

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Listing
<b>CCN:</b>	NWGQ, NWGQ7 (Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	SERVER
<b>Model:</b>	NVRmini2-2Bay
<b>Rating:</b>	I/P: 19Vdc, 2.1A(Optional)
<b>Applicant Name and Address:</b>	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 Underwriters Laboratories Inc. ('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.

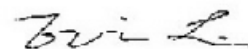
The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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

Prepared by: Alex Lin  
Underwriters Laboratories Inc.



Reviewed by: Eric Liu  
Underwriters Laboratories Inc.



**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, one DC fan and two HDD. Unit provides two RJ-45 ports and USB 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 (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) : Up to 2000 m
- Mass of equipment (kg) : 3.39
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°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


**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."
<b>Special Instructions to UL Representative</b>	
N/A	

<b>Production-Line Testing Requirements</b>							
<b><u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u></b>							
Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s	
--	--	--	--	--	--	--	
<b><u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u></b>							
All models.							
<b><u>Electric Strength Test Exemptions - This test is not required for the following models:</u></b>							
All models.							
<b><u>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:</u></b>							
--							
<b><u>Sample and Test Specifics for Follow-Up Tests at UL</u></b>							
Model	Component	Material	Test	Sample(s)		Test Specifics	
--	--	--	--	--		--	

**TABLE: List of Critical Components**

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
01. Label	--	--	60 degree C if maximum surface temperature not specified.	PGDQ2, PGJ12	UL
02. Enclosure	--	--	Metal (SECC), overall 183.4 by 106.2 by 139 mm, minimum thickness 0.6 mm	--	--
03. Front bezel (Decorative Part)	--	--	Rated HB minimum, overall 139.35 by 83.22 by 7.5 mm, minimum 1.0 mm thickness.	QMFZ2	UL
04. External Power Adapter	--	--	Output: 19Vdc, 2.1A, 40 degree C, comply with LPS or Limited Power Source	QQGQ	UL
05. DC Fan (Optional)	YEN SUN TECHNOLOGY CORP	FD126010HB	12 Vdc, 0.24 A, 23.3 CFM.	GPWV2	UL
05a. DC Fan (Alternate) (Optional)	YEN SUN TECHNOLOGY CORP	FD126010HL(X)	12 Vdc, maximum 0.175 A, 23.38 CFM.	GPWV2	UL
06. Hard disk (Optional)	--	--	I/P: 12Vdc 1.0A maximum; 5Vdc, 1.0A maximum	NWVQ2	UL
07. RTC Battery (BAT2)	--	CR2032	3.3V, Maximum reverse charging current 10 mA protected by R550 and D14	BBCV2	UL
08. Polyswitch (FS3)	TYCO ELECTRONICS CORP	miniSMDC150F/16	16Vdc, 1.5A, Ih: 1.5, It: 2.8, CA: 1(105),2,3,4,#	XGPU2	UL
09. Printed Wiring Board	--	--	Rated minimum V-1, 105 degree C.	ZPMV2	UL
10. Connectors and Receptacles (Secondary ELV/SELV)	--	Metal/Plastic	Copper alloy pins housed in bodies of plastic rated V-2 minimum. Three RJ45 ports.	QMFZ2 or ECBT2 or RTRT2	UL
11. Wire, Internal (Secondary)	--	--	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1, minimum 30 V, 60 degree C minimum.	AVLV2	UL
12. Interconnecting Cable (Optional)	--	--	Maximum length 3.05 m, marked VW-1 or FT-1. Rated minimum 30 Vdc, 80 degree C minimum.	AVLV2	UL
13. Internal Plastic Parts	--	--	Minimum. V-2.	QMFZ2	UL

Issue Date: 2011-09-21

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Report Reference #

E210294-A66-UL

## Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	External View - 01
Photographs	3-02	External View - 02
Photographs	3-03	External View - 03
Photographs	3-04	External View - 04
Photographs	3-05	External View - 05
Photographs	3-06	External View - 06
Photographs	3-07	External View - 07
Photographs	3-08	Internal View - 01
Photographs	3-09	Top view of mainboard-1
Photographs	3-12	Bottom view of mainboard-1
Photographs	3-13	Top view of mainboard -2
Photographs	3-14	Bottom view of mainboard-2
Diagrams	4-01	Enclosure drawing
Diagrams	4-02	Fan Opening
Schematics + PWB		
Manuals		
Miscellaneous		



nuuo

PWR

SYS

USB

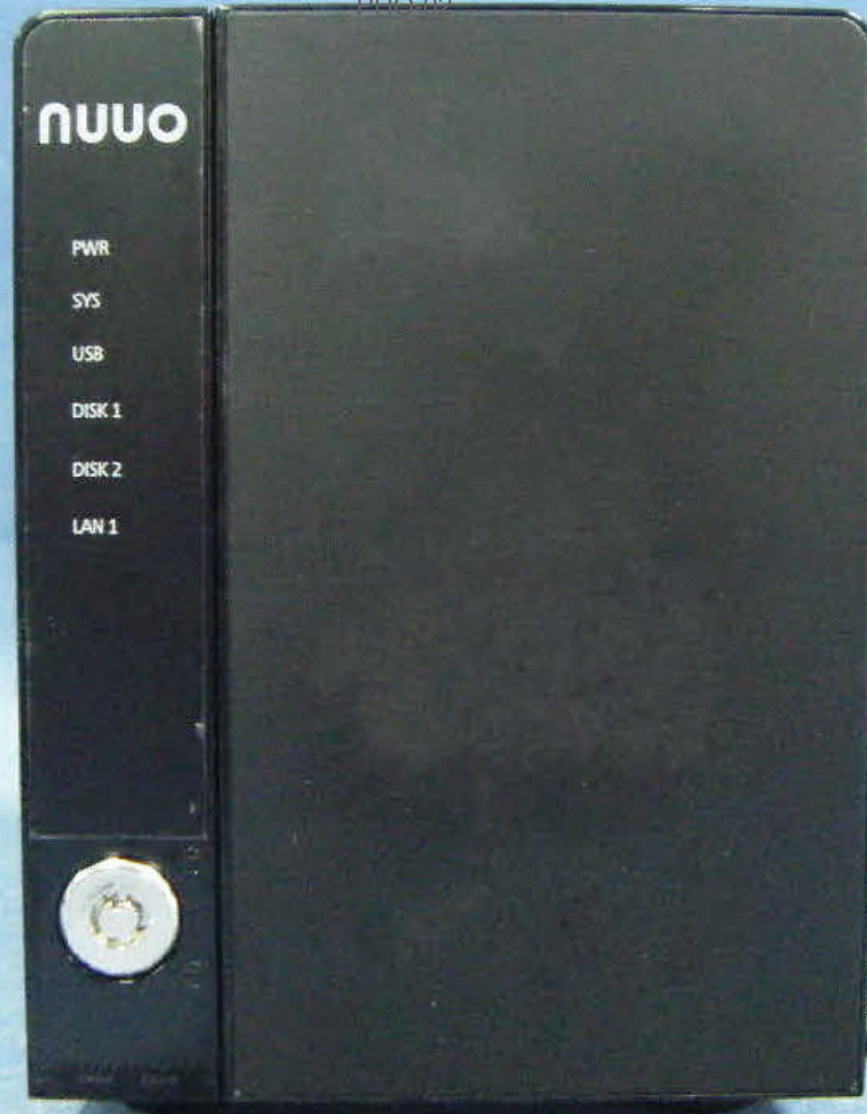
DISK 1

DISK 2

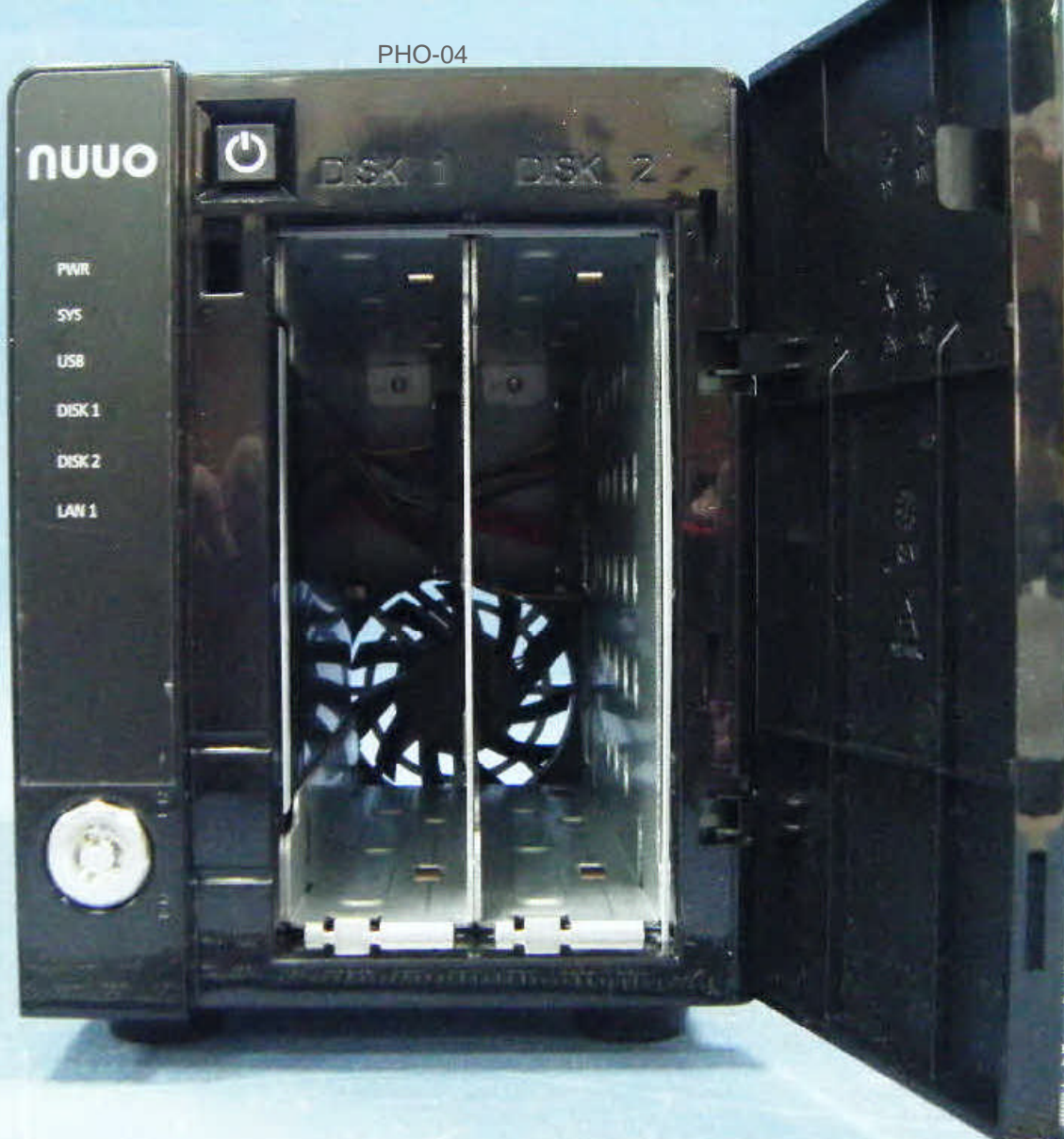
LAN 1







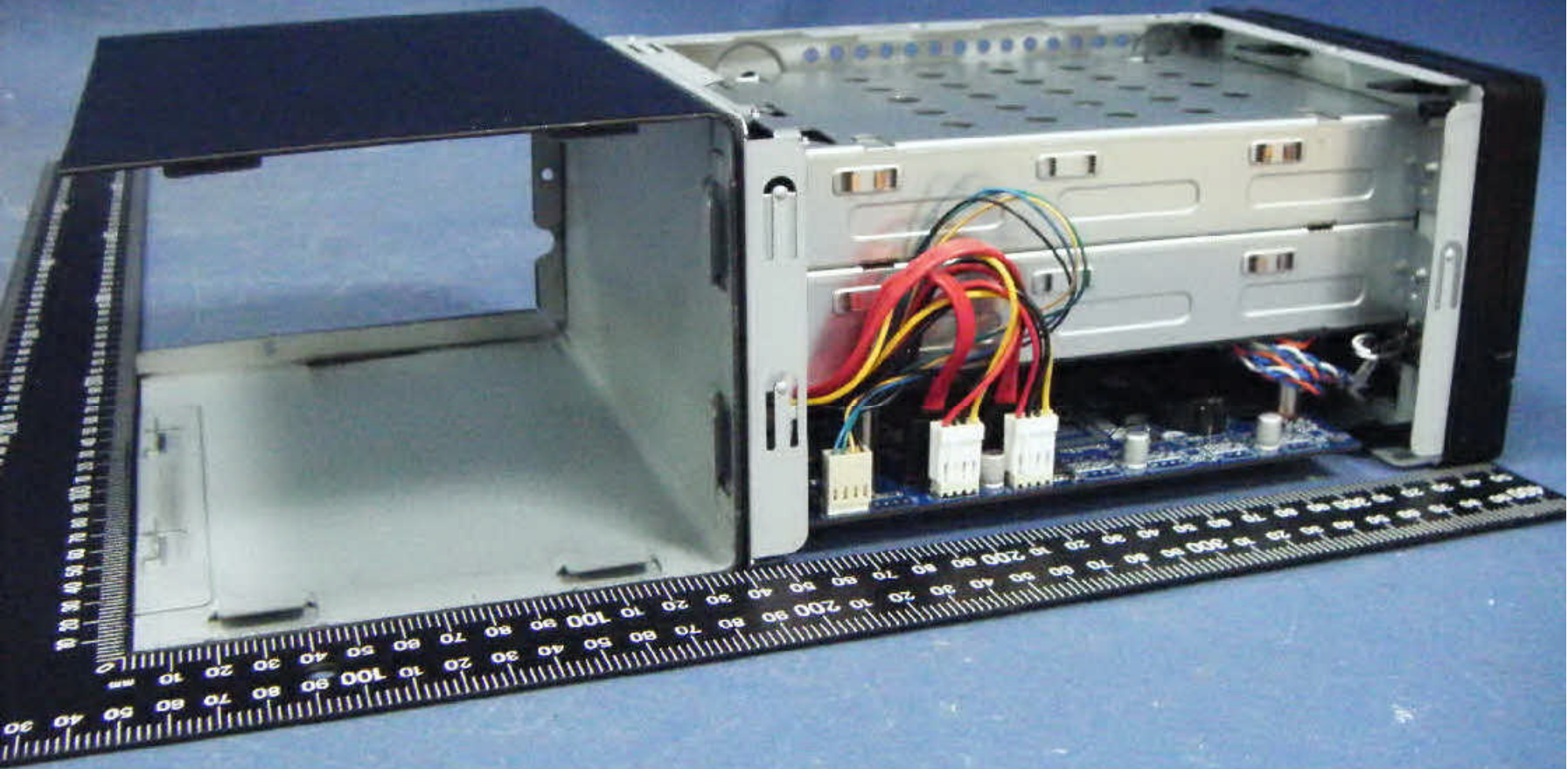


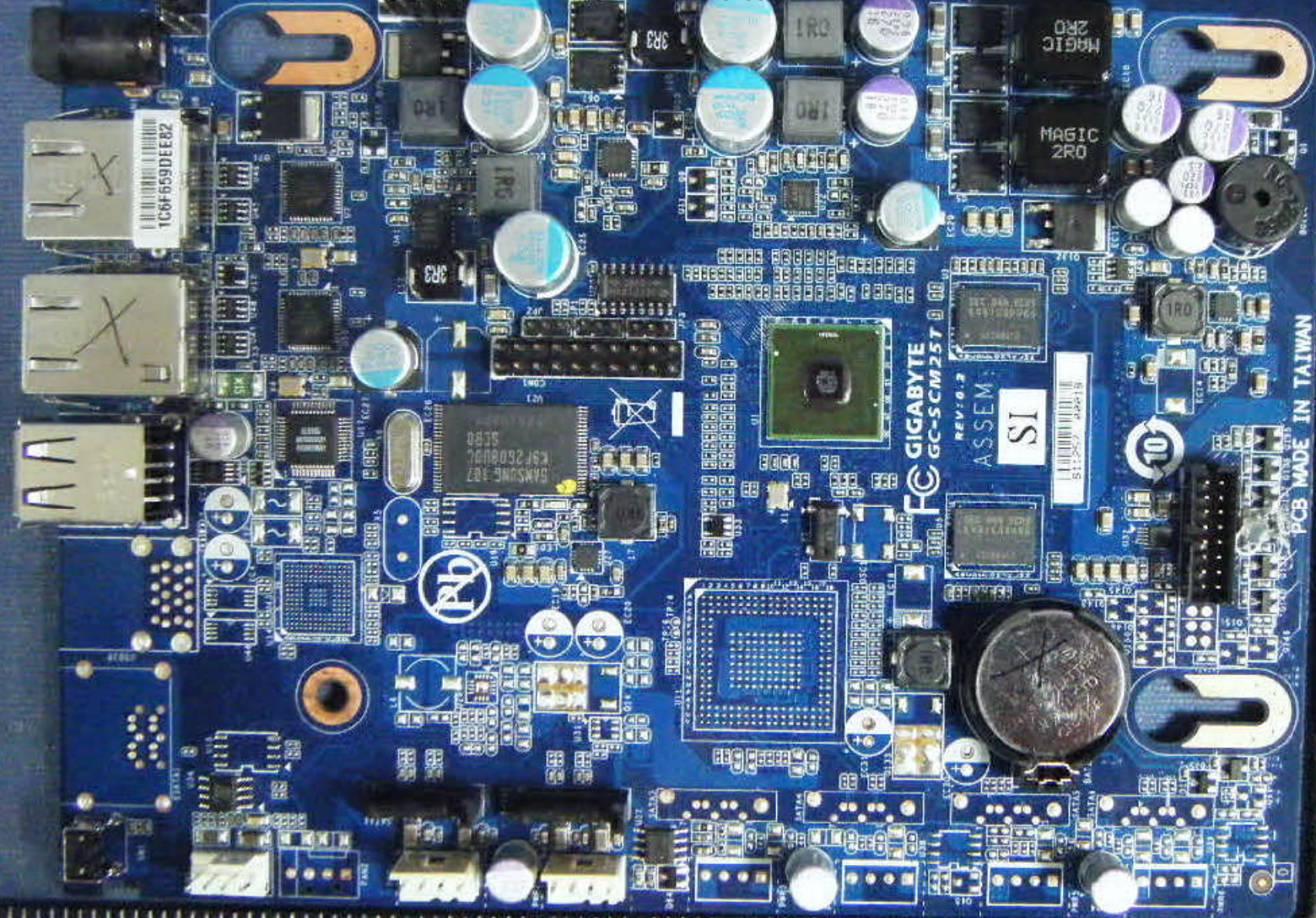












1C6F659DEC82

39F26090C  
K9F26090C  
S588

GIGABYTE  
REV: 0.3  
ASSEM

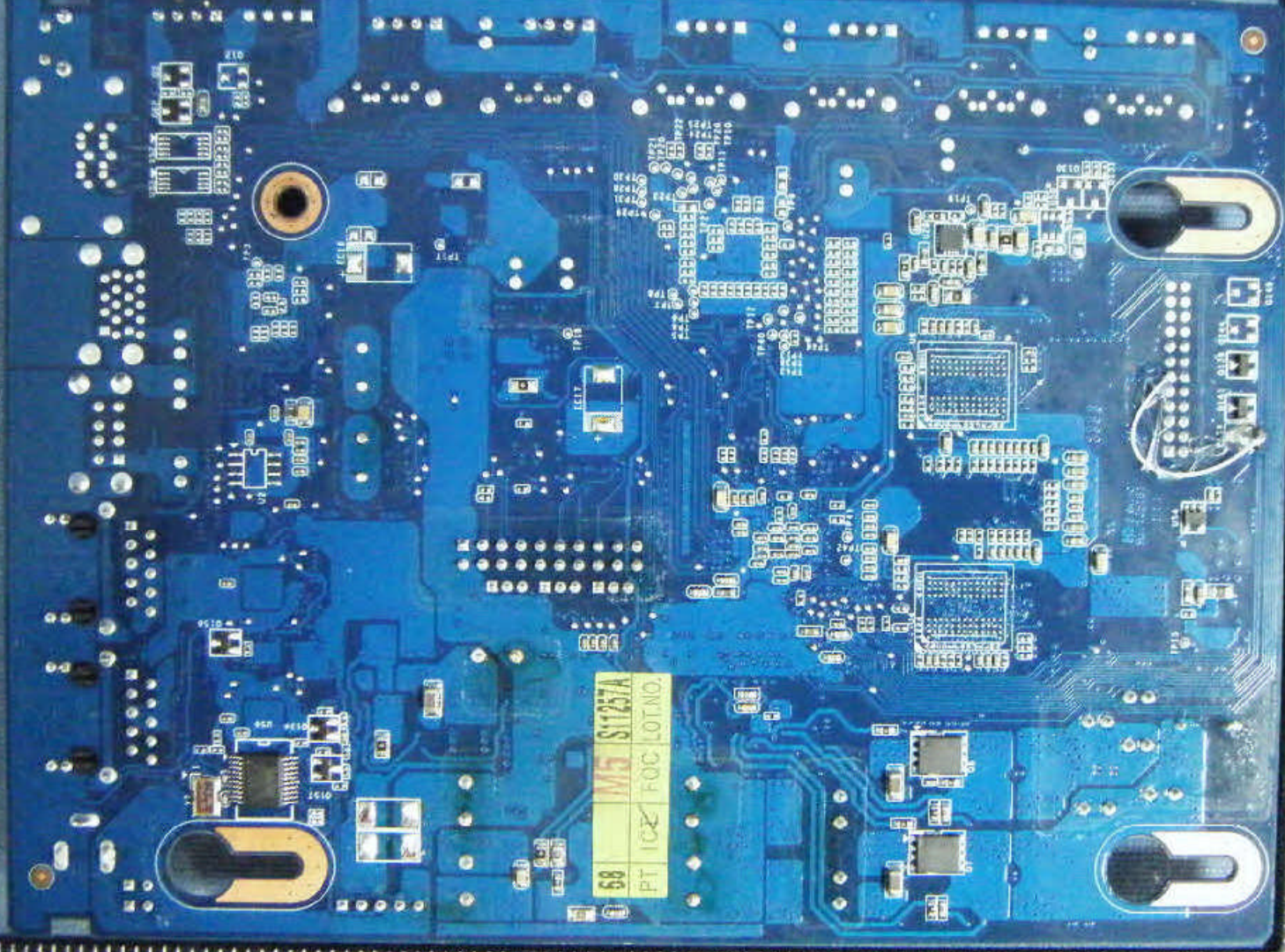
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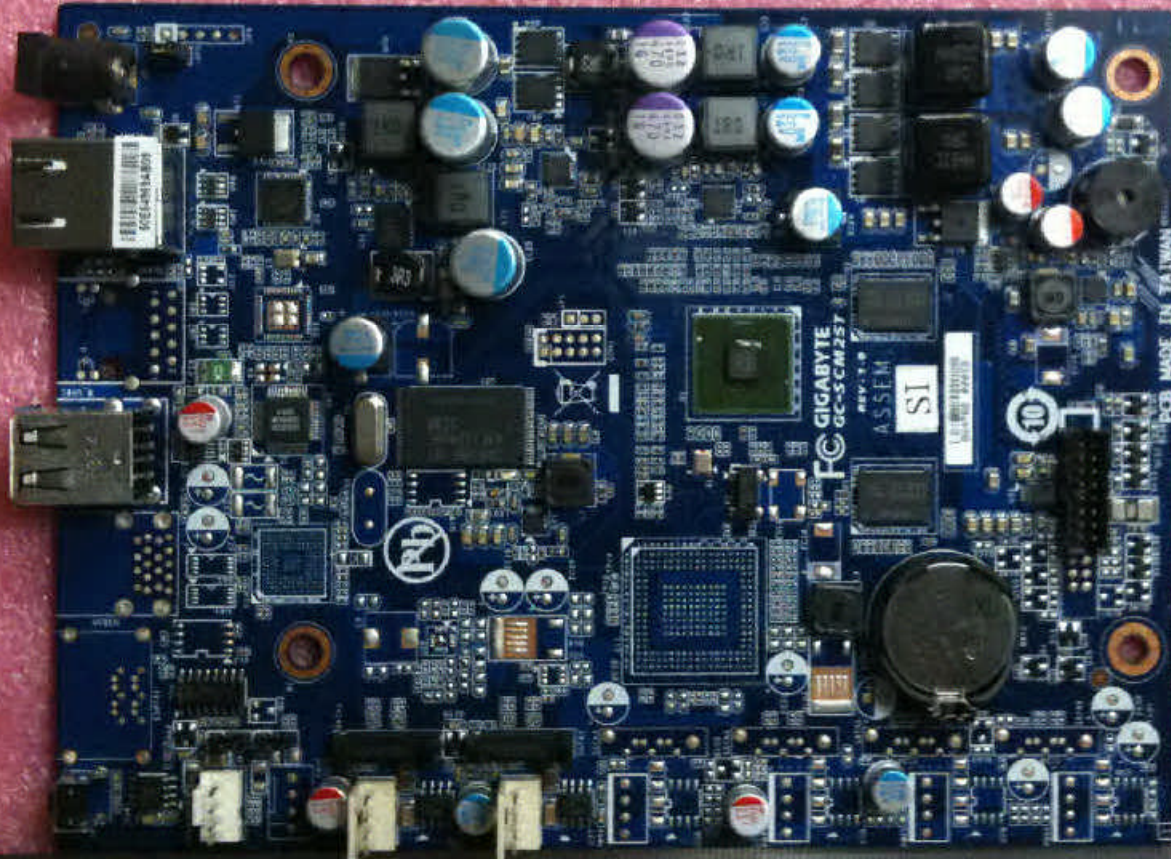
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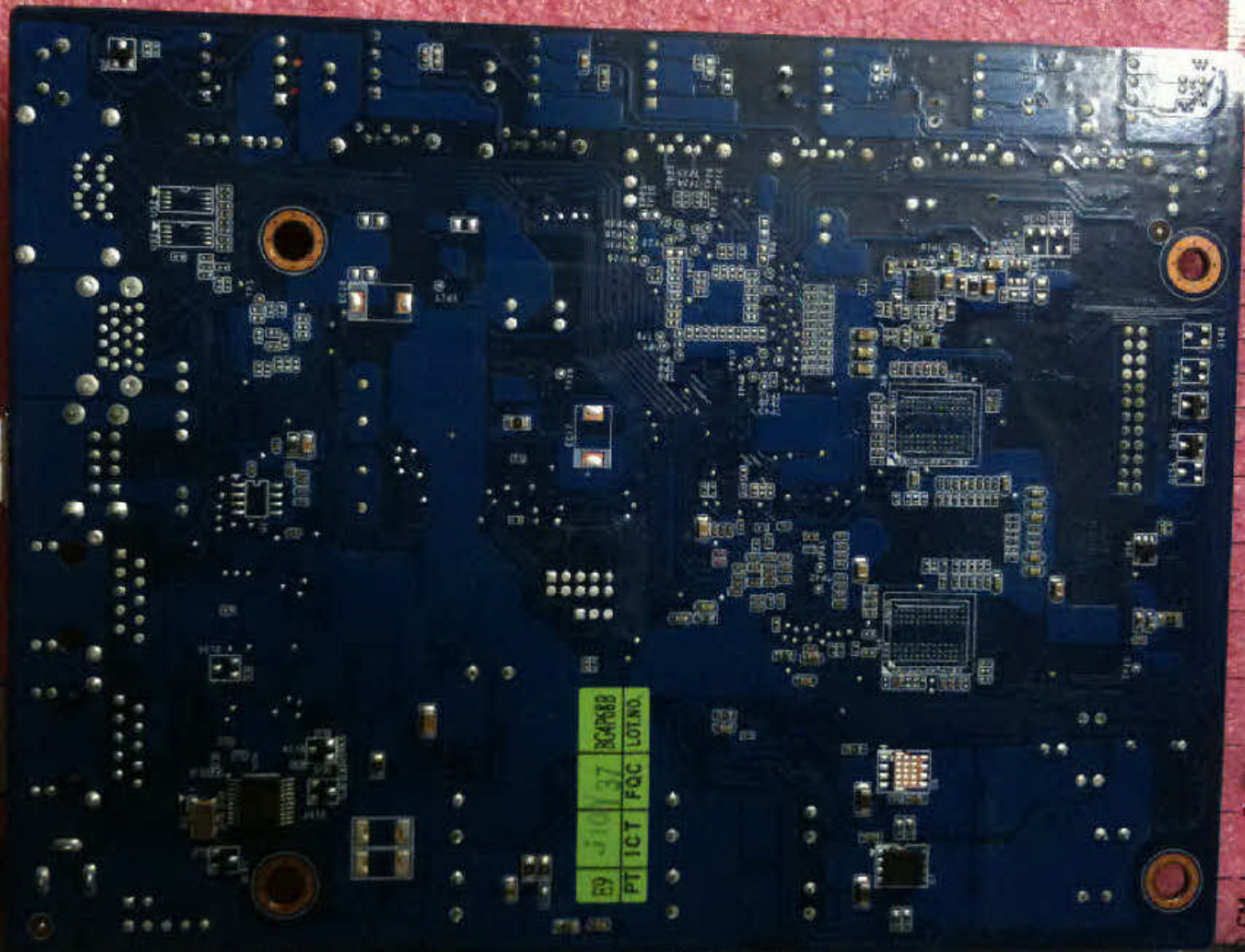
01

PCB MADE IN TAIWAN



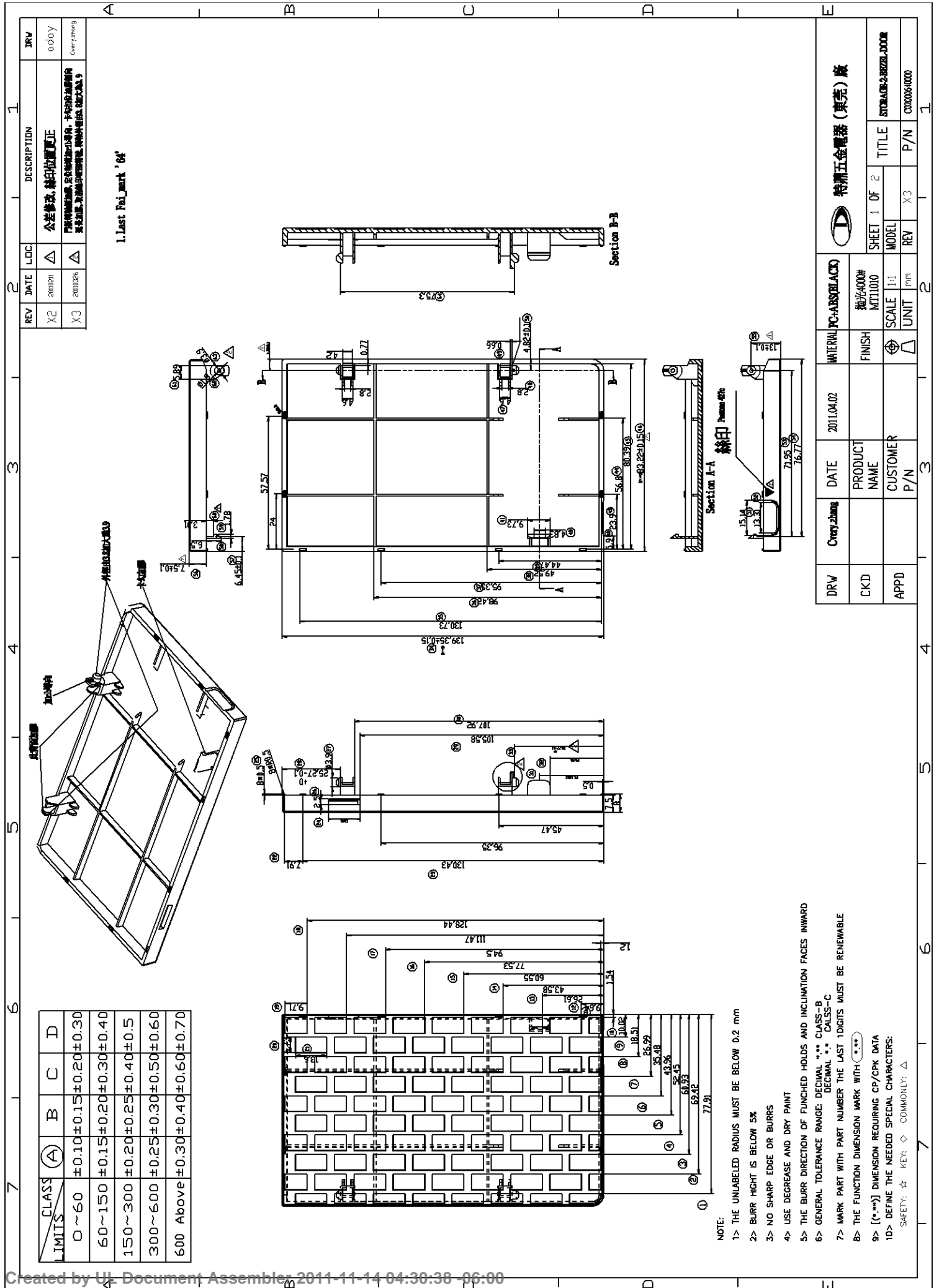


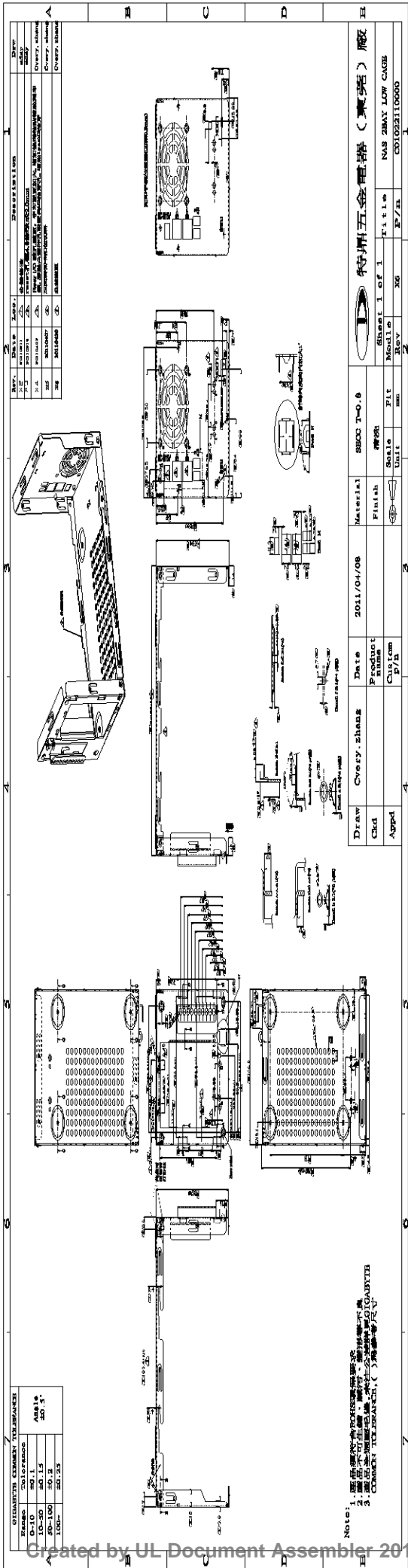




BY	J10	37	18047588
PT	ICT	FQC	LOT.NO.

W.I.P.



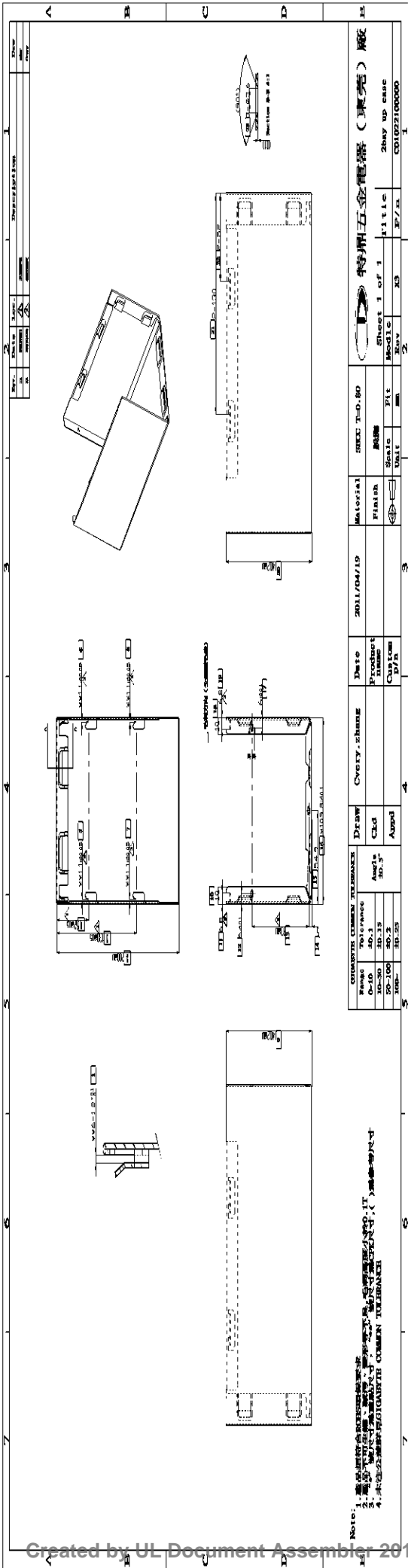


DIMENSIONS / TOLERANCES	
NAME	TOLERANCE
D-10	AS14
IO-SD	SD.5
IO-L	SD.5
IO-R	SD.5

Notes:  
 1. 此圖係根據客戶提供的規格書繪製。  
 2. 此圖係根據客戶提供的規格書繪製。  
 3. 此圖係根據客戶提供的規格書繪製。

Drawn	Cvery, zhang	Date	2011/04/08	Material	SECC 2.0-0.8
Chkd		Project		Finish	
Appd.		Client		Unit	
		Scale	1:1	Sheet	1 of 1
		Unit	mm	Module	NAB 2BAY LOW CASE
				Rev	00102110000
				File	
				Title	

特州五金電器 (東莞) 廠



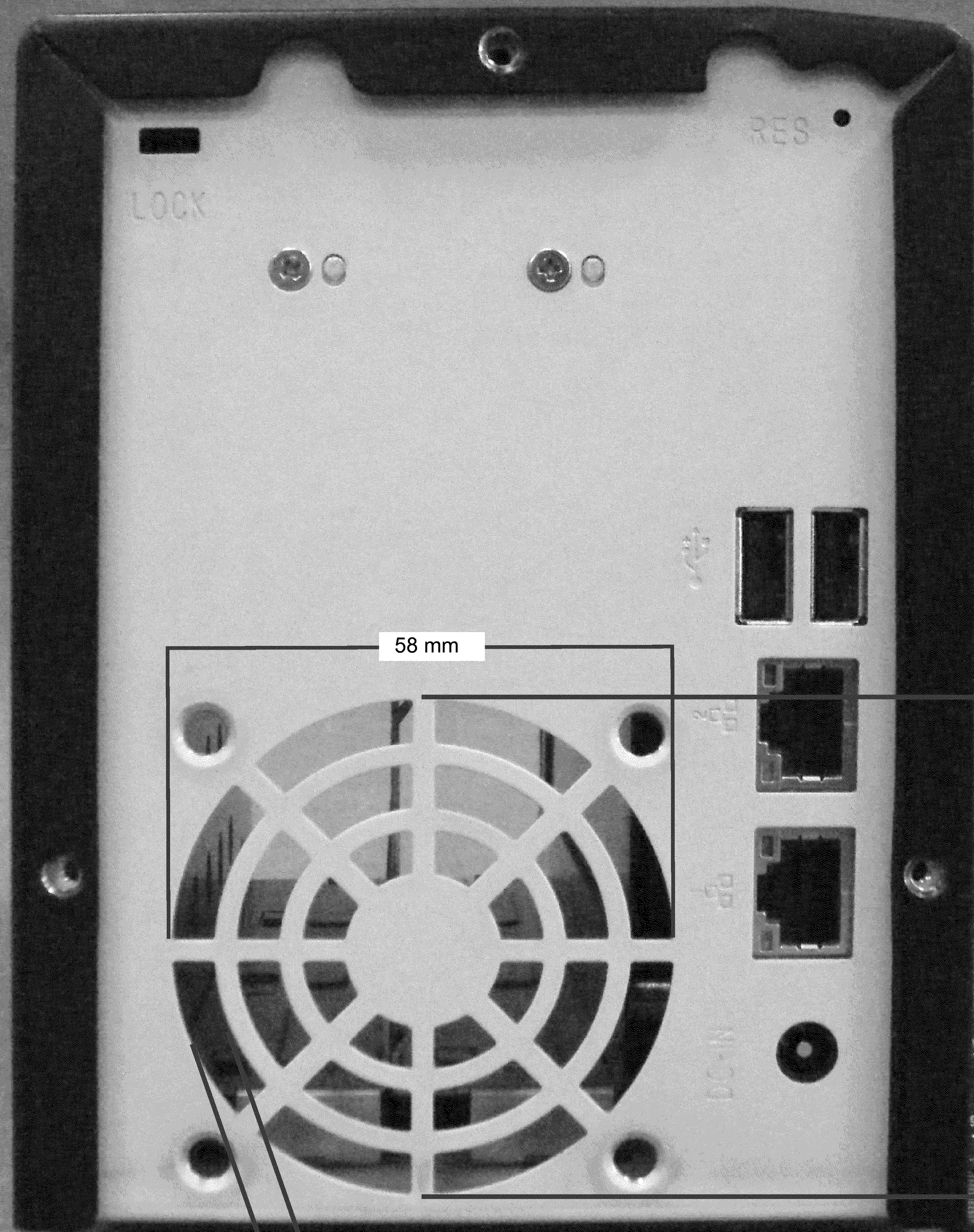
Note: 1. 本図は、製品の仕様書に基づき作成されたものであり、製品の仕様書と相違する場合は、製品の仕様書が優先となります。  
 2. 本図は、製品の仕様書に基づき作成されたものであり、製品の仕様書と相違する場合は、製品の仕様書が優先となります。  
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DIMENSIONAL TOLERANCES	
0-10	±0.10
10-30	±0.15
30-100	±0.20
100-	±0.25

DATE	DESCRIPTION	BY	CHKD	APP'D
2011/04/19	2011/04/19			

DATE	DESCRIPTION	BY	CHKD	APP'D
2011/04/19	2011/04/19			

特州五金電器 (東莞) 廠  
 Sheet 1 of 1  
 MODEL  
 20110419  
 0002100000



58 mm

58 mm

5 mm

## Test Record

**Test Record No. 1**

- The manufacturer submitted samples representing production of SERVER, Model NVRmini2-2Bay.

-Tests were conducted by Creave Sfety & Consultant Co. 13F., No. 190, Sec. 2, Chung Hsing Road, Hsin Tien Dist., New Taipei City 231, Taiwan.under TPTDP(CAP/EA).

-Test results relate only to the items tested.

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 - Lamp Rupture (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.

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Attachment	2-01	CRD
Datasheet	2-02	Datasheet



Project: 11CA27125 File: E210294 Page 1 of 1Compliance Review Alex Lin Alex Lin 2011-09-08  
Conducted by: Printed Name Signature Date

## CONSTRUCTION COMPLIANCE REVIEW RECORD

## SAMPLE IDENTIFICATION:

Sample Card #	Date Received	Sample #	Manufacturer, Product Identification and Ratings
C02830003	2011-05-18	1	GIGA-BYTE TECHNOLOGY CO LTD SERVER NVRmini2-2Bay Class III; 19Vdc, 2.1A
--	--	--	New

[ ] Indications of compliance apply to all samples identified with specific indications of compliance included for construction differences of the different samples

## MEASUREMENT INSTRUMENT INFORMATION: (Ex. Micrometer, Calipers, Comparator)

Inst. ID #	Instrument Type	Function/Range	Last Cal. Date	Next Cal. Date
19	Caliper	0-150 mm	2011-05-20	2012-05-19
52	Tape Measure	0-7m	2006-12-05	2011-12-04
34	Electronic Scale	0-75 Kg	2010-10-08	2011-10-07

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID # below corresponds to the Inst. ID # above.

Inst. ID #	Make / Model / Serial Number / Asset No.
19	MITUTOYO/500-196/045543/--
52	ULTRA STEEL/--/0612M04D3/--
34	EXCELL/FSB931/A0437747/--

[ ] UL Measurement instrument information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database

## CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the standard(s) indicated below and a complete record including measurements to support compliance with those requirements is detailed in Report Reference Number E210294-A66

Standard(s):  CSA C22.2 No. 60950-1-07 2nd Ed. 2007-03  
 UL60950-1 2nd Ed. 2007-03-27  
 UL60950-1 2nd Ed. 2007-03-27; CSA C22.2 No. 60950-1-07 2nd Ed. 2007 -03; IEC 60950-1:2001, second Edition