Quick Start Guide

LECTROSONICS®

Standard Belt-Pack Transmitters

UM400a
UM450
LMa

Fill in for your records:

Serial Number:

Purchase Date:

This guide is intended to assist with initial setup and operation of your Lectrosonics product.
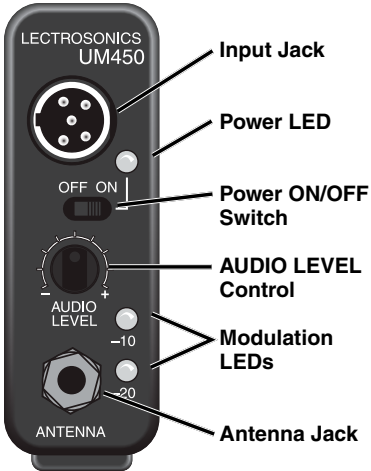
For a detailed user manual, download the most current version at:
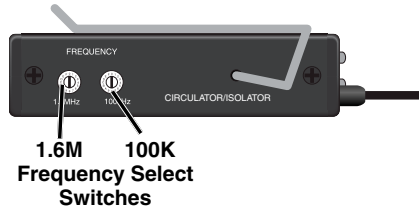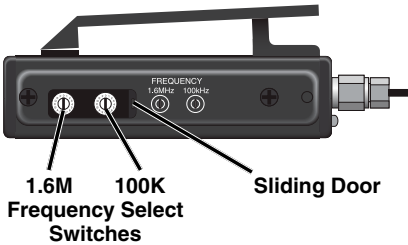
www.lectrosonics.com/manuals

06 jun10

Controls and Functions

UM400a, UM450 transmitters

LECTROSONICS
UM450

- Input Jack
- Power LED
- Power ON/OFF Switch
- AUDIO LEVEL Control
- Modulation LEDs
- Antenna Jack

OFF ON

AUDIO LEVEL
–10
–20

ANTENNA

LMa transmitter

LECTROSONICS
LMa

MIC

AUDIO LEVEL
– +
–10 –20

ON
OFF

ANTENNA

- Input Jack
- AUDIO LEVEL Control
- Modulation LEDs
- Power LED
- Power ON/OFF Switch
- Antenna

FREQUENCY
1.6MHz 100kHz

1.6M 100K Sliding Door
Frequency Select
Switches

E F 0 1 2 3 4 5 6 7 8 9 A B C D

E F 0 1 2 3 4 5 6 7 8 9 A B C D

FREQUENCY

1.6MHz 100kHz CIRCULATOR/ISOLATOR

1.6M 100K
Frequency Select
Switches

E F 0 1 2 3 4 5 6 7 8 9 A B C D

E F 0 1 2 3 4 5 6 7 8 9 A B C D

---

75 Hz

FCCID:DBZUM450X
Lectrosonics, Inc.
Made in U.S.A.

UM450
SN: XXXX

35 150
LF ROLL OFF   MODES: 100, 200, MODE 3, 400, MODE 6

Low Frequency Roll Off
Control

Audio Input Jack

Accommodates most lavaliere and dynamic microphones, and line level signals.

Power ON/OFF Switch

Turns the transmitter on and off.

Power LED

Indicates power status and battery strength.

Audio Level Control

The front panel AUDIO LEVEL Control is used to adjust the incoming audio input level for proper modulation.

Modulation LEDs

The two bicolor Modulation LEDs provide a visual indication of the input audio signal level from the microphone.

Frequency Select Switches

Two 16-position rotary switches adjust the center frequency of the carrier. The 1.6M is a coarse adjustment and the 100K is the fine adjustment.

UM400a, UM450:

Antenna

The flexible galvanized steel cable antenna supplied with the transmitter is removable via an SMA connector. Replacement antennas are available.

Belt Clip

The belt clip may be removed for special applications by removing one hex screw, accessible through the hole in the belt clip.

WARNING: Use ONLY the screw that is supplied.

Adjustable Low Frequency Roll-Off

The 18dB per octave low frequency roll-off control is used to remove subsonic (or very low frequency) audio, often produced by air conditioning systems, automobile traffic and other sources.

LMa:

Antenna

The flexible galvanized steel cable antenna is permanently attached to the transmitter

Belt Clip

The wire belt clip may be removed for special applications by spreading the wire away from the housing and sliding it out of the holes.

Operating Instructions
Selecting the Compatibility Mode

The UM400a, UM450, and LMa can be used with Lectrosonics 400 Series Digital Hybrid, 200 Series analog, 100 Series analog and some non-Lectrosonics analog wireless receivers. Contact the factory for details on the non-Lectrosonics models that can be used. The transmitter must be set to the operating mode of the matching receiver, which is done using the supplied screwdriver and a battery. The UM400a and UM450 are functionally identical, while the LMa lacks the manual low-frequency rolloff control. The LMa has an output of 50mW, the UM400a has 100mW output, and the UM450 has 250mW output.

> NOTE: The unit is supplied from the factory in the Hybrid mode.

1) Ensure the battery is good.

2) Turn off the transmitter.

3) With a small screwdriver (included), set the Frequency Select Switches to CC. (for **C**hange, **C**hange).

4) Power up the unit briefly – just long enough for the LED's to light up and then turn it off - about one second.

5) Change the Frequency Select Switches to one of the following settings:

   • To set Lectrosonics 100 Series mode:1,1

   • To set Lectrosonics 200 Series mode:2,2

   • To set Mode 3*: 3,3

   • To set Lectrosonics Hybrid mode: 4,4

   • To set IFB mode: 5,5

   • To set Mode 6*: 6,6

   * contact the factory for details

6) Turn the unit on, wait about one second and turn off again.

7) Change the Frequency Select Switches to 0,0.

8) Turn on the transmitter to complete the operation.

   The LEDS will blink to indicate the selected compatibility mode. Immediately after power up, all LEDS will blink together red, then green, followed by the audio level LEDs (-20 and -10) blinking to indicate the mode.

   The -20 and -10 LEDs will blink:

   • **Once for 100 Series mode**
   • **Two times for 200 Series mode**
   • **Three times for Mode 3**
   • **Four times for 400 mode**
   • **Five times for IFB mode**
   • **Six times for Mode 6**

   At powerup the transmitter will confirm the current compatibility mode with the number of blinks listed here. This setting will remain the same until you reset it with the procedure listed above.

Attaching a Microphone and Adjusting Gain

1) Ensure the battery is in good condition.

2) Insert the microphone plug into the input jack, aligning the pins; be sure that the connector locks.

3) Attach the antenna to the SMA connector on the top of the transmitter.

4) Mute the associated receiver's audio output.

5) Turn on the transmitter.

6) Position the microphone in the location you will use in actual operation. While speaking or singing <u>at the same voice level that will actually be used</u>, observe the Modulation LEDs. Adjust the AUDIO LEVEL control until the –20 dB LED glows green with occasional red flickers and -10 dB glows green. This will set the gain of your transmitter so peaks are between +0 dB and +10 dB modulation.

Signal Level	-20 LED	-10 LED
Less than -20 dB	○ Off	○ Off
-20 dB to -10 dB	🟢 Green	○ Off
-10 dB to +0 dB	🟢 Green	🟢 Green
+0 dB to +10 dB	🔴 Red	🟢 Green
Greater than +10 dB	🔴 Red	🔴 Red

7) Once the gain has been adjusted, the mixer or recorder can be turned on to make level adjustments.

NOTE: The transmitter Audio Level Control should not be used to control the volume of your sound system or recorder levels. This gain adjustment matches the transmitter gain with the user's voice level and microphone positioning.

Operating Notes

If the audio level is too high — both LEDs will blink red frequently or glow a steady red. This condition may reduce the dynamic range of the audio signal.

If the audio level is too low — neither LED will glow, or only the -20 LED will glow green. This condition may cause hiss and noise in the audio.

Different voices will usually require different settings of the AUDIO LEVEL control, so check this adjustment as each new person uses the system. If several different people will be using the transmitter and there is no time to make the adjustment for each individual, adjust it for the loudest voice.

Frequency Select Switches

Two 16-position rotary switches adjust the center frequency of the carrier. The 1.6M is a coarse adjustment and the 100K is the fine adjustment.


1.6M

100K

Changing the Frequency

Locate the two small rotary switches. (On the UM400a/UM450, slide open the small door on the side of the transmitter.) With the small screwdriver supplied with the kit, turn the left switch to the first character in the two-digit Transmitter Frequency Switch Setting code, then turn the right switch to the second character of the two-digit code. For example: the frequency display is 623.000, and two-digit Transmitter Frequency Switch Setting code is 56, thus the lefthand switch on your transmitter should be set to "5" and the righthand switch to "6".
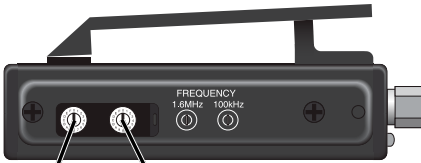
5   **6**

Transmitter Frequency Select Switches

Note: Be sure to orient the transmitter so the nomenclature reads correctly (not upside down).

If you are using a receiver with a frequency scan function, find a clear frequency with the receiver, then set the transmitter to match. With Lectrosonics 400 Series receivers, a front panel LCD character display will indicate the correct transmitter switch settings as a two-character alphanumeric hex code once a clear frequency has been located with the scan function.

Battery Installation

UM400a/UM450

To open the battery compartment, press outward on the cover door in the direction of the arrow as shown in the illustration. Only firm, sliding pressure is needed to open and close the battery door. Swing the door open and take note of the polarity marked inside showing the location of the positive (+) and negative (-) terminals. You can also see the large and small contact holes inside the battery compartment with the door open.

Insert the battery correctly and close the cover by pressing the door closed and across, reversing the opening procedure. If the battery is inserted incorrectly, the door will not close. Do not force the door closed.

LMa

To replace the battery, push up on the Battery Compartment Door and rotate it clockwise. Remove the old battery and take note of the polarity marked inside showing the location of the positive (+) and negative (-) terminals. (You can see the large and small contact holes inside the battery compartment with the door open.)

Insert the new battery correctly and close the Battery Compartment Door by reversing the opening procedure. If the battery is inserted incorrectly, the door will not fully close. Do not force the door closed.

The Power LED glows green when the battery is good and the transmitter is turned on. The LED will glow yellow/orange as the battery voltage drops and finally glows red when there are about 30 minutes of operation left (when using an alkaline battery). The LED then blinks red when there are only a few minutes of life left.

NOTE: While a LiPolymer battery provides long operating time, it will give little or no warning when depleted. If you use a LiPolymer battery in the UM450, we recommend trying a fully charged battery in the unit, noting the length of time that the battery will run the unit and in the future use somewhat less than that time to determine when the battery needs to be replaced.

A weak battery will sometimes light the Power LED to the "good" green indication immediately after being put in the unit, but will quickly discharge to the point where the LED will go red or shut down (just like a flashlight with "dead" batteries). If the lamp fails to light, the battery should be replaced.

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.

LECTROSONICS®

Made in the USA by a Bunch of Fanatics

581 Laser Road NE • Rio Rancho, NM 87124 USA • www.lectrosonics.com
(505) 892-4501 • (800) 821-1121 • fax (505) 892-6243 • sales@lectrosonics.com