

Long Ranger 4

TECHNICAL DATA

Portable Wireless Sound System with Fast Charge Battery



The Long Ranger 4 is a high output, wireless, portable sound system for outdoor public address applications. The built-in wireless microphone, convenient second wireless microphone channel, rechargeable power supply, and the high audio output set this system apart from any other portable PA system available.

The system includes a professional quality VHF wireless microphone system with up to 750 feet of operating range. A highly sensitive receiver and full power transmitters provide solid reliability and rejection of interference. Two belt-pack transmitters are available with the system which are compatible with all Lectrosonics headset and lavalier microphones. A unique plug-on transmitter for microphones with XLR connectors is also available to allow the use of a wide variety of hand-held microphones made by other manufacturers.

- High audio output covers large outdoor areas
- Built-in VHF wireless microphone allows complete freedom of movement
- Optional dual-channel wireless capability
- Operates on rechargeable battery pack or external 12 Volt DC power
- Fast Charge circuitry for 3 hour recharge time and/or AC powering
- Powers built-in and/or external speakers
- Sold as a complete system including transmitter, microphone and charger
- Designed and manufactured in the USA

A second wireless microphone system can be added to allow two people to use the system simultaneously. The optional add-on receiver mounts on the rear panel and operates from the Long Ranger internal battery pack via the 12 Volt DC OUT jack on the control panel.

The Long Ranger 4 features a high current battery charging circuit and high current charger that also serves as an AC power supply for 100-240 VAC sources. The batteries can be fully recharged in about 3 hours from a typical day's use, and slightly longer when deep discharged. The charger provides a 3-pin socket for standard power cords like those used on computers.



The amplifier produces a full 33 Watts RMS with low distortion into the 8 Ohm speaker. This power, together with a highly efficient horn loudspeaker produces enough audio output to cover an area the size of a football field. Adding the H300 external loudspeaker horn expands the coverage area significantly. The H300 can be positioned a few feet away from the Long Ranger 4 and faced in a different direction than the built-in horn to provide an almost circular coverage pattern.

Two Long Ranger 4 sound systems can also be interconnected to create an even larger sound system. A unique auxiliary input/output combines the two units so that any sound in either unit appears at all loudspeakers.



A closer look...

The front panel includes two ¼" external speaker jacks for use with any 8 Ohm loudspeaker. The left-hand jack disconnects the internal speaker when the plug is inserted, which is typically used with a full-range loudspeaker indoors. The right-hand jack leaves the internal speaker operating, for use with an additional loudspeaker such as the H300 horn.

The main unit can be powered by the internal rechargeable batteries or from external 12 Volt DC through the jack on the front panel. The 12V DC connector is a common type that works with "cigarette lighter" power cords available almost anywhere.

The control panel groups the volume control for the built-in wireless microphone system next to the transmitter RF carrier lamp and audio level (mod level) indicator.

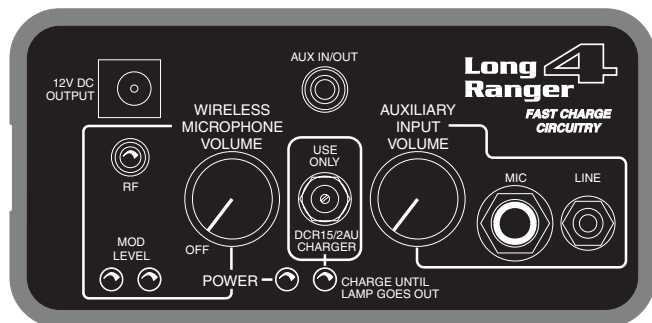
The auxiliary inputs with both ¼" and mini jacks are on the right side of the panel with a separate volume control. These inputs are used with microphones, CD players or other line level audio signals.

The AUX IN/OUT connector provides a unique feature that allows multiple Long Rangers systems to be connected together to act as a common sound system. This powerful feature allows, for example, configuring two dual-channel Long Rangers, each powering two loudspeakers, which creates a system with four wireless microphones and four loudspeakers. This jack can also be used for recording and playback with many types of recorders.

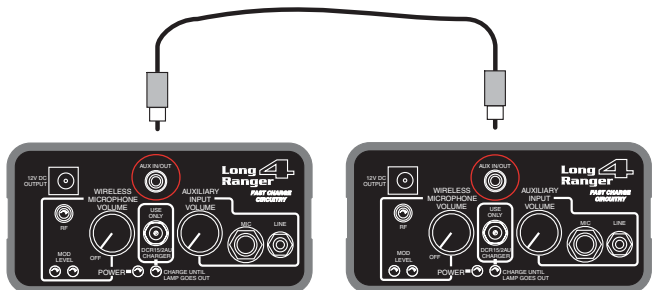
The 12V DC output connector provides power for an add-on, second channel wireless receiver.



The front panel provides jacks for one or two external speakers, and an input to power the unit from an external 12V DC source, such as a vehicle battery.



The control panel provides straight forward simplicity of operation for minimum setup time.



Two Long Rangers can be connected together to operate as one system. Any sound produced by either Long Ranger will be heard from all loudspeakers.

Transmitters

M175 and M175-LS Belt Pack Models

The M175 transmitter is basic belt-pack design for use with electret lavalier and headset microphones. The M175-LS version provides a “no-pop” mute switch to defeat the audio while leaving the transmitter on.

The machined aluminum housing and spring-loaded belt clip provide a rugged package well suited for professional use.

- Locking micro jack for secure connection
- Uses mic cord for antenna (no dangling wire)
- Battery status LED indicator
- 12 to 15 hours battery life
- Machined aluminum construction
- Supplied with spring-loaded belt clip



H175DC Plug-on Model

The H175DC is a unique transmitter that plugs into any microphone with an XLR connector. It works with all dynamic types, and many electret types of microphones made by other manufacturers.



A locking collar rotates to attach the microphone with a secure, noise-free fit. The antenna is formed between the housing of the transmitter and the body of the microphone for an efficient design that provides excellent operating range. A gain control knob on the panel next to the battery door adjusts to accommodate a wide variety of microphones and voice levels.



Microphones

HM142V Headset

The HM142V headset microphone can be worn comfortably on the head or around the neck for “hands-free” use. It is constructed of machined aluminum and stainless steel for durability. A volume knob on the temple pad helps control feedback.



HM152V Headset

The HM152V adds a double headband configuration to the HM142V model which fits more securely on the user’s head. The omnidirectional pickup pattern on both models is very resistant to wind noise and clothing “rattle.”

HM162 Headset

The HM162 is a single band “over the ears” design with a dual-element, noise cancelling pickup element for increased loudness without feedback. The neck band adjusts for a comfortable fit.



M140 Lavalier

The M140 model provides a cardioid pickup pattern, which is best for indoor use where wind noise is not a concern.

Accessories

CCPRO Carrying Case

The CCPRO is a heavy-duty, foam lined, molded case that has padlock loops and a water tight seal with a pressure relief valve. The inside foam is custom cut to fit all Long Ranger models and an assortment of the smaller accessories.

Weight

Unloaded: 11lbs, 11oz
Loaded: 31 lbs

Dimensions: 20½" wide, 18½" long, 8½" deep



H300 Extension Horn

The H300 is the same high efficiency re-entrant horn that is built into the Long Ranger to provide greater flexibility in sound coverage. This horn is normally used near the built-in horn in the Long Ranger, aimed a different direction, to expand the width of the speaker coverage pattern



SS5 Tripod Stand

The SS5 tripod stand elevates either the Long Ranger or the H300 horn for better audience coverage. The unit is collapsible for storage and transport and has a maximum height of 59 inches when fully extended.

Add-on Wireless Microphone Systems



Add-on wireless systems include transmitter, microphone and “add-on” receiver.

- **Powered from the “12V DC OUTPUT” jack on the Long Ranger control panel**
- **Audio output is fed to “LINE” jack on the Long Ranger control panel**
- **Antenna for add-on receiver is built into the Long Ranger horn loudspeaker**
- **Crystal controlled frequency eliminates drift and “tuning” adjustments**
- **Audio “compandor” noise reduction**
- **Automatic, self-adjusting squelch**
- **Solid aluminum housing**

A second wireless microphone system can be added to the Long Ranger 4 system to allow two people to use a single Long Ranger system at the same time without having to alternately switch transmitters off and on. A typical add-on system includes an LR175 compact receiver, an M175 belt-pack transmitter and one of several different types of headset microphones.

The receiver mounts directly on the rear upright panel of the Long Ranger, with no special adapters required. Connecting cables are supplied with the LR175 receiver, and the antenna for the add-on system is built into the loudspeaker on the Long Ranger.

Several different microphone and transmitter options are available to suit individual preferences. The standard microphone is the HM142V single band headset which can be worn around the neck or over the head. The HM152V double band headset mic is more secure when worn on the head, but it may not work if the user is wearing a hat. The HM142V and HM152V models include a volume control to control feedback when working close to the loudspeakers.



The LR175 add-on wireless receiver mounts on the rear upright panel of the Long Ranger. Cables and connectors are provided to provide antenna, power and audio connections.

A special model HM162 headset microphone is also available with a dual capsule, noise-cancelling pickup element that rejects feedback allowing the user to work close to the loudspeakers. The microphone fits around the back of the neck and over the ears.

The M175LS optional transmitter includes an audio mute switch that allows the user to turn off the microphone audio silently, while leaving the transmitter power turned on. An optional H175DC transmitter is available which plugs directly into any hand-held microphone with an XLR connector. The add-on wireless system offers the same performance as the Long Ranger itself, and overcomes the problems that can occur when using two wireless systems simultaneously.

The add-on wireless system is available on a variety of frequencies to maintain compatibility with Long Ranger sound systems.

Specifications

Long Ranger 4

Operating frequency:	169 to 172 MHz	Audio Outputs:	Two ¼" jacks for external 8 Ohm speakers (one switches the internal speaker off.)
Audio power output:	33 Watts, RMS, into 8 Ohms	Construction:	All aluminum housing for circuitry; machined aluminum chassis; Cyclocac horn
Distortion:	Less than 1%	FM deviation:	±15kHz
Amplifier freq. response:	100Hz to 15kHz; +0/-3 dB	Wireless operating range:	Up to 750 feet
Overall freq. response:	200Hz to 3kHz; +0/-3 dB	RF signal-to-noise ratio:	96dB, A weighted
Max. audio output (SPL):	Over 120 dB at 1 meter	Speaker:	6" x 12" re-entrant horn
Wireless Microphone:	Fixed frequency, crystal controlled transmitter and receiver	Weight:	16 lbs., 13 ozs.
Sound system inputs:	•1/4" jack for dynamic mics •Mini jack accepts audio output from "add-on" receiver	Dimensions:	15" high, 6 3/4" wide, 9 3/4" deep
Aux In/Out jack:	RCA jack provides aux input/output ("omni-bus") for interconnecting two Long Rangers		

Transmitters

Operating Frequency:	169 to 172 MHz	Deviation:	±15kHz
Input Jack:	Locking micro (M175) 3-pin XLR female (H175DC)	Spurious Radiation:	60dB below carrier
Battery Indicator:	LED indicates status	Frequency Stability:	±0.002%
Battery:	Alkaline or Lithium 9 Volt	Equivalent Input Noise:	-125 dB (M175); 121 dB (H175DC)
Battery life:	12 to 15 hours with alkaline 9V	Input Sensitivity:	8mV to 1.6V before limiting (M175) 2mV to 300 mV before limiting (H175DC)
Controls:	• On/off slide switch • Recessed audio gain control • Audio mute switch (M175-LS only)	Input Compressor:	Soft compressor, >20 dB range (M175) Soft compressor, 30 dB range (H175DC)
Size:	1.1 x 2.3 x 3.3 inches	Electret Bias:	+5 VDC (positive bias) (M175) +5 VDC phantom power (H175DC)
Weight:	6.3 ozs including battery	Antenna:	Input cord or microphone (M175) Transmitter and attached mic body (H175DC)
RF Power Output:	50 mW		

Add-on Wireless System

Operating Frequency:	169 to 172 MHz, crystal controlled	Signal/Noise Ratio:	-90 dB (system)
RF Sensitivity:	-110 dBm for 20 dB Sinad (0.7 uV)	Antenna Input:	BNC; 50 Ohms impedance
IF Selectivity:	150 kHz interference bandwidth -30 dB @ ±200 kHz	Controls:	2 position power/function switch
Squelch Quieting:	-109 dB	Indicators:	• Red LED for power ON • 2 LEDs for mod level
AM Rejection:	Below the noise at all input levels	Power Requirements:	12 Volts DC external, polarity protected
Modulation Acceptance:	±15 kHz	Power Consumption:	70 mA @ 12 kHz deviation, 61 mA @ idle
Third Order Intercept:	+5 dBm	Weight:	11 ounces
Distortion:	0.5% @ 1 kHz, 12 kHz deviation (overall system)	Dimensions:	1.1 x 2.75 x 5.5 inches

