

# Fishman Onboard Aura

## Welcome

Thank you for making Fishman a part of your acoustic experience. It is our goal to provide you with the finest acoustic amplification products available: high-quality, professional-grade musician's tools that empower you to sound your very best. We are confident that the sound you can achieve with Onboard Aura will enhance and inspire your music making.

## Overview

Onboard Aura bridges the gap between the beauty of pure studio sound and the convenience of plugging in. With Onboard Aura, you'll discover unexpectedly realistic acoustic guitar sound from a pickup, with tone quality you thought you could only hear from a top-shelf microphone, in an ideal studio environment.

The Fishman Onboard Aura system uses powerful Acoustic Sound Image algorithms prepared especially for this instrument to seamlessly adjust the "view" of the pickup, so the pickup sees the guitar in the same way a microphone does; with all the subtle acoustic nuances intact.

Although the Onboard Aura is technologically advanced, we offer it to you with a refreshingly organic approach. When you plug in, you'll feel and hear the true acoustic, un-amplified sound of your guitar, only louder.

With Onboard Aura, we create totally custom Acoustic Sound Images especially for the guitar you have before you, so you can be assured that your plugged-in tone will precisely match your instrument's un-amplified voice. We use a variety of top-shelf microphones to create the Acoustic Sound Images, with six different variations to choose from.

Three bands of useful EQ, a convenient onboard tuner (with mute), a feedback fighting phase switch, plus an automatic anti-feedback circuit round out the Onboard Aura's features.

## What does it do?

Onboard Aura is the next step in the evolution of blending technology, pioneered by Fishman over a decade ago. With a traditional onboard blending system, the proven utility of a pickup is combined with the realism that only a microphone can add. The Onboard Aura takes the blender concept a giant leap forward by eliminating the microphone from the equation and replacing it with six sophisticated Acoustic Sound Images created for your guitar in a professional recording studio environment.

## Is it modeling?

Acoustic Sound Imaging and modeling share similar goals: to turn "acoustic-electric" into "acoustic". But when you look at the sound and science of Sound Imaging, you'll see why we make the distinction between it and modeling products.

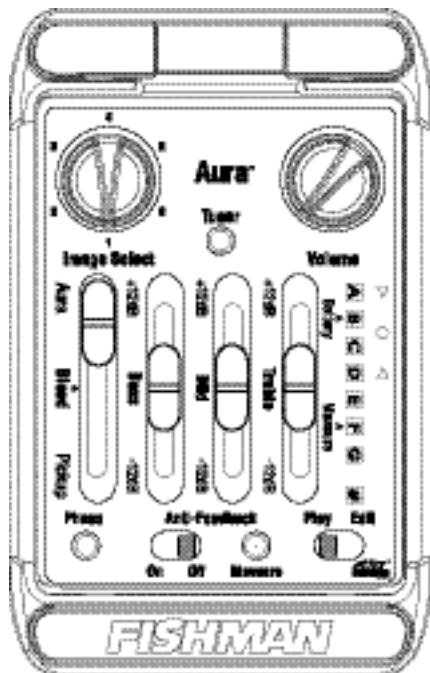
Listen to the sound of Onboard Aura and you'll hear uncolored acoustic guitar with a heightened realism that is beyond the scope of modeling preamps.

The reason for this is that unlike modelers that use a one-size-fits-all approach, the advanced algorithms in Sound Imaging form an exclusive partnership with your guitar. Acoustic Sound Imaging is a collaboration between your instrument and the digital realm, where modeling is more like a one-sided conversation.

# Quick Start

## Set the controls as shown:

- Image Select:** #1
- Volume:** Seven o'clock
- Blend:** Set to "Aura"
- Bass, Mid, Treble:** Centered (at detent)
- Anti Feedback:** Off
- Play/Edit:** Set to "Play"



- 1. Plug In** - Connect the Onboard Aura into your amplifier or PA with a ¼ inch instrument cable.
- 2. Tune Up** - Press the Tuner button. The output will mute when the tuner is engaged. To exit, press the Tuner button again.
- 3. Select** - Increase the volume to a comfortable level and use the Image Select knob to browse through the Acoustic Sound Images. Refer to the included Acoustic Sound Image Reference Chart to identify the microphone (and placement) associated with each Sound Image.
- 4. Blend** - Move the Blend slider to mix in some pickup signal with the Sound Image.
- 5. Phase (master)** - Put the Phase switch in the position that sounds most pleasing. If feedback occurs, change the position of the switch.
- 6. Shape Your Tone** - Set the Play/Edit switch to Play, adjust the Bass, Mid and Treble sliders to shape the pickup sound to your liking.

# Go Deeper

## EDIT • Programmable Tone for Acoustic Sound Images

- Set the Blend slider to Aura.
- Move the Play/Edit switch to Edit and select a Sound Image.
- Adjust the Bass, Mid and Treble sliders to taste.
- To save, move the switch back to Play.  
When you switch to Play, you freeze the tone settings for the last selected Sound Image(s). When you return to Edit, your bass, mid and treble settings for the Sound Image(s) will not change until you move the respective sliders.

## Anti-Feedback

- Move the Anti-Feedback switch left to the On position and push the Measure button once.
- The letter "F" in the tuner display will flash. Turn up the volume until you reach the threshold of feedback. The automatic filter will identify and eliminate the offending frequency.

## Relative Phase (pickup)

- Fine-tune the sound by changing the phase of the pickup relative to the Sound Image you've selected.
- Center the Blend slider and move the Play/Edit switch to Edit.
- Push the Tuner button to toggle between positive pickup polarity (above pitch arrow in tuner) and negative pickup polarity (below pitch arrow in tuner) until you find the setting that sounds best to you.
- To exit this parameter, move the Play/Edit switch to Play.

# Setup

## Battery Compartment

Pull the small tab at the top of the Onboard Aura toward you. The body of the preamp will swing out, revealing the battery compartment. Observe the polarity marks on the battery clip and install a fresh 9V alkaline battery accordingly.

## Trim Control and VU Meter

- A small circular potentiometer is located on the underside of the preamp just below the battery compartment. Use this control in conjunction with the VU meter to set a clean and quiet input level.
- To turn on the VU meter, move the Edit/Play switch to Play, then press the Tuner button as you plug in the guitar. The above/below pitch LEDs (two arrows and a circle) will now display the input level of the preamp.
- Play the instrument strongly and watch the LED display. Use a small flat-head screwdriver to raise or lower the trim control so that the top LED (below pitch arrow) lights only occasionally with forceful playing.
- To exit the VU meter, push the tuner button.

## Endpin Jack

When you plug into the endpin jack, the Onboard Aura switches on. To conserve the battery, remove the instrument cable from the endpin jack when the system is not being used. As with any audio device, it is a good idea to turn down your amp or mixer input before you insert or remove a plug at the endpin jack. Doing so will protect your speakers (and your ears) from loud pops.

## Sleep Mode

When the Onboard Aura is plugged in and you don't play for at least 30 seconds, the electronics will go into sleep mode to conserve the battery. As soon as you start to play again, the unit will wake up and return to its normal operating mode. Note that when the Onboard Aura is sleeping, it still consumes some power. We advise you to unplug the system when you take an extended break.

## Power Up

The LEDs in the tuner display flash briefly when you first plug into the endpin jack, indicating that the power is on. Some ask, "Why is there no conventional pilot light that stays on when I plug in?" We find that a steadily lit LED devours too many precious hours of battery life. Instead, we have the LEDs flash at startup and this extends the useful life of the battery. If you need visual confirmation that the power is on, move the Play/Edit switch to Edit and the (#) LED will flash.

## Low Battery Indicator

When the "B" LED in the tuner array flashes once every three seconds, you have approximately 1.5 hours before the battery is exhausted. Change it at the next opportunity. When the "B" light starts flashing every half a second, the battery is practically spent and should be changed immediately. When the tuner is switched on, the low battery indicator will function only when no signal is present.

# Controls

## Image Select

Your Onboard Aura is factory loaded with six Sound Images that were created especially for this instrument. Each Sound Image corresponds to a different microphone type and position. Refer to the included Acoustic Sound Image Reference Chart to identify the microphone associated with each Sound Image.

## Volume

For the cleanest noise-free sound, set the volume as high as possible without causing your amp or mixer to distort.

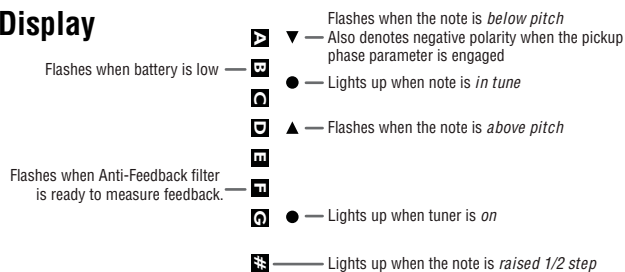
## Tuner

Plug an instrument cable into the endpin jack, move the Play/Edit switch to Play, then depress the tuner button to turn the circuit on and off.

This digital chromatic tuner accommodates all standard and alternate tunings. For your convenience, the tuner button also acts as a mute switch.

Note that the tuner is calibrated to A = 440.

## Tuner Display



## Blend

Use the Blend slider to set the balance between the pickup and the Acoustic Sound Image. Lower the slider to emphasize the pickup. Move it up to hear more Acoustic Sound Image. Set the Blend slider to the center detent for an even balance of both.

## Tone Controls

The Bass, Mid and Treble controls can be set independently for both the pickup and the Sound Images.

### Bass

A boost here will add depth and weight to the sound.

### Mid

This control affects how well the instrument blends in or stands out in the mix. If you play at loud volumes, cut the Mids to achieve a more natural amplified tone.

### Treble

A boost here will help add sparkle and presence to your sound. Conversely, cutting Treble will mellow and darken your amplified tone.

## Pickup Tone

When you move the Play/Edit switch to Play, the three tone controls will affect only the pickup signal. Much of your useful equalization will be performed on the pickup in Play mode.

Note that when you switch to Edit, you freeze the tone settings for the pickup signal. When you return to Play, your previous bass, mid and treble settings for the pickup will not change until you move the respective sliders.

## Sound Image Tone

Set the Blend slider to Aura, then move the Play/Edit switch to Edit and select a Sound Image. The three tone controls will now only affect the selected Sound Image. Adjust the Bass, Mid and Treble sliders to taste. Note that a little EQ here goes a long way.

To save these settings, move the Play/Edit switch back to Play or move the Image Select knob to another position. Note that when you switch to Play, you freeze the tone settings for the last selected Sound Image(s). When you return to Edit, your Bass, Mid and Treble settings for the Sound Image(s) will not change until you move the respective sliders.

## Phase and Anti-Feedback

These controls work hand in hand to suppress acoustic feedback. When set properly, you can play your instrument as loud as you like, feedback-free.

## Phase (global)

This switch inverts the phase at the Onboard Aura's output and acts on both the pickup and the selected Acoustic Sound Image. Push the Phase switch in and out several times until you find the position that sounds best and subdues feedback.

## Relative Phase (Pickup Phase)

To change the character of your blended sound, you may wish to invert the phase of the pickup relative to the Sound Image(s). There is no "best" position for relative phase and where you set it is a matter of personal taste.

- Center the Blend slider and switch to Edit.
- Push the Tuner button to toggle between positive pickup polarity (above pitch arrow in tuner) and negative pickup polarity (below pitch arrow in tuner) until you find the setting that sounds best to you.
- To exit this parameter, move the Play/Edit switch to Play.

You may program a different relative pickup phase setting for each of the six Sound Images. Select a different Sound Image and repeat the above procedure.

## Anti-Feedback

The Onboard Aura is equipped with an automatic search-and-destroy anti-feedback filter.

- Move the Anti-Feedback switch left to the On position and push the measure button once. The letter "F" in the tuner display will flash.
- Turn up the volume until you reach the threshold of feedback.

The automatic filter will identify and eliminate the offending frequency. The Anti-Feedback circuit will remember this offending frequency (even when you turn the circuit off/on) until you push the Measure button again.

The Anti-Feedback feature is a global parameter and will apply to both the pickup and all of the six Sound Images. The default anti-feedback frequency is 100 Hz, or about G# on the low E string.

## Play/Edit Switch

When the switch is in "Play" position the Onboard Aura is in normal operating mode and the tone controls affect only the pickup signal.

In Edit mode the Sound Image tone controls may be programmed and relative phase parameters can be accessed. See Sound Image Tone and Relative Phase (pickup) above.

## Electrical Specifications

Typical in-use current consumption @ 9VDC:	13.5mA
Typical 9V alkaline battery life (in-use):	37 hrs.
Typical sleep mode current consumption @ 9VDC:	6.5mA
Typical 9V alkaline battery life (sleep mode):	77 hrs.
Nominal output impedance:	1k $\Omega$
Recommended load impedance:	10k $\Omega$ and up
Adjustable gain range:	-5dB to +7dB
Maximum output level (onset of clipping):	+3.8 dBV
Baseline noise (A-weighted, tone controls flat, -82 dBV pickup signal path):	
Typical baseline noise (A-weighted, tone controls flat, -77 dBV digital image signal path):	
Dynamic Range:	85.8 dB
(Referenced to onset of clipping, A-weighted)	
Frequency response:	40Hz – 20 kHz
(Tone controls flat, -3dB relative to 1kHz, 100k $\Omega$ load)	

Bass control:	Frequency	Boost and Cut Range
	40 Hz	12 dB
	100 Hz	9 dB
Midrange control:	Frequency	Boost and Cut Range
	1 kHz	12 dB
Treble control:	Frequency	Boost and Cut Range
	10 kHz	10 dB
	15 kHz	12 dB
Anti-Feedback:	Cut depth:	13.5 dB
	Bandwidth:	0.25 Octave (-3dB relative to nominal gain)
	Default center Frequency:	100Hz (prior to calibration)
Global phase switch:	In position:	(+) positive polarity
	Out position:	(-) inverse polarity

All specifications subject to change without notice.

## Acoustic Sound Image Reference Chart

### Guitar: Ramirez

Image #	Mic make/model	Type	Distance
1	Audix CX111	Lg Diaphragm Condenser	Far
2	Soundelux E47	Lg Diaphragm Condenser	Far
3	DPA 4011	Sm Diaph Omni Cond	Far
4	Shoeps CMC64	Sm Diaph Omni Cond	16"
5	Soundelux E47	Lg Diaphragm Condenser	16"
6	Shoeps CMC64	Sm Diaph Omni Cond	12" Bridge

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