

Gibson Robot Interface Pack (RIP)



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Important Safety Instructions

We value you as a customer—and want our products to give you an inspiring, and gratifying, experience. So, to insure your safety and protect your investment in the Gibson RIP, please read and follow all safety warnings and operating instructions before using this product, and keep all documentation for future reference.

Environmental Factors

Heat and moisture can harm your Gibson RIP. Please do not install or operate this product near sources of moisture, such as sinks, damp basements, leaky roofs, etc. and never store it near heat sources, such as heaters or radiators. Both you and your RIP will be much happier if you store and operate this product under safe conditions.

Power Sources

Use only the power sources recommended in this manual. Make sure any power supply cords are not located where they are likely to be safety hazards, such as on the floor where people might walk, or in locations where they may receive pressure from items placed upon or against them. Also, be very careful with any power source connections, such as where the AC adapter connects to the wall outlet and where it plugs into RIP. If these are jostled loose, RIP may experience extreme power differentials, which can potentially harm you and the product.

Service

Please do not attempt to service RIP yourself. Opening the case may expose you to high voltages (besides, there are no user-serviceable parts), so let our expert technicians handle any repairs for you.

Speaking of experts, always send the RIP to an authorized service technician if any of the following occurs (contact numbers for service centers are at the end of this section):

- Any foreign object (especially liquid) has gotten into the case
- RIP has been exposed to water, dropped, or otherwise damaged
- A marked changed in RIP's performance
- You hear anything rattling around inside if you shake the RIP gently

Warranty Protection

It is very important to us that you are satisfied with your Gibson product. Register it and activate your warranty protection by mailing the warranty card included with Dusk Tiger to Gibson USA, Department W, P.O. Box 100087, Nashville, TN 37210-0087. If you encounter any kind of problem, contact us as soon as possible so we can make things right.

Once your warranty protection is active, RIP's electronic components are warranted to be free from defects in materials and workmanship for a period of one (1) year from the date of original purchase. Your warranty covers the cost of both labor and materials on any repair deemed necessary by our Customer Service Representative for the warranty period, subject to the limitations below. Please note that our warranty belongs to the original retail purchaser only, and may not be transferred or assigned to subsequent owners.

If RIP malfunctions as a result of faulty materials or workmanship, Gibson will determine whether repair or replacement is more appropriate. In case the original materials are no longer available for repair, Gibson reserves the right to use materials regularly utilized at the time of repair.

If we determine that replacing RIP best serves your interests, or in the unlikely event that it is destroyed, lost, or damaged beyond repair while in our possession for repairs, we will replace the product. If it is no longer available, it will be replaced with the most similar product whose value does not exceed your original product's purchase price.

Remember—as a necessary condition to the warranty coverage described in this section, you must activate your warranty by mailing the warranty card included with Dusk Tiger to Gibson USA, Department W, P.O. Box 100087, Nashville, TN 37210-0087.

Warranty Limitations

Unfortunately, it is not possible for your product warranty to cover any of the following:

- Any product that has been altered or modified in any way, or upon which any serial or registration number has been tampered with or altered in any way.
- Any product whose warranty card has been altered or contains false information.
- Any product that has been damaged due to misuse, negligence, accident or improper operation or storage.
- Any product damaged during shipment. Inspect the package immediately upon receipt, and notify the carrier *immediately* if there is damage.
- Any product damaged as a result of extreme temperature, humidity, or the use of an improper power source.
- Any product not purchased through an authorized dealer, or any product that has had repairs, modifications or alterations made by an unauthorized service technician.
- Wear and tear based on normal usage.
- Factory installed electronics after more than one year following the original date of purchase.

Gibson makes no other express warranty of any kind. All implied warranties, including warranties of merchantability and fitness for a particular purpose that exceed the specific provisions of the warranty, are expressly and specifically disclaimed and excluded from the warranty. Note, however, that some states and/or countries do not allow the exclusion or limitation of implied warranties, so this paragraph may not apply to you. In particular, if you purchased your product outside of the United States, contact your local distributor for the handling and resolution of all warranty issues, as the warranty described here is not always applicable.

And of course, Gibson shall not be liable for any special, indirect, consequential, incidental or other similar damages to you or to any third party, including, without limitation, damages for loss of profits or business, or damages resulting from use or performance of the product, whether in contract or tort, even if Gibson or its authorized representative has been advised of the possibility of such damages, and Gibson shall not be liable for any expenses, claims or suits arising from or relating to any of the foregoing.

To obtain warranty service, contact the service center nearest you:

US (Toll Free) 1-800-4GIBSON
US (Local) 1-615-871-4500
Email - service@gibson.com

Europe 00800-4GIBSON1
Email - service.europe@gibson.com

Japan
Email - service.japan@gibson.com

China 800-820-8841 (in China only)
Email - service.china@gibson.com

Please do not send a unit in for repair before contacting your customer service center. They will advise you of the proper procedure for a quick and efficient repair, as well as provide information on where and how to send the product.

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FireWire® is a trademark of Apple Computer, Inc.
Windows® and Windows XP® are registered trademarks of Microsoft, Inc.

Chapter 1: Introduction

We know you don't like to read manuals—you just want to play! And we understand. Use the Quick Start manual to get acquainted with Dusk Tiger, but when you're ready to get into its powerful computer-based applications, please read this manual in its entirety so you can get the most out of Dusk Tiger and RIP.

The RIP is a product of Echo Digital Audio, which introduced its first sound card for PCs over 20 years ago. The company now makes a complete line of audio interfaces for Mac and Windows computers; RIP can run concurrently with other Echo Digital Audio devices if you want to expand the total amount of inputs and outputs.

If You Own Both Dark Fire and Dusk Tiger Guitars

Caution: The Dark Fire charger/splitter box works with Dusk Tiger *only* as a splitter. *The splitter should not be powered up with Dusk Tiger, as damage to the LP-Z circuit may occur.*

Also, use Dusk Tiger only with the RIP supplied with Dusk Tiger. Do not use Dusk Tiger with the Dark Fire RIP. The Dark Fire RIP also acts as a charger, while the Dusk Tiger RIP does not. If charging is turned on with the Dark Fire RIP while connected to Dusk Tiger, damage to the LP-Z circuit may occur. The Dusk Tiger RIP unit has a circular blue sticker on the bottom to help you to distinguish between the two.

RIP Overview

The Robot Interface Pack (RIP) can send all Dusk Tiger signals (magnetic pickups, piezo pickup, and hex pickup) into a computer for recording or live use. RIP is compatible with virtually all current Mac and Windows computers, as well as many older models. Setting up RIP involves three main steps:

- **Installing RIP's software on your computer.** On Windows, this includes *drivers*—small programs that let RIP communicate with the computer. Mac OS X already includes suitable drivers. For both computers, a virtual mixing Console program—very much like a hardware digital mixer—lets you adjust the RIP's levels and routing within the computer.
- **Hooking Up RIP.** RIP transfers audio to the computer via an industry-standard FireWire (also called IEEE1394) cable. This physically connects RIP's FireWire port to a similar port on your computer. Most computers include a FireWire port, but you can add FireWire ports to desktop and laptop computers via accessory cards. See Appendix B for information on doing this, as well as other helpful FireWire tips. RIP requires power from the included AC adapter (which also can power the battery charger).
- **Customizing RIP for your particular computer or application.** This involves making adjustments to the virtual mixing Console.

Although RIP is designed and optimized for music programs, it can also provide traditional “sound card” capabilities for Windows computers (see Appendix E).

RIP-Related Accessories

The Dusk Tiger Accessory Pack box contains the following components needed by the RIP interface system:

- Gibson RIP interface box
- FireWire cable
- 6-pin to 4-pin FireWire adapter (required by some laptop computers)
- Card with Customer Code for authorizing the Dusk Tiger software bundle on the Gibson website. Store this card in a safe place!

Note: The RIP's AC adapter is included with the Dusk Tiger guitar. RIP cannot be powered from a FireWire port, and will not operate without this AC adapter.

Minimum System Requirements

Using RIP requires a desktop or laptop computer with:

- Unused FireWire 400 port (four-pin or six-pin—described later). FireWire 800 ports are supported only under Mac OS X and Windows 7.
- At least 512MB RAM (1GB or more is *highly* recommended)
- A fast, high-capacity IDE, SCSI, SATA or FireWire hard disk drive for recording audio
- **Mac:** Mac OS X 10.4 or later. (Gibson does not officially support operation under Apple's Boot Camp, although most users report that it works well.)
- **Windows:** Any version of Windows XP, Windows Vista, Windows 7, or Server 2003. XP must have at least Service Pack 2 installed, but Service Pack 3 is strongly recommended. Vista should have at least Service Pack 1. Newer versions of these operating systems are also supported. The RIP drivers are true 64-bit drivers that are fully compatible with 64-bit operating systems.

Chapter 2: Important General Installation Instructions (Mac and Windows)

Check the Gibson Website for Updates

Gibson is committed to enhancing RIP's performance. For the latest updates for RIP and other software associated with Dusk Tiger, go to www.gibson.com/dusktigersoftware. This is also where you'll find updated documentation, so please download the latest version of this manual to make sure you're taking advantage of everything RIP has to offer.

Installing from a Downloaded File

All Dusk Tiger software is available as a convenient download rather than from a DVD-ROM or other physical media. When downloading new software, the downloaded file will create an icon where you saved the software (e.g., the Windows Desktop or Mac Finder).

FireWire 400 Port Types

There are two main types of FireWire 400 ports: 4-pin (usually found in laptops), and 6-pin (found in desktops). RIP uses a 6-pin port, and the included cable connects RIP to 6-pin FireWire ports. If your computer has a 4-pin port, patch the enclosed 4-pin to 6-pin adapter between your computer's 4-pin port and the included 6-pin cable connector. If you prefer not to use an adapter, cables are available at consumer electronics stores with a 4-pin connector on one end and a 6-pin connector on the other.

RIP is also compatible with 9-pin FireWire 800 ports when running Mac OS X or Windows 7. However, you will need an appropriate physical adapter.

Caution: FireWire Connector Orientation

6-pin FireWire connectors have one straight edge and one curved edge. These fit into matching straight and curved sections in the computer and RIP FireWire ports.



6-pin FireWire connectors (male on the left, female on the right). Note how the bottom is straight, and the top is curved (angled). Make sure the male and female connectors match up when you plug in.

4-pin FireWire connectors have a small “notch” in one side. This fits into a matching “ridge” in the computer’s FireWire port.



4-pin FireWire connectors (male on the left, female on the right). Note how the bottom of the male connector has a groove that fits into the corresponding ridge in the female connector.

Plug the cable straight in. If you feel that you need to force it, *stop immediately* and look carefully at the connectors to make sure they’re aligned properly. Plugging in either type of cable incorrectly could damage your RIP, computer, FireWire adapter, or all three.

RIP Requires Its AC Adapter

Bus-powered FireWire devices obtain their power from the FireWire port itself. RIP is not bus-powered, so always use RIP with the AC adapter provided with Dusk Tiger. *Do not use other AC adapters.*

Make FireWire Connections When the Computer and RIP Are Turned Off

In theory, you can plug and unplug FireWire devices with power applied (called “hot-swapping”). In practice, this is not always true and may damage your computer’s motherboard or the RIP. Make connections when the computer is turned off to prevent potential damage.

Connect to a FireWire Port on the Computer Itself, or a FireWire Card Installed in the Computer

Some FireWire devices, such as hard drives, have two FireWire ports so you can “daisy-chain” additional peripherals. Do not use these. RIP wants the most direct path possible to your computer.

RIP Automatic Fault Detection

RIP can detect faulty cables or bad FireWire connections. If you open the Gibson RIP Console and the console GUI (Graphic User Interface) does not appear, check your connections. If the Console disappears for no apparent reason while the application is open, the FireWire cable has likely been unplugged, become unseated from its connector, or the RIP’s AC adapter has been disconnected. Restoring these connections restores the Console’s GUI.

Read the FireWire Tips in Appendix B

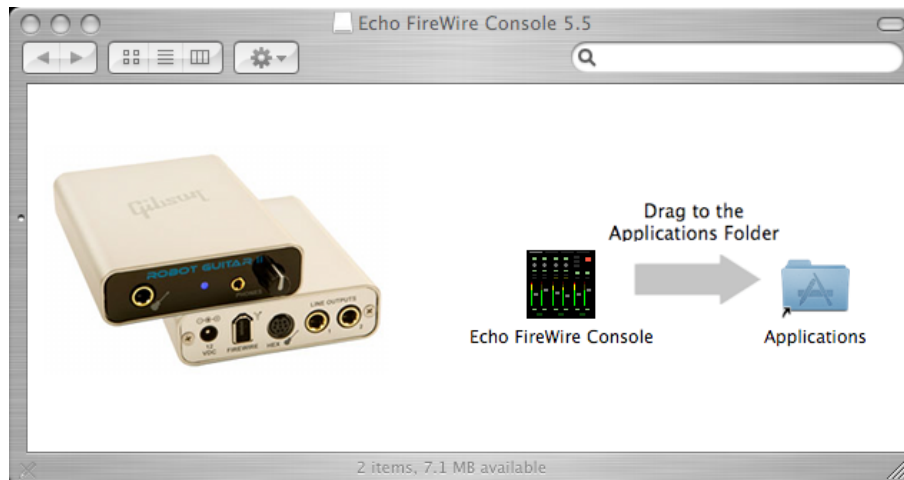
Even if you’re not having trouble with RIP and your computer, these tips may help you optimize performance.

Chapter 3: Macintosh Installation

1. If a previous RIP Console installation exists, uninstall the program as described in Appendix C.
2. Download the latest RIP software for Mac from www.gibson.com/dusktigersoftware and save it to your desktop. You'll see a DMG (installation) file called EchoFireWireConsole_[revision number].dmg.



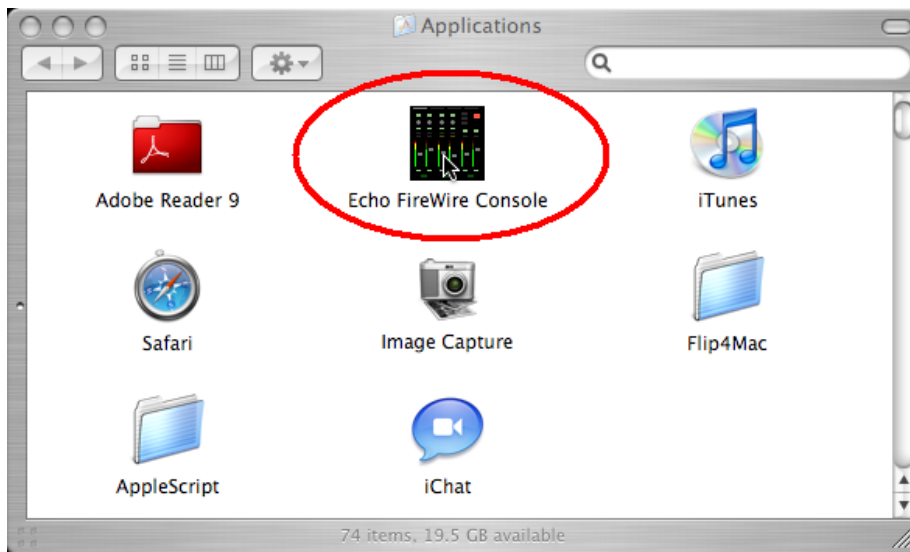
3. With the Mac powered off and RIP's AC adapter disconnected, plug the included FireWire cable between the FireWire port on the back of the RIP, and an empty FireWire port on your Mac (there's usually one on the Mac's front panel; otherwise, check the rear panel).
4. Make sure you've selected the proper AC adapter plug that fits into the type of wall socket used in your country, then connect the AC adapter to RIP.
5. Plug in the RIP AC adapter, then power-up your Mac.
6. Double-click on the DMG file. The installation window appears.



7. In the Installation window, drag the Echo FireWire Console icon into the Applications folder shortcut icon next to the Console icon. (If for any reason this doesn't work, locate the top menu bar in the Mac's Finder, click on *Go*, then select *Applications*. The Applications folder opens; drag the "Echo FireWire Console" file icon into this folder.)



8. Click on **Go** in the top menu bar in the Mac's **Finder**, then select *Applications*. The **Applications** folder opens; double-click on the **Echo FireWire Console** icon in the **Applications** folder.



9. The **RIP Console** appears.

Macintosh installation is now complete, and the virtual mixing Console opens automatically.

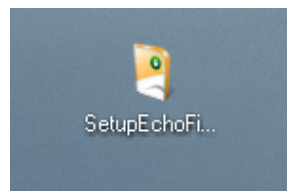
- If a window appears that says “The firmware for this device is out of date,” proceed to Chapter 6, “Opening the Console and Updating RIP Firmware.” Otherwise, proceed to Chapter 7, “Connecting to Dusk Tiger.”

Chapter 4: Windows XP Installation

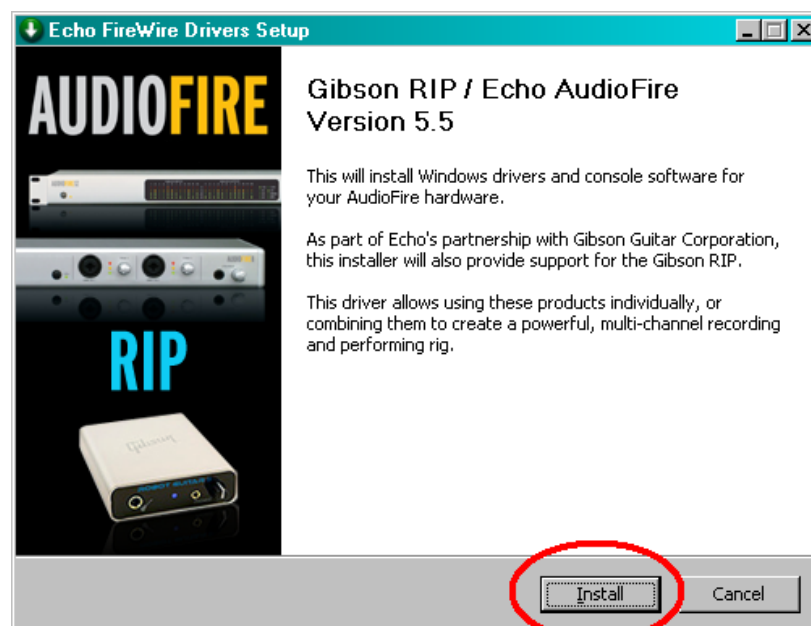
Note: If at any point during installation a “Windows Logo Testing” window appears, click on “Continue Anyway.”

Note: The installation procedure for the 64-bit version of Windows XP is virtually identical.

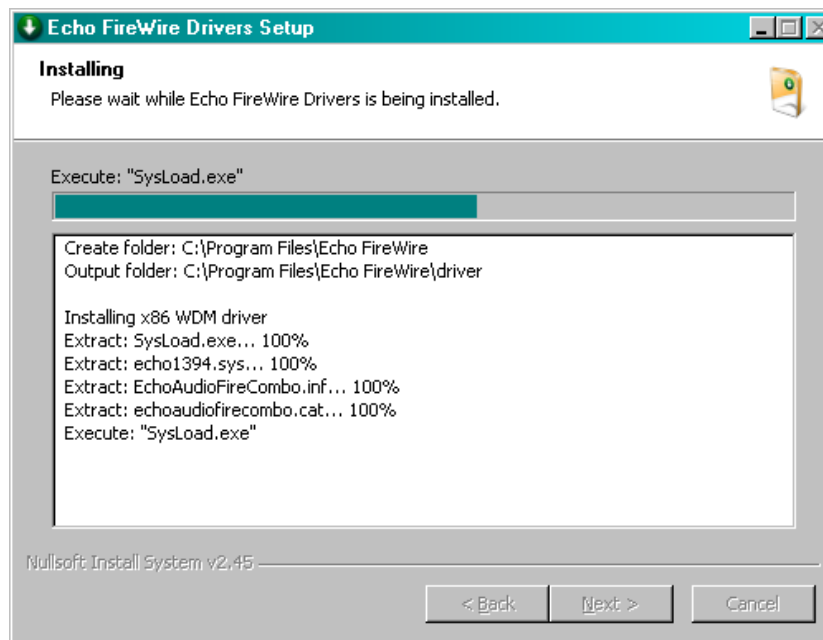
1. Log in as an Administrator—either with the “Administrator” account or any other account with administrative privileges. Otherwise, you will not be able to install the RIP software. **Caution: DO NOT connect the Gibson RIP to your computer’s FireWire port yet.**
2. If a previous RIP Console installation exists, uninstall the program as described in Appendix C.
3. Download the latest RIP software for Windows from www.gibson.com/dusktigersoftware and save it to your desktop. You'll see an icon called SetupEchoFireWire_[revision number].exe.



4. If RIP is connected to your computer, disconnect it now. Double-click on the SetupEchoFireWire.exe icon.
5. When the Gibson RIP Installer screen appears, click on “Install.”



6. A window shows the install progress.

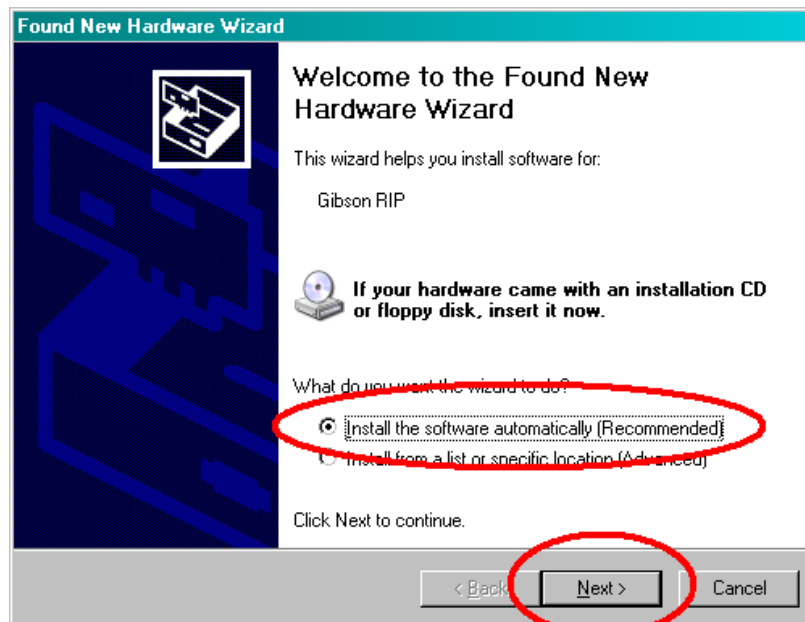


7. Note: The screen may go blank for a second or two. This is normal. After the window shows "Completed," click on "Next."
8. Software installation is almost complete. Click on "Finish," then turn off your computer.

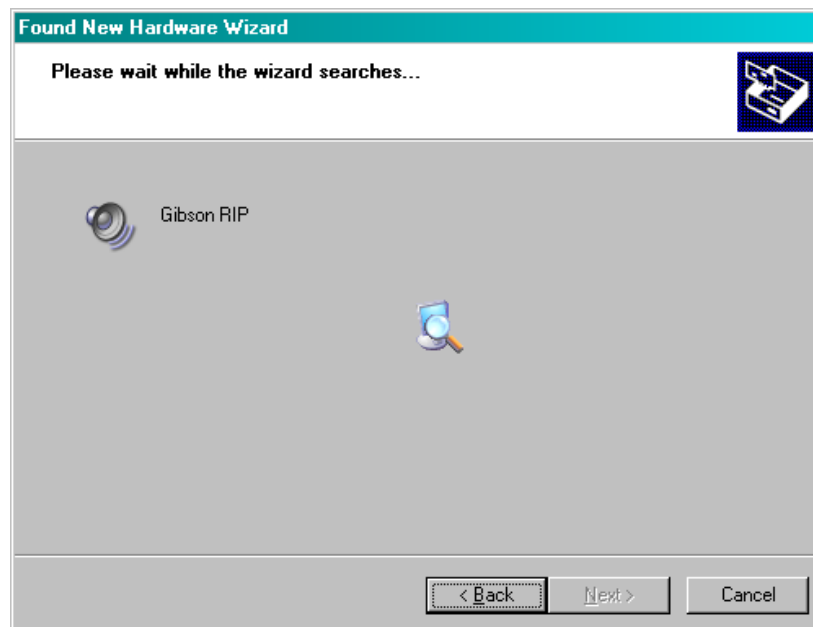


9. Locate the Gibson RIP, the power supply adapter included with your Dusk Tiger guitar, and the FireWire cable. Plug one end of the FireWire cable into the FireWire connector on the rear of the Gibson RIP. Attach the other end of the FireWire cable to an open FireWire port on your computer.

10. Make sure you've selected the proper AC adapter plug that fits the type of wall socket used in your country, then connect the AC adapter to RIP. Plug in the adapter. *Now, turn your computer back on.*
11. Windows will detect RIP, and the “Welcome to the Found New Hardware Wizard” dialog box will appear (this may take a while, so be patient). If the option “No, not this time” appears, click on it. If not, you’ll see an option to “Install the software automatically (Recommended).” Select this, then click on “Next.”

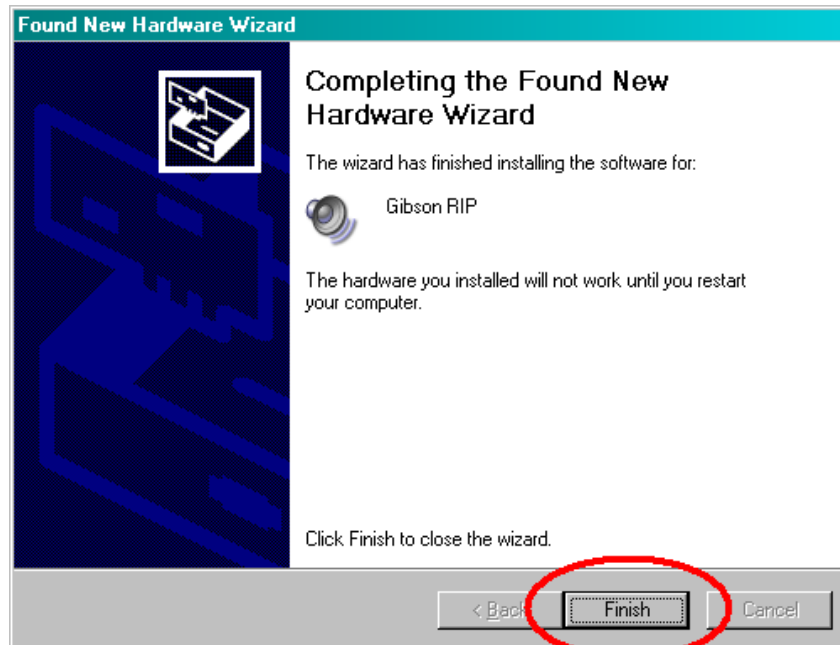


12. The software will install automatically.

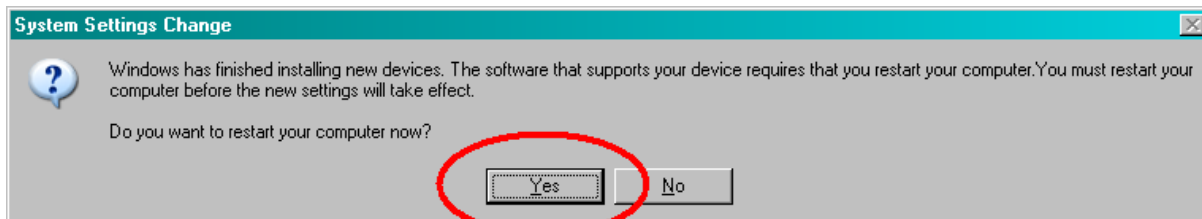


13. If the “Windows Logo Testing” window appears again, ignore it and click on “Continue Anyway.” Automatic installation continues.

14. When the “Completing the Found New Hardware Wizard” appears, click “Finish” to close the wizard.



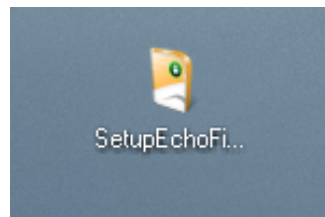
15. A window may appear that advises you to restart your computer. Click on Yes to restart. If the window doesn't appear, it's generally good practice to restart your computer anyway.



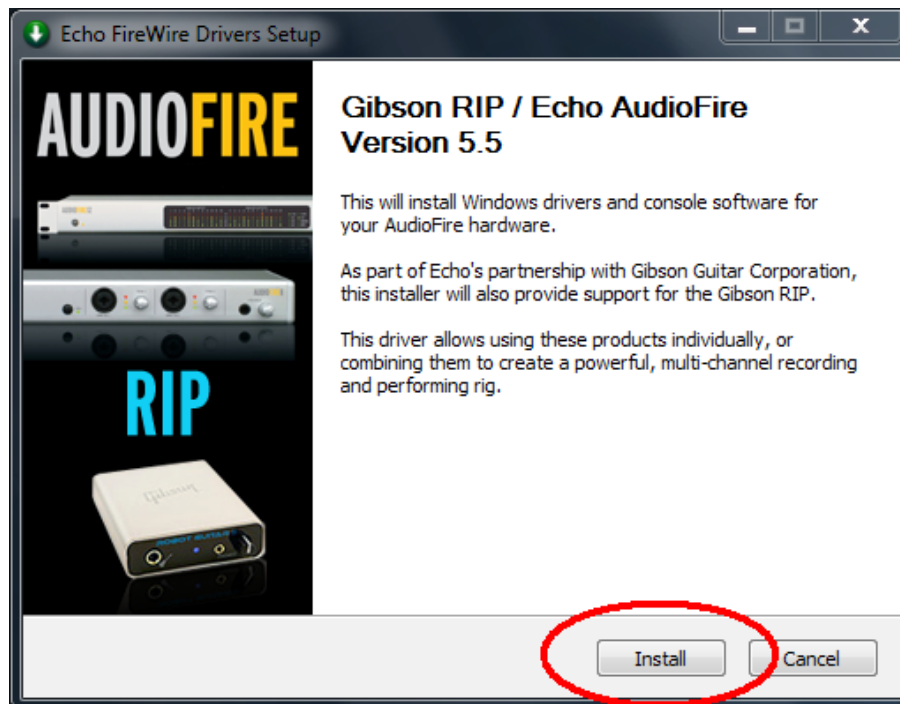
Installation for Windows XP is now complete. Proceed to Chapter 6, “Opening the Console and Updating RIP Firmware.”

Chapter 5: Windows Vista/Windows 7 Installation (32- or 64-bit)

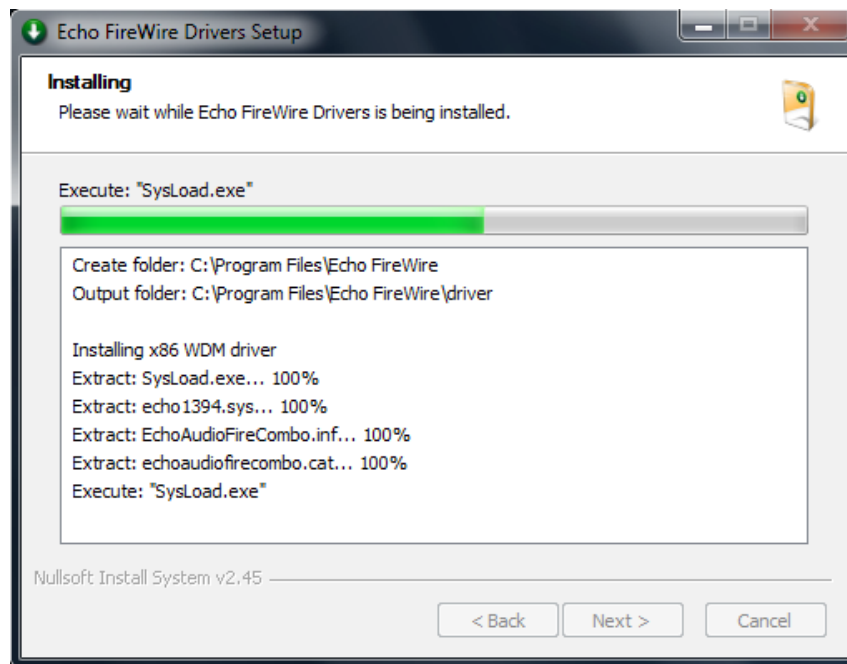
1. Power-up your Windows computer, and log in as an Administrator—either with the “Administrator” account or any other account with administrative privileges. Otherwise, you will not be able to install the RIP software. **Caution: DO NOT connect the Gibson RIP to your computer’s FireWire port yet.**
2. If a previous RIP Console installation exists, uninstall the program as described in Appendix C.
3. Download the latest RIP software for Windows from www.gibson.com/dusktigersoftware and save it to your desktop. You'll see an icon called SetupEchoFireWire_[revision number].exe.



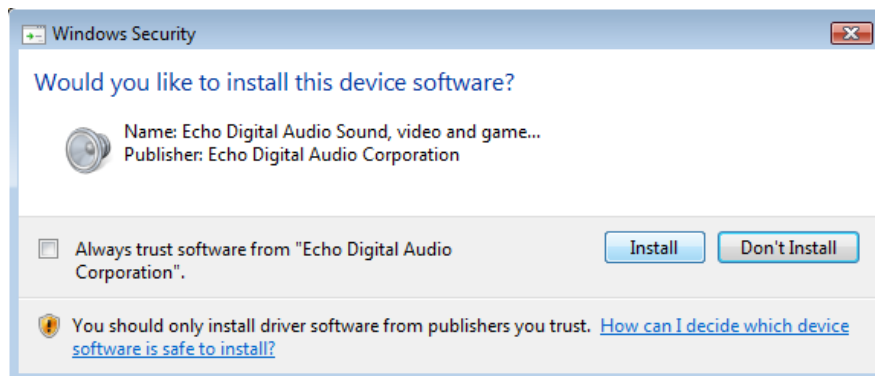
4. If RIP is connected to your computer, disconnect it now. Double-click on the SetupEchoFireWire.exe icon.
5. When the Gibson RIP Installer screen appears, click on “Install.”



6. A window shows the install progress.



7. The "Windows Security" window appears. Click on "Install."



8. When the "Install Complete" window appears, click on "Finish." Now that the drivers are installed, turn off your computer.



9. Locate the Gibson RIP, the power supply adapter included with your Dusk Tiger guitar, and the FireWire cable. Plug one end of the FireWire cable into the FireWire connector on the rear of the Gibson RIP. Attach the other end of the FireWire cable to an open FireWire port on your computer.
10. Make sure you have selected the proper AC adapter plug that fits into the type of wall socket used in your country, then connect the AC adapter to RIP. Plug in the adapter, then turn your computer back on.
11. Windows will detect RIP, and install the software automatically. When the process is complete, a "bubble" comes out of the Taskbar that says "Your device is ready to use." This bubble will disappear automatically after a few seconds.

Installation for Windows Vista/7 is now complete. Proceed to Chapter 6, "Opening the Console and Updating RIP Firmware."

Chapter 6: Opening the Console and Updating RIP Firmware

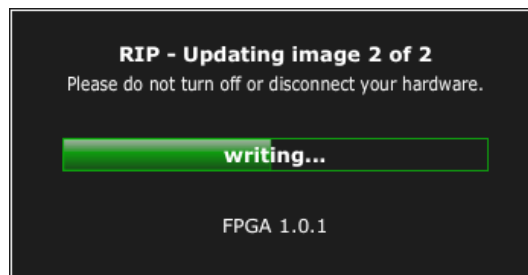
Firmware is RIP's "brain," and may be updated from time to time to optimize performance. Firmware updates may occur when the virtual mixing Console opens for the first time after a software update. Here's how to open the Console after installation.

- **Mac:** The Console opens automatically when Mac installation is complete.
- **Windows XP:** After installation and rebooting, go *Start > Programs > Echo FireWire*, then click on Echo FireWire Console.
- **Windows Vista/7:** After installation, go *Start > All Programs > Echo FireWire*, then click on Echo FireWire Console.

Once the Console is open, it will check the RIP firmware. If it isn't the latest version, the following window will appear.



Click "Yes" to install new firmware. ***Do not turn off or unplug your Gibson RIP or your computer while the firmware is being installed!*** This can leave RIP in a non-functional state that requires returning it to the factory. If possible, connect your computer and RIP to an Uninterruptible Power Supply while updating firmware. A window shows the updating progress.



Once the firmware update is complete, a screen will appear that says "Flash Update complete." Turn off power to the RIP, wait 10 seconds (or more), then reconnect power to load the new firmware.

Chapter 7: Connecting to the Gibson RIP

RIP is a versatile interface that also works with guitars other than Dusk Tiger, including Dark Fire (although it does not provide a charging function for Dark Fire's battery).

Guitar Input and Analog Outputs

Gibson RIP's front panel has (left to right) a guitar input, indigo power indicator light, and 1/8" stereo headphone output jack with a corresponding volume knob. The guitar input's 1 Megohm impedance prevents loading down your pickups, thus preserving the guitar's tone.



RIP has two rear-panel 1/4" analog line outputs. These are compatible with balanced or unbalanced cables. By default, the outputs send a +4dBu (high-output, pro studio level) signal. You can trim the output level if needed in the RIP Console (see Chapter 8). Typically, the outputs would feed a mixing console, powered monitors, PA system, etc.



Hex Output

The Hex output provides outputs from each string and is compatible with guitar-to-MIDI converters made by Axon, Roland, and others. To patch RIP to the guitar-to-MIDI converter, use the custom 13-pin cable included with Dusk Tiger.

FireWire Connector

The RIP's rear-panel FireWire connector is a 6-pin IEEE 1394a connector that operates at 400 Mbps. It connects the audio interface to your computer.



Connecting Your Guitar to RIP

Standard guitars: Connect your guitar to the front-panel 1/4" jack using a standard, 1/4" mono guitar cable.

Dusk Tiger, magnetic pickups only: Connect your guitar to the same jack using a standard, 1/4" mono guitar cable. (Note: You can also blend in the piezo pickup sound in this mode; refer to the Dusk Tiger manual.)

Dusk Tiger, all available pickup outputs (magnetic pickups, piezo pickup, hex pickup): Connect your guitar to the same jack using the stereo (TRS) 1/4" cable supplied with Dusk Tiger.

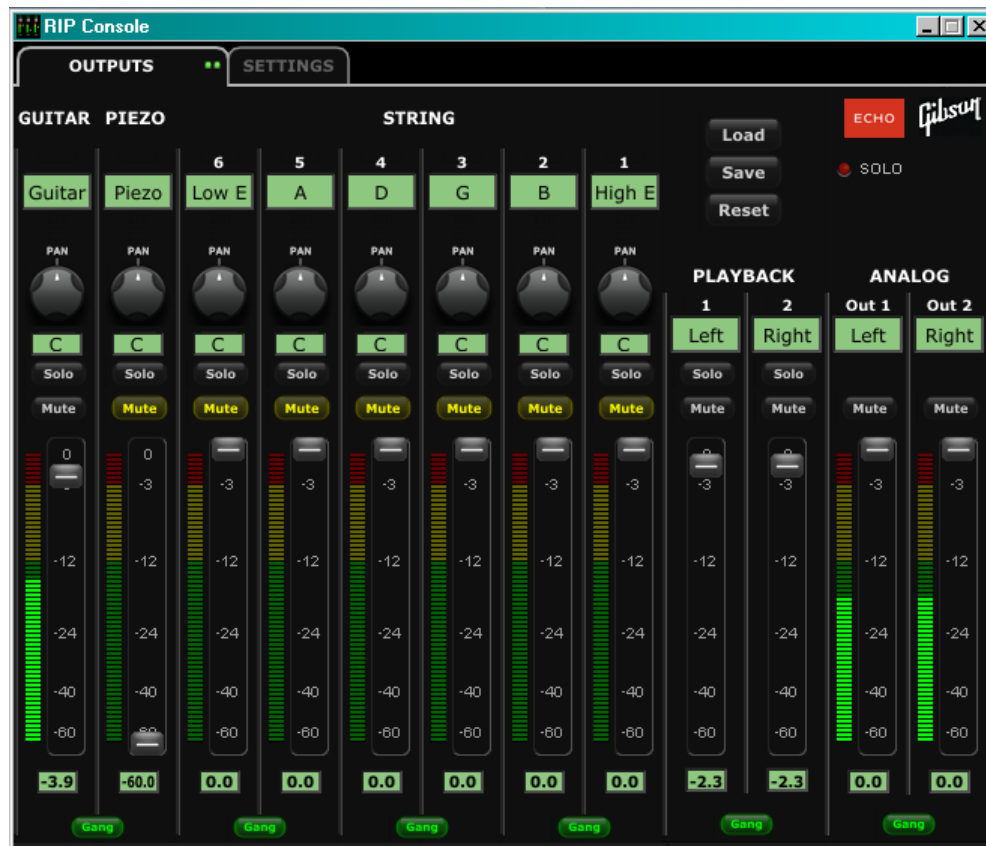


The plugs used with a stereo cable have tip, ring, and sleeve (TRS) connections.

Chapter 8: Console Application, Outputs Tab

The installation process adds a “virtual control surface” application called the *Console*. This allows controlling the audio I/O (output levels and input monitoring) and several of RIP's digital audio-oriented functions, while bringing these controls to a single, easy-to-use location.

Opening the Console



The RIP Console, with the Outputs tab selected.

Here's how to open the console. We recommend placing a shortcut (alias) on your desktop for easy access; double-clicking on this would produce the same results as any of the following methods of opening the Console.

Mac: Open the Applications folder and double-click on the Echo FireWire Console icon.

Windows XP: Click on the *Start* menu and choose *Programs > Echo FireWire > Echo FireWire Console*.

Windows Vista/7: Click on the *Start* menu and choose *All Programs > Echo FireWire > Echo FireWire Console*.

The System Tray Icon (Windows Only)

Opening the console adds an icon to the system tray.



Clicking the left mouse button on the tray icon brings the console window to the foreground if it is minimized.

Output Bus Controls

The console interface works like a digital mixer. The Analog Out 1 and Analog Out 2 bus faders toward the right control the master level going to RIP's two 1/4" line-level outs. The audio output from your recording application (e.g., Ableton Live) can feed this bus, as can any Dusk Tiger signal (magnetic pickups, piezo pickup, individual string outputs). Think of these controls as the “master volume.”



The Console, with the output bus highlighted.

The green label fields default to “Left” and “Right” but you can edit these and save the new labeling in a console session (see below).

The *Mute* buttons and *Faders* below the green label fields affect **everything being mixed to this bus**. Thus, pulling the faders down will reduce the level of your

application's output as well as any RIP output signals being monitored, as described later. The level meters display the amount of signal going to the outputs, and the number fields below the faders show the precise fader settings.

Each pair of channels (inputs and outputs) has a *Gang* button. Enabling this button ties the two sets of channel controls together. For example, clicking the Mute button on one channel also enables the Mute button on the other channel. Ganging ties pairs of Faders together as well; they maintain their placement relative to each other when either one is moved.

Guitar, Piezo, and String Input Level Controls

The guitar input controls are on the left side of the console. These monitor the Dusk Tiger signals and mix them directly to the output, bypassing the computer or any application that's running. This lets you hear the straight, unprocessed guitar sounds without any latency (see Appendix D) caused by going through the computer.



The guitar string channel strips.

There is one strip, or *input channel*, for each guitar signal. Note that *none of these controls affect the recording process*; they determine only how the signal will be monitored at the output bus. Each input channel has:

- **Green label.** You can edit and save this if you want to change the name. For example, to make it easier to remember which gauge strings you use, you can enter the diameter in the string field.



The guitar string channel strips have been renamed to show string gauges.

- **Pan knob** (with pan position readout directly below), The places the string anywhere in the output bus stereo field, from left to right. Holding the Ctrl key and clicking on a pan knob sets it to the center position. Below each pan knob, a non-editable green field shows the pan knob's current setting.
- **Solo button.** When selected, any channels that aren't soloed are silenced and will not appear in the output.
- **Mute button.** When enabled, this silences the muted channel.
- **Input level meter.** Always displays the incoming signal level at the various inputs.
- **Faders.** Control the level of the signals feeding the output bus. Note that Fader pairs also have a Gang button that works similarly to the Gang button on the output bus control.

DAW Playback Controls

The Playback controls (to the left of the Output bus controls and the right of the input channels) affect the level of Live's stereo output, or that of any other application whose output feeds RIP.



The Playback controls.

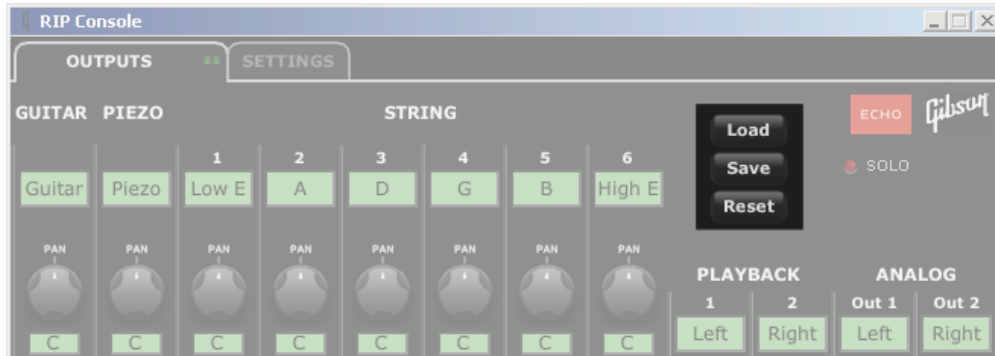
The channel names default to Left and Right, as shown in the green fields. These can be edited and saved with a Console session, as described later. The controls operate the same way as the input monitor controls, except there are no pan knobs or level meters.

Adjusting Playback Volume

Output volume adjustments affect the digital resolution because lowering a volume fader below 0dB decreases the number of available bits, reducing the system's potential dynamic range. While this doesn't make too much difference due to RIP's overall high resolution (24 bits), for best results leave the Playback and Output faders at 0dB. If you need to lower the level, do so at your monitoring system (mixer, level controls on powered speakers, the RIP headphone level control, etc.).

Console Sessions

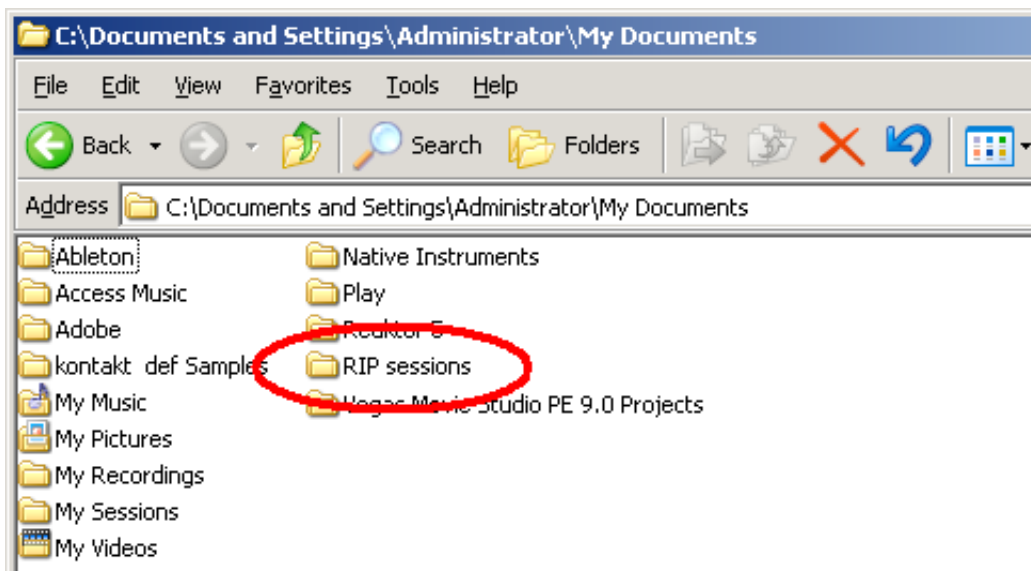
You can save the state of the Gibson RIP to a file called a “Session.” To save or load a session, click on the “Save” or “Load” button respectively at the top of the Console window. The “Reset” button restores the Console to its default state. However, the “Gang” buttons, “Core Audio sample rate” buttons, and “Locked” sample rate button (in Windows XP only) do not reset.



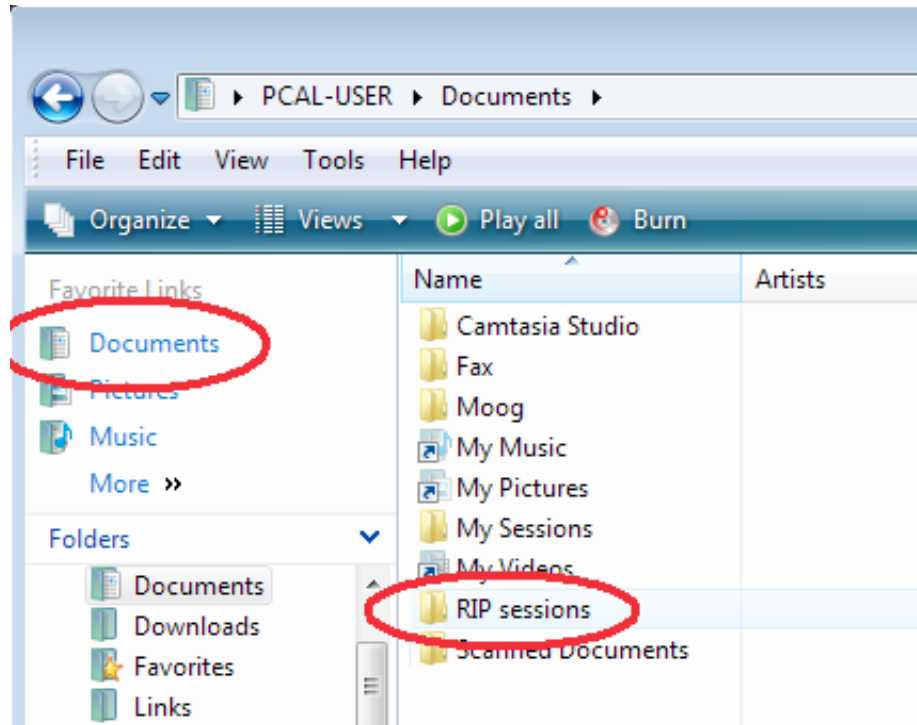
The three session control buttons.

Sessions default to being saved in the following locations. However, you can create a new folder for Sessions, and navigate to it while saving. The console remembers the last folder used to save or load a session.

Windows XP: Sessions are stored in the Administrator’s “My Documents” folder, in a sub-folder named “RIP sessions.”



Windows Vista/7: Sessions are stored in the User's "Documents" folder, in a sub-folder named "RIP sessions."



Mac: Sessions are stored in the User's "Documents" folder, in a sub-folder named "RIP sessions."

Hot Keys (Shortcuts)

Several "hot keys" (shortcuts) can Control the console when its window is active. (Note: The following shortcuts are for Windows. For the Mac, use the Apple/Command key instead of Ctrl.)

- **Ctrl-S** saves or quick-saves the current session
- **Ctrl-O** loads a session
- **Ctrl-click** a *Fader* to set to 0 dB
- **Ctrl-click** a *Pan* knob to set it to center
- **Ctrl-click** on a *Mute* button to select all or deselect all
- **(Windows only) Left-click** on the System Tray icon to restore the Console view if it has been minimized
- **(Windows only) Right-click** on the System Tray icon for various console view options

Click on the numerical readout below each Console fader to enter a value. Press your computer keyboard's Tab key to step between each Fader readout.

Typical Console Scenarios

The following assume that the Playback and Output level controls are at 0dB except as noted.

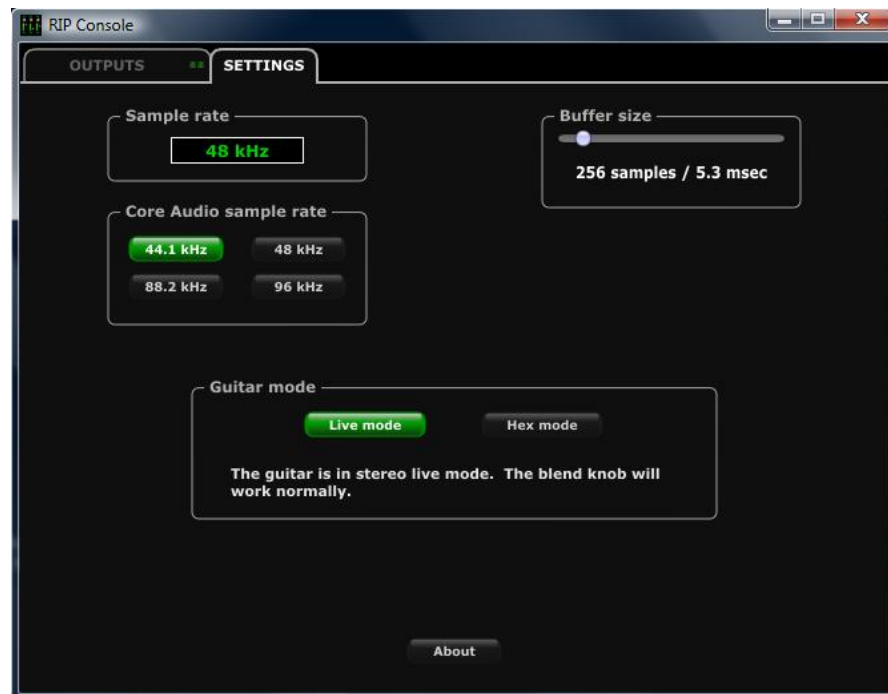
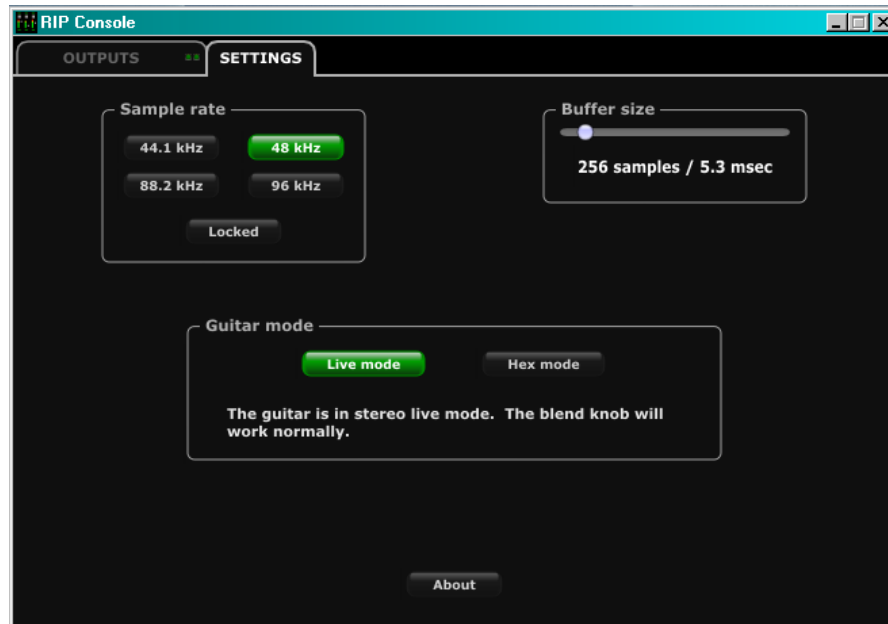
You want to practice Dusk Tiger without any processing, and be able to listen to any of the string and pickup options through a monitoring system (including headphones plugged into RIP's front panel): Turn up the individual string/pickup faders. For example, if you want to hear just the Piezo pickup, turn up the Piezo channel. To hear the Hex pickup outputs and pan the strings across the stereo field, turn up the individual string faders and set the panpots as desired. You will hear no latency with the guitar signal in this scenario.

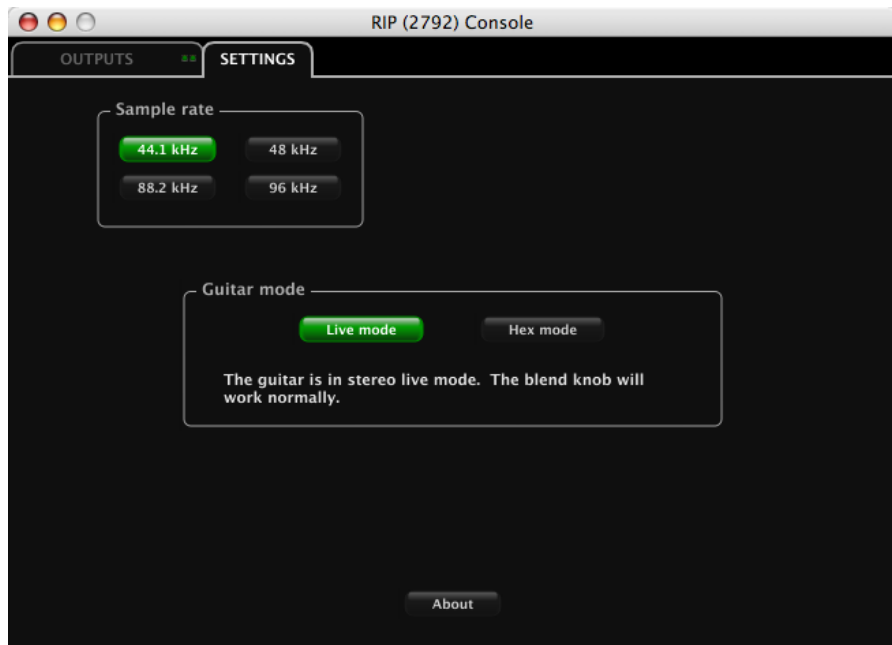
You want to play Dusk Tiger only through the processors in your computer (e.g., Guitar Rig 4, the processors in Ableton Live, or other applications) and not hear the direct string sounds: Simply mute all the inputs, or turn down all string channel level controls. The guitar signal will have some latency with this scenario.

You want to play Dusk Tiger through the processors in your computer and blend in the direct string sounds: Turn up the individual string channel faders as desired to hear the direct sound. To adjust the blend between the direct guitar sound and the processed sound, bring down the Playback fader if the processed sound is too loud, or bring down the string faders if the direct sound is too loud. The direct guitar signals will have no latency, but the processed sounds will. Refer to Appendix D for tips on minimizing latency.

Chapter 9: Console Application, Settings Tab

Click on the “Settings” tab to access RIP’s system settings. Note that it’s best to adjust Console settings *before* opening any applications that access RIP so that the application “sees” these settings when it opens. If the application that should access RIP is already open, close it and re-open after changing any settings. The following shows settings for (top to bottom) XP, Vista/7, and Mac.





Settings tab for (top to bottom) Windows XP, Windows Vista/7, and Mac. All three include an “About” button which when clicked, opens a window that gives details about the Console software version and also allows you to initiate RIP firmware updates. The About window is described in detail later in this chapter.

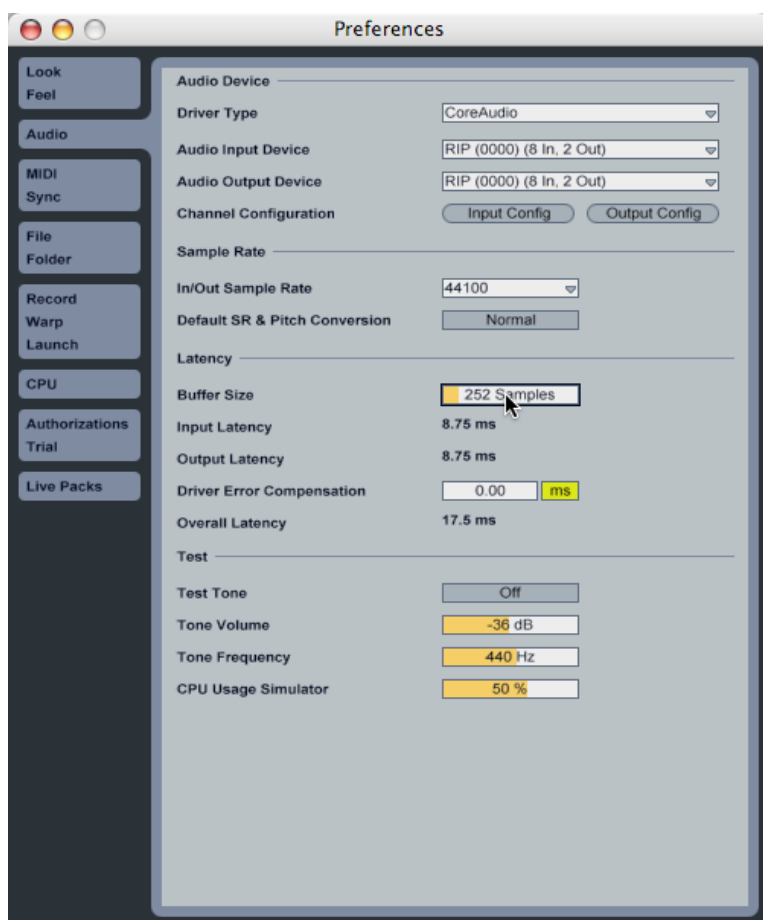
Buffer Size Settings (Windows XP and Vista/7)

This slider sets the *buffer size* for all audio software that works with RIP, and has a direct effect on latency (Appendix D) because smaller buffer sizes give lower latencies. However, too small a setting will introduce clicks and pops into the audio (and in extreme cases, turn off the audio engine) because this places excessive demands on your computer. So, choose the smallest value possible consistent with having no audio problems. Most modern computers can handle 256 samples. Older, slower machines may require 512 to 1024 samples. Fast multicore computers can often use latencies as low as 96 or 64 samples.

Buffer Size Settings (Mac)

The buffer size is set within the application, not the console. For example, with Ableton Live Lite 8 Gibson Studio Edition:

1. With Live open, click on Live in the menu bar and select Preferences. The Preferences window opens.



2. Click on the Audio tab.
3. Click in the Buffer Size tab, and drag up or down to change the buffer size.

About Sample Rates

The sample rate provides a reference to which all audio synchronizes, and is roughly twice the highest frequency you want a system to be able to reproduce or record. For example, a sample rate of 44.1kHz was chosen for the CD because half of that is in most cases the upper limit of human hearing. However, other sample rates are commonly in use, and can be selected in RIP.

44.1kHz: The most common sample rate used in music projects, and the same sample rate used by CDs.

48kHz: Typically used with music for video projects, but also in some music projects because of the belief that the higher sample rate means higher fidelity. However, this is not a dramatic difference; you may not notice any difference at all.

88.2kHz: The less common of two “high-resolution” sample rates (neither is available in Ableton Live Lite 8 Gibson Studio Edition). Recording at 88.2kHz creates files that are twice as large as those created when using 44.1kHz. Also, some plug-ins used in audio applications may not work as well at 88.2kHz, or you may be able to use fewer instances. However, latencies are lower if your computer is up to the task of handling high-resolution sample rates.

96kHz: The most common “high-resolution” sample rate, although it’s still not as common as 44.1 and 48kHz sample rates. Recording at 96kHz creates files that are 2.18 times as large as those created when using 44.1kHz. All other comments regarding 88.2kHz apply here as well.

Sample Rate (Macintosh)

Click on a sample rate button to select it. It’s generally best to do this before opening any audio application. After opening the application, if needed set its sample rate to the same value.

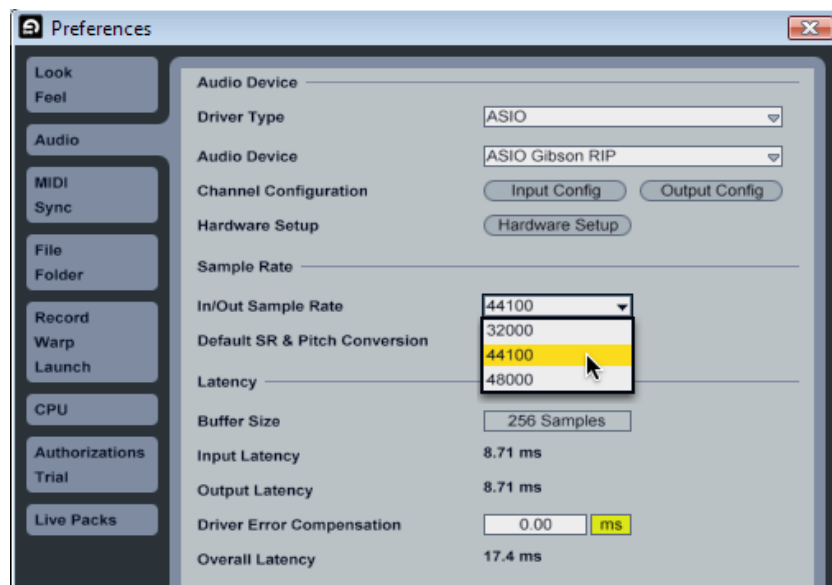
Sample Rate (Windows XP)

Click on a button to select a sample rate. It’s recommended that you do this before opening an audio application. After the application is open, if needed set its sample rate to the same value.

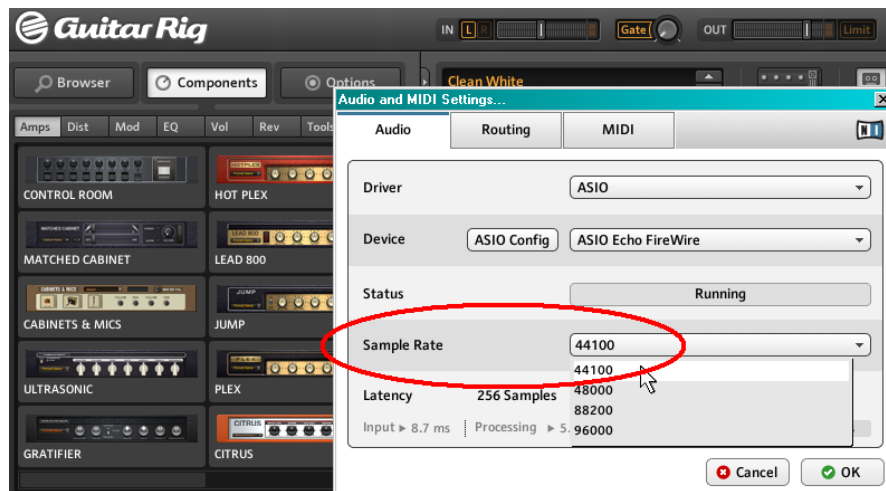
Enabling the “Locked” setting (available only in the Windows XP Console) blocks software from changing your selected sample rate. *Note:* Locking the sample rate is not really necessary for applications (such as Live Lite 8 Gibson Studio Edition) that use ASIO. However, locking can be important when using RIP as a “sound card.” See Appendix E.

Sample Rate (Windows Vista/7)

With ASIO applications such as Live Lite 8 Gibson Studio Edition, Sonar, Acid, Record, etc., set the sample rate in the application itself. For example, in Live you set the sample rate by going to Preferences, then clicking on the Audio tab:



Guitar Rig 4 sets the sample rate for stand-alone operation in its Audio and MIDI Settings window:



When used as a plug-in, Guitar Rig 4 automatically adopts the host's sample rate.

After you set the sample rate and play or record audio in your application, the Sample Rate field on the Console's Settings tab will show the sample rate you selected.

You do not need to adjust sample rate in the Core Audio sample rate section *except* when using RIP as a traditional Windows sound card. See Appendix E.

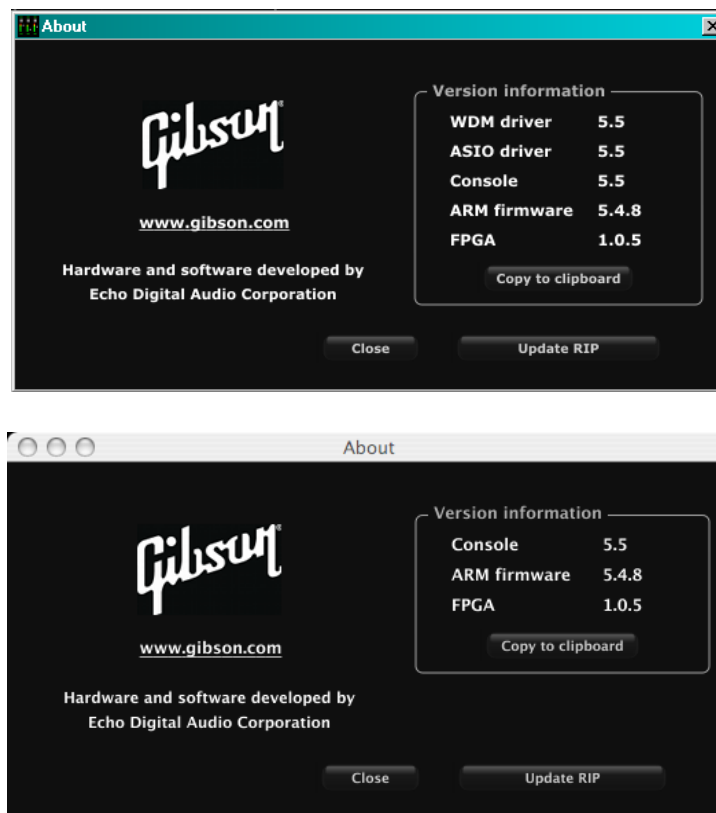
Guitar Mode

There are two main modes for using Dusk Tiger with the RIP. In Live Mode, Dusk Tiger produces a stereo signal that includes the magnetic and piezo pickup outputs. The blend control in the pickup select toggle switch works normally, i.e., it sets the balance of piezo and magnetic sounds. Guitar Mode can be active regardless of whether or not Dusk Tiger's power is on, but if it's off, the piezo pickup output will not be available.

Hex Mode is available only if Dusk Tiger's power is on. In this mode, Dusk Tiger generates eight simultaneous outputs that feed into the Console: Magnetic pickup, piezo pickup, and individual string outputs. Note that the pickup toggle switch blend knob doesn't work in hex mode; also, hex mode is required for Dusk Tiger to communicate with the Chameleon Preset Editor and do guitar firmware updating.

The About Button

Clicking on the Settings tab's About button opens a window that displays version numbers for the various RIP software components (these may be different than the numbers shown in the screen shots), provides a link to Gibson's home page, and lets you initiate RIP firmware updates.



The upper picture shows the About window for Windows XP and Vista/7, while the lower one shows the About window for Mac OS X.

If you encounter problems, customer service may ask for the version information in the About page. You can copy this information to your clipboard by clicking on “Copy to clipboard,” then pasting the text it into an e-mail to send to customer service.

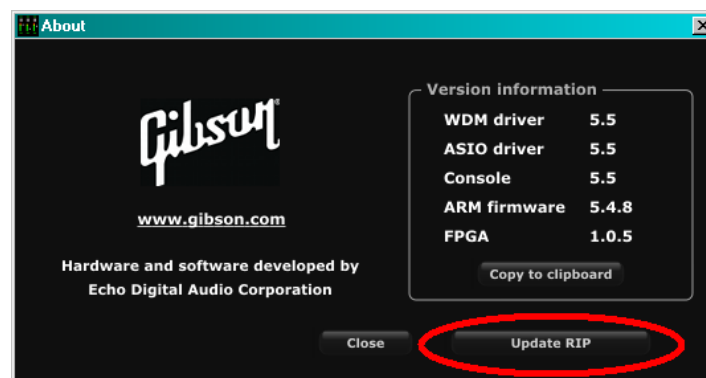
Updating RIP Firmware Manually from the About Window

Firmware is computer code embedded in your RIP (there's also firmware in the Dusk Tiger guitar, which is updated using a separate procedure) that controls many operational aspects. It works in conjunction with the Console and driver software, so it is important that you use the latest version of both the software and firmware.

However, there are situations where the two may be “out of sync.” For example, you might download new, enhanced software from the Gibson website, while the RIP has older firmware. Gibson has anticipated this possibility, and included procedures in the Console software that take different scenarios into account.

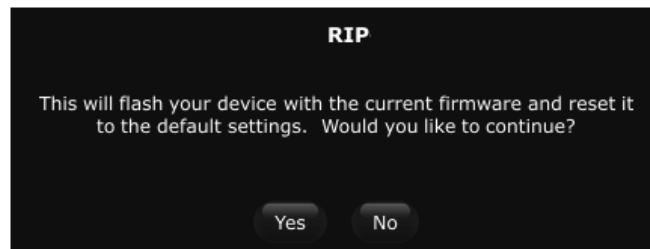
Upon running the Console application for the first time, you will be notified if the RIP firmware is out of date, and given the opportunity to update it. See Chapter 6 for a complete description of this process. Gibson recommends that you always use the latest firmware, and update when asked to do so. You can also update the RIP firmware manually at any time with the following steps.

1. If the Console window is not already open, open it in Windows by going *Start > Programs* (or *All Programs* in Windows Vista/7) > *Gibson RIP > Gibson RIP Console*, and with the Mac by (from the Finder) selecting *Go > Applications > Gibson RIP Console*. Of course, in both cases, you can create shortcuts/aliases and put them where they're easily accessible.
2. After the Console opens, click on the Settings tab, then click on the About button.
3. The About Window opens. Click on Update RIP. (Note: The screen shots in this section are from the Windows version; the Mac version has some minor differences, but both have the same update buttons.)

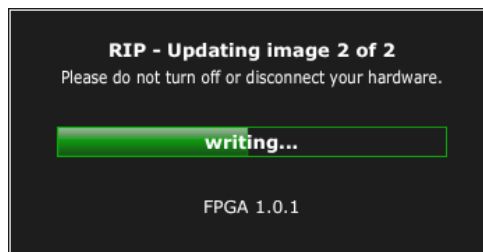


4. If the RIP needs updating, a window appears that asks if you want to update your firmware. Click “Yes” to install the firmware. If the RIP has the current firmware version, you will be asked if you want to flash the device with the

current software, and reset it to the default settings. You do not need to do this unless you want to reset the RIP, or if you think the current software may have become corrupted. In either case, **do not turn off or unplug your Gibson RIP or your computer while the firmware is being installed!** This can leave RIP in a non-functional state that requires returning it to the factory. If possible, connect your computer and RIP to an Uninterruptible Power Supply while updating firmware.



5. A window shows the updating progress.



6. Once the firmware update is complete, a screen appears that says "Flash Update complete." Turn off power to the RIP, wait 10 seconds (or more), then reconnect power to load the new firmware.

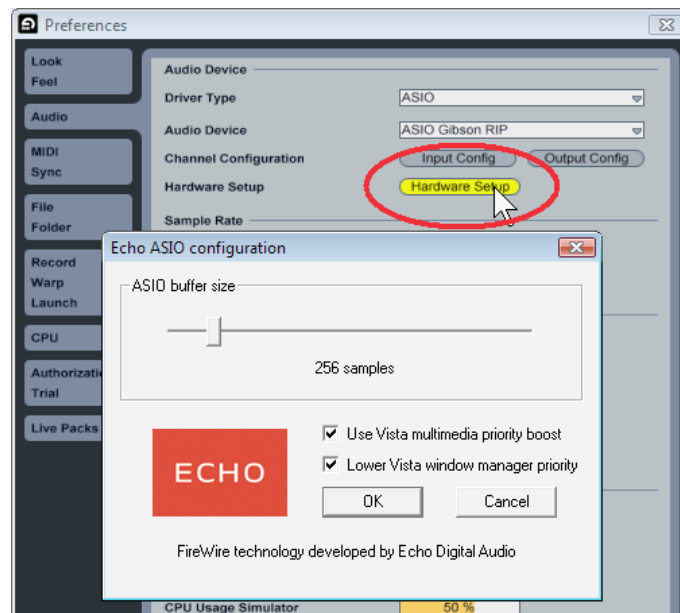
Optimizing ASIO Performance with Windows Vista/7

The ASIO driver supports Windows Vista/7's multimedia thread scheduler (also called MMCSS), which allows more reliable, lower latency performance.

The ASIO driver automatically uses MMCSS, which is *highly* recommended. However, you can disable it if you want to give priority to another application that's running at the same time. Here's how to disable MMCSS.

Open your application's ASIO control panel, usually accessible from within an audio Preferences window. It may be called ASIO Panel, ASIO Control, Hardware Setup, etc. For example, with Live Lite 8 Gibson Studio Edition, the ASIO panel is located in the Audio tab under Preferences (located under the Options menu) and called Hardware Setup.

- Uncheck "Use Vista multimedia priority boost" to disable MMCSS.
- Uncheck "Lower Vista window manager priority" to prioritize drawing windows on the screen over audio.



Stand-Alone Console Mode

When you close the Console, it saves all the RIP mixer settings in RIP's flash memory. When you reboot RIP or move it to another computer, RIP will recall these settings.

RIP need not be connected to a computer to operate. This is called *stand-alone* mode. Simply set the mixer setting as desired in the console, then close the console to save those settings to flash memory. Then, when you turn on your Gibson RIP, those settings will automatically be loaded into the RIP's internal mixer. This is useful for live performance if, for example, you've crafted a perfect mix of all the Dusk Tiger outputs, and you want to feed them into an amp. You can do so simply by powering RIP; no computer is necessary.

LED Diagnostics

RIP's front panel blue LED provides feedback on what's happening inside RIP.

- **LED flashes quickly five times:** This happens immediately after power-up.
- **LED dim:** RIP is active (playback and magnetic pickups input are functional) but RIP is not currently receiving a signal from the Dusk Tiger piezo/hex pickup
- **LED bright:** RIP is detecting the piezo/hex signal from Dusk Tiger
- **LED flashes rapidly and continuously:** The FireWire chip inside RIP has failed to boot up. Remove power for 15 seconds and re-connect. If the LED still continues to flash continuously, there is a hardware problem; contact your nearest service center.

Chapter 10: FireWire Analyzer (Windows Only)

The FireWire Analyzer utility included with RIP is intended for advanced users and provides detailed timing information about how ASIO applications perform with RIP; leave it running as you use your ASIO-compatible audio software.

Here's how to open the Analyzer.

Windows XP: Go *Start > Programs > Gibson RIP* and click on “FireWire Analyzer.”

Windows Vista/7: Go *Start > All Programs > Gibson RIP* and click on “FireWire Analyzer.”



The FireWire Analyzer is test equipment for analyzing FireWire performance on Windows computers.

Status

The upper area of the FireWire Analyzer window displays your current sample rate and buffer size, as selected in the Console or an audio application. Below that is the calculated buffer time in milliseconds.

Playback

The playback section shows the number of buffers sent to the hardware, the maximum buffer time, and the average buffer time. If you are running off the computer application's internal clock, the average buffer time should be close to the expected buffer time. The important spec here is that the average playback buffer time should be close to the average record buffer time.

Record

This is similar to the playback section. The average buffer time here will tell you how fast your hardware is actually running, and should closely match the playback time.

ASIO Wakeup

The ASIO wakeup statistics shows how quickly the ASIO driver responds to the hardware, e.g., how long it takes to inform an audio application that new audio data is available. For low-latency ASIO performance, this number should be as low as possible.

If the wakeup time is more than a few tenths of a millisecond, then another driver in your system is hogging the processor and preventing your audio app from running efficiently. Unfortunately, there's no straightforward way to isolate which driver is responsible. Try going into Device Manager and disabling any hardware that you don't absolutely need, such as web cams, wireless cards (often very problematic with audio applications), unneeded external hard drives, etc.

For example, one test machine had a USB camera hooked up. With the camera hooked up and running, the maximum ASIO wakeup time was several milliseconds. Disconnecting the camera brought the ASIO wakeup time back down to a normal range.

ASIO Host

The ASIO host statistics show how long an audio application takes to process each buffer.

Buffer Offset

These values apply only if you're using more than one RIP and/or AudioFire interface. This displays the buffer arrival time difference between multiple devices, and should normally be between 0 and -0.5 milliseconds.

Firmware

The firmware statistics display RIP's internal state. The analyzer will periodically query RIP and show the results.

Warning Signs

If your audio is glitching, popping, or crackling, use the Analyzer to see if:

- The average playback time is substantially different from the average record time
- The ASIO wakeup time is too long.
- The ASIO host time is too long.

To get glitch-free playback, the wakeup time plus the host time must be less than the average buffer time. If your ASIO host time is too long, try running fewer tracks or fewer plug-ins in your audio software.

Saving a Report

Clicking the "Save" button will write a report containing all of this information to your "My Documents" folder on Windows XP or your "Documents" folder on Windows Vista/7. The FireWire Analyzer adds the PCI vendor ID and device ID for all the FireWire host controllers in the system to the report, which can be very useful for tech support and for pinpointing the 1394 host controller's specific make and model.

Advanced Settings Tray

If you are experiencing glitches, changing the advanced settings may improve performance. To access these settings, click on the green arrow in the FireWire Analyzer's lower right. A tray slides out to the right, with three additional parameters.

Transmit cycle subtract: The FireWire driver measures the rate at which the FireWire interface receives audio data. It then transmits playback data back to the device at that same rate. However, if you are seeing excessive numbers of overflows or underruns, you may be able to improve this by adjusting the "Transmit cycle subtract" slider. Pulling the slider down causes the driver to transmit data more quickly. Pulling the slider up causes data to be transmitted more slowly.

Secondary device offset: If you have multiple devices connected, the driver will select one of them to be the primary device. The driver will then adjust the buffer timings for the other devices so that their buffers will be ready slightly before the primary device. This is necessary due to FireWire packet jitter. Changing the slider will set the amount by which the driver adjusts the buffer timings.

Variable clock thresholds: If you have multiple devices connected, and one of them supports variable clock synchronization, then the driver will continuously adjust the variable clock device to stay synchronized with the other devices. The driver does so by measuring the difference in the buffer arrival times of the different devices. If the difference in the buffer arrival time is outside of the specified range, then the driver adjusts the variable clock. Changing this slider sets the allowed range for the difference in the buffer arrival time.

DPC Latency Checker

DPC Latency Checker is a free utility that's very useful in tracking down problems with audio glitching and dropouts. This utility has been developed by a company called Thesycon Systemsoftware & Consulting GmbH, and is available from their website:

http://www.thesycon.de/eng/latency_check.shtml

Their website has an excellent description of this tool, and how to use it.

Appendix A: Troubleshooting Guide

Problem: You want more information about the RIP interface and driver.

Solution: Echo Digital Audio has posted additional information on their FireWire drivers at <http://echoaudio.com/downloadfiles/Drivers/PC/AudioFire/Echo%20FireWire%205.5%20PC%20readme.pdf>

Problem: You can't install the RIP under Windows 95/98/ME/2000 or Mac OS9.

Solution: There is no driver support for these operating systems. You need at least Windows XP, Vista, 7, Server, or Mac OS X (10.3.9 or later) to use your RIP.

Problem: After installation on a Windows XP or Vista/7 system, the interface doesn't work properly.

Solution: Did you try to install the software while the RIP was connected? If so, uninstall the RIP software as described in Appendix B, then restart your computer. Install again, this time following the instructions.

Problem: When you try to install the drivers in a Windows system, you see an error message.

Solution: You *must* be logged in as an Administrator to install the Windows drivers. Another possibility is that you may have an ASIO application open in the background. Close all audio applications, restart your computer, and attempt to install the driver again.

Problem: Your Windows computer spontaneously reboots on you.

Solution: You have probably experienced what Microsoft calls a "bug check," but what everyone else calls the Blue Screen of Death (BSOD). The default setting for the BSOD is not to show the BSOD, but to reboot the computer. This isn't very helpful for tracking down problems. If you are experiencing blue screens, here's how you can help tech support track it down:

1. Go *Start > Settings > Control Panel* and double-click on *System*.
2. Click on the Advanced tab, then in the "Startup and Recovery" section, click on the "Settings" button.
3. Uncheck "Automatically restart."
4. In the "Write debugging information" section select "Small memory dump" from the dropdown menu.
5. Click "OK."

Now, next time you get a blue screen, look at it and see if the crash occurred in GibsonRIP.sys. If so, then it's probably something we need to fix. Restart your computer and find the most recent .dmp file—this is the memory dump. It's probably in C:\WINDOWS\Minidump. Zip up this .dmp file and if requested by your local service center, email it along with a description of how it happened. This will really help track down the problem.

Problem: When you play an audio file, it plays at an altered pitch.

Solution: Try changing the sample rate under the Settings tab.

Problem: You hear pops and clicks when you play and record audio.

Solution: Try changing the buffer size. If this doesn't help, and you have a Windows system, run the FireWire Analyzer as described previously. If you are using a built-in FireWire port on your laptop, you may need to purchase a third-party ExpressCard or PCMCIA FireWire adapter. Our users have encountered the fewest problems with Texas Instruments FireWire chips.

Problem: The sound cuts in and out, or the left or right channel doesn't work.

Solution: You may have a bad audio cable. Try using a different cable in the problem channel.

Problem: There is no sound unless you pull the audio plug out a little.

Solution: Not all 1/4" plugs are made to the exact same dimensions. Try a plug/cable from a different manufacturer.

Problem: You call up the Console, but its screen does not appear.

Solution: If RIP detects a problem with the FireWire connection, it will not show the Console. Check your FireWire connections. If they are solid, substitute a different FireWire cable.

Problem: No matter what you do, you can't seem to solve the problem.

Solution: Contact Gibson customer service.

US (Toll Free) 1-800-4GIBSON

US (Local) 1-615-871-4500

Email - service@gibson.com

Europe 00800-4GIBSON1

Email - service.europe@gibson.com

Japan

Email - service.japan@gibson.com

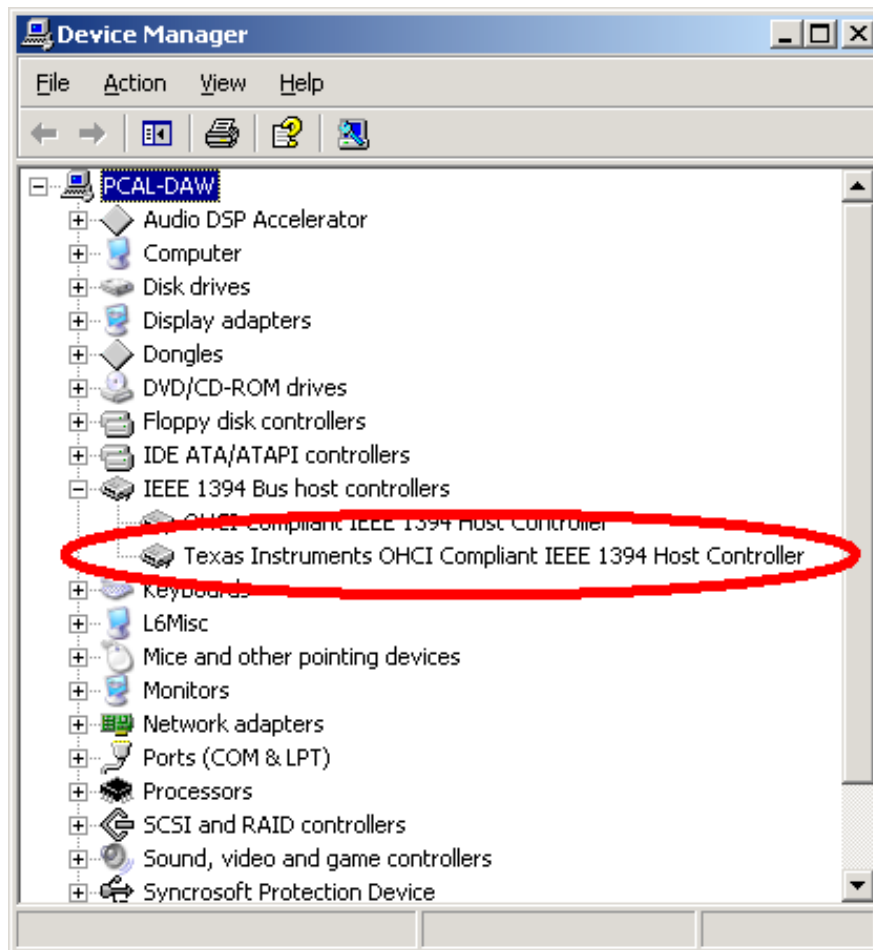
China 800-820-8841 (in China only)

Email - service.china@gibson.com

Appendix B: FireWire Tips

Some say that FireWire was never really intended for audio interfaces, but it's here, it's universal, and it works...well, mostly. Some people have a hard time getting FireWire to play nice, but these tips can help.

- There are different FireWire chip sets. Find out what type your computer uses, then check the Echo website at <http://www.echoaudio.com> to see if there are any known issues (most companies recommend the TI chip set). To find the chip set used in a Windows XP computer, right-click on My Computer, select Properties, click on the Hardware tab, then click on Device Manager. Expand "IEEE 1394 Bus host controllers" in the device tree by clicking on the little (+) sign, and Windows will show the chip set being used.



This Windows computer uses a Texas Instruments chip set, which is recommended by most manufacturers.

- Adding a PCI or PCIe FireWire card (available at stores like Best Buy, Office Depot, Fry's, etc.) might give better results than using your motherboard's on-board FireWire port. But avoid combo USB/FireWire cards, as some users report unreliable results with these.

- Remember that RIP requires its power supply. RIP *cannot* be powered from the FireWire bus.
- Connect FireWire devices while the computer and device are powered-down. In theory, you should be able to hot-swap FireWire devices; in practice, this isn't always true, with potentially disastrous results (e.g., a fried motherboard).
- Follow installation instructions to the letter. Sometimes you need to install the software first, as with RIP, and sometimes you need to connect the device first.
- Power-up the FireWire device before turning on your computer.
- Mac owners, upgrade to at least OS X 10.4.10. FireWire performance is much improved compared to earlier versions.
- Dedicate a FireWire port to audio devices, and don't run other devices on the same port.
- Use a high-quality cable. If the cable gets crushed or stepped on, it might not work.

If you do encounter problems, don't spend too much time on troubleshooting without first checking the Gibson website. There may be known issues that can be fixed with a simple driver download, or by disabling a conflicting device.

Appendix C: Uninstalling the RIP Drivers and Console

There are few reasons to uninstall the RIP software unless it is being replaced by a newer version, or somehow becomes corrupted (e.g., due to hard drive deterioration). Uninstalling can also do “brute force” troubleshooting: Uninstalling and re-installing the software may solve various problems.

Macintosh: Drag the Gibson RIP Console icon out of the Applications folder and into the trash.

Windows XP: Go *Start > Programs > Gibson RIP > Uninstall*.

Windows Vista/7: Go *Start > All Programs > Gibson RIP > Uninstall*.

Appendix D: Computer Latency and Recording

When playing guitar through a computer, there's a slight delay that occurs between the time you play a note, and when you hear it come out of the speakers. This is called *latency*, and occurs because even the most powerful processors can only do so many millions of calculations per second. For the best possible “feel” when playing Dusk Tiger, let's investigate how to obtain the lowest possible latency.

Minimizing Latency

The faster the processor, the lower the potential latency. Multicore processors can help tremendously in reducing latency.

Also, use an audio protocol designed for low latency. Steinberg devised the first low-latency protocol for sound cards, based on their ASIO (Advanced Streaming Input Output) drivers. These tied in closely with the CPU, bypassing various layers of both Mac and Windows operating systems. At that time the Mac used Sound Manager, and Windows used various protocols that were equally unsuited to musical needs.

With OS X, Apple introduced Core Audio, which was tied in even more closely with low-level operating system elements. It's now possible to obtain latencies of around 1.5 to 3 ms with a fast processor and a sound card that supports low-latency drivers like ASIO on Windows, or Core Audio on the Mac.

Caution: Windows machines have their own sound protocols, such as MME and DirectSound. When selecting the desired audio interface type using a DAW like Ableton Live, these options will often show up along with ASIO. They are not suitable for music—always use ASIO for the best results. Also, avoid any options like “Emulated ASIO.” They are not true ASIO drivers.

With Windows machines, always choose “Gibson RIP ASIO” for the lowest latency, and adjust latency to the lowest possible value (short of audio problems) under the Console's “Settings” tab.

Why Direct Monitoring Isn't Always the Answer

RIP includes a feature called “direct monitoring,” where you can listen directly to your Dusk Tiger outputs without having them go through the computer. The faders toward the left of the Console control these levels. This results in no latency, but the tradeoff is that you will no longer hear Dusk Tiger through any of your processors, as they require that the signal go through the computer.

How Low Can You Go?

1.5 ms of latency approaches the theoretical minimum, because it will always take a finite amount of time to convert analog to digital at the input, and digital to analog at the output. Unfortunately, though, ultra-low latency settings (or higher sampling rates, for that matter) make your computer work harder, so you'll be limited as to how many plug-ins can run before your computer audio starts to sputter, crackle, or mute. As latency will continue to be a part of our musical lives for the foreseeable future, here are some tips on living with latency.

- Set latency to the highest comfortable value. 5.6 ms feels very responsive, and makes the computer work less hard compared to choosing 2 or 3 ms. If you're using a DAW like Ableton Live, a higher latency settings means you can also have more tracks, use software synthesizers more readily, etc.
- Every millisecond of latency is approximately equivalent to moving 1 foot away from your speaker. So, if you wear headphones with a system that has 5 ms of latency, you'll experience the same amount of delay as if your head was 5 feet away from your monitor speakers.
- Periodically go to Gibson's website to check for updated drivers that may improve performance.
- If you also use software synthesizers, use your DAW's "freeze" function (if available) to disconnect some synths from the CPU. Or, render a soft synth's output as a hard disk audio track (then remove the soft synth), which is far less taxing on your processor. *Hint:* If you retain the MIDI track driving the soft synth, which places virtually no stress on your CPU, you can always edit the part later by re-inserting the soft synth. Freezing frees up CPU power for additional processors like Guitar Rig 4.
- With Windows machines, use Device Manager to disable wi-fi devices and web cams. To do this, right-click on My Computer, and select Properties. Then select Device Manager. Right-click on any device you want to disable, and select "Disable." This device can be re-enabled at any time by right-clicking on it and selecting Enable.
- With Windows machines, disable system sounds. Go to the Control Panel and open Sounds. Under Sound Scheme, choose "No Sounds."

Appendix E: Using RIP With Non-ASIO Windows Applications

RIP is designed to work with ASIO applications on Windows XP, Vista, and 7 because these are optimized for music and provide the lowest possible latency. However, many “consumer-oriented” Windows applications, like Windows Media Player, are not ASIO-compatible but instead use protocols like MME, DirectX, and WDM. RIP is compatible with these and can be used similarly to a Windows sound card for playback (although with *much* better fidelity).

Windows XP

In general, we recommend first setting the sample rate in your audio application, then choosing the same rate in the Console under the “Settings” tab and clicking on the “Locked” button to lock it in. Next:

1. Go *Start > Settings > Control Panel* and double-click on “Sounds and Audio Devices.”
2. Click on the Audio tab and for Sound Playback, default device, select “RIP Analog Out” from the drop-down menu. (You can also select a RIP guitar input—pickups, piezo, or all hex strings—for the Sound Recording option.)
3. Click on Sounds and for Sound Scheme, select “None.” While this isn’t essential, Windows system sounds like beeps and such tend to be loud and distracting when played through RIP.

If RIP is open (it doesn’t need to be), you can control the output level with the RIP Console’s Playback or Analog output controls. Otherwise, use the standard Windows XP volume control—go *Start > Programs > Accessories > Entertainment > Volume Control*. If both are open, the level controls work in tandem; for example, lower the RIP Playback controls, and the Windows volume control changes along with them.

Note that locking the sample rate (by clicking on the Locked button in the Console settings page) can be important in non-ASIO applications, as Windows will frequently try to set the hardware to the highest supported sample rate. Then, Windows will do sample rate conversion between that rate and the rate at which you are playing or recording. For instance, you may be trying to play at 44.1kHz, but Windows sets the hardware to 96kHz and converts between the two. This is undesirable because you may be trying to do a transfer at a specific rate; furthermore, sample rate conversion will reduce your audio quality and consume a great deal of CPU power. Locking the sample rate forces Windows to use the hardware only at the locked rate.

Windows Vista/7

In general, we recommend first setting the sample rate in your audio application, then choosing the same rate in the Console under the “Settings” tab and clicking on the “Locked” button to lock it in. Next:

1. Go *Start > Control Panel*.
2. Double-click on “Sound.”
3. Click on the Playback tab, then click on Analog Out, 2 – Gibson RIP, then click on Set Default. RIP is now the default for system sounds and applications such as Windows Media Player. (You can also select a RIP guitar input—pickups, piezo, or all hex strings—for the Sound Recording option.)
4. Click on Sounds and for Sound Scheme, select “No Sounds.” While this isn’t essential, Windows system sounds like beeps and such tend to be loud and distracting when played through RIP.

If RIP is open (it doesn’t need to be), you can control the output level with the RIP Console’s Playback or Analog output controls, Otherwise, use the standard Windows /7 volume control—click on the Speaker icon in the Taskbar, and adjust the slider. To adjust other sound sources, while the volume control is open, click on Mixer.

If both the RIP console and Vista/7 volume controls are open, the level controls work in tandem; for example, lower the RIP Playback controls, and the Windows volume control changes along with them.

Note: If you open the application and begin playback, the RIP console will automatically switch to the correct Core Audio sample rate.