



SPEAKER SYSTEM

VXC2P Reference Manual

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Introduction

About this product

This is a speaker system used for audio amplification in conference rooms, etc.

This speaker, one of the devices that make up the ADECIA solution, can be attached to the ceiling of an office conference room.

✓ Supports Dante and PoE (Power over Ethernet)

This unit can be incorporated into digital audio network systems such as ADECIA.

✓ Suitable for remote conferences in large spaces

Providing uniform, high sound quality and volume, this unit allows you to participate in meetings where the sound environment will not be affected by your seating position.

✓ Adaptable to varying room configurations

This unit can adapt to various room configurations, whether one room is divided with movable partitions or multiple rooms share the same ADECIA devices and audio signals.

Available utility software

The following utility software can be used to set up this unit according to its use and environment. For information on what can be done with each software, refer to “Controlling with software” (page 15).

RM-CR Web GUI Device Manager

This is software for controlling RM-CR as well as devices connected to RM-CR. This software runs on a Windows browser.

RM Device Finder

This is Windows software for controlling ADECIA devices on the same network. It detects the ADECIA devices on the network, displays the Device Manager for each device, and updates firmware.

ProVisionaire Kiosk

This is software for controlling devices. It runs on a Windows computer or iPad/iPhone.

ProVisionaire Control PLUS

This is Windows software for designing ProVisionaire Kiosk controllers.

ProVisionaire Design

This is Windows software for designing and managing an entire sound system made up of a processor with added peripheral devices.

Available manuals

The manuals for this product can be downloaded in the PDF format from the Yamaha website.

▼ Yamaha website (Downloads)

<https://download.yamaha.com/>

Product manuals





- | | |
|--|---|
| <input type="checkbox"/> Owner’s Manual (included) | This provides details on using this unit. |
| <input type="checkbox"/> Installation/Dimensional diagrams (included) | This contains an overview of the installation as well as dimensional diagrams for this unit. |
| <input type="checkbox"/> Safety Guide (included) | This contains the precautions for using this unit safely. |
| <input checked="" type="checkbox"/> Reference Manual (this document) | This provides details on connecting and using this unit. |
| <input type="checkbox"/> Remote Control Protocol Specifications | This provides details on command information for acquiring and controlling information about this unit from external devices. |

Other related manuals

- | | |
|--|---|
| <input type="checkbox"/> RM-CR Reference Manual | This provides details on setting up RM-CR and peripheral devices as well as on using RM-CR. |
| <input type="checkbox"/> RM-CR RM-CG RM-TT Web GUI Device Manager Operation Guide | This provides details on the Web GUI Device Manager for each RM-series device. |
| <input type="checkbox"/> RM Device Finder User Guide | This provides details on using RM Device Finder. It is included in the download file for the RM Device Finder software. |
| <input type="checkbox"/> ProVisionaire Kiosk User Guide | This provides details on using ProVisionaire Kiosk. |
| <input type="checkbox"/> ProVisionaire Control PLUS User Guide | This provides details on using ProVisionaire Control PLUS. |
| <input type="checkbox"/> ProVisionaire Design User Guide | This provides details on using ProVisionaire Design. |

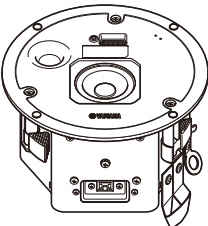
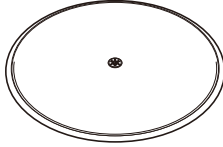

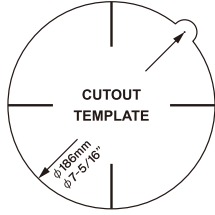
About this document

This manual uses the following signal words for important information.

 WARNING	This content indicates “risk of serious injury or death.”
 CAUTION	This content indicates “risk of injury.”
 NOTICE	Indicates content that you must observe in order to prevent the product from malfunctioning, being damaged, or operating incorrectly, and to avoid data loss.
 NOTE	Indicates information that is related to operation and use. Read this for your reference.

- The illustrations in this manual are for instructional purposes only.
- The company names and product names in this manual are trademarks or registered trademarks of their respective companies.
- Yamaha continuously makes improvements and updates to the software included in this product. You can download the latest software from the Yamaha website.
- The contents of this manual apply to the latest specifications as of the publishing date. To obtain the latest manual, access the Yamaha website then download the manual file.

Included items

A Speaker  x 1	B Grille  x 1	C Safety wire 635 mm  x 1	D Cutout template  x 1
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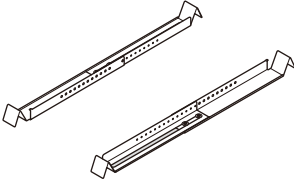
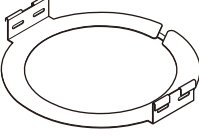

- Owner's Manual
- Safety Guide
- Installation/dimensional diagram

* An Ethernet cable is not included.

Separately sold items

E Reinforcing Bracket Kit AB-C2

Included items

Tile rails  x 2	C-ring  x 1	Screws (S-TITE M4 x 8 mm)  x 2
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* This document includes installation instructions for AB-C2.

Items to prepare

• PSE compliant with IEEE802.3at (PoE+) or IEEE802.3af (PoE)

Used between this unit and a Dante device, such as a processor, in order to supply power to this unit.

* PSE (power sourcing equipment): Generic term for PoE injector and PoE network switch

• Ethernet cable

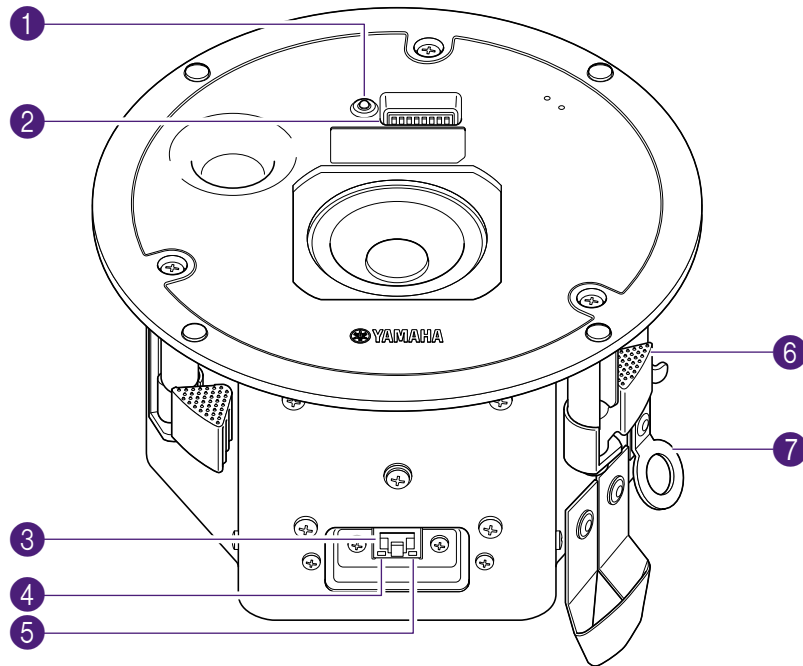
Used between the Dante device and PSE, and between the PSE and this unit.



- Prepare a CAT5e or higher Ethernet cable, which supports the maximum power supply voltage (57 V) of the IEEE802.3at standard.
- Cables up to a maximum length of 100 m can be used.
- In order to prevent electromagnetic interference, use STP (shielded twisted pair) cables.

Part names and functions

Part names



1 Power indicator

This indicator shows the power supply status.

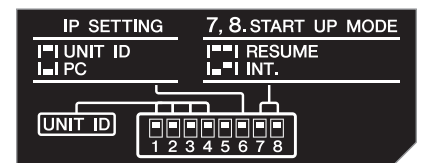
	Green	Lit	Power is properly supplied.
	Green	Flashing quickly	Initializing
	Green	Flashing	Responding to "Identify" from the utility software
	Unlit		Unit is not turned on. Approximately 30 seconds have passed after startup.

2 Device setting DIP switch

This switch is for specifying startup settings for this device.

A label explaining the settings is attached below the DIP switch.

☞ [Setting the DIP switch \(page 8\)](#)



3 Dante/NETWORK port




RJ-45 port for connecting Dante devices. (The illustration shows the device with the port cover removed.)



Do not connect any device here other than a Dante-compatible device or a device (including a computer) that supports Gigabit Ethernet.


4 SYNC indicator

This indicator shows the operating status of the Dante network.

	Green	Lit	Unit is synchronized as a clock follower device.
	Green	Flashing	Unit is synchronized as a clock leader device.
	Orange	Flashing	Incorrect word clock settings between Dante networks. → Set the clock leader and sampling frequency correctly with Dante Controller.

5 LINK/ACT indicator

This indicator shows the communication status of the Dante/NETWORK port.

	Green	Flashing quickly	Ethernet cable is correctly connected.
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6 Clamp

Holds the C-ring against the ceiling to secure the speaker when attaching it to the ceiling.

☞ [Installing the **A** speaker in the ceiling. \(page 13\)](#)

7 Safety wire mount

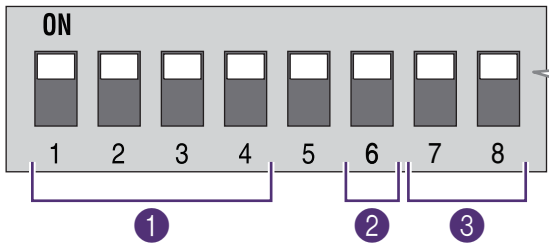
Attach the safety wire to this and a sturdy steel beam, etc.

☞ [Attaching the **C** safety wire to the ceiling. \(page 12\)](#)

Setting the DIP switch

Set the seven switches to configure this unit.

DIP switch arrangement



Switch	Description
	Switch is up. (default)
	Switch is down.

- 1** DIP switches 1 to 4 **UNIT ID** Individual ID (specify to avoid duplicates on the same network)
- 2** DIP switch 6 **IP SETTING** Specifies IP address
- 3** DIP switches 7 and 8 **START UP MODE** Specifies startup mode



NOTE

- Before changing settings, turn off the PSE (power sourcing equipment).
- Even if the settings are changed while the unit is on, the changes will not be applied until it has been turned off.

1 DIP switches 1 to 4 (UNIT ID)

Specify the [UNIT ID] (individual ID) setting for this unit.

[UNIT ID] can be set to a number between 101 and 115 (hexadecimal: 65 to 73), which is the value set with DIP switches 1 to 4 plus 100.

UNIT ID	DIP switch			
	1	2	3	4
101				
102				
103				
104				
105				
106				
107				
108				

UNIT ID	DIP switch			
	1	2	3	4
109				
110				
111				
112				
113				
114				
115				
RESERVED				





NOTE

When multiple VXC2P are connected to the same network, make sure that their [UNIT ID] settings are not the same. By setting the DIP switch to "RESERVED", [UNIT ID] can be set to a value other than 101 to 115. For details, refer to the manuals for the various applications, such as Remote Control Protocol Specifications.





2 DIP switch 6 (IP SETTING)

Select the method for setting the IP address for communicating with external devices.

Setting	DIP switch		Description
	6		
UNIT ID			The [UNIT ID] setting is part of the IP address. The IP address will be set as follows. 192.168.0.<UNIT ID>
PC			If there is a DHCP server, the IP address is set by the DHCP server. If there is no DHCP server, the IP address is set by link-local addressing.

3 DIP switches 7 and 8 (START UP MODE)

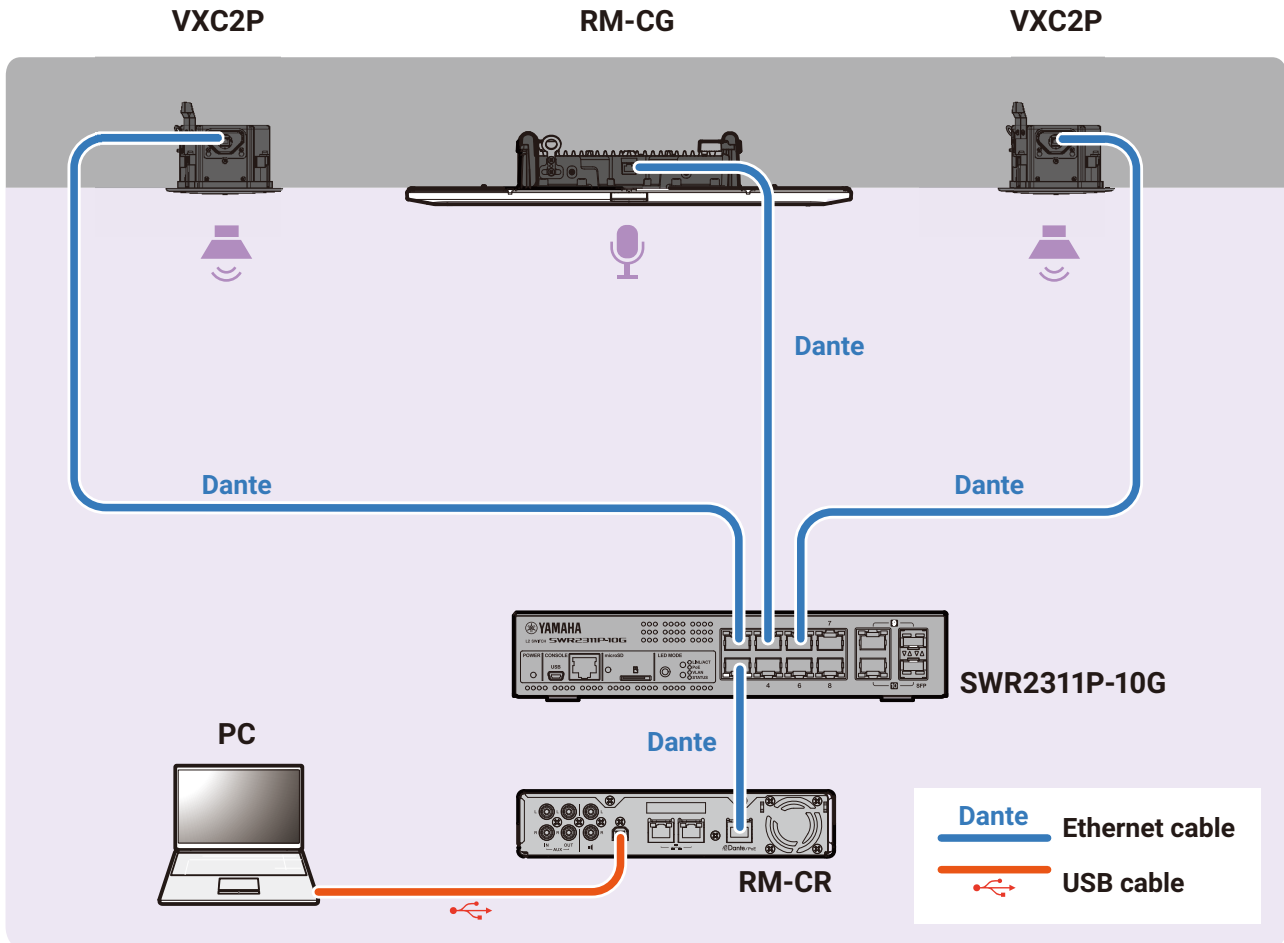
Select the startup mode.

Setting	DIP switch		Description
	7	8	
RESUME			This is the normal operating mode. When the unit is turned on, it starts up in the condition it was in just before it was turned off.
INITIALIZE			The unit is initialized and restored to its factory default settings. ☞ Initializing the unit (page 17)

Connection diagram

The following is a connection diagram for combining ADECIA ceiling solution devices. Refer to the diagram below to connect this unit to peripheral devices by using Ethernet cables.

Sample setup for an ADECIA ceiling solution



Connecting to peripheral devices

- When disconnecting the Ethernet cable from the Dante/PoE port, wait at least 5 seconds before reconnecting the cable. Otherwise, damage or malfunctions may result.
- With a Dante network, do not use the EEE function* of the network switch.
The EEE function may degrade clock synchronization performance and interrupt the audio. Therefore, please note the following.



- When using managed switches, turn off the EEE function on all ports used for Dante. Do not use a switch that does not allow the EEE function to be turned off.
- When using unmanaged switches, do not use switches that support the EEE function. In such switches, the EEE function cannot be turned off.

* EEE (Energy-Efficient Ethernet) function:

Technology that reduces the power consumption of Ethernet devices during periods of low network traffic; also known as Green Ethernet or IEEE802.3az

Speaker installation

While referring to the illustrations under “Installation” in the included leaflet, follow the steps below to install the speaker.

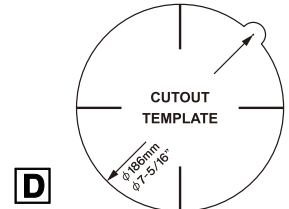


Before installation, confirm that the installation locations for the speaker and safety wire are strong enough.

1 Making a hole in the ceiling.

1. Place the included **D** cutout template on the ceiling and trace it to draw a line for the hole.

- Be sure to use the cutout template since the speaker cannot be installed if the hole does not have the correct diameter.
- When using a hole cutter, make sure that its diameter matches the cutout template.



2. Cut along the line to make a hole.

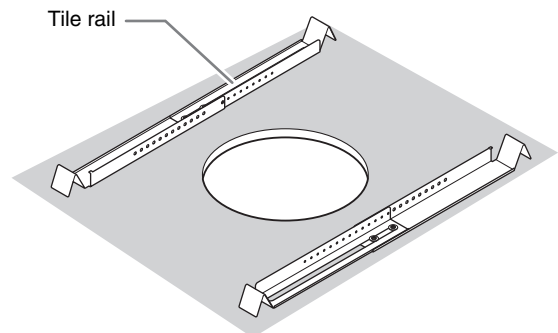


Be careful not to get debris or dust in your eyes when cutting holes.

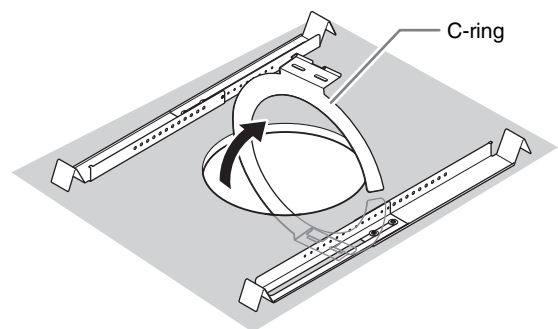
2 If applicable, install the separately sold **E** reinforcing bracket kit AB-C2.

1. Insert the two tile rails through the cut hole and place them on the ceiling surface within your reach.

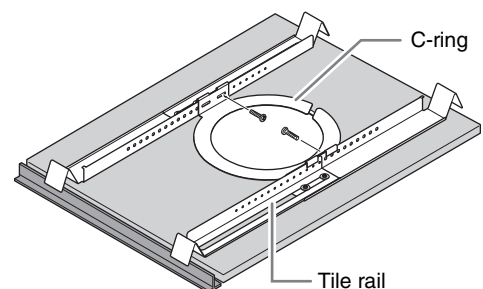
Adjust their length and be sure that each of the tile rails are oriented as shown right.



2. Use the opening in the C-ring to slide one section of the C-Ring into the cut hole, continuing to slide it around until the C-ring is completely inside the ceiling.



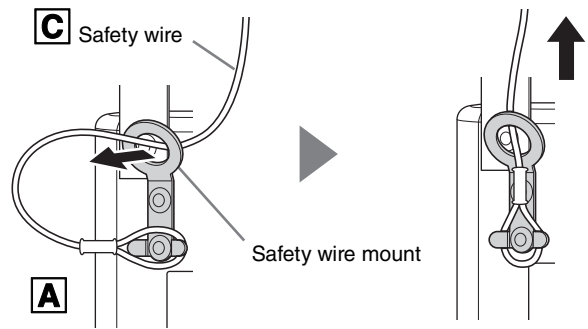
3. Secure the C-ring and tile rails with the supplied two screws through either slot of both C-ring brackets.



3 Attaching the [C] safety wire to the ceiling.

Attach one end of the [C] safety wire to a structure above the ceiling.

Make sure the safety wire is securely attached to a structure, and then attach the other end to the safety wire mount on the [A] speaker.

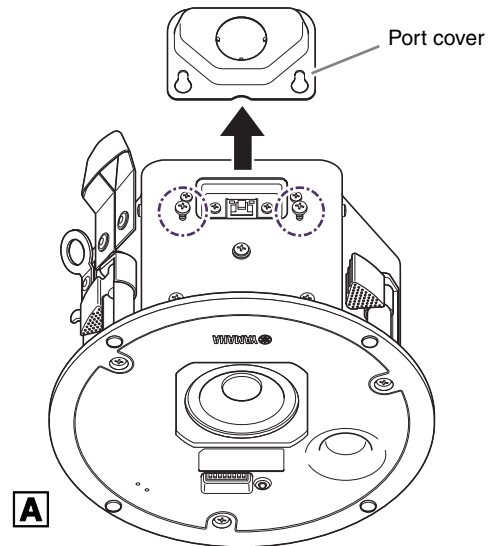


Be sure to take measures to prevent the unit from falling. If the attached safety wire is not long enough, consider the weight of the unit and the installation location when preparing a wire of appropriate length and strength. If the wire is too long, kinetic energy will be applied to the wire when the unit falls, possibly causing the wire to break and the unit to fall.

4 Connecting the Ethernet cable to the Dante/NETWORK port.

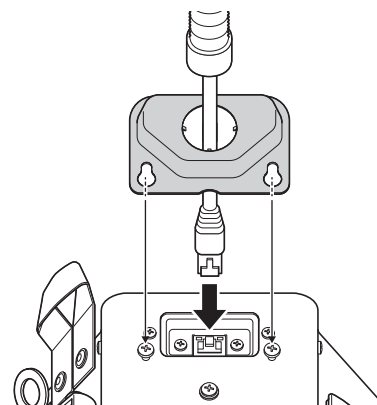
The Ethernet cable from the PSE (power sourcing equipment) connects to the Dante/NETWORK port.

1. Loosen the port cover screws, and then remove the port cover from the unit.



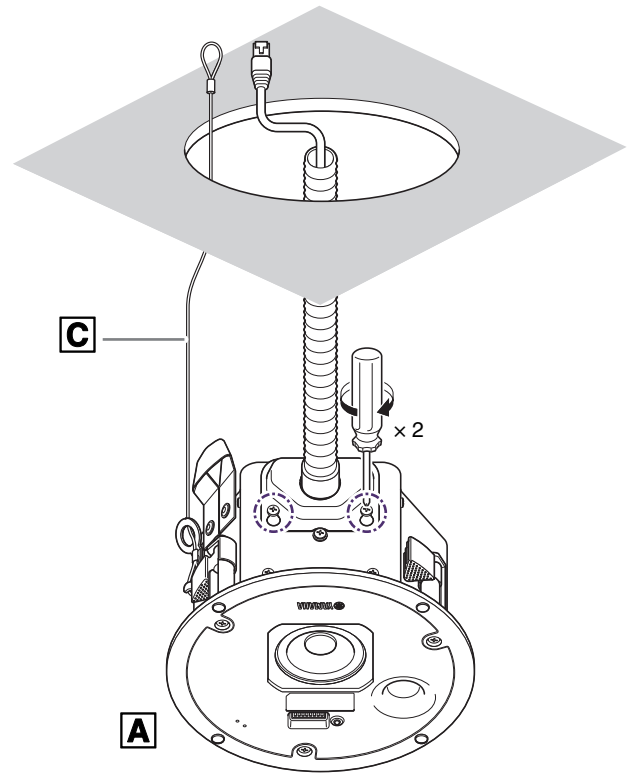
2. Pass the Ethernet cable through the hole in the port cover.

* If the port cover will not be used, leave it off and proceed to connecting the Ethernet cable.



3. Connect the Ethernet cable to the Dante/ NETWORK port.

* If the port cover will be used, install it.



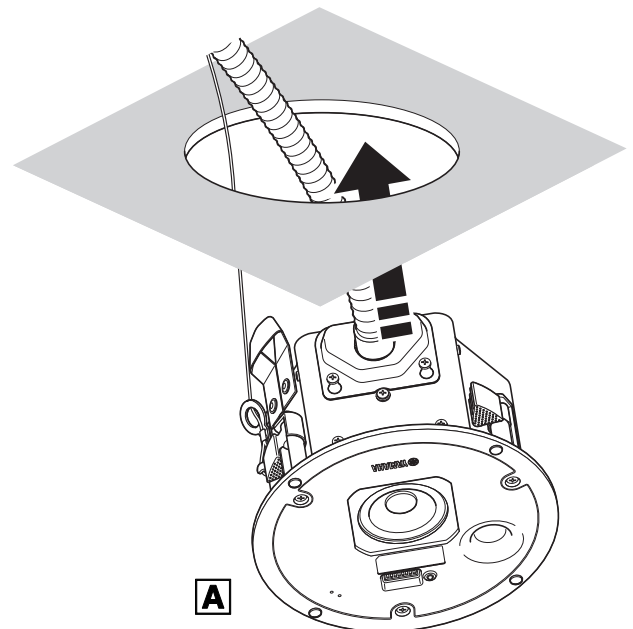
When connecting the Ethernet cable, be careful not to fall or cause the unit or surrounding structures to be dropped or damaged.

5 Installing the **A** speaker in the ceiling.

The speaker fits into the ceiling.

Start by feeding the cables through the hole in the ceiling.

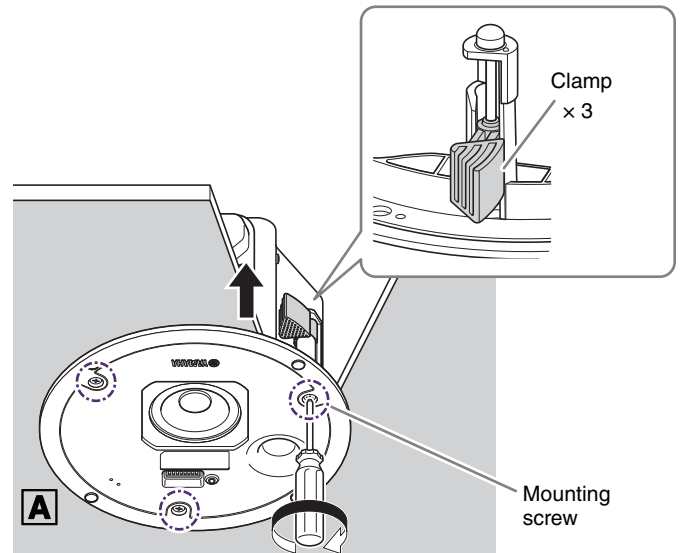
While being careful not to pinch the cables, carrying band or safety wire between the ceiling and the speaker, slowly push the speaker up into the hole in the ceiling in a rotating motion.



Securing the speaker

1. While holding the speaker up, turn the three mounting screws clockwise with a Phillips screwdriver to tighten them.
2. The first turn opens the clamp.

With each turn of the screw, the clamp is lowered, pressing the C-ring against the ceiling. If it is difficult to open the clamp, turn the screw counterclockwise half a turn to make it easier for the clamp to open.



NOTE

Do not overtighten the mounting screws, otherwise they or the clamp may break.

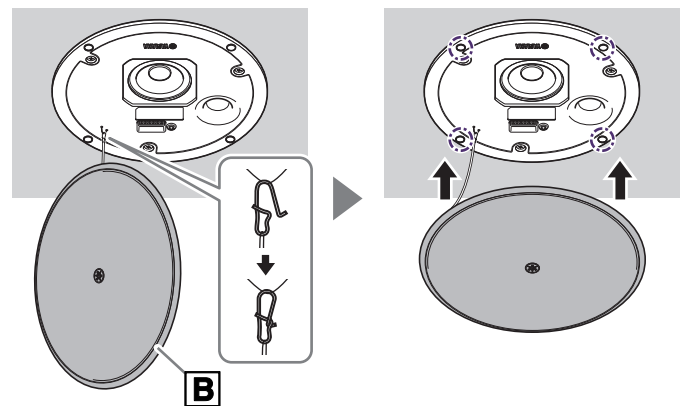


CAUTION

Do not turn any screws other than the mounting screws. Otherwise, the speaker may fall or malfunction.

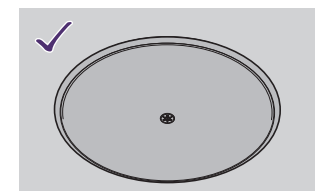
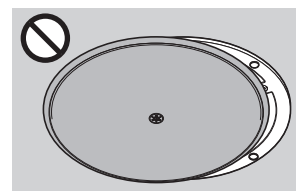
6 Attaching the **B** grille.

1. Attach the string on the **B** grille to the speaker.
2. Place the grille onto the four magnets on the front of the speaker.



Incorrectly positioned grille

Correctly installed



- ✓ Make sure that the grille fits snugly against the speaker and that it is not misaligned.



CAUTION

If the grille is incorrectly positioned, it may fall after installation. Make sure that the grille is correctly installed.

Controlling with software

This unit can be configured and operated by using the following software.

The software can be downloaded from the Yamaha website.

▼ Yamaha website (Downloads)

<https://download.yamaha.com/>

1 RM-CR Web GUI Device Manager

Controls RM-CR as well as devices connected to RM-CR. This software runs on a Windows browser.

- ✓ **Easy setup (AUTO SETUP)/manual registration of ADECIA devices**
- ✓ **Viewing device information**
- ✓ **Setting/controlling audio parameters**
- ✓ **Saving/recalling presets**
- ✓ **Updating the firmware**

→ For details, refer to the following manuals.

- For setup as well as starting the Device Manager: RM-CR Reference Manual
- For using the Device Manager: RM-CR RM-CG RM-TT Web GUI Device Manager Operation Guide

2 RM Device Finder

This is Windows software for detecting and managing ADECIA devices on the network.

- ✓ **Detecting devices/displaying device information**
- ✓ **Updating the firmware**
- ✓ **Specifying divide/combine settings for multiple rooms and selecting a preset**

→ For details, refer to the RM Device Finder User Guide. (It is included in the download file for the RM Device Finder software.)

3 ProVisionaire Kiosk

This is software for controlling devices. It runs on a Windows computer or iPad/iPhone.

- ✓ **Controlling or remotely controlling devices**
- ✓ **Controlling operating privileges by specifying role settings**

→ For details, refer to the ProVisionaire Kiosk User Guide.

4 ProVisionaire Control PLUS

This is Windows software for designing ProVisionaire Kiosk controllers.

When installing it, ProVisionaire Kiosk is also installed.

- ✓ **Creating controllers**
- ✓ **Centralized management of controllers for the entire building or facility**

→ For details, refer to the ProVisionaire Control PLUS User Guide.

5 ProVisionaire Design

This is Windows software for designing and managing an entire sound system made up of a processor with added peripheral devices.

- ✓ **Detecting/Registering devices**
- ✓ **Setting/controlling audio parameters**
- ✓ **Updating the firmware**

→ For details, refer to the ProVisionaire Design User Guide.

Updating the firmware

Firmware can be updated in any of the following ways.

- 1 Using RM-CR Device Manager
- 2 Using RM Device Finder
- 3 Using ProVisionaire Design

The firmware files can be downloaded from the Yamaha website.

▼ Yamaha website (Downloads)

<https://download.yamaha.com/>

Firmware files

ADECIA Firmware: This contains all firmware files for ADECIA compatible devices.

VXC2P Firmware: This is the firmware file for VXC2P.

1 Using RM-CR Device Manager

1. Download the firmware file.

2. Update using RM-CR Device Manager.

[TOOLS] menu > [Update] screen > [FIRMWARE UPDATE]

→ For operating procedures, refer to the Web GUI Device Manager Operation Guide.

2 Using RM Device Finder

1. Download the firmware file.

2. Update using RM Device Finder.

[RM Device Finder] main screen > [Firmware Update] screen.

→ For operating procedures, refer to the RM Device Finder Operation Guide.

3 Using ProVisionaire Design

→ For operating procedures, refer to the ProVisionaire Design User Guide.



Initializing the unit

To return the unit's settings to their factory defaults (initialize), perform the following steps.

1 Turn off the PSE (power sourcing equipment).

2 Set the DIP switch to "INITIALIZE":




On the device setting DIP switch, set switch 7 down and switch 8 up.

Setting	7	8
INITIALIZE		

3 Turn on the PSE.

Initialization begins. The power indicator shows the initialization status.

Initialization status shown by power indicator

Indicator	Color/lighting status		Description
	Green	Flashing quickly	Initializing
	Green	Flashing slowly	Initialization finished
	Unlit		Initialization failed

✓ Initialization is finished when the power indicator flashes slowly.



NOTE



Do not turn off the PSE during initialization. Otherwise, damage may result.

4 Turn off the PSE.

After initialization is finished, turn off the PSE.

5 Set the DIP switch to "RESUME":

On the device setting DIP switch, set both switches 7 and 8 up.

Setting	7	8
RESUME		

6 Turn on the PSE.

✓ The unit starts up with its factory default settings.

Specifications

Product specifications		
System Type		Full range, Powered Speaker, Bass reflex
Dimensions (ø × D)		ø 225 mm × D133 mm (including grille)
Weight		1.8 kg (including grille)
Power requirements		PoE+ (IEEE 802.3at), PoE (IEEE 802.3af)
Maximum Power Consumption		25.5 W (PoE+ (IEEE 802.3at)), 13 W (PoE (IEEE 802.3af))
Idle Power Consumption		4.0 W
1/8 Power Consumption		6.2 W (PoE+ (IEEE 802.3at)), 4.9 W (PoE (IEEE 802.3af))
In Operation	Temperature	0 °C–40 °C
	Humidity	30%–90% (No condensation)
Storage	Temperature	–20 °C–60 °C
	Humidity	20%–90% (No condensation)
Cooling method		Natural convection
Accessories		Grille, Cutout template, Safety wire, Owner's Manual, Safety Guide, Installation/Dimensional diagram
Options		Reinforcing Bracket Kit AB-C2
Color		White
Protection circuit	Product	Over temperature protection, Over power output protection, Over voltage protection
	Amplifier	Over temperature protection, Over current shutdown, DC detect protection, Over voltage protection, Under voltage lockout, Clock detection protection
	Power supply	Over load protection, Thermal shutdown
Component Configuration		2.5" (6.4 cm) Full range unit
Enclosure Specifications	Cabinet Material	Steel 1.0 mm Black
	Baffle Material	PP (HB) 5 mm Black
Grille Specifications	Material	Metal grille: Powder coated perforated steel 0.6mm Aperture rate: 51% Trim Ring: ABS (V-0)
	Finish	White painting (approximate value: Munsell 9.3)
Input/Output Terminal		RJ-45 (PoE/Dante) × 1
Operator		DIP switch 8P × 1
Indicator		Power (Front), SYNC (RJ-45), LINK/ACT (RJ-45)
Installation Method		Ceiling Mount Cutout size: ø 186 mm Required ceiling board thickness: 5 mm to 24 mm Conduit Tube: JIS C8350 Flexible conduit connector: 24-25/24-22 Terminal Cover Knockout diameter: ø 27.6 mm
Maximum device number with RM-CR		16
Dust And Water Resistance		No
Magnetically Shielded		No
Eco Products		No
Frequency Range (–10 dB) *1		80 Hz–20 kHz
Coverage Angle (–6 dB, 1–4 kHz Average)		160° conical
Maximum SPL (Peak) *1, *2		97 dB SPL
Certifications		VCCI

*1: Half-space (2π)

*2: Measured at 2 m; value converted to 1 m is shown (frequency range: 100 Hz–10 kHz)

Electrical specifications		
Amplifier Type		Class-D
Power Rating	Dynamic	15 W (PoE+ (IEEE 802.3at)), 6 W (PoE (IEEE 802.3af))
	Continuous	15 W (PoE+ (IEEE 802.3at)), 6 W (PoE (IEEE 802.3af))
Sampling Rate		48 kHz
Signal Processing		EQ/Enhancer, Volume, PEQ, Ducker (Noise gate), MIXER, Delay, Speaker EQ (6 band)
Network specifications		
Ethernet		Dante Audio/Dante Control, Remote Control, WebUI, PoE
Cable requirements		CAT5e or higher (STP)

SIGNAL BLOCK DIAGRAM

