



frontrow™
pro

installer guide

YOU'RE ABOUT TO MAKE LEARNING MORE FUN

Welcome to FRONTROW PRO -- the teacher-friendly way to improve the learning environment in every classroom. With your new active learning system, you'll enjoy greater student attention, less teacher fatigue, and very likely better test scores.

To help you start benefiting from your FRONTROW PRO system right away, we recommend that you first read the section in this guide called Before You Begin, and from there proceed to Steps 1 through 6. Be sure to consult the Teacher Guide as well.

If you follow the steps set out in this Installer Guide and organize everything you need beforehand, you'll find setting up your FRONTROW PRO system to be quite simple. Of course, if you run into any obstacles, you can always call us at 1.800.227.0735 (US) / 1.800.263.8700 (Canada) / **+45 3917 7101 (Global)**. Our technical support representatives are happy to help.

Thank you for choosing FRONTROW! You're just six steps away from a happier classroom.

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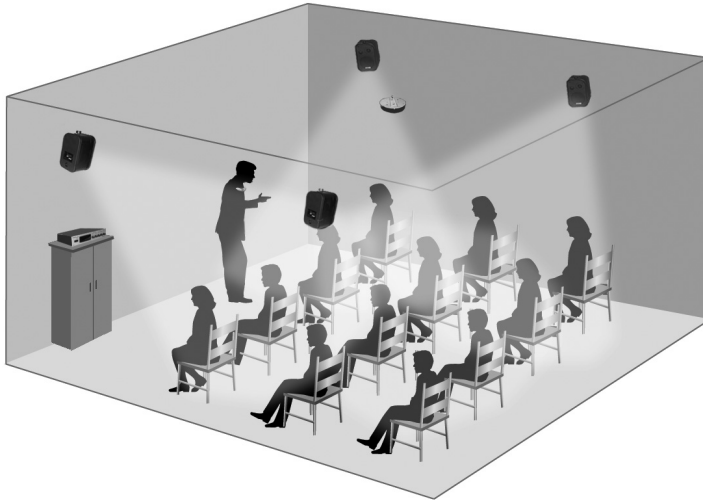
Be sure to read the helpful tip boxes found throughout this guide. Of course, if you need further assistance, you can always call us at one of the numbers found on the back page.

BEFORE YOU BEGIN

Make sure you've got everything you need to set up your FRONTROW PRO active learning system. By taking a few minutes to prepare, you'll help ensure the actual set-up is as quick and problem-free as possible.

Visualize your goal

When your FrontRow Pro system is installed, it will look something like this:



General safety precautions

- Do not install or use the receiver near water or heat sources
- Clean only with a dry cloth
- Do not block any ventilation openings
- Protect all cables from wear and damage from foot traffic, doors, and other hazards
- Use only accessories specified by Phonic Ear Inc
- Refer servicing to qualified service personnel
- Wear safety goggles whenever installing using power tools
- Follow all safety guidelines when using ladders
- Observe your local building, electrical, and fire codes when installing any electrical equipment
- Use at least 18-gauge plenum speaker wire (included with system)

Get your classroom ready

1. Does your classroom meet the system requirements?

Check the table below to confirm that your classroom is set up properly for the FRONTROW PRO system you have. While other classroom configurations may work with your FRONTROW PRO system, we can only support those listed below.

If your classroom has:	You should have:
A drop ceiling more than 10 feet high	Ceiling or wall speakers
A drywall/concrete ceiling	Wall speakers only
A drop ceiling 10 feet or lower	Wall speakers only
Tall free-standing bookshelves, hanging art, or other obstructions	Dome or wall sensors
Small size, light walls, few windows	Dome sensor
Medium to dark-toned walls	Dome sensor and/or wall sensors
Larger size darker walls, more windows	Several wall sensors
Large, odd shape, dark surfaces, lots of windows	Dome sensor and/or several wall sensors
Alcoves, bays, or other sheltered areas where teachers may walk	Dome sensor and/or external wall sensors

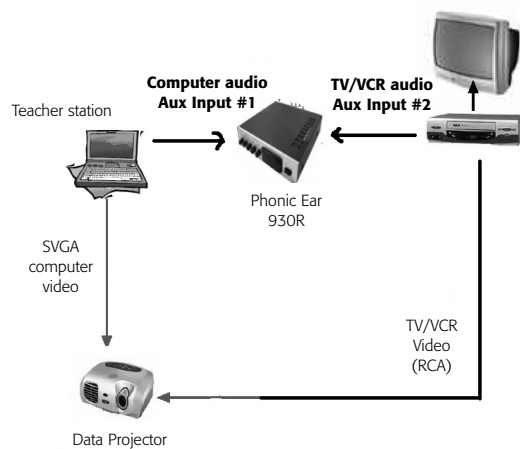
2. Think about combining your other teaching technologies

Your FRONTROW PRO system is the communication center of your classroom. Take advantage of this opportunity to connect your TV, VCR, computer, CD player, and other teaching technology to your active learning system. This will allow children to hear not only your voice, but also the rich multimedia content you're providing, regardless of where they're seated.

Deciding what other devices you'll want to connect to your FrontRow system now will make positioning the receiver easier in Step 1. There are two ways to approach integration.

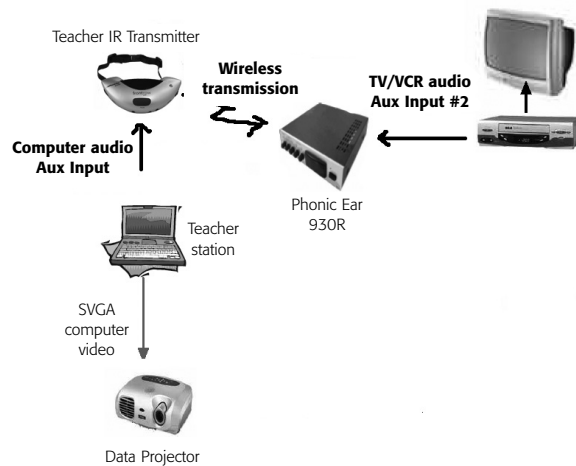
Wired

This is more work for the installer, but seamless for the teacher:



Wireless

This is less work for the installer, but slightly more involved for the teacher



Get your FrontRow Pro parts ready

Check the contents of your FrontRow Pro installation kit against the parts listed below. To help you stay organized, we recommend that you keep the parts needed for each step separate.

1. Open your main component box (the long box)



930R Receiver



AT0783 receiver power supply



595-7348-101 accessory cable kit



930TM

930T

930HT



384-01-210-08 aux-in adaptor cord (930TM only)



AT0795-L external microphone (930T only)



AT0712 elastic belt (930T only)



930HTC handheld transmitter charger stand

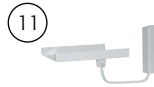


520-7347-103 ceiling sensor

AT0848 wall sensor



AT0847 external sensor cable



AT0784 wall mount tray



AT0581 speaker wire



374-30-400-00 rechargeable batteries (930TM/930HT)



AT0807 rechargeable batteries (930T)

Tip

Missing a part from your FrontRow Pro installation kit?

Call 1.800.227.0735 (US) / 1.800.263.8700 (Canada) / +45 3917 7101 (Global).

Our customer service representatives will be more than happy to help you.

This box should contain a minimum of the following parts:

- ① 1 FrontRow Pro receiver
- ② 1 receiver power supply
- ③ 1 Plugs & cords accessory kit:
 - 1 Dual charging cord, 1.3mm male
 - 1 Aux-out rebroadcast cable
 - 1 2.5mm to 3.5mm mono plug adapter
 - 1 Aux-in adapter cord (3.5mm to dual RCA)
 - 1 Aux-in adapter cord, 6ft (dual RCA to dual RCA)
- ④ 1-3 FrontRow Pro transmitters (depending on your order)
- ⑤ 1 Aux-in adapter cord (3.5mm to 3.5mm)
- ⑥ External microphone (optional)
- ⑦ 1 Elastic belt (optional)
- ⑧ Hand-held transmitter charging stand and power supply (optional)
- ⑨ 1-3 external sensors (depending on your order)
- ⑩ 1-2 External sensor cables
- ⑪ 1 wall mount tray
- ⑫ 4 speaker cables
- ⑬ 1-4 rechargeable 2500mAH, AA batteries (depending on your transmitter)
 - 1 Receiver User Guide
 - 1 Transmitter User Guide
 - 1 Teacher's Daily Check List

2. Open your speaker box

This box should contain:

4 wall or ceiling speakers

4 wall speaker brackets or ceiling tile bridges (depending on your order)



470-2956-119
wall speaker

or

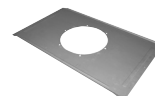


AT0806
ceiling speaker



wall speaker bracket
(incl. w/speaker)

or



470-7347-106
ceiling speaker tile bridge

Get yourself ready

Nearly everything you need to install your FrontRow Pro system is included in the boxes we shipped. You will need some basic tools and materials, depending on how your classroom is built:

1. What kind of walls do you have?

For drywall installations (similar to most houses) gather the following tools:

- Drill
- Drill bits
- Phillips #2 driver bit
- Level or ruler/tape measure
- Crimp pliers or scissors
- Hammer
- Staple gun
- Cable tacks/staples
- Plastic cable (zip) ties
- Plastic raceway with screws
- Tin snips (optional)
- Ladder
- Safety goggles

For concrete walls, assemble the following tools:

Hammer drill

Masonry drill bits

Phillips #2 driver bit

Level or ruler/tape measure

Crimp pliers or scissors

Concrete screws

Hammer

Plastic cable (zip) ties

Plastic raceway with adhesive

Tin snips (optional)

Ladder

Safety goggles

2. Are you installing ceiling speakers?

If so, you'll also need:

Keyhole saw or sabre saw or RotoZip

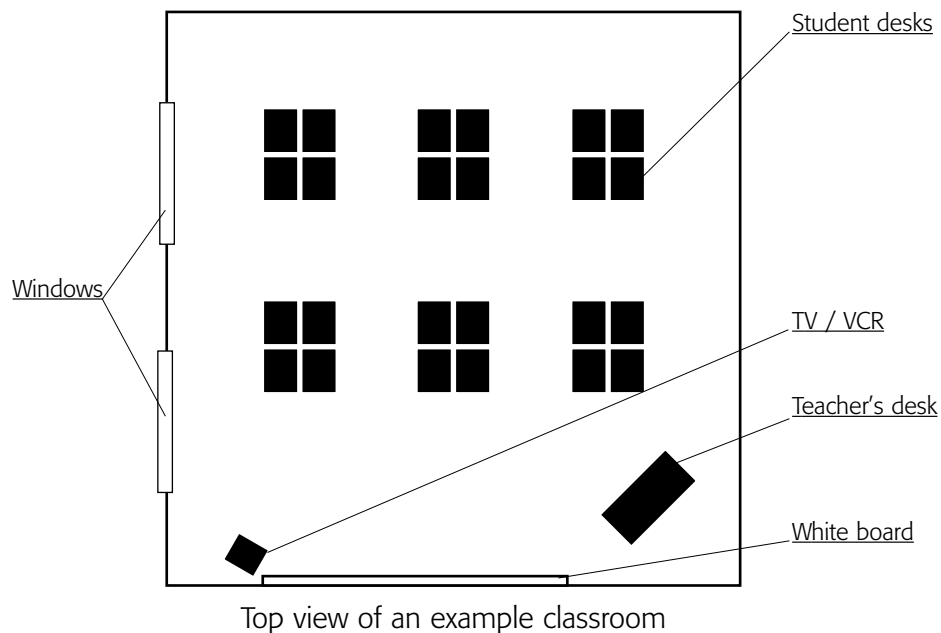
Electrical tape

Short length of string or twine

Step 1: Plan your installation

Estimated time for this step: 5-10 minutes

Your classroom is ready and you've organized all the parts and tools you'll need to set up your active learning system. Now it's time to decide where you'll place major components. To help you decide, we'll use the following layout of a typical classroom as an example:



1. Decide where to put the receiver

We recommend locating the receiver in a corner with good visibility of the classroom, at about the teacher's eye-level.

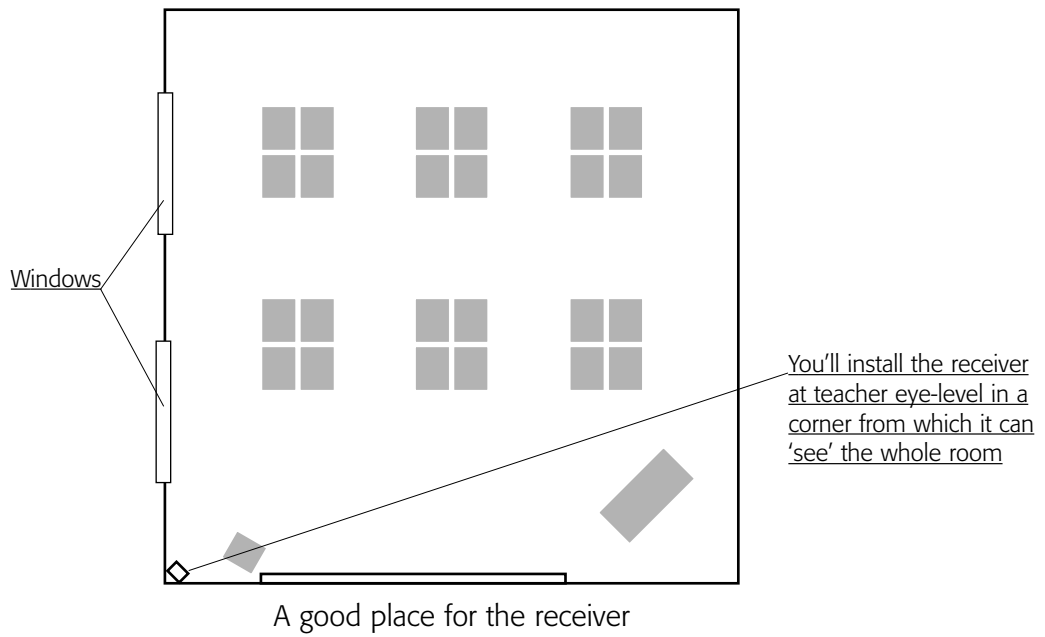
If you're going to be connecting other audio sources to your receiver (see Before You Begin), consider a location near the teacher's computer or TV/VCR. There are probably convenient power sources near these as well.

If possible, place the receiver in a corner where it will not be pointed at windows.

Tip

Want to install your FrontRow Pro system in a cabinet?

No problem. Just be sure to install external sensors as shown later in this guide.



Tip

Point your receiver away from windows

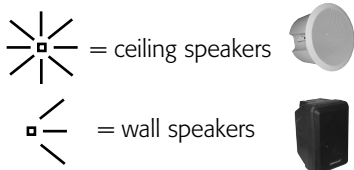
Your FrontRow Pro system communicates with light. Strong sunlight can overwhelm that communication. Your receiver will perform best if it is pointed away from windows that get direct sunlight. If this is not possible, no problem, just plan on installing one or more external sensors.

2. Plan speaker placement

Proper speaker placement is critical to getting optimum benefit from any active learning system. Improperly chosen or installed speakers can actually harm intelligibility, so please take the time to plan this step thoroughly.

It's useful to imagine each speaker as a flashlight, and that your goal is to light up the areas where students are sitting. Speakers should therefore be focused on the students and facing them.

Speaker symbols:



a Installing ceiling speakers?

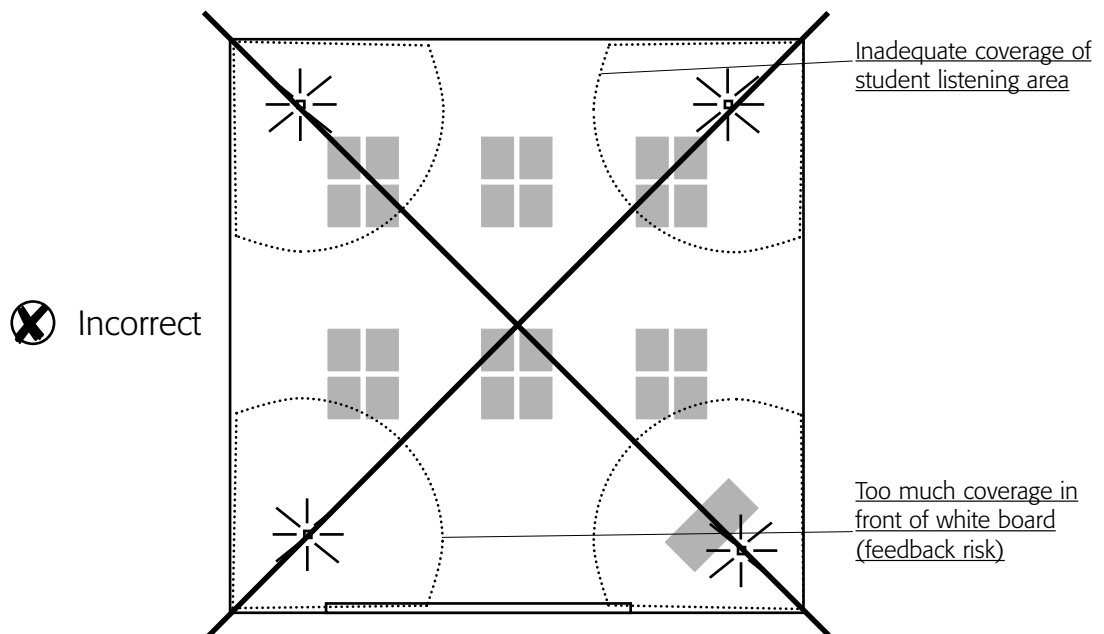
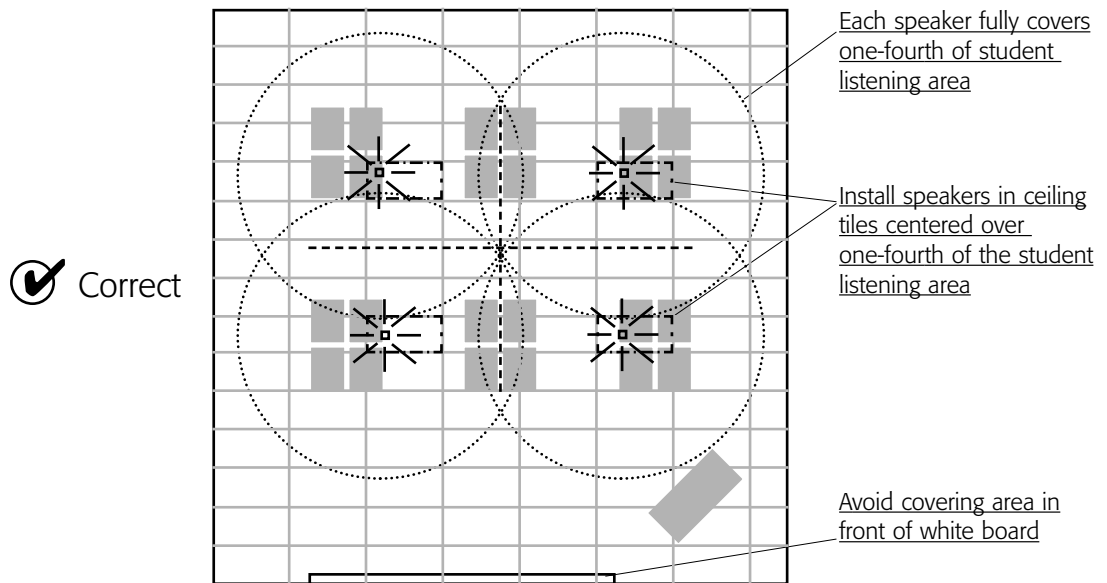
Use the following guidelines when choosing where to put your ceiling speakers:

Define the area where students are sitting – this is the area you want to cover with speakers; not the entire room.

Divide this area into four equal sections

Using a piece of tape, mark a ceiling tile in the center of each of the four sections -- these are the tiles where you'll mount your ceiling speakers

Avoid installing speakers directly in front of the white board -- this not only covers an area not used by students but increases the chance of feedback



b Installing wall speakers? 

Use the following guidelines when choosing where to put your wall speakers:

Define the area where students are sitting – this is the area you want to cover with speakers; not the entire room.

Mentally divide this area into four equal sections

Using a piece of tape, mark a desk in the center of each of the four sections – these are the targets at which you'll aim each of your wall speakers

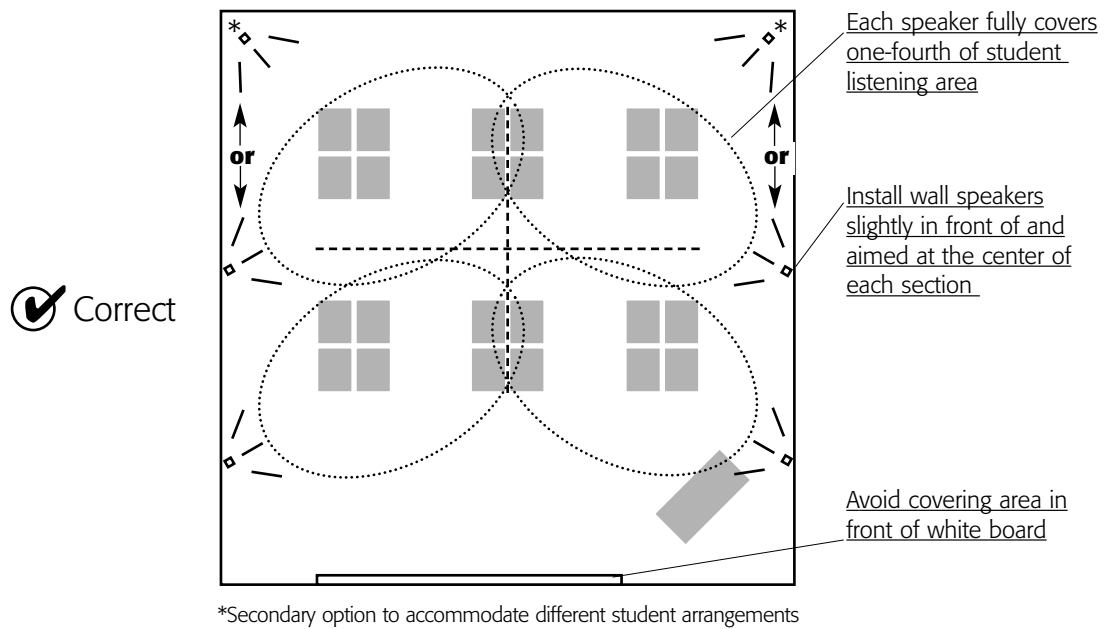
For each section, choose a speaker location that is:

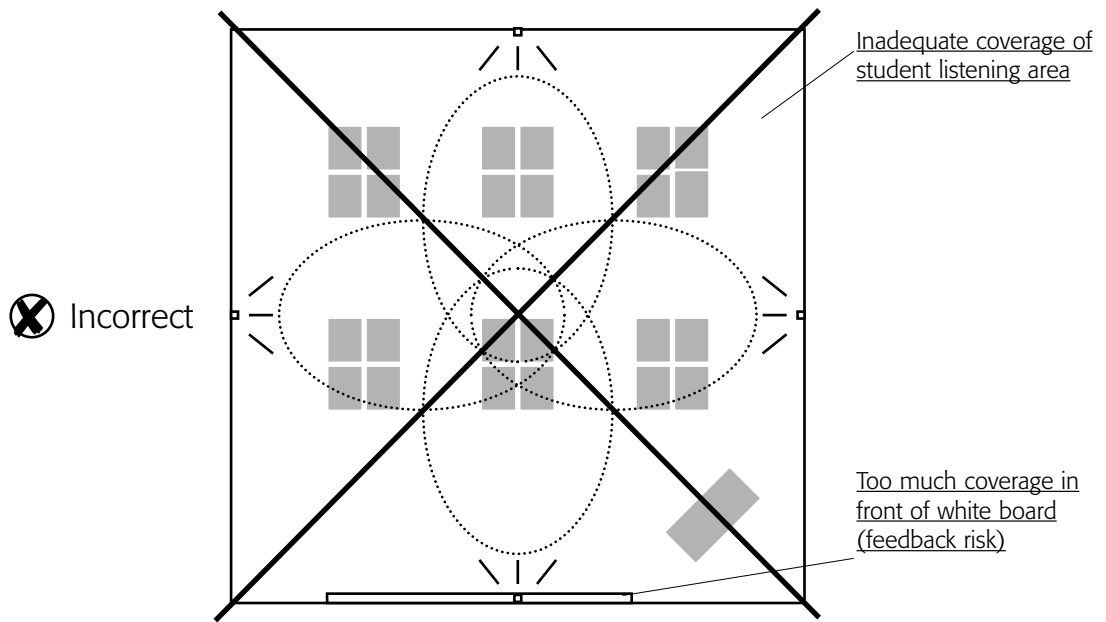
As close to the ceiling as possible

Slightly in front of each section (considering 'front' to be the direction of the white board)

In each section, the distance from the speaker to the farthest student should be ideally no more than twice the distance from the speaker to the nearest student

Avoid installing speakers directly in front of the white board -- this not only covers an area not used by students but increases the chance of feedback

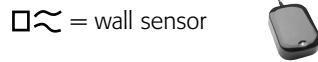
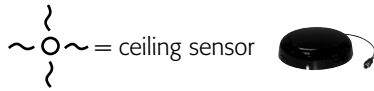




3. Planning sensor placement

Your FrontRow Pro receiver has a powerful built-in sensor -- often sufficient to serve your entire classroom. The walls or design of some classrooms may not allow for the direct transmission and reflections of infrared light that your active learning system relies on. That's why it's a good idea to plan for external sensors.

Sensor symbols:



Possible external sensor combinations:

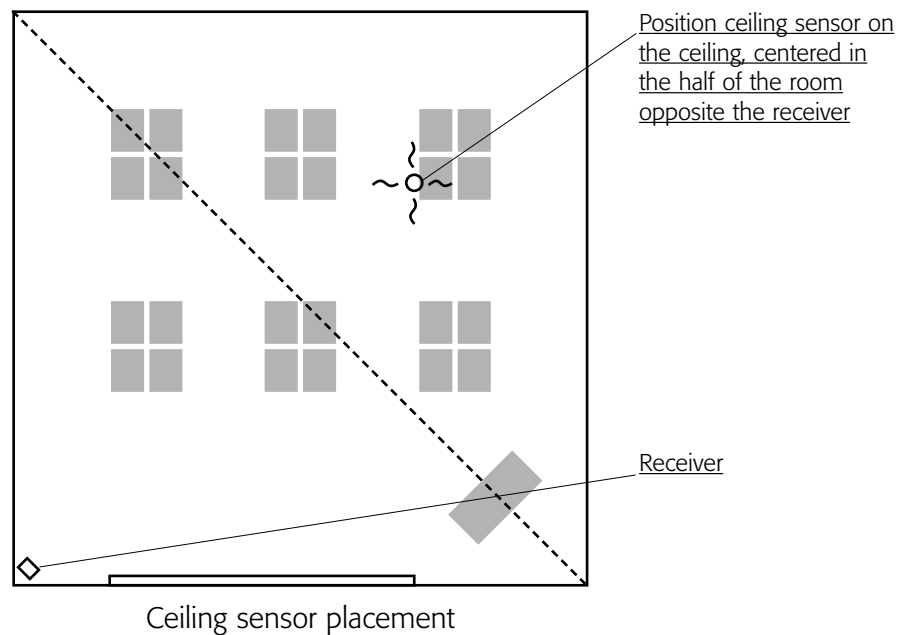
sensor combinations	maximum connections
ceiling sensor only	1
wall sensor(s) only	6 (using three 300-6332-108 y-cords)
ceiling & wall sensor	1 ceiling sensor, 2 wall sensors

a Positioning a ceiling sensor

A ceiling sensor is designed to 'see' the entire room at once, and so can often fill in any gaps in reception by the main receiver. Use the following guidelines when installing a dome sensor:

Mentally divide the room in half, with the main receiver contained within one half

Use a piece of tape to mark a spot on the ceiling that is centered within the other half of the room -- This is where you will install the dome sensor



Single ceiling sensor placement conditions:

- walls and floors light colored (white or beige)
- less than 50% window to wall area
- rooms no larger than 50' x 50' (2500 sq. ft.) typical
- rooms without obstructions

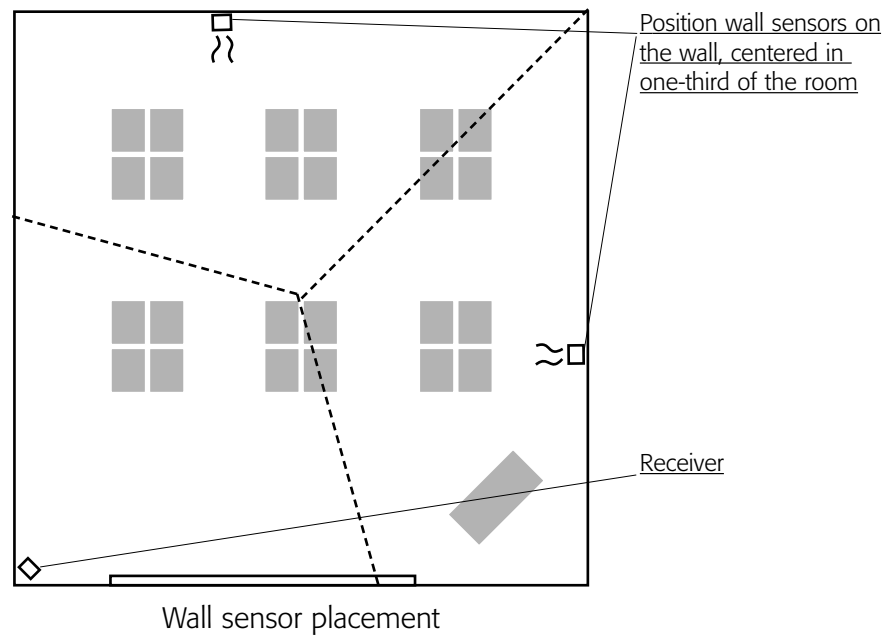
b Positioning 2 wall sensors

Wall sensors are ideal for complete coverage of rooms, even those with non-reflective or obstructing walls. Use the following guidelines when installing wall sensors:

Mentally divide the room into three equal sections, with the main receiver contained within one section

Use a piece of tape to mark a spot for each of the two wall sensors. The spot you choose should be:

- On the wall, as close to the ceiling as possible
- In a position that can 'see' the entire section



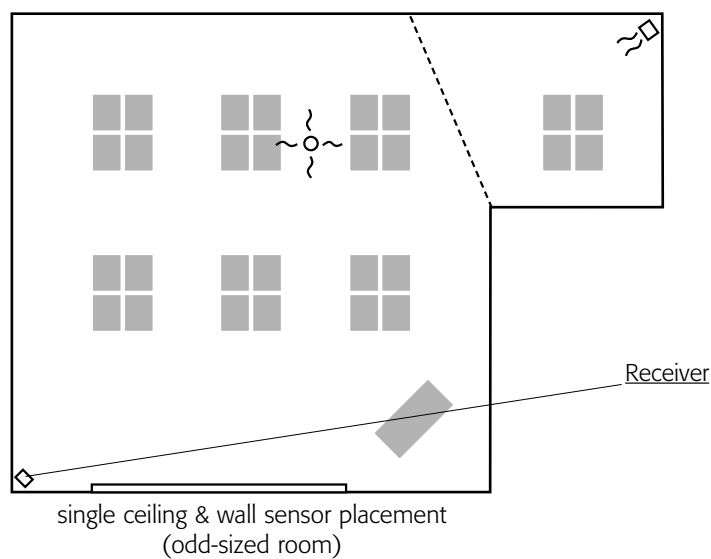
Dual wall sensor placement conditions:

- walls and floors medium to dark-toned in color
- rooms no larger than 50' x 50' (2500 sq. ft.) typical
- rooms with obstructions

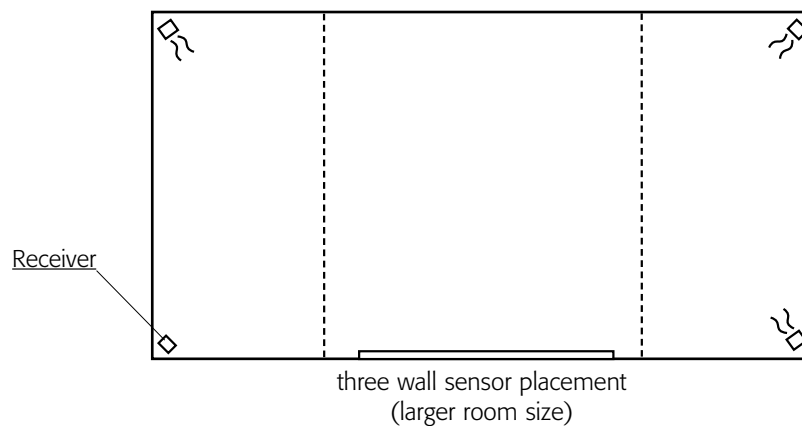
C Positioning ceiling and wall sensors

Combining external sensors is ideal for complete coverage of odd sized or oversized rooms with or without non-reflecting or obstructing walls. Use the following guidelines when installing ceiling and wall sensors:

- Mentally divide an odd-shaped room into sections as shown. The receiver and ceiling sensor should cover the larger sections of the room and the wall sensor should cover the alcove or smaller section.
- For larger sized rooms greater than 2500 sq. ft. we recommend using external wall sensors only (up to six wall sensors maximum) for optimum room coverage in IR challenging room environments.
- Use a piece of tape to mark a spot on the ceiling that is centered within one half of the large section of the room – this is where you will install the ceiling sensor
- Use a piece of tape to mark a spot for each of the wall sensors. The spot you choose should be:
 - on a wall, as close to the ceiling as possible
 - in a position that can “see” the entire section



or



Ceiling sensor and wall sensor placement conditions:

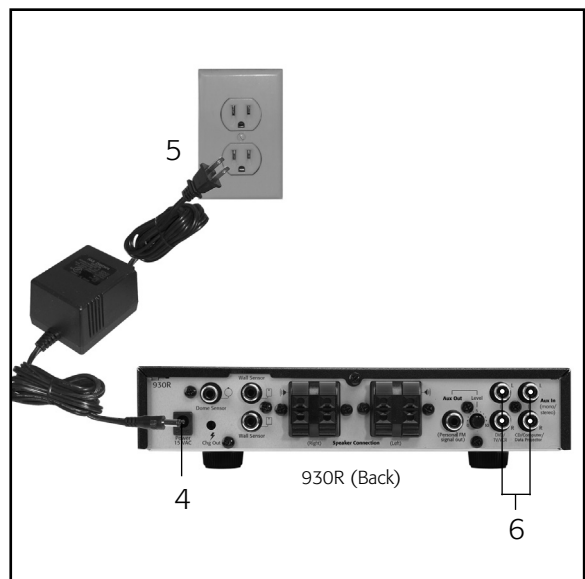
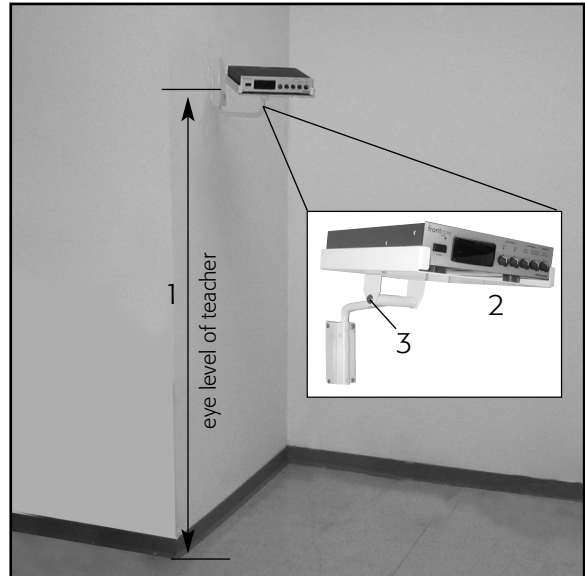
- odd-shaped rooms with alcoves, bays or sheltered areas
- large sized rooms greater than 50' x 50' (2500 sq. ft.) and less than 50' x 60' (3000 sq. ft.)
- rooms with obstructions, dark-toned walls and ceilings
- rooms with greater than 50% window to wall area

Step 2: Install the receiver

Estimated time for this step: 15 minutes

With the positions of all your major components settled, you can now install your receiver.

1. Attach AT0784 metal bracket to wall at teacher eye-level
2. Place receiver on tray
3. Slightly loosen tray joint with wrench provided, angle main sensor toward center of room, and tighten tray joint
4. Plug power supply into receiver
5. Plug power supply into wall socket
6. Connect any other teaching technology – TV / VCR, teacher's computer, etc. – to your FrontRow Pro system through the Aux Input jacks (cables supplied)



You've now completed Step 2. Let's proceed to routing your speaker and sensor cables.

Step 3: Routing speaker and sensor cables

Estimated time for this step: 45 minutes

With your receiver installed, you now have a base for routing your cables.

Ceiling speakers

If you're installing ceiling speakers, follow the guidelines below. (If you're installing wall speakers, follow the instructions starting on page 17).

1. Remove selected ceiling tiles

Remove the ceiling tiles you marked in **Step 1**

Remove the ceiling tiles directly above the sensor locations you marked in **Step 1**

Remove the ceiling tile directly above the receiver you mounted in **Step 2**

2. Prepare and route cable

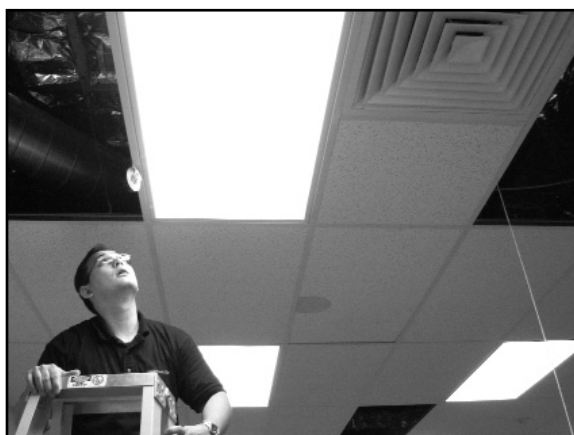
Tie an object, such as a roll of electrical tape, to some twine to use as a pull line. This will help you more accurately direct the cable in the area above the ceiling.

Standing on a ladder with your head and shoulders in the space where you'll install a ceiling speaker, toss the weighted end of your twine through ceiling space into the open tile hole above your receiver.

Connect the other end of the twine to the speaker cable. Pull cable through to the receiver.

Your goal is to have the cable entirely above the ceiling, with only the two ends protruding from the open space above the receiver and your chosen speaker tile.

Repeat these steps for the other three speakers and for your sensors



Tip

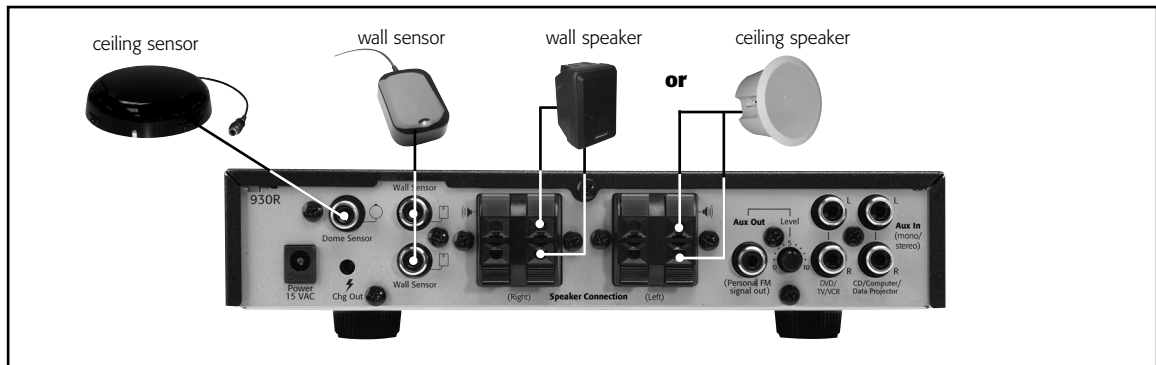
Can't get the pull line to the receiver in one throw?

Get the weighted end of the pull line as close to the receiver as you can. Then move your ladder under the tile where your cable stopped, remove that tile, and repeat until you've hit the mark.

3. Connect cables to receiver

To ensure faithful reproduction of stereo auxiliary inputs, be sure to properly match the red/black and left/right speaker wires to the proper receiver terminals.

Connect all speaker and sensor cables as shown:



Tip

Connecting more than three sensors?

If you need more than three sensors because your room is very large or oddly shaped, you can use a y-cord (300-6332-108) to attach more. Maximum sensor combinations include: 1 ceiling sensor & 1 wall sensor or 6 wall sensors only.

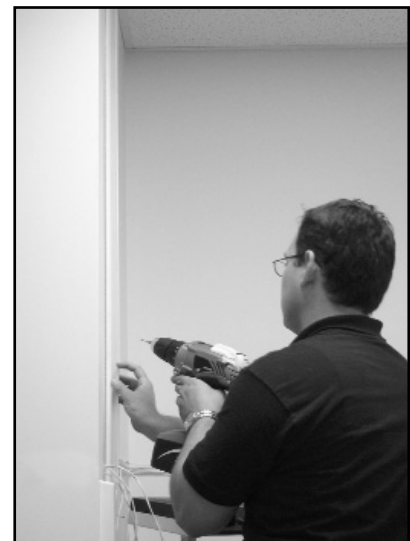
4. Install raceway

You can neatly conceal all cables running between the receiver and the ceiling space using widely-available plastic raceway.

Cut enough raceway to extend from just behind your mounted receiver to the ceiling

Using a level or tape measure to ensure straightness, attach the raceway to the wall

Route all speaker and sensor cables in raceway and close



Tip

For an especially neat installation

Cut your raceway long enough to extend into the ceiling space by about 5 centimeters. Notch the ceiling tile grid and the ceiling tile to fit your raceway. This makes a neater installation and reduces flexing of the cable.

5. Support cables

Speaker and sensor cables should not rest on the ceiling. Lift them off the ceiling and use cable/zip ties to secure them loosely to beams, anchor bolts, or other support structures in the ceiling (do not attach them to ductwork, plumbing, or other secondary work).

Wall speakers

If you're installing wall speakers, follow these guidelines:

1. Tack cable

Starting at one of your marked speaker locations, begin securing speaker cable to the wall with professional cable tacks. For a neat installation, try to keep the cable as close to the ceiling as possible. Leave about 10 centimeters slack for your eventual connection to the speaker.

Make your way back toward the receiver

Repeat for the other speakers and sensors in the room

2. Connect cables to receiver

Trim speaker cables to comfortably meet the receiver. Coil and tie sensor cable -- do not trim.

Connect all speaker and sensor cables as shown on the previous page.

Tip

Up to eight speakers can be connected at once

If you have a large or odd-shaped room you may install more than the typical four speakers. Refer to the "special speaker connections" section starting on page 23

Step 4: Install your speakers

Estimate time for this step: 30 minutes

Now that your cables are in place, you're ready to install your speakers.

Ceiling speakers

If you're putting in ceiling speakers, do the following:

1. Cut ceiling tiles

Locate one of your supplied ceiling tile bridges and the ceiling tile designated to hold a ceiling speaker

Lay the bridge on the tile so that the large hole in the bridge is approximately centered in the tile

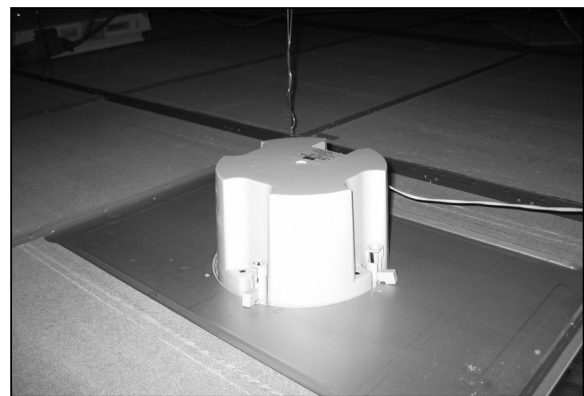
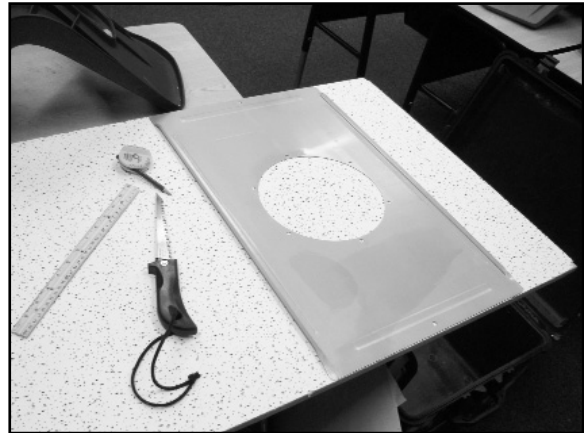
Use the bridge as a template to trace a circle on the ceiling tile

Using a keyhole saw, cut the traced circle out of the tile

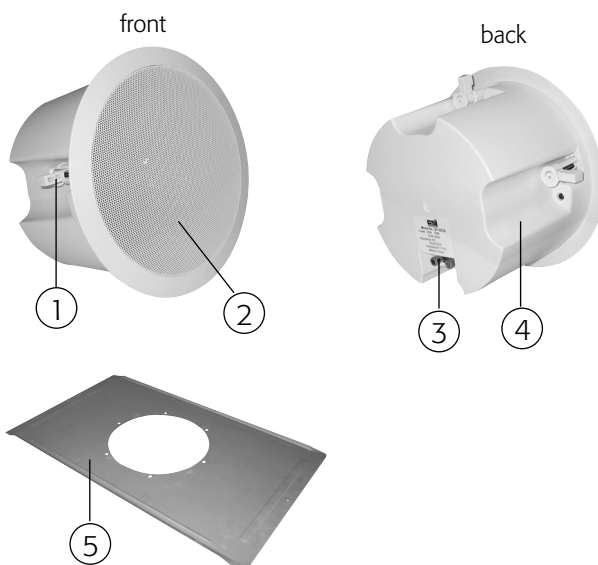
Repeat for your other speaker tiles

2. Replace tiles

Lay the tile bridge on the back side of the ceiling tile and return both to position in the ceiling tile grid. Be certain that the two short sides of the metal tile bridge are resting on top of the T-bar rails holding the ceiling tiles in place.



AT0806 distributed ceiling speaker features



- ① speaker support tabs
- ② speaker grill
- ③ speaker input terminals
- ④ attached speaker back enclosure (back can)
- ⑤ 470-7347-106 metal tile bridge

3. Connect speakers

Remove a tile next to your speaker tile to give yourself some working room

Remove the front grill from a ceiling speaker

Fold in the speaker's support tabs

Place the speaker in position in the tile

Using a Phillips screwdriver, turn each of the four mounting screws clockwise which will fold out the speaker's support tabs and allow it to rest on the tile bridge

Attach the speaker wires to the speaker terminals by pressing in each compression terminal to reveal an "eye," inserting the wire, and releasing the terminals to lock the cable in place. Be sure to connect the red wire to the red terminal and the black wire to the black terminal. Tighten screws on speaker face until the speaker is snug against tile.

Replace speaker grill

Repeat for your other speakers in the room



Wall speakers

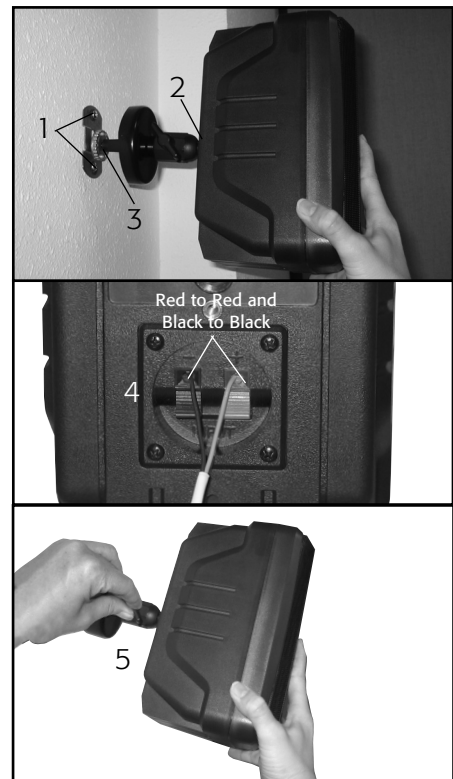
If you're installing wall speakers, do this:

1. Screw the bracket baseplate to the wall using fasteners provided
2. Screw the bracket balljoint assembly to the back of the speaker
3. Slide the balljoint assembly onto the baseplate and tighten the thumbwheel. Slide plastic cover over the baseplate.
4. Connect speaker wires

Insert red-tipped cable into red speaker connector and black-tipped cable into black speaker terminal.

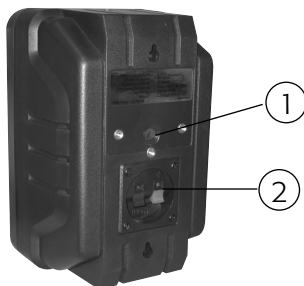
5. Align speaker

Loosen the bracket balljoint, angle the speaker toward the desk you marked in Step 1, and tighten the balljoint



470-2856-119 compact speaker features

back



- ① bracket mounting hole
- ② speaker wire input terminals

speaker with wall bracket



- ③ wall mount bracket
(470-7329-104 included with each speaker)
Consult bracket mounting guide included with bracket packaging for complete installation instructions.

Tip

Keep wall speakers upright

Two-way speakers have a horizontal dispersion pattern, so it's important to keep your wall speakers upright (i.e., the long dimension should be vertical) even when you're angling them toward the students. This orientation provides the best possible sound projection to the room.

Step 5: Install sensors

Estimated time for this step: 10 minutes

You're almost done. Chances are, your FrontRow Pro system can perform perfectly at this stage (and if you'd like to try to skip this step, go ahead to Step 6). Just to make sure you get maximum voice pickup throughout the room, it's probably a good idea to install at least one external sensor.

Ceiling sensor

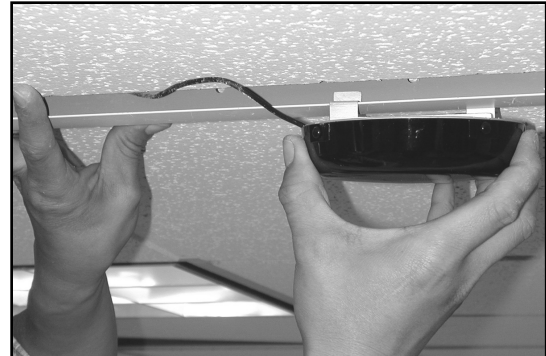
If you're installing a ceiling sensor and have an acoustic tile ceiling (or "drop ceiling"):

Note: Consult the ceiling sensor installation guide included with packaging for complete installation instructions.

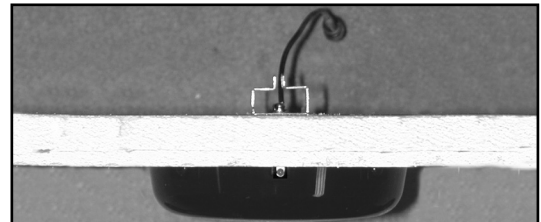
1. Locate the tile you marked in Step 2 for sensor placement
2. Slide and twist the ceiling sensor bracket onto the T-bar rail until it rests on the rail or mount directly to the ceiling tile if not using the T-bar supports
3. Attach the sensor to the cable leading to the receiver
4. Replace the ceiling tile, making sure that the sides of the tiles prevent the sensor bracket from twisting

If you're installing a ceiling sensor and have a sheetrock ceiling:

1. Locate the spot you marked in Step 2 for sensor placement
2. Mount the ceiling sensor directly to the sheetrock ceiling using the screws provided
3. Attach the sensor to the cable leading to the receiver

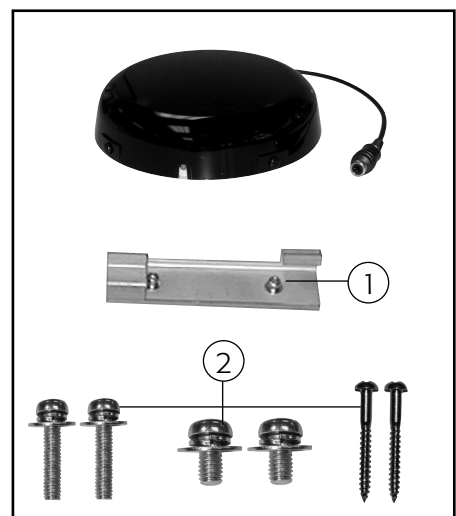


T-bar support rail



ceiling tile mount

520-7347-103 ceiling sensor features



① ceiling tile mount bracket

② mounting screws

Wall sensor

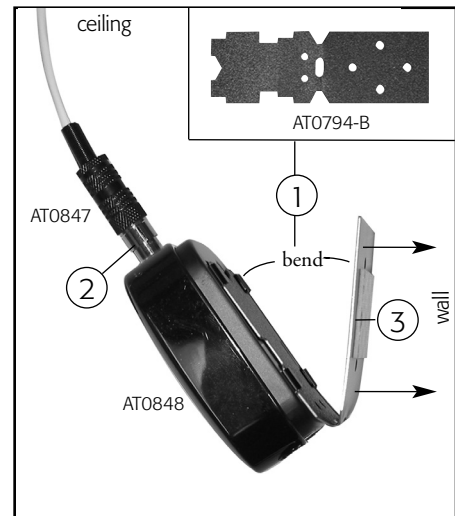
If you're installing wall sensors:

Note: Consult the wall sensor installation guide included with packaging for complete installation instructions.

1. Locate the spots you marked in Step 2 for sensor placement
2. Bend sensor bracket so that when placed on the wall, the sensor will face the center of the section of the room it's serving (see Step 2)
3. Slide bracket onto the back of the sensor
4. Attach the sensor to the cable leading to the receiver
5. Remove the cover on the adhesive mounting square
6. Press the bracket onto the wall firmly. Use mounting screws provided to secure bracket to wall if the adhesive mounting pad does not adhere well to the wall.

You're done! Now it's time to test your setup.

AT0848 wall sensor features



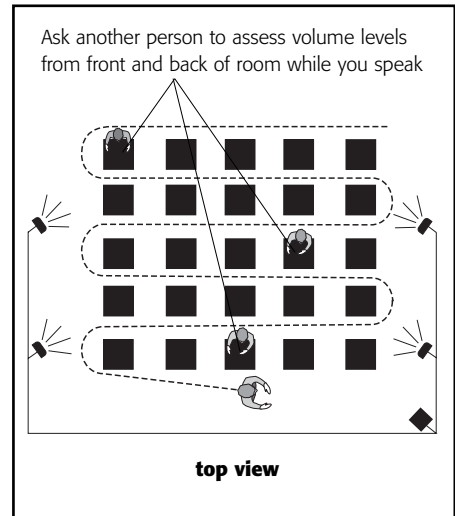
- ① wall sensor bracket (bent)
- ② sensor connector
- ③ adhesive mounting square

Step 6: Turn it on and test it

Estimated time for this step: 5 minutes

It's important to confirm that everything is working before packing up your tools. Take a few moments to test your work.

1. Use the following baseline settings to start:
All volume controls at setting 2 to 3
OptiVoice at Low
2. Put on the transmitter / microphone and turn it on
3. Turn on the receiver
4. Walk, talk, and listen to the sound quality (Find another person to help you with this step: It's difficult to assess your own voice)
5. Try to find any areas where the receiver is not picking up your signal (see Frequently Asked Questions if this happens)
6. Try to find any areas where you experience acoustic feedback (squealing) (see *Tip* below if this happens)



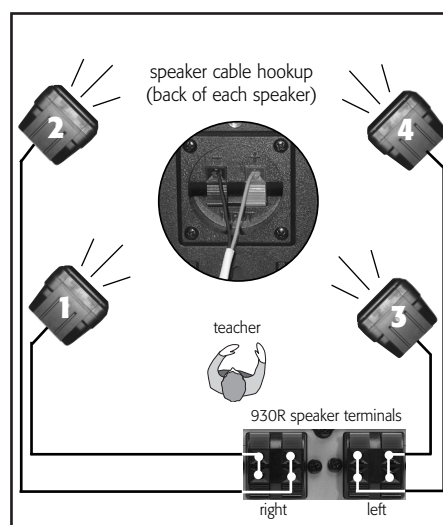
Tip

High-band EQ adjustment

In the event you experience acoustic feedback, have someone stand in the area of maximum feedback with the mic and receiver turned on. A second person should then adjust the Hi-band EQ control (located on the left side of the receiver) in a counter-clockwise rotation using a flat blade screwdriver, until the feedback disappears or is significantly reduced.

Special Speaker Connections

There may be cases where you want to install more than four speakers (e.g., the room is very large) or connect speakers in series (e.g., to save cable length). Here's how to do it:

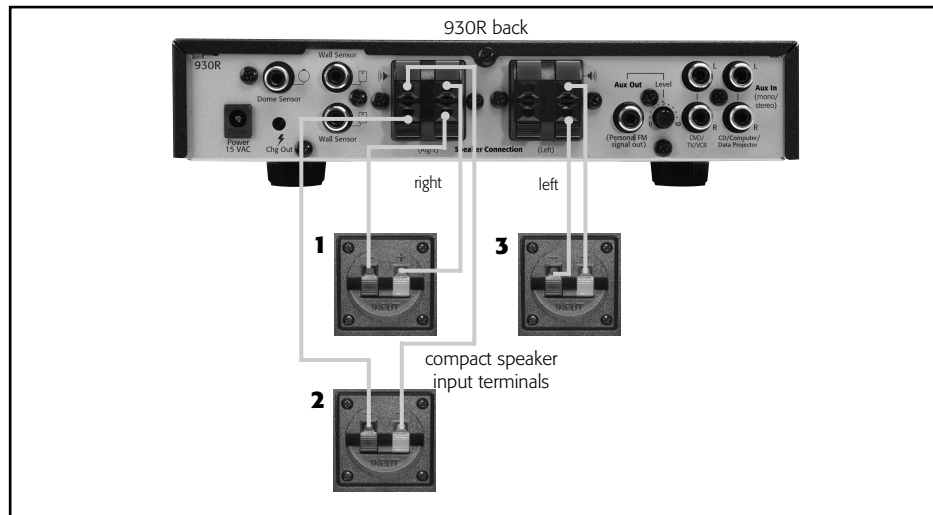


standard four-speaker setup

Using three speakers instead of four

If your room is too small for four speakers, daisy-chain three.

Connect speaker wires to the terminals as shown below for best power and sound distribution



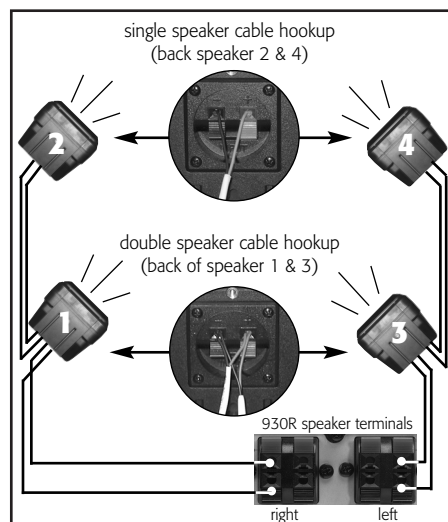
daisy chaining with 3-speaker connection grid

Daisy-chaining four speakers:

Daisy-chaining allows setup with shorter cable lengths

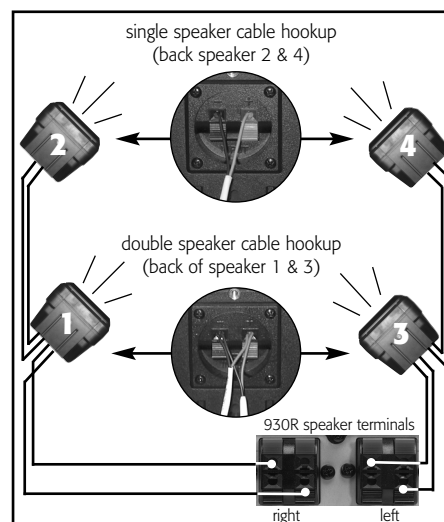
For optimum performance, daisy chain speakers in pairs: e.g. speakers 1-2, then 3-4 rather than 1-2-3-4 separately

Be sure to plug one speaker set on right, and one speaker set on left side of terminal.



four-speaker daisy-chaining option

or

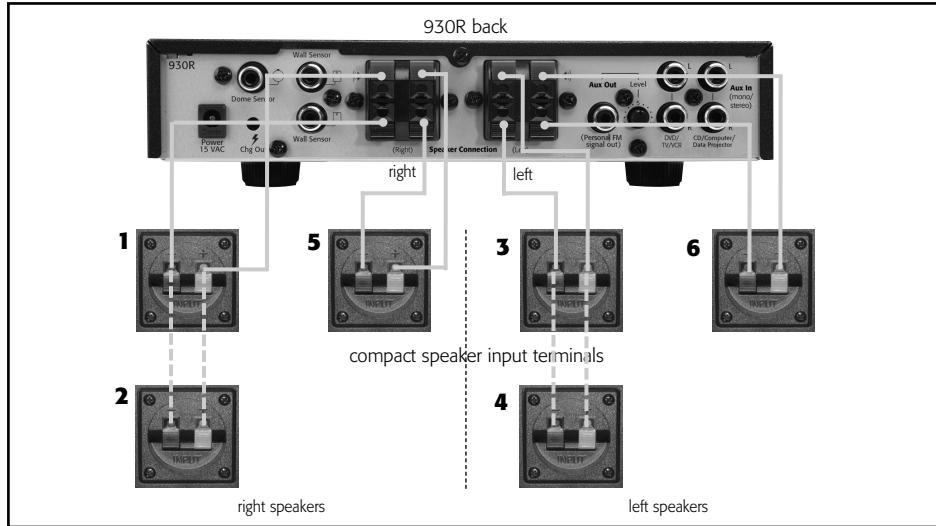


bridged mode
(if more power is desired)

Using up to six speakers:

If your room is too big for four speakers, daisy-chain six.

Connect speaker wires to the terminals as shown below for best power and sound distribution

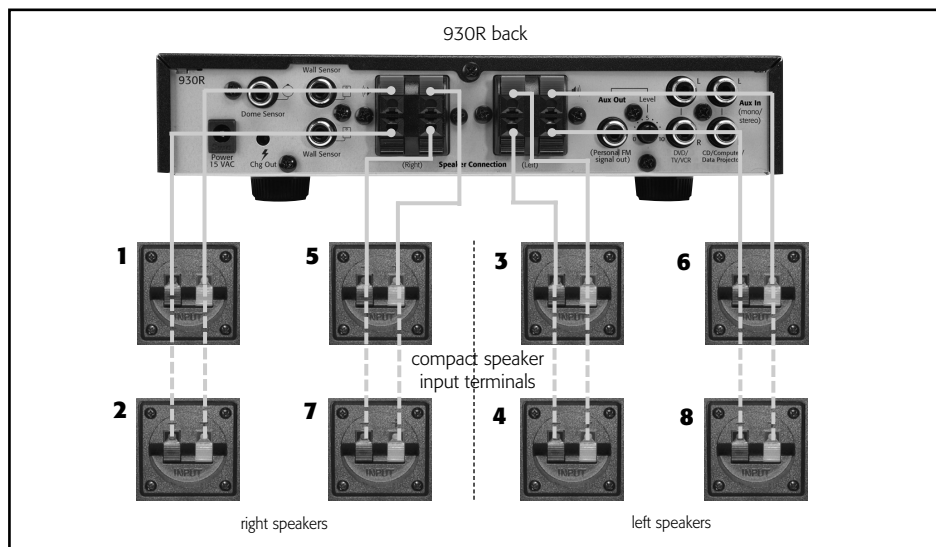


daisy chaining with 4 or 6-speaker connection grid

Using up to eight speakers:

If your room is too big for six speakers, daisy-chain eight .

Connect speaker wires to the terminals as shown below for best power and sound distribution



daisy chaining with 4 or 8-speaker connection grid

Frequently Asked Questions

I'm not getting reception – the volume control lights on the receiver are red. What's wrong?

- Check that the transmitter is on
 - Verify that you are not blocking either the emitters on the transmitter or the sensors on receiver or mounted around room
 - If reception is interrupted when facing a certain direction, install an additional sensor in that area of the room (see **Step 2**)
 - If team-teaching, verify that transmitters are not on the same channel
 - Recharge transmitter's batteries if low battery indicator shows (930TM, 900T, 930HT). Replace batteries if recharge is ineffective.
 - Verify that the emitter/mic is working (Test with another working emitter/mic)
 - If using a pendant style transmitter (930TM), verify the mute switch is off (in position, solid green indicator light)
-

I'm getting feedback (squealing) – how can I minimize this?

- Make sure that speakers are mounted as close as possible to both the ceiling and the listeners; avoid mounting speakers in the teacher's primary lecture area (see Step 2)
 - Position the microphone closer to mouth
 - Lower the MIC VOLUME control(s) on the receiver
 - Select the Low or Medium OPTVOICE setting
 - Adjust the HIGH BAND EQ control on the side of the receiver
-

There's no sound coming out of the speakers (or it's weak)

- Verify that the receiver is on (green power light)
 - Verify that the receiver is picking up a signal (green "Mic volume" light)
 - Increase the MIC VOLUME or AUX VOLUME control(s) on the receiver
 - Position the microphone closer to mouth
 - Verify that the speaker cables are connected properly
 - Verify that the transmitter is not muted
-

My receiver won't turn on – the power light is off. What should I do?

- Verify that the power supply is plugged into both the receiver and a working wall outlet
 - Test with another power supply
-

How can I eliminate 'dead spots' or microphone crackling / noise?

- Verify that you are not blocking either the emitters on the transmitter or the sensors on receiver or mounted around room
 - If reception is interrupted when facing a certain direction, install an additional sensor in that area of the room (see **Step 2**)
 - If team-teaching, verify that transmitters are not on the same channel
 - Recharge or replace the transmitter's batteries
 - Verify that the emitter/mic is working (Test with another working emitter/mic)
-

Why do I need to install external sensors?

Your FrontRow Pro system uses infrared light to transmit your voice from the transmitter to the receiver, similar to how your remote control changes your TV channels. This light signal needs to either be direct (i.e., 'line of sight') or reflected off walls, ceiling, and other surfaces. While in many cases, the sensor that's built into the receiver is more than adequate, some classrooms don't have enough reflective surfaces to allow the teacher to turn away from the receiver or stand in certain parts of the room. That's why it's a good idea to add at least one external sensor.

I think I need more than four speakers. Can I?

Yes. See Special Speaker Connections (page 23)

Product Specifications

base station receiver: 930R



Receiving frequency: 2.3MHz & 2.8MHz
Modulation: FM wide-band
IR frequency response: 50Hz to 10kHz
Speakers: 8 ohm
Acoustic output: 90dBa ± 3dB @ 1m into 8 Ohm
Auxiliary input level: 200 mVrms
Auxiliary input impedance: 15k Ohm, Nominal
Signal-to-noise: >65dB
THD: <1% @ 1kHz into 8 Ohm
Nominal deviation: ± 10 kHz
Maximum deviation: ± 25 kHz
Squelch: RF carrier/tone control
Squelch level: 19 dBuV
Power supply: 15VAC at 2.5A (AT0783)
User controls: Power on; Channel A volume; Channel B volume; 2 auxiliary volumes; OPTIVOICE™, Hi-band EQ (left side)
Displays: LEDs for "On" "Channel A"; "Channel B"; Green Ch A & Ch B LED indicates IR signal reception; Red LED indicates no IR signal
Color: Black case, silver front face
Size (wxdxh): 21.5 x 23.5 x 2.25cm/8.5 x 8.3 x 1.75in
Weight: 1.3kg/3lbs
Case: Steel, baked enamel finish, solid aluminum front face
Operating range: 18.5m/60ft line-of-sight (typical)
Reception area: 232m²/2500ft² (typical, with ceiling sensor)
Reception angles: 130° horizontally; 60° vertically (1/2 power)
Inputs/outputs: 2 RCA stereo (L/R) aux in jack; RCA aux out jack; 4 quick-connect speaker terminals; 3 RCA jacks for external sensor connection; 2.5mm input power jack; 1.3mm output charge jack

pendant transmitter: 930TM



Transmitting frequency: 2.3MHz & 2.8MHz (switchable)
Modulation: FM wide-band
Operating range: 18.5m/60ft line-of-sight (typical)
Transmission angles: 160° horizontally; 40° vertically (1/2 power)
Microphones: dual uni-directional hyper-cardioid (directivity index 6.0@500Hz)
User controls: On/off/mute/channel
Inputs/outputs: 2.5mm mic input; 3.5mm aux input; 1.3mm DC charge jack
Battery life: minimum 8 hour (single AA, 2500mAh rechargeable NiMH)
Size (wxhxd): 11 x 6 x 2.5 cm/4.5 x 2.5 x 0.9 in
Weight: 85g/3.0oz (with battery)
Case: ABS plastic

body-worn transmitter: 930T



Transmitting frequency: 2.3MHz & 2.8MHz (switchable)
Modulation: FM wide-band
Operating range: 18.5m/60ft line-of-sight (typical)
Transmission angles: 140° horizontally; 40° vertically (1/2 power)
User controls: On/off/mute/channel
Inputs/outputs: 6 pin DIN mic input; 1.3mm DC charge jack
Battery life: minimum 8 hour (dual AA, 1600mAh rechargeable NiMH)
Size (wxhxd): 5.8 x 9.4 x 3.0 cm/2.3 x 3.7 x 1.2 in
Weight: 85g/3.9oz (with batteries)
Case: ABS plastic

Product Specifications

handheld transmitter: 930HT



Transmitting frequency: 2.3MHz & 2.8MHz (switchable)
Modulation: FM wide-band
Operating range: 12m/40ft line-of-sight (typical)
Transmission angle: 360° radial
Audio distortion: <1.0% (± 15 kHz deviation @ 1kHz)
Microphone type: uni-directional dynamic
User controls: on/off/channel
Battery life: maximum 8 hours (dual AA, 2500mAh rechargeable NiMH)
Size (R x DIA): 255 x 58 mm/10.04 x 2.28 in
Weight: 258g/9.1 oz with batteries

wall speakers: 470-2856-119



Speaker type: Bass reflex; 8.9cm/3.5in woofer; 2.5cm/1in soft-dome tweeter
Impedance: 8 Ω nominal
Continuous power: 30W
Peak power: 80W
Frequency response: 65Hz to 20kHz - 10dB
Dimensions (W x H x D): 2.7 x 22.2 x 14cm/5 x 8.75 x 5.5 in
Weight: 1.75kg/3.86lbs
Mounting: wall mounting brackets provided (470-7329-104) (tabletop/floor stands also available)
Speaker wire: AT0581 18.3m/60ft
Sensitivity: 88dB, 1W @ 1m

ceiling speakers: AT0806



Speaker type: coaxial: 6in woofer, .5in tweeter
Impedance: 8 Ω nominal
Sensitivity: 90dB, 1W @ 1m
Continuous power: 35W
Peak power: 70W
Frequency response: 65Hz to 20kHz
Dimensions (DIA x D): 203 x 5.7 cm/9 x 2.25 in
Weight: 1.1kg/2.4lbs
Mounting: acoustic ceiling metal tile bridge (470-7347-106)
Speaker wire: AT0581 18.3m/60ft
Minimum ceiling height: 3m/10ft

ceiling sensor: 520-7347-103



Operating frequency: 2.3MHz & 2.8MHz
Operating range: 18.5m/60ft line-of-sight (typical)
Signal/Power interface: RCA-female jack, 8" lead
Number of IR LEDs: 9 (sequal radial spacing; 1 center)
Power indicator LED: Green
Reception area: 232m²/2500ft² (typical with receiver sensors)
Reception angle: 360° full semi-spherical (half dome) coverage
Dimensions (DIA x H): 13.5 x 3.3 cm/5.1 x 1.3 in
Weight: 224g/7.9oz (with bracket)
Mounting: Drop ceiling acoustic tile or sheetrock ceiling
Sensor wire: AT0847, 50ft long (RCA male-to-male)

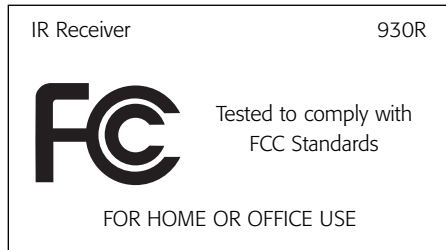
wall sensor: AT0848



Operating frequency: 2.3MHz & 2.8MHz
Operating range: 18.5m/60ft line-of-sight (typical)
Signal/Power interface: RCA-female jack
Number of IR LEDs: 2
Power indicator LED: Green
Reception angle: 70° horizontally/60° vertically (1/2 power)
Dimensions (W x H x D): 7.9 x 5.1 x 3.0 cm/3.1 x 2.0 x 1.2 in
Weight: 82g/2.9oz
Mounting: wall mount bracket provided (AT0794-B)
Sensor wire: AT0847, 50ft long (RCA male-to-male)

Regulatory Compliance

receiver: part 15, subpart B





This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications made to any government-approved element of this instrument, without the express approval of Phonic Ear Inc in writing, could void the user's authority to operate those elements of the system.

 This product conforms with the essential requirements of European Union Directive 1999/5/CE R&TTE Directive

 This product has been cleared by the U.S. Food and Drug Administration for use by persons with normal hearing and hearing impairment.

 *Waste from electronic equipment must be handled according to local regulations.*

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