

RADIUM

sound field system



user guide

PE 915SR speaker

PE 916T body-worn transmitter

PE 917T handheld transmitter

PE 918C charging stand

)))))) **PhonicEar®**

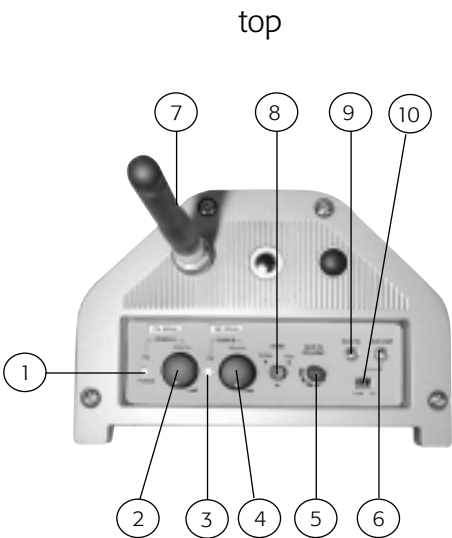
specs available on-line at www.phonicear.com

table of contents

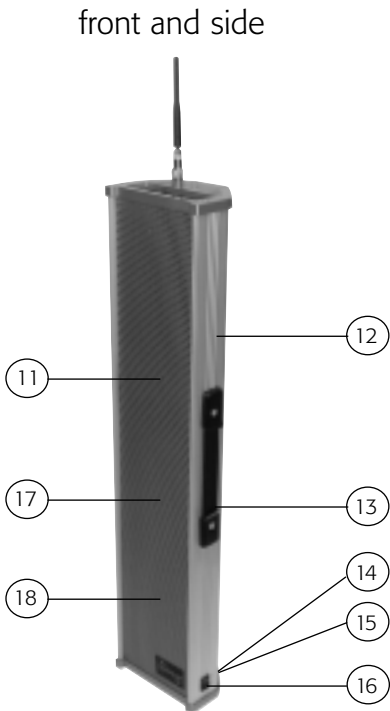
Column Speaker: PE 915SR	1
Body-worn Transmitter: PE 916T	2
Handheld Microphone: PE 917T & Boom Microphone.	3
Charging Stand: PE 918C	4
Column speaker setup and operation	5-6
Mounting speaker	7-8
Body-worn Transmitter setup and operation	9-11
Handheld Microphone operation	12-13
Adding secondary sound source	14
Charging Stand setup and operation.	15
Replacing batteries	16
Warranty.	17
Troubleshooting	18
Product specifications	19
Teacher/student sound field survey	Center spread

column speaker: PE 915SR

- ① power, low battery, and reception status indicator (for Channel A)
- ② power switch and volume control for channel A
- ③ reception status indicator for channel B
- ④ power switch and volume control for channel B
- ⑤ aux input volume control
- ⑥ aux output jack (3.5mm, mono)
- ⑦ antenna
- ⑧ tone control
- ⑨ aux input jack (3.5mm, mono)
- ⑩ aux output level
 - Low = EASY LISTENER transmitters and SPRITE 72 & 173MHz
 - High = SPRITE 216MHz and SOLARIS transmitters

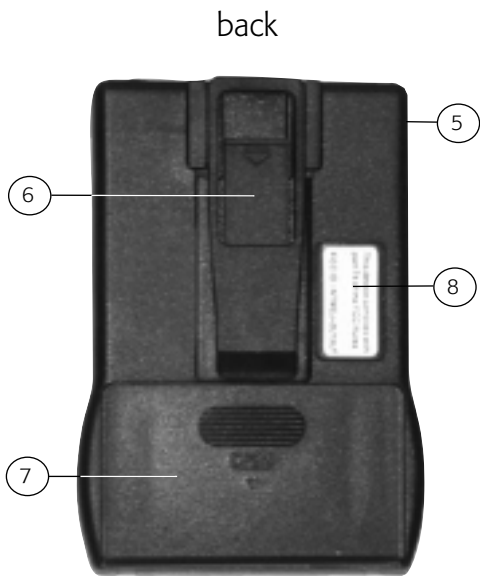
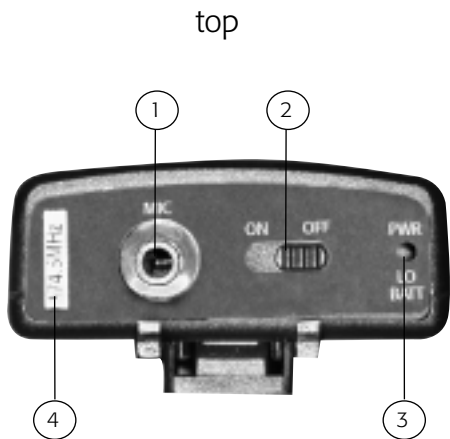


- ⑪ speaker grille
- ⑫ outer casing
- ⑬ handle
- ⑭ power and charging indicator
- ⑮ power jack
- ⑯ on/off switch
- ⑰ internal rechargeable battery
- ⑱ two built-in speakers



body-worn transmitter: PE 916T

- ① microphone input
- ② 3 position power switch
 - ON OFF
 - ON OFF
 - ON OFF
 - on standby off
- ③ power and low battery indicator light
- ④ frequency label
- ⑤ audio gain control
- ⑥ belt clip
- ⑦ battery compartment
- ⑧ bar code and serial number label



handheld microphone: PE 917T

- ① LED indicator light
- ② 3 position power switch

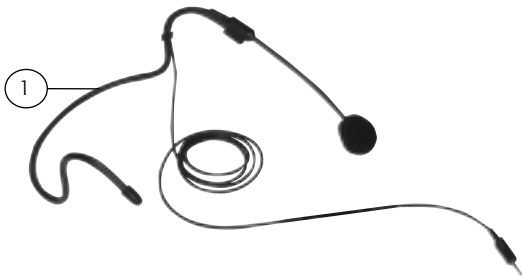


- ③ battery compartment



boom microphone: AT0655R

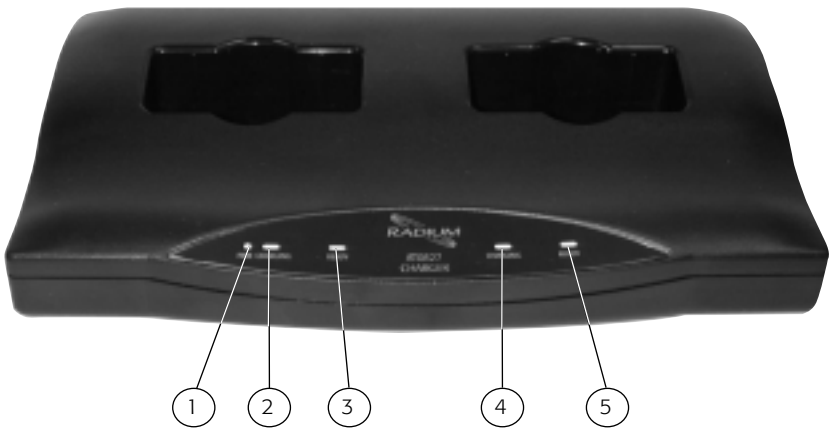
- ① flexible boom mic



charging stand: PE 918C

- ① power indicator
- ② pocket 1 charging indicator
- ③ pocket 1 full charge indicator
- ④ pocket 2 charging indicator
- ⑤ pocket 2 full charge indicator
- ⑥ power switch
- ⑦ DC power socket

front

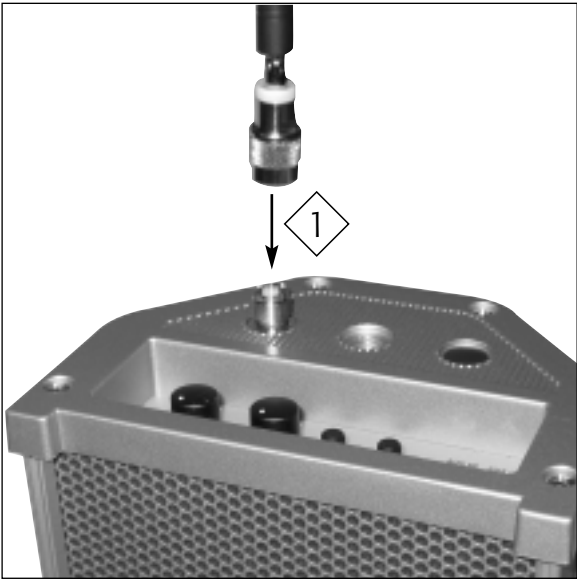


back



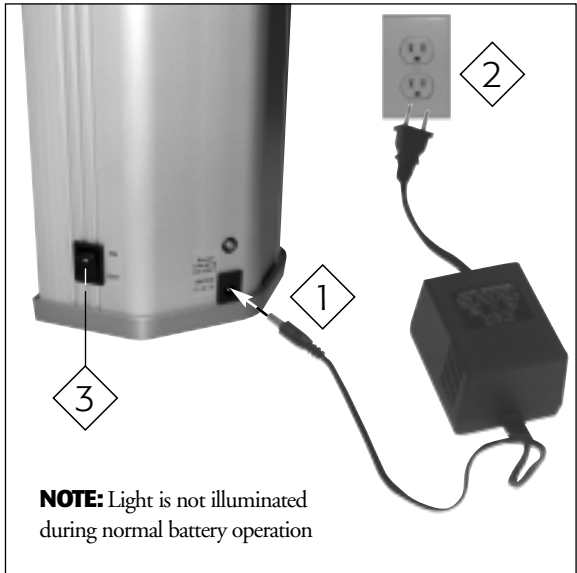
column speaker setup and operation

1 attach antenna



1 Attach antenna to top of speaker

2 turn on master power



if using wall outlet

1 Plug transformer into power/charging socket

2 Plug transformer into wall socket

3 Turn speaker on

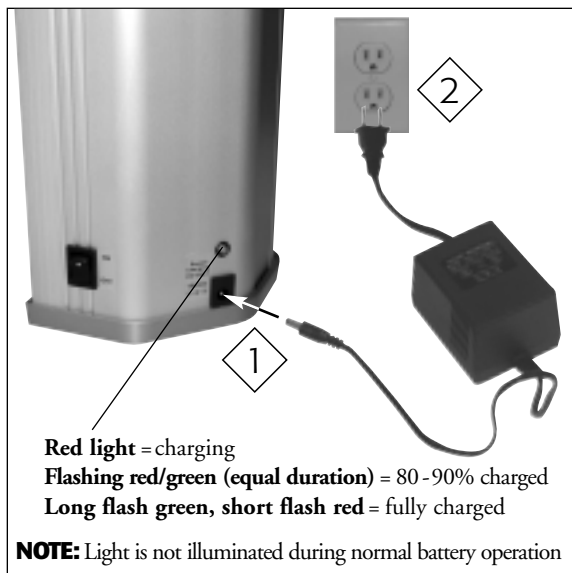
if using battery

3 Turn speaker on

NOTE: Battery operating time is 5-8 hours depending on volume control settings.

column speaker setup and operation (cont'd)

3 charge battery



charge after every use

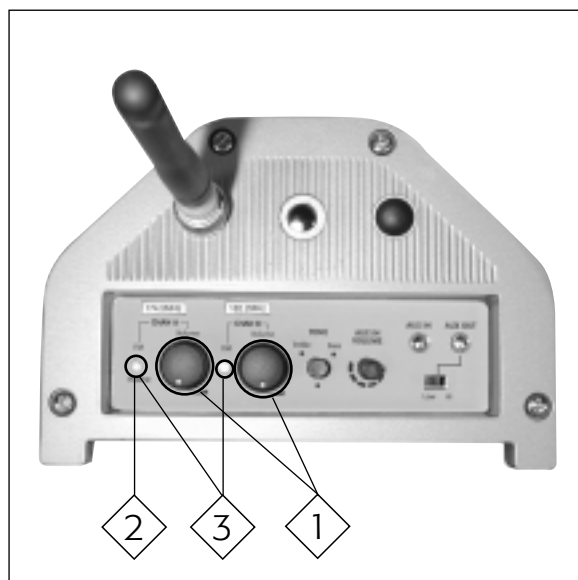
1 Plug transformer into power/charging socket

2 Plug transformer into wall socket

Recharging time is 4-8 hours

NOTE: Battery operating time is 5-8 hours depending on volume control settings.

4 activate receivers



1 Turn receiver on by turning Channel A and/or Channel B volume control knob(s) to the right

2 Check power indicator light:

Flash red once = adequate power

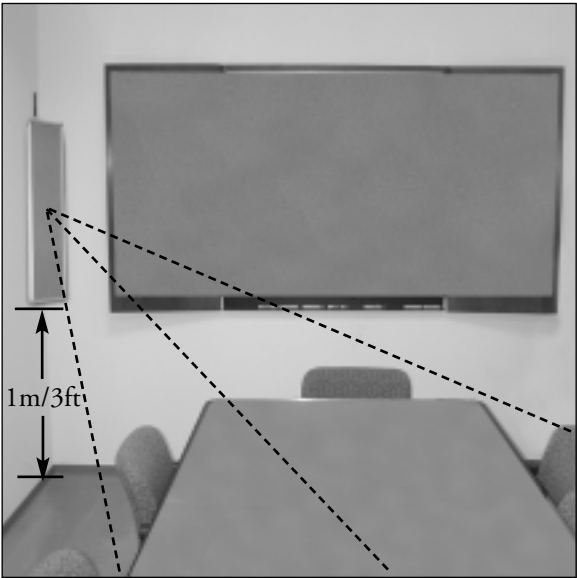
Continuous red = low battery

No light = battery does not have power and requires recharging or transformer is not connected properly

3 Turn on a 916T or 917T transmitter (pages 9-12) and check FM indicator light(s):
Green = receiving FM signal

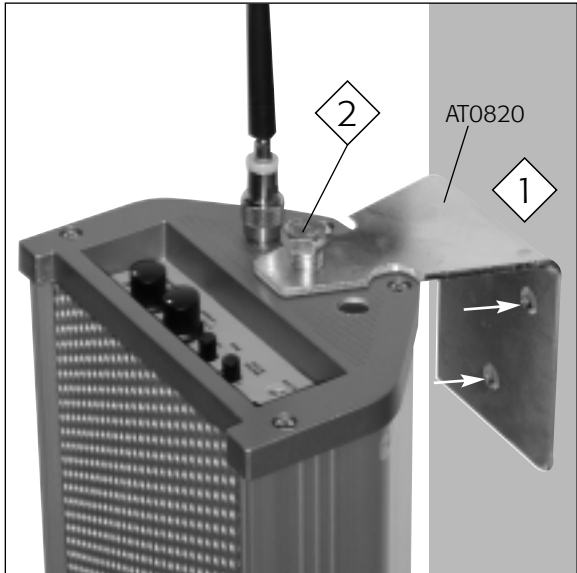
mounting speaker

1 speaker positioning



Place speaker in a corner of the room facing listeners. Mount speaker on wall using brackets or place speaker on a surface using a speaker stand. The bottom of the speaker should be about 1 meter/3 feet from the floor.

2 wall mounting



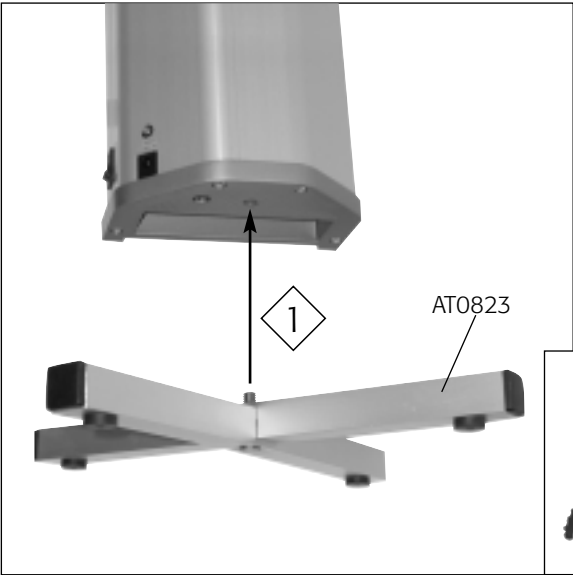
1 Attach brackets to wall

2 Screw mounting brackets to top and bottom of speaker

or continue to 3

mounting speaker (cont'd)

3 mounting on stand

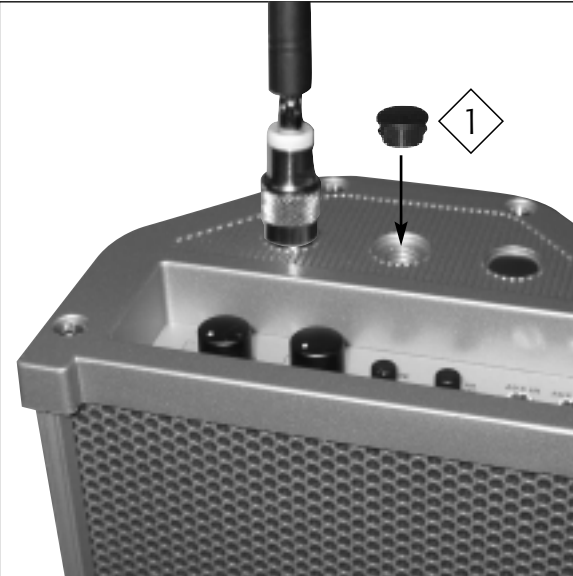


- 1 Screw speaker stand into hole on bottom of speaker.
- Turn clockwise to tighten
- Turn counter-clockwise to loosen



AT0824 floor stand is also available

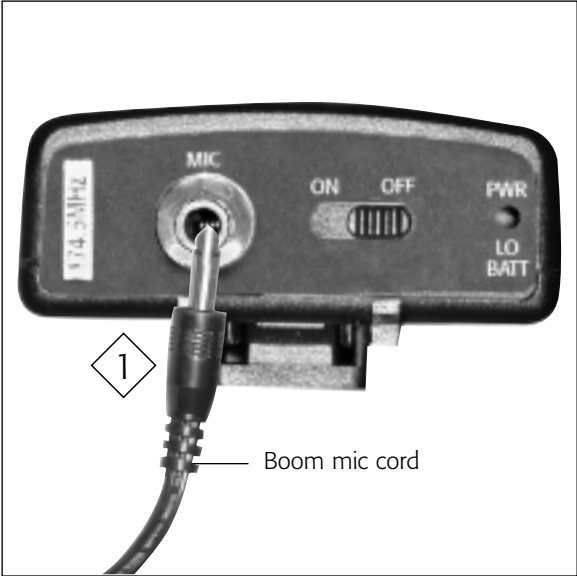
4 seal wall mounting hole if using table stand



- 1 Place plastic plug into mounting bracket hole on top of speaker to keep out dust

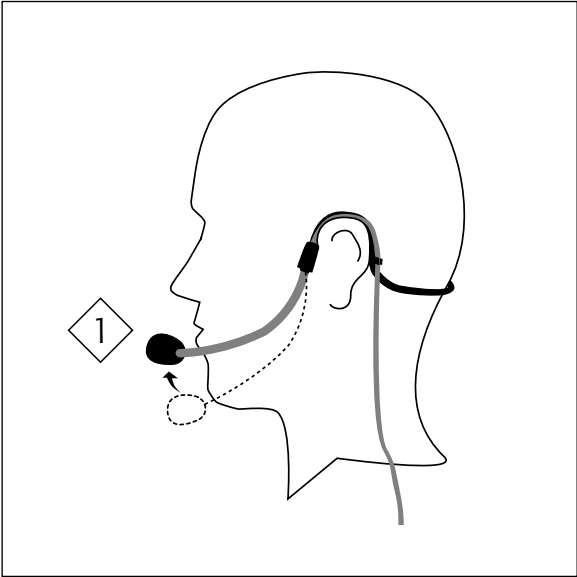
body-worn transmitter setup and operation

1 plug mic in



1 Plug boom mic cord into top of body-worn transmitter

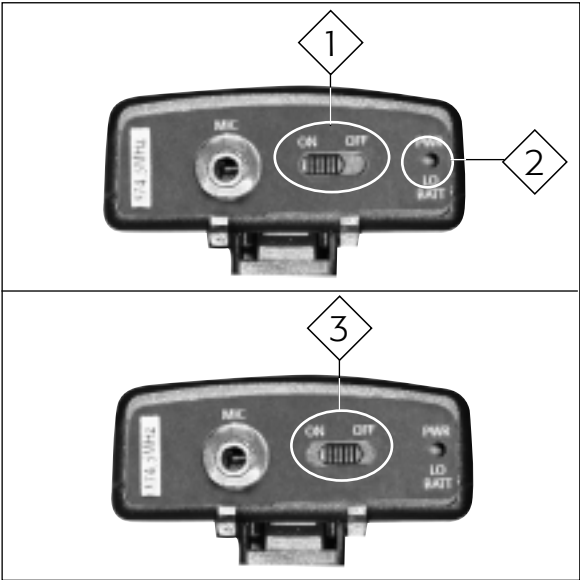
2 put on AT0655R mic and adjust



1 Bend headband and/or boom to customize fit

body-worn transmitter setup and operation (cont'd)

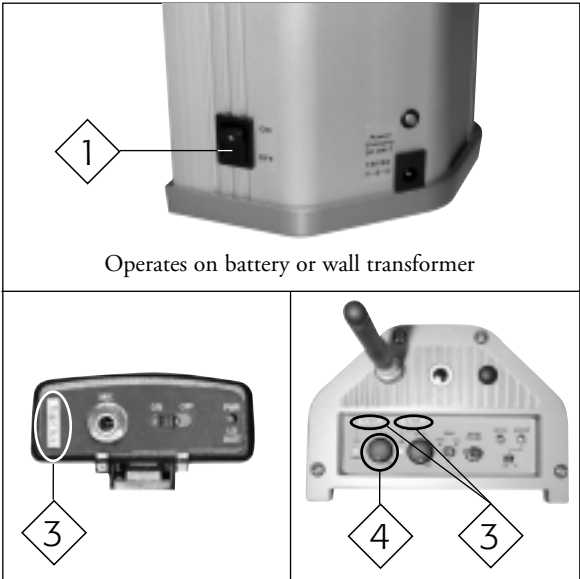
3 turn power on



- 1 Switch power on
- 2 Check indicator light:
Red flash = adequate power
Continuous red = low battery
- 3 Activate standby mode to eliminate white noise when not speaking

battery life
NiMH rechargeable AA = 20 hours, typical
Alkaline disposable AA = 23 hours, typical
WARNING: Never recharge alkaline batteries!

4 adjust speaker volume

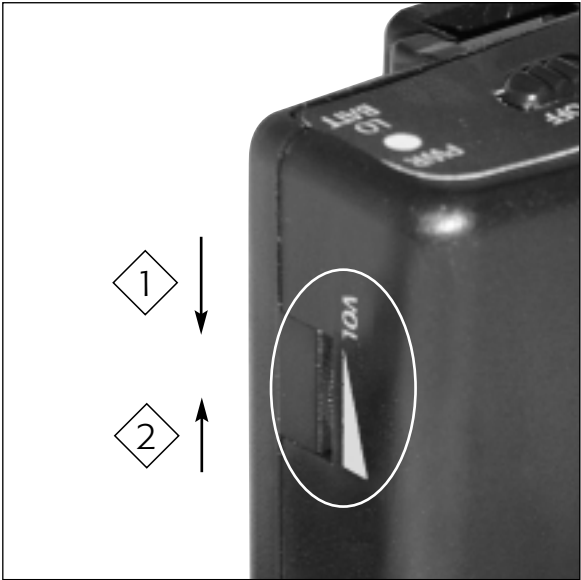


- 1 Turn speaker master power switch on
- 2 Determine if transmitter frequency matches Channel A or Channel B on speaker
- 3 Turn on Channel A or B volume control (whichever matches transmitter) and adjust to desired level

NOTE: Decrease speaker volume if feedback occurs

body-worn transmitter setup and operation (cont'd)

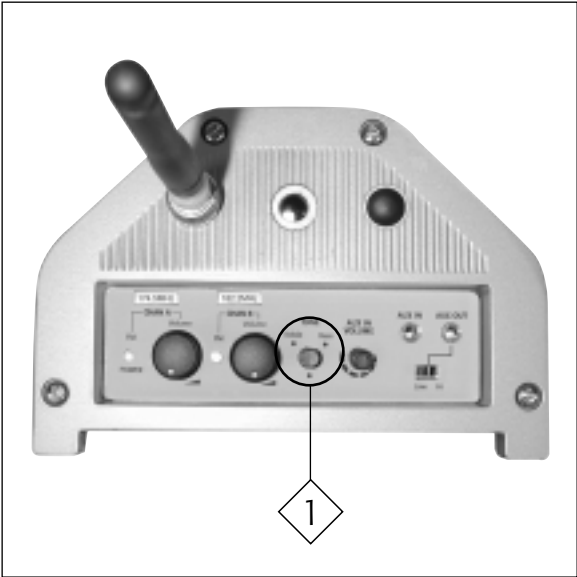
5 adjust transmitter volume



1 Increase transmitter volume for greater mic sensitivity and sound clarity

2 Reduce transmitter volume if feedback occurs

6 adjust tone control



1 Adjust tone control to desired setting

NOTE: Decrease tone if feedback occurs

handheld microphone operation

1 turn power on



1 Turn power on by pushing power switch up

2 check indicator light



1 Check indicator light:

Flash red once =
adequate power

Continuous red =
low battery

battery life

NiMH rechargeable AA =
23 hours, typical

Alkaline disposable AA =
27 hours, typical

WARNING: Never recharge
alkaline batteries!

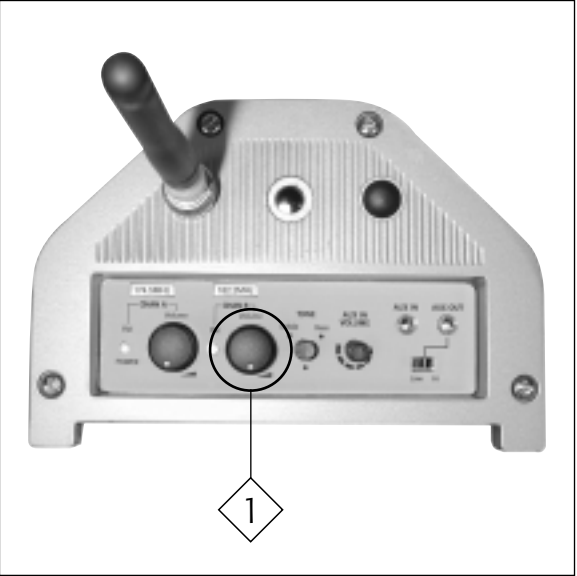
handheld microphone operation (cont'd)

3 standby mode



1 Activate standby mode to eliminate white noise when not speaking

4 adjust speaker volume

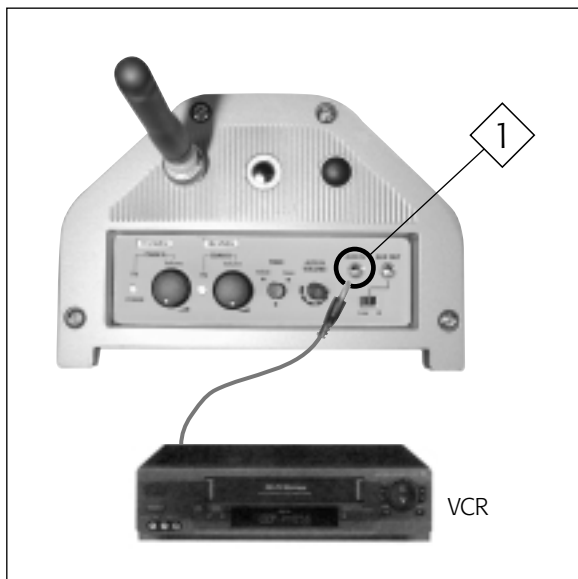


1 Adjust volume control for handheld mic

NOTE: Decrease speaker volume if feedback occurs

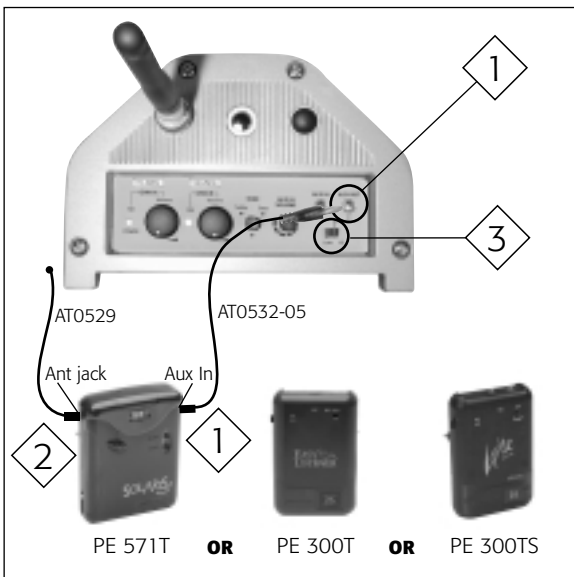
adding secondary sound sources (optional)

connecting speaker to VCR



Connect VCR cable
to AUX IN port on
top of speaker

connecting to SOLARIS, EASY LISTENER, or SPRITE transmitter



for rebroadcast of audio to students with hearing impairment

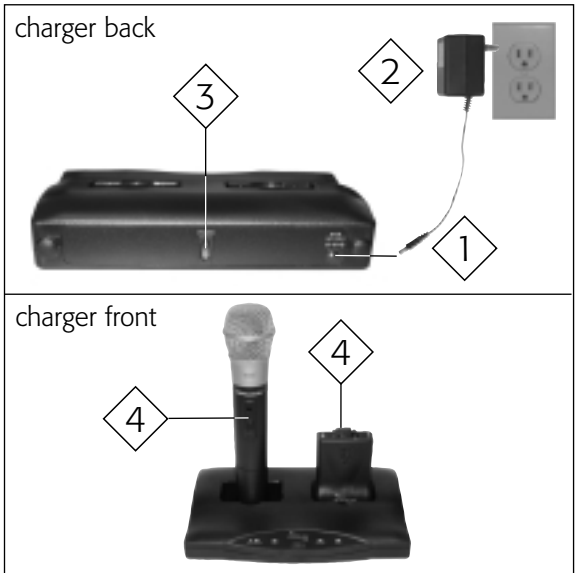
Connect AT0532-05(ft)
or AT0532-15 (15ft) cord
to Aux input jack of either
SOLARIS, EASY LISTENER,
or SPRITE transmitter.
Connect other end of cable
to AUX OUT port on top
of speaker.

Connect antenna
AT0529A-26 (26in) or
AT0529A-05 (5in) to
Mic/Ant jack on transmitter

Set level switch to:
Low = EASY LISTENER,
SPRITE 72 or 173MHz
High = SPRITE 216MHz
or SOLARIS

charging stand setup and operation

1 place units in charger



- 1 Plug transformer into power jack on back of charger stand
- 2 Plug transformer into wall socket
- 3 Turn charger on
- 4 Turn transmitters off while charging

WARNING: Never recharge alkaline batteries!

2 wait until full charge indicators light (4-5 hours)



- 1 **PWR:**
Red light = charger is turned on
- 2 **CHARGING:**
Amber light = units are being charged
- 3 **READY:**
Green light = units are fully charged

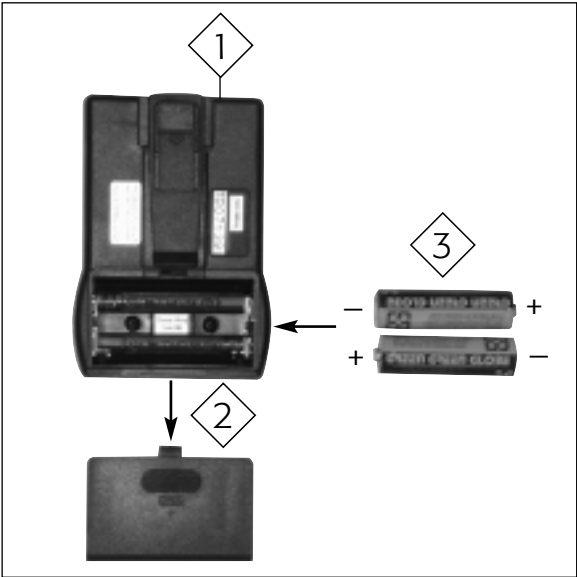
replacing batteries

handheld mic



- 1 Switch power off
- 2 Remove battery cover (*turn counter-clockwise*)
- 3 Insert two AA rechargeable NiMH batteries

body-worn transmitter



- 1 Switch power off
- 2 Remove battery cover (*push and slide off*)
- 3 Insert two AA rechargeable NiMH batteries

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; VOCALIGHT™ has 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 (refer to previous pages for explanatory diagrams)

no FM reception (Channel A, Channel B indicator does not have green light)

- Verify the transmitter is turned on
- Verify the frequency number on the transmitter matches the frequency number on receiver (see page 10)
- Verify transmitter batteries are charged
- Verify speaker antenna is connected properly

weak sound from speaker

- Increase volume on the speaker
- Turn up transmitter volume (PE 916T only)
- Make sure AT655RM boom microphone is being worn correctly (see page 9)

speaker is receiving a signal but no sound is coming out

- Verify mute switch on boom microphone is turned off
- Verify microphone is connected properly to transmitter and is working correctly

feedback from speaker

- Turn down the volume on the transmitter (PE 916T only)
- Turn down the volume on the speaker
- Make sure the person wearing the transmitter is not too close to the speaker
- Make sure AT600RM boom microphone is being worn correctly
- Adjust tone control to reduce treble

speaker does not turn on (power indicator does not flash red)

- Verify master power switch on the bottom of the unit is turned on
- Verify Channel A and Channel B volume control knobs are turned on
- Verify transformer is plugged securely into speaker and wall socket
- Verify wall socket works

speaker battery does not charge

- Connect power transformer to speaker and charge for four hours. If speaker battery does not hold a charge, send the unit to Phonic Ear Service department for replacement (battery must be replaced after one year of continuous use).

poor sound when connecting SOLARIS, SPRITE, OR EASY LISTENER transmitters to the Aux Out

- Check Aux Out is set to the correct level (see page 14)
- Check transmitter antenna is plugged in; reposition antenna
- Turn up volume on auxiliary transmitter
- Check connection cord

speaker is picking up FM interference or hum

- Check to make sure no other wireless systems are operating on similar frequencies
- Check to make sure the system is not placed too close to a computer
- Check to make sure metal objects are not placed too close to transmitter or speaker (i.e. jewelry, metal shelves)

product specifications

two channel column speaker: PE 915SR

output power	Max. 36W @ 4Ω x 2
power requirements	115V/230V AC adaptor 15V DC/2A External DC 12–16V Battery 12V/2.7A (Battery charger)
frequency response	100 Hz – 12kHz
total harmonic distortion	Less than 1% (at rated output)
signal-to-noise ratio	>70 dB (at rated output)
inputs	AUX x 1, power & charge
output	AUX x 1 (Hi: 700 mV/Low: 100mV)
controls	Treble/Bass, Channel A, Channel B, Aux Volume, High/Low output, on/off
dimensions	100(w) x 660(h) x 145(d)mm
weight	5kg/11lbs
recharging time	3 hours
battery operating time	5 – 8 hours (continuous operation)
speaker stand	Optional table stand (AT0823), floor stand (AT0824) or wall brackets (AT0820)
frequencies	See chart in spec sheet
de-emphasis	50µs

body-worn transmitter: PE 916T

carrier frequency range	174MHz to 202MHz (Channel A) 182MHz to 214MHz (Channel B)
emission modulation	FM (F3E)
T.H.D.	<0.5%
frequency stability	± 0.005% (at 25° C)
operating temperature	-10° C to +50° C
maximum modulation	± 25KHz, with level limiting
image rejection	Over 70dB
pre-emphasis	50µs
frequency response	50Hz to 15KHz
dynamic range	100 dB
tone squelch	Tone key and noise lock dual squelch
operating range	30-50m (open field)
controls	on/standby/off
battery life	NiMH rechargeable AA - 20 hrs typical Alkaline disposable AA - 23 hrs typical

handheld transmitter: PE 917T

mic	Dynamic microphone
antenna	Built-in
RF output	15mW
spurious emissions	45 dBc
battery	NiMH rechargeable battery 2AA Alkaline disposable 1.2V x 2 AA
battery life	NiMH rechargeable: 23 hrs typical Alkaline disposable: 27 hrs typical
dimensions	54mm (diameter) x 237mm (length)
weight	230g/8.1oz
controls	on/standby/off

charging stand: PE 918C

power supply	AC adaptor (DC 12V / 0.5A)
battery	1.2 V x 2AA type NiCD (700mAh) or NiMH (1300mAh) rechargeable battery
charging status indication	LED green battery = OK LED red = recharging
recharging time	NiCD (700mA) / 2 hr NiMH (1300mA) / 3-4 hr
dimensions	135(w) x 47(h) x 230(d)mm
weight	360g/12.7oz
controls	on/off switch

AT0655R boom microphone

microphone	Electret condenser noise cancelling type
directionality	Uni-directional type
frequency range	150-10,000 Hz
impedance	2K ohm max. (RL=2.2K ohm)
sensitivity	-63dB ± 4dB at 1KHz (0dB=1V/ubar)
cord and plug	2-way plug
accessory	windscreen (black)

FCC notes

The Radium sound field system is approved by the FCC (Federal Communications Commission). The use of the system may be governed by specific FCC rules and FCC licensing or notifications may be required. Consult your local FCC office for detailed information.

Measuring sound field success in the classroom

This sheet contains two surveys – one for teachers and one for students. **You may remove this survey, make copies** and use it as a tool for gaining support and funding for the use of sound field in your school. If you are interested in other studies on how classroom amplification has positively impacted classrooms you may look online at www.phonicear.com.

	Agree completely	Agree somewhat	Disagree somewhat	Disagree completely
1. Students' focus and attention span has improved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Students stay on task longer with less ongoing direction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Students follow directions with fewer questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Students are more involved in discussions and group activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Test scores overall seem to have improved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Behavioral and LD referrals have declined

☐☐☐☐

7. I feel less fatigued at the end of the day

☐☐☐☐

8. I experience fewer vocal problems

☐☐☐☐

9. I would recommend this system to others

☐☐☐☐

10. I believe the sound field system has
been beneficial for everyone

☐☐☐☐

11. Additional notes, comments, observations:

Student Survey – Do you like your sound field system?



Agree
completely



Agree
somewhat



Disagree
somewhat



Disagree
completely

1. I can hear the teacher better

☐☐☐☐

2. I can hear the teacher from anywhere
in the room

☐☐☐☐

3. The teacher's instructions are more
clear to me

☐☐☐☐

4. I like to use the microphone

☐☐☐☐

5. I am learning more

☐☐☐☐

6. Other students seem to pay more
attention to the teacher

☐☐☐☐

7. Other students make less noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It's easier for me to pay attention to the teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am less tired at the end of the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. My teacher doesn't have to yell anymore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I would like to have sound field in my classroom next year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Additional comments: _____

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

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