

Compat Menu

Selecting the Compatibility Mode



Use the and arrow buttons to select the desired mode, then press the **BACK** button twice to return to the Main Window. Compatibility modes are as follows:

- Standard Mono Digital D2
- High Density Mode HDM

HDM Mode (High Density Transmission)

This special transmitting mode and associated low RF power of 4 mW allows the user to “stack” many units into a very small area of the spectrum. Standard, ETSI-compliant RF carriers take up about 200 kHz of occupied bandwidth, while HDM takes up about half of that, or 100 kHz, and allows for much tighter channel spacing, without concern for frequency coordination.

IR&Key Menu

SendFreq

Press **MENU/SEL** to send the Frequency to another transmitter or receiver via the IR port.



SendAll

Press **MENU/SEL** to send information to a paired receiver: Frequency, Transmitter Name, and Talkback Enabled to another transmitter or receiver via the IR port.



NOTE: SendAll does not send Encryption Key. This must be done separately.

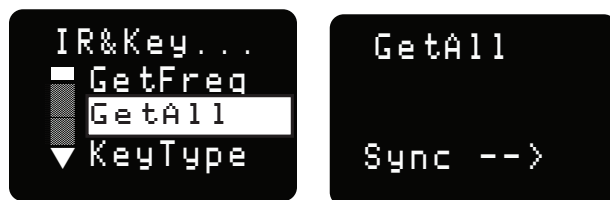
GetFreq

Press **MENU/SEL** to get Frequency information from another transmitter or receiver via the IR port.



GetAll

Press **MENU/SEL** to get information from a paired receiver: Frequency, Transmitter Name, Talkback Enabled, and Compatibility Mode via the IR port.



KeyType

The DSSM receives an encryption key via the IR port from a key generating receiver. Begin by selecting a key type in the receiver and generating a new key (key type is labeled KEY POLICY in the DSQD receiver). Set the matching KEY TYPE in the DSSM and transfer the key from the receiver (SYNC KEY) to the DSSM via the IR ports. A confirmation message will display on the receiver display if the transfer is successful. The transmitted audio will then be encrypted and can only be listened to if the receiver has the matching encryption key.



The encryption system in Lectrosonics Digital modes D2 and HDM may be configured in four different ways, determined by a parameter known as the Key Type. The four key types range from least secure but most convenient, to most secure but least convenient. Below are descriptions of the four Key Types and how they work.

- **Universal:** This is the default key type, the simplest to use, and the least secure. While encryption is technically being performed and a scanner or simple demodulator would not reveal the signal content, communications are not truly secure. This is because all Lectrosonics products employing

the Universal key type use this same “universal” encryption key. With this key type selected, keys do not need to be created or exchanged, and wireless devices can be used without attention to the encryption feature.

- **Shared:** This is the easiest encryption mode to use while employing a uniquely generated key. This key type offers excellent security and considerable flexibility. Once a key has been created, it can be shared an unlimited number of times with any compatible device which, in turn, can also share the key. This is especially useful when multiple receivers may need to pick up various transmitters.
- **Standard:** The Standard key type offers enhanced security, at the cost of some complexity. Standard keys are “instance controlled”, which allows the hardware to protect against “differential attacks”. A Standard key can only be sent by the device that created it, and only up to 256 times. Unlike with Shared keys, devices receiving a Standard key cannot pass it on.
- **Volatile** The Volatile key type is the most secure, and also the least convenient to use. Volatile keys behave identically to Standard keys, except that they are never stored. Equipment which is turned off while using a Volatile key will come back on with no key. If a key-generating device is left on, the key can be re-shared with units in the system that have lost their keys. Once all equipment having used a given Volatile key is powered off, that key is effectively destroyed. This may be required in some highly secure installations.

WipeKey

This menu item is only available if Key Type is set to Standard, Shared or Volatile. Select Yes to clear the current key.



Setup Menu

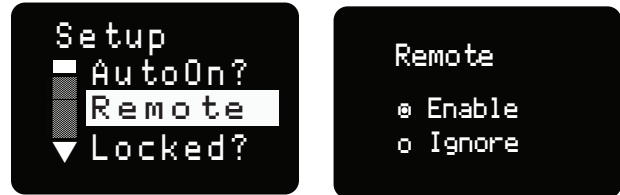
AutoOn

Use the **UP** and **DOWN** buttons to toggle the AutoOn feature on or off. When enabled, the transmitter will turn on to Transmit mode when a battery is replaced while the unit is running.



Remote

Use the **UP** and **DOWN** buttons to toggle the remote “dweedle tone” feature on or off. When enabled, the transmitter will respond to tone commands.



Locking/Unlocking Changes to Settings

Changes to the settings can be locked in this menu.



When changes are locked, several controls and actions can still be used:

- Settings can still be unlocked
- Menus can still be browsed
- When locked, **POWER CAN ONLY BE TURNED OFF** by removing the batteries.

DispOff

Use the **UP** and **DOWN** buttons to select the Display Off setting between 5 and 30 seconds after the last time a button is pressed, or constantly on.



LED Off

From the main menu screen, a quick press of the the  arrow button turns the control panel LEDs on. A quick press of the  arrow button turns them off. The buttons will be disabled if the LOCKED option is selected in the Power Button menu.



Default

Select Yes with the **UP** or **DOWN** button then press **MENU/SEL** to restore the Default (factory) settings.



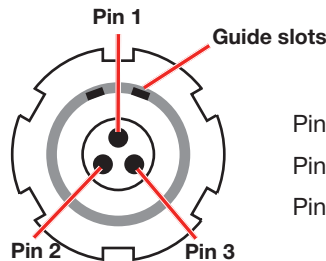
About

Press **MENU/SEL** to display the model, the firmware version, and the band/block of the unit.



Microphone Wiring

Looking into the 3 pin Lemo mic connector from the outside of the transmitter, the pin centered in the two guide slots is pin 1 (ground). Pin 2 is a 1k resistor to ground. Pin 3 is the audio/bias connection for two-wire microphones and line inputs.



Pin 1 - ground

Pin 2 - 1k source load to ground

Pin 3 - servo input

Voltages, polarity, impedance and line level for all signal sources are selected by menus. Menu selections include presets for popular microphones, and a sub-menu for manual setup. Refer to the section entitled **Setup Screens** on the previous page for details.

Two-wire electret lavalier:

Pin 1 - Ground (shield)

Pin 3 - Audio and Bias

Sanken COS-11 lavalier

Recommended Wiring:

Pin 1 - Shield (ground)

Pin 2 - White (source load)

Pin 3 - Black (bias and audio)

NOTE: The COS-11 can also be wired in a two-wire configuration. Contact Plus24/Sanken for details.

The Sanken CUB-01 is not supported.

Line and Instrument Input Wiring and Use

Pin Configuration:

Pin 1: Shield (ground)

Pin 2: Audio

Transmitter Settings:



The gain setting can be adjusted as needed for the specific input level used.

Selecting Mic/Audio Input Configuration

Refer to Page 12 for detailed information on configuring Line and Instrument level inputs.

IR Sync

An IR (infrared) link between an associated receiver and the transmitter can be used to shorten setup time and ensure that the correct settings in the transmitter are made. The window on the top panel of the transmitter is the port used for the IR link. The receiver is normally used to identify a clear operating frequency. Once step size, frequency and compatibility mode are set in the receiver, the settings can be sent to the transmitter via this IR link.

Place the transmitter close to the IR enabled receiver with the ports facing each other a few inches apart. Send the settings with the trigger on the receiver. If the settings are successfully transferred, a confirmation message will appear on the transmitter and receiver displays.

NOTE: If a mismatch exists between the receiver and transmitter, an error message will appear on the units.

Reversible Belt Clip

The belt clip may be removed or reoriented (to point the antenna up or down) by carefully lifting it out and off of the housing, with the battery door open. Pull the one side of the wire out of the grooved hole as shown, then upward to remove. Repeat for the opposite side.



The wire rests in a small groove while placed into the mounting hole.



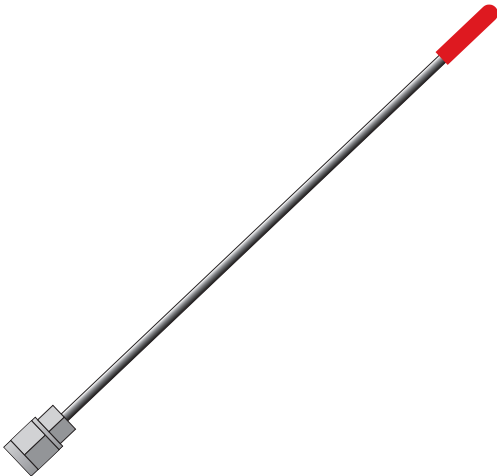
Whip Antennas

Because the transmitter tunes across such a broad frequency range, it is best to use the appropriate antenna for maximum operation. Two antennas are included with the transmitter, and are shipped from the factory pre-cut and fully assembled with a 50 Ohm SMA connector.

Each antenna covers three blocks. Use the chart below to determine which antenna best fits your needs.

Band	Block	Frequency Range MHz	Cap Color	Antenna
A1	470	470.100 - 495.600	Black	AMM470
	19	486.400 - 511.900	Black	AMM19
	20	512.000 - 537.500	Black	AMM20
B1	21	537.600 - 563.100	Brown	AMM21
	22	563.200 - 588.700	Red	AMM22
	23	588.800 - 614.300	Orange	AMM23
C1	24	614.400 - 639.900	Yellow	AMM24
	25	640.000 - 665.500	Green	AMM25
	26	665.600 - 691.100	Blue	AMM26
	941	941.525-959.825	Black	AMM944

NOTE: the DSSM/E07-941 use the AMM944 antenna



LectroRM

By New Endian LLC

LectroRM is a 3rd party mobile application for iOS and Android smart phone operating systems. Its purpose is to make changes to the settings on select Lectrosonics transmitters by delivering encoded audio tones to the microphone attached to the transmitter. When the tone enters the transmitter, it is decoded to make a change to a variety of different settings such as input gain, frequency and a number of others.

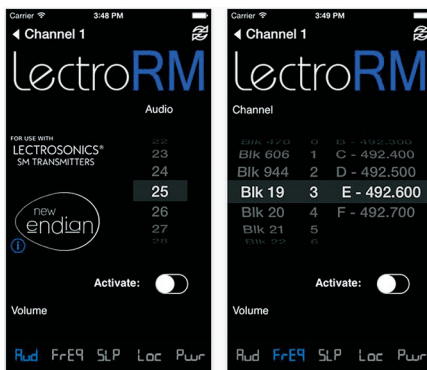
The app was released by New Endian, LLC in September 2011. The app is available for download and sells for \$25 on the Apple App Store and Google Play Store.

The settings and values that can be changed vary from one transmitter model to another. The complete list of available tones in the app is as follows:

- Input gain
- Frequency
- Sleep Mode
- Panel LOCK/UNLOCK
- RF output power
- Low frequency audio roll-off
- LEDs ON/OFF

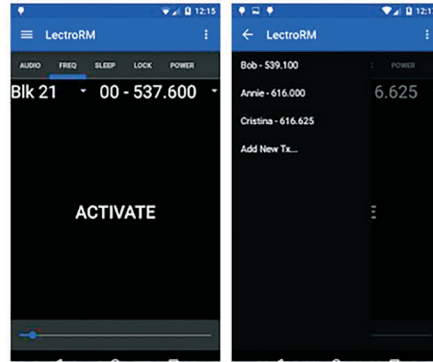
The user interface involves selecting the audio sequence related to the desired change. Each version has an interface for selecting the desired setting and the desired option for that setting. Each version also has a mechanism to prevent accidental activation of the tone.

iOS



The iPhone version keeps each available setting on a separate page with the list of options for that setting. On iOS, the “Activate” toggle switch must be enabled to show the button which will then activate the tone. The iOS version’s default orientation is upside-down but can be configured to orient right-side up. The purpose for this is to orient the phone’s speaker, which is at the bottom of the device, closer to the transmitter microphone.

Android



The Android version keeps all settings on the same page and allows the user to toggle between the activation buttons for each setting. The activation button must be pressed and held to activate the tone. The Android version also allows users to keep a configurable list of full sets of settings.

Remote Control and Activation

Remote control signals (“dweedle tones”) may be used to control the transmitter. The tones are played back into the microphone to avoid the need to reach and handle the transmitter when making changes to the adjustments and settings.

For a transmitter to respond to remote control audio tones, the transmitter must meet certain requirements:

- The transmitter must be turned on.
- The transmitter microphone must be within range.
- The remote control function must be enabled on the transmitter. See page 15.

Please be aware this app is not a Lectrosonics product. It is privately owned and operated by New Endian LLC, www.newendian.com.

Firmware Update

Firmware updates are made with Wireless Designer software and a file downloaded from the web site. The DSSM is connected via USB (see p. 7) to a computer running Wireless Designer.

Firmware files are located at <https://lectrosonics.com/firmware.html> and Wireless Designer software can be downloaded for Mac or Windows here <https://lectrosonics.com/wireless-designer.html>.

The USB port on the transmitter requires a micro-B male plug on the connecting cable. The other end of the cable would normally be a USB A-Type male connector to fit the most common type of USB jack used on computers. Our part number for this cable is 21926.

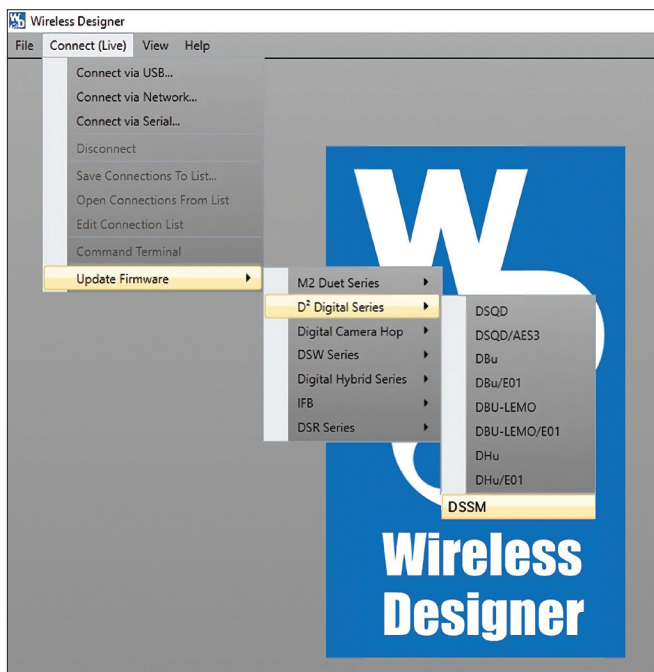
Step 1:

Open the DSSM battery compartment and remove the battery. Connect your computer to the DSSM using the USB cable. The transmitter will automatically power on into Update mode.

Firmware
Update
Mode

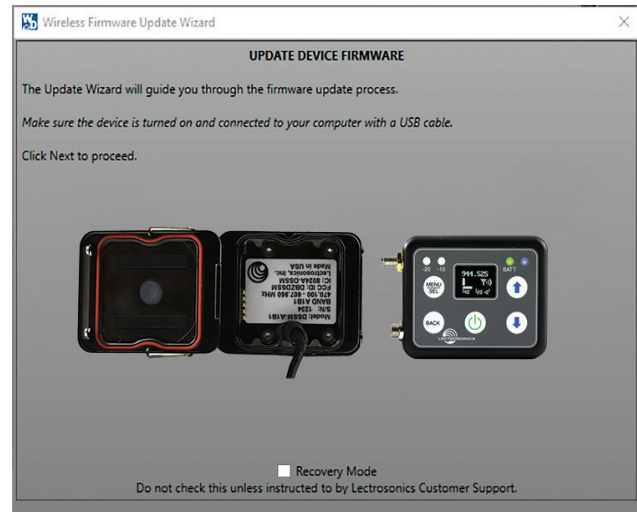
Step 2:

Start Wireless Designer and under the “Connect (Live)” menu, scroll down to Update Firmware, and in the D² sub-menu, click on DSSM.



Step 3:

Follow the on-screen instructions to choose the update file, check to see if an update is needed, and initiate the update process. When finished, unplug the unit, replace the battery, and power on to RF Off mode, and check the firmware version in Setup>About to verify the update.



Supplied Accessories

AMM19

Whip Antenna with Standard SMA Connector. Block 19; included with A1B1 variant only.

AMM22

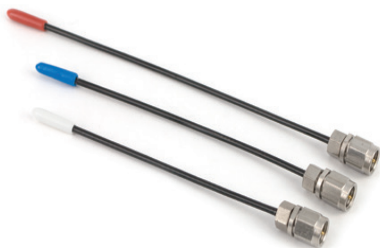
Whip antenna with Standard SMA Connector. Included with A1B1 and B1C1 variants.

AMM25

Whip antenna with Standard SMA Connector. Included with B1C1 variants only.

AMM944

Whip antenna with Standard SMA Connector. Included with 941 variants only.



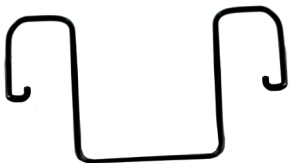
Cordura Pouch

P/N 35939 zippered, padded; 4 x 6 x1 inches



Reversible Wire Belt Clip

Belt clip for DSSM; black wire. Reorder with P/N 27332.



Rechargeable battery

P/N 40106-1 LB-50 3.6V lithium-ion battery pack



Optional Accessories

CHSDSSM Dock Charging System

Charger for two Lectrosonics LB-50 batteries; includes charger and short USB cable. Use P/N 40117.

Available with transmitter as a kit. Use P/N **ZS-DSSM-A1B1-WITH-CHARGER**



DCR5/9AU

AC-DC power supply, for CHSDSSM



SSMCVR

Silicone cover protects from moisture and dust



Specifications

Operating Frequencies:

DSSM - A1B1	470.100 - 607.950
DSSM/E01-A1B1:	470.100 - 614.375
DSSM-B1C1 (US)	537.600 - 607.950 614.050 - 615.950 653.050 - 662.950
DSSM/E01-B1C1:	537.600 - 691.175
DSSM/E07-941:	941.525 - 951.975 953.025 - 956.225 956.475 - 959.825
Frequency Selection Steps:	25 kHz
RF Power output:	Selectable; 10, 25, 35, 50 mW (D2 mode) or 4 mW (HDM mode) 20 mW max for North American B1C1 from 614.050-615.950 and 653.050-662.950
Compatibility Modes:	HDM or D2 (all models)
Frequency Stability:	± 0.002%
Spurious radiation:	Compliant with ETSI EN 300 422-1
Equivalent input noise:	-120 dBV (A-weighted)
Input level:	Nominal 2 mV to 300 mV, before limiting. Greater than 1V maximum, with limiting.
Input impedance:	- Mic: 300 or 4.5 k ohm; selectable - Line: 900 ohm - Instrument: 1 M ohm
Input limiter:	DSP controlled, dual envelope "soft" limiter with greater than 30 dB range
Gain control range:	-7 to +44 dB; digital control, 1 db steps
Modulation indicators:	Dual bicolor LEDs indicate modulation of -20, -10, 0 and +10 dB referenced to full modulation

NOTE: It is the user's responsibility to select the approved frequencies for the region where the transmitter is operating.

Specifications subject to change without notice.

For body worn operation, this transmitter model has been tested and meets the FCC RF exposure guidelines when used with the Lectrosonics accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. Contact Lectrosonics if you have any questions or need more information about RF exposure using this product.

This device complies with FCC radiation exposure limits as set forth for an uncontrolled environment. This device should be installed and operated so that its antenna(s) are not co-located or operating in conjunction with any other antenna or transmitter.

This device complies with ISED Canada radiation exposure limits as set forth for a controlled "professional" use only.

Cet appareil est conforme avec les normes d'Industrie Canada concernant les limites d'exposition aux radiations pour un usage professionnel contrôlé seulement.

Audio Performance:

Frequency Response:	35-20 kHz; 35-15 kHz (HDM compat mode)
Low frequency roll-off:	Selectable; 35, 50, 70, 100, 120, 150 Hz
THD:	0.2% (typical)
Controls:	Front panel membrane switches with OLED interface for power on/off and all setup and configuration controls
Audio Input Jack:	Subminiature; locking 3 pin
Antenna:	SMA connector; coated, flexible wire, length by frequency band
Battery: (included)	Lithium-ion 3.6 V 1000 mAh LB50 battery pack
Battery Life:	4 hours per charge @ 35 mW
Weight:	3.5 ounces (100 grams) including lithium battery pack
Dimensions (housing):	2.59 x 1.9 x .70 in. (66 x 49 x 17 mm)
Emission Designator:	110KG1E (HD mode); 170KG1E (D2 mode)



Troubleshooting

It is important that you follow these steps in the sequence listed.

Symptom:

Possible Cause:

Transmitter Battery LED off when Power Switch “ON”

1. Batteries are inserted incorrectly.
2. Batteries are low or dead.

No Transmitter Modulation LEDs when Signal Should be Present

1. Gain control turned all the way down.
2. Batteries are inserted incorrectly. Check power LED.
3. Mic capsule is damaged or malfunctioning.
4. Mic cable damaged or miswired.
5. Instrument Cable damaged or not plugged in.
6. Musical instrument output level set too low.

Receiver Indicates RF But No Audio

1. Audio source or cable connected to transmitter is defective. Try using an alternate source or cable.
2. Make sure the compatibility mode is the same on transmitter and receiver.
3. Ensure musical instrument volume control is not set to minimum.
4. Check for correct encryption key type is selected.

Receiver RF Indicator Off

1. Ensure that the transmitter and receiver are set to the same frequency.
2. Transmitter not turned on, or battery is dead.
3. Receiver antenna missing or improperly positioned.
4. Operating distance is too great.
5. Transmitter may be set to the Standby Mode. See page 8.

No Sound (Or Low Sound Level), Receiver Indicates Proper Audio Modulation

1. Receiver output level set too low.
2. Receiver output is disconnected; cable is defective or miswired.
3. Sound system or recorder input is turned down or not enabled.

Distorted Sound

1. Transmitter gain (audio level) is too high. Check Modulation LEDs on transmitter and receiver while distortion is being heard.
2. Receiver output level may be mismatched with the sound system or recorder input. Adjust output level on receiver to the correct level for the recorder, mixer or sound system.
3. RF interference. Reset both transmitter and receiver to a clear channel. Use scanning function on receiver if available.
4. Transmitter is at the edge of the useable range for that frequency.

Wind Noise or Breath “Pops”

1. Reposition microphone, or use a larger windscreen, or both.
2. Omni-directional mics produce less wind noise and breath pops than directional types.

Hiss and Noise -- Audible Dropouts

1. Receiver antenna missing or obstructed.
2. Operating distance too great.
3. RF interference. Reset both transmitter and receiver to a clear channel. Use scanning function on receiver if available.
4. Microphone capsule picking up RF noise.

Excessive Feedback (With Microphone)

1. Transmitter gain (audio level) too high. Check gain adjustment and/or reduce receiver output level.
2. Microphone too close to speaker system.
3. Microphone is too far from user's mouth.

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 inter-connecting cables.

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 email 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 or FEDEX 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.

Lectrosonics USA:

Mailing address:

Lectrosonics, Inc.
PO Box 15900
Rio Rancho, NM 87174
USA

Web:

www.lectrosonics.com

Shipping address:

Lectrosonics, Inc.
561 Laser Rd., Suite 102
Rio Rancho, NM 87124
USA

E-mail:

service.repair@lectrosonics.com
sales@lectrosonics.com

Telephone:

+1 (505) 892-4501
(800) 821-1121 Toll-free US/Canada
Fax +1 (505) 892-6243

Lectrosonics Canada:

Mailing Address:

720 Spadina Avenue,
Suite 600
Toronto, Ontario M5S 2T9

Telephone:

+1 (416) 596-2202
(877) 753-2876 Toll-free Canada
(877) 7LECTRO
Fax (416) 596-6648

E-mail:

Sales: colinb@lectrosonics.com
Service: joeb@lectrosonics.com

Self-Help Options for Non-Urgent Concerns

Our Facebook groups and weblists are a wealth of knowledge for user questions and information. Refer to:

Lectrosonics General Facebook Group: <https://www.facebook.com/groups/69511015699>

D Squared, Venue 2 and Wireless Designer Group: <https://www.facebook.com/groups/104052953321109>

The Wire Lists: <https://lectrosonics.com/the-wire-lists.html>

NOTE: 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.

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Lectrosonics, Inc. may void the user's authority to operate the equipment.

This device complies with Innovation, Science and Economic Development Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux flux RSS exemptés de licence d'Innovation, Science et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

- (1) Cet appareil ne doit pas provoquer d'interférence; et
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

This device operates on a no-interference, no-protection basis. Should the user seek to obtain protection from other radio services operating in the same TV bands, a radio licence is required. For further details, consult Innovation, Science and Economic Development Canada's Client Procedures Circular CPC-2-1-28, Voluntary Licensing of Licence-Exempt Wireless Microphones in the TV Bands.

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 liability 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.

