



Thank you for giving UL the opportunity to partner with you.

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.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at <https://www.ul.com/about/locations>.

Please find attached the related material

For your convenience, the below describes the related updates:

PO# KANG, JEISOON.

E158873-volX13-Index
E158873-20210209-CertificateofCompliance
E158873-A6054-DescriptionUL
Figure-13-Total
E158873-A6054-TestRecordUL

This material is provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Times change, Trust Remains™

File		Volume	Page	Date:
E158873	Index	X13	1	09-Feb-21

Index

<u>Product Type</u>	<u>Model/Type Reference</u>	<u>Report Reference #</u>	<u>Status</u>
NETWORK VIDEO RECORDER	XRN-6410B4, XRN-3210B4	E158873-A6027-UL	
NETWORK VIDEO RECORDER	PRN-6410B4, PRN-3210B4, XRP-4210B4	E158873-A6028-UL	
NETWORK VIDEO RECORDER	XRN-6410DB4	E158873-A6029-UL	
NETWORK VIDEO RECORDER	PRN-6410DB4, XRP-4310DB4	E158873-A6030-UL	
NETWORK CAMERA	PNM-9002VQ	E158873-A6031-UL	
NETWORK CAMERA	XNF-9010RV, XNF-9010RVM, XNF-9010RS	E158873-A6032-UL	
NETWORK CAMERA	PNM-9000QB	E158873-A6033-UL	
NETWORK CAMERA	XNP-9300RW, XNP-8300RW, XNP-6400RW	E158873-A6034-UL	
NETWORK CAMERA	TNV-8010C	E158873-A6035-UL	
OUTDOOR NETWORK CAMERA	PNM-8082VT	E158873-A6036-UL	
THERMAL CAMERA	TNM-3620TDY	E158873-A6037-UL	
DIGITAL VIDEO RECORDER	HRX-1621* (* is Blank or N or P : P=PAL, N=NTSC)	E158873-A6038-UL	
NETWORK CAMERA	PNM-9022V	E158873-A6039-UL	
NETWORK CAMERA	PNM-9322VQP	E158873-A6040-UL	
DIGITAL VIDEO RECORDER	HRX-821* (* is Blank or N or P : P=PAL, N=NTSC)	E158873-A6041-UL	
NETWORK I/O BOX	SPM-4210	E158873-A6042-UL	
NETWORK VIDEO RECORDER	XRN-2011*, XRN-2010*, XRN-3010*, XRN-1610*, XRN-2010P/DM, XRN-3010P/DM, XRN-3010A, XRN-2011A, XRN-2010A, XRN-1610A (* is blank or N or P: N=NTSC, P=PAL)	E158873-A6043-UL	
PUBLIC VIEW MONITOR	SMT-2730PV	E158873-A6044-UL	
PUBLIC VIEW MONITOR	SMT-3230PV	E158873-A6045-UL	
PUBLIC VIEW MONITOR	SMT-1030PV	E158873-A6047-UL	
NETWORK CAMERA	XNP-9250R, XNP-8250R, XNP-6400R	E158873-A6049-UL	
NETWORK CAMERA	XNP-9250, XNP-8250, XNP-6400	E158873-A6050-UL	
NETWORK VIDEO RECORDER	XRN-1620B2	E158873-A6053-UL	
NETWORK VIDEO RECORDER	XRN-1620SB1	E158873-A6054-UL	
NETWORK VIDEO RECORDER	XRN-820S	E158873-A6055-UL	

File		Volume	Page	Date:
E158873	Index	X13	2	09-Feb-21

NETWORK CAMERA	SCO-6020	E158873-A6056-UL	
----------------	----------	------------------	--

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2015898-0
Report Reference E158873-20210209
Date 11-Feb-2021

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

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

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

Standard(s) for Safety: UL 62368-1, 2nd Ed., Issue Date: 2014-12-01

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

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

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

Look for the UL Certification Mark on the product.

B. Mahlen

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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



CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2015898-0
Report Reference E158873-20210209
Date 11-Feb-2021

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
XRN-1620SB1	NETWORK VIDEO RECORDER



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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



CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2012639-0
Report Reference E158873-20210209
Date 11-Feb-2021

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

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

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

Standard(s) for Safety: CSA C22.2 NO. 62368-1-14, 2nd Ed., Issue Date: 2014-12-01

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

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

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

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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



CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2012639-0
Report Reference E158873-20210209
Date 11-Feb-2021

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
XRN-1620SB1	NETWORK VIDEO RECORDER



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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



UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK VIDEO RECORDER
Model:	XRN-1620SB1
Rating:	100-240 Vac, 50/60 Hz, 3.2 A
Applicant Name and Address:	HANWHA TECHWIN CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

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

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

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

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

Prepared By: Lawrence Lee / Project Handler Reviewed By: SeulKi Park / Reviewer

Supporting Documentation

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

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

B. Generic Inspection Instructions -

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

Product Description

NETWORK VIDEO RECORDER.

This unit consist of R/C (QQJQ2/8) power supply, DC Fan, main board, maximum 4 hard disk-drives (optional) and numerous components mounted on PWB.

This unit connect CCTV camera using 16 channels PoE ports and 2 Network ports.

Model Differences

N/A

Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	pluggable equipment type A - appliance coupler
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	movable rack-mounting
Over voltage category (OVC)	OVC II
Class of equipment	--
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	40
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	HDD Full Mounted (4 EA) : 7.9 kg

Technical Considerations

- ☐ The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40 °C
- ☐ The product is intended for use on the following power systems : TN
- ☐ Considered current rating of protective device as part of the building installation (A) : 20
- ☐ Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- ☐ The equipment disconnect device is considered to be : Appliance inlet
- ☐ The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All accessible connectors
- ☐ The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information




4789711253




- All tests were considered necessary for UL/CSA national deviation based upon previous evaluation under CB Scheme. The CB Scheme Test Certificate, Ref. Certi. No. DK-109819-UL and Report Ref. No. C20IA157-M0A0 were prepared by UL International Demko A/S, Borupvang 5A, DK-2750 Ballerup, Denmark.

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 companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Symbols - On/Off switch	Switches to be marked with  symbol for "ON" (IEC 60417-5007) and  symbol for "OFF" (IEC 60417-5008)
Symbols - Stand-by switch	"Stand-by" to be indicated by  (IEC 60417-5009)

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

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

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

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Power Supply (SMPS)	DELTA ELECTRONICS INC	DPS-280AB-6 XX (X=0-9, A-Z or blank)	Rated Input: 100-240 Vac, 6A-3A, 47-63 Hz Output: 12 Vdc, 6.0 A (MAX), 55 Vdc, 4.0 A (MAX)	QQGQ2/8, QQJQ2/8	UL (E131881)	
Power cord set	Weihai Hong Lin Electronic Co., Ltd.	HL-002S + SVT 18AWG X 3C + HL- 004	Detachable, min 1.5 m, max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 105 deg. C, SVT type flexible cord. One end with NEMA 5-15P the other end with appliance coupler.	ELBZ/7	UL (E254927)	
Power cord set - Alternate	Longwell	LP-30B + SVT 18AWG X 3C + LS- 13	Detachable, min 1.5 m, max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 60 deg. C, SVT type flexible cord. One end with NEMA 5-15P the other end with appliance coupler.	ELBZ/7	UL (E55349)	
Power cord set - Alternate	CHANGZHOU HONG CHANG ELECTRONICS CO LTD	DTII-3P-11 + SVT 18AWG X 3C + DTII-3P-04	Detachable, min 1.5 m, max. 4.5 m long, rated 125 V, 10 A, 18/3 AWG, 105 deg. C, SVT type flexible cord. One end with NEMA 5-15P the other end with appliance coupler.	ELBZ/7	UL (E205766)	
Power cord set - Alternate	KOREA KDK CO LTD	KKP-30 + SVT 3/18AWG + KKS- 16A	Detachable, min 1.5 m, max. 4.5 m long, rated 125 V, 7 A, 18/3 AWG, 105 deg. C, SVT type flexible cord. One end with NEMA 1-15 other	ELBZ/7	UL (E58075)	

			end with appliance coupler.			
Front Enclosure (Plastic)	LOTTE ADVANCED MATERIALS CO LTD	HN-1068(+)(f1)	Min. V-0, 130 deg. C, Min. 1.5 mm thickness, See enclosure for more detail.	QMFZ2/8	UL (E115797)	
Rear Enclosure (Metal) (Fire / Mech / Elec)	Interchangeable	Interchangeable	SECC, approximately 370.0 by 10 by 90.0 mm, Min. 1.0 mm thickness, See enclosure for more detail.	-	-	
Top Enclosure (Metal) (Fire / Mech / Elec)	Interchangeable	Interchangeable	SECC, approximately 440.0 by 402.0 by 88.0 mm, Min. 0.6 mm thickness, See enclosure for more detail.	-	-	
Bottom Enclosure (Metal) (Fire / Mech / Elec)	Interchangeable	Interchangeable	SGCC, approximately 440.0 by 428.0 by 90.0 mm, Min. 1.0 mm thickness, See enclosure for more detail.	-	-	
Insulation sheet for Bottom Enclosure	SICHUAN LONGHUA FILM CO LTD	LonghuaPC ECO-(d)(f)	Min. VTM-0, 80 deg. C, Min. 0.060-0.275 mm thickness, Approx. overall size of 130 by 80 mm	QMFZ2/8	UL (E254551)	
Insulation sheet Adhesive tape	3M COMPANY	9948HK	Acrylic coated Polycarbonate. Approx. overall size of 130 by 80 mm	-	-	
Bracket (Metal)	Interchangeable	Interchangeable	SECC, approximately 20.0 by 75.0 by 95.0 mm, Min. 1.0 mm thickness	-	-	

DC Fan for Main board	MinebeaMitsumi Inc.	08025SS-12M-(d)(e)-(f)	Rated voltage: 12 Vdc, Rated current: 0.06 A, speed: 4000±15 % RPM	GPWV2/8	UL (E89936)	
Hard Disk Drive (Max. 4 EA) (Optional)	Interchangeable	Interchangeable	Rated 5 Vdc or 12 Vdc	NWGQ2 or AZOT2	UL	
Lithium Battery (BAT1)	Wuhan Lixing (Torch) Power Sources Co.,Ltd	CR2032	Non-rechargeable, Lithium/manganese dioxide (Coin), Max Continuous Discharge C Current: 10 mA, Nominal Voltage: 3.0 Vdc	BBCV2	UL (MH26236)	
Lithium Battery (BAT1) - Alternate	Interchangeable	CR2032	Non-rechargeable, Lithium / manganese dioxide (Coin), 3.0 Vdc, Max Abnormal Charging Current 10 mA.	BBCV2	UL	
Reverse Current Protection Circuit for Lithium Coin Battery (BAT1)	Interchangeable	Interchangeable	Diode (D4, 30 V, 1 A) and resistor (R137, 1.0 kohm) in series.	-	-	
USB Protection IC (USB 2.0: U18 / USB 3.0: U20)	Texas Instruments Inc	TPS2062	Rated 2.7 – 5.5 Vdc, 1 A	QVGS2	UL (E169910)	
USB Protection IC (USB 2.0: U18 / USB 3.0: U20) - Alternate	DIODES INC	AP2162SG-13	Rated 2.7–5.5 Vdc, 1 A	QVGS2	UL (E322375)	
Line Filter (T14) in Main board	TNC CO.,LTD	CV650050SKA	Rated 5.0 mH, 120 °C, See enclosure for more detail.	-	-	
Internal Wiring (Secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	

Connectors and Receptacles (Secondary circuits)	Interchangeable	Interchangeable	Min. V-2	ECBT2	UL	
Connectors and Receptacles (Secondary circuits) - Alternate	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated Min. V-2	QMFZ2	UL	
PWB	HANNSTAR BOARD CORP	MV-1	V-0, Min. 130 deg. C	ZPMV2/8	UL (E89382)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-1, 105 deg. C	ZPMV2	UL	
Label	Interchangeable	Interchangeable	Min.40 deg. C if max. surface temperature not specified.	PGDQ2 or PGJI2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-03	Port Front
Photographs	03-04	Port Rear
Photographs	03-05	Internal
Photographs	03-06	SMPS
Photographs	03-07	Main Board
Photographs	03-08	Fan for main board
Manuals	06-01	Manual
Miscellaneous	07-01	CRD for Dual Language Requirement
Miscellaneous	07-02	Label
Miscellaneous	07-03	Enclosure Drawing
Miscellaneous	07-04	Line Filter (T14)

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

IMPORTANT SAFETY INSTRUCTIONS



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

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



Standards Approvals



-  Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
-  This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

BEFORE START

This manual provides operational information necessary for using the product and contains a description about each component part and its function as well as menu or network settings.

You have to keep in mind the following notices :

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

Warning

Battery

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

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

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

CALIFORNIA USA ONLY

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

Moving fan blades

Keep body parts away from fan blades.

CAUTION

- Connect the power cord into a grounded outlet.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.
- When the HDD reaches its end of life, the stored video data may be damaged, and not be able to be recovered.
- The HDD status LED on the front of the system continuously blinks to indicate that the system's connection to the HDD is normal. Check the HDD status LED regularly to see if it blinks continuously. Recording may not be possible when there is an HDD failure.
Periodically check the recording status and backup important data regularly.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.
- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- Do not ingest battery, Chemical Burn Hazard.
- This product contains a coin / button cell battery. If the coin / button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children.
If you think batteries might have been swallowed or placed inside any part or the body, seek immediate medical attention.

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.
- Ne pas ingérer la pile, risque de brûlure chimique.
- Ce produit contient une pile de type bouton/pièce de monnaie. Si la pile de type bouton/pièce de monnaie est avalée, elle peut causer de graves brûlures internes en seulement 2 heures et peut entraîner la mort.
- Gardez les piles neuves et usagées hors de portée des enfants. Si le compartiment de la pile ne se ferme pas correctement, cessez d'utiliser le produit et gardez-le d'atteinte des enfants.
Si vous suspectez que des piles ont été avalées ou insérées dans une partie du corps, consultez un médecin sans tarder.

System Shutdown

Turning off the power while the product is in operation, or undertaking improper actions may cause damage or malfunction to the hard drive or the product.
Press <OK> on the system shutdown popup window and then remove the power cable to ensure a safe power off.
You may want to install a UPS system for safe operation in order to prevent damage caused by an unexpected power stoppage. (Any questions concerning UPS, consult your UPS retailer.)

- 
- If powered off abnormally, restarting may take more time for restoring data from hard disk drive for proper operation.

Operating Temperature

The guaranteed operating temperature range of this product is 0°C ~ 40°C (32°F ~ 104°F).
This product may not work properly if you run right after a long period of storage at a temperature below the guaranteed one.
Prior to using a device that has been stored for a long period in low temperatures, allow the product to stand at room temperature for a period.
Especially for the built-in HDD in the product, its guaranteed temperature range is 5°C ~ 55°C (41°F ~ 131°F).
Likewise, the hard drive may not work at a temperature below the guaranteed one.

Ethernet Port


This equipment is in door use and all the communication wirings are limited to inside of the building.

Security Precautions

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.

Products supporting each feature

Function	Products
Fan	XRN-1620SB1/XRN-1620B2/XRN-820S
P2P	XRN-1620SB1/XRN-1620B2/XRN-820S
Alarm	XRN-1620SB1/XRN-1620B2/XRN-820S
AI compatible function	XRN-1620SB1/XRN-1620B2/XRN-820S
Joystick	XRN-1620SB1/XRN-1620B2/XRN-820S
Extended monitor	XRN-1620SB1/XRN-1620B2/XRN-820S
Failover	XRN-1620SB1/XRN-1620B2/XRN-820S
PoE	XRN-1620SB1/XRN-820S

- 
- In duplicated mode, a 4K resolution monitor supports up to 30 fps. In extended mode, the resolution of a primary monitor supports up to 1080p.
 - Als het totale vermogen van de poort of het maximale vermogen per poort wordt overschreden, worden alle poorten een voor een uitgeschakeld.
For PoE power consumption of each product, see below.
 - XRN-1620SB1: Total power of 200W, max power of 30W per port
 - XRN-820S : Total power of 100W, max power of 30W per port

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

Standard SCC Requirements and Guidance - Product Certification Body Accreditation Program Edition/ Revision Date 2016-04-06

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

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

NETWORK VIDEO RECORDER

MODEL: XRN-1620SB1

AC 100-240V~, 50/60Hz 3.2A

M/C: XRN-1620SB1/KAP Fac. ID: D



2021.01

S/N: Serial No.

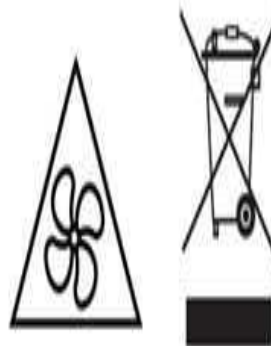
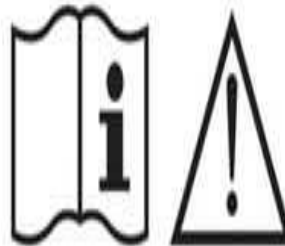
MAC ADDRESS 1: XX-XX-XX-XX-XX-01

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

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

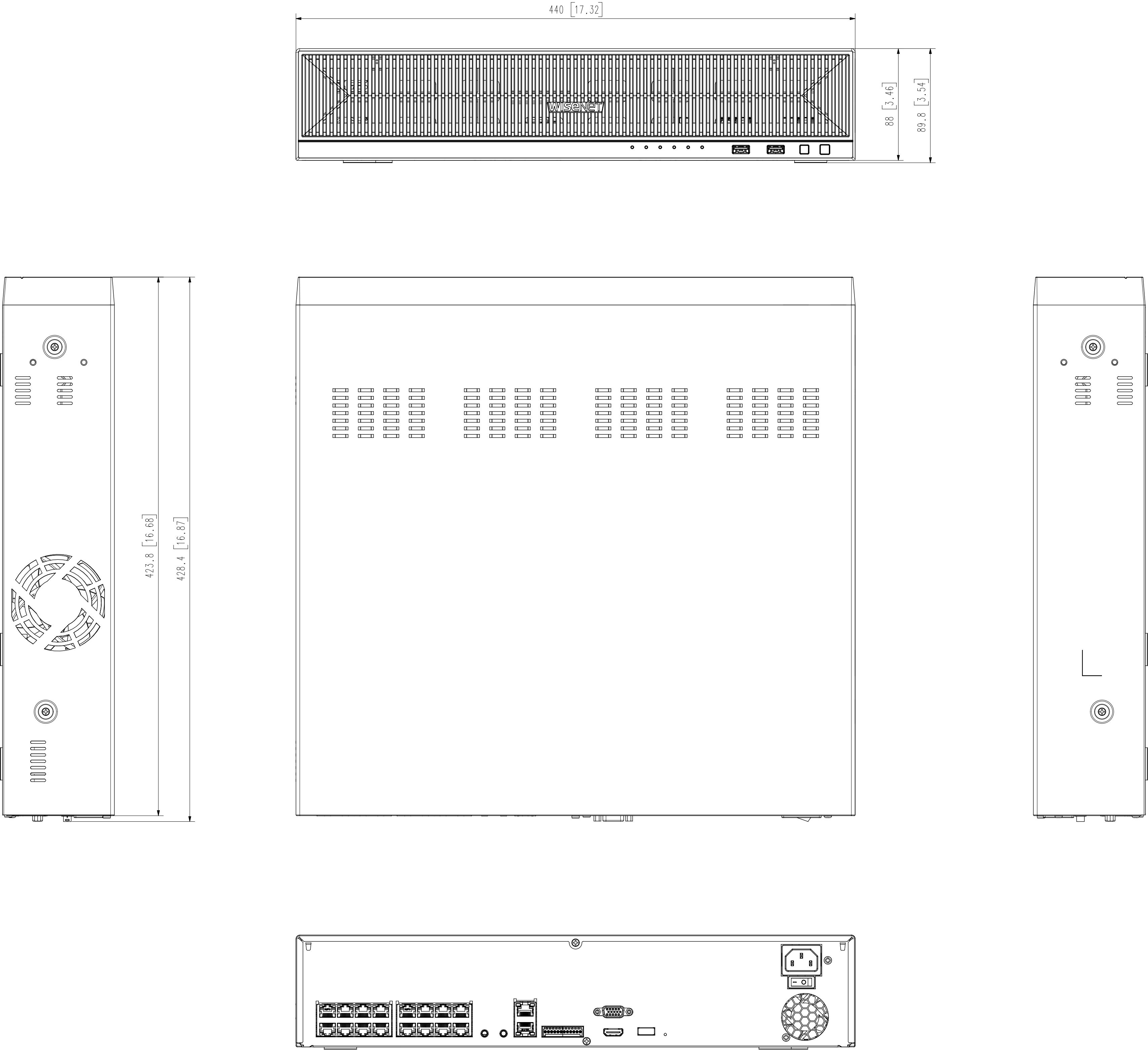
MADE IN KOREA

Hanwha Techwin Co., Ltd.



PT03-002663S

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



3		
2		
1	XRN-1620SB1	'20.10.09
No.	MODEL NAME	DATE
Unit:mm[inch]		SCALE:1/2
Hanwha Techwin		

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

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV650050SKA	0

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	5.0A			
3	INDUCTANCE	START-FINISH	16KHz	5.0mH	+ 50%, -30%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	48.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)
7	INSULATION RESISTANCE	LINE TO COVER	DC 500V, 300MΩ MIN.			TOS-8850

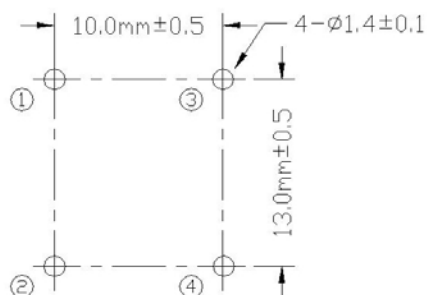
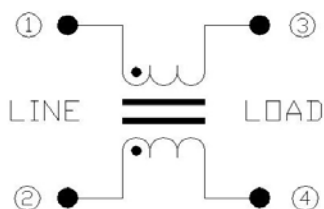
3. OPERATING TEMPERATURE RANGE

-40℃ TO +120℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-40℃ ~ +120℃.

5. CIRCUIT DIAGRAM



PCB layout requirements

※PCB LAYOUT is strictly required..

TNC TNC CO.,LTD

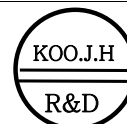
DESIGN



CHECK



APPROVAL



PAGE

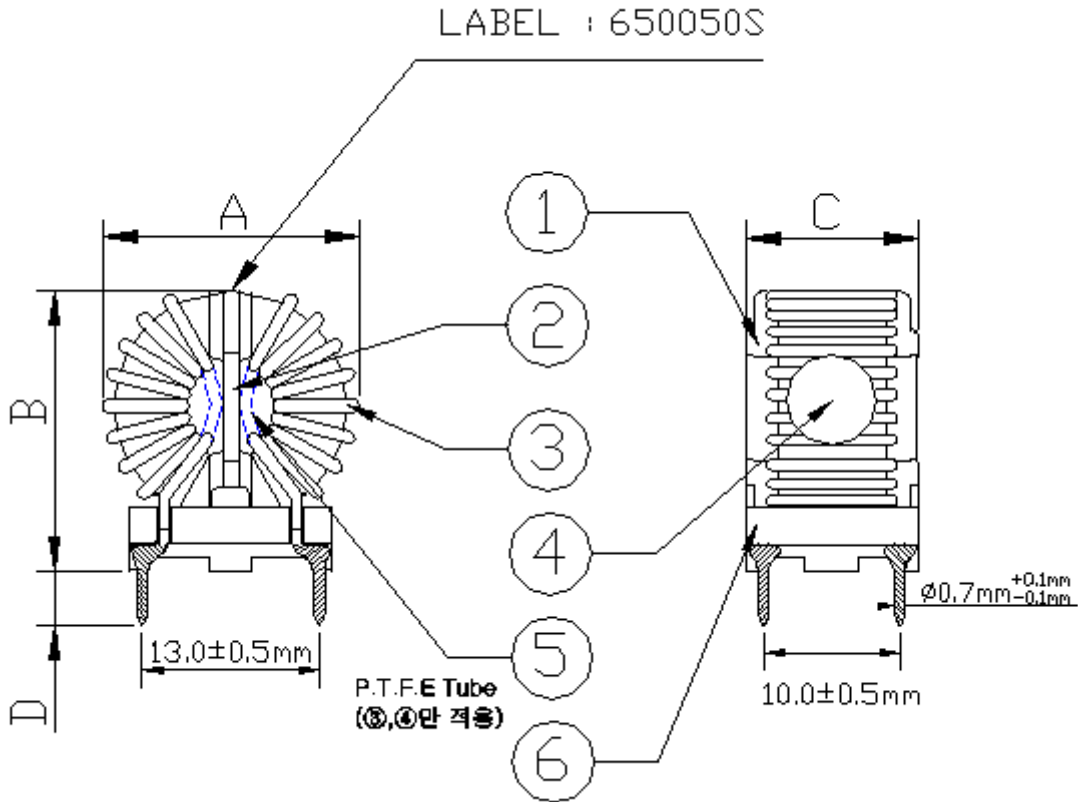
3/16

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV650050SKA	0

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.7Φ	27 ±2Ts	HANDMADE	BETWEEN L1 AND L2 (0.2mH MAX)
L2	2	4				

7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	21.0mm MAX	23.0mm MAX	15.0mm MAX	Not include solder fillet 4.0±1.0mm

<div>TNC</div> <div>TNC CO.,LTD</div>	DESIGN	CHECK	APPROVAL	PAGE
	<div>CHOI.J.K</div> <div>R&D</div>	<div>KANG.S.W</div> <div>R&D</div>	<div>KOO.J.H</div> <div>R&D</div>	4/16

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV650050SKA	0

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	UL No.
1 / 2	Core Cover Coil Separator	PBT LUPOX GP-2156F(#)		LG CHEM LTD	E67171
		PBT 4130		CHANG CHUN PLASTICS CO LTD	E59481
3	Enamel Wire	UEW 0.7Φ / 27±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
4	Ferrite Core	MA100 R-16-10-7 A10 T16X10X7 M10K T16X10X7		JFE Ferrite Corp ACME Electronics Corporation SUZHOU TIANMING MAGNETIC INDUSTRY CO.,LTD	
5	Insulation tube	P.T.F.E Tube (Teflon Tube) NOT HEAT-SHRINKABLE PTFE TUBING		SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD	E203950
6	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

9. MARKING

MODEL	LABEL	COLOR
CV650050SKA	650050S	black letters on Transparent

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				5/16

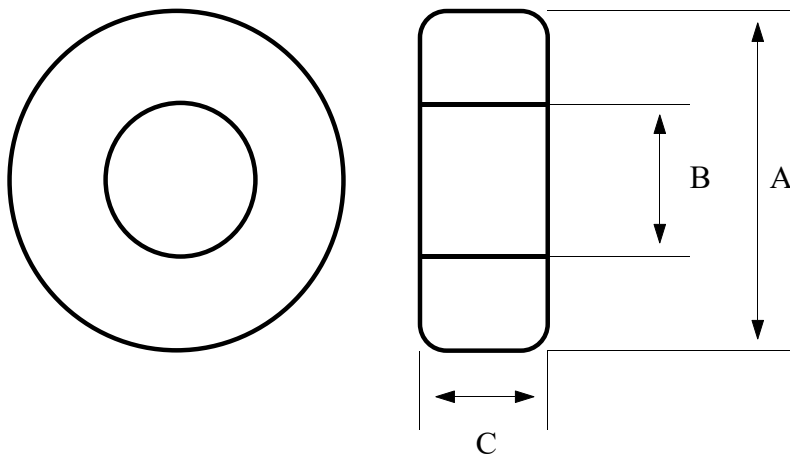
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV650050SKA	0

15. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	MA100 R-16/10/7	A10 T16X10X7	M10K T16X10X7
μ_i	-	10,000±30%	10,000±30%	10,000±30%
B _{ms}	mT	415	410	380
H _{cms}	A/m	3.0	7.0	6.0
B _{rms}	mT	76	140	120
T _c	℃	>115	>130	>120
TAN δ / μ iac	*10 ⁻⁶	<1.9	<10.0	<20.0
$\alpha_{\mu r}$	*10 ⁻⁶ /℃	-0.5~2.0	0~1.5	-0.5~1.5
ρ	Ω .m	0.1	0.15	0.2
d	g/cm ³	5.0	4.9	4.9

- Dimension



A: 16.0 ±0.35

B: 10.0 ±0.3

C: 7.0 ±0.3

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV650050SKA	0

3.1 ENAMEL WIRE - UEW (HWA-IL ELECTRONICS)

HWA-IL ELECTRONICS CO LTD

E140246

Hwa Il Bldg Suite 501

2-92 Chang Jeon Dong


Mapo-Gu

Seoul, REPUBLIC OF KOREA

Material Designation	Mark Dsg	Base Coat	Top Coat	ANSI Type	Temp Class
AI-EIW	AI-EIW	Polyester-imide	Polyamide-imide	MW 35-C	200
AIEI(I)	AIEI(I)	Polyester-imide	Polyamide-imide	MW 35-C	200
AIW	AIW	Polyamideimide	-	MW 81-C	220
NPW	NPW	Polyester	Polyamide	MW 76-C	180
		Polyester	Polyamide	MW 24-C	155[#]
NUW	NUW	Polyurethane	Polyamide	MW 80-C	155
		Polyurethane	Polyamide	MW 28-C	130[#]
PEW	PEW	Polyester	-	MW 30-C	180
		Polyester	-	MW 5-C	155[#]
RNW	RNW	Modified Polyester	Polyamide-imide	MW 73-C	200
UEW	UEW	Polyurethane	-	MW 79-C	155
		Polyurethane	-	MW 75-C	130[#]

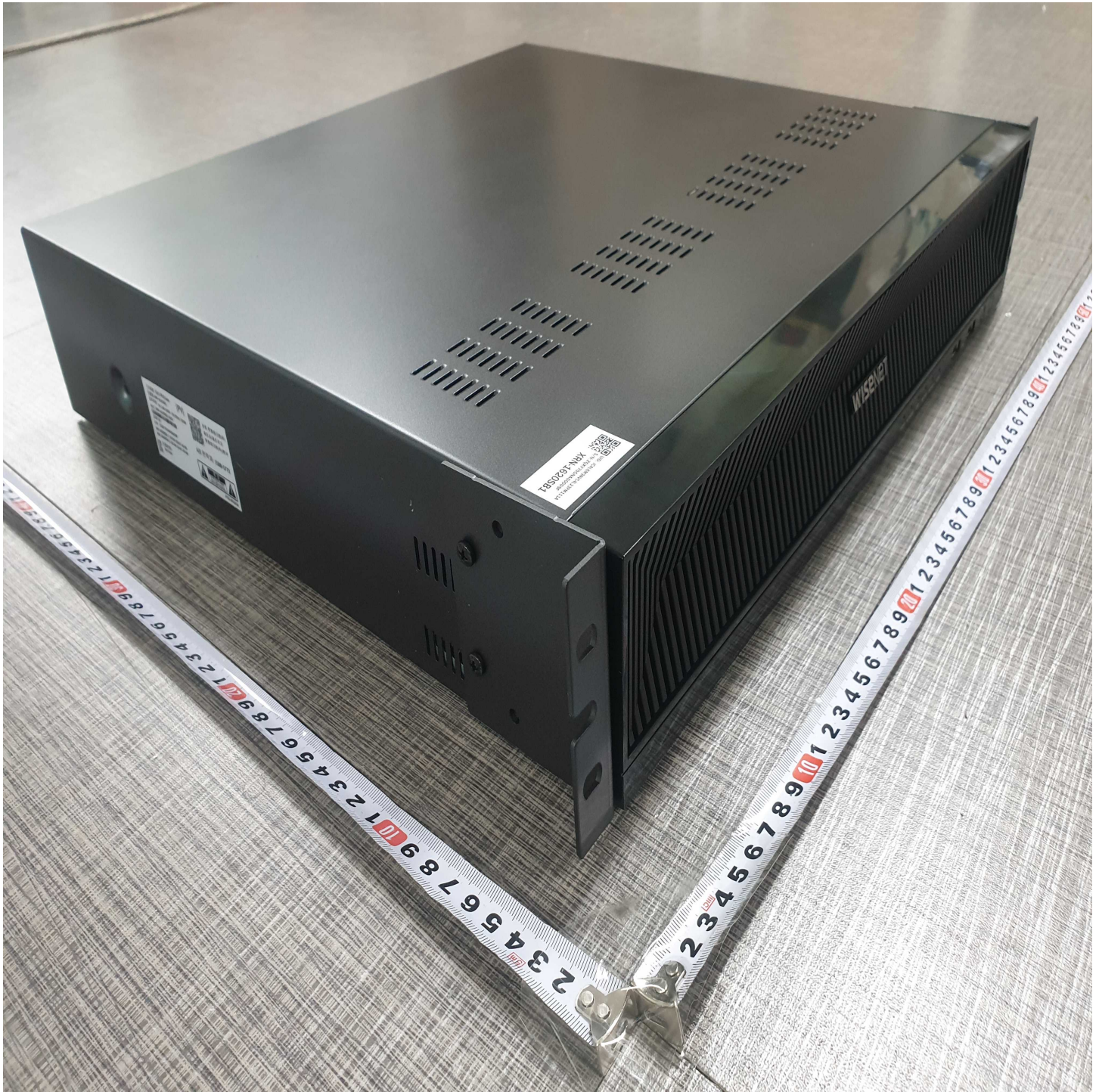
Material Designation	Mark Dsg	Base Coat	Top Coat	Bond Coat	ANSI/Conductor Type	Temp Class
AIEI(I)-AL	AIEI(I)-AL	Polyester-imide	Polyamide-imide	-	Al	200
AIW-AL	AIW-AL	Polyamideimide	-	-	Al	220
NPW-AL	NPW-AL	Polyester	Polyamide	-	Al	180
		Polyester	Polyamide	-	Al	155[#]
PEW-AL	PEW-AL	Polyester	-	-	Al	180
RAW	RAW	Polyester-imide	Polyamide-imide	-	-	220
UEW(I)	UEW(I)	Polyurethane	-	-	-	155

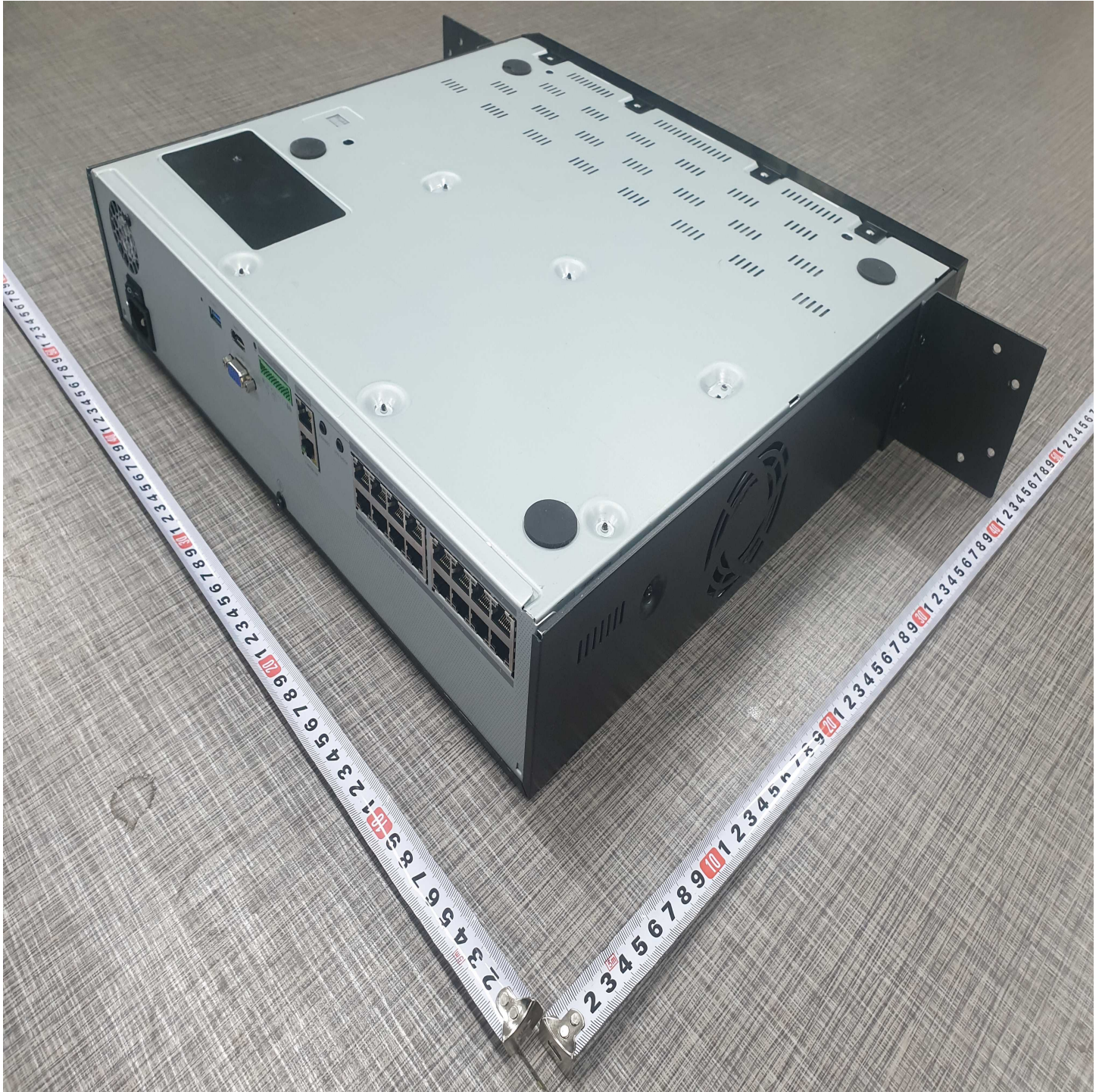
[#] - The magnet wire may perform better than the rating reflects and may not be suitable for insulation system, varnish or end-product testing. Further consideration is necessary prior to its use in testing.

Marking: Company name, material designation or marked designation and the Recognized Component Mark,  on the shipping spool label or smallest unit container in which the product is packaged.

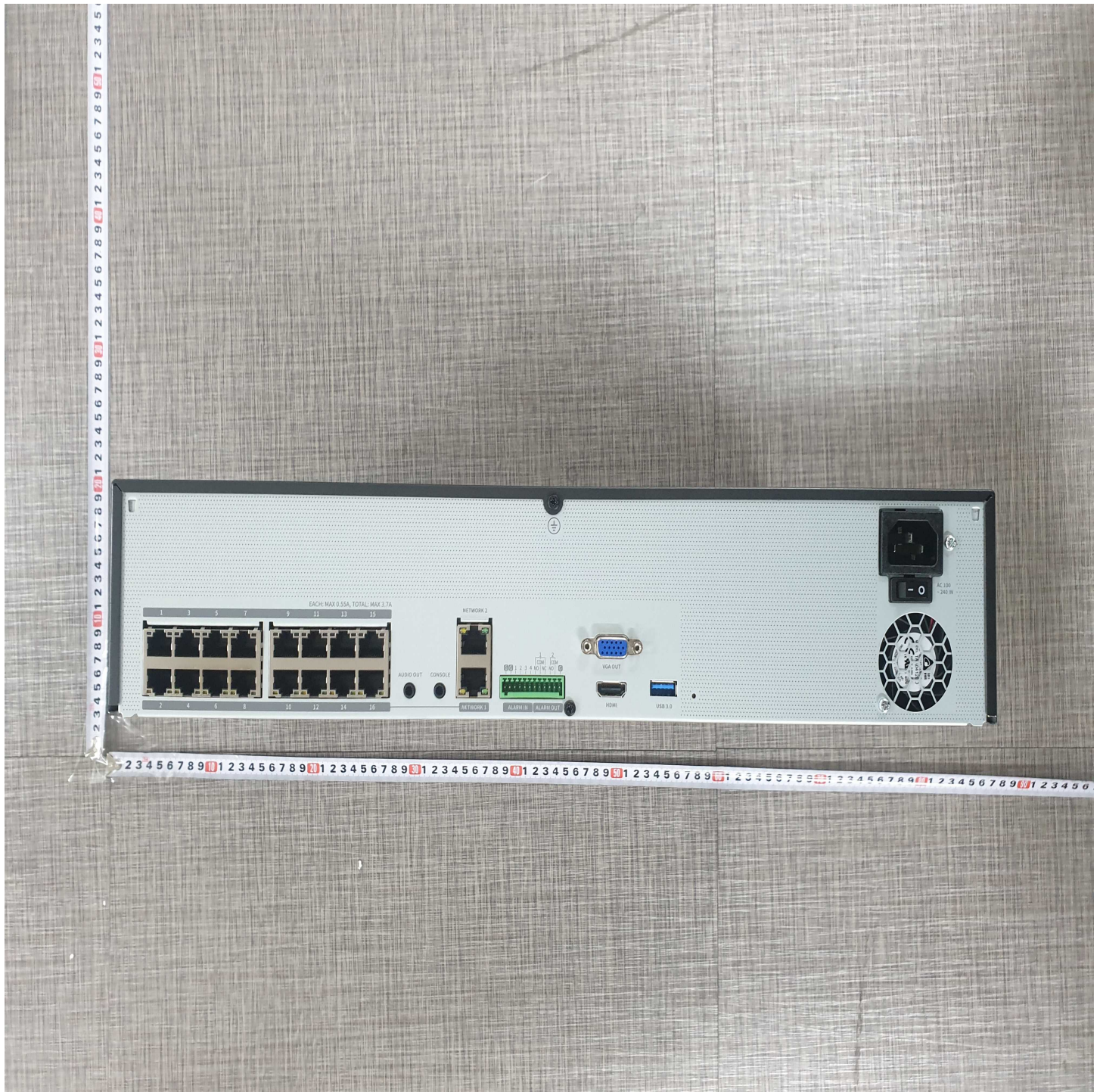
Last Updated on 2016-03-30

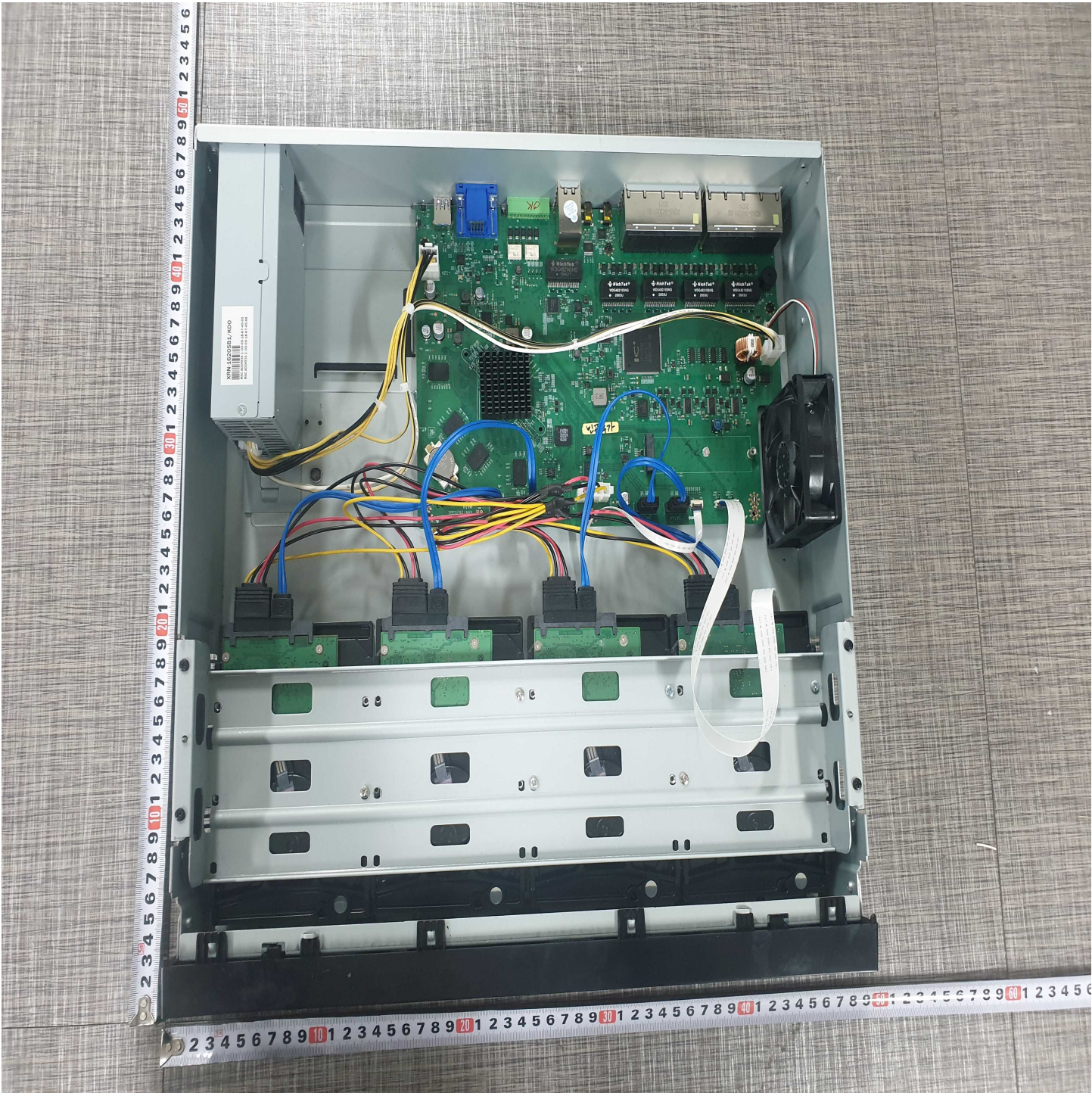
 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				11/16

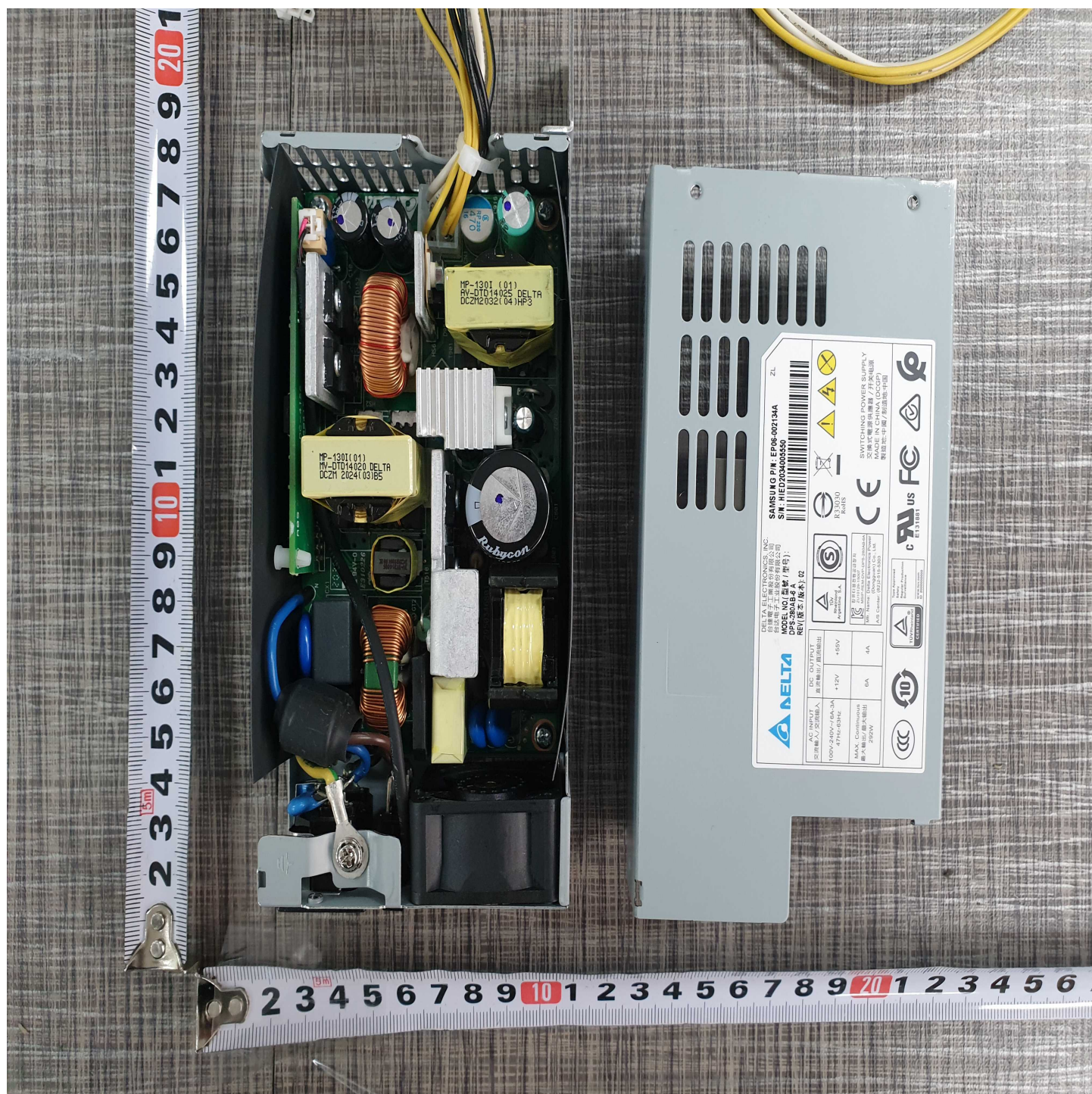


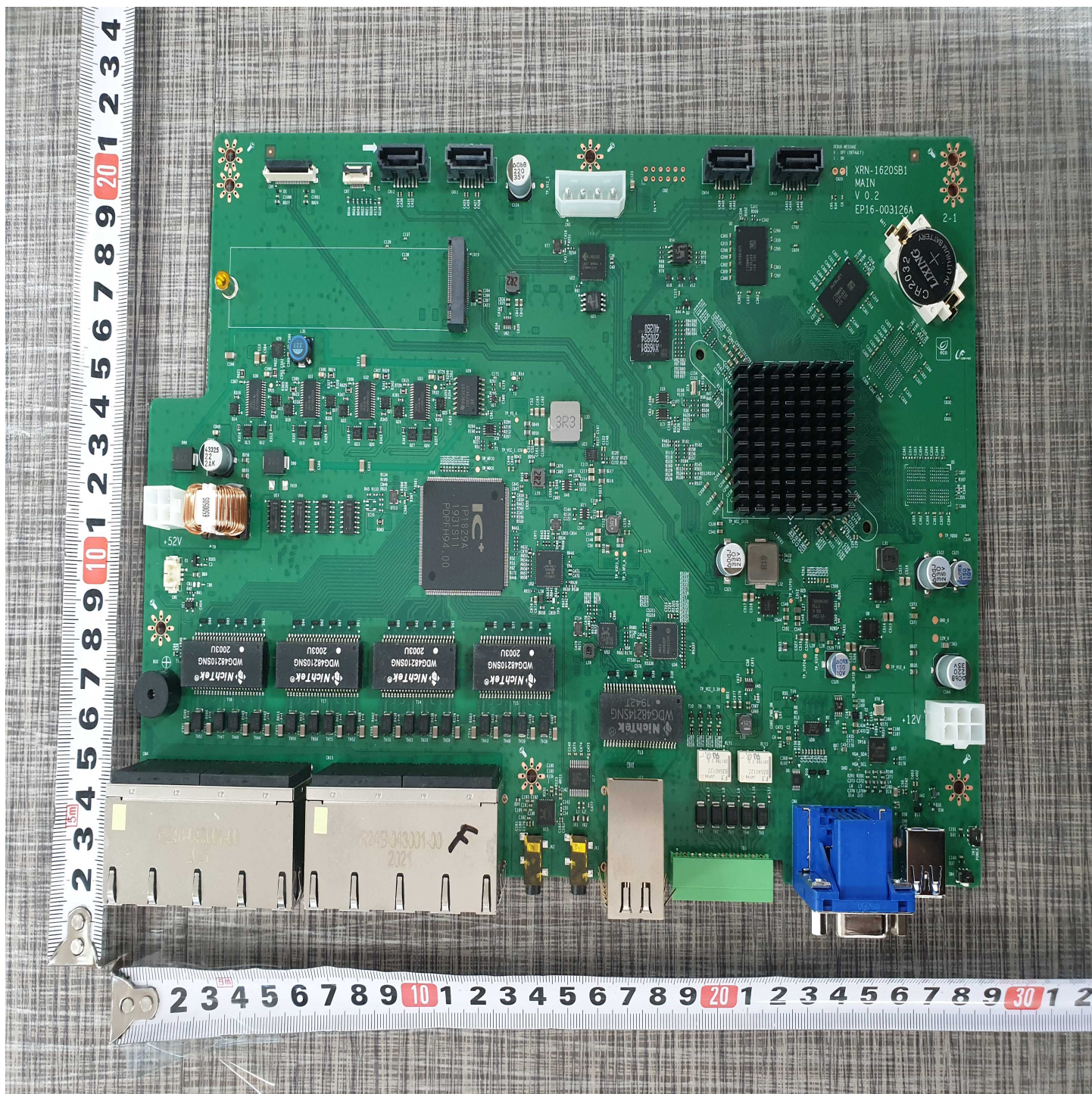














Test Record No. 1

All tests were considered necessary for UL/CSA national deviation based upon previous evaluation under CB Scheme. The CB Scheme Test Certificate, Ref. Certi. No. DK-109819-UL and Report Ref. No. C20IA157-M0A0 were prepared by UL International Demko A/S, Borupvang 5A, DK-2750 Ballerup, Denmark.

The following tests were conducted:

Tests performed (name of test and test clause):	Testing location: CTK Co., Ltd., 386-1 Ho-dong Yongin-shi, Kyungki-do, 449-100, Korea
The following tests were waived:	Rationale for Waiving
STEADY FORCE TEST, 250 N (4.4.4.2, ANNEX T.5)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
IMPACT TEST (4.4.4.4, ANNEX T.6)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
HUMIDITY CONDITIONING (5.4.8)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
ELECTRIC STRENGTH TEST (5.4.9)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR (5.5.2.2)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
RESISTANCE OF THE PROTECTIVE BONDING SYSTEM (5.6.6.2)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
POWER MEASUREMENTS (6.2.2.2, 6.2.2.3)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
STATIC STABILITY (8.6.2)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
INPUT TEST: SINGLE PHASE (B.2.5)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
SIMULATED SINGLE FAULT CONDITIONS (B.4)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
TEST FOR THE PERMANENCE OF MARKINGS (ANNEX F.3.10)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
METALLIZED COATINGS AND ADHESIVES SECURING PARTS (ANNEX P.4.2)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.
LIMITED POWER SOURCE (ANNEX Q.1)	Evaluated in CB Report. See CBTR (C20IA157-M0A0) test result for details.

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

