

# LR-400 Portable Display FM Receiver



## Configuration

LR-400-072  
LR-400-216  
LR-400-863

The LR-400 Portable Display FM Receiver is a lower cost digital display receiver. It has exceptional audio quality as Listen's full-featured receivers and the same convenient recharging options. The LR-400 can receive up to 17 wide band channels along with 40 narrow bands (72 MHz), 19 wide band with 38 narrow band (216 MHz) and 17 wide band (863 MHz) channels. The LR-400 has a digital display to monitor channel selection, battery level, and signal strength. An LED on top signifies if the unit is on, flashes when batteries are low or locked on a channel if it blinks while pushing SEEK.

## Highlights

- Superior Audio Quality – 80 dB (70 dB with 863 MHz) signal-to-noise ratio, setting the industry's sound quality standard.
- A choice between 57 channels (17 channels with 863 MHz), complete antenna and accessory options make Listen products ideal for a wide range of applications.
- 100 % Digital – Listen receivers are digitally-tuned so transmission won't drift; assurance that when you select a channel, it stays on the channel.
- Uses standard alkaline or NiMH batteries.
- Built in SmartCharge™ won't allow batteries to overcharge. Charging circuitry is conveniently built into Listen's receivers; never worry about unplugging a transformer at a certain time.
- Transformer charging plug or for the ultimate in convenience drop in charging contacts.
- Limited Lifetime Warranty with hassle-free support.

## Requires

**Requires a type of ear piece and (2) AA batteries.**

LA-161 Single Ear Bud  
LA-162 Stereo Ear Bud  
LA-164 Ear Speaker  
LA-165 Stereo Headphones  
LA-166 Neck Loop  
LA-170 Behind-the-Head Stereo Headphones  
LA-361 High Capacity AA Alkaline Batteries (2)  
LA-362 Rechargeable AA NiMH Batteries (2)

## Used With

LT-800 Stationary FM Transmitter  
LT-700 Portable FM Display Transmitter

## Architectural Specification

### LR-400-072/216

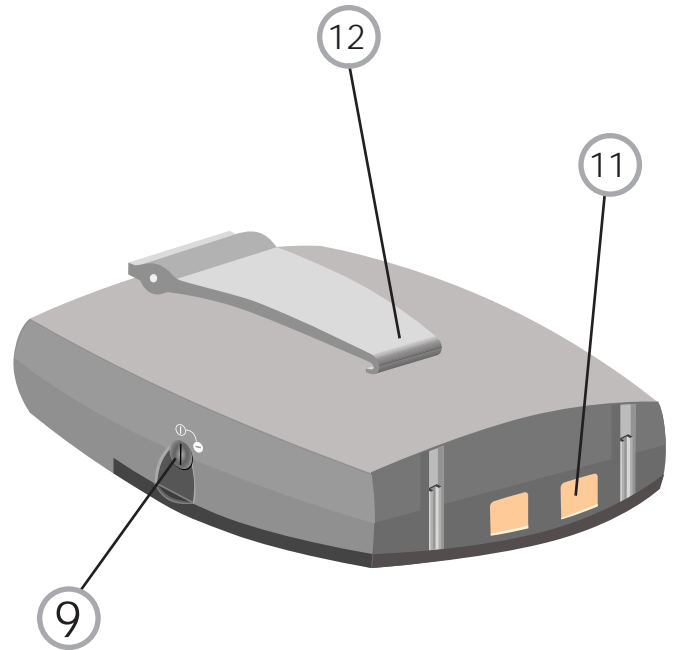
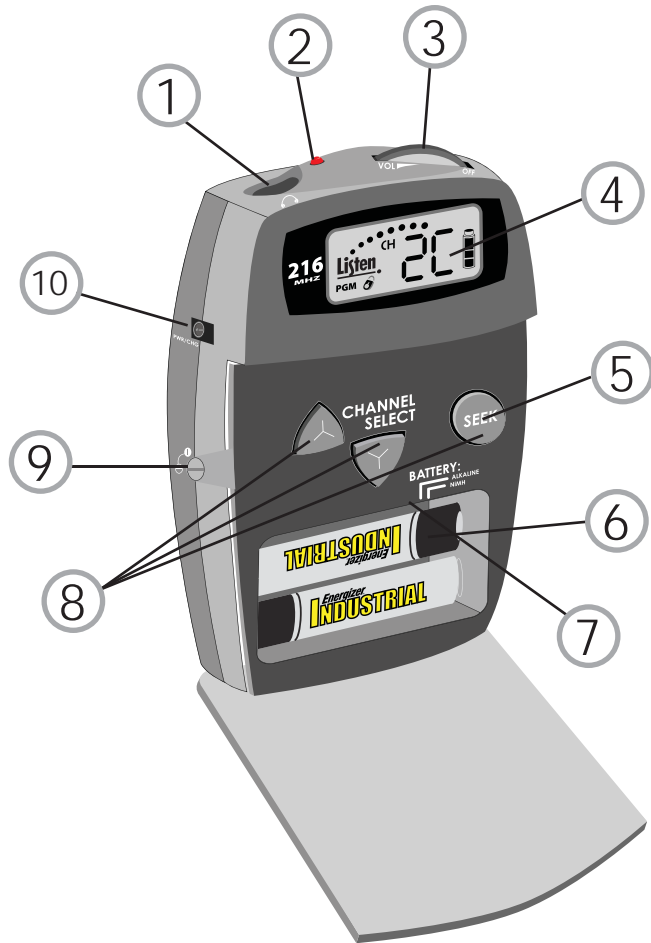
The FM receiver shall be capable of receiving on 57 wide and narrow band channels. The receiver shall have a SNR of 80 dB or greater. The receiver shall be capable of seeking channels. The device shall have a squelch. The device shall have an audio frequency response of 50 Hz to 15 KHz,  $\pm 3$  dB at 72 MHz and 50 - 10 kHz ( $\pm 3$ dB) at 216 MHz. The device shall incorporate a stereo headset jack that allows the user to plug in either a mono or stereo headset and listen to audio normally. The device shall incorporate an LCD display that indicates channel, battery level, low battery, battery charging, RF signal strength and channel lock status. The unit shall operate off of 2 AA batteries. The receiver shall incorporate automatic battery charging circuitry for recharging of NiMH batteries. The device shall have a switchable option for the use of (2) alkaline or (2) NiMH batteries. The Listen LR-400-072 or LR-400-216 is specified.

### LR-400-863

The FM receiver shall be capable of receiving on 17 wide band channels with a SNR of 70dB or greater. The device shall be able to be locked on a single channel. The receiver shall be capable of seeking channels. The device shall have an adjustable squelch. The device shall have an audio frequency response of 50 Hz to 15 KHz,  $\pm 3$  dB. The device will incorporate a stereo headset jack that allows the user to plug in either a mono or stereo headset. The device shall incorporate an LCD display that indicates channel, battery level, low battery, battery charging, and RF signal strength. The receiver shall be able to function in both DX and Local mode. The unit shall operate off of 2 AA batteries. The receiver shall incorporate automatic battery charging circuitry for recharging of NiMH batteries. The device shall have a switchable option for the use of (2) alkaline or (2) NiMH batteries. The Listen LR-400-863 is specified.

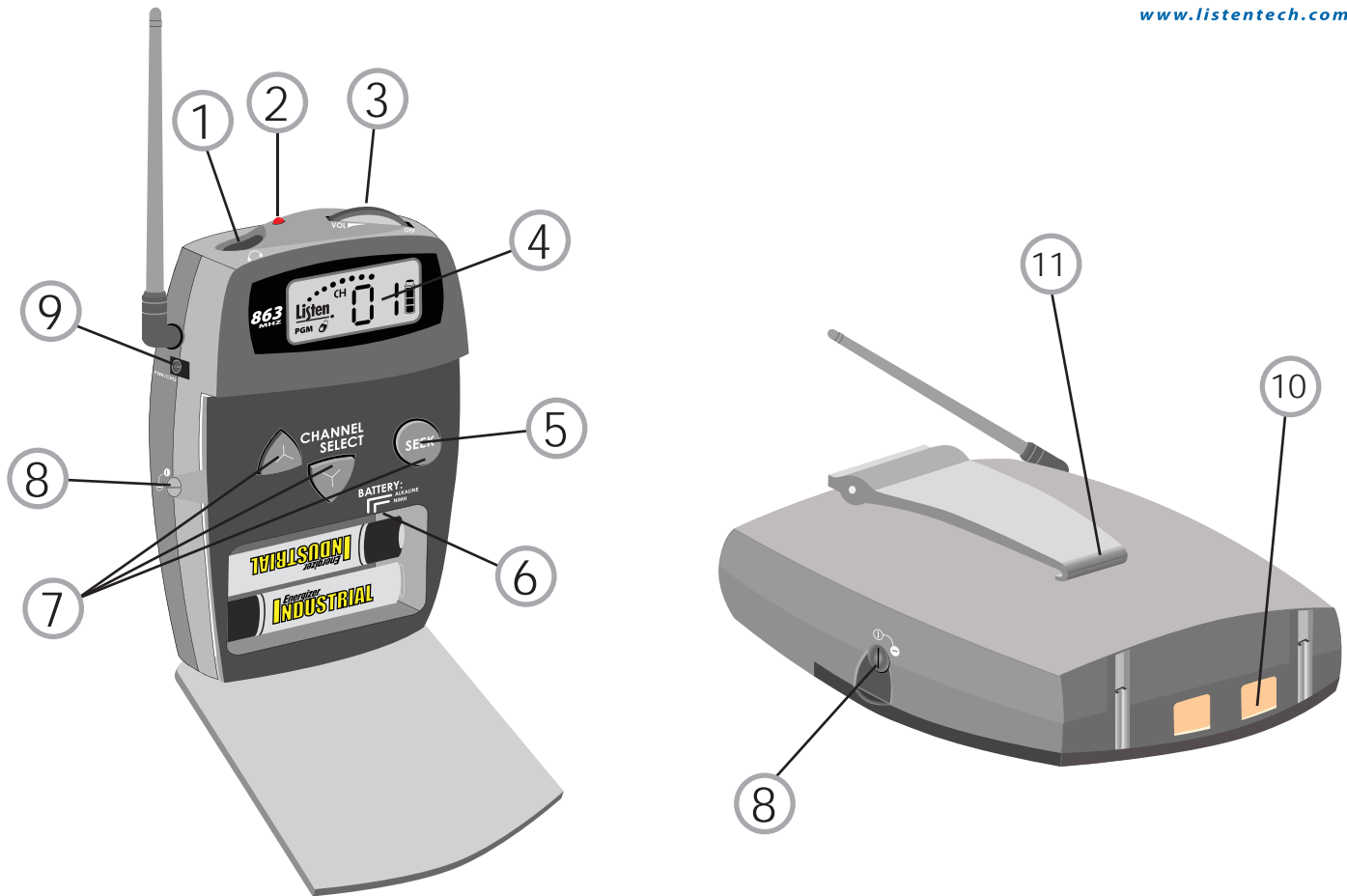
## Includes

LR-400 Portable Display FM Receiver  
Owner's manual (72 MHz & 216 MHz)  
Quick Reference Card (863 MHz)  
Limited Lifetime Warranty Program Card (863 MHz)  
FM System Design Guide and Manual Card (863 MHz)



## Product Features LR-400-072/216

1. An earphone jack (3.5 mm) accepts either mono or stereo headsets. Receiver antenna is built into the earphone cord, eliminating additional wires while maximizing receiver effectiveness.
2. Multifunction LED indicates power on, if batteries are low, if the unit is locked on a channel when SEEK is pressed and charging status.
3. Easy on/off volume control.
4. Look&Listen™ LCD Display shows channel selection, channel lock and battery level.
5. Seeks to find best available broadcast. Also used to adjustable squelch in 20 steps mutes audio on loss of RF signal.
6. Uses two AA batteries. Selectable to use either alkaline or Listen's advanced NiMH Rechargeable AA Batteries. SmartCharge™ incorporated into receiver makes sure each unit receives the most beneficial charge.
7. When enabled, SQ provides highest audio quality available in its product category. SQ can be disabled for compatibility with other assistive listening equipment.
8. Digitally tuned with UP, DOWN, and SEEK buttons behind manually lockable door. Electronically lock on channel by holding the SEEK button down 5 seconds to prevent tampering.
9. Manually lockable battery compartment door.
10. Charging plug port.
11. Contact points for Listen's drop in charging cases.
12. Exclusive belt clip "loop" prevents unit from slipping off belt or strap.



## Product Features LR-400-863

1. An earphone jack (3.5 mm) accepts either mono or stereo headsets. Receiver antenna is built into the earphone cord, eliminating additional wires while maximizing receiver effectiveness.
2. Multifunction LED indicates power on, if batteries are low, if the unit is locked on a channel when SEEK is pressed and charging status.
3. Easy on/off volume control.
4. Look&Listen™ LCD Display shows channel selection, channel lock and battery level.
5. Seeks to find best available broadcast. Also used to adjust squelch in 20 steps which mutes audio on loss of RF signal.
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7. Digitally tuned with UP, DOWN, and SEEK buttons behind manually lockable door. Electronically lock on channel by holding the SEEK button down 5 seconds to prevent tampering.
8. Manually lockable battery compartment door. 10. Contact points for Listen's drop in charging cases.
9. Charging plug port.
10. Contact points for Listen's drop in charging cases.
11. Exclusive belt clip "loop" prevents unit from slipping off belt or strap.

## Accessories



LA-170

### Headphones

LA-161 Single Ear Bud  
LA-162 Stereo Ear Bud  
LA-164 Ear Speaker  
LA-165 Stereo Headphones  
LA-166 Neck Loop  
LA-170 Behind-the-Head Stereo Headphones



LA-202

### Power/Charging Supplies

LA-202 Power/Charging Supply for FM Portable Products  
LA-208-01 7.5 VDC Power/Charging Supply for FM Portable Products (North America)  
LA-208-02 7.5 VDC Power/Charging Supply for FM Portable Products (Asia, UK)  
LA-208-03 7.5 VDC Power/Charging Supply for FM Portable Products (Euro)



LA-266

### Cables

LA-265 Consumer Camcorder Cable  
LA-266 Professional Camcorder Cable  
LA-275 Sacrificial Cable



LA-321

### Charging/ Carrying Cases

LA-311-01 16-Unit Portable FM Product Charging/Carrying Case (North America)  
LA-311-02 16-Unit Portable FM Product Charging/Carrying Case (Asia, UK)  
LA-311-03 16-Unit Portable FM Product Charging/Carrying Case (Euro)  
LA-317-01 4-Unit Portable FM Product Charging/Carrying Case (North America)  
LA-317-02 4-Unit Portable FM Product Charging/Carrying Case (Asia, UK)  
LA-317-03 4-Unit Portable FM Product Charging/Carrying Case (Euro)  
LA-321-01 8-Unit Portable FM Product Charging/Carrying Case (North America)  
LA-321-02 8-Unit Portable FM Product Charging/Carrying Case (Asia, UK)  
LA-321-03 8-Unit Portable FM Product Charging/Carrying Case (Euro)



LA-324

### Charging/ Carrying Cases with Removable Lid

LA-323-01 4-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (North America)  
LA-323-02 4-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Asia, UK)  
LA-323-03 4-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Euro)  
LA-324-01 8-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (North America)  
LA-324-02 8-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Asia, UK)  
LA-324-03 8-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Euro)  
LA-325-01 16-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (North America)  
LA-325-02 16-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Asia, UK)  
LA-325-03 16-Unit Portable FM Product Charging/Carrying Case w/Removable Lid (Euro)



LA-362

### Miscellaneous

LA-306 Soft Case (72 MHz & 216 MHz only)  
LA-319 Protective Pouch for Portable FM Products  
LA-320 Configurable Carrying Case  
LA-330 Portable Unit Lanyard  
LA-361 High Capacity AA Alkaline Batteries (2)  
LA-362 Rechargeable AA NIMH Batteries (2)

	Specifications	LR-400-072	LR-400-216
RF	RF Frequency Range	72.025 - 75.950 MHz	216.0125 - 216.9875 MHz
	Number of Channels	17 wide band, 40 narrow band	19 wide band, 38 narrow band
	Sensitivity	.6 uV typical, 1 uV maximum for 12dB sinad	
	Frequency Accuracy	+/- .005% stability 32° to 122°F (0° - 50°C)	
	Antenna	Uses earphone cable	
	Squelch	Programmable in 20 steps, automatic on loss of RF signal	
	Compliance	FCC Part 15, Industry Canada	FCC Part 90, Industry Canada

\*\* All system specifications are wireless end-to-end

Audio	System Frequency Response	50Hz - 15kHz (+/-3db) 72 Mhz	50Hz - 10kHz (+/-3db) 216 MHz
	System Signal to Noise Ratio	SQ enabled: 80dB; SQ disabled 60dB	
	System Distortion	<2% total harmonic distortion (THD) at 80% deviation	
	Output	3.5 mm connectors, unbalanced, 0dBu nominal output level, 16 mW maximum, impedance 32 Ohms	

Controls	User Controls	Volume, channel UP/DOWN, SEEK	
	Set up Controls (battery compartment)	Alkaline/NiMH batteries, SQ enable/disable	
	Programming	Channel lock, squelch	

Indicators	LED	Red, illuminated when unit is on. Flashes when batteries are low, or to indicate charging. Flashes when locked and SEEK is pushed.	
	Display	Channel Designation, lock status, signal strength indication	

Power	Battery Type	Two AA batteries, alkaline or NiMH	
	Battery Life (Listen Batteries)	30 hours alkaline (LA-361), 15 hours NiMH rechargeable (LA-362)	
	Battery Charging (NiMH only)	Fully automatic, 13 hours	
	Power Supply	I/P 120VAC; O/P 7.5VDC 250 mA; Drop in contact points for use with charging cases. Power supply not included (LA-202)	
	Power Supply Connector	2.3 mm OD by 0.7 mm ID, barrel type connector, 7.5 VDC, center positive <250 mA. Drop in contact points for use with Listen charging cases.	
	Power Supply Compliance	RoHS, WEEE, UL, PSE, CE, CUL, TUV, CB compliant	

Physical	Dimensions H x W x D	5.0 x 3.0 x 1.0 in. (13 x 7.6 x 2.5 cm)	
	Color	Dark Grey with white silk screening	
	Unit Weight	3.9 oz. (111 g)	
	Unit Weight with batteries	5.8 oz. (164.4 g)	
	Shipping Weight	1.0 lb. (0.45 kg)	
	Door	Manually lockable. SEEK behind the door.	

Environmental	Temperature - Operation	14° to 104°F - (10° to 40°C)	
	Temperature - Storage	-4° to 122°F - (-20° to 50°C)	
	Humidity	0 to 95% relative humidity, non-condensing	

\*\* Specifications are subject to change without notification

	Specifications	LR-400-863
RF	RF Frequency Range	863.050 - 864.950 MHz
	Number of Channels	17 Wideband
	Sensitivity	.6uV typical, 1 uV maximum for 12 dB sinad
	Frequency Accuracy	+/- .005% stability 32 to 122° (0 - 50°C)
	Antenna	Integrated External Antenna
	Squelch	Programmable in 20 step, automatic on loss of RF signal
	Compliance	CE, ETSI, RoHS

\*\* All system specifications are wireless end to end \*\*

Audio	System Frequency Response	50Hz - 15kHz (+/-3db)
	System Signal to Noise Ratio	70db (A-Weighted)
	System Distortion	<2% total harmonic distortion (THD) at 80% deviation
	Output	3.5 mm connector, unbalanced, 0dBu nominal output level, 16 mW maximum, impedance 32 Ohms

Controls	User Controls	Channel up/down, SEEK, volume
	Set up Controls (battery compartment)	NiMH/Alkaline battery switch
	Programming	Channel Lock, DX/Local, squelch

Indicators	LED	Red, illuminated when unit is on. Flashes when batteries are low, or charging. Flashes when locked and SEEK is pushed.
	LCD Display	Channel Designation, lock status, signal strength indication, battery life

Power	Battery Type	Type: 2 AA batteries, Alkaline or NiMH
	Battery Life (Listen Batteries)	20 hours alkaline (LA-361), 10 hours NiMH rechargeable (LA-362)
	Battery Charging (NiMH only)	Fully automatic, 13 hours maximum
	Power Supply (LA-208)	7.5VDC, center positive 300mA. Drop in contact points for use with charging cases. Power supply not included (LA-208).
	Power Supply Connector	2.3 mm OD by .7 mm ID, barrel type
	Power Supply Compliance	RoHS, WEEE, UL, PSE, CE, CUL, TUV, CB compliant

Physical	Dimensions (H x W x D)	5.0 x 3.0 x 1.0 in (13.0 x 7.6 x 2.5 cm)
	Color	Dark Grey with white silk screening
	Unit Weight	3.9 oz. (111 g)
	Unit Weight with batteries	5.8 oz.. (164 g)
	Shipping Weight	1.0 lbs. (0.45 kg)
	Door	Manually lockable. Up, down, and power buttons through door. Other controls behind door (see controls)

Environmental	Temperature - Operation	14° - 104°F (-10° - 40°C)
	Temperature - Storage	-4° - 122°F (-20° - 50°C)
	Humidity	0 to 95% Relative Humidity, non condensing

\*\* Specifications are subject to change without notification

## Frequently Asked Questions

- Q What is the difference between the LR-400 and the LR-500?
- A The LR-500 gives the user an opportunity to lockout unused channels and has the controls on the outside of the front door.
- Q Can the LR-400 be used with multiple transmitters?
- A Yes. The LR-400 can be used with multiple transmitters, but unlike the LR-500, it cannot be programmed to lock out channels.
- Q How many receivers can I have in a system?
- A As many as you need, the number is endless
- Q What is the function of SQ?
- A To reduce noise of our systems, Listen now offers a noise reduction technology called ListenSQ™ (on 72 MHz and 216 MHz only). Both the transmitter and receiver must have SQ on to achieve the desired results. If you are planning to use this product with older Listen systems or equipment not manufactured by Listen, you should disable SQ.
- Q What is the warranty of Listen receivers?
- A Limited lifetime warranty. The following cases will void the warranty:
- Misuse, dropping, or any other noticeable cosmetic damage
  - Charging alkaline batteries instead of NiMH
  - Overheating the charging process by closing the lid on the charging case.
- Q How long do the batteries last on the LR-400 receiver?
- A Alkaline batteries last 30 hours. NiMH rechargeable batteries last 15 hours (72 MHz and 216 MHz). With 863 MHz, Alkaline batteries last 20 hours and NiMH rechargeable batteries last 10 hours.