**User's Guide**

# Fishman Onboard Aura™


FISHMAN®

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www.martinguitar.com

## 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 musicians' tools that empower you to sound your very best. We are confident that the sound you can achieve with the Onboard Aura will enhance and inspire your music making.

## Overview

The Onboard Aura bridges the gap between the beauty of pure studio sound and the convenience of plugging in. With the 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, unamplified sound of your guitar, only louder.

With the 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 unamplified 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?

The 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.

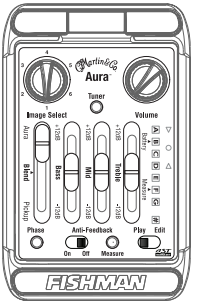
Listen to the sound of the Onboard Aura, and you'll hear uncolored acoustic guitar with a heightened realism that is beyond the scope of modeling preamps.

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. Check Play/Edit Switch

Be sure the Play/Edit switch is set to "Play."

### 2. Plug In

Connect the Onboard Aura into your amplifier or PA with a 1/4 inch instrument cable.

### 3. Tune Up

Press the Tuner button. The output will mute when the tuner is engaged. To exit, press the Tuner button again.

### 4. Select

Increase the volume to a comfortable level, and use the Image Select knob to browse through the Acoustic Sound Images. Refer to the Acoustic Sound Image Reference Chart online to identify the microphone (and placement) associated with each Sound Image.

*http://www.martinguitar.com/guitars/reinforcements/userguides.html*

### 5. Blend

Move the Blend slider to mix in some pickup signal with the Sound Image.

### 6. Phase (master)

Put the Phase switch in the position that sounds most pleasing. If feedback occurs, change the position of the switch.

### 7. 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, 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 flathead 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 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, so 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 your 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.

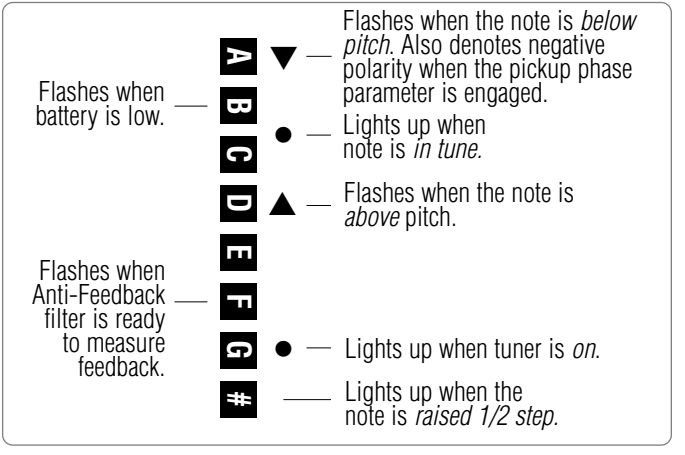
### Tuner

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 are playing 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.

**1.** Center the Blend slider and switch to Edit.
**2.** 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.
**3.** 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.

1. 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.
2. 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).

## 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: | | 1kΩ |
| Recommended load impedance: | | 10k and up |
| Adjustable gain range: -5dB to +7dB | | |
| Maximum output level (onset of clipping): | | +3.8 dBV |
| Baseline noise (A-weighted, tone controls flat) | | |
| Pickup signal path: -82 dBV: | | |
| Digital image signal path: | | -77 dBV |
| Dynamic Range: (Referenced to onset of clipping, A-weighted) | | 85.8 dB |
| Frequency response: (Tone controls flat, -3dB relative to 1kHz, 100kΩ load) | | 40Hz – 20 kHz |
| 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: (-3dB relative to nominal gain) | | 0.25 Octave |
| Default center Frequency: (prior to calibration) | | 100Hz |
| Global phase switch: | In position: | (+) positive polarity |
| | Out position: | (-) inverse polarity |

All specifications subject to change without notice.

## DC-AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Neumann M147 | Lg. Diaphragm Condenser | Close |
| #2 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #3 | Schoeps CMT 156 | Sm. Diaphragm Condenser | Close |
| #4 | Soundelux E47 | Lg. Diaphragm Condenser | Far |
| #5 | Neumann M147 | Lg. Diaphragm Condenser | Far |
| #6 | Earthworks QTC 30 | Omni Condenser | Close |

## DC-16RE AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Neumann M147 | Lg. Diaphragm Condenser | Close |
| #2 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #3 | Schoeps CMT 156 | Sm. Diaphragm Condenser | Close |
| #4 | Soundelux E47 | Lg. Diaphragm Condenser | Far |
| #5 | Neumann M147 | Lg. Diaphragm Condenser | Far |
| #6 | Earthworks QTC 30 | Omni Condenser | Close |

## DC-16RGTE AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Shure Beta 58A | Dynamic | Close |
| #2 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #3 | Shure KSM-141 | Sm. Diaphragm Condenser | Close |
| #4 | Neumann M147 | Lg. Diaphragm Condenser | Close |
| #5 | Soundeluxe E47 | Lg. Diaphragm Condenser | Far |
| #6 | Schoeps MK4G (Pair) | Sm. Diaphragm Condenser | X/Y Close |

All specifications subject to change without notice.

## OMC-AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Neumann M147 | Lg. Diaphragm Condenser | Close |
| #2 | Shure Beta 58A | Dynamic | Close |
| #3 | Soundelux E47 | Lg. Diaphragm Condenser | Close |
| #4 | Soundeluxe E47 | Lg. Diaphragm Condenser | Far |
| #5 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #6 | Earthworks QTC 30 | Omni Condenser | Far |

## OMC-16RE AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Neumann M147 | Lg. Diaphragm Condenser | Close |
| #2 | Shure Beta 58A | Dynamic | Close |
| #3 | Soundelux E47 | Lg. Diaphragm Condenser | Close |
| #4 | Soundeluxe E47 | Lg. Diaphragm Condenser | Far |
| #5 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #6 | Earthworks QTC 30 | Omni Condenser | Far |

## OMC-16RGTE AURA

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Shure Beta 58A | Dynamic | Close |
| #2 | DPA 4011 | Sm. Diaphragm Condenser | Close |
| #3 | Neumann KM 184 | Sm. Diaphragm Condenser | Close |
| #4 | Soundeluxe E47 | Lg. Diaphragm Condenser | Close |
| #5 | Neumann M147 | Lg. Diaphragm Condenser | Far |
| #6 | Shure KSM 141 (Pair) | Sm. Diaphragm Condenser | X/Y Close |

## JC-16RE Aura

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Soundeluxe E47 | Lg. Diaphragm Condenser | Far |
| #2 | Neumann M147 | Lg. Diaphragm Condenser | Far |
| #3 | Shure SM57 | Dynamic | Far |
| #4 | Schoeps CMC 64 | Sm. Diaphragm Condenser | Far |
| #5 | Earthworks QTC 30 | Sm. Diaphragm Condenser | Close |
| #6 | Schoeps CMC 64(Pair) | Sm. Diaphragm Condenser | X/Y Close |

## JC-16ME Aura

| *Image* | *Microphone* | *Type* | *Position* |
|---|---|---|---|
| #1 | Soundeluxe E47 | Lg. Diaphragm Condenser | Far |
| #2 | Neumann M147 | Lg. Diaphragm Condenser | Far |
| #3 | Shure SM57 | Dynamic | Close |
| #4 | DPA 4011 | Sm. Diaphragm Condenser | Far |
| #5 | Schoeps CMC 64 | Sm. Diaphragm Condenser | Close |
| #6 | Earthworks QTC 30 | Omni Condenser | Close |

## Restore EQ/Relative Phase Defaults

If you'd like to quickly restore the default EQ and Relative Phase settings for all six Acoustic Sound Images, follow the procedure below. Once reset, Bass, Mid and Treble (for all six Sound Images) revert to zero cut/boost, and Relative Phase settings return to their default state.

**To Restore Defaults:**

1. Unplug the guitar and move all the tone sliders to the center-detent position.
2. Press and hold the Tuner and Measure buttons simultaneously.
3. Plug in the guitar. Continue to hold the Tuner/Measure buttons for three seconds after you plug in.
4. Release the Tuner/Measure buttons then unplug the guitar to complete the procedure. Plug in again and the defaults will be restored.

***Note:*** *Be sure to unplug the guitar to complete the reset procedure. If the guitar is left plugged-in after you release the Tuner/Measure buttons, the Onboard Aura will produce no sound, and one or more of the Tuner LEDs will light up.*



All specifications subject to change without notice. **17L09** 0512-14