User Manual

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

LISTEN
TECHNOLOGIES

![LISTEN TECHNOLOGIES logo]

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,

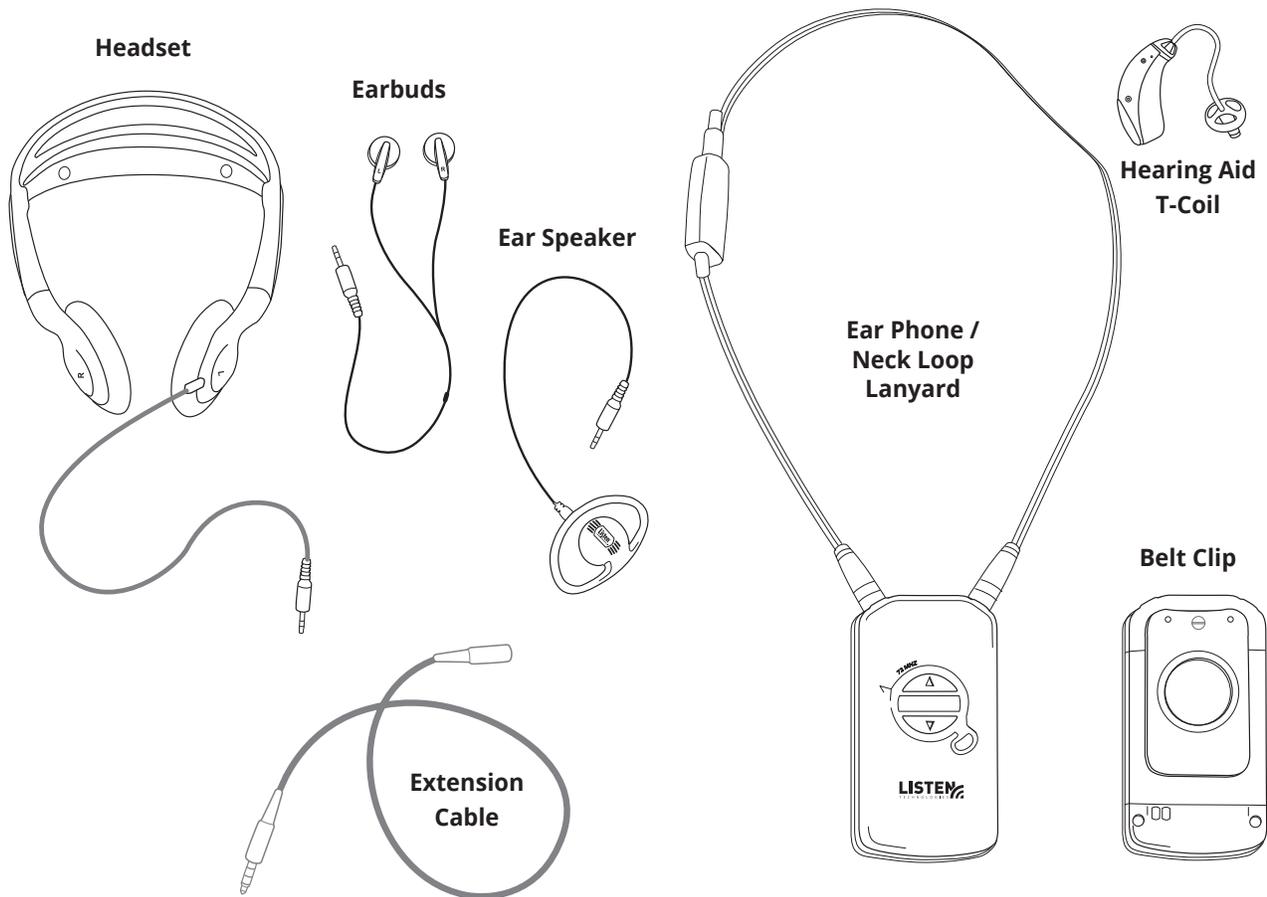Russell Gentner and the Listen Team

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- 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."

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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.

Headset

Earbuds

Ear Speaker

Hearing Aid T-Coil

Ear Phone / Neck Loop Lanyard

Belt Clip

Extension Cable

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
2. Micro USB
3. Up/Down Volume Control
4. Programmable Channel Select

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
6. Belt Clip
7. Charging Contact
8. Power On/Off
9. LED
10. Battery Protective Pull Tab
11. Battery Door

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

Ear Speaker

Ear Phone/ Neck Loop Lanyard

Headset

Earbuds
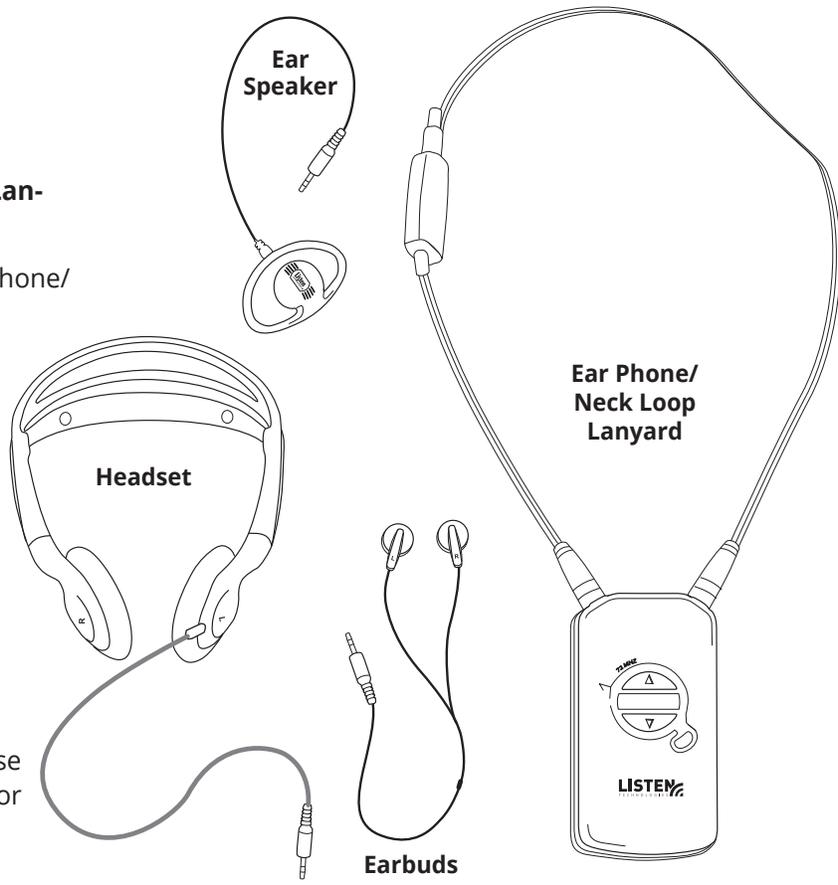
Using The 3.5mm Earphone Extension Cable

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.

Ear Speaker

Extension Cable

Headset

Earbuds
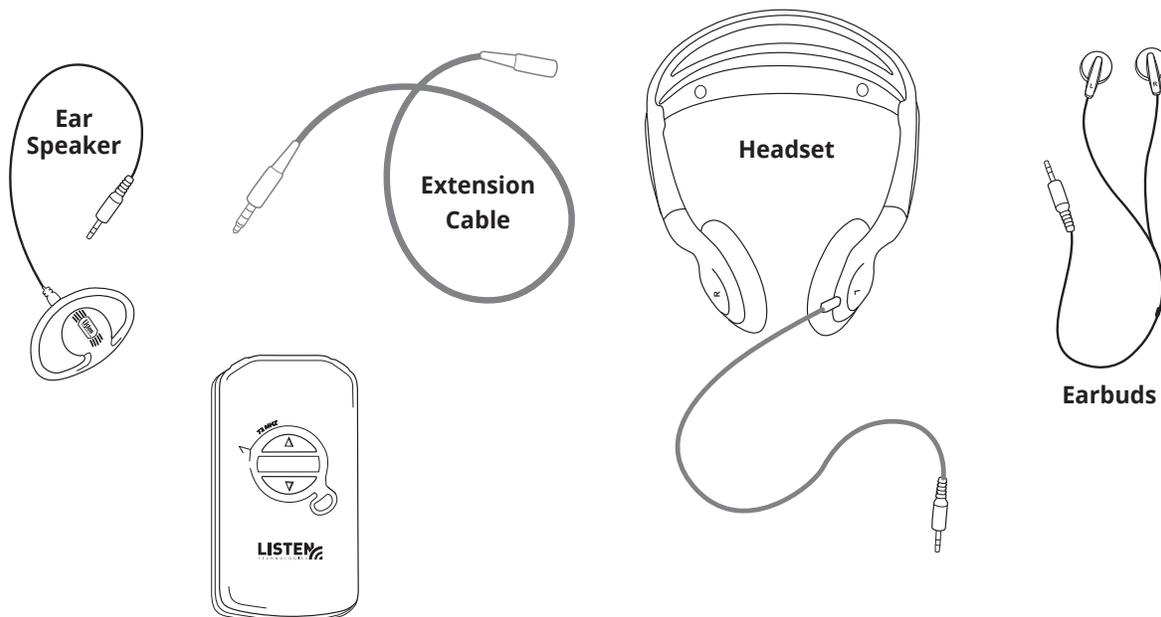
5. Turn the Unit On

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:

4. Save/Exit:
Press power button
to save and exit.

**1. Manual
Select Mode:**
Press and hold
the Power and
Down button
simultaneously
for 3 seconds

2. Scroll Up/Down:
Use the up or down button to
scroll through available channels

CH E

**3. Channel Select:
(Listen Button)**
Push Listen button to select /de-select the channel

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:

3. Save/Exit
Press power button to save
and exit

2. Scroll Up/Down
Use the Up or Down
button to scroll
through available
channels

CH E

1. Channel Select Mode
Press and hold Up and Down
button simultaneously for 5
seconds

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.

OLED Display:
A closed lock will display.

Lock Mode:
Press and hold the Listen button for 5 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.

OLED Display:
An open lock will display.

Un-Lock Mode:
Press and hold the Listen button for 5 seconds.

Adjust Volume

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

OLED:
Indicates the level in a % of maximum level

Volume Up/Down
Use the volume up or down to raise/lower volume

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.

OLED Display:

Press the Power button to get the status of the battery charge life

OLED Indicates a % of charge

Status LED:

Begins to flash when receiver has less than an estimated 30 minute use left on the charge

100%

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.

Belt Clip Screw:
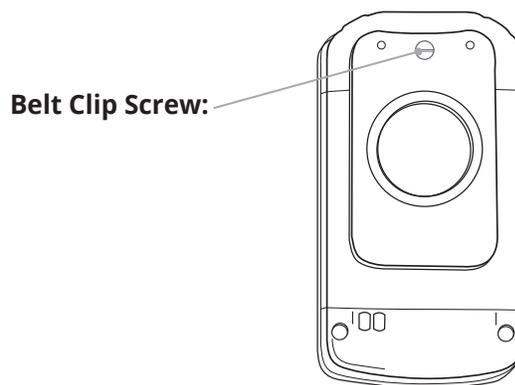
Accessing Battery Compartment

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
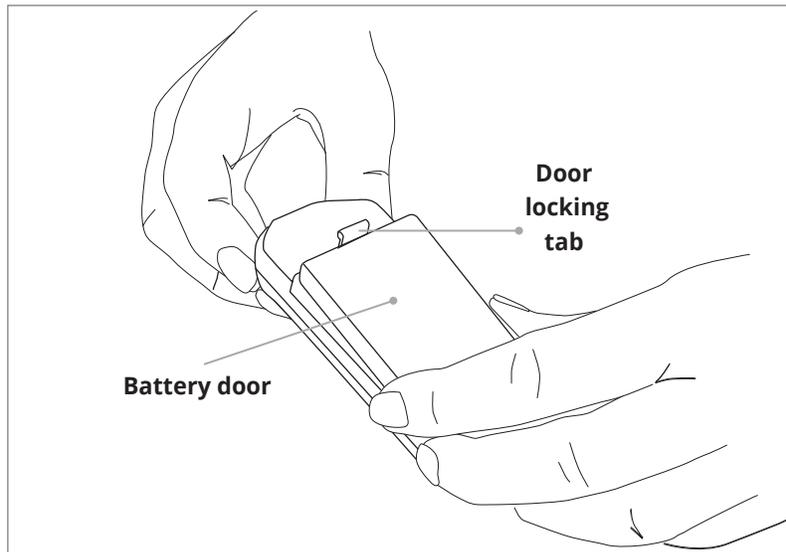
3. Continue to hold down the volume down button while the unit powers on. The OLED display will show the Unit #, Charge Level %, Channel Selection and end with "Reset?"

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-soft-ware-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.

LISTEN TECHNOLOGIES

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 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, 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/

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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