# User Manual

## LR-5200-072 Advanced iDSP Receiver (72 MHz)
## LR-5200-216 Advanced iDSP Receiver (216 MHz)

LISTEN TECHNOLOGIES



For further details regarding use, adjustment, or programming of your Listen Technologies products visit our website at www.listentech.com/support-manuals or contact us at +1.801.233.8992 or 1.800.330.0891.

*Dear Valued Customer,*

Thank you for choosing Listen! We are dedicated to providing you with the highest quality products available, and take pride in delivering outstanding performance to ensure you are completely satisfied.

We independently certify each of our products to the highest quality standards and back them with a limited lifetime guarantee. We are available to answer any questions you might have during installation or in the operation of our products. At Listen, it's all about you, should you have any comments or suggestions we're here to listen.

Here's how to reach us:

+1.801.233.8992
+1.800.330.0891 North America
+1.801.233.8995 fax
support@listentech.com
www.listentech.com

Thank you and enjoy your listening experience!

Best regards,

Russell Gentner and the Listen Team

- In the few instances where repairs were needed, 99% of all clients indicated that they were happy with repair turn-around-times and 85% of the time, clients were without their product for less than 10 days!
- Overall client satisfaction of working with Listen was rated 4.8 out of 5.
- "Please continue with your excellent attitude toward customer satisfaction. You guys are great!"
- "I've never had such good service from any company. Keep up the good work!"
- "You stand behind your product wonderfully."

LISTEN TECHNOLOGIES

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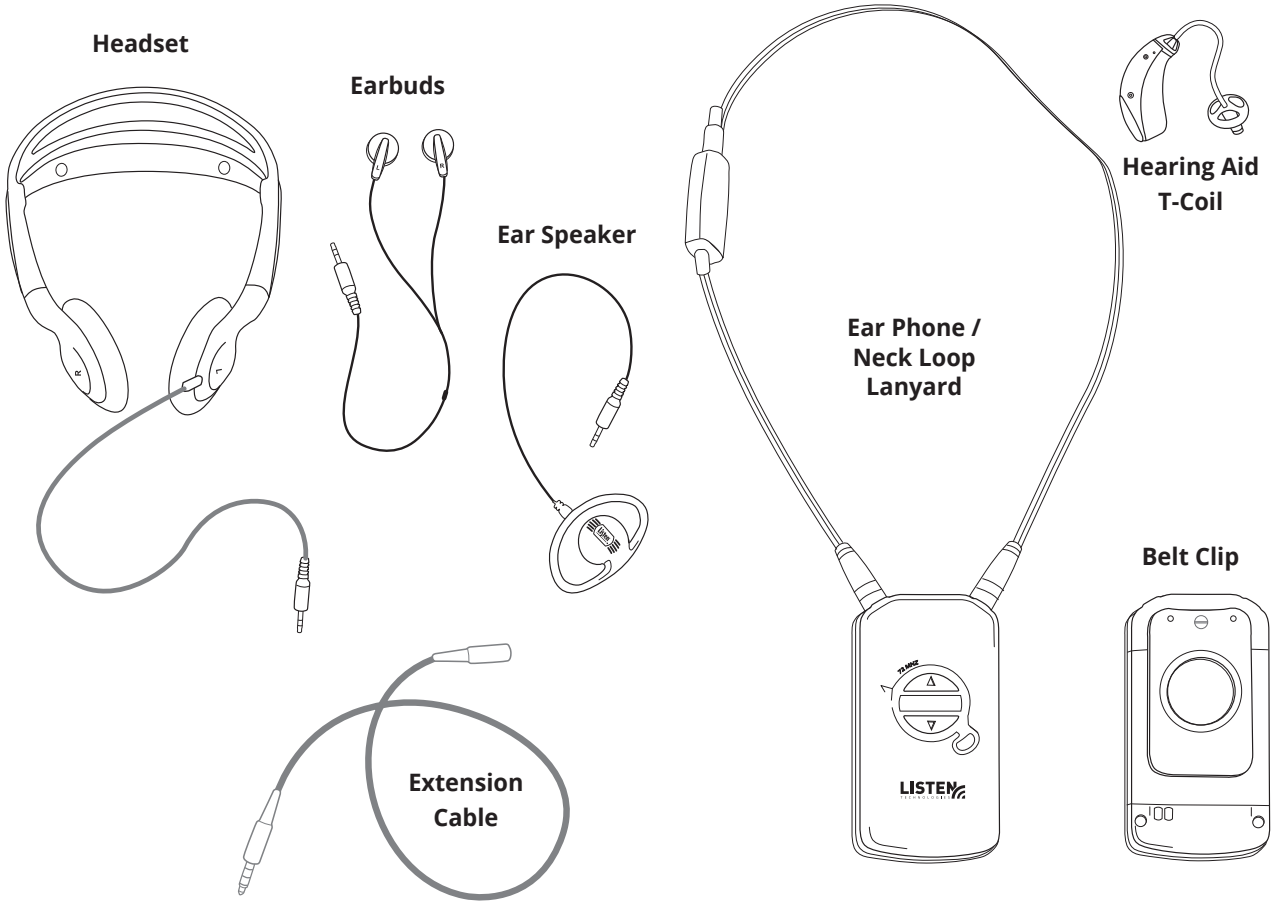
# iDSP™ Receivers

The LR-5200 is a powerful Assistive Listening Receiver designed to be compact and simple to use. The unique design of the iDSP™ receiver family allows them to be worn as a necklace, using the belt clip or concealed in a pocket, making this the most inconspicuous ALS receiver on the market.




Each receiver can be purchased with a Ear Phone/Neck Loop Lanyard that is designed to hold the receiver like a necklace similar to the Blue Tooth™ transceivers used with many of the today's hearing aids. The Ear Phone/Neck Loop Lanyard can be used as the induction loop for those users who have T-coil enabled hearing aids or cochlear implants, inducing the received audio directly into these T-coil enabled devices. The Ear Phone/Neck Loop Lanyard also provides the connection to Listen's Universal Ear Speaker, Earphones and Headphones, incorporating a short connection cable that plugs directly into the Ear Phone/ Neck Loop Lanyards 3.5mm headset jack located 2/3 of the way up the lanyard. A second 3.5mm extension cable provided with Listen's universal earphones provides the length of cable required to place the receiver in a pocket or using the belt clip.

# LR-5200 Quick Reference


1. **OLED Display Area:** Displays battery status, unit ID, channel status, volume status and charge activation
2. **Micro USB:** USB charging, programming, firmware updates and inventory dispensing
3. **Up/Down Volume Control:** Press momentarily to adjust the volume up/down or press and hold to ramp the volume.

   *Note:* Press and hold both up and down buttons for 5 seconds to activate channel select, use up and down to change the channel. Momentarily press the power button to save and exit
4. **Programmable Channel Select:** Cycle through active channels, seek to or lock to a channel.


5. **3.5 mm Output Jacks:** Connect Listen Ear Phone/Neck Loop Lanyard for use with T coil hearing aids or with Universal Ear Speaker or Headphone.
6. **Belt Clip:** To remove, remove screw and pull belt clip from unit. To install place belt clip in place and insert screw.
7. **Charging Contact:** For use with Listen charging tray options.
8. **Power On/Off:** Press and hold for 1 second to turn on. Press and hold for 3 seconds to turn off.
9. **LED:** Indicates low battery condition and charging status
10. **Battery Protective Pull Tab:** Remove clear plastic pull tab to activate internal battery connections.
11. **Battery Door:** Can be removed to access battery and product labeling information.

# LR-5200 Specifications

| Product Specification: LR-5200-072 / LR-5200-216 | | |
|---|---|---|
| Audio | System Frequency Response<br>System Signal to Noise Ratio<br><br>System Distortion<br>Output/s | 50 Hz - 15 kHz (±3 dB)<br>SQ enabled 80 dB, SQ disabled 60 dB<br>SQ enabled 70 dB, SQ disabled 50 dB<br><2% total harmonic distortion (THD) at 80% deviation<br>Two (2) 3.5 mm (0.14 in.) connectors, unbalanced, 0 dBu nominal output level, 16 mW maximum, impedance 32 ohm |
| Controls | User Controls<br><br>Set-up Controls<br><br>Programming | Power, up/down volume, Listen button for end user channel selection<br>Press and hold up/down volume buttons for 5 seconds to enter channel adjust, use up/down to select channel<br>Via software and USB port |
| Indicators | LED<br><br>Display | Flashes when batteries are low or to indicate charging, solid when fully charged<br>Channel designation, battery level, unit number, charging status |
| RF | Frequency Range<br>Number of Channels<br>Sensitivity<br>Antenna Type<br><br>Squelch | 72.025-75.975 MHz/ 216.0125-216.9875 MHz<br>(57) 17 wide Band, 40 narrow band/ (57) 19 wide, 38 narrow<br>.6uV typical, 1 uV maximum for 12 dB sinad<br>Uses ear phone/neck loop lanyard and short ear phone cable or standard earphone cable<br>Programmable in 20 steps, automatic on loss of RF signal |
| Power | Battery Type<br>Battery Life<br>Battery Charging Time<br>Power Supply | Lithium Ion<br>8 Hours of typical use<br>Fully charged in 2.5 Hours<br>Micro USB connector, 5 V, 500 mA |
| Physical | Dimensions (H x W x D)<br>Dimensions with Belt Clip<br>Unit Weight<br>Unit Weight with Batteries<br>Shipping Weight<br>Color | 3.75 x 2.0 x 0.64 in. (9.6 x 5.0 x 1.7 cm)<br>3.75 x 2.0 x 0.80 in. (9.6 x 5.0 x 2.1 cm)<br>1.6 oz (45.4 g)<br>2.4 oz (68.1 g)<br>3.2 oz (90.8 g) with 16 oz (454 g) minimum<br>Flat Black |
| Environmental | Temperature - Operation<br>Temperature - Storage<br>Relative Humidity | 14 to 104 ºF (-10 to 40 ºC)<br>(-)4 to 122 °F (-20 to 50 °C)<br>0 to 95% relative humidity, non-condensing |
| Compliance | Standards | FCC Part 15, Industry Canada, RoHS |

# Safety Cautions!

## Hearing Safety:

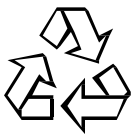
This product is designed to amplify audio to a high volume level which could potentially cause hearing damage if used improperly. To protect your hearing make sure the volume is turned down before putting on the ear speaker or headphones. Then adjust the volume up to the minimum setting require to hear clearly. Do not allow children or other unauthorized individuals to have access to this product without supervision.

## Medical Device Safety:

Before using this Listen product with an implantable or other medical device, consult your physician or manufacturer of your implantable or other medical device. Always make sure you are using this product in accordance with the safety guidelines established by your physician or the implantable device manufacturer.

## Recycling :

Help Listen Technologies protect the environment! Please take the time to dispose of your equipment properly.



### Product Recycling Instructions:

Please do NOT dispose of your Listen Technologies equipment in the household trash. Please take the equipment to an electronics recycling center; OR, return the product to the factory for proper disposal.

### Battery Recycling Instructions:

Please do NOT dispose of batteries in the household trash. Please take the batteries to a retail or community collection point for recycling.

# Quick Setup and Operation Instructions:

## 1. Unpack Unit

Inspect the unit for physical damage. If damage is apparent, please contact Listen Technologies technical support for assistance.

## 2. Activate Battery

Remove the clear plastic pull tab located at the bottom of the battery door, this will activate the internal battery connections. Note: upon first activation the battery will have a limited charge, we recommend the unit be charged immediately.

**Pull the tab to activate the internal battery**

## 3. Charge Battery

Fully charge the rechargeable Lithium Ion battery by connecting the unit to one of Listen Technologies charging options.

a. LA-380 Intelligent 12-Unit Charging/Carrying Case
b. LA-381 Intelligent 12-Unit Charging Tray
c. LA-421 1-Port USB Charger ( comes with cable)
d. LA-423 4-Port USB Charger (comes with 4 cables)
e. LA-422 USB to Micro USB cable (Connects iDSP™ receiver to any standard USB port)

When connected to a charging option the OLED status display will show the battery charge Icon momentarily and the status LED next to the power button will begin to flash indicating that the unit is charging.

**OLED Display:**

Charging Icon when first connected to a charging source

Indicated Unit #, Charge % and Channel Assignment when removed for charging

**Status LED:**

Flashes during charging

Solid when charge is complete

When the unit reaches 100% charged the status LED next to the power button will stop flashing and will be solid.

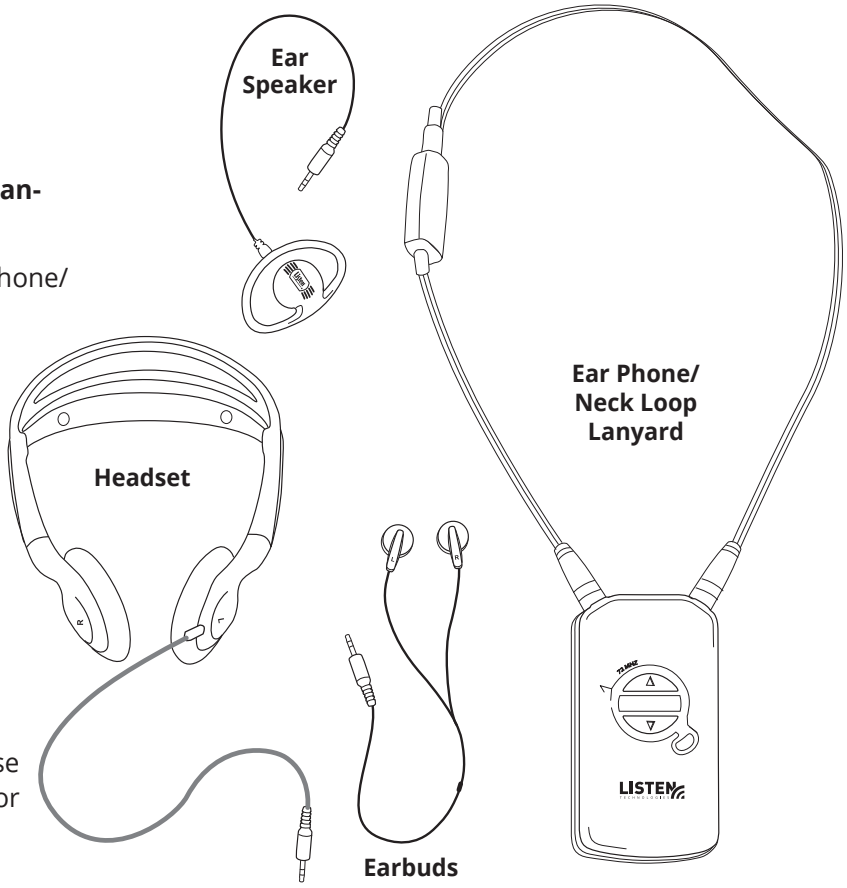
## 4. Connect Earphone

### Using The Earphone/Neck Loop Lanyard

Connect the Listen Intelligent ear phone/ neck loop lanyard to the two 3.5 mm output jacks on the unit. Then connect the short cable ear speaker or headphones to the 3.5mm output jack on the lanyard. The lanyard neck loop is placed over the head and worn as a necklace.

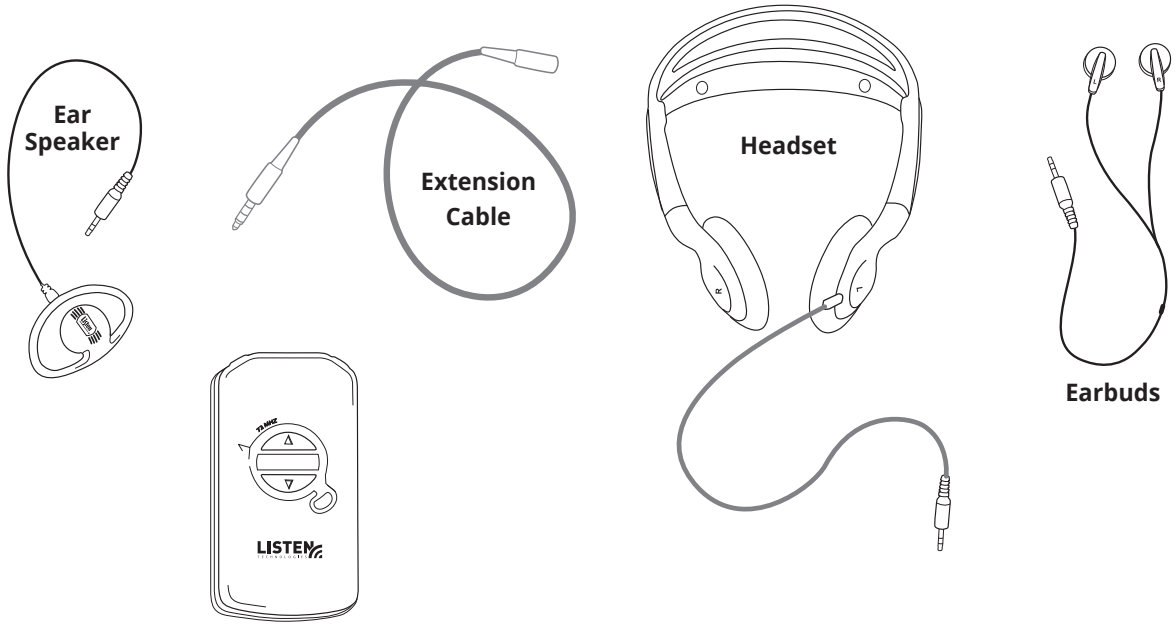
This is the preferred method of wearing the receiver for best performance!

For T-coil compatible hearing aid use simply disconnect the ear speaker or headset from the ear phone/neck loop lanyard.




### Using The 3.5mm Earphone Extension Cable

If the receiver is to be clipped to a belt, waistband or inside a pocket a long extension cable is used. Connect the extension cable to the ear speaker, headset or earphones, then connect the extension cable into one of the 3.5 mm output jacks on top of the receiver.



## 5. Turn the Unit On

Press and hold the Power Button for 1 second to turn the receiver on, the unit display will show the unit ID, battery status and the current channel. Each item will be displayed and then the display will turn off.

**OLED Display:**

Indicates Unit #, Charge % and Channel Assignment when power button is pressed


**Power Button:**

Press and hold for 1 second to turn on, press and hold for 3 seconds to turn off

To view the unit ID, battery status or channel while the unit is powered, momentarily press the power button. To turn the receiver off, press and hold the power button for 3 seconds.

## 6. Programmable Channel Select (Listen Button)

The main advantage of the LR-5200 Receiver is the functionality of the programmable Listen Button. The Listen Button can be programmed for Channel Select Mode, Seek Mode or be Disabled. These modes can only be changed via the IDSP Software Suite.

*Note:* In order for the LR-5200 to receive audio it must be on the same channel as a transmitter in the facility. 72 MHz receivers operate on 17 wide band channels and 40 narrow band channels. Channels represented by letters on the display (i.e. A) are wideband channels: channels represented by numbers are narrowband channels. Listen recommends the use of wide band channels for a much higher quality listening experience.

216 MHz receivers operate on 19 wide band channels and 38 narrow band channels. Channel numbers starting with a "2" are wide band; channels beginning with a "1" or "3" are narrow band channels.

It is important to choose channels that are free from interference to achieve proper operation of your Listen equipment. This process is trial and error. Before turning on the transmitter, listen for interference on the available channels. Choose channels with the least amount of interference. If you are using multiple channels follow this process:


**1. Channel Select: (Listen Button)**

**Same Space:** If you are using transmitters in the same space, the most number of channels that will work simultaneously is six wide band channels or 8 narrow band channels at 72 MHz, three wide band channels or 5 narrow band channels at 216 MHz. With all of the transmitters off, listen for interference on all the wide band channels via the headphone jack. Using the frequency compatibility tables on pages 21-22, eliminate any channels that have noticeable interference. Now choose the channels with the widest channel spacing. It is recommended that adjacent channels be spaced at least 300 KHz. If there is no interference the following channels are recommended: A, C, E, I, J, and H (wide band) or 1, 5, 10, 16, 21, 24, 31, and 35 (narrow band) for 72 MHz and 2A, 2K, and 2V (wide band) or 1A, 1C, 1F, 1N, and 1V (narrow band)

**Distributed Spacing:** If you are using transmitters that are spread out over space, you can achieve more simultaneous broadcast channels. However, it is critical that your receiver(s) be located as close to its transmitter as possible. You can use adjacent channels (see frequency compatibility tables on pages 21-22) in this case as long as the adjacent channel transmitter is at least 50% further away from the receiver as its transmitter. Example: The transmitter for the receiver on channel E is 100 feet from the receiver. The adjacent channel transmitter on channel D should be at least 150 feet away.

## Channel Select Mode

The Listen Button on your receiver has been programmed from the factory for Channel Select Mode. This mode is especially useful for applications where users are required to select between active channels (such as language interpretation or multiple classrooms), and you don't want them to have to go through all available channels to find the appropriate channel. In this mode the button can be programmed to increment only through the desired active channels in your facility and lock out all the other unused channels.

In this mode when the Listen Button is pressed the unit will increment through the channel list to the next programmed channel. For example if there are three channels programmed (English, Spanish and German) and the unit is on the English and the button is pressed the unit will switch to Spanish. If the button is pressed again the unit will switch to German and an additional press will take the unit back to English again.

There are two modes to customize the channel list for the Listen Button. The two modes are Automatic Channel Selection and Manual Channel Selection. These modes can be programmed using the unit or via the IDSP Software Suite.

Your Listen receiver has been shipped to you with the Automatic Channel Selection, Auto 2 (channels E and A) enabled for 72MHz or (channels 2C and 2V) enabled for 216 MHz.

## 1. Automatic Channel Selection

In the Automatic Channel Selection mode the user decides how many channels of audio are to be received by the unit. In this mode the unit automatically selects the channels that can be used together simultaneously in a given space. The unit is defaulted to Auto 2. The max number of channels is 8 for 72 MHz and 5 for 216 MHz.

**1. Auto Select Mode:**

Press and hold the Power and Up button simultaneously for 3 seconds


**3. Save/Exit:**

Press power button to save and exit.

**2. Scroll Up/Down:**

Use the up or down button to scroll through available options

72 MHz
Auto 1 (Channel E)
Auto 2 (Channels E, A)
Auto 3 (Channels E, A, H)
Auto 4 (Channels E, A, H, I)
Auto 5 (Channels E, A, H, I, J)
Auto 6 (Channels E, A, H, I, J, C)
Auto 7 (Channels 1, 5, 10, 16, 21, 24, 31)
Auto 8 (Channels 1, 5, 10, 16, 21, 24, 31, 35)

216 MHz
Auto 1 (Channel 2C)
Auto 2 (Channels 2C, 2V)
Auto 3 (Channels 2A, 2C, 2V)
Auto 4 (Channels 1A, 1F, 1N, 1V)
Auto 4 (Channels 1A, 1C, 1F, 1N, 1V)

The user selects the number of channels by using the following sequence:
Simultaneously press and hold the UP and POWER button for 3 seconds. The unit will display "Auto 2" on the display. Press the UP/DOWN button for the number of desired channels. Momentarily press the POWER button to save the setting or after 5 seconds of no activity the setting is saved and the unit returns to normal operation.

Or use the IDSP Software Suite for set up!

## 2. Manual Channel Selection

In the Manual Channel Selection mode the user decides specifically which channels are to be received by the unit. It is recommended that adjacent channels be spaced at least 300 KHz apart if being used simultaneously.

The user selects these channels by using the following sequence:


Simultaneously press and Hold the DOWN and POWER button for 3 seconds. The unit will display "Manual" on the display for 3 second and then displays the current channel. If the channel is used (meaning the Listen Button can select it) the channel will be solid; if not it will flash. Press the LISTEN button for each selected channel to change between "used" (solid) and "not used" (flashing). Press the UP/DOWN button to scroll through all available channels. Momentarily press the POWER button to save and end or after 5 seconds of no activity the setting are saved and the unit returns to normal operation.

*Note: The IDSP Software Suite can also be used for set up!*

## Channel Select Mode

Once the channels have been selected via the Automatic Channel Selection or the Manual Channel Selection modes a quick change to a specific channel can be made easily. This can be accomplished by the following process:


Select the channel to be changed via the Listen Button. Press and hold the volume up and down buttons simultaneously for 5 seconds. The current channel will begin to flash on the display.

Use the volume up or down button to scroll through the available channels. Once the desired channel is located momentarily press the power button to save and exit the channel select mode or if no button is pressed for 5 seconds then the selected channel will be saved and the unit will exit the channel select mode. See page 21 for complete channel selection information.

## Seek Mode

Seek Mode is another way to find and active channel in a venue. In the Seek Mode with a press of the Listen Button the unit searches for and locks onto the next active channel in the list of available channels. This mode is useful when users are moving from room to room or may not know which channel to select.

In this mode it is possible that the unit will mistake interference for a real broadcast signal. If you get interference, press the Seek Button again. The unit may also stop on a channel that is close to the actual broadcast channel if in the available channel list, in which case the channel will sound noisy or distorted. Simply press Seek again until you find the clearest operating channel.

## Disabled

When in the disabled mode the Listen Button has no function.

## Listen Button Lock

Once an active channel is found it is sometimes desirable to lock the unit onto the currently tuned channel and not allow the user to make any channel changes. This can be accomplished by pressing and holding the listen button for 5 seconds. When the unit enters locked mode the unit will show the locked symbol on the display for 3 second. When locked, each time the Listen Button is pressed the unit will show the locked symbol on the display for 3 seconds.


To unlock the unit simply press and hold the Listen button for 5 seconds. When the unit is unlocked the unit will show the unlocked symbol on the display.

## Adjust Volume

Adjust the listening volume to a comfortable listening level via the volume up/down buttons.


If the volume is adjusted while there is no audio present the unit will output a momentary tone each time the button is pressed allowing the user to gauge and adjust the audio level to a comfortable listening level. The volume level will be displayed for 3 seconds and then the display will turn off.

*Note: To protect the users hearing, at power up the receiver will automatically reset to a 25% volume level. Put on a headset and then adjust the volume to a comfortable listening level.*

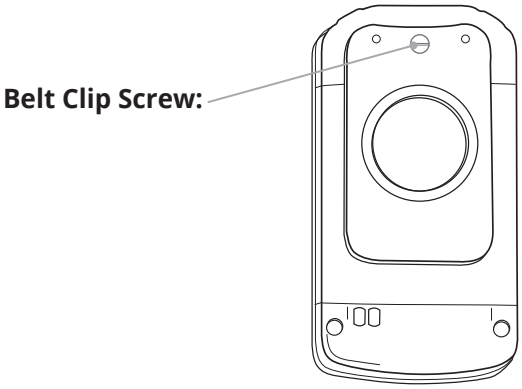
# Battery & Belt Clip

## Low Battery Indication

When the unit detects a low battery condition it will cause the status LED to flash slowly indicating that the unit needs to be charged. When the light begins to flash the unit has approximately 30 minutes of receiver use before the unit will turn off. Press and release the power button and the battery charge % will be displayed on the OLED screen temporarily.

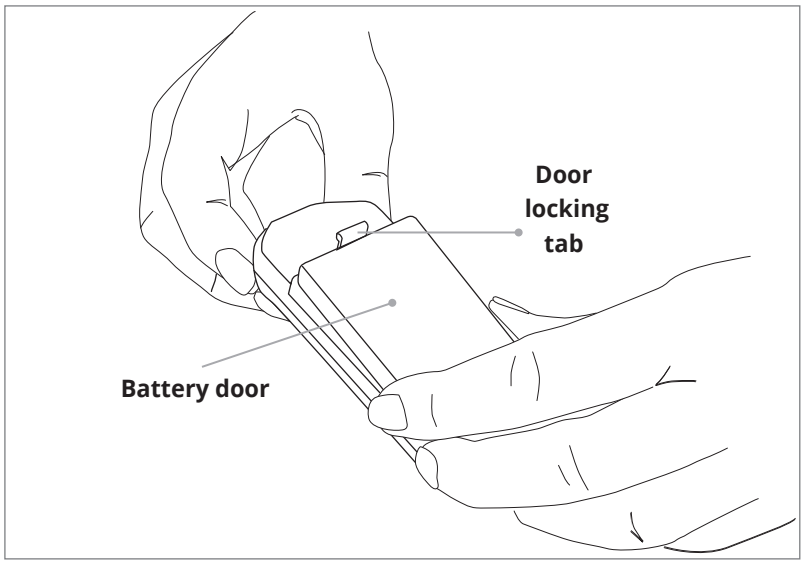

## Belt Clip Installation/Removal

To remove belt clip, remove screw and pull belt clip from unit. To install place belt clip in place and insert screw.



## Accessing Battery Compartment

To access the battery compartment simply remove the belt clip and battery door by pulling down and out on the battery door locking tab. *Note: The product labeling information can be found behind the battery and includes the product model number, description, serial number, contact information and compliance statement.*




## Reset to Factory Default Settings

The unit can be returned to its factory default settings at any time by following steps:

1. Turn the unit off
2. Press and hold down the volume down button while pressing and holding the power button for 1 second to turn the unit on
3. Continue to hold down the volume down button while the unit powers on. The OLED display will show the Unit #, Charge Level %, Channel Selection and end with “Reset?”
4. Release the volume down button when Reset is displayed on the OLED display.
5. Press the power button to confirm default is desired. Once pressed the unit will display “Defaulted” on the OLED display. The unit has now returned to the factory default state
6. If 5 seconds lapses before the power button is the pressed, the unit will time out and the unit will not reset to the factory default settings

# Advanced Program Features and Listen's iDSP Software Suite

To manage the advanced program features on any of the iDSP™ receivers a windows based User Interface (UI) software is required.


This software is available free of charge from Listen Technologies. To download the software log onto **http://www.listen-tech.com/support/software/idsp-software-suite/** and follow the instructions.

With the UI software, direct communication is provided via the Micro USB connection on the receiver. Once connected the UI software provides setup and adjustment of the following functions of the LR-5200 receiver.

*Note: A help file for the UI software is included with the download and will provide detailed instructions for set up and management of all the advanced program features of the LR-5200 receiver.*

# Super Quiet Mode

To reduce background noise and increase the audio quality, Listen offers a noise reduction technology called Listen SQ™. Only Listen *transmitters and receivers have SQ™ available, both the transmitter and receiver must have SQ™ activated to achieve the improved sound quality performance. This LR-4200 receiver has been shipped to you with the SQ™ feature enabled.

*SQ™ Summary:*

- Improves noise performance by at least 20 dB
- SQ must be enabled for both the transmitter and receivers
- SQ™ is NOT Squelch
- SQ™ is NOT compatible with other manufactures' products
- SQ™ can be disabled to permit operation with early Listen products or other manufactures, products

Note: SQ™ is not available on some of the early Listen transmitters. Please contact Listen's Technical Support team to find out if your existing transmitter has this feature available.

*Note: If you are planning to use this product with older Listen systems that do not employ SQ™ or another manufactures transmitter The SQ™ mode should disabled on this receiver. Refer to the manual supplied with the downloaded Listen UI software for details on how to manage the SQ™ Mode on this receiver.*

## Squelch

The purpose of squelch is to mute the audio output of the receiver when the signal from the transmitter is turned off or the level is too weak to be received. Without squelch radio noise will be heard in the earphone. The squelch on the receiver can be adjusted to mute the audio at different RF signal strengths. There are 20 squelch settings. The lowest squelch setting (no squelch) is “0” and the tightest squelch setting is “20”. Your Listen receiver has been shipped to you with the squelch setting of 3.

*Useful as follows:*

- To ensure that users don’t hear transmissions from other transmitters, set the squelch setting to the highest level that doesn’t squelch the receiver in the defined listening area
- If the receiver is to close to the transmitter (i.e. in a classroom), set the squelch high enough so that when the transmitter is turned off it immediately squelches the audio on the receiver and transmitters in other rooms will not be heard
- In an area that has a lot of broadcast inference, adjust the squelch setting to a higher setting to ensure the interference is not picked by the receiver
- For the maximum amount of range, consider setting the squelch setting to a low level (0, 1 or 2). This expands the range but could allow interference from other transmitters when operating far distances from the primary transmitter

## Basic Channels and Expanded Channels Modes

Your Listen receiver has been shipped with the Basic Channel Mode enabled.

In the default Basic Channel Mode, only the wide band channels are available for selection. If the channel desired is not available in Basic Channel Mode, the receiver will need to be set to the Expanded Channel Mode. In Expanded Channel Mode all wide band and narrow band are available for selection.

## Channel Labels

The channel labels are displayed on the OLED status screen. The default is the channel number the receiver has been programmed to receive, i.e. “CH-E”.  Customization of this display can be created to better identify the type of audio, for example CH-E could be changed to display “Spanish” if the receiver is used for language translation.

## Auto Power Mode

The auto power mode will automatically power the receiver on when the unit is removed from the charging device, displaying the unit ID, battery status and the active channel. When the unit is returned to the charging device the unit will automatically turn off and resume charging operation. Your Listen receiver has been shipped to you with the Auto Power Mode enabled.

## Unit ID

The unit ID number provides a unique identification for each receiver that is displayed on the OLED status screen. This can be any 3 digit number between 000 and 999. The unit ID allows venues to track individual units and for easy dispensing and inventory control. Your Listen receiver has been shipped to you with a Unit ID of 000.

## Brightness Control

The Brightness Control adjusts the level of brightness of the OLED display. There are four settings Auto, Bright, Dim and Disabled. In the Auto mode the unit uses an internal light sensor and automatically dims the display when the light level is below approximately 10 Lux. In the Bright, Dim or Disabled mode the unit disables the light sensor and leaves the OLED in the selected Bright or Dim state. In the disabled mode the unit disables the display from lighting during normal operation except for the power on sequence or when the power button is momentarily pressed to check status. The receiver is shipped with the Auto Brightness Control Mode enabled.

## Jack Sense

The jack sense mode when enabled will automatically turn the receiver on when a headset is inserted into the 3.5 mm output jack on the receiver. The receiver will automatically turn off after 60 seconds when the headset is removed from the 3.5 mm output jack. Your listen receiver has been shipped to you with the Jack Sense Mode disabled.

*Note:* If Jack Sense is on and Auto Power is on, the receiver will ignore jack sense while on the charger.

## Unit Information

When a unit is connected to the configuration software the software extracts specific information from the unit and displays it for the user. This information includes the model number, frequency, Serial Number and Firmware Version.

## Reset to Factory Defaults

The unit can be returned to the factory default settings.

## Firmware Update

The firmware update function will check via the internet to see if a firmware update is available for the receiver.

## RF Reception Maximization Strategies:

For proper and reliable operation, Listen receivers should receive a strong and consistent signal from the originating transmitter. Follow these strategies should be used to maximize this signal:

a. When designing and installing a system, keep in mind that the location of both the transmitter and receivers is critical to maximizing signal strength

b. Eliminate or minimize obstructions between the transmitter and receivers

c. Minimize the distance between the transmitter and receivers

d. Move transmitter and receivers away from metal objects

e. Place the transmitting antenna as high as possible (on stationary transmitters)

f. Orient both transmitting and receiving antennas vertically

g. On portable transmitters and receivers, the cable from the microphone or headset is the antenna; ensure that the cable is not coiled or laying horizontal

h. For 216 MHz stationary LT-800 transmitter only, consider using a gain antenna such as a Yagi type antenna or the LA-107 ground plane antenna.

*Note:* If the RF signal to the 216 MHz models is too high, the audio will be distorted. This may happen if you are within 40 feet (12m) of the LT-800-216 transmitter or within 5 feet (1.5 m) of the LT-700-216 transmitter.

**CAUTION:** When installing remote antennas, ensure the antenna is clear of power lines. Coaxial cable, connectors, and optional antenna mounting kits are available from Listen. Visit **www.listentech.com** or ask your dealer for details.

# 72 MHz Compatibility Chart:

| Frequency MHz | Listen | Phonic Ear | Comtek | Phonak | Williams* | Gentner | Telex | Drake |
|---|---|---|---|---|---|---|---|---|
| 72.0250 | 1 | 1 | 1 | A1 | (11, 1) | | | |
| 72.0500 | | | | | (2) | 1 | | |
| 72.0750 | 2 | 2 | 2 | A2 | (12, 3) | | | |
| 72.1000 | A | A | A | A | A, (13, 4) | 2 | A | 72.1 |
| 72.1250 | 3 | 3 | 3 | A3 | (14, 5) | | | |
| 72.1500 | | | | (6) | 3 | | | |
| 72.1750 | 4 | 4 | 4 | A4 | (15, 7) | | | |
| 72.2000 | K | K | K | K | K, (8) | 4 | B | 72.2 |
| 72.2250 | 5 | 5 | 5 | K5 | (16, 9) | | | |
| 72.2500 | | | | | (10) | 5 | | |
| 72.2750 | 6 | 6 | 6 | K6 | (17, 11) | | | |
| 72.3000 | B | B | B | B | B,(18, 12) | 6 | C | 72.3 |
| 72.3250 | 7 | 7 | 7 | B7 | (19, 13) | | | |
| 72.3500 | | | | | (14) | 7 | | |
| 72.3750 | 8 | 8 | 8 | B8 | (20, 15) | | | |
| 72.4000 | N | N | N | N | N, (16) | 8 | D | 72.4 |
| 72.4250 | 9 | 9 | 9 | N9 | (21, 17) | | | |
| 72.4500 | | | | | (18) | 9 | | |
| 72.4750 | 10 | 10 | 10 | N0 | (22, 19) | | | |
| 72.5000 | C | C | C | C | C, (23, 20) | 10 | E | 72.5 |
| 72.5250 | 11 | 11 | 11 | C1 | (24, 21) | | | |
| 72.5500 | | | | | (22) | 11 | | |
| 72.5750 | 12 | 12 | 12 | C2 | (25, 33) | | | |
| 72.6000 | O | O | O | O | O, (24) | 12 | F | 72.6 |
| 72.6250 | 13 | 13 | 13 | O2 | (26, 25) | | | |
| 72.6500 | | | | | (26) | 13 | | |
| 72.6750 | 14 | 14 | 14 | 4 | (27) | | | |
| 72.7000 | D | D | D | D | D, (28) | 14 | G | 72.7 |
| 72.7250 | 15 | 15 | 15 | D5 | (29) | | | |
| 72.7500 | | | | | (30) | 15 | | |
| 72.7750 | 16 | 16 | 16 | D6 | (30, 31) | | | |
| 72.8000 | | P | P P | P | P, (32) | 16 | H | 72.8 |
| 72.8250 | 17 | 17 | 17 | P7 | (31, 33) | | | |
| 72.8500 | | | | | (34) | 17 | | |
| 72.8750 | 18 | 18 | 18 | P8 | (32, 35) | | | |
| 72.9000 | E | E | E | E | E, (33, 36) | 18 | I | 72.9 |
| 72.9250 | 19 | 19 | 19 | E9 | (34, 37) | | | |
| 72.9500 | | | | | (38) | 19 | | |
| 72.9750 | 20 | 20 | 20 | E0 | (35, 39) | | | |

| Frequency MHz | Listen | Phonic Ear | Comtek | Phonak | Williams* | Gentner | Telex | Drake |
|---|---|---|---|---|---|---|---|---|
| 74.6250 | 33 | 33 | 33 | E3 | (36, 40) | | | |
| 74.6500 | | | | | (41) | 20 | | |
| 74.6750 | 34 | 34 | 34 | E4 | (37, 42) | | | |
| 74.7000 | I | I | I | I | I, (38, 43) | 21 | O | |
| 74.7250 | 35 | 35 | 35 | I5 | (39, 44) | | | |
| 74.7500 | | | | | (45) | 22 | | |
| 74.7750 | 36 | 36 | 36 | I6 | (40, 46) | | | |
| 75.2250 | 37 | 37 | 37 | I7 | (41, 47) | | | |
| 75.2500 | | | | | (48) | 23 | | |
| 75.2750 | 38 | 38 | 38 | I8 | (42, 49) | | | |
| 75.3000 | J | J | J | J | J, (43, 50) | 24 | P | |
| 75.3250 | 39 | 39 | 39 | J9 | (55, 51) | | | |
| 75.3500 | | | | | (52) | 25 | | |
| 75.3750 | 40 | 40 | 40 | J0 | (45, 53) | | | |
| 75.4000 | R | R | R | R | R, (54) | 26 | Q | |
| 75.4250 | 21 | 21 | 21 | R1 | (46, 55) | | | |
| 75.4500 | | | | | (56) | 27 | | |
| 75.4750 | 22 | 22 | 22 | R2 | (47, 57) | | | |
| 75.5000 | F | F | F | F | F, (48, 58) | 28 | J | 75.5 |
| 75.5250 | 23 | 23 | 23 | F3 | (49, 59) | | | |
| 75.5500 | | | | | (60) 29 | | | |
| 75.5750 | 24 | 24 | 24 | F4 | (50, 61) | | | |
| 75.6000 | S | S | S | S | S, (62) | 30 | K | 75.6 |
| 75.6250 | 25 | 25 | 25 | S5 | (51, 63) | | | |
| 75.6500 | | | | | (64) | 31 | | |
| 75.6750 | 26 | 26 | 26 | S6 | (52, 65) | | | |
| 75.7000 | G | G | G | G | G, (53, 66) | 32 | L | 75.7 |
| 75.7250 | 27 | 27 | 27 | G7 | (54, 67) | | | |
| 75.7500 | | | | | (68) | 33 | | |
| 75.7750 | 28 | 28 | 28 | G8 | (55, 69) | | | |
| 75.8000 | T | T | T | T | T, (70) | 34 | M | 75.8 |
| 75.8250 | 29 | 29 | 29 | T9 | (56, 71) | | | |
| 75.8500 | | | | | (72) | 35 | | |
| 75.8750 | 30 | 30 | 30 | T0 | (57, 73) | | | |
| 75.9000 | H | H | H | H | H, (58, 74) | 36 | N | 75.9 |
| 75.9250 | 31 | 31 | 31 | H1 | (59, 75) | | | |
| 75.9500 | | | | | (76) | 37 | | |
| 75.9750 | 32 | 32 | 32 | H2 | (60, 77) | | | |

*Parenthesis indicate T35 and T20 narrowband.

Wideband frequencies are indicated in highlighted rows. The highlighted channels also indicated those channels available in the “basic” mode (default). All channels can be accessed when in the “expanded” channel mode (see page 19 for more information).

# 216 MHz Compatibility Chart:

| Frequency MHz | Listen | Phonic Ear | Phonak | Comtek | Williams | Gentner | CSI | Light AVR | Speed |
|---|---|---|---|---|---|---|---|---|---|
| 216.0125 | 1A | | 1 | 1 | | | | C01 | N01 |
| 216.0250 | 2A | 41 | 41 | 41 | | 1 | 1 | | |
| 216.0375 | 3A | | 2 | 2 | | | | | |
| 216.0625 | 1B | | 21 | 3 | | | | | |
| 216.0750 | 2B | 42 | 42 | 42 | | 2 | 10 | | |
| 216.0875 | 3B | | 4 | 4 | | | | | |
| 216.1125 | 1C | | 5 | 5 | | | | C05 | |
| 216.1250 | 2C | 43 | 43 | 43 | A | 3 | 6 | | |
| 216.1375 | 3C | | 22 | 6 | | | | | |
| 216.1625 | 1D | | 23 | 7 | | | | | |
| 216.1750 | 2D | 44 | 44 | 44 | B | 4 | 14 | | |
| 216.1875 | 3D | | 8 | 8 | | | | | |
| 216.2125 | 1E | | 9 | 9 | | | | C09 | N09 |
| 216.2250 | 2E | 45 | 45 | 45 | C | 5 | 2 | | |
| 216.2375 | 3E | | 24 | 10 | | | | | |
| 216.2625 | 1F | | 25 | 11 | | | | | |
| 216.2750 | 2F | 46 | 46 | 46 | D | 6 | 11 | | |
| 216.2875 | 3F | | 12 | 12 | | | | C12 | N12 |
| 216.3125 | 1G | | 13 | 13 | | | | | |
| 216.3250 | 2G | 47 | 47 | 47 | E | 7 | 7 | | |
| 216.3375 | 3G | | 26 | 14 | | | | | |
| 216.3625 | 1H | | 27 | 15 | | | | | |
| 216.3750 | 2H | 48 | 48 | 48 | F | 8 | 15 | | |
| 216.3875 | 3H | | 16 | 16 | | | | C18 | N18 |
| 216.4125 | 1J | | 17 | 17 | | | | C21 | |
| 216.4250 | 2J | 49 | 49 | 49 | G | 9 | 18 | | |
| 216.4375 | 3J | | 18 | 18 | | | | | |
| 216.5125 | 1K | | 61 | 21 | | | | | |
| 216.5250 | 2K | 51 | 29 | 51 | H | 10 | 3 | | |
| 216.5375 | 3K | | 62 | 22 | | | | | |
| 216.5625 | 1L | | 28 | 23 | | | | | |
| 216.5750 | 2L | 52 | 52 | 52 | I | 11 | 12 | | |
| 216.5875 | 3L | | 64 | 24 | | | | C24 | N64 |
| 216.6125 | 1M | | 65 | 25 | | | | C25 | |
| 216.6250 | 2M | 53 | 53 | 53 | J | 12 | 8 | | |
| 216.6375 | 3M | | 81 | 26 | | | | | |
| 216.6625 | 1N | | 82 | 27 | | | | | |
| 216.6750 | 2N | 54 | 54 | 54 | K | 13 | 16 | | |
| 216.6875 | 3N | | 68 | 28 | | | | | |
| 216.7125 | 1P | | 69 | 29 | | | | C29 | |
| 216.7250 | 2P | 55 | 55 | 55 | L | 14 | 19 | | |
| 216.7375 | 3P | | 83 | 30 | | | | | |
| 216.7625 | 1R | | 84 | 31 | | | | | |
| 216.7750 | 2R | 56 | 56 | 56 | | 15 | 4 | | |
| 216.7875 | 3R | | 72 | 32 | | | | C32 | N72 |
| 216.8125 | 1S | | 73 | 33 | | | | C33 | |
| 216.8250 | 2S | 57 | 57 | 57 | | | 13 | | |
| 216.8375 | 3S | | 76 | 34 | | | | | |
| 216.8625 | 1T | | 85 | 35 | | | | | |
| 216.8750 | 2T | 58 | 58 | 58 | | | 9 | | |
| 216.8875 | 3T | | 86 | 36 | | | | | |
| 216.9125 | 1U | | 77 | 37 | | | | C37 | N77 |
| 216.9250 | 2U | 59 | 59 | 59 | | | 17 | | |
| 216.9375 | 3U | | 88 | 38 | | | | | |
| 216.9625 | 1V | | 79 | 39 | | | | C39 | |
| 216.9750 | 2V | 60 | 60 | 60 | | | 5 | | |
| 216.9875 | 3V | | 80 | 40 | | | | C40 | N80 |

Wideband frequencies are indicated in highlighted rows.

# Troubleshooting LR-5200 Receivers:

### The receiver has no power
Make sure the unit has either a fully charged battery or a Listen approved wall charging transformer is connected. Make sure the Power button on the top of the unit has been pressed to turn the unit ON. If this does not work, make sure the battery is installed properly and / or install a replacement battery.

### There is no audio
Make sure the volume control is turned up to at least 25%. Check the Intelligent Earphone/Neck Loop Lanyard to insure it's plugged all of the way. Make sure the Ear Phone is plugged into the Earphone/Neck Loop Lanyard. Check to insure the transmitter is broadcasting an audio source. Verify the receiver is tuned to the same channel as the transmitter. If the RF signal is too weak, the receiver will squelch and mute the audio source; move closer to the antenna or make sure the transmitter's output RF power switch is set on "FULL" (LT-800).

### The audio is distorted
Check the receiver is on the correct channel and make sure your using the clearest channel possible. Verify the audio on the transmitter is not turned up too loud; this will cause distortion. Insure the Intelligent Ear Phone/Neck Loop Lanyard connectors are pushed all the way into the jacks on top of the unit. Check the Ear Phone to verify it is plugged all the way into the Ear Phone/Neck Loop Lanyard. Review the SQ™ settings on your transmitter and receivers to verify both are turned ON (or OFF, if some of your equipment is not SQ™ capable). Make sure the receiver is not too close to the transmitting antenna. If the receiver can't get farther away from the antenna, turn down the RF output power on the stationary (LT-800) transmitter.

### I cannot pick up the signal on the receiver
Check to make sure the receiver and the transmitter are on the same exact channel frequency. Verify the receiver is in broadcast range of the transmitter. Move the receiver closer to the transmitter.

### I can pick up the signal on the receiver, but it sounds like it's not tuned in
Check the transmitter and receiver and verify they are both on exactly the same channel number/letter. Make sure you are using a clear channel that is free from noise and interference.

### I'm using another brand of transmitter - how do I tell which channel to use?
Refer to Listen's Channel Frequency Chart (page 21). Adjust either the transmitter or the receiver to a common channel.

### There is not sufficient range
Inspect the transmitting antenna verify it is located as close as possible to the receiving area. Place the antenna as high as possible and check to see it is free from obstacles. Check the squelch setting on the unit; perhaps it is too sensitive.

### When I change channels, only certain channels are accessible
The unit is in auto mode or has been limited in manual mode or the unit has been programmed to basic mode which only shows the wide band channels. The unit can be programmed for expanded mode which will show all 57 channels. This is programmed via the configuration software.

### My battery is not charging
Verify the clear plastic pull tab has been removed from the receiver battery door engaging the battery connections. Make sure the battery is installed properly and that the unit is plugged into the charging device correctly. Check the charging device to verify it is plugged in the proper power outlet and power is available at the outlet.  If this does not work, install a replacement battery.

### I want to run the unit from a wall transformer
Simply plug a Listen approved charging transformer (LA-423) into the Micro USB connector on the side of the unit. A battery must be installed at all times even when operating the unit with a wall charging transformer.

# Compliance Notice and FCC Statement and Industry Canada Statements

### Compliance Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesirable operation.

### FCC Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC and IC Rules. In order to maintain compliance with FCC and IC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

### Industry Canada Statement

This equipment complies with ICES-003 class B.

CAN ICES-3 (B)/NMB-3(B)

# Product Warranty

Listen Technologies Corporation (Listen) product warranty is only available to the original end purchaser of the product and cannot be transferred.

Warranty is only valid if online form is completed or warranty card has been returned within 90 days of purchase. This warranty is void if damage occurred because of misuse or if the product has been repaired or modified by anyone other than a factory authorized service technician.

Warranty does not cover normal wear and tear on the product or any other physical damage unless the damage was the result of a manufacturing defect. Listen is not liable for consequential damages due to any failure of equipment to perform as intended. Listen shall bear no responsibility or obligation with respect to the manner of use of any equipment sold by it. Listen specifically disclaims and negates any warranty of merchant-ability or fitness of use of such equipment including, without limitation, any warranty that the use of such equipment for any purpose will comply with applicable laws and regulations. The terms of the warranty are governed by the laws of the state of Utah, USA. In the first ninety days after purchase, any defective product will be replaced with a new unit. After ninety days, Listen will at its own discretion either repair or replace product with a new unit or a unit of similar type and condition.

This limited warranty, prices, and the specifications of products are subject to change without notice.

### ListenRF and ListenIR Products

Listen warrants its transmitters and receivers (LT-82, LT-700, LT-800, LT-803, LR-100, LR-42, LR-44, LR-200, LR-300, LR-400, LR-500, LR-4200, and LR-5200) to be free from defects in workmanship and material under normal use and conditions for the useful lifetime of the product from date of purchase. Useful lifetime is defined as five years from date of purchase.

Listen warrants its IR Radiator (LT-84, LA-141, LA-140) to be free from defects in workmanship and material under normal use and conditions for three years from date of purchase.

Li-ion batteries supplied with receivers carry a one year limited warranty from date of purchase.

## Other Products and Accessories

All other products and accessories carry a one year limited warranty to be free from defects in workmanship and material under normal use and conditions from date of purchase.

### The following cases are not covered by the above warranty:

- Minor faults or deviations in the quality of a product which do not affect the product's value or fitness for its intended purpose
- NiMH rechargeable and disposable alkaline batteries (these products have a shorter service life, the length of which also depends on the frequency of use)
- Consumable itemss such as but not limited to: Ear bud cushions, Headphone cushions/covers, microphone windscreens
- Faults resulting from improper use (e.g. operating errors, mechanical damage, incorrect operating voltage)
- Faults due to wear and tear
- Any modification of Listen products effected by you or a third party, unless Listen has given its prior written consent to the nature and extent of the modification
- Faults of which the purchaser was already aware at the time of purchase

**http://www.listentech.com/support/warranty/**

LISTEN TECHNOLOGIES

## Contacting Listen

If technical service is needed, please contact Listen. Pre-authorization is required before returning Listen products. If products were damaged in shipment, please contact the carrier, then contact Listen for replacement or repair requirements payable by the carrier.

Listen's corporate headquarters are located in Bluffdale, Utah U.S.A. and are open Monday through Friday, 8am to 5pm Mountain Time.


14912 Heritagecrest Way
Bluffdale, Utah 84065-4818
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**www.listentech.com**


20180124

Listen®
www.listentech.com

# User's Manual


LT-800-072 Stationary FM Transmitter
LT-800-216 Stationary FM Transmitter

***Don't miss a single sound.***

Dear Valued Customer,

Thank you for choosing Listen! All of us at Listen are dedicated to providing you with the highest quality products available. We take great pride in their outstanding performance because we care that you are completely satisfied. That's why we independently certify them to the highest quality standards and back them with a limited lifetime guarantee. We stand ready to answer any questions you might have during installation or in the operation of our products. Should you experience any problems whatsoever with your Listen products, we are ready to help you in any way we can with prompt, efficient customer care. Because at Listen, it's all about you! And should you have any comments on how we might improve our products or our service, we're here to listen.

Here's how to reach us:
+1.801.233.8992
+1.800.330.0891 North America
+1.801.233.8995 fax
support@listentech.com
www.listentech.com

Thank you and enjoy your listening experience!

Best regards,
Russell Gentner and the Listen Team

- In the few instances where repairs were needed, 99% of all clients indicated that they were happy with repair turn-around-times and 85% of the time, clients were without their product for less than 10 days!
- Overall client satisfaction of working with Listen was rated 4.8 out of 5.
- "Please continue with your excellent attitude toward customer satisfaction. You guys are great!"
- "I've never had such good service from any company. Keep up the good work!"
- "You stand behind your product wonderfully."

# LT-800 Table of Contents

# *LT-800 Package Contents*



## LT-800 Contents

- LT-800-072 (72 MHz) or
- LT-800-216 (216 MHz) or
- 12 VDC Power Supply
- User Manual


## Listen Part Number

LT-800-072 (72 MHz)
LT-800-216 (216 MHz)

## Optional Accessories

See page 22

# LT-800 Specifications



## Architectural Specifications

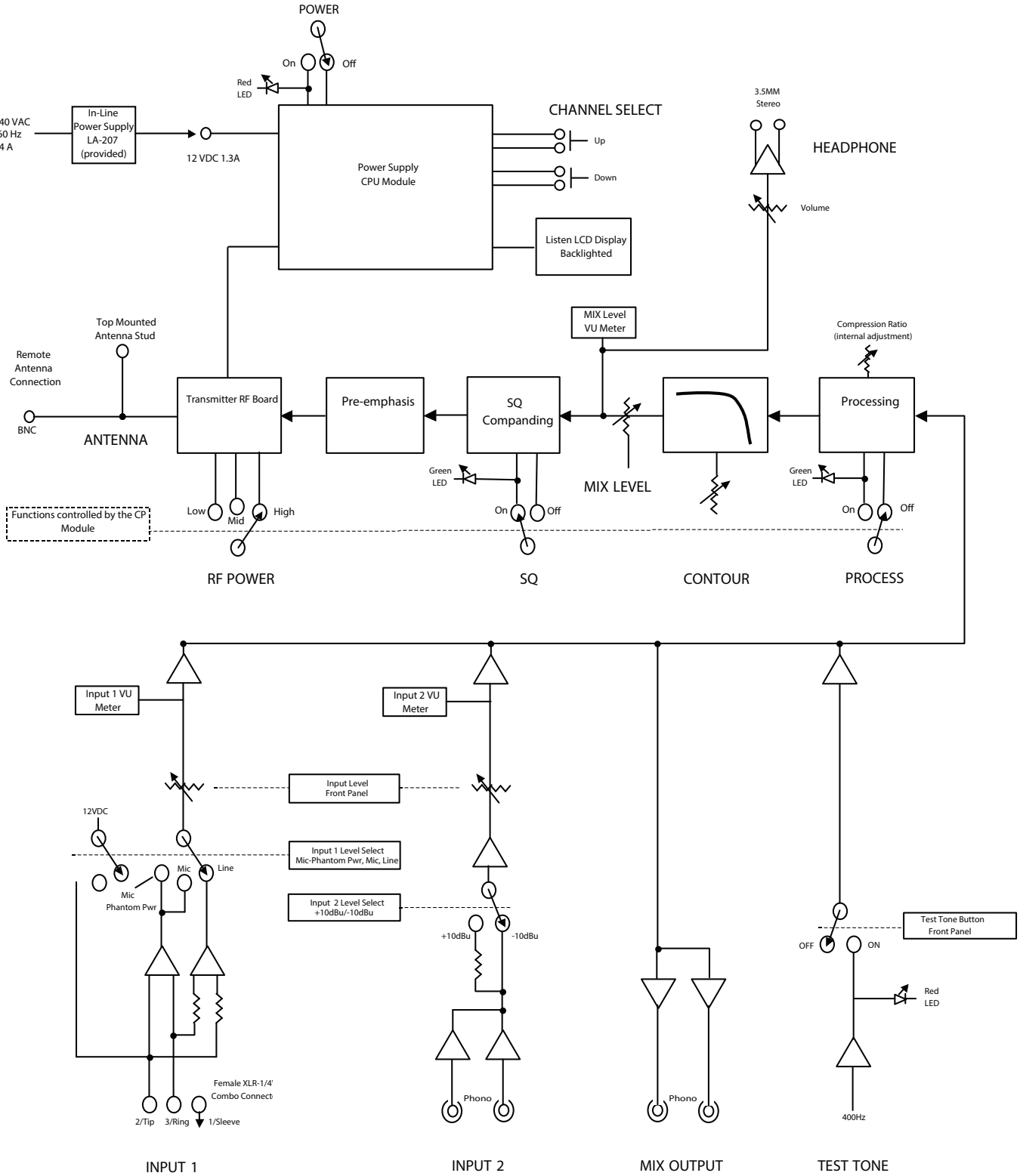
The stationary FM transmitter shall be capable of broadcasting on 57 channels. The transmitter shall have a SNR of 80dB or greater. The output power shall be adjustable to quarter, half or full. Channel tuning shall be capable of being locked. The device shall broadcast on both wide and narrow band channels. The device shall have an audio frequency response of 63 Hz to 15k Hz, ± 3dB at 72 MHz, or of 63 Hz to 10k Hz, ± 3dB at 216 MHz. It shall have two mixing audio inputs. The device shall have the following audio controls: input level, mix level and an adjustable low pass filter. The device shall have an audio processor that is capable of automatic gain control and limiting. The Listen LT-800 is specified.

## Specification

| | Specifications | LT-800-072 | LT-800-216 |
|---|---|---|---|
| RF | RF Frequency Range | 72.025 - 75.950 MHz | 216.025 - 216.9875 MHz |
| | Number of Channels | 17 wide band, 40 narrow band | 19 wide band, 38 narrow band |
| | Frequency Accuracy | +/-.005% stability 32˚ to 122˚F (0˚- 50˚C) | |
| | Transmitter Stability | 50 PPM | |
| | Output Power | 80,000uV at 3 m | 100mW (max allowed by FCC) |
| | Antenna | Various Antennas available | |
| | Antenna Connector | BNC | |
| | Compliance | FCC Part 15, Industry Canada | FCC Part 90, Industry Canada |
| ** All system specifications are wireless end-to-end | | | |
| Audio | System Frequency Response | 50 Hz - 15 kHz (±3 dB) | 50 Hz - 10 kHz (±3 dB) |
| | System Signal to Noise Ratio (A-Weighted) | 80 dB SQ enabled; 60 dB SQ disabled | 80 dB SQ enabled; 50 dB SQ disabled |
| | System Distortion | <2% total harmonic distortion (THD) at 80% deviation | |
| | Audio Input 1 | Rear panel. (1) Female-XLR and ¼ in. combo connector, balanced, 0/-55 dBu (line/mic) nominal input level adjustable, -30/+21 dBu (line/mic) maximum input level, impedance 20k/1k Ohms (line/mic), phantom power +12 VDC. | |
| | Audio Input 2 | Rear panel. Two (2) Phono connectors, unbalanced, -10/+10 dBu nominal input level adjustable, +30 dBu maximum, impedance 100k Ohms. | |
| | Audio Processing (Process) | Compression can be turned on/off. Slope internally adjustable from 1:1 to 4:1. Default 2:1 | |
| | Contour | Cuts and boosts frequencies above 5 kHz | |
| | Combined Audio Output (Mix) | Input 1 and Input 2 Mixed Output (Rear Panel). Two (2) phono connectors, unbalanced, -10 dBu nominal output level, +19 dBu maximum, impedance 10 ohm. | |
| | Headphone Output (Monitor) | Front panel. One (1) 3.5 mm stereo connector, unbalanced, adjustable output level, +7 maximum, impedance 10 Ohm. | |
| Controls | Front Panel | Power, Test Tone on/off, Channel UP/DOWN, Input levels, Mix level, Contour, Monitor volume control. | |
| | Rear Panel | Input 1 Level (line, mic, mic-phantom power), Input 2 Level (-10/+10 dBu), RF Power (low, mid, high) | |
| | Internal Adjustments | Compression ratio for audio processor | |
| | Programming | SQ on/off, Processing on/off. Channel lock | |
| Indicators | Input 1 and Input 2, Mix VU | Indicates Input 1, Input 2 and Mix audio levels. 10 segment LED's (8 green, 2 red) | |
| | SQ and Processing | Indicated by a green LED when on (front panel) | |
| | RF Power | Indicated on the LCD (low, mid, high) | |
| | LCD Display | Channel designation, lock status, RF Power Level, programming (front panel) | |
| | Test Tone | Red LED illuminates when test tone enabled | |
| Power | Power Supply Type | In-line power supply. Listen part number LA-207 (Line cord is determined by each country's AC power standards). | |
| | Power Supply Input | Input: 100-240 VAC, 50-60 Hz, 0.4 A | |
| | Power Supply Output | Output: 12 VDC, 1.3 A, 15.6 W | |
| | Power Supply Connector | Output Connector: .02 in. (5.0 mm) OD, .01 in. (2.5 mm) ID, barrel type | |
| | Power Supply Compliance | UL, CE, GS, TUV | |
| Physical | Dimensions (H x W x D) | 1.75 x 8.50 x 9.13 in. (4.5 x 21.5 x 23 cm) | |
| | Color | Dark Grey with white silk screening | |
| | Unit Weight | 2.6 lbs. (5.7 kg) | |
| | Unit Weight with LA-201 | 4.4 lbs. (2.0 kg) | |
| | Power Supply | | |
| | Shipping Weight | 5.0 lbs. (2.26 kg) | |
| | Rack Mounting | One (1) rack space height, 1/2 rack space wide. One (1) or two (2) transmitters can be mounted in one rack space. Optional rack mount (LA-326) | |
| Environmental | Temperature - Operation | -10˚C (14˚F) to +40˚C (104˚F) | |
| | Temperature - Storage | -20˚C (-4˚F) to +50˚C (122˚F) | |
| | Humidity | 0 to 95% Relative Humidity, non condensing | |

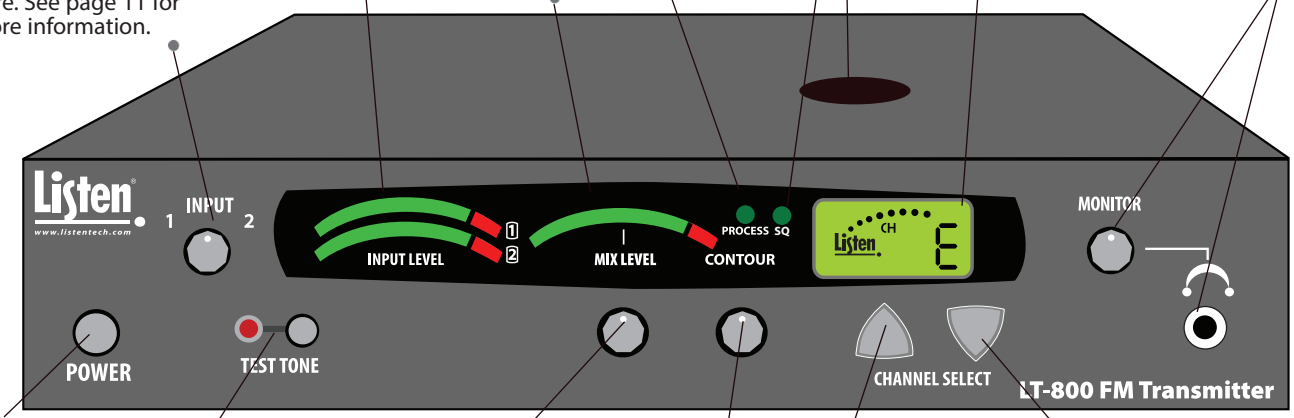
Specifications are subject to change without notification

# LT-800 Block Diagram



# LT-800 Quick Reference

## LT-800 Front Panel: Controls & Displays




Adjust audio input levels of Input 1 and Input 2 here. See page 11 for more information.

Indicates audio input level of Input 1 and Input 2.

Shows mixed audio level.

Indicates Process Mode is active.

Indicates Super Quiet mode is active.

Top mount antenna connection: Remove rubber plug and screw antenna in place.

LCD: Shows which channel is selected.

Monitor Port: Plug in a headset and adjust volume.

Power ON / OFF

Test Tone: Activates a tone to aid system setup.

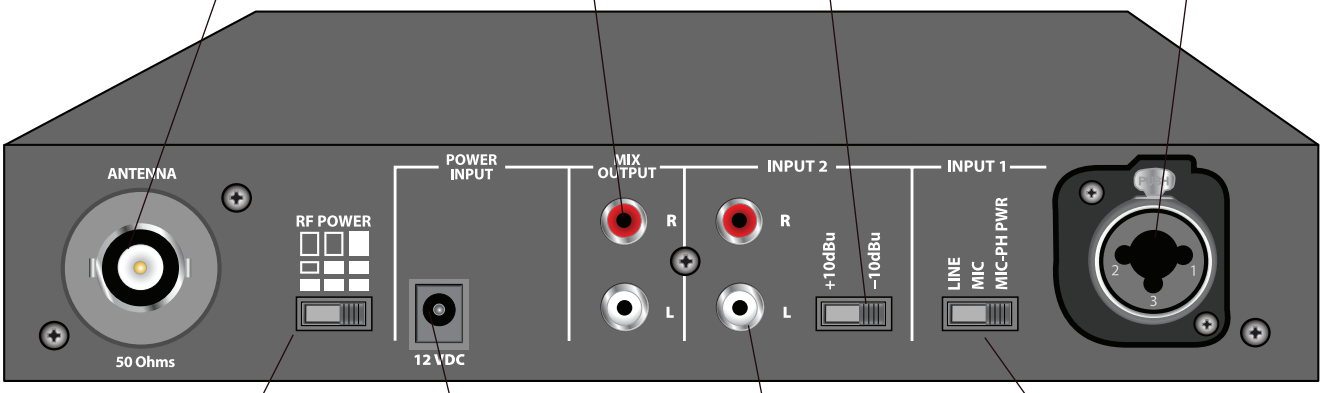
Mix Level: Adjust so the Mix Level meter occasionally lights the red LED.

Contour: Equalization adjustment. Turn counter-clockwise for voice and clockwise for music.

Channel Select Up: Press for 3 seconds to lock on current channel.

Channel Select Down: Press for 8 seconds to enter program mode. See page 8 for more information.

## LT-800 Back Panel: Connections & Settings




Remote Antenna Connection: See page 22 or the Listen website for details on antennas that can be attached here.

Mix Output: These connectors contain a mix of Input 1 and Input 2. They are unbalanced phono connectors; and the output level is -10dBu.

Input 2: Set switch to match the level of your Input 2 audio source, not used to increase or decrease level by +10dBu.

Input 1: Used for balanced connection of a microphone or line level input. This combination connector accepts either XLR or ¼" phono plugs.

Set RF Power level here (¼, ½, and Full). See page 9 for guidelines on setting power levels.

The Listen LA-201 power supply connects here.

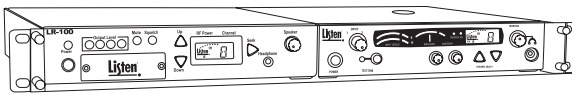
Input 2: Connect unbalanced audio to these phono connectors, input level -10dBu or +10dBu.

Select Line, Mic or Mic+Phantom Power. Line is balanced 0 dBu input level, Mic is -55dBu, +12VDC supplied in PH Power position. If not using input 1, leave in line position.

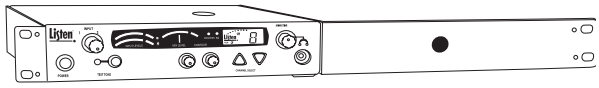
# LT-800 Setup Instructions

**1** ***Unpack the Product***
Remove outer packaging and plastic cover. Inspect for physical damage.

**2** ***Mount in Rack (if necessary)***
If rack mounting the unit, install the optional rack mount kit (part LA-326) according to the instructions included with the kit, then install the LT-800 in the rack.
***NOTE: If rack mounting, you will need to use a rear connection antenna.***

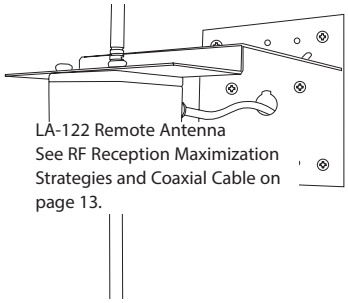


Rack Mount with dual unit installed

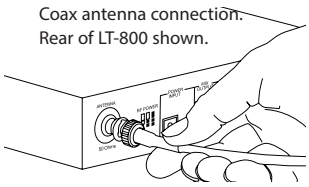


Rack Mount with single unit installed
Shown with LT-800

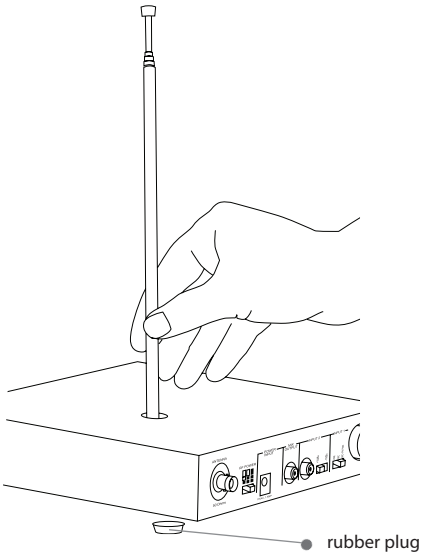
**3** ***Connect Antenna***
Connect the antenna (not included) according to the installation instructions. Only use an antenna supplied by Listen. If you are connecting the antenna directly to the top of the LT-800, you will need to remove the rubber plug on top of the unit. If you are using a remote antenna connected to the rear of the unit, do not connect an antenna to the top connector. See page 22 for antenna options, or refer to the Listen website for remote antenna options, ***www.listentech.com***.



LA-122 Remote Antenna
See RF Reception Maximization Strategies and Coaxial Cable on page 13.

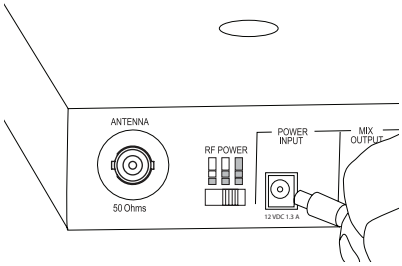


Coax antenna connection.
Rear of LT-800 shown.




LT-800 shown with top mount antenna connected through top of unit (part numbers LA-101, LA-106 (72 MHz) or LA-102 (216 MHz)

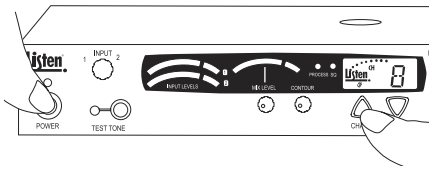
**4** ***Connect Power***
Plug the power supply into the power connector on the back panel, then plug the power supply into an outlet. Only use a Listen approved power supply (The LA-207, an in-line switching power supply, is the approved power supply for this unit).




**5** ***Select Phonak Compatibility (if necessary)***
If you will be using Phonak receivers with your LT-800 (216 MHz only), the transmitter can become completely compatible through software control. When switched to this mode, the LT-800 transmitter will display the Phonak channels. By integrating Phonak channels and compatibility into the LT-800-216, it is more convenient to use Phonak receivers with Listen transmitters. (www.phonak.com)

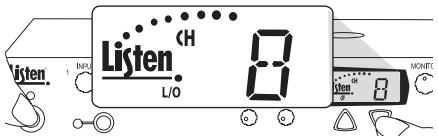
# LT-800 Setup Instructions (cont.)

***To Select Phonak Mode:***
Press and hold down the channel select "up" button while powering on the unit. The LCD will display a "P" momentarily upon power up indicating that the transmitter is in the Phonak Channel Mode. The channels displayed will now match Phonak channels. To return to the Listen channel designations, repeat this process. The LCD will display an "L" momentarily upon power up indicating that you are in the Listen Channel Mode.



**6** ***Select Channel Mode (if necessary)***
Your transmitter has been shipped to you with only a limited number of channels available (Basic Mode). If all channels (Expanded Mode) are required, use the following procedure.

***To Select Expanded Mode:***
To enable or disable the Expanded Mode, press and hold the channel select "down" button while powering on the unit. When the Basic Mode is enabled, "L/O" (lockout) will be displayed on the LCD display as shown below. This indicator is extinguished when in the Expanded Mode.

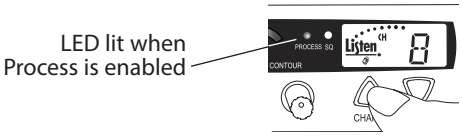



**7** ***Set SQ™ (Super Quiet) and Process Features***
Your transmitter is shipped to you with SQ (super quiet) enabled and Process disabled. For a detailed description of these features and when to use them, please refer to page 12.

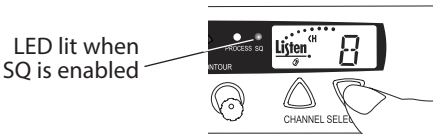
***To Disable or Enable SQ and Process Features:***
With the unit on press and hold the channel select "Down" button for 8 seconds. The program (PGM) icon will appear on the LCD.

Once in the program mode,


the SQ and Process featurs can be turned on and off by pressing the channel select buttons. Press the channel select "Up" button to toggle between Process On and Off. Press the channel select "Down" button to toggle between SQ On and Off.




If the green LED is illuminated on the front panel, that feature is enabled. Once you have enabled or disabled the features as desired, let the transmitter exit the program mode by waiting 5 seconds.

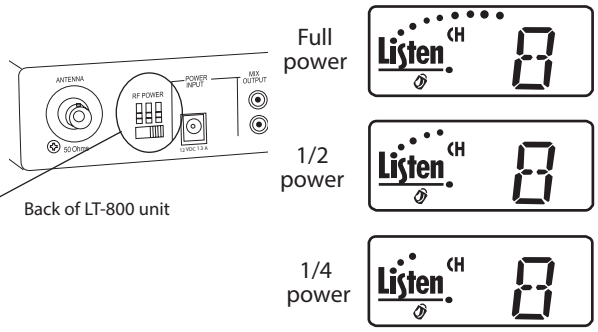


# LT-800 Setup Instructions (cont.)



**8** ***Set RF Power***

Set the RF POWER switch on the back of the unit to Full, 1/2 or 1/4 (Level is indicated on the LCD display). The amount of transmitted RF power that you will need depends on your application. If you are operating multiple transmitters in the same environment, it is best to set the transmitters output power to its lowest level to reduce the possibility of interference.




**9** ***Connect Audio Inputs***

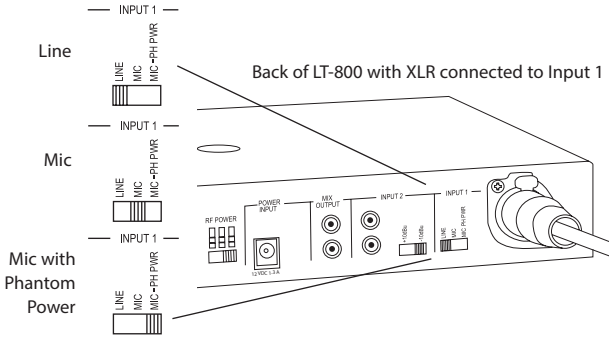
The LT-800 has two audio input options: Input 1 and Input 2. Input 1 is a balanced connection using either an XLR or 1/4" phono connector. Input 2 has two unbalanced mixing phono connectors. Use Input 1 if you are using a microphone or if you have a balanced connection such as from a professional audio mixer (you can also use Input 1 for unbalanced connections). Use Input 2 to connect to an unbalanced audio source.

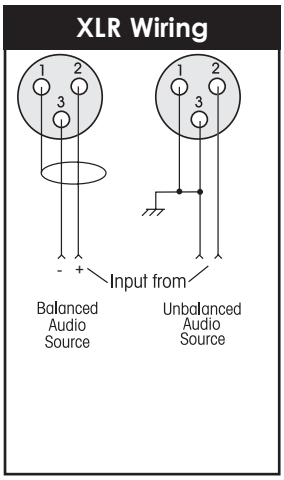
***Input 1***

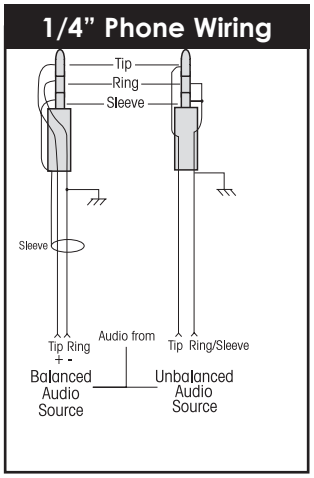
Connect the audio source(s) to one or both audio input connections. Input 1 offers a choice of balanced XLR or 1/4" phono connector.

Plug your microphone into Input 1 and move the input select switch to Mic (for dynamic microphones) or Mic + PH Power (for condenser microphones).

Plug your balanced or unbalanced audio source into Input 1. Use the following diagram.

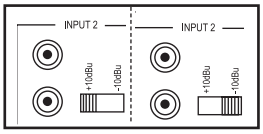



**7** ***Input 2***

Plug your unbalanced audio source into Input 2 and select the audio level switch for -10dBu or +10dBu, to match the audio level coming from your equipment.



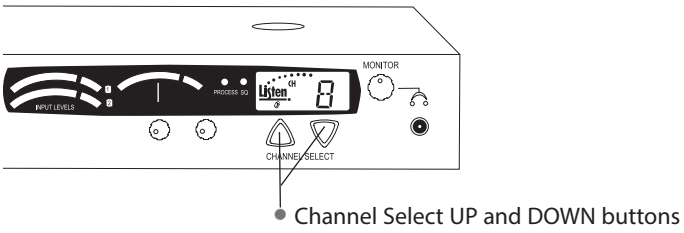
# LT-800 Operating Instructions

**1** ***Power Unit On***

Turn power on by pressing the power button.

**2** ***Select a Channel***

Select the transmit channel by pressing the channel select UP and DOWN buttons. See Channel Selection on page 14 for more information.

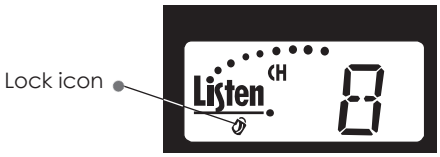



***NOTE: The LT-800 is shipped with only limited channels (Basic Mode). To select from all channels (Expanded Mode) refer to page 12. (for a more detailed description of Basic and Expanded Mode refer to page 12)***



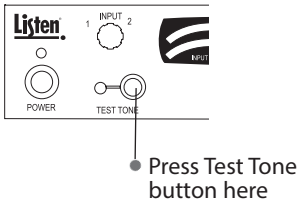
**3** ***Lock on Channel***

Once you determine your transmit channel, you can lock the transmitter on that channel. To lock a channel hold the Channel Select "Up" button for 3 seconds until the padlock icon appears on the display. To unlock, repeat this process and the padlock icon will disappear.



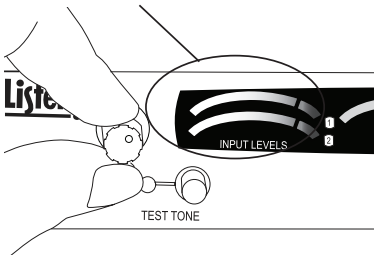

**4** ***Test Tone (if necessary)***

To broadcast a test tone, press the test tone button. This helps to test receivers when no audio source is available.



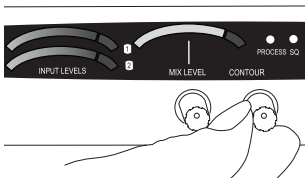
**1** ***Adjust Audio Input Level***

Adjust the input knob counterclockwise to add gain to Input 1. This will decrease gain to Input 2. Adjust input knob clockwise to add gain to Input 2. This will decrease gain to Input 1. If you have two audio sources connected to both Input 1 and 2, adjust the level of one input using the VU meter, then adjust the output level of the other audio source. Adjust the input level until the left VU meter(s) occasionally illuminate the red LEDs. Illumination of the red LEDs indicates the unit is in limiting. Limiting is required so that the unit does not over-modulate the transmitter. If you don't want any audio limiting to occur, make sure the red LEDs never illuminate. If you want a highly limited signal, turn the audio gain up so the red LEDs illuminate often.




**2** ***Adjust Contour***

Adjust the Contour knob counterclockwise if your audio source is mostly voice. Adjust the knob clockwise if your audio source is mostly music. The Contour knob adjusts the relative equalization of the unit. This equalization boosts or cuts frequencies above 5 kHz.

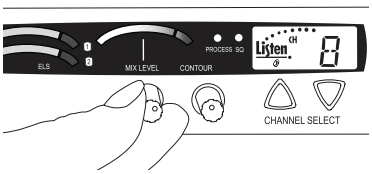



**3** ***Adjust Mix Level***

Adjust the mix level until the right VU meter occasionally illuminates the red LED. This is the level adjustment for the combined output from Input 1 and Input 2.

If you are using another manufacturers' receivers with the LT-800, determine the frequency of their receivers then refer to Listen's Frequency Compatibility Tables (pages 15-16) to find the LT-800 channel that corresponds with the receiver's frequency. We recommend verifying corresponding channel designations on these tables to ensure compatibility and provide the best possible reception.

The LT-800 is Phonak compatible and can be set to display Phonak specific channels. See page 8 to set Channel Mode and page 14 for specific channel designations.



# *Listen SQ™ (Super Quiet) - Improving Your Listening Experience*

People are accustomed to listening to low noise, high fidelity audio (delivered via CD, DVD, etc.). FM radio systems, such as those made by Listen, have more inherent noise compared to most sound systems. To minimize noise, Listen uses a noise reduction technology called ListenSQ™. Both the transmitter and receiver must have the SQ feature enabled to achieve the desired results. SQ is available on new Listen systems, including the system you received in this shipment. If you are planning to use this product with older Listen systems that do not have Listen SQ, or equipment not manufactured by Listen, you must disable Listen SQ.

Your Listen LT-800 has been shipped to you with the SQ feature enabled. You may need to disable the SQ function for one or more of the following reasons:

1. You are using your new Listen LT-800 with older version Listen receivers that do not have the SQ function.
2. You are using your new Listen LT-800 with equipment supplied by other manufacturers (Listen is the only manufacturer using SQ Technology).
3. You expect that end users will bring and use their own receivers that don't have the SQ function.

***NOTE: See page 8 to enable or disable SQ (Super Quiet).***

**SQ Summary**

- SQ is NOT squelch
- SQ improves noise performance by at least 20dB
- SQ is NOT compatible with older version Listen products
- SQ is NOT compatible with other manufacturers' products
- To work properly, SQ must be enabled for both the transmitter and receivers
- SQ can be disabled to permit operation with older Listen products or other manufacturers' products

### *Process Mode*

Process mode is used for Audio Gain Control (AGC). With the process mode enabled, the LT-800 will automatically adjust for inconsistent signal input levels by raising or lowering the signal level accordingly to provide a consistent sound output level. This feature should be used in applications where a consistent sound level is important and the input levels vary substantially. Typically you would not want to engage the Process Mode when a speaker's emphasis is critical to the message they are conveying.

### *Basic and Expanded Mode*

In the default Listen channel mode, only the most commonly used channels are available. This is called "Basic Mode". When the LT-800 is in Basic Mode, "L/O" (lock-out) will be displayed on the LCD, meaning some transmission channels are unavailable. If the channel needed is not available in Basic Mode, access to all transmission channels is achieved in "Expanded Mode". To access Expanded Mode press and hold the channel select "down" button while powering on the unit. To return to Basic Mode, repeat the same process of powering on the unit while holding the "down" button.

# RF Reception Maximization Strategies

For proper and dependable operation, Listen receivers need to receive a strong and consistent signal from the originating transmitter. Note that on portable receivers the headset wire is the receiving antenna. The following strategies should be used maximize this signal:

1. When designing and installing your system, keep in mind that the location of both the transmitting and receiving antennas is critical to maximize broadcast range.
2. Eliminate or minimize obstructions between the transmitting and receiving antenna.
3. Minimize the distance between the transmitting and receiving antennas.
4. Move transmitting and receiving antennas away from metal or conductive objects.
5. Place the transmitting antenna as high as possible.
6. Orient both transmitting and receiving antennas vertically.
7. Position the RF Power switch on the back of the LT-800 to full RF Power, unless lower power is necessary (see page 9).
8. Keep coaxial cable from transmitter to antenna as short as possible.

***CAUTION: When installing antennas, ensure the antenna is clear of power lines.***

Coaxial cable, connectors, and optional antenna mounting kits are available from Listen. See page 22-23, visit ***www.listentech.com*** or ask your dealer for details.

## Coaxial Cable

The antenna for the LT-800 can be mounted directly on the unit if desired. However, you may find that the unit will provide better performance when the antenna is located elsewhere. If you plan to mount the antenna in a different location other than the top of the unit, you must use cable and connectors rated at 50 ohms. Although cable used for cable TV installations looks similar to this cable, it will not work with your Listen system.

If you need to run cable over a length greater than 50 feet for 216 MHz applications or greater than 100 feet for 72 MHz applications or to maximize broadcast range, Listen recommends that you use RG-8 cable rather than RG-58. RG-8 is a lower loss cable, meaning that more of your signal will reach the antenna.

Long cable runs can result in signal degradation due to the "loss" characteristics of the cable. When using RG-58 with a 72 MHz transmitter, there is an average* loss of 4 dB per 100 feet of cable and at 216 MHz using RG-58 an average* loss of 8 dB per 100 feet of cable. (A 3dB loss means half of your power has been lost.) However, it is better to suffer coaxial power loss than to try to shoot your signal through obstacles! Obstacles, especially metal, can create drop-outs or reflections of your signal that will result in poor listening conditions.

***NOTE: There are many varieties of 50 ohm, RG-58 and RG-8 cables. You may purchase a cable that is better or worse than this value. Please check with the cable vendor or manufacturer for exact specifications.**

# Channel Selection

It is important to choose channels that are free from interference to achieve proper operation of your Listen equipment. This process is trial and error. Before turning on the transmitter, listen to the wide band channels on the receivers (lettered channels at 72 MHz and channels that start with a "2" for 216 MHz when using a Listen receiver). Listen to the audio through the headphone or via the speaker and choose a channel with the least amount of interference. Unless you are interfacing with an existing narrowband transmission system, always use a wide band channel.

### *If you are using multiple channels follow this process:*

1. ***Same Space*** If you are using multiple transmitters in the same space, the highest number of channels that will work simultaneously is six at 72 MHz and three at 216 MHz. With all of the transmitters off, listen for interference on all the wide band channels with a Listen receiver. Using the frequency compatibility tables on pages 15-17, eliminate any channels that have noticeable interference. Now choose the channels with the widest channel spacing. It is recommended that adjacent channels be spaced at least 300k Hz apart. If there is no interference the following channels are recommended. For a 72 MHz system, use channels A, C, E, I, J and H. For a 216 MHz system, use channels 2A, 2K and 2V.
2. ***Distributed Spacing*** If you are using transmitters that are distributed over a large area, you can achieve more simultaneous broadcast channels. However, it is critical that your receiver(s) be located as close to its transmitter as possible. You can use adjacent channels (see frequency compatibility tables (on pages 15-17) in this case as long as the adjacent channel transmitter is at least 50% further away from the receiver than the original transmitter. Example: The transmitter for the receiver on channel E is 100 feet from the receiver. The adjacent channel transmitter on channel D should be at least 150 feet away.

It is highly recommended that after channel selection has been achieved, you lock the channel so that it cannot be changed by the user. To accomplish LOCK on the LT-800, press the "UP" button for 3 seconds. Repeat the process to unlock.

### *Notes in regard to using 72 MHz and 216 MHz systems:*

1. 72 MHz is a secondary frequency band. This means that other transmitters are licensed to use these frequencies. Thus, you may experience interference from paging transmitters and other types of transmissions. You will need to find a clear channel by listening to all the wide band channels.
2. 216 MHz is a primary frequency band and no other types of transmissions are authorized to use it. Thus, you will find the highest probability of clear channels in this band. However, you may experience intermodulation of the TV Channel 13 aural carrier if there is a channel 13 transmitter in your area and you are close to the transmitter. If you cannot find a clear channel in 216 MHz band due to channel 13, it is recommended that you switch to a 72 MHz system.

**Wide Band Recommendation**
Listen recommends that you always use a wide band channel unless you need to be compatible with existing narrow band receivers from other manufacturers. Wide band channels have lower noise than their narrow band counterparts.

**At 72MHz**
The LT-800 at 72 MHz operates on 17 wide band channels and 40 narrow band channels.

- Letters= Wide Band Channels (Example: E)
- Numbers= Narrow Band Channels (Example: 32)

**At 216MHz**
The LT-800 at 216 MHz operates on 19 wide band channels and 38 narrow band channels.

- "2" as left digit= Wide Band Channel (Example: 2C)
- "1" and "3" as left digits= Narrow Band Channels (Examples: 1A; 3R)

# 72 MHz Compatibility Chart

| Frequency MHz | Listen | Phonic Ear | Comtek | Phonak | Williams* | Gentner | Telex | Drake |
|---|---|---|---|---|---|---|---|---|
| 72.0250 | 1 | 1 | 1 | A1 | (11, 1) | | | |
| 72.0500 | | | | | (2) | 1 | | |
| 72.0750 | 2 | 2 | 2 | A2 | (12, 3) | | | |
| 72.1000 | A | A | A | A | A, (13, 4) | 2 | A | 72.1 |
| 72.1250 | 3 | 3 | 3 | A3 | (14, 5) | | | |
| 72.1500 | | | | | (6) | 3 | | |
| 72.1750 | 4 | 4 | 4 | A4 | (15, 7) | | | |
| 72.2000 | K | K | | K | K, (8) | 4 | B | 72.2 |
| 72.2250 | 5 | 5 | 5 | K5 | (16, 9) | | | |
| 72.2500 | | | | | (10) | 5 | | |
| 72.2750 | 6 | 6 | 6 | K6 | (17, 11) | | | |
| 72.3000 | B | B | B | B | B, (18, 12) | 6 | C | 72.3 |
| 72.3250 | 7 | 7 | 7 | B7 | (19, 13) | | | |
| 72.3500 | | | | | (14) | 7 | | |
| 72.3750 | 8 | 8 | 8 | B8 | (20, 15) | | | |
| 72.4000 | N | N | | N | N, (16) | 8 | D | 72.4 |
| 72.4250 | 9 | 9 | 9 | N9 | (21, 17) | | | |
| 72.4500 | | | | | (18) | 9 | | |
| 72.4750 | 10 | 10 | 10 | N0 | (22, 19) | | | |
| 72.5000 | C | C | C | C | C, (23, 20) | 10 | E | 72.5 |
| 72.5250 | 11 | 11 | 11 | C1 | (24, 21) | | | |
| 72.5500 | | | | | (22) | 11 | | |
| 72.5750 | 12 | 12 | 12 | C2 | (25, 33) | | | |
| 72.6000 | O | O | | O | O, (24) | 12 | F | 72.6 |
| 72.6250 | 13 | 13 | 13 | O2 | (26, 25) | | | |
| 72.6500 | | | | | (26) | 13 | | |
| 72.6750 | 14 | 14 | 14 | 4 | (27) | | | |
| 72.7000 | D | D | D | D | D, (28) | 14 | G | 72.7 |
| 72.7250 | 15 | 15 | 15 | D5 | (29) | | | |
| 72.7500 | | | | | (30) | 15 | | |
| 72.7750 | 16 | 16 | 16 | D6 | (30, 31) | | | |
| 72.8000 | P | P | | P | P, (32) | 16 | H | 72.8 |
| 72.8250 | 17 | 17 | 17 | P7 | (31, 33) | | | |
| 72.8500 | | | | | (34) | 17 | | |
| 72.8750 | 18 | 18 | 18 | P8 | (32, 35) | | | |
| 72.9000 | E | E | E | E | E, (33, 36) | 18 | I | 72.9 |
| 72.9250 | 19 | 19 | 19 | E9 | (34, 37) | | | |
| 72.9500 | | | | | (38) | 19 | | |
| 72.9750 | 20 | 20 | 20 | E0 | (35, 39) | | | |
| 74.6250 | 33 | 33 | 33 | E3 | (36, 40) | | | |
| 74.6500 | | | | | (41) | 20 | | |
| 74.6750 | 34 | 34 | 34 | E4 | (37, 42) | | | |
| 74.7000 | I | I | I | I | I, (38, 43) | 21 | O | |
| 74.7250 | 35 | 35 | 35 | I5 | (39, 44) | | | |
| 74.7500 | | | | | (45) | 22 | | |
| 74.7750 | 36 | 36 | 36 | I6 | (40, 46) | | | |
| 75.2250 | 37 | 37 | 37 | I7 | (41, 47) | | | |
| 75.2500 | | | | | (48) | 23 | | |
| 75.2750 | 38 | 38 | 38 | I8 | (42, 49) | | | |
| 75.3000 | J | J | J | J | J, (43, 50) | 24 | P | |
| 75.3250 | 39 | 39 | 39 | J9 | (55, 51) | | | |
| 75.3500 | | | | | (52) | 25 | | |
| 75.3750 | 40 | 40 | 40 | J0 | (45, 53) | | | |
| 75.4000 | R | R | | R | R, (54) | 26 | Q | |
| 75.4250 | 21 | 21 | 21 | R1 | (46, 55) | | | |
| 75.4500 | | | | | (56) | 27 | | |
| 75.4750 | 22 | 22 | 22 | R2 | (47, 57) | | | |
| 75.5000 | F | F | F | F | F, (48, 58) | 28 | J | 75.5 |
| 75.5250 | 23 | 23 | 23 | F3 | (49, 59) | | | |
| 75.5500 | | | | | (60) | 29 | | |
| 75.5750 | 24 | 24 | 24 | F4 | (50, 61) | | | |
| 75.6000 | S | S | | S | S, (62) | 30 | K | 75.6 |
| 75.6250 | 25 | 25 | 25 | S5 | (51, 63) | | | |
| 75.6500 | | | | | (64) | 31 | | |
| 75.6750 | 26 | 26 | 26 | S6 | (52, 65) | | | |
| 75.7000 | G | G | G | G | G, (53, 66) | 32 | L | 75.7 |
| 75.7250 | 27 | 27 | 27 | G7 | (54, 67) | | | |
| 75.7500 | | | | | (68) | 33 | | |
| 75.7750 | 28 | 28 | 28 | G8 | (55, 69) | | | |
| 75.8000 | T | T | | T | T, (70) | 34 | M | 75.8 |
| 75.8250 | 29 | 29 | 29 | T9 | (56, 71) | | | |
| 75.8500 | | | | | (72) | 35 | | |
| 75.8750 | 30 | 30 | 30 | T0 | (57, 73) | | | |
| 75.9000 | H | H | H | H | H, (58, 74) | 36 | N | 75.9 |
| 75.9250 | 31 | 31 | 31 | H1 | (59, 75) | | | |
| 75.9500 | | | | | (76) | 37 | | |
| 75.9750 | 32 | 32 | 32 | H2 | (60, 77) | | | |

Wideband frequencies are indicated in highlighted rows. The highlighted channels also indicated those channels available in the "basic" mode (default). All channels can be accessed when in the "expanded" channel mode (see page 8 for more information).

*Parenthesis indicate T35 and T20 narrowband.

# 216 MHz Compatibility Chart

| Frequency MHz | Listen | Phonic Ear | Comtek | Phonak | Williams | Gentner | CSI | AVR |
|---|---|---|---|---|---|---|---|---|
| 216.0125 | 1A | | 1 | 1 | | | | C01 |
| 216.0250 | 2A | 41 | 41 | 41 | | 1 | 1 | |
| 216.0375 | 3A | | 2 | 2 | | | | |
| 216.0625 | 1B | | 3 | 21 | | | | |
| 216.0750 | 2B | 42 | 42 | 42 | | 2 | 10 | |
| 216.0875 | 3B | | 4 | 4 | | | | |
| 216.1125 | 1C | | 5 | 5 | | | | C05 |
| 216.1250 | 2C | 43 | 43 | 43 | A | 3 | 6 | |
| 216.1375 | 3C | | 6 | 22 | | | | |
| 216.1625 | 1D | | 7 | 23 | | | | |
| 216.1750 | 2D | 44 | 44 | 44 | B | 4 | 14 | |
| 216.1875 | 3D | | 8 | 8 | | | | |
| 216.2125 | 1E | | 9 | 9 | | | | C09 |
| 216.2250 | 2E | 45 | 45 | 45 | C | 5 | 2 | |
| 216.2375 | 3E | | 10 | 24 | | | | |
| 216.2625 | 1F | | 11 | 25 | | | | |
| 216.2750 | 2F | 46 | 46 | 46 | D | 6 | 11 | |
| 216.2875 | 3F | | 12 | 12 | | | | C12 |
| 216.3125 | 1G | | 13 | 13 | | | | |
| 216.3250 | 2G | 47 | 47 | 47 | E | 7 | 7 | |
| 216.3375 | 3G | | 14 | 26 | | | | |
| 216.3625 | 1H | | 15 | 27 | | | | |
| 216.3750 | 2H | 48 | 48 | 48 | F | 8 | 15 | |
| 216.3875 | 3H | | 16 | 16 | | | | C18 |
| 216.4125 | 1J | | 17 | 17 | | | | C21 |
| 216.4250 | 2J | 49 | 49 | 49 | G | 9 | 18 | |
| 216.4375 | 3J | | 18 | 18 | | | | |
| 216.5125 | 1K | | 21 | 61 | | | | |
| 216.5250 | 2K | 51 | 51 | 29 | H | 10 | 3 | |
| 216.5375 | 3K | | 22 | 62 | | | | |
| 216.5625 | 1L | | 23 | 28 | | | | |
| 216.5750 | 2L | 52 | 52 | 52 | I | 11 | 12 | |
| 216.5875 | 3L | | 24 | 64 | | | | C24 |
| 216.6125 | 1M | | 25 | 65 | | | | C25 |
| 216.6250 | 2M | 53 | 53 | 53 | J | 12 | 8 | |
| 216.6375 | 3M | | 26 | 81 | | | | |
| 216.6625 | 1N | | 27 | 82 | | | | |
| 216.6750 | 2N | 54 | 54 | 54 | K | 13 | 16 | |
| 216.6875 | 3N | | 28 | 68 | | | | |
| 216.7125 | 1P | | 29 | 69 | | | | C29 |
| 216.7250 | 2P | 55 | 55 | 55 | L | 14 | 19 | |
| 216.7375 | 3P | | 30 | 83 | | | | |
| 216.7625 | 1R | | 31 | 84 | | | | |
| 216.7750 | 2R | 56 | 56 | 56 | | 15 | 4 | |
| 216.7875 | 3R | | 32 | 72 | | | | C32 |
| 216.8125 | 1S | | 33 | 73 | | | | C33 |
| 216.8250 | 2S | 57 | 57 | 57 | | | 13 | |
| 216.8375 | 3S | | 34 | 76 | | | | |
| 216.8625 | 1T | | 35 | 85 | | | | |
| 216.8750 | 2T | 58 | 58 | 58 | | | 9 | |
| 216.8875 | 3T | | 36 | 86 | | | | |
| 216.9125 | 1U | | 37 | 77 | | | | C37 |
| 216.9250 | 2U | 59 | 59 | 59 | | | 17 | |
| 216.9375 | 3U | | 38 | 88 | | | | |

Wideband frequencies are indicated in highlighted rows. The highlighted channels also indicated those channels available in the "basic" mode (default). All channels can be accessed when in the "expanded" channel mode (see page 8 for more information).

# Phonak Frequency Chart

| Frequency (MHz) | Listen | Phonak |
|---|---|---|
| 216.012 | 1A | 1 |
| 216.025 | 2A | 41 |
| 216.037 | 3A | 2 |
| 216.062 | 1B | 21 |
| 216.075 | 2B | 42 |
| 216.088 | 3B | 4 |
| 216.113 | 1C | 5 |
| 216.125 | 2C | 43 |
| 216.137 | 3C | 22 |
| 216.162 | 1D | 23 |
| 216.175 | 2D | 44 |
| 216.188 | 3D | 8 |
| 216.213 | 1E | 9 |
| 216.225 | 2E | 45 |
| 216.238 | 3E | 24 |
| 216.262 | 1F | 25 |
| 216.275 | 2F | 46 |
| 216.287 | 3F | 12 |
| 216.312 | 1G | 13 |
| 216.325 | 2G | 47 |
| 216.338 | 3G | 26 |
| 216.363 | 1H | 27 |
| 216.375 | 2H | 48 |
| 216.387 | 3H | 16 |
| 216.412 | 1J | 17 |
| 216.425 | 2J | 49 |
| 216.438 | 3J | 18 |
| 216.512 | 1K | 61 |
| 216.525 | 2K | 29 |
| 216.537 | 3K | 62 |
| 216.562 | 1L | 28 |
| 216.575 | 2L | 52 |
| 216.588 | 3L | 64 |
| 216.613 | 1M | 65 |
| 216.625 | 2M | 53 |
| 216.637 | 3M | 81 |
| 216.662 | 1N | 82 |
| 216.675 | 2N | 54 |
| 216.688 | 3N | 68 |
| 216.713 | 1P | 69 |
| 216.725 | 2P | 55 |
| 216.738 | 3P | 83 |
| 216.762 | 1R | 84 |
| 216.775 | 2R | 56 |
| 216.787 | 3R | 72 |
| 216.812 | 1S | 73 |
| 216.825 | 2S | 57 |
| 216.838 | 3S | 76 |
| 216.863 | 1T | 85 |
| 216.875 | 2T | 58 |
| 216.887 | 3T | 86 |
| 216.912 | 1U | 77 |
| 216.925 | 2U | 59 |
| 216.938 | 3U | 88 |
| 216.963 | 1V | 79 |
| 216.975 | 2V | 60 |
| 216.988 | 3V | 80 |

Wideband frequencies are indicated in highlighted rows. The highlighted channels also indicated those channels available in the "basic" mode (default). All channels can be accessed when in the "expanded" channel mode (see page 8 for more information).

# LT-800 Troubleshooting

## Troubleshooting

***The LT-800 has no power***

Make sure the LA-207 power supply is connected to a power source and is connected to the jack marked "Power Input". Make sure the POWER button is pressed in.

***There is no audio or the audio level is too low***

Make sure that your audio source is properly connected to Input 1 and/or Input 2. The Input 1 or Input 2 switches must be in the correct position for the appropriate input level. For example: if you are using the output of a mixer on Input 2, the switch should be in the -10dBu position. If it were to be in the +10dBu position, the level would be too low. Also, check the Input knob to ensure it is properly adjusted. You should be able to see the VU meter deflect on Input 1 or Input 2 corresponding with the input level of the audio source. You can listen to the audio source by connecting a headset to the front panel jack and adjusting the Monitor volume control.

If the level of audio into the transmitter is low and can't be corrected using the level input switches, the audio processor can be turned on to boost the signal (see page 8 to set, page 12 for description of Process Mode).

***The audio is distorted***

Check to make sure you have the input level select switches in the proper position. You may be providing too much audio level for the input stage to handle. Make sure the SQ mode is set correctly on both the LT-800 and the receivers you are using. If your receivers do not have SQ, make sure the SQ mode is turned off (see page 8).

***There is hum in the audio***

Make sure you have properly grounded the audio source to the LT-800. Check the connections from the audio source to the LT-800. If you can, try to use a balanced audio source - this will reduce the chance of creating hum. Connect a ground wire from the LT-800 to ground and/or to the ground of the source audio.

***There is a tone***

The Test Tone button has been pressed (its LED light is on). Push the Test Tone button to turn off the tone.

***The Audio Input 1 sounds "tinny"***

If you are using an unbalanced audio source, make sure Pin 3 on the XLR or the ring on the ¼" plug is grounded (see page 9).

***I cannot pick up the signal on the receiver***

Check to make sure the receiver and the transmitter are using the same frequency band (i.e. 72 MHz or 216 MHz) and that they are on the same channel. Make sure the LT-800 has an antenna connected. Ensure that the receiver has an antenna (for portable products the headset is the receiving antenna).

***I can pick up the signal on the receiver, but it sounds like it's not tuned in***

Check to make sure the transmitter and receiver are on exactly the same channel. It's a good idea to lock the channels once they have been set. To lock the LT-800, press the UP button for 3 seconds (see page 10).

# LT-800 Troubleshooting (cont.)

## Troubleshooting

***I'm using another brand of receiver - how do I tell which channel to use***

Refer to Listen's Frequency Compatibility Tables (pages 15-17). Adjust Listen's transmitter to the same frequency as the other major brand. Since Listen products can access 57 channels, they will most likely receive on the same fixed channel or channels of other major brands. If you are using another brand of receiver, make sure you have turned off the SQ feature on the Listen product(s).

***There is not sufficient range***

First make sure that the receivers you are using are operating properly, then make sure that you have an antenna connected either to the top of the LT-800 transmitter or connected to the back of the unit (but not both!). The antenna should be as high as possible and free of obstacles. In addition make sure you are using the correct antenna type for your unit. You might want to use a remote antenna (provided by Listen) that can be mounted on a mast or wall. Try using different frequencies to find one with less interference.

***There is interference in my transmission***

Ensure that the transmitter and receivers are on the same channel. Verify that there are no other transmitters on the same channel or a close channel to the one exhibiting interference. Try different channels until you find a clear channel. If this does not work, try a different frequency band (i.e. if you are using 72 MHz, try 216 MHz or vice versa). Please contact Listen support for assistance and a return authorization (RMA) number to exchange product for alternate frequency equipment.

***End users are adjusting the unit***

First, lock the channel by pressing and holding the channel select UP button for 3 seconds. Consider removing the Input, Mix Level and Contour knobs. You can order a rack mount kit from Listen which offers a security cover that will limit access to the unit.

***I am using other manufacturers' receivers and the sound is distorted***

The receiver is probably not designed to handle the +25 kHz deviation of the Listen transmitter. This can be corrected by turning the Mix Level knob down. Another possibility is that you have enabled the SQ function of the LT-800, and this feature is not available in other companies' products. You will need to disable SQ in this event (see page 8).

If you are using Phonak receivers, the transmitter is capable of operating in the Phonak mode (please refer to page 8).

***Several transmitters are operating in the same environment***

For this, you'll need to choose your transmitting frequencies carefully. See page 15-17 for more details.

***Can I have two antennas connected to my transmitter***

No. The LT-800 transmitter can use only one antenna connection at a time. You may connect either a top mount antenna through the top antenna port, or a remote antenna connected to the BNC connection on the rear of the unit. If multiple antennae are simultaneously connected to both ports the transmitter will have extremely poor broadcast performance and range.

# Compliance Notice & FCC Statement

## Compliance Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesirable operation.

**Listen's LT-800 Transmitter (216 MHz only)**
Listen's LT-800 transmitter is authorized by rule under the Low Power Radio Service (47 C.F.R. Part 95) and must not cause harmful interference to TV reception or United States Navy SPASUR installations. You do not need an FCC license to operate these transmitters. These transmitters may only be used to provide: auditory assistance to persons with disabilities, persons who require language translation, or persons in educational settings; health care services to the ill; law enforcement tracking services under agreement with a law enforcement agency; or automated maritime telecommunications system (AMTS) network control communications. Two-way voice communications and all other types of uses not mentioned above are expressly prohibited.

This device must be installed by a trained audio professional or certified dealer of Listen. The user can't make any modifications to the unit without expressed written consent of Listen Technologies Corporation. Any modifications made will void the FCC compliance, Listen warranty and the users authority to operate Listen's equipment.

## FCC Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC and IC Rules. In order to maintain compliance with FCC and IC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

# Warranty & Contacting Listen

## Warranty

Listen Technologies Corporation (Listen) warrants its transmitters and receivers (LT-82, LT-700, LT-800, LR-100, LR-42, LR-44, LR-300, LR-400, LR-500, LR-600) to be free from defects in workmanship and material under normal use and conditions for the useful lifetime of the product from date of purchase.

Listen warrants its Stationary IR Radiators (LA-140) to be free from defects in workmanship and material under normal use and conditions for three years from the date of purchase.

Listen warrants its Noise Canceling Microphone (LA-270) to be free from defects in workmanship and material under normal use and conditions for one year from date of purchase.

Listen warrants its Charging/Carrying Cases (LA-306, LA-311, LA-313, LA-317, LA-318, LA-319, LA-320, LA-321, LA-322, LA-323, LA-324, LA-325) to be free from defects in workmanship and material under normal use and conditions for one year from date of purchase.

All other products and accessories are warranted for 90 days from date of purchase.

This warranty is only available to the original end purchaser of the product and cannot be transferred. Warranty is only valid if warranty card has been returned within 90 days of purchase. This warranty is void if damage occurred because of misuse or if the product has been repaired or modified by anyone other than a factory authorized service technician. Warranty does not cover normal wear and tear on the product or any other physical damage unless the damage was the result of a manufacturing defect. Listen is not liable for consequential damages due to any failure of equipment to perform as intended. Listen shall bear no responsibility or obligation with respect to the manner of use of any equipment sold by it. Listen specifically disclaims and negates any warranty of merchantability or fitness of use of such equipment including, without limitation, any warranty that the use of such equipment for any purpose will comply with applicable laws and regulations. The terms of the warranty are governed by the laws of the state of Utah.

In the first ninety days after purchase, any defective product will be replaced with a new unit. After 90 days, Listen will, at its own discretion either repair or replace transmitters and receivers with a new unit or a unit of similar type and condition. Product that is not covered under warranty shall be repaired or replaced with a unit of similar type and condition based on a flat fee. Contact Listen for details.

This limited warranty, prices and the specifications of products are subject to change without notice.

## Contacting Listen

If technical service is needed, please contact Listen. Pre-authorization is required before returning Listen products. If products were damaged in shipment, please contact the carrier, then contact Listen for replacement or repair requirements payable by the carrier.

Listen's corporate headquarters are located in Bluffdale, Utah U.S.A. and are open Monday through Friday, 8am to 5pm Mountain Time.

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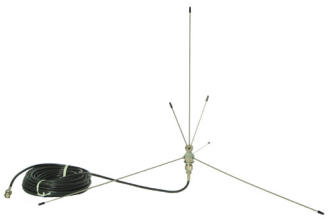
# Optional Accessories

## Antenna Accessories

LA-101
Helical Top Mounted Antenna
(72 MHz)

LA-102
Telescoping Top Mounted
Antenna (216 MHz)

LA-106
Telescoping Top Mounted
Antenna (72 MHz)



LA-107
Ground Plane Remote Antenna
(216 MHz)

LA-122
Universal Antenna Kit

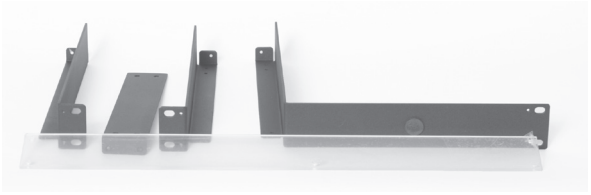
The single solution for all of your indoor remote antenna needs. Includes: 72 and 216 MHz components; flexible and rigid dipoles and monopole radials; hardware for multiple mounting configurations; and 25 feet (7.6m) of RG-58 coax cable.

LA-123
90˚ Helical Antenna
(72 MHz)

LA-124
90˚ Helical Antenna
(216 MHz)

## LT-800 Rack Mount Accessories

LA-125 (72 MHz) and LA-126 (216 MHz)
Antenna Kit for Rack Mount



LA-326
Universal Rack Mounting Kit

Includes components for single and dual rack configuration and a security cover

***NOTE: Rack mounted units cannot use the LA-106, LA-102 or LA-101 top mounted antenna.***

# Optional Accessories (cont.)

## Cable & Connectors Accessories

LA-112
RG-58 50 Ohm
Coaxial Cable (per ft.)

LA-113
RG-8 50 Ohm Low-Loss
Coaxial Cable (per ft.)

LA-127
RG-58 BNC Connector

LA-128
RG-8 BNC Connector

LA-390
RG-8 50 Ohm Preassembled
Coaxial Cable (per ft.)

LA-391
RG-58 50 Ohm Preassembled
Coaxial Cable (per ft.)

## Microphone Accessories

LA-261
Lavalier Microphone

LA-262
Over-the-Head
Microphone

LA-270
Noise Canceling
Microphone

LA-274
Hand-Held
Microphone

LA-276
Collar
Microphone

LA-277
Conferencing
Microphone

LA-278
Behind-the-Head
Microphone

LA-279
Over-the-Ear Microphone
Presentation Style

LA-280
¼ in. to 3.5 mm
Microphone
Adapter for
LT-800/LT-82

***NOTE: To use Listen microphones you must use a converter (LA-280) to adapt the 3.5 mm connection to a 1/4" phono connection.***

## Notes

## Notes

## Notes

## Notes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