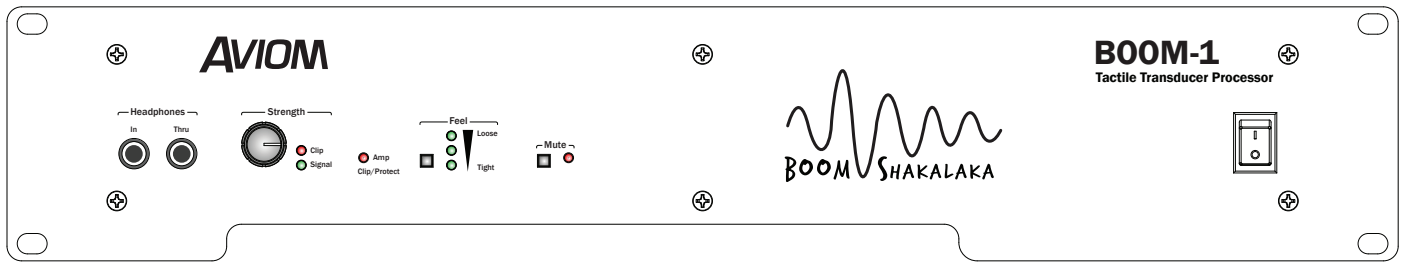# AVIOM®

# BOOM-1
**Tactile Transducer Processor**

# *Quick Start*



## Welcome to the BOOM team!

*Thank you for purchasing the BOOM System. The BOOM-1 Tactile Transducer Processor provides optimized DSP and amplification for tactile transducers that are mounted to drum thrones, keyboard seats, platforms, performance stools, or even installed in the floor of a stage.*

*This Quick Start Guide will help you set up and optimize your BOOM System products to get the best performance from your personal mixer, IEMs or headphones, BOOM-1, and tactile transducer products.*

## System Benefits

Tactile transducers benefit all in-ear and headphone performers and are especially beneficial to those using electronic drum kits as well as guitar and bass amp simulators. Why? Because playing an acoustic drum kit or an electric guitar or bass through an amp actually vibrates the performer's physical surroundings and this vibration becomes part of the live performance experience and energy. When you switch to in-ears or headphones and an electronic drum kit or a modeled amp system without speaker cabinets, those natural vibrations are lost…
Until now.

The BOOM System concept is simple: by adding a natural feeling low-frequency tactile transducer (also known as a"bass shaker") to your drum throne, keyboard seat, performance stool, performance platform, or even to your stage floor, the body feels bass frequencies, adding realism to the mix. The benefits extend to any performer who loses their on-stage amplification to a silent stage.

Aviom has made it extremely easy to incorporate tactile transducers into your monitor mixing system by offering a suite of complementary products that are designed to work together seamlessly. These include the CTT-1 Clamp-On Tactile Transducer (powered by ButtKicker®) for drum thrones and stools, the KBS-1 Keyboard Seat, PFS-1 Performance Stool, and the ButtKicker-enhanced PLF-1 Platform.
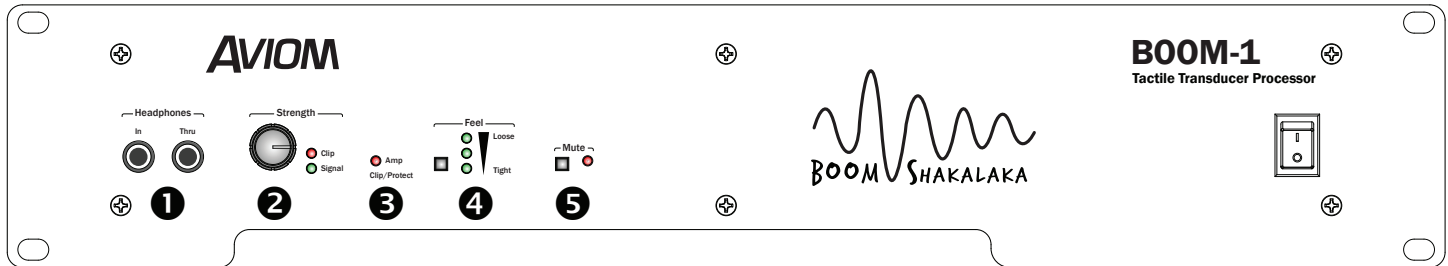
## How To Use The Boom System

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, not 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.
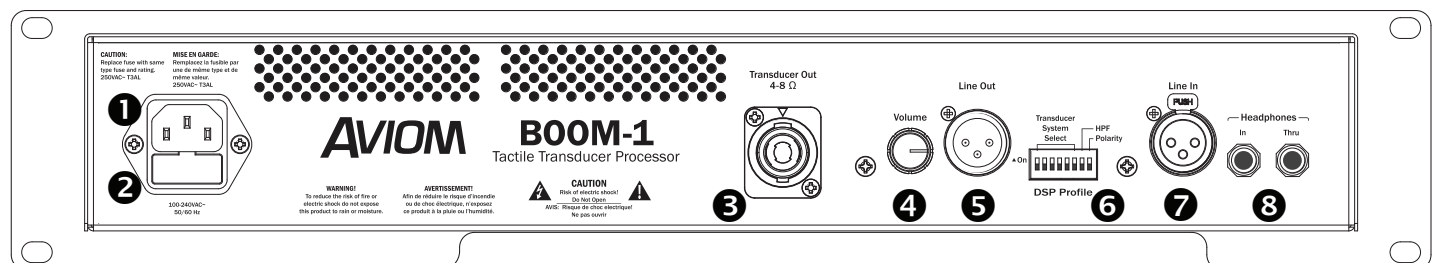
And don't forget, if you need more help, the complete User Guide is available on the Aviom website.

## Front Panel Features



| | Feature | Description |
|---|---|---|
| **1** | Stereo Headphone In and Thru | The **HEADPHONE IN** 1/4-inch jack on the BOOM-1 is designed to accept a left-right stereo, unbalanced TRS audio signal from a personal mixer as its input. Connect your headphones or in-ears to **THRU**. |
| **2** | Strength Control with Signal and Clip LEDs | The **STRENGTH** knob controls how much of the unit's DSP-processed signal is sent to the tactile transducer output and the rear-panel **LINE OUT** jack. |
| **3** | Amp Clip/Protect LED | The **AMP CLIP/PROTECT** LED has these behaviors:<br>■ It will light red to indicate that the input to the amplifier is overloading and causing distortion.<br>■ 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.<br>■ 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 for one second after the circuit detects that the short circuit was removed. |
| **4** | Feel control with push button selector and three LED indicators | **Loose** – 3 LEDs – Highest compression threshold; allows more dynamic variations from soft to loud.<br>**Medium** – 2 LEDs – Average compression threshold; moderate filter cutoff setting.<br>**Tight** – 1 LED – Lowest compression threshold; lowest low pass filter (LPF) setting . |
| **5** | Mute control with push button switch and LED | Temporarily silences the rear-panel transducer output while leaving the incoming source audio active in the BOOM-1 headphone output. It's great for auditioning with/without the BOOM System active. The Mute control does not affect the Line Out. |

## Rear Panel Features



| | Feature | Description |
|---|---|---|
| **1** | AC power inlet | 120-240VAC 50/60Hz, switching power supply, IEC connector |
| **2** | Fuse, size:  250VAC~ T3AL | To check the fuse, remove the small cover below the AC inlet to open the fuse compartment. |
| **3** | Transducer Out | Impedance 4-8 Ohms; locking speaker connector |
| **4** | Line-level output volume control | Use this to control the amount of the BOOM-1 processed audio signal sent from the XLR Line Out to an external amplifier's audio input. |
| **5** | Balanced line-level output | Connects the unit's processed audio signal to an external amplifier; XLR-M. Output is not affected by the front panel Mute control. |
| **6** | DSP Profile DIP switches | *See table.* |
| **7** | Balanced line-level input | Connect mono, line-level audio from an A360 Personal Mixer, mixing console, etc.; XLR-F.<br>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. |
| **8** | Headphone In and Thru | Duplicate of the front-panel headphone I/O |

## DSP Profile DIP Switches

The six DIP switches in the TRANSDUCER SYSTEM SELECT section of the DSP Profile allow the response of the BOOM-1 output to be optimally tuned to suit the specific type and model of tactile device that you are using. The table below shows the switch settings for the Aviom-branded products that include tactile transducers as well as settings for some common bass shaker products that can be added to drum thrones, platforms, or built into stage floors. Each combination includes three unique Feel settings, chosen from the front panel.

The DIP switch block also includes settings for the high pass filter and polarity. 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.
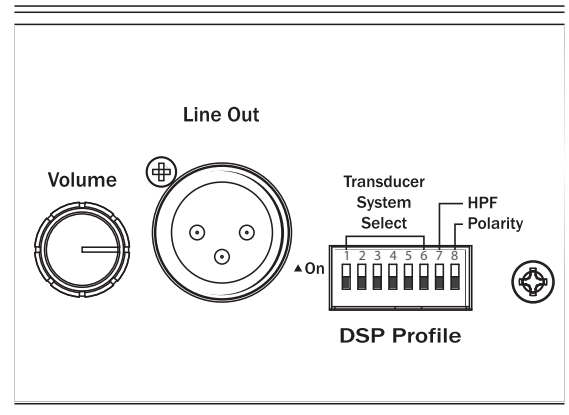


*Use the eight DSP Profile DIP switches to match the BOOM-1 to your tactile transducer.*

| 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 with two Aura® shakers | ▼ | ▲ | ▲ | ▼ | ▼ | ▼ | ▼ | ▲ |
| Drum Throne with two ADX® shakers | ▲ | ▲ | ▲ | ▼ | ▼ | ▼ | ▼ | ▲ |
| Drum Throne with two BK mini Concert® shakers | ▼ | ▼ | ▼ | ▲ | ▼ | ▼ | ▼ | ▲ |
| Platform with two Aura shakers | ▲ | ▼ | ▼ | ▲ | ▼ | ▼ | ▼ | ▲ |
| Keyboard Seat with one Aura shaker | ▼ | ▲ | ▼ | ▲ | ▼ | ▼ | ▼ | ▲ |
| Keyboard Seat with one Visaton® shaker | ▲ | ▲ | ▼ | ▲ | ▼ | ▼ | ▼ | ▲ |
| Bypass all DSP filter settings | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| *All other DIP switch combinations are set to the CTT-1 settings:* | | | | | | | | |
| | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |

The default Polarity position 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.

Remember, the DSP Profile setting for each transducer offers three distinct Feel variations; be sure to try each and choose the one that best suits your performance environment and playing style.

## Setting Up a System

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.

We have outlined the setup for two sample systems in this document. There is an example for systems that use a TRS stereo headphone output and one that uses a mono line-level output.

You can use any of the tactile-transducer enhanced products instead of the drum throne and 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.

## Connecting Any Personal Mixer's Headphone Output

This system example uses a personal mixer with a TRS stereo headphone audio output such as an Aviom A320 or A-16II Personal Mixer and the **CTT-1 Clamp-On Transducer** connected to a drum throne. (Note that you can optionally connect any personal mixer or device with a TRS stereo headphone output, such as a phone, CD player, etc., to the BOOM-1 headphone input)

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

1. Connect one end of a TRS 1/4-inch cable to the 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 from the CTT-1, connect the locking end to the **TRANSDUCER OUT** jack on the BOOM-1 processor rear panel.
4. Set the DIP switches on the BOOM-1 rear panel for the CTT-1 Clamp-On Transducer (*see the table on the previous page*) .
5. Connect the drummer'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. Create a basic mix on the personal mixer at a comfortable listening level and then raise the level of the **STRENGTH** control on the BOOM-1 front panel to add in the tactile transducer.

The Personal Mixer's main output level controls the overall amount of audio sent to the BOOM-1.

Be sure to try the three **FEEL** settings on the front panel; choose the one that works best with your combination of music, style, and performing ensemble.
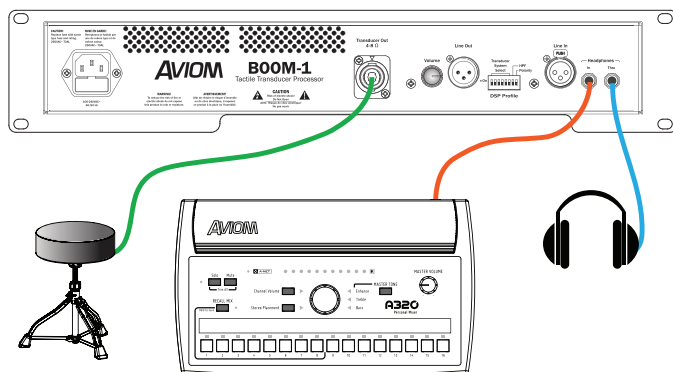


*Remember, any tactile-enhanced product may be used in place of the drum throne and platform shown in these setup examples.*

## Connecting an A360 Line-Level Output

This system example uses a device with a dedicated mono line-level audio output such as the Aviom A360 Personal Mixer or a mixing console's Aux send connected to the BOOM-1's XLR 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. Do not use this type of cable with a *stereo* signal.

The BOOM-1 will be shown connected to the **PLF-1 Platform** (powered by ButtKicker®), but any tactile transducer enhanced product may be used.

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

1. Connect the female end of an XLR mic cable to the **MONO MIX OUT** of the A360 Personal Mixer.
2. Connect the male end of the XLR cable to the **LINE IN** jack on the BOOM-1 rear panel.
3. To tune the performance platform's response, use the Transducer System Select DIP switches on the BOOM-1 rear panel.  (*See the table.*)
4. Using the locking speaker cable, connect one end to the **TRANSDUCER OUT** jack on the BOOM-1 processor's rear panel.
5. Connect the other end of the locking speaker cable to the tactile transducer input on PLF-1 Platform.
6. Connect the performer's headphones or earbuds to the **STEREO MIX OUT** jack on the A360 Personal Mixer.
7. Power up the personal mixing system and the BOOM-1 Tactile Transducer Processor.
8. Create a basic mix on the personal mixer at a comfortable listening level and then raise the level of the **STRENGTH** control on the BOOM-1 front panel to add in the tactile transducer.

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 A360's rear-panel XLR **MONO MIX OUT** jack and hence, to the BOOM system's input.