

# OPERATOR'S MANUAL

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## ***PR-75a*** ***AutoSmart-Tuning™*** ***Assistive Listening*** ***Receiver***



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# COMTEK®

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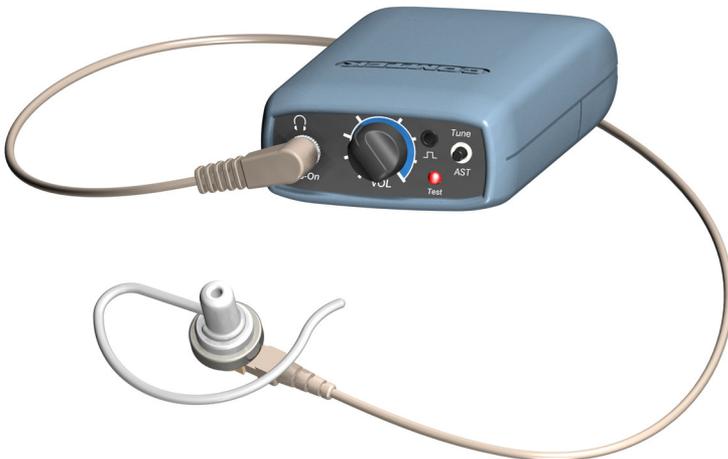
WARNING: MODIFICATION OF THIS DEVICE  
TO RECEIVE CELLULAR RADIOTELEPHONE  
SERVICE SIGNALS IS PROHIBITED UNDER  
FCC RULES AND FEDERAL LAW.

## INTRODUCTION

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# ***PR-75a*** ***AutoSmart-Tuning™*** ***Assistive Listening*** ***Receiver***

The PR-75a personal receiver is the newest generation of user-friendly, high fidelity monitor receivers for auditory assistance and other personal communication applications. When turned on, this unique receiver will automatically tune itself to the closest transmitter. If other transmissions need to be monitored, a manual, AutoSmart-Tuning™ (AST) control will cause the receiver to seek any on-channel group frequency transmission in the 72-76 MHz band.



# PR-75a CONTROLS AND INDICATORS

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## PR-75a Controls

### ❶ BATTERY COMPARTMENT:

The battery compartment features a hinged battery cover and a polarity protection design to ensure that only proper battery polarity can occur.

### ❷ AUDIO OUTPUT JACK:

This stereo/mono audio output jack accommodates any low impedance headphone; also functions as automatic on/off power switch when headphone is plugged in and as rechargeable battery charging access.

### ❸ VOLUME CONTROL:

This control has 50 dB of range to adjust the audio output for a comfortable listening level (clockwise for maximum level).

### ❹ POWER / RECEIVER STATUS INDICATOR:

LED indicator will display these four functions:

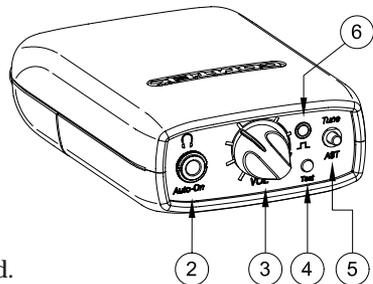
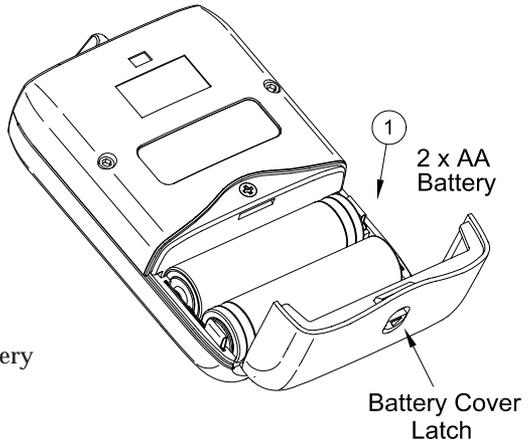
- a. Fast blinking ----- Seeking channel
  - b. Continuous ----- Receiving signal
  - c. Steady slow flash ----- No signal
  - d. Rapid flash ----- Low battery
- Additionally there is an audible beeping to indicate a low battery.

### ❺ AutoSmart-Tuning™ PUSH BUTTON:

This one-button tuning control (AST) allows the receiver to seek other channels within the frequency group to which it is tuned.

### ❻ DATA I/O PORT:

For channel programming or specialty channel sequencing.



## PR-75a SETUP AND OPERATION

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### Setup

a. Open the battery door on the receiver (see page 8) and insert two 1.5 V AA alkaline batteries (Eveready E91 or equivalent). This type of battery will offer up to 100 hours of operation. **If a rechargeable battery is to be used, ensure that it has been allowed to charge at least twelve hours to bring it to full charge (see page 9 for battery charger instructions).**

*The use of carbon batteries is not recommended.*

b. Ensure that there is a signal on the air on a channel from A-J (see frequency chart page 6). The PR-75a receiver must be within 150 feet of the transmitter for best reception.

c. Plugging the earphone into the “Auto-On” output jack on the top of the PR-75a receiver will automatically turn on the receiver and initiate the AutoSmart-Tuning™ process. (The LED will blink very rapidly during this process.) The receiver will then tune itself to the closest on-air transmitter in its vicinity. Based on the first channel found, the receiver will then determine the channel group to which it belongs for multiple channel operation. (The LED will illuminate continuously when a signal is being received.) Pushing the AutoSmart-Tuning™ button (AST) will cause the receiver to seek another compatible channel being transmitted in the frequency group being used.

**NOTE: The headphone cord also functions as part of the receiver’s antenna system. For optimum performance, this cord should be fully extended. Coiling or bunching the headphone cord may reduce the range of the receiver. Also, coil-cord type headphone cords are *not* recommended. The receiver should be carried by the snap-on belt clip (included) or in a pocket or belt-clip pouch.**

d. Set the audio output level control to a comfortable listening volume. This control is turned clockwise for maximum output level.

## PR-75a SETUP AND OPERATION

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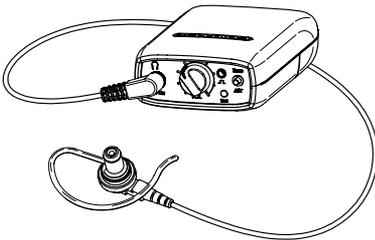
### Monitoring Capabilities

Because each monitoring application requires a different headphone or transducer to best satisfy each listening need, the PR-75a can source a strong audio signal (200 mW) to either stereo or mono headphones with an impedance as low as 16 ohm. A hearing aid type button receiver may be used with an impedance as high as 2k ohm and still produce a strong audio signal.

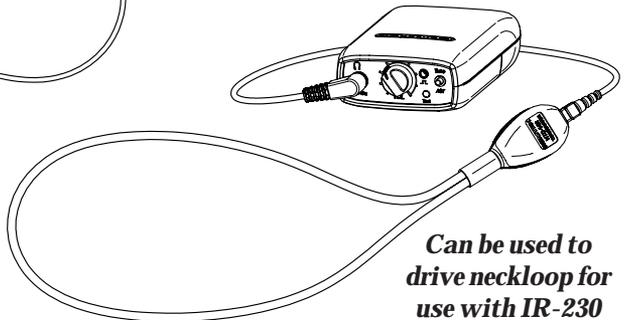
The PR-75a is ideal for use with the COMTEK NTC-102 neckloop transducer and wireless IR-230 miniature universal-fit ear canal inductor receiver or with hearing aids having a "T" switch.



*Can be used with consumer or professional headphones.*



*Can be used with hearing aid button receivers for assistive listening or acoustic ear tube for IFB application.*



*Can be used to drive neckloop for use with IR-230 inductor receiver or hearing aids.*

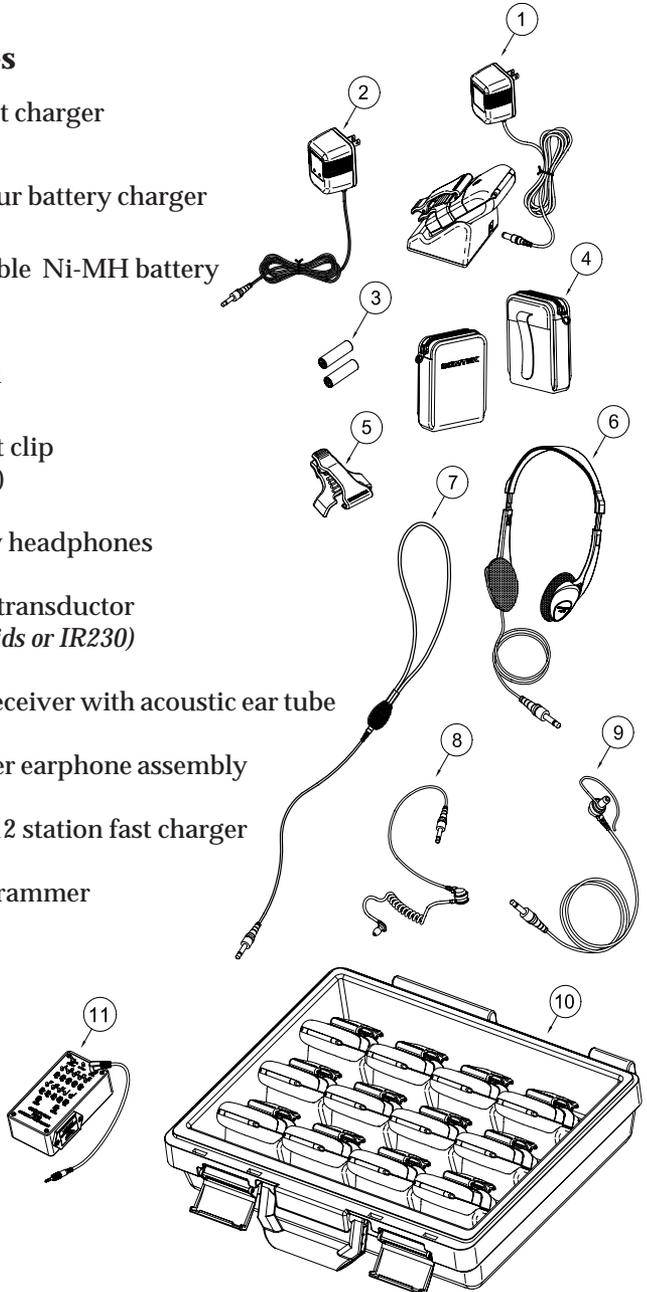
# PR-75a OPTIONAL ACCESSORIES

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## Optional Accessories

1. NBC 9-3-1 Digital fast charger
2. NBC 3-1 3 volt 12 hour battery charger
3. NH 1600 Rechargeable Ni-MH battery (1.2 volt 1700 mAh)
4. P-1 Universal pouch
5. BC-216 Snap-on belt clip (supplied with PR-75a)
6. LS-3 High efficiency headphones
7. NTC-102 Neckloop transducer (for use with hearing aids or IR230)
8. ET-4 SM-N Button receiver with acoustic ear tube
9. SM-N Button receiver earphone assembly
10. NBC 9-3-12 Digital 12 station fast charger
11. FP-75 Channel programmer



# PR-75a FREQUENCY INFORMATION

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## 72 MHz WIDE-BAND CHANNELS

CHANNEL	FREQUENCY
A	72.100 MHz
B	72.300 MHz
C	72.500 MHz
D	72.700 MHz
E	72.900 MHz
F	75.500 MHz
G	75.700 MHz
H	75.900 MHz
I	74.700 MHz
J	75.300 MHz

## Custom Programming

The Data I/O port allows special channel programming with the FP-75 programmer to create new dedicated frequency groups. These frequencies can then operate in sequence for “roundabout” type channel selection with the AST push button. A dedicated single channel can also be programmed.

## AutoSmart-Tuning™ Process

Plugging the earphone into the PR-75a receiver will automatically turn on the receiver and initiate the AutoSmart-Tuning™ process. (The LED will blink very rapidly during this process.) The receiver will then tune itself to the closest on-air transmitter in its vicinity. Based on the first channel found, the receiver will then determine the channel group to which it belongs for multiple channel operation.

## GROUP FREQUENCY CHART GROUP 1

CHANNEL	FREQUENCY
A	72.100 MHz
E	72.900 MHz
H	75.900 MHz
J	75.300 MHz

## GROUP FREQUENCY CHART GROUP 2

CHANNEL	FREQUENCY
B	72.300 MHz
G	75.700 MHz
I	74.700 MHz

## GROUP FREQUENCY CHART GROUP 3

CHANNEL	FREQUENCY
C	72.500 MHz
F	75.500 MHz

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## Multiple Channel Operation

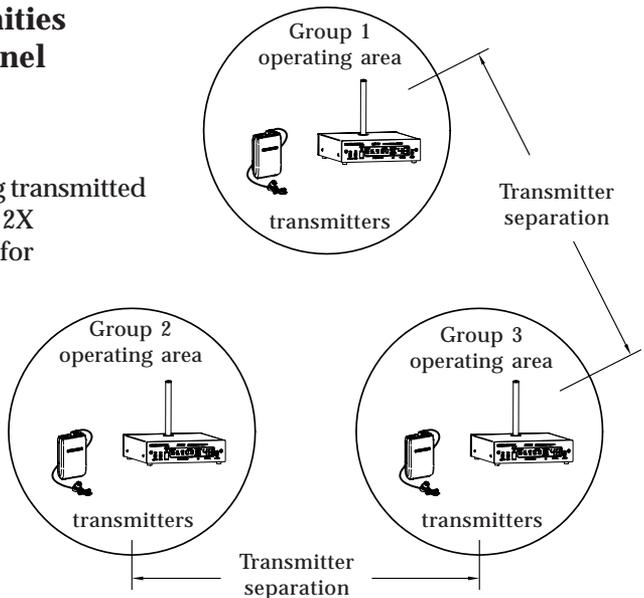
When multiple transmitters (more than two) are used in the same proximity, intermodulation interference can occur. This condition is common to all radio receivers to some extent when multiple transmitters are used in the same operating area. The RF signals will “MIX” together generating additional signals. If these product frequencies are too close to a frequency which the receiver can also respond to, you will experience intermodulation interference which may cause undesirable operation.

***To avoid this type of interference when multiple transmitters are used in the same proximity, transmitting frequencies must be coordinated by selecting from frequencies in the same group. (See group frequency chart on page 6.)***

When programming new customized frequency groups with the FP-75 channel programmer, COMTEK’s Frequency Selection Guide Software can be used to determine appropriate frequencies. Contact COMTEK to obtain a free copy of the frequency selection software or download it from COMTEK’s web site at [www.comtek.com/software.html](http://www.comtek.com/software.html)

## Transmitter Proximities For Multiple Channel Operation

Frequency groups being transmitted should be separated by 2X the operating area; and for best performance, the group operating areas should have a 100 ft. minimum separation.



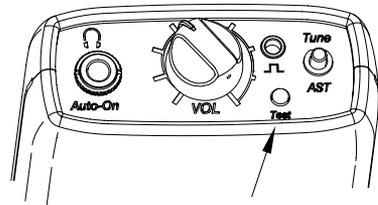
## PR-75a BATTERY INFORMATION

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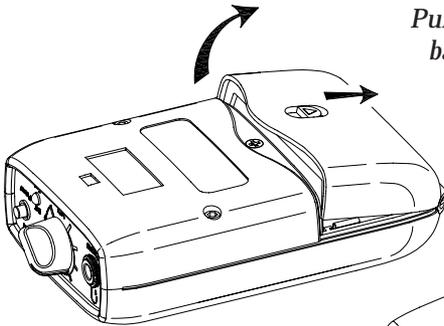
### Low Battery Indicator

The LED indicator on the PR-75a is a multi-function indicator which includes low battery detection. When the receiver is operating normally, the LED indicator illuminates continuously indicating that the receiver is receiving a signal on the tuned channel. If the battery is low, the LED will show a steady fast flash indicating the battery is low. Additionally, if the user is monitoring, an audible beeping sound will be heard warning that the battery will be dead soon. Replace a low battery immediately as performance of the receiver will be unpredictable and may vary from audio distortion to complete failure to operate.

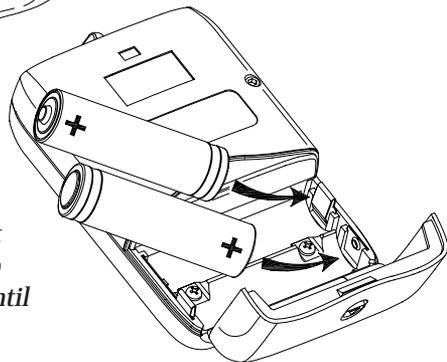


Battery indicator LED

### Battery Removal / Replacement



*Pull back battery door latch and allow battery cover door to spring open. To remove batteries, simply manipulate the negative (-) end of battery out of the compartment and remove.*



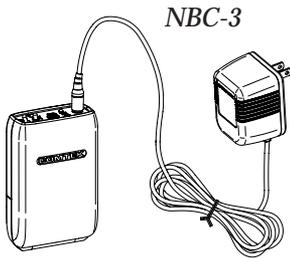
*To insert batteries, manipulate the positive (+) end into place with correct polarity as shown. Press batteries into compartment and close battery door until it snaps shut. Note: Battery polarity must be correct for unit to operate.*

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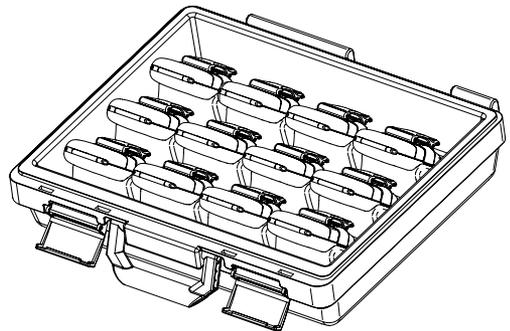
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## Battery Charging

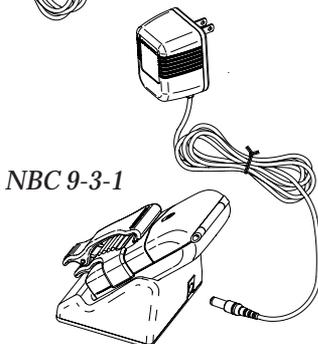
1. Make sure that two AA size 1.2 volt Ni-MH rechargeable cells are used with a minimum of 1400 mAh capacity. **(Alkaline batteries must not be charged.)**
2. Note that the red charging indicator on the charger is “ON” when the PR-75a is plugged into the charger through the audio output jack.
3. When using the NBC -3 charger allow the battery to charge for 12 hours for a full charge. The unit must then be unplugged. When using the NBC 9-3-12 or NBC 9-3-1 digital fast charger, the charger will automatically end the charge cycle and the red LED will change to green. With this charger, the unit may be left in the charger until the unit is used.
4. Periodically open the battery compartment on stored COMTEK units to check for battery leakage. If a battery is leaking, it must be discarded, and the battery compartment must be cleaned or returned to COMTEK’s service department for repairs.



NBC-3



NBC 9-3-12

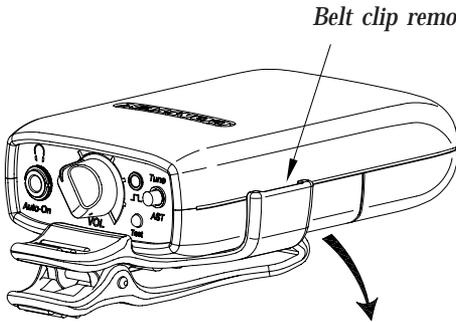


NBC 9-3-1

# PR-75a SNAP-ON BELT CLIP

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## Belt clip removal

*Flex out and pull down with your thumb or a large coin (quarter) to unsnap belt clip from case.*

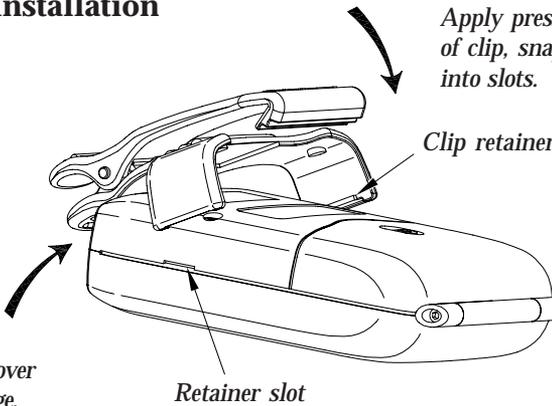
### STEP 2:

*Rotate belt clip down onto case. Apply pressure on both sides of clip, snapping clip retainers into slots.*

## Belt clip installation

### STEP 1:

*Hook belt clip retaining lip over front case ridge.*



# PR-75a SPECIFICATIONS

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**Audio Output:**

Headset output 200 mW average  
(Impedance as low as 16 ohm)

**Connectors:**

- Stereo/mono 3.5 mm audio output connector and charging input.
- 2.5 mm stereo connector for I/O data programming.

**Indicators:**

- Multi-function LED
- a. Channel-seeking
  - b. Received signal
  - c. No signal
  - d. Low battery (also audible beeping)

**Controls:**

- Volume control (50 dB range)
- Automatic turn-on when headphone is plugged in and turn-off when headphone is removed.
- One-button tuning control (AST)

**Audio Frequency Response:**

100 Hz to 10 kHz  $\pm 3$  dB

**Harmonic Distortion:**

Less than 1% (1kHz tone 30 kHz deviation)

**Operating Radio Frequency:**

- 72 to 76 MHz
- Frequency synthesized 10-channel, AutoSmart-Tuning™ (AST)

**Frequency Stability:**

0.002% frequency synthesized  
crystal controlled

**RF Sensitivity:**

1.3  $\mu$ V for 38 dB of quieting  
(average)

**Ultimate Quieting:**

Better than 75 dB related  
to output

**F.M. Modulation Acceptance:**

Non-Companded F.M.  
Deviation up to 40 kHz

**Antenna:**

Integral with headphone cable  
(no external antenna)

**Battery Life:**

100 hours with alkaline batteries

**Power Requirements:**

2 AA 1.5 volt alkaline batteries  
or rechargeable Ni-MH  
(NH 1700)

**FCC Compliance:**

Complies with Part 15  
of FCC rules for scanning  
receivers.

**Dimensions:**

1 1/16" x 2 1/2" x 3 1/4"  
(27 mm x 57 mm x 83 mm)

NOTE: Specifications subject to  
change without notice

# PR-75a WARRANTY AND SERVICE

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## Warranty

COMTEK warrants this product to be free from defects in workmanship and material under normal use and conditions for a period of one year from date of original purchase. Items such as batteries, neckloops, and cords are not covered by the warranty. Damage due to misuse, ill treatment and unauthorized modification and repairs are not covered by this warranty. COMTEK is not liable for consequential damages arising out of any failure of the equipment to perform as intended. COMTEK shall bear no responsibility or obligation with respect to the manner of use of any equipment sold by it. COMTEK SPECIFICALLY DISCLAIMS AND NEGATES ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF SUCH EQUIPMENT INCLUDING, WITHOUT LIMITATION, ANY WARRANTY THAT THE USE OF SUCH EQUIPMENT FOR ANY PURPOSE WILL COMPLY WITH APPLICABLE LAWS AND REGULATIONS.

## Service Policies

Warranty repairs must be done by COMTEK. Only factory technicians are authorized to perform warranty service on the PR-75a receiver. Before returning the PR-75a for service, a Return Authorization Number should be obtained from the service department by calling 1-800-496-3463 or 1-801-466-3463. Return the unit to the factory with the original or comparable packing. COMTEK will pay for insurance and ground return shipping costs in the United States for all warranty service.

**COMTEK®**

*First Quality in Wireless Sound*

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Web Page: [www.comtek.com](http://www.comtek.com)

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