



File E158873

Vol X14

Authorization Page 1

Issued: 2021-09-30

Revised: 2022-07-13

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

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

Manufacturer:	SEE ADDENDUM FOR MANUFACTURER LOCATIONS
Applicant: (813307-003)	105140 (Party Site) Hanwha Techwin Co Ltd 6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si Gyeonggi-do 13488 KR
Listee/Classified Company: (813307-003)	105140 (Party Site) SAME AS APPLICANT

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 Company 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 Company 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 Company 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

52000 (Party Site)
INTER M CORP
73 Hwahap-ro 1402beon-gil
Yangju-si Gyeonggi-do 11451 KR
Factory ID: NONE
UL Contracting Party for above site is: UL GmbH

2897947 (Party Site)
INTER M CORP
7-18 Gwonyulro1253beon-Gil
Yangju Gyeonggi-do 11517 KR
Factory ID: Honjuk
UL Contracting Party for above site is: UL GmbH

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<u>Product Type</u>	<u>Model/Type Reference</u>	<u>Report Reference #</u>	<u>Status</u>
Audio Server	SPA-S1000	E158873-A6085-UL	
AUDIO MODULE	SPA-D1000	E158873-A6086-UL	
Network Microphone	SPA-M1000	E158873-A6087-UL	
Wall speaker	SPA-W100W, SPA-W100B	E158873-A6090-UL	

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, Issued: 2019-12-13 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, Issued: 2019-12-13 (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:	AUDIO MODULE
Model:	SPA-D1000
Rating:	Input: PoE: 44-57 Vdc, Max. 300 mA or PoE+: 50-57 Vdc, Max. 510 mA
Applicant Name and Address:	HANWHA TECHWIN CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

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

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

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

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

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

Supporting Documentation

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

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

B. Generic Inspection Instructions -

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

Product Description

Audio module is supplied by PoE (44-57 Vdc) and/or PoE+ (50-57 Vdc) which comply with ES1 and PS2. The product is enclosed by metal enclosure, and numerous components are mounted on PWB. The product can be connected to one speaker. The product also has alarm port and SD memory port.

Model Differences

N/A

Test Item Particulars

Product group	end product
Classification of use by	Ordinary person Children likely to be present
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	mating connector
Considered current rating of protective device	N/A
Equipment mobility	transportable
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Special installation location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	50
IP protection class	IPX0
Power systems	not AC mains
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.25

Technical Considerations

- ☐ The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50 °C

- ☐ The product is intended for use on the following power systems : No direct connection
- ☐ Considered current rating of protective device as part of the building installation (A) : N/A
- ☐ Mains supply tolerance (%) or absolute mains supply : No direct connection
- ☐ The equipment disconnect device is considered to be : N/A
- ☐ The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All accessible connector
- ☐ The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

New (4789961779)

- Max. normal load : Continuous operation with followings.

1) 1/8 Pmax for 8 ohm speaker for speaker port.

2) SD Card inserted

3) LED load is connected to the alarm port.

4790096504

- Alternate Coin cell (for RTC) (BAT200).

- Max. normal load : Continuous operation with followings.

1) 1/8 Pmax for 8 ohm speaker for speaker port.

2) SD Card inserted

3) LED load is connected to the alarm port.

4790223587

- Alternate Coin cell (for RTC) (BAT200).

- Max. normal load : Continuous operation with followings.

1) 1/8 Pmax for 8 ohm speaker for speaker port.

2) SD Card inserted

3) LED load is connected to the alarm port.

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's 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)
Battery replacement	Provided (on equipment, in instruction manual) CAUTION - Risk of fire or explosion if the battery is replaced by an incorrect type. Dispose of Used Batteries According to the Instructions

Issue Date: 2021-10-29

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Report Reference #

E158873-A6086-UL

Revision Date: 2021-12-20

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
-	-	-	-	-	-	-
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All model					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All model					
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.					
	All model					

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

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
Top enclosure (Mech)	Interchangeable	Interchangeable	Min. 2.0 mm thickness. See enclosure for dimension.	---	---	
Bottom enclosure (Mech)	Interchangeable	Interchangeable	Min. 1.0 mm thickness. See enclosure for dimension.	---	---	
Bridge Diode (BD100, BD101)	Interchangeable	Interchangeable	Rated 600 V, 3.0 A	---	---	
Transformer (T1)	ATECH OEM INC	ATS-1259R	130 deg.C	---	---	
Optocoupler (OC1)	COSMO ELECTRONICS CORP	KPC357NT	Isolation Voltage: 3750. Max. Operation Temperature:110 deg. C	FPQU2	UL (E169586)	
Optocoupler (PC700, PC1)	LITE-ON TECHNOLOGY CORP	LTV-356T(%) (c)	Isolation Voltage: 3750. Max. Operation Temperature:110 deg. C	FPQU2	UL (E113898)	
Coin cell (for RTC) (BAT200)	SEIKO INSTRUMENTS INC MICRO- ENERGY DIV	MS621T	Lithium (Coin), Rechargeable, Max charging voltage: 3.4 Vdc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Coin cell (for RTC) (BAT200) - Alternate	PANASONIC CORP ORATION	ML621*	Lithium alloy (Coin), Max charging current: 300 mA, Max charging voltage: 12 Vdc	BBCV2	UL (MH12210)	
Protective device for Coin cell (R219)	Interchangeable	Interchangeable	Rated 1 Kohm	---	---	
Protective device for Coin cell (D219)	Interchangeable	Interchangeable	Rated 80 V, 250 mA	---	---	

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Report Reference #

E158873-A6086-UL

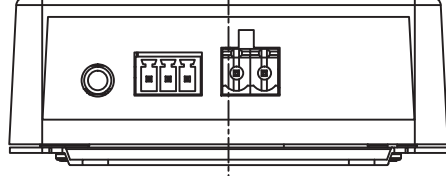
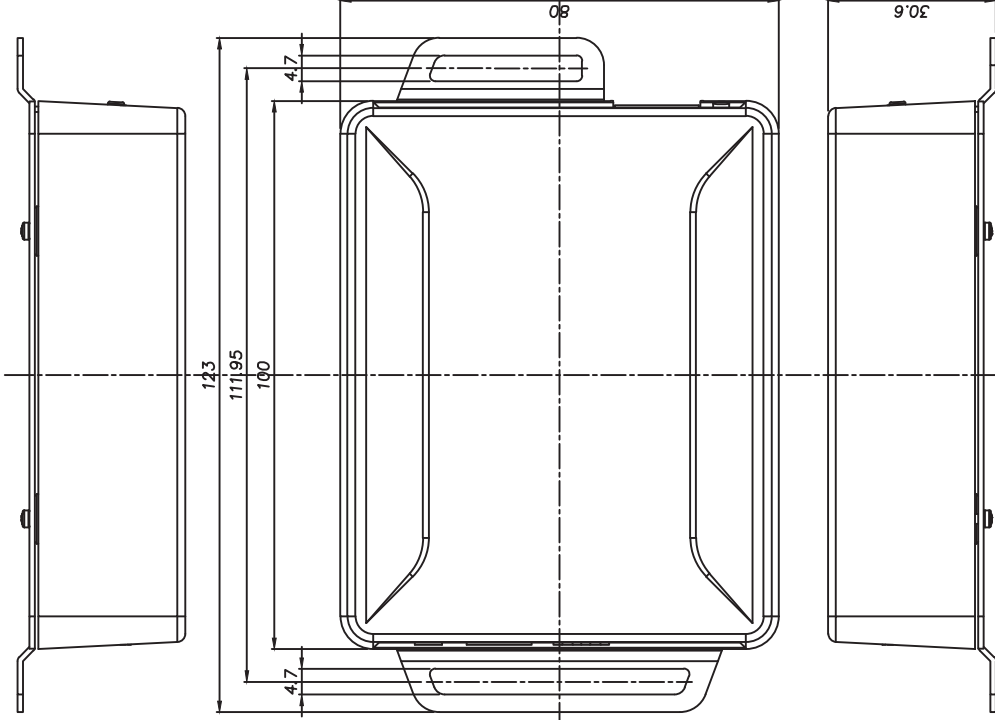
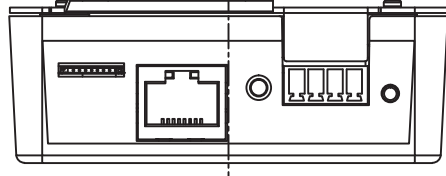
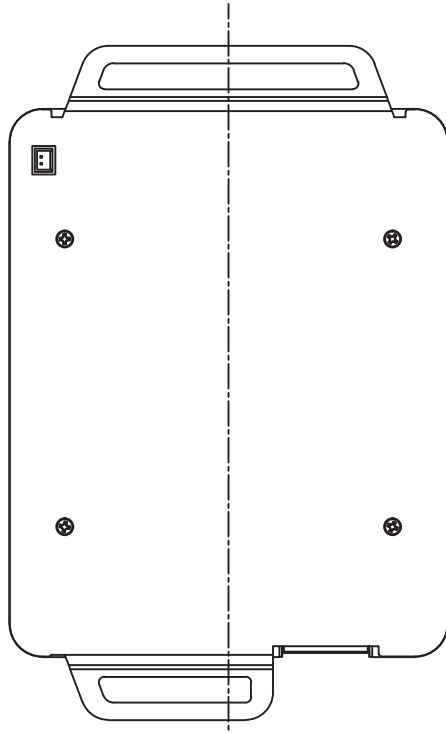
Revision Date: 2021-12-20

Printed wiring board	SKY Technology Co Ltd	SKY2	Min. V-0, 130 deg.C	ZPMV2	UL (E513927)	
Printed wiring board - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg.C	ZPMV2	UL	
Label	Interchangeable	Interchangeable	Min. 60 deg.C if max. Surface temperature not specified.	PGDQ2 or PGJI2, PGAA	UL	

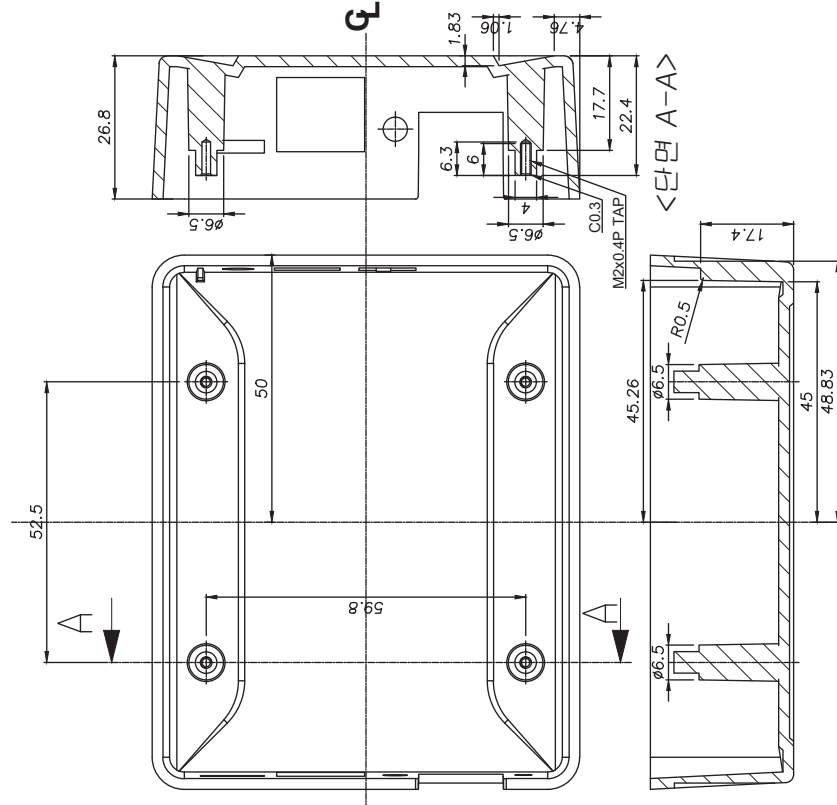
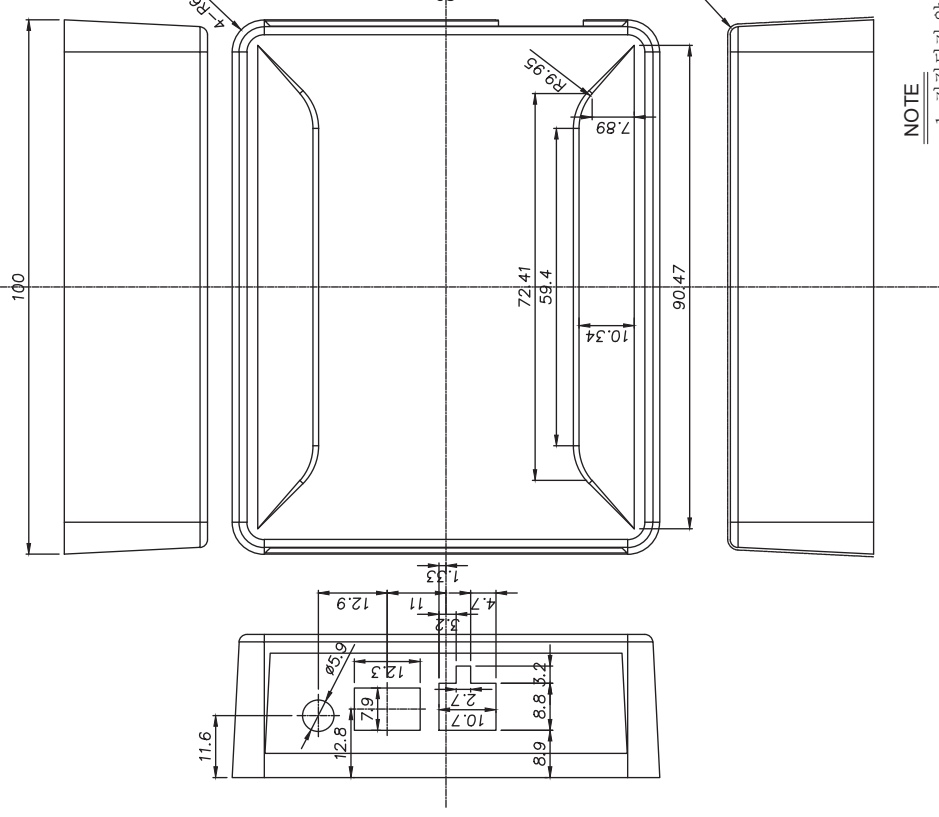
Enclosures

Type	Supplement Id	Description
Photographs	03-01	External
Photographs	03-02	External
Photographs	03-03	Connector
Photographs	03-04	Connector
Photographs	03-05	Internal
Photographs	03-06	Main board Top
Photographs	03-07	Main board Bottom
Diagrams	04-01	Mechanical drawing
Miscellaneous	07-01	Label
Miscellaneous	07-02	CRD for Dual language
Miscellaneous	07-03	T1

SPA-D1000



다들 물어봐서 물어보기



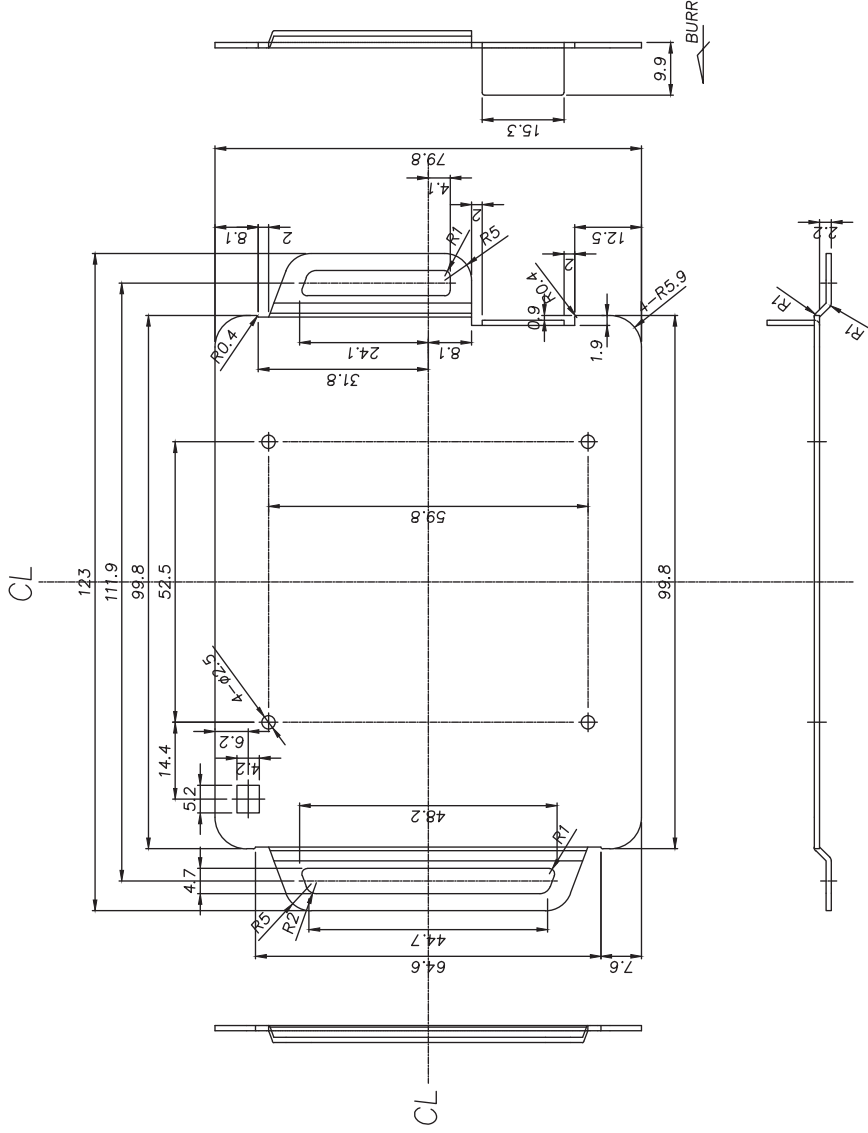
1. 지정되지 않은 구배는 1°
2. 샘플승인후 양산할것.
3. CAVITY=1
4. 샌딩 후 도장처리 할것.

MODEL	IP-1015BX		MATERIAL	ALD12	NAME	FRONT COVER
DESIGNED	CHECKED	APPROVED	FINISH	의정사양참조		
차지훈			SCALE	1/1	DWG.NO	97A0032000



mm

DIMENSION				f	m	⊙	v	DATE	SIGN	REVISION	DESIGNED	용도
A				0.5~3	±0.05	±0.1	±0.2	21.4.5		원도작성	최지훈	
L				3~6	±0.05	±0.1	±0.3		1			기본제작용
L				6~30	±0.1	±0.2	±0.5		2			
O				30~120	±0.15	±0.3	±0.8		3			금형제작용
W				120~400	±0.2	±0.5	±1.2		4			
A				400~1000	±0.3	±0.8	±2		5			금형수정용
N				1000~2000	±0.5	±1.2	±3		6			
C				2000~4000	—	±2	±4		7			양산용



NOTE
1. 샘플 승인 후 양산할 것.
2. BURR 및 비틀림 없음.
3. 지시되지 않은 R=0.5

MODEL	IP-1015BX	MATERIAL	CR 1.0t	NAME	BOTTOM COVER
DESIGNED	우광성	CHECKED	APPROVED	DWG.NO	61A0066000
SCALE	1/1				

AUDIO MODULE

MODEL : SPA-D1000

PoE (802.3af) : 44V-57V $\overline{\text{=}}$, max 300mA

PoE+ (802.3at) : 50V-57V $\overline{\text{=}}$, max 510mA

M/C : SPA-D1000/KEX

Hanwha Techwin Co., Ltd.

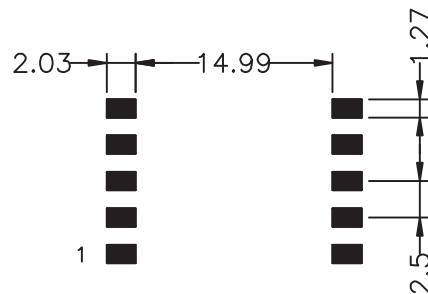
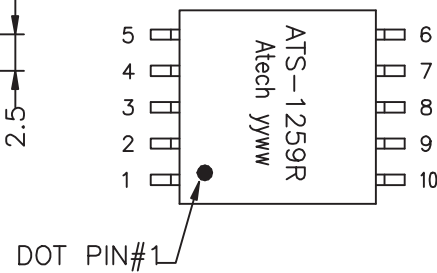
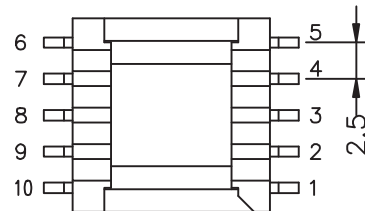
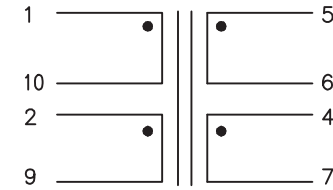
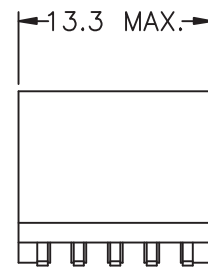
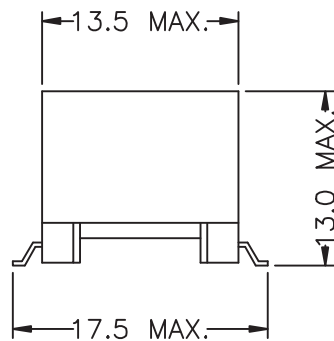
MADE IN KOREA

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



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

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



SUGGESTED P.C.B LAYOUT

ELECTRICAL CHARACTERISTICS :

- DCR : 1-10 = 135mΩ MAX.
2-9 = 280mΩ MAX.
4-7 = 75mΩ MAX.
5-6 = 65mΩ MAX.
- INDUCTANCE : (@200KHz, 0.1Vrms) : 45uH ±10%
- TURN RATIO : (@100KHz, 0.1Vrms) 1-10 : 5-6 = 3 ±3%
1-10 : 4-7 = 3 ±3%
1-10 : 2-9 = 2.625 ±3%
- HI-POT : (@1500VAC, 1mA, 2SEC) 1-2 , 1-5 , 1-4
- RoHS COMPLIANT

								TITLE TRANSFORMER	
								DWG. NO. ATS-1259R	
RELEASE		8/20/2013	SHIRLEY	BETTY	BETTY	UNITS: M/M	SAFETY		SHEET 1 OF 1
NO:	DESCRIPTION	DATE	BY	CHK	APPD	DATE	P/N:	DRAW SHIRLEY	
REVISIONS						08/20/13			

MATERIAL LIST

PART NO.: ATS-1259R

Item	Material	Manufacturer	UL File No.
BOBBIN	E4008 EP13	SUMITOMO CHEMICAL CO LTD	E54705
	P180 0.25mm	ELEKTRISOLA (MALAYSIA) SDN BHD	E143312
WIRE	P180 0.15mm	ELEKTRISOLA (MALAYSIA) SDN BHD	E143312
Solder bar	Sn3.0Ag-0.5Cu	SHENZHEN YIK SHING TAT INDUSTRIAL CO LTD	N/A
TAPE	KA180 W7.9mm	SYMBIO INC	E50292
	PZ W7.9mm	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
CORE	Mn-Zn EP13	ACME ELECTRONICS CORPORATION	N/A
EPOXY	3300	DONGGUAN EATTO ELECTRONIC MATERIAL CO LTD	E218090

