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HANWHA TECHWIN SECURITY VIETNAM CO LTD  
LOT O-2 QUE VO INDUSTRIAL ZONE EXTENDE  
BAC NINH VIETNAM

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

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

**Issue**

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
2020/07/26	X13	A6027	Add New Volume	

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Inspections at your plant will be conducted under the supervision of

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

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

Please review this material and report any inaccuracies to UL's Customer Service Professionals. Contact information for all of UL's global offices can be found at <http://ul.com/aboutul/locations>.

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NBK File

UL INSPECTION CENTER 864

# Follow-Up Service Procedure

## DO NOT DISCARD THIS PAGE

**It is important to keep UL Procedures and Test Reports up-to-date as new or revised pages are received. Correct maintenance will decrease the amount of time the UL Representative spends when visiting your facility.**

UL LLC offers MyHome @UL, a dedicated website providing secure access to online tools and databases that can help simplify your compliance activities. You can customize your personal MyHome @UL page to include the content needed most, including timely information about certification updates and links to other Web sites you visit regularly. Visit <http://my.home.ul.com/> to sign up today!

PAGES (in content order)	FUNCTION	HOW TO UPDATE
<b>Authorization Page</b>	Displays the Product Category, the type of Follow-Up Service (Type R=Reexamination / Type L=Label), the File Number and the Volume Number associated with each Applicant's, Manufacturer's and Listee's company name and address.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
<b>Addendum to Authorization Page*</b>	Lists the additional names and addresses of manufacturing locations, when multiple locations exist	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
<b>Listing Mark Data (LMD), Classification Mark Data (CMD) or Recognized Component Mark Data (RCMD) Pages* #</b>	Used only for products covered under Type R Service. Displays the correct LMD, CMD, or RCMD Mark, the Control Number for Listed and Classified categories and additional information regarding minimum size, application, procurement, and any other optional markings, in addition to the UL Mark.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
<b>Multiple Listing (ML) Correlation Sheet</b>	Correlates product model numbers between those products made by a Manufacturer for the Basic Applicant and those supplied to another company, the Multiple Listee.	Replace, add or delete page(s) with most current "Issued" or "Revised" date.
<b>Index*</b>	Catalogs the contents of the Procedure by some logical means, i.e. Section Number, Report Reference Number, or Issue Date.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
<b>Appendices* # (App.)</b>	Contains instructions for the Manufacturer and UL Representative concerning specific responsibilities and required periodic tests. May also outline tests to be conducted on samples to be forwarded to UL's facilities.	Replace present page by matching the UL File Number, Volume Number, Appendix letter (eg. App. A), Page Number and most current "Revised" date.
	Standardized Appendix Pages are the same for all manufacturers within a particular product category.	Replace present page by matching the Appendix letter (eg. App. A), Page Number and most current "Revised" date.
<b>Follow-Up Inspection Instructions (FUII) Pages*</b>	Contains information similar to that in the Appendices. FUII Pages are issued as part of the Procedure when a UL Standard is used in conjunction with the Procedure, and are the same for all manufacturers within a particular category.	Replace present pages by matching the Page Number and most current "Issued" or "Revised" date.
<b>Section General* # (Sec. Gen.)</b>	Contains description, requirements, identifications and/or specifications that are common to all products covered by the entire volume and supplements the information provided in the Description Section.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
<b>Description, or Section (Sec.)*</b>	Contains the specific description of one or more products or systems. This includes written text supplemented by photographs, drawings, etc., as necessary, to define features that affect compliance with the applicable requirements.	Replace present page by matching the UL File Number, Volume Number, Section Number, Page Number and most current "Issued" date.

\* The above page(s) may not appear in all UL Follow-Up Service Procedures; UL's Conformity Assessment Services staff determines their inclusion.

# These pages are combined in the **Generic Inspection Instructions** for International Style Reports, identified, as example by Vol. X1, X2, etc.

**PLEASE NOTIFY YOUR LOCAL UL OFFICE OF ANY CHANGES IN CONTACT NAME, COMPANY NAME OR ADDRESS, SO THIS MATERIAL AND IMPORTANT INFORMATION CONTINUES TO BE DELIVERED TO YOUR FACILITY WITHOUT INTERRUPTION.**



File E158873

Vol X13

Auth. Page 1

Issued: 2020-07-22

Revised: 2020-07-22

FOLLOW-UP SERVICE PROCEDURE  
(TYPE R)

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT  
(AZOT,AZOT7)

Manufacturer: SEE ADDENDUM FOR MANUFACTURER LOCATIONS

Applicant: 105140 (Party Site)  
Hanwha Techwin Co Ltd  
(813307-003) 6, Pangyo-ro 319beon-gil, Bundang-gu  
Seongnam-si Gyeonggi-do 13488 KOREA

Listee: 105140 (Party Site)  
SAME AS APPLICANT  
(813307-003)

Use of the Mark

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party. The UL Contracting Party for Follow-Up Services is listed in the addendum to this Follow-Up Service Procedure ("UL Contracting Party"). UL Contracting Party and UL LLC are referred to jointly herein as "UL."

It is the responsibility of the Applicant, Manufacturer(s), and Listee/Classified Co. to make sure that only the products meeting the aforementioned requirements bear the authorized Marks of UL LLC, or any authorized licensee of UL LLC.

### Additional Responsibilities

Additional responsibilities, duties and requirements for the Applicant and Manufacturers are defined under Additional Resources at the following web-site: <http://www.ul.com/fus> . Manufacturers without Internet access may obtain the current version of these documents from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of these documents or the Follow-Up Service Terms referenced below, please contact UL's Customer Service at <http://www.ul.com/aboutul/locations/> , select a location and enter your request, or call the number listed for that location.

### Acceptance of Follow-Up Services

The Applicant and the specified Manufacturer(s) and any Listee/Classified Co. in this Follow-Up Service Procedure must agree to receive Follow-Up Services from UL Contracting Party. If your applicable service agreement is a Global Services Agreement ("GSA"), the Applicant, the specified Manufacturer(s) and any Listee/Classified Co. will be bound to a Service Agreement for Follow-Up Services upon the earliest by any Subscriber of a) use of the prescribed UL Mark, b) acceptance of the factory inspection, or c) payment of the Follow-Up Service fees. The Service Agreement incorporates such GSA, this Follow-Up Service Procedure and the Follow-Up Service Terms which can be accessed by clicking the following link: <http://services.ul.com/fus-service-terms>. In all other events, Follow-Up Services will be governed by and incorporate the terms of your applicable service agreement and this Follow-Up Service Procedure.

### Use and Ownership of the Follow-Up Service Procedure

This Follow-Up Service Procedure, and any subsequent revisions, is the property of UL and is not transferable. This Follow-Up Service Procedure contains confidential information for use only by the Applicant, the specified Manufacturer(s), and representatives of UL and is not to be used for any other purpose. It is provided to the Subscribers with the understanding that it is not to be copied, either wholly or in part unless specifically allowed, and that it will be returned to UL, upon request.

### Definition of Terms

Capitalized terms used but not defined herein have the meanings set forth in the GSA and the applicable Service Terms or any other applicable UL service agreement.

### No Third Party Liability

UL shall not incur any obligation or liability for any loss, expense or damages, including incidental, consequential or punitive damages arising out of or in connection with the use or reliance upon this Follow-Up Service Procedure to anyone other than the above Manufacturer(s) as provided in the agreement between UL LLC or an authorized licensee of UL LLC, including UL Contracting Party, and the Manufacturer(s).

### Certification Body

UL LLC has signed below solely in its capacity as the certification body to indicate that this Follow-Up Service Procedure fulfills the requirements for certification documentation issued by the certification body.

Bruce A. Mahrenholz  
Director  
Conformity Assessment Programs (CPO)  
UL LLC

LOCATION

135422 (Party Site)  
D-TECH CO LTD  
173-25 Saneop-ro Gwonseon-gu  
Suwon-si Gyeonggi-do 16648 KOREA  
Factory ID: D  
UL Contracting Party for above site is: UL GmbH

1846102 (Party Site)  
Hanwha Techwin Security Vietnam Co Ltd  
Lot O-2 Que Vo Industrial Zone extended area Nam Son commune  
Bac Ninh VIETNAM  
Factory ID: V  
UL Contracting Party for above site is: UL GmbH

File		Volume	Page	Date:
E158873	Index	X13	1	28-Jul-20

## Index

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

## Generic Inspection Instructions

**GENERIC INSPECTION INSTRUCTIONS**

Product Category	Listing / Classification CCN	Component Recognition CCN **
Audio Video, Information and Communication Technology Equipment	AZOT, AZOT7	AZOT2, AZOT8
Power Supplies for Audio Video, Information and Communication Technology Equipment	QQJQ, QQJQ7	QQJQ2, QQJQ8
Information Technology Equipment Including Electrical Business Equipment	NWGQ, NWGQ7	NWGQ2, NWGQ8
Power Supplies for Information Technology Equipment Including Electrical Business Equipment	QQGQ, QQGQ7	QQGQ2, QQGQ8

\*\* These instructions shall also be used for the indicated Component Recognition CCNs unless specifically exempted from the factory production-line tests as noted in each individual Test Report.

These instructions contain the UL LLC Follow-Up inspection requirements for manufacturing and production-line tests. These requirements are considered to be certification requirements related to Follow-Up inspection of equipment, as such, they are not included in the Bi-National Standard as deviations from IEC 60950 or IEC 60950-1.

These instructions consist of the following Parts:

Part	Description
AA	Instructions and Duties for UL Representative
AB	Instructions for Follow-Up Tests at UL
AC	Responsibilities and Requirements for Manufacturer
AD	General Terminology
AE	General Product Construction Requirements
AF	UL Certification Marks

## Generic Inspection Instructions

**PART AA**

## INSTRUCTIONS AND DUTIES FOR UL REPRESENTATIVE

AA1.0	<b>UL REPRESENTATIVE'S DUTIES</b>
AA1.1	<p>The UL Representative's duties include, but are not limited to:</p> <ul style="list-style-type: none"><li>A. Examining the construction of production intended to bear the UL Mark or Marking to determine compliance with the description of the product and any other requirements expressed in this Procedure.</li><li>B. Where so specified in each Test Report, forwarding samples to UL for Follow-Up tests</li><li>C. Where so specified by Part AC, inspecting the test records and facilities of the manufacturer to ensure that:<ul style="list-style-type: none"><li>1. The proper number of samples are undergoing the required tests, and</li><li>2. The required tests are being performed correctly, and</li><li>3. The proper information is being recorded and is up-to-date, and</li><li>4. The instruments being used for the tests have been calibrated at the prescribed interval and are in good working order.</li></ul></li></ul>
AA2.0	<b>PROCEDURE IN CASE OF NONCONFORMANCE</b>
AA2.1	<p>Report to the manufacturer and UL LLC by means of a Variation Notice (VN) if:</p> <ul style="list-style-type: none"><li>A. Variations in construction are found, or</li><li>B. The manufacturer's method and/or frequency of testing is not as described, or</li><li>C. The test records maintained by the manufacturer are not as described, or</li><li>D. The manufacturer's inspection program is not being performed as described, or</li><li>E. Nonconforming test results are witnessed during tests conducted specifically for the UL Representative.</li></ul>
AA2.2	<p>Explain to the manufacturer that a VN is a means of communication with the manufacturer and applicant and forms a record of those items where nonconformance to the Procedure has been found. Reference is to be made to "Information for Manufacturer's Variation Notices" on the back of the VN.</p>
AA2.3	<p>When a product does not conform with the Procedure, require that the manufacturer:</p> <ul style="list-style-type: none"><li>A. Remove any markings referencing UL from the product, or</li><li>B. Suitably modify all products that do not comply with the Procedure, or</li><li>C. Hold shipment pending further instructions from UL LLC</li></ul> <p>Exception: Production may be temporarily accepted if it can be determined that the nonconformance does not present a conflict with the applicable UL requirements, and laboratory testing (other than Follow-Up testing) is not required to determine product compliance.</p>



## Generic Inspection Instructions

AA2.4	In the event of a disagreement between the manufacturer and the UL Representative as to whether a product is acceptable, the manufacturer shall hold production at the factory pending resolution of the variations. The manufacturer and applicant have the right to appeal the decision; and the UL Representative shall provide the name of the UL Engineer to whom the appeal is to be made. If the UL Engineer is not known the manufacturer is to be directed to contact the Client Advisor at the Reviewing Office. Should UL LLC grant temporary authorization for the continued use of the UL Mark, such temporary authorization shall only be for the time needed to review and/or process the Procedure revisions, or as otherwise specified to cover a particular lot or production run.
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AA3.0	<b>INSTRUCTIONS FOR INSPECTION OF THE PRODUCT</b>
AA3.1	At each inspection, samples of current production and/or stock shall be examined for compliance with the applicable descriptions and requirements contained in this Procedure.

AA4.0	<b>INSTRUCTIONS FOR SAMPLE SELECTION</b>
AA4.1	Certain products contained in this Procedure employ plastic enclosures that may require Follow-Up testing when the material is not a Recognized Component Plastic (QMFZ2). Where indicated in each Test Report, samples shall be selected once per year.
AA4.2	Where Follow-Up tests are required, the number and type of samples to be selected and the tests to be conducted are indicated in each Test Report. Where different models shown use identical enclosures (material and dimensions), a single enclosure can be sent to represent all models. When several alternate materials are specified for particular models, only a sample of the enclosure material currently in use should be sent.
AA4.3	The selected samples shall be appropriately tagged to indicate materials, manufacturer and model/cat. no., and shall be forwarded to the appropriate Reviewing Office. Each enclosure sample should also be marked with the Procedure and Report Reference Number that the sample represents.

## Generic Inspection Instructions

**PART AB**

## INSTRUCTIONS FOR FOLLOW-UP TESTS AT UL

AB1.0	<b>GENERAL</b>
AB1.1	A Test Report may require Follow-Up Tests for specific products. The stated sample requirements and test specifics are based the information in AB2.0.
AB1.1	The samples forwarded by the UL Representative shall be subjected to the specified tests in accordance with the method and basis of acceptability noted in AB3.0.
AB1.2	All clause references are from the Standard for Safety of Information Technology Equipment, UL 60950, Third Edition and UL 60950-1, First Edition.

AB2.0	<b>SAMPLE REQUIREMENTS</b>		
	Test	Samples	Test Specifics
AB2.1	Impact	1 complete unit or 1 enclosure with supporting framework	Ball drop height = 1.3 m
AB2.2	Drop	1 complete unit	Unit drop height = 0.75 m or 1 m
AB2.3	Stress Relief	1 complete unit; or 1 enclosure with supporting framework	Oven temperature (°C)
AB2.4	3/4-Inch (19 mm) Flammability	3 enclosures or 3 sample parts with representative wall thickness and ventilation openings.	Oven temperature (°C)
AB2.5	5-Inch (127 mm) Flammability	3 enclosures or 3 sample parts with representative wall thickness and ventilation openings.	Oven temperature (°C)
AB2.6	Needle-Flame	3 enclosures or 3 sample parts with representative wall thickness and ventilation openings.	Oven temperature (°C)

AB3.0	<b>PERFORMANCE TESTS</b>		
	Test	Method (sub-clause)	Basis for Acceptability
AB3.1	Impact	4.2.5	4.2.1
AB3.2	Drop	4.2.6	4.2.1
AB3.3	Stress Relief	4.2.7	4.2.1
AB3.4	3/4-Inch (19 mm) Flammability	Annex A, A.2	Annex A, A.2
AB3.5	5-Inch (127 mm) Flammability	Annex A, A.1	Annex A, A.1
AB3.6	Needle-Flame	Annex A, A.2.7	Annex A, A.2.7

## Generic Inspection Instructions

**PART AC**

## RESPONSIBILITIES AND REQUIREMENTS FOR MANUFACTURER

AC1.0	<b>MANUFACTURER'S RESPONSIBILITIES (INCLUDING BUT NOT LIMITED TO)</b>
AC1.1	Control of UL Mark - Restrict the use of markings that reference UL (either directly or by use of the name, an abbreviation of it, or the UL symbol or Classification Mark, or indirectly by means of agreed-upon markings that are understood to indicate acceptance by UL) to those products that are found by the manufacturer's own inspection to comply with the Procedure description. Such restrictions apply to packaging, brochures or other means of advertising that reference UL. Use of such markings is further limited by the agreements that have been executed by the subscriber and UL.
AC1.2	Substitution of Non-Specified Plastic Materials - The product description may require the use of a Recognized Plastic with a minimum flammability rating. For these cases, before a plastic material may be used, current UL certification documentation must be checked to ensure that the plastic material has an acceptable flammability rating as specified at the thickness of use. Acceptable UL certification documentation includes: (a) the current edition of the Recognized Component Directory or Supplement; (b) the UL Online Certification Directory ( <a href="http://www.ul.com/database">http://www.ul.com/database</a> ). NOTE: The above does not apply to materials for which the specific manufacturer and type designation of the plastic is specified in the individual Test Reports (i.e. Enclosures).
AC1.3	Substitution of Non-Specified PWB's - Before a printed wiring board may be used, current UL certification documentation must be checked to ensure that the maximum solder temperature and dwell time is as indicated and that the printed wiring board has minimum flammability and operating temperature ratings as specified in the individual Test Reports or other specified requirements. Acceptable UL certification documentation includes: (a) the current edition of the Recognized Component Directory or Supplement; (b) the UL Online Certification Directory ( <a href="http://www.ul.com/database">http://www.ul.com/database</a> ).
AC1.4	Production-Line Tests - Conduct the tests detailed in Part AC2.
AC1.5	Test Equipment Calibration – Determine that the test equipment is functioning properly and have it calibrated at least annually, or whenever it has been subject to abuse (such as being dropped or struck with an object) or its accuracy is questionable. Calibration may be by the manufacturer or an outside laboratory. In either case, it shall be by comparison with a Standard that is traceable to the applicable U.S. or the appropriate country's National Standard. Certification of calibration shall be maintained by the manufacturer until the next succeeding certification, and shall be readily available for review by the UL Representative. A letter from an outside laboratory or from an off-site manufacturer's calibration lab stating that their lab Standards are directly traceable to their country's National Standard and outlining their traceability path is considered adequate proof of traceability. A tag or marking on the equipment alone is not to be considered as equivalent to certification, but may be used to reference the certification report.
AC1.6	Packaging - Ensure that there are no markings on the carton, package or contents that are, or could be construed to be, in conflict with or an extension of the uses covered in the instruction manual or Procedure.

## Generic Inspection Instructions

AC1.7	<p>Power Supply Cords –</p> <p>A. Non-Detachable Power Supply Cord - A non-detachable power supply cord must be provided if described in a Test Report.</p> <p>B. Detachable Power Supply Cord - A detachable power supply cord described in a Test Report may or may not be shipped with the unit(s). When a cord is provided, it should either:</p> <ol style="list-style-type: none"> <li>1. Comply with the specific description in the Procedure, or,</li> <li>2. Be provided for products for use outside of the USA and/or Canada. In this case, the manufacturer is to supply the UL Representative with information that allows the Representative to verify that the products are intended to be sold outside of the USA and/or Canada <u>and</u> that the cord is certified or similarly appropriate for use in the destination country.</li> </ol>
AC1.8	User and Installation (Safety) Instructions provided with Bulk Shipped Equipment
AC1.8.1	<p>Bulk shipments may be provided with installation instruction sets totaling less than the total number of products in the shipment provided, or none at all provided that the following conditions are met.</p> <p>A. Bulk Shipment to Distribution Center - Bulk shipments from a manufacturing facility covered by the Procedure describing the product to an off-site distribution center need not have the user/installation instructions provided with the shipment if appropriate safety instructions will be added to individual products at the distribution center before final redistribution to the consumer. It is the dual responsibility of the manufacturer and distribution center to have a system in place to insure that all instructions required by the Procedure are provided with the product before final distribution to the consumer, but this system will not be subject to review by UL Follow-Up Service.</p> <p>Example: A product shipped in a bulk lot to an overseas distribution center where appropriate installation instructions in the local language are added before final redistribution.</p> <p>B. Bulk Shipment to Single Destination Which Controls Installation of Equipment and Manages Distribution of Instructions - Bulk shipments from a manufacturing facility covered by the Procedure to a single destination, where the redistribution and installation of the product, including distribution of instructions, is under the control of the customer, may include just one set of use/installation instructions provided that the user/installation instructions (original or copies) are made available to the users of the equipment, as needed.</p> <p>Alternatively, user/installation instructions need not be provided with such a shipment if appropriate safety instructions will be sent separately to single destination that controls installation of the equipment. For such cases, it is the responsibility of the manufacturer to have a system in place to insure that all instructions required by the Procedure are provided to the consumer, but this system will not be subject to UL Follow-Up Service.</p> <p>Example: A product shipped in bulk lots to a corporate customer where the equipment will be redistributed and installed locally by the corporate customer, and copies of user/installation instructions are not needed for all users of the equipment.</p> <p>C. Bulk Shipment to Single Destination Which Does Not Control Installation - Bulk shipments from a manufacturing facility covered by the Procedure describing the product to a single destination, where redistribution and installation of the product is not controlled, should be provided with individual sets of use/installation instructions for each product, unless subjected to special consideration.</p> <p>Example: A product shipped in bulk lots to a wholesale or retail outlet where the installation of the equipment will not be under the control of the wholesaler or retailer.</p>

## Generic Inspection Instructions

AC1.8.2	Compliance with these guidelines will be determined through a review of the content of the equipment's installation instructions during the product investigation, and information supplied to the UL Inspection Center Representative during inspection visits. Other options that provide an equivalent level of safety or control may be considered based on the application.
AC1.9	<p>Product Variations - In the event that a nonconformance to the Procedure is found, a Variation Notice (VN) will be issued. A VN is a means of communication with the applicant and manufacturer, and forms a record of those items where nonconformance to the Procedure has been found. The VN will indicate the specific model inspected and all other models with similar construction features, even when these models are not individually inspected.</p> <p>Unless directed otherwise by the UL Representative, when a product does not comply with the Procedure, the manufacturer shall either:</p> <ul style="list-style-type: none"> <li>A. Remove any markings referencing UL from the product, packaging, instructions, etc.; or</li> <li>B. Suitably modify all products that do not comply with the Procedure; or</li> <li>C. Hold shipment pending further instructions from UL LLC; or</li> <li>D. Act in accordance with special arrangements made with the Reviewing Office.</li> </ul>
AC1.9.1	In the event of a disagreement between the manufacturer and the UL Representative as to whether or not a product is conforming, the manufacturer shall hold production at the factory pending resolution of the variations. The applicant or manufacturer has the right to appeal a decision with which he disagrees and should contact the appropriate UL Office to resolve any disagreements. Should UL LLC grant temporary authorization for the continued use of the UL Mark, such temporary authorization shall only be for the time needed to review and/or process the Procedure revisions, or as otherwise specified to cover a particular lot or production run.

AC2.0	<b>REQUIREMENTS FOR PRODUCTION-LINE TESTS</b>
AC2.1	The following Production-Line Tests shall be conducted on the products covered by this Procedure. During production, the test equipment shall be checked for proper operation at least once during each shift. When the tests are not performed concurrently, it is preferred that the Electric Strength (Dielectric Voltage-Withstand) Test be performed after the Earthing (Grounding) Continuity Test.
AC2.2	<b>Production-Line Earthing (Grounding) Continuity Test</b>
AC2.2.1	General
AC2.2.1.1	<p>For Listed products: Except as may be noted under "Exceptions" in each Test Report, the manufacturer shall subject 100 percent of production of all of the following products to a routine Production-Line Earthing Continuity Test as described in section AC2.2.3.</p> <ul style="list-style-type: none"> <li>A. Products that are provided with a non-detachable earthing type power supply cord, or</li> <li>B. Products that are provided with an earthed type inlet which accepts a detachable power supply cord, or</li> <li>C. Products that are provided with an earthing type terminal block or field wiring (pigtail leads) for permanent connection to the branch circuit.</li> </ul>
AC2.2.1.2	For Component Recognized products: When specifically noted in each Test Report, the manufacturer shall subject 100 percent of the specified models to a routine Production-Line Earthing Continuity Test as described in section AC2.2.3.
AC2.2.2	Test Equipment
AC2.2.2.1	Any suitable continuity-indicating device (such as an ohmmeter, a battery and buzzer combination, or the like) may be used to determine compliance with the Earthing Continuity Test requirements. Commercial earth continuity testers that pass a current through the earthing path may also be used to determine compliance with the same requirements.

## Generic Inspection Instructions

AC2.2.3	Method
AC2.2.3.1	Continuity shall be determined between the earthing conductor of the attachment plug cap, and/or the designated main protective earthing point, and accessible dead-metal parts of the product, using the test equipment indicated above.
AC2.2.3.2	A single test is sufficient if the accessible metal selected is conductively connected by design to all other accessible metal.
AC2.2.4	Basis for Acceptability
AC2.2.4.1	There shall be earthing continuity between the parts specified.
AC2.2.5	In Cases of Non-conformance
AC2.2.5.1	Any unit that does not conform shall be segregated from conforming units until repaired or otherwise brought into compliance. Records of non-conforming test results shall be retained for six (6) months and shall be readily available for review by the UL Representative. The records shall include the model or catalog designation of the product, the date of production of the unit, the date the test was performed, test results and action taken on rejection.
AC2.3	<b>Production-Line Electric Strength (Dielectric Voltage-Withstand) Test</b>
AC2.3.1	General
AC2.3.1.1	For Listed products: Except as may be noted under "Exceptions" in each Test Report, the manufacturer shall subject 100 percent of production of all products to a routine Production-Line Electric Strength Test as described in section AC2.3.3.
AC2.3.1.2	For Component Recognized products: When specifically noted in each Test Report, the manufacturer shall subject 100 percent of the specified models to a routine Production-Line Electric Strength Test as described in section AC2.3.3.
AC2.3.2	Test Equipment
AC2.3.2.1	The test equipment shall include a means of indicating the test potential, an audible or visual indicator of electrical breakdown, and either a manually operated reset device to restore the equipment after electrical breakdown or an automatic feature that rejects any unacceptable unit. If an ac test potential is applied, the test equipment shall also include a transformer having an essentially sinusoidal output.
AC2.3.2.2	If the output of the test-equipment transformer is less than 500 volt-amperes, the equipment shall include a voltmeter in the output circuit to indicate the test potential directly.
AC2.3.2.3	If the output of the test-equipment transformer is 500 volt-amperes or more, the test potential may be indicated (1) by a voltmeter in the primary circuit or in a tertiary-winding circuit, (2) by a selector switch marked to indicate the test potential, or (3), in the case of equipment having a single test-potential output, by a marking in a readily visible location to indicate the test potential. When marking is used without an indicating voltmeter, the equipment shall include a positive means, such as an indicator lamp, to indicate that the manually operated reset switch has been reset following a dielectric breakdown.
AC2.3.2.4	Test equipment other than that described above may be used when it can be shown that UL has previously confirmed in writing that the equipment complies with the above requirements and is deemed suitable for use for this test.

## Generic Inspection Instructions

AC2.3.3	Method
AC2.3.3.1	<p>Each product shall withstand without electrical breakdown, as a routine production-line test, the application of an ac potential at a frequency within the range of 40-70 Hz or a dc potential between (a) the primary wiring, including connected components, and (b) accessible dead metal parts that are likely to become energized.</p> <p>For purposes of these instructions, primary wiring encompasses input wiring for connection to power systems associated with both ac mains and dc mains that exceeds 60 V dc.</p> <p>Note: See the Specific Inspection Criteria in each Test Report for details or special instructions for test locations, such as testing of enamel coating on signal transformers associated with TNV circuits per 2.3.2 and 6.2.1 of UL 60950/-1.</p>
AC2.3.3.2	When there are capacitors across the insulation under test, it is recommended that dc test voltages be used.
AC2.3.3.3	The production-line test potential for paragraph AC2.3.3.1 shall be in accordance with Table AC1 for protectively earthed (Class I) products and Table AC2 for double insulated (Class II) products, as applicable. The full test potential is to be applied for 1 second. The manufacturer's test conditions may be higher than those shown in Tables AC1 and AC2 when necessary to comply with other international product safety certifications.
AC2.3.3.4	The product may be in a heated or unheated condition for the test.
AC2.3.3.5	<p>The test shall be conducted when the product is complete (fully assembled), and it is not intended that the product be unwired, modified, or disassembled for the test, unless otherwise permitted below:</p> <ul style="list-style-type: none"> <li>A. A part, such as a snap cover or a friction-fit knob, that would interfere with conducting the test need not be in place.</li> <li>B. The test may be conducted before final assembly if the test parameters represent that for the completed product.</li> <li>C. The test need not be performed using the power supply cord provided with the product. However, if the manufacturer's test method employs a test power supply cord, then the continuity of the test power supply cord conductive connections shall be checked once daily.</li> </ul>
AC2.3.3.6	For the test, either a sufficient number of control devices are to be closed, or separate applications of the test potential are to be made, so that all parts of the primary circuit are tested.
AC2.3.3.7	<p>During the test, the primary switch is to be in the on position, both sides of the primary circuit of the product are to be connected together and to one terminal of the test equipment, and the second test-equipment terminal is to be connected to accessible dead metal, except as permitted below:</p> <ul style="list-style-type: none"> <li>A. A product (resistive, high-impedance winding, or the like) having circuitry not subject to excessive secondary voltage buildup in case of electrical breakdown during the test may be tested (1) with a single-pole primary switch, if used, in the off position, or (2) with only one side of the primary circuit connected to the test equipment when the primary switch is in the on position or when a primary switch is not used.</li> <li>B. The primary switch is not required to be in the on position if the testing means applies full test potential between the primary wiring and dead metal parts with the switch not in the on position.</li> </ul>
AC2.3.3.8	When authorized by the "Exceptions" included in each Test Report, solid-state components that might be damaged by a secondary effect (induced voltage surge, excessive heating, and the like) of the test may be short-circuited by means of a temporary electrical jumper or the test may be conducted without the component electrically connected, providing the wiring and terminal spacings are maintained. Transient voltage suppression devices other than capacitors connected from primary wiring to dead metal may also be disconnected during the test.

## Generic Inspection Instructions

AC2.3.4	Basis for Acceptability
AC2.3.4.1	All products shall withstand the applied potential without an indication of electrical breakdown.
AC2.3.5	In Cases of Non-conformance
AC2.3.5.1	Any unit that does not conform when tested at the values as specified in Table AC1 or AC2 shall be segregated from conforming units until repaired or otherwise brought into compliance. Records of non-conforming test results shall be retained for six (6) months and shall be readily available for review by the UL Representative. The records shall include the model or catalog designation of the product, the date of production of the unit, the date the test was performed, test results and action taken on rejection.

TABLE AC1  
ELECTRIC STRENGTH TEST CONDITIONS  
FOR CLASS I (PROTECTIVELY EARTHED) EQUIPMENT

Appliance Voltage Rating	Test Potential (V rms)	Test Potential (V dc)	Time (seconds)
Rated less than or equal to 130 V rms (184 V dc)	1000	1400	1
Rated more than 130 V rms (184 V dc) and less than or equal to 600 V rms (849 V dc)	1500	2100	1

For products with special constructions and test conditions see "Exceptions" in each Test Report.

TABLE AC2  
ELECTRIC STRENGTH TEST CONDITIONS  
FOR CLASS II (DOUBLE INSULATED) EQUIPMENT

Appliance Voltage Rating	Test Potential (V rms)	Test Potential (V dc)	Time (seconds)
Rated less than or equal to 130 V rms (184 V dc)	2000	2800	1
Rated more than 130 V rms (184 V dc) and less than or equal to 600 V rms (849 V dc)	3000	4200	1

For products with special constructions and test conditions see "Exceptions" in each Test Report.



## Generic Inspection Instructions

**PART AD**

## GENERAL TERMINOLOGY

AD1.0	<b>ABBREVIATIONS / DEFINITIONS</b>	
AD1.1	Bounding Surface	The outer surface of the electrical enclosure, considered as though metal foil was pressed into contact with accessible surfaces of insulating material
AD1.2	Clearance	Shortest distance between two conductive parts or between a conductive part and the BOUNDING SURFACE of the equipment, measured through air
AD1.3	Creepage Distance	Shortest distance between two conductive parts, or between a conductive part and the BOUNDING SURFACE of the equipment, measured along the surface of the insulation
AD1.4	Extra Low Voltage (ELV)	A secondary circuit with voltages between any two conductors of the circuit, and between any one such conductor and earth, not exceeding 42.4 V peak, or 60 V dc, under normal operating conditions, which is separated from a HAZARDOUS VOLTAGE CIRCUIT by basic insulation, and which neither meets all of the requirements for an SELV circuit nor meets all of the requirements for a LIMITED CURRENT CIRCUIT.
AD1.5	Hazardous Energy Level (HAZ/EL)	An available power level of 240 VA or more having a duration of 60 s or more, or a stored energy level of 20 J or more, at a potential of 2 V or more.
AD1.6	Hazardous Voltage (HAZ/V)	A voltage exceeding 42.4 V peak, or 60 V dc, existing in a circuit that does not meet the requirements for either a LIMITED CURRENT CIRCUIT or a TNV CIRCUIT.
AD1.7	Limited Current Circuit (LCC)	A circuit which is so designed and protected, that, under both normal operating conditions and single fault conditions, the current which can be drawn is not hazardous
AD1.8	Limited Power Source (LPS)	A circuit which includes a transformer or battery, and which is either inherently limited to power levels considered not a risk of fire, or is not inherently limited and requires an over-current protective device to limit the source to power levels considered not a risk of fire
AD1.9	Primary (PRI)	A circuit that is directly connected to the ac mains supply. It includes, for example, the means for connection to the ac mains supply, the primary windings of transformers, motors and other loading devices.
AD1.10	Safety Extra Low Voltage (SELV)	A SECONDARY CIRCUIT which is so designated and protected that under normal operating conditions and single fault conditions, its' voltages do not exceed a safe value, generally 42.2 V peak or 60 V dc.
AD1.11	Secondary (SEC)	A circuit that has no direct connection to a PRIMARY CIRCUIT and derives its power from a transformer, converter or equivalent isolation device, or from a battery.
AD1.12	TNV Circuit	A telecommunications network voltage circuit, which is in the equipment and to which the accessible area of contact is limited, and that is so designed and protected that, under normal operating conditions and single fault conditions, the voltages do not exceed specified limit values based upon the type of TNV circuit.

## Generic Inspection Instructions

**PART AE**

## GENERAL PRODUCT CONSTRUCTION REQUIREMENTS

AE1.0	<b>CONSTRUCTION DETAILS</b>
AE1.1	Unless otherwise described or supplemented in individual Test Reports, the requirements specified in Table AE1 apply to all equipment included in this Procedure
AE1.2	All clause references are from the Standard for Safety of Information Technology Equipment, UL 60950, Third Edition and UL 60950-1, First Edition.

TABLE AE1  
CONSTRUCTION DETAILS




Clause	Clause Title	Clause Specifics
		None specified

## Generic Inspection Instructions

**PART AF**

## UL CERTIFICATION MARK

<i>Product Category:</i>	Audio/video, Information and Communication Technology Equipment
<i>Product Category CCN:</i>	AZOT



AF1.1	The Test Report covering each product must be consulted to determine which Listing Marks are authorized for use in conjunction with that product.
AF1.1.1	The following Listing Mark is authorized for use on products that are Listed <b>only</b> to the requirements for the United States: <div style="text-align: center;">  </div>
AF1.1.2	Either of the following Listing Marks is authorized for use on products that are Listed to the requirements of <b>both</b> the United States and Canada: <div style="text-align: center;">   </div>
AF1.2	The Listing Mark consists of four elements that are placed in close proximity to each other and shall appear on Listed products only.
AF1.2.1	Element 1 - UL Symbol. There is no required minimum height for the UL Symbol, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye. Information on downloading electronic versions or receiving camera-ready artwork of the UL Symbols may be obtained at <a href="http://www.ul.com">www.ul.com</a>
AF1.2.2	Element 2 - The word "LISTED"
AF1.2.3	Element 3 - A product identity
AF1.2.3.1	The product identity is: "INFORMATION TECHNOLOGY EQUIPMENT" or its abbreviations, "AV EQUIPMENT", "AV&ICT", "COPIER", "MUSICAL INSTRUMENT", "PAPER SHREDDER", "PERSONAL COMPUTER", or other appropriate name as shown in the individual Test Reports.
AF1.2.3.2	The product identity may be omitted if the Listing Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate that includes the rating or the catalog or model designation.
AF1.2.3.3	Where Rebuilt products are authorized in individual Test Reports, the product identity for such products shall be preceded by "REBUILT" or "REMANUFACTURED", as appropriate.
AF1.2.4	Element 4 – A control number represented above by XXXX is to be replaced with the Listee's file number.
AF1.3	A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) must include the four elements.
AF1.4	The manufacturer may reproduce the Listing Mark or obtain it from a UL authorized supplier.

## Generic Inspection Instructions

## **PART AF**

### **UL CERTIFICATION MARK**

<i>Product Category:</i>	Audio/video, Information and Communication Technology Equipment
<i>Product Category CCN:</i>	AZOT7

AF1.1	The Test Report covering each product must be consulted to determine which Listing Marks are authorized for use in conjunction with that product.
AF1.1.1	<p>The following Listing Mark is authorized for use on products that are Listed <b>only</b> to the requirements for Canada:</p> 
AF1.1.2	<p>Either of the following Listing Marks is authorized for use on products that are Listed to the requirements of <b>both</b> the United States and Canada:</p> 
AF1.2	The Listing Mark consists of four elements that are placed in close proximity to each other and shall appear on Listed products only.
AF1.2.1	Element 1 - UL Symbol. There is no required minimum height for the UL Symbol, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye. Information on downloading electronic versions or receiving camera-ready artwork of the UL Symbols may be obtained at <a href="http://www.ul.com">www.ul.com</a>
AF1.2.2	Element 2 - The word "LISTED"
AF1.2.3	Element 3 - A product identity
AF1.2.3.1	The product identity is: "INFORMATION TECHNOLOGY EQUIPMENT" or its abbreviations, "AV EQUIPMENT", "AV&ICT", "COPIER", "MUSICAL INSTRUMENT", "PAPER SHREDDER", "PERSONAL COMPUTER", or other appropriate name as shown in the individual Test Reports.
AF1.2.3.2	The product identity may be omitted if the Listing Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate that includes the rating or the catalog or model designation.
AF1.2.3.3	Where Rebuilt products are authorized in individual Test Reports, the product identity for such products shall be preceded by "REBUILT" or "REMANUFACTURED", as appropriate.
AF1.2.4	Element 4 – A control number represented above by XXXX is to be replaced with the Listee's file number.
AF1.3	A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) must include the four elements.
AF1.4	The manufacturer may reproduce the Listing Mark or obtain it from a UL authorized supplier.

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
<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 VIDEO RECORDER
<b>Model:</b>	XRN-6410B4, XRN-3210B4
<b>Rating:</b>	100-240Vac, 50/60 Hz, 2.7 A
<b>Applicant Name and Address:</b>	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: ByeonUk Lee / Reviewer

### Supporting Documentation

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

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

B. Generic Inspection Instructions -

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

### Product Description

NETWORK VIDEO RECORDER.

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

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

### Model Differences

Model XRN-6410B4 is basic model.



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


Model with 64 channels: XRN-6410B4

Model with 32 channels: XRN-3210B4

### Test Item Particulars

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

Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	HDD Mounted (1 EA) :14.40 kg HDD Full Mounted (16 EA) : 23.45 kg
<b>Technical Considerations</b> <ul style="list-style-type: none"> <li>The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40 °C</li> <li>The product is intended for use on the following power systems : TN</li> <li>Considered current rating of protective device as part of the building installation (A) : 20</li> <li>Mains supply tolerance (%) or absolute mains supply values : +10%/-10%</li> <li>The equipment disconnect device is considered to be : Appliance inlet</li> <li>The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All accessible connectors</li> <li>The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual</li> </ul>	
<b>Additional Information</b> 4789490673 - Max. Normal Load: Continuous operation with the followings. 1. Hard disk-drive 16 EA connected and record video data as manufacturer provided. 2. Front USB port (2 EA): 0.5 A each 3. Rear USB port (2 EA): 0.9 A each 4. 64 Channel network Camera connected and as manufacturer provided.	
<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 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)"
Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."/"ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions." (Marking) Alternatively, symbol   (ISO 7000-0434 and/or ISO 7000-1641) on product where visible, with the above wording in the instruction manual.

Class I equipment -Terminal for main protective earthing	Provided adjacent to the main protective earthing terminal  (IEC 60417-5019)
<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>					
	N/A					
<b>BD1.3</b>	<b>Electric Strength Test Exemptions – This test is not required for the following models:</b>					
	N/A					
<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>					
	N/A					

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

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

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

Lithium Battery (BAT1)	WUHAN LIXING (TORCH) POWER SOURCE CO LTD	CR2032	Lithium/manganese dioxide (Coin), Max. Abnormal Charging Current: 10 mA, Max. Abnormal Charging Voltage: 5 Vdc	BBCV2	UL (MH26236)	
Lithium Battery (BAT1) - Alternate	ShenZhen Gaonengda Battery Co., LTD.	CR2032	Lithium/manganese dioxide (Coin), Max. Abnormal Charging Current: 10 mA, Max. Abnormal Charging Voltage: 3.5 Vdc	BBVC2	UL (MH30114)	
Lithium Battery (BAT1) - Alternate	Interchangeable	CR2032	Max. abnormal charging current: 10 mA	BBCV2	UL	
Reverse Current Protection Circuit for Lithium Coin Battery (BAT1)	Interchangeable	Interchangeable	Diode (D22, Max. reverse voltage 30 V, Max. reverse current 10 mA) and resistor (R944, 1.0 kohm) in series.	-	-	
USB Protection IC (USB 2.0 : U59, U60 / USB 3.0 :U50, U53)	Texas Instruments Inc	TPS2062	Rated 2.7–5.5 Vdc, 1 A	QVGS2	UL (E169910)	
USB Protection IC (USB 2.0 : U59, U60 / USB 3.0 :U50, U53) - Alternate	DIODES HONG KONG LIMITED	AP2162	Rated 2.7–5.5 Vdc, 1 A	QVGS2	UL (E322375)	
Internal Wiring (secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg.C	AVLV2	UL	
Hard Disk Driver (HDD) (Optional)	Interchangeable	Interchangeable	Max. 12 Vdc	NWGG2 or AZOT2	UL	
Hard disk driver frame (Plastic)	LOTTE ADVANCED MATERIALS CO LTD	NH-1035(+)	Min. 1.5 mm thickness, rated V-0, 80 deg.C	QMFZ2/8	UL (E115797)	

Internal Plastic Part Materials	Interchangeable	Interchangeable	Rated Min. V-2	QMFZ2	UL	
DC BRUSHLESS FAN (Two provided) for HDD	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MG(a)12012(j)(e)-(f)25(MGT12012XR-W25)	Rated voltage: DC12 V, Rated current: 0.52 A, speed: 2700±10 %RPM	GPWV2	UL (E187236)	
DC BRUSHLESS FAN (Two provided) for HDD -Alternate	Minebeamitsumi INC.	11925S(i)-12P-(d)(e)D-(f)	Rated voltage: DC12 V, Rated Maximum current: 0.50 A, speed: 2800±15 %RPM	GPWV2	UL(E89936)	
DC BRUSHLESS FAN for CPU	FOXCONN TECHNOLOGY CO LTD	PVA080G12Q-(X)yy-yy(PVA080G12Q)	Rated voltage: DC12 V, Rated current: 0.45 A, speed: 4500±8 %RPM	GPWV2	UL (E231557)	
Flat wire Cable (secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg.C	AVLV2/8	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	
Label	Interchangeable	Interchangeable	Min.40 deg. C, if Max. surface temperature not specified.	PGDQ2 or PGJI2	UL	
PCB	Interchangeable	Interchangeable	V-0, Min. 105 deg.C	ZPMV2/8	UL	

**Enclosures**

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



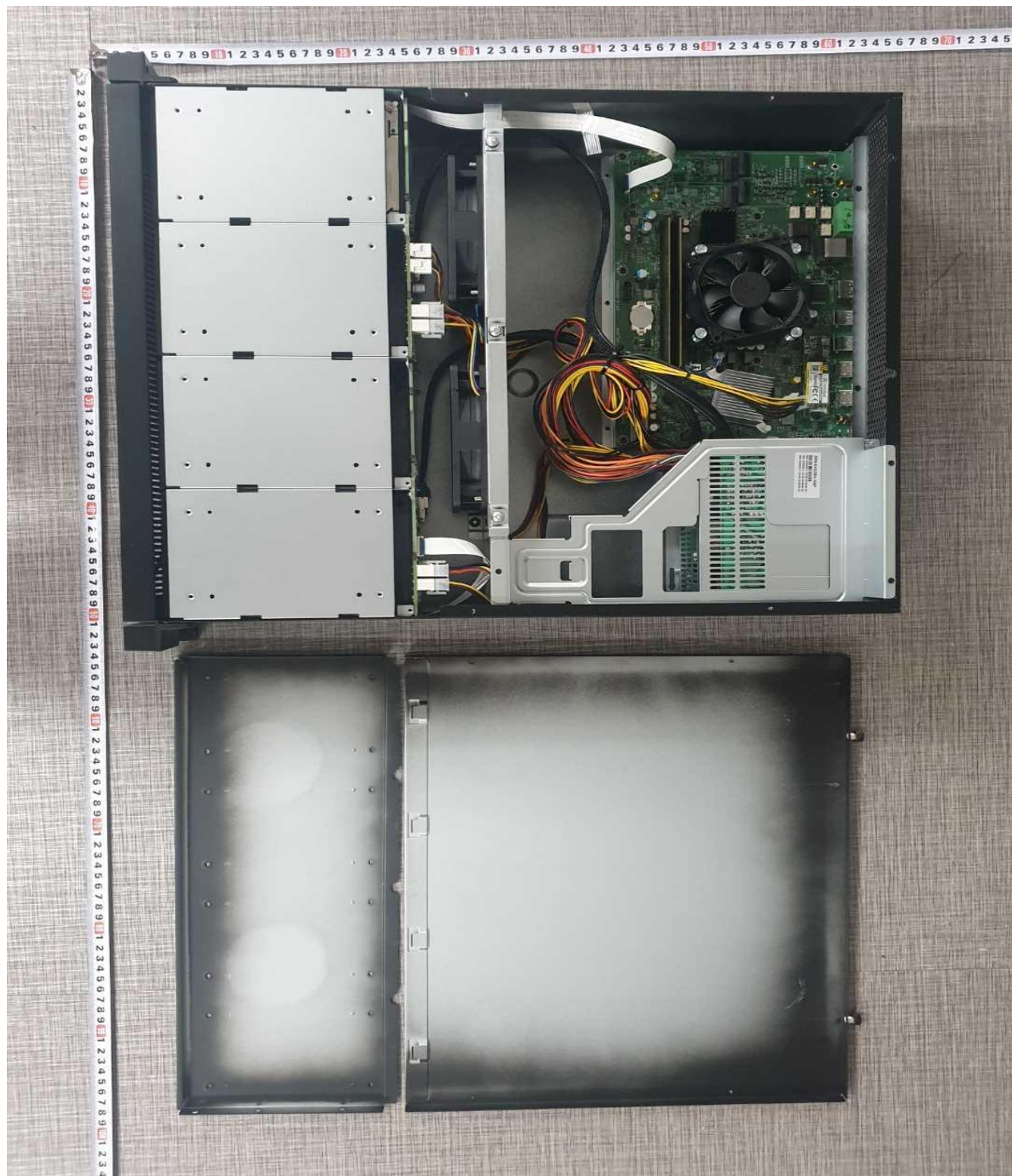


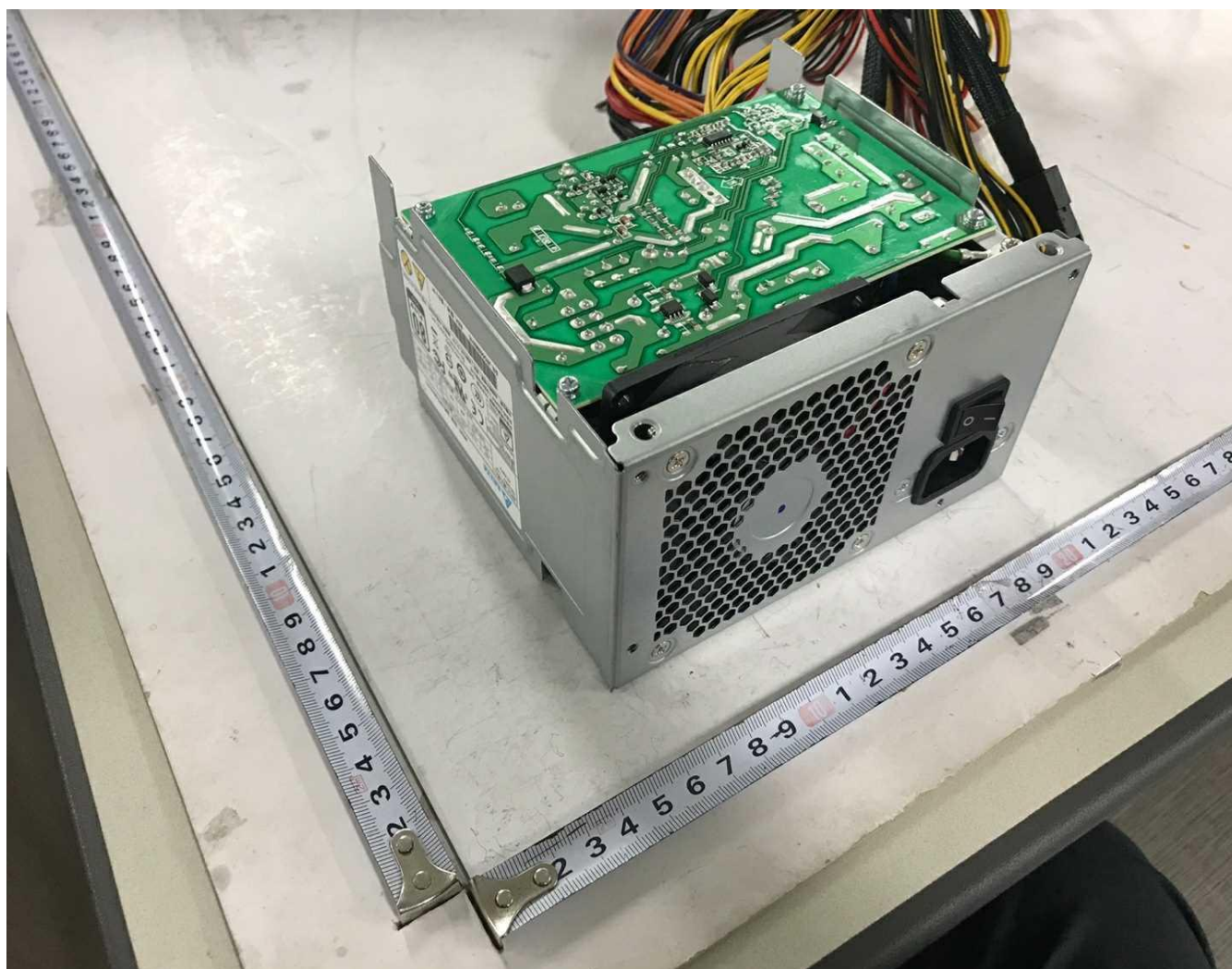






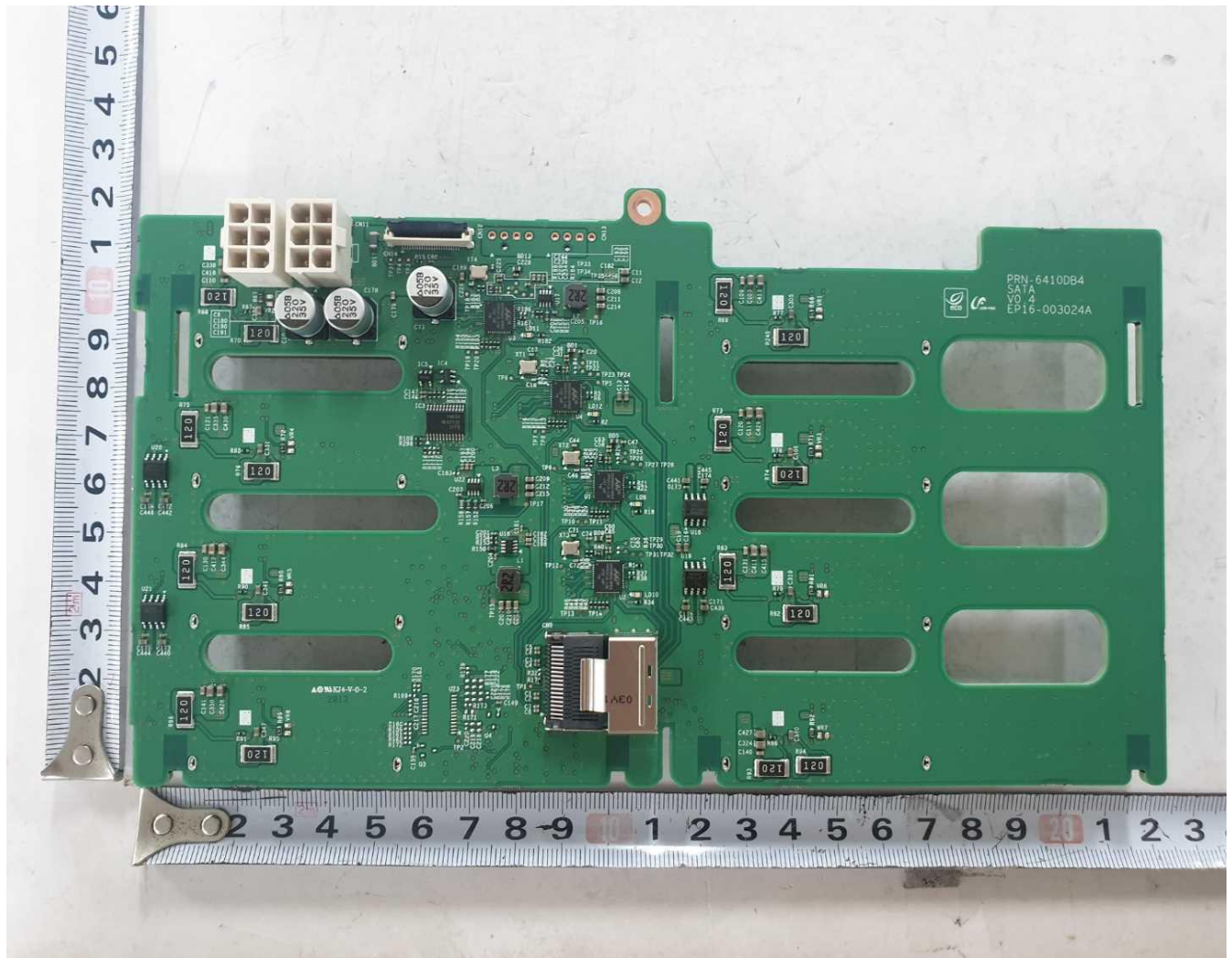


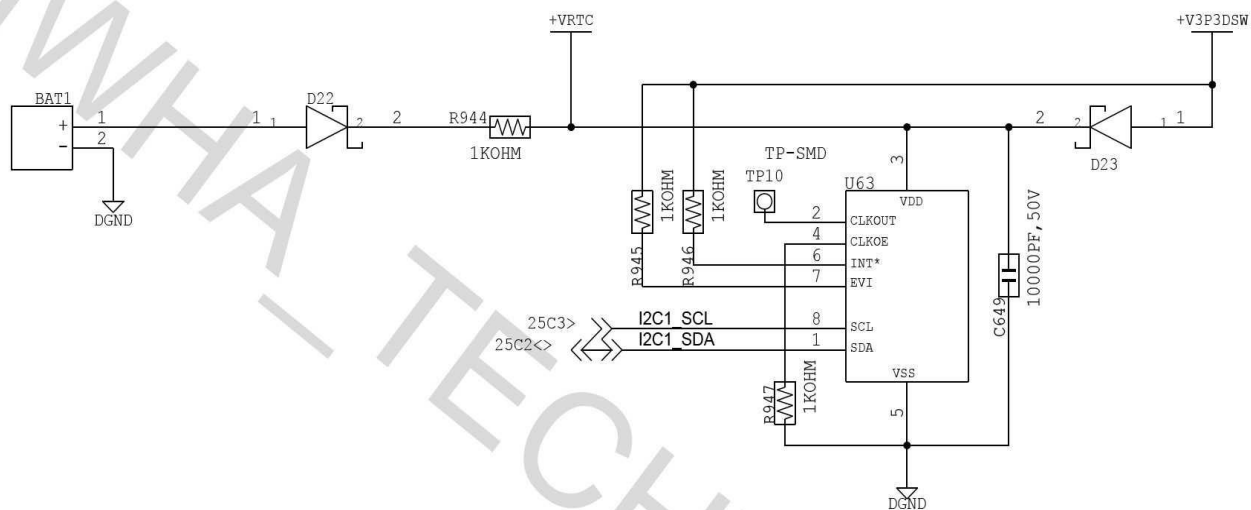












Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
9.2.3 CBs shall include dual language safety labeling within their product certification requirements, if so required by the standard or by the authority having jurisdiction.					
The manufacturer 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



Project No. 4789490673

File E158873

Page 2

Compliance

Review

Conducted by:

Printed Name

Signature

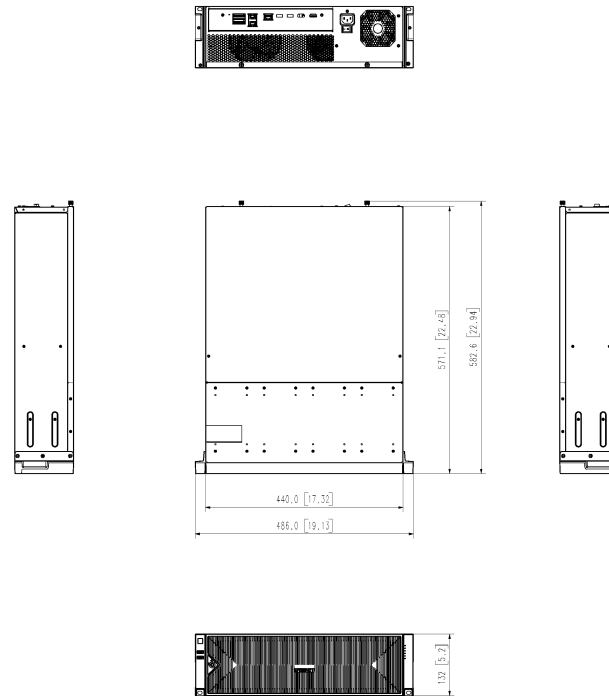
Date

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language.	X			<p>Evaluation staff are to only verify that the manufacturer has a method to control distribution.</p> <p>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.</p> <p>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.</p>	N/A

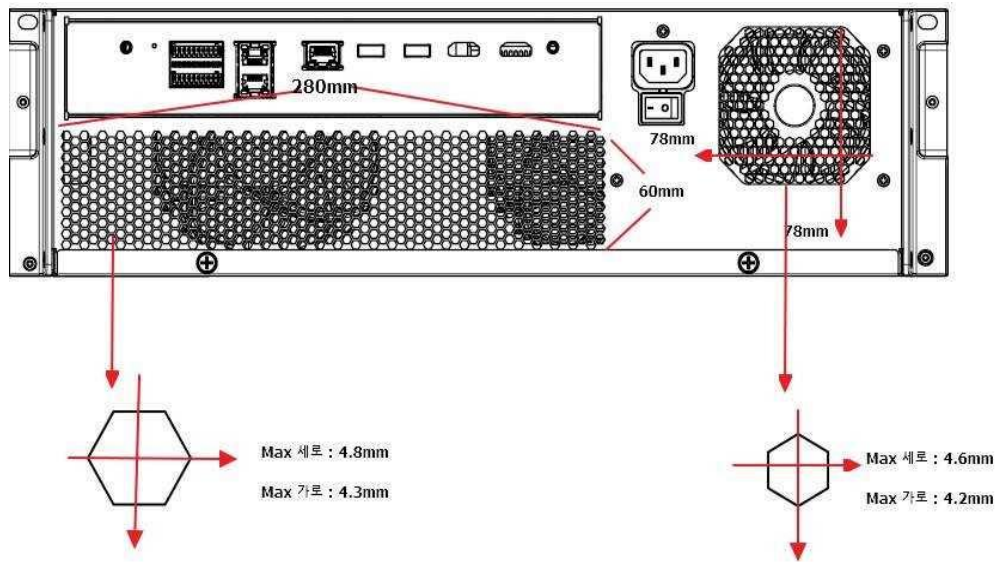
**NETWORK VIDEO RECORDER****MODEL: XRN-6410B4****AC 100-240V~ 50/60Hz 2.7A****M/C: XRN-6410B4/KAP Fac. ID: D****DATE S/N: XXXXXXXXXXXXXXXX****MAC ADDRESS 1: XX-XX-XX-XX-XX-01****MAC ADDRESS 2: XX-XX-XX-XX-XX-02****MAC ADDRESS 3: XX-XX-XX-XX-XX-03****CAN ICES-3(A)/NMB-3(A)****MADE IN KOREA****Hanwha Techwin Co., Ltd.**

**NETWORK VIDEO RECORDER****MODEL: XRN-3210B4****AC 100-240V~ 50/60Hz 2.7A****M/C: XRN-3210B4/KAP Fac. ID: D****DATE S/N: XXXXXXXXXXXXXXXX****MAC ADDRESS 1: XX-XX-XX-XX-XX-01****MAC ADDRESS 2: XX-XX-XX-XX-XX-02****MAC ADDRESS 3: XX-XX-XX-XX-XX-03****CAN ICES-3(A)/NMB-3(A)****MADE IN KOREA****Hanwha Techwin Co., Ltd.**

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



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



## overview

WISENET

## IMPORTANT SAFETY INSTRUCTIONS

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

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



## Standards Approvals



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

## BEFORE START

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

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

## Warning

## Battery

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

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

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

## CALIFORNIA USA ONLY

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

## CAUTION

- Connect the power cord into a grounded outlet.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.
- 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 serious internal burns in just 2 hours and can lead to death.
- Keep raw 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 of the body, seek immediate medical attention.


overviewWISENET

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/pile de monnaie. Si la pile de type bouton/pile de monnaie est avalée, elle peut causer de graves brûlures internes en seulement 2 heures et peut entraîner la mort.
- Gardez les piles rechargées et utilisées hors de portée des enfants. Si le compartiment de la pile ne se ferme pas correctement, cessez d'utiliser le produit et contactez le distributeur 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, restoring 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-6410CB4/XRN-6410B4/XRN-3210B4
P2P	XRN-6410CB4/XRN-6410B4/XRN-3210B4
Alarm	XRN-6410CB4/XRN-6410B4/XRN-3210B4
RAID	XRN-6410CB4/XRN-6410B4/XRN-3210B4
Distributed recording	XRN-6410CB4/XRN-6410B4/XRN-3210B4
iSCSI	XRN-6410CB4/XRN-6410B4/XRN-3210B4
AI function	XRN-6410CB4/XRN-6410B4/XRN-3210B4
Joystick	XRN-6410CB4/XRN-6410B4/XRN-3210B4
Extended monitor	XRN-6410CB4/XRN-6410B4/XRN-3210B4
Power supply redundancy	XRN-6410CB4
Fallover	XRN-6410CB4/XRN-6410B4/XRN-3210B4

## installation

**WISENET**

Please take note of the followings before using this product.

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

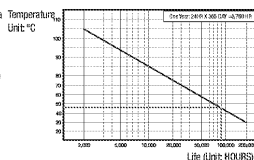


※ Depending on the hard disk configuration and the surrounding temperature, there may be some noise from the product.

### CHECKING THE INSTALLATION ENVIRONMENT

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

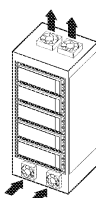
Note that an excessive internal temperature of the product may cause a system failure or a shortened product life (see the right figure). Keep in mind the following instructions before installing the product.



(Figure 1)

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

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



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

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



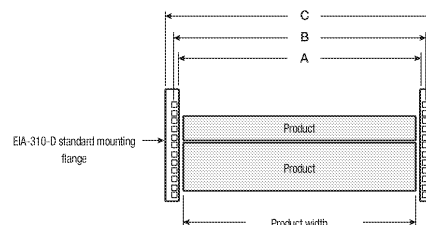
(Figure 2)

### INSTALLING THE RACK

#### Rack installation requirements and reference dimensions

Classification	Requirements
Rack type	19-inch rack of EIA-310-D standard
POST count	4
POST distance	Depth 800 mm

#### Dimensions of mounting flange



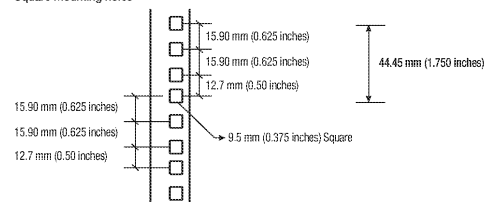
#### • Notable dimensions

Index	Dimension
A	450 mm (17.717 inches) min.
B	465 mm (18.307 inches) nominal
C	483.4 mm (19.031 inches) min.

#### • Flange mounting holes (square holes are recommended for XRN-6410 series)

While EIA-310-D standard allows the mounting flange holes to be round, square, or tapped (threaded), the XRN-6410 series is only designed to work with round or square holes, but not tapped holes.

#### • Square mounting holes

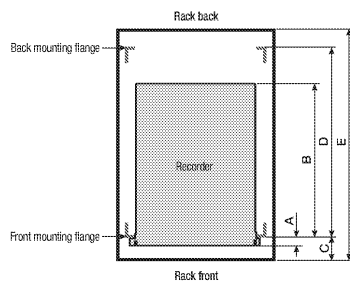




## installation

**WISENET**

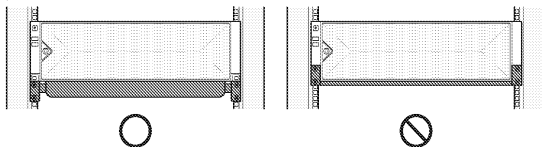
### Recommended rack dimensions



Index	Dimension	Description
A	28 mm	Recorder front dimension
B	560 mm	Recorder product dimension
C	51 mm	Offset distance between mounting flange and rack front
D	617~730 mm	Offset distance between mounting flanges
E	800 mm	Rack depth

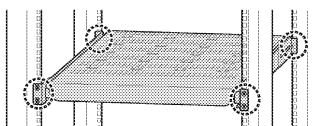
### Precautions when selecting shelves

To prevent any problem while installing the recorder, make sure to select a structure where the bottom of the product is mounted.



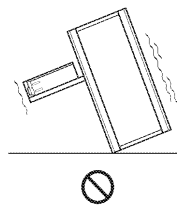
For installation stability, fixed shelf dedicated to 19-inch rack that supports the load of at least 30 kg is recommended.

\* A shelf needs to be secured with at least 4 screws.

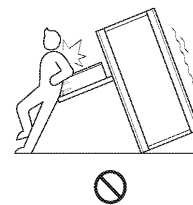


### Precautions when using sliding shelves

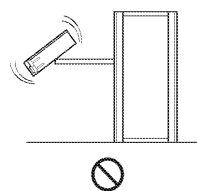
When removing a shelf, fix the rack to the ground so that it does not get toppled.



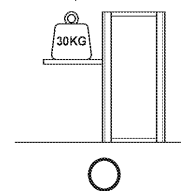
Avoid leaning on the installed product or place an object on it while its shelf is pulled out.



When sliding in/out the shelf, be careful not to drop the product.



Use a shelf that supports the load of at least 30 kg while it is pulled out, and ensure that there is no deformation in the rail part while in use.

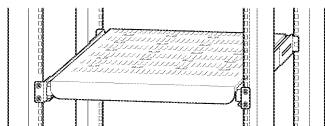


## installation

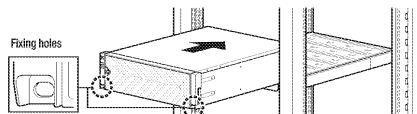
**WISENET**

### How to install rack

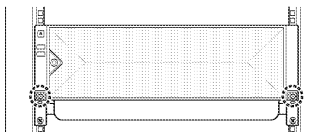
- 1 Mount the fixed or sliding shelf onto the 19-inch rack.  
\* See the manual provided by the manufacturer for installing the fixed shelf.



- 2 Place the recorder on the shelf and push it until the left/right fixing holes of the recorder align with the mounting flange holes of the 19-inch rack.  
\* Cage nuts must be assembled in the mounting flange holes of the 19-inch rack.



- 3 Insert the screws in the left/right fixing holes of the recorder to secure the recorder.  
\* Fixing nuts and cage nuts for the recorder are not shipped with the product. They are separately sold at the place where you purchased the shelf or rack.  
(M6 nuts and cage nuts of head size equal to 12 mm or less are recommended.)



### INSTALLING THE HDD

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

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

- \* Number of HDDs supported : Max. 16 EA
- \* Make sure to unplug the power cord from the wall outlet before proceeding with the installation.



\* **Cautions for data loss (HDD care)**

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

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

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

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

\* **Cases might cause damage to HDD or recorded data**

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

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

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

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

### Cautions when installing a HDD

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

## installation

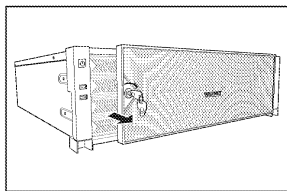
**WISENET**

### Installing the HDD

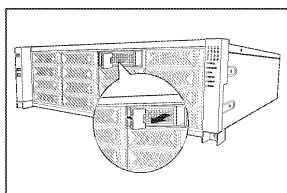


\* If you are adding a new or previously used HDD to this product in addition to the HDD(s) originally installed, format the new HDD manually in the set before use.  
To learn how to format, see "Device Format" in the User Manual.

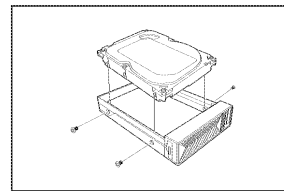
1. Open the front cover using the hard disk door lock key.



2. Press the orange button on the hard disk bracket to the left and pull forward to separate the main body and the hard disk bracket.



3. Mount a HDD in the HDD bracket and screw it in using the screws provided.



4. Once the HDD is mounted in the bracket, push the bracket into the main body and close the front cover.

\* Fit the front cover into the right notch of the main body, then press and close until you hear a 'click'.

