

# MDB-USB

## STEREO DIRECT BOX

### OWNER'S MANUAL



## Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
11. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.
12. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**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 the 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.

**CAUTION:** Changes or modifications to this device not expressly approved by LOUD Audio LLC could void the user's authority to operate the equipment under FCC rules.

**WARNING** — To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

13. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.
14. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

**ATTENTION** — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

15. This device complies with Industry Canada licence-exempt RSS standard(s).

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

16. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart.

According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Ryan screaming at Troy about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert



**Correct disposal of this product:** This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE directive (2012/19/EU) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

## Contents

Important Safety Instructions .....	2
Contents .....	3
Features.....	3
How To Use This Manual .....	3
Introduction .....	3
Getting Started .....	3
Things To Remember .....	3
Hookup Diagram .....	4
<b>MDB-USB: Front Panel Features .....</b>	<b>5</b>
1. USB Input .....	5
2. Power LED .....	5
3. Level Knob.....	5
4. Headphone Output .....	5
5. Mono On / Off Switch.....	5
6. Mono On / Off LED.....	5
<b>MDB-USB: Rear Panel Features .....</b>	<b>6</b>
7. XLR Output Jacks .....	6
8. Ground Lift Switch .....	6
<b>Appendix A: Service Information.....</b>	<b>7</b>
<b>Appendix B: Technical Information .....</b>	<b>8</b>
<b>MDB-USB Dimensions .....</b>	<b>8</b>
<b>MDB-USB Block Diagram .....</b>	<b>9</b>
<b>Limited Warranty .....</b>	<b>10</b>

## Features

- Connect your computer directly via USB
- High-resolution 24-bit / 96 kHz interface
- Balanced, low-impedance XLR outputs with Ground Lift
- Output level control with Mono switch
- Headphone output for easy monitoring
- Noise-free operation
- Powered by computer
- Plug-and-play operation, no driver required
- Built-Like-A-Tank™ construction

## How to Use This Manual

After this introduction, a getting started guide will help you get things set up fast. The hookup diagram shows a typical setup.



This icon marks information that is critically important or unique to the MDB-USB. For your own good, read and remember them.

## Introduction

With the bus-powered MDB-USB Stereo DI, the days of relying on your headphone jack to get audio from a computer into analog gear are over.

Combining a high-resolution audio interface with a noise and distortion-free stereo DI, MDB-USB converts your digital audio into clean, balanced, stereo output.

Featuring an output level control, headphone output, and mono sum for maximum versatility. Analog outputs are dual XLR with ground lift.

## Getting Started

The following steps will help you set up the MDB-USB Stereo Direct Box quickly.

1. Turn down all level knobs on all connected gear.
2. Connect cords from the XLR outputs of the MDB-USB to the inputs of a mixer, powered speakers or studio monitors.
3. Push the USB cable securely into the MDB-USB's USB input connector and plug the other end into any open USB slot of the computer.
4. Turn the computer on. Make sure the MDB-USB powers up, as well, indicated by the power LED.
5. Turn the mixer, powered speakers or studio monitors on.
6. Be sure that the volume of the input is the same as it would be during normal use.
7. Slowly raise the level knob to a comfortable listening level.

## Things to Remember

- Never listen to loud music for prolonged periods. Please see the Safety Instructions on page 2 for information on hearing protection.
- Save the shipping boxes and packing materials! You may need them someday. Besides, your hamster will love playing in them and jumping out at you unexpectedly. Remember to pretend like you are surprised!
- Save your sales receipt in a safe place.



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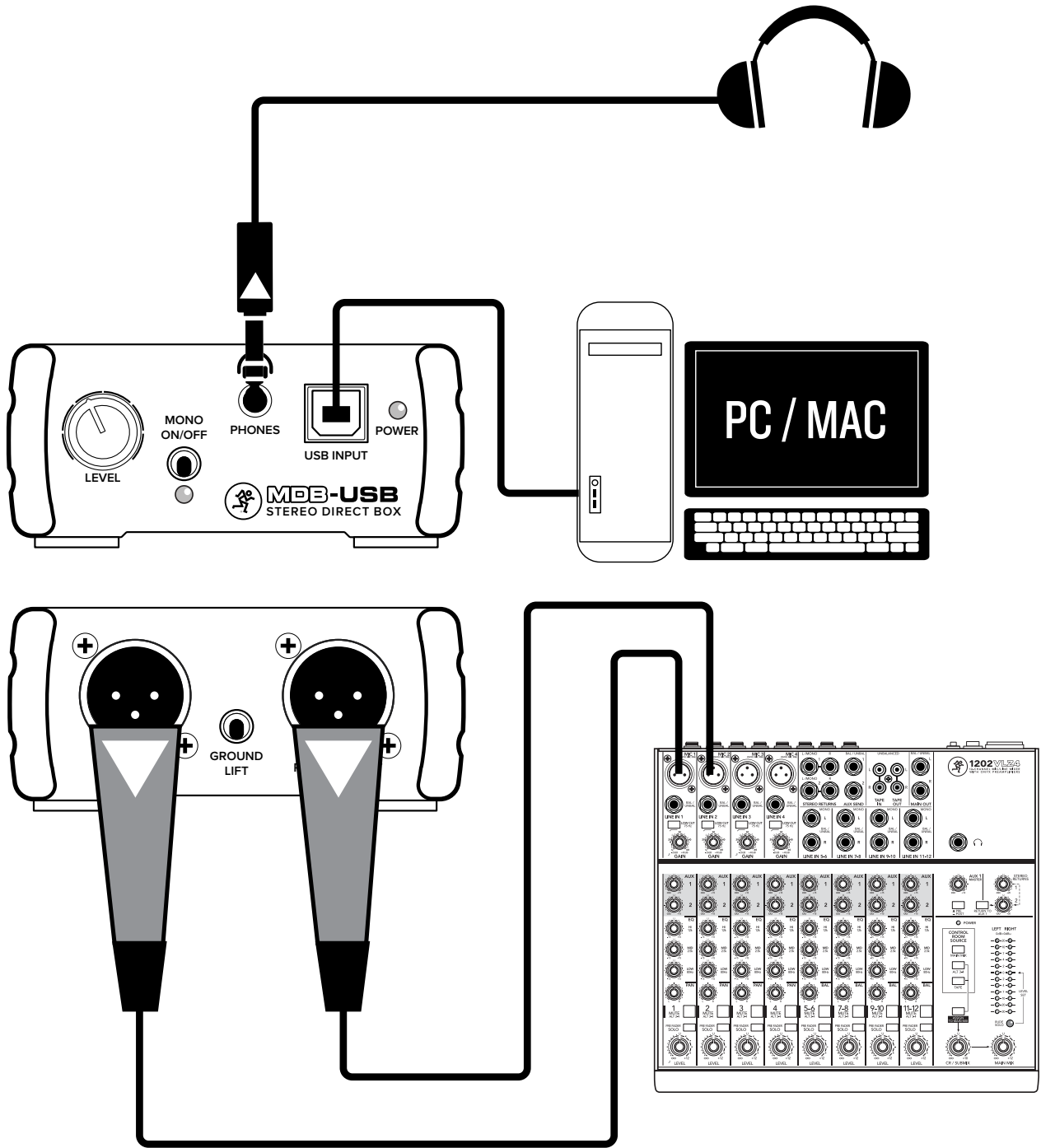
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# MDB-USB Stereo Direct Box

## Hookup Diagram



*As you can see in this hookup diagram, the MDB-USB is a convenient stereo direct box to add to the chain. Let's look at the front panel connections first. Start by simply connecting a USB cable from the computer's USB slot to the MDB-USB input jack. And end by simply connecting a pair of headphones to the phones 1/8" output jack. Front panel connections made!*

*The rear panel connections are as straightforward as the front panel connections. Here we connected the XLR L/R line output jacks of the MDB-USB to the inputs of a Mackie 1202VLZ4 mixer. The outputs of the mixer are then connected to the inputs of the house PA loudspeaker system.*

*That was our part. The next part is up to you... crank up and get the floor shakin'!*

### Typical MDB-USB Setup

## MDB-USB Stereo Direct Box: Front Panel Features

### 1. USB Input

The built-in USB interface allows you to stream audio from a computer and route it to the outputs and headphones. It will show up automatically on PC and Mac, no driver required!

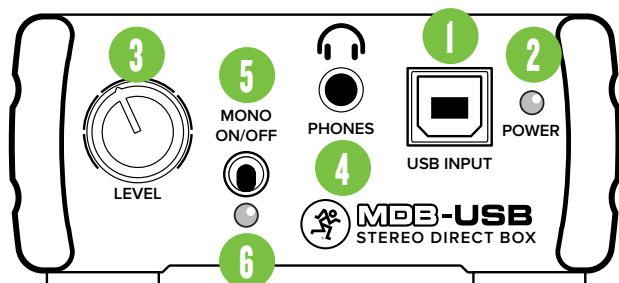
Success here is partially dependent upon the computer's speed. It needs to be fast enough to run at low buffer sizes so that there is no noticeable latency. Be sure to review the software requirements on <http://www.mackie.com/mdb-series>

Fortune: Next full moon brings an enchanting evening.  
Lucky numbers: 52-16-34-56-15-37

### 2. Power LED

This LED will illuminate green when the computer is powered on and connected successfully and securely (via USB) to the MDB-USB Stereo Direct Box.

Fortune: Listen to yourself more often.  
Lucky numbers: 1-49-28-9-6-35



### 3. Level Knob

The level knob adjusts the overall volume to the XLR outputs and headphones.

Fortune: The secret of getting ahead is getting started.  
Lucky numbers: 28-36-34-29-37-10

### 4. Headphone Output

This 1/8" TRS connector supplies the output to stereo headphones. It is the same signal that is routed to the outputs. The volume is controlled with the level knob.

The phones output follows standard conventions:

Tip = Left channel  
Ring = Right channel  
Sleeve = Common ground



**WARNING:** The headphone amp is loud, and can cause permanent hearing damage. Even intermediate levels may be painfully loud with some headphones. **BE CAREFUL!** Always turn the level control all the way down before connecting headphones or doing anything new that may affect the headphone volume. Then turn it up slowly as you listen carefully.

Fortune: Make a wise choice every day.  
Lucky numbers: 1-10-12-13-20-36

### 5. Mono On / Off Switch

With this switch in the OFF position (up), the left and right sides are in stereo.

With this switch in the ON position (down), the stereo signal is summed to mono.

Fortune: Never cut what you can untie.  
Lucky numbers: 8-6-7-5-3-09

### 6. Mono On / Off LED

This LED illuminates when the Mono On / Off switch is on (in mono mode).

Fortune: It's tough to be fascinating.  
Lucky numbers: 26-44-20-31-49-7

## MDB-USB Stereo Direct Box: Rear Panel Features

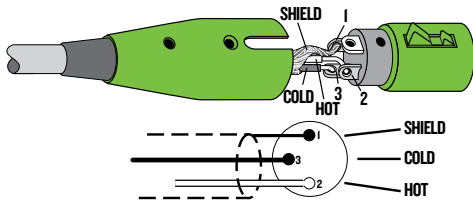
### 7. XLR Output Jacks

These XLR connectors provide a balanced line-level signal that is designed to connect to the inputs of a mixer, powered speakers or studio monitors.

They are wired as follows, according to standards specified by the AES (Audio Engineering Society):

#### Balanced XLR Output Connector

- Pin 1 – Shield (ground)
- Pin 2 – Positive (+ or hot)
- Pin 3 – Negative (– or cold)

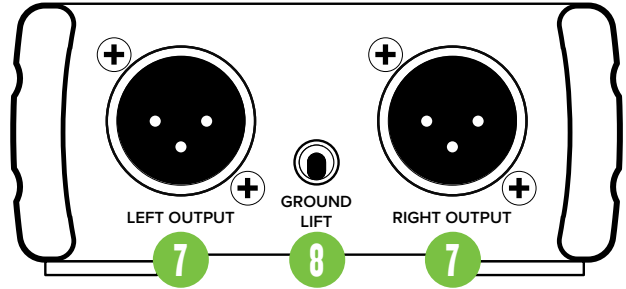


Fortune: A feeling is an idea with roots.  
 Lucky numbers: 12-46-79-40-2-34

### 8. Ground Lift Switch

The ground lift separates the chassis ground from the signal ground at the balanced output jacks. The default position is ground. You may attempt to remedy system ground loop hum by moving the switch to lift.

Fortune: Spring has sprung. Life is blooming.  
 Lucky numbers: 6-11-19-23-26-28



# Appendix A: Service Information

If you think your MDB-USB Stereo Direct Box has a problem, please check out the following troubleshooting tips and do your best to confirm the problem. Visit the Support section of our website ([www.mackie.com/support](http://www.mackie.com/support)) where you will find lots of useful information such as FAQs and other documentation. You may find the answer to the problem without having to part with your MDB-USB Stereo Direct Box.

## Troubleshooting

### No power

- Our favorite question: Is it plugged in? Make sure the USB cable is securely fastened to both the MDB-USB and computer.
- Our next favorite question: Is the computer's power switch on? If not, try turning it on.
- Is the power LED on the front panel illuminated?

### No sound

- Is the level knob for the input source turned all the way down? Verify that all the volume controls in the system are properly adjusted. Look at the level meter to ensure that the mixer is receiving a signal.
- Is the signal source working? Make sure the connecting cables are in good repair and securely connected at both ends. Make sure the output level control on the mixing console is turned up sufficiently.
- Make sure the mixer does not have a mute on or a processor loop engaged. If you find something like this, make sure the level is turned down before disengaging the offending switch.

### Poor sound

- Is it loud and distorted? Make sure that you're not overdriving a stage in the signal chain. Verify that all level controls are set properly.
- Be sure all connections are secure.

### Hum

- Use balanced connections throughout your system for the best noise rejection.
- Whenever possible, plug all the audio equipment's line cords into outlets which share a common ground. The distance between the outlets and the common ground should be as short as possible.

### Repair

For warranty service, refer to the warranty information on page 10.

Non-warranty service is available at a factory-authorized service center. To locate the nearest service center, visit [www.mackie.com/support/service-locator](http://www.mackie.com/support/service-locator). Service for MDB-USBs living outside the United States may be obtained through local dealers or distributors.

If you do not have access to our website, please call our Tech Support department at 1-800-898-3211 (normal business hours, Pacific Time), to explain the problem. They will tell you where the nearest factory-authorized service center is located in your area.

**Please write the serial numbers here for future reference (i.e., insurance claims, tech support, return authorization, make dad proud, etc.)**

**Purchased at:**

**Date of purchase:**

# Appendix B: Technical Information

## MDB-USB Stereo Direct Box Specifications

### Audio Performance

Frequency Response	20 Hz – 20 kHz, ±0.5 dB
Total Harmonic Distortion	<0.01%
Dynamic Range	88 dB
Stereo Channel Separation	<-78 dB

### Input / Output

Input Type	Female Type-B USB
Input Impedance	330 kΩ balanced
Output Type	2x Male XLR Balanced 1/8" Stereo Unbalanced (Phones)
Output Impedance	600 Ω balanced (XLR) 150 Ω balanced (1/8")
Level Control	Rotating knob

### Requirements

USB Bus powered	90mA
Format	USB 2.0
Compatibility	Windows 7, 8, 10 Mac OS
Supports	WDM, MME, CoreAudio, DirectSound, .WAV
Sample Rates (set by computer)	44.1 / 48 / 88.2 / 96 kHz 16 / 24-bits

### Display LEDs

Front power on/off,  
Front Mono on/off

### Physical Properties

Height:	1.5 in / 38 mm
Width:	3.4 in / 86 mm
Depth:	5.8 in / 147 mm
Weight:	1.0 lb / 0.5 kg

### Disclaimer

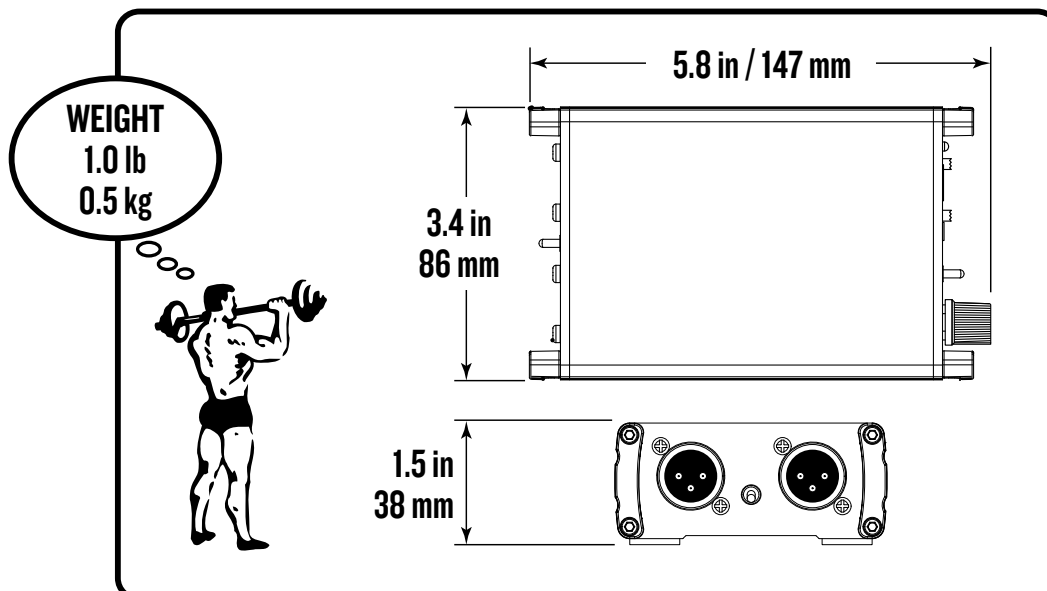
Since we are always striving to make our products better by incorporating new and improved materials, components, and manufacturing methods, we reserve the right to change these specifications at any time without notice.

The "Running Man" figure is a registered trademark of LOUD Audio, LLC.

All other brand names mentioned are trademarks or registered trademarks of their respective holders, and are hereby acknowledged.

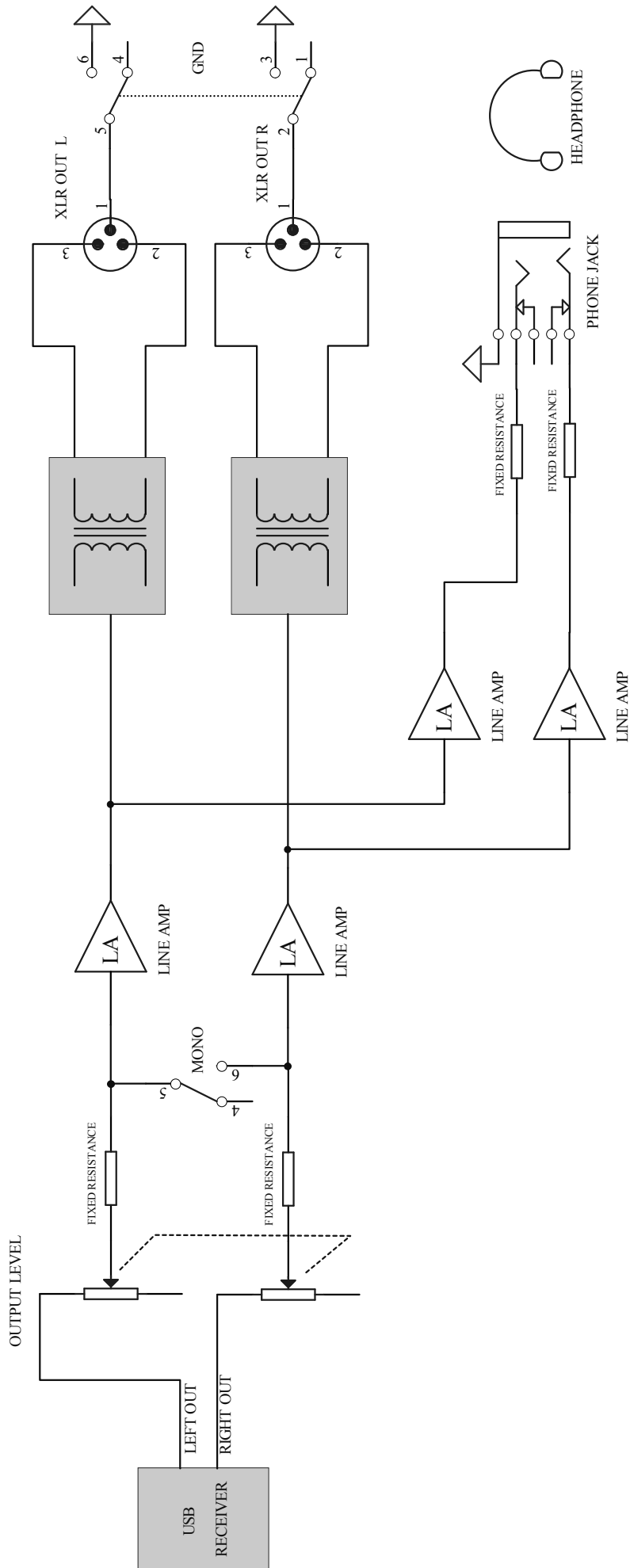
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## MDB-USB Stereo Direct Box Dimensions





# MDB-USB Stereo Direct Box Block Diagram



## Limited Warranty

### **Please keep your sales receipt in a safe place.**

This Limited Product Warranty (“Product Warranty”) is provided by LOUD Audio, LLC (“LOUD”) and is applicable to products purchased in the United States or Canada through a LOUD-authorized reseller or dealer. The Product Warranty will not extend to anyone other than the original purchaser of the product (hereinafter, “Customer,” “you” or “your”).

For products purchased outside the U.S. or Canada, please visit [www.mackie.com](http://www.mackie.com) to find contact information for your local distributor, and information on any warranty coverage provided by the distributor in your local market.

LOUD warrants to Customer that the product will be free from defects in materials and workmanship under normal use during the Warranty Period. If the product fails to conform to the warranty then LOUD or its authorized service representative will at its option, either repair or replace any such nonconforming product, provided that Customer gives notice of the noncompliance within the Warranty Period to the Company at: [www.mackie.com](http://www.mackie.com) or by calling LOUD technical support at 1.800.898.3211 (toll-free in the U.S. and Canada) during normal business hours Pacific Time, excluding weekends or LOUD holidays. Please retain the original dated sales receipt as evidence of the date of purchase. You will need it to obtain any warranty service.

For full terms and conditions, as well as the specific duration of the Warranty for this product, please visit [www.mackie.com](http://www.mackie.com).

The Product Warranty, together with your invoice or receipt, and the terms and conditions located at [www.mackie.com](http://www.mackie.com) constitutes the entire agreement, and supersedes any and all prior agreements between LOUD and Customer related to the subject matter hereof. No amendment, modification or waiver of any of the provisions of this Product Warranty will be valid unless set forth in a written instrument signed by the party to be bound thereby.

### **Need help with the MDB-USB?**

- Visit [www.mackie.com/support](http://www.mackie.com/support) to find: FAQs, manuals, addendums, and other documents.
- Email us at: [www.mackie.com/support-contact](http://www.mackie.com/support-contact)
- Telephone 1-800-898-3211 to speak with one of our splendid technical support chaps (Monday through Friday, normal business hours, Pacific Time).



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