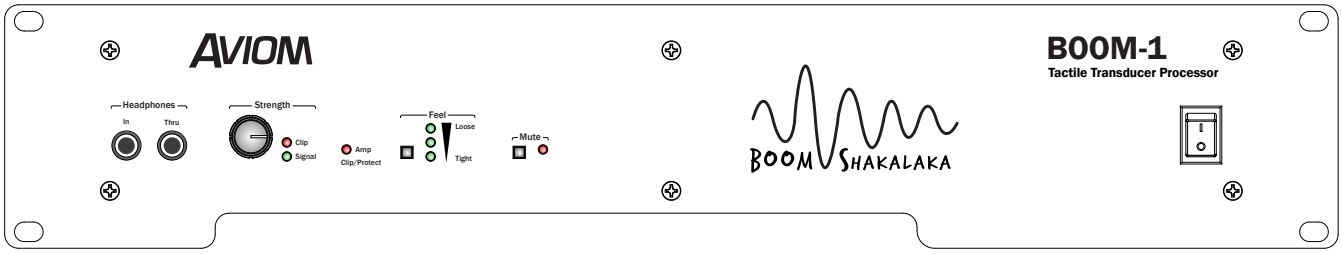
AVIOM®



B00M-1

Tactile Transducer Processor

User Guide

9310-1034-0001F v1.0

READ THIS FIRST

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. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as when the 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.
15. No on/off power switches are included in the system. The external power supply should be used to control power to an Aviom device. This power supply should remain readily operable.
16. The solid line over dashed line symbol (⎓) indicates that the input voltage must be a DC voltage.
17. The box within a box symbol (⧈) indicates that the external power supply is double insulated.

WARNING!

TO REDUCE THE DANGER OF ELECTRICAL SHOCK DO NOT REMOVE COVERS.

NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

To reduce the risk of fire or electrical shock, do not expose this product to rain or other types of moisture.

To avoid the hazard of electrical shock, do not handle the power cord with wet hands.

Replace fuse with same type and rating.

Operating Temperature: 0˚C to 50˚C (32˚F to 122˚F)

Risque de choc électrique – ne pas ouvrir. Pour réduire le risque de feu ou de choc électrique, ne pas exposer cet équipement à la pluie ou la moisissure. Pour réduire le risque de choc électrique, ne pas retirer le couvercle. Pièces non remplaçables par l'utilisateur. Confier la réparation à une personne qualifiée. Attention – utiliser seulement un fusible de rechange de même type.

Cet appareil est conforme à la section 15 de la norme FCC. Son fonctionnement est soumis aux conditions suivantes : (1) cet équipement ne doit pas causer des interférences nocives, et (2) cet équipement doit accepter toute interférence captée incluant les interférences pouvant causer des opérations indésirables.

Cet appareil numérique de Classe B est conforme à la norme NMB-003 du Canada.

IMPORTANT:

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.

Changes or modifications to the product not expressly approved by Aviom, Inc. could void the user's FCC authority to operate the equipment.

CAUTION:

- Using any audio system at high volume levels can cause permanent damage to your hearing.
- Set your system volume as low as possible.
- Avoid prolonged exposure to excessive sound pressure levels.

Certifications

EMC: EN55103-1:2009
EN 55103-2: 2009
EN 55022:2006 / CISPR 22:1997
CAN/CSA-CEI/IEC CISPR 22:02
FCC 47 CFR, Part 15

Safety: UL 62368-1 Ed 2.0; Proposal Number 500542870;
Testing done to UL 62368-1 first edition
Can/CSA C22.2 62368-1

ETL/cETL Listed and RoHS Compliant

Notice of Rights

Trademarks

Aviom, Inc. Limited Warranty

Aviom, Inc. warrants this product against defects in materials and workmanship for a period of **one year** from the date of the original retail purchase.

This warranty does not apply if the equipment has been damaged due to misuse, abuse, accident, or problems with electrical power. The warranty also does not apply if the product has been opened or modified in any way; if the product serial number has been damaged, modified, or removed; or if the original Quality Assurance label has been damaged, modified, or removed.

If a defect is discovered, first write or call Aviom, Inc. to obtain a Return Authorization number. No service will be performed on any product returned without prior authorization. Aviom, Inc. will, at its option, repair or replace the product at no charge to you. The product must be returned during the warranty period, with transportation charges prepaid to Aviom, Inc., 1157 Phoenixville Pike, Suite 201, West Chester, PA 19380. You must use the product's original packing materials for shipment. Shipments should be insured for the value of the product. Include your name, address, phone number, description of the problem, and copy of the original bill of sale with the shipment. The Return Authorization number should be written on the outside of the box.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). AVIOM'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER SUCH PERIOD.

AVIOM, INC. DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY DOCUMENT. AVIOM, INC.'S LIABILITY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT OUR OPTION, OF ANY DEFECTIVE PRODUCT, AND SHALL IN NO EVENT INCLUDE INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

SOME STATES DO NOT ALLOW EXCLUSIONS OR LIMITATION OF IMPLIED WARRANTIES OR LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Warranty Information

Please record the following information for future reference:

Your Authorized Aviom Dealer:

Name: _____

Address: _____

_____

_____

Phone: _____

Serial Numbers of Your Aviom Products: _____

_____

_____

Date of Purchase: _____

Your Authorized Aviom Dealer is your primary source for service and support. The information recorded above will be helpful in communicating with your Authorized Aviom Dealer should you need to contact Aviom Customer Service. If you have any questions concerning the use of this unit, please contact your Authorized Aviom Dealer first. For additional technical support, or to find the name of the nearest Authorized Aviom Repair Station, check the Aviom web site at www.aviom.com.

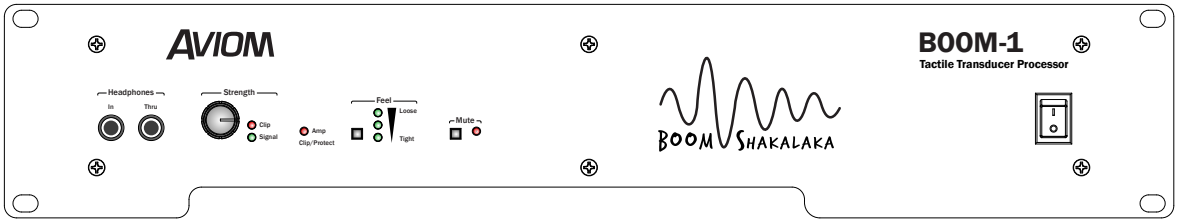
To fulfill warranty requirements, your Aviom product should be serviced only at an authorized Aviom service center. The Aviom serial number label must appear on the outside of the unit, or the Aviom warranty is void.

Although every effort has been made to ensure the accuracy of the text and illustrations in this manual, no guarantee is made or implied as to the accuracy of the information contained within.

Table of Contents

BOOM-1 Tactile Transducer Processor

*Thank you for purchasing the Aviom **BOOM-1 Tactile Transducer Processor**. This User Guide is designed to familiarize you with your new BOOM System product's features and to have your system up and running as quickly as possible.*



Feature Overview

The BOOM-1 Tactile Transducer Processor is the perfect companion to Aviom's Pro16® Series of personal mixing products It is designed to add low frequency tactile information to a performer's monitor mix for applications in live performance, recording, and broadcast. Designed by the personal monitor experts, it's easy to use and provides a natural low-frequency extension to your monitoring environment.

The BOOM-1 Tactile Transducer Processor features:

- 1/4-inch TRS Stereo Headphone In and Thru
- Strength control with Signal and Clip LED indicators
- Selectable Feel presets control multiple DSP settings for user-preferred Tight to Loose feel
- Locking Transducer Out connector
- XLR mono input
- XLR mono line-level output with Volume control
- Seamless integration with existing Aviom personal mixing systems

BOOM System products can be connected to virtually any audio device that can supply a mono line-level or stereo headphone-level output.

The BOOM System

In addition to the BOOM-1 Tactile Transducer Processor, Aviom makes adding tactile transducers to your monitoring system as easy as possible by providing a suite of complementary products that are designed to be plug-and-play simple. We've partnered with some of the industry's leading manufacturers to offer tactile-enhanced versions of their products that can be directly connected to the BOOM-1 Tactile Transducer Processor. These include:

- CTT-1 Clamp-On Tactile Transducer—powered by ButtKicker®—for Drum Thrones and Stools
- KBS-1 Keyboard Seat
- PFS-1 Performance Stool
- PLF-1 Platform—powered by ButtKicker

Conventions Used in this Document

Using Personal Mixers

When referring to the use of the Personal Mixers in a personal mixing system in general, the term ***Personal Mixer*** is used to describe a case where an A320 Personal Mixer, A360 Personal Mixer, or legacy personal mixer such as the A-16II may be used. In fact, the stereo audio output of most audio devices may be connected to the inputs of the BOOM-1.

Cat-5 Cables

In most cases Cat-5e, Cat-6, and Cat-6e cables can be interchanged. When speaking about interconnections between components in a system, the term ***Cat-5*** is used generically to indicate the use of any of the applicable cable types.

A-Net Distributors

The Aviom D800, D800-Dante, D400, D400-Dante, A-16D and A-16D Pro A-Net Distributors are referred to generically as ***A-Net Distributors***. These are used to supply DC power to the personal mixers and to copy an A-Net digital signal and split it into multiple copies so that personal mixers may be connected in parallel.

Button Presses

When instructed to press a specific button on the BOOM-1 Tactile Transducer Processor a special font style is used. For example, "Press the **Mute** button."

Package Contents

The BOOM-1 Tactile Transducer Processor box includes:

- One BOOM-1 Tactile Transducer Processor
- Quick Start Documentation

A Warranty Registration Is included within this User Guide. Be sure to fill out the form and return it to Aviom, Inc. via mail or fax as soon as possible.

Compatibility

The BOOM-1 Tactile Transducer Processor is compatible with current and legacy Aviom personal mixing devices as detailed below.

Pro16 Products

The stereo audio output from any personal mixer (or similar audio device) may be connected to the BOOM-1 Tactile Transducer Processor's **Headphone In**. Compatible Aviom products include:

- A360 Personal Mixer
- A320 Personal Mixer
- A-16II Personal Mixer

AC Line Conditioning

Aviom products are digital devices and as such are sensitive to sudden spikes and drops in the AC line voltage. Changes in the line voltage from lightning, power outages, etc. can sometimes damage electronic equipment.

To minimize the chance of damage to your equipment from sudden changes in the AC line voltage, you may want to plug your equipment into a power source that has surge and spike protection. Power outlet strips are available with built-in surge protection circuits that may help protect your equipment.

Other options for protection of your equipment include the use of an AC line conditioner or a battery backup system (sometimes referred to as an *uninterruptible power supply*, or UPS).

Cleaning and Maintenance Information

The exterior of your Aviom products should be cleaned with a dry, soft, lint-free cloth. For tougher dirt, you can use a cloth slightly dampened with water or with a mild detergent.

When cleaning your Aviom products, never spray cleaners directly onto the product surfaces. Instead,

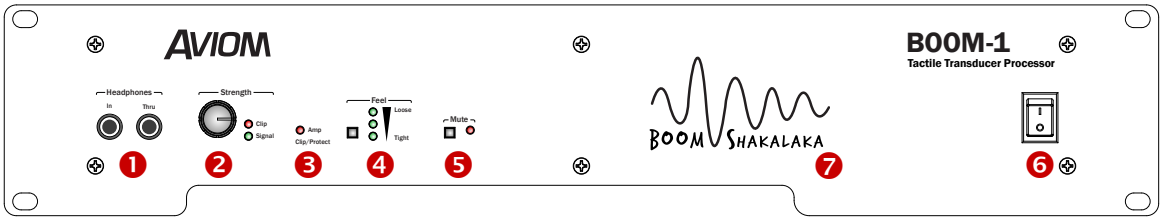
spray a small amount of the cleaning solution onto a clean cloth first. Then use the dampened cloth to clean the product.

✓ **Note:** Never use solvents or abrasive cleaners on the finished surfaces of your Aviom products.

BOOM-1 Front Panel

The following section covers the basic functions of the BOOM-1 Tactile Transducer Processor's user interface. See "System Setup" on page 15 for information about adding the BOOM-1 to your personal mixing system

Controls and Switches



	Function
1	Stereo Headphone In and Thru
2	Strength Control with Signal and Clip LEDs
3	Amp Clip/Protect LED
4	Feel control with push button selector and three LED indicators
5	Mute control with push button selector and LED
6	AC power on/off switch
7	Clever waveform and marketing slogan

Stereo Headphone In and Thru

The **Headphone In** on the BOOM-1 is designed to accept the unbalanced stereo headphone output from a personal mixer or similar audio device. This signal becomes the audio input to the BOOM-1 DSP processor. An exact copy of your headphone input is available at the **Headphone Thru** jack. This provides an easy way to feed your personal mixer's stereo mix to the BOOM-1 digital signal processor while retaining the use of its unprocessed stereo output for your headphones or earbuds.

✓ **Note:** The Headphone In and Thru are duplicated on the BOOM-1's front and rear panel for convenience sake. It is recommended that only one audio source be connected to the BOOM-1 **Headphone In** at a time.

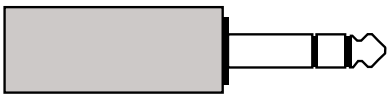
When setting up your system it is important to remember that the front and rear **Headphone In** will interact with each other if improperly used and should not be thought of as a passive audio mixer, or in the case of the **Headphone Thru** connection, as a way to connect multiple headphones/earbuds. Connect one source to the **Headphone In** and one set of headphones/earbuds to the **Headphone Thru** for optimal results.

✓ **Note:** Any audio connected to the rear panel XLR **Line In** is sent directly to the internal DSP processor and will not be heard in headphones (or earbuds) connected to either Headphone Thru jack on the BOOM-1.

Audio Sources

The **Headphone In** 1/4-inch jack on the BOOM-1 is designed to accept a left-right stereo, unbalanced audio signal as its input. A standard TRS stereo plug is configured as follows:

- Tip: Audio Left
- Ring: Audio Right
- Sleeve: Ground



Tip, ring, sleeve (TRS) 1/4-inch plug

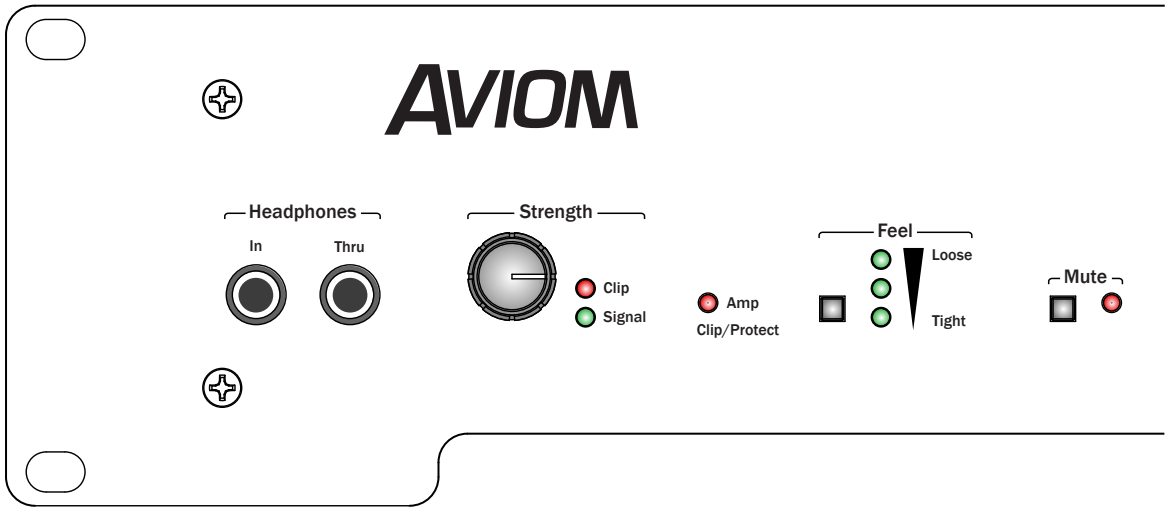
Do not connect mono, balanced TRS (tip, ring, sleeve) 1/4-inch line-level audio signals to the BOOM-1 headphone input; phase-induced cancellation of the source audio signal will occur. Connect line-level audio sources to the XLR Line In on the rear panel; use a TRS-to-XLR adapter cable if necessary.

Strength Control

Once a stereo headphone mix from your personal mixer is connected to the BOOM-1 **Headphone In** jack, the stereo audio signal is converted to mono, sent to the internal digital signal processor (DSP) section for processing, and then output at speaker level for your tactile transducer. The **Strength** knob controls how much of that DSP-processed signal is sent to the tactile transducer output and the rear-panel **Line Out** jack.

Strength Control LEDs

Two LED indicators are used in conjunction with the Strength control. The green **Signal** LED will light whenever the input signal to the digital signal processor reaches a level of -40 dB or higher. The red **Clip** LED indicates that the source input to the digital signal processor has reached maximum level. Short transients from percussive sources such as drums will light the **Clip** LED briefly; this is normal. Sustained high level inputs that cause the **Clip** LED to light steadily should be avoided as this indicates that the source audio is clipping the BOOM-1 DSP processor input. Lower the audio level at its source to avoid clipping.



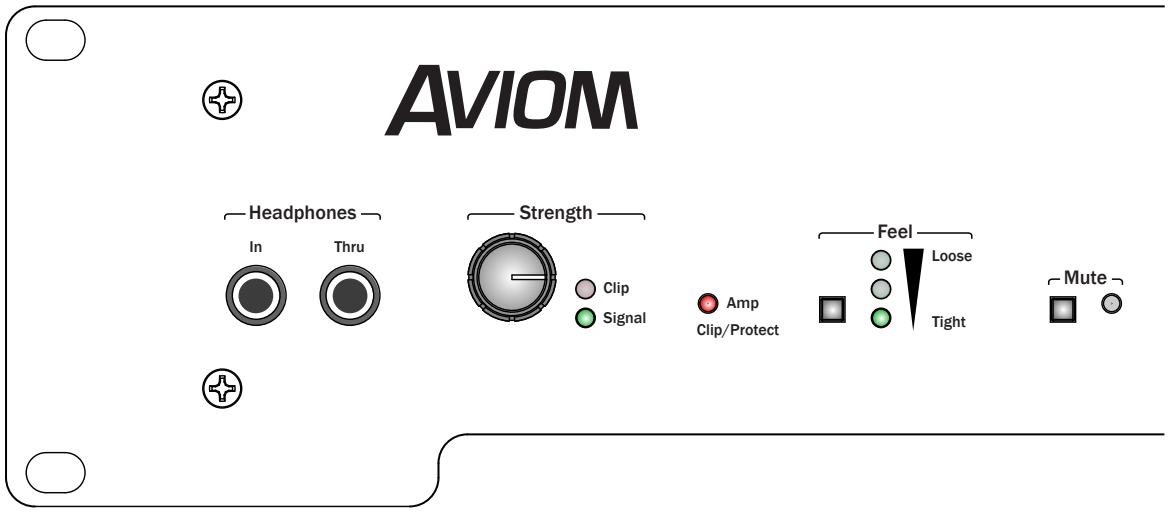
The Strength knob controls the amount of the source signal sent to the digital signal processor.

Amp Clip/Protect LED

The BOOM-1 internal amplifier contains built-in protection circuitry to prevent damage to the system. The **Amp Clip/Protect** LED has these behaviors:

1. It will light red to indicate that the input to the amplifier is overloading and causing distortion.
2. If that overload state persists and the amplifier becomes overheated, the **Amp Clip/Protect** LED will begin to flash, indicating that the BOOM-1 has suspended operation to protect itself. The transducer output is also muted.
3. The **Amp Clip/Protect** LED will also flash if the unit detects a short circuit on the transducer output while there is a significant audio output. In this case the LED will continue flashing until three seconds after the circuit detects that the short circuit was removed.

When the internal amplifier section is in Protect mode, the red **Amp Clip/Protect** LED will continue to flash until such time that the internal circuitry reaches a safe operating temperature and normal operation can be restored. The time it takes for this to happen will vary and is dependant upon the unit's current internal temperature, how the unit is mounted, and the ambient temperature of its surroundings.



The Amp Clip/Protect LED lights to indicate amplifier clipping and flashes to indicate that the unit has entered its protection mode.

Feel Control

The BOOM-1 Tactile Transducer Processor offers three distinct options that allow you to tailor the response of the unit's DSP processing to the incoming audio and allow you to choose the most musical setting based on your own tastes. The easy-to-use **Feel** control steps through three preset DSP settings from **Tight** to **Loose** that control numerous parameters including the internal filtering cutoffs, compression threshold and compression ratio values. Simply press the momentary button to choose a preset.

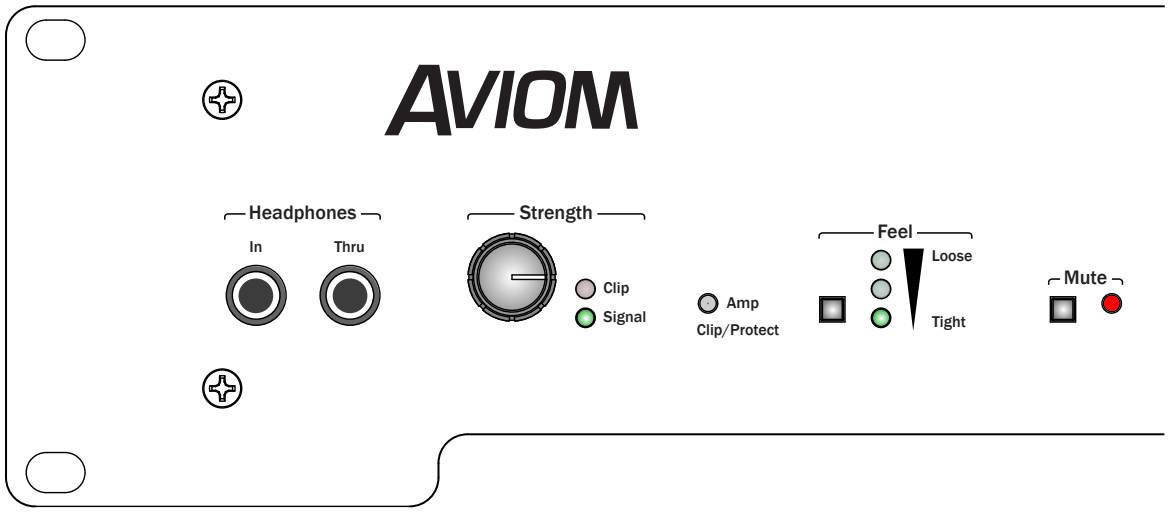
Setting	Description
3 LEDs	**Loose** — Highest compression threshold; allows more dynamic variations from soft to loud. Highest filter cutoff frequency, allows the most source audio to reach the DSP input.
2 LEDs	**Medium** — Average compression threshold; The filter cutoff frequency is set higher than the Tight setting, allowing more low frequency information from drums, bass, and guitars, etc., to be sent to the tactile transducer.
1 LED	**Tight** — Lowest compression threshold; allows fewer dynamic variations from soft to loud. Lowest filter cutoff frequency emphasizes kick drum and bass.

Pressing the **Feel** button will cycle up/down through the three preset options, moving up from Tight to Medium to Loose and then back down to Medium and finally to Tight. The BOOM-1 unit's current Feel setting is retained across power cycles.

The Feel control also interacts with the rear panel's DSP Profile setting that is used to fine-tune the BOOM-1 performance for the specific tactile transducer and mounting method being used.

Mute Switch

Use the **Mute** switch to temporarily silence the rear-panel transducer output while leaving the incoming source audio active in the BOOM-1 headphone output. This allows you to easily set up levels and compare a mix with and without the tactile transducer component. The Mute switch's red LED blinks whenever the BOOM-1 rear panel transducer output is muted.



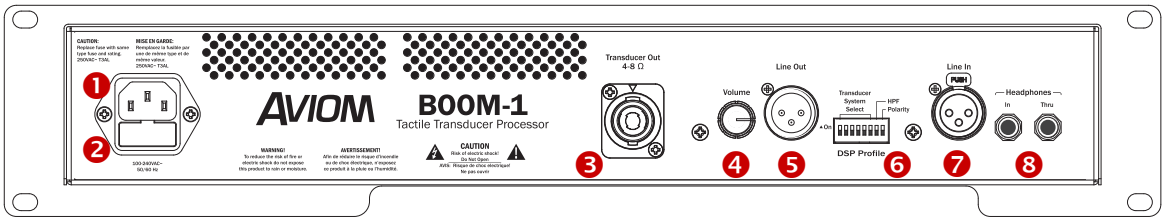
Press the **Mute** button to temporarily stop the output to the tactile transducer.

The Mute switch does not affect audio at the rear-panel XLR Line Out; the DSP-processed signal is always available at this output for externally connected amplifiers. If you are going to use the BOOM-1 XLR line-level output instead of the Transducer Out for your application it is suggested that the **Mute** button be left engaged, effectively disabling the internal power amplifier.

BOOM-1 Rear Panel

This section outlines the basic functions of the BOOM-1 Tactile Transducer Processor's connections and interface found on its rear panel. See "System Setup" on page 15 for information about adding the BOOM-1 to your personal mixing system

Connectors and Switches



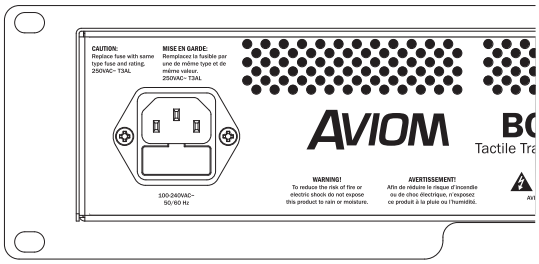
	Function
1	AC power inlet, IEC connector
2	Fuse, size: 250VAC~ T3AL
3	Transducer Out; 4-8 Ohms; Locking speaker connector
4	Line-level output volume control
5	Balanced line-level output, XLR-M
6	DSP Profile DIP switches
7	Balanced line-level input, XLR-F
8	Stereo Headphone In and Thru

Power Connections

The BOOM-1 has a switching power supply that allows the unit to be used with AC power service anywhere in the world. The AC power inlet uses a standard, detachable IEC power connector. Always use the IEC power connector with the plug designed for your local power service; avoid using adapters.

Fuse

The BOOM-1 AC inlet includes an internal fuse, size 250VAC~ T3AL. To check the fuse, power off the BOOM-1 processor and remove the power cord from the AC service. Remove the small cover below the AC inlet to open the fuse compartment. Reinstall the fuse and its cover before powering the unit up.



The fuse is found below the AC inlet.

✓ **Note:** Always replace the fuse with one of the same value, 250VAC~ T3AL.

Transducer Out

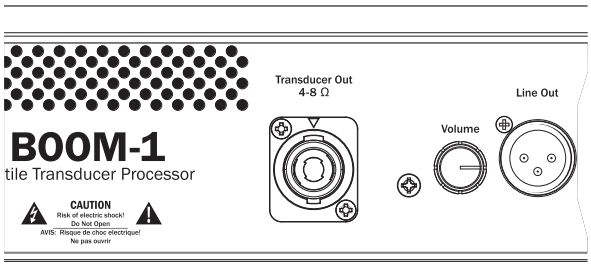
The locking **Transducer Out** connector is designed to be connected to the tactile transducer(s) mounted on a drum throne, keyboard seat, performance stool, platform, etc.

The speaker-level output of the BOOM-1 Tactile Transducer Processor's amplifier uses a two-conductor locking style connector. This provides a solid connection between the processor output and the tactile transducer. Speaker cables fitted with the locking connector are readily available in a variety of lengths.

BOOM-1 can be connected to one or more tactile transducers as long as the total impedance is in the range of 4-8 Ohms.

Line-Level Output

The BOOM-1 provides a mono, balanced XLR line-level audio output which makes it easy to connect the unit's processed audio signal to an external amplifier. The **Line Out** is useful when you want to use an array of tactile transducers in a large area such as a stage floor, powered by one or more external amplifiers.



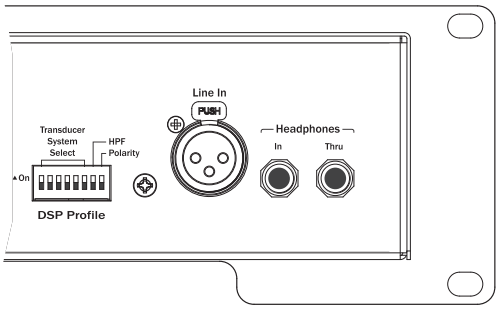
The Line Out simplifies the connection of the unit's processed signal to an external amplifier.

A separate **Volume** control is available for the line-level output. Use this to control the amount of the BOOM-1 processed audio signal sent to an external amplifier's audio input. Note that the front-panel **Strength** control determines the total level of the processed audio signal available to both audio outputs (Transducer Out and Line Out) on the BOOM-1 processor.

✓ **Note:** The front-panel Mute switch does not affect audio at the rear-panel XLR Line Out.

DSP Profile DIP Switches

The processed audio output of the BOOM-1 can be fine-tuned to match the tactile transducer being used and its mounting type (drum throne, platform, performance stool, or stage floor) using the eight **DSP Profile** DIP switches on the rear panel.



Match the BOOM-1 to your choice of transducer and mounting method with the DSP Profile switches.

Transducer System Select

The six DIP switches in the **Transducer System Select** section of the DSP Profile allow the response of the BOOM-1 output to be fine tuned to suit the specific type and model of tactile device as well as the mounting method that you are using. Drum thrones, keyboard seats, platforms, performance stools, etc., all have natural resonant frequencies that can enhance and/or detract from the response of a given tactile transducer device connected to it. The result is some frequencies being augmented and made more prominent while others are diminished. In addition, the tactile transducers themselves have resonances that can be smoothed out to produce a more even, more musical response when combined with any given mounting method.

The table below offers settings for a variety of mounting methods and some specific models of tactile transducers.

The DIP switches on the rear panel provide the following settings:

▼ = DIP switch down ▲ = DIP switch up

DIP Switch	1	2	3	4	5	6	7	8
Product	▼ = DIP switch down ▲ = DIP switch up							
CTT-1 Clamp-On Transducer	▼	▼	▼	▼	▼	▼	▼	▼
KBS-1 Keyboard Seat	▲	▼	▼	▼	▼	▼	▼	▲
PFS-1 Performance Stool	▼	▲	▼	▼	▼	▼	▼	▲
PLF-1 Platform	▲	▲	▼	▼	▼	▼	▼	▲
CTT-1 Variation 1	▼	▼	▲	▼	▼	▼	▼	▲
CTT-1 Variation 2	▲	▼	▲	▼	▼	▼	▼	▲
Drum Throne w/ 2 Aura® shakers	▼	▲	▲	▼	▼	▼	▼	▲
Drum Throne w/ 2 ADX® shakers	▲	▲	▲	▼	▼	▼	▼	▲
Drum Throne w/ 2 BK mini Concert® shakers	▼	▼	▼	▲	▼	▼	▼	▲
Platform w/ 2 Aura shakers	▲	▼	▼	▲	▼	▼	▼	▲
Keyboard Seat w/ Aura shaker	▼	▲	▼	▲	▼	▼	▼	▲
Keyboard Seat w/ Visaton® shaker	▲	▲	▼	▲	▼	▼	▼	▲
Bypass all DSP filter settings	▲	▲	▲	▲	▲	▲	▲	▲
All other DIP switch combinations are set to the CTT-1 settings:								
	▼	▼	▼	▼	▼	▼	▼	▼

The **Transducer System Select** DIP switches can be changed at any time, even while the BOOM-1 Tactile Transducer Processor is powered up and connected.

HPF

Two high pass filter (HPF) settings are available. The default position for the high pass filter (HPF) is down. This setting rolls off non-musical components (like rumble) sent to the transducer output from 15Hz and below. When the switch is up, the HPF cutoff is moved higher, near 20 Hz.

Polarity

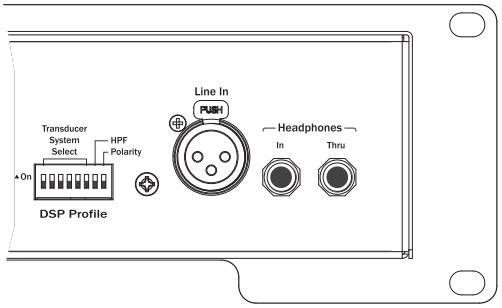
Changing the polarity of the audio from BOOM-1 can be useful when you need to compensate for the orientation of a tactile transducer mounted on a platform, stool, etc. Use the **Polarity** DIP switch in the ***up*** position to invert the polarity of the processed audio signal sent to both the Transducer Out and Line Out.

The default Polarity position shown in the table above is set to match the mounting orientation of the tactile transducer. You may want to try the polarity set in the opposite direction; use the setting that provides the best low-frequency feel for your application.

Line-Level Input

Mono line-level audio sources from mixing consoles and other audio devices may be connected to the BOOM-1 Tactile Transducer Processor by using its rear-panel **Line In** jack. The XLR female connector accepts a balanced mono signal. If needed, use a TRS-to-XLR adapter cable to connect the line-level output of a device that has 1/4-inch balanced TRS line-level output.

The **Line In** jack is also ideal when using the A360 Personal Mixer which has a dedicated mono XLR output. Simply connect a standard XLR mic cable between the A360 and the BOOM-1 input instead of using the Headphone In. See the system setup for an A360 in "Power Connections" on page 11.



Use the Line In jack when connecting a mono, balanced audio source.

Stereo Headphone In and Thru

The **Headphone In** on the BOOM-1 is designed to accept the unbalanced stereo headphone output from a personal mixer or similar audio device. The rear-panel headphone connections are a duplicate of those found on the unit's front panel. See the information on page 6.

System Setup

This section explains how the BOOM-1 Tactile Transducer Processor can be integrated with your Personal Mixer (from Aviom or third-party manufacturers) to create a powerful personal mixing system. See the detailed User Guides that came with the Aviom products mentioned in this section for complete information about their use, features, and setup.

Adding a well processed low-frequency tactile transducer (also known as a 'bass shaker') to a drum throne, keyboard seat, guitarist's stool, performance platform, or even to the floor of a stage, allows the body to feel bass frequencies, adding realism to the mix. The BOOM-1 Tactile Transducer Processor brings Aviom-optimized DSP to the tactile experience.

Being able to hear *and feel* your mix can significantly improve the user experience when using in-ear monitors and/or headphones, providing powerful sound usually achieved only with high volume and large, high quality speaker cabinets.

How To Use The Boom System

Since the BOOM System makes virtually no audible sound, it's important to understand the concepts behind its use to enable you to use it effectively in a musical context. **A little goes a long way.**

Using a BOOM System device with your IEMs or headphones should add back that amount of vibration that previously came from the sympathetic vibrations of the stage and its surroundings when acoustic drum sets and/or amplifiers were being used. You don't want the effect that's used in a theme park or movie sound system to shake everyone and everything during a high-energy action sequence. You're trying to complete a musical picture, no rebalance or re-mix it.

We always suggest that you start with the tactile system off (with the Strength knob at minimum) and get a good stereo mix on your personal mixer first at a moderate listening level. Then, blend in the BOOM System slowly while playing and/or singing. Set to a musically useful level, the BOOM System will enhance your monitoring experience and allow you to deliver a performance with more energy and to do so at lower overall monitoring levels.

Setup Overview

Adding the BOOM System products to most audio systems is easy. The three basic steps include:

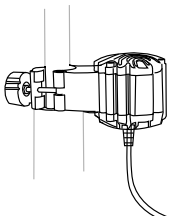
- Connect headphone- or line-level audio to the BOOM-1 input.
- Set the DSP Profile DIP switches to match your tactile device.
- Connect the locking speaker cable.

You can use any of the tactile-transducer enhanced products instead of the drum throne or performance platform shown in the example systems. Remember, the tactile component is supposed to musically enhance your monitor mix; a little goes a long way.

BOOM System Products

Aviom makes adding tactile transducers to your monitoring system as easy as possible by providing a set of products that are designed to be plug-and-play simple. We've partnered with some of the industry's leading manufacturers to offer tactile-enhanced versions of their products that can be directly connected to the BOOM-1 Tactile Transducer Processor. Each model has its own digital profile to fine-tune its performance with the BOOM-1.

CTT-1

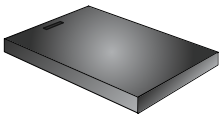


The CTT-1 Clamp-On Tactile Transducer has a universal mount that makes connecting a tactile transducer to the stem of most drum thrones or stools easy. At the heart of the CTT-1 is a premium ButtKicker® transducer, and an integrated locking speaker cable ensures a solid connection to the BOOM-1 processor.

PFS-1

Aviom's PFS-1 Performance Stool combines a sturdy QuikLok® performance stool with a built-in tactile transducer system. The stool has an adjustable seat, back, and foot rest that allows it to be customized to suit any player. Simply connect the stool to the BOOM-1 using the included locking-type speaker cable.

PLF-1



The PLF-1 Platform, powered by ButtKicker®, is a portable performance platform that is the perfect solution for those performers—especially bass players, guitarists and vocalists—who stand on stage. The sturdy 28" x 32" (71 x 81cm) platform uses a premium ButtKicker tactile transducer and is designed with an opening in the front to allow convenient positioning of mic and music stands. Connect the platform to the BOOM-1 using the included locking-type speaker cable.

KBS-1

The KBS-1 Keyboard Seat is an adjustable On-Stage Stands® keyboard seat with an integrated tactile transducer system. Minimal setup is required; simply connect the seat to the BOOM-1 using the included locking-type speaker cable.

Drum Throne Systems

Drummers using headphones or earbuds with a personal mixer for live monitoring benefit tremendously by adding a tactile transducer to their setup. The tactile transducer allows a drummer to feel the low frequency components of the mix (primarily the kick drum and the bass instruments), adding detail to the monitor mix that may have been lost in the transition from stage wedges to head-worn monitoring. For drummers using electronic kits, adding the BOOM-1 along with a drum throne-mounted transducer such as Aviom's CTT-1 helps return some of the low frequency energy that may have been lost when switching from an acoustic to an electronic drum kit.

Connecting a Headphone Output

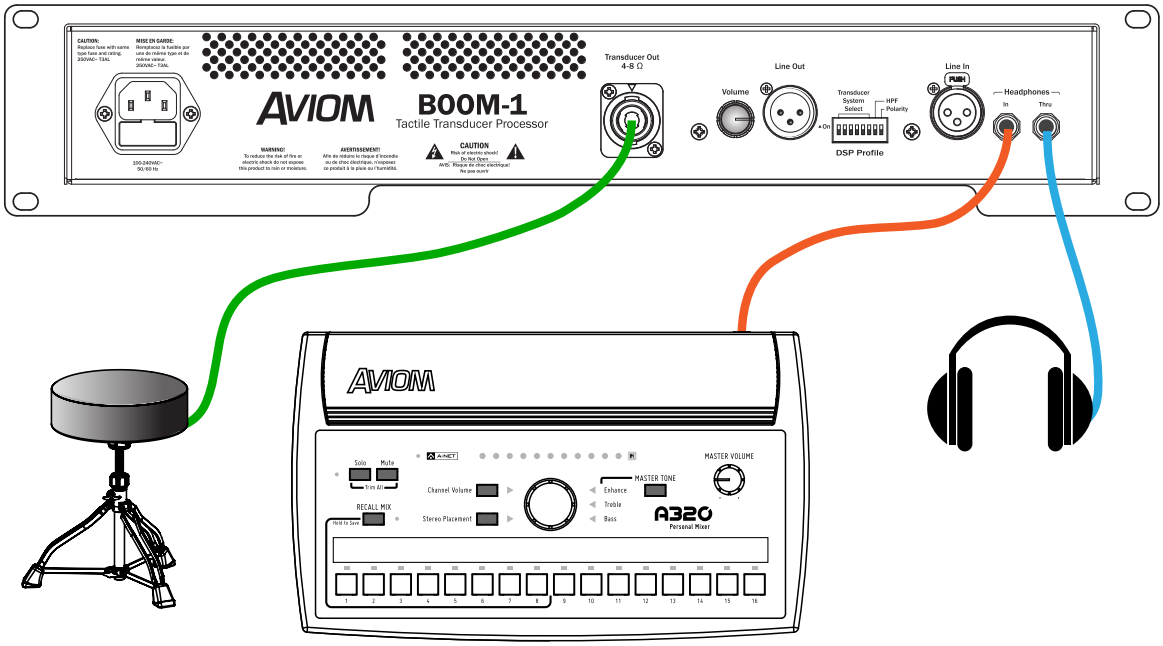
The first system example uses a personal mixer with a stereo headphone audio output such as an Aviom A320 or A-16II Personal Mixer. The A360 Personal Mixer's headphone output can also be set up according to these instruction, but note that the A360 has a dedicated mono XLR line-level output designed to make connecting a BOOM-1 even easier. See the second example that follows in "Connecting a Line-Level Source" on page 19.

The following items will be used:

- Personal mixer
- TRS-TRS 1/4-inch cable
- BOOM-1 Tactile Transducer Processor
- Drum throne
- CTT-1 Clamp-On Transducer and its locking speaker cable
- Headphones or earbud monitors

Start with the power off on all devices. Follow these steps to connect the system:

1. Connect the CTT-1 Clamp-On Transducer to the drum throne.
2. Connect one end of the TRS 1/4-inch cable to the headphone output of the personal mixer.
3. Connect the other end of the TRS cable to the **Headphone In** on the BOOM-1. (You can use either the front- or rear-panel headphone connectors.)
4. Using the locking speaker cable that comes pre-connected to the CTT-1, connect it to the **Transducer Out** jack on the BOOM-1 processor rear panel.
5. Connect the drummer's headphones or earbuds to the Headphone **Thru** jack on the BOOM-1 front (or rear) panel.
6. Set the BOOM-1 DSP Profile DIP switches for the CTT-1. See "Transducer System Select" on page 13
7. Power up the personal mixing system and the BOOM-1 Tactile Transducer Processor.
8. Create a basic mix on the personal mixer and then raise the level of the **Strength** control on the BOOM-1 front panel to add in the tactile transducer.



The personal mixer headphone out connects to the BOOM-1 Headphone In with a TRS cable.

Use the **Mute** switch on the front panel of the BOOM-1 to easily compare the mix with and without the tactile transducer.

Connecting a Line-Level Source

This system example uses a device with a dedicated mono line-level audio output such as a mixing console's Aux send or the Aviom A360 Personal Mixer's Mono Mix Out connected to the BOOM-1's line-level input on the rear panel. If your mono line-level audio source has a balanced TRS 1/4-inch connector, use a TRS-to-XLR male adapter cable.

The following items will be used:

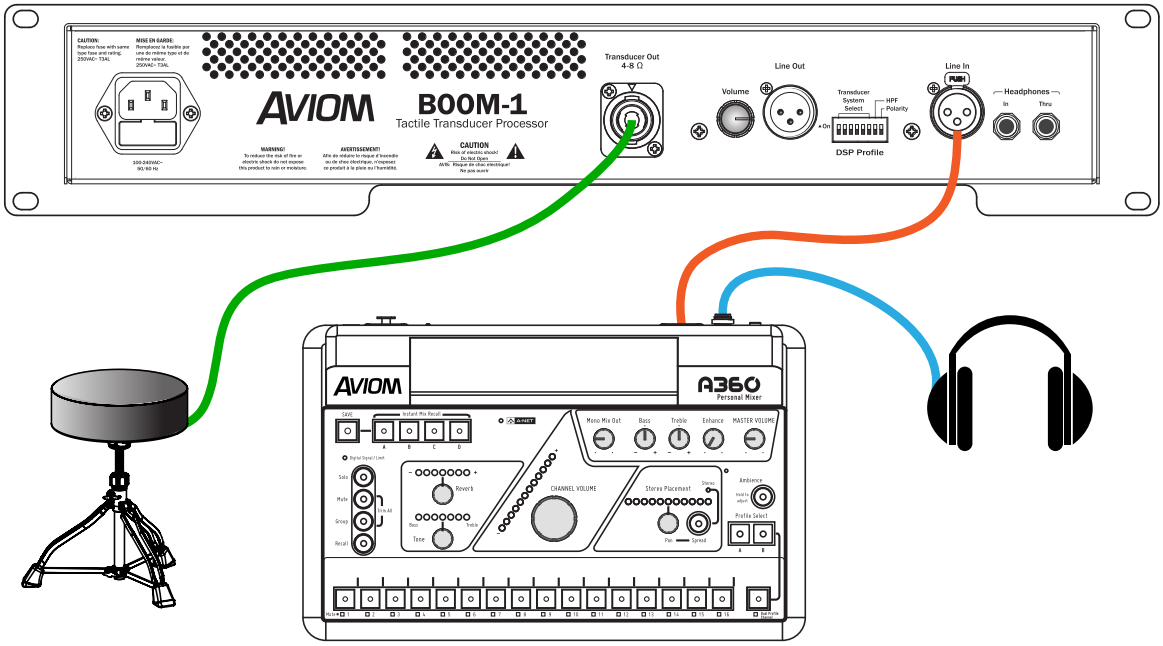
- A360 Personal Mixer (or other mono line-level source)
- XLR male/female mic cable
- BOOM-1 Tactile Transducer Processor
- Drum throne
- Drum throne with CTT-1 Clamp-On Transducer installed
- Locking speaker cable
- Headphones or earbud monitors

Start with the power off on all devices. Follow these steps to connect the system:

1. Make sure that the CTT-1 tactile transducer is firmly connected to the drum throne.
2. Connect the female end of the XLR mix cable to the **Mono Mix Out** of the A360 Personal Mixer.
3. Connect the male end of the XLR cable to the **Line In** jack on the BOOM-1 rear panel.
4. Using the locking speaker cable that is pre-connected to the CTT-1, connect it to the **Transducer Out** jack on the BOOM-1 processor's rear panel.
5. Connect the drummer's headphones or earbuds to the **Stereo Mix Out** jack on the A360 Personal Mixer.
6. Set the BOOM-1 DSP Profile DIP switches for the CTT-1. See "Transducer System Select" on page 13
7. Power up the personal mixing system and the BOOM-1 Tactile Transducer Processor.
8. Set the **Mono Mix Out** on the A360 about half way up to start.
9. Create a basic mix on the A360 Personal Mixer and then raise the level of the **Strength** control on the BOOM-1 front panel to add in the tactile transducer.

✓ **Note:** When using an A360 Personal Mixer, remember that the A360's **Mono Mix Out** knob controls the amount of the current mix sent to the Personal Mixer's rear-panel XLR **Mono Mix Out** jack. You can use the Mono Mix Out to control how much of the tactile transducer effect is felt directly from the A360 interface.

Once the system is set up, try the three Feel settings and choose one that best suits the audio you are listening to. Simply press the **Feel** button to step through the three options. For more information, see "Feel Control" on page 8.



The A360's mono line-level output connects to the BOOM-1 Line In.

✓ **Note:** Do not connect a balanced line-level mono audio signal to the 1/4-inch headphone inputs.

Transducer Response

To fine tune the drum-throne-mounted transducer's response, use the Transducer System Select DIP switches on the BOOM-1 rear panel. See "Transducer System Select" on page 13 for more info.

Platform Systems

A performance platform equipped with tactile transducers is an ideal complement to a guitar- or bass-player's setup (or for any performer who stands in one location). The platform consists of a solid base with one or more tactile transducers secured to its surface—essentially an easily portable mini stage for the performer to stand on.

✓ **Note:** If the performance platform being used contains multiple transducers, be sure that the total impedance for the platform is in the 4-8 Ohm range to avoid damage to the BOOM-1 internal amplifier.

Connecting a Performance Platform

This example uses a personal mixer with a stereo headphone audio output such as an Aviom A320 Personal Mixer.

Example 1

The following items will be used:

- Personal mixer
- TRS-TRS 1/4-inch cable
- BOOM-1 Tactile Transducer Processor
- PLF-1 Platform (powered by ButtKicker) with tactile transducer
- Locking speaker cable
- Headphones or earbud monitors

The instructions assume that the performance platform equipped with tactile transducers is set up with a locking speaker connector. If the platform uses another type of speaker connector, an appropriate adapter may be required. Common speaker connection adapters (such as 1/4-inch to locking speaker) are readily available.

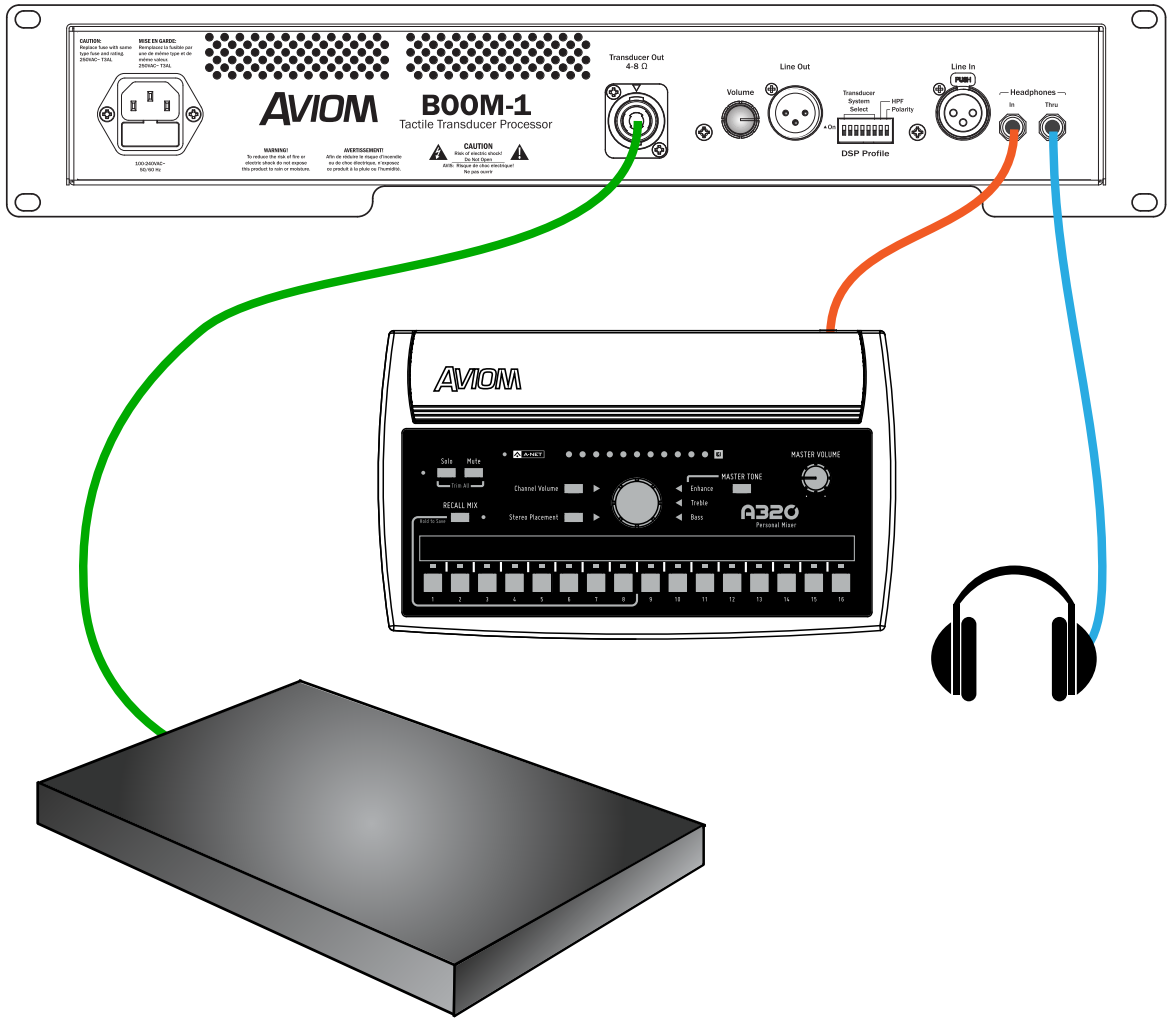
To fine tune the performance platform's response, use the Transducer System Select DIP switches on the BOOM-1 rear panel. See "Transducer System Select" on page 13 for more info.

Start with the power off on all devices. Follow these steps to connect the system:

1. Connect one end of the TRS 1/4-inch cable to the stereo headphone output of the personal mixer.
2. Connect the other end of the TRS cable to the **Headphone In** on the BOOM-1. (You can use either the front- or rear-panel headphone connectors.)
3. Using the locking speaker cable, connect one end to the **Transducer Out** jack on the BOOM-1 processor rear panel.

4. Connect the other end of the locking speaker cable to the tactile transducer input on the PLF-1 platform.
5. Connect the performer's headphones or earbuds to the Headphone **THRU** jack on the BOOM-1 front (or rear) panel.
6. Power up the personal mixing system and the BOOM-1 Tactile Transducer Processor.
7. While standing on the platform, create a basic mix on the personal mixer and then raise the level of the **STRENGTH** control on the BOOM-1 front panel to add in the performance platform and the tactile transducer.

Try the three Feel presets on the BOOM-1 front panel; choose the one that works best for your musical application.



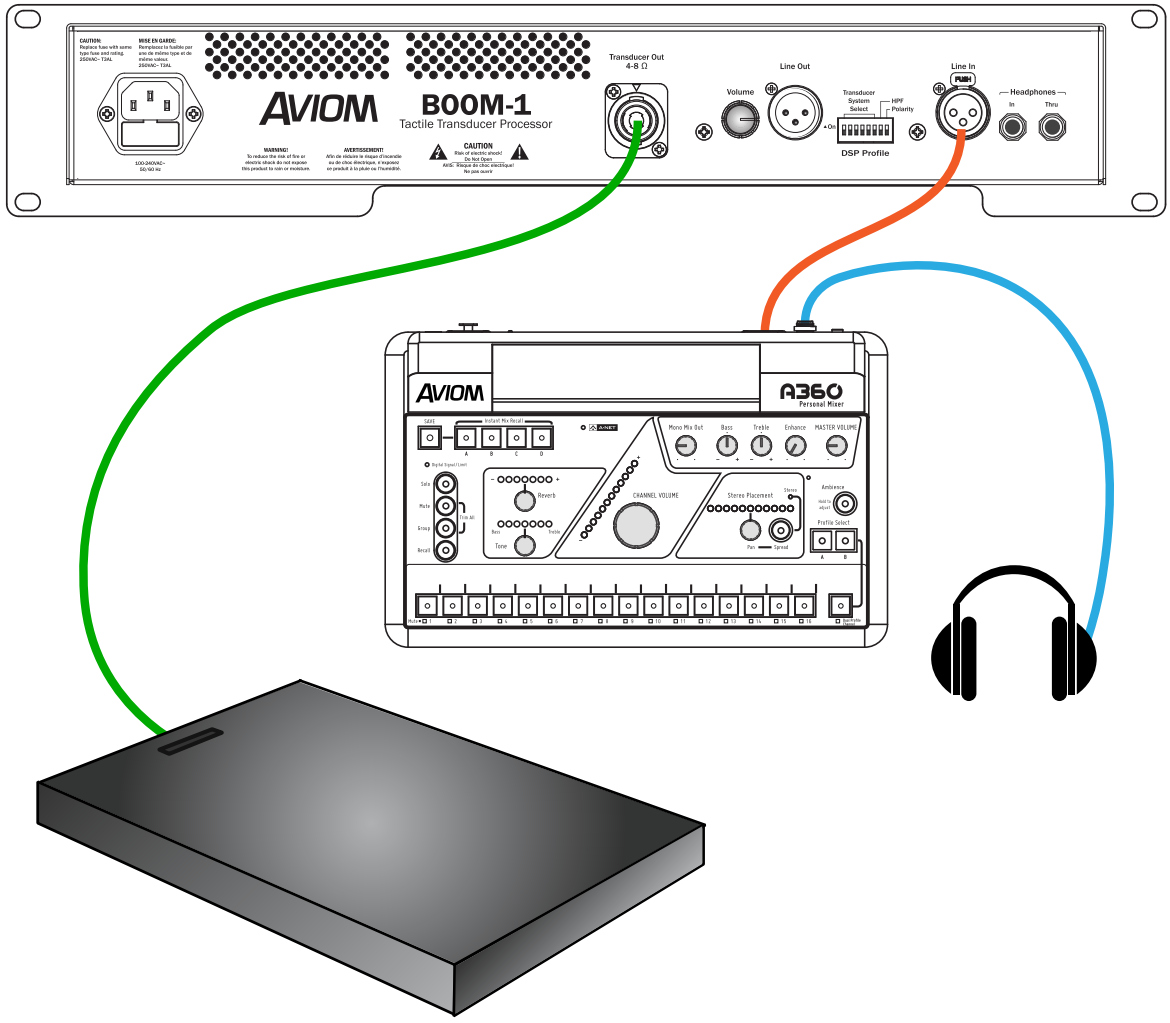
An A320 Personal Mixer feeds its headphone mix to a BOOM-1 and a PLF-1 platform.

Example 2

This example uses an audio device or personal mixer with a mono line-level audio output such as an Aviom A360 Personal Mixer.

The following items will be used:

- Personal mixer
- XLR mic cable
- BOOM-1 Tactile Transducer Processor
- Performance platform such as the PLF-1 with installed tactile transducer(s)
- Locking speaker cable
- Headphones or earbud monitors



An A360 Personal Mixer feeds its headphone mix to a BOOM-1 from its built-in Mono Mix Out.

Start with the power off on all devices. Follow these steps to connect the system:

1. Set up the performance platform and its tactile transducer(s) according to the manufacturer's instructions.
2. If you are using the Aviom PLF-1, set the Transducer System Select DIP switches on the BOOM-1 rear panel for th PLF-1. See "Transducer System Select" on page 13 for more info.
3. Connect the XLR mic cable to the mono line-level output of the A360 Personal Mixer.
4. Connect the male end of the XLR mic cable to the **Line In** on the BOOM-1 rear panel.
5. Using the locking speaker cable, connect one end to the **Transducer Out** jack on the BOOM-1 processor rear panel.
6. Connect the other end of the locking speaker cable to the tactile transducer input on the performance platform.
7. Connect the performer's headphones or earbuds to the **Stereo Mix Out** jack on the A360 Personal Mixer.
8. Power up the personal mixing system and the BOOM-1 Tactile Transducer Processor.
9. Set the A360 Personal Mixer's **Mono Mix Out** level to about half way up as a starting point.
10. While standing on the platform, create a basic mix on the personal mixer and then raise the level of the **Strength** control on the BOOM-1 front panel to add in the performance platform tactile transducer.

✓ **Note:** When using an A360 Personal Mixer, remember that the A360's **Mono Mix Out** knob controls the amount of the current mix sent to the Personal Mixer's rear-panel XLR **Mono Mix Out** jack.

Specifications

BOOM-1 Tactile Transducer Processor

Headphone In (front & rear)	1/4" TRS stereo Tip: Audio Left; Ring: Audio Right; Sleeve: Ground
Headphone Thru (front & rear)	1/4" TRS stereo; Tip: Audio Left; Ring: Audio Right; Sleeve: Ground
Line In	XLR female, with Volume control; Pin 2: Hot, Pin 3: Cold; Pin 1: Ground
Maximum Input Level	15.98 dBV
Input Impedance	9.5k Ohms
Line Out	XLR male; with Volume control Pin 2: Hot, Pin 3: Cold; Pin 1: Ground
Maximum Output Level	12.55 dBV
Output Impedance	33.2 Ohms
Amplifier Output	4 Ohms - 210W 8 Ohms - 117W
Transducer Output	2-conductor locking speaker connector;
Fuse	Size: 250VAC~ T3AL
Power Supply	Internal, universal switching type, IEC connector 100-240 volts AC, 50/60Hz
Dimensions	19" (482.6 mm) wide x 8.62" (219.07 mm) deep; 2U, 3.5" (88.9 mm) high
Weight	6.0 lbs, 2.72 kg

Specifications

CTT-1 Clamp-On Transducer

Transducer Input	Attached, 2-conductor cable with locking connector
Dimensions	6.125 x 4.375 x 4.375", 15.56 x 12.38 x 11.11 cm
Dimensions, shipping	10 x 8 x 10 inches, 25.4 x 20.32 x 25.4 cm
Weight	7 lbs, 17.24 kg

PFS-1 Performance Stool

Model No.	QuikLok DX-749
Transducer Input	Locking, 2-conductor
Seat	Adjustable; 9 positions, from 22.8" to 31.5" (58 to 80 cm)
Depth	12.4", 31.5 cm
Width	16.3", 41.5 cm
Thickness	2.36", 60 mm
Backrest	Adjustable
Footrest	Adjustable, folding
Dimensions	
Frame Width	15.7", 40 cm
Frame Depth	18.5", 47 cm
Weight Capacity	242.5 lbs, 110 kg
Dimensions, shipping	50 x 9 x 18 inches, 450 x 215 x 125 mm
Weight	38 lbs, 17.24 kg

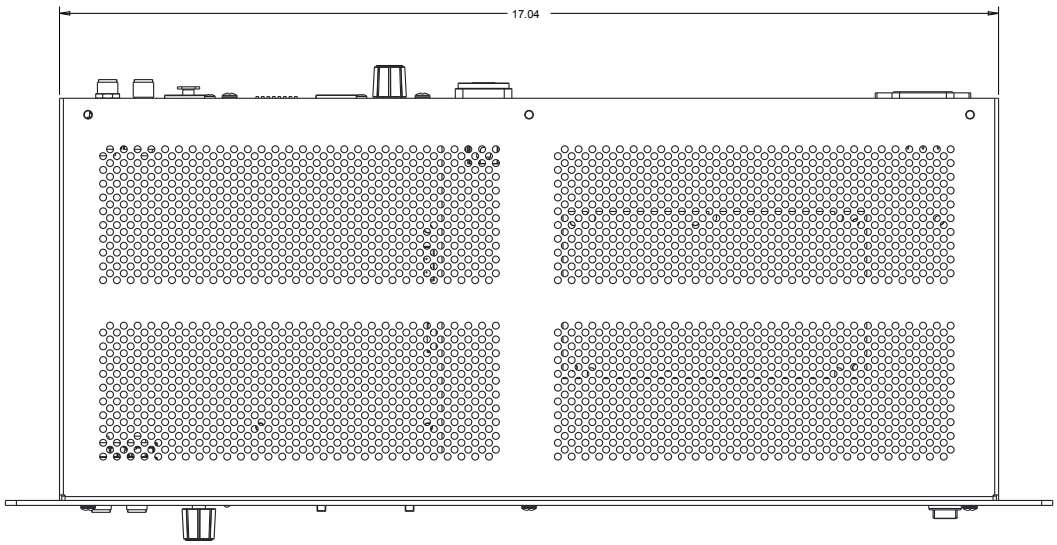
PLF-1 Performance Platform

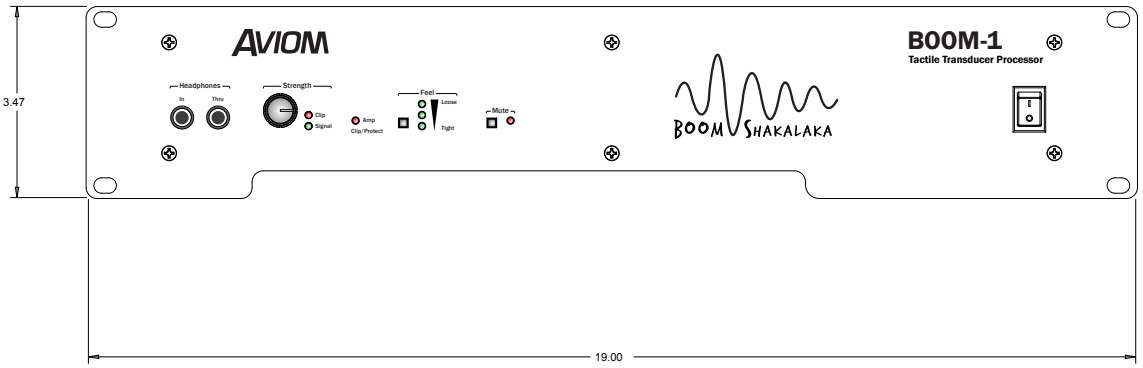
Transducer Input	Locking, 2-conductor
Dimensions	28 x 32”, 71 x 81 cm
Weight Capacity	350 lbs, 159 kg
Dimensions, shipping	34 x 30 x 6 inches, 86.36 x 71.12 x 15.24 cm
Weight	33 lbs, 14.97 kg

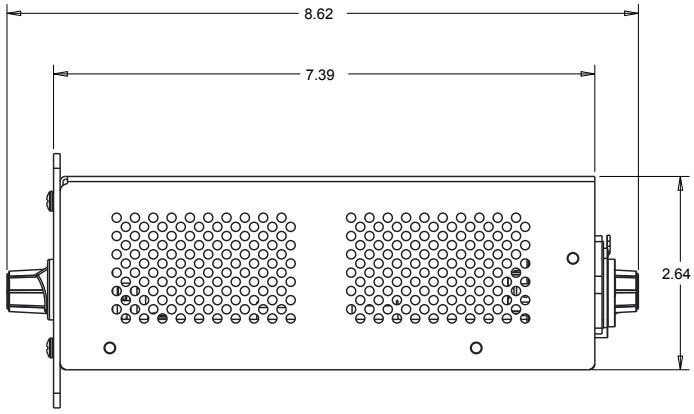
KBS-1 Keyboard Seat

Model No.	On-Stage Stands KT7800+
Transducer Input	Locking, 2-conductor
Dimensions	
Height	Adjustable; 19.5-24.5”, 48.26-64.23 cm
Width	23.5”, 59.7 cm
Depth	12.5”, 31.75 cm
Seat Thickness	2.5”, 63.5 mm
Weight Capacity	360 lbs, 163.3 kg
Dimensions, shipping	29 x 11 x 17 inches, 74 x 28 x 43.2 mm
Weight	24 lbs, 10.88 kg

Dimensions


17.04


3.47
AVIOM
Headphones
In
Thru
Strength
Clip
Signal
Amp
Clip/Protect
Feel
Loose
Tight
Mute
BOOM SHAKALAKA
BOOM-1
Tactile Transducer Processor
19.00


8.62
7.39
2.64

Index

K

L

M

O

P

Q

R

S

T

U

V

W

X

Warranty Registration

Please take a moment to fill in this warranty registration form.

Return it to Aviom via mail or fax. All information will be kept confidential.

Model _____ Product Serial Number _____

Model _____ Product Serial Number _____

Model _____ Product Serial Number _____

Model _____ Product Serial Number _____

Date Purchased _____

Dealer Name _____

Dealer Location _____

_____

Your Name _____

Address _____

Address _____

City _____

State/Province _____

Zip/Postal Code _____

Country _____

Email Address _____

Fax this form to Aviom at +1 610-738-9950

AVIOM®

1157 Phoenixville Pike, Suite 201 • West Chester, PA 19380 USA
Voice: +1 610.738.9005 • Fax: +1 610.738.9950 • www.Aviom.com