

EASY &
LISTENER™

**PE 210 Sound Field System
User Instructions**



ongratulations! You are now the owner of the **EASY LISTENER™** sound field system, an innovative product designed to improve listening environments through amplification.

Sound field amplification has been shown to:

- solve student listening problems
- improve academic performance
- reduce teacher vocal fatigue
- lower special education costs

Your new sound field system is very easy to use; however, we recommend that you read the entire *User Instructions* booklet to become familiar with all the features and benefits your Easy Listener system offers.

This assistive listening system meets the relevant requirements of section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA).

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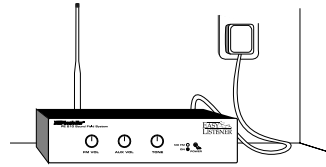
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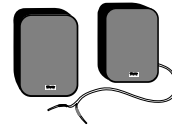
GETTING STARTED

WHAT YOU NEED

To start using your new sound field system, make sure you have these items:

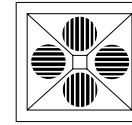


PE 210R or PE 210FSR Receiver
with AT577 Wall Transformer and Antenna



AT578-S Speakers with
AT581 Speaker Cable
(1 per speaker)

OR



AT664
Ceiling Speaker
with AT581 Cable

PE 300T Transmitter
with AT655 BTN Microphone
or other appropriate mic



AT534 Wall Transformer/
Two-Unit Charger

INSTALLING THE AT578-S SPEAKERS

The location and position you select for your AT578-S Speakers will play an important role in the room's overall sound quality. Everything from furniture to room configuration can effect sound dispersion. Therefore, it is a good idea to experiment with a number of possible locations before you decide on the final arrangement.

Ideally, speakers should be mounted on walls near the ceiling; however, the speakers may also be placed on a flat surface (such as a bookcase) or mounted to speaker stands. Consider the following suggestions when determining speaker location:

- Avoid placing speakers flush with corner walls or ceiling (see Figures 1 and 2).
- The speakers should be placed against the wall, approximately 8 to 12 ft (2.5m to 3.5m) above the floor.
- The speakers should be angled to point toward the listeners' ear level.

- Place speakers so that the sound transmission is equal for all individuals in the listening area.
- Position speakers so that furniture does not block sound dispersion.
- Avoid placing speakers directly opposite each other or opposite a large reflective surface; stagger them instead (see Figures 3 and 4).

When you've established suitable locations for your speakers:

- Connect a speaker cable to each speaker, matching black to black and red to red for correct polarity.

GETTING STARTED

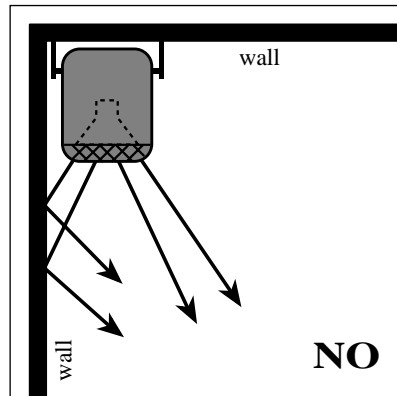


Figure 1 (Top View)

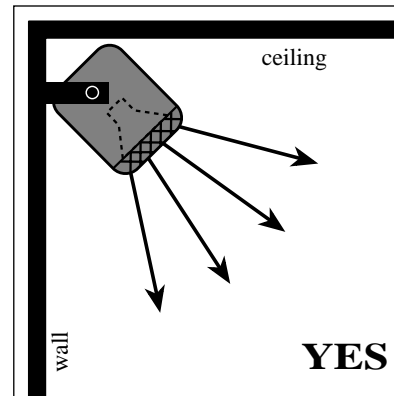


Figure 2 (Side View)

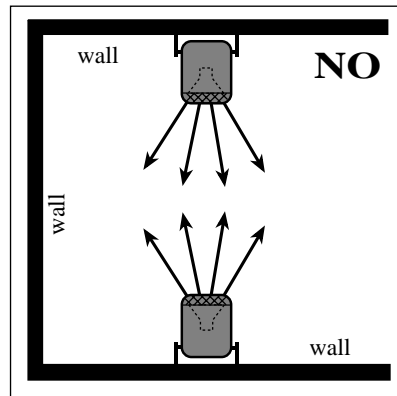


Figure 3 (Top View)

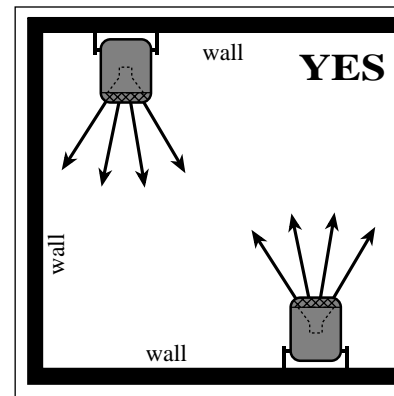


Figure 4 (Top View)

Speaker Placement Checklist

Before permanently installing speakers, check each of the following:

- | | |
|---|--|
| <input type="checkbox"/> Does set-up deliver a uniform and clear sound signal? | <input type="checkbox"/> Is equipment located in areas away from excessive heat or cold, wetness, or open windows? |
| <input type="checkbox"/> Is there any feedback? | <input type="checkbox"/> Are you using the proper hardware to secure the speakers? |
| <input type="checkbox"/> Are cables secured to the walls? | <input type="checkbox"/> Does your installation meet local electric and fire department codes? |
| <input type="checkbox"/> Is speaker angle pointing at the listeners' ear-level when seated? | |

GETTING STARTED

Mounted Top View

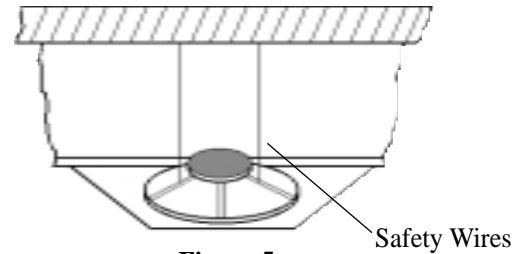


Figure 5

NOTE: GVC, SD Technologies, and Phonic Ear Inc. are not responsible for the structural integrity of the installation. This drawing is not intended for use as an engineering design specification or for loading calculations.

INSTALLING AT664 CEILING SPEAKER

Please follow these recommendations to enhance the speaker's overall performance.

- Consult with a professional sound contractor or electrician before installation.
- Select a ceiling position over the central listening area for best coverage.
- Leave a distance of at least one foot from lighting transformers to avoid interference.
- If possible, remove obstructions in the path of the sound, or add another speaker to cover the affected zone.
- Remove a 2 ft x 2 ft (61cm x 61cm) ceiling tile.
- Insert the speaker unit into opening, placing the edge of speaker onto the ceiling grid.
- Always attach the speaker to a structural component above the ceiling with a minimum of two safety wires. (see Figure 5).
- Insert one end of the AT581 speaker cable into the crimp connector of the ceiling speaker wire. (Connect black to black and red to red for correct polarity). Crimp the connection using pliers or other tool.

INSTALLING THE RECEIVER

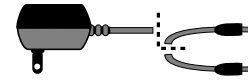
- Position the PE 210R Receiver near a wall outlet that is central to the location of the speakers, and verify that the power switch is in the off position. Plug in the AT577 Wall Transformer.

NOTE: Install your sound field receiver at least 5 feet away from digital equipment (such as computers or CD players) to avoid interference or possible loss in effective range.

- Run speaker cables to the receiver, making sure they are against a wall and out of the way of foot traffic.
 - Connect the speaker cables to the speaker terminals on the back of the receiver. Connect black to black and red to red for correct polarity.
 - Connect the antenna to the antenna jack located on the back of the receiver.
 - Set the FM VOL control and AUX VOL control on the receiver to the minimum level (counter-clockwise). Adjust the TONE control to the center position.
- NOTE:** If using the PE 210FSR Receiver, select the operating channel that matches the transmitter channel by sliding the channel selection switch located on the bottom of the Receiver. (See page 6)

GETTING STARTED

PE 300T Transmitter
with AT655 BTN Microphone
or other appropriate mic



AT534 Wall Transformer/
Two-Unit Charger

- Switch the receiver POWER control on. The receiver is now ready to receive the FM signal from the transmitter. The ON and NO FM lights will be on.

USING THE TRANSMITTER

The transmitter will need to be charged overnight or for at least 12 hours prior to the first use. (Batteries are protected from over-charging.)

- Plug the microphone into the MIC jack of the transmitter.
- If using the AT655 Behind-the-Neck microphone, position the microphone over the left ear and slightly below the mouth. If using a lapel microphone, clip it to clothing or adjust the lavalier cord so that it is no further than 6 in (15cm) below your chin.
- Turn the transmitter's ON/OFF switch to the ON position, and verify that the red NO FM light on the receiver is off.
- The transmitter/microphone is now ready to accept your speech signal.
- Adjust the receiver's FM VOL and TONE controls while speaking into the transmitter and listening to the speakers. As a general rule, increase treble in a sound-absorptive room (i.e., one with carpet, soft furniture,

etc.), and decrease treble in a sound-reflective room (i.e., one with hard walls, floors, furniture, etc.). (See page 5.) If feedback occurs, reduce the FM VOL and/or reduce the TONE control setting.

- Make installation a team effort —have one person speak into the transmitter while another checks the sound quality in various locations around the room. Adjust the speaker position if necessary.

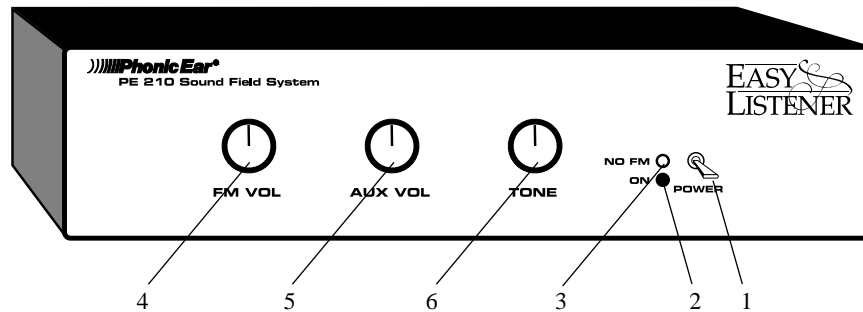
CHARGING THE TRANSMITTER

CAUTION: Do not recharge disposable or rechargeable alkaline batteries—they may rupture and damage the unit.

- To charge the PE 300T Transmitter first verify that the ON/OFF switch is in the OFF position.
- Then, plug one of the two mini plugs of the AT534 Charger/Transformer into the AUX/CHG jack of the transmitter. (You may charge up to two transmitters at once.) Next, connect the wall plug end of the Charger/Transformer to a wall socket. The Transmitter's AUX/CHG light should come on indicating the unit is being charged.
- After charging, disconnect the charger from the transmitter.

FEATURES AND FUNCTIONS

Front View



PE 210R / PE 210FSR RECEIVER

Front Panel

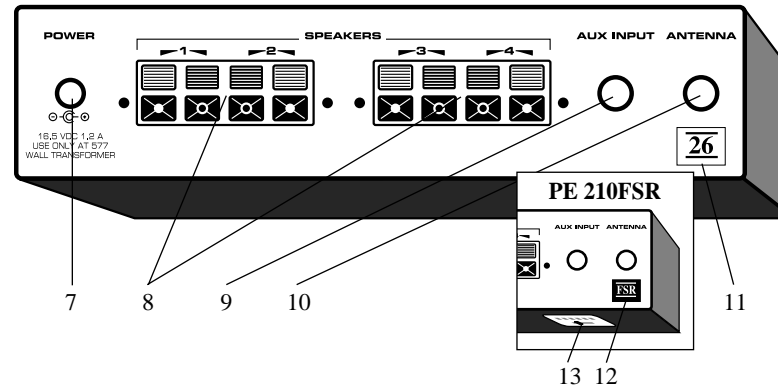
- 1. Power Switch**
Turns the unit on and off.
- 2. ON Indicator Light**
Lights when the unit is on.
- 3. NO FM Indicator**
A red lamp will light when the receiver is on, but no FM signal is being received.
- 4. FM VOL Control**
Controls the sound level received from the PE 300T Transmitter.
- 5. AUX VOL Control**
Controls the sound level received from tape players, TVs, or other equipment plugged into the AUX INPUT jack on the back of the receiver.
- 6. Tone Control**
Allows the system to be adjusted for best performance in various listening environments. Turn the knob clockwise to increase treble, and counter-clockwise to increase bass. Place knob in the center for a mid-range tone.

Rear Panel

- 7. Power Jack**
Provides power to the receiver from the AT577 Wall Transformer.
- 8. Speaker Output Terminals**
Push terminals allow for connection of up to four 8-ohm AT578-S Speakers, or up to two AT664 Ceiling Speakers. Black and red color-coding ensures correct polarity.

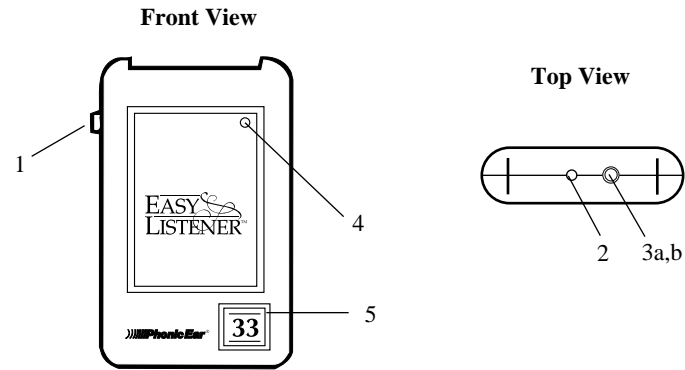
FEATURES AND FUNCTIONS

Back View



- 9. AUX Input Jack**
Allows external sound sources (such as a cassette recorder or television) to be broadcast over the system's speakers. Also enables connection of a PE 300R or PE 350FSR Receiver for team teaching presenters — allowing two different signals to be broadcast simultaneously through the PE 210 or PE 210 FSR receiver.
- 10. Antenna Jack**
Connects the antenna to the receiver for reception of the transmitted FM signal.
- 11. Channel Number (PE 210R only)**
Identifies the operating channel of the PE 210R Receiver. Transmitter and receiver channel numbers must match for the units to operate together.
- 12. FSR Indicator (PE 210FSR only)**
Identifies the unit as a PE 210FSR frequency selective receiver, allowing for selection of any one of six FM narrow-band receiver frequencies for greater flexibility.
- 13. Frequency Selector Switch (PE 210FSR only)**
This switch (located on the bottom of the PE 210FSR Receiver) permits selection of any one of six FM narrow-band operating channels. Three standard channel groupings are available in the frequency band. (See the Frequency Reference Chart on page 14.)

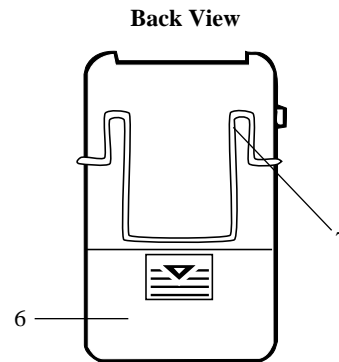
FEATURES AND FUNCTIONS



PE 300T TRANSMITTER

1. **Power Switch**
Turns the unit on and off.
2. **MIC Jack**
Used to connect microphones available for the PE 300T Transmitter. To connect a microphone, insert plug into the MIC jack of the transmitter. (The MIC cord also serves as the antenna. To ensure optimum reception, do not coil or tangle the cord during use.)
NOTE: *When an external microphone is not being used, the AT529 Antenna must be plugged into the MIC jack for proper transmission.*
- 3a. **AUX Input Jack**
For connecting an external sound source such as a cassette recorder, CD-player or TV via the AT532 Auxilliary Input cord.
- 3b. **Charge Jack**
Accepts the AT534 Charger / Wall Transformer for recharging NiCad batteries. Always turn the unit off prior to recharging (unit will charge if left on, but more charging time will be required).
4. **Charging Indicator**
A red light will indicate that the unit is being recharged.

FEATURES AND FUNCTIONS



5. **Channel Number**

Identifies the operating channel of the unit. Transmitter and receiver channel numbers must match for the units to operate together.

6. **Battery Compartment**

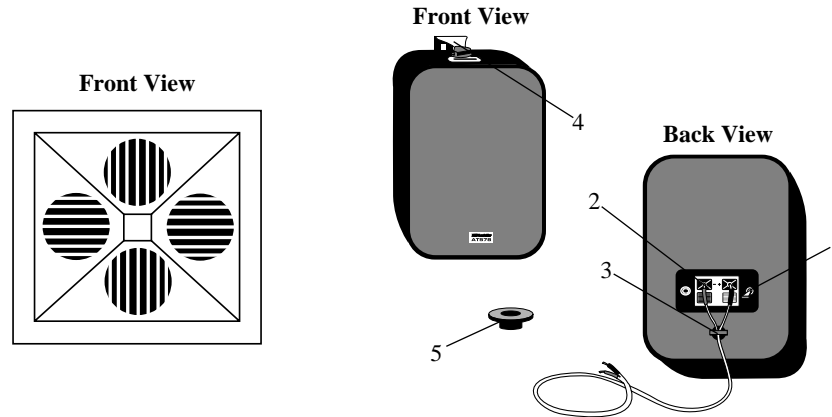
Houses two AA-size rechargeable NiCad or disposable alkaline batteries used to power the unit.
(Caution: Do not recharge disposable or rechargeable Alkaline batteries – they may rupture and damage the unit.) When replacing batteries, carefully note the markings inside the battery compartment for proper placement.

Transmitter operating life: 8 hours with rechargeable NiCad batteries; 20 hours with alkaline batteries.

7. **Belt Clip**

Designed to conveniently attach the transmitter to a belt. The transmitter may also be placed in a pocket or hip pack as long as the microphone cord/antenna is not bent, coiled, or twisted.

FEATURES AND FUNCTIONS



AT664 CEILING SPEAKER

This 4-way speaker unit disperses sound through four full-range 8 in (20cm) speakers with 180° by 360° coverage. Total coverage is determined by the height of the ceiling. A maximum of two ceiling speakers may be connected to the EASY LISTENER receiver to increase coverage as needed.

The speaker's patented design eliminates "hot" spots and minimizes areas of drop out to guarantee the most even distribution of sound.

AT578-S SPEAKERS

- 1. Speaker Switch**
Allows speakers to be muted.
- 2. Speaker Input Terminals**
Push terminals allow for connection of speaker cable. Black and red color coding ensures correct polarity.
- 3. Speaker Cable Strain Relief**
A pull-out spring retainer holds speaker cable securely to prevent accidental disconnection.
- 4. Wall Bracket Mounts**
Allows speakers to be mounted on walls. When mounted vertically, the speaker can be adjusted from side to side. When mounted horizontally, the speaker can be positioned up or down.
- 5. Speaker Stand Adapter (optional)**
Allows speaker to be mounted to the AT579 Speaker Stand for convenient placement around the room.

TEAM TEACHING CONFIGURATION

Team teaching is a great way to maximize learning. Because two teachers can divide their time among students, team-taught classes can offer children more learning and participation opportunities than would be possible in a traditional setting.

Adding amplification to the team-teaching strategy can make it even more effective. Here's how:

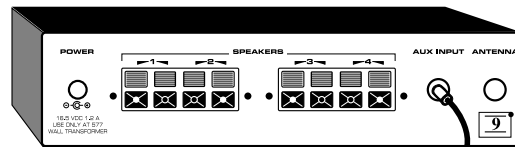
REQUIRED EQUIPMENT

- An additional 300R AND 300T with mic.
- One AT653 AUX input cord.

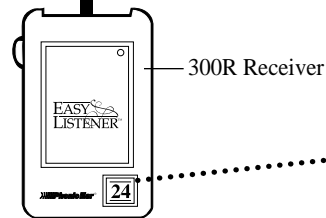
First Teacher



The first teacher's transmitter channel matches that of the 210R or 210FSR



AT653 AUX input cord



Second Teacher

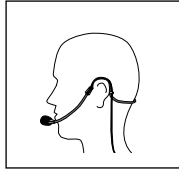


The second teacher's transmitter channel matches that of the 300R Receiver plugged into AUX input jack of the 210R/FSR via the AT653 input cord.

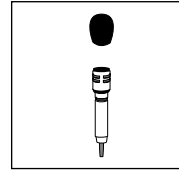
NOTE: Teachers may need to adjust the FM VOL and AUX VOL controls on the Sound Field receiver and the VOL control on the personal receiver to achieve a comfortable balance.

ACCESSORIES

TRANSMITTER MICROPHONE OPTIONS

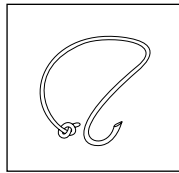


AT655
Behind-the-Neck Mic

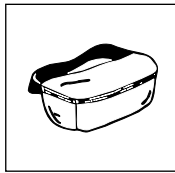


AT291-W
Windscreen
AT291 Directional
Microphone w/Mic
Clip and Lavalier Cord

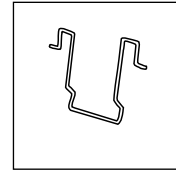
TRANSMITTER WEARING OPTIONS



AT076 Plastic
or AT512 Rope
Lavalier Cord

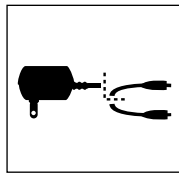


AT594 Hip Pack

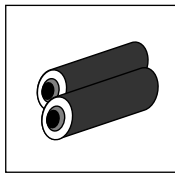


AT489
Wire Belt Clip

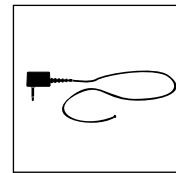
TRANSMITTER MISCELLANEOUS



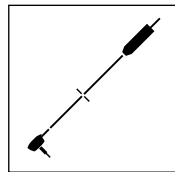
AT534
Two-Unit Charger/
Wall Transformer



AT544
2AA Rechargeable NiCad
Batteries



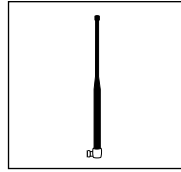
AT529
Mic Jack Antenna



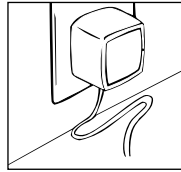
AT532 Auxiliary Input Cord
5 ft or 15 ft (1.5 m or 4.6 m) lengths

ACCESSORIES

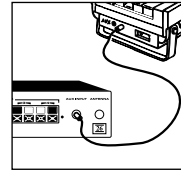
RECEIVER



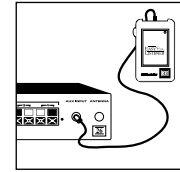
ANTENNA
AT617 37 MHz
AT565 72 MHz
AT566 173 MHz



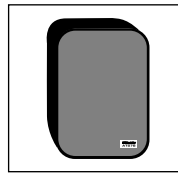
AT577
Wall Transformer



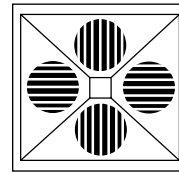
AT653
AUX Input Cord
30 in (76 cm)
For use with dual presenters
or with secondary audio sources



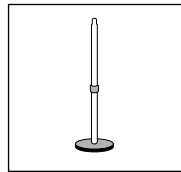
SPEAKERS



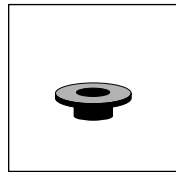
AT578-S
Speaker



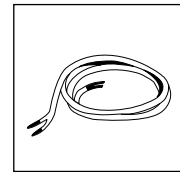
AT664
Ceiling Speaker



AT579
Speaker Stand

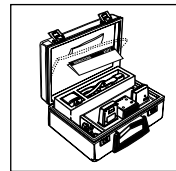


AT582-FM
Speaker
Stand Adapter



AT581 Speaker Cable
24, 48, & 60 ft
(7, 15, & 18 m) lengths

CARRYING CASE



AT580
System Carrying Case

TROUBLE SHOOTING GUIDE

SYMPTOM	CHECK THE FOLLOWING
<p><i>No FM Reception</i> (NO FM light on receiver stays on)</p>	<p>Check that the transmitter is turned on.</p> <p>Verify that the channel number of the transmitter and the receiver are the same.</p> <p>Verify that the channel selector switch (on the PE 210FSR) is set correctly. Refer to page 6.</p> <p>Verify that the receiver antenna is attached.</p> <p>Recharge or replace the transmitter's batteries.</p> <p>Verify that the microphone is working. (Test with another working microphone.)</p>
<p><i>Feedback</i></p>	<p>Lower the FM VOL control on the receiver.</p> <p>Reduce the TONE control adjustment on the receiver.</p> <p>Make sure that the person wearing the 300T Transmitter is not too close to the speakers.</p> <p>Verify that <i>only</i> the AT291 Directional Mic or AT655 Behind-the-Neck Mic is being used with the 300T Transmitter.</p>
<p><i>Weak Output from Speaker(s)</i></p>	<p>Increase FM and/or AUX VOL control.</p> <p>Check that none of the AT578-S Speakers is blocked or covered.</p> <p>Reposition the microphone closer to the speaker's mouth.</p> <p>Place the AT578-S Speakers closer to the listeners (see speaker placement suggestions on page 2).</p> <p>Verify that the AT664 Ceiling Speaker has been properly installed.</p>
<p><i>Receiver Won't Turn On</i> (Power light doesn't turn on.)</p>	<p>Verify that the wall transformer is plugged into a working wall outlet.</p> <p>Test with another AT577 Wall Transformer.</p>
<p><i>No sound from one speaker</i></p>	<p>Verify that the speaker switch is in the ON position.</p> <p>Verify that speaker cables are connected at the speaker and receiver terminals.</p> <p>Replace speaker in question.</p> <p>Disconnect speaker cable and reconnect with a new cable.</p>

72 MHz FREQUENCY REFERENCE CHART

FREQUENCY MHz	COLOR CODE	CHANNEL NUMBER	BAND
72.025	Red/Gray	1	LOW
72.075	Brown/Gray	2	
72.125	Red/Brown	3	
72.175	Brown/Red	4	
72.225	Orange/Gray	5	
72.275	Brown/Orange	6	
72.325	Orange/Brown	7	
72.375	Brown/Yellow	8	
72.425	Yellow/Gray	9	
72.475	Brown/Green	10	
72.525	Yellow/Pink	11	
72.575	Brown/Blue	12	
72.625	Yellow/White	13	
72.675	Brown/Pink	14	
72.725	Green/Gray	15	
72.775	Brown/White	16	
72.825	Green/Brown	17	
72.875	Black/Gray	18	
72.925	Green/Red	19	
72.975	Black/Brown	20	
74.625	White/Brown	33	MEDIUM
74.675	White/Red	34	
74.725	White/Orange	35	
74.775	White/Yellow	36	
75.225	White/Green	37	
75.275	White/Blue	38	
75.325	White/Pink	39	
75.375	White/Black	40	
75.425	Black/Orange	21	HIGH
75.475	Green/Yellow	22	
75.525	Black/Yellow	23	
75.575	Green/Blue	24	
75.625	Black/Green	25	
75.675	Green/Pink	26	
75.725	Black/Blue	27	
75.775	Green/Black	28	
75.825	Black/Pink	29	
75.875	Pink/Gray	30	
75.925	Black/White	31	
75.975	Pink/Yellow	32	
NOTE: Channels shown in bold face type are the 6 standard channel groupings (low, medium and high) used on the PE 210 FSR receiver.			

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 AT580 carrying case or original packaging.

OTHER IMPORTANT NOTES

- Protect your sound field system from excess moisture, heat, and mechanical shocks.
- The case bottom of the PE 210R and PE 210FSR receivers, as well as the AT577 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.

Phonic Ear FM receivers and FM transmitters are approved by the Federal Communications Commission in the U.S., and Industry Canada. Other government approvals available upon request. (Other international regulations may also apply.)

NOTE: FCC Rules, Part 15, Subpart A, 15.19 (a)(3) and (c.) This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

If any changes or modifications are made it will be the responsibility of the party performing the changes or modifications to ensure continued compliance with the FCC regulations and they are required to: (1) File for a new equipment authorization, or (2) Relabel the product(s) with "This product has been modified by [insert the name, address and telephone number of the party performing the modification]."

WARRANTY

A one-year limited warranty is issued to the original consumer of this product(s) by:

))))PhonicEar®
Innovative Communication Technologies

Sales and Service
Western U.S. / International

Phonic Ear, Inc.
3880 Cypress Drive
Petaluma, CA 94954-7600
U.S.A.
800-227-0735
707-769-1110
707-769-9624 FAX

Service Only
Eastern U.S.

Phonic Ear, Inc.
9140-K Guilford Road
Columbia, MD 21046-1890
U.S.A.
800-638-2680
301-725-8883
301-725-3754 FAX

Sales and Service
Canada

Phonic Ear, Ltd.
10-7475 Kimbel Street
Mississauga, Ontario
L5S 1E7 Canada
800-263-8700
905-677-3231
905-677-7760 FAX

TIME PERIOD OF WARRANTY

This warranty will go into effect upon the date of original purchase of this equipment and will remain in effect for one calendar year from that date as long as the instrument remains the property of the original consumer.

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 of defective components to the service center 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 one-year limited warranty does not apply to:

1. Malfunctions resulting from abuse, neglect, or accident.
2. Peripheral accessories as itemized within the product brochure, when such items are returned after 90 days from the original purchase.
3. Alkaline batteries, if applicable.
4. Instruments connected, installed, used or adjusted in a manner contrary to instructions provided by the manufacturer.
5. 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.
6. Products damaged in transit unless investigated by the shipper and returned to the warrantor with the investigation report.



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