MR. JOE CHANG
GIGA-BYTE TECHNOLOGY CO LTD
6 BAO CHIANG RD
HSIN-TIEN DIST
NEW TAIPEI
231 TAIWAN

Date: 2012/04/11
Subscriber: 855549001
PartySite: 188594
File No: E210294
Project No: 12CA14443
PD No: 12O13942
Type: R
PO Number: C0283i03-A

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

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

Issue

Date	Vol	Sec	Pages	Revised Date
	X12		Index Page(s)	
2012/04/11	X12	A68	Add New Proc/Report Sect	

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

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

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TPI File

File		Volume	Page	Date:
E210294	Index	X12	1	2012-04-10

Index

Product Type	Model/Type Reference	Report Reference #	Status
SERVER	NVRmini2-2Bay	E210294-A66-UL	
Server	NVRmini 2 - 4 Bay	E210294-A68-UL	

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	NWGQ, NWGQ7 (Information Technology Equipment Including Electrical Business Equipment)
Product:	Server
Model:	NVRmini 2 - 4 Bay
Rating:	I/P: 19Vdc, 4.7A(Optional)
Applicant Name and Address:	GIGA-BYTE TECHNOLOGY CO LTD 6 BAO CHIANG RD HSIN-TIEN DIST NEW TAIPEI 231 TAIWAN

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.

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Prepared by: Jonathan Chen Reviewed by: Stanley Tsai

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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

Consists of LPS adapter, other electronic components mounted on PWB, two DC fans and four HDD. Unit provides two RJ-45 ports, two USB ports and two eSATA ports.

Model Differences

N/A

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : No direct connection
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : N/A
- Mains supply tolerance (%) or absolute mains supply values : No direct connection
- Tested for IT power systems : N/A
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class III (supplied by SELV)
- Considered current rating of protective device as part of the building installation (A) : N/A

- Pollution degree (PD) : PD 2
- IP protection class : IP 20
- Altitude of operation (m) : Up to 2000 m
- Altitude of test laboratory (m) : less than 2000 m
- Mass of equipment (kg) : 4.33
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All output connector ports
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- Based upon the product specification provided by the manufacturer, this unit is intended to be supplied by an UL Listed power supply suitable for use at Tma is 40 degree C whose output meets SELV and LPS, and is rated 19Vdc, 4.7A minimum.

Additional Information

N/A

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Inter-connecting cables - External detachable	Listee's Name and Part number (Marking or Instruction)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Symbols - Stand-by switch	"Stand-by" to be indicated by

	(60417-2-IEC-5009)
Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
--	--	--	--	--	--	--

Earthing Continuity Test Exemptions - This test is not required for the following models:

All models.

Electric Strength Test Exemptions - This test is not required for the following models:

All models.

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:

--

Sample and Test Specifics for Follow-Up Tests at UL

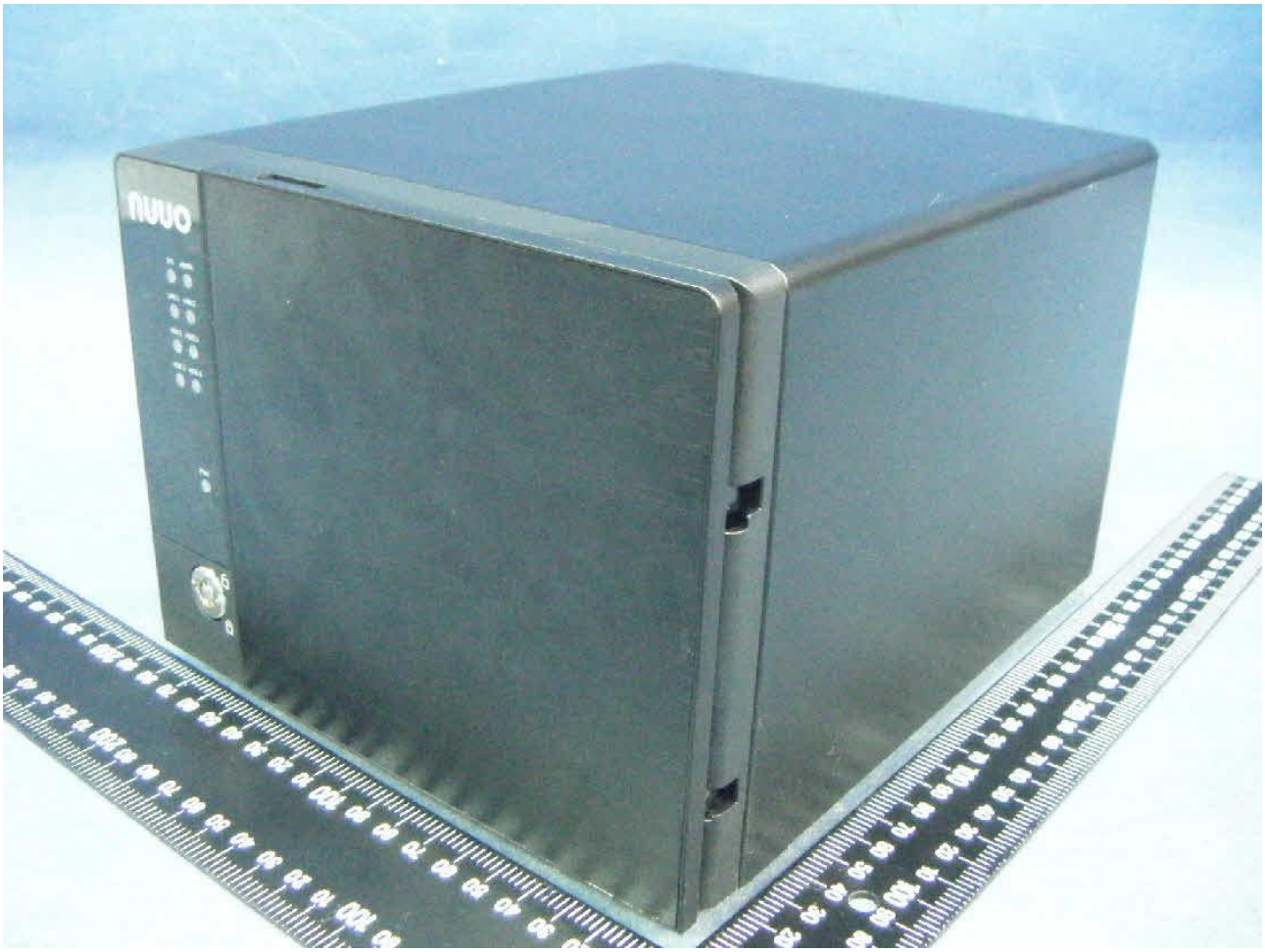
Model	Component	Material	Test	Sample(s)	Test Specifics
--	--	--	--	--	--

1.5.1	**TABLE: list of critical components**					Pass
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
01. Label	--	--	60 degree C if maximum surface temperature not specified.	PGDQ2, PGJI2	UL	
02. Cover Enclosure	--	--	Metal (SGCC), overall 183.4 by 140.2 by 200 mm, minimum thickness 0.6 mm	--	--	4-01
03. Bottom Enclosure	--	--	Metal (SGCC), overall 199 by 139 by 181.5 mm, minimum thickness 0.6 mm	--	--	4-02
04. Front bezel (Decorative Part)	--	--	Rated HB minimum, overall 183.4 by 140 by 20.0 mm, minimum 1.0 mm thickness.	QMFZ2	UL	
05. External Power Adapter	--	--	Output: 19Vdc, 4.74A, comply with LPS or Limited Power Source	QQGQ	UL	
06. DC Fan	YEN SUN TECHNOLOGY CORP	FD126010HL(X)	Two provided, both rated 12 Vdc, maximum 0.175 A, 23.38 CFM.	GPWV2	UL	
07. Hard disk (Optional)	--	--	Four provided, each rated 12Vdc 1.0A maximum; 5Vdc, 1.0A maximum	NWGQ2	UL	
08. RTC Battery (BAT2)	--	CR2032	3.3V, Maximum reverse charging current 10 mA protected by R550 and D14	BBCV2	UL	
09. Polyswitch (FS3) (provided for USB ports)	--	--	6Vdc, 1.5A, Ih: 1.5, It: 3.0, CA: 1(125),2,3,4,#	XGPU2	UL	
10. Printed Wiring Board	--	--	Rated minimum V-1, 105 degree C.	ZPMV2	UL	
11. Connectors and Receptacles (Secondary /SELV)	--	Metal/Plastic	Copper alloy pins housed in bodies of plastic rated V-2 minimum, including two RJ45	QMFZ2 or ECBT2 or RTRT2	UL	

			ports.			
12. Wire, Internal (Secondary)	--	--	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1, minimum 30 V, 60 degree C minimum.	AVLV2	UL	
13. Interconnecting Cable (Optional)	--	--	Maximum length 3.05 m, marked VW-1 or FT-1. Rated minimum 30 Vdc, 80 degree C minimum.	AVLV2	UL	
14. Internal Plastic Parts	--	--	Minimum. V-2.	QMFZ2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	3-01	Overall front view 01
Photographs	3-02	Overall front view 02
Photographs	3-03	Outside View (door opened)
Photographs	3-04	Outside View (HDD removed)
Photographs	3-05	Overall rear view 01
Photographs	3-06	Overall rear view 02
Photographs	3-07	Inside View-1
Photographs	3-08	Inside View-2
Photographs	3-09	Inside View-3
Photographs	3-10	Main Board Top view
Photographs	3-11	Main Board Bottom view
Photographs	3-12	LED Board Top view
Photographs	3-13	LED Board Bottom view
Photographs	3-14	Alternate - Overall front view 01
Photographs	3-15	Alternate - Overall front view 02
Photographs	3-16	Alternate - Outside View (door opened)
Diagrams	4-01	Cover Enclosure dimensions
Diagrams	4-02	Bottom Enclosure dimensions
Schematics + PWB		
Manuals	6-01	Manual
Miscellaneous		


NUUO

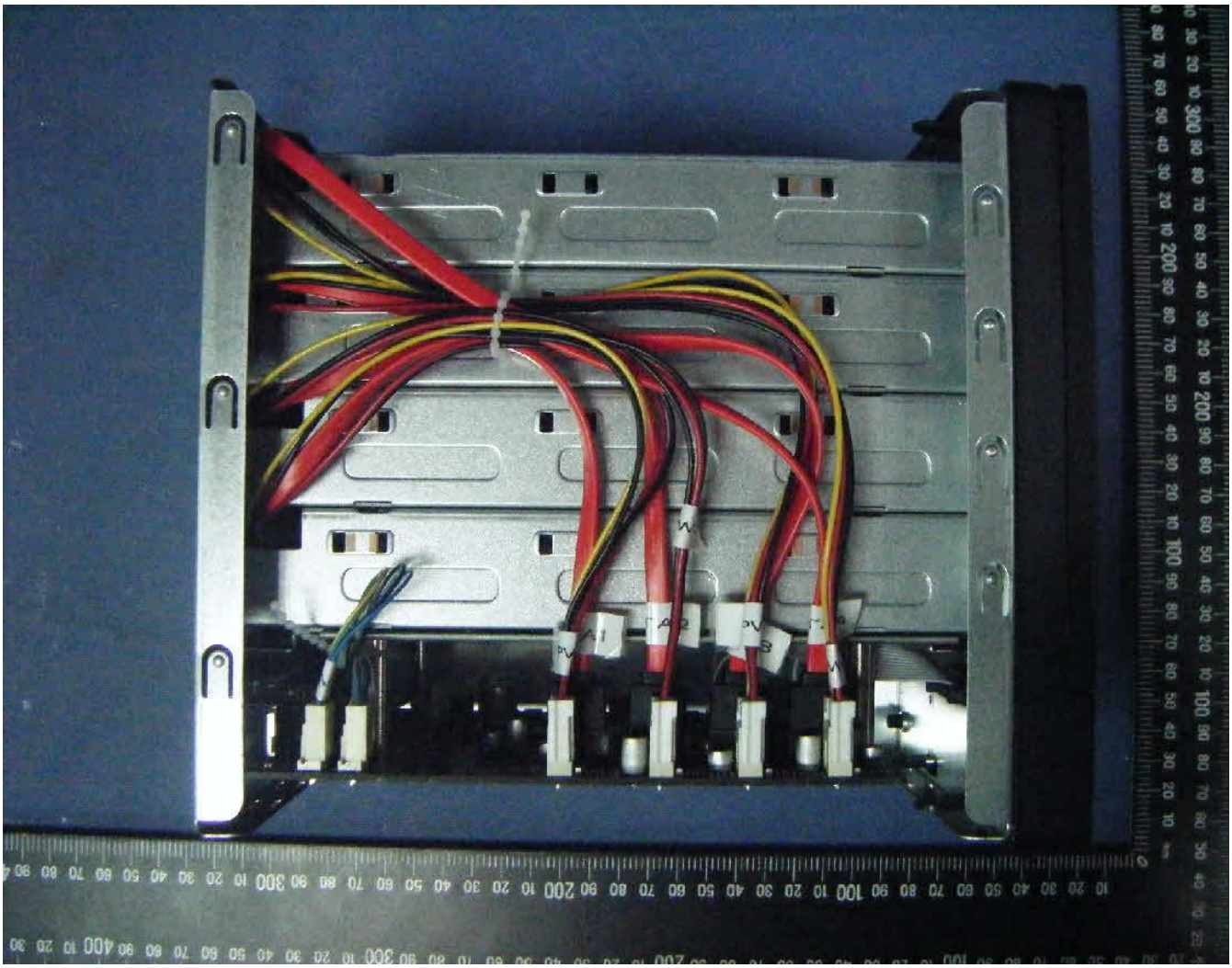
nuuo
SYS
eSATA
LAN 1
LAN 2
HDD 1
HDD 2
HDD 3
HDD 4
PWR

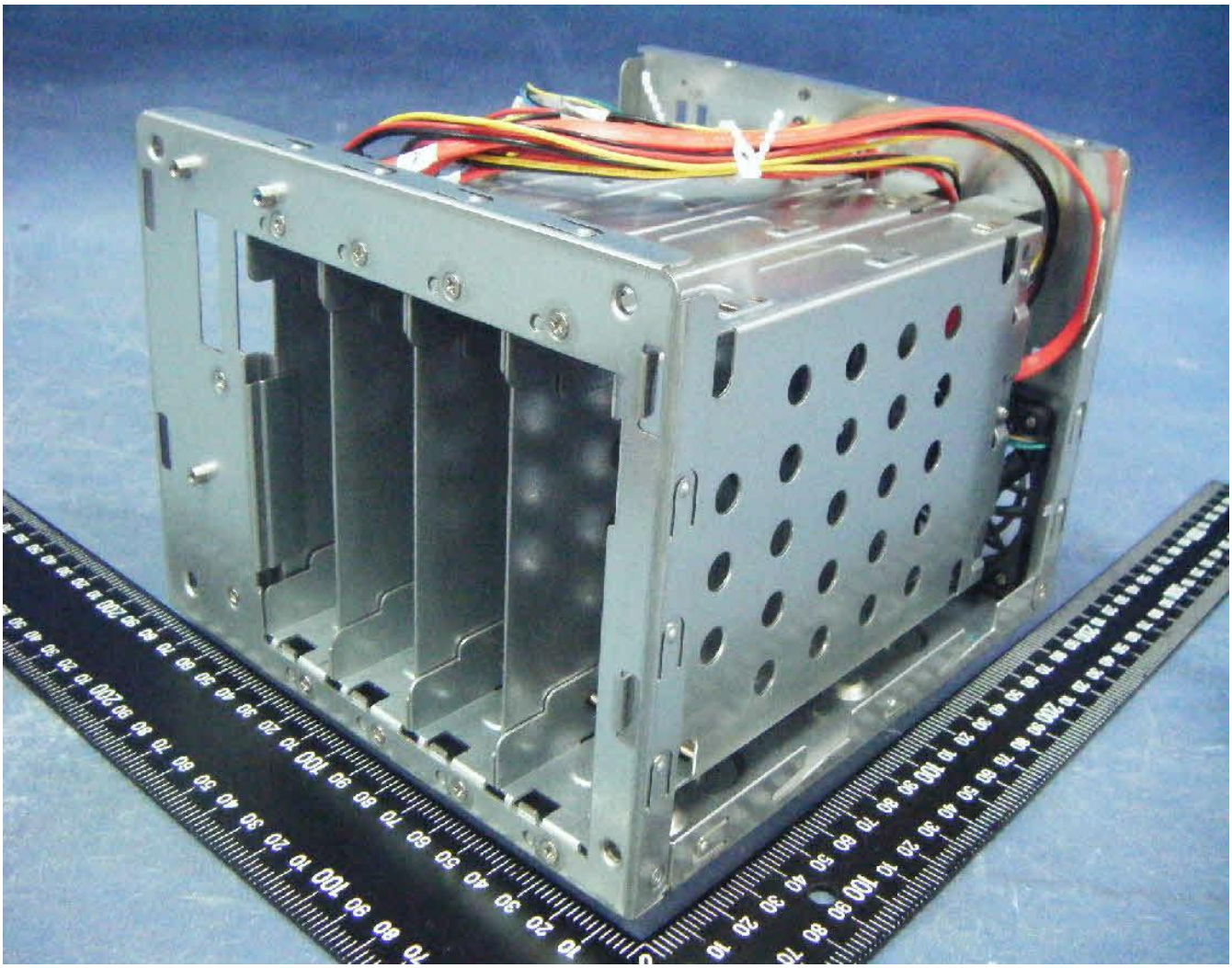
nuuo
1
2
3
4

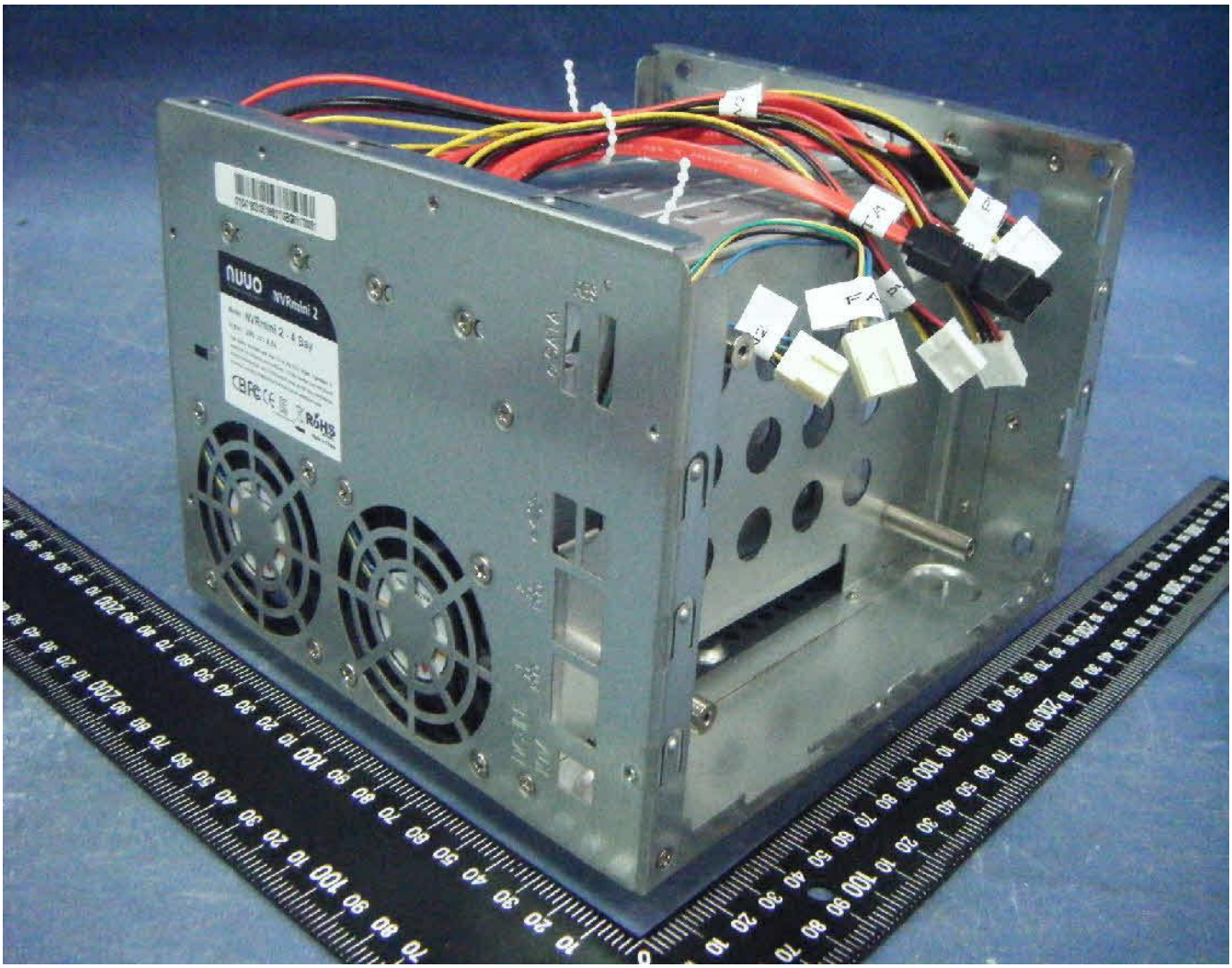
nuuo
1
2
3
4

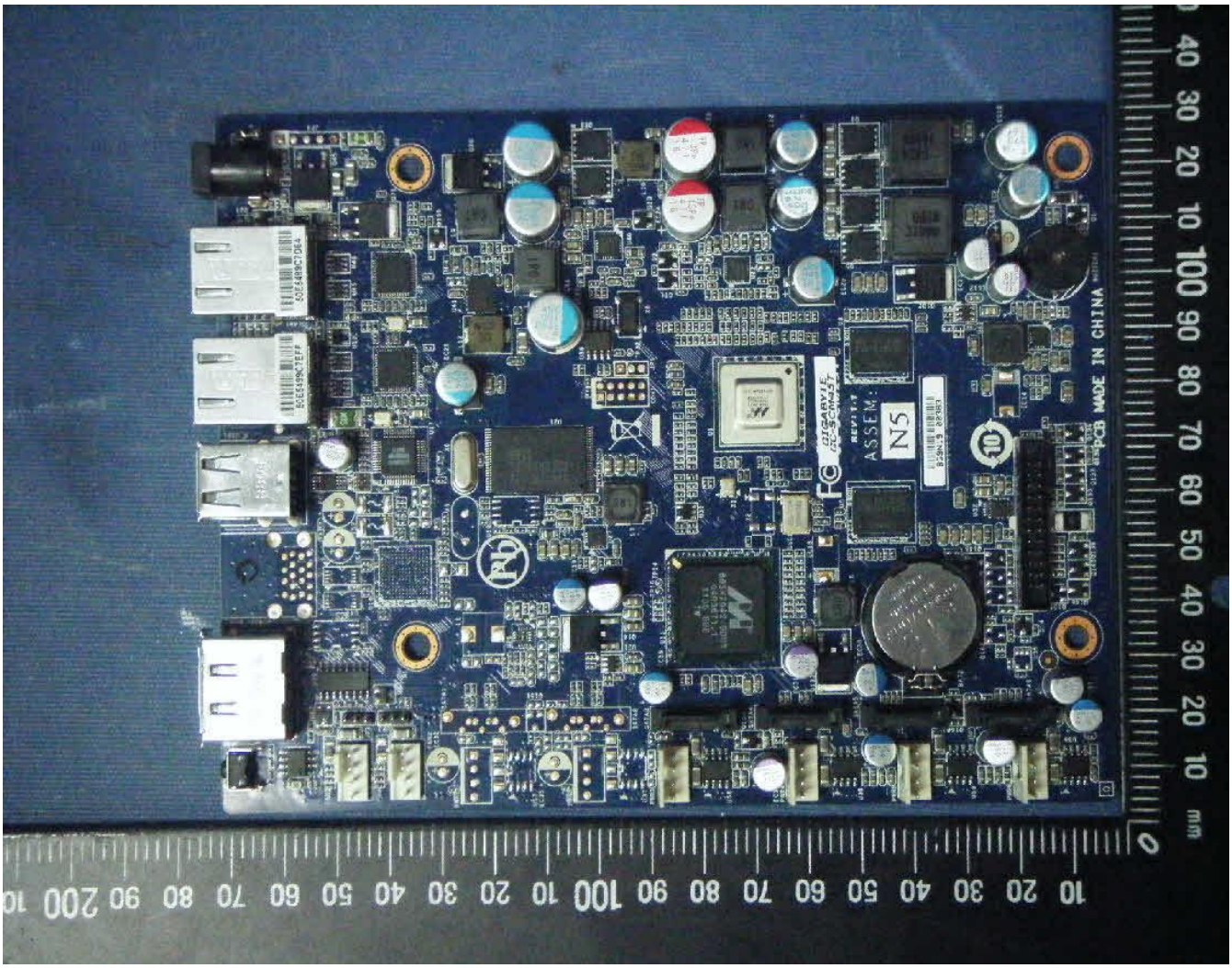
nuuo
NVRmini 2
Model NVRmini 2 - 4 Bay
eSATA
DC IN 19V

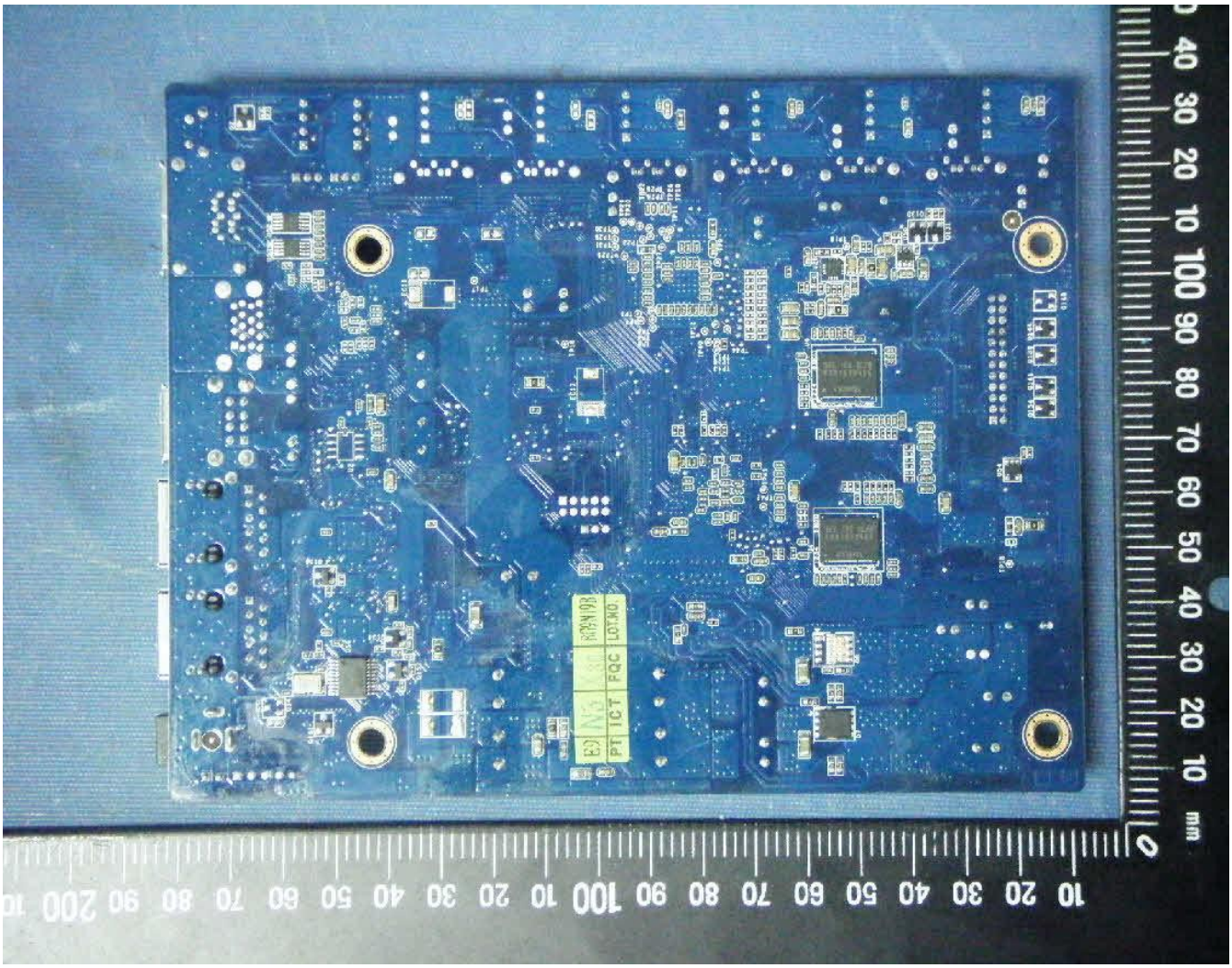
nuuo






nuuo
NVRmini 2


MADE IN CHINA
ASSEM:
N5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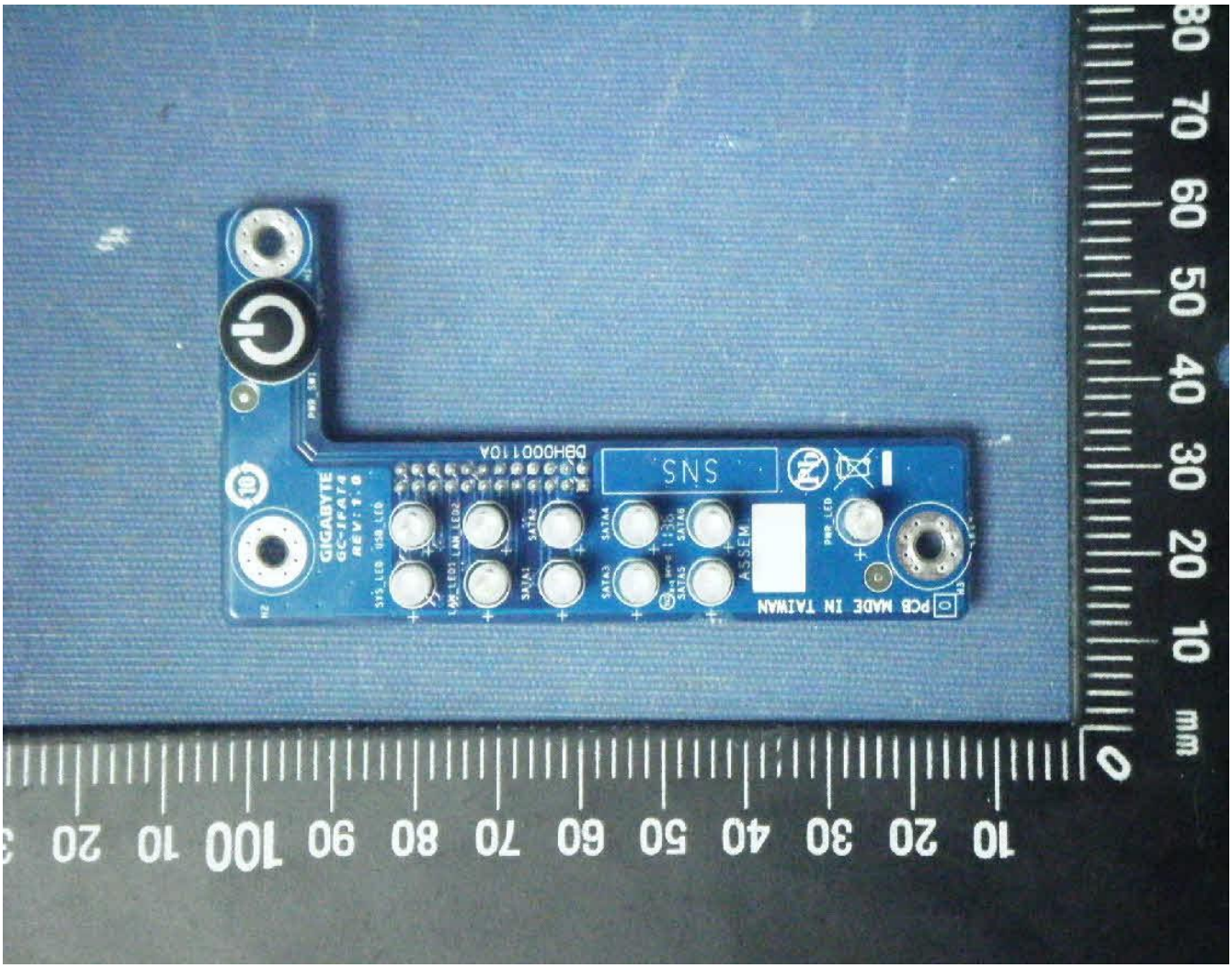
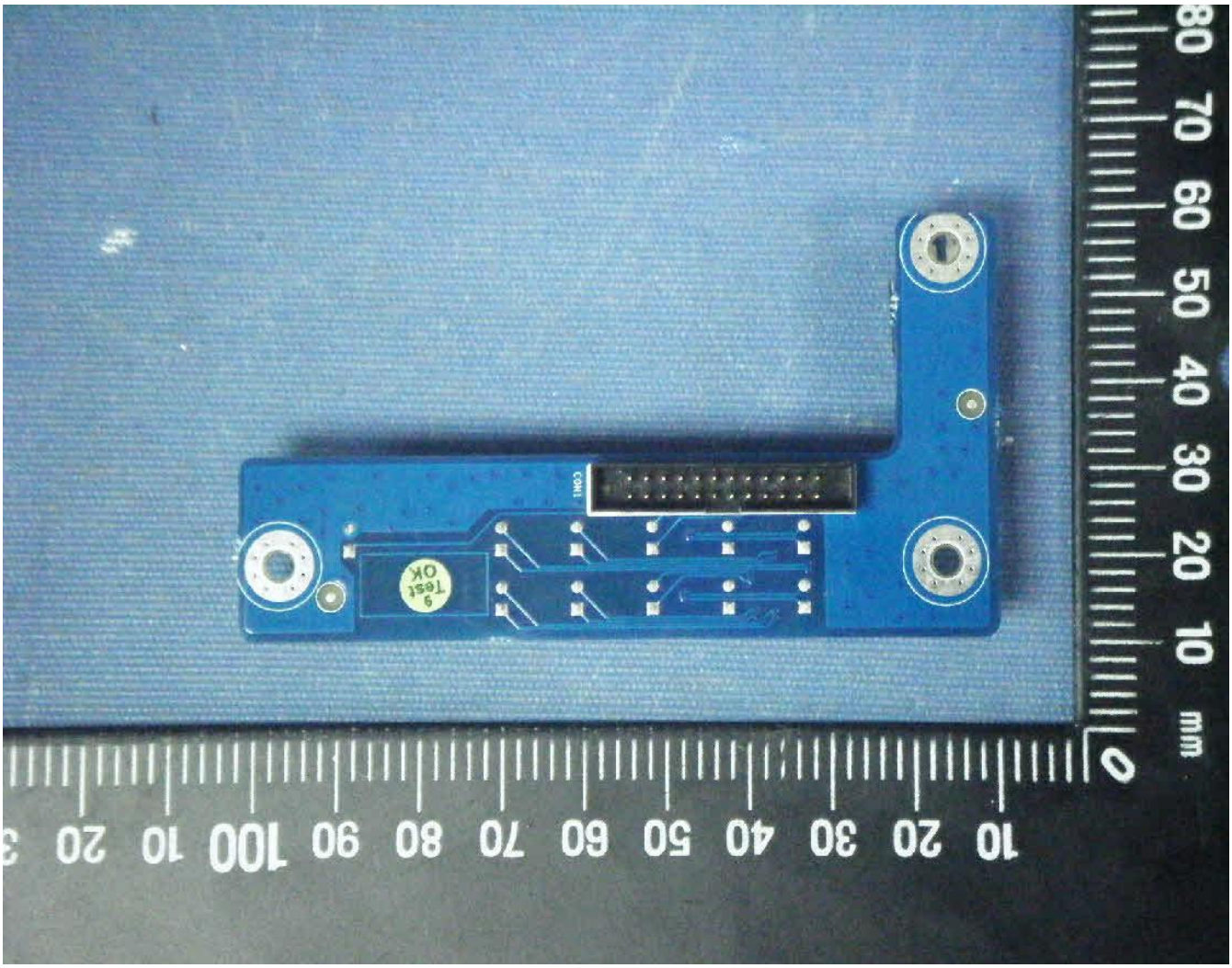
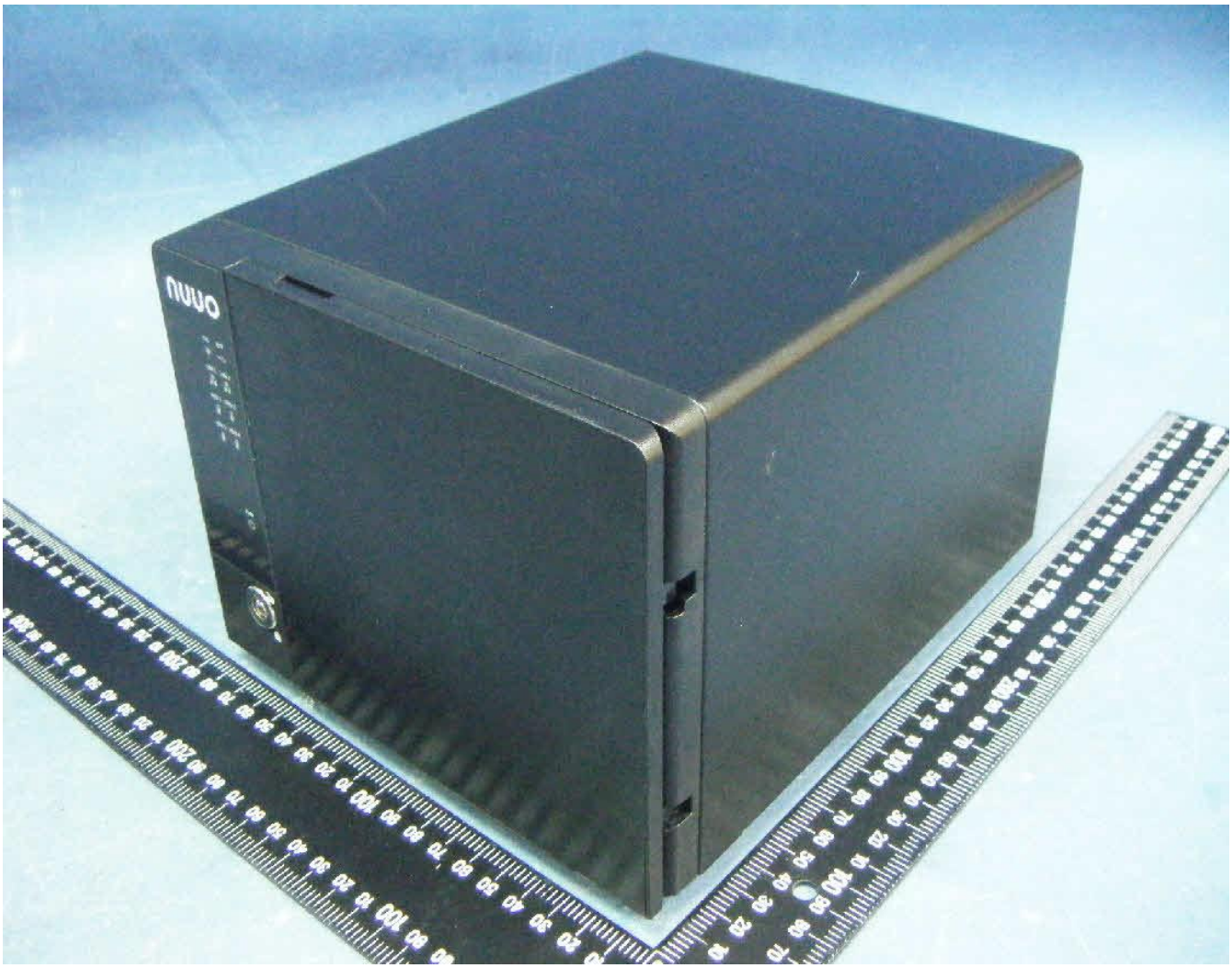
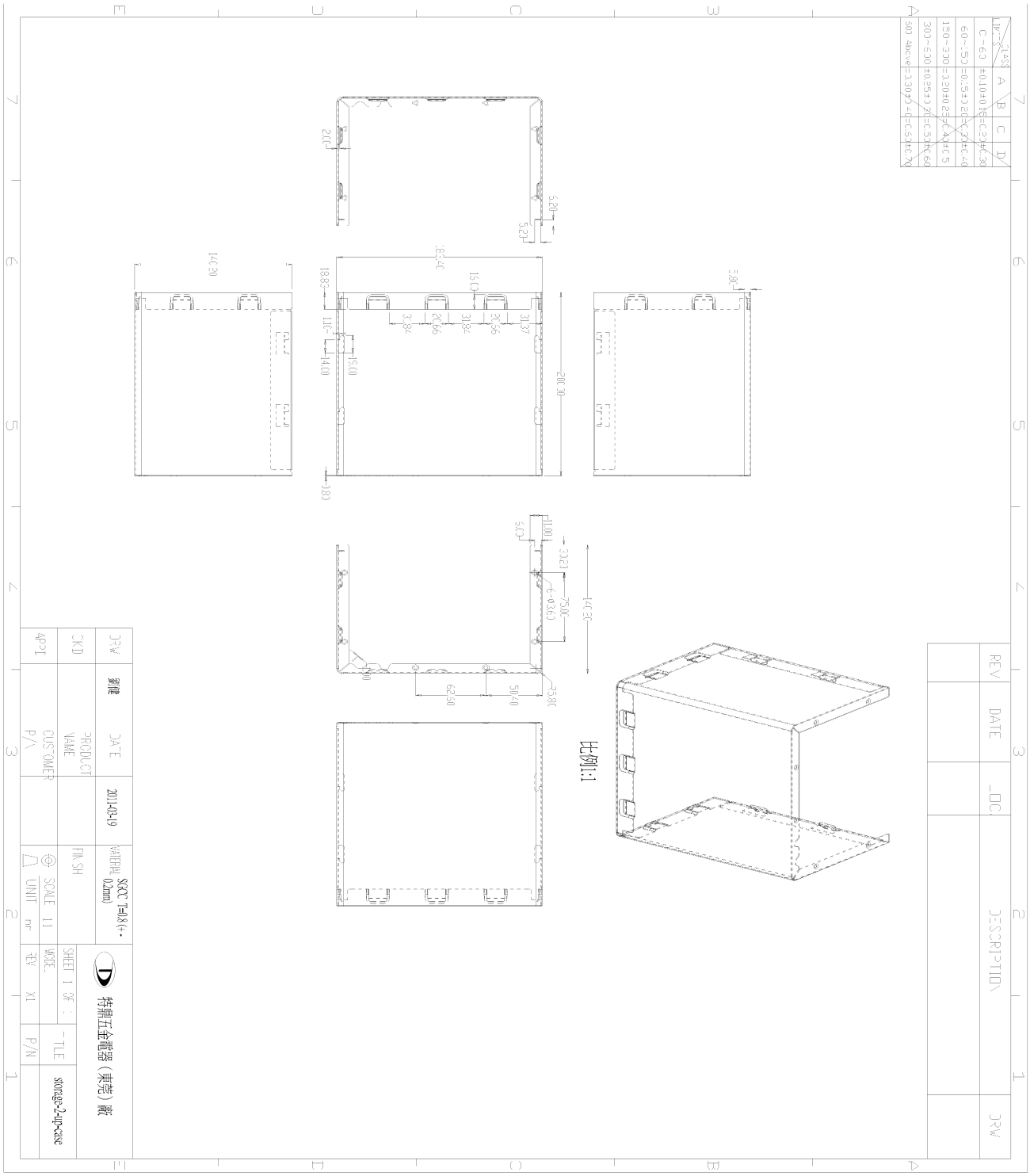

SNS
GIGABYTE
GC-1PAT4
REV:1.0
PCB MADE IN TAIWAN
ASSEM
mm

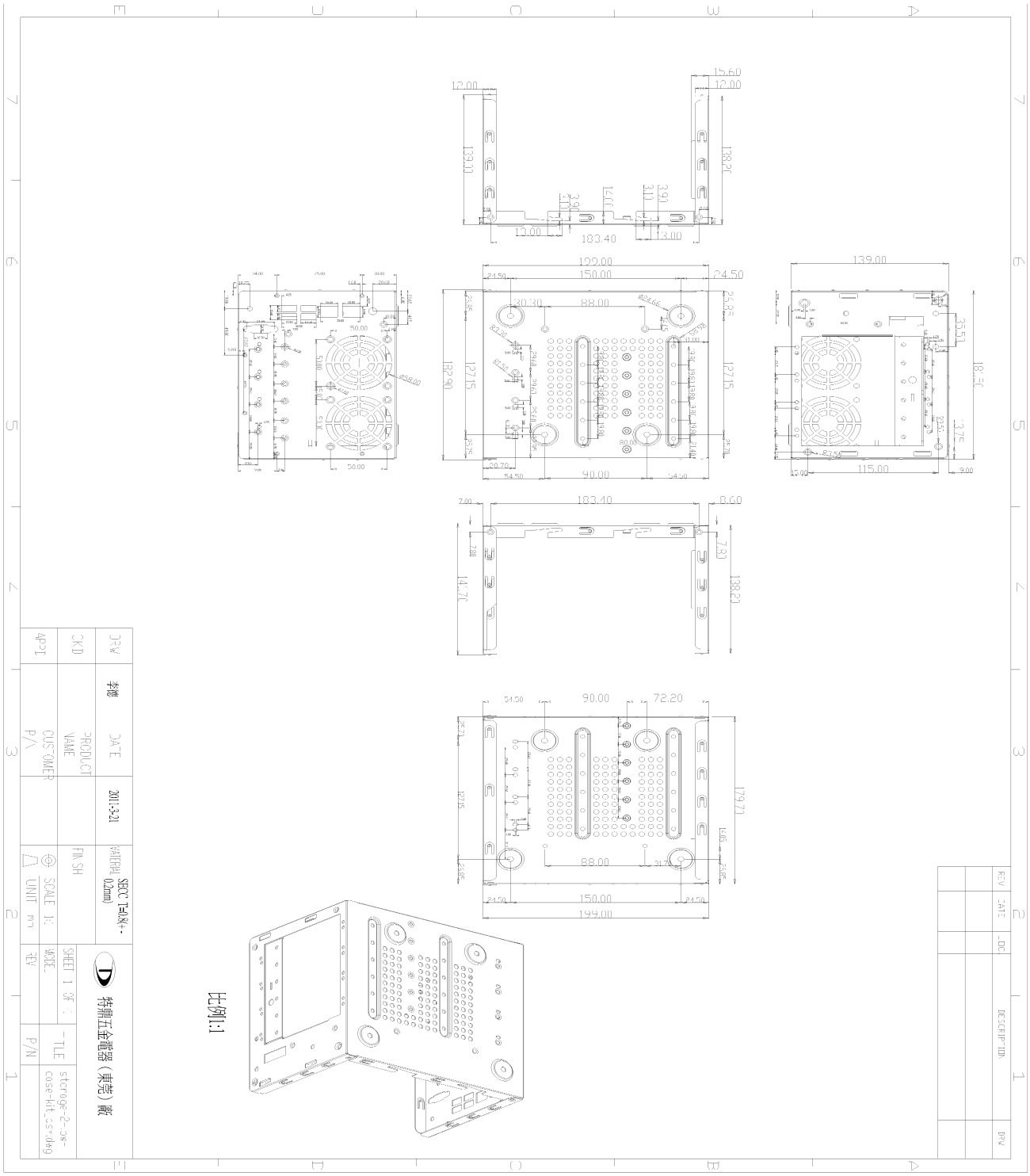

CON1
Test OK
mm


nuvo

nuuo

nuuo
SYS
EXT
LAN1
LAN2
HDD1
HDD2
HDD3
HDD4
PWR
1
2
3
4


比例1:1
REV
DATE
DESCRIPTION
DRW
劉健
DATE
2011-03-19
WATERIAL
SGCC T=0.8(+-0.2mm)
FINISH
SCALE 1:1
UNIT mm
SHEET 1 OF 1
MODEL
REV X1
P/N
TITLE
storage-2-up-case
特鼎五金電器（東莞）廠


比例1:1
DRW
李德
DATE
2011-3-21
CKD
PRODUCT NAME
CUSTOMER P/N
APPD
WATERIAL SECC T=0.8(+-0.2mm)
FINISH
SCALE 1:
UNIT mm
SHEET 1 OF 1
MODE
REV
P/N
TITLE
storage-2-ow-case-kit_ss.dwg
特鼎五金電器（東莞）廠
REV
DATE
LOC
DESCRIPTION
DRW

1.Installation

1.1 Installation Process

Step 1: Unpack the Unit

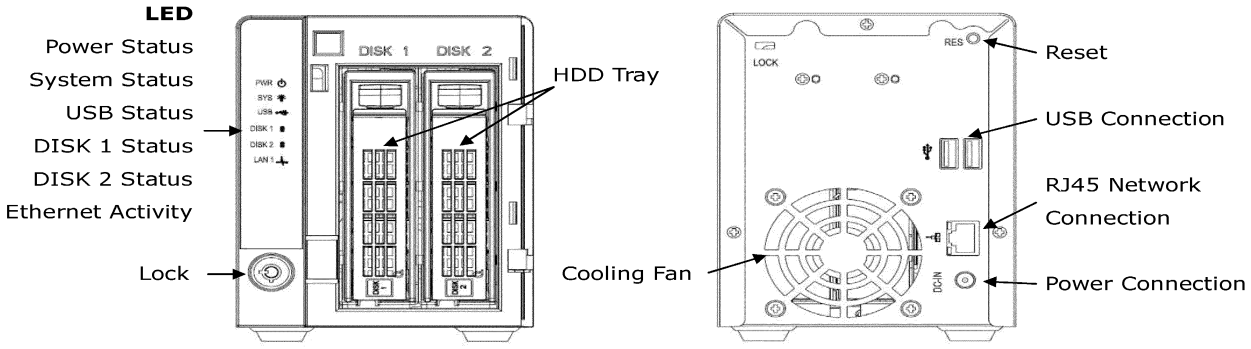
This package contains the following items:

- The unit
- Quick Start Guide
- Screws for disk drives
- Key
- Power cord
- Warranty card
- 19V DC power transformer
- CD with **Install Wizard**, **Backup**, **Live View**, **Playback**, **Verification Tool** and **Offline Tool** application, user manual, and quick start guide

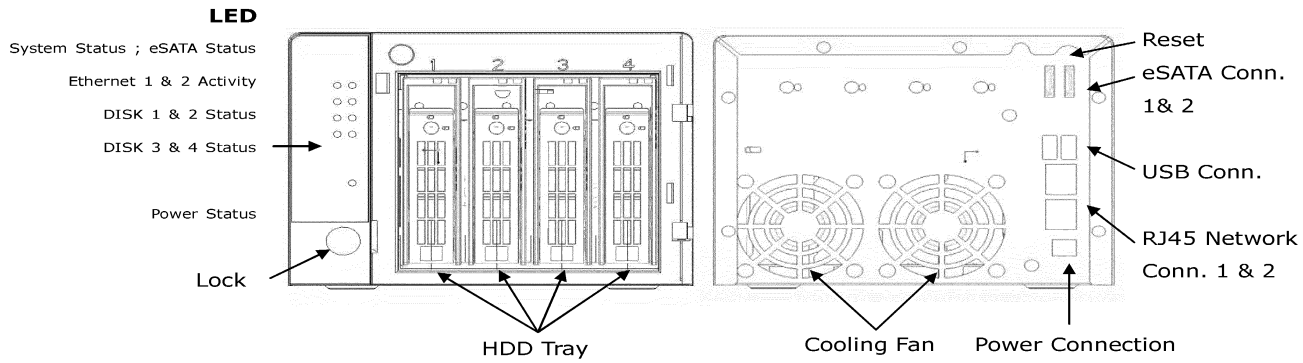
	The electronic components within the unit can be damaged by Electrostatic Discharge (ESD). Please take precautions at all times when handling the unit or its sub-assemblies.

	To configure the unit, you must install the software onto a desktop/ laptop running Windows XP-SP3 32bit, Windows 7 32/64bit.

2 bay unit front/rear view



4 bay unit front/rear view



Step 2: Install Hard Drives

Refer to compatibility list and install HDDs. For optimal performance consideration, install disks with the same model and storage capacity. The available RAID level depends on the amount of disks installed.

1. Open the lid on the front of the unit enclosure.
2. Pull a HDD tray from the enclosure. See the front view figure.
3. Carefully lock the disks into the HDD tray with screws. 4 screws for each disk. Put the HDD tray back once you finished.

Step 3: Connect to the Network

1. Attach one end of the network cable to the RJ45 network connection. See the rear view figure.
2. Attach the other end of the network cable to your Ethernet hub or switch.

	If there are multiple networks at your facility, note the network to which you connect the unit. You will need this information during the setup process. Please also enable the DHCP function within the network, as the unit will retrieve an IP address through DHCP by default.

Step 4: Connect the Power

1. Attach the power cord from the power source to the power adapter.

2. Connect the power adapter to the back of the unit enclosure. See the rear view figure.
3. On the front of the unit, press the power button. See the front view figure.

It takes about a minute for the unit to fully power up. Once it is powered up:

- The System Status LED turns blue. See the front view figure.
- The buzzer beeps one time.

Step 5: Install the Software

1. Insert the CD into your CDROM.
2. Double-click **Setup.exe** to begin installation.
3. Follow the instruction of **Setup.exe**, and click the **Finish** button to close the installer.

Step 6: Set up the Unit

The software **Installation Wizard** performs the setup procedures on the unit. After the procedure, you can begin using it.

1. Go to Start > NUUO NVRmini 2 > NUUO Install Wizard.
2. This program will show the default language setting and initiation mode.
3. Choose your preferred language and initiation mode, and then click the button.

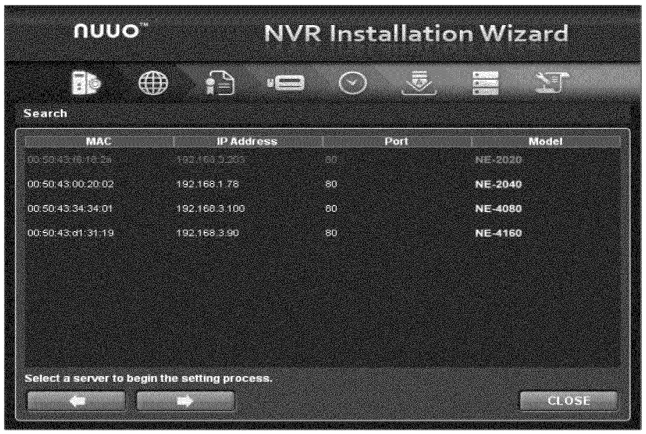
- **Express Mode**: you don't need to set up the network settings, Date/Time

and RAID level.

- **Advanced Mode**: configure all settings manually: network, license, camera, Date/Time, upgrade notification, and RAID level

	"Add license" function is supported in v1.0.0.20 and later version.

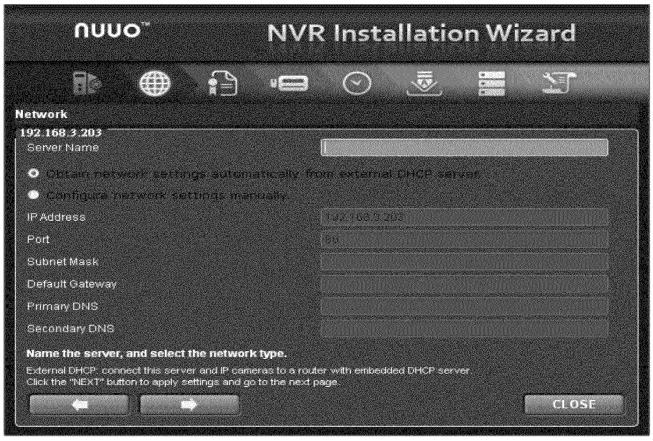
4. The **Installation Wizard** program starts searching for all the units on the internet currently. Choose one of them, and then click the button.



5. Type in the password, and then click the **OK** button.

	The default Administrator password is "admin".

6. Name this server and select the network type, and then click the button.

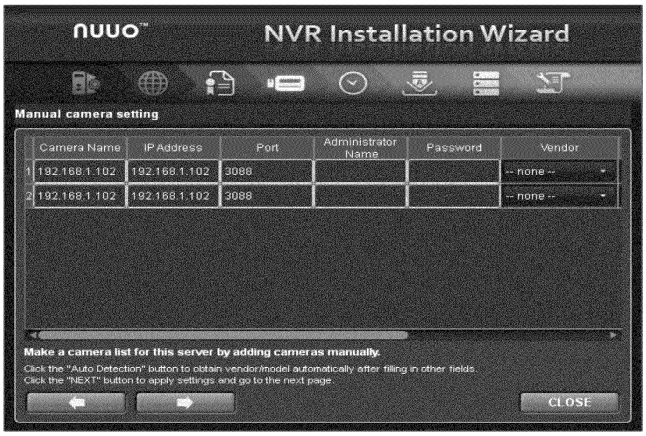


- **Obtain network settings automatically from external DHCP server**: apply all settings which are automatically generated by the DHCP server, such as IP, subnet mask, gateway, and DNS.
- **Configure network settings manually**: configure the preferred settings one by one.

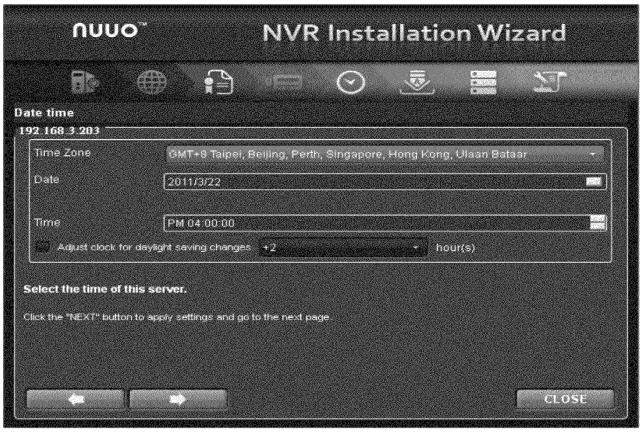
7. Activate camera license to have more channel capacity, and click the button.

8. Add cameras for this server. There are two ways of adding cameras,

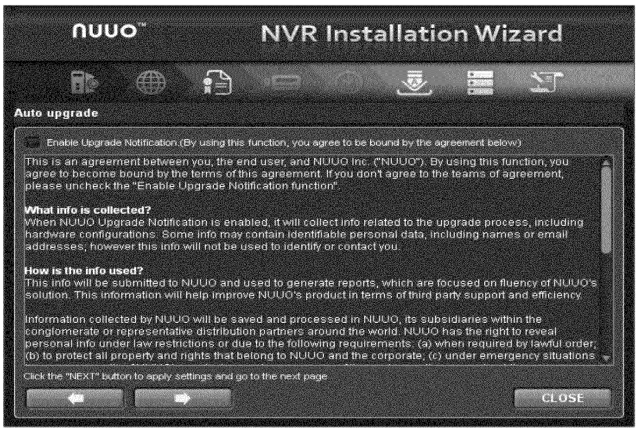
selecting the searched cameras and manually configuring the cameras. Click the button after completing camera list.



9. Set up the time zone, date, and time, and adjust daylight saving changes if needed. Click the button.



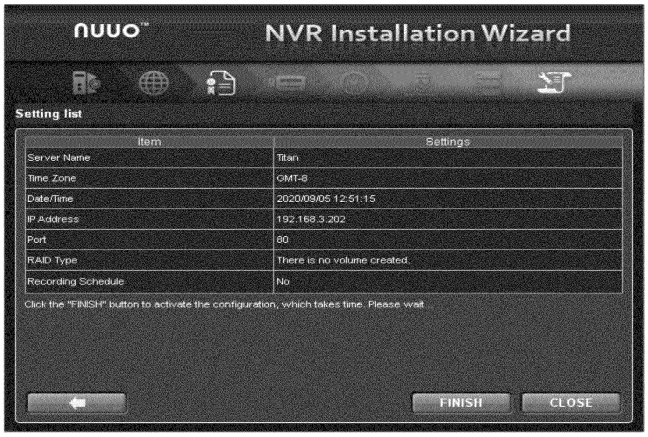
10. Check "**Enable Upgrade Notification**" box if you want to receive notification when there is a newer FW version. Click the button.



11. Follow the following instruction and select the RAID type you want to create. Click the button.

	For 2 bay unit, only RAID 0 and 1 are available.

12. Review your settings. If the settings are correct, click the **Finish** button to exit the settings procedure and activate the system.



	Once the "FINISH" button is clicked, the unit will start working. In order to ensure the stability of the unit, never pull any disks out when the system is running.

1.2 LED Status Definitions

Function	LED Status
Power Status	■ Power-on: blue ■ Power-off: dark
System Status	■ Healthy: blue ■ Reset admin password: blue with blinking ■ Unhealthy or abnormal temperature status: orange ■ Reset to default setting: orange with blinking ■ Off: dark
HDD Status	■ Healthy: blue ■ Failed: orange ■ No disk: dark ■ Rebuilding: orange with blinking
eSATA Status	■ Healthy: blue ■ No disk: dark
Ethernet Status	■ Linking: blue ■ Accessing: blue with blinking ■ No linking: dark

Test Record No. 1

--The manufacturer submitted representative production samples of Server, Model NVRmini 2 - 4 Bay.

-- All tests were conducted by Creative Safety & Consultant Co., located on 13F, 190, Sec. 2, Chung Hsing Rd., Hsin Tien Dist., New Taipei City, Taiwan, under TPTDP.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Input: Single-Phase (1.6.2)	
Limited Power Source Measurements (2.5)	
Steady Force (4.2.1 - 4.2.4)	
Impact (4.2.5, 4.2.1, Part 22 10.2)	
Lithium Battery Reverse Current Measurement (4.3.8)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Abnormal Operation (5.3.1 - 5.3.9)	
Overload of Operator Accessible Connector (5.3.7)	

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 a part of this Test Record. NOTE: These supplements are only available to the Applicant via the CDA system.

Type	Supplement Id	Description
Datasheet	2-01	Test Datasheet
Attachment	2-02	CRD form