

ONWAVE USER GUIDE

1) ANTENNA MOUNTING

1A) Standard Mounting the Whip Antenna, AT0777

- Attach the antenna by screwing antenna onto the back of the unit (connector has left-handed thread).

1B) Remote Mounting the Whip Antenna.

(Requires the Antenna Ground Plane, AT0775 or AT0776)

- Installing the transmitter in a metal sound room or metal racks may confine the signal. Remote installing the antenna outside of the sound room provides optimum coverage (i.e., near the seats), while keeping your transmitter convenient to access.
- Remote mounting the antenna eliminates potential interference between the RF signal and other sensitive electronic devices in the audio rack.
 - 1) Attach the antenna to the ground plane jack that's closest to the middle of the ground plane.
 - 2) U.S. FM systems are required by the FCC to feature non-standard connectors (unique to Phonic Ear) on the transmitter. Remote mounting the antenna requires the Phonic Ear ground plane kit that includes the non-standard cable (AT0776). Contractors using their own cable (RG58/U 50-ohm coaxial cables) to make custom cable lengths can order the ground plane with the non-standard connector kit (AT0775).
 - 3) Attach the cable to the other jack on the ground plane.
 - 4) Plug the free end of the cable into the RF OUT jack on the back of the transmitter, and secure the cable away from foot traffic.
 - 5) Choose a location where the antenna will "see" the entire seating arrangement and test the system to make sure there aren't any dead spots in the listening environment before securing the ground plane permanently.
 - 6) Secure the ground plane by attaching screws through the two holes provided and mount it on a wall or a ceiling (we recommend a vertical orientation). The ground plane can also be placed on a tabletop.

1D) Large Area Antenna Mounting

- Required coverage radius is greater than 60m/200 ft.
- Large area coverage radius of 300m/1000 ft.
 - 1) For shipping purposes it's necessary to collapse the antenna, you will need to extend the antenna to its tuned height for best results. To extend it, loosen the two worm clamps and pull the large center section out to the black ring marked around the tube. Then tighten the lower worm clamp and extend the smaller element to the black ring. Tighten the top clamp.
 - 2) The large area antenna comes with a mounting hole and set screw so you can mount it on a tripod (such as Radio Shack's 1m/3ft tripod mount; Part #15-516) with a mast (such as Radio Shack's 1.5m/5 ft mast; Part #15-842). Ground your mounting pole, tripod, or other holder to a metal surface to protect against lightning strikes. You may also hang the antenna from a railing or metal superstructure (such as in a stadium).

- 3) The antenna is an electrical conductor. Contact with power lines can result in death or serious injury. Do not install the antenna, supporting mast, or tower where there is any possibility of contact with a high-voltage arc from power cables or service drops. Outdoor antennas should be grounded against lightning strikes. Consult the National Electrical Code for further details.
- 4) Be careful not to deform or move the tuning ring around the black insulator at the antenna's base, doing so will affect the antenna's tuning as well as its efficiency.
- 5) Do not place the antenna where it would be parallel to or within six feet of any metal structure; situating the antenna in such a way will de-tune it. It's fine, however, to place the antenna perpendicular to and beneath metal.
- 6) As with the standard antenna, experiment with different locations to achieve the best possible antenna placement. Make sure you place it in a location where it will "see" the entire seating arrangement. We recommend vertical orientation, upside down at maximum height.
- 7) US FM systems are required by the FCC to feature non-standard connectors (unique to Phonic Ear) on the transmitter. The Large Area Antenna Kit includes a non standard connector kit for use with RG-58/U 50 Ohm Coaxial Cable. There are two antenna kits to choose from. The AT0773 Low Band Antenna is used for Channels A-E (WB) or 1 –20 (NB). The AT0774 High Band Antenna is used for channels F-J (WB) or 21 –40 (NB).
- 8) Keep the cable length as short as possible, the maximum recommended RG58/U cable length is 30m/100 ft. If you find that your installation requires longer cable, contact our Applications Engineer Bob Mendoza at (800) 227-0735, extension 276 before purchasing a transmitter — he can help specially modify a transmitter to meet your needs.
- 9) Attach one end of the cable to the connector found on the large area antenna.
- 10) Attach the other end of the cable to the ANTENNA jack on the back of the PE560T transmitter, and secure it away from foot traffic,

* Use only those antennas supplied or recommended by Phonic Ear. For help selecting an appropriate antenna, consult the ON WAVE 560T specification sheet, or call Customer Service at 800-227-0735, then press 5 (800-263-8700 in Canada)

2) TRANSMITTER INSTALLATION

- 2A) Use the AT0780 or the AT0781 rack mount kit to install the transmitter in the audio rack or place close by the audio system.
- 2B) Plug the AT0757 transformer into the power jack on back of the transmitter, plug in the wall outlet, and press the power key on the front panel to turn on the unit.
- 2C) Connect one end of an XLR or 1/4" cable to the universal *mic/line* input and the opposite end to the sound system mixer. For connection to a stand-alone mic (compatible with dynamic or condenser mics, system has phantom power, 12V) use an XLR cable. Select the desired input by pressing the mic/line key located on the front panel. The selection will appear on the display.

To connect to speaker levels of 10 Volts RMS use the terminal block input (sum inputs) and select the line level setting on the transmitter. Using a series resistor one can

accommodate higher input levels; an additional 47K Ohm resistor can be used for an input level of 20 Volts RMS and 100K Ohm resistor for 30 Volts RMS.

Check the line level indicator on the front panel to confirm audio is being received. The 5-step indicator should be flashing up and down as the audio signal peaks.

- 2D) Use the 500R or 350R to check sound quality. The 560T and 500R are factory set to Wide Band channel E. If a different channel is desired or if testing with the 350R/300R follow the channel selection instructions below.
- 2E) Using a dynamic audio signal, such as lively music, increase the volume on the amplifier/mixer until the transmitter overload indicator on the front panel momentarily lights. Fine tune the adjustment by decreasing the volume on the amplifier/mixer until the transmitter indicator light turns off. Check reception from all listening areas for sound quality and signal strength. Relocate the transmitter antenna if necessary to eliminate any drop out and adjust audio input level as necessary.

3. ADJUSTING TRANSMITTER OUTPUT LEVELS

- 3A) Use the line level control to adjust transmitter output levels if the volume on the sound source cannot be adjusted. Increase the line level output until the overload indicator lights, fine tune by decreasing slightly until the overload indicator light turns off.

Increase output - Keystrokes: +level
Decrease output - Keystrokes: - level

- 3B) Bass Cut Options - the most common type of hearing loss is a high frequency loss. Individuals with this type of hearing loss require high frequency amplification and less amplification of the lower frequencies. The base cut option can be used to reduce the bass output level for these individuals. If possible, the system should be tested by several of the end users with a hearing loss to determine the optimum bass cut settings.

The bass cut option is also useful for eliminating unwanted low frequency noise and 60 cycle electrical hum.

Keystrokes: press the bass cut key to select from four bass cut options: 40 Hz, 80 Hz, 160 Hz, and 320 Hz. The selection will appear on the front panel display.

- 3C) Speech/Music Selection

The speech setting amplifies frequencies in the speech bandwidth of 160Hz to 6KHz. The speech setting can be further customized using the bass cut options. The bandwidth for the music mode is extended to 12KHz for a wider frequency response and fuller sound. Check the front panel display to determine what mode the transmitter is set to, the music note symbol indicates music and the "S" symbol indicates the speech setting.

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4) SELECTING ALTERNATIVE TRANSMITTER CHANNELS

- 4A) Transmitter Bandwidth Selection - Keystrokes: Press the *Function* key followed by the *Channel* key to switch between Wide Band and Narrow Band transmission. Wide Band channels are indicated by letters and Narrow Band channels are listed numerically.
- 4B) Transmitter Channel Selection - Keystrokes: Press the *Channel* key to select from 10 WB channels or 40 NB channels. Check the front panel display to view the channel being selected.

5) TUNING THE 500R RECEIVER

5A) Activate the transmitter test tone by following the keystrokes below:

Test tone activation keystrokes: Function, then Speech/music

Test tone deactivation keystrokes: Function

The five steps of the front panel level indicator will flash simultaneously when the test tone is activated.

5B) Turn the receiver on, place headset on head, and increase volume by rotating dial one half turn.

5C) Locate the tuning screw on the back of the receiver. The receiver is pre-tuned to the standard frequency, 72.9 MHz, channel E. Check to see whether the channel you wish to select is a lower or higher frequency than 72.9 MHz.

<u>Channel</u>	<u>Frequency</u>	<u>Chann</u> <u>el</u>	<u>Frequency</u>
CH A	72.1	CH F	75.5
CH B	72.3	CH G	75.7
CH C	72.5	CH H	75.9
CH D	72.7	CH I	74.7
CH E (Std.)	72.9	CH J	75.3

5D) While listening to the receiver, use a standard flat blade tuning tool or small screwdriver to tune to the desired frequency. Note the high - low arrows on the tuning label. If the desired frequency is higher than 72.9 MHz, turn the screw to the left or counter clockwise, for lower frequencies turn the screw to the right or clockwise. The tuning screw is a multi-turn design for fine-tuning so it may take several turns to reach your desired channel. Once the test tone is located, fine-tune the receiver until the tone is clear, undistorted and at maximum volume.

6) 350R/300R RECEIVER

6A) For the 350R, check the channels listed on the inside the battery compartment, if using the 300R check the channel listed on the front of the receiver.

6B) Select Narrow Band transmission on the 560T transmitter; (see bandwidth selection instructions)

6C) Press the channel button on the transmitter until the desired 350R/300R channel appears in the display.

7) FRONT PANEL LOCK OUT

The front panel lock out feature prevents transmitter setting from being changed.

Lock Out Keystrokes: Press the *Function* key followed by the *- level* key.

Unlock Keystrokes: Press the *Function* key followed by the *+ level* key.

A "L" will appear on the front panel to indicate the lockout feature is activated.

8) FCC Statement

NOTE: 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 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 antenna or cordage, other than those specifically approved for use with this FM system by Phonic Ear Inc. is used, the antenna or cord must be installed by a professional and the operation of the system must be verified by the installer of the antenna or cord to comply with applicable government regulations.

IMPORTANT: This product was tested for FCC compliance under conditions that included the use of shielded cables and connectors between System components.