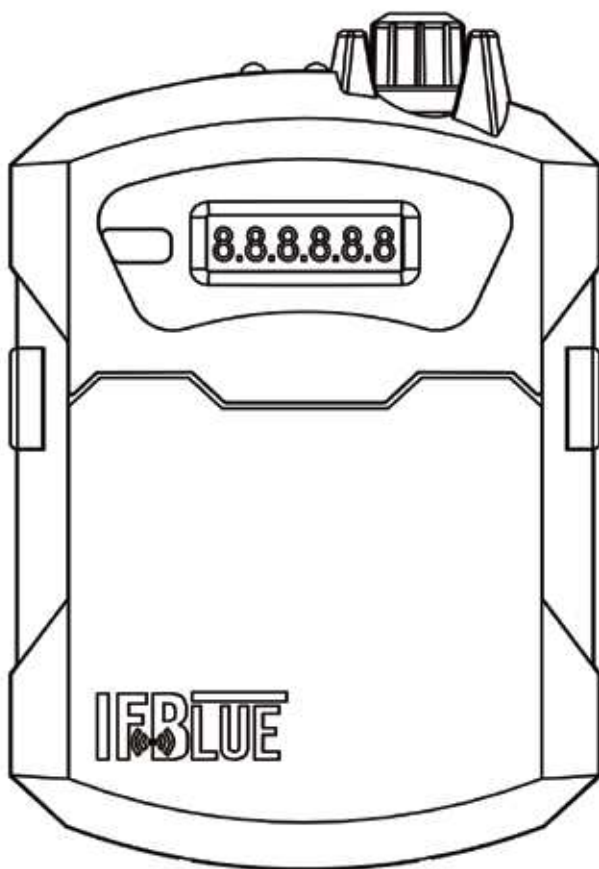


# IFBR1C

## UHF Multi-Frequency Belt-Pack IFB Receiver

IFBR1C, IFBR1C-941, IFBR1C-VHF



- Compatible with Lectrosonics Digital Hybrid and IFB transmitters
- Stores up to 10 frequency presets in memory
- LCD interface for programming and operation
- High sensitivity for extended operating range indoors or outdoors
- USB port for firmware updates
- Compact, rugged injection molded ABS housing
- Attached battery door
- 2 AA batteries; alkaline, lithium, or NiMH rechargeables (supplied)

Fill in for your records:

Serial Number:

Purchase Date:

Designed and Distributed by Lectrosonics, Inc.

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# Introduction

Wireless IFB (interruptible fold back) systems are used for talent cueing and crew communications in broadcast and motion picture production. In other cases, the IFB system is used by directors and other management to monitor program audio during a production. The IFBR1C receiver provides simplicity and flexibility in a package that is intuitive for untrained users to operate. In spite of its tiny size, the new IFBR1C receiver offers excellent performance on par with all of Lectrosonics' IFB products.

The design uses +/-20 kHz FM deviation for efficient use of the bandwidth, with compandor noise reduction circuitry for an excellent signal to noise ratio. A supersonic Pilot Tone signal controls the audio output squelch to keep the receiver silent when no transmitter signal is received. The incoming RF signal is filtered and amplified, then mixed down to the IF frequency with a microprocessor controlled synthesizer.

If a monaural earpiece is connected, this condition is automatically accommodated, with no loss of audio output power or battery life. Full output power is available with either type of connector, without the power losses that result from a resistive circuit design. The head-phone cable doubles as the receiving antenna.

The receiver will drive a wide variety of earbuds, headphones and induction neck loops at substantial levels, with loads from 16 Ohms to 600 Ohms.

The IFBR1C operates on two (2) double A batteries. The LED indicator changes color from green to red as the battery voltage declines to provide plenty of warning before operation ceases. Inside the battery door is a USB port for firmware updates in the field.

The IFBR1C is housed in a rugged, injection molded ABS package. A belt clip is included and provides a secure mounting on a wide variety of belts, pockets and fabrics.

## Frequency Presets

There are 10 presets available for programming in the IFBR1C. The stored frequencies remain in memory during power **OFF** and even with the battery removed. Use the **UP** and **DOWN** arrows to scroll through the previously selected frequencies stored in the IFBR1C and quickly change frequencies for quick communication.

## Simplicity

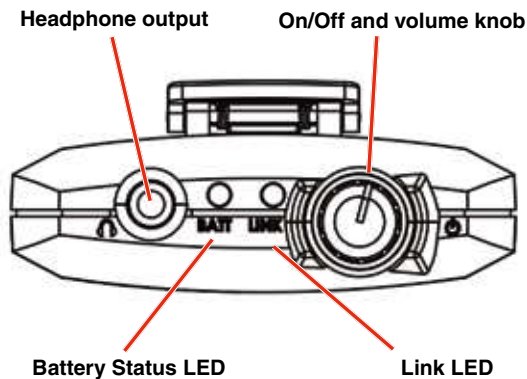
The unique design in this receiver is not only tiny, but provides simple one knob operation for on/off and audio level and easy on-the-fly programming with simple frequency adjustments and 10 preset slots available. Basic operation is simply a matter of rotating the knob to turn power on and adjust the volume level.

# General Technical Description

## Frequency Agility

The frequency agile IFBR1C Receiver is designed to operate with the Lectrosonics IFB transmitters and compatible Digital Hybrid transmitters. Microprocessor control of frequencies within each frequency block provides the ability to work around interference problems quickly and simply.

## IFBR1C Features



### On/Off and Volume Knob

Turns unit on or off and controls headphone audio level. When the IFBR1C is first turned on, the firmware version will display briefly.



### Battery Status LED

When the battery status LED glows green, the batteries are good. The color changes to red at a midpoint during the runtime. When the LED begins to **blink** red, only a few minutes remain.

The exact point at which the LED turns red will vary with battery brand and condition, temperature and power consumption. The LED is intended to simply catch your attention, not to be an exact indicator of remaining time.

**NOTE:** The LCD will also alert when the battery is critically low.



### RF Link LED

When a valid RF signal from a transmitter is received, this LED will light up blue.

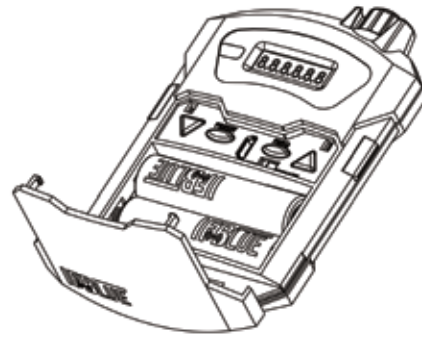
### Headphone Output

A 3.5 mm mini phone jack accommodates a standard mono or stereo type 3.5 mm plug. The unit will drive low or high impedance earphones. The jack is also the receiver antenna input with the earphone cord acting as the antenna. The cord length is not critical but must be at least 6 inches minimum.

### USB Port

Firmware updates via the IFBlue Updater are made easy with the USB port in the battery compartment.

## Installing the Batteries



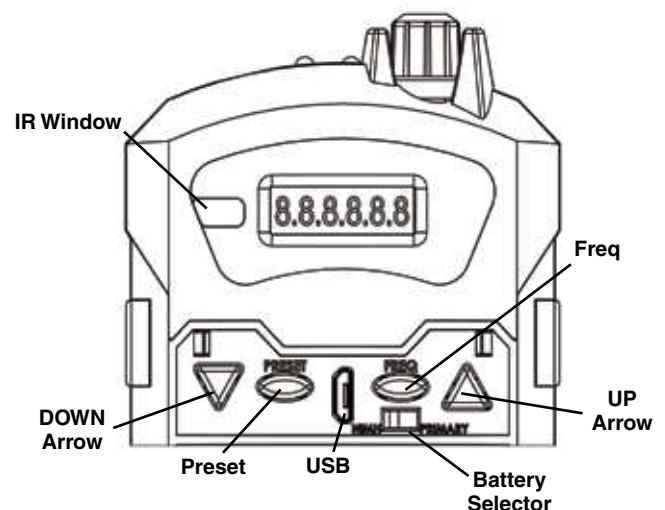
IFBR1C functions with two (2) AA batteries (+1.5 VDC each); alkaline, lithium, or NiMH rechargeables (supplied). Pinch the buttons on each side of the battery door, and pull the door toward you to open. Install the batteries according to the polarity diagram. Select either "primary" (non-rechargeable) or "NiMH" (rechargeable) via the slide switch next to the USB connector. Press the battery door closed until you hear the retaining clasps snap.

**WARNING! Do NOT select (NiMH) rechargeable if you are using Lithium or Alkaline batteries; these are primary cells and can be damaged by enabling recharging. Use the NiMH only with rechargeable Nickel Metal Hydride NiMH batteries.**

## Battery Setup

Use the arrows to select A for alkaline, L for lithium. The default is alkaline.

## Button Controls



# Basic Operation

## Frequency Selection

Press the **FREQ** button to select receiver frequency. Frequency is shown in MHz. The **UP** and **DOWN** arrow buttons adjust the frequency in 1 Mhz steps. Press the **FREQ** button again to select receiver frequency in KHz. The **UP** and **DOWN** arrow buttons adjust the Frequency in 25 KHz steps (VHF: 125 KHz steps).

NOTE: Holding down the **UP** or **DOWN** arrow button, as opposed to a quick press, will scroll through the frequency steps at an accelerated pace.

## Preset Selection

Press the **PRESET** button to select preset frequencies for future use. Presets are displayed as:

P on the left and the current preset number (1-10) on the right **OR**

If the current preset slot is empty, an E also appears on the right. Use the **UP** and **DOWN** arrow buttons to navigate among any programmed presets, tuning the receiver to each.

NOTE: If the preset number is blinking, the receiver IS NOT currently tuned to that preset.

## Preset Programming

In order to program presets, you must first get into “escaped mode.” Press and hold the **PRESET** button until the letter P blinks. Once in escaped mode, there are two options available for setting presets:

### Choosing the preset slot first:

1. Press **PRESET** to display the preset page.
2. Use **UP** and **DOWN** to choose the desired slot. When navigating among the preset slots in this way, all slots are accessible, even the empty ones, and the receiver’s tuning is not affected.
3. If the desired preset slot is occupied, you can reprogram by pressing **PRESET + DOWN** to clear the slot.
4. Press **FREQ** to display the frequency, then use the **UP** and **DOWN** arrow buttons adjust the frequency in 1 Mhz steps.
5. Press **PRESET** again to return to the presets page. You should see the slot you chose.

6. Press and hold **PRESET + UP** to store the preset. The E (if any) will disappear and the preset number will stop blinking, indicating that this slot has now been programmed.

### Choosing the frequency first:

1. Press **FREQ** to display the frequency, then use the **UP** and **DOWN** arrow buttons adjust the frequency in 25 kHz steps.
2. Press **PRESET** to display the preset page.
3. Press and hold **PRESET** until the P blinks (escaped mode). When navigating among the preset slots in this way, all slots are accessible, even the empty ones, and the receiver’s tuning is not affected. Choose the preset slot.
4. Press and hold **PRESET + UP** to program the preset. The E will disappear and the preset number will stop blinking, indicating that this slot has now been programmed with the current frequency.

## Clear a Preset Selection

1. Press **PRESET** to display the preset menu.
2. Press either **UP** or **DOWN** arrow buttons (tuning as you scroll) or **PRESET + UP** and **PRESET + DOWN** (selecting the preset without tuning) to select the preset number you wish to clear.

NOTE: If there is an E next to the preset number, the slot is already clear (empty).

3. Press and hold **PRESET + DOWN** to clear the slot. The E will appear and the preset number will blink, indicating the slot is now empty.

# Setup Pages

## Circular Navigation of Setup Pages

To access the setup pages, hold down the **PRESET** button while powering on. From there, use the **FREQ** or **PRESET** buttons to navigate circularly among the setup pages. To leave the setup pages, power off and on again.

## Battery Type Selection

To access the battery selection option, hold down the **PRESET** button while powering on. bat L (Lithium) is the default option. Use the **UP** or **DOWN** arrow to select Lithium or

Alkaline. Press the **FREQ** button to access additional setup items or turn the unit off to save the settings.

## Backlight Settings

Press the **UP** arrow button while powering on the receiver to display the backlight time out menu. Use the **UP** and **DOWN** arrow buttons to scroll through the options:

**bL**: Backlight always on; default setting

**bL 30**: Backlight times out after 30 seconds

**bL 5**: Backlight times out after 5 seconds

Press the **FREQ** button to access additional setup items or turn the unit off to save the settings.

## LED On/Off

Press the **PRESET** button while powering on the receiver. Press the **FREQ** button to scroll through the setup menu to the LED on/off page. Use the **UP** and **DOWN** arrow buttons to select LEDs On or OFF.

Press the **PRESET** button to access additional setup items or turn the unit off to save the settings.

## Locale (941 band only)

Press the **PRESET** button while powering on the receiver. Press the **FREQ** button to scroll through the setup menu to the Locale page "LC". Use the **UP** and **DOWN** arrow buttons to select CA (Canada) or "=" all other locations.

Press the **PRESET** button to access additional setup items or turn the unit off to save the settings.

## IR Sync Testing

One IFBR1C can now be used to test another in terms of IR communication. To use this feature, have two units available and select one as the tester.

On this unit, press the **PRESET** button while powering on the receiver. Press the **FREQ** button to scroll through the setup menu to the IR test page "Ir". This unit is now ready to initiate the test. Use the second unit as the one being tested. Power it on normally (any display page is fine on the unit being tested).

From the tester's IR page, the tests may be performed and the status is shown. The left side of the page always shows "Ir". On the right side, there possible symbols may be shown:

| Symbol              | Meaning                       |
|---------------------|-------------------------------|
| Blinking minus sign | Test is in progress (LED off) |
| y                   | Test passed (LED green)       |
| n                   | Test failed (LED red)         |

Initially, "Ir n" is shown, meaning failure is assumed until a test passes. The battery status LED will show red at this time, even if the battery is good, to indicate failure.

To start a test, hold the unit being tested up to the tester so that the IR windows face each other and are within a few inches apart. Press the **UP** arrow button on the

tester to begin the test. Within 2 seconds the tester will indicate success ("Ir y" and the power LED will turn green, or failure "Ir n" and the power LED will turn red. If the test fails, it might be useful to adjust the positions of the units' IR windows and try again.

Note: even though the unit being tested displays "Ir y" on a successful test, mirroring the tester's display, it is not then configured as a tester.

Press the **PRESET** button to access additional setup items or turn the unit off to leave the setup menu.

## Firmware Updates

Use the free IFBlue Updater to install firmware updates. The Updater (for both Windows and macOS), firmware update files and change notes are available from the IFBlue website:

**[www.IFBlue.com](http://www.IFBlue.com)**.

1) Open the battery door and connect the IFBR1C to your Windows or macOS computer with a USB cable. The cable must have a micro-B male connector to mate with the USB jack in the IFBR1C.

2) Turn the IFBR1C on. Use the IFBlue Firmware Update Wizard to open the firmware file and install the new firmware version.



# Specifications and Features

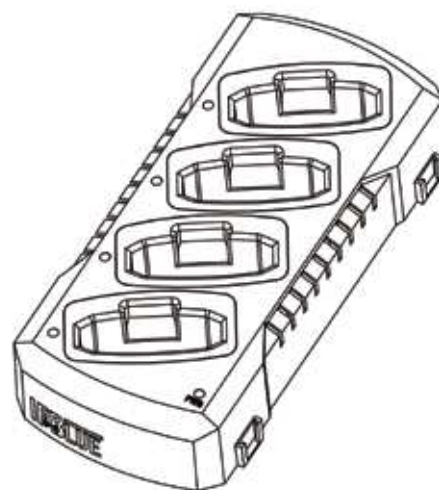
## Operating Frequencies (MHz):

|            |                   |                    |
|------------|-------------------|--------------------|
| Band A1:   | 470.100 - 537.575 |                    |
| Band B1:   | 537.600 - 614.375 |                    |
| Band C1:   | 614.400 - 691.175 |                    |
| Block 941: | Locale - -        | Locale CA (Canada) |
|            | 941.525 - 951.975 | 941.525 - 951.975  |
|            | 952.875 - 956.225 | 953.025 - 956.225  |
|            | 956.475 - 959.825 | 956.475 - 959.825  |
| VHF:       | 174.100 - 215.750 |                    |

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

|                                     |                                                                                                                                                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency Selection Steps:</b>   | 25 kHz; VHF: 125 kHz                                                                                                                                                       |
| <b>Sensitivity:</b>                 | 1 $\mu$ v (20 dB SINAD)                                                                                                                                                    |
| <b>Signal/Noise ratio:</b>          | 95 dB A-weighted                                                                                                                                                           |
| <b>Squelch quieting:</b>            | 90 dB                                                                                                                                                                      |
| <b>AM rejection:</b>                | 50 dB, 10 $\mu$ V to 100 mV                                                                                                                                                |
| <b>Modulation acceptance:</b>       | $\pm$ 20 kHz                                                                                                                                                               |
| <b>Spurious rejection:</b>          | Greater than 70 dB                                                                                                                                                         |
| <b>Operating temperature range:</b> | -20 to 50 degrees C.                                                                                                                                                       |
| <b>Third order intercept:</b>       | 0 dBm                                                                                                                                                                      |
| <b>Frequency response:</b>          | 100 Hz to 10 kHz, (+/-1 dB)                                                                                                                                                |
| <b>Audio output:</b>                | 1V RMS into 50 ohms minimum                                                                                                                                                |
| <b>Antenna:</b>                     | Headphone cable                                                                                                                                                            |
| <b>Min. headphone impedance:</b>    | 16.0 Ohms                                                                                                                                                                  |
| <b>Programmable memory:</b>         | 10 frequencies can be stored as presets                                                                                                                                    |
| <b>Controls:</b>                    | <p>Top Panel: Single knob controls Audio Output Level and Power On</p> <p>Side Panel: Membrane switches with LCD interface for Frequency Selection and Preset function</p> |
| <b>Indicators:</b>                  | Multi-color LED indicator for power on and battery status                                                                                                                  |
| <b>Battery:</b>                     | Two AA batteries (+1.5 VDC each)                                                                                                                                           |
| <b>Battery Life:</b>                | 10 hours (Alkaline), 12 hours (NiMH), 20 hours, 40 minutes (Lithium)                                                                                                       |
| <b>Current consumption:</b>         | 120 mA                                                                                                                                                                     |
| <b>Weight:</b>                      | 4.6 oz (130 g) with batteries                                                                                                                                              |
| <b>Size:</b>                        | 2.8 x 2.4 x 0.8 in.<br>108 x 70.0 x 28.5 mm                                                                                                                                |

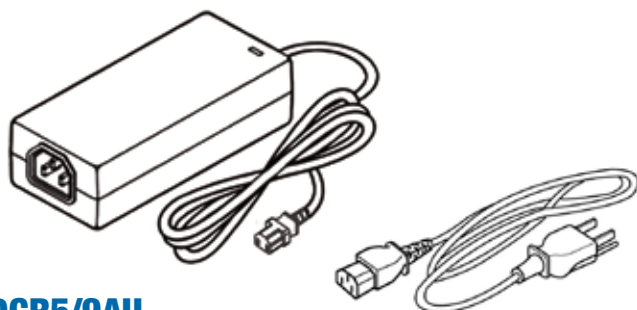
*Specifications subject to change without notice.*



## CHSIFBR1C

IFBlue Receiver battery charging station; up to four units can be charged at once. Includes DCR5/9AU power supply and AC power cord appropriate for region.

## Accessories



## DCR5/9AU

Replacement supply for the charging station. Includes AC power cord.

# Troubleshooting

## Symptom

## Possible Cause

### LED NOT LIT

- Battery not installed or depleted.
- Power not turned on.

### NO SOUND IN HEADPHONE

- AUDIO LEVEL turned all the way down.
- Headphone plug not inserted fully.
- Defective headphone or connector
- Transmitter not operating. (See separate transmitter manual.)
- Receiver not on the same frequency as the transmitter.

### DISTORTED SOUND

- Transmitter gain (audio level) is far too high. Refer to the operating instructions section in the transmitter manual for details on gain adjustment.
- Receiver output may be mismatched with the headset or earphone. Adjust audio level on receiver to the correct level for the headset or earphone.

### HISS AND NOISE, AUDIBLE DROPOUTS

- Transmitter gain far too low.
- Receiver antenna missing or obstructed. (Headphone cable is the antenna.)
- Transmitter antenna missing or obstructed.
- Operating range too great.
- Transmitter antenna obstructed. Move transmitter antenna and/or receiver to a position with a line of sight between the transmitter antenna and the receiver.
- Receiver antenna (headset cord) may need to be repositioned for a line of sight to transmitter antenna

### SHORT RANGE

- Receiver headphone cable is also the antenna. Make sure the cable is not coiled or wound up or wrapped around the receiver case.

### DECIMAL POINT IS BLINKING ON FREQUENCY

- It is normal to see the decimal point blink briefly when making large changes to frequency, as when wrapping around the band edges.
- Can also mean the receiver is currently tuned to an invalid frequency.
- Otherwise, a blinking decimal point is a sign that something is wrong with the hardware.



## 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 e-mail 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.

### Lectrosonics USA:

**Mailing address:**  
Lectrosonics, Inc.  
PO Box 15900  
Rio Rancho, NM 87174  
USA

**Shipping address:**  
Lectrosonics, Inc.  
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Service: [joeb@lectrosonics.com](mailto:joeb@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 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.

**Designed and Distributed by Lectrosonics, Inc.**

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28 June 2021