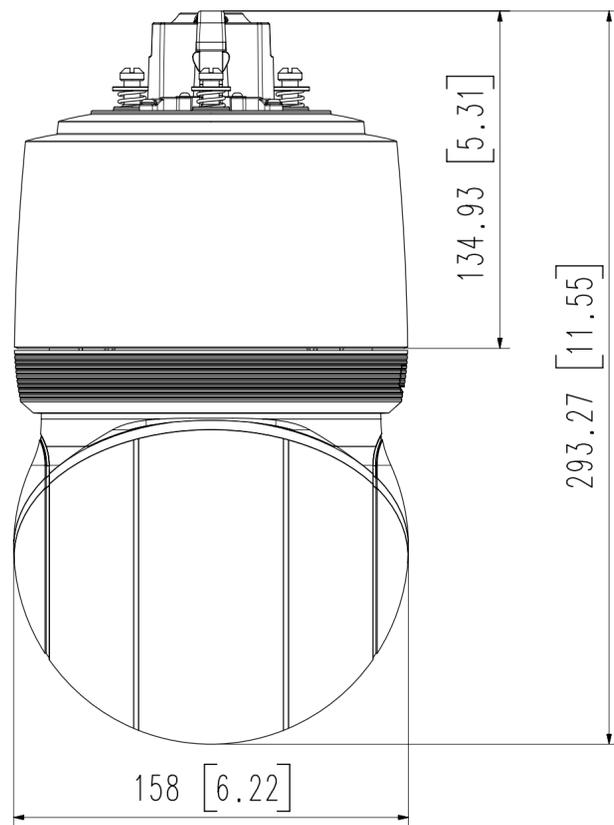
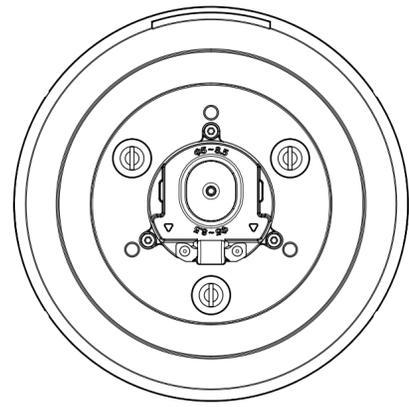
Stepping motor	VIDE TECHNOLOGY CO.,LTD	VGSM1558	Rated 12 Vdc, Max pulse rate 1200 pps	-	-	
Focus motor(Stepping motor) (3ea)	TOKYO MICRO INC.	8S-486L99	Rated 5.0 Vdc, Max pulse rate 1500 pps	-	-	
Rechargeable battery(BAT1)	FDK CORPORATION	ML614R-TT31	Lithium, Rechargeable, Max Charging Voltage, 5 V dc, 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	-	-	
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	AVLV2	UL	

			marked VW-1; Min. 30 V, 80 deg. C			
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	Camera Module
Photographs	03-07	Camera Module - Case open
Photographs	03-08	Drive board-top
Photographs	03-09	Drive board-bot
Photographs	03-10	Sensor board
Photographs	03-11	Motion board-top
Photographs	03-12	Motion board-bot
Photographs	03-13	Tilt-hall board-top
Photographs	03-14	Tilt-hall board-bot
Photographs	03-15	DC fan with Cover
Photographs	03-16	DC fan with cover inner view
Photographs	03-17	SD card slot board-top
Photographs	03-18	SD card slot board-bot
Photographs	03-19	Network board-top
Photographs	03-20	Network board-bot
Photographs	03-21	Power board-top
Photographs	03-22	Power board-bot
Diagrams	04-01	APPERANCE
Manuals	06-01	Manuals
Miscellaneous	07-06	Label_XNP-C9253
Miscellaneous	07-07	Label_XNP-C8253
Miscellaneous	07-08	Label_XNP-C6403
Miscellaneous	07-09	Transformar Specification
Miscellaneous	07-10	Line Filter Specification-2
Miscellaneous	07-11	Line Filter Specification-3

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

## 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

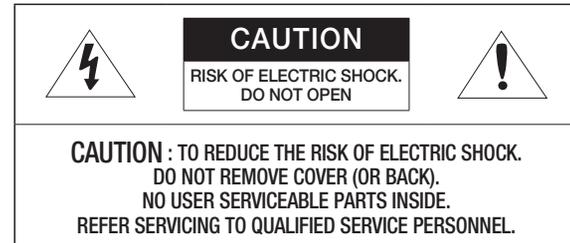
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

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.

## WARNING

To Prevent damage which may caused by IR LED, don't stare at operating lamp.  
For below models only.

XNP-C9253R  
XNP-C8253R  
XNP-C6403R

Risk Group 1 (Groupe de Risque 1)	
<b>WARNING</b>	IR emitted from this product Do not stare at operating lamp
<b>MISE EN GARDE</b>	IR émis par ce produit Ne pas regarder fixement la lampe
Product tested against IEC 62471	

## 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.)

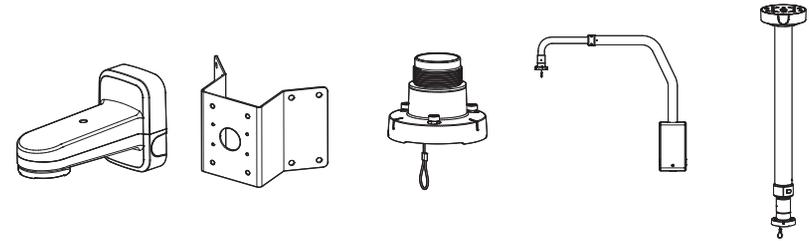
Appearance	Item Name	Quantity	Description	Model Name	
	Main Body	1		XNP-C9253R/XNP-C9253/ XNP-C8253R/XNP-C8253/ XNP-C6403R/XNP-C6403	
	Quick Guide (Optional)	1			
	Cap Installer	1	Used to connect the network cable		
	Bushing clip	1	Used as a means of preventing cable bushing from being separated or falling 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.



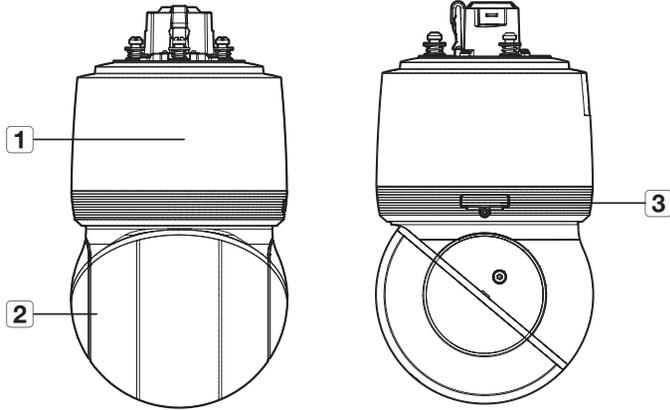
Wall & Pole Mount	Corner Mount	Hanging Mount	Parapet Mount	Ceiling Mount
SBP-156WMW	SBP-156KMW	SBP-156HMW	SBP-156LMW	SBP-156CMW

**\* 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)

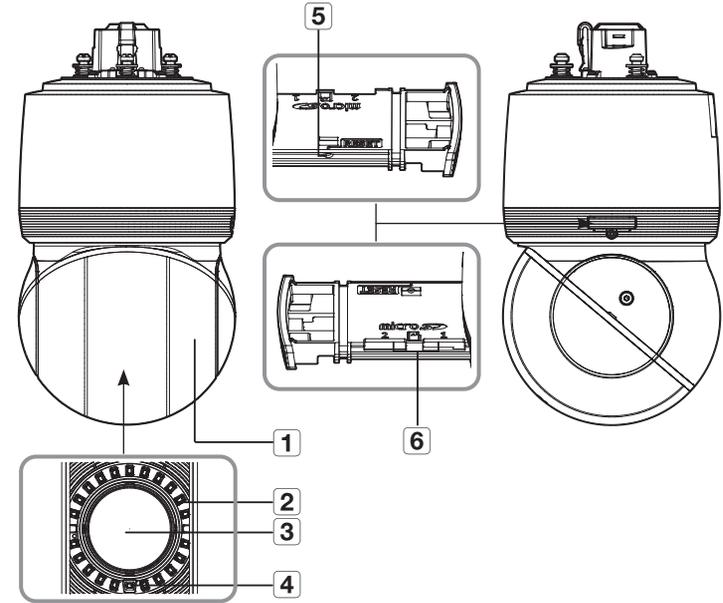
AT A GLANCE

Appearance



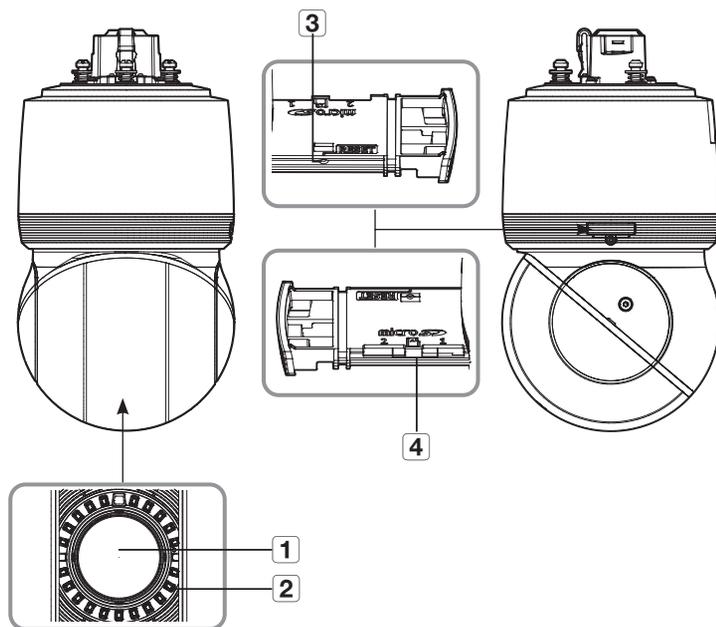
Item	Description
<b>1</b> Main cover	Protects the internal PTZ mechanism from the direct sunlight, rain or external impact.
<b>2</b> Dome cover	Shield cover for the lens and unit protection.
<b>3</b> Micro SD Card cover	Covers micro SD card slots and the Reset button. You can open it using a Torx screwdriver.

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



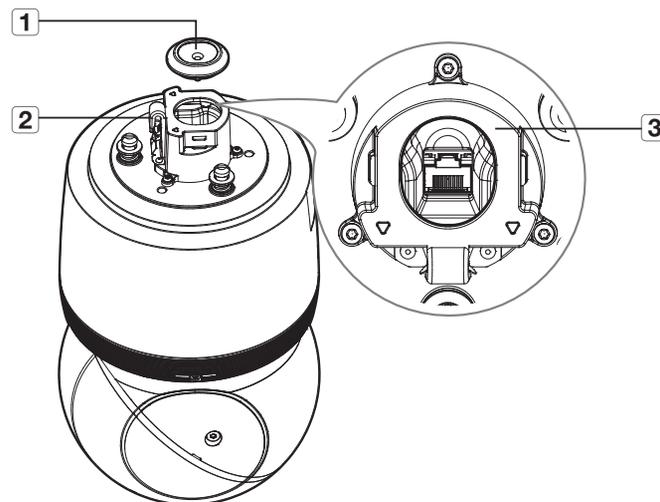
Item	Description
<b>1</b> IR LED	These infrared LED's are controlled by the illumination sensor.
<b>2</b> Heater	At a certain temperature below the threshold, it automatically operates, or you can turn it on manually in the web viewer.
<b>3</b> Lens	Lens for the camera.
<b>4</b> Illumination Sensor	Detects 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.

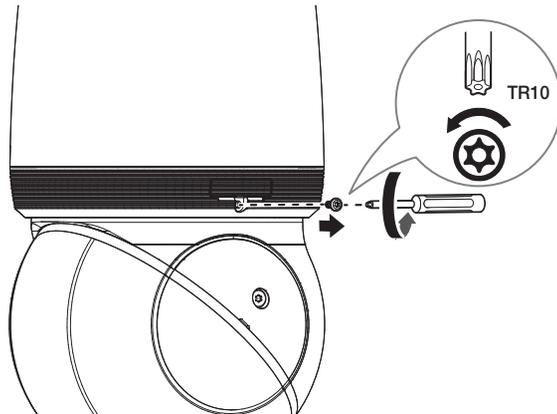
### Precautions before installation

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.

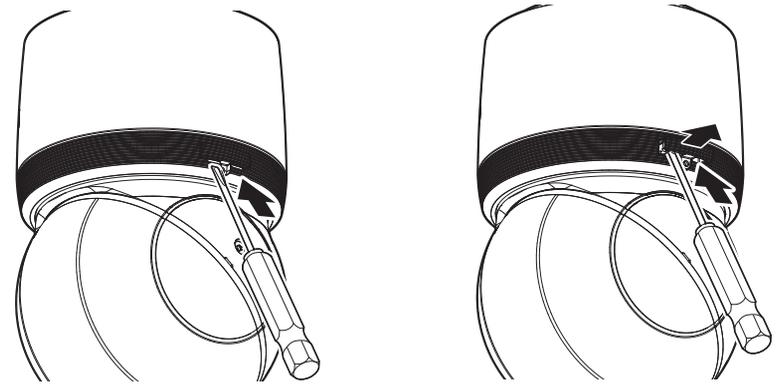
### Inserting a Micro SD card

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

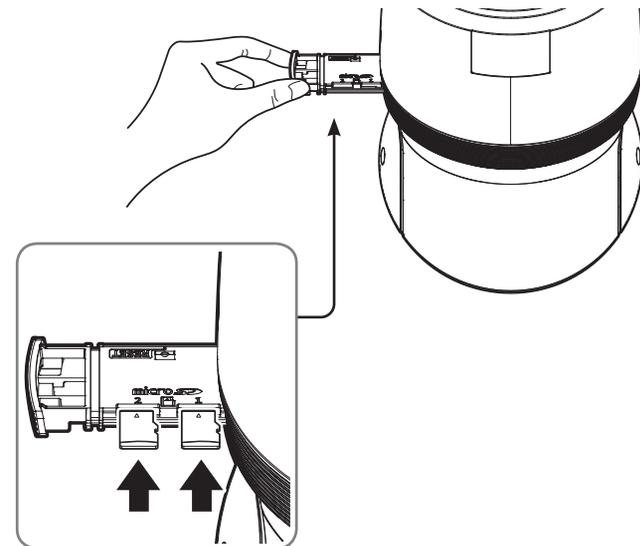


- ! Disconnect the power cable from the camera before inserting the Micro SD card.
- ! When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- ! When installing/removing the Micro SD card, make sure you put the product body on a flat ground before working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

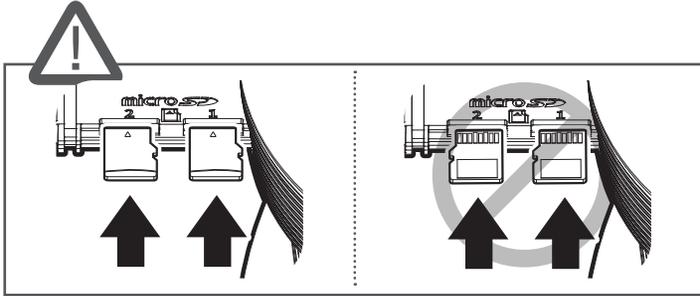
2. Push in a flathead screwdriver under the slot to pull out the Micro SD card slot.



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.

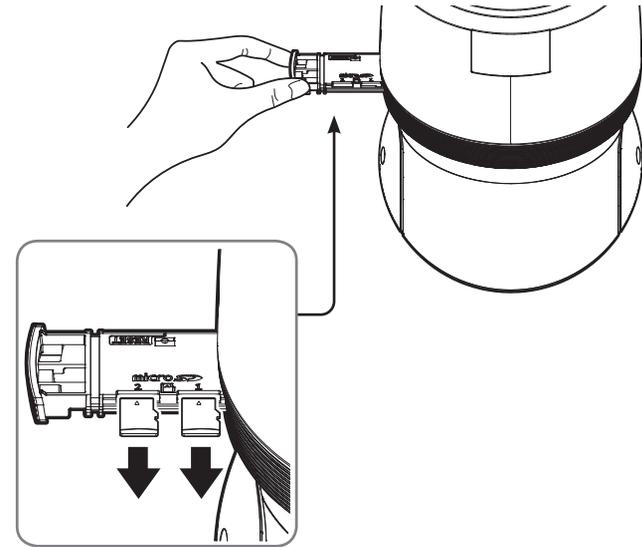


- After inserting the Micro SD cards, push the Micro SD card slot until it clicks into place.
- Fix the Micro SD card slot using screws.

- ! 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.

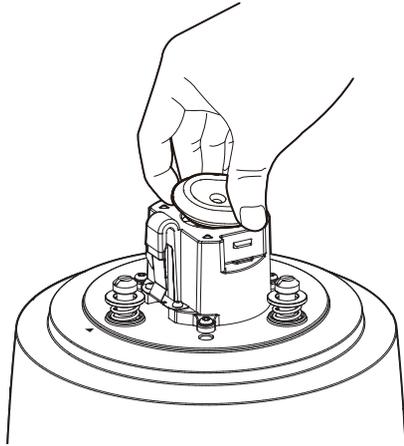
## Preparing & Installing Camera Mount

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

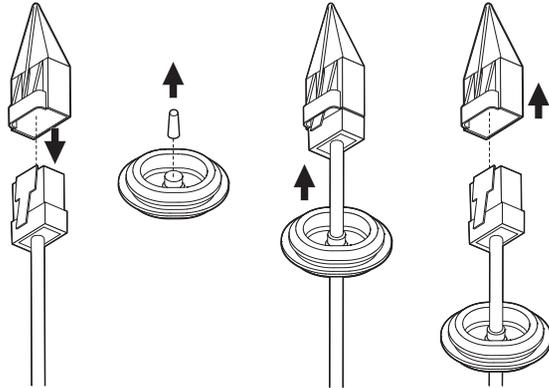
- 📄 See **"Optional Accessories for Installation"** for the appearance of each mount (unbundled). (page 7)

### Getting ready for network cable installation

1. Remove the cable bushing.

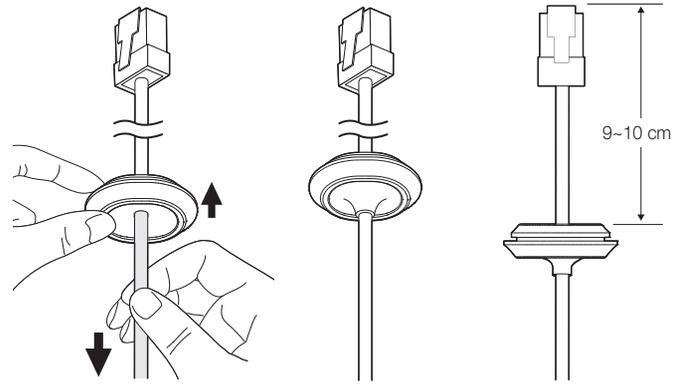


2. Pull off the extruded part of the removed cable bushing.
3. Use the cap installer to route the network cable through the cable bushing.



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

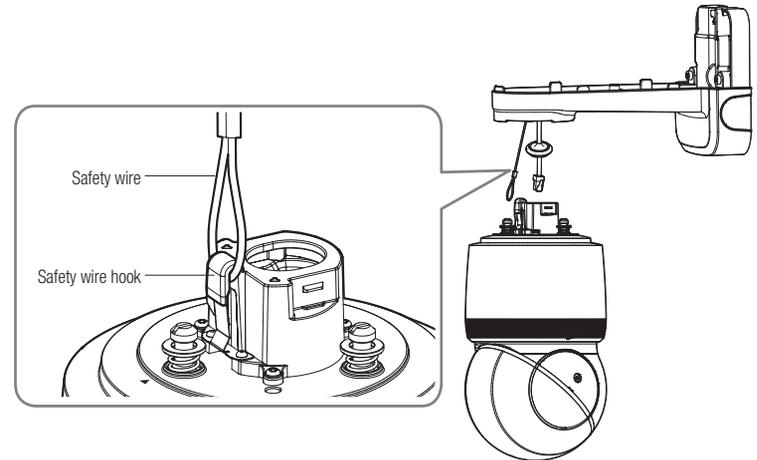
4. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.



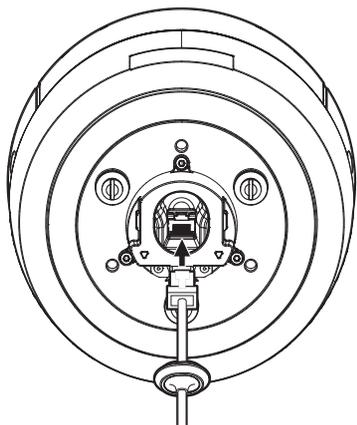
### Installing using wall & pole mount

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

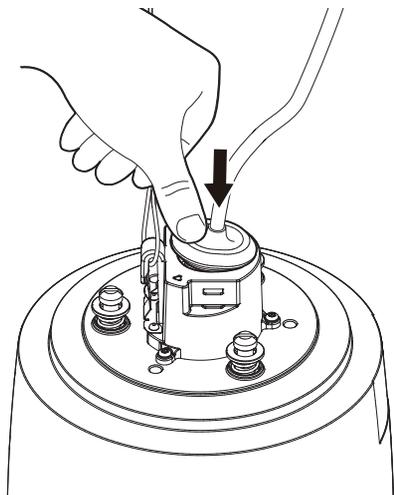
1. Hang the safety wire of the wall & pole mount on the safety wire hook of the product.



2. Connect the network cable to the network port.

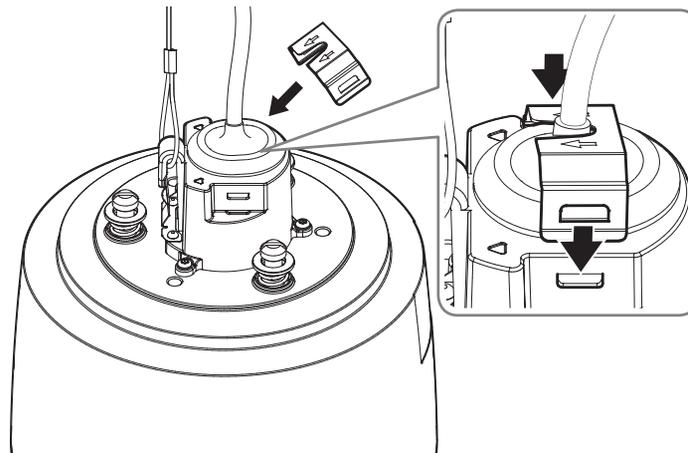


3. Plug the cable bushing of the network cable in the hole.  
When plugging it in, press the whole bushing area evenly so that it is properly plugged in.

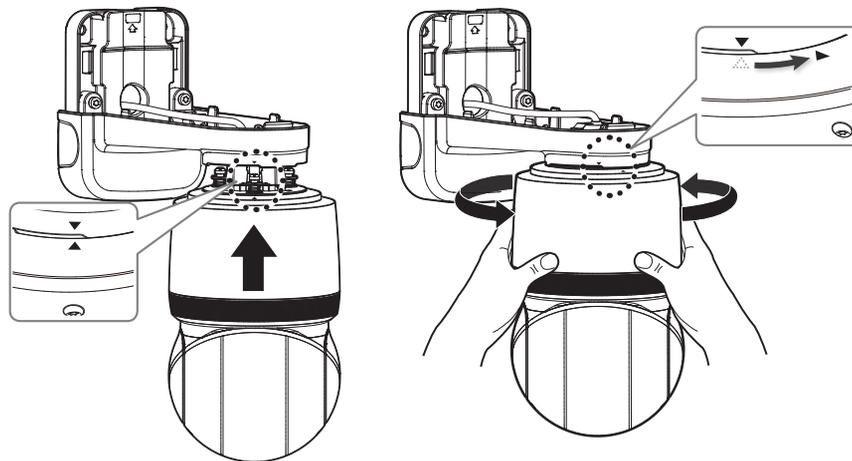


! The length and width of the cable bushing are different. Check the shape and plug it in the right direction.

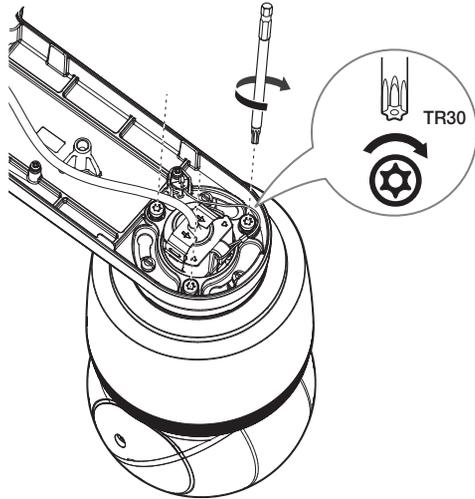
4. Install the bushing clip.  
Let the arrow mark on the clip point in the direction of the safety wire hook, and click each side into place one at a time.



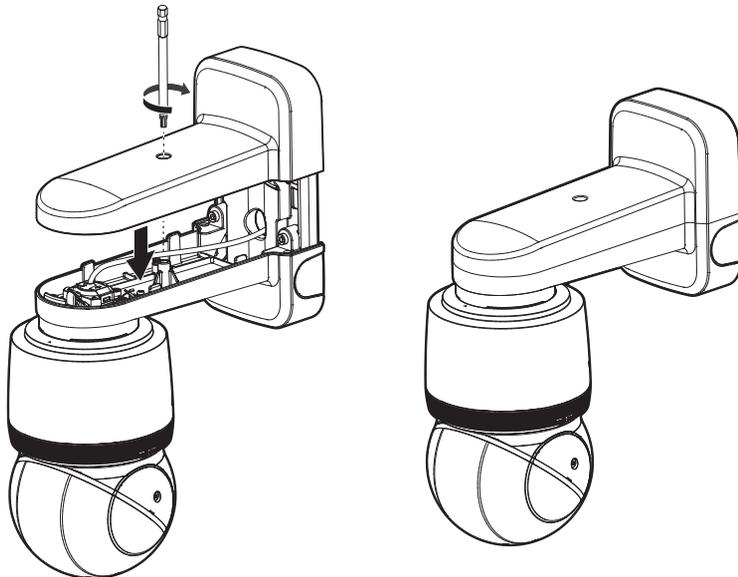
5. After aligning the installation direction guides of the camera and wall & pole mount, push the main cover upward and turn it counterclockwise until it is secured.



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

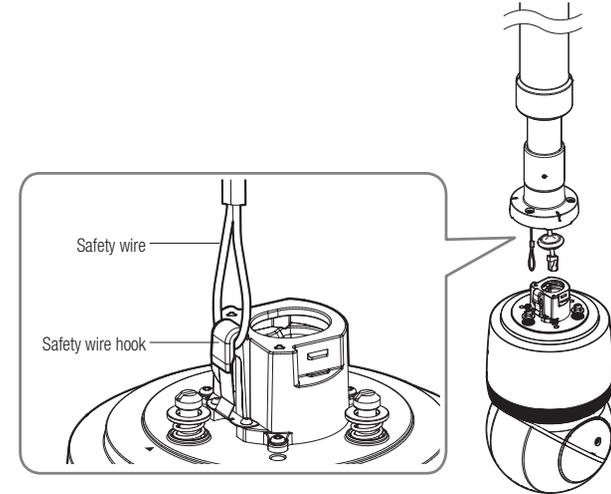


7. Join the top cover of the wall & pole mount.

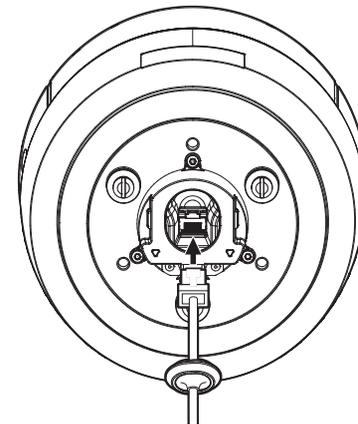


## Installing using ceiling or parapet mount

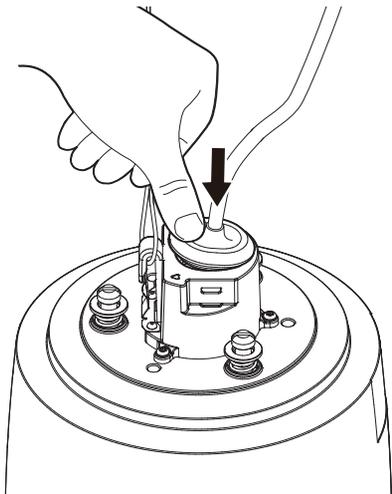
1. Hang the safety wire of the mount on the safety wire hook of the product.



2. Connect the network cable to the network port.

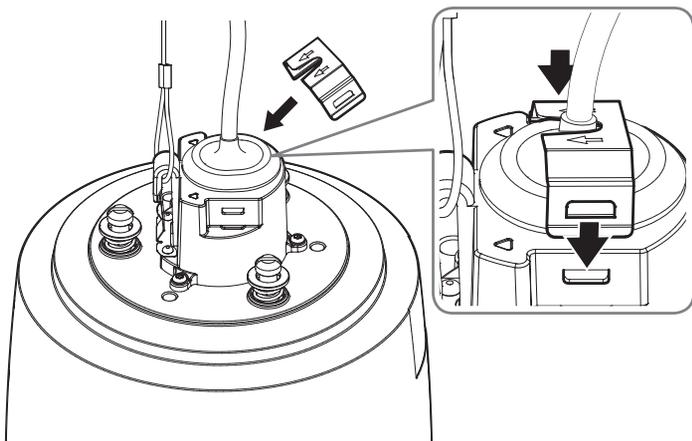


3. Plug the cable bushing of the network cable in the hole.  
When plugging it in, press the whole bushing area evenly so that it is properly plugged in.

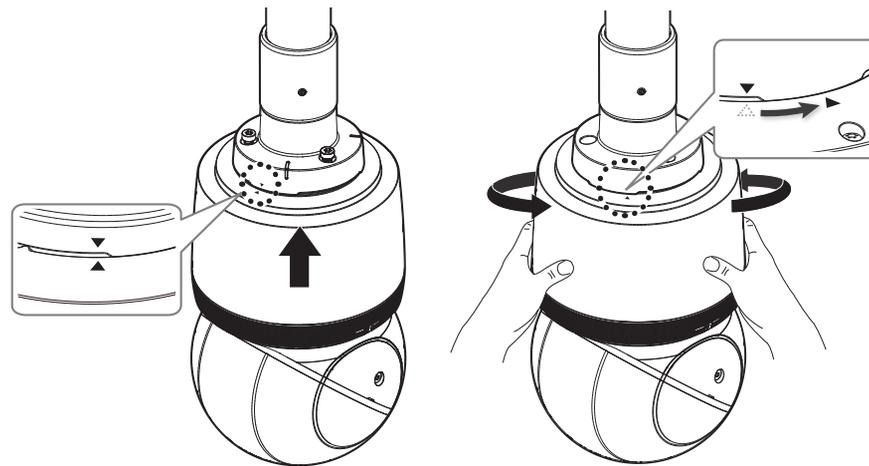


**!** The length and width of the cable bushing are different. Check the shape and plug it in the right direction.

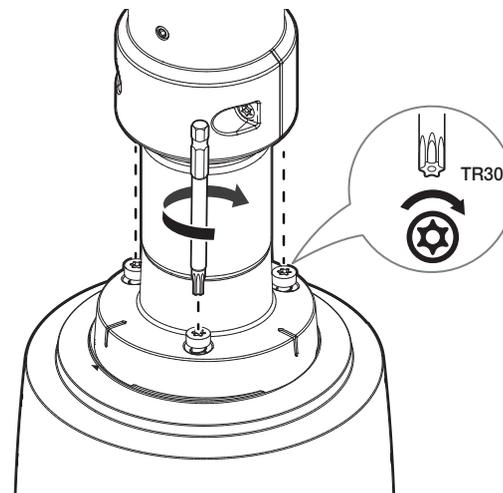
4. Install the bushing clip.  
Let the arrow mark on the clip point in the direction of the safety wire hook, and click each side into place one at a time.



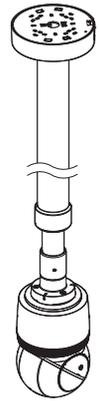
5. After aligning the installation direction guides of the hanging mount, push the main cover upward and turn it counterclockwise until it is secured.



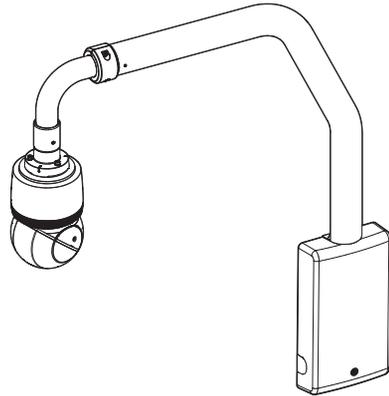
6. Tightly fasten the 3 mounting screws on the top side of the mount.



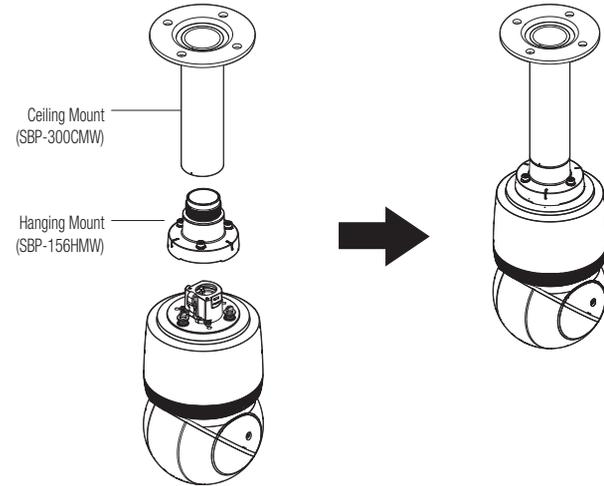
## ▪ Joined with official product mounts (ceiling/parapet)



Ceiling Mount  
(SBP-156CMW)

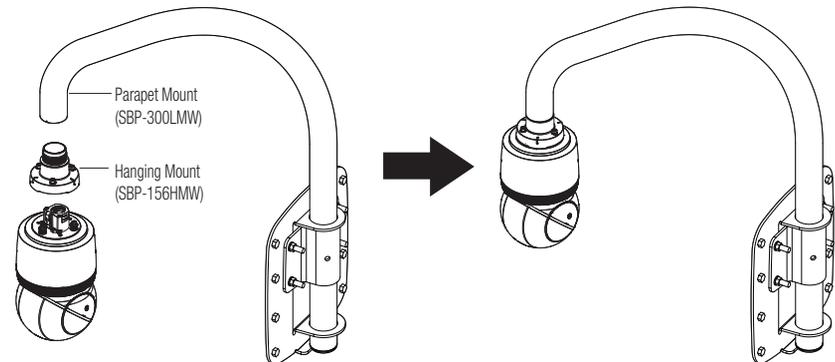
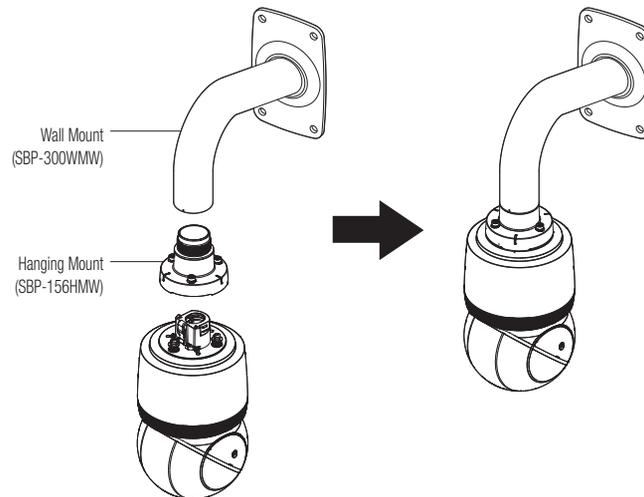


Parapet Mount  
(SBP-156LMW)



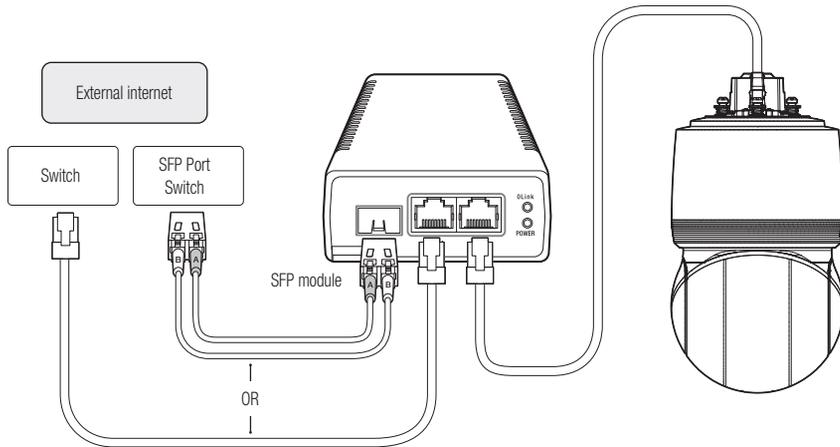
## ▪ Joined with mounts other than official product mounts

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.



NETWORK CAMERA,XNP-C9253

PoE(53V ) 0.49A

M/C: XNP-C9253/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-C8253**

**PoE(53V  ) 0.49A**

**M/C: XNP-C8253/KEX**

**Fac.ID:D**



**DATE**

**S/N: Serial No.**

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

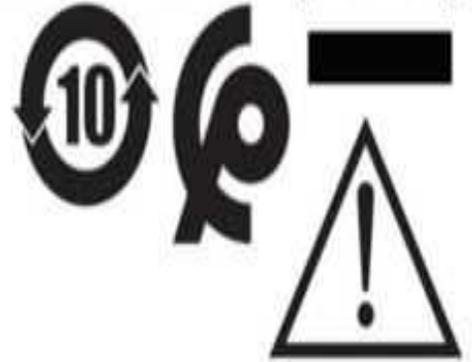
**CAN ICES-3(A)/NMB-3(A)**

**HANWHA VISION CO.,LTD.**

**MADE IN KOREA**



**Rainproof/ Étanche  
IP66**



**NETWORK CAMERA,XNP-C6403**

**PoE(53V  $\overline{\text{---}}$ ) 0.49A**

**M/C: XNP-C6403/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**

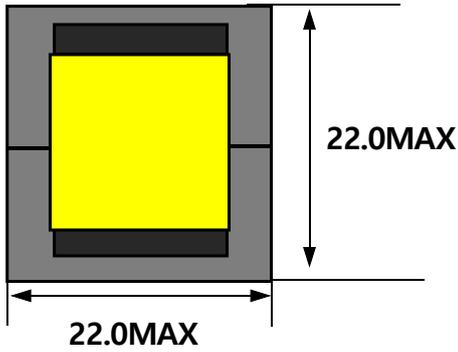
The following Page(s) are related to Miscellaneous-09. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

# APPROVAL SHEET

DATE	2020. 10. 05
PAGE	OF

CUSTOMER	M S P		
PART NAME	SWITCHING TRANS	MODEL NO.	
PART NO.	MSS20-001	DESCRIPTION	EFD2020"H"10PIN

## 1. DIMENSIONS (UNIT:mm)

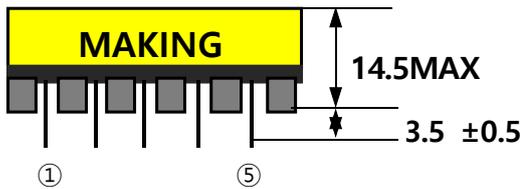


TOP VIEW

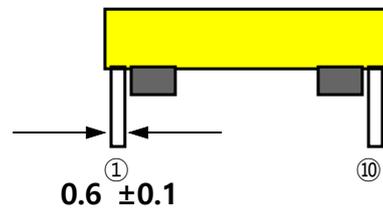
\* MARKING \*

MSS20-001	PART NO
DIAABB	

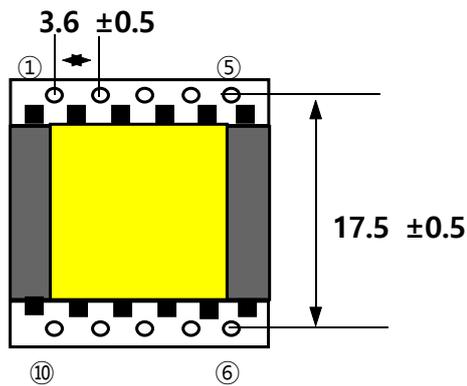
MARKING	
PART NO.	MSS20-001
(LOT NO)	AA : YEAR
	BB : WEEK
MAKER	DONGIN SYSTEM



FRONT VIEW

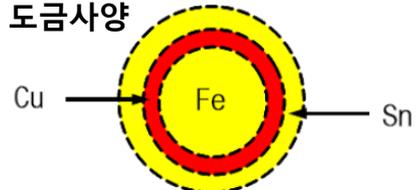


SIDE VIEW



BOTTOM VIEW

PIN 도금사양



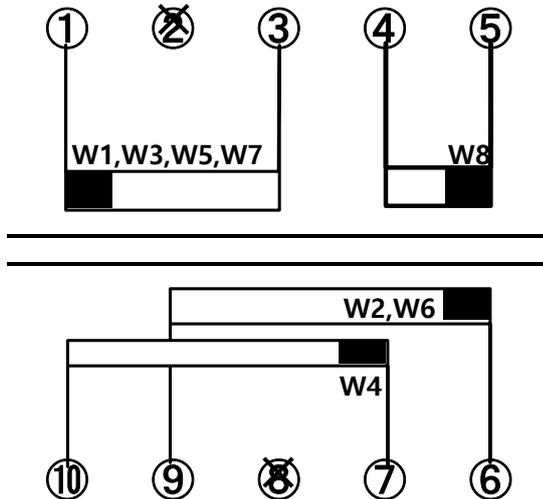
DRAWN BY	CHECK BY	APPR. BY	REVISION		DATE

# APPROVAL SHEET

DATE 2020. 10. 05  
PAGE OF

CUSTOMER	M S P		
PART NAME	SWITCHING TRANS	MODEL NO.	
PART NO.	MSS20-001	DESCRIPTION	EFD2020"H"10PIN

## 2. CONNECTION



REMOVED PIN	#2,8
CUT PIN	#
N.C PIN	#
TEFLON TUBE	#
FLUX BAND	#
DOT MARK	■START OF WINDING
*1~5번 권선기 쪽으로 끼우고 권선한다.	
* CORE CENTER EPOXY BONDING 작업시 SK-015B는CORE 면에 90% 이상 도포	

## 3 WINDING SPECIFICATION

NO	TERMINAL		WIRE	Ts	WINDING METHOD	INSULATION		BARRIER	
	S	F				MATERIAL ( t/ mm )	Ts	PRI	SEC
W1	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W2	6	9	2UEW 0.20Ø X 2P	17	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W3	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W4	7	10	2UEW 0.20Ø X 2P	17	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W5	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W6	6	9	2UEW 0.20Ø X 2P	17	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W7	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE 0.025 / 13.0	1	2.5	2.5
W8	5	4	2UEW 0.15Ø X 2P	18	SOLENOID	POLYESTER TAPE 0.025 / 13.0(YELLOW)	2	3.0	3.0
CORE FIXING TAPE						POLYESTER TAPE 0.025 / 6.0(YELLOW)	3		

DRAWN BY	CHECK BY	APPR. BY	REVISION	DATE
			Safety	

# APPROVAL SHEET

DATE 2020. 10. 05

PAGE OF

CUSTOMER	M S P		
PART NAME	SWITCHING TRANS	MODEL NO.	
PART NO.	MSS20-001	DESCRIPTION	EFD2020"H"10PIN

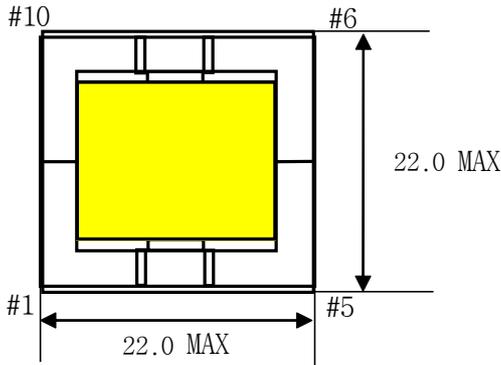
## 10. MATERIAL LIST

NO	ITEM	MATERIAL	MANUFACTURER	FILE NO.
1	CORE	PC-40 EFD2020 HX-4P EFD2020 GP4 EFD2020 TD4 EFD2020	SHANG HAI JISHUN MAGNETIC MATERIAL CO.,LTD NANTONG HUAXING MAGNETIC MATERIAL CO.,LTD NANTONG GUANYOUDA MAGNETIC CO.,LTD ZHEJIANG TONGDA MAGNETIC PRODUCTS CO.,LTD	
2	BOBBIN	PHENOL 94V-0 EFD2020"H" TYPE 10PIN ( 5+5 PIN )	Hexion Gmbh CHANG CHUN PLASTICS CO LTD SUMITOMO BAKELITE CO LTD	E61040 E59481 E41429
3	WIRE	POLYURETHANE ENAMELED COPPER WIRE 2UEW 0.15Ø,0.20Ø,0.23Ø	YOUNG HWA PRODUCTION CO LTD SHANDONG PENGTAI STOCK CO LTD	E141925 E166187
4	INSULATION TAPE	POLYESTERS TAPE ( YELLOW ) T = 0.025mm , W = 13.0mm	WEIHAI KANGLI TAPE CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E475896 E165111
5	CORE FIXING TAPE	POLYESTERS TAPE T = 0.025mm , W =6.0 mm ( YELLOW )	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	E246950
6	PIN TERMINAL	SOLDER COATED COPPER	DAE-A LEAD CO.,LTD.	
7	BARRIER TAPE	P.N.W TAPE T = 0.25, 2.5mm,3.0mm	TAE HWA INDUSTRIAL CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD WEIHAI KANGLI TAPE CO LTD	E92677 E165111 E475896
8	MARKING	INK ( BON MARQUE) or EQV.	ATL CO.,LTD or EQV.	
9	VARNISH	SR-337* J13(a)	SEKYE CHEMICAL CO LTD JIANGYIN CHUANGYI SPECIAL INSULATION MATERIAL CO LTD	E257443 E315314

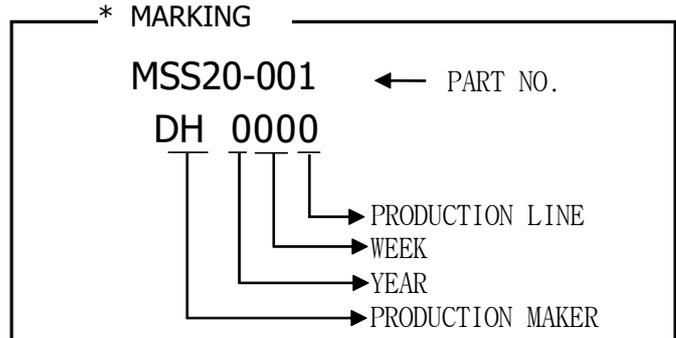
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<b>SPECIFICATION</b>		SHEET NO.	1 OF 15
		D A T E	2020. 08. 31.
ITEM	S/W TRANS	MODEL NAME	DC-DC(한화테크윈)
PART NO.	MSS20-001	DESCRIPTION	EFD 20x20mm

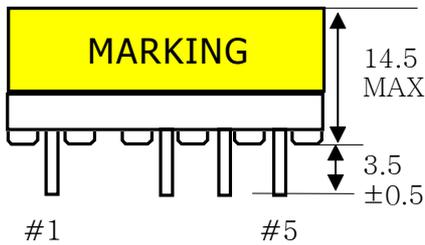
1. APPEARANCE & DIMENSION (UNIT:mm)



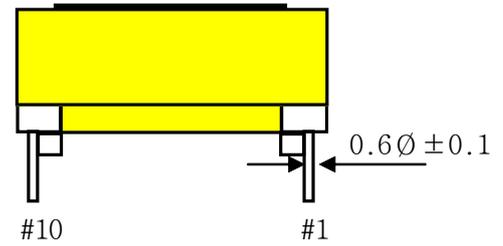
<TOP VIEW>



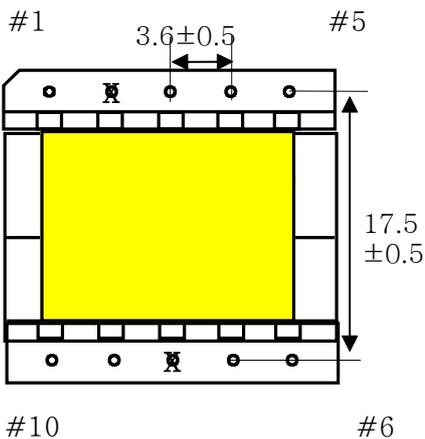
- ※ PRODUCTION LINE
1. A : CHUN AN
  2. Y : YANTAI
  3. C : WEIHAI



<FRONT VIEW>

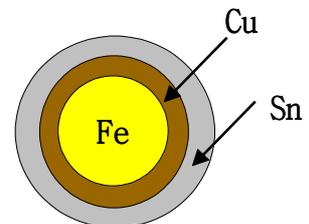


<SIDE VIEW>



<BOTTOM VIEW>

\*. PIN PLATING SPEC

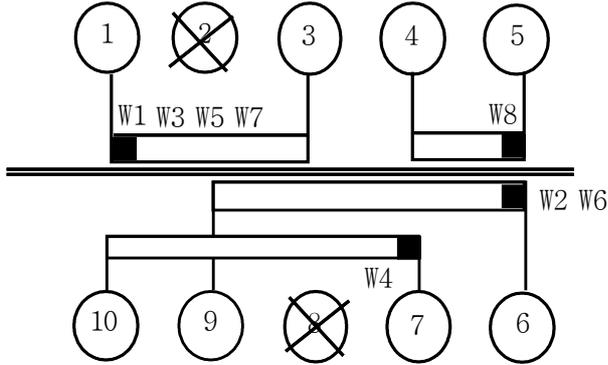


※ PIN LENGTH: BEFORE SOLDERING

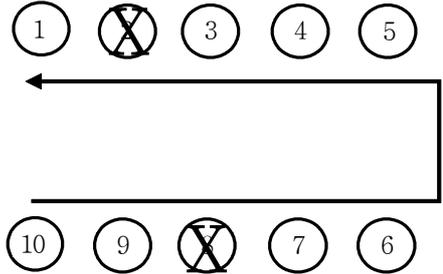
NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

<h1>SPECIFICATION</h1>		SHEET NO.	2 OF 15
		D A T E	2020. 08. 31.
ITEM	S/W TRANS	MODEL NAME	DC-DC(한화테크윈)
PART NO.	MSS20-001	DESCRIPTION	EFD 20x20mm

2. SCHEMATIC DIAGRAM.



\* ■ START MARK.



WINDING	BOTTOM VIEW	C.C.W
REMOVE PIN	#2,8	
N.C PIN		
CUT PIN		
TUBE PIN		
BOBBIN INSERT	PRIMARY	

3. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION			BARRIER	
	S	F				MATERIAL	T/W	TS	TOP	PIN
W1	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W2	6	9	2UEW 0.20Øx2#	17	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W3	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W4	7	10	2UEW 0.20Øx2#	17	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W5	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W6	6	9	2UEW 0.20Øx2#	17	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W7	1	3	2UEW 0.23Ø	30	SOLENOID	POLYESTER TAPE	0.025/13.0	1	2.5	2.5
W8	5	4	2UEW 0.15Øx2#	18	SOLENOID	POLYESTER TAPE	0.025/13.0{Y}	2	3.0	3.0
* CORE FIX TAPE						POLYESTER TAPE	0.025/6.0{Y}	3	-	-

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

<h1>SPECIFICATION</h1>		SHEET NO.	6 OF 15
		D A T E	2020. 08. 31.
ITEM	S/W TRANS	MODEL NAME	DC-DC(한화테크윈)
PART NO.	MSS20-001	DESCRIPTION	EFD 20x20mm

8. MATERIAL LIST

NO	I T E M	MATERIALS & DIMENSIONS	MANUFACTURER	REMARK	
1	CORE	EFD 20x20mm	K2.3P	ZHEJIANG LINAN HE SHUN MAGNETIC FLUX ELECTRONIC CO LTD	
			PC40	SHANGHAI JISHENG MAGNETIC MATERIAL CO LTD	
			DMR40	HENGDIAN GROUP DMEGC MAGNETICS CO LTD	
			YR28	TONGXIANG YAORUN ELECTRONIC CO LTD	
			KP4	SHANGHAI KANGSHUN MAGNETIC COMPONENT CO LTD	
			GP4	NANTONG GUANYOUDA MAGNETIC CO LTD	
2	BOBBIN	EFD 20 x 20mm [10P] PHENOL (94V-0)	SUMITOMO BAKELITE CO LTD CHANG CHUN PLASTICS CO LTD	E41429 E59481	
3	COPPER WIRE	2UEW 0.15Ø 2UEW 0.20Ø 2UEW 0.23Ø	YANTAI ROME ELECTRONIC CO LTD JIANGSU DARTONG M & E CO LTD SHANDONG SAINT ELECTRIC CO LTD ZHEJIANG HONGBO TECHNOLOGY CO LTD	E166187 E237377 E194410 E221719	
4	INSULATION TAPE	POLYESTER TAPE 0.025T x 13.0mm 0.025T x 13.0mm {YELLOW}			
5	CORE FIXING TAPE	POLYESTER TAPE: 0.025T W=6.0mm {YELLOW}	DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD JINGJIANG JINGYANG INSULATING PRODUCT CO LTD JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD SHENZHEN MEIXIN ELECTRONIC CO LTD	E105147 E165111 E309872 E246950 E304309	
6	BARRIER TAPE	POLYESTER TAPE 0.050T x 3.0mm			
7		P.N.W TAPE W=2.5mm			
8	EPOXY	UNI-BOND #812 SK-015B H-907	GREENSTAR CO LTD SE KYE CHEMICAL CO LTD. DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY		
9	VARNISH	J13 R-831 DVB-2085(*),DVB-2177(@) T-4260	JIANGYIN CHUANGYI SPECIAL INSULATION MATERIAL CO LTD ZHEJIANG RONGTAI TECHNICAL INDUSTRY CO LTD NOROO PAINT&COATINA CO LTD SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E315314 E227128 E93947 E228349	
10	SOLDER	Sn98/Cu2.0	SAMWOO ALLOY METAL CO LTD TIANJIN SONGBENENVIRONMENTAL SCIENCE&TECH CO LTD		
11	INK & LASER	JP-K12,K33 JP-K72 TH-TYPE A JP-K72 W89	HITACHI INDUSTRIAL EQUIPMENT CO LTD TIANJIN LIANJIIEZHURUIPENGMAKEJI YOUXIANGONGSI		
12	FLUX	8EB34 L-8EB34	TIANJIN SONGBENENVIRONMENTAL SCIENCE&TECH CO LTD TIANJIN QINGHE SCIENCE-TECH DEVELOPMENT CO LTD		

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

The following Page(s) are related to Miscellaneous-10. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	0

## 2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	7.5A			
3	INDUCTANCE	START-FINISH	160KHz	450uH	+ 50%, -30%	HP-4194A 1V (25°C±2°C)
4	TEMPERATURE RISE	AT RATED CURRENT	60°C MAX			
5	DC RESISTANCE	START-FINISH	19.0 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)

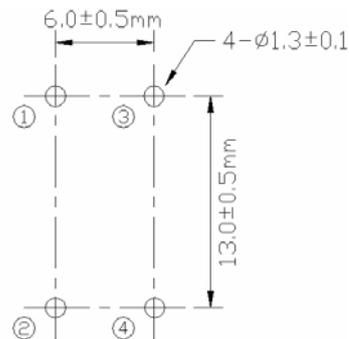
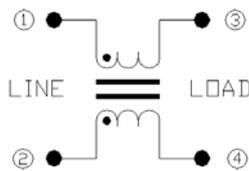
## 3. OPERATING TEMPERATURE RANGE

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

## 4. KEEP TEMPERATURE RANGE

-30°C ~ +60°C.

## 5. CIRCUIT DIAGRAM



Minimum PCB Piercing HOLE

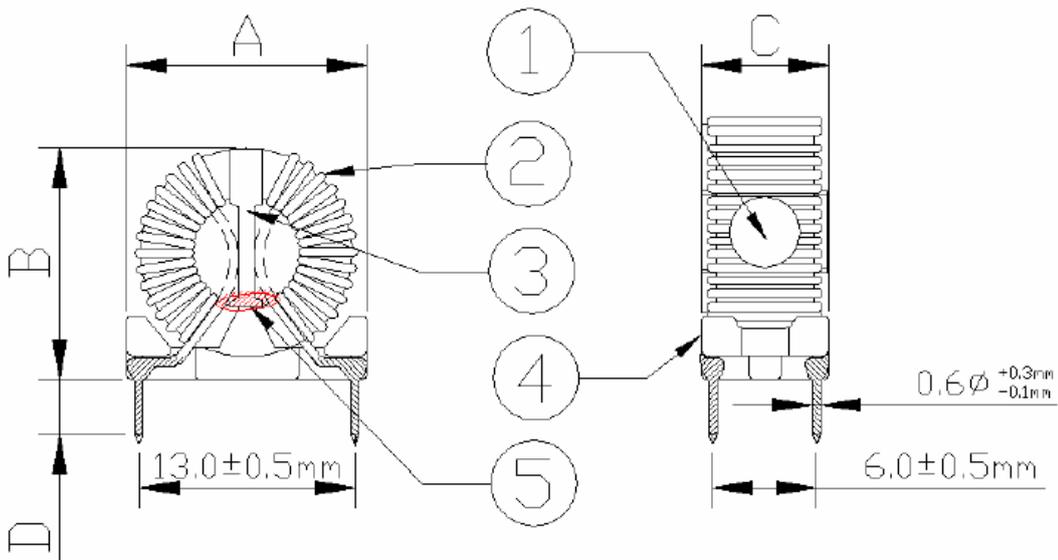
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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	0

### 6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.7Φ	9 ±1Ts	HANDMADE	BETWEEN L1 AND L2 (52.78uH MAX)
L2	2	4				

### 7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	18.0mm MAX	18.5mm MAX	10.0mm MAX	4.0±1.0mm

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DESIGN



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APPROVAL



PAGE

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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	0

## 8. MATERIAL LIST

No.	NAME	SPECIFICATION	MANUFACTURER	COLOR	UL No.	
1	Ferrite Core	MA100 R-13/7/5 R10KF TR13X7X5C	JFE Ferrite Corp LAIWU CHAINWELL ELECTRONIC&MATERIAL CO.,LTD Equal.	GRAY		
2	Enamel Wire	UEW 0.7Φ / 9±1Ts	UEW	Hwa Il Electronics Co.,Ltd	YELLOW	E140246
			UEW	SHANDONG PENGTAI STOCK CO LTD Equal.	YELLOW	E166187
3	Coil Separator	LCP L304T40	TORAY Industries INC	BLACK	E41797	
		NYLON A 50H1(r3)(f2)	SOLVAY ENGINEERING PLASTICS GBU	BLACK	E44716	
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 LTD	BLACK	E59481	
5	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE	
			EA610A / EA610B	Chem Tech	Transparent	

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
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The following Page(s) are related to Miscellaneous-11. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB5	0

## 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	+ 50%-30%	HP-4194A 1V (25°C±2°C)
4	TEMPERATURE RISE	AT RATED CURRENT	55°C MAX			
5	DC RESISTANCE	START-FINISH	141.0 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)

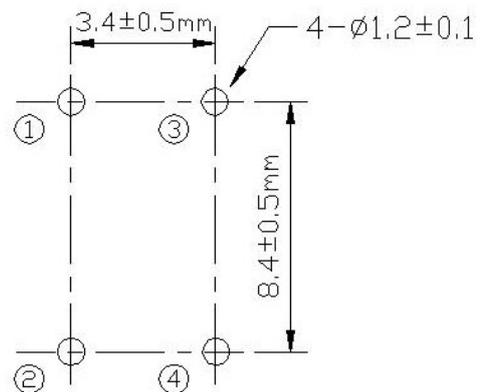
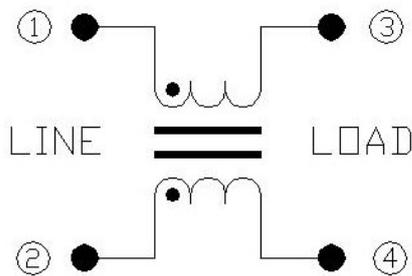
## 3. OPERATING TEMPERATURE RANGE

-40°C TO +105°C INCLUDING TEMPERATURE RISE.

## 4. KEEP TEMPERATURE RANGE

-40°C ~ +105°C.

## 5. CIRCUIT DIAGRAM



PCB layout requirements

※PCB LAYOUT is strictly required..

**TNC** TNC CO.,LTD

DESIGN

CHOL.J.K  
R&D

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R&D

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KOO.J.H  
R&D

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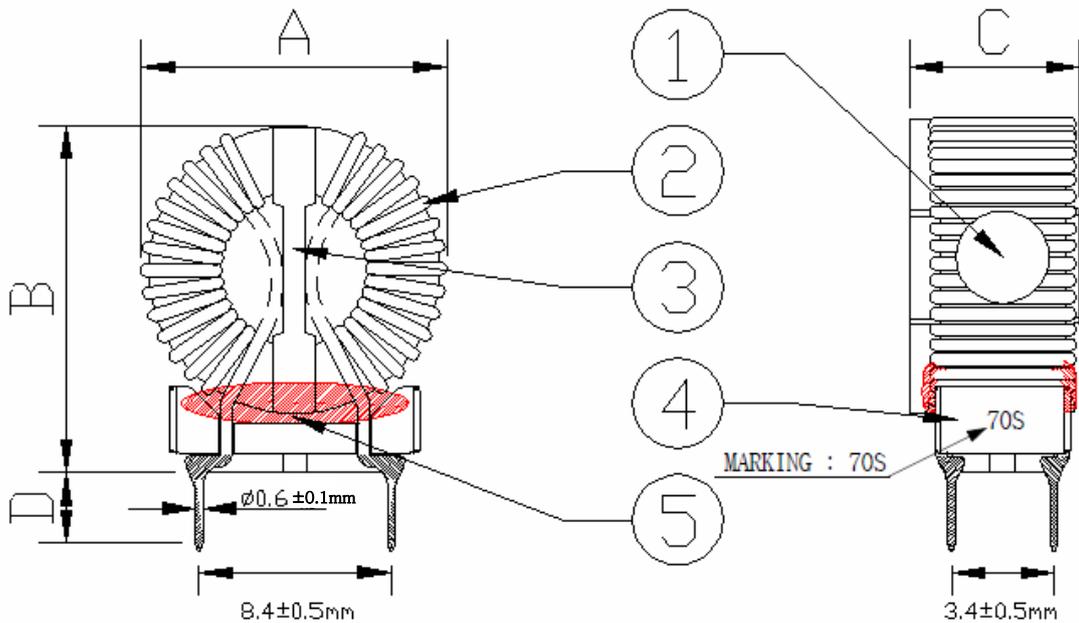
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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB5	0

### 6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.40Φ	35±2Ts	HANDMADE	BETWEEN L1 AND L2 (0.2mH MAX)
L2	2	4				

### 7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	16.0mm MAX	18.5mm MAX	10.0mm MAX	Not include solder fillet 3.3 ± 0.5mm

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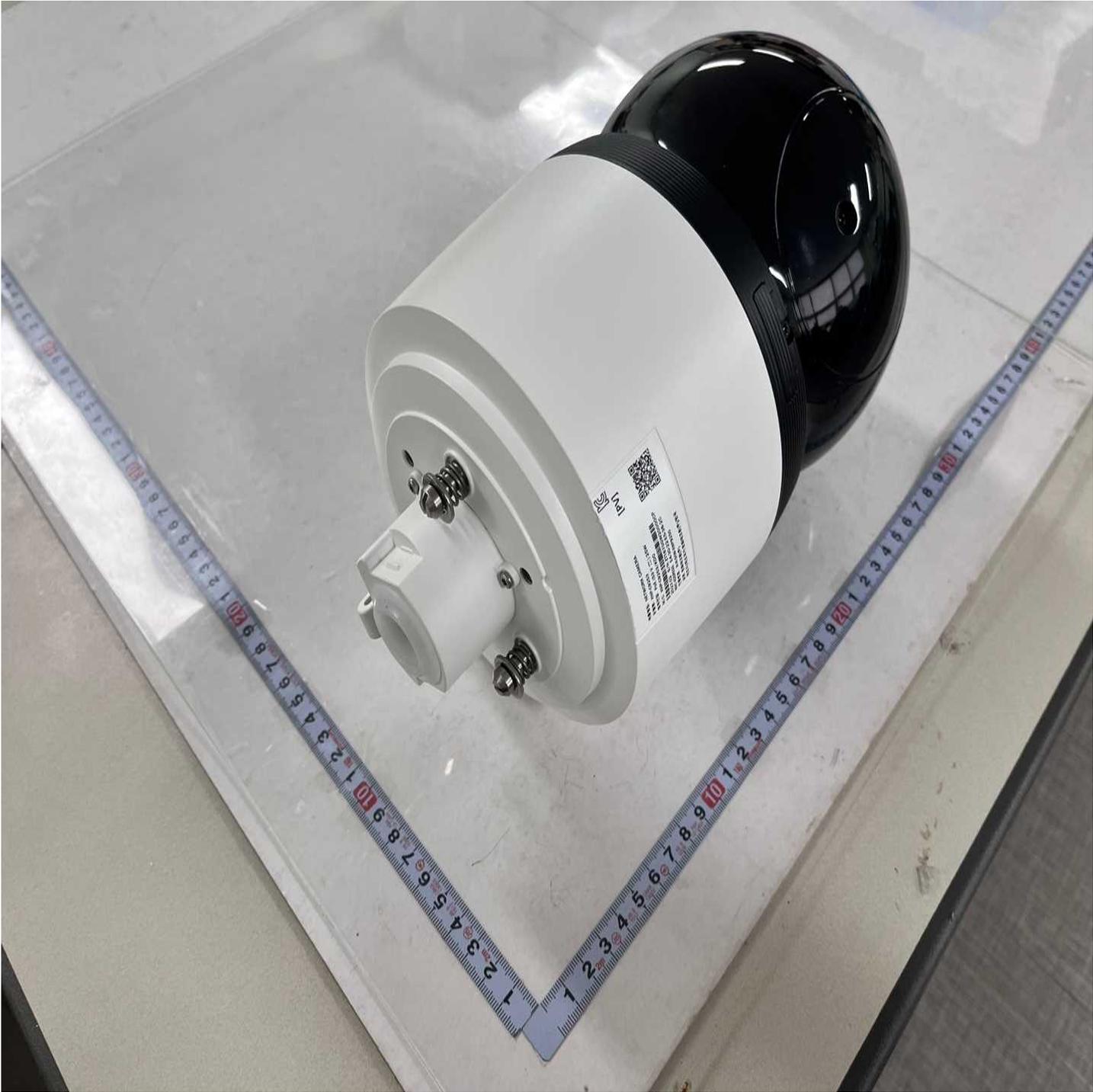
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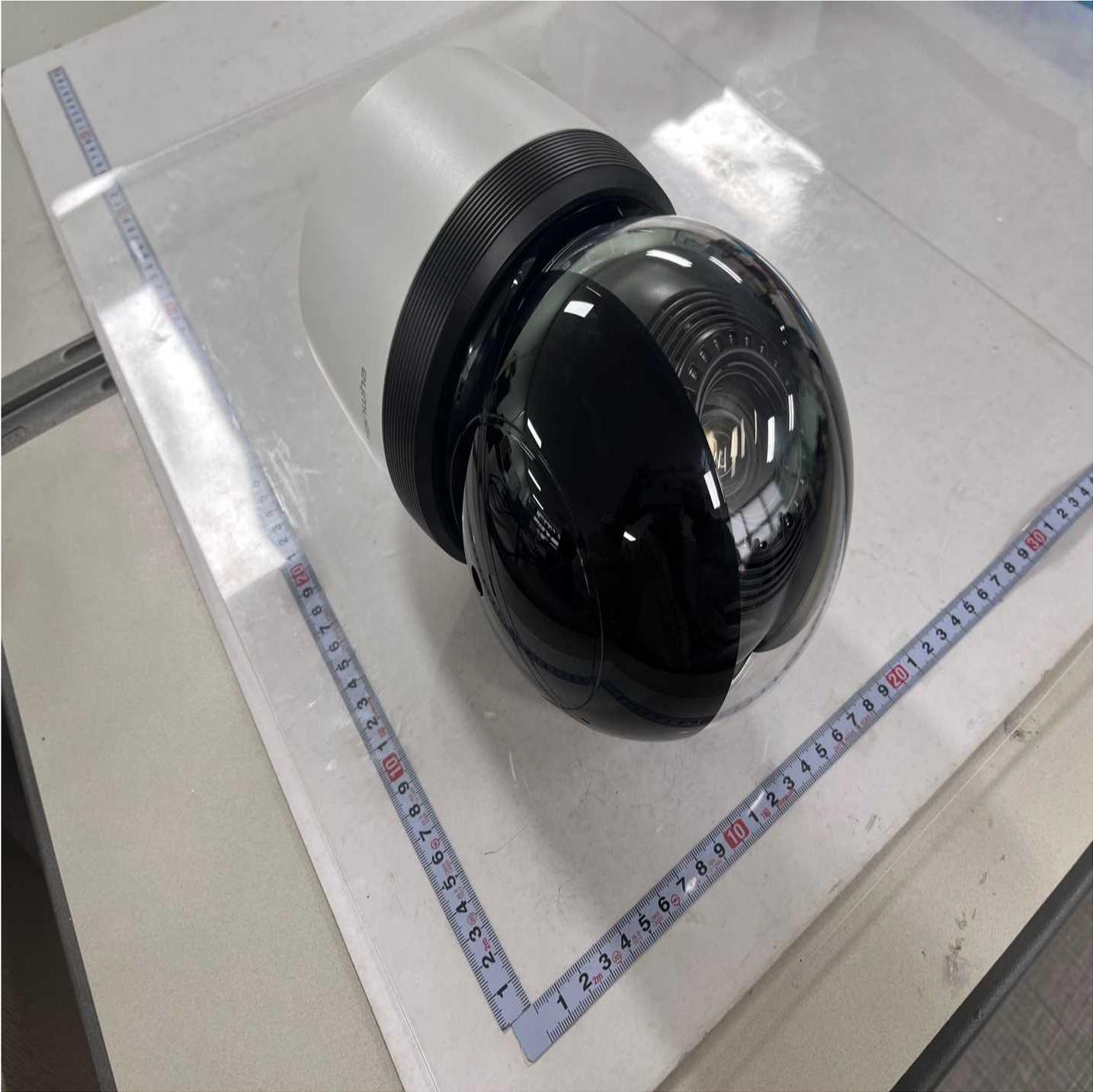
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB5	0

## 8. MATERIAL LIST

No.	NAME	SPECIFICATION	MANUFACTURER	UL No.	
1	Ferrite Core	MA100 R-13/7/5 M10K T13X7X5C	JFE Ferrite Corp SUZHOU TIANMING MAGENETIC TECHNOLOGY CO.,LTD		
2	Enamel Wire	UEW 0.40Φ / 35±2Ts	UEW	HWA-IL ELECTRONICS CO LTD	E140246
			UEW	YANTAI ROME ELECTRONIC CO LTD	E166187
			UEW	SIAM PACIFIC ELECTRIC WIRE & CABLE CO.,LTD	E142108
			UEW	LIAONING DONGGANG MAGNET WIRE CO LTD	E229247
3	Coil Separator	LCP L304T40	TORAY INDUSTRIES INC	E41797	
		NYLON A 50H1(r3)(f2)	BASF Engineering Plastics (Shanghai) Co., Ltd.	E507491	
4	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class	Hexion GmbH	E61040	
		Phenolic (T375HF) UL 94 V-0 Class	CHANG CHUN PLASTICS CO LTD	E59481	
5	Epoxy	EPOXY RESIN	EA610A / EA610B	Chem Tech	
			HB5225A10/ HB5225B10	SUZHOU ROUTEN ELECTRONICS CO., LTD	
A	Marking	Bon Mar Que	T&K Toka		
		IR-254WTSPB/MC-254WT	DOMINO		

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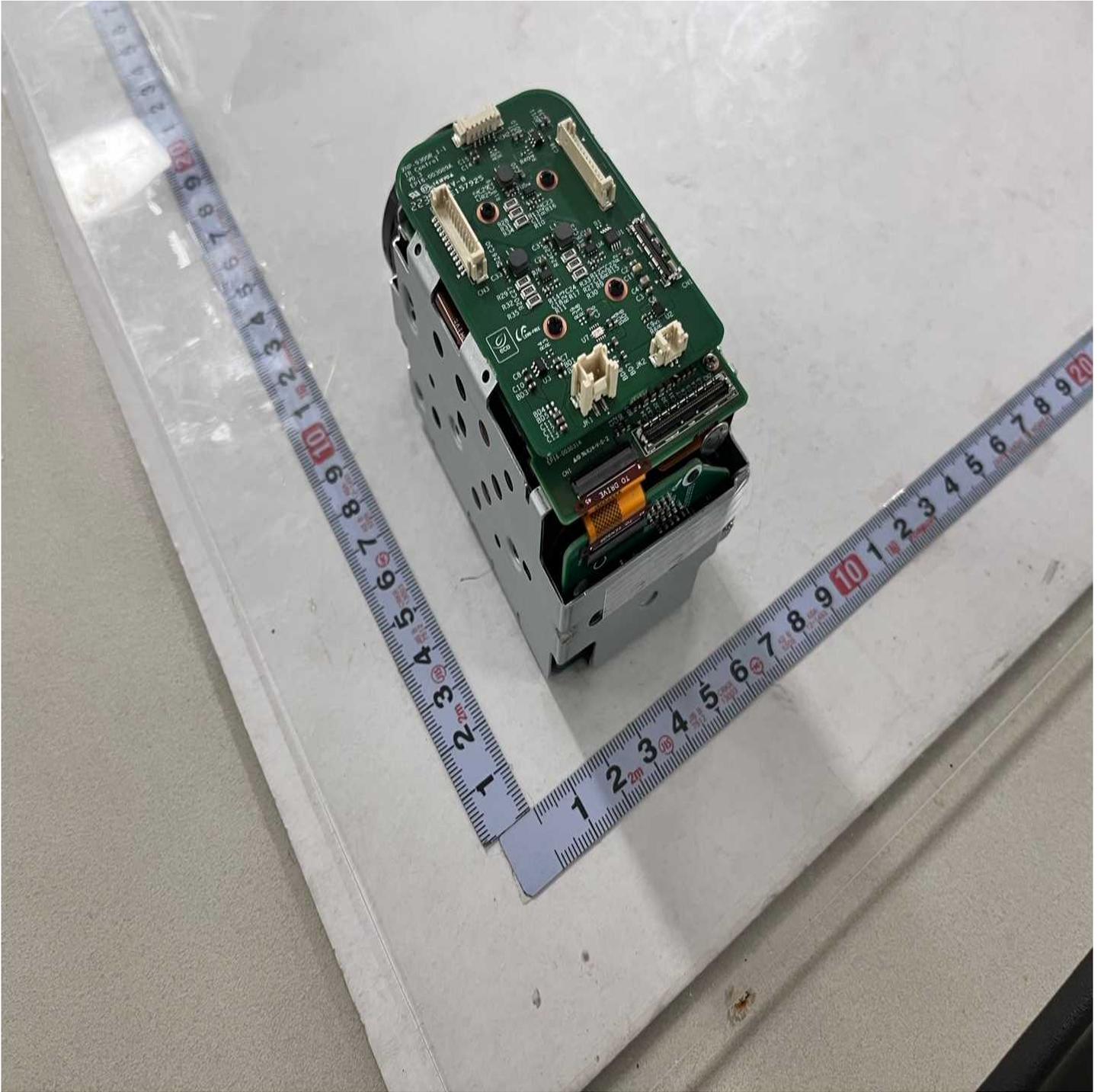


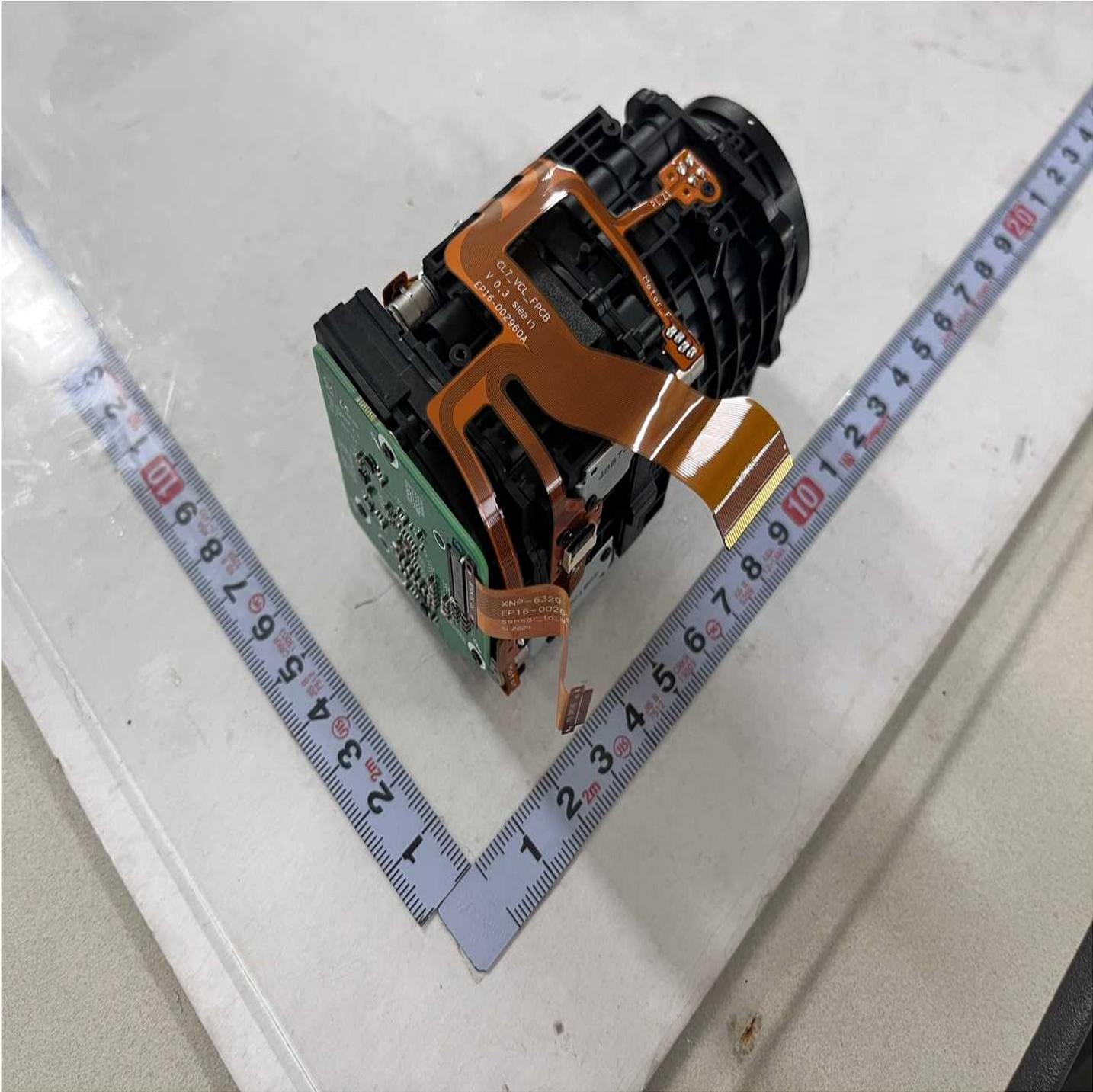


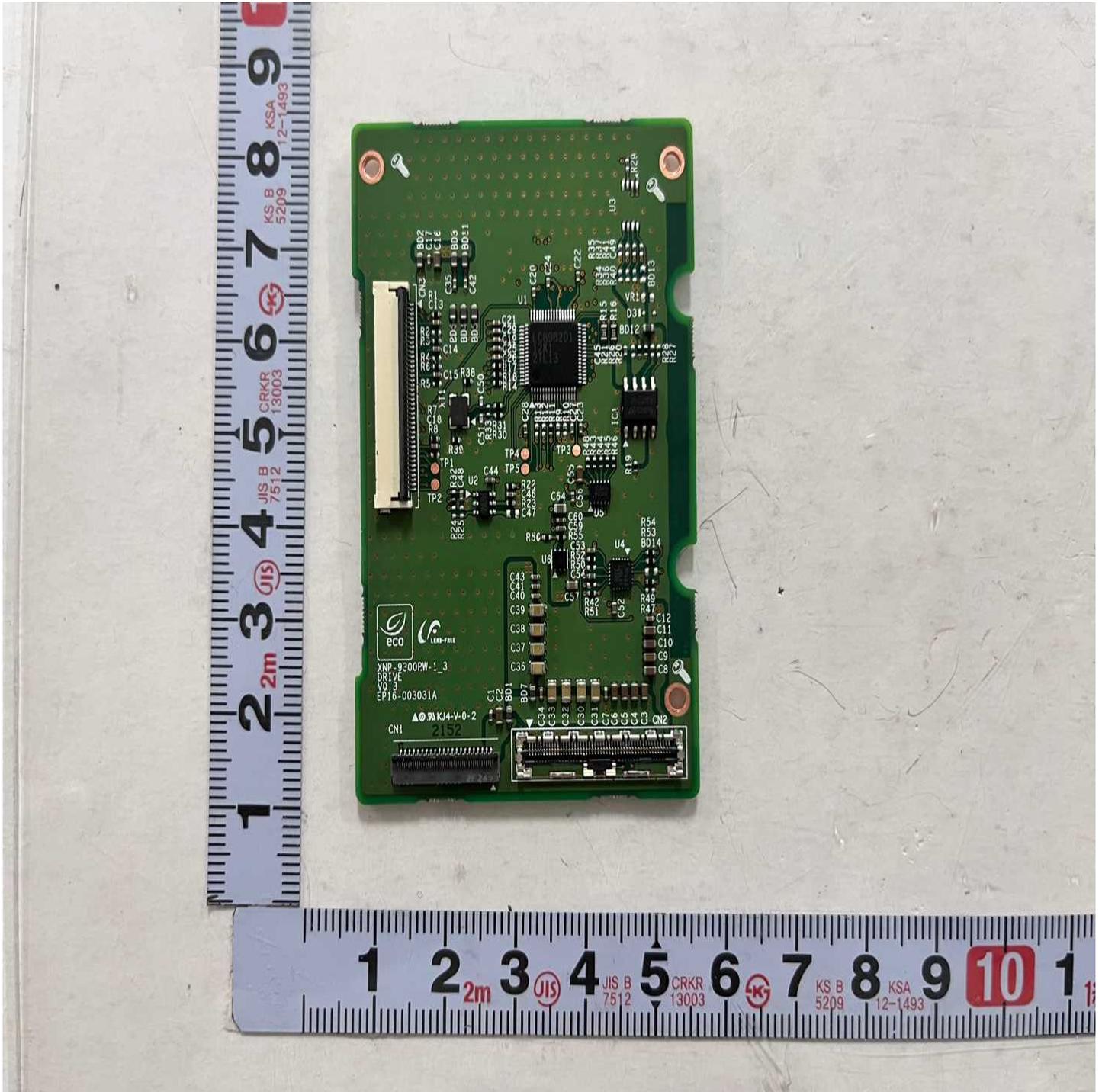


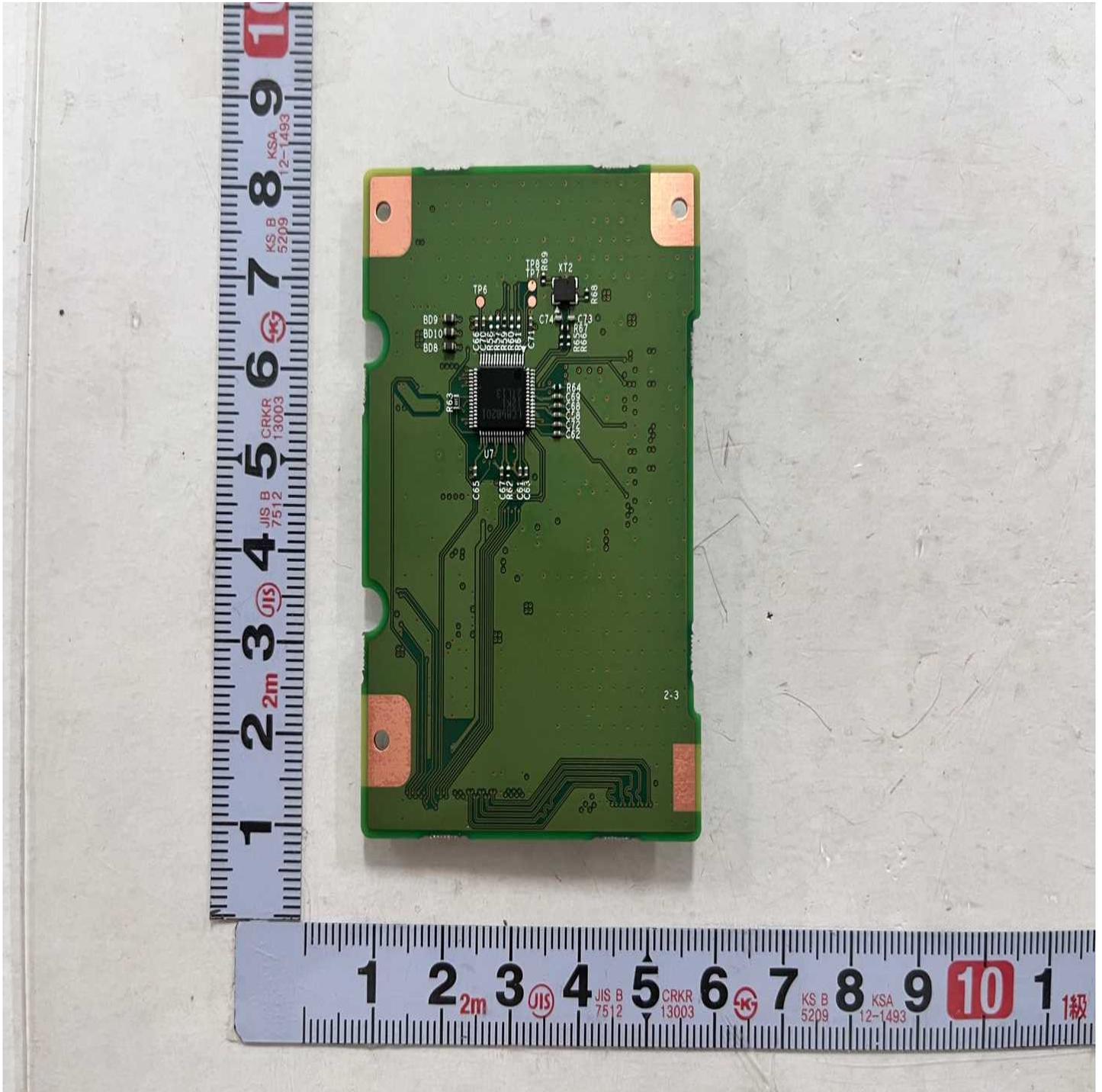


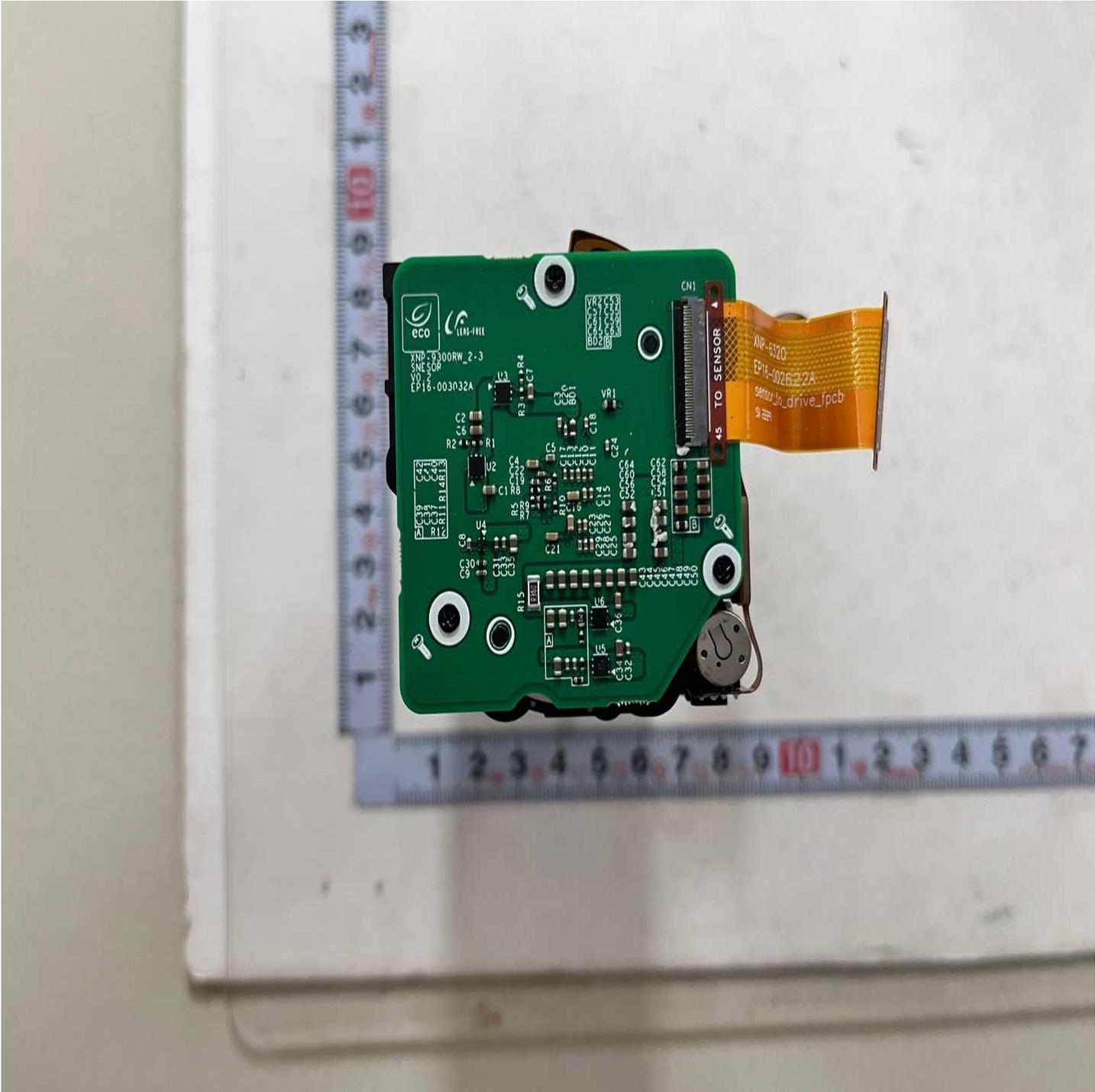


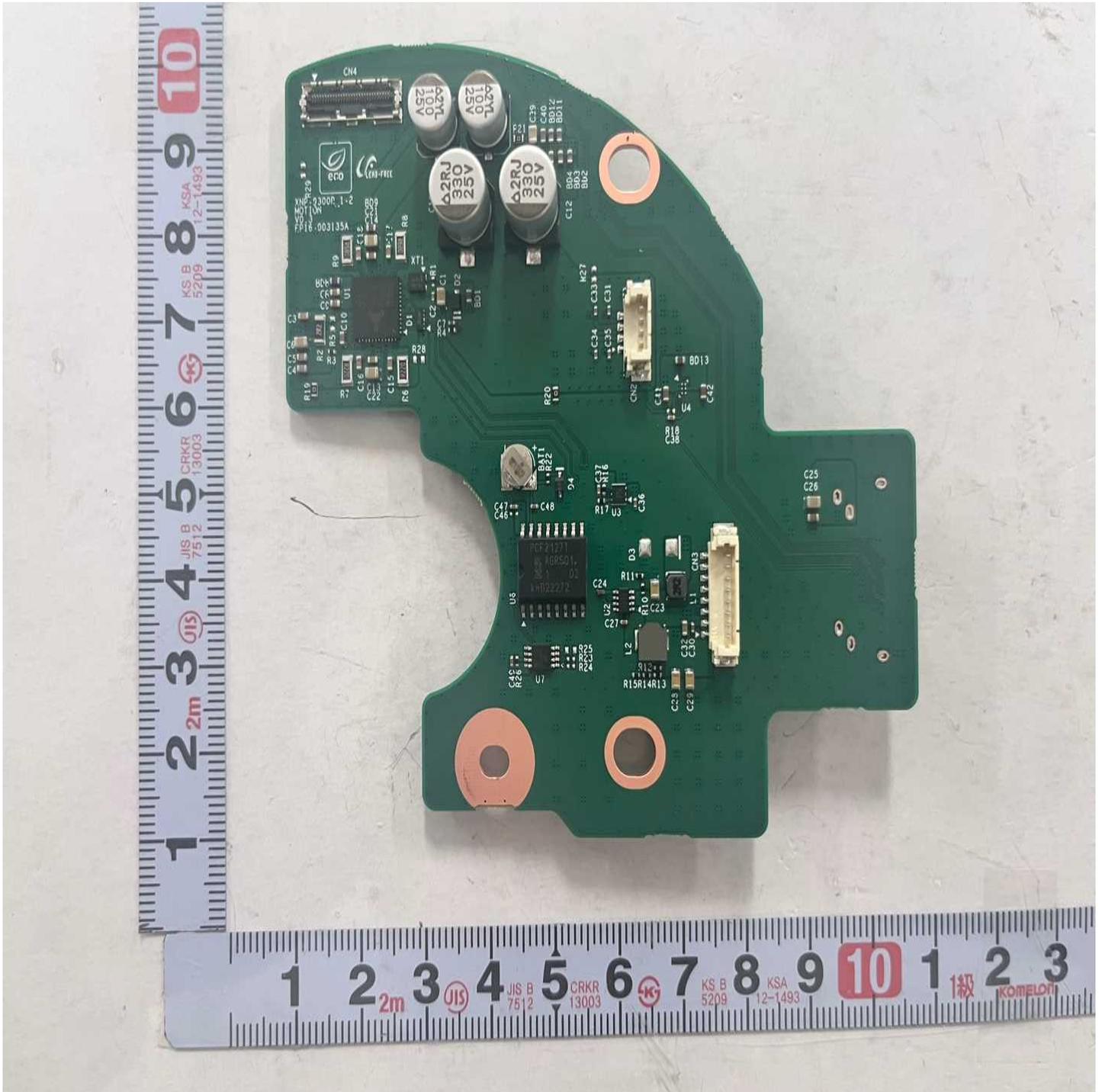




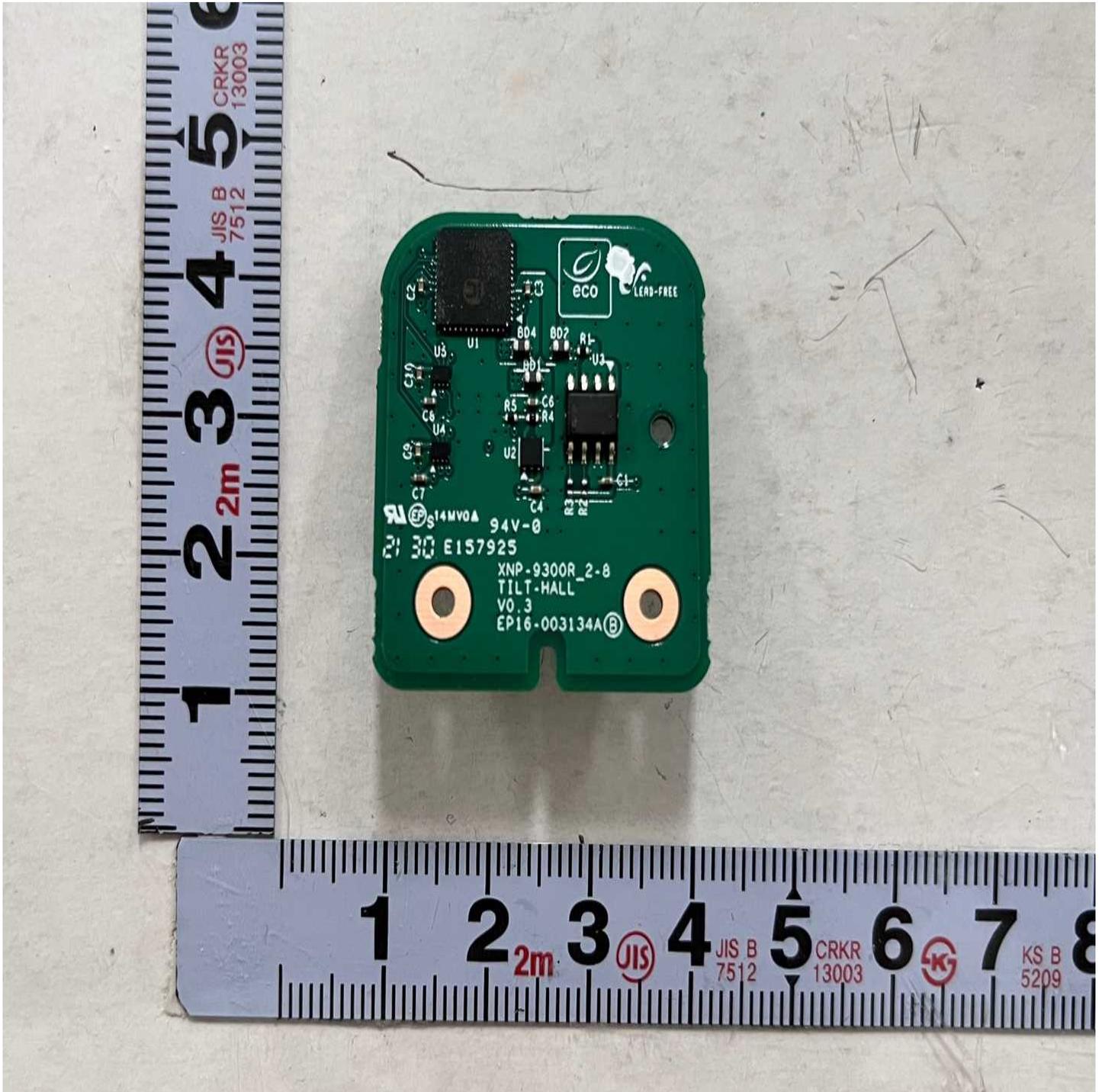


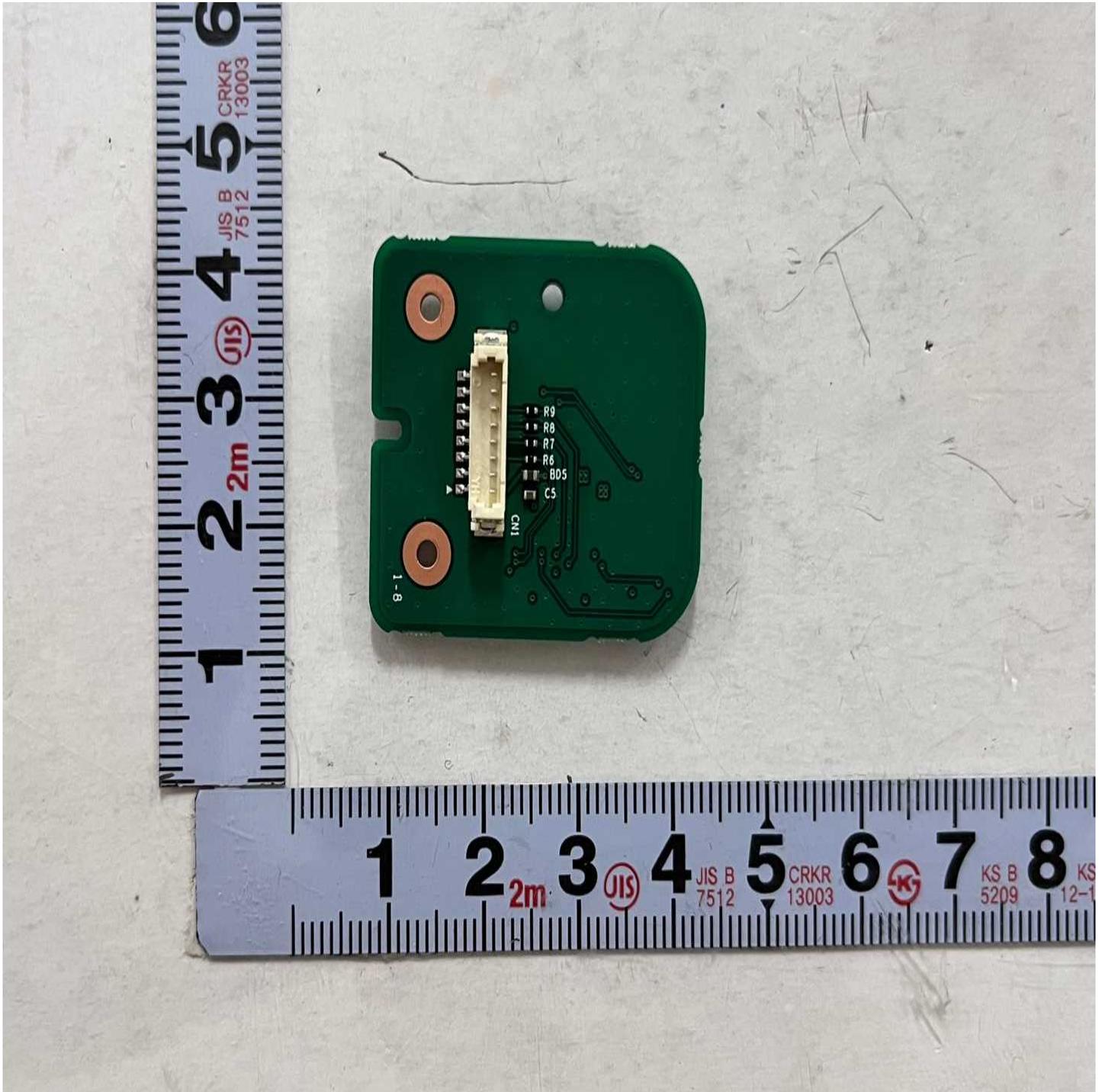




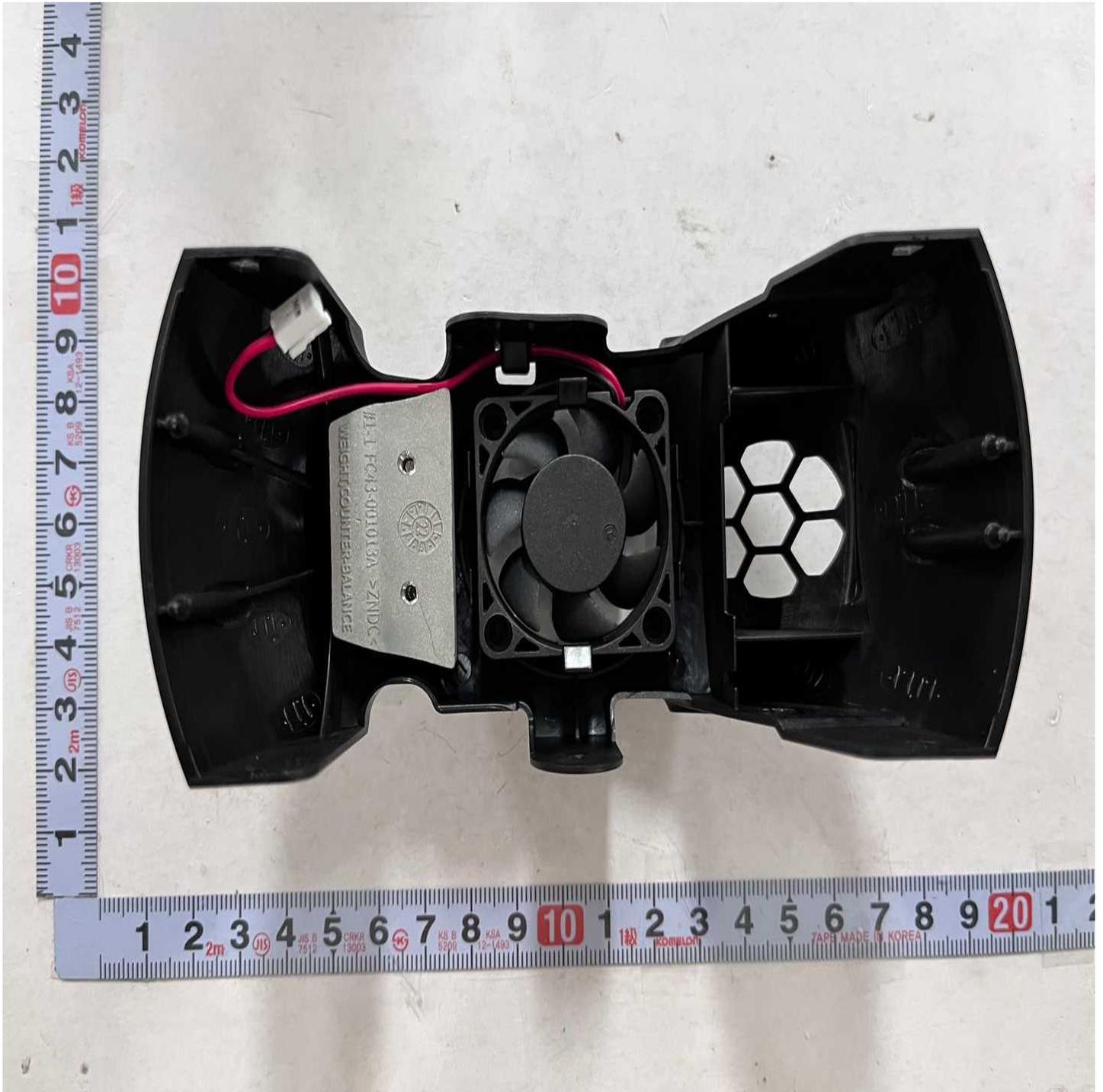


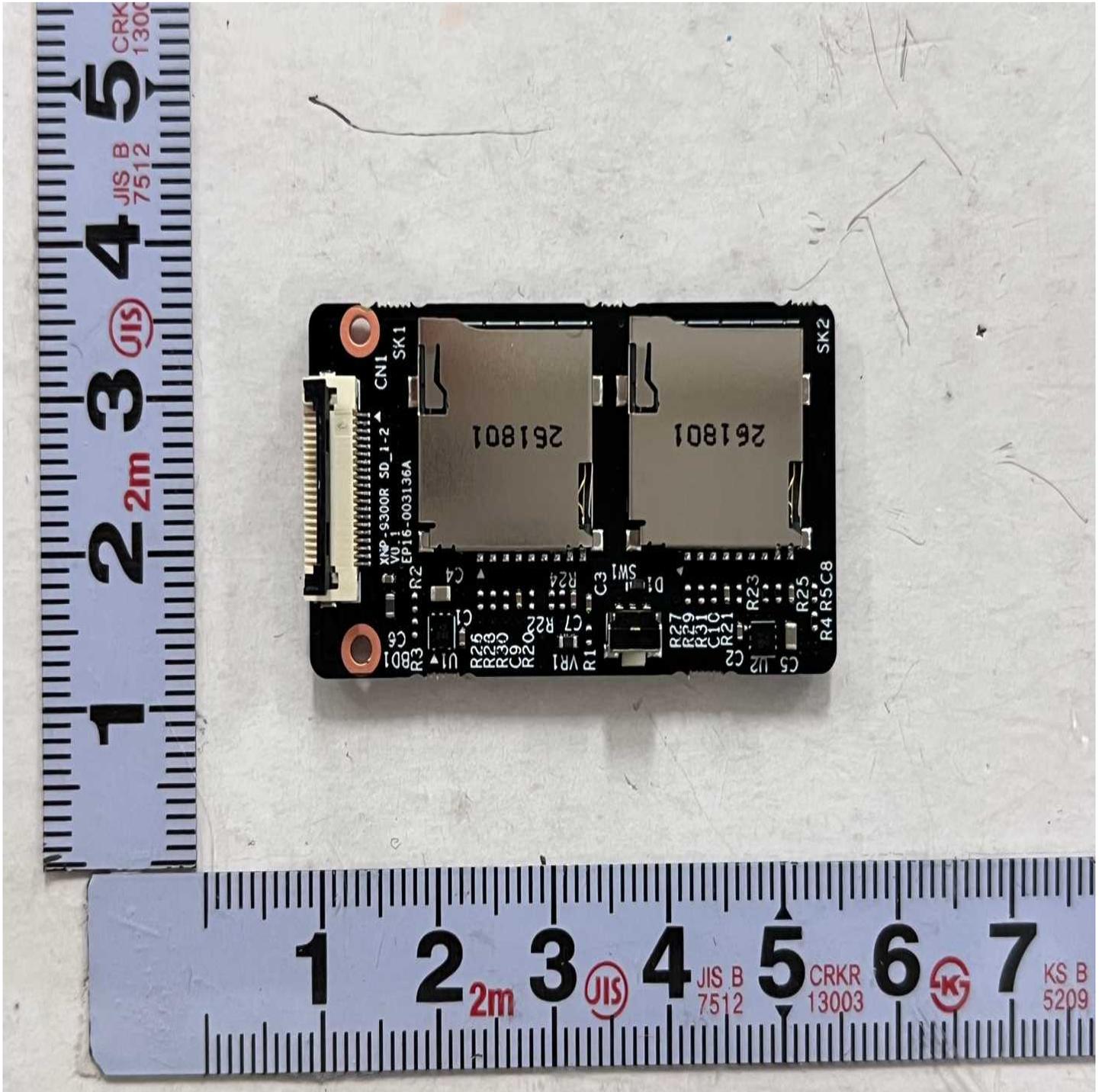




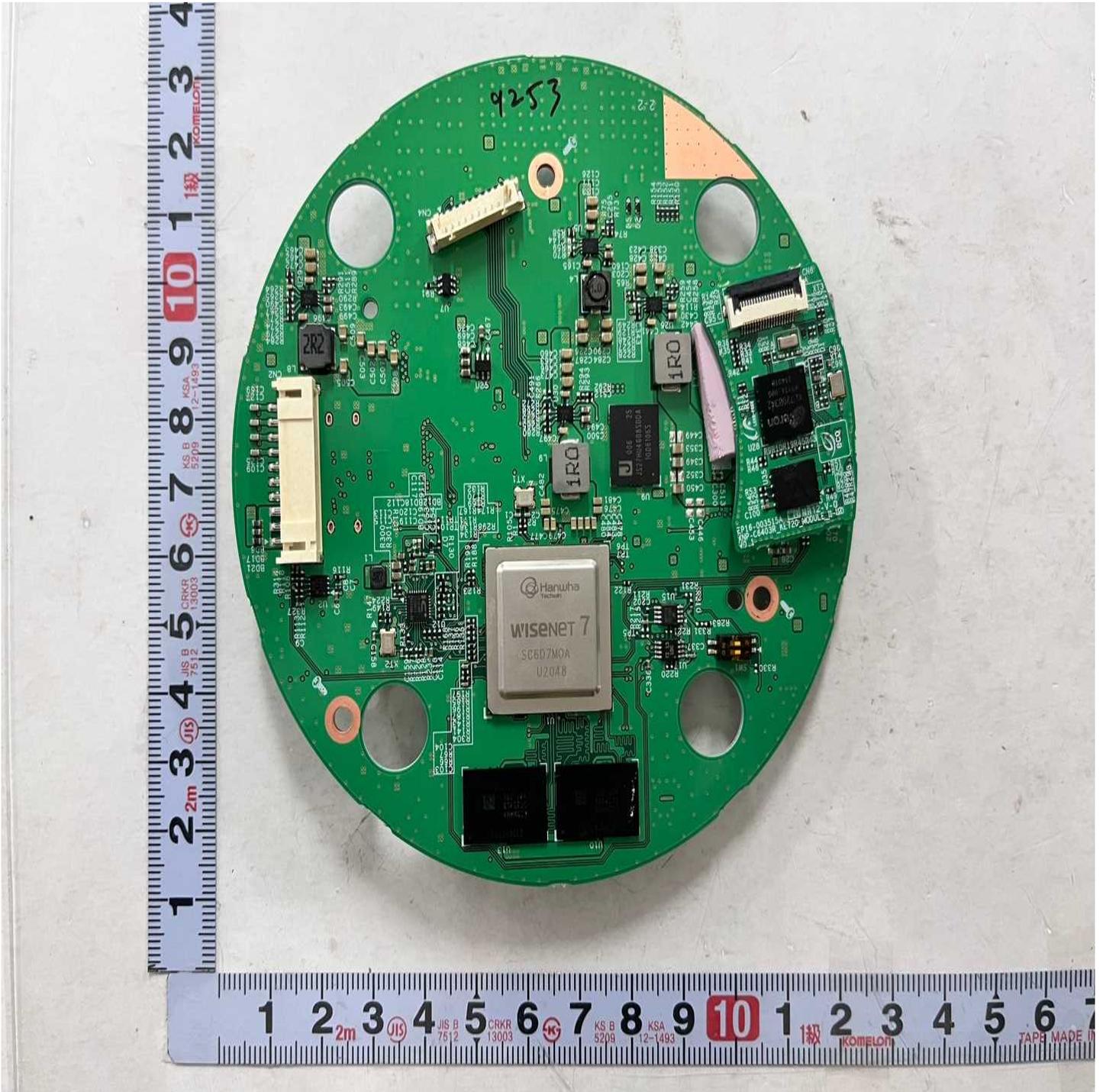


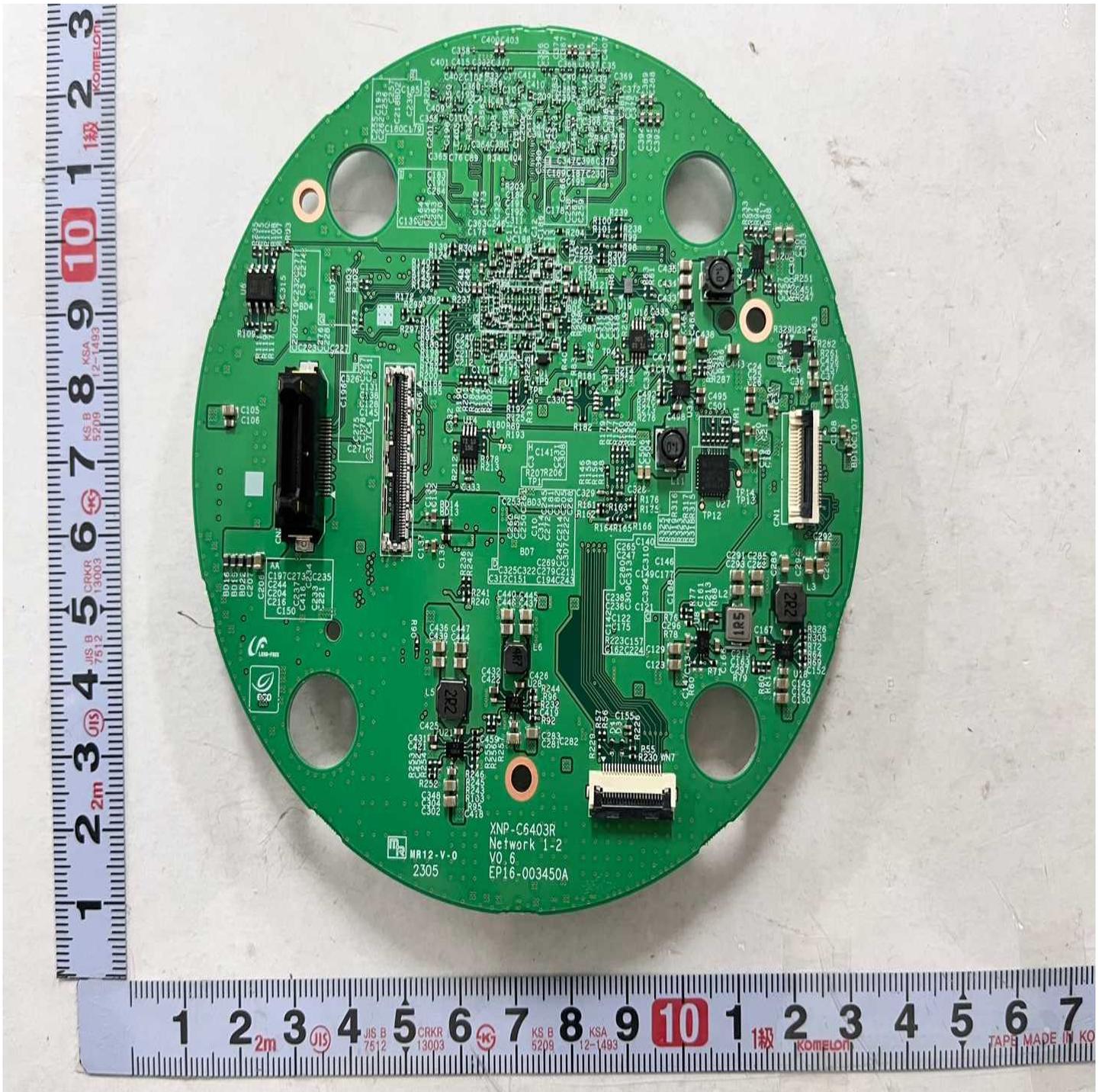




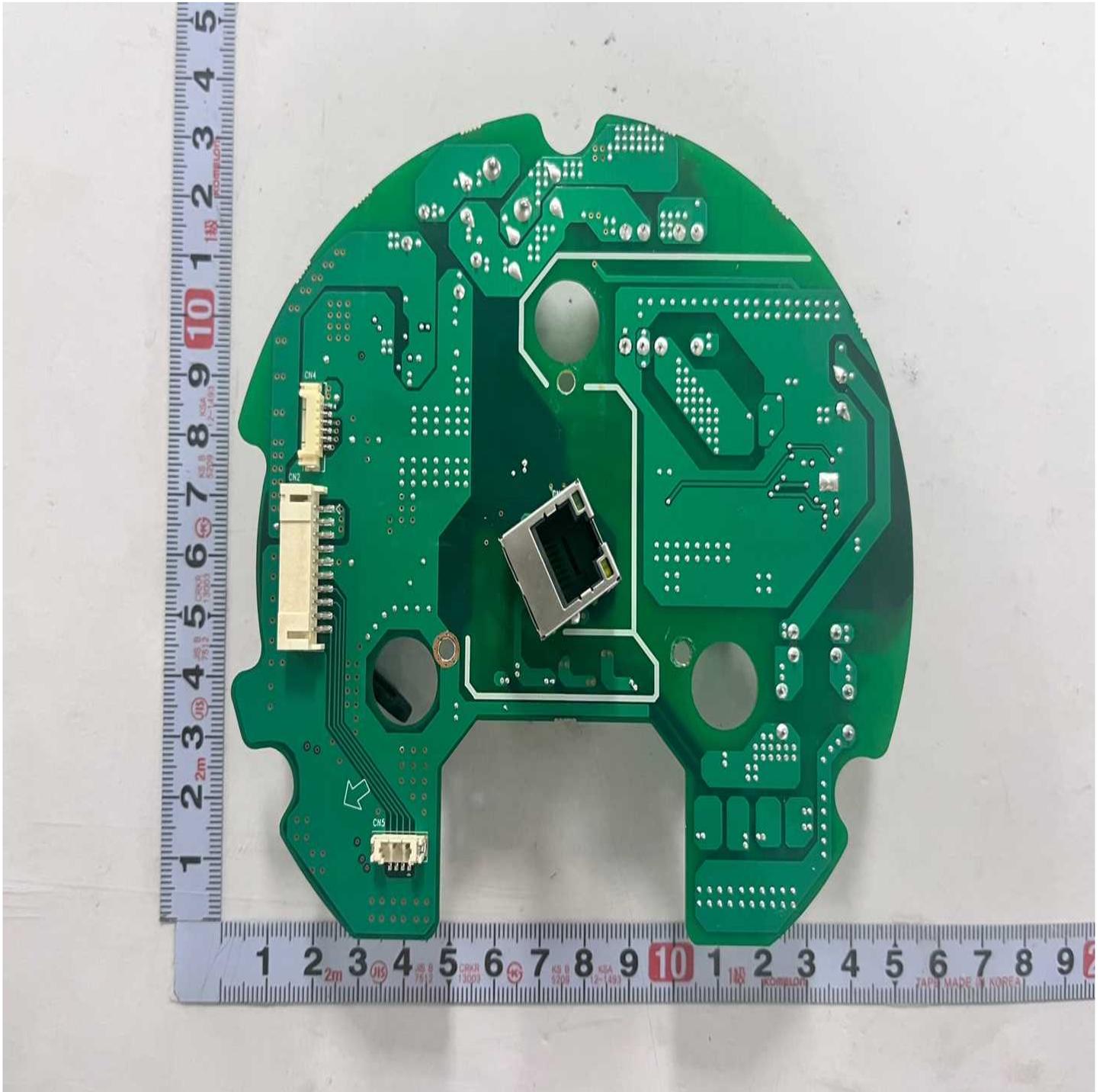












**Test Record No. 1**

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of NETWORK CAMERA XNP-C9253
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)