

EASY & LISTENER™

PE 210 sound field system



user guide

PE 210R receiver

PE 210FSR receiver

AT0578 mini speakers

AT0664 ceiling speaker

AT0806 distributed ceiling speaker

PE 300T transmitter

)))))) **PhonicEar®**

other resources on line at www.phonicear.com

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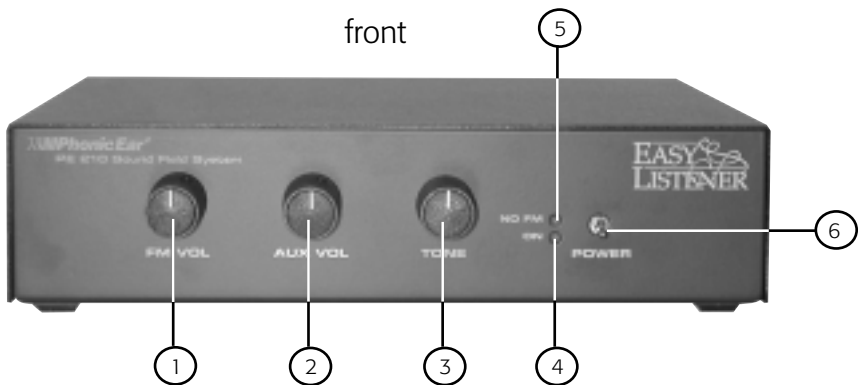
Base station receiver: PE 210R/PE 210FSR. 1-2
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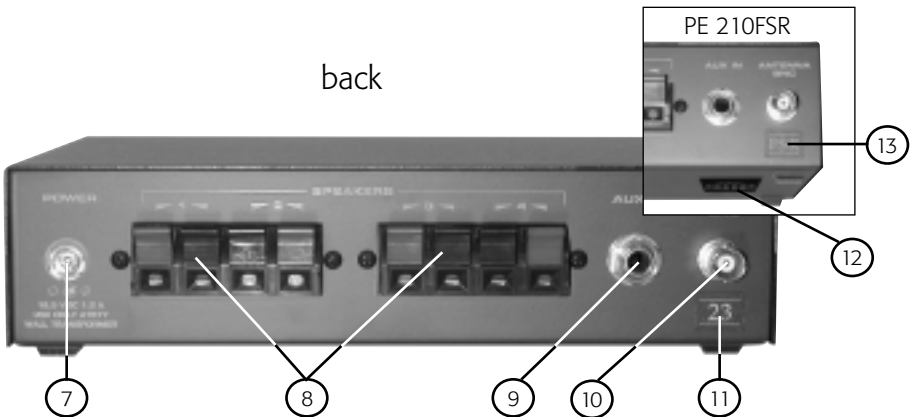
base station receiver: PE 210R/PE 210FSR

- ① FM volume
Controls the volume of the presenter's voice through the FM transmitter
- ② auxiliary volume control
Controls the volume of auxiliary sound equipment — such as TVs and CD players — plugged into AUX INPUT jack on back of receiver (see ⑨)
- ③ tone
Controls bass-to-treble emphasis
- ④ ON indicator
Lights when unit is powered and functioning
- ⑤ NO FM indicator
Lights when unit is not receiving an FM signal
- ⑥ power switch
Powers the unit



base station receiver: PE 210R/PE 210FSR (cont'd)

- 7 power jack
Connect AT0577 wall transformer here
- 8 speaker output terminals
Connect to speaker(s) via speaker cable; match red to red and black to black; depress and release lever to secure
- 9 auxiliary input jack
Connect a TV, CD player or other secondary sound source here
- 10 antenna jack
Connect antenna here
- 11 channel number
Make sure the channel matches your transmitter
- 12 frequency selector switch (PE 210FSR only)
Switch to the channel that matches your transmitter
- 13 indicates FSR model (PE 210FSR only)



transmitter: PE 300T

14 on/off switch

15 charging indicator
Glowes red when charging
NiCad or NiMH batteries
(Never recharge alkaline batteries!)

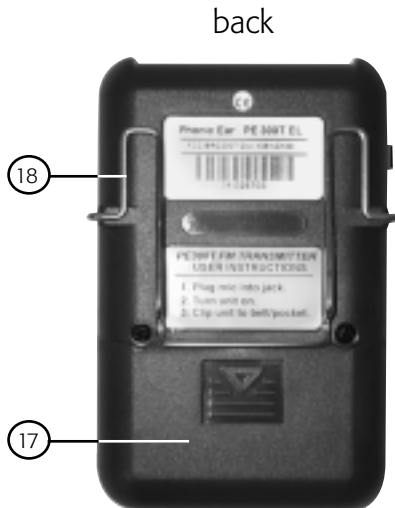
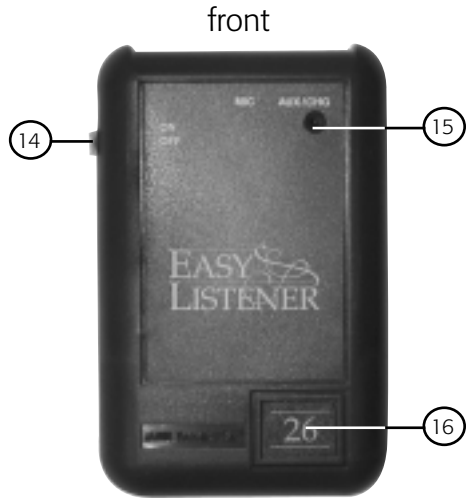
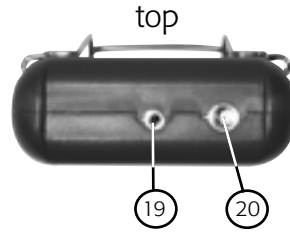
16 channel number
Make sure the channel matches
your receiver

17 battery compartment
Use AA rechargeable NiCad or
disposable alkaline batteries
(never recharge alkaline batteries!)

18 belt clip

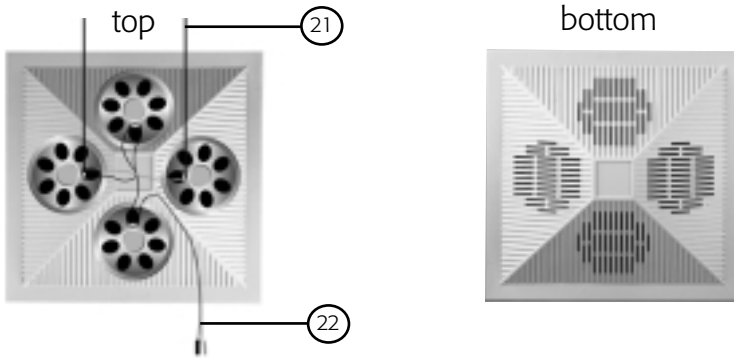
19 microphone jack
Plug in a directional microphone
(AT0291-L lapel mic or, preferably,
the AT0655M muteable behind-
the-neck mic)

20 auxiliary charge jack
Connect to a CD player or other
device through the AT0532 cord to
transmit a second sound source;
connect to personal charger (see 2)
to recharge NiCad or NiMH batteries
(never recharge alkaline batteries!)



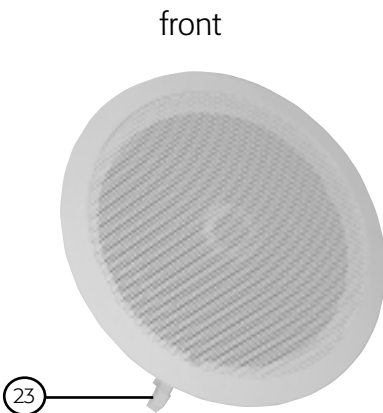
cluster ceiling speaker: AT0664

- 21 safety wires
Loop through speaker and attach to stable beam
- 22 speaker cable crimp connectors
Connect to receiver via speaker cable; match red to red and black to black and crimp with pliers to secure



distributed ceiling speaker: AT0806

- 23 mounting tabs
Allow quick and easy installation



mini speakers: AT0578S

- 24 speaker input terminals
Connect to receiver via speaker cables; match red to red and black to black; depress and release lever to secure

- 25 speaker cable strain relief
Feed speaker cable through eyelet to reduce strain

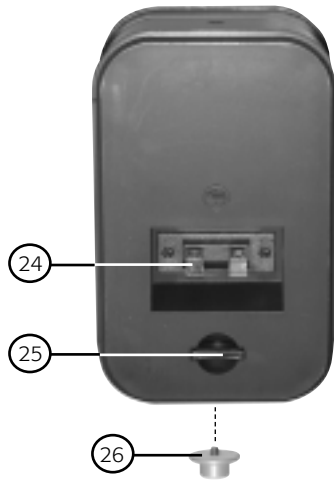
- 26 speaker stand adapter (optional)
Use to mount speaker on AT0579 floor stand or AT0579-T tabletop stand

- 27 wall mount harness
28 wall mount bracket

front



back

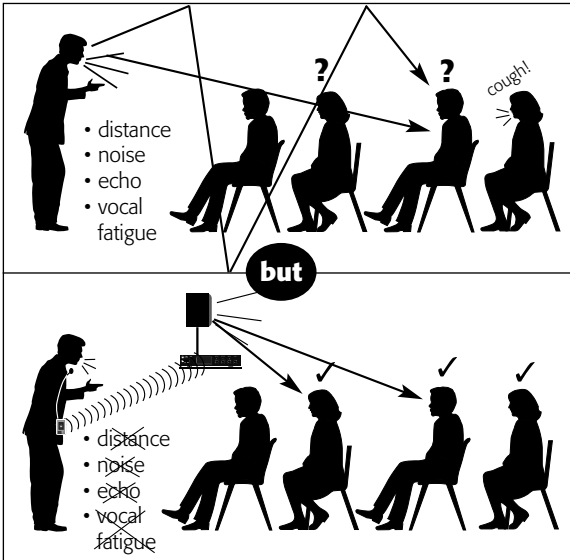


back with wall bracket

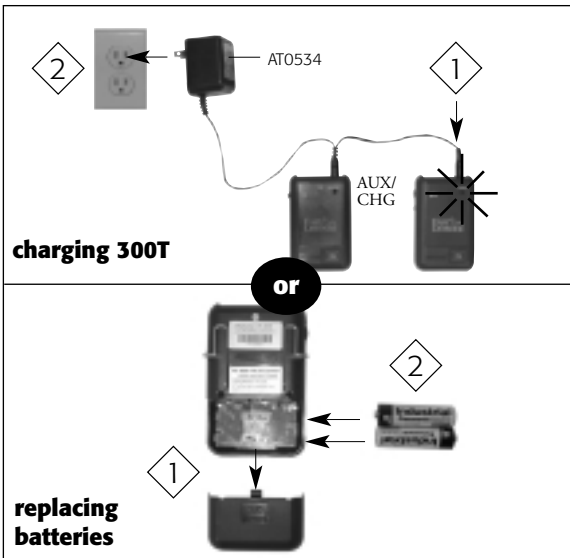


sound field system setup and operation

1 understanding sound field



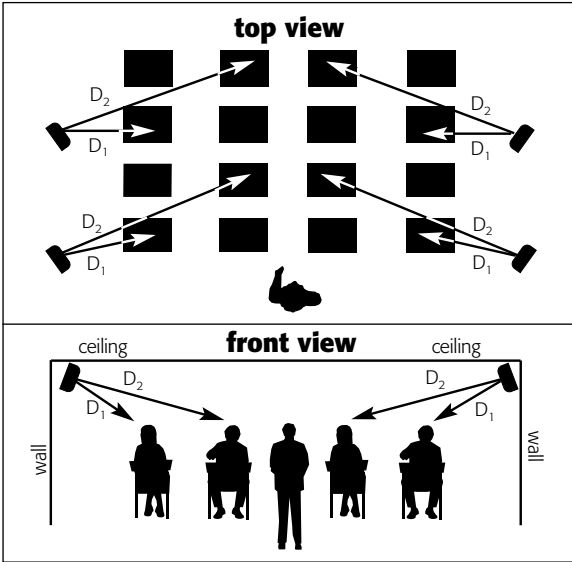
2 charging



- 1 Plug charger into unit
 - 2 Plug charger into wall socket
- Charge every night for 12 hours
 - Charge only rechargeable NiCad or NiMH batteries
 - **Never recharge alkaline batteries!**
- 1 Push off battery compartment door
 - 2 Insert batteries into compartment and replace door

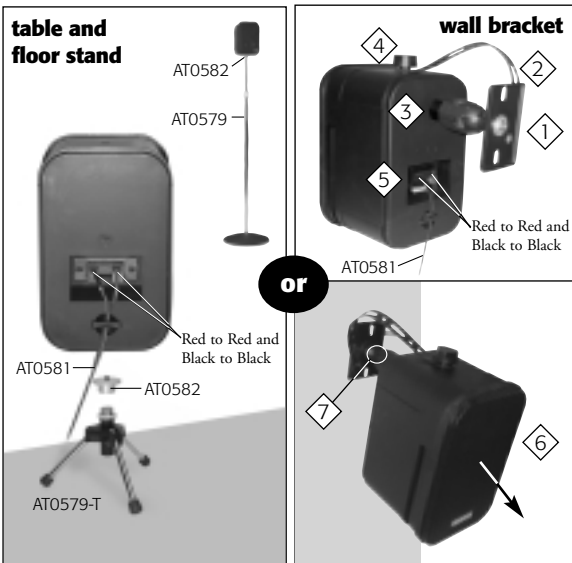
sound field system setup and operation (cont'd)

3a where to mount mini speakers (AT0578S)



- Use as many speakers as is practical (4 are recommended).
- Mount on walls, ceiling beams, columns, or other structure to bring speakers close to listener
- Mount speakers as high up as possible and angled down
- Aim speakers down toward listeners' faces.
- The farthest listener each speaker can serve should be less than twice as far away as the closest listener. ($D_2 < 2D_1$ in diagram)

3b mini speaker mounting

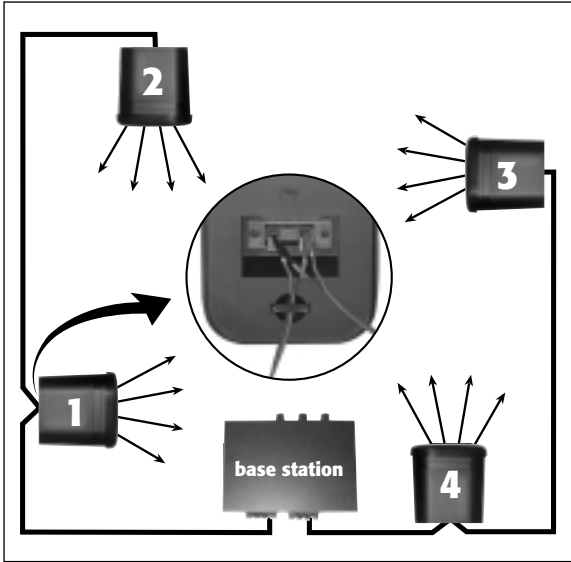


- 1 Screw wall bracket into wall
- 2 Screw harness into round hole in wall bracket
- 3 Screw speaker onto wall bracket
- 4 Attach harness to top of speaker
- 5 Attach speaker wires to back of speaker
- 6 Aim the speaker to desired position*
- 7 Secure speaker by tightening the ball joint using a 4mm Hex Key

* Consult Sound Wizard program for best speaker placement

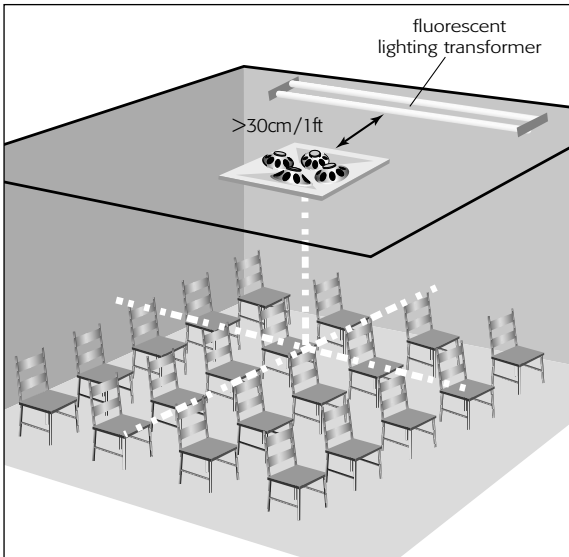
sound field system setup and operation (cont'd)

3c daisy chaining



- Daisy chaining allows setup with shorter cable lengths
- For optimum performance, daisy chain speakers in pairs: e.g. speakers 1-2 plus 3-4 rather than 1-2-3-4

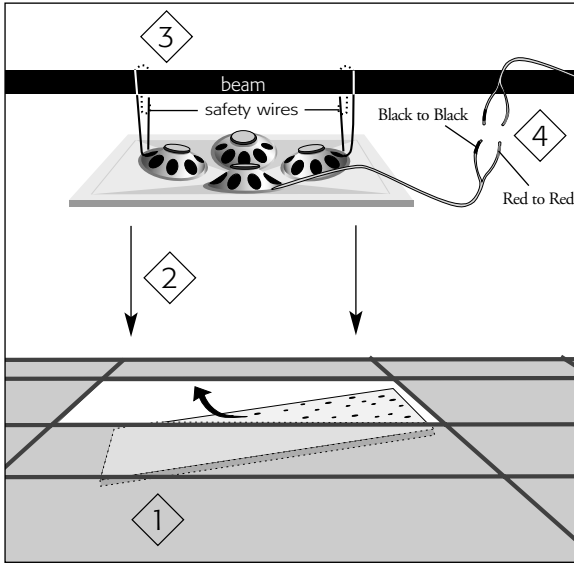
3d where to mount ceiling speakers (AT0664)



- Center speaker over listening area
- >3.5m/12ft ceiling recommended
- >30cm/1ft distance from fluorescent lighting transformer is recommended

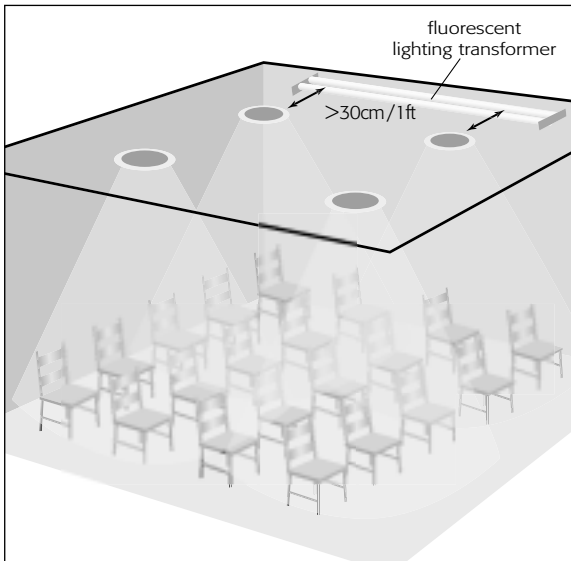
sound field system setup and operation (cont'd)

3e ceiling speaker mounting (AT0664)



- 1 Remove 60 x 60 cm/
2 x 2 ft ceiling tile
- 2 Lower speaker into space
- 3 Secure safety wires
- 4 Connect and crimp
speaker cable (run cable
along wall)

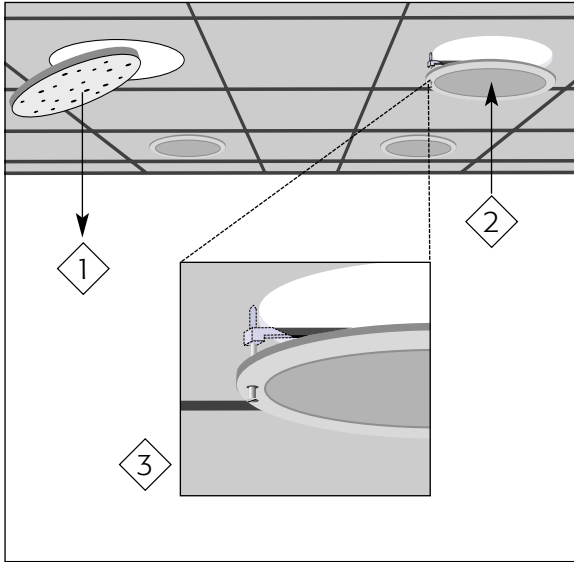
3f where to mount ceiling distributed speakers (AT0806)



- Space speakers evenly over listening area
- >3.5m/12ft ceiling recommended
- >30cm/1ft distance from fluorescent lighting transformer is recommended

sound field system setup and operation (cont'd)

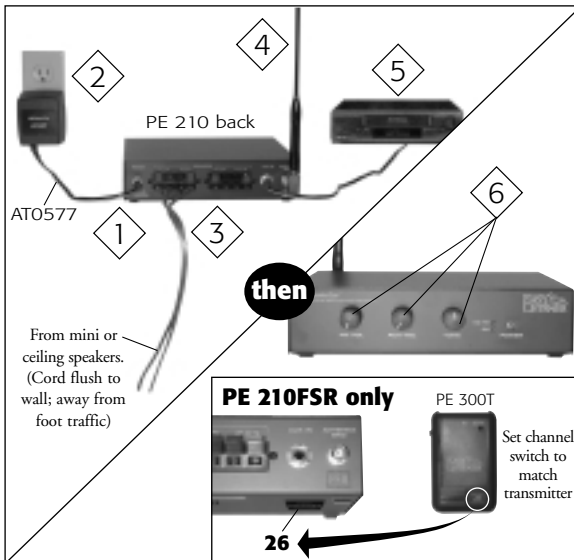
3g distributed speaker mounting (AT0806)



- 1 Cut and remove round hole in ceiling tile
- 2 Slide speaker into hole in tile
- 3 Tighten screw in mounting tab

NOTE: Speakers should be evenly spaced over the listening area

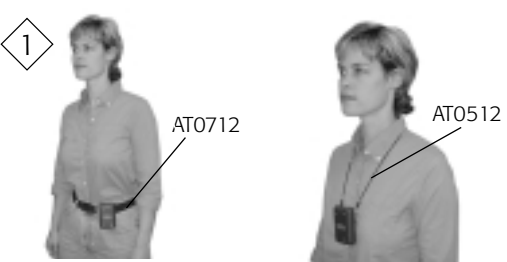
4a installing the receiver



- 1 Plug transformer into receiver
- 2 Plug transformer into wall socket
- 3 Connect speakers (red to red, black to black)
- 4 Connect antenna
- 5 Connect secondary sound source (optional)
- 6 Set dials as shown

sound field system setup and operation (cont'd)

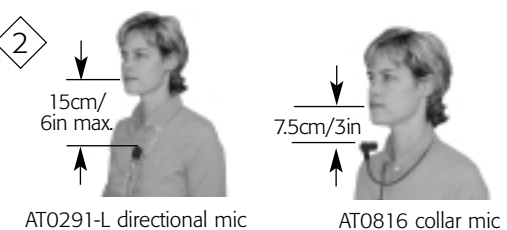
5 using the transmitter and mics



1

AT0712

AT0512




2

15cm/
6in max.

AT0291-L directional mic

7.5cm/3in

AT0816 collar mic

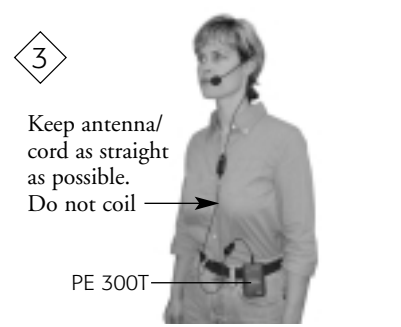


AT0814M
earhook mic

recommended

optional

AT0655M
(two wearing options)



3

Keep antenna/
cord as straight
as possible.
Do not coil

PE 300T

- 1 Clip to belt or wear around neck
- 2 Put on microphone
- 3 Plug in microphone
- 4 Turn transmitter power on

then

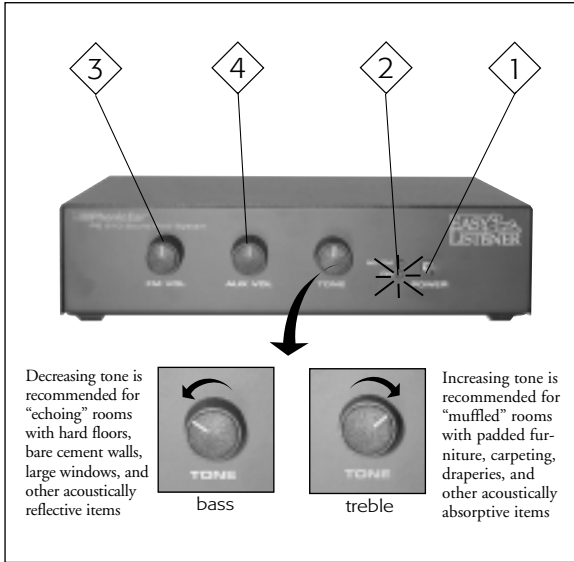
4

power



sound field system setup and operation (cont'd)

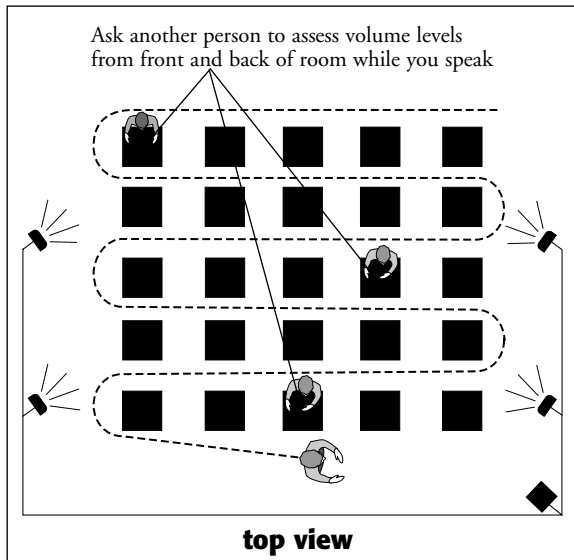
6 activate the base-station receiver



- 1 Turn power on
- 2 Confirm "On" light is lit
- 3 Adjust FM VOL as necessary
- 4 Adjust AUX VOL if team teaching or using TVs, CD players, etc.

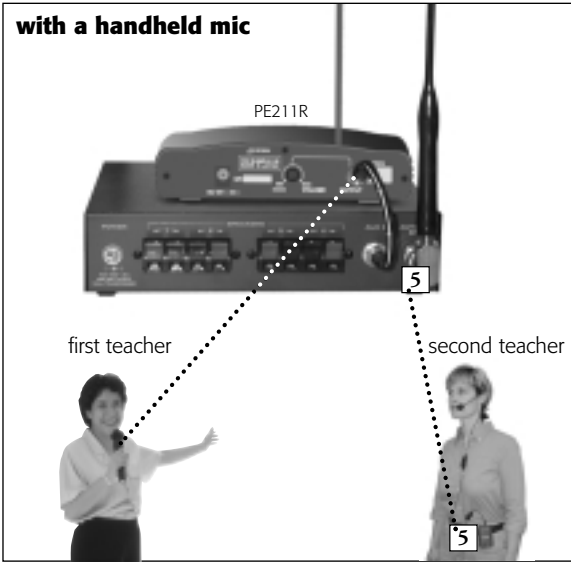
7 walk, talk, and listen to quality

(Initial setup only; reposition speakers if necessary. See 3)

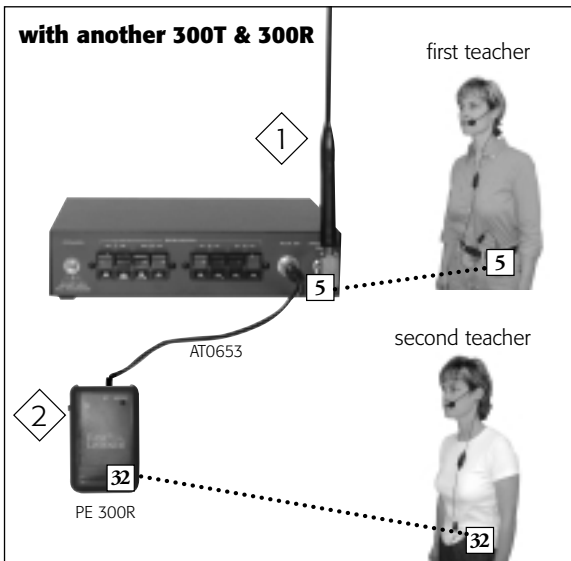


sound field system setup and operation (cont'd)

8 team teaching: option 1



team teaching: option 2

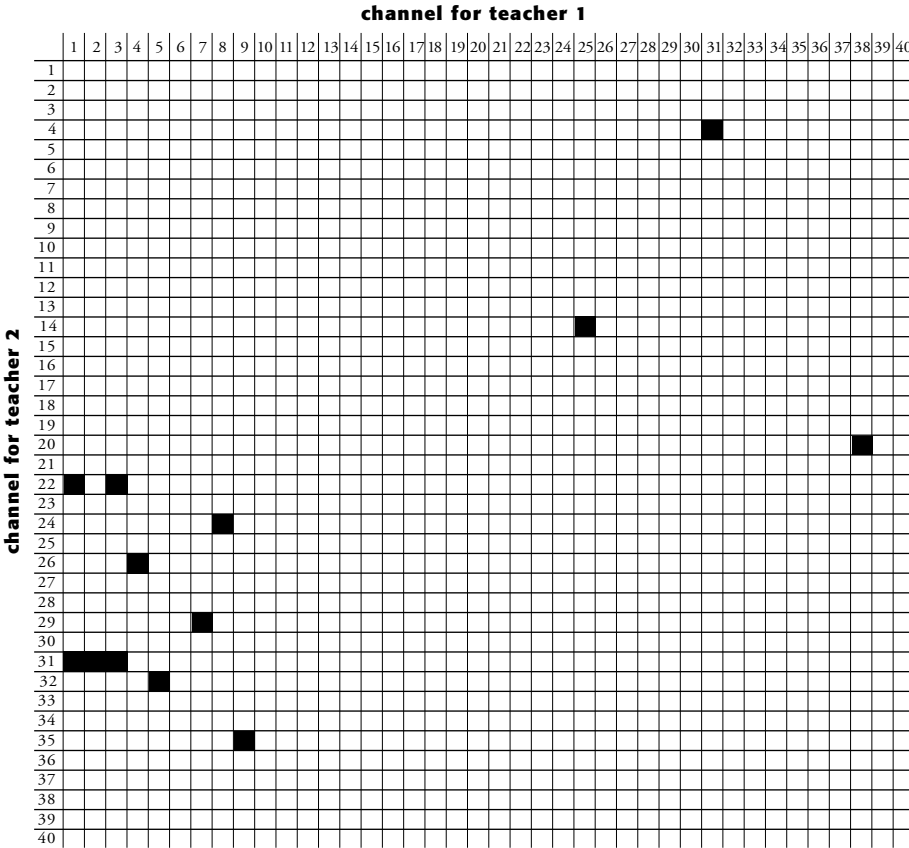


1 Adjust FM VOL, AUX VOL as necessary

2 Adjust VOL as necessary

optimal channel pairs for team-teaching

When setting up a team teaching system using personal FM transmitters (see [8](#)) it is a good idea to select channels that are as far apart as possible. Here are some recommended channel pairs.



specifications

base station receiver: PE 210R/ PE 210FSR

receiving frequency	72MHz to 76MHz (U.S./Canada) 37, 72, or 173 MHz (outside U.S./Canada)
frequency stability	±200Hz 0° to 50°C
modulation	FM narrow-band
AF frequency response	100Hz to 10kHz ±3dB
speakers	Four 8-ohm
max. acoustic output	90dB SPL @ 1m
auxiliary input level	100 mV
aux. input impedance	≥10k ohm
signal-to-noise	> 60dB
THD	< 2%
nominal deviation	±3.6kHz
maximum deviation	±10kHz
sqelch	RSSI Type
sqelch level	1μV at 20dB SINAD
power supply	16.5VDC at 1.2A (AT577)
user controls	ON/OFF/VOL FM VOL AUX VOL TONE Channel selector (PE 210FSR)
displays	LEDs for “On” and “No FM”
color	Black with purple/white lettering
size	21.6 x 15.2 x 6.4 cm/8.5 x 6 x 2.5 in
weight	635g/1.4 lbs
case	Aluminum, baked enamel finish

transmitter: PE 300T

transmitting frequency	72MHz to 76MHz (U.S./Canada) 37, 72, or 173 MHz (outside U.S./Canada)
modulation	FM narrow-band
operating range	30m/100ft
user controls	Off/on
inputs / outputs	3.5mm auxiliary input jack 2.5mm microphone input jack
battery life	40Hr (AA alkaline) 10Hr (AA NiCad)
size	2.5 x 9.4 x 5.6 cm/1 x 3.7 x 2.2 in
weight	80g/2.8oz
case	ABS Cyclocac plastic

specifications (cont'd)

mini-speakers: AT0578S

speaker type	Bass reflex 8.9cm/3.5in woofer 2.5cm/1in soft-dome tweeter
impedance	8 Ohms
capacity	40W continuous power
frequency response	100Hz to 10kHz
user control	On/off switch
size	17.8 (H) x 11.4 (W) x 12.7 (D) cm/ 7 (H) x 4.5 (W) x 5 (D) in
weight	1.13kg/2.5lbs
mounting	Wall mounting brackets provided (tabletop/floor stands also available)
cable	AT0581 7.3m/24ft, 14.6m/48ft, and 18.3m/60ft lengths available
strain relief	Spring-loaded pull-out cable retainer

cluster ceiling speaker: AT0664

speaker type	4 full-range 20cm/8in speakers
impedance	8 Ohms
sensitivity	96dB SPL 1W @ 1m
capacity	40W _{rms}
frequency response	30Hz to 15kHz
size	60.3 (H) x 60.3 (W) x 7.6 (D) cm/ 23.75 (H) x 23.75 (W) x 3 (D) in
weight	4.53kg/10lbs
mounting	Wall mounting brackets provided (tabletop/floor stands also available)
cable	AT0581 18.3m/60ft
enclosure	Composite

distributed ceiling speaker: AT0806

rms power	35W
max power	70W
frequency response	63Hz to 20kHz
impedance	8 Ohm
tweeter	.5 in mylar dome
dimensions (Dia x D)	203 x 5.7 cm/9 x 2.25 in
weight (approx)	1.1kg/2.4lbs
cable	AT0581 7.3m/24ft, 14.6m/48ft, and 18.3m/60ft lengths available

accessories

microphones

- Noise-canceling behind-the-neck microphone with mute (AT0655M) (recommended)
- Earhook microphone with mute switch (AT0814M)
- FM collar microphone with mute switch (AT0816)
- Directional mic with mic clip and lavalier cord (AT0291-L)
- Mic jack antenna (AT0529 A)
- AUX input patch cord 1.5m, 4.5m/ 5ft, 15ft (AT0532)
- PE 211 Wireless microphone system

transmitter options

- Wire belt clip (AT0489)
- Lavalier cord (AT0512)
- 2 rechargeable NiCad batteries (AT0665)
- Two-unit charger (AT0534)
- Waist belt (AT0712)

receiver accessories

- Auxiliary input cord (AT0653) 195cm/ 30in
- Antenna:
 - 37MHz: AT0617
 - 72MHz: AT0809
 - 173MHz: AT0566
- Wall transformer (AT0577)

speaker accessories

- Cluster ceiling speaker (AT0664)
- Distributed ceiling speaker (AT0806)
- Mini speaker (AT0578S)
- Tabletop speaker stand (AT0579-T)
- Speaker floor stand (AT0579)
- Speaker stand adapter (AT0582)
- Speaker cable 7m/24ft, 15m/48ft, 18m/160ft (AT0581)
- Speaker wall mount bracket (AT0578B)

caring for your system

cleaning

Clean as needed, using a soft, damp cloth.

storage

Clean with a soft damp cloth and remove the batteries from the transmitter. Place the system into an AT0580 carrying case or original packaging.

other important notes

- Protect your sound field system from excessive moisture, heat, and mechanical shocks.
- The case bottom of the PE 210R and PE 210FSR receivers, as well as the AT0577 wall transformer can get warm under normal operation.
- To protect the transmitter's case front, position it face down on a soft surface when removing or inserting the batteries.
- Always dispose of old batteries in approved battery recycling bins. It may be illegal to dispose in the trash. If you are not sure of proper disposal method, please consult your local authority.

warranty

time period of warranty

This warranty will go into effect upon the date of purchase and will stay in effect as long as the instrument remains the property of the original owner. ONWAVE™ has a 3-year warranty; VOCALPORT™ and VOCALIGHT™ have a 2 year warranty. All other products have a 1 year warranty.

what is covered by this warranty

Any electronic component, which because of workmanship, manufacturing or design defects, fails to function properly under normal use during the life of this warranty will be replaced or repaired at no charge for parts or labor, when returned to the factory service center. Transportation in and out is paid by the customer. If it is determined that repair is not feasible, the entire unit may be replaced with an equivalent unit upon mutual agreement of the manufacturer and customer.

what is not covered by this warranty

This limited warranty does not apply to:

1. Malfunctions resulting from abuse, neglect or accident
2. Instruments connected, installed, used or adjusted in any manner contrary to instructions provided by the manufacturer
3. Consequential damages and damages resulting from delay or loss of this instrument. The exclusive remedy under this warranty is strictly limited to repair or replacement as herein provided
4. Products damaged in transit unless investigated by the shipper and returned to the warrantor with the investigation report
5. Peripheral accessories as itemized within the product specification sheet as applicable, when such items are returned within 90 days from original purchase
6. Batteries if applicable

Phonic Ear Inc. reserves the right to make changes in the design or construction of any of its instruments at any time without incurring any obligation to make any changes whatsoever on units previously purchased.

This warranty is in lieu of all other expressed warranties. All expressed and implied warranties will terminate upon the expiration of this written warranty. No representative or person is authorized to represent or assume for us any liability in connection with the sale or use of our products other than as set forth above.

what to do if you have questions

If you have any questions about service, call the service department at **800.227.0735, then press 7.**

what to do if you need service

If you require service under the warranty terms, obtain a service order form either online at **www.phonicear.com/support.asp** or through our U.S. customer service department at **800.227.0735, then press 5** (or +1.707.769.1110 outside the U.S.). Fill the form out completely remembering to include:

1. Description of the problem
2. Your billing address
3. Your shipping address (if different from billing address)
4. Contact name and phone number
5. A P.O. number if the equipment is not under a warranty or service contract

Then, carefully package the equipment in the original shipping container to prevent damage and send it postpaid to the service center near you:

USA/International:

Phonic Ear Inc.

3880 Cypress Drive
Petaluma, CA 94954-7600
U.S.A.

In Canada:

Phonic Ear Ltd.

10-7475 Kimbel Street
Mississauga, Ontario
L5S 1E7 Canada

what to do if you have questions

If you have any questions about service, call the service department at **800.227.0735, then press 7.**

about your batteries

To ensure that your batteries are as fresh as possible upon arrival, we have intentionally not installed them in your equipment.

install your batteries in your equipment now, then charge overnight before initial use

(see user guide for charging procedure).

avoid battery corrosion

To avoid battery corrosion and damage to your equipment, **do not recharge disposable or rechargeable alkaline batteries.** Before charging any Phonic Ear equipment make sure only NiCad or NiMH rechargeable batteries are installed. As an added precaution, remove batteries if the equipment will not be used for several weeks.

troubleshooting

no FM reception (“NO FM” light on receiver stays on)

- Check that the transmitter is on
- Verify that the channel number of the transmitter and the receiver are the same
- Verify that the channel selector switch (PE 210FSR only) is set correctly
- Verify that the receiver antenna is attached
- Recharge or replace the transmitter’s batteries
- Verify that the microphone is working (test with another working microphone)

feedback

- Lower the FM VOL control on the receiver
- Reduce the TONE control on the receiver
- Make sure that the person wearing the 300T transmitter is not too close to the speakers
- Verify that only the AT0655M behind-the-neck mic, AT0513 over-the-head mic, AT0814M earhook mic, AT0816 collar mic or AT291 directional mic is being used with the PE 300T transmitter

weak output from speaker(s)

- Increase FM and/or AUX VOL control
- Check that none of the AT0578S speakers is blocked or covered
- Reposition the microphone closer to the speaker’s mouth
- Place the AT0578S speakers closer to the listeners
- Verify that the AT0664/AT0806 ceiling speaker has been properly installed

receiver won’t turn on (power light doesn’t turn on)

- Verify that the wall transformer is plugged into a working wall outlet
- Test with another AT0577 wall transformer

no sound from one speaker

- Verify that the speaker switch is in the ON position
- Verify that speaker cables are connected at the speaker and receiver terminals
- Disconnect speaker cable and reconnect with a new cable
- Replace speaker in question

the basics

1 using the transmitter and mics

1

AT0712

AT0512

2

15cm/
6in max.

AT0291-L directional mic

7.5cm/3in

AT0816 collar mic

3

AT0814M
earhook mic

recommended

optional

AT0655M
(two wearing options)

4

Keep antenna/
cord as straight
as possible.
Do not coil →

PE 300T

1 Clip to belt or wear around neck

2 Put on microphone

3 Plug in microphone

4 Turn transmitter power on

then

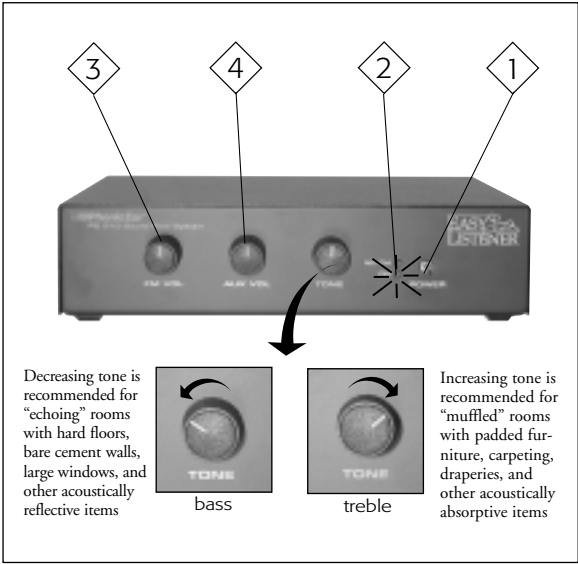
4

power



the basics (cont'd)

2 activate the base-station receiver



- 1 Turn power on
- 2 Confirm "On" light is lit
- 3 Adjust FM VOL as necessary
- 4 Adjust AUX VOL if team teaching or using TVs, CD players, etc.

u.s.: 800.227.0735, then press 7 • **canada:** 800.263.8700
outside u.s./canada: Call your local Phonic Ear dealer • **website:** www.phonicear.com