

Gibson Firebird X

Owner's Manual



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owner's manual version 1.3h

FCC and IC Compliance

This device complies with Part 15 of the FCC Rules and RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by 1 or more of the following measures:

- * Reorient or relocate the antenna
- * Increase the separation between the equipment and receiver
- * Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- * Consult the dealer or an experienced radio or television technician for help

Caution: Changes or modifications not expressly approved by Gibson could void the user's authority to operate this equipment.

Japanese Compliance

This device has been granted a designation number by the Ministry of Internal Affairs and Communications according to the Ordinance concerning the Technical Regulations Conformity Certification etc. of Specified Radio Equipment (特定無線設備の技術基準適合証明等に関する規則)

Article 2 clause (1) Item (19) (1)

Approval nos: 202WWSM115690411, 202WWSM115690412, 202WWSM115690413, 202WWSM115690414

This device should not be modified (otherwise the granted designation number will become invalid)

Chapter 1: Firebird X Essentials

Important: Register Your Firebird X

Registration provides information for joining the Firebird X Visionaries Club, where you can:

- × Participate in the Firebird X forums
- × Maintain a blog
- × Share FBX patches
- × Download free software: Gibson FBX Editor, Native Instruments Guitar Rig 4 Pro (full version), and Ableton Live Lite 8 Gibson Studio Edition
- × Post calendar events
- × Contact support

Additional benefits are planned for the future, so stay tuned.

How to Register

1. Use any internet browser to visit <http://www.gibson.com/FirebirdX>.
2. Click on the Registration link to submit your warranty information (see the Firebird X Certificate of Authenticity included with your guitar).
3. After registering, you'll receive licenses for the Firebird X software bundle, as well as a username and password to access the Firebird X Visionaries Club site at <http://fbx.gibson.com>.

STOP! Update Your System

The software-based Firebird X system allows for product enhancements. After registering your Firebird X, check the Firebird X Visionaries Club for new documentation, patches, and system updates. ***If new system software or firmware is available, install the Mac or Windows FBX Editor as described in the downloadable FBX Editor manual, then follow the update procedure.***

Important Safety and Warranty Information

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 Gibson’s Firebird X guitar, 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 Firebird X. Please do not install or operate this guitar 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 Firebird X will be much happier if you store and operate this product under safe conditions.

Power Sources

Use only the power sources included in the Firebird X package. 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. If this is jostled loose, the G-Node USB 2.0 audio interface included with Firebird X may experience extreme power differentials, which can potentially harm you and the product.

Service

Please do not attempt to service Firebird X or any of its accessories yourself—let our expert technicians handle any repairs for you.

Speaking of experts, always send the Firebird X or G-Node USB 2.0 audio interface to the factory for servicing if any of the following occurs:

- ✘ Any foreign object (especially liquid) has gotten inside Firebird X or its accessories
- ✘ Firebird X or its accessories have been exposed to water, dropped, or otherwise damaged
- ✘ A marked change in Firebird X’s performance
- ✘ You hear anything rattling around inside if you shake the Firebird X gently

Warranty Protection

It is extremely important to us that you are satisfied with Firebird X. Register it and activate your warranty protection by mailing the warranty card included with Firebird X 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, Firebird X'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 Firebird X 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 Firebird X 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 Firebird X to Gibson USA, Department W, P.O. Box 100087, Nashville, TN 37210-0087.

Warranty Limitations

Unfortunately, your product warranty cannot cover :

- × 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, please contact Gibson directly:

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

Never send a unit in for repair before contacting Gibson. You will be advised of the proper procedure for a quick and efficient repair, as well as provide information on where and how to send your Firebird X.

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Introduction

Congratulations on joining the select group of Firebird X visionaries.

Firebird X combines revolutionary features with Gibson's traditional construction quality and superior sound. It's the most technologically-advanced guitar in the world—yet remains familiar and playable. You don't have to adapt to Firebird X; it adapts to *you*.

- × **Tune your guitar strings automatically**, including alternate tunings, in seconds
- × **GoldTone™ pickup technology** for the three mini-humbuckers emulates iconic guitar sounds through switching of purely analog signals, not digital modeling
- × Over **2,000 pickup combinations** are possible, including variations on single-coil, humbucker, series, parallel, in-phase, out-of-phase, and many more
- × Play **stunning acoustic guitar sounds** from the separate piezo pickup—even layer acoustic and electric sounds
- × **Blue Lightning™ Wireless Pedalboard and Switchboard** floor pedals eliminate cable clutter and allow rapid sound selection
- × The onboard **Pure Analog™ upgradable audio engine** provides anything from subtle tone control to state-of-the-art processor, amp, and cabinet effects
- × Tweak sounds live or in the studio with innovative **onboard control sliders**
- × Customize the **volume knob** for any volume curve, and edit the **Digital Varitone™ tone knob** for virtually any tone control response
- × Send Firebird X outputs—including individual strings—to Mac/Windows recording software, thanks to Gibson's **G-Node™ USB 2.0** interface
- × Create your own signature sounds with the intuitive Mac/Windows **FBX Editor**
- × Gain exclusive access to the **Firebird X Visionaries Club** for trading and downloading patches, learning new techniques, sharing experiences with other Firebird X owners, and more

...and those are only the highlights. Welcome!

Preparation

Accessories Checklist

Your Firebird X is a complete system with all needed accessories. After removing the guitar case from the shipping box, take out the Accessory Pack in the bottom of the box. Check that between the Accessory Pack and guitar case pocket, the following are all included.

FIREBIRD X

- LIMITED EDITION -



A	Pedals (2)	H	G-Node Interface™ Antenna	O	Charging Dock Power Supply (2)
B	Pedal Power/ Data Connector	I	G-Node Interface™	P	Charging Dock for Rechargeable Battery (2)
C	Pedal Spacer	J	Stereo Cable	Q	European Adapter (2)
D	Hi-Speed 2.0 USB Cable (3)	K	Power Cord, Pedal Power Supply	R	Case Connector Strap
E	Firebird X Limited Edition Guitar Strap	L	Tailpiece Hex Wrench	S	Shoulder Strap, Accessory Pack
F	Stereo to XLR Cable	M	Truss Rod Wrench	T	Firebird X Guitar Case Shoulder Strap
G	Power Supply, Bluetooth Pedal	N	Rechargeable Lithium Ion Battery (8)		

Notes:

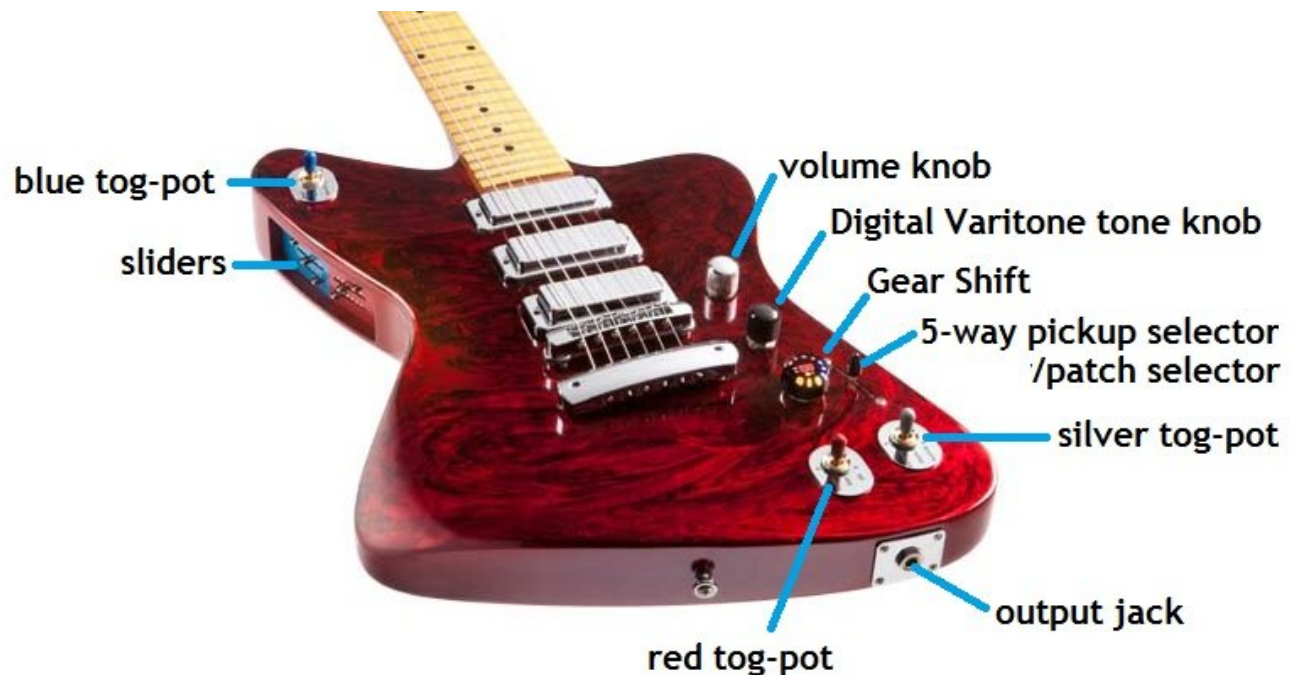
- ✘ All AC adapters are global and work with 100 to 240V, 50/60Hz.
- ✘ Use only USB 2.0 high-speed cables with Firebird X USB peripherals.
- ✘ The Certificate of Authenticity is an important part of the Firebird X package—it's your passport to continued support, free patches and software, special offers, and access to the online Firebird X Visionaries Club. File it in a safe place.

Firebird X's ProX Guitar Case

The ProX case is made from advanced materials, and can survive a fall from a six-story building. Gibson recommends taking guitars on airplanes as carry-on, but many guitar players have checked their Firebird X as baggage using the ProX case.

Firebird X Controls

Please note the control names we'll be using in this manual, and their locations.



About the Gear Shift Knob

The Gear Shift is a sophisticated “push-pull” knob with an illuminated interactive display. The display shows Firebird X's status as you select tunings, sounds, and additional functions. It is your primary way of interacting with Firebird X.

Pull the Gear Shift **up** (furthest from the guitar body) to apply power to Firebird X.

Push **down** on the Gear Shift knob (pushing toward the body until it clicks) to turn off Firebird X. This stores the current tuning and sound for recall next time you power-up.

The Battery

Firebird X must be turned on, with a charged battery, to work. Batteries can lose charge over time, so please check the batteries when you receive Firebird X.

Pull up on the Gear Shift knob to turn on Firebird X. Within five seconds, a **green** circle should appear momentarily in the middle of the knob to indicate the battery is charged.



If not, open the battery door on the back of the guitar, and remove the battery.



Place the battery in one of the supplied chargers. A full charge takes about 70 minutes.



The battery charger light will be **red** while charging, then turn **green** when the battery is charged. Insert the charged battery in the guitar.

Check the charge of the other supplied batteries, and if necessary, charge them to capacity as you explore Firebird X. If you need additional batteries, use Samsung IA-BP80W (or equivalent) camcorder batteries.

Low Battery Indications

Depending on how often you tune, the battery charge can last up to two hours of continuous playing. The following indicators represent the battery status.

- × Gear Shift knob has **green** dot in center: Battery is charged, with at least 30 minutes charge remaining
- × Gear Shift knob flashes **yellow**: 10 to 30 minutes of charge left
- × Gear Shift knob flashes **red**: Less than 10 minutes left—replace battery. Low-level white noise appears in the output to give audible confirmation of battery status.
- × Gear Shift knob flashes **blue** approximately every four seconds: After 10 minutes without activity, Firebird X goes into “sleep” mode. (Sleep mode still drains the battery somewhat; to prevent this, turn the guitar off completely.) Move the Gear Shift knob to “wake up” Firebird X.

Connecting to Amplification

Firebird X’s unbalanced output can drive anything from a guitar amp, to a mixing board’s low-impedance input, to a computer’s audio interface. Separate cables are included to connect Firebird X to either 1/4” phone jacks (balanced or unbalanced, with ring not connected) or XLR inputs (pin 2 hot, pin 1 ground, and pin 3 not connected). *Note: Use only the supplied stereo cable to connect Firebird X to the G-Node interface.*

Caution! When patching Firebird X to a balanced XLR input, **make sure the XLR input does not have phantom power enabled.** This could damage Firebird X’s output.

Firebird X’s output level is somewhat “hotter” than standard guitars. Start with the amplifier volume at minimum, then turn up to a comfortable listening level. *Note: Firebird X produces no “thump” on power-up or power-down, so you may safely turn Firebird X on or off even if your amp is set to high levels.*

For a quick audio check, you can plug standard headphones directly into Firebird X’s output. However levels will be low, and only in the left earphone.

Required String Gauges

For optimum Robo-Tuner tuning speed and reliability, please use the correct gauge strings.

Firebird X ships with the recommended string gauge set: High E = .010, B = .013, G = .017 (wound), D = .026, A = .036, low E = .046.

- × The heaviest gauge permissible string set is high E = .011, low E = .052
- × The lightest gauge permissible string set is high E = .009, low E = .042.

Chapter 2: Select Tuning and Sound Presets

Select Tuning Presets

Note: The “down” tog-pot switch position means pointing at the floor, referenced to holding the guitar in a normal playing position.

1. With the Gear Shift knob pulled up and the guitar on, push the silver tog-pot switch to the down (Tuning) position. *Note: This mutes the audio.*
2. Rotate the Gear Shift knob fully counter-clockwise to select standard tuning. The knob's display shows “1.”
3. Strum each string distinctly, as when playing single notes—*not* rapidly, like strumming a chord. The Robo-Tuners will turn as needed, and the string LEDs around the Gear Shift's edge will turn different colors to indicate tuning status. Several strums may be necessary; the more you use the tuning function, the faster it tunes. Here's what the colors indicate.
 - × **Red:** String not in tune, or not yet tuned
 - × **Yellow:** Robo-Tuners are turning to tune the string. If the corresponding Robo-Tuner doesn't turn when its LED flashes **yellow**, there is a physical or electrical problem.
 - × **Green:** Individual string in tune
 - × **All string LEDs green:** Tuning is complete
 - × **White:** Short circuit detected. If any part of a string touches something metallic that's not in the normal string path, that string will not tune. Check if a string touches the tail piece, the bridge, a fret, or another string; make sure that strings are cut close to the posts, and that all strings are in the bridge saddle's center.
4. When tuning is finished, Firebird X automatically exits tuning mode, unmutes the audio, and returns to whatever patch was selected when you started tuning. A Gear Shift light flashes **green** to confirm the guitar is tuned.
5. Return the silver tog-pot to mid-position.

To experiment with other tunings:

1. Push the silver tog-pot down to Tuning position.
2. Rotate the Gear Shift to the desired tuning. See the following Tuning chart for a listing (*Gear Shift Center* is the character that appears in the center; the *Gear Shift Symbol* flashes in **blue** briefly upon selecting a patch.)
3. Strum as described above.
4. Return the silver tog-pot to the middle position when tuning is done.

Gear Shift Center	Gear Shift Symbol	Tuning	Tuning (Low String to High)
1	flat symbol	Standard	E A D G B e
2	arrow	Dropped D	D A D G B e
3	e	Eb	Eb Ab Db Gb Bb eb
4	B	DADGAD	D A D G A D
5	G	Open G	D G D G B D
6	D	Open E	E B E G# B e
7	A	Low D	D G C F A D
8	E	Open A	E A E A C# e
9	C	Open Ab	D# G# D# G# C D#
A	pin	Open G	D G D G B D
B	peg	Dbldrop D	D A D G B D

Manual Tuning with the Robo-Tuners

You can tune Firebird X's Robo-Tuners by hand as an alternative to using Robot tuning technology.

Caution! *Never use a manual or mechanical string winding tool, or attempt to tune the Robo-Tuners manually while they are operating robotically.* Either one of these operations could permanently damage the Robo-Tuners.

Unlike conventional tuning keys, Robo-Tuners all turn in the same direction. The Robo-Tuner tuning posts have locking nuts to secure the end of each string during tuning operations.

Robot technology includes special functions for changing strings (starting on page 34), as this is much faster than changing strings manually. Gibson strongly advises using these functions when changing strings not only due to speed and convenience, but because they minimize Robo-Tuner wear.

Select Sound Banks

Firebird X has 11 Banks (1-9, A, and B), which you select with the Gear Shift knob. Each Bank has five patches (1-5), also called presets, that you select with the 5-way Pickup Selector/Patch Selector. You can freely save, load, and edit patches with the included FBX Editor software. For example, Firebird X could have 55 basic pickup patches, 55 patches with effects, some patches with effects and some without, etc. To select a Bank:

1. Set the silver tog-pot to the middle position.
2. Rotate the Gear Shift knob to select a Bank. The knob's color-coded readout shows the Bank number or letter. Banks are:

Yellow Banks (pickups only)

1 = Firebird X, 2 = single-coil, 3 = humbucker, 4 = piezo (acoustic Bank)

Blue Banks (single effects)

5 = modulation, 6 = echo (delay), 7 = reverb

Red Banks (multieffects)

8 = distortion, 9 = distortion leads, A and B = multieffects sounds

Select Patches within a Bank

The 5-way Pickup Selector/Patch Selector selects patches within a Bank. Position 1 is closest to the neck, position 5 to the bridge. The following chart lists the factory patch set.

Bank #	Bank Name	Knife Switch Position				
		1	2	3	4	5
	Global	Hum	SC Neck+Mid	Hum	SC Mid+Bridge	Hum
1	Firebird X	FBX Neck	335 Neck+Mid	FBX Mid	Country B+N	FBX Bridge
2	Single-Coil	SC Neck	SC Neck+Mid	SC Mid	SC Mid+Bridge	SC Bridge
3	Humbucker	LPS Neck	Country Neck	LPS Neck+Bridge	Country Bridge	LPS Bridge
4	Acoustic	Piezo J200	Piezo 12-string	Piezo Small Body	Piezo Resonator	Piezo J45
5	Modulation	Chorus	Tremolo	Phaser	Vibrato	Flanger
6	Echo	Analog Delay	Reverse Delay	Digital Delay	Chorus Delay	Looper
7	Reverb	Ducking Cosmic	Hall Bright	Plate Damped	Spring	Taj Mahal
8	Distortion	Hi-Gain 80's	60's	Royal OD	70's	90's Metal
9	Lead	Octaver	Dist Chor Delay	Stadium Solo	Rock Chorus	Metal Chorus
A	FX1	Blues	Ziggy	Bo	Clean Chorus	Country Lead
B	FX2	Old Jazz	Reggae	Rockabilly	Southern Solo	Surfer

Change Pickups within Patches

With Banks 1-3, the Pickup Selector/Patch Selector switch is dedicated to pickup selection; with the other Banks, the Pickup Selector/Patch Selector switch is primarily for choosing different patches within the Bank. However, although patches in Banks 4 through B load with specific pickup configurations, you can still change pickups using the Pickup Selector/Patch Selector.

1. After selecting a Bank and patch, move the silver tog-pot to the up position.
2. The Pickup Selector/Patch Selector switch now selects Firebird X's five default pickup options. The Gear Shift knob's center shows the pickup combination (Pickup Selector/Patch Selector switch position 1 = neck, 2 = neck+middle, 3 = middle, 4 = middle+bridge, 5 = bridge).
3. This pickup setting remains until you choose a different patch.

Mix in the Piezo Pickup Sound

Tog-pots are not just three-way toggle switches; rotating their shaft is equivalent to turning a control. The piezo pickup produces an electrified acoustic guitar timbre, with the level controlled by the silver tog-pot. To mix the piezo sound into any patch, rotate the silver tog-pot's shaft clockwise for more piezo signal, and counter-clockwise for less piezo signal.

Alter Volume and Tone

The silver volume knob controls volume, while the black Digital Varitone knob controls tone. The volume taper and Digital Varitone response are both customizable with the FBX Editor software.

Chapter 3: Editing Firebird X Sounds

Patch Play Mode and Edit Mode

Firebird X has two playing modes.

Patch Play Mode is Firebird X's default mode. It provides “foolproof” playing on stage by locking out the sliders and most **blue** and **red** tog-pot functions—even if you hit them accidentally, your sound won't change. All controls work normally except:

- × Changing the **red** or **blue** tog-pot switch position has no effect.
- × Rotating the **blue** tog-pot shaft clockwise in any patch adds a global reverb effect. Rotating the tog-pot counter-clockwise reduces the reverb effect; fully counter-clockwise returns to the original patch sound.
- × Rotating the **red** tog-pot shaft clockwise in any patch increases the balance of a global distortion effect to the dry sound. Rotating the tog-pot counter-clockwise reduces the distortion blend; fully counter-clockwise removes the distortion *Note: In patches that include distortion, the **red** tog-pot controls the existing distortion.*

Edit Mode “unlocks” the sliders and all **red** and **blue** tog-pot functionality so you can tweak the effects. This essentially places high-quality stomp boxes inside your guitar, with instant access to their controls via the sliders and tog-pots; the floor pedal readouts indicate the current settings.

The Digital Varitone control is also a momentary pushbutton. To enter Edit Mode, push down twice on the Digital Varitone knob within one second (like how you would double-click on a mouse button). The knob will produce a click sound each time you push it. All colors on the Gear Shift turn **magenta** to indicate that Firebird X is in Edit Mode.

Edit with the Blue Tog-pot

The **blue** tog-pot's switch chooses the effect category to edit: Modulation, Echo, or Reverb, as labeled on the switchplate.

For these effect categories, the tog-pot's shaft is a wet/dry balance control. Turning the shaft clockwise increases the proportion of wet (processed) signal, counter-clockwise gives more dry sound.

The **blue** sliders edit the effect parameters shown on the label to the left of the **blue** sliders. For example, with the tog-pot set to Reverb, the sliders control reverb Type, Feedback (Decay), and Damping.

Note: A slider will not take effect until it passes through the existing parameter value. If a slider does not appear to be working, move it back and forth over its full travel. Also, when editing Reverb and Echo parameters, there may be a slight delay between moving a slider and hearing a change.

Note: The Blue Lightning™ Pedalboard and Switchboard provide visual indications of the slider settings, effect types, and more. For now, just play with the sliders to get an idea of what's possible; you'll find that editing is easy and unambiguous when the pedals are set up, as described starting on page 19.

After you edit an effect, you can move the tog-pot switch to another effect and edit that. All edits are retained, so if for example you switch the tog-pot to Modulation and dial in a chorus sound, you can then change the tog-pot to Reverb and add some reverb, then change the tog-pot again to Echo and introduce delay.

Edit with the Red Tog-pot

The **red** tog-pot works similarly to the **blue** tog-pot, but edits the Compressor/Gate, Distortion, and EQ effects (again, as labeled on the switchplate). The **red** sliders edit the selected effect parameters shown on the label to the right of the **red** sliders.

Exit Edit Mode, Save, and Restore Patches

After tweaking the effects, you can exit Edit Mode and do one of the following.

Save your edits. Push once on the Digital Varitone knob, move the knife switch, or rotate the Gear Shift. The Gear Shift shows **S-A-V-E-D** to indicate your new sound is saved. This sound will remain as edited even if you change patches and return to it later.

Restore the original patch sound. You can restore an edited patch to its original patch settings at any time, whether in Edit Mode or Patch Play Mode, by pushing three times in quick succession on the Digital Varitone knob. The Gear Shift knob will show **R-E-S-T-O-R-E-D** as it restores the original patch settings.

Familiarize Yourself with the Effects

To become familiar with the effects, consider choosing a patch from Banks 1-3 (dry electric guitar sounds) as the various processors' effects will be obvious. The sliders control the parameters shown in the following chart, and cover a wide range of possible sounds.

Slider Position (top = closest to FBX top)	Effect Type		
	Mod	Echo	Reverb
Top Slider	Type	Type	Type
Middle Slider	Rate	Feedback	Feedback
Bottom Slider	Depth	Time	Damping
	Compression	Distortion	EQ
Top Slider	Sustain	Type	5.5kHz
Middle Slider	Comp Threshold	Bite	1.3kHz
Bottom Slider	Noise Gate Threshold	Drive	200Hz

With the Modulation, Echo, Reverb, and Distortion tog-pot positions, the Type slider chooses the different effect types shown in the following chart.

Note: Type slider position 1 is closest to the headstock; moving the slider closer to the bridge selects higher numbers.

Effect Block/Tog- Pot Position	< < toward headstock Type Slider Position toward bridge > >						
	1	2	3	4	5	6	7
Mod	Chorus	Tremolo	Phaser	Vibrato	Flanger		
Echo	Digital Delay	Analog Delay	Tape Delay	Chorus Delay	Ducking Delay	Reverse Delay	Looper
Reverb	Hall Bright	Ducking Cosmic	Plate Damped	Spring	Taj Mahal		
Distortion	80's High-Gain	60's	Royal OD	70's	90's Metal		

Strum Tempo Option

Firebird X can use a Switchboard footswitch to set the delay time (called “tap tempo”). However, you can also set the delay time with Firebird X’s unique Strum Tempo option.

1. Select any patch that has a Delay effect enabled.
2. Toggle the silver tog-pot *rapidly* three times between Tuning (down position) and Piezo (center position).
3. T appears in the center of the Gear Shift knob.
4. Mute the strings with your left hand and strike the strings four times with your right hand. The onboard computer will calculate the delay time from these peaks.
5. Play Firebird X and determine that the delay time is correct. If not, repeat steps 1-4 and make you you strike the strings with sufficient force to create strong peaks.

Chapter 4: Blue Lightning™ Pedalboard and Switchboard

Pedalboard and Switchboard Basics

Firebird X's Pedalboard and Switchboard provide exceptional, fluid control over Firebird X, both live and in the studio.

- ✘ The Pedalboard provides visual display of the guitar status, and pedal functions.
- ✘ The Switchboard primarily selects and edits sounds, as well as provides sophisticated Echoplex™ Looper functions.

The Pedalboard and Switchboard (as well as Firebird X itself) are Bluetooth devices that communicate wirelessly. The pedals can use batteries or the supplied AC adapter, and operate a minimum of 30 feet (10 meters) from Firebird X to a maximum of 100 feet.

These devices need to recognize each other—a process called “pairing”—which is done at the factory. If for any reason they are not paired, or you need to re-pair, see page 27.

Powering the Pedalboard and Switchboard

The pedals can use a common power supply by connecting the two using the Pedal Power/Data Connector (called “Bone” for short—see the illustration), or be powered individually. The bone is stored in a slot on the bottom of the Pedalboard; its magnets are strong, so you may need a screwdriver to pry the bone out of its slot.



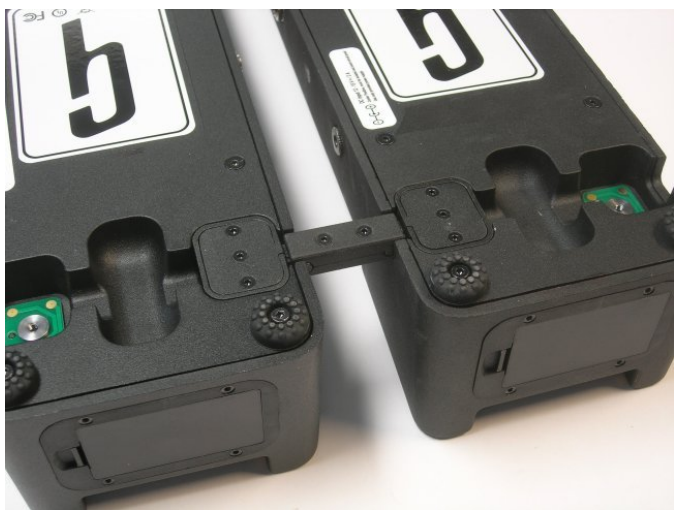
Of the following power options, the last two are preferred.

- ✘ When linked, both pedals can work from a single battery inserted in either pedal (the battery door is located on the rear of each pedal).
- ✘ Each pedal can be AC-powered individually.
- ✘ Each pedal can be battery-powered individually.
- ✘ When linked, using the supplied AC adapter with one pedal powers both pedals.

Both pedals have a standard 9V battery connector located in the battery compartment, and a separate cavity that fits a 9V battery. If a 9V battery is connected, it will work as a backup power source if the standard rechargeable battery discharges below its shutdown voltage; switchover to the 9V battery occurs automatically. However, switching on the pedal with *only* a 9V battery is not supported.

Setting Up the Pedals for Firebird X

1. Remove the Pedal Power/Data Connector, which carries power from the Pedalboard to the Switchboard, from the bottom of the Pedalboard.
2. Link the underside of the Pedalboard and Switchboard using the Pedal Power/Data Connector.



3. Place them on the floor (typically Pedalboard to the left, Switchboard to the right but you can reverse the order).



4. Plug the supplied AC adapter plug into the matching jack on the left side of the Pedalboard or Switchboard.
5. Raise the Bluetooth antennas on each pedal.



6. Turn on Firebird X by lifting up on the Gear Shift knob.
7. Push down on the Pedalboard pedal until you hear a click, and hold it down until the display lights. The display will initially show Guitar Link Down and Bone (Pedal Power/Data Connector) Link Down, but then will change to Guitar Up, and the display will show **Receiving config...**. This confirms Firebird X and the Pedalboard are paired. After receiving the configuration, the display will go to its default.
8. Press on the Switchboard's Upper Left footswitch. The Pedalboard display will turn on and show Bone Link Up. This confirms that all devices are communicating.

Note: If you turn off Firebird X (e.g., to save battery power or change batteries) this will stop communications to the pedals. However, turning Firebird X back on will re-establish the link automatically after several seconds.

Pedalboard Function Selection and Display

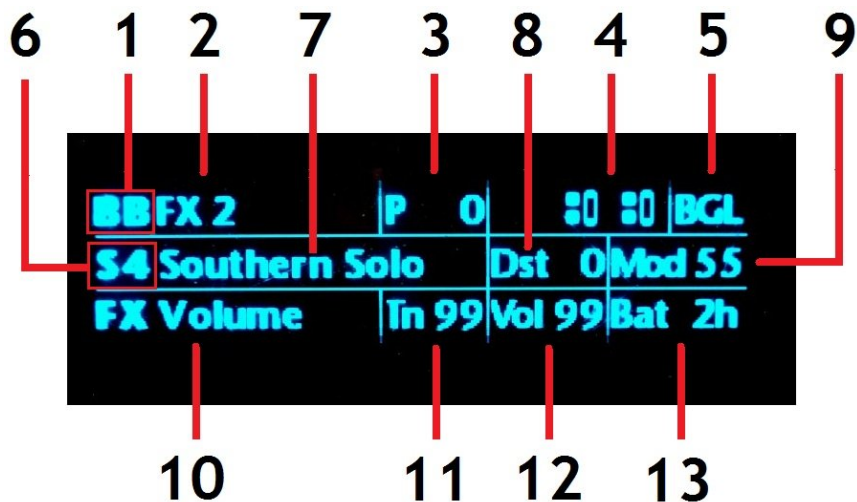
Choose the pedal function by pressing on the appropriate Pedalboard footswitches.

- × **Volume:** Upper Left footswitch
- × **WahWah:** Upper Right footswitch
- × **Octaver:** Middle and Upper Right footswitch simultaneously
- × **Rotary Speaker:** Middle and Upper Left footswitch simultaneously

After selecting the function, push down on the pedal until it clicks to toggle between effect enabled or bypassed.

Pedalboard Display

When you rotate the Gear Shift to change Banks or the Pickup Selector/Patch Selector switch to change patches, the display shows the Bank and Patch in large type for about two seconds, then reverts to the default display. The default shows the following (numbers in the descriptions are keyed to the display image).



Top Line

- (1) Bank number
- (2) Bank name
- (3) Silver tog-pot piezo level (00-99)
- (4) Pickup configuration
- (5) BGL if Bluetooth (B), Guitar Link (G), and Bone Link (L) are active. If any of these are inactive, the corresponding letter will be dimmed.

Middle Line

- (6) Patch number
- (7) Patch name
- (8) Distortion Amount (00-99, Patch Play mode only)
- (9) Reverb Amount (00-99, Patch Play mode only)

Bottom Line

- (10) Pedal function (name is dim if bypassed, bright if enabled)
- (11) Tone setting (00-99)
- (12) Volume setting (00-99)
- (13) Estimated remaining guitar battery life in hours

Switchboard Function Selection and Display

Note: Place the mylar overlay over the top of the Switchboard to familiarize yourself with the functions.

Select Bank: This is equivalent to the Gear Shift Bank select function. A single press on the button labeled 1, 2, 3, 4, 5, or 6 selects that Bank. A fast double-click on a footswitch selects the alternate Bank shown on the overlay, as well as mute: 7, 8, 9, A, B, and Mute.

Select Patch/Tap Tempo: The Upper Left footswitch toggles between Bank and Patch/Tap Tempo select mode. In Patch select mode, footswitches 1-5 select the like-numbered patches. Footswitch 6 selects Tap Tempo for any delay effects in a patch. Tap the footswitch four times; the time between taps sets the delay time.

Select Pickup: This is equivalent to the Pickup Selector function (e.g., when the silver toggle is in the up position). Press the Upper Middle and Left footswitches simultaneously to select this mode. Footswitches 1-5 correspond to the five pickup selector positions. Footswitch 6 is inactive.

Select Tuning: This is equivalent to the Gear Shift Tuning select function. Press the Upper Middle and Right footswitches simultaneously to select this mode. A single press on the button labeled 1, 2, 3, 4, 5, or 6 selects the equivalent tuning. A fast double-click on a footswitch selects the other tuning shown on the overlay (7, 8, 9, A, and B). The 6--Mute button always selects standard tuning.

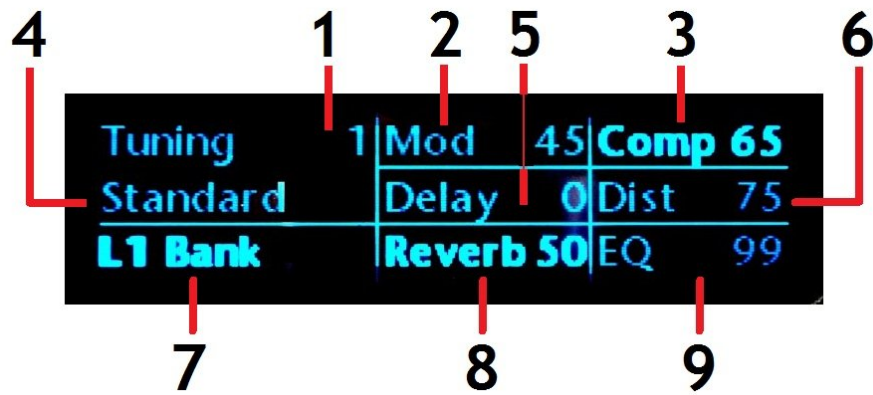
Select Effect Bypass: The Upper Right footswitch toggles between selecting the Echoplex Looper and selecting an Effect bypass function. In effect bypass mode, each footswitch enables or disables a particular effect in the effects chain if the effect is present in the patch or preset: **1** = Modulation, **2** = Compression, **3** = Delay, **4** = Distortion, **5** = Reverb, **6** = EQ.

Note: The section on using the Switchboard with the Echoplex Looper starts on page 25.

Switchboard Display

The default display shows the following.

Note: The effects chain settings change only when Firebird X is in Edit mode, not Patch Play mode.



Top Line

- (1) Tuning number
- (2) Modulation wet/dry mix (00-99) as selected by the blue tog-pot when switched to the Mod position
- (3) Compressor wet/dry mix (00-99) as selected by the red tog-pot when switched to the Comp position

Middle Line

- (4) Tuning name
- (5) Delay wet/dry mix (00-99) as selected by the blue tog-pot when switched to the Echo position
- (6) Distortion wet/dry mix (00-99) as selected by the red tog-pot when switched to the Dist position

Bottom Line

- (7) Current selected function (Tuning, Bank, Patch, Echoplex Looper, Pickup, Effect)
- (8) Reverb wet/dry mix (00-99) as selected by the blue tog-pot when switched to the Reverb position
- (9) EQ wet/dry mix (00-99) as selected by the red tog-pot when switched to the EQ position

Turn Off the Pedalboard or Switchboard

1. To turn off the Pedalboard or Switchboard, press and hold the Upper Middle footswitch until the display shows **Shutdown?**
2. Press the Upper Right footswitch to shut down, or the Upper Left footswitch to cancel.

You can also simply disconnect the AC adapter.

The Echoplex™ Looper

The Echoplex Looper provides independent recording and playback on three tracks, as well as overdubbing (sound on sound recording) on two of the tracks.

Activate the Echoplex Looper

1. Verify that Firebird X, Pedalboard, and Switchboard are turned on and connected.
2. Press the Upper Right footswitch. If the display shows Looper, proceed to the next step. If it shows Effect, press the Upper Right footswitch again.
3. Verify that the display's lower left shows L6 Looper.

The looper has three tracks. Track 1 is the master track. Recording on Track 1 sets the loop length for all three tracks. You must record on Track 1 before recording on Tracks 2 or 3.

Note: Recording on Track 1 deletes any previous recordings on any tracks.

Note: We'll refer to the switches by the legends on the Switchboard mylar overlay.

Record on Track 1

1. To start recording, double-click footswitch 1--7. Recording starts immediately.
2. To stop recording *and* start playing the loop you recorded, press footswitch 1--7. *Note: the maximum loop length is 20 seconds; after 20 seconds the loop will stop recording and automatically start playing.*
3. To stop playing or recording on Track 1, press footswitch 4--A. To stop all tracks from playing, double-click footswitch 4--A.

Record on Tracks 2 and 3

After recording on Track 1, you can now record on Tracks 2 and 3.

1. If Track 1 isn't playing, press footswitch 1--7. Then, double-click footswitch 2--8. Track 2 will start recording the next time the Track 1 loop returns to the beginning.
2. Track 2 will stop recording at the end of the loop, or if you press on footswitch 5--B. The track will automatically start playing the next time the Track 1 loop returns to the beginning.
3. Recording on Track 3 works just like recording on Track 2, except the start footswitch is now 3--9 and the stop footswitch is 6--Mute.

Note: You can stop and start each Track independently through their respective track buttons.

Overdub on Tracks 2 and 3

You can record new sounds into what you've already recorded onto Tracks 2 or 3; this mixes the new sounds with the previously-recorded ones ("sound-on-sound" recording).

1. To overdub, start playing the loop.
2. To overdub on Track 2, double-click footswitch **5--B**.
3. To overdub on Track 3, double-click footswitch **6--Mute**.
4. When you initiate overdubbing on either Track 2 or 3, recording begins immediately and stops when the loop ends. To stop overdubbing on a track at any time, press the corresponding track's Play or Stop footswitch.

Note: You can do unlimited overdubs.

Switchboard Echoplex Looper Footswitch Summary

Footswitch 1--7

Press once: Play Track 1

Double-click: Record Track 1 and delete Tracks 2 and 3

Footswitch 4--A

Press once: Stop Track 1

Double-click: Stop all tracks

Footswitch 2--8

Press once: Play Track 2

Double-click: Record Track 2

Footswitch 5--B

Press once: Stop Track 2

Double-click: Overdub Track 2

Footswitch 3--9

Press once: Play Track 3

Double-click: Record Track 3

Footswitch 6--Mute

Press once: Stop Track 3

Double-click: Overdub Track 3

Firebird X and Pedal Pairing with Bluetooth

If you switch guitars or replace some system component, re-pairing may be necessary.

1. Set up the Pedalboard and Switchboard as described previously in steps 1-5 of **Setting Up the Pedals for Firebird X** on pages 19 and 20 (linked, AC power connected, and antennas up). However, they should not be powered-on.
2. Turn on the Firebird X by pulling up on the Gear Shift knob.
3. Set the silver tog-pot upward to the PU/Prog setting and *within one second*, push down on the Digital Varitone knob until the Gear Shift lights turn **red**.
4. Turn the Gear Shift to the B position (i.e., the B LED on the outer rim is lit). The inside of the Gear Shift will cycle through the four characters of the guitar's Bluetooth ID (e.g., 09P3). Note this ID.
5. Power-up the Pedalboard by pressing down on the pedal until it clicks, and holding the pedal down until the display lights.
6. Power-up the Switchboard by pressing on the Upper Left footswitch.
7. Simultaneously press and hold the Pedalboard's Upper Left and Upper Right footswitches for at least three seconds.
8. A menu appears, with **1. Bluetooth** highlighted. Press the Upper Middle footswitch button to select this option.



9. Press the Upper Right footswitch to start the Bluetooth scanning process.
10. When scanning ends, another menu appears. The third option will say **3. Firebird [your guitar's Bluetooth ID]**. Click on the Upper Left footswitch twice to scroll down and highlight the third option. Once it's highlighted, press on the Upper Middle footswitch to select it.
11. Pairing begins. When the Pedalboard finishes **Receiving config...**, pairing is complete.
12. Return the Firebird X silver tog-pot to its center position.

Delete a Pairing

To pair to a different Firebird X, first “unpair,” then re-pair to the new Bluetooth ID.

1. Follow steps 1-8 for pairing.
2. Press the Pedalboard's Upper Right footswitch to Delete the pairing entry.
3. The display indicates pairing is being deleted.
4. To pair with the new Bluetooth ID, follow steps 8-12 for pairing.

Chapter 5: Red Bank Functions

In addition to tuning and patch Banks, a third Bank provides utilities and customizations. It's called the **Red** Bank because when you initially enter the Bank, the Gear Shift knob displays mostly **red** characters.

Select a Red Bank Function

1. Switch the silver tog-pot to the up position (PU/Prog) and *within one second*, push down on the Digital Varitone knob.
2. Rotate the Gear Shift knob to select the desired **Red** Bank function. Upon selecting a Gear Shift position, the Display Matrix will show a **red** letter for the function ID, then scroll through a series of magenta letters that give an abbreviated function name. The following chart shows the details.

Gear Shift Pos.	GearShift display	Abbreviation	Function
Peg	T	TUNER	Chromatic tuner function
I	I	INT	Adjust intonation
C	C	CUS	Create custom tuning
E	R	REF	Sets reference pitch (e.g., A = 440)
A	up arrow	UP	Tune replacement string(s) up to pitch
D	down arrow	DWN	Tune string(s) down for removal
G	R	ROBO	Robo-Tuner test
B	B	[4 characters]	Show Bluetooth ID
e	e	N/A	Reserved for future expansion
Arrow	b#	N/A	Piezo calibration
Full CCW	●	N/A	Restore all factory defaults

3. Push down on the Digital Varitone knob to start editing the function. *Note: This additional push is not needed for the Bluetooth function.*
4. To exit the **Red** Bank, return the silver tog-pot to the center position.

Chromatic Tuner (Position = Peg, ID = T)

The chromatic tuner detects a plucked string, then displays the nearest note and frequency offset compared to that note.

The center display can define the note in one of two modes:

- × **Note Mode:** Shows the note's letter name
- × **Frequency Mode:** Shows the note's frequency in Hertz. The frequency's numbers scroll in sequence, accurate to one place to the right of the decimal point. In other words, if you fret A = 440, the display will show 4-4-0-.0

The outer LEDs can show the offset in two different modes:

- × **Offset Mode:** The length of the "bar" made up of multiple LEDs indicates the relative offset, with a longer bar indicating more offset.
- × **Strobe Mode:** A rotating pattern shows the relative offset, with a faster rotation indicating more offset.

In either case, the color of the outer ring of LEDs provides a rough indication of pitch.

- × **Red:** Pitch is flat
- × **Yellow:** Pitch is sharp
- × **Green:** Pitch is correct

For example, if in strobe mode the pattern rotates slowly and the LEDs are red, then the string is slightly flat.

Tuner Step-by-Step Procedure

1. After entering the **Red** Bank, rotate the Gear Shift knob to the Peg position.
2. Push down once on the Digital Varitone knob.
3. Push down briefly on the Digital Varitone knob to toggle between Offset Mode (display shows **O**) or Strobe Mode (display shows **S**). Firebird X stores this preference on power-down.
4. Rotate the Gear Shift knob fully counter-clockwise.
5. Push down briefly on the Digital Varitone knob to toggle between Note Mode (display shows **N**) or Frequency Mode (display shows **F**). This setting is not stored; Note Name is the default.
6. Pluck a string (open or fretted) and observe the readout. Continue to pluck strings as needed.

Intonation (Position = I, ID = I)

When strings aren't properly intonated the octave (12th fret) is off-pitch compared to the open string. With correct intonation, the octave is *exactly* one octave above the open string.

Firebird X's intonation function makes intonating guitar strings easy. Each string has an intonation screw on the part of the bridge that faces away from the pickups. Adjusting these screws clockwise or counterclockwise adjusts the intonation; Firebird X will tell you how many turns these screws need, and in which direction.

Notes:

- ✘ *You will need a small screwdriver to adjust the bridge's saddle adjustment screws.*
- ✘ *Be careful when fretting strings. You can change a fretted string's pitch by up to 10 cents by fretting with more or less force. Also, the position where you press down on the string affects pitch. For best results, use a consistent force and position.*
- ✘ *During intonation Firebird X takes a little bit longer to detect pitch. This is normal, as Firebird X switches automatically to a special high-accuracy mode.*

Intonation Step-by-Step

1. Choose a tuning. For general intonation, Gibson recommends the Standard tuning. However, using alternate tunings can affect intonation. If you want perfect intonation for an alternate tuning, select that tuning prior to doing intonation.
2. Enter the **Red Bank**, then rotate the Gear Shift knob to the | (pin) position.
3. Push the Digital Varitone knob once.
4. Pluck the string you want to intonate.
5. When tuning is complete, the corresponding Gear Shift knob LED changes color to **yellow**.

Wait for about five seconds, then fret the same string at the 12th fret and pluck the string again.

6. The system will measure the pitch, then display the needed changes on the Gear Shift knob: If the rotating pattern is **green** and goes clockwise, then the bridge intonation screw needs to be turned clockwise. If the rotating pattern is **red** and goes counter-clockwise, then the bridge intonation screw needs to be turned counterclockwise. The **green** number in the Gear Shift knob's center shows how many half-turns the bridge's intonation adjustment screw should be turned.
7. Turn the screw as indicated, then repeat the procedure starting at step 4. If the corresponding string LED turns **yellow**, continue with the intonation procedure; if the LED turns **blue**, the string is intonated properly.
8. Proceed to adjust intonation on the other strings. When all strings are intonated, the corresponding string LEDs turn **blue**, and Firebird X exits intonation mode. To exit before intonating all strings, return the silver tog-pot to its center position.

Custom Tuning (Position = C, ID = C)

Firebird X has eleven onboard tunings. The easiest way to create custom tunings is with the FBX Editor; however, if you don't have access to a computer, you can create custom tunings within Firebird X itself, and replace onboard tunings with your custom tuning or tunings.

Custom Tuning Preset Creation Step-by-Step

1. Tune strings to the desired pitches. The allowed string pitch ranges with the recommended string gauges (0.010" to 0.046" (frequencies are rounded off to the nearest Hertz) are:

String	Lowest Pitch	Highest Pitch
E	A1 (55Hz)	Ab2 (104Hz)
A	D2 (73Hz)	Db3 (139Hz)
D	G2 (97Hz)	Gb3 (185Hz)
G	C3 (130Hz)	B3 (247Hz)
B	E3 (164Hz)	Eb4 (312Hz)
e	A3 (220Hz)	Ab4 (416Hz)

2. Enter the **Red** Bank, then rotate the Gear Shift knob to the **C** position.
3. Push down on the Digital Varitone control. All string LEDs change to **red** to indicate Firebird X is ready to analyze the string pitches. The peg LED shines cyan.
4. Pluck each string individually to ensure the most accurate pitch detection. After the pitch has been detected, the associated string LED turns **green**. Damp the string you just plucked, then move on to the next string.
5. After detecting all string pitches, Firebird X clears all string LEDs and the **C** LED starts blinking **blue**. This indicates the default preset "slot" where the custom tuning will be stored.
6. To save the custom tuning to a different preset, rotate the Gear Shift knob to the desired preset slot.
7. Push down on the Digital Varitone knob to store the custom tuning in the selected preset. All string LEDs flash **blue** to confirm the operation was successful, then Firebird X returns to whichever patch had been selected prior to entering the **Red** Bank.
8. Return the silver tog-pot to its center position.

Setting a Reference Pitch (Position = E, ID = R)

Although the most common tuning reference is A=440Hz, it's not the only one (e.g., some orchestras tune to A=442Hz). Or a piano may be in tune with itself, but not tuned exactly to A=440Hz. For these situations, Firebird X can tune to any arbitrary reference. The basic process is to tune Firebird X to the desired tuning, adjust one string to the reference pitch, then instruct Firebird X to tune the remaining strings relative to the reference string.

Setting a Reference Pitch Step-by-Step

1. Move the silver tog-pot to the tuning function. Choose one of the stored tunings (e.g., rotate the Gear Shift knob fully counter-clockwise to select Standard tuning by) and tune Firebird X by plucking its strings sequentially as described on page 12.
2. Tune one string (we'll call it the "reference string") to the desired reference pitch. For example, if you're tuning to a piano that's in tune with itself but is overall an 1/8th of a tone flat, tune the reference string to the piano so that the reference string is 1/8th tone flat.
3. Enter the **Red Bank**, then rotate the Gear Shift knob to the E position.
4. Push down on the Digital Varitone knob; all string LEDs change to **red** to indicate that the system is ready to determine the reference string pitch. The Peg LED shines **magenta**.
5. Pluck the reference string. Its corresponding LED turns **green** after Firebird X has analyzed the pitch.
6. Pluck each remaining string individually to ensure the most accurate pitch detection. After a string's pitch is properly tuned, its associated LED will turn **green**. Damp the string you plucked, then move on to the next string until all strings are tuned to the new reference.
7. When all strings are in tune, Firebird X automatically exits Reference Pitch mode and returns you to whichever patch had been selected prior to entering the **Red Bank**.
8. Return the silver tog-pot to its center position.

Once the Reference Tuning process is complete, the reference tuning stays active until the system is turned off or you select a different tuning.

Notes:

- × *During pitch detection, Firebird X checks that the resulting tuning is within the allowed pitch ranges, as specified in page 31 on Custom Tuning Preset Creation.*
- × *If a reference tuning is still active when selecting the same tuning for retuning, the display will show the preset ID briefly in **red** when entering the tuning function, then change to **blue**. This reminds you that Firebird X is set to a specific reference tuning.*

Replacing Strings: General Guidelines

Because each Robo-Tuner turns extremely slowly when tuned by hand, Firebird X's **Red Bank** includes two modes to speed up, simplify, and automate the string-changing process.

Caution! Remember not use manual or mechanically-powered “string winder” tools.

The two modes are:

- × **Single String Up Mode** (for replacing individual strings, or replacing strings one at a time after removing all strings)
- × **String Down Mode** (for removing *all* strings at the same time)

After re-stringing your guitar, you may want to “break in” your strings by tugging gently on them, and also perform multiple tunings until they've stabilized—just like changing strings on a conventional guitar. Also, use strings with ends that **fit completely within the bridge end holes and do not short out to the bridge**. For best results when changing strings, please follow these steps carefully.

1. Manually rotate each Robo-Tuner until the hole in the string binding post provides a straight path for threading each new string.
2. Guide each string through your tailpiece, over the center of each saddle (where contact is essential), through the nut slot, then straight through the post hole.
3. Pull the string slightly to take up any slack, then tighten down the post hole's locking nut.
4. Cut the extra length off each string close to the post; if one string contacts another, the system may function improperly. Also, do not use any strings which have frayed wraps at the ball end (Firebird X will not function if any part of the string touches beyond its insulated holder), and don't let steel bottleneck slides contact the strings during tuning operations.
5. Manually turn each tuning peg to tighten the string tension—just enough for the Piezo bridge to accurately “read” the string pitch.
6. Let Firebird X take care of the rest—as we'll find out next.

All Strings Down Mode (Position = D, ID = Down Arrow)

When changing an entire set of strings, String Down Mode causes all Robo-Tuners to de-tension all strings so that you can remove them all.

Detuning All Strings Step-by-Step

1. Enter the **Red Bank**, then rotate the Gear Shift knob to the **D** position.
2. Push down on the Digital Varitone knob.
3. All Firebird X strings start tuning down in pairs, until either the user leaves the String Down function by returning the silver tog-pot to the center position, or until a short circuit occurs due to a detuned string touching another string.

Single String Up Mode (Position = A, ID = Up Arrow)

This mode is useful when replacing all strings after using the All Strings Down function, or replacing a broken string.

Tuning Strings Up Step-by-Step

1. Enter the **Red** Bank, then rotate the Gear Shift knob to the **A** position.
2. Push down on the Digital Varitone knob; the outer string LEDs will shine **red** and the arrow will be **green**.
3. Rotate the Gear Shift knob to the string position corresponding to the first string you want to tune up. The string LED will shine **blue**.
4. Pluck the selected string. If Firebird X does not respond, that means the string tension is too low to read its pitch.

Note: If a string is very loose, it may short out to a different string, or a different Robo-Tuner. The Gear Shift knob will advise you of this condition by showing the string LED in white. Tune the string up manually until it no longer shorts out, then proceed as described.

5. Push down on the Digital Varitone knob, and the string will start to wind.
6. Pluck the string again. If Firebird X does not respond, push down on the Digital Varitone knob again to increase string tension.
7. Repeat step 6 again if necessary.
8. Once the string tension is sufficient for Firebird X to read the pitch, upon being plucked it will start tuning the string to standard tuning. When it's close to standard tuning, the associated string LED will shine **blue**. **Caution!** Do not press down on the Digital Varitone knob without first plucking the string to see if Firebird X can read its pitch. Otherwise, the string could snap from over-tightening.
9. Repeat steps 3-8 for any other strings you want to tune, until all strings are approximately in tune.
10. To finalize the tuning process, move the silver tog-pot to the tuning function. Choose one of the stored tunings (e.g., rotate the Gear Shift knob fully counter-clockwise to select Standard tuning by) and tune Firebird X by plucking its strings sequentially as described on page 12.

Robo-Tuner Test (Position = G, ID = D)

This conducts a series of tests on the Robo-Tuners and requires no user interaction.

Robo-Tuner Test Step-by-Step

1. Enter the **Red** Bank, then rotate the Gear Shift knob to the **G** position.
2. Push down on the Digital Varitone knob.
3. The entire test takes a little under two minutes and steps through each Robo-Tuner at increasing speeds. Sit back, look at the Gear Shift knob, and enjoy the light show.
4. When complete, return the silver tog-pot to its center position.

Bluetooth ID (Position = B, ID = B)

The pedals read the Bluetooth ID to enable wireless control with Firebird X. This function provides the ID for reference during the Bluetooth “pairing” process, and requires no user interaction. For more on pairing, see page 27.

Bluetooth Step-by-Step

1. Enter the **Red** Bank, then rotate the Gear Shift knob to the **B** position.
2. The four ID characters read sequentially in the middle of the Gear Shift knob (e.g., **0-9-P-3**).
3. To exit Bluetooth ID mode, return the silver tog-pot to its center position.

Piezo Calibration (Position = Arrow, ID = b# symbols)

The piezo calibration process analyzes the levels of each string’s individual piezo pickup, which provides data to the Robo-Tuners for tuning. Optimizing the calibration may improve tuning performance.

Piezo Calibration Step-by-Step

1. Enter the **Red** Bank, then rotate the Gear Shift knob to the Arrow position.
2. Push down on the Digital Varitone knob. All string LEDs will be lit **red**, except that the low E will flash **green** to indicate this string will be calibrated first. The Gear Shift display shows **P** (for “pick”).
3. Pick the string with the same force, pick, and pick angle you use during tuning. The Gear Shift center shows the measured level, and after the string has decayed, shows **P** again.
4. Pick the string each time the **P** re-lights until the string’s LED switches to solid **green** and another string starts blinking **green**.
5. Pick the next string as you did in steps 3-5.
6. Repeat step 5 until all strings are calibrated. Return the silver tog-pot to its center position.

Restore Factory Defaults (Position = full CCW, ID = red circle)

This operation restores all factory defaults. **Caution!** Any custom patches or tunings you've stored in the guitar will be lost unless you've backed them up to disk using the FBX editor software. Therefore, this procedure makes it difficult to restore the defaults accidentally.

Note: In step 3, you will need to push the Gear Shift knob down partway—not enough to turn it off, but enough to trigger a secondary switch. This is called a “half press.” If you accidentally turn Firebird X off by pushing the Gear Shift knob down too far, you will need to start over.

Restore Defaults Step-by-Step

1. Enter the **Red** bank, then rotate the Gear Shift knob fully counter-clockwise to the ● (red circle) position.
2. Push down on the Digital Varitone knob; a white arrow appears in the Gear Shift knob center.
3. Half press the Gear Shift knob, then hold it in this position until the arrow turns **blue**.
4. Turn the Gear Shift knob clockwise until its center shows **1** (the pin string LED will be lit as well).
5. Push down on the Digital Varitone knob. The **1** will flash **red** once.
6. Turn the Gear Shift knob clockwise one notch so the center shows **0** (the peg string LED will be lit as well).
7. Push down on the Digital Varitone knob. The **0** will flash **red** once.
8. Turn the Gear Shift knob counter-clockwise until its center shows **9** (the arrow string LED will also be lit).
9. Push down on the Digital Varitone knob. The **9** will flash **red** once.
10. Turn the Gear Shift knob fully counter-clockwise until the center shows a **blue** arrow.
11. Push down on the Digital Varitone knob. The arrow will flash **red** once, and the display will show 1-0-9 to confirm the numbers you selected. Then, a **red ?** (question mark) will appear.
12. Rotate the Gear Shift knob two notches clockwise to select **Y** (for “yes”).
13. Push down on the Digital Varitone knob. The **Y** flashes **red** once.
14. Rotate the Gear Shift knob fully counter-clockwise; a **blue** arrow appears.
15. Push down on the Digital Varitone knob. The arrow flashes **red**, and all string LEDs flash **green** to indicate the reset is complete, and finally, the **blue** arrow re-appears in the center of the Gear Shift knob. (If the string LEDs flash **red**, Firebird X did not reset. You will need to start over from step 1.)
16. Return the silver tog-pot to its center position.

Appendix

Appendix A: G-Node USB 2.0 Interface and FBX Editor Software

The G-Node advanced USB 2.0 audio interface, included with your Firebird X, is designed specifically for Firebird X. However, it also functions as a standard audio interface for Windows (ASIO 2.0, WDM) and Mac (Core Audio) computers.

FBX Editor software gives you access to Firebird X's audio engine and tuning capabilities. You can create your own sounds and tunings as well as modify existing ones, maintain a library of patches, transfer patches in and out of Firebird X, and much more.

The latest software and documentation for these components is available from the Firebird X Visionaries Club web site. Please register as described previously on page 3, then download the software and documentation.

Appendix B: Battery and Power Management

Firebird X's power source is an on-board, rechargeable, Lithium Ion (Li-Ion) 7.2V battery. Firebird X can tune itself up to 500 times on a single charge, and recharges in about 70 minutes. *Note: Because this battery is a precision device, please follow these instructions carefully on charging, storage, and optimizing performance.*

Optimizing Battery Life

Proper care extends the battery's life, keeps it operating at optimum efficiency, and preserves the highest possible storage capacity. Please observe the following.

- × **Charge the battery fully before using Firebird X.** Even if Firebird X seems charged upon arrival, that was done for testing at the factory. Initially charge Firebird X for at least an hour.
- × **Caution! Do not use any charger other than the one supplied with Firebird X.** Li-Ion batteries require specific charge rates.
- × **Avoid full discharges that drain the battery completely.** Li-Ion batteries like to be discharged somewhat, then recharged back to full capacity. Firebird X provides a good environment for Li-Ion batteries, as you'll typically discharge it about halfway during the length of a concert. Charging the battery back to full charge after playing provides optimum battery life.
- × **Avoid elevated temperatures.** You don't want to expose any guitar to high temperatures, but this also shortens battery life dramatically.
- × **Store the battery properly.** If you won't be playing Firebird X for several weeks or more, discharge the battery partway (about 40-50% of its full charge), remove the battery, and store it in a cool, but not cold, place. *Do not store the battery either fully charged or fully discharged.* Either one can shorten battery life considerably.
- × **After taking a battery out of storage, charge it fully before playing Firebird X.** This promotes longer battery life.
- × **Once the battery is fully charged, disconnect the charger.** Li-Ion batteries are "smart" and you can't really overcharge them. However, leaving them connected to a charger when fully charged uses power unnecessarily.
- × **These tips don't necessarily apply to laptop computers.** Even if a laptop uses an Li-Ion battery, there are computer-specific considerations. Follow the computer manufacturer's instructions for proper laptop battery care.

About Charge/Discharge Cycles

An Li-Ion battery is typically rated for 300-500 *charge/discharge cycles*. In other words, you can discharge the battery at least 300 times and charge it back up again before its useful life is over.

If you play Firebird X and discharge it 50% during a concert, then charge it to full capacity, that is only half of a charge/discharge cycle. If you play Firebird X every day and discharge it to 75% of capacity then charge it back to 100%, it would take four days before the battery would experience a full charge/discharge cycle.

However, a battery has a finite life regardless of whether you've used up the full number of charge/discharge cycles—after about 2-3 years its internal resistance rises to the point where it can no longer deliver its rated voltage.

Note that Li-Ion batteries like “exercise.” Leaving a battery on a charger all the time will lead to lower performance than doing some degree of charging and discharging.

Appendix C: Troubleshooting

If you encounter problems with Firebird X, Gibson recommends that you take it to an authorized service center. Although there are some procedures you can try yourself, *be careful*—if you have *any* doubt about your ability to do any of these fixes, please consult Gibson tech support.

One or more strings don't seem to tune correctly, but the rest do.

There can be several possible reasons for this problem:

- × The nut slot too high and there's too much friction
- × The lock nut on the string post is not tight enough
- × The string was strummed too hard, causing it to go sharp
- × A sticky string bar in the saddle causes pitch detection to fail
- × The tailpiece is set too low, so the string touches the bridge base and shorts out to it.

Observe what happens when you try to tune the problematic string. Here's what should happen:

- × You strum, and the respective string LED should start flashing **red** to indicate that pitch detection is active.
- × Next, the LED should start flashing **yellow** (information is being sent to the neck CPU, and the Robo-Tuner starts to move).
- × After tuning the string, the string's LED turns **green** to indicate the string is in tune.

If not, try these fixes:

- × Remove the problematic string and make sure the string bar is not inclined in the saddle, and that you can move the string bar up and down a little bit; it must not be sticky in its saddle. Sometimes just “unsticking” the string bar is enough to solve the problem.
- × Re-string the string and tap the string bar gently. Check that the string bar is not inclined, and that the tuner post's lock nut is set tight.
- × If all else fails, tune the problematic string to your liking, and save as a Custom tuning preset as described on page 31.

My headstock hit against the wall, and now one of the Powertune heads doesn't work.

If you hear a winding noise but the Robo-Tuner doesn't move, it might be a connection issue from the powerhead to the neck circuitry.

Inspect the tuning peg that doesn't work. If its case is rotated, rotate the Robo-Tuner head back to its original position—this should fix the problem. Then, tighten the nut to make sure the Robo-Tuner stays in this position. **Caution! Avoid overtightening—do not exceed 1 ft/pound torque maximum.**

I removed the A, G, and (high) e strings but now the tuning system doesn't work.

To get a “tighter” rhythm guitar sound, some guitarists remove these strings so they can't be hit accidentally. However, with Firebird X the strings carry low voltages and data, as well as provide grounding. The E, D, and B strings are ground. The A, G, and high e strings carry a positive voltage and data. By removing those three strings, there's no way for the tuning system to provide data on how to tune the strings.

The string LEDs are flashing white, and tuning doesn't work at all.

A white flashing string LED indicates a short circuit. The strings carry power and data to the neck, so even if only one string is touching a hardware part (bridge, tailpiece, even a fret bar) or another string, the tuning system won't work. Also note that if the Gibson "G" on the neck electronic cover does not start flashing once you activate the system, it's likely that there's also a white LED flashing on the Gear Shift knob to indicate there's a short circuit, and therefore, no power going to the neck electronics. Please check the following:

- × The string ball ends must not touch the tailpiece at all.
- × The strings must be in the middle position of each string bar.
- × Look at the tuner posts; the strings must not touch each other, so cut all string ends close to their posts.
- × Check the tailpiece and bridge height, then adjust if needed.

When I tune the Robo-Tuners manually, the process seems extremely slow.

The gear ratio in the Robo-Tuners is very high, so you need to turn the tuning peg many times to get one complete rotation of the string post. This is one reason why Gibson recommends using the Robot tuning options, especially when re-stringing, as the process is fast and efficient. For more information, please see the information on Robotic string-changing starting on page 33.

Firebird X doesn't seem to connect to the G-Node interface.

Unplug the stereo cable from the Firebird X, wait a few seconds, then plug it back in again. This solves most connection problems.