

SMART Audio™ 340

Classroom amplification system

Installation guide

Extraordinary made simple®

SMART®

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Trademark Notice

SMART Board, SMART Notebook, SMART Audio, smarttech, the SMART logo and all SMART taglines are trademarks or registered trademarks of SMART Technologies ULC in the U.S. and/or other countries. All third-party product and company names may be trademarks of their respective owners.

Copyright Notice

© 2012 SMART Technologies ULC. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language in any form by any means without the prior written consent of SMART Technologies ULC. Information in this manual is subject to change without notice and does not represent a commitment on the part of SMART.

Patents pending.

06/2012

Contents

- Chapter 1: Planning your installation 1**
- Chapter 2: Installing your SMART Audio system5**
 - Installing speaker wires and Cat 5e cables.....5
 - Installing ceiling speakers 7
 - Installing wall speakers9
 - Installing the room module 10
 - Installing the control unit 13
 - Installing the microphone charging cradle..... 17
- Chapter 3: Integrating your SMART Audio system with your
SMART Board interactive whiteboard system 19**
- Appendix: Hardware environmental compliance.....21**
 - Waste Electrical and Electronic Equipment regulations (WEEE directive)21
 - Batteries21

Chapter 1

Planning your installation

Product components

This guide describes the installation of the following SMART Audio™ classroom amplification system components:

- Control unit
 - Mounting plate
 - Cable cover
 - Power cable
- Room module
 - Mounting plate
 - Cable cover
- Ceiling speakers
 - Cut-out template
 - Tile bridge
 - Adhesive putty
 - Wire hook
- Wall speakers
 - Wall speaker mounting bracket
- Power supply
 - Mounting plate
 - Cover
 - Power cable
- Infrared microphone and microphone charging cradle
 - Mounting plate
- SMART Audio software installation CDs
- Installation screws and drywall anchors
- USB cable, RCA cable, 3.5 mm to 3.5 mm cable and 3.5 mm to RCA cable

Required tools and supplies

You need the following tools and supplies to install your SMART Audio system:

- Drywall saw
- Marking pencil
- Phillips® No. 2 screwdriver
- Drill
- Ladder



WARNING

Take appropriate safety precautions when working at ceiling height, and use a sturdy ladder to reduce the risk of personal injury.

- Cat 5e cable
- 16 gauge speaker wire



WARNING

Check your local building codes to determine whether you require plenum-rated speaker wire and speakers to reduce the risk of fire.



NOTE

Your SMART Audio system doesn't include Cat 5e cable or speaker wire, unless you order it specifically with your classroom amplification system. You can purchase these wires and cables from most professional installers.

Choosing locations for ceiling speakers

Install ceiling speakers at regular intervals throughout the room to ensure even sound distribution. See page 7 for installation instructions.

Choosing locations for wall speakers

Install two speakers at the front of the audience and two speakers at the back of the audience. To prevent audio feedback, install speakers 5' (1.5 m) above the floor. See page 9 for installation instructions.

Choosing a location for the room module

The microphone uses infrared light to transmit signals to the room module. Take note of lights, projectors or anything in the room that could block the infrared signal. Install the room module in the center of the room in an area that maintains line of sight to the area where the microphone will be used. Install the room module within 50' (15.2 m) of cable distance from the control unit. See page 10 for installation instructions.



IMPORTANT

The room module performs best in the center of a room that is 30' W × 30' L (9.1 m × 9.1 m). Connect expansion sensors to the room module for larger rooms. For ordering information, see the SMART Audio specifications (smarttech.com/kb/155323).

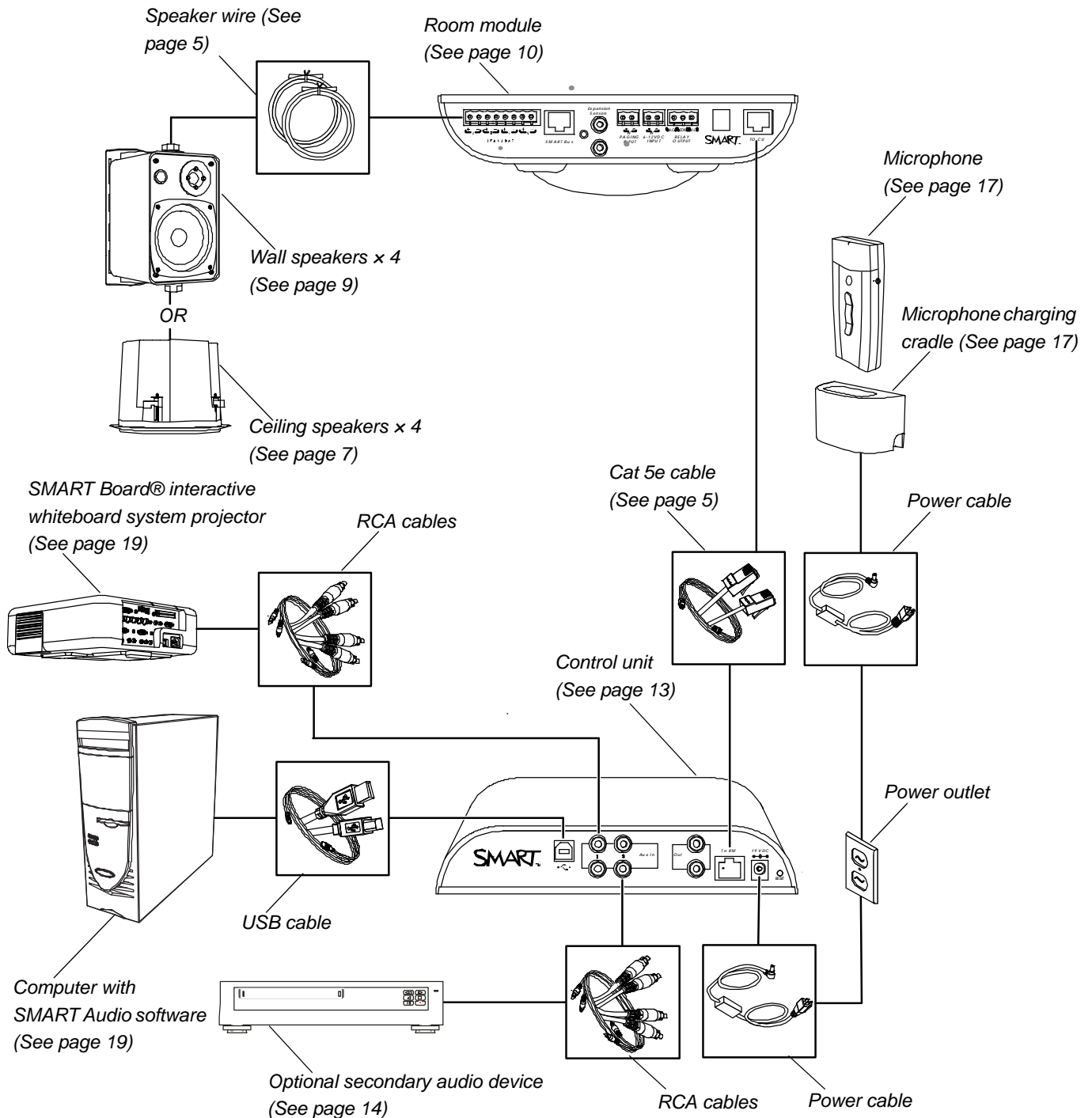
Choosing a location for the control unit

Install the control unit on the wall at the front of the room where the presenter can easily access it. Select a location that is within 8' (2.4 m) of a power outlet and within 50' (15.2 m) of cable distance from the room module. See page 13 for installation instructions.

Choosing a location for the microphone charging cradle

Install the microphone charging cradle within 5' (1.5 m) of a power outlet. See page 17 for installation instructions.

SMART Audio system cabling diagram



Chapter 2

Installing your SMART Audio system

Installing speaker wires and Cat 5e cables

Run the speaker wires to the speakers and run the Cat 5e cable between the control unit and room module before you begin installation. If you want to place the wires and cables out of sight, run the cables in the walls and ceiling.

WARNING

- Check your local building codes to determine whether you require plenum-rated speaker wires and speakers to reduce the risk of fire.
- Take appropriate safety precautions when working at ceiling height, and use a sturdy ladder to reduce the risk of personal injury.

To install speaker wires

1. Remove the ceiling tile at the location of each of the four ceiling speakers.

OR

Cut a wiring hole in the wall where you will mount each of the four wall speakers.

2. Remove the ceiling tile at the location of the room module.
3. Run the speaker wires from the speaker locations in the ceiling or wall to the location for the room module.

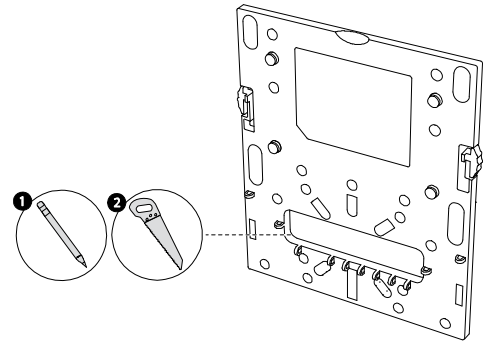


IMPORTANT

For each speaker wire, identify the positive and negative strands and mark each end accordingly.

To install the Cat 5e cable

1. Place the control unit mounting plate on the wall and trace the cable opening with a pencil.
2. Cut out the traced outline with a drywall saw.



3. Attach an RJ45 connector to each end of the Cat 5e cable.
4. Insert the Cat 5e cable into the wall opening, and then pull it to the room module location.



IMPORTANT

The maximum length of Cat 5e cable is 50' (15.2 m). Using longer Cat 5e cables can cause reduced performance.

To install cables for optional room module expansion sensors

1. Remove a ceiling tile where you will place each expansion sensor, if required.
2. Pull an RCA cable from the room module location to each expansion sensor location.

To install audio cables from your SMART Board interactive whiteboard system

If you have a SMART Board interactive whiteboard system, pull audio cables from the audio out connectors on your projector to the control unit location.

Installing ceiling speakers

For each of the four speakers, use the ceiling speaker cut-out template to cut a hole in a ceiling tile, and then assemble the ceiling tile bridge, secure the speaker to the ceiling tile and replace the tile.

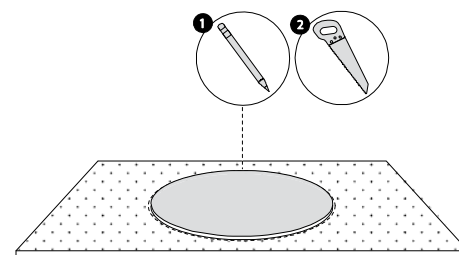


WARNING

Take appropriate safety precautions when working at ceiling height, and use a sturdy ladder to reduce the risk of personal injury.

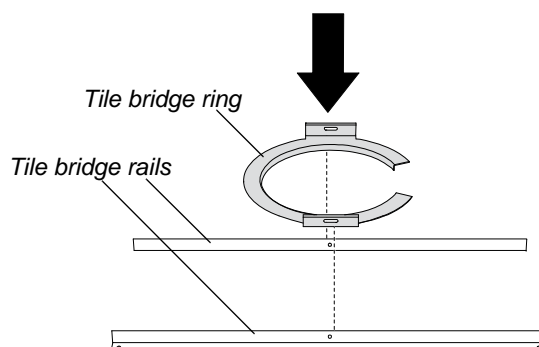
To cut a hole in a ceiling tile for the ceiling speaker

1. For each ceiling tile you removed while installing speaker wires, place the ceiling speaker cut-out template in the middle of the tile, and then trace the outline with a pencil.
2. Cut out the traced circle with a drywall saw.



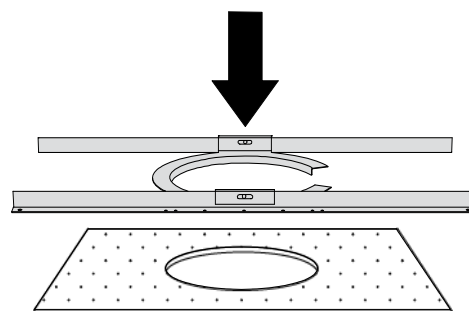
To assemble the ceiling tile bridge

Insert the tile bridge ring onto the tile bridge rails.



To secure the ceiling speaker to the ceiling tile

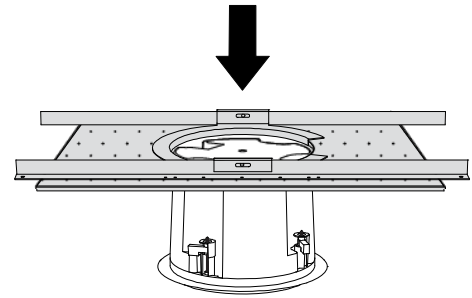
1. Place the tile bridge on the ceiling tile and insert the lip of the tile bridge ring into the ceiling tile hole.
2. Pull off the speaker grille from the front of the speaker with the included wire hook.



CHAPTER 2

Installing your SMART Audio system

3. Slide the ceiling tile and tile bridge onto the speaker.



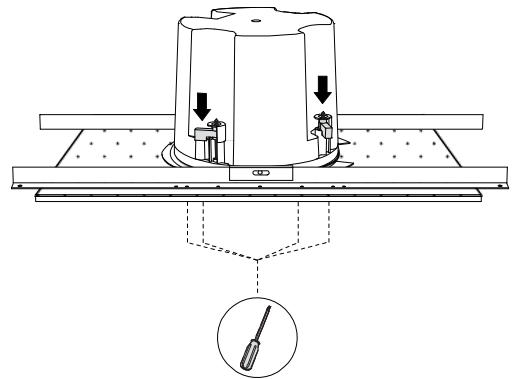
4. Turn the ceiling speaker clamps so they're perpendicular to the speaker.
5. Tighten the four speaker clamp screws with a screwdriver until they firmly clasp the ceiling tile.



CAUTION

Do not over-tighten the clamp screws to the point where you damage the clamps or the ceiling tile.

6. Connect the positive speaker wire to the red connector on the speaker and connect the negative speaker wire to the black connector on the speaker.
7. Apply the included four rods of black adhesive putty, spaced evenly, to the inside edge of the speaker grille.
8. Press the speaker grille back onto the speaker.
9. Return the ceiling tile to the ceiling.



WARNING

Two people are required to lift the speaker and tile.

Installing wall speakers

For each of the four speakers, install the wall speaker bracket on the wall, and then attach the speaker to the bracket.

To install the wall bracket on the wall

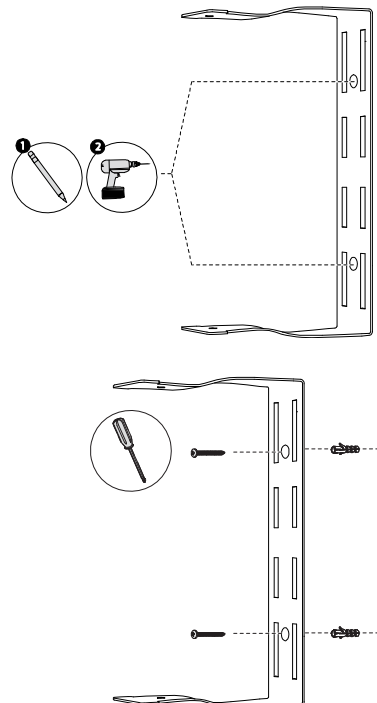
1. Loosen the top and bottom knobs that secure the bracket to the wall speaker, and then remove the bracket from the speaker.
2. Place the wall bracket against the wall where you plan to install it, and then mark the screw holes with a pencil.



IMPORTANT

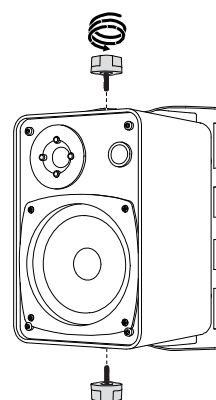
To prevent audio feedback, install the speakers 5' (1.5 m) from the floor.

3. Move the bracket away from the wall, and then drill holes at the marks.
4. Secure the bracket to the wall with the included screws and drywall anchors.



To secure the wall speaker to the bracket

Place the wall speaker in the bracket, and then attach and tighten the knobs to secure the speaker to the bracket.



To connect the speaker wires

Connect the positive speaker wire to the red connector on the speaker and connect the negative speaker wire to the black connector on the speaker.

Installing the room module

Install the room module mounting plate on the ceiling or on a ceiling tile, and then attach the room module and the cable cover to the mounting plate.



WARNING

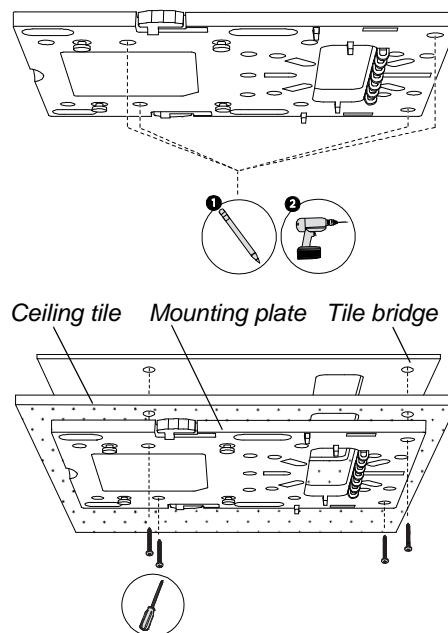
Take appropriate safety precautions when working at ceiling height, and use a sturdy ladder to reduce the risk of personal injury.

Installing the room module mounting plate

Install the room module mounting plate on the ceiling or on a ceiling tile.

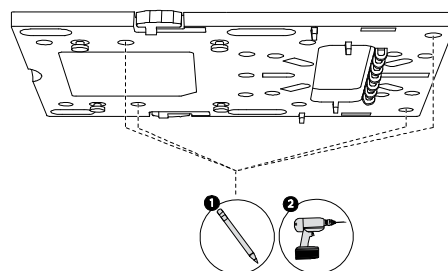
To install the mounting plate on a ceiling tile

1. Using the room module tile bridge as a template, mark the screw holes and the cable hole on the ceiling tile you previously removed for the room module.
2. Drill the screw holes at the marks.
3. Cut out the traced cable hole with a drywall saw.
4. Place the ceiling tile on the mounting plate, and then place the tile bridge on the ceiling tile, ensuring that you align the tile bridge with the mounting plate.
5. Screw the included screws through the holes in the mounting plate, the ceiling tile and the tile bridge.
6. Replace the ceiling tile, passing the wires and cables through the cable hole.



To install the mounting plate directly on the ceiling

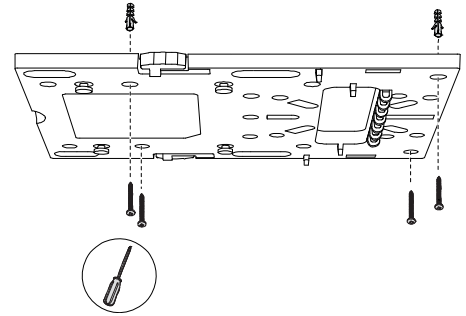
1. Place the room module mounting plate against the ceiling where you plan to install it, and then mark the screw holes with a pencil.
2. Lower the mounting plate from the ceiling, and then drill holes at the marks.



CHAPTER 2

Installing your SMART Audio system

3. Screw the mounting plate to the ceiling with the included screws and drywall anchors.

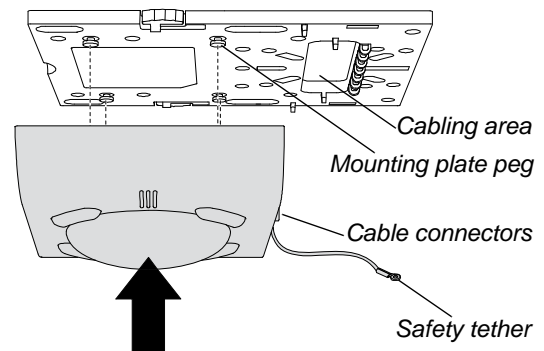


Attaching the room module to the mounting plate

Attach the room module to the mounting plate, and then connect the wires, cables and safety tether.

To attach the room module to the mounting plate

1. Position the room module so the cable connectors are facing the cabling area, and then attach the room module to the mounting plate pegs.

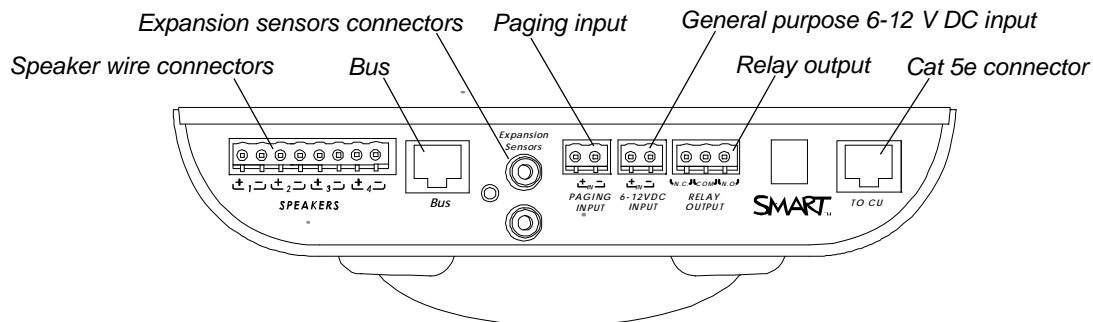


2. Slide the room module toward the cabling area until it locks into place.
3. Pass the room module safety tether through the cable hole, and then screw it to a secure location in the ceiling.

Connecting cables to the room module

For more information, see the *SMART Audio system cabling diagram* on page 4.

Room module connectors

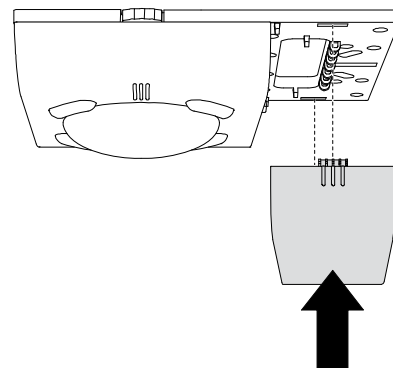


To connect cables to the room module

1. For each of the four speakers, connect the positive speaker wire from the red connector on the speaker to a positive connector on the room module.
2. For each of the four speakers, connect the negative speaker wire from the black connector on the speaker to a negative connector on the room module.
3. Connect the Cat 5e cable from the Cat 5e connector to the room module connector on the control unit.
4. If you have a paging system, connect the existing paging wires to the paging input on the room module.

i NOTES

- For more information on customizing the 6-12 V DC input, the relay output and the way pages play over the SMART Audio system, see the *SMART Audio 340 Classroom Amplification System User's Guide* (smarttech.com/kb/155322).
 - The Relay output has 3 states: NC (normally closed), COM (common) and NO (normally open).
5. After you connect the cables, attach the cable cover to the mounting plate.

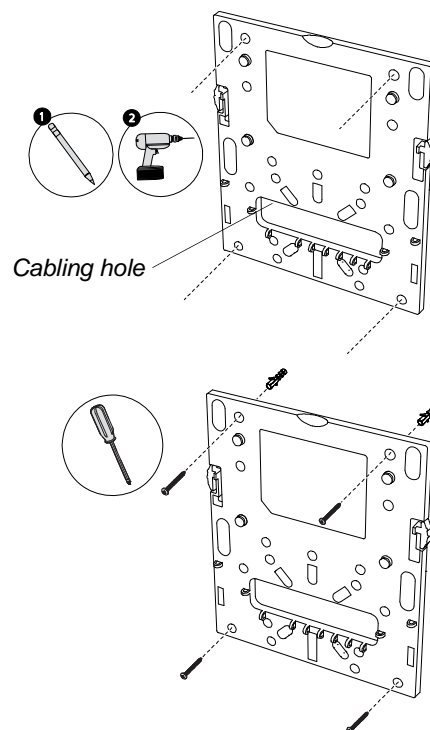


Installing the control unit

Install the mounting plate, and then attach the control unit and cable cover to the mounting plate. Select a location on the wall that is within 8' (2.4 m) of a power outlet.

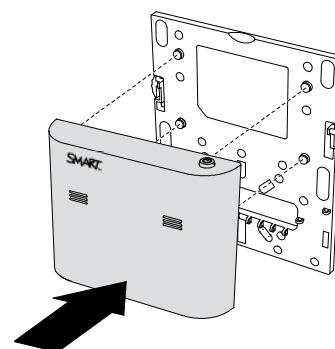
To install the mounting plate

1. Hold the control unit mounting plate against the wall where you plan to install it, and mark the screw holes on the wall with a pencil. If you're pulling cables through the wall, trace the cabling hole as well.
2. Lower the control unit from the wall and drill holes at the marks.
3. Cut a cabling hole, if required.
4. Screw the mounting plate to the wall with the included screws and drywall anchors.



To attach the control unit to the mounting plate

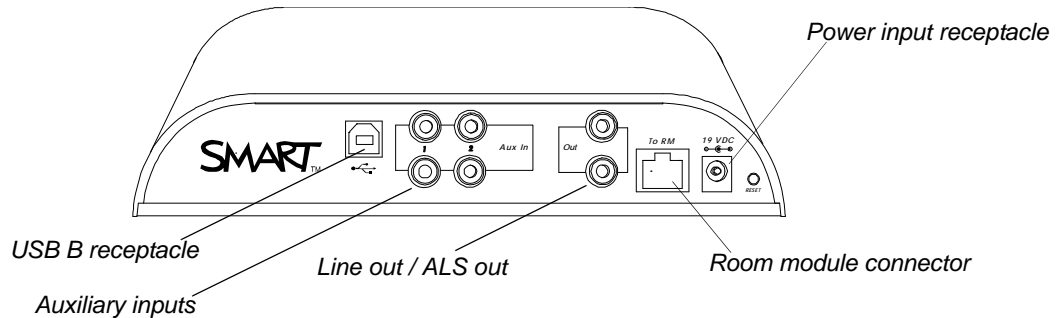
1. Attach the control unit to the mounting pegs on the mounting plate.
2. Slide the control unit down until it locks into place.



Attaching cables to the control unit

For more information, see the *SMART Audio system cabling diagram* on page 4.

Control unit connectors



To connect cables to the control unit

1. Connect the Cat 5e cable from the room module to the room module connector on the control unit.
2. Connect the control unit to a power outlet with the included power cable.
3. Connect the included USB cable from the control unit to your computer.
4. If you have a SMART Board interactive whiteboard system, connect the RCA cable (with two connectors on each end) from your projector to the **Aux In 1** connectors.

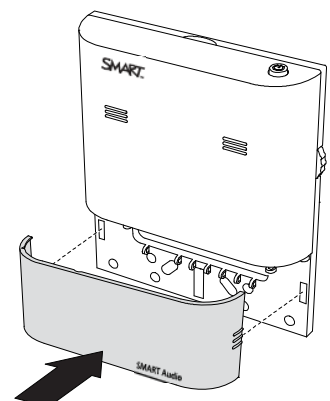
i NOTE

The **Aux In 1** input is a mono input, not a stereo input.

5. If you have a secondary audio device like a CD player, connect the RCA cable from the device to the **Aux In 2** connectors.
6. Connect a recording feed or an assistive listening device to the **Line out / ALS out** connector.
7. Attach the cable cover to the mounting plate.

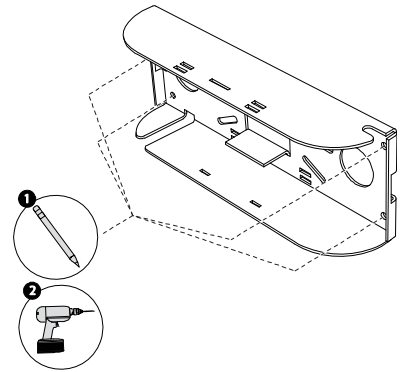
👉 IMPORTANT

If you connect cables that run from outside of the wall, snap and remove the break-away plate at the bottom of the cable cover so you can connect the cables to the control unit.

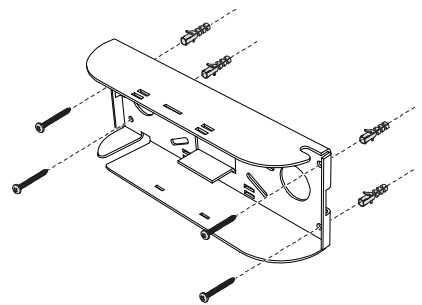


To install the power supply

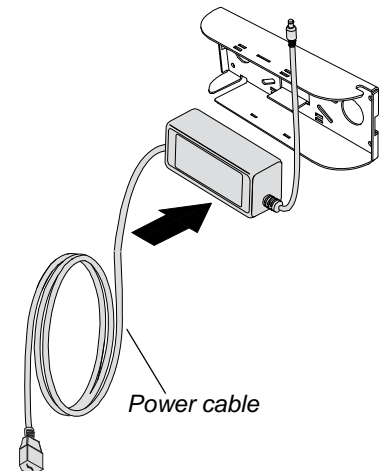
1. Hold the power supply mounting plate against the wall where you plan to install it, and then mark the anchoring holes on the wall with a pencil.
2. Lower the bracket from the wall, and then drill holes at the marks.



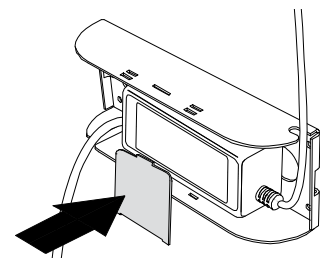
3. Screw the mounting plate to the wall with the included screws and drywall anchors.



4. Position the power supply so the power cable is on the left, and then place the power supply in the mounting bracket.

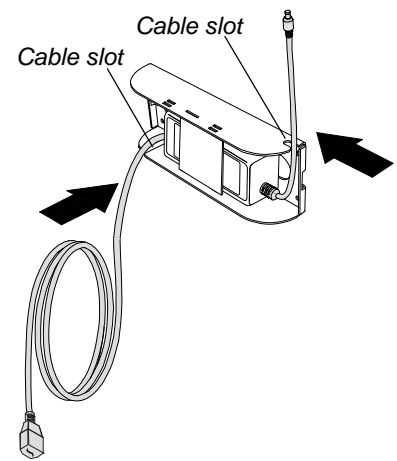


5. Attach the power supply brace to the bracket.

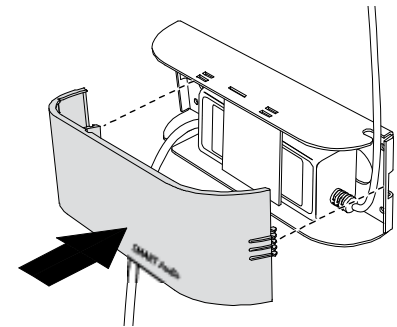


CHAPTER 2
Installing your SMART Audio system

6. Push the cables into the cable slots in the mounting bracket.



7. Attach the power supply cover to the bracket.



Installing the microphone charging cradle

You can install the microphone charging cradle on the wall or place it on a table. If you're mounting the charging cradle on the wall, install its mounting plate, and then attach the charging cradle to the mounting plate. Select a location that is within 5' (1.5 m) of a power outlet.

To install the microphone charging cradle mounting plate

1. Hold the mounting plate against the wall where you plan to install it, and then mark the screw holes with a pencil.
2. Lower the mounting plate from the wall, and then drill holes at the marks.
3. Screw the mounting plate to the wall using the included screws and drywall anchors.

To attach the charging cradle to the mounting plate

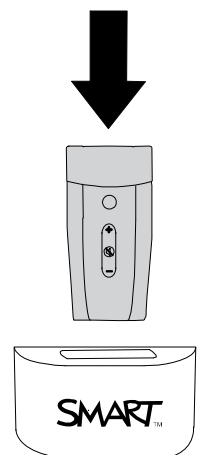
1. Attach the charging cradle to the mounting plate pegs.
2. Slide the charger down until it locks into place.

To connect the power cable

Connect the power cable to the microphone charging cradle, and then plug it in a power outlet.

To charge your microphone for initial use

1. Insert the included battery in the microphone.
2. Place the microphone in the microphone charging cradle.



3. Allow eight hours for the microphone to charge fully.

CHAPTER 2

Installing your SMART Audio system

Chapter 3

Integrating your SMART Audio system with your SMART Board interactive whiteboard system

SMART Board 600 series interactive whiteboard systems

To integrate with a SMART Board 600 series interactive whiteboard system

Connect the audio cables from your interactive whiteboard system's projector to the **Aux 1 In** connectors on your SMART Audio system's control unit.

SMART Board 800 series interactive whiteboard systems

To integrate with a SMART Board 800 series interactive whiteboard system

1. Connect the audio cables from your interactive whiteboard system's projector to the **Aux 1 In** connectors on your SMART Audio system's control unit.
2. Disconnect the 3.5 mm stereo cable from your interactive whiteboard system's extended control panel.

SMART software

Your SMART Audio classroom amplification system operates without additional software. However, installing the SMART Audio software suite enables you to do the following:

- Access SMART Audio volume settings through SMART Notebook™ collaborative learning software or a desktop icon.
- Customize SMART Audio system settings with the SMART Audio system administrator settings.



IMPORTANT

The included CDs are required for software installation.

To install SMART software

1. Disconnect the USB cable that connects your computer to your control unit.
2. Place the included SMART Audio configuration software CD in your computer.
3. Follow the on-screen instructions to install SMART Audio configuration software.

CHAPTER 3

Integrating your SMART Audio system with your SMART Board interactive whiteboard system

4. If your computer doesn't have SMART Notebook software installed, place the included SMART Notebook software CD in your computer.
5. Follow the on-screen instructions to install SMART Notebook software.

Appendix

Hardware environmental compliance

SMART Technologies supports global efforts to ensure that electronic equipment is manufactured, sold and disposed of in a safe and environmentally friendly manner.

Waste Electrical and Electronic Equipment and Battery regulations (WEEE and battery directive)



Electrical and electronic equipment and batteries contain substances that can be harmful to the environment and to human health. The crossed-out wheeled bin symbol indicates that products should be disposed of in the appropriate recycling stream and not as regular waste.

Batteries



Contains lithium ion batteries. Recycle or dispose of batteries properly.

For more information, see smarttech.com/compliance.



SMART Technologies
smarttech.com/support
smarttech.com/contactsupport