

# User Manual

## LR-4200-IR iDSP Receiver



© 2018 Listen Technologies Corporation® All Rights Reserved

For further details regarding use, adjustment, or programming of your Listen Technologies products visit our website at [www.listentech.com/support-manuals](http://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

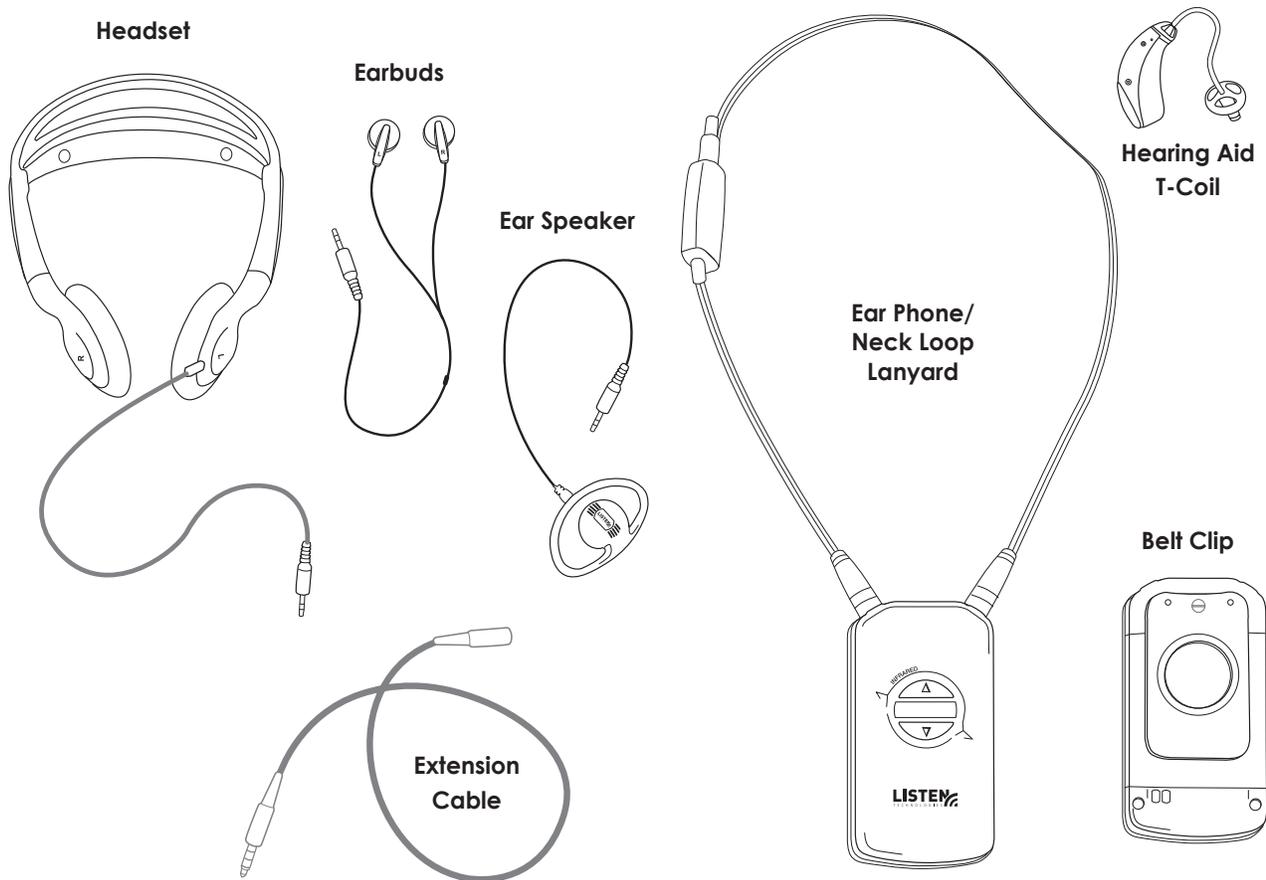
- In the few instances where repairs were needed, 99% of all clients indicated that they were happy with repair turn-around-times and 85% of the time, clients were without their product for less than 10 days!
- Overall client satisfaction of working with Listen was rated 4.8 out of 5.
- "Please continue 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."

## TABLE OF CONTENTS

iDSP-IR Receivers .....	3
LR-4200 Quick Reference .....	4
LR-4200 Specifications .....	5
Safety Cautions .....	6
Hearing Safety .....	6
Medical Device Safety .....	6
Recycling .....	6
Product Recycling Instructions .....	6
Battery Recycling Instructions .....	6
Quick Setup and Operation Instructions .....	7
1. Unpack Unit .....	7
2. Activate Battery .....	7
3. Charge Battery .....	7
4. Connect Ear Phone .....	8
Using the Neck loop/Lanyard .....	8
Using the 3.5mm Headset Extension Cable .....	8
5. Turn the Unit On .....	9
6. Channel Select Mode .....	9
7. Adjust Volume .....	10
Battery & Belt Clip .....	11
Low Battery Indication .....	11
Belt Clip Installation/Removal .....	11
Accessing Battery Compartment .....	12
Reset to Factory Default Settings .....	12
Advanced Program Features an Listen Technologies' UI Configuration Software .....	13
Squelch .....	13
Channel Labels .....	13
Auto Power Mode .....	14
Auto OFF Mode .....	14
Unit ID .....	14
Brightness Control .....	14
Auto Seek Mode .....	14
Jack Sense .....	14
Unit Information .....	15
Reset to Factory Defaults .....	15
Firmware Update .....	15
Troubleshooting LR-4200 Receivers: .....	16
Compliance Notice and FCC Statement .....	17
Warranty .....	18
Contacting Listen Technologies .....	19

## iDSP-IR Receivers

The LR-4200 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, making this the most inconspicuous ALS receiver on the market.



Each receiver can be purchased with 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 Lanyard's 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 use the belt clip.

## LR-4200 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. 3.5 mm Output Jacks:** Connect Listen Earphone/Neck Loop Lanyard for use with T coil hearing aids or with Universal Ear Speaker or Headphone.
- 5. Belt Clip:** To remove, remove screw and pull belt clip from unit. To install place belt clip in place and insert screw.
- 6. Charging Contact:** For use with Listen charging tray options.
- 7. Power On/Off:** Press and hold for 1 second to turn on. Press and hold for 3 seconds to turn off.
- 8. LED:** Indicates low battery condition and charging status
- 9. Battery Protective Pull Tab:** Remove clear plastic pull tab to activate internal battery connections.
- 10. Battery Door:** Can be removed to access battery and product labeling information.

## LR-4200-IR Specifications

Product Specification: LR-4200-IR		
Audio	System Frequency Response System Signal to Noise Ratio System Distortion Output/s	63 Hz - 15 kHz ( $\pm 3$ dB) >60dB <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, accepts mono or stereo phone plug
Controls	User Controls Set-up Controls  Programming	Power, up/down volume 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, volume status
RF	Carrier Frequencies Number of Channels Frequency Accuracy Modulation	2.3 MHz, 2.8 MHz, 3.3 MHz, 3.8 MHz Four (4) selectable channels $\pm .005\%$ stability 32 to 122 °F (0 to 50 °C) FM Wideband, $\pm 50$ kHz deviation Max, 50 uS de-emphasis
IR	Squelch Power Save Mode  Sensitivity	Programmable in 20 steps, automatic on loss of signal Turns unit off after a specified time of no IR signal, default is 30 minutes Better than one (1) nW/cm <sup>2</sup> @40 dB SNR
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 Battery 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) 1.9 oz. (53.9 g) 2.8 oz. (79.4 g) 3.5 oz. (99.2 g) with a 1 lbs. (0.45 kg) 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, ICS-03, CE, RoHS, WEEE

## 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.



### 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 Ear Phone

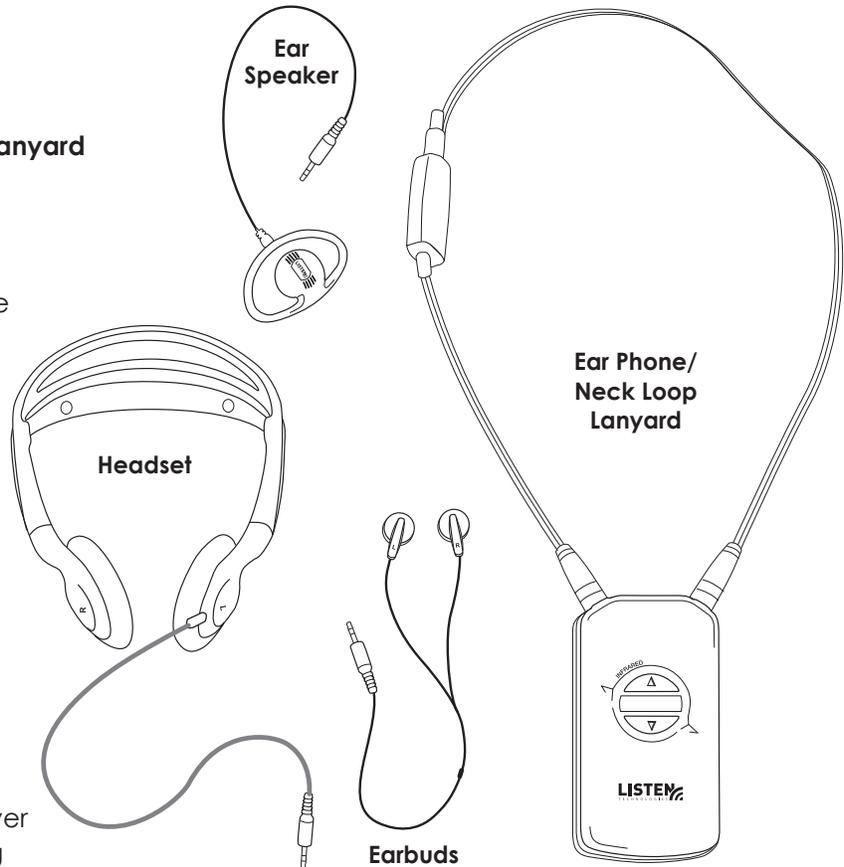
### Using The Ear Phone/Neck Loop Lanyard

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!

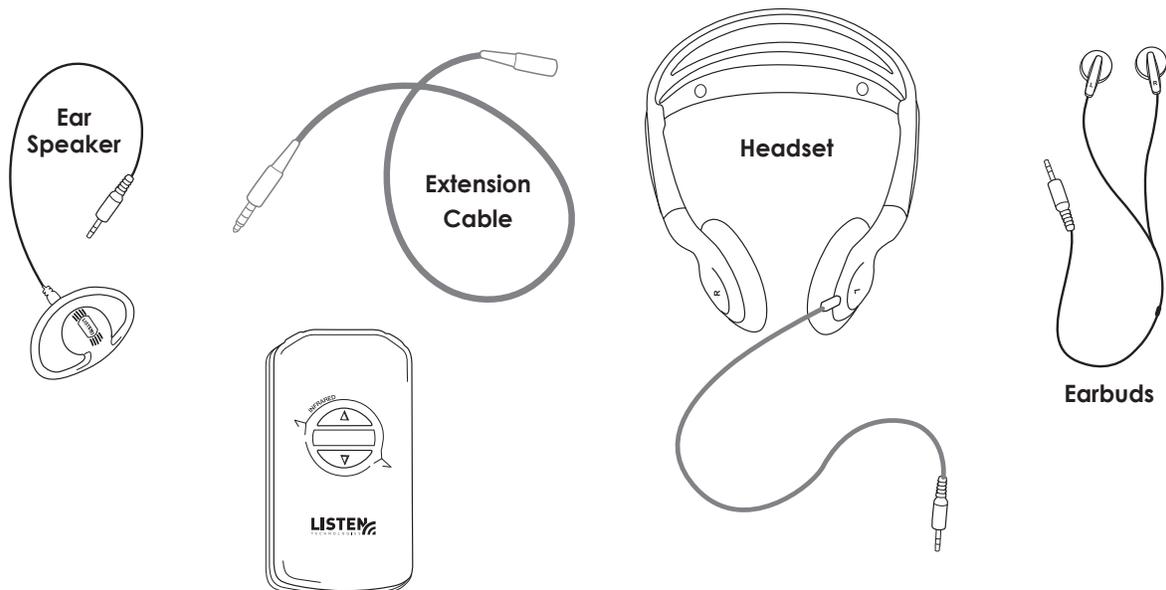
For T-coil compatible hearing aid use simply disconnect the ear speaker or headset from the ear phone/neck loop lanyard.

**Important:** Always wear the receiver in such a way that there is nothing covering the receiver, if covered or obstructed the receiver will have poor range and performance!



### Using The 3.5mm Earphone Extension Cable

If the receiver is to be clipped to a belt or waistband 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. Channel Select Mode

The LR-4200-IR receiver operates on 4 wideband channels, Channel 1 (2.3 MHz), Channel 2 (2.8 MHz), Channel 3 (3.3 MHz), and Channel 4 (3.8 MHz).

The Listen receiver is pre-programmed to operate on channel 1 from the factory. To receive audio, the transmitter/Radiator needs to be broadcasting on Channel 1 or the receiver channel needs to be reprogrammed to the channel being broadcast. To adjust the receiver to a different listening channel, 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.

**1. Channel Select Mode:**

Press and hold the up and down button simultaneously for 5 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 channels

*Note:* The channel can also be changed via the iDSP Software Suite, see page 13

## 7. 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

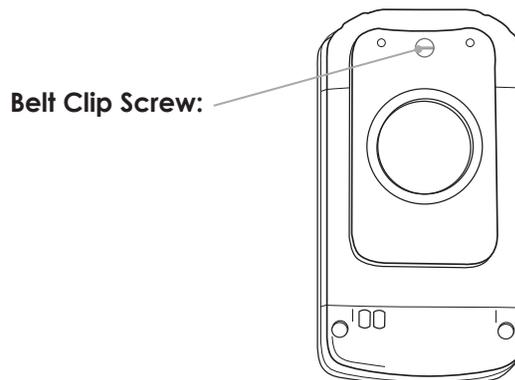
### Low Battery Indication

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.



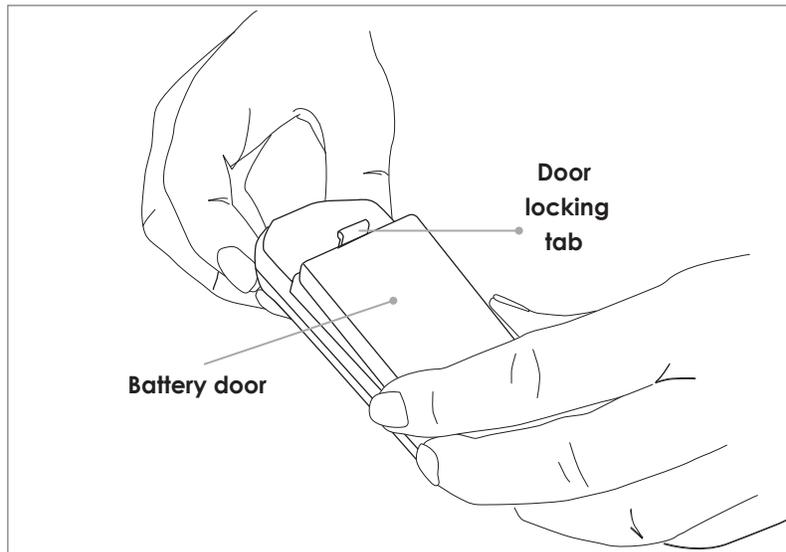
### Belt Clip Installation/Removal

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 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 the 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

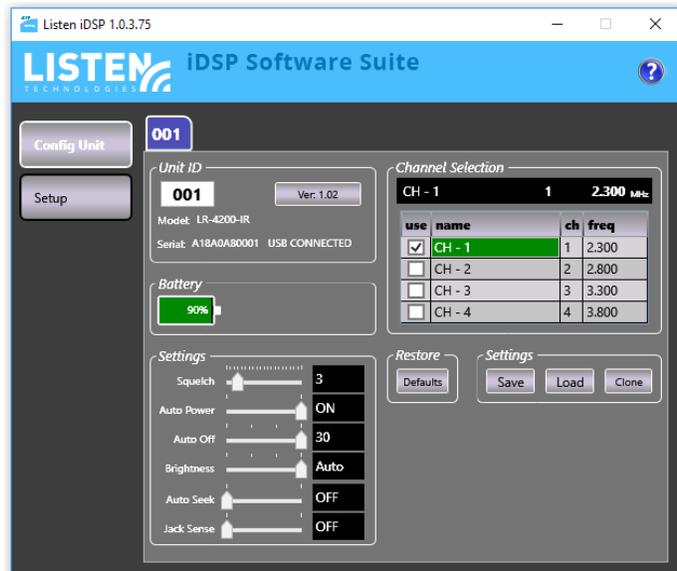
## Advanced Program Features and Listen's iDSP Software Suite

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.listentech.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-4200 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-4200 receiver.*



## Squelch

The purpose of squelch is to mute the audio output of the receiver when the signal from the radiator(s) 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 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.

### When to Adjust Squelch Setting:

For maximum range the squelch setting should be set to a low level (0, 1, or 2). However when setting the squelch level low radio noise will be heard in the earphone when the signal strength is low.

If no radio noise is desired to be heard when the signal strength is low then set the squelch setting to a higher number. When setting the squelch higher than 3 the receiver will have reduced range due to the audio being cut off when the signal is low.

## 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-1". Customization of this display can be created to better identify the type of audio, for example CH-1 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.

## Auto OFF Mode

The Auto OFF Mode when enabled will automatically turn the receiver off after a period of time if no IR signal is detected by the receiver. There are four setting OFF, 10, 15, and 30 minutes. Your Listen receiver has been shipped to you with the Auto OFF Mode enable to 30 minutes.

## 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.

## Auto Seek Mode

When Auto Seek Mode is enabled the receiver will power up to the same channel that it was on when it was last turned off. If no signal is present or the signal is lost on that channel the receiver will continuously seek for a channel with IR signal until one is found. Auto seek is excellent for applications where users are moving from room to room or exhibit to exhibit. Auto Seek Mode has two settings ON and OFF. Your Listen receiver has been shipped to you in the Auto Seek OFF Mode.

## 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.

*Note:* When resetting the unit to factory default via the software the unit ID is not reset.

## **Firmware Update**

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

*Note:* Battery level must be greater than 10% to perform a firmware update!

## Troubleshooting LR-4200 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 in all the way. Make sure the Ear Phone is plugged into the Earphone/Neck Loop Lanyard. Check to insure the transmitter/radiator(s) is broadcasting an audio source. Verify the receiver is tuned to the same channel (frequency) as the transmitter/radiator(s). If the IR signal is too weak, the receiver will squelch and mute the audio source; move closer to the transmitter/radiator(s) or add more radiators to provide more range and freedom of movement.

### **The audio is distorted**

Check the receiver is on the correct channel (frequency). Verify that 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. Make sure the receiver is not too close to the transmitter/radiator.

### **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/radiator(s) by moving closer.

### **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-421) 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)

## 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 items 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

<https://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.

14912 Heritagecrest Way  
Bluffdale, Utah 84065-4818  
+1.801.233.8992  
+1.800.330.0891 North America  
+1.801.233.8995 fax

**support@listentech.com**  
**www.listentech.com**

20180220