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User's Manual

for all Listen Products

LISTEN TECHNOLOGIES CORPORATION

INTRODUCTION

Assistive Listening Systems help enhance the ability to hear in many applications. These systems deliver audio directly to a person's ear through an earphone. This earphone can be used in conjunction with a hearing aid or placed directly on the ear. The earphone is connected to a receiver, which picks up a broadcast transmission of an audio source. Volume can be adjusted by the user. Audio originates from a person speaking into a microphone or sound system. Assistive Listening Devices are commonly available in facilities such as places of worship, stadiums, arenas, meeting rooms, schools, etc. In various public facilities in the U.S.A., assistive listening device accessibility is mandated by the Americans with Disabilities Act, and must be provided by the facility for the hard of hearing.

Listen's FM Assistive Listening Systems, in particular, are extremely versatile, durable and easy to set up and use. 100% compatible with all major manufacturers of FM assistive listening products, Listen products offer access to 57 channels at 72MHz or at 216MHz. This means that if you have a Listen receiver and walk into a facility, simply press "SEEK" to find the transmitting channel. 57 channels also more likely guarantee that a facility manager can find a clear transmission channel to broadcast on or can easily change channels if interference becomes a problem. Also, Listen's receivers and portable transmitter feature high performance NiMH batteries which allow for hassle-free, long battery life. Another unique feature is Listen's LCD Display, which communicates battery level, channel and RF signal strength.

Listen is dedicated to whatever-it-takes customer support. We even offer a Limited Lifetime Warranty that assures maximum performance and no hassle. Contact Listen; we'll be happy to assist you.

Frequency (MHz)	LTC	Williams	Comtek	Phonic Ear	Telex	Drake	Gentner
216.5250	2K	H					10
216.5375	3K						
216.5500							
216.5625	1L						
216.5750	2L	I					11
216.5875	3L						
216.6000							
216.6125	1M						
216.6250	2M	J					12
216.6375	3M						
216.6500							
216.6625	1N						
216.6750	2N	K					13
216.6875	3N						
216.7000							
216.7125	1P						
216.7250	2P	L					14
216.7375	3P						
216.7500							
216.7625	1R						
216.7750	2R						15
216.7875	3R						
216.8000							
216.8125	1S						
216.8250	2S						16
216.8375	3S						
216.8500							
216.8625	1T						
216.8750	2T						17
216.8875	3T						
216.9000							
216.9125	1U						
216.9250	2U						18
216.9375	3U						
216.9500							
216.9625	1V						
216.9750	2V						19
216.9875	3V						
217.0000							

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216MHz Frequency Compatibility Table

Frequency (MHz)	LTC	Williams	Comtek	Phonic E	Telex	Drake	Gentner
216.0125	1A						
216.0250	2A						1
216.0375	3A						
216.0500							
216.0625	1B						
216.0750	2B						2
216.0875	3B						
216.1000							
216.1125	1C						
216.1250	2C	A					3
216.1375	3C						
216.1500							
216.1625	1D						
216.1750	2D	B					4
216.1875	3D						
216.2000							
216.2125	1E						
216.2250	2E	C					5
216.2375	3E						
216.2500							
216.2625	1F						
216.2750	2F	D					6
216.2875	3F						
216.3000							
216.3125	1G						
216.3250	2G	E					7
216.3375	3G						
216.3500							
216.3625	1H						
216.3750	2H	F					8
216.3875	3H						
216.4000							
216.4125	1J						
216.4250	2J	G					9
216.4375	3J						
216.4500							
216.4625							
216.4750							
216.4875							
216.5000							
216.5125	1K						

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Listen™

Technical Service Contacts & Compliance Notices

Technical Service Contacts

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.

Toll Free: 1.800.330.0891
Telephone: +1.435.647.0318
Fax: +1.435.647.0316
Internet: www.listentech.com
General E-Mail: info@listentech.com

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1762A Prospector Avenue
Park City, UT 84068-3010 U.S.A.

Correspondence Mailing Address:
Listen Technologies Corporation
P.O. Box 683010
Park City, UT 84068-3010 U.S.A.

FCC ID Numbers:

LT-800-072 (72MHz base transmitter) ID: OMD800-001
LT-800-216 (216MHz base transmitter) ID: OMD800-216
LT-700-072 (72MHz portable transmitter) ID: OMD700-001
LT-700-216 (216MHz base transmitter) ID: OMD700-216

Compliance Notices

Listen's Models LT-800, LT-700, LR-400 and LR-500

These devices comply 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 undesired operation.

Listen's LT-800 and LT-700 Transmitters (216MHz only)

Listen's LT-800 and LT-700 transmitters are 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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's 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 Rules. In order to maintain compliance with FCC 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.

72MHz Frequency Compatibility Table (continued)

Frequency (MHz)	LTC	Phonic Ear	Comtek	Williams	Telex	Drake	GTNR
74.675	34	34	34	37			
74.700	I	I	I	I, 38	0		21
74.725	35	35	35	39			
74.750							22
74.775	36	36	36	40			
75.225	37	37	37	41			
75.250							23
75.275	38	38	38	42			
75.300	J	J	J	J, 43	P		24
75.325	39	39	39	44			
75.350							25
75.375	40	40	40	45			
75.400	R				Q		26
75.425	21	21	21	46			
75.450							27
75.475	22	22	22	47			
75.500	F	F	F	F, 48	J	75.5	28
75.525	23	23	23	49			
75.550							29
75.575	24	24	24	50			
75.600	S				K	75.6	30
75.625	25	25	25	51			
75.650							31
75.675	26	26	26	52			
75.700	G	G	G	G, 53	L	75.7	32
75.725	27	27	27	54			
75.750							33
75.775	28	28	28	55			
75.800	T				M	75.8	34
75.825	29	29	29	56			
75.850							35
75.875	30	30	30	57			
75.900	H	H	H	H, 58	N	75.9	36
75.925	31	31	31	59			
75.950							37
75.975	32	32	32	60			

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72MHz Frequency Compatibility Table

Frequency (MHz)	LTC	Phonic Ear	Comtek	Williams	Telex	Drake	GTNR
72.025	1	1	1	11			
72.050							1
72.075	2	2	2	12			
72.100	A	A	A	A, 13	A	72.1	2
72.125	3	3	3	14			
72.150							3
72.175	4	4	4	15			
72.200	K				B	72.2	4
72.225	5	5	5	16			
72.250							5
72.275	6	6	6	17			
72.300	B	B	B	B, 18	C	72.3	6
72.325	7	7	7	19			
72.350							7
72.375	8	8	8	20			
72.400	N				D	72.4	8
72.425	9	9	9	21			
72.450							9
72.475	10	10	10	22			
72.500	C	C	C	C, 23	E	72.5	10
72.525	11	11	11	24			
72.550							11
72.575	12	12	12	25			
72.600	0				F	72.6	12
72.625	13	13	13	26			
72.650							13
72.675	14	14	14	27			
72.700	D	D	D	D, 28	G	72.7	14
72.725	15	15	15	29			
72.750							15
72.775	16	16	16	30			
72.800	P				H	72.8	16
72.825	17	17	17	31			
72.850							17
72.875	18	18	18	32			
72.900	E	E	E	E, 33	I	72.9	18
72.925	19	19	19	34			
72.950							19
72.975	20	20	20	35			
74.625	33	33	33	36			
74.650							20

Listen Limited Lifetime Warranty

Limited Lifetime Warranty, Including Performance Guarantee

Listen Technologies Corporation (Listen) warrants its products 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. Accessories are warranted for ninety 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 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.

Listen will only accept returned products with prepaid shipping and with a return authorization number. To receive a return authorization number call **1.800.330.0891** or **+1.435.647.0316**.

Listen will refund the purchase price of the product to the original purchaser within the first ninety days after purchase if the product does not perform better than a similar competitive product subject to an annual amount to any one original purchaser not to exceed $1,000 and subject to the conditions of this limited warranty. This is called our Whatever-It-takes Performance Guarantee. Refunds will only be given to the original purchaser of product once the product has been returned to the factory in good working order with an explanation for the refund. To receive a refund, call Listen for a return authorization number. Return the product with a letter on the end user's letterhead stating the reason for the refund and a copy of the original invoice. If the product was purchased through a dealer, refunds must be processed through the original dealer.

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 replace the unit with a new unit or a unit of similar type and condition. Product that is not covered under warranty shall be replaced with a unit of similar type and condition based on a flat fee.

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

Performance 100% SATISFACTION Guarantee

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LR-400 and LR-500 Receiver Troubleshooting

The LR-400/LR-500 has no power.

Make sure the unit has either fully charged batteries or a Listen approved wall transformer connected to the unit. Make sure the VOLUME knob has been rotated to the ON position. If this does not work, try a different set of batteries. Make sure the batteries are installed properly.

There is no audio.

Make sure you have turned the volume control up. Make sure the earphone jack is plugged all the way in to the top of unit. Make sure the transmitter is broadcasting an audio source. Make sure you're tuned to the same channel as the transmitter. If the RF signal is too weak, the receiver will squelch and thus mute the audio source; move closer to the antenna or turn up the RF signal strength on the transmitter if possible.

The audio is distorted.

Make sure you're receiving on the correct channel.

There is interference.

Try different frequencies until you find a clear channel. If this does not work, try a different frequency band (i.e. if you're using 72MHz, try 216MHz or vice versa). This is accomplished by returning the equipment to Listen (at no charge).

I cannot pick up the signal on the receiver.

Check to make sure the receiver and the transmitter are on the same frequency.

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 number/letter.

I'm using another brand of transmitter - how do I tell which channel to use?

Refer to Listen's Frequency Compatibility Tables (included on pages 28-31). Either adjust the transmitter or the receiver to a common channel.

There is not sufficient range.

Make sure you are located as close to the antenna of the transmitter as possible. Try to locate the antenna as high as possible and free from obstacles.

It's confusing for users to have 57 channels when switching between channels.

Use the programming feature of the LR-500 (only) to limit the number of channels users have access to.

Users keep changing channels.

You can prevent users from changing channels by pressing the SEEK button and holding it for 10 seconds. This will lock the channel. On the LR-400, simply lock the access door to prevent users from accessing channel buttons.

I cannot change channels when pressing the UP and DOWN buttons.

The unit is locked. Press the SEEK button for 10 seconds to unlock.

When I change channels, only certain channels are accessible.

The unit has been programmed to tune to only certain channels (LR–500 ONLY!). You can change these tunable channels by re-programming the unit.

How can I limit access to the batteries?

Use the side door locks.

My batteries are not charging.

Make sure the battery switch is in the NiMH position. Make sure you have connected an approved Listen charging transformer. Make sure you use ONLY NiMH batteries provided by Listen. Never try to charge alkaline or NICAD batteries.

I want to run the unit from a wall transformer.

Simply plug a Listen approved transformer to the CHARGE/POWER connector. Batteries need not be installed, however, NiMH will recharge if installed while the unit is being used.

LR-500 Specifications

RF Frequency Range:
72MHz: 72.05 - 75.95MHz
216MHz: 216.025 - 216.975 MHz

Sensitivity:
.6uV typical, 1uV maximum for 12dB SINAD
Max deviation at ± 70kHz

Signal to Noise ratio:
wide band channels, 60dB
narrow band channels, 54dB

Frequency Response:
50Hz to 15KHz, ± 3dB

Distortion:
< 2% THD

Squelch:
40dB with loss of RF signal

Antenna:
Uses headphone cable

Available Channels:
72MHz: 17 wide band, 40 narrow band
216MHz: 19 wide band, 38 narrow band

Physical Dimensions:
3" W x 1"D x 5"H
(7.6cm W x 2.5cm D x 13cm H)

Weight:
< 1 lb. (.45 kg) with batteries

Door:
CHANNEL and SEEK buttons are accessible through door, lockable

Programmability:
Allows only programmed channels to appear on the display, user functions can be locked by pressing the Seek button for >3 seconds

Power:
Two AA batteries, high capacity alkaline or NiMH rechargeable; external power connector 8-9 VDC, tip positive, <300mA

Battery Life:
40 hours with high capacity alkaline,
20 hours with rechargeable NiMH

Headphone Output:
750mV RMS maximum at 25kHz deviation,
32 ohms, 3.5MM mono or stereo

LR-400 Specifications

RF Frequency Range:
72MHz: 72.05 - 75.95MHz
216MHz: 216.025 - 216.975 MHz

Sensitivity:
.6uV typical, 1uV maximum for 12dB SINAD
Max deviation at ± 70kHz

Signal to Noise ratio:
Wide band channels, 60dB
Narrow band channels, 54dB

Frequency Response:
50Hz to 15KHz, ± 3dB

Distortion:
< 2% THD

Squelch:
40dB with loss of RF signal

Antenna:
Uses headphone cable

Available Channels:
72MHz: 17 wide band, 40 narrow band
216MHz: 19 wide band, 38 narrow band

Physical Dimensions:
3" W x 1"D x 5"H
(7.6cm W x 2.5cm D x 13cm H)

Weight:
< 1 lb. (.45 kg) with batteries

Door:
Channel and Seek buttons are located behind door, door can be locked

Programmability:
User functions can be locked by pressing the SEEK button for >3 seconds

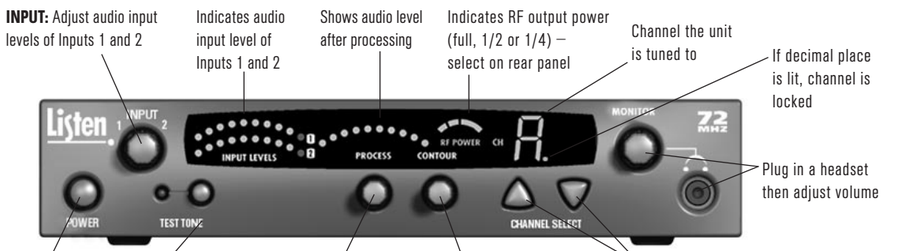
Power:
Two AA batteries, alkaline or NiMH rechargeable; external power connector 8-9 VDC, tip positive, <300mA

Battery Charging:
Fully automatic, <12 hours

Battery Life:
40 hours with high capacity alkaline,
20 hours with high capacity NiMH

Headphone Output:
750mV RMS maximum at 25kHz deviation,
32 ohms, 3.5MM mono or stereo

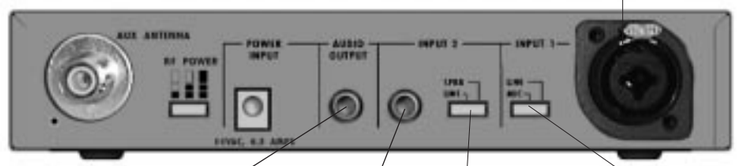
LT-800 Front Illustration: Controls & Displays



LT-800 Audio Connections

The LT-800 has two possible audio inputs:

INPUT 1 is used to connect a balanced mic or line level input.
INPUT 2 is used to connect an unbalanced, high impedance line input or speaker input.



INPUT 1 CONNECTION: Connect a microphone or balanced line level input. See Preparation instruction #7 for details (Page 9).

LINE OUTPUT – the LINE OUTPUT connector is a mixed output of INPUT 1 and INPUT 2 after processing. This is an unbalanced phono connector. The output level is –10dBm.

INPUT 2 CONNECTION: this is a phono connector used to connect an unbalanced, high impedance line or speaker input

INPUT 2 SWITCH: Select LINE or SPEAKER on the slide switch directly next to the INPUT 2 connector. In the line position, the input level is –10dBm, and on speaker, the input level is +10dBm.

INPUT 1 SWITCH: Select MIC or LINE input on the slide switch. For Mic input, the level is –55dBm and the input impedance is 50 ohms. In the line position, the input level is +4dBm and the input impedance is 600 ohms.

Listen™

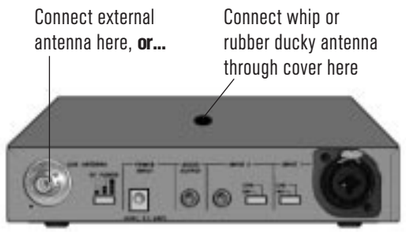
Preparing the LT-800 for Use

1 Remove the product from the shipping container and plastic cover. Inspect for physical damage. See "Technical Service Contacts" (Page 4) if damage has occurred.

2 For Rack Mounting: If rack mounting the unit, install the rack mount shelf according the instructions that come with the shelf, then install the unit and shelf in the rack.

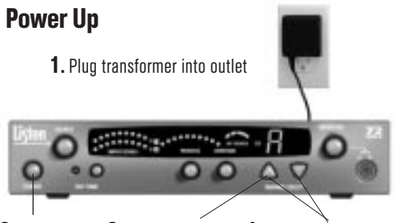
3 Plug in Wall Transformer Plug the connector on the wall transformer into the power connector on the back panel. Use strain relief on far left side of rear panel. Do not plug into power source yet. (Only use a Listen supplied transformer.)

4 Connect Antenna: Connect the supplied antenna according the instructions that come with the antenna. Only use an antenna supplied by Listen.



5 Set the RF POWER: Set the RF POWER switch for FULL, 1/2 or 1/4. (Level is also indicated on the front panel.) The amount of transmitted RF power that you will need depends on your application. If you are operating other transmitters in the same environment and receivers can be used close to the antenna, it is best to have the transmitter's output power at its lowest level to reduce the possibility of interference.

6 Power Up



Lock Into or Unlock A Channel

TO LOCK: Press the LT-800's channel UP and DOWN buttons simultaneously for three or more seconds until you see a decimal dot light up next to the channel number.

To UNLOCK: Press the channel UP and DOWN buttons simultaneously for three or more seconds until you see the decimal dot next to the channel number disappear.

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Charging the Batteries (continued)

5. Plug a wall transformer into the side of the Listen receiver or place receiver in a Listen Battery Recharging Tray.

For charging using a transformer: with NiMH batteries in unit, plug wall transformer in CHARGING connection and into wall outlet (as shown).

Batteries will be fully charged when red LED shines solid red. (LED and battery symbol will flash slowly while charging.)

6. Once the batteries are fully charged, the unit will stop charging the batteries. Full-charge will be indicated when all the battery symbol segments are illuminated and the LED near the volume control is glowing steadily.

7. The unit can be operated while batteries are charging.

Operating the Receiver with a Wall Transformer

1. The unit will operate normally when connected to a wall transformer.
2. Batteries do not need to be installed in the unit operate from a wall transformer.

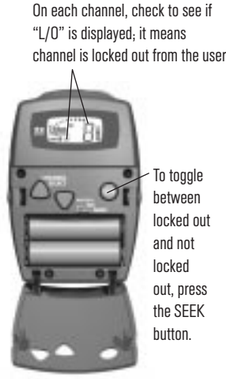
LR-500 Receiver Programming

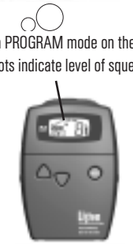
1. The LR-500 can be programmed to operate on a limited number of channels. (The LR-400 cannot be programmed.) For applications where users are required to select a channel (such as language translation or classrooms), and you don't want them to have to go through all of the available channels, this feature is ideal. If all channels where available, the user could have 57 channels to select from.

2.

To enter PROGRAM mode, press the UP and DOWN keys simultaneously until the PGM symbol is displayed on the LCD display.

3. **Use the UP and DOWN keys to select channels.** As channels are displayed, the L/O symbol on the LCD display will be displayed for those channels that are locked out. When a channel is locked out, the channel is not available to the user. To toggle between locked out and not locked out, press the SEEK button.





4. **To adjust squelch,** the padlock icon will appear after you program your channels in PROGRAM mode. You should still be in PROGRAM mode. To NOT adjust squelch, don't press a button for 4 seconds and the unit will exit PROGRAM mode. To adjust squelch, press SEEK to unlock squelch (the padlock will disappear). The squelch level will appear as a number of dots showing. No dots means no squelch. The more dots displayed in this mode, the more sensitive squelch will be. The factory default setting is four dots. Press the UP button to rotate through the number of dots.

5. **To exit PROGRAM mode,** don't press a key for 4 seconds.

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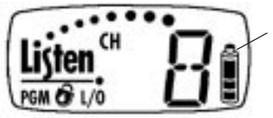
Receiver Battery Status Icon



The status of the battery is indicated by the battery symbol on the LCD.

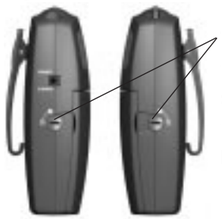
When the battery is fully charged, all three segments of the battery symbol will be displayed, as shown.

As fewer battery segments are displayed, the lower the battery level, as shown.

When the batteries are almost fully discharged, the battery segments and the red LED near the volume control will blink quickly. When this occurs, less than 5% of the battery life is remaining and the batteries should be immediately replaced or recharged.

This segment will blink when batteries are low.

Locking the Receiver's Access Door



To unlock: On both the right and left side, unlock by turning slot horizontal as shown.

To lock: On both the right and left side, lock door by turning slot vertical as shown.

Charging Batteries Using SmartCharge™

1. Listen's LR-400 and LR-500 receivers are unique because they have an automatic battery charger built in. That means that when the Listen receiver is connected to a wall transformer or placed in a Listen Battery Recharging Tray, NiMH batteries will be charged while in the receiver. Once batteries are charged, the internal battery charger will automatically turn off. This prevents overcharging of batteries, automates the process of charging, and makes it so you don't have to remember to unplug the charger.
2. Do not attempt to charge alkaline or any other type of non-NiMH batteries. Only charge Nickel Metal Hydride (NiMH) batteries within the LR-500 or LR-400. We recommend that you use NiMH batteries supplied by Listen.

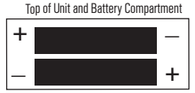
WARNING: Attempting to charge non-NiMH batteries may result in physical harm, destruction of property and /or fire.

3. **IMPORTANT:** To charge NiMH batteries, the BATTERY SELECT switch must be selected to NiMH. Use a pen or small screwdriver to the move the switch (located in the battery compartment directly below the BATTERY SELECT label) to the proper position.

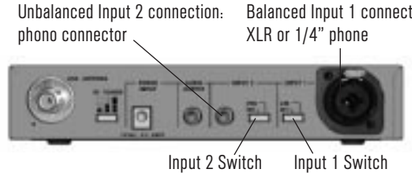
For only NiMH batteries: set BATTERY SELECT switch to NiMH. For all other batteries, set BATTERY SELECT at alkaline.

4. Install NiMH rechargeable batteries in the battery compartment ensuring that proper polarity has been observed.

Top of Unit and Battery Compartment

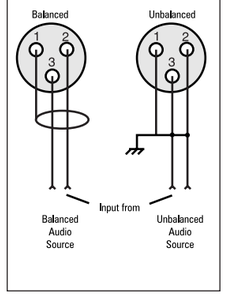


7 Connect Audio Inputs: Connect audio source(s) to one or both audio input connections: Input 1 offers a choice of balanced XLR or 1/4" phone connection. Input 2 is an unbalanced phono connector. (See LT-800 Audio Connections on Page 7 for specific connection instructions.)

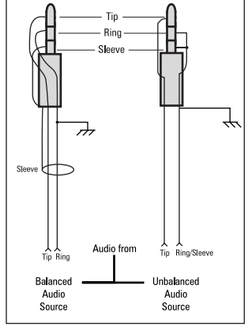


Connect balanced and unbalanced audio sources as shown in diagram. Make sure that if you are connecting an unbalanced audio source, that Pin 2 of the XLR and the ring of 1/4" phone jack are connected to ground as shown.

XLR Wiring



1/4" Phone Wiring



8 Adjust Audio Input Switches – For Input 1 Switch, select MIC or LINE input level; Input 2 Switch, select LINE or speaker level. (See illustration on Page 7.)

9 Use the headset jack to listen to audio source – With the audio source or sources active and the unit powered ON, plug a headset into the jack located on the LT-800's front panel to listen to the audio source. Adjust headset volume to a comfortable level.

LT-800 Audio Control

(Refer to LT-800 Controls & Displays Illustration on Page 7.)

The LT-800 incorporates automatic audio level control and processing. Input levels can be viewed on the two VU meters on the front panel.

1. **ADJUST INPUT:** Adjust INPUT knob counter-clockwise to add gain to INPUT 1. Adjust INPUT knob clockwise to add gain to INPUT 2. 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.
2. **ADJUST CONTOUR:** Adjust the CONTOUR knob counter-clockwise. If most of your audio source is voice, adjust clockwise for music. The CONTOUR knob adjusts the relative equalization of the unit. This equalization boosts or cuts frequencies above 3kHz.
3. **ADJUST PROCESS:** Adjust the PROCESS knob clockwise if you want more processing. This will provide for even more consistent levels. This knob adjusts processing, relative to automatic processing already performed in the unit. The LT-800 provides dynamic audio processing intended to keep audio levels consistent to the listener. When the PROCESS knob is rotated fully clockwise, all audio is at the same relative level. When rotated fully counter clockwise, more dynamic range is provided for the transmitted audio source.

If you'd like to disable the audio processor or make it more aggressive, contact Listen Technical Service (Page 4).

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Operating the LT-800

1 Make sure the unit is powered on.

Press POWER button and verify power connections. When "ON", display should be lit.

2 Select a channel – Select the channel to transmit on to by pressing the channel UP and DOWN buttons. See "Selecting a Channel to Transmit On" to the right.

Can't change the channel? It may be locked. Press both the UP and DOWN buttons simultaneously for 3 seconds until the decimal dot next to the channel turns off. Press again to lock in new channel, if desired.

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

Letters = Wide Band Channels
Numbers = Narrow Band Channels

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

"2" as left digit = wide band channel
"1" and "3" left digits = narrow band channels

Please refer to the Frequency Compatibility Tables (Pages 28-31) for specific frequencies and compatibility with other manufacturers.

■ **NOTE:** Operating on a narrow band channel will have less fidelity and more noise.

3 Test Tone, if necessary: To broadcast a tone, press the test tone button. This button is used to tune other manufacturer receivers or to identify a particular channel on a receiver.

Selecting a Channel to Transmit On

Selecting a clear channel to broadcast is important for interference-free broadcasting.

Wide Band Recommendation – If you don't plan to have other transmitters (or a limited number) operating in the same area, it is recommended that you use wide band channels. These are the most common channels used. Many people own receivers that will operate on these channels. In addition, wide band channels offer the best fidelity and the lowest noise. In this case, select one of the 17 wide band channels A through R on 72MHz systems (19 wide band channels beginning with "2" on 216MHz systems). The best way to select a channel is by trial and error. Try a channel, if it has low interference and reliable performance, stick to that channel.

Compatibility with other manufacturers – If you are using other manufacturer's receivers with the LT-800, find out their frequency, then refer to Listen's Frequency Compatibility Tables (Pages 28-31) to find the LT-800 channel number or letter that corresponds with the receiver's frequency. As much as possible, Listen has duplicated the wide band channel letters to cover frequencies of other major brands. However, we recommend verifying corresponding channel numbers and letters on the tables on pages 28-31.

If you are using other manufacturer's receivers and the sound is distorted, *it is probably because the receiver is not designed to handle the ±25kHz deviation of the Listen transmitter. This can be corrected by turning the PROCESSOR control knob all the way counter-clockwise and turning the INPUT LEVEL knob down. Or, call Listen Technical Service (Page 4) to adjust the transmitter deviation internally.*

Several transmitters operating in the same environment – For this, you'll need to choose your transmitting frequencies carefully. The following guidelines should be used to choose channels:

a. If possible, use all wide band channels. These channels offer better fidelity and lower noise.

b. Select channels that have the highest frequency separation as possible (see Frequency Compatibility Tables, pages 28-31), to avoid adjacent channels and interference. Channels should be at least 200kHz apart.

c. Through a process of trial and error select a combination of channels that offer the lowest interference and highest reliability.

Locking into Only One Channel

When locked, the unit will display the LOCK symbol.

To lock the receiver so users cannot change the channel, press the SEEK button until the LOCK symbol is displayed.

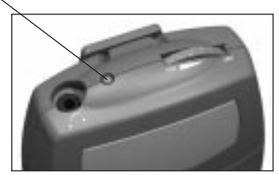
To unlock the channel, press and hold down the SEEK button until the LOCK symbol disappears on the display.

Receiver LED Indicator

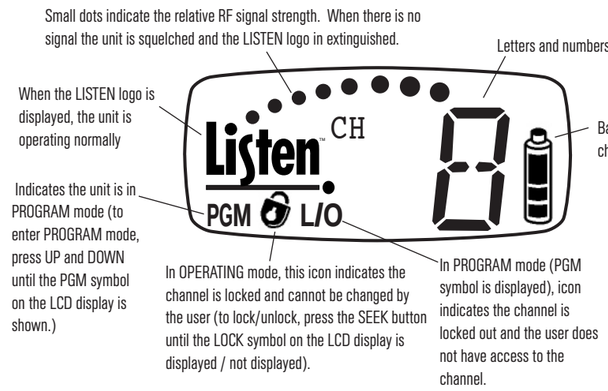
Steady Green LED = Proper Operation

Slow Flashing = Battery is Low

Slow Flashing when Charging = Unit is Charging

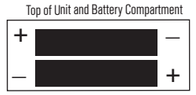


LR-400 and LR-500 Receivers: Look & Listen™ Display Descriptions



Listen™

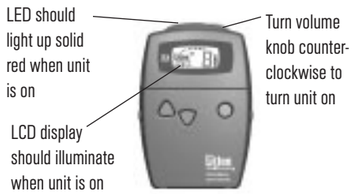
5 Place Batteries in Unit Place two AA batteries in the compartment, making note of the battery polarity shown in the battery compartment, and again verifying that the BATTERY SELECT switch is switched correctly for your batteries (see Step 4).



6 Place an earpiece or headset in the mini jack on the top of the unit. The LR-500 and LR-400 are designed to work with either mono or stereo connectors.

NOTE: Listen receivers accept mono or stereo jacks.

7 Turn the receiver on by rotating the volume knob counter-clockwise. The red LED should activate and the LCD display should illuminate. If they do not, check to ensure you have installed charged batteries and that the batteries have been installed with the proper polarity.



Operating the Listen Receiver

1 Make sure the unit is on by rotating the volume knob to ON when an earpiece or headset is plugged into the unit. Listen receivers use the cable of the earphone or headset as a receiving antenna.

CAUTION: Don't blow out your ears! Slightly rotate the volume knob to turn the unit ON while keeping the volume turned down. Then, adjust volume after listening to earphone.

Operating Listen Receivers (continued)

2 Select the channel to transmit on to by pressing the UP and DOWN buttons.

- **At 72MHz:** Each LR-400 and LR-500 receiver at 72MHz operates on 17 wide band channels and 40 narrow band channels.
  Letters = Wide Band Channels
  Numbers = Narrow Band Channels
- **At 216MHz:** receivers operate on 19 wide band channels and 38 narrow bands: Channels starting with "2" are wide band, and channels beginning with "1" or "3" are narrow band channels.

Please refer to the Frequency Compatibility Tables section (Pages 28-31) for specific frequencies and compatibility with other manufacturers.

- **NOTE: Operating on a narrow band channel will have less fidelity and more noise.**

3 Test the Audio: If a transmitter is broadcasting on that channel, you will be able to hear the audio. If the signal is too weak, the audio will be muted (squelched).

4 Find Audio Transmission: Another way to select a channel is to press the SEEK button. When you do this, the

Listen receiver looks for the next channel that is active. Sometimes the unit will mistake interference for a real broadcast signal. If you get interference, simply press the SEEK button again. The SEEK button will also likely stop on adjacent narrow band channels, or the wide band channel associated with the narrow band you are looking for. Simply continue to press SEEK until you reach the clearest operating channel.

5 Adjust volume control for the best listening level.

LT-800 Stationary Transmitter Specifications

RF Frequency Range:
72MHz: 72.05 - 75.95MHz
216MHz: 216.025 - 216.975 MHz

Transmitter Stability:
50 PPM

Frequency Response:
50Hz to 15kHz, within ±3 db

Modulation Type:
FM, ±25 kHz wide band,
±7.5kHz narrow band

Output Power:
72MHz: 8000uV at 3 meters
216MHz: 100mW
(Max allowed by FCC)

Signal to Noise ratio:
Wide band channels, 60dB
Narrow band channels, 54dB

Antenna:
72MHz: Telescoping (recommended), Helical Rubber Ducky or Remote Base
216MHz: Whip, Remote Base, Ground Plane or Directional Antenna

Available Channels:
72MHz: 17 wide band, 40 narrow band
216MHz:19 wide band, 38 narrow band
(Modulation is automatically switched when changing between narrow and wide band channels)

RF Power Selection:
Full, 1/2, 1/4

Physical Dimensions:
8" W x 8"D x 1.75"H
(20.3cm W x 20.3cm D x 4.45cm H)
Optional rack mount kit, see Page 17

Weight:
3 lbs. (1.4 kg)

Power:
15 VAC/1 amp

Audio Input 1:
F-XLR / 1/4" Phone, 50/600 ohms, balanced
-55dBm / +4dBm, selectable, bridging

Audio Input 2:
Phono, 10k/50 ohms, unbalanced
-10dBm / +20dBm, selectable, adjustable

Audio Output (Mix):
Phono, 10k ohms, unbalanced, -10dBm

Headphone Output:
250mW, 32 ohms, 3.5MM stereo

Controls:
Mix, Process, Contour, Headphone Level, Tone, RF Power Output, and ON/OFF

Visual Indicators:
Audio input levels 1, 2 and post processed modulation level; channel; RF power, test tone

Specifications subject to change without notice.

Listen™

LT-800 Troubleshooting

The LT-800 has no power.
Make sure the power transformer is connected to a power source and is connected to the jack marked "Power Input". Make sure the POWER button is pressed.

There is no audio or the audio level is too low.
Make sure that you have an audio source properly connected to INPUT 1 and/or 2. The INPUT 1 or 2 switch must be located 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 LINE position. If it were in the SPEAKER 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 INPUTS 1 or 2 corresponding with the input level of the audio source. Try connecting a headset to the front panel jack and adjusting the MONITOR volume control so that you can listen to the audio source.

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.

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. Try connecting a ground from the LT-800 to ground and/or to the ground of the source audio.

There is too much audio processing.
Adjust the process knob counter-clockwise. If there is still too much processing for your application (or you do not want any processing), contact Listen technical service.

I don't want any audio processing.
Call Listen's Technical Service (Page 4).

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.

I cannot change the broadcast channel.
The unit is locked. To unlock, press the UP and DOWN button simultaneously for 3+ seconds. You can tell when it's locked because the decimal is illuminated.

The Audio Input 1 sounds "tinny".
If you are using an unbalanced audio source, make sure Pin 2 or the XLR and the ring on the 1/4" jack is grounded.

There is interference.
Try different frequencies until you find a clear channel. If this does not work, try a different frequency band (i.e. if you're using 72MHz, try 216MHz or vice versa). This is accomplished by returning the equipment to Listen (no charge) and replacing it with Listen's alternate frequency band equipment.

I cannot pick up the signal on the receiver.
Check to make sure the receiver and the transmitter are on the same frequency.

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 number/letter.

I'm using another brand of receiver - how do I tell which channel to use?
Refer to Listen's Frequency Compatibility Tables (pages 28-31). Adjust Listen's transmitter or receiver to the same frequency as the other major brand. Since Listen products can access 57 channels, they will most likely transmit or receive on the same fixed channel or channels of other major ALD brands.

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!). Locate the antenna at a location as high as possible and free of obstacles. Make sure the antenna is of the correct type and is connected properly to the unit. Try using different frequencies that don't have interference. If you're using 216MHz, you might want to try a directional antenna.

End users are adjusting the unit.
First, lock the channel by pressing the UP and DOWN buttons together for 3+ seconds. Consider removing the INPUT, PROCESS AND CONTOUR knobs. You can order from Listen a rack mount shelf and security cover that will limit access to unit from end users.

Other manufacturers' receivers sound distorted.
It is probably because the Listen transmitter is over-deviated. See Page 10 for instructions on how to correct this.

Listen Receivers: LR-500 Programmable Display Receiver and LR-400 Display Receiver

Differences in the LR-400 and LR-500

Differences between the LR-500 and LR-400 include: SEEK and channel UP and DOWN buttons are behind the door on the LR-400 versus protruding through the door on the LR-500. Also, the LR-500 is programmable. See page 25 for LR-500 programming features. (Other than these differences, instructions for use of Listen's LR-400 and LR-500 receivers and their specifications are identical.)

The LR-400 has channel UP, DOWN and SEEK buttons behind the door.

The LR-500 has channel UP, DOWN and SEEK buttons protruding through the door.

Preparing Listen Receivers for Use

1 **Remove the product from the shipping container** and plastic cover. Inspect for physical damage. See "Technical Service Contacts" (Page 4) if damage has occurred.

2 **Check to see if the door is locked.** If locked, use a pocketknife or small screwdriver to unlock the door locks on the both sides of the unit. To unlock the door, rotate the lock 1/4 turn counter clockwise.

To unlock door: On both the right and left side, unlock by turning slot horizontal as shown.

3 **Open the front access** door by gripping the two tabs with your thumb and index finger.

4 **Select Battery Type** – **CAUTION:** If you are using any battery type other than rechargeable Nickel Metal Hydride (NiMH) batteries, make sure the BATTERY SELECT switch is in the **alkaline** position (located in the battery compartment and labeled BATTERY SELECT, remove batteries to access this switch). The product is shipped from the factory in the alkaline position.

To use NiMH batteries, before placing in unit, change the battery switch to NiMH.

BATTERY SELECT Switch - With batteries removed, use a pen or small screwdriver to select the battery type

WARNING: Do not place the BATTERY SELECT switch in the NiMH position when using Non-Nickel Metal Hydride batteries. The NiMH position will attempt to charge the batteries. Charging non-Nickel Metal Hydride batteries may result in physical harm, destruction of property and/or fire.

LT-700 Portable Transmitter Specifications

RF Frequency Range:
72MHz: 72.05 - 75.95MHz
216MHz: 216.025 - 216.975 MHz

Transmitter Stability:
50 PPM

Modulation Type:
FM, ±25 kHz wide band,
±7.5kHz narrow band

Frequency Response:
15Hz to 50kHz, within ±3dB

Output Power:
72MHz: 8000uV at 3 meters
216MHz: 20mW
(Max allowed by FCC)

Signal to Noise ratio:
Wide band channels, 60dB
Narrow band channels, 54dB

Antenna:
Uses microphone cable

Available Channels:
72MHz: 17 wide band, 40 narrow band
216MHz: 19 wide band. 38 narrow band
(Modulation is automatically switched when changing between narrow and wide band channels)

Physical Dimensions:
3"W x 1"D x 5"H
(7.6cm W x 2.5cm D x 13cm H)

Weight:
< 1 lb. (0.45 kg) with batteries

Door:
Channel and ON/OFF buttons are accessible through the door, lockable

Programmability:
Allows only programmed channels to be tuned and to be displayed

Power:
Two AA batteries, alkaline or NiMH rechargeable; external power connector 8-9 VDC, center positive, <300mA

Battery Charging:
Fully automatic, < 14 hours

Phantom Power:
Included for microphone

Battery Life:
16 hours with high capacity alkaline
8 hours with rechargeable NiMH

Microphone Input:
-55dBm, 50 ohms, unbalanced, tip of 3.5MM connector

Line Input:
-10dBm, 10k ohms, unbalanced, ring of 3.5MM connector

Audio Processing:
40dB automatic 3-speed dynamic control with noise gate

Controls:
On/Off/Program/Lockout, Channel UP, Channel DOWN, Battery Type

Mute Control:
Located on top of unit, LED flashes when mute is activated

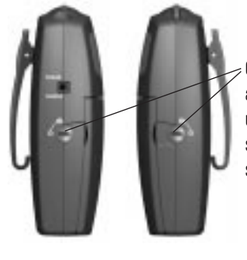
LCD:
Channel, Battery/Charge Status, Program, Locked, Channel Lock Out

LED:
Red, Constant = ON and/or charged, fast flash = muted, slow flash = battery low or charging

Preparing the LT-700 for Use

1 Remove the product from the shipping container and plastic cover. Inspect for physical damage. See "Technical Service Contacts" (Page 4) if damage has occurred.

2 Check to see if the door is locked. If locked, use a pocketknife or small screwdriver to unlock the door locks on the both sides of the unit. To unlock the door, rotate the lock 1/4 turn counter clockwise.



On both the right and left side, unlock by turning slot horizontal as shown.

3 Open the front access door by gripping the two tabs with your thumb and index finger.

4 Select Battery Type – **CAUTION:** If you are using any battery type other than rechargeable Nickel Metal Hydride (NiMH) batteries, make sure the BATTERY SELECT switch is in the **alkaline** position (located in the battery compartment and labeled BATTERY SELECT, remove batteries to access this switch). The product is shipped from the factory in the alkaline position.

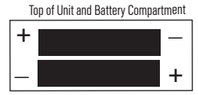
To use NiMH batteries, before placing in unit, change the battery switch to NiMH.

BATTERY SELECT Switch - With batteries removed, use a pen or small screwdriver to select the battery type

WARNING: Do not place the BATTERY SELECT switch in the NiMH position when using Non-Nickel Metal Hydride batteries. The NiMH position will attempt to charge the batteries. Charging non-Nickel Metal Hydride batteries may result in physical harm, destruction of property and/or fire.

5 Place Batteries in Unit Place two AA batteries in the compartment, making note of the battery polarity shown in the battery compartment, and again verifying that the BATTERY SELECT switch is switched correctly for your batteries (see Step 4).

Top of Unit and Battery Compartment



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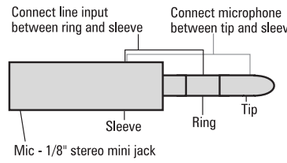
Preparing the LT-700 for Use (continued)

6 **Connect the microphone** to the microphone jack on the top of the unit. The unit uses the microphone cable as an antenna. If you are using the line input, use the special cable accessory designed for this purpose.

Or, connect optional Line Level Input Cable – Use an optional Listen supplied line input cable, or connect as follows:



7 **Turn the unit on.** If it does not turn on by pressing power button, check to ensure you have installed charged batteries and that the batteries have been installed with the proper polarity.

Operating the LT-700 Transmitter

1 **Make sure the unit is on** by opening the access door and pressing the POWER button.

2 **Select the channel** to transmit on by pressing and holding the channel UP and DOWN buttons for 3 seconds. The LOCK symbol on the LCD will go off and the channel can be changed. Also see "Selecting a Channel to Transmit On".

Operating the LT-700: Select a Channel (continued)

- **At 72MHz,** the LT-700 operates on 17 wide band channels and 40 narrow band channels (letters = wide band and numbers = narrow band channels).
- **At 216MHz,** the LT-700 operates on 19 wide band channels and 38 narrow band channels (channels beginning with "2" = wide band, and channels beginning with "1" or "3" = narrow band channels).

Please refer to the Frequency Compatibility Tables (Pages 28-31) for specific frequencies and compatibility with other manufacturers.

- **NOTE: Operating on a narrow band channel will have less fidelity and more noise.**

Close the access door.

If you choose, lock the door by rotating the locks on the right side 1/4 turn clockwise, and on the left side 1/4 turn counter clockwise. This can be done with a small screwdriver or pocketknife.

Access Door Closed

LT-700 Troubleshooting

The LT-700 has no power.
Make sure the unit has either fully charged batteries or a Listen approved wall transformer connected to the unit. Open the door and press the ON button. If this does not work, try a different set of batteries. Make sure the batteries are installed properly.

There is no audio.
Make sure the MUTE switch is off. Make sure you have the microphone plugged all the way in the top of unit. Make sure you are using a Listen approved microphone. If you're using the line input, make sure you have connected a line level, unbalanced input to the "ring" of the connector.

The audio is distorted.
Make sure you're using an approved Listen microphone. Make sure the line input level is not too high.

There is hum in the audio.
The microphone may be too close to a transformer.

The microphone is low in level.
The microphone must be placed in close proximity to the person speaking. If this does not work, try using a head-worn microphone.

There is too much noise.
This is probably due to the fact that the microphone is not close enough to the person speaking and is picking up background noise. Try positioning the microphone closer or try using a microphone that is directional (like a head-worn mic).

There is interference.
Try different frequencies until you find a clear channel. If this does not work, try a different frequency band (i.e. if you're using 72MHz, try 216MHz or vice versa). This is accomplished by returning the equipment to Listen (no charge) and replaced with alternate frequency band equipment.

I cannot pick up the signal on the receiver.
Check to make sure the receiver and the transmitter are on the same frequency.

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 number/letter.

I'm using another brand of receiver - how do I tell which channel to use?
Refer to Listen's Frequency Compatibility Table (included on Pages 28-31). Either adjust the transmitter or the receiver to a common channel.

There is not sufficient range.
The LT-700 is a portable transmitter that uses the microphone cable as an antenna and as such, the range will vary depending on the location of the receivers compared to the transmitter. You can only expect 100 feet of effective working area.

It's confusing for users to have 57 channels when switching between channels.
Use the programming feature of the LT-700 to limit the number of channels users have access to.

How can I limit access to the batteries?
Use the side door locks.

My batteries are not charging.
Make sure the battery switch is in the NiMH position. Make sure you have turned the unit's POWER on initially to charge. Make sure you have connected an approved Listen charging transformer. Or if inserted in charging tray, make sure the unit is ON and is pushed securely into tray. Make sure you use ONLY NiMH batteries provided by Listen. Never try to charge alkaline or NICAD batteries.

I want to run the unit from a wall transformer.
Simply plug a Listen approved transformer to the Charge/Power connectors. Batteries need not be installed, however NiMH will be recharged if installed, and if the BATTERY SELECT switch is set to NiMH.

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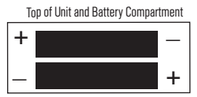
Charging the Batteries (continued)

4. **Install NiMH rechargeable batteries** in the battery compartment, ensuring that proper polarity has been observed.



Note: It is recommended that you only use a Listen charging transformer. Or, set the LT-700 with NiMH batteries within unit and powered ON in a Listen Battery Charging Tray.

For charging using a transformer: with NiMH batteries in unit, plug wall transformer in CHARGING connection and into wall outlet (as shown). Batteries will be fully charged when red LED shines solid red. (LED and battery symbol will flash slowly while charging.)

5. **The LT-700 must be powered ON initially to charge NiMH batteries within unit** – Connect the wall transformer to the LT-700. The unit must be on to charge. However, once the charger has started, the unit can be turned off.

6. Once the batteries are fully charged, the unit will stop charging the batteries. Full-charge will be indicated when all the battery symbol segments are illuminated and the LED near the volume control is glowing steadily.

7. The unit can be operated while batteries are charging.

Operating the LT-700 with a Wall Transformer

1. The unit will operate normally when connected to a wall transformer.

2. Batteries do not need to be installed in the unit to operate using a wall transformer.

Selecting a Channel Transmit On

Selecting a clear channel to broadcast is important for interference free broadcasting.

Wide Band Recommendation: If you don't plan to have other transmitters (or a limited number) operating in the same area, it is recommended that you use wide band channels. These are the most common channels used. Many people own receivers that will operate on these channels. In addition, wide band channels offer the best fidelity and the lowest noise. In this case, select one of the 17 wide band channels A through R on the 72MHz system, or one of the 19 wide band channels on the 216MHz system labeled 2A, 2B, 2C, etc. The best way to select a channel is by trial and error. Try a channel, if it has low interference and reliable performance, stick to that channel.

Compatibility with other manufacturers – If you are using other manufacturer's receivers with the LT-700, find out their frequency, then refer to Listen's Frequency Compatibility Tables (Pages 28-31) to find the LT-700 channel number or letter that corresponds with the receiver's frequency. As much as possible, Listen has duplicated the wide band channel letters to cover frequencies of other major brands. However, we recommend verifying corresponding channel numbers and letters on the tables on pages 28-31.

If you are using other manufacturer's receivers and the sound is distorted, *it is probably because the receiver is not designed to handle the ±25kHz deviation of the Listen transmitter. This can be corrected by turning the PROCESSOR control knob all the way counter-clockwise and turning the INPUT LEVEL knob down. Or, contact Listen Technical Service (Page 4) to adjust the transmitter deviation internally.*

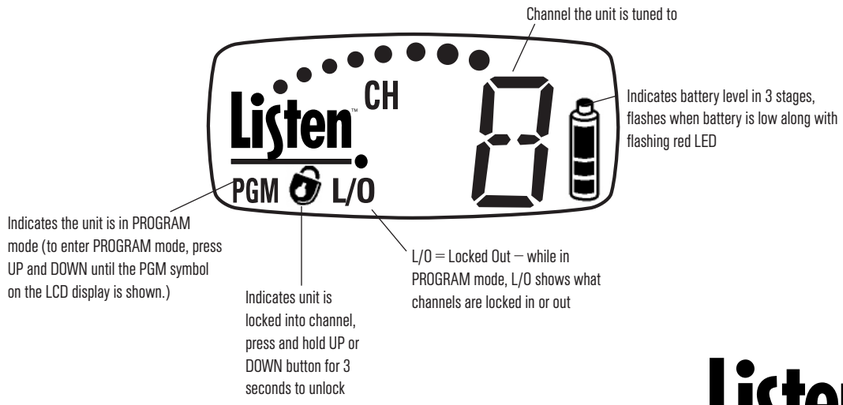
Several transmitters operating in the same environment – For this, you will need to choose your transmitting frequencies carefully. The following guidelines should be used to choose channels:

a. If possible, use all wide band channels. These channels offer better fidelity and lower noise.

b. Select channels that have the highest frequency separation as possible (see Frequency Compatibility Tables, pages 28-31), to avoid adjacent channels and interference. Selected channels should be at least 200kHz apart.

c. Through a process of trial and error select a combination of channels that offer the lowest interference and highest reliability.

LT-700 Look & Listen™ Display Descriptions



Listen™

LT-700 Programming

In General: The LT-700 can be programmed to transmit on a limited number of channels. For applications where users are required to select a channel (such as classrooms), and you don't want them to have to scroll through all of the available channels, this feature is ideal. If all channels where available, the user could have 57 channels to select from.

1. Enter PROGRAM Mode:

To enter PROGRAM mode, open the access door and press the UP and DOWN keys simultaneously until the PGM symbol is displayed on the LCD display.

2. Scroll through channels to lock or unlock

Use the UP and DOWN channel select keys to scroll through all 57 channels. When checking a particular channel, the L/O symbol on the LCD will be displayed when that channel is locked out. "Locked Out" means the channel is not available to the user after the programmer exits PROGRAM mode.

On each channel, check to see if "L/O" is displayed; it means channel is locked out from the user

To toggle between locked out and not locked out, press the POWER button.

3. To exit PROGRAM mode, don't press a key for 4 seconds.

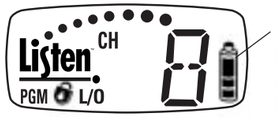
Locking into One Channel

Enter PROGRAM Mode (as described to the right), lock all channels except the channel you want to use.

LED Indicator

Steady Red LED = Normal Operation
Slow Flashing = Battery is Low
Slow Flashing while charging = Unit is Charging
Fast Flashing = Mute

Battery Status Icon



The status of the battery is indicated by the battery symbol on the LCD.

When the battery is fully charged, all three segments of the battery symbol will be displayed, as shown.

As fewer battery segments are displayed, the lower the battery level, as shown.

When the batteries are almost fully discharged, the battery segments and the red LED near the volume control will blink quickly. When this occurs, less than 5% of the battery life is remaining and the batteries should be immediately replaced or recharged.

This segment will blink when batteries are low.

Unlocking and Locking the Access Door

The front access door can be locked so that the users will not have access to controls or batteries. To do this, use a pocketknife or small screwdriver to rotate the locks as shown.

To unlock: On both the right and left side, unlock by turning slot horizontal as shown.

To lock: On both the right and left side, lock door by turning slot vertical as shown.

Charging Batteries Using SmartCharge™

1. The LT-700 is unique because it has an automatic battery charger built in. That means that when the unit is connected to a wall transformer or placed in a Listen battery recharging tray, NiMH batteries will be charged within the LT-700. Once batteries are charged the internal battery charger will automatically turn off. This prevents overcharging of batteries, automates the process of charging, and makes it so you don't have to remember to unplug the charger.
2. Do not attempt to charge alkaline or any other type of non-NiMH batteries. Only charge Nickel Metal Hydride (NiMH) batteries within the LT-700. We recommend that you use NiMH batteries supplied by Listen.

WARNING: Attempting to charge non-NiMH batteries may result in physical harm, destruction of property and /or fire.

3. **IMPORTANT:** To charge NiMH batteries, the BATTERY SELECT switch must be selected to NiMH. Use a pen or small screwdriver to the move the switch (located in the battery compartment directly below the BATTERY SELECT label) to the proper position.

For only NiMH batteries: set BATTERY SELECT switch to NiMH. For all other batteries, set BATTERY SELECT at alkaline.

(Continued...)