

EASY LISTENER™

large area hearing assistance system



user guide

PE 550T transmitter

PE 300R/350FSR receivers

PE 300C charger/organizer

)))))) **PhonicEar®**

specs available on-line at www.phonicear.com

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All Phonic Ear FM components have been certified or type-approved by the FCC and Industry Canada, and no licensing is required to install or use the system. The Phonic Ear EASY LISTENER FM system meets the relevant requirements of Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA). For approvals for use in countries outside the U.S. and Canada, please contact your Phonic Ear representative.

Phonic Ear and EASY LISTENER are trademarks of, and the exclusive property of Phonic Ear, Inc.

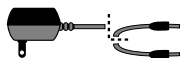
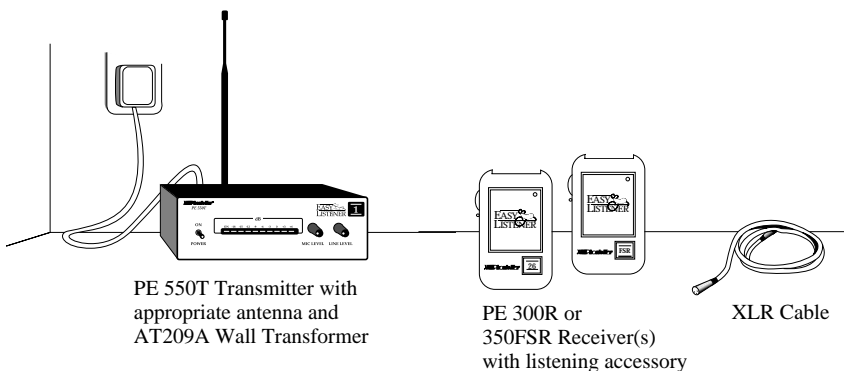


Welcome to the best in easy listening! We know you'll be pleased with the quality and performance of your new EASY LISTENER™ system, and that your patrons with hearing impairment will appreciate the accessibility it offers.

Before you begin installing the system, we recommend that you refer to the *Features and Functions* section on page 2 of this booklet. This provides an overview of the system, and will help you become familiar with its individual components.

WHAT YOU NEED

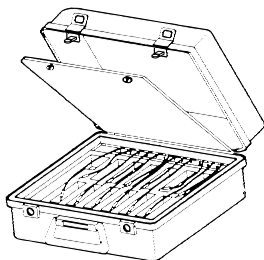
Verify that you have the following items before you begin installing the EASY LISTENER™ system:



AT534
Two-Unit Charger/
Wall Transformer

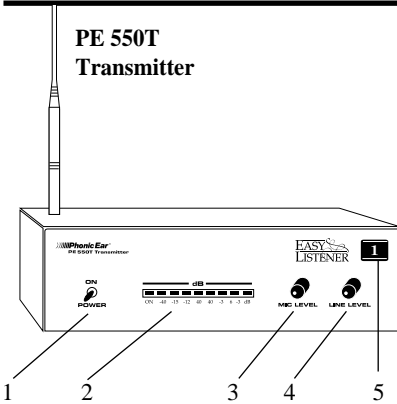
OR

PE 300C
Twelve-Unit Charger/
Organizer with
AT461 Wall Transformer

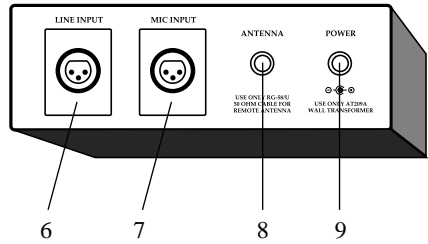


(These are basic system components only. Equipment may vary depending on the characteristics of your installation.)

FEATURES AND FUNCTIONS



Front View



Back View

PE 550T TRANSMITTER

1. POWER Switch

Turns the PE 550T on and off.

2. Light Bar VU Meter

Displays the Power/On indicator light and the microphone and line input levels.

3. MIC LEVEL Control

Use this control to adjust the input level from an external mic until the LED bars peak at 0 dB. Levels above 0 dB should be avoided to minimize distortion.

4. LINE LEVEL Control

Use this control to adjust the input level from a sound system amplifier or mixer until the LED bars peak at 0 dB. Levels above 0 dB should be avoided to minimize distortion.

NOTE: When using both microphone and line inputs, adjust the MIC and LINE levels separately for proper mixing.

5. Channel Number

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

6. LINE INPUT Jack

This XLR-type jack receives a balanced line level input from a sound amplifier/mixer.

You may adjust levels through the amplifier/mixer and the LINE LEVEL control (see #4).

7. MIC INPUT Jack

This XLR-type jack receives a balanced mic level input signal from an accessory microphone. You may adjust the microphone signals with the MIC LEVEL control (see #3).

8. ANTENNA Jack

The FM transmitting antenna is connected to the ANTENNA jack. Only FCC-approved antennas supplied or recommended by Phonic Ear, Inc. should be used.

NOTE: Whereas non-US antennas feature BNC connectors, US antennas are required by the FCC to feature TSC connectors unique to Phonic Ear (it's intended to prevent the use of non-regulation antennas for this type of equipment). US customers must order antennas, remote-mounting cables (AT588-1), or cable adapter kits (AT654-1) directly from Phonic Ear.

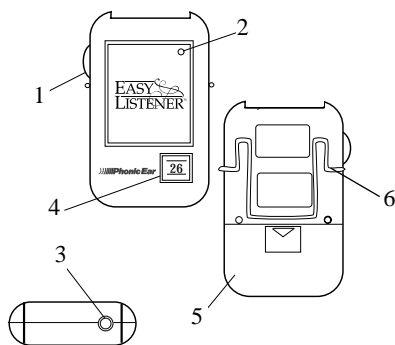
CAUTION: To prevent possible damage to the PE 550T unit, DO NOT operate without an antenna connected to the ANTENNA jack.

9. POWER Jack

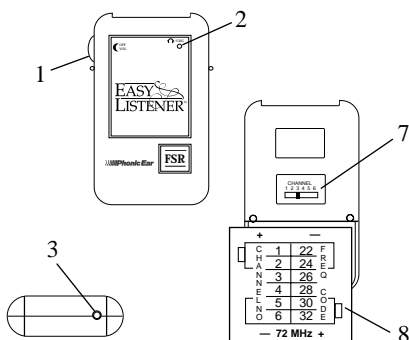
Connect the AT209A wall transformer between the POWER jack and a wall outlet.

FEATURES AND FUNCTIONS

PE 300R Receiver



PE 350FSR Frequency-Selective Receiver



Inside view of
battery compartment

PE 300R/350FSR RECEIVERS

1. Volume Control / ON-OFF Switch


2. CHG Light

Lights when recharging NiCad batteries.

NOTE: Units will charge even if left on, but more charging time will be required.

3. Earphone / Charge Jack

Used for earphone connection, and also serves as the charge jack when recharging NiCad batteries. Earphone cords also serve as the antenna for the receiver.

NOTE: Receivers with stereo-headset-compatible (SHC ) markings in the battery compartment can be used with personal stereo headsets. Units without this marking may only be used with Phonic Ear listening accessories.

4. Channel Number

Indicates the operating frequency of the unit. The transmitter and receiver channel numbers must match for the units to operate together.

5. Battery Compartment

Houses two AA-size rechargeable or disposable batteries used to power the unit.

NOTE: 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.

Receivers may be safely stored in the charger when not in use. When storing for long periods of time, clean the external surfaces of the units, and remove their batteries before placing in the charger.

6. Belt Clip

Enables units to be fastened to a belt or pocket.

PE 350FSR ONLY

8. Channel Selector Switch

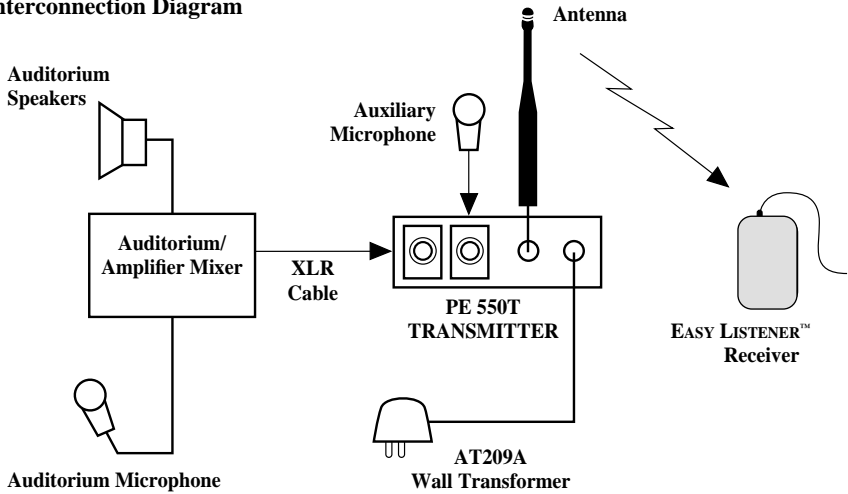
Up to six different channels may be selected using this slide switch. Each number adjacent to the slide switch corresponds to a specific frequency code (see #8)

9. Frequency Code Label

The frequency codes and channel numbers are identified on the label inside the battery compartment.

INSTALLATION & OPERATION

Interconnection Diagram



PE 550T LARGE AREA TRANSMITTER

1. Position the PE 550T large area transmitter near the existing sound system amplifier/mixer or auxiliary microphone (or install using the AT575 rack mount kit).
2. Connect an XLR cable between the LINE INPUT jack on the transmitter and a mixed output connection on the amplifier/mixer.
3. Connect a Shure Prologue microphone and extension cable (or another good-quality, low-impedance microphone and an appropriate XLR interconnect cable) to the MIC INPUT jack of the transmitter.
4. Connect the AT209A wall transformer between the transmitter's POWER jack and an appropriate wall outlet.

NOTE: The transmitting antenna should be in plain view from all seats. For areas up to 300 ft (100 m), connect the standard antenna directly to the back of the transmitter, or to an AT567 antenna ground plane for remote placement. For coverage beyond 300 ft (100 m), use the AT568 large area antenna.

NOTE: Whereas non-US antennas feature BNC connectors, US antennas are required by the FCC to feature TSC connectors unique to Phonic Ear (it's intended to prevent the use of non-

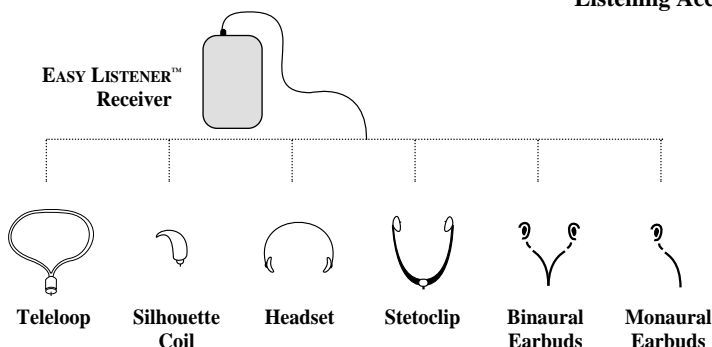
regulation antennas for this type of equipment). US customers must order antennas, remote-mounting cables (AT588-1), or cable adapter kits (AT654-1) directly from Phonic Ear.

5. Adjust the LINE LEVEL control on the PE 550T transmitter so that the LED bars on the VU meter peak at 0 dB. Readjust the amplifier/mixer level controls and the PE 550T transmitter controls as necessary to achieve the best sound.
6. When using an auxiliary microphone. Adjust the MIC LEVEL on the transmitter until the LED bars on the VU meter peak at 0 dB.
7. Use a PE 300R or PE 350FSR receiver to check sound quality. Re-adjust the amplifier/mixer level controls and the transmitter level controls as needed.
8. Check reception from all listening areas or seats to ensure clear, undistorted sound. Relocate the transmitter antenna if necessary to eliminate any dropout.

TIP: Wear an EASY LISTENER™ receiver during programs to monitor the FM signal transmission. Make minor level adjustments to suit specific program dynamics.

INSTALLATION & OPERATION

Listening Accessories



PE 300R/350FSR RECEIVERS

1. Install batteries into the receiver(s), taking note of the markings inside the battery compartment for proper orientation. **NOTE:** To prevent damage, remove batteries prior to long-term storage of receivers. (If using disposable Alkaline batteries, skip to #4.)

2. Charge NiCad batteries prior to use.* The batteries will not over charge, and may be left charging overnight.

CAUTION: Do not recharge disposable or rechargeable Alkaline batteries: They may rupture, and damage the unit.

If using the PE 300C Charger:


- Turn the receivers' power switches to the OFF position.
- Connect the AT461 wall transformer between a wall outlet and the POWER jack on the back of the charger. The green power lamp on the charger will light.
- Place the receivers sideways into the charger's slots with the earphone/charge (CHG) jack facing up.
- Plug the charge cords into the earphone/CHG jack on each receiver. The CHG lamp on each will light to indicate that the unit is being charged.

If using the AT534 Charger:

- Turn the receivers' power switches to the OFF position.
 - Connect the charger between the receivers' earphone/ CHG jack and a wall outlet.
 - The CHG lamp on each receiver will light to indicate that the NiCad batteries are charging.
3. When charging is complete, unplug the receivers from the charger.
 4. Verify that the transmitter and receiver are on matching channels.
 5. Set the receiver volume control to the "0" (OFF) position, and plug a listening accessory into the earphone/CHG jack.
 6. Clip the unit onto a belt or pocket.
 7. Adjust the VOL control to a comfortable listening level.

* **NOTE:** The receiver operating time using NiCad rechargeable batteries is approximately 35 hours per charge. The operating time using Alkaline batteries is 70 hours.

TROUBLESHOOTING GUIDE

SYMPTOM	CHECK THE FOLLOWING
<p><i>No FM reception or sound from the receiver</i></p>	<p>Verify that the channel numbers of the transmitter and receiver are the same.</p> <p>Check that the transmitter is on.</p> <p>Verify that the wall transformer is connected between the transmitter and a working wall outlet.</p> <p>Recharge or replace the batteries.</p> <p>Verify that the antenna connection is properly made.</p> <p>Verify that the audio connection from an amplifier is properly made.</p> <p>Verify that the LINE and/or MIC LEVEL controls are properly set.</p> <p>Verify that the listening accessory is securely plugged into the receiver.</p> <p>Check the receiver volume setting.</p>
<p><i>Weak or distorted sounds from the receiver</i></p>	<p>Check for correct fitting of the earphones or headsets.</p> <p>Recharge or replace batteries.</p> <p>Check the volume control setting on the receiver.</p> <p>Check the adjustment of audio amplifier controls.</p> <p>Check the level controls on the transmitter.</p>
<p><i>Receiver sound through only one side of headset</i></p>	<p>Check that the stereo headset is only being used with receivers that have the “SHC  ” mark in the battery compartment.</p> <p>Check that the headset is not defective by using a headset known to be functional.</p>
<p><i>Charger/receiver CHG lamps won't light; batteries won't charge</i></p>	<p>Verify that the wall transformer is plugged into the PE 300C charger and into a working wall outlet (power lamp should be lit).</p> <p>Try different charge cords.</p> <p>Verify that the CHG lamp on the receiver lights when the charge cord is plugged in.</p> <p>Check that the receiver is turned OFF before charging.</p> <p>Check that the batteries are the rechargeable type.</p>
<p>NOTE: If you have referred to the User Instructions and Troubleshooting Guide and the unit still does not work, call the Phonic Ear Service Center nearest you. Service Centers are listed on page 10. All international customers should contact the local Phonic Ear distributor.</p>	

ACCESSORIES

PE 550T TRANSMITTER

ANTENNA OPTIONS—U.S.

FM Transmitting Antenna: TSC-TYPE

AT564-1	72 MHz (low band) 1-20
AT565-1	75 MHz (high band) 21-40
AT567-1	Antenna Ground Plane

Large Area FM Transmitting Antenna:

AT568-1-L	72 MHz (low band) 1-20
AT568-1-H	75 MHz (high band) 21-40
AT588-1-50	Cable 50 ft (17 m)

ANTENNA OPTIONS—CANADA, INT'L

FM Transmitting Antenna: BNC-TYPE

AT564	72 MHz (low band) 1-20
AT565	75 MHz (high band) 21-40
AT566	173 MHz
AT567	Antenna Ground Plane
AT616	37 MHz (low band) 1-20
AT617	37 MHz (high band) 21-40

Large Area FM Transmitting Antenna:

AT568-L	72 MHz (low band) 1-20
AT568-H	75 MHz (high band) 21-40
AT569	173 MHz
AT588-50	Cable 50 ft (17 m)

CABLES

AT532	3.5mm & 3.5mm 1 ft (300cm)
AT570-10	XLR Jack & 1/4" Plug 10 ft (3 m)
AT572-10	XLR Jack & XLR Plug 10 ft (3 m)
AT572-25	XLR Jack & XLR Plug 25 ft (8 m)
AT573-10	1/4" Plug & 1/4" Plug 10 ft (3 m)
AT604-20	XLR Plug & Spade Lugs 20 ft (6 m)

ADAPTERS/MISCELLANEOUS

AT209A	Wall Transformer
AT551	Impedance-Matching Trans- former XLR/Phone Plug
AT561	Impedance-Matching Transformer XLR/3.5 mm Phone Plug

ADAPTERS/MISCELLANEOUS (CONT'D)

AT571	Shure Prologue Mic
AT575	Rack Mount Kit
AT587	Line-Bridging Transformer
AT590	Feed-Thru Adapter BNC Jack/BNC Jack
AT598	Adapter XLR Plug & 1/4" Plug
AT654-1	(2) TSC Connector Kit

PE 300R/350FSR RECEIVER

LISTENING OPTIONS

AT163-B	Teleloop with AT543 Connector Cord
AT312	Silhouette Inductor Assembly with AT545 Connector Cord
AT359	Stetoclip (requires AT16 Transducer & AT545 Transducer Cord)
AT538-M	Monaural Earbud
AT538-S	Binaural Earbuds
AT541	Standard Walkman-Style Headset

Miscellaneous:

AT317-B	100 Foam Eartips
AT352	20 Mushroom Eartips
AT538	25 Earphone Cushions
AT607	Earpads for Headset (1 pair)

CHARGING OPTIONS

PE 300C	Twelve-Unit Charger/ Organizer with AT461 Wall Transformer
AT534	Two-Unit Charger/ Wall Transformer
AT544	2 Rechargeable NiCad Batteries
AT601	2 AA-Size Disposable Batteries

Miscellaneous:

AT574	System Carrying Case
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TECHNICAL SPECIFICATIONS

PE 550T LARGE AREA TRANSMITTER

ITEM	SPECIFICATIONS
Transmitting Frequency	Any of 40 FCC- and Industry Canada-approved channels on the 72 MHz – 76 MHz band. Channel 26 supplied unless otherwise specified. Foreign frequency information available upon request.
Frequency Stability	+ / - 500 Hz 0°-50°c
Transmission Range	Dependent upon antenna used. Small Antenna (standard): 300 ft (100 m) minimum. Large Area Antenna (optional): 1,000 ft (300 m) minimum.
RF Field Strength	80 mV/m @ 3 m (maximum)
Modulation	FM narrow-band
Transmitted Frequency Response	80 Hz – 15 kHz +/- 3 dB
Frequency Response Range	50 – 15 Hz +/- 3 dB (Listener-received frequency response dependent upon listening accessories, FM receiver and/or hearing aid used.)
Signal-to-Noise Ratio	> 55 dB
Nominal Deviation	+ / - 3.6 kHz
Maximum Deviation	+ / - 10 kHz
Line Input Level	10 mV to 1 V p-p maximum
Mic Input Level	.15 mV to 100 mV p-p maximum
Line Input Impedance	10 k Ohm-balanced
Mic Input Impedance	600 Ohms-balanced
Power Input	16-24 VDC, 400mA AT209A Wall Transformer
Input Connections	Power Jack: 2.5 mm Line Input: XLR-type jack Mic Input: XLR-type jack
Input Protection	1/2 A Polyfuse
Current Drain	250 µA maximum
Max. Cable Length for Remoting Antenna	100 ft (use RG58/U Cable)
User Controls	Line Input Level Mic Input Level On/Off Power Switch
Displays	LED Bar VU Meter LED Power On Indicator
Size	2" x 6.5" x 6" (5 x 16.5 x 15.2 cm)
Weight	20 oz (567 g)
Case	Aluminum/baked enamel finish

TECHNICAL SPECIFICATIONS

PE 300R/350FSR RECEIVERS

ITEM	SPECIFICATIONS
Receiving Frequency	Any of 40 FCC- and Industry Canada-approved channels on the 72 MHz - 76 MHz band. Channel 26 supplied unless otherwise specified. Foreign frequency information available upon request. (PE 350FSR: Any six of 40 FCC- and Industry Canada-approved channels in the 72 - 76 MHz band grouped in low, middle, or high band.)
Frequency Stability	+/- 200 Hz 0° - 50° c
Modulation	FM narrow-band
Frequency Response Range	200 Hz - 8 kHz +/- 3 dB
Max Sound Pressure	134 dB SPL (with 100-Ohm transducer)
Signal-to-Noise	> 60 dB
Nominal Deviation	+/- 3.6 kHz
Maximum Deviation	+/- 10 kHz
Squelch	RSSI-Type
Squelch Level	12 dB SINAD
Power Supply	2 AA-size NiCad or Alkaline batteries
Operating Time	NiCad: 35-hour life (between charges) Alkaline: 70-hour life
Current Drain	16 μ A
Output/Charge Jack	3.5 mm (for listening accessories or charge cords)
User Controls	On/Off/Volume control (PE 350 FSR only: Channel Selector Switch)
Displays	Charging LED
Size	1" x 3.7" x 2.2" (2.5 x 9.4 x 5.6 cm)
Weight	2.8 oz (80 g)
Case	ABS Cyclocac plastic

PE 300C TWELVE-POCKET CHARGER/ORGANIZER

ITEM	SPECIFICATIONS
Storage Pockets	12 charging locations/charge cords; one pocket for wall transformer
Storage Compartment	15.5" x 10.5" x 2" (39.4 x 26.6 x 5.1 cm) with easy-open lid
Power Input	8.5 VAC 11.5 VA /AT461 Wall Transformer
Displays	Green power indicator
Size	15.5" x 11.5" x 6" (39.4 x 29.2 x 15.2 cm)
Weight	4.1 lbs (1,859 g) empty
Case	Black plastic case with aluminum trim and locks

WARRANTY

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

Phonic Ear, Inc.

Western U.S. / International
Sales and Service

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

Canada
Sales and Service

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.

us: 800.227.0735, then press 5 • **canada:** 800.263.8700

outside u.s./canada: Call your local Phonic Ear dealer • **website:** www.phonicear.com