INSTRUCTION MANUAL

M175

Belt Pack Transmitter

Fill in for your records:

Serial Number:

Purchase Date:

LECTROSONICS®
Rio Rancho, NM, USA
www.lectrosonics.com

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General Description

Thank you for selecting the M175 Wireless Microphone Transmitter. The M175 Series transmitters operate on high band frequencies from 150 MHz to 216 MHz. It is offered in three different versions to meet your specific needs. This manual covers all versions.

Only the M175 series transmitters are covered in this manual. Receivers are covered in separate manuals. All versions of the M175 Series transmitters will operate with any Lectrosonics high band VHF receiver. A frequency matched transmitter/receiver combination makes up a “wireless system.”

If you are new to wireless microphones, you will discover a new freedom of movement and level of convenience. If you are an experienced wireless user, you will be pleased with the versatility and superior performance of the M175 design.

The M175 Series transmitter is offered in three versions. The standard model is the M175. The M175-LS has an additional audio mute switch on the front panel, and the M175DC has a proprietary Digital Code Squelch* circuit to eliminate squelching problems caused by interference.

The digital code system provides much more reliable control over the receiver audio output than a conventional squelch can provide. The transmitter generates an 8-bit code at turn on, and another code at turn off, to open and close the audio output on the receiver. The squelch on the receiver cannot be opened by anything other than the specific code it is programmed to receive. This type of squelch system is even more important when the receiver is connected into an automatic mixing system.

The M175 transmitter uses the microphone cord for the antenna. This feature eliminates the need for the “dangling wire” antenna found on many transmitters.

The M175 Series transmitters use a crystal controlled oscillator and temperature compensation circuitry to ensure that the transmitter does not drift over time or with age.

To suppress audible noise, a “compandor” noise reduction circuit is used which is compatible with all Lectrosonics 170 series, 175 series, and 185 series receivers. In addition, the input limiting circuit will handle >25dB of overload without distortion. The audio circuitry is extremely quiet, with low distortion for natural reproduction of either voice or music. The wide input adjustment range of M175 Series transmitters allows the use of virtually any microphone. The M175 can even be used with modest line level inputs such as tape recorders or musical instruments.

The M175 Series transmitters operate from a replaceable standard 9 Volt alkaline battery. A precision battery test circuit continuously monitors the battery voltage. A highly visible LED glows as long as the battery voltage is high enough to operate the transmitter. A 9 Volt alkaline battery will provide up to 15 hours of operation.

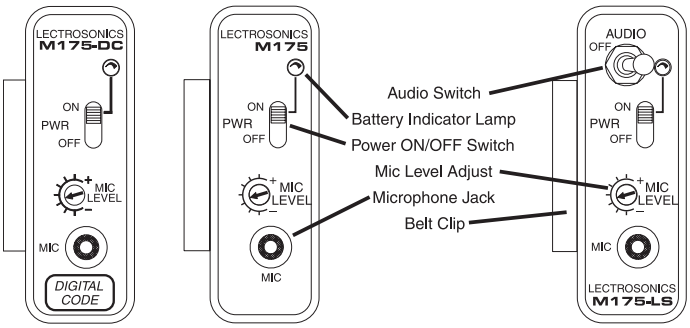
The electret microphone input jack provides 5 Volts DC positive bias for all Lectrosonics’ electret microphones. Many other electret microphones may be adapted to the M175 Series by making simple wiring changes in the microphone connector.

**DCS (Digital Code Squelch) systems require a match between transmitter and receiver of both frequency and digital code.*

M175 Series transmitters are FCC type accepted under the following Parts:

Part 90 (150-172 MHz), Part 74 (174-216 MHz)

Controls and Functions



Mic Jack

The MIC JACK is a locking micro jack that supplies "phantom power" for electret microphones such as the Lectrosonics M119, M140 Lavalier and the HM142V, HM152V and HM162 headset models. Insert the microphone cord plug into the jack and *rotate it clockwise to lock it*. It is important that the plug be securely locked, since the microphone cord serves as the antenna for the transmitter.

Power ON/OFF

The POWER ON/OFF switch turns the power on and off. The switch should be left in the OFF position when the transmitter is not in use. When the switch is in the ON position, the battery will be drained even though the transmitter is not being used.

Battery Indicator Lamp

The BATTERY INDICATOR LAMP will light when the transmitter is turned on and will stay lit as long as the battery is good. As the battery voltage drops, the lamp will grow dim and finally go out.

Mic Level Adjust

The MIC LEVEL ADJUST is a recessed screwdriver adjustment used to match the gain of the transmitter to different microphones, individual voices or other audio inputs such as tape deck outputs.

Audio Switch

The AUDIO SWITCH (M175-LS only) is a toggle type on-off switch used to shut off the audio signal without shutting off the RF carrier of the transmitter.

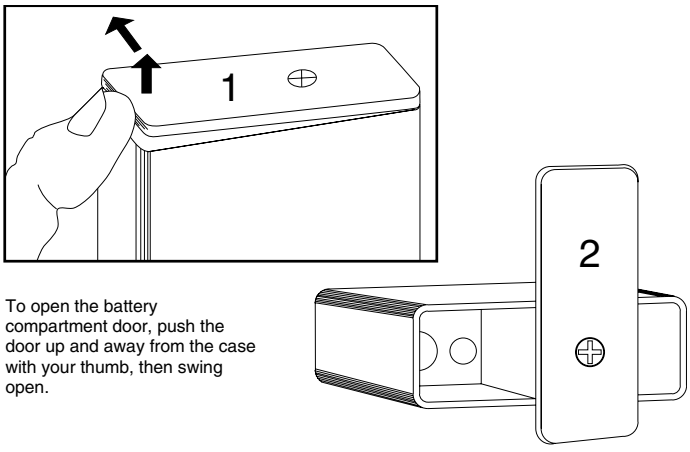
Note: The M175DC, Digital Code Squelch version is operationally identical to the standard M175.

Battery Instructions

The battery you use in the M175 Series transmitter should be a 9 Volt lithium or alkaline, available almost everywhere. A lithium 9 Volt battery will provide the best performance with over 30 hours of operation. An alkaline battery will provide up to 15 hours of operation, and carbon zinc batteries, even if marked "heavy duty" will only provide about 4 hours of operation. Rechargeable batteries made to look like 9 Volt batteries typically only produce 7.2 Volts at full charge, which will only operate the transmitter for an hour or less. Make sure your batteries are marked "alkaline." Short battery life is almost always caused by weak batteries or batteries of the wrong type.

The BATTERY LAMP will light when the transmitter is turned on and will stay lit as long as the battery is good. As the battery voltage drops, the lamp will grow dim and finally go out. Even after the lamp goes out, there may still be up to an hour or more of operating time remaining. When the battery voltage is too low for proper transmitter operation, the sound from the wireless system may be distorted, intermittent or totally absent. When the transmitter is first turned on, the lamp may light for a short while even with a bad battery. It is good practice to check the brightness of the lamp after the transmitter has been on for several minutes and to note the brightness occasionally during use.

To replace the battery, open the bottom battery door cover with your thumb, rotate the door until it is perpendicular with the case and allow the battery to fall out of the compartment into your hand. It is difficult to install the battery backwards. Observe the large and small holes in the battery contact pad before inserting a new battery. Insert the contact end of the battery first, making sure the contacts are aligned with the holes in the contact pad, and then swing the door closed. You will feel it snap into place when it is fully closed.



To open the battery compartment door, push the door up and away from the case with your thumb, then swing open.

Operating Instructions

This section covers adjustments to the transmitter that must be made before the wireless microphone system is placed into operation. The step-by-step procedures are listed in the order in which they should be performed:

1) Turn the wireless receiver power on and make any required preliminary adjustments in accordance with instructions in the receiver operating instructions.

2) Plug the microphone into the transmitter. If you are using a lavalier or headset microphone, rotate the plug clockwise to make sure the connection is locked.

3) Turn the transmitter power on and verify that the red lamp on it lights. If the lamp is very dim or does not light, replace the battery.

4) Observe that the RF lamp on the receiver control panel is lit. This verifies that the receiver is receiving a usable radio signal from the transmitter.

5) Position the microphone on your person in the location it will be used during actual operation. If a headset microphone is being used, adjust the headband for a comfortable fit with the "gooseneck" to the left side of your head. Position the microphone element at the corner of the mouth and rotate the white volume control fully clockwise. The headset is designed to be worn over the head, but can also be worn around the neck. Do not position the microphone pickup directly in front of your mouth as this may cause unwanted noise from breath pops as you speak.

6) A small screwdriver is supplied with the transmitter. The screwdriver is used to adjust the audio gain of the transmitter to match your microphone and your voice. The GAIN ADJUST is located on the control panel of the transmitter as shown below. The adjustment is made while observing the modulation level lamps on the receiver control panel:

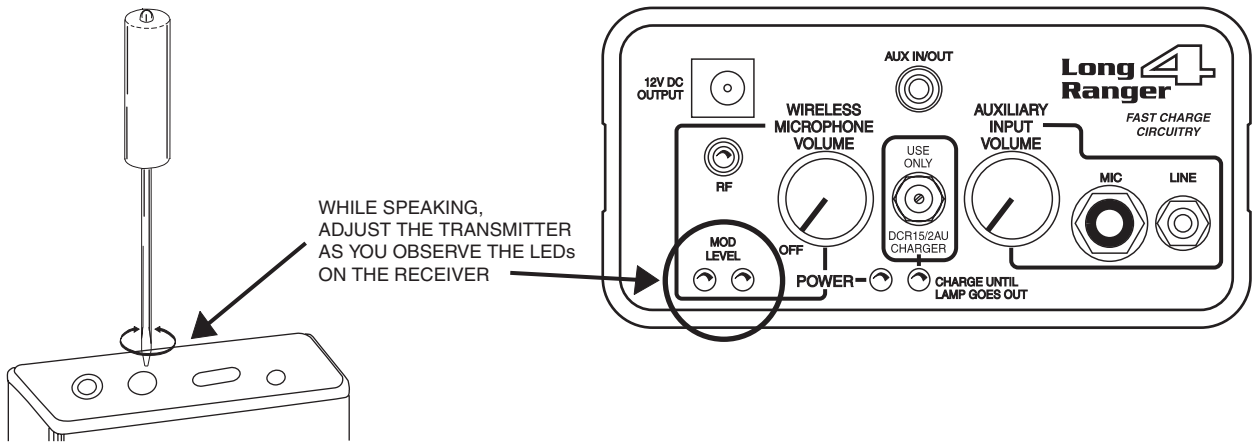
a) Speak at the voice level you will be using during actual operation.

b) While speaking, adjust the transmitter gain until the green modulation lamp on the receiver (may be marked "-20") is lit or flickers and the red modulation lamp blinks only on the loudest words. Raise and lower your voice while observing the lamps. The red lamp should blink only occasionally.

Note: The modulation lamps on some receivers are marked or colored differently than just described. Consult the operating manual for the receiver in use.

7) You may now adjust the receiver output level (wireless microphone or mic volume, level, or volume attenuator) to the desired audio output level. Consult your receiver manual if you are not sure of the location of these controls.

The GAIN ADJUST is used **only** to adjust for proper modulation level lamp indications. **DO NOT** use it to adjust the audio output level of the receiver. Different voices and different microphones will usually require readjustment of the transmitter gain control, so check the adjustment frequently. If several different people will be using the transmitter, and there is not time to make the adjustment for each individual, adjust it for the loudest voice.



Troubleshooting

Before going through the following chart, be sure that you have a good battery in the transmitter. It is important that you follow these steps in the sequence listed.

Symptom:	Possible Cause:
Transmitter battery LED off	1) Unit turned off. Check front panel on/off slide switch. 2) Battery is inserted backwards. 3) Battery is dead.
Receiver RF lamp off	1) Transmitter not turned on. 2) Transmitter battery is dead. 3) Receiver antenna missing or improperly positioned. 4) Transmitter and receiver not on same frequency. Check labels on transmitter and receiver. 5) Operating range is too great.
No sound and receiver mod level LEDs are off	1) Transmitter audio muted (M175-LS only) 2) Microphone or input cable defective.
No sound but receiver mod level LEDs are on	1) Receiver audio is muted. Refer to receiver manual. 2) Receiver audio output is disconnected or cable is defective or mis-wired. 3) Sound system or recorder input is turned down.
Distorted sound	1) Transmitter gain (audio level) is too high. Speak or sing into the transmitter and check mod level lamps on the receiver (see Operating Instructions.) 2) Receiver output may be mis-matched with the sound system or recorder input. 3) Excessive wind noise or breath “pops.”
Hiss and noise -- Audible dropouts	1) Transmitter gain (audio level) too low. 2) Receiver antenna missing or obstructed. 3) Operating range too great.
Excessinve feedback	1) Transmitter gain (audio level) too high. Check gain adjustment and/or reduce receiver output level (see Operating Instructions.) 2) Transmitter too close to speaker system. 3) Move transmitter closer to the user’s mouth.

Specifications and Features

Operating frequencies:	150 to 216 MHz
RF Power Output:	50 mW
Deviation:	±15kHz
Spurious Radiation:	50dB below carrier
Frequency Stability:	±0.005%
Equivalent Input Noise:	-123dB
Input Sensitivity:	8mV to 1.6V for full modulation
Input Compressor:	Soft Compressor; 12dB range
Electret Bias:	+5 Volt DC (positive bias)
Antenna:	Input cord or microphone body
Input Jacks:	Twist-lock micro for electret microphones
Battery Indicator:	LED indicates battery condition
Battery Life:	Approximately 15 hours
Controls:	Power on/off slide switch Recessed audio gain control Mute on/off toggle switch (M175-LS only)
Size:	1.3 x 2.35 x 3.7 inches
Weight:	6.6 ozs with battery and microphone
FCC ID:	DBZM175 (150 to 172 MHz) DBZM175A (174 to 216 MHz)
Emission designator:	58K0F3E

Specifications subject to change without notice.

Service and Repair

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check the interconnecting cables and then go through the TROUBLESHOOTING section in this manual.

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working**.

LECTROSONICS' Service Department is equipped and staffed to quickly repair your equipment. In warranty repairs are made at no charge in accordance with the terms of the warranty. Out-of-warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out-of-warranty repairs.

Returning Units for Repair

For timely service, please follow the steps below:

A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 A.M. to 4 P.M. (U.S. Mountain Standard Time).

B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the **outside** of the shipping container.

C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.

D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

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(800) 821-1121 Toll-free
(505) 892-6243 Fax

Web:
www.lectrosonics.com

E-mail:
sales@lectrosonics.com

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc. or an authorized dealer, shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liablility of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

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August 31, 2005