



Thank you for giving UL the opportunity to partner with you.

Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at <https://www.ul.com/about/locations>.

Please find attached the related material

For your convenience, the below describes the related updates:

For revised/new documentation, please reference 2023-02-20 in the page headings

E158873-volX14-Index
E158873-20230220-CertificateofCompliance
E158873-A6148-DescriptionUL
Figure-10-Total
E158873-A6148-TestRecordUL

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Times change, Trust Remains™

File		Volume	Page	Date:
E158873	Index	X14	1	20-Feb-23

Index

<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	
HORN SPEAKER	SPA-H100W, SPA-H100B	E158873-A6143-UL	
CEILING SPEAKER	SPA-C110B, SPA-C110W	E158873-A6148-UL	

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2306486-0
Report Reference E158873-20230220
Date 21-Feb-2023

Issued to: Hanwha Techwin Co Ltd
6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si,
Gyeonggi-do 13488
Republic of Korea

This is to certify that representative samples of AZOT7 - Audio/Video, Information and Communication Technology Equipment Certified for Canada
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: CSA C22.2 No. 62368-1:19, 3rd Ed., Issue Date: 2019-12-13, Revision Date: 2021-10-22

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.


Deborah Jennings-Conner, VP Regulatory Services
UL LLC



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CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2306486-0
Report Reference E158873-20230220
Date 21-Feb-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
SPA-C110B	CEILING SPEAKER
SPA-C110W	CEILING SPEAKER

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2307457-0
Report Reference E158873-20230220
Date 21-Feb-2023

Issued to: Hanwha Techwin Co Ltd
6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si,
Gyeonggi-do 13488
Republic of Korea

This is to certify that AZOT - Audio/Video, Information and Communication
representative samples of Technology Equipment
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 62368-1, 3rd Ed., Issue Date: 2019-12-13, Revision
Date: 2021-10-22

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.


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UL LLC



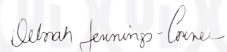
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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2307457-0
Report Reference E158873-20230220
Date 21-Feb-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
SPA-C110B	CEILING SPEAKER
SPA-C110W	CEILING SPEAKER


Deborah Jennings-Conner, VP Regulatory Services
UL LLC



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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:	CEILING SPEAKER
Model:	SPA-C110B, SPA-C110W
Rating:	PoE (44-57 Vdc), 300 mA or PoE+ (50-57 Vdc), 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

CEILING SPEAKER has been designed for INDOOR use and integrated a bracket for ceiling mount.

It is a commercial equipment supplied by PoE/PoE+ (Power over Ethernet) and installed by service personnel

Model Differences

SPA-C110B is basic model.

SPA-C110W is identical to basic model except model designation and enclosure color.

Test Item Particulars

Product group	end product
Classification of use by	Instructed 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	wall/ceiling-mounted
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)	--
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)	2.68

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 following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

4790708619

- Maximum Normal Load: Continuous operation (Applied 1/8 Pmax for speaker).

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, dc, current/power)
Installation Manual	These servicing instructions are for use by qualified service personnel only.
Hard Copy	A. IMPORTANT or ATTENTION or similar wording. B. Please check 'Manuals' from our website, before connecting to the supply. C. Company website URL (https://www.~~) or QR code.
(Website) Manual - 1	This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (44-57 Vdc), 300 mA or PoE+ (50-57 Vdc), 510 mA.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

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 models					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All models					
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.					
	-					

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
Front Mesh Enclosure (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 0.6 mm thickness.	-	-	
Front Enclosure (Plastic)	LG CHEM LTD	AF365(&)	Min. 2.0 mm thickness, rated Min. V- 0, 80 deg. C.	QMFZ2	UL (E67171)	
Front Enclosure (Plastic) -Alternative	LOTTE CHEMICAL CORPORATION	VE-0800	Min. 2.0 mm thickness, rated Min. V- 0, 60 deg. C.	QMFZ2	UL (E115797)	
Side Enclosure (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness.	-	-	
Bracket (Metal)	Interchangeable	Interchangeable	Steel, Min. 2.0 mm thickness.	-	-	
Internal Wire	Interchangeable	Interchangeable	Style No. 1015 marked VW-1	AVLV2	UL	
Tubing for Speaker (+) pin	DAEIL COATING CO LTD	DFA-205NR	600 Vrms, 105 deg. C, VW-1	VDTU2	UL (E104390)	
Tubing for Speaker (+) pin - Alternate	Interchangeable	Interchangeable	600 Vrms, 105 deg. C, VW-1	VDTU2	UL	
Tubing for Speaker (-) pin	DAEIL COATING CO LTD	DFA-110NR	600 Vrms, 105 deg. C, VW-1	VDTU2	UL (E104390)	
Tubing for Speaker (-) pin - Alternate	Interchangeable	Interchangeable	600 Vrms, 105 deg. C, VW-1	VDTU2	UL	
Audio Module	Hanwha Techwin Co., Ltd.	SPA-D1000	Rated: 44-57 Vdc, Max. 300 mA or 50-57 Vdc, Max 510 mA	AZOT	UL (E158873)	
Speaker	Interchangeable	Interchangeable	8 Ω , 30 W	-	-	
Label	Interchangeable	Interchangeable	Min. 50 deg. C if max. Surface temperature not specified.	PGDQ2 or PGJ12, PGAA	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-03	Internal View
Photographs	03-04	Audio Module
Photographs	03-05	Audio Module PCB View - Top
Photographs	03-06	Audio Module PCB View - Bottom
Photographs	03-07	Speaker View - Top
Photographs	03-08	Speaker View - Bottom
Manuals	06-01	Manual
Miscellaneous	07-01	Label

The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SAFETY INFORMATION

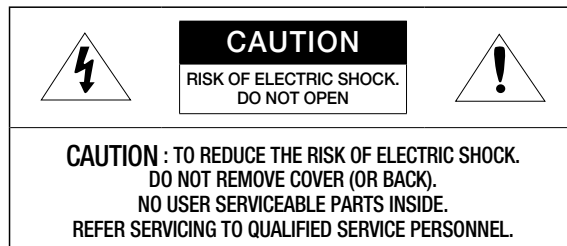
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

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.

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.



The ITE is to be connected only to (PoE/PoE+) networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE/PoE+) in accordance with IEEE 802.3af/at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

SAFETY INFORMATION

Important Safety Instructions

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. To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.
14. Unplug this apparatus during lighting storms or when unused for long periods of time.
15. 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.
16. This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE(802.3af) : 44V-57V (, max 300mA / PoE+(802.3at) : 50V-57V (, max 510mA.
17. This product is intended to be supplied by isolation power.
18. If you use excessive force when installing the product, the product may be damaged and malfunction.
If you forcibly install the product using non-compliant tools, the product may be damaged.
19. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.
20. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
21. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
22. Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
23. Do not place this apparatus near conductive material.
24. Do not attempt to service this apparatus yourself.

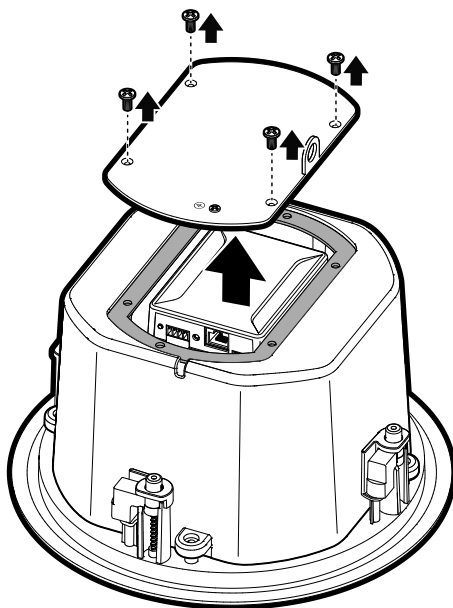


SAFETY INFORMATION

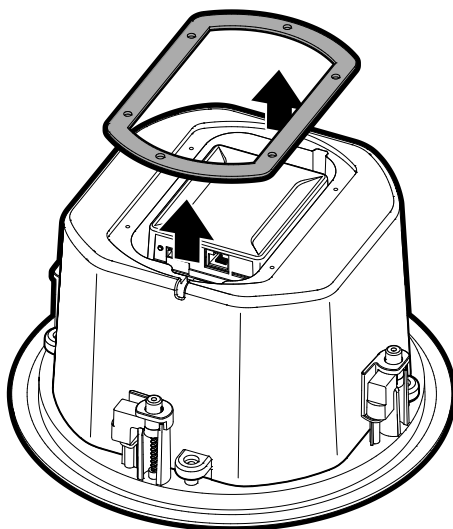
- 25. Do not place a glass of water on the product.
- 26. Do not install near any magnetic sources.
- 27. Do not place heavy items on the product.
- 28. Please wear protective gloves when installing/removing the product.
The high temperature of the product surface may cause a burn.
- 29. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstroke, communication interruption.
- 30. In particular installation environments, there might be interference in radio communications.
When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.
- 31. An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
- 32. Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.
The battery cannot be replaced.
- 33. Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.
- 34. Select an installation site that can hold at least 5 times the product's weight.
- 35. Stuck-in or peeled-off cables can cause damage to the product or a fire.
- 36. For safety purposes, keep anyone else away from the installation site.
And put aside personal belongings from the site, just in case.
- 37. We do not guarantee the quality of third-party products (e.g. accessories) that you separately purchase.
- 38. The product must be installed on the ceiling.

INSTALLATION

1



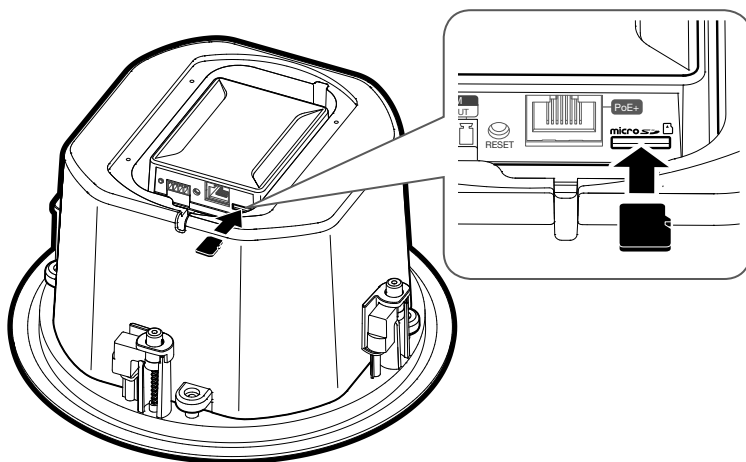
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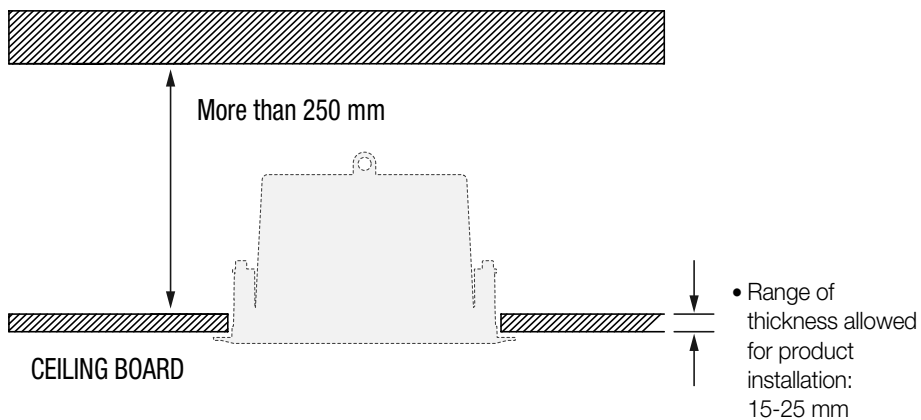
INSTALLATION

3

- Not Included : Micro SD Card

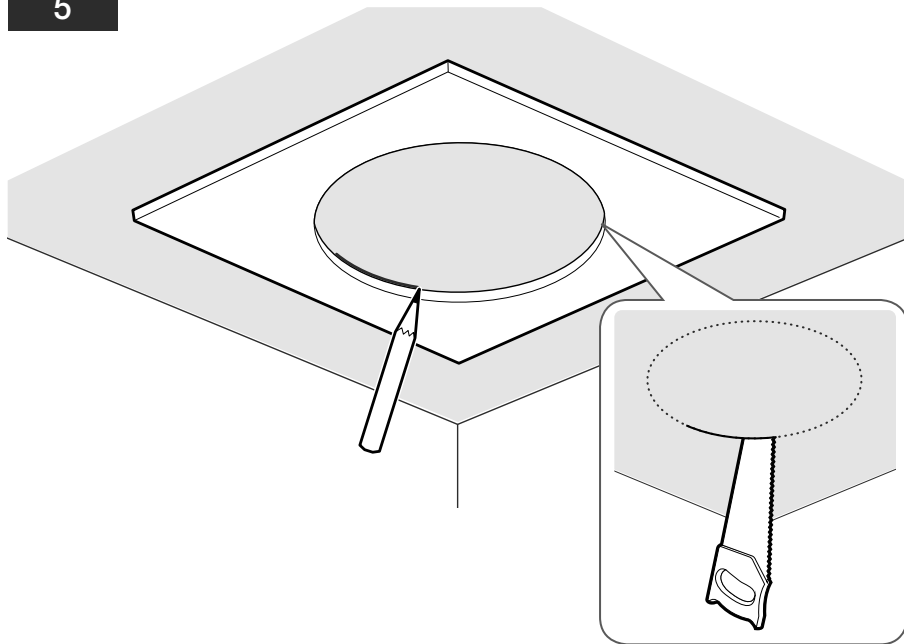


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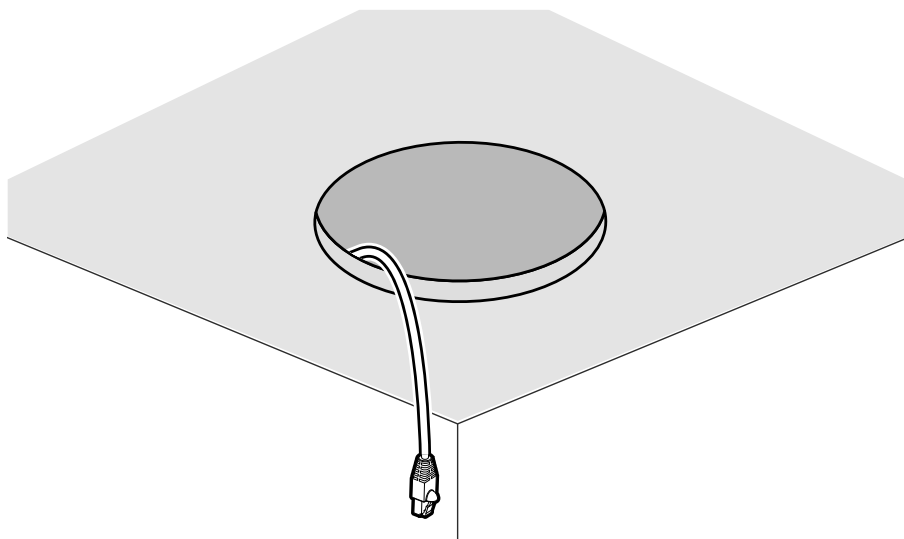


INSTALLATION

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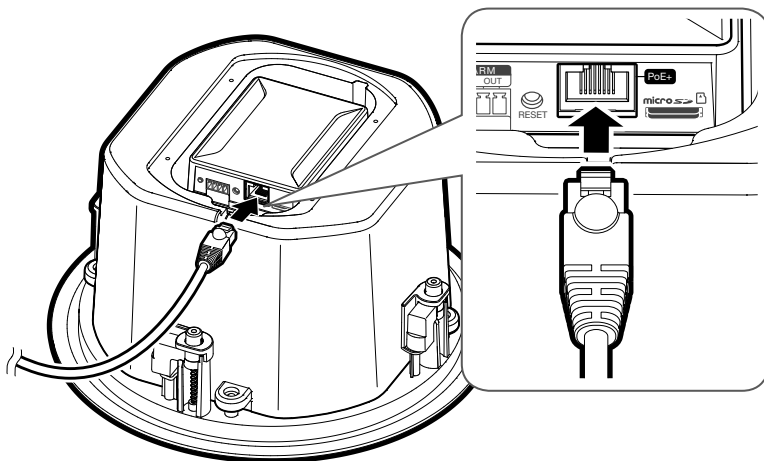


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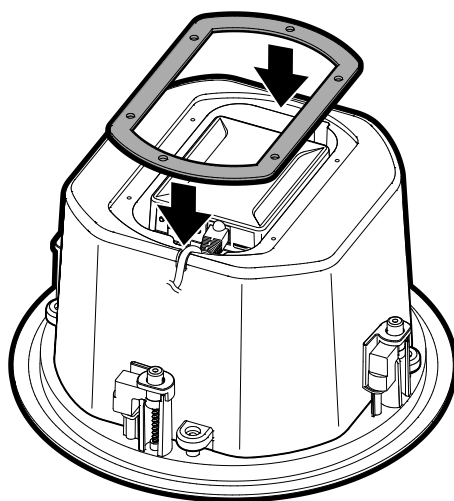


INSTALLATION

7

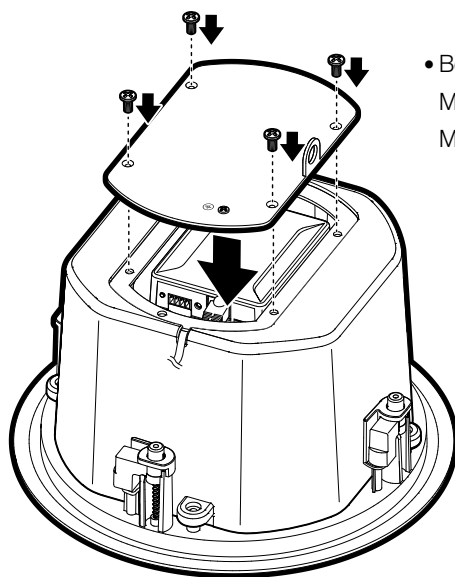


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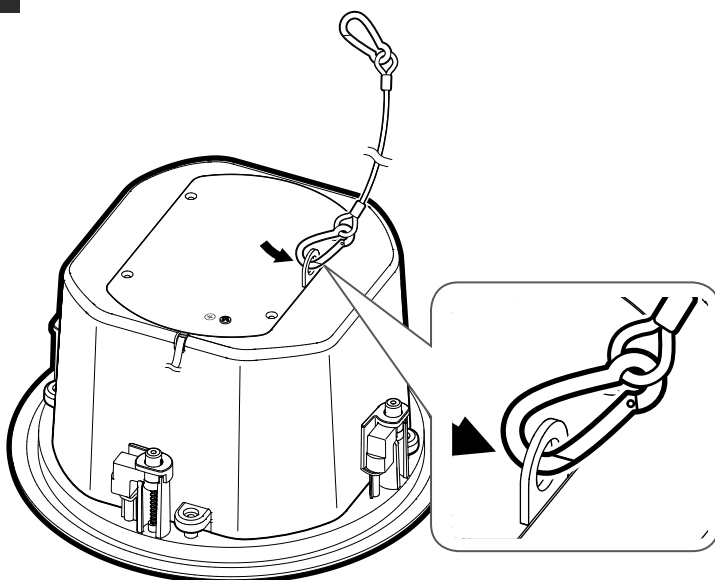
INSTALLATION

9



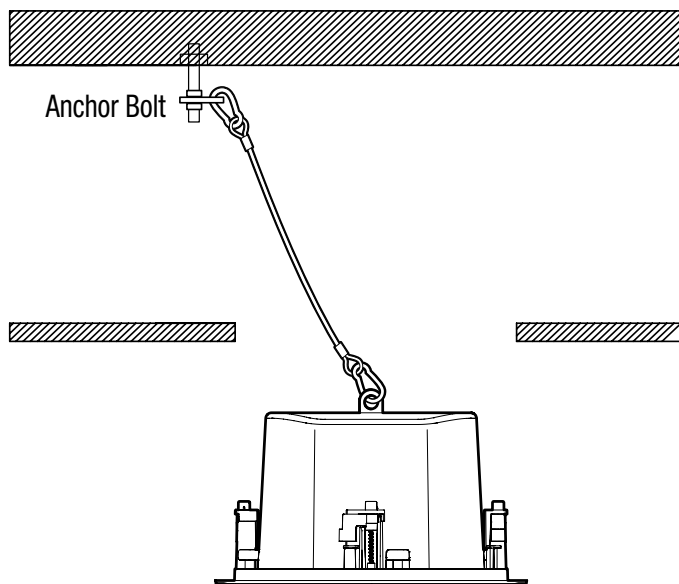
- Bolt Tightening Torque
Minimum : 6 kgf.cm
Maximum : 8 kgf.cm

10

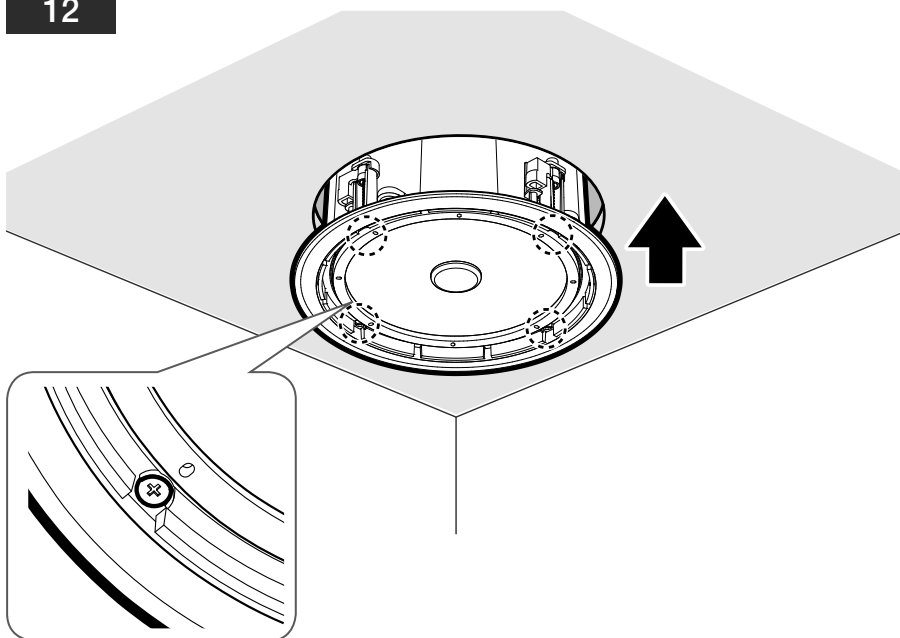


INSTALLATION

11

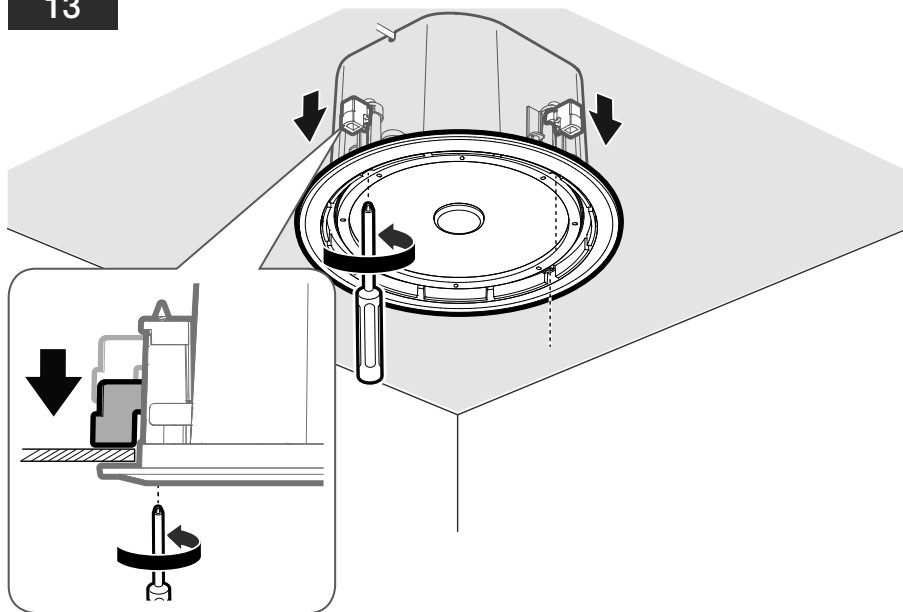


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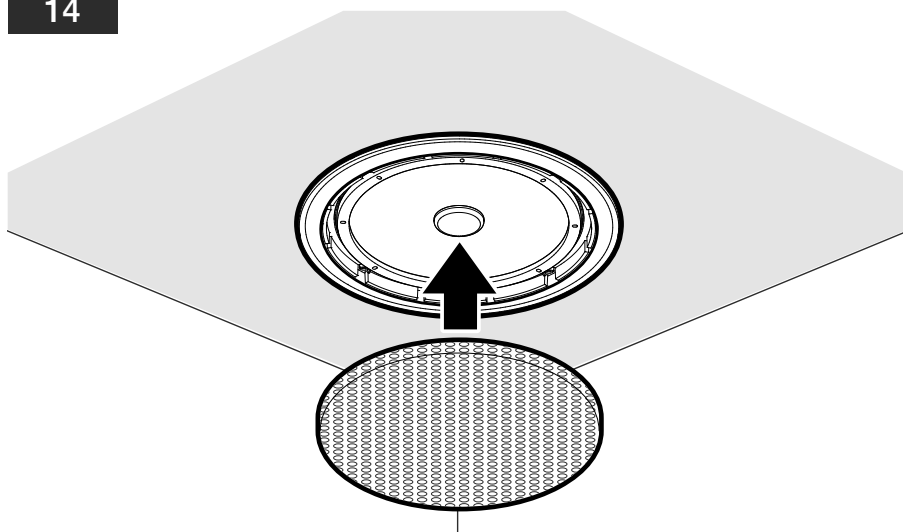


INSTALLATION

13



14



CEILING SPEAKER
MODEL: SPA-C110B

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

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

M/C:SPA-C110B/KEX



May. 2021

S/N:ZQESxxxxxxxxxxxx

F/W Ver:

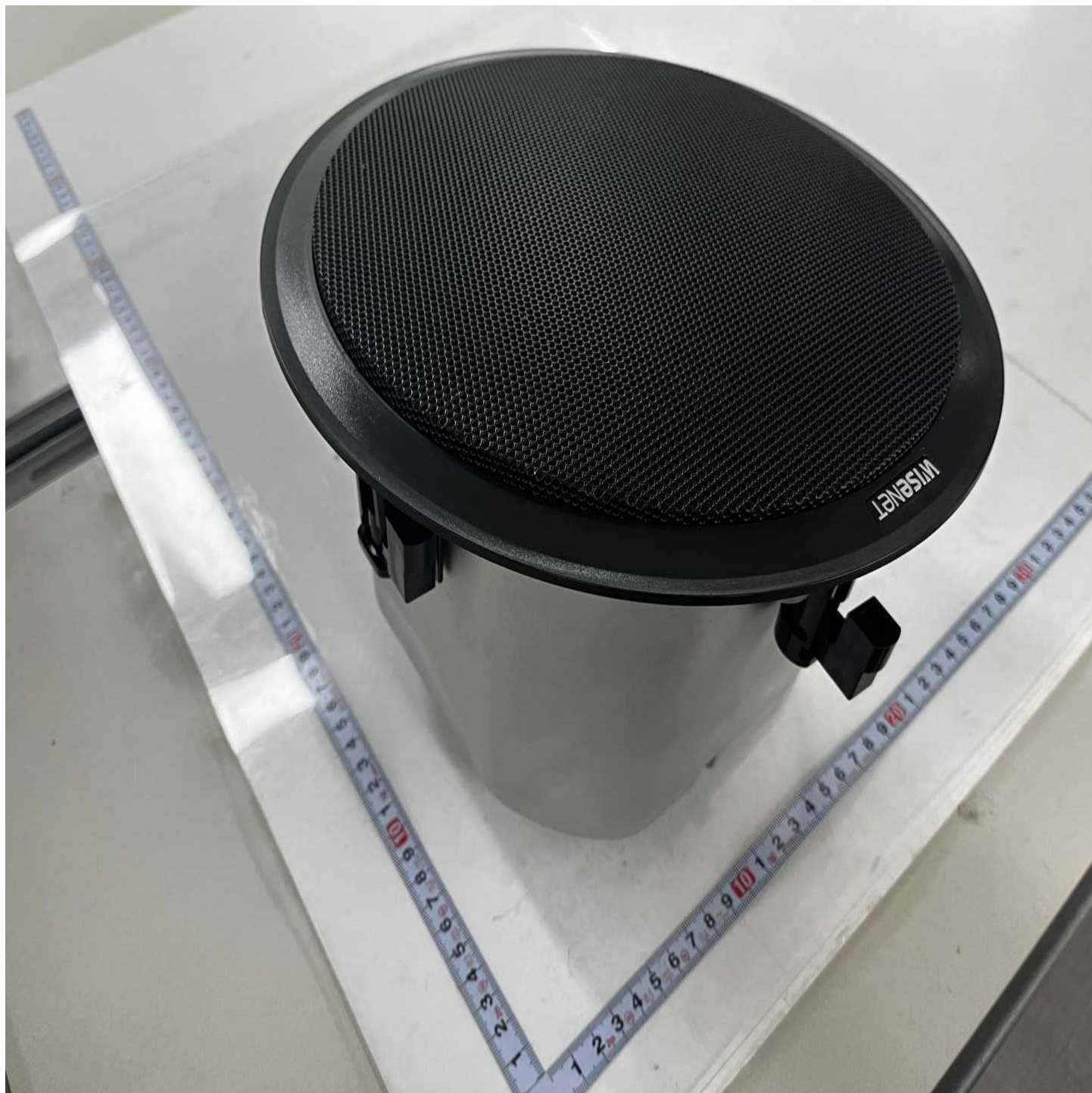
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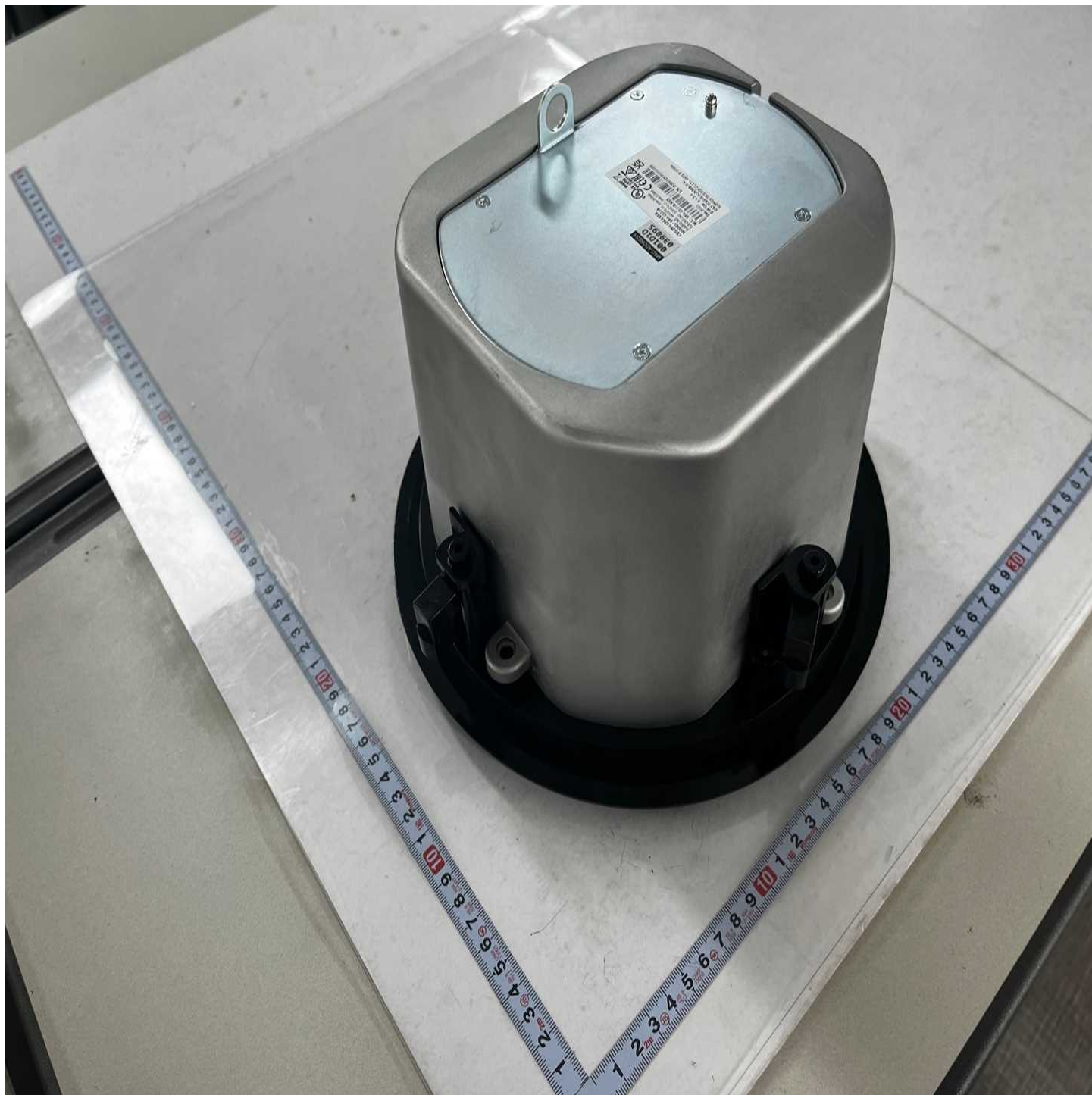
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HANWHA TECHWIN CO.,LTD. MADE IN KOREA



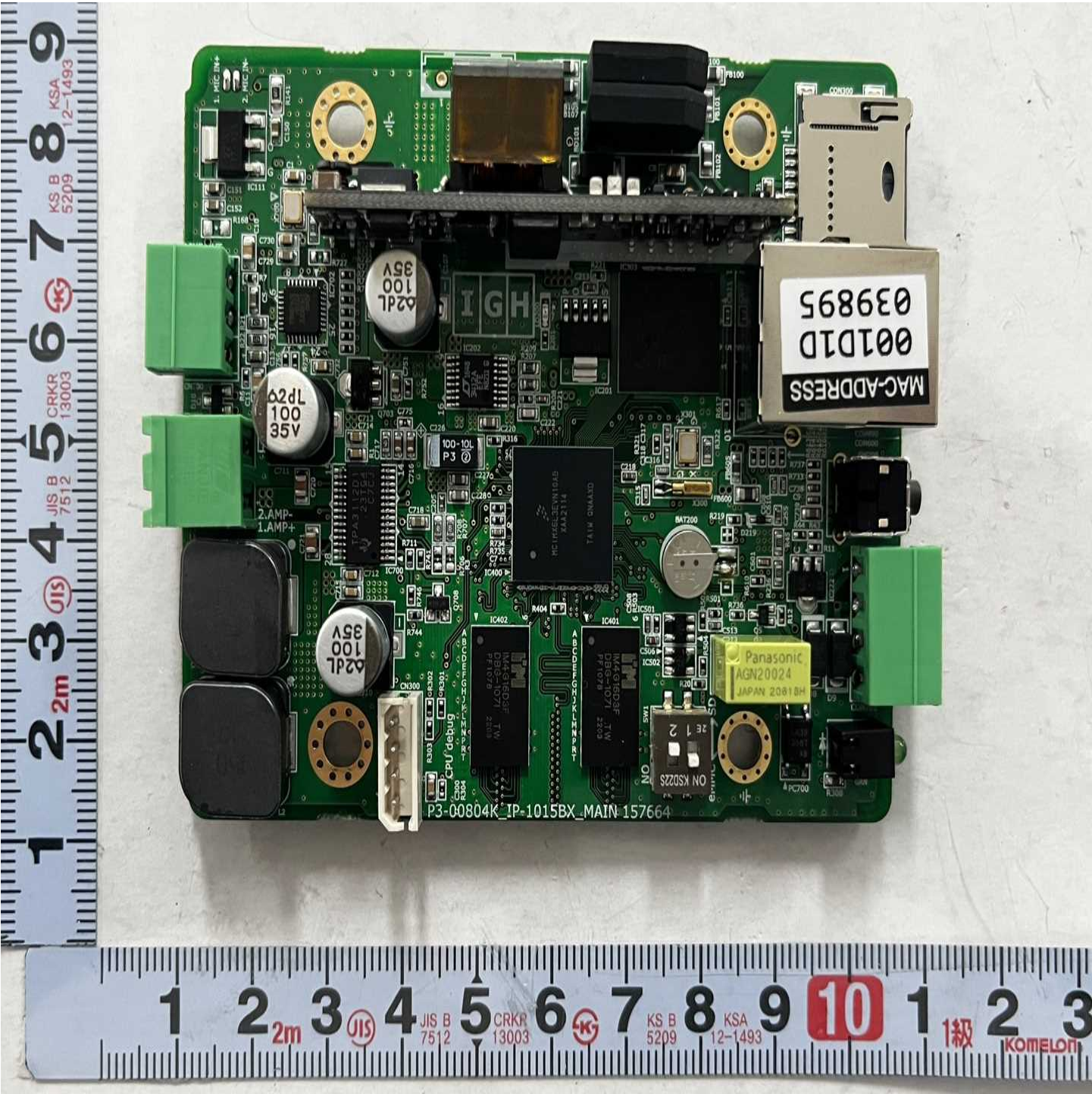
UK
CA

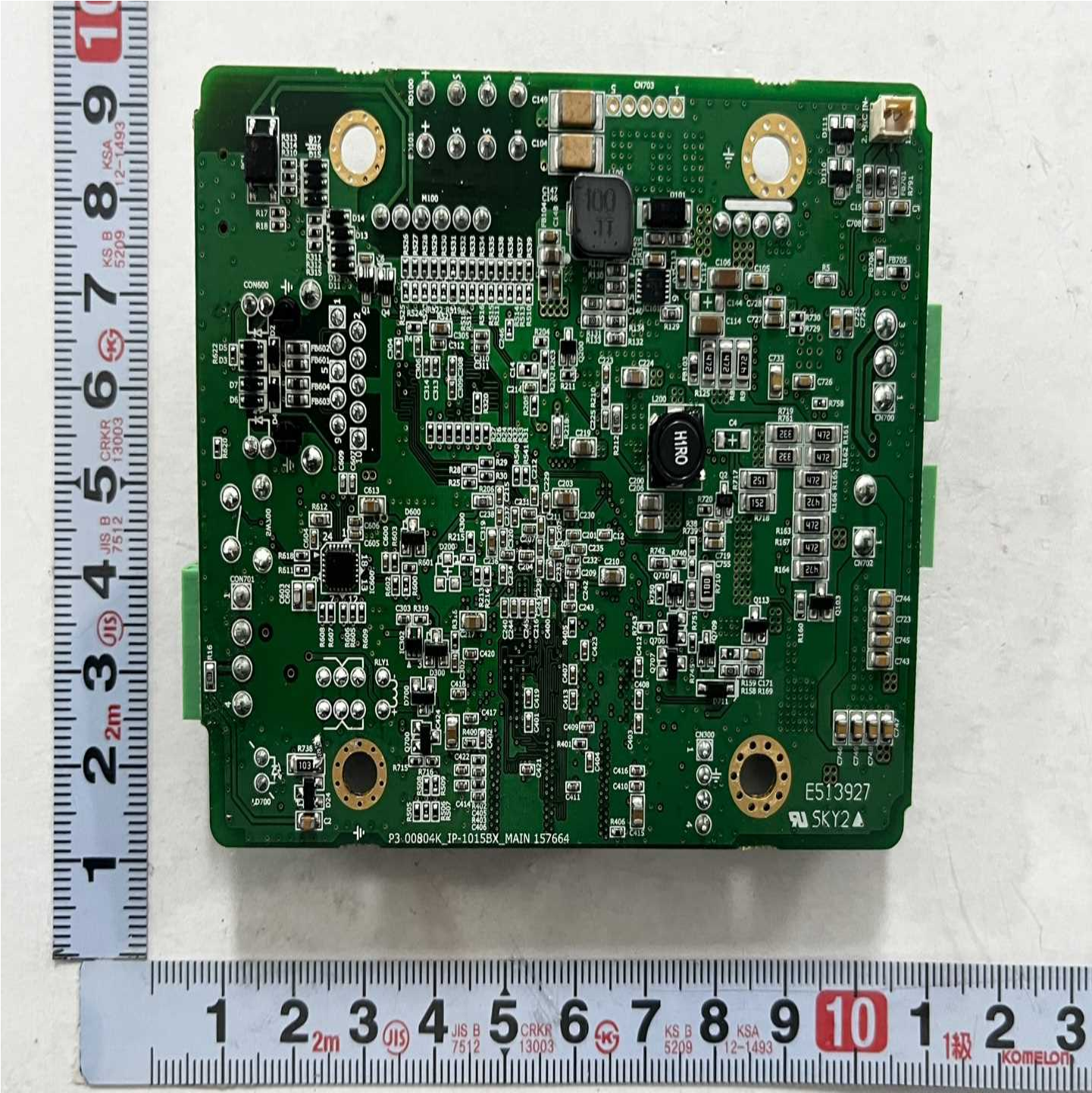
















Test Record No. 1

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of CEILING SPEAKER, SPA-C110B.
3. Only the test listed were considered necessary.

The following tests were conducted:

Tests performed (name of test and test clause):	Testing location: CTK Co., Ltd. / 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17141, Korea (WTDP)
8.7 – WALL, CEILING, OR OTHER STRUCTURE MOUNTING TESTS	
B.2.5 – INPUT TEST: PRODUCTS CONTAINING AN AUDIO AMPLIFIER	
B.2.6, 5.4.1.4, 6.3, 9.3, B.1.5 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT	
B.3 – SIMULATED ABNORMAL OPERATING CONDITIONS	
B.4 – SIMULATED SINGLE FAULT CONDITIONS	
The following tests were waived:	Rationale for Waiving

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 part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description
Datasheet	02-01	Datasheet
Attachment	02-02	Dual language safety labeling CRD