

NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK



2022-11-29

Mr. Kazumasa Saito
i-PRO Co., Ltd.
7-9-66 HAKOZAKI HIGASHI-KU
FUKUOKA-SHI, FUKUOKA, 812-0053, JP

Your Reference: iPRO-22-U048
Our Reference: File E521573, Volume X5, X6 Order: 14540676
Project: 4790607337
Project Scope: UL/cUL (62368 3rd)-New: Network Disk Recorder, Models WJ-NU101K, WJ-NU201K, WJ-NU300K, Covered in Report Reference No. E521573-A6056, Volume X5, X6

Dear Mr. Kazumasa Saito:

UL has completed the investigation under the above project and confirmed compliance of your product(s) with UL requirements. We appreciate that you have a choice of certification providers and thank you for choosing UL.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at the factory location(s) identified on the Authorization Page of UL File E521573, Volume X5, X6. You are required to send a copy of this letter to all manufacturing locations authorized under UL File E521573, Volume X5, X6.

The Follow-Up Services Procedure covering your product(s) will typically be provided by UL within 10 business days. Any information and documentation provided to you involving the UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Products that bear the UL Mark must be identical to those submitted to UL for evaluation and certification and must comply with the Follow-Up Services Procedure covering your product(s). Additional requirements related to the responsibilities of the Applicant and Manufacturer can be found under **Additional Resources** at <https://www.ul.com/fus>.

A UL certification is a valuable marketing tool meaning your product or company has successfully met stringent requirements. We encourage you to use your UL Mark and certification in your marketing activities. You can find information on how to accurately promote your UL certification at <https://www.ul.com/marketing>.

If you have any questions, please contact me or any of our customer service representatives. And, congratulations again on your achievement!

Sincerely,

Nao Maede
Project Engineer
UL Japan, Inc.
Nao.Maede@ul.com

Bruce A. Mahrenholz
Director, Conformity Assessment Programs (CPO)
UL LLC
Bruce.A.Mahrenholz@ul.com

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UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	Network Disk Recorder
Model:	WJ-NU101K, WJ-NU201K, WJ-NU300K
Rating:	For Model WJ-NU101K 54 Vdc, 1.67 A For Models WJ-NU201K, WJ-NU300K 54 Vdc, 2.78 A
Applicant Name and Address:	i-PRO CO., LTD. 7-9-66 HAKOZAKI HIGASHI-KU FUKUOKA-SHI FUKUOKA 812-0053 JAPAN

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: Nao Maede / Project Handler Reviewed By: Takaya Ishisue / 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

The network disk recorder equipped H.265 CODEC and are designed for use with a H.265 surveillance system, and record images/audio from network cameras on the hard disk drive (HDD).

This equipment supports connection with a monitor equipped with the HDMI connector.

Connection using an HDMI Cable offers display of playpack/live images with superior quality.

It is possible to display images from multiple cameras, switch those images and perform basic operation of the camera.

Model Differences

Network Disk Recorder, Model WJ-NU201K is described as basic model in this report.

Model WJ-NU300K is identical to Model WJ-NU201K except for model designation only.

Model WJ-NU101K is identical to Model WJ-NU201K except for number of PoE+ ports (Model WJ-NU101K: 4 ports, Model WJ-NU201K: 8 ports), capacity of internal HDD, input current rating and model designation only.

Test Item Particulars

Product group	end product
Classification of use by	Ordinary person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	mating connector
Considered current rating of protective device	N/A
Equipment mobility	movable stationary rack-mounted, wall-mounted
Over voltage category (OVC)	OVC II
Class of equipment	Class III
Special installation location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified T _{ma} (°C)	45°C
IP protection class	IPX0
Power systems	not AC mains

Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	Approximately 10 to 20 m
Mass of equipment (kg)	Approximately 2.7kg (Manufacturer's Spec)
Technical Considerations	
<ul style="list-style-type: none"> The product is intended for use on the following power systems : No direct connection Mains supply tolerance (%) or absolute mains supply : No direct connection The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : CAMERA PoE/PoE+ Ports, Rear USB2.0 Port, Front USB3.0 Port 	
Additional Information	
<p>Unless otherwise stated, all required tests were conducted on Model WJ-NU201K under * Maximum Normal Load.</p> <p>* Maximum Normal Load is Continuous data recording by program which provided by client and with following external load. 54Vdc, 110W dummy load is connected to Power Line of PoE+ port. Mouse is connected to Rear USB2.0 port. Monitor is connected to Rear HDMI [A/V MAIN] port. 0.9A dummy load is connected to Front USB3.0 port.</p> <p>(NOTE) Internal HDD has maximum capacity.</p> <p>Only limitedt tests were conducted on Model WJ-NU201K under ** Maximum Normal Load for simulated Model WJ-NU101K.</p> <p>** Maximum Normal Load is Continuous data recording by program which provided by client and with following external load. 54Vdc, 50W dummy load is connected to Power Line of PoE+ port. Mouse is connected to Rear USB2.0 port. Monitor is connected to Rear HDMI [A/V MAIN] port. 0.9A dummy load is connected to Front USB3.0 port.</p> <p>(NOTE) Internal HDD has maximum capacity.</p>	
Additional Standards	
The product fulfills the requirements of:	
Markings and Instructions	
Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number

F.3.1 Location of Maring Plate	<p>Following statement is provided on Important Information.</p> <p>"Indication label Refer to the indication label placed on the top or bottom of this product for the equipment classification, power source, etc."</p>
F.4 Equipment for use in location where children not likely to be present	<p>Following statement or equivalent is provided in Important Information.</p> <p>"This product is not suitable for use in locations where children are likely to be present."</p>
F.4 Safety Instructions - Rack Mount	<p>Following statement or equivalent is provided in the Installation Guide.</p> <p>"Important: The following measures should be taken when installing the rack to ensure that the product is used within the operating temperature range.</p> <ul style="list-style-type: none"> - Install a fan or other equipment to lower the temperature inside the rack. - Allow a distance of at least 1U (44 mm) between the top and bottom of the product. - Do not put doors on the front of the rack or block the sides. <p>Precaution for installation Heat dissipation To prevent this product from overheating, heed the following. Failure to observe this may cause fire or trouble.</p> <ul style="list-style-type: none"> - Do not block the cooling fan outlet or the ventilation holes with a wall, rack, cloth, etc. Maintain the product periodically to prevent dust from blocking ventilation holes. - Clear a space of more than 5 cm (2 inches) from both sides, the top and the rear of the product. Do not block the ventilation holes on the front side since this product is designed to cool the hard disk drives by drawing in air from the front."
Q.3, DVA Q Power source for Class 2 circuits - Marking	<p>Following marking is provided near PoE ports.</p> <p>"CAMERA PoE/PoE+ 54 V@278 mA, 57 V MAX"</p>
<p>Special Instructions to UL Representative N/A</p>	

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	--	--	--	--	--	--
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models: WJ-NU101K, WJ-NU201K, WJ-NU300K					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models: WJ-NU101K, WJ-NU201K, WJ-NU300K					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	N/A					

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

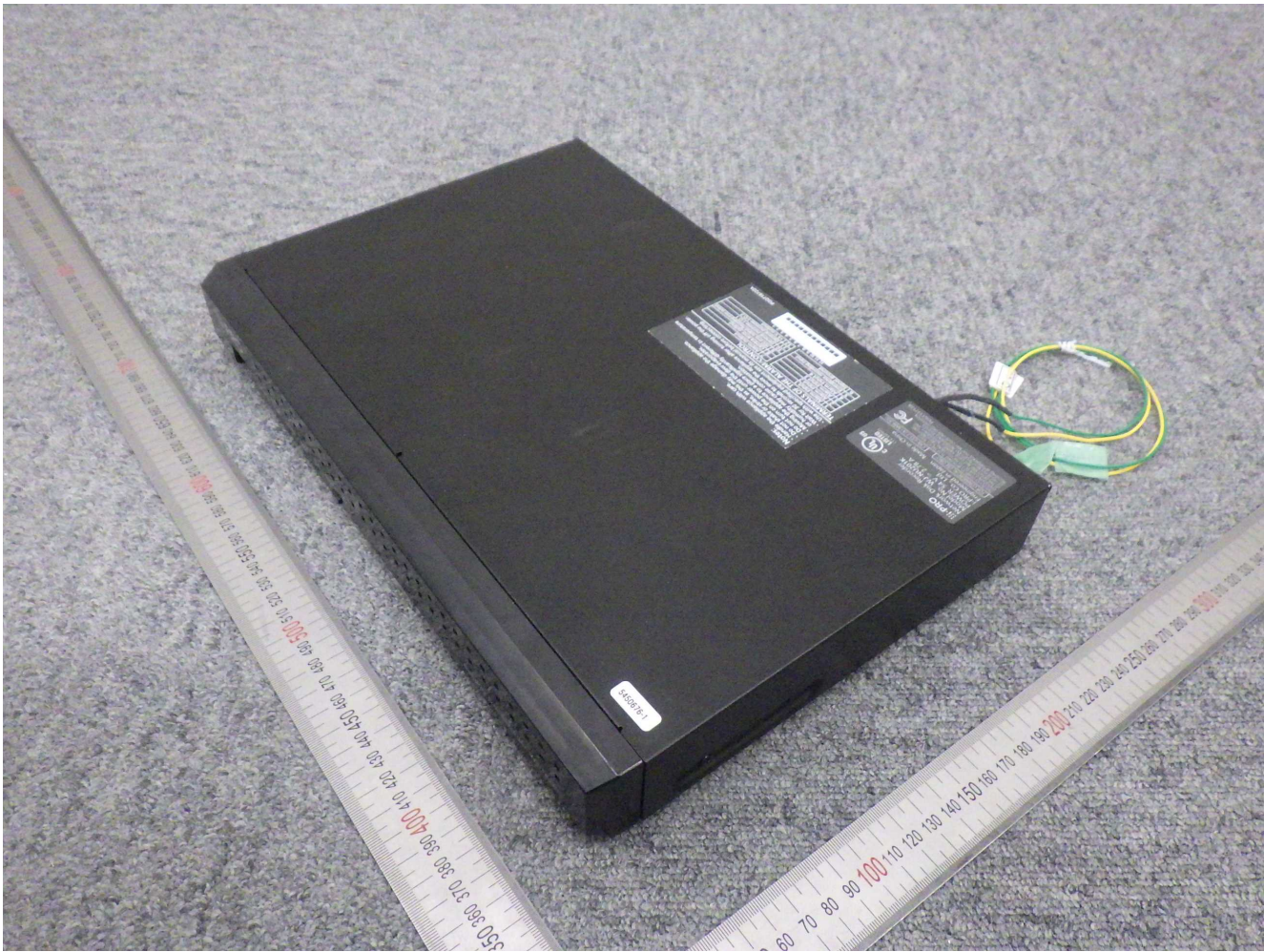
4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
IC Current Limiter (IC252) for PoE outputs	MICROSEMI CORP	PD69104B1	Input Voltage: 44Vdc to 57Vdc Output Continuous Rating: AF: 10 to 350mA AT: 10 to 600mA Output Current Limit: AF: 350mA to 400mA AT: 600 to 775mA	QVRQ2	UL	
IC Current Limiter (IC253) for PoE outputs for Models WJ-NU201K, WJ- NU300K	MICROSEMI CORP	PD69104B1	Input Voltage: 44Vdc to 57Vdc Output Continuous Rating: AF: 10 to 350mA AT: 10 to 600mA Output Current Limit: AF: 350mA to 400mA AT: 600 to 775mA	QVRQ2	UL	
Back up Battery (B2601)	Maxell, Ltd.	CR2032	3V, 220mAh, Maximum Abnormal Charging Current: 10mA Charging current is prevented by Diode (D2602) and 1kohm Resistor (R2601) in series.	BBCV2	UL	
Alternate	Maxell, Ltd.	CR2032H	3V, 240mAh, Maximum Abnormal Charging Current: 10mA Charging current is prevented by Diode	BBCV2	UL	

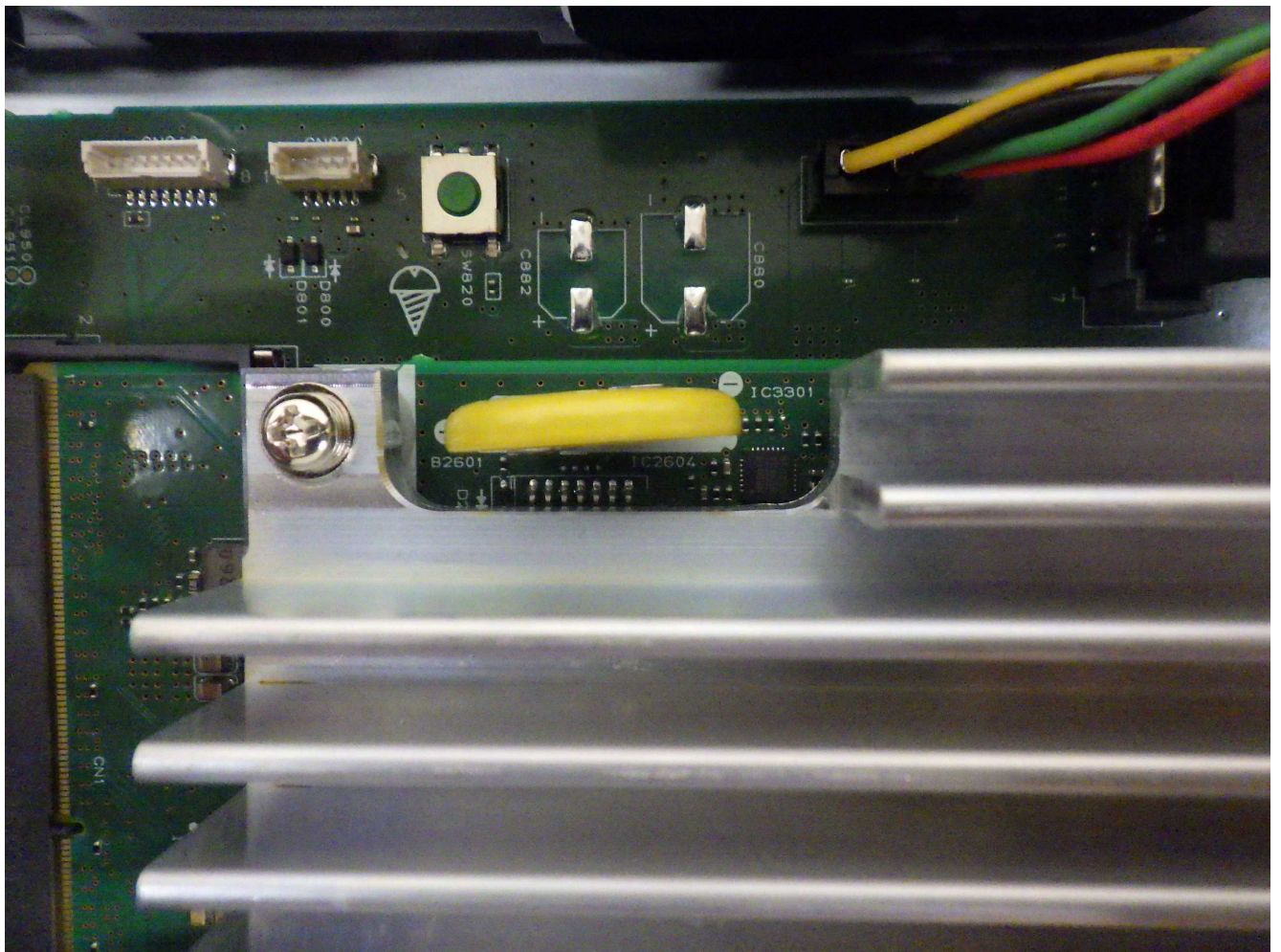
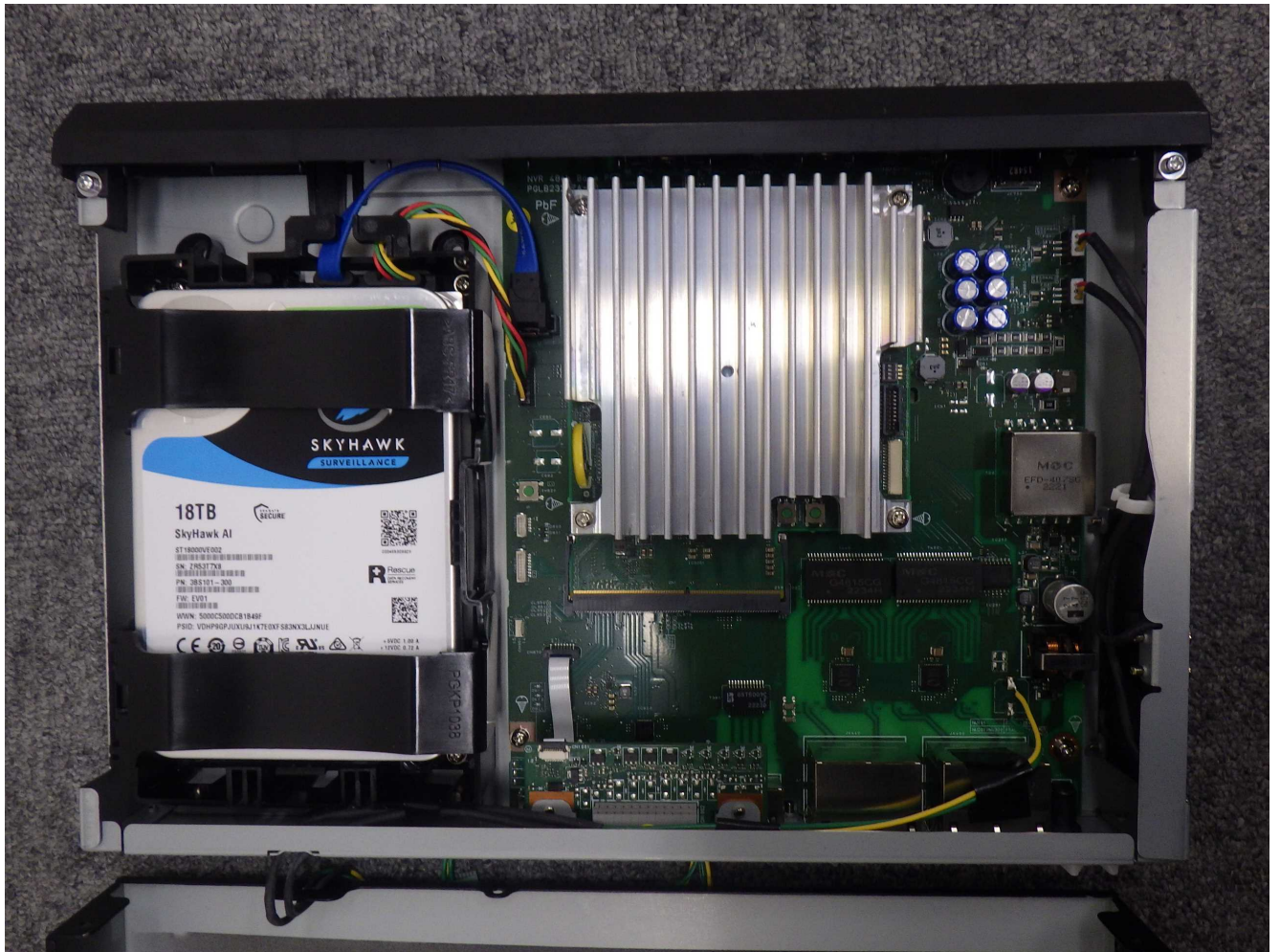
			(D2602) and 1kohm Resistor (R2601) in series.			
Alternate	Interchangeable	Interchangeable	3V, 220mAh, Maximum Abnormal Charging Current: 10mA Charging current is prevented by Diode (D2602) and 1kohm Resistor (R2601) in series.	BBCV2	UL	
Heatsink	Interchangeable	Interchangeable	Aluminum, See Enclosure Id. 07-02 for construction details.	--	--	
Printed Wiring Board	Interchangeable	Interchangeable	Minimum V-1, minimum 105°C	ZPMV2	UL	
3.5" Hard Disk Drive (Optional)	SEAGATE TECHNOLOGY LLC	ST with additional suffixes (ST18000VE002)	12Vdc, 0.72A, 5Vdc, 1.0A, Tma: 65°C	AZOT2	UL	
Alternate	Interchangeable	Interchangeable	12Vdc, maximum 0.72A, 5Vdc, maximum 1.0A, minimum Tma: 65°C	AZOT2	UL	
Fan Motor (2 provided)	Sunonwealth Electric Machine Industry Co., Ltd.	MF40101V2-1D06U-F99	12Vdc, 40mA, nominal 7.0CFM	--	--	
HDD HOLDER BASE/TOP (Internal)	KINGFA SCI & TECH CO LTD	FW-620T	V-0, minimum 1.9mm thick.	QMFZ2	UL	
Alternate	Interchangeable	Interchangeable	Minimum V-2 (at thickness and color used.)	QMFZ2	UL	
FRONT PANEL (Fire)	KINGFA SCI & TECH CO LTD	FW-620T	V-0, minimum 1.2mm thick.	QMFZ2	UL	

TOP PANEL (Fire/Electrical)	Interchangeable	Interchangeable	Steel, minimum 0.7mm thickness, See Enclosure Id. 07-03 for dimension openings.	--	--	
MAIN CHASSIS (Fire/Electrical)	Interchangeable	Interchangeable	Steel, minimum 0.7mm thickness	--	--	
REAR PANEL (Fire/Electrical)	Interchangeable	Interchangeable	Steel, minimum 0.7mm thickness	--	--	
Marking Plate	SUZHOU HUASHUN LABEL PRODUCTS CO LTD	FS-03-50BSX	Applied to TOP PANEL or MAIN CHASSIS (Bottom). (Conducted Durability Test.)	--	--	
Alternate	Interchangeable	Interchangeable	Applied to Top Cover or Main Chassis (Bottom).	PGDQ2 or PGJ12	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall View 1
Photographs	03-02	Overall View 2
Photographs	03-03	Internal View
Photographs	03-04	Close up View of Back up Battery
Miscellaneous	07-02	Dimension of Heatsink
Miscellaneous	07-03	Dimension of TOP PANEL



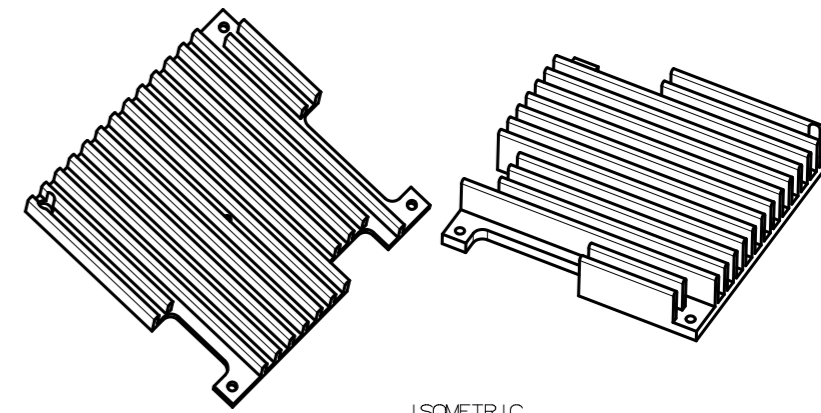


・化学物質管理ランク指針最新版(製品版)を遵守すること。
 ・Observe the Chemical Substances Management Rank Guidelines latest version (For Products).

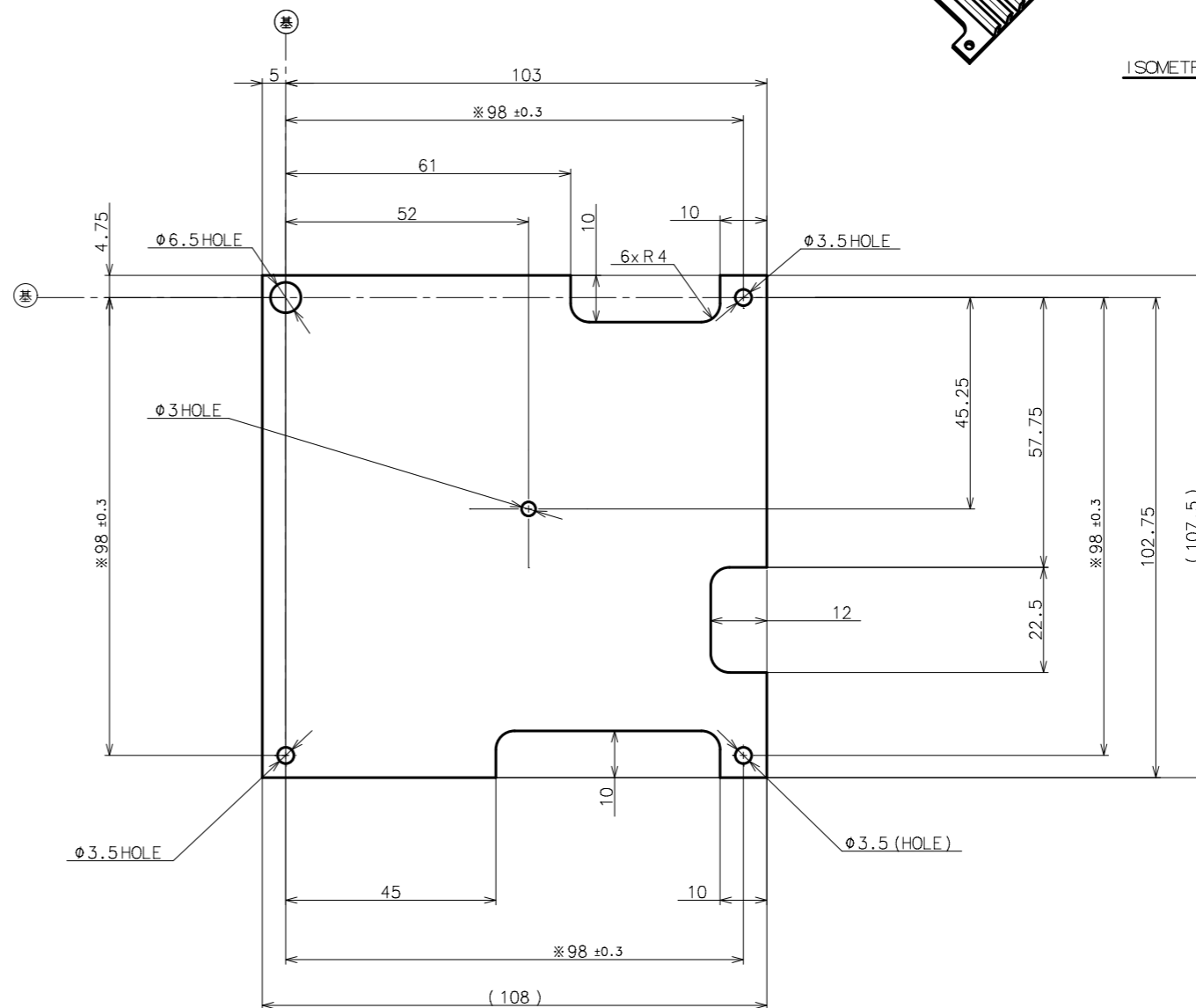
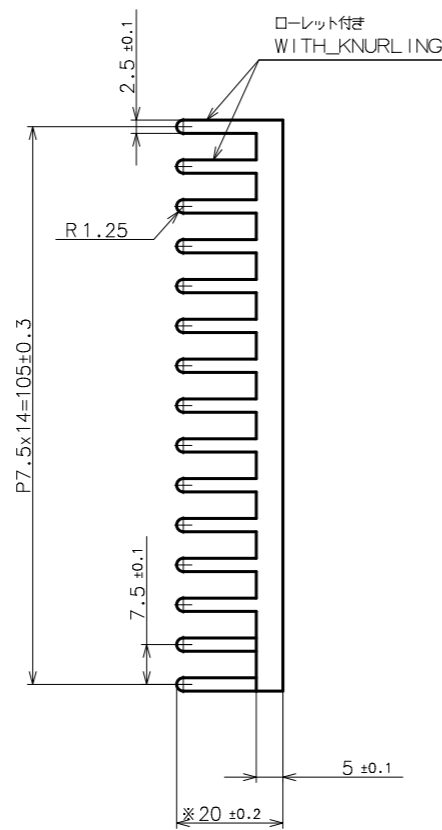
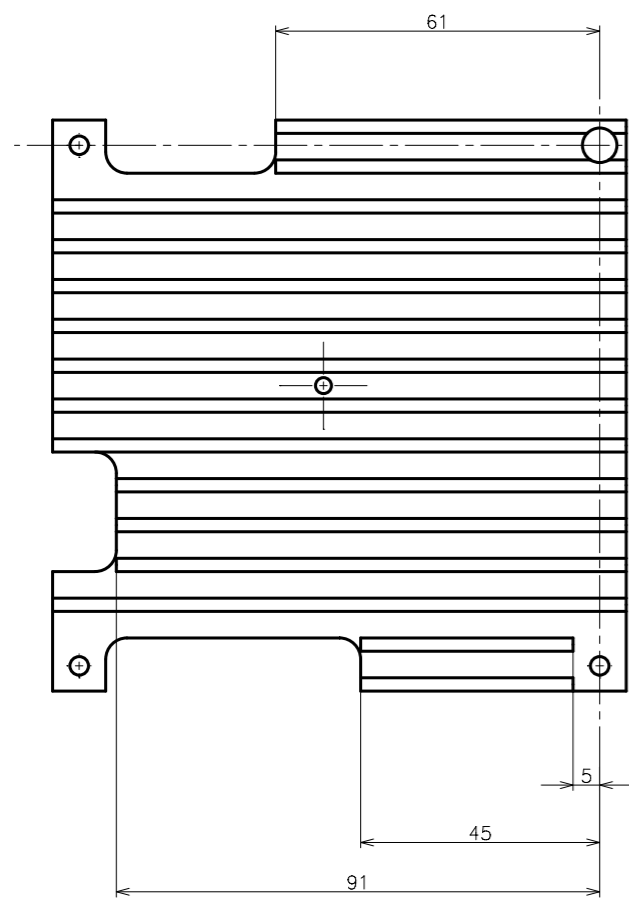
SYM.	DATE	REVISION	SIGNED	CHECKED
△				
△				
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JIS B 0405-f (単位 mm)		許容差	
呼び寸法の区分	長さ寸法		
6以下		±0.05	
6を超え 30以下		±0.10	
30を超え 120以下		±0.15	
120を超え 400以下		±0.20	
400を超え 1000以下		±0.30	
1000を超え 2000以下		±0.50	
2000を超え 4000以下		-	

JIS B 0405-f (in mm)		
Cutting		
Nominal dimension class	Tolerance Length	
6 or less	±0.05	
More than 6 and 30 or less	±0.1	
More than 30 and 120 or less	±0.15	
More than 120 and 400 or less	±0.2	
More than 400 and 1000 or less	±0.3	
More than 1000 and 2000 or less	±0.5	
More than 2000 and 4000 or less	-	



ISOMETRIC



- 注記
- 指示無き素材の【】内寸法公差は、JIS-H4100普通級公差による。
 - 左右対称形状寸法は、省略する。(省略した部分の寸法も測定のこと)
 - 切削くず、傷、汚れ、ゴミ付着無きこと。
 - 手を切る様なエッジ無きこと。
 - カエリ無きこと。(弊社外観規格をお願いします。)
 - 品質上(外観、バリ仕上げ等)、疑義が生じた場合は、協議の上、処置方法を決めることとし、必要によって限度見本を作成し、管理する。
 - 「※」印寸法は、弊社受入検査部門での管理寸法とする。
 - 製品納入時に、傷、変形無き荷姿とする。
 - 当図面の管理に注意し、外部に供覧、貸与、転用等を行わないこと。
 - 指示無き角R/隅Rは、R2以下とする。

- Note
- Dimensional tolerances without indication of base material (ex【】) shall adopt to the JIS-H4100(General class) tolerance chart.
 - The dimensions of left-right symmetry shapes shall be omitted. (The dimensions of omitted portions shall be measured.)
 - Sawdust, scratch, stain, and dirt shall not be present on the surface.
 - Not accept edge, like cutting the hand.
 - No peeling. (Please use our appearance standard.)
 - If any doubt arises with respect to quality (appearance, burr finishing, etc.), the treatment method shall be decided after consultation, and boundary samples shall be made for management as necessary.
 - The dimensions marked with "*" shall be the control dimensions of our acceptance inspection division.
 - The type of packing shall not have any scratch or deformation at delivery.
 - Care shall be taken of managing this drawing, and never perform display, lending, diversion, etc.
 - If not indicated corner R/inside corner R, it must be R2 or less.

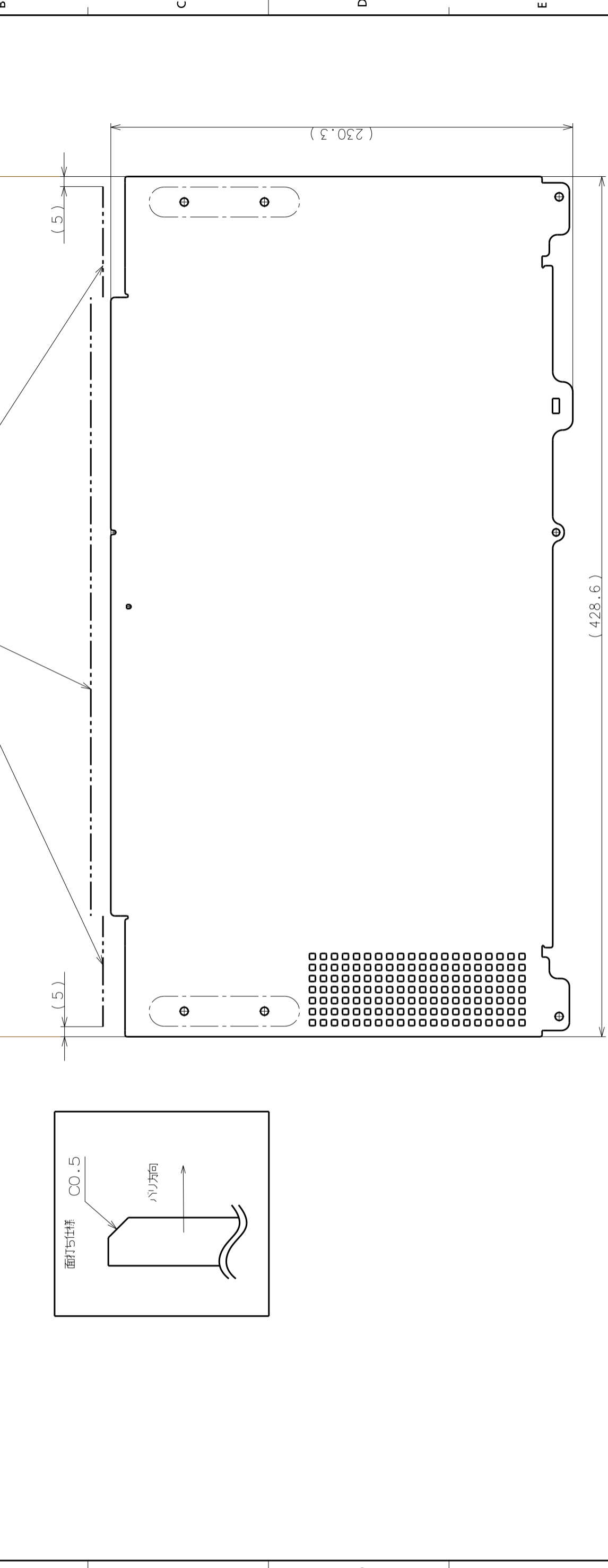


REMARK Mass:Approx. 250g		A6063	脱脂	MODEL WJ-NU101/201/300/301
SCALE 1:1		MATERIAL & SIZE		NAME HEAT_SINK(SOC)
DESIGNED T.FUKAMIZU 2022.06.06	DRAWN	CHECKED M.HIRATA 2022.06.29	APPROVED K.MATSUOKA 2022.06.29	DRAWING/ Part NO. PGMY1440ZA/C1
REF.NO.	xxx	1/1		

量産手配図面
 【2022.06.29】
 ORDER DRAWING
 FOR MASS PRODUCTION

1	2	3	4	5	6	7	8
・化学物質管理ラック指針最新版(製品版)を遵守すること。 ・Observe the Chemical Substances Management Rank Guidelines latest version (For Products). JIS B 0408-B (in mm)							
General metal stamping							
Nominal dimension class		Tolerance					
Punching dimensions		Bending and drawing dimensions					
6 or less	±0.1	±0.3					
More than 6 and 30 or less	±0.2	±0.5					
More than 30 and 120 or less	±0.3	±0.8					
More than 120 and 400 or less	±0.5	±1.2					
More than 400 and 1000 or less	±0.8	±2					
More than 1000 and 2000 or less	±1.2	±3					
Bending type	Angle difference						
Right angle bending	±1.0°						
Other bendings	±1.5°						

SYMBOL	DATE	REVISION	SIGNED	CHECKED
A x 0	2022.09.21	寸法公差緩和(B特採)、塗料材質追加	FUKAMIZU	MATSUOKA
A				
A				



REVISION 改訂図面 2022.09.01 ⇨ 2022.09.21 PREVIOUS DRAWING IS VOID. 旧図面は廃図とする
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REMARK	MATERIAL & SIZE	PROCESS	MODEL	WJ-NU101/201/300
SCALE	DRAWN	CHECKED	NAME	TOP_PANEL
1:2	D.ARAMAKI	M.HIRATA	DRAWING/Part NO.	PGUA1139ZA/C1
DESIGNED	2022.06.27	2022.09.01	APPROVED	
T.FUKAMIZU			K.MATSUOKA	

Notes:

- Dimensional tolerances without indication shall stand on the data in the tolerance chart.
- Angle tolerances without indication shall stand on the data in the tolerance chart.

注記

- 指示なき寸法公差は、公差表による。
- 指示なき角度公差は、公差表による。