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Update Policy
In order to be eligible to obtain updates of the program, you must complete and return to MOTU the Mark of the Unicorn Purchaser Registration Card found at the beginning of the Electric Keys User Guide.

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Quick Reference

Electric Keys includes 12 different “skins” (graphic looks) for each instrument category. Each skin is meant to recall the look and feel of the instrument(s) in the category. Regardless of the skin, however, the controls are exactly the same, as explained briefly below.

1. Use these knobs to adjust the master volume and tuning.
2. Click here to open the separate Effects Rack below.
3. Load and save combis here. A combi is a “snapshot” of all settings.
4. Click the keyboard to play notes. They also animate when being played by your sequencer.
5. Use these different velocity response curves to adjust the feel of the notes as you play.
6. Adjust individual preset controls here, including volume, pan, mute and “Expert” settings.
7. These are global tone and drive controls. Right-click any control to assign it to any MIDI controller.
8. Double-click the preset name to open the multi-column preset browser. You can load two completely different instrument presets at a time and layer them.
9. Click the arrows to choose the next or previous preset.
10. Add and adjust tremolo in this section.
11. Tempo settings for tremolo and other effects that can synchronize to your host software’s tempo.
12. Browse, load and save effects presets — even multi-effects.
13. Apply these effects independently to presets. Save them as separate effect presets — or as part of a combi.
A universal instrument
Electric Keys is a universal electric keyboard instrument plug-in for Mac and Windows. Electric Keys supports all major audio plug-in formats, as well as stand-alone operation, on both platforms (MAS, VST, AAX, RTAS, and Audio Units).

The ultimate collection of electric keyboard instrument sounds at your fingertips
Electric Keys delivers a comprehensive collection of electric keyboard instruments in one simple-to-use window. Included is a massive 40GB library of instrument multi samples recorded with pristine audio fidelity and careful attention to detail.

Universal plug-in or stand-alone operation
Electric Keys operates both as a stand-alone application and as a plug-in inside a host audio/MIDI sequencer application such as Digital Performer, Pro Tools, Logic Pro, Live, SONAR, or Cubase.

As a stand-alone application, Electric Keys turns your Mac or PC into an electric keyboard instrument powerhouse with 50 different classic and rare keyboard models, disk streaming and 40GB of expertly crafted multi-samples. Stand-alone operation also allows you to use Electric Keys with music software applications that do not host 3rd-party instrument plug-ins. Stand-alone operation is virtually identical to plug-in operation, except for a few additional settings for audio/MIDI input and output.

As a plug-in, Electric Keys can be used as a comprehensive keyboard instrument library directly within your projects. You can save all Electric Keys settings with the project for instant and total recall. Since all Electric Keys settings are saved with your host application session, you enjoy the highest degree of convenience and speed because there is no separate application or associated documents to manage.

Collaborate across platforms
Because Electric Keys supports every major audio production platform, you can effortlessly move from one platform to another — or collaborate with colleagues who use different audio software. For example, you could compose and track a project in Digital Performer, Logic or Nuendo and then move to Pro Tools for mixing. Simply save an Electric Keys combi (a snapshot of all Electric Keys settings) in DP, Logic or Nuendo and then load it into Electric Keys running in Pro Tools. All settings are exactly preserved, and Electric Keys is ready to go.

Operation at a glance
Electric Keys displays all essential settings in one window, showing you everything in one glance, without the need to flip through different pages or dig through menus. Adjust your sound quickly and intuitively. “Expert” settings are one click away.

Multi-column browser
Electric Keys makes it easy to browse and locate exactly the sounds you are looking for, with a large, easy to navigate, multi-column browser. Quickly scan through the browser columns to audition and select instruments. For even quicker access to your sounds, use Electric Keys’s convenient pop-up browser.

Combis (layers)
Electric Keys let you layer and play two individual instruments at a time, each with its own volume and pan. By adding effects, the possibilities for creating unique electric keyboard instrument sounds are limitless.
**Synthesis engine**
After loading a preset, you can further adjust the sound with numerous part settings, including octave transpose, coarse/fine tuning, pitch bend range and portamento. You can even apply advanced synthesis engine settings, including pan mode and depth, a resonant filter, AHDSR amplitude envelope and even an AHDSR filter envelope. These additional synthesis features allow you to sculpt your electric keyboard sounds to sit perfectly in your mix. All parameters can be controlled and automated by MIDI. The award-winning UVI-Engine that powers Electric Keys delivers 256-note polyphony per instrument and ultra-low latency.

**Disk streaming**
Disk streaming is a process where only a small initial portion of each sample (instrument sound) is loaded from the hard drive into RAM in preparation for playback, and the rest of the sample is streamed from the hard drive when the note is actually played, rather than being loaded in its entirety beforehand. Streaming conserves large amounts of RAM, allowing you to load more instruments simultaneously and free up your RAM resources for other plug-ins and applications. Streaming also significantly speeds up the time it takes for instruments to load, especially instruments with large sample sets.

**24-bit 96kHz samples**
Most Electric Keys sounds are provided in 24-bit 96kHz resolution (some presets are provided at CD-quality 16-bit 44.1kHz). Electric Keys also provides on-the-fly upsampling and downsampling, allowing you to play Electric Keys sounds at any sample rate that your current project calls for, without the need for lengthy sample rate conversion operations.

**Multi-effects rack**
Electric Keys provides a separate effects rack that lets you chain multiple effects and apply the effects chain independently to Electric Keys instrument presets. Since the effects chain is not part of the instrument preset itself, you can freely mix and match effects chains with instrument presets or even two-instrument combs, which opens up an infinite world of possibilities for creating unique electric keyboard sounds. You can even leave the effect rack in place while you audition various instrument presets.

Eight different real-time effects are included, including amp simulation, analog filter emulation, phaser, flanger, chorus, vinyl, delay and reverb. All effects rack settings can be independently saved for total recall. Dozens of factory presets are also provided. You can also save effects as part of a user combi for permanent storage with an instrument preset.

**Compatibility with MachFive 2**
If you own MachFive version 2, the universal sampler, and you prefer the convenience of consolidated sound library access via MachFive, you can access the Electric Keys sounds directly from the soundbank and preset menus in MachFive. After a sound is loaded, you can take full advantage of MachFive’s sophisticated layering and stacking features to create elaborate keyboard instrument combinations, for live performance or complex MIDI sequencing.
CHAPTER 2    Installation

OVERVIEW
Thank you for purchasing Electric Keys, the universal electric keyboard instrument.

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PACKAGE CONTENTS
Your Electric Keys package includes:

■ Electric Keys installer CD-ROM disc
■ Electric Keys User Guide with tear-out registration card
■ Five (5) Electric Keys soundbank DVD discs

AN ILOK IS REQUIRED
This product requires an iLok Smart Key, a small USB device (sold separately) that holds the license for your MOTU software. Before you install and use your MOTU software, you must obtain an iLok, if you don’t already have one.

☛ You will not be able to use your Electric Keys software without an iLok.

Do you already own an iLok?
You may already own an iLok if you upgraded from a previous version or own any other product that uses iLok. If so, you can skip to "Downloading your Electric Keys license to your iLok".

Purchasing an iLok
If you do not already own an iLok, you can purchase one from your local music retail shop, an on-line music technology reseller, or iLok.com.

iLok compatibility
MOTU instrument products are compatible with iLok 1 or 2 (Figure 2-1).

PREPARING YOUR iLOK USB SMART KEY
Electric Keys will not run unless it detects an iLok Smart Key plugged into any available USB port on your computer. In addition, the iLok must hold an Electric Keys license. (A version 1 license will not work with Electric Keys version 2.)

Do you already own an iLok?
You may already own an iLok if:

■ you own another MOTU instrument product
■ you own a 3rd-party product that uses iLok

If so, you can skip to “Downloading your Electric Keys license to your iLok” below.
Purchasing an iLok
If you do not already own an iLok, you can purchase one from your local music retail shop or on-line music technology reseller.

iLok compatibility
Electric Keys is compatible with any iLok (1 or 2), as shown in Figure 2-1 on page 9.

Downloading your Electric Keys license to your iLok
Your Electric Keys package includes a card with your unique iLok license code printed on it. Follow the instructions below to redeem the code and download the resulting Electric Keys software license to your iLok.

Electric Keys will not run without the downloaded license in your iLok, so be sure to follow these important instructions before proceeding to install and use Electric Keys.

Installing iLok License Manager
1 Download and install the iLok License Manager application from ilok.com.

This software is required for iLok operation on your computer.

2 Plug in your iLok into any available USB port on your computer.

3 Launch iLok License Manager and create an account, if you don’t already have one.

4 Choose “Redeem Activation Code” from the Licenses menu, then enter your unique, 30-digit license code (found on the license card included with your Electric Keys package).

5 Click on your account name to view your new authorization in the list. Click it to select it, choose “Activate” from the Licenses menu, select your iLok in the window that appears, and click “Activate” to move your activated license into your iLok.

Your Electric Keys software license is now in your iLok. Be sure the iLok is connected when you run Electric Keys.

Managing iLok licenses
If you have multiple iLoks, you can consolidate all of your licenses onto a single iLok. Use iLok License Manager to move product licenses from one iLok to another, consolidate them onto one iLok, protect them from loss or damage, or otherwise manage your product license assets.

If you have further questions about your iLok, visit www.iLok.com, or contact MOTU Customer Service at +1 (617) 576-2760.

SYSTEM REQUIREMENTS
Electric Keys version 1.0.6 has the following minimum and recommended system requirements:

- Mac or PC with Intel Core Duo CPU 1.83 GHz or faster; multiple processors or a multi-core processor is required. Intel Core 2 Duo CPU 2.0 GHz or faster recommended. Macs with PowerPC CPUs are not supported.
- 2 GB of RAM is required; 4 GB or more is highly recommended.
- CD/DVD disc drive for installation.
- Mac OS X version 10.5 or 10.6 (v10.5.8 or later is required), or Windows 8, 7 or Vista (32- or 64-bit; Vista SP2 or later is required).
- A large hard drive (preferably at least 100 GB) with enough free space to hold the 40 GB of soundbank files. The drive on which the sounds are stored must be a fast hard drive. See below for Mac- and Windows-specific hard drive requirements.
- An available USB port for the iLok USB key. If you have multiple products that use iLoks for authorization, you can consolidate multiple authorizations onto a single iLok using www.iLok.com.
A digital audio workstation program or other program that hosts MAS, AU, VST, AAX or RTAS instrument plug-ins. Alternatively, Electric Keys can be used as a stand-alone application.

64-bit operation
For native 64-bit operation, Electric Keys has the following additional requirements:

- Mac OS X v10.6, Windows 8, or a 64-bit version of Windows 7 or Vista
- 64-bit CPU
- 64-bit plug-in host application, if using the 64-bit plug-in

Hard disk format
Due to the large size of Electric Keys’ factory soundbank UFS files, the disk containing the soundbank files must be able to support individual files larger than 4 GB. This is determined by the disk’s file system format.

The default file system format for disk drives on Mac OS X and Windows are compatible with Electric Keys’ soundbank files:

- Mac OS X: HFS+ (Mac OS Extended, journaled or unjournaled)
- Windows: NTFS

The FAT32 format is not compatible with Electric Keys’ soundbank files, as it does not allow file sizes greater than 4 GB.

If you experience trouble copying the UFS files to your hard disk, refer to the troubleshooting chapter in the Electric Keys User Guide.

Run the Electric Keys installer
Run the Electric Keys installer first before you copy the UFS soundbank files from the soundbank DVDs, as follows:

1. Insert the Electric Keys Installer CD; or, if you have downloaded the Electric Keys installer, locate the folder containing the download.

2. Double-click Install Electric Keys (Mac), Setup32.exe (Windows 32-bit), or Setup64.exe (Windows 64-bit).

3. Follow the directions the installer gives you.

Windows VST users: setup lets you choose the location for the Electric Keys VST plug-in. Point your host application to this same directory.

Copy the UFS soundbank files to your hard drive
Electric Keys includes five 8 GB (dual layer) soundbank DVDs that contain a total of 40 GB of multi-sampled instruments. To install the UFS soundbank files, copy them from the DVDs to the following location:

Mac OS X
startup disk/Library/Application Support/MOTU/Electric Keys/Sounds/

Windows
startup disk:\Program Files\MOTU\Electric Keys\Sounds/

The term startup disk in the path names above is the name of your system hard drive (usually Macintosh HD or C).

Place the UFS files directly in this location. Alternatively, you can place the UFS files in another location (possibly on an external or second hard drive), create aliases (Mac OS X) or shortcuts (Windows) to them, and then place the aliases or shortcuts in this location.

If you create aliases or shortcuts, the names must be the same as their corresponding UFS files. If the alias or shortcut name includes the words alias or shortcut to, it will not work.
The Classic Electric Pianos.ufs and Classic Electric Pianos.ufs1 files MUST be placed in the same folder.

PLEASE REGISTER YOUR SOFTWARE
MOTU can only provide customer service and technical support to registered users. Therefore, it is important for you to register your software immediately after purchase.

To do so, visit www.motu.com/registration to register online. Or, fill out and mail in the registration card found at the beginning of the User Guide (leave the rest of the cardboard page in the manual for your future reference).

If you purchased an upgrade from an earlier version at motu.com, you are already registered and no further action is necessary.

GETTING STARTED WITH ELECTRIC KEYS
Follow the directions in the next few chapters of this guide to successfully install and begin using Electric Keys.

FAMILIARITY WITH YOUR COMPUTER
This manual assumes that your are familiar with using your computer. If not, please review your computer's user guide before proceeding.

VISIT MOTU.COM FOR SOFTWARE UPDATES
Software updates are periodically posted on our web site, so check our web site for the latest updates at www.motu.com.

ABOUT YOUR ILOK USB SMART KEY
Electric Keys will not run unless it detects that your iLok Smart Key is plugged into any available USB port on your computer. If you wish to transfer the authorization in your Electric Keys iLok to another iLok, or if you have questions about your iLok, visit www.ilok.com for further information, or contact MOTU Customer Service at (617) 576-2760.

TECHNICAL SUPPORT
If you have questions, please review this manual carefully first. You can reach MOTU tech support as follows:

- 24-hour online tech support database with search engine: www.motu.com
- Tech support online: www.motu.com/support
- Tech support fax: (617) 354-3068
- Tech support phone: (617) 576-3066 (9 a.m. – 6 p.m. Eastern)
- Downloads: www.motu.com
Open Electric Keys
1 After Electric Keys installation, launch the stand-alone Electric Keys application (found in the Mac Applications folder or Windows Start menu). Or launch your host audio sequencer application and open Electric Keys as a virtual instrument plug-in from within your host software in the standard fashion.

Choose a preset
2 Before you can begin using Electric Keys, you need to go to the Part section (as shown below in Figure 3-1) to load an instrument preset into a part in Electric Keys’s part list. To do so, double-click the word Empty to open the preset browser.

Set up MIDI input to the instrument
4 Electric Keys receives on MIDI channel 1. If you are running Electric Keys as a plug-in, send MIDI from your MIDI software to Electric Keys on channel “A1”. (You’ll see Electric Keys as a destination in your MIDI output menus.)

5 If you are running the Electric Keys stand-alone application, open the preferences (in the Electric Keys menu on the Mac or the File menu on Windows) and click the MIDI Devices tab. Choose your MIDI controller from the MIDI Port A menu. (If you see other menus in this tab, you can ignore them.) Send MIDI from your MIDI controller on channel 1.

Check the audio output assignment
6 If you are running Electric Keys as a plug-in inside your audio sequencer host, the Electric Keys track has an audio output assignment. Make sure
that it is assigned to the appropriate audio output in your system (the headphone outs, main outs, or whatever you are using for listening).

7 If you are running the Electric Keys stand-alone application, open the preferences (in the Electric Keys menu on the Mac or the File menu on Windows) and click the Audio Device tab. Check the Output Device assignment and make sure the sample rate setting matches the setting on your audio hardware (or the built-in audio hardware of your computer, if that is what you are using).

Play the instrument
8 Try playing your MIDI controller. You should now hear the sound of the instrument you chose back in step 2.

9 If you hear it, congratulations! You are now ready to use Electric Keys.

If you don't hear anything
10 Check to see if the keys on the keyboard are blinking when you play notes on your MIDI controller. If they blink, then MIDI is OK. If not, check your MIDI cables and software settings again.

11 Still don't hear a sound? Try clicking the keys on the keyboard. If this does not produce a sound, check the audio output assignment for the track on which Electric Keys is instantiated. Make sure it is assigned to your headphones, main speakers, or whatever you are listening to.
CHAPTER 4  The Electric Keys Application

OVERVIEW
Electric Keys is supplied in two forms:

■ As a stand-alone application
■ As a plug-in

This chapter explains how to use the Electric Keys stand-alone application. For information about operating it as a plug-in, see chapter 5, “The Electric Keys Plug-in” (page 23).

STAND-ALONE OPERATION
Electric Keys can operate as a stand-alone instrument application, independent of a plug-in host, turning your Mac or PC into a streamlined electric keyboard instrument powerhouse with 50 instruments to choose from. Stand-alone operation also allows you to:

■ play Electric Keys from an external MIDI keyboard or other MIDI controller, allowing you to use Electric Keys as a live instrument
■ use Electric Keys as a comprehensive electric keyboard instrument for an external MIDI sequencer or MIDI-capable music software running on another computer
■ use Electric Keys as a comprehensive electric keyboard instrument for MIDI-capable music software that does not host 3rd-party instrument plug-ins but that is running on the same computer as Electric Keys

These three scenarios are briefly described below. The rest of this chapter explains the settings in Electric Keys necessary to establish MIDI and audio connections for these scenarios.

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Playing Electric Keys as a live instrument from MIDI controller
To play Electric Keys as a live instrument from a MIDI controller, you need to route MIDI data from your controller to Electric Keys via a MIDI interface connected to the computer, and then route the audio output from Electric Keys to your computer’s audio hardware, as shown below. The MIDI data triggers sounds in Electric Keys, which then produces audio signal to be routed to your headphones or speakers in your studio:

![Diagram of MIDI data flow](image1)

Figure 4-1: The flow of MIDI data and audio signal when playing Electric Keys as a live instrument.

MIDI connections
There are several ways to get MIDI data into your computer. Here are a few:

- A USB MIDI keyboard or controller that connects directly to the computer
- A MIDI-equipped keyboard connected to a USB MIDI interface, or to an audio interface that doubles as a MIDI interface, via a standard MIDI cable

Audio connections
There are many ways to play audio from your computer. The simplest method is to use the computer’s built-in audio capabilities. You can also use a third-party audio interface. A perfect example is the MOTU UltraLite, an affordable, bus-powered FireWire audio interface that also provides MIDI input and output, as shown below:

![Diagram of MOTU UltraLite setup](image2)

Figure 4-2: An example setup for stand-alone operation using a MOTU UltraLite audio interface. In this example, the UltraLite is also handling MIDI data transmission from the keyboard controller to the computer and Electric Keys.
Using Electric Keys as a sound source for music software running on another computer

When running as a stand-alone application on a computer by itself, Electric Keys can serve as a sound source for MIDI equipped music software, such as an audio sequencer application or notation software, running on another computer.

The advantage of this “satellite” setup is that you can fully dedicate the Electric Keys satellite computer’s processing resources to Electric Keys, without affecting the performance of your audio sequencer, notation program or other MIDI authoring software running on your main computer.

The disadvantage to this setup is that you must manage the operational overhead of two (or more) computers. For example, you will need to save Electric Keys settings on the satellite computer in a way that lets you easily cross reference them to the corresponding file or project for your authoring software on your main computer. If you prefer to save Electric Keys settings directly in your host authorizing software, you are better off running Electric Keys as a plug-in. But if processing resources are at a premium, and you have an extra computer on which to run Electric Keys, this “satellite” computing scenario can be very beneficial.

The setup for running Electric Keys on a satellite computer is similar to the live keyboard scenario described in the previous section, except that audio sequencer software, notation software or other authoring software running on your main computer serves as the source of MIDI data being sent to Electric Keys running on the satellite computer, as demonstrated in Figure 4-3. MIDI data is transmitted from the host computer via a FastLane MIDI interface and MIDI cable to the UltraLite audio/MIDI interface connected to the laptop running Electric Keys.

The example setup shown in Figure 4-3 shows one satellite computer. But you can use this same basic idea for two or more satellite computers, each running virtual instruments as well. For multiple satellite computer setups, you may also want to consider using just one or two computer monitors connected to a computer monitor switcher. These devices, available from your favorite computer supplies retailer, allow you operate multiple computers from the same screen, keyboard and mouse.
Running Electric Keys stand-alone on the same computer as your host software

If you are planning to run Electric Keys on the same computer as your audio sequencer, notation program or other MIDI authoring software, it will be most convenient for you to run Electric Keys as a plug-in inside your host software.

If, however, your authoring software does not have the ability to host instrument plug-ins, it is possible that you might be able to run Electric Keys in stand-alone mode and trigger Electric Keys sounds from your host software using inter-application MIDI transmission, if your host software supports this feature. **Inter-application MIDI transmission** is when one program sends MIDI data to another program that is running at the same time. In essence, both programs are running side by side as stand-alone applications, and they pass MIDI data (and perhaps even audio streams) between each other.

**Inter-application MIDI**

On the Mac, inter-application MIDI functionality is supported by the Mac operating system (OS) itself, and many current music software packages support the Mac OS’s inter-application features. Consult your host software documentation for details. On the Mac, you can set up a compatible host application to publish a virtual MIDI device (stream), which then appears in Electric Keys’s MIDI Device tab menus.

![Figure 4-4: An example of the inter-application MIDI feature in a host program. This window in Digital Performer (Setup menu> Interapplication MIDI) lets you create a 'virtual' MIDI output device (stream) from Digital Performer, as shown in this example by the name 'DPOutput'. You can then choose this a virtual MIDI device (source) from within Electric Keys (running stand-alone, not as a plug-in). If you then play a MIDI track to the MIDI channels on this virtual output device, they will trigger parts in Electric Keys that are assigned to receive on those same MIDI channels.](image)

On Windows, there are 3rd-party utilities available for Windows, such as *LoopBe* or *MIDI Yoke*, that allow MIDI programs to transmit MIDI data to each other.

**Inter-application audio**

The audio output from Electric Keys can either play directly to your audio interface hardware connected (via the settings described later in this chapter), or you can use third-party downloadable utilities (such as Cycling 74’s *Sound Flower* utility for Mac OS or other similar downloadable 3rd-party audio utility) to route Electric Keys’s audio output back into your host audio sequencer application (or any other audio software running on the same computer).
MANAGING LATENCY WITH STAND-ALONE OPERATION

Latency is the time it takes for MIDI data from your controller to reach Electric Keys and then for Electric Keys to respond to it and produce sound. See “Managing latency” on page 24, which discusses ways to manage latency that apply to both plug-in operation and stand-alone operation.

OPENING THE STAND-ALONE VERSION

On the Mac, the stand-alone version of Electric Keys can be found in your Applications folder. On Windows, it can be found under the Start menu> Programs> MOTU.

Stand-alone operation is identical to plug-in operation as described in chapter 6, “The Electric Keys Window” (page 37), with the exception of the additional stand-alone settings described in this chapter.

PREFERENCES

The stand-alone version of Electric Keys has a few basic settings that can be found in Electric Keys menu> Preferences:

![Audio Device Tab](image)

**Audio Device Tab**

The Audio Device tab preferences (Figure 4-5) let you make several audio hardware device settings.

**Interface (Windows only)**

Choose the desired Windows audio driver for the audio interface you are using for Electric Keys. If your audio device provides both MME and ASIO driver support, you are free to choose either driver for Electric Keys, but ASIO is recommended.

**Output device**

Choose the desired audio hardware from the Output Device menu (Figure 4-5). For example, you could choose your computer’s built-in audio hardware. If you have a 3rd party audio interface installed or connected, and you do not see it in the menu, be sure that you have correctly installed its driver and that it is otherwise functioning properly, independently of Electric Keys. For example, can you access the hardware from the system software (Mac OS or Windows) and other audio applications?

**Sample Rate**

Choose the desired Sample Rate (Figure 4-5) for playback. The choices in this menu are provided by your audio hardware driver, and the setting you choose here is the sample rate your hardware will be set to. 44.1 kHz is the standard rate for audio compact discs. Electric Keys samples are all provided in either 16-bit or 24-bit resolution at either 44.1kHz or 96 kHz, but if you choose to operate at a different sample rate, they are sample-rate converted on the fly to match the rate you’ve chosen.

**Buffer size (Mac)**

Output Latency (Windows)

This setting is crucial for managing your computer’s processing resources. In general, settings of 256, 128 or 64 samples produce better latency performance. But lower settings place higher demand on your computer’s processor.
ASIO Config (Windows only)
Click the ASIO config button to open the ASIO driver configuration window. Consult your audio hardware documentation for details about the settings in this window for configuring your hardware's ASIO driver.

Refresh Audio Devices
If you make changes to your audio device configuration (outside of Electric Keys), click the Refresh Audio Devices button (Figure 4-5) to see those changes reflected in the Electric Keys Audio Devices tab.

ROUTING TAB
Electric Keys produces stereo audio output. The Routings tab (Figure 4-6) provides a way for you to map the Electric Keys left/right output channels to a physical output connector on your audio hardware. For example, you might map Electric Keys's “Main Out Left/Right” output pair to analog outputs 1-2 of your MOTU Traveler audio interface, as demonstrated in Figure 4-6.

The connectors you see in the Physical Output menus (Figure 4-6) are provided by your hardware and its software driver. If you do not see the desired hardware device outputs in the menus, be sure that you have correctly installed its driver and that it is otherwise functioning properly, independently of Electric Keys. For example, can you access the hardware from the system software (Mac OS X or Windows XP) and other audio applications?

MIDI DEVICES TAB
The MIDI Devices tab lets you choose the external MIDI device you wish to use to play Electric Keys.

External MIDI sources that appear in the menu could be any of the following, depending on your hardware setup:

- A MIDI IN port on a MIDI interface that is connected to the computer
- A “virtual” MIDI cable from MIDI software running concurrently with Electric Keys (such as Digital Performer or Finale)
- A USB MIDI controller (a keyboard controller that is connected directly to the computer via a USB cable)
- An audio interface that also supplies one or more MIDI IN ports (such as the MOTU 828mk3 or Traveler)

When any of these devices are “on line” (that is, they are connected to your computer with their drivers properly installed — or in the case of MIDI software programs, they are running simultaneously with Electric Keys), they will display their available MIDI ports in the MIDI device menu in the MIDI Devices tab. Choose the desired MIDI controller source for Electric Keys from the menu.
Refresh MIDI Devices
If you make changes to your MIDI device configuration (outside of Electric Keys), click the Refresh MIDI Devices button to see those changes reflected in the Electric Keys MIDI Devices tab.

FILE MENU
The File menu for the stand-alone version of Electric Keys provides Load and Save commands. These are the same as clicking the Load combi and Save combi features, as explained in “Loading and saving combis” on page 45.
CHAPTER 5  The Electric Keys Plug-in

OVERVIEW
Electric Keys is supplied in two forms:

■ As a stand-alone application
■ As a plug-in

This chapter provides basic setup and operation instructions for each supported plug-in format, with specific explanations for a variety of popular host audio software applications. After reading the first two sections (for all users), turn to the section that applies to you.

For information about operating the stand-alone application, see chapter 4, “The Electric Keys Application” (page 15).

When operating Electric Keys as a plug-in inside a host audio program, you can open — or instantiate — Electric Keys on two or more tracks at a time. Each independently operating Electric Keys is referred to as an instance of Electric Keys. For example, you could say that it is possible to open multiple instances of Electric Keys in a project. Each one opens as a separate window and operates independently.

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Managing latency .................................... 24

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CONSERVING CPU RESOURCES
Regardless of your host application, Electric Keys provides several settings that are crucial for managing your computer's precious processing (CPU) resources. Another setting, generally referred to as hardware buffer size, can also dramatically impact Electric Keys performance. This last setting is not in Electric Keys; instead, you'll find it either in your host application or in your audio hardware driver configuration settings.

The Polyphony setting
The Polyphony setting (see “Polyphony (Poly)” on page 41) lets you control the maximum allowed number of stereo notes that can be played simultaneously by an individual part. The upper limit is 256. This setting can be adjusted separately for each part. Keep it as low as possible to conserve CPU bandwidth. For further details, see page 41.

Other ways to optimize Electric Keys performance
Here are three additional ways you can optimize Electric Keys performance:

1. The filter requires processing bandwidth, so disable the filter when not in real use by the preset. See “Filter” on page 41 to learn how to disable it.

2. Long envelope times can increase the polyphony count — without being obvious. Make sure your amplitude envelope is set as short as possible. For details, see “Amplitude Envelope” on page 42 and “Filter envelope” on page 42.

3. Electric Keys’s Effects Rack will increase the CPU load. Reverb is the most CPU-intensive effect.

Hardware buffer size
A third crucial setting for managing your system's resources is the hardware buffer size. This setting is discussed more specifically for each host application later in this chapter. In general, under Mac OS X, this setting is managed by (and found in) your host audio software. Under Windows, some host audio applications, such as SONAR, control this setting, and you'll find it in the host software. For other Windows applications, such as Cubase and Pro Tools, it is managed by the audio hardware driver and is usually found in the driver configuration software for your audio hardware. In general, settings of 256, 128 or 64 samples produce better latency performance. But lower settings place higher demand on your computer's processor.

MANAGING LATENCY
Latency is a term used to refer to the very small delay that can occur between when a MIDI note is played and the resulting Electric Keys sound is triggered. The discussion below explains how to best reduce — and in some cases completely eliminate — latency. However, regardless of which host application you use, there are two general situations that you should be aware of in which latency may be an issue:

■ During live MIDI input
■ During MIDI track playback

Live MIDI input
Live input latency can occur when you play your MIDI controller to trigger sounds “live” in Electric Keys, as demonstrated below in Figure 5-1. The most important setting to control live input latency, regardless of your host application, is the hardware buffer size on page 24. Lower hardware buffer settings (512 samples or below) make live input latency almost inaudible. The lower the setting, the more accurate live playing will feel. However, lower settings place higher demand on the computer, so if you are placing high demands on Electric Keys, you may not want to go much lower than 512 samples. If you can live with a little “sponginess” when playing live parts, you could even set the buffer size to 1024 samples. This will give you even better Electric Keys performance.
It is important to note that live input latency has no effect whatsoever on the accuracy with which the MIDI data is recorded. This is only a monitoring issue (i.e. what you hear when you play live).

**MIDI track playback**

MIDI sequencers store streams of MIDI data in their tracks. When you play back the sequence, this MIDI data is sent to Electric Keys (and other MIDI instruments) to trigger sounds. The question is: how much time elapses between when a MIDI data event is played from the track and when Electric Keys plays the sample being triggered? This period of time, if any, could be referred to as **MIDI playback latency**.

The latest versions of the host applications described in this chapter all have ways to completely eliminate MIDI playback latency for virtual instruments like Electric Keys: their MIDI track playback is extremely accurate — even sample-accurate in some cases. (Host applications either send the MIDI data a little early or cue up Electric Keys’s audio playback a little early so that it plays exactly when the MIDI note plays.) For a few host applications, however, this period of time is affected by the “Hardware buffer size” on page 24: the higher the buffer size, the longer the playback latency. The following sections explain which applications are affected by this setting with regard to MIDI track playback. As with live input latency, lower buffer settings result in more accurate playback, but at the expense of increased processing load on your computer.

**DIGITAL PERFORMER (MAC OS X)**

For Digital Performer, Electric Keys operates as a standard MAS instrument plug-in. For complete details about running instrument plug-ins in Digital Performer, refer to your DP documentation. Here is a brief overview of how to use Electric Keys in DP.

**Installation for DP**

The Electric Keys Installer places the Electric Keys plug-in in the MAS plug-ins folder:

```
/Library/Audio/Plug-ins/MAS/
```

**Calling up Electric Keys on an instrument track**

Electric Keys is accessed from an instrument track in Digital Performer’s Mixing Board. To create a new instrument track with Electric Keys already instantiated on it, choose **Project menu > Add Track > Instrument Track > Electric Keys**. To instantiate Electric Keys on an existing instrument track, just choose it from the topmost insert menu.

---

*Figure 5-1: Latency during live MIDI input. You press a key on your controller keyboard. The note gets sent to Electric Keys, which then plays a note in response to the received MIDI data. Latency is the time it takes between when you play the note and then hear it. High latency feels “spongy.” In other words, notes seem to play consistently a little late. Live input latency has no effect whatsoever on the accuracy with which the MIDI data is recorded. This is only a monitoring issue (i.e. what you hear when you play live).*
Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in Digital Performer as your computer’s processing resources will allow.

Using Electric Keys in a V-rack
If you are working with multiple sequences in a Digital Performer project document, and the sequences are making use of the same sounds in Electric Keys, consider instantiating Electric Keys in a V-rack. By doing so, you will only have to instantiate Electric Keys once, in the V-rack, instead of multiple times in each individual sequence. This is a much more highly efficient way to work, as it speeds up the time it takes for the project to open and the amount of time to switch between sequences. It also takes up much less computer memory.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Specifying audio output
Electric Keys sends its audio output to the audio output assignment of the instrument track on which it is instantiated.

MIDI I/O
MIDI I/O between Electric Keys and Digital Performer is handled by Mac OS X’s built-in MIDI services (CoreMIDI). When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to Digital Performer and appears in the output assignment menus of DP’s MIDI tracks.

To send MIDI data from a DP track to Electric Keys, assign the MIDI track to Electric Keys MIDI channel 1.

Near sample-accurate MIDI playback
In regard to “Managing latency” on page 24, DP’s MIDI track playback (the timing between MIDI tracks in Digital Performer and the audio being triggered in Electric Keys) is accurate to within one sample. In other words, Electric Keys audio will never trigger more than one sample earlier or later than the exact sample location prescribed by the MIDI data event triggering the sample. This is because both DP and Electric Keys take advantage of Mac OS X’s MIDI time-stamping features. This allows DP to accurately pre-cue MIDI data for playback. Electric Keys plays back in DP with the tightest timing possible.
**Reducing live input latency**  
In regard to “Managing latency” on page 24, you can minimize live input latency with Electric Keys by keeping Digital Performer’s Buffer Size setting as low as possible. This setting is found in the Setup menu > Configure Audio System > Configure Hardware Driver. Try values of 256 samples or lower, if your computer can handle them. Lower settings produce higher processing demands on your computer’s CPU resources.

**PRO TOOLS (MAC & WINDOWS)**  
Electric Keys operates as a standard AAX or RTAS plug-in. For complete details about running AAX or RTAS plug-ins in Pro Tools, refer to your Pro Tools documentation. Here is a brief overview of how to use Electric Keys in Pro Tools.

**Installation for Pro Tools**  
The Electric Keys installer places the Electric Keys plug-in here:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>/Library/Application Support/Digidesign/Plug-ins</td>
</tr>
<tr>
<td>Windows XP/Vista</td>
<td>\Program Files\Common Files\DAE\Plug-ins</td>
</tr>
</tbody>
</table>

**Calling up Electric Keys on an instrument track**  
Electric Keys is accessed from the insert menus of any instrument track in Pro Tools. Just choose it from the insert menu and it will open as a plug-in.

**Working with multiple instances of Electric Keys**  
You can open as many instances of Electric Keys in Pro Tools as your computer’s processing resources will allow.

**Initiating Electric Keys operation**  
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

**Specifying audio output**  
Electric Keys sends the output of all parts to the audio output assignment of the instrument track on which it is instantiated.

**MIDI I/O**  
To send MIDI data from a Pro Tools MIDI track to Electric Keys, assign the MIDI track to Electric Keys MIDI channel 1. When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to Pro Tools and appears in the output assignment menus of each Pro Tools MIDI track.

* Electrical Keys must be instantiated in the session before you’ll see it displayed in the MIDI output menus in Pro Tools.
Reducing buffer latency
In regard to “Managing latency” on page 24, you can minimize both live MIDI input latency and MIDI track playback latency by keeping your Pro Tools DAE Buffer Size setting as low as possible. Consult your Pro Tools manual for details about adjusting the DAE buffer size. Lower settings produce higher processing demands on your computer’s CPU resources.

LOGIC PRO (MAC OS X)
For Logic Pro, Electric Keys operates as a standard AU plug-in.

Installation for Logic Pro
The Electric Keys Installer places the Electric Keys AU plug-in in the Components plug-in folder:

/Library/Audio/Plug-ins/Components/

Opening Electric Keys on an instrument track
In Logic Pro, create an audio instrument track. Then open a stereo Electric Keys on the instrument track.

Figure 5-5: Opening Electric Keys on a Logic Pro instrument track (from the track settings panel in this example).

Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in Logic Pro as your computer’s processing resources will allow.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Specifying audio output
Electric Keys sends its audio output to the audio output assignment of the instrument track on which it is instantiated.

MIDI I/O
MIDI I/O between Electric Keys and Logic Pro is handled by Mac OS X’s built-in MIDI services (CoreMIDI). When you first instantiate an Electric Keys plug-in and choose a preset, Electric Keys publishes itself as a MIDI destination to Logic Pro and appears in the output assignment menus of Logic Pro’s MIDI tracks.

To send MIDI data to Electric Keys, assign the MIDI track to Electric Keys MIDI channel 1.

Electric Keys must be instantiated before you’ll see it displayed in the MIDI output menus in Logic Pro.

In the Electric Keys instrument track (or any other tracks assigned to the Electric Keys instrument object), each MIDI data event is tagged with a MIDI channel. Use Logic Pro’s list editor to assign existing notes to MIDI channel 1. Any notes in the instrument track that match Electric Key’s MIDI receive channel will play that part. The same is true for any new data recorded, or live data that is ‘patched through’ to Electric Keys from your controller keyboard. In this scenario, make sure the Electric Keys instrument track channel (in the track settings panel) is set to All or “0” (zero).

You can also route data from other MIDI tracks to Electric Keys by assigning the track to the Electric Keys audio instrument and tag all notes in the track to the necessary MIDI channel for Electric Keys.
Latency
In regard to “Managing latency” on page 24, Logic Pro’s I/O Buffer Size setting (as shown below in Figure 5-6) has no effect on either live MIDI input latency or MIDI track playback, as Logic Pro has other ways of managing them. In general, Electric Keys will perform as well as any other virtual instrument that you use in Logic Pro.

![Figure 5-6: Logic Pro’s I/O Buffer Size setting.](image)

OTHER AUDIO UNIT HOSTS (MAC OS X)
For Mac OS X audio/MIDI applications that support Audio Units (AU) plug-ins, Electric Keys operates as a standard AU plug-in. The AU host application must also support MIDI sequencing and Mac OS X’s built-in MIDI services (CoreMIDI) to send MIDI data to Electric Keys. Electric Keys sounds are triggered by MIDI data received from the host application.

Installation for AU hosts
The Electric Keys Installer places the Electric Keys AU plug-in in the Components plug-in folder:

/Library/Audio/Plug-ins/Components

Calling up Electric Keys on an audio track
Electric Keys is accessed in an Audio Unit host application in the standard fashion as an AU plug-in.

Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in your host application as your computer’s processing resources will allow.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Specifying audio output
Electric Keys sends its audio output to the audio output assignment of the instrument track on which it is instantiated.

MIDI I/O
MIDI I/O between Electric Keys and an AU plug-in host application is handled by Mac OS X’s built-in MIDI services (CoreMIDI). When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to the AU host and appears in the output assignment menus of the AU host’s MIDI tracks.

To send MIDI data from a host track to Electric Keys, assign the MIDI track to Electric Keys MIDI channel 1.

☛ Electric Keys must be instantiated in the AU host project before you’ll see it displayed in the MIDI output menus in the host.

Reducing buffer latency
In regard to “Managing latency” on page 24, the hardware buffer size may or may not impact live MIDI input latency and MIDI track playback: it depends on the host software. Consult the documentation for your host software for information about using virtual instruments.
CUBASE AND NUENDO (MAC & WINDOWS)
For Cubase or Nuendo, Electric Keys operates as a standard VST instrument (VSTi).

Installation for Cubase or Nuendo
The Electric Keys Installer places the Electric Keys VST plug-in here:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>/Library/Audio/Plug-Ins/VST</td>
</tr>
<tr>
<td>Windows XP/Vista</td>
<td>Program Files/MOTU/Vstplugins</td>
</tr>
</tbody>
</table>

If you want to install the VST in another Vstplugins folder, copy the Electric Keys VST file from this folder to the desired location.

Opening an Electric Keys VSTi
Go to the VST Instruments rack and choose Electric Keys in a slot, as shown below:

![Figure 5-7: Opening Electric Keys in the VST Instruments window.](Image)

Alternately, you can create an instrument track, as shown below:

![Figure 5-8: Creating an instrument track for Electric Keys.](Image)

Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in the VST Instruments rack as Cubase or Nuendo as your computer’s processing resources will allow.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Setting up audio outputs
Use the Device Setup window to enable VST outputs as usual. Then, add the desired output busses in the VST Connections window (Devices menu). For complete information about setting up audio outputs for VST instruments, refer to your Cubase or Nuendo manual.

After you’ve set up the desired output bus, go to the Mixing Board and assign the Electric Keys output to the desired output bus:
THE ELECTRIC KEYS PLUG-IN

MIDI I/O
MIDI I/O between Electric Keys and Cubase or Nuendo is handled by VST. When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to Cubase or Nuendo, which appears in the output assignment menus of Cubase or Nuendo’s MIDI tracks.

Electric Keys must be opened in your Cubase or Nuendo project before you’ll see it displayed in the MIDI output menus in Cubase or Nuendo.

To send MIDI data to Electric Keys, assign the MIDI track to Electric Keys.

Reducing buffer latency
In regard to “Managing latency” on page 24, Cubase and Nuendo provide ways to manage virtual instrument playback timing (consult your user guide for details). You can minimize live input latency with Electric Keys by keeping the Audio Buffer Size setting as low as possible. Try values of 256 samples or lower, if your computer can handle them. Lower settings produce higher processing demands on your computer’s CPU resources.

Under Mac OS X, the Audio Buffer setting is found in the Device Setup window under the VST Audio System list item (Figure 5-10).

Under Windows, open the Device Setup window and choose your audio hardware from the list on the left, found under VST Audio System (Figure 5-11). Click the Control Panel button to launch your audio hardware’s configuration software.
LIVE (MAC & WINDOWS)
For Ableton Live running on Mac OS X or Windows, Electric Keys operates as a standard VST instrument (VSTi). Alternatively, you may use Electric Keys as an Audio Unit (AU) instrument when running Live on Mac OS X; the process is the same as described for VST.

Installation for Live
The Electric Keys Installer places the Electric Keys VST plug-in here:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>/Library/Audio/Plug-ins/VST</td>
</tr>
<tr>
<td>Windows XP/Vista</td>
<td>Program Files/MOTU/Vstplugins</td>
</tr>
</tbody>
</table>

If you want to install the VST in another Vstplugins folder, copy the Electric Keys VST file from this folder to the desired location.

Opening an Electric Keys VSTi
Go to the Plug-in Device Browser and drag the Electric Keys VST onto a MIDI track, or into the Clip/Device Drop Area, to create a new track.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Setting up audio outputs
Use the Preferences > Audio window to enable outputs as usual. After you’ve set up the desired outputs, assign the output of the Electric Keys track to the desired bus. Choose Master to assign it to the master output bus, or choose Ext. Out and select a different output from the menu below.

MIDI I/O
When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to Live, which appears in the output assignment menus of Live’s MIDI tracks.

Electric Keys must be opened in your Live project before you’ll see it displayed in the MIDI output menus in Live.

To send MIDI data to Electric Keys, assign the MIDI track to Electric Keys.

Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in the VST Instruments rack as Live as your computer’s processing resources will allow.
Reducing buffer latency
In regard to “Managing latency” on page 24, Live provide ways to manage virtual instrument playback timing (consult your user guide for details). You can minimize live input latency with Electric Keys by keeping the Audio Buffer Size setting as low as possible. Try values of 256 samples or lower, if your computer can handle them. Lower settings produce higher processing demands on your computer’s CPU resources.

In Live, the Buffer Size setting is found in the Preferences > Audio window (Figure 5-14). On Mac OS X, you can directly change that setting. On Windows, click the Hardware Setup button to launch your audio hardware’s configuration software.

Figure 5-14: Setting the Audio Buffer Size in Live.

SONAR (WINDOWS)
For SONAR, Electric Keys operates as a standard VSTi instrument.

Installation for Sonar
The Electric Keys Installer places the Electric Keys VST plug-in here:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>/Library/Audio/Plug-Ins/VST</td>
</tr>
<tr>
<td>Windows XP/Vista</td>
<td>\Program Files\ MOTU\Vstplugins</td>
</tr>
</tbody>
</table>

If you want to install the VST in another Vstplugins folder, copy the Electric Keys VST file from this folder to the desired location.

Opening an Electric Keys VSTi
To open Electric Keys in SONAR, open it as a standard VSTi.

Using multiple instances of Electric Keys
You can open as many instances of Electric Keys in the Synth Rack as SONAR as your computer’s processing resources will allow.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Setting up audio outputs
Electric Keys audio output needs to be assigned to a SONAR audio track input. Choose Electric Keys from an audio track input menu.

MIDI I/O
When you first instantiate an Electric Keys plug-in, it publishes itself as a MIDI destination to the VSTi host, appearing in the output assignment menus of SONAR or other VSTi host’s MIDI tracks.

Electric Keys must be opened in your SONAR project before you’ll see its MIDI channels displayed in the MIDI output menus in the host application.
To send MIDI data from a MIDI track to an Electric Keys part, assign the MIDI track to any Electric Keys MIDI channel 1.

Reducing buffer latency
In regard to “Managing latency” on page 24, SONAR provides ways to manage virtual instrument playback timing (consult your user guide for details). You can minimize live input latency with Electric Keys by keeping the Buffer Size setting as low as possible. This setting is found in the Audio Options window under the General tab, as shown below in Figure 5-15. Lower settings produce higher processing demands on your computer’s CPU resources.

![Figure 5-15: Setting the Audio Buffer Size in SONAR.](image)

OTHER VST HOSTS (MAC & WINDOWS)
For other VST hosts running on Mac OS X or Windows, Electric Keys operates as a standard VST instrument (VSTi).

Installation for Your VST host
The Electric Keys Installer places the Electric Keys VST plug-in here:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>/Library/Audio/Plug-Ins/VST</td>
</tr>
<tr>
<td>Windows XP/Vista</td>
<td>\Program Files\MOTU\Vstplugins</td>
</tr>
</tbody>
</table>

You can copy the Electric Keys VST file from the directory listed above to the Vstplugins folder of your choice after installation completes. Or you can point your host application to the directory listed above.

Calling up Electric Keys on an audio track
Electric Keys is accessed in a VST host application in the standard fashion as an VST plug-in.

Working with multiple instances of Electric Keys
You can open as many instances of Electric Keys in your host application as your computer’s processing resources will allow.

Initiating Electric Keys operation
Before you can begin using Electric Keys, you need to choose a preset for at least one part. For details, see chapter 3, “QuickStart Guide” (page 13).

Specifying audio output
Electric Keys sends its audio output to the audio output assignment of the instrument track on which it is instantiated.

MIDI I/O
When you first instantiate an Electric Keys plug-in, Electric Keys publishes itself as a MIDI destination to the VST host and appears in the output assignment menus of the VST host’s MIDI tracks.

To send MIDI data from a host track to Electric Keys, assign the MIDI track to Electric Keys MIDI channel 1.

☛ Electric Keys must be instantiated in the VST host project before you’ll see it displayed in the MIDI output menus in the host.

Reducing buffer latency
In regard to “Managing latency” on page 24, the hardware buffer size may or may not impact live MIDI input latency and MIDI track playback: it
depends on the host software. Consult the
documentation for your host software for
information about using virtual instruments.
CHAPTER 6 The Electric Keys Window

OVERVIEW
The Electric Keys window provides simple controls, as shown below in Figure 6-1. The appearance of the controls changes, depending on the current preset loaded, because each of the eleven sound banks has its own look and feel — or “skin”. See chapter 8, “Soundbanks” (page 57) to review each sound bank and to see what it looks like. The function of the controls, however, is the same for all skins, as explained in this chapter.

Figure 6-1: The Electric Keys window.

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CONVENTIONS AND SHORTCUTS
Electric Keys provides the following user interface conventions and shortcuts.

Scroll wheel support
Electric Keys supports the scroll wheel on your mouse, where applicable.

Right-clicking
There is extensive support for right-clicking in Electric Keys. Except where noted, Mac users can use control-clicking as an alternative for right-clicking.

Option/alt key
In this manual, the convention option/alt is used for any operation or shortcut that involves the option key on the Mac or the alt key on a PC.

Shortcuts for changing Electric Keys settings
Here are several shortcuts for changing settings for Electric Keys’s controls, knobs, sliders and so on:

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return to default</td>
<td>option/alt-click (Mac)</td>
</tr>
<tr>
<td>Enter numeric value</td>
<td>double-click</td>
</tr>
<tr>
<td>Fine adjustment</td>
<td>hold command (Mac) / control (Win) while dragging parameter</td>
</tr>
<tr>
<td>Relative adjustment</td>
<td>hold shift while dragging parameter</td>
</tr>
<tr>
<td>Automate/modulate</td>
<td>right-click</td>
</tr>
</tbody>
</table>

PART SECTION
Electric Keys provides two different parts (Figure 6-1). Each part can load a separate keyboard instrument, allowing you to layer two sounds together (Figure 6-2). Each part has its own controls for volume, pan and so on, so that you can create exactly the balanced sound you want.

Figure 6-2: The Part section.

Part controls
Each part has the following controls:

Figure 6-3: An Electric Keys part.

Master settings

The Master Volume and Master Tune (Figure 6-1) affect the entire plug-in as a whole (both parts).

Master volume
The Volume setting in the Master section (Figure 6-1) serves as a overall volume setting for the entire Electric Keys plug-in. It is applied as a final, additional gain stage for both Electric Keys parts.
**Next/previous preset**  
Click the Next/Previous Preset buttons (Figure 6-3) to load the next or previous preset (keyboard instrument).

**Part volume, pan and mute**  
The Volume, Pan and Mute controls (Figure 6-3) operate independently for each of the two parts. You can double-click the Volume or Pan knobs to type in an exact value.

![Figure 6-5: Double-click to set volume and pan numerically.](image)

Volume range is from -144 to +6 dB.

When you mute a part, it no longer expends system resources.

Volume and pan for each part are saved with combis and the host application session document.

Both volume and pan can be automated with the standard MIDI controllers #7 (volume) and #10 (pan), although you can use any controller you wish, as explained in “MIDI automation” on page 44.

**Clicking a part to view its settings**  
All settings in the Electric Keys window except for the master volume and tune (Figure 6-1) control the currently selected part. To select a part, click its name so that it is displayed in bold text, as demonstrated in Figure 6-2 on page 38.

**Preset browser**  
Double-click the word Empty or the current preset (Figure 6-3) to open the Preset browser. The Preset browser (Figure 6-4) lets you choose any preset (instrument) in the Electric Keys library. Each part can be loaded with its own unique preset. You can also load the same preset into both parts, if you would like to create panned stereo or chorused effects, for example.

![Figure 6-4: Double-click to access the preset browser.](image)
**Browser columns**
Presets are organized into eleven instrument categories — or banks — as shown in the left-most column in Figure 6-4. When you click a bank, its sub-categories are listed in the next column to the right, and so on, if there are further sub-categories. The final column on the right displays the actual presets.

**Choosing a preset**
To choose (load) a preset, double-click it. Or click it once to select it and click OK. To clear a preset so that the part is empty, click the *Empty* button. To leave the current preset setting unchanged, click *Cancel*.

Tip for Mac OS X users: you can use the arrow keys on your computer keyboard to navigate through the preset browser and select items in the same fashion as the Mac OS file browser.

**Loading Electric Keys presets in MachFive**
You can load Electric Keys presets in MachFive (version 2.03 or later). Electric Keys presets operate just like MachFive factory presets.

You must have a valid Electric Keys iLok authorization to load a preset in MachFive.

**Browsing with hierarchical menus**
Press on the word *Empty* or the current preset name (Figure 6-3) to quickly browse Electric Keys presets using a convenient hierarchical menu:

![Figure 6-6: Press on a part name to browse presets with hierarchical menus.](image)

Choose the *Empty* command at the very top of the menu to remove the currently loaded preset.

**EXPERT SETTINGS**
Click the *Expert Settings* (Figure 6-3) button to access the Expert settings (Figure 6-7). These settings provide advanced control for the preset loaded into each part.

![Figure 6-7: Expert settings.](image)
Polyphony (Poly)
The Polyphony setting (Figure 6-7) determines how many stereo notes the currently selected part can play simultaneously. For example, a setting of 12 lets you play 12 stereo notes. The maximum settings is 256 stereo notes (per part). Note that this is a per part setting, and it controls the currently selected part.

Caution: higher polyphony settings demand more of your host computer's processing power. For example, if you set the polyphony to 64 voices and played only 12 notes, the Electric Keys would require much more computer processing power than it would when playing those same 12 notes with a polyphony setting of 12. Try to keep the polyphony setting as low as possible — only use what you know you'll need for the part. This setting is one of the most significant ways of optimizing Electric Keys CPU usage and managing your computer's processing resources.

Pitch settings
The pitch settings (Figure 6-7) let you modify the pitch reference for the currently selected part.

Octave
The Octave setting (Figure 6-7) transposes incoming MIDI notes for the part (or preset) in increments of one octave.

Semi-tone and Fine tune
The Semitone and Fine-Tune settings (Figure 6-7) transpose the part in semitones and cents, respectively. Semi-tone is MIDI transposition; Fine-tune is audio transposition. The Fine Tune range is from -100 to +100 cents (one semitone).

Bend
The Bend setting (Figure 6-7) controls the pitch bend range for the part. The range is from zero to 24 semitones (two octaves).

Portamento
Enable polyphonic Portamento (Figure 6-7) to make the currently selected part play with polyphonic portamento, where each new note played “bends into” the new note from the root pitch of the previously played note. You can control the speed of the “bend” (or “glide”) with the time control (below).

Time (portamento)
The Time knob (Figure 6-7) controls the length of the portamento transition between notes in Portamento mode. The range is from 0.00 ms (milliseconds) to 10.00 seconds.

Pan Mod (Pan Modulation)
Choose the desired source for modulating pan from the Pan Mod menu (Figure 6-7), and adjust the modulation Depth with the knob. Modulation depth is a bipolar parameter whose value ranges from -1.00 to +1.00. Negative values invert the modulation.

Filter
The Filter (Figure 6-7) provides several filter types for shaping the sound of the instrument.

Filter Type
Choose the type of filter you wish to apply from the Filter menu (Figure 6-7). The Electric Keys over a dozen filter types to choose from.

Cutoff (Cutoff Frequency)
Turn the Cutoff knob (Figure 6-7) to modify the cutoff frequency of the filter. The cutoff frequency can be automated by sending a MIDI controller to the Electric Keys, as explained in “MIDI automation” on page 44.

Reso (Resonance)
Resonance (Figure 6-7) emphasizes the cutoff frequency. Higher resonance values can significantly boost gain, so you may need to attenuate the volume of the instrument (part) to achieve a clean sound. Resonance can be
automated by sending a MIDI controller to the Electric Keys, as explained in “MIDI automation” on page 44.

Env (Envelope Depth)
The Envelope Depth knob (Figure 6-7) is like a valve that governs the amount of envelope control signal you want to apply to the filter. Positive envelope depth values open up the filter relative to the cutoff frequency; negative values close (invert) it. A value of +1.00 applies the envelope in full, and -1.00 applies the envelope in full, but completely inverted. Also see “Filter envelope” on page 42.

Amplitude Envelope
The amplitude envelope (Amp Env. in Figure 6-7) lets you control the attack (A), hold (H), decay (D), sustain (S) and release (R) characteristics of the preset loaded into the currently selected part.

The attack, hold, decay and release parameters are time-based parameters (a length of time), whereas the sustain parameter is a level (volume) parameter. When a note is played, the envelope generator begins to rise to its full level at the rate set by the attack parameter. Upon reaching peak attack level, it begins to hold for as long as the hold parameter. After the hold stage is over, the signal begins to fall in volume at the rate set by the decay parameter down to the volume level set by the sustain parameter. The envelope remains at the sustain level as long as the note sustains. When the note stops, level returns to zero at the rate set by the release parameter.

Below is a summary:

<table>
<thead>
<tr>
<th>Envelope stage</th>
<th>unit</th>
<th>range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attack (A)</td>
<td>msec</td>
<td>0.00 msec to 10 seconds</td>
</tr>
<tr>
<td>Hold (H)</td>
<td>msec</td>
<td>0.00 msec to 10 seconds</td>
</tr>
<tr>
<td>Decay (D)</td>
<td>msec</td>
<td>1.00 msec to 45 seconds</td>
</tr>
<tr>
<td>Sustain (S)</td>
<td>percent</td>
<td>zero to 1 (full scale)</td>
</tr>
<tr>
<td>Release (R)</td>
<td>msec</td>
<td>1.00 msec to 20 seconds</td>
</tr>
</tbody>
</table>

Velocity
Velocity (Vel in Figure 6-7) allows you to control the amplitude envelope depth with MIDI note-on velocity. This control has a range from 0 to +1, which produces maximum control via on-velocity.

Filter envelope
The Electric Keys provides a separate envelope for filter modulation. Think of the filter envelope (Figure 6-7) as a hard-wired control signal for the filter cutoff frequency. It provides the following conventional five-stage controls:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Name</th>
<th>Unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Attack time</td>
<td>Milliseconds</td>
</tr>
<tr>
<td>H</td>
<td>Hold time</td>
<td>Milliseconds</td>
</tr>
<tr>
<td>D</td>
<td>Decay time</td>
<td>Milliseconds</td>
</tr>
<tr>
<td>S</td>
<td>Sustain level</td>
<td>Percent of filter cutoff frequency</td>
</tr>
<tr>
<td>R</td>
<td>Release time</td>
<td>Milliseconds</td>
</tr>
</tbody>
</table>

Velocity
Velocity (Vel in Figure 6-7) allows you to control the filter envelope depth with MIDI note-on velocity. This control has a range from 0 to +1, which produces maximum control via on-velocity.

Key Range
Check the Key Range (Figure 6-7) box if you would like to restrict the instrument to a specific range of notes. Enter the desired note range in the note range field provided.
**TONE CONTROLS**

The Tone Controls section of the Electric Keys window (Figure 6-8) provides customary bass, middle and treble frequency tone controls for the currently selected part (see “Clicking a part to view its settings” on page 39). The Drive knob provides classic “drive”, an amplification of the output of the instrument that produces distortion and “grunge”.

**TREMOLO**

Flip the Tremolo switch (Figure 6-9) to On for standard tremolo (amplitude modulation) or Pan for pan modulation.

**Depth and speed**

Depth (Figure 6-9) controls how much tremolo you hear. If mod wheel is assigned to control depth, the depth knob setting becomes the maximum value for when the mod wheel is all the way up. For example, if the Depth knob is set to 0.50, then moving the mod wheel all the way up sets the depth to 0.50. Speed (Figure 6-9) controls the speed of the LFO oscillation in hertz (cycles per second) from zero to 20.00 Hz.

**Sync**

When the Sync option (Figure 6-9) is enabled, tremolo follows the tempo of the host software (when Electric Keys is operating as a plug-in) or the tempo set by the BPM setting in the Effects Rack (when Electric Keys is operating as a stand-alone application). The Speed setting (above) changes from hertz to fractions of a beat. For example, “1/4” means one quarter of a beat.

For more information about tempo sync, see “Tempo sync” on page 51.

**VELOCITY CURVE**

Click the desired note-on velocity response curve (Figure 6-10).

The flat line option plays all struck notes at the same velocity. By default, the velocity value is 127, but the Flat velocity curve can be set to any value from 1-127. All notes played by the part will then be played at the note-on velocity that you specify. To edit this value, double-click the Flat velocity button. You can then type in a velocity from your computer keyboard, or you can play a note on your MIDI controller. Click anywhere outside of this text box, or press Enter, to confirm the value.

Choose the linear curve for a 1-to-1 response curve (all notes are played at the velocity at which the key is struck). This is the normal response for MIDI data.
The exponential curve produces medium velocity values that result in a lower volume than in linear mode. This curve is well-suited for soft keyboards that send high velocity values with a light touch.

The logarithmic curve produces higher velocity values that result in a higher volume than linear mode. This curve is good for piano-action keyboards that need hard hitting to send high velocity values.

**EFFECTS RACK BUTTON**

The Effects Rack button (Figure 6-1 on page 37) opens the separate Effects Rack window. For complete details, see chapter 7, “The Effects Rack” (page 49). The appearance of the Effects Rack button may change, depending which instrument you currently have loaded and its associated “skin” (appearance). For example, in Figure 6-1 it appears as a headphone jack, but it may appear as a button, an LED or other front-panel object.

**THE KEYBOARD**

The keys on the keyboard (Figure 6-1 on page 37) along the bottom of the Electric Keys window flash when the corresponding MIDI note is received by Electric Keys. You can use this to see what notes are playing and for MIDI troubleshooting. You can also click the keys to play notes with the mouse.

**MIDI AUTOMATION**

You can send MIDI continuous controller data to any Electric Keys knob or slider to control it remotely from your MIDI controller or automate it from recorded controller data in a MIDI track in your audio sequencer.

To assign a MIDI controller to a knob or slider, control-click it, or if you have a right mouse button, right-click it. A window appears:

Click the **MIDI Learn** box and send the desired controller from your keyboard. As you move it, the controller data type is accepted and the window is dismissed.

To remove a controller, control-click or right-click the control and choose the **Disabled** option (Figure 6-11).

**Automation is assigned per part**

When you assign a MIDI controller as described above, it is connected to the control for the currently selected part (see “Clicking a part to view its settings” on page 39). This gives you the maximum amount of flexibility, allowing you to control both parts simultaneously.

**MIDI automation examples**

Here are a few examples of how you could use MIDI automation to control the Electric Keys.

**Controlling the volume of each instrument**

To control the volume of each instrument individually, perhaps from a MIDI controller device with faders on it, click the name of an instrument to highlight it (Figure 6-2 on page 38), control-click or right-click its volume knob (Figure 6-8 on page 43) and then move the desired fader on your controller to complete the assignment (Figure 6-11).

Repeat this procedure for each instrument.
Controlling the timbre of an instrument

MIDI automation is an ideal way to have hands-on, real-time dynamic control over the timbre of an instrument. Here are just a few examples:

- Control the rate and depth of tremolo to quickly and easily produce realistic tremolo or Leslie effects
- Control the attack parameter (in the AHDSR amplitude section) to achieve dynamic control of an instrument's articulations in real time.

Default MIDI controllers

By default, MIDI controller numbers 7, 10 and 11 are assigned to part volume, pan and expression. 71, 74 and 75 are assigned to filter resonance, filter cutoff and drive.

MIDI MODULATION

*MIDI modulation* is an extension of the Electric Keys's MIDI automation capabilities discussed in the previous section. MIDI Modulation works as a real time control that modulates a parameter's value without changing the preset setting itself. It can either add to or subtract from the parameter's current value, while at the same time preserving the preset's original value for the parameter.

This feature is available for non-voice-specific parameters, such as volume, pan and filter cutoff frequency. Option/alt-right click (or option-control-click with a single-button Mac mouse) to bring up the MIDI Modulation window.

The MIDI Modulation window (Figure 6-12) looks very much like the MIDI Control window (Figure 6-11 on page 44), except this window also has a slider. For a negative modulation value, drag the slider to the left; for a positive value, drag the slider to the right. Now send the desired controller for your keyboard, and the window is dismissed.

This is useful to provide an extra degree of control and variance over the details of your Electric Keys sounds. For example, try using MIDI Modulation to modify the filter cut-off frequency. You can also use it to create crossfades between different controls. For example, you could assign both parts to respond to the same controller: modulate volume on one part with Expression (CC 11) and drag the slider to the right, and modulate volume on the other part with Expression and drag the slider to the left. The result is that you could crossfade between the two parts by moving your expression controller.

LOADING AND SAVING COMBIS

A *combi* is like a “snapshot” of the Electric Keys window. It saves the entire window in its current state, including all presets currently loaded, and the current Effects Rack settings, if any. Combis are a powerful and convenient way to transfer Electric Keys settings to other projects, clients, colleagues, and even other host applications. You can even share combis across computer platforms.
Figure 6-13: The controls for managing combis are located just below the two parts.

Combis can be saved anywhere you wish on your hard drive.

**Saving a combi**

To save a combi:

1. Set up the Electric Keys window the way you would like to save it.
2. Click the **Save** button (Figure 6-13).
3. Type in a name for the combi and save it in the usual fashion anywhere you wish.

**Loading a combi**

To load a combi from disk:

1. Click the **Load** button (Figure 6-13).
2. Use the standard navigation features of your computer to locate the saved combi on your hard drive and open it.

The existing settings in the Electric Keys window are completely replaced by the loaded combi, so if you care about them, save them as their own combi before loading another combi.

**Clearing a Combi**

The **Clear Combi** button (Figure 6-13) quickly clears all of the currently loaded presets (sounds) from the Part section. It also clears the current Effects Rack setting and turns off the Effects Rack altogether. This feature is meant to provide you with a convenient way to “start from scratch” with one click.

**Viewing the name of the combi that was last loaded**

To view the name of the combi that was last loaded, click the **Combi** button (Figure 6-13). Click again to return to the current preset name. When viewing combi names, there are next/previous combi buttons that let you browse recently used combis.

**Default combi**

The stand-alone version of the Electric Keys (chapter 4, “The Electric Keys Application” (page 15)) supports a default combi feature which is designed to automatically load your preferred combi as soon as the application is launched. To use this feature:

1. Create a combi as usual.
2. Name the combi *Default.ekeys*.
3. Save the combi (or an alias of the combi) in this folder:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac</td>
<td>/Library/Application Support/MOTU/Electric Keys/</td>
</tr>
<tr>
<td>Windows</td>
<td>%Program files%\MOTU\Electric Keys</td>
</tr>
</tbody>
</table>

This feature is particularly useful if you have a standard template of instruments, and you would like that template to be loaded and ready as soon as the stand-alone application is opened.

**Loading Electric Keys combis in MachFive**

You can load an Electric Keys combi in MachFive (version 2.03 or later).

- You must have a valid Electric Keys iLok authorization to load a combi in MachFive.
MachFive sees the combi as a performance, so follow the procedures in your MachFive manual for loading and managing performances.

Any settings on the front panel of Electric Keys, such as tone controls and tremolo, are loaded as part settings or effects. Any effects from the Effects Rack that are included in the combi are loaded as master effects.

Electric Keys expert settings are loaded into MachFive as preset settings, except for key range, which loads into MachFive’s Expert Mode settings.

**DISK STREAMING PREFERENCES**

Click the MOTU logo in the upper left-hand corner of the Electric Keys window (Figure 6-1 on page 37) to open the disk streaming preferences shown below (Figure 6-14):

![Figure 6-14: Disk streaming preferences.](image)

**About disk streaming**

Disk streaming allows Electric Keys to load very large presets (that consist of a large amount of audio sample data), even if the samples are larger than the amount of free memory (RAM) available in your computer. Rather than loading the entire sample set into RAM, Electric Keys reads (streams) the sample from the hard drive as the preset is being played. This allows Electric Keys to play presets that add up to a gigabyte (GB) of sample data or more.

**Memory requirements and recommendations**

Disk streaming is not a “cure all” for running Electric Keys on a computer that has lower amounts of memory installed. The minimum RAM required to run Electric Keys is still 1 GB, and it is still strongly recommended that you install at least 2 to 4 GB. Optimum performance will be achieved with 4 GB of RAM or more. The streaming feature allows you to play much larger samples, but it doesn’t necessarily squeeze more samples into less RAM.

**Disk performance**

The disk streaming performance can be heavily affected by the speed of the hard drive on which the Electric Keys soundbank files (.ufs) reside. For streaming, the faster the hard drive is, the better. You should use at least a 7200RPM drive.

If you are using Electric Keys in a host application such as Digital Performer, Pro Tools or Logic, and you are also recording and playing disk tracks in the host software, you should strongly consider placing the soundbank files on their own, separate hard drive (or across several drives). If your host software is recording and playing audio files while Electric Keys is attempting to stream samples from the same hard drive, the hard drive can quickly be pushed beyond its performance limits. If the disk tracks are playing from one hard drive, and Electric Keys is streaming from another separate drive, you are much less likely to encounter disk performance issues.

**Streaming settings**

There are two streaming preferences that allow you to optimize streaming performance for your computer (Figure 6-14).

**Preload Time**

The Preload Time (Figure 6-14) is the amount of each sample pre-loaded into RAM when the preset is first loaded.
Lower values require less RAM overall, but increase the load on the host computer processor and the hard drive. Don’t use very small values because this causes many small samples to be streamed unnecessarily. The result is unnecessary strain on your computer.

If you would like to place a limit on the minimum size of the samples to be streamed, use this setting. Samples that are smaller than the *Sample preload size* will not be streamed.

In situations where a preset consists of a large number of very large samples, and you have lots of extra RAM installed in your computer, a higher sample preload size can actually allow you to play more parts because the processor and hard drive strain will be lower.

**Ring Buffer Size**
The *Ring Buffer Size* (Figure 6-14) is the number of samples reserved for each voice after streaming has begun and the sample is being played. Lower values can sometimes help eliminate dropouts and similar artifacts, but lower values also increase the load on the host computer processor and the hard drive. Higher values reduce processor strain, but require more memory.
The Electric Keys Effects Rack provides eight included DSP effects (Figure 7-1). Each effect is described briefly in this appendix, along with a list of factory presets for each effect. You can also create as many of your own user presets as you wish.
OPENING THE EFFECTS RACK
To open the Effects Rack, click the Effects button (Figure 6-1 on page 37) in the main Electric Keys window, below the Preset Browser.

BROWSING, LOADING AND SAVING EFFECTS PRESETS
Use the top section of the Effects Rack (Figure 7-2) to browse, load and save effect presets.

The effects preset browser
Click Load (Figure 7-2) to open the multi-column effects browser (Figure 7-3):

Click the Factory tab (Figure 7-3) to browse supplied effect presets, which are divided into two categories in the left-hand column: Multi effect presets and Single effect presets. Multi effects consist of multiple effects used as an effects chain. The effects used in each preset depend on the preset itself. Most factory-supplied multi-effect presets employ 3 or 4 effects at most; effects that are not used in the multi are disabled when you load the multi.

Single effect presets load a single effect.

Click the User tab (Figure 7-3) to browse any user multi effect presets that you have saved using the Save button.

Next/previous preset buttons
Click the Next/Previous Preset buttons (Figure 7-2) to load the next or previous multi, single or user preset, as determined by the preset currently loaded. These buttons simply go to the next or previous preset as listed in the multi-column browser (Figure 7-3).

Clearing the Effects Rack window settings
To clear all of the current settings in the Effects Rack and disable all current effects, click the Empty button at the bottom of the effects preset browser (Figure 7-4):

Click Empty in the effects preset browser to clear the Effects Rack and disable all effects.

Figure 7-2: Browsing, saving and loading effects presets.
Saving a multi effect preset
Click the Save button (Figure 7-2) to save all current settings in the Effects Rack window as a multi-effect preset. The user effects browser appears, with a name field at the bottom where you can type in the desired name and then click OK. Your newly saved preset appears in the user effect preset browser.

GLOBAL BYPASS
Click the Global Bypass button (Figure 7-2) to bypass the entire Effects Rack.

TEMPO SYNC
Some effects have parameters, such as delay taps, that can be synced to Electric Keys’s tempo or the tempo of your plug-in host. To do so, enable the sync button provided, as demonstrated in Figure 7-12 for the Simple Delay effect. When the sync button is engaged, the time line is specified in note values, rather than in seconds or milliseconds (msec).

Sync to host
Enable the Sync to Host button (Figure 7-2) to make synced effects (and tremolo speed) follow the tempo of your plug-in host software. Synced parameters are set in terms of number of beats (or fractions of a beat). The BPM setting becomes disabled (it cannot be directly modified) and instead displays the current tempo setting of the host software. Use the tempo controls in the host software to control overall tempo of both Electric Keys and the host software tracks.

The Sync to Host button has no effect in the stand-alone version of Electric Keys, as there is no host to sync to. In stand-alone operation, use the tempo setting (Figure 7-2) to specify the tempo.

EFFECTS RACK SIGNAL FLOW
The Effects Rack supplies the following effects:

- Amp Simulator
- Analog Filter
- Phaser
- Flanger
- Chorus
- Delay
- Reverb
- UVInyl™

Each effect can be independently enabled or disabled. If you enable two or more effects (to create an effects chain), the Electric Keys output signal runs through any enabled effects in the order they are listed above. Graphically on screen, signal flow runs roughly top to bottom, left to right (with the exception of UVInyl).

Enabling or disabling each effect
Each effect has an enable/disable button that lets you turn it on or off.
EFFECTS AUTOMATION
Effects settings can be automated using MIDI Learn, as explained in “MIDI automation” on page 44 and “MIDI modulation” on page 45.

AMP SIMULATOR
The Amp Simulator effect (Figure 7-6) models the sound of fourteen popular guitar cabinets. Turn the Model knob to choose the desired cabinet. Turn the Mic Type knob to choose among three mic designs: Dynamic, Condenser and Ribbon. Use the Split and Spread commands to adjust the stereo mic modeling, where split controls the left/right mix and spread controls the distance between the stereo mics.

Amp Simulator presets
- Bass Deluxe
- Cheap Radio
- Chelsea
- Chipped Glass
- Classic
- Combo
- Electric Shock
- Jazz
- Leicester Combo
- Lincoln Standard
- Metal Bowl
- Northbridge
- Sweep
- Tin Can
- Vintage

ANALOG FILTER
The Analog Filter is modeled after the filter section of a very popular American synth.

Analog Filter presets
- BP
- HP
- LP

Figure 7-6: Guitar Amp Simulator.
Figure 7-7: Analog Filter.
PHASER
This Cross Phaser is essentially an enhanced double phaser with stereo cross-feedback in between the 12 stages of the effect. You can set the minimum and maximum sound frequencies on which the phaser will operate. You can also set the speed — syncable to your host application's tempo — of the feedback and the depth of this 12-stage phaser.

Figure 7-8: Phaser.

Phaser presets

- Low Phase
- Stereo Phase
- Synchro
- Whistle

FLANGER
The flanger can give you a varied palette of sounds, from smooth to deadly to synced and fast flange.

Figure 7-9: Flanger.

Flanger presets

- Boolart
- Cool Flange
- Extreme
CHORUS
This is a four-stage stereo chorus with straightforward Speed, Width and Intensity controls.

UVINYL
UVInyl makes audio sound like it is being played from a vinyl record on a turntable. Settings include (needle) Wear amount, Noise amount and Scratch amount.

Chorus presets
- Analog Feel
- Chorus Deluxe
- Make it Big
- My Pedal
- Nice and Slow
**DELAY**

This is a basic all-purpose delay. The delay time can be entered in seconds or synchronized to the host application’s tempo. Use cutoff to add a low-pass or high-pass filter to the delay feedback. As you turn the cutoff knob, the pop-up value indicator will switch between the HP and LP filter. Spread controls the stereo spread of the delay taps.

**REVERBERATION**

This is a musically useful reverberation effect that includes a filter so that you can control which part of the signal gets affected (for example, you can exclude muddy bass). The filter, combined with the dampening parameter, will keep your reverberated sound fresh and clean.

---

**Delay presets**

Before Eight
Doubling
Eight Miles
Mono for Stereo
Sixteen
Springly

**Simple Reverb presets**

Background Verb
Big Cathedral
Big Room
Canyon Percussion
Concert Hall
Jazz Club
Large Hall
Opera Cosmic
Piano Room
Short Verb
Warm Quartet Room
Warm Room
MULTI-EFFECTS PRESETS

**Chorused**
- Alicia C
- Ensemble Wet
- Light Chorus
- Vintage Cab
- Warmy

**Filter & Vinyl**
- 1960 Phono
- Maxi Vinyl
- Wah Wheel
- Wah Wheel Dry

**Flange and Phase**
- AMPPhase
- Flangotronic
- Phase Room
- Phary Flangy

**Natural**
- Colour of sound
- In da Cave
- Large Delay Room
- Small and Warm

**UnNatural**
- AMPire State
- Space 8
- Wheel D-tronic

---

**Loading Electric Keys multi-effect presets in MachFive**

If you have MachFive (version 2.03 or later) installed in your system, the Electric Keys multi-effects presets shown to the left will be available to MachFive. This means you can load them and use them in MachFive, as well as in Electric Keys. You can find them in the **User** tab of the MachFive multi-effects browser. The same is true for any user multi-effects that you create in Electric Keys.
CHAPTER 8  Soundbanks

OVERVIEW
Electric Keys includes five dual-layer, 8GB soundbank DVDs that contains approximately 40 GB of world-class sampled electric keyboard instruments. Most instruments are recorded at 96 kHz.

Sounds are organized by instrument category into twelve sound banks, which are supplied on the five DVDs. For your convenience, each soundbank is supplied in the form of an encapsulated “ufs” (universal file system) file, which you should copy to your hard drive(s). This gives you the flexibility to only install the soundbanks you intend to use.

After the sounds are installed on your hard drive, you can then browse each UFS (soundbank) in Electric Keys’s File Browser, as explained in “Preset browser” on page 39. Each bank has its own authentic look (“skin”).

This chapter provides an overview of each soundbank. For a complete list of presets, see Appendix A, “Presets” page (67).

Classic Electric Organs ........................................ 58
Classic Electric Pianos ................................. 59
Electro-mechanical Keyboards ..................... 60
Funky Clavs ................................................... 60
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Figure 8-1: The twelve soundbanks in the preset browser.
CLASSIC ELECTRIC ORGANS

1960 (Tube) Electric Organ
This early Dutch electric organ had two designs: tubes and transistors. Instead of the drawbars you often find in organs, this instrument had five switches to produce harmonics, along with seventeen pre-programmed chords. It also has vibrato and a spring reverb.

Used by:
- Robert Wyatt
- The cabaret artist Hans D. Hüsch
- Danny Dziuk

Doors Electric Organ
This transistor-based combo organ was initially designed for touring musicians, replacing heavier organs. It came in two versions: British (this preset) and Italian (the Italian Doors preset). It works with six drawbars and includes a simple vibrato toggled by a switch.

The presets for this instrument offer a large selection of drawbar settings. Each preset name includes its drawbar settings, arranged as six digits, each with a setting from 0 to 8.

Used by:
- Ray Manzarek (The Doors)
- Alan Price (The Animals)
- The Dave Clark Five
- The Tornados
- Manfred Mann
- The Zombies

HaM100
Lighter than his big brother, the great B – Electric Organ, this model shares similar construction (same vibrato, perc, starter and motor). Instead of drawbars, it features flip tabs to get presets.

The presets for this instrument offer a selection of drawbar settings. Each preset name includes its drawbar settings, arranged as eight digits, each with a setting from 0 to 8.

Used by:
- Pink Floyd
- Jean Michel Jarre

Italian Combo
This combo organ features two series of tabs: eight white tabs with pipe length and genre (Flute 4, Strings 16, etc.) and three green tabs with simple 4 – 8 – 16 presets that can be modulated with the knee lever to get an even “cheesier” sound.

Used by:
- Ray Manzarek (The Doors)
- Rick Wright (Pink Floyd)
- Michael MacNeil (Simple Minds)
- Elvis Costello
Italian Doors
This is an Italian version of the Doors Electric Organ. The presets for this instrument offer a selection of drawbar settings. Each preset name includes its drawbar settings, arranged as six digits, each with a setting from 0 to 8.

Italian ElkOrgan
This is a nice and cheesy electric organ with a strong personality.

Japanese Electric Organ
Impersonating the B – Electric Organ, this instrument works with drawbars along with three presets. It includes a two-band equalizer, drive, and Leslie. A noticeable key-click effect completes the unique personality of this keyboard.

CLASSIC ELECTRIC PIANOS

Deeply multi-sampled on each key with up to 10 velocity layers and release samples on every note, the Classic Electric Pianos capture the beauty and the warmness of the originals.

These electric pianos will sound very familiar and have been used on countless hit recordings, such as:

- “Riders on the Storm” — The Doors
- “Just the Way You Are” — Billy Joel
- “Still Crazy After All These Years” — Paul Simon
- “Babe” — Styx
- “You Are The Sunshine Of My Life” — Stevie Wonder
- “Peg” — Steely Dan
- The intro to “Sheep” — Pink Floyd
- “Get Back” — Beatles (with Billy Preston)
- “Spain” — Chick Corea
- “Watermelon Man” — Herbie Hancock
- “A Remark You Made” — Weather Report
And many more...

EPiano mk1 — 1975
With principles derived from both the celesta and electric guitar, the rubber-tipped hammers of this keyboard instrument strike pegs of metal (tines), transmitting the vibration to the tone bars suspended over each tine, thus creating a mellow ring. This original model was designed for on-stage use.

EPiano mk2 — 1979
This model was developed as a “suitcase” version of the mk1 intended primarily for studio use.

EPiano mk2 — 1981
Another addition to this widely popular keyboard family, this model was made with plastic instead of wooden keys, and it also introduced different sound-producing mechanism.

EPiano mk5 — 1984
Latter, lighter version, back to wooden keys together with a modification to the dampers to get a more bell-like tone.
ELECTRO-MECHANICAL KEYBOARDS

Clavibes
This keyboard operates almost like a harpsichord, using small rubber plectra to pluck small steel blades. It features a vibrato and a few filters named after instrument names (metallophone, xylophone, music box, etc.)

Guitarkeys
The blades in this reed instrument are constructed to allow chords. There is also a lever to activate the plectrum mechanism.

Piano-Electro
This German electric piano, initially designed for education, operates quite similarly to the Classic Electric Piano, along with vibrating reeds.

Used by:
- Led Zeppelin

Planet M
The sound of this keyboard comes from metal reeds plucked by foam pads. The vibration is then transmitted via electrostatic pickups to an amplifier.

Used by:
- The Zombies
- The Kingsmen
- The Beatles

FUNKY CLAVS

D-Clav
This instrument was initially designed for classical music, due to its similarity to the harpsichord. However, it ended up being used mainly in the funk music of the late 1960’s and early 1970’s. Known for its trashy sound, this keyboard uses small rubber tips to fret strings. The D-Clav version, released in 1971, is the most famous in the family.

Used by:
- “Superstition” — Stevie Wonder
- “Trampled Under Foot” — Led Zeppelin
- “Machine Gun” — The Commodores
- “Outa-Space” — Billy Preston
- “Head Hunters” — Herbie Hancock
- “Kid Charlemagne” — Steely Dan

E-Clav
This instrument was produced later in 1977, but with similar characteristics to the popular D-Clav version.

C-Clav
This instrument is the earliest of the three, as it was introduced in 1968.
JAPANESE CPIANOS

CPiano 10
This was one of the first electronic piano instruments, with piano and harpsichord tones, tremolo and sustain as effects.

CPiano 30
This instrument came from the same family but with sensitivity to velocity and four presets that could be combined.

CPiano 80
This “Electric Grand Piano”, as opposed to the other two CPianos, was designed similarly to an ordinary acoustic piano but with electro static pickups under each string, which resulted in a smaller instrument than its acoustic counterpart. The Full preset has the most extensive sampling and layering, whereas the Light preset has fewer samples and therefore loads faster.

Used by:
- Phil Collins
- Tony Banks (Genesis)
- Jeff Lorber
- Hall and Oates
- And many others...

KEYBOARD BASS

Analog Pedal Bass
This bass pedal synthesizer looks very similar to organ foot pedal boards and was initially designed to be a part of a larger organ-like synthesizer. It has three presets, plus one user-programmable patch, along with foot controllers.

Used by:
- Pink Floyd
- Electric Light Orchestra
- Styx
- U2
- Yes
- The Police
- Genesis...

EPiano Bass and EPiano Bass Custom
Prior version of the Classic Electric Piano but only with two and a half octave based in the low register, specifically designed for bass accompaniment. It operates the same way its younger sibling.

Used by:
- Ray Manzarek (The Doors)...

KBass Model 1, 2 and 3
Created with mobility in mind, this German bass keyboard was released in three versions. It features programmable decay and two or three presets for each model.
RARE & BONUS KEYBOARDS

Cheap Digital Keyboard
This keyboard was the first to provide FM sounds at an affordable price.

GSounds
These two FM synthesizers are similar in operation but different in appearance; the first looks like a baby grand piano and the second looks like a classic electric keyboard. Both models provided powerful features like multi-operator generators and digital to analog converters. Small magnetic sticks inserted in a reader were used for preset loading.

Used by:

■ Toto…

Keyboard Computer
This instrument, the first digitized portable keyboard, has a transposer function from fifth up to seventh down, twenty-nine native presets and a card reader to load a variety of other programs.

Used by:

■ Jean Michel Jarre…

Lambda Keys
This instrument provides a polyphonic ensemble with a percussive section, and three oscillators per voice.

Log Piano & Strings
This is a typical “cheesy” keyboard with 4 presets, several possible combinations, and polyphony.

REED ELECTRIC PIANOS

W200 Piano
This electro-acoustic piano has single steel reeds for each key. The vibration is transmitted through an electrostatic pickup system, giving it a brighter and more hollow sound than the classic electric piano. This keyboard can be sweet when played gently or aggressive if played harder. The Full preset has the most extensive sampling and layering, whereas the Light preset has fewer samples and therefore loads faster.

This instrument will sound very familiar and was used on countless hit recordings, such as:

■ “Dreamer” — Supertramp
■ “What'd I Say” — Ray Charles
■ “No Quarter” — Led Zeppelin
■ “Mama Told Me Not to Come” — Three Dog Night
■ “Mercy, Mercy, Mercy” — Cannonball Adderley
■ “Stay With Me” — The Faces
And many more...

W270 Butterfly
Also called “Butterfly Baby Grand” due to its shape, with a walnut finish wooden case, this instrument was one of the last models produced in this family. The Full preset has the most extensive sampling and layering, whereas the Light preset has fewer samples and therefore loads faster.
STRING MACHINES

Cheap Strings and Cheezy Strings
The names — and sound — of these presets are true to the instruments used to create them. They are representative of the type of sound produced by this class of keyboards.

Classic Strings Machine
Six presets are provided for this famous strings machine instrument. Electric Keys provides full polyphony and built-in chorus.

Used by:
- Herbie Hancock
- Elton John
- The Cure
- The Buggles
- Pink Floyd
- Air
- Jean-Michel Jarre

Cruma Strings
This Italian analog strings and bass machine, fully polyphonic, has two oscillators with 8' and 16' settings and a strong LFO.

Used by:
- Duran Duran

Italian Strings
This instrument represents a milestone in Italian string ensembles with four presets.

Used by:
- Jean-Michel Jarre
- Tangerine Dream

Japanese Strings
This classic strings machine from the seventies with keyboard division and two tones for each note also has an individual VCA envelope for each key.

Used by:
- Ultravox
- Midge Ure

Melody Strings
This strong strings machine, with equal keyboard splitting, can accept combinations of up to three strings sound per division. It also features controls for attack and decay.

Used by:
- Steve Hackett

Polyphonic Strings
Very characteristic of the seventies, this strings machine with eight presets also has full polyphony, three VCOs, and attack + release control.

Used by:
- Jean-Michel Jarre
- Tangerine Dream
- Hawkwind

S-Orchestra
This four-part orchestral Italian synthesizer with four presets is remarkable for its unique strings sound.
VP Strings and Choir
One of the best Vocoder parts ever designed but also outstanding for the quality of its strings and choir, it has organ-style tabs and analogue synthesis.

Used by:
- Mike Oldfield
- Vangelis
- Kraftwerk…

TAPE SAMPLER
This mythical instrument, one of the first sample playback keyboards, plays magnetic audiotapes, one for each key, to produce sound. Famous add-on soundbanks featured sounds of flutes, cello, or choir.

Used by:
- The Beatles
- The Moody Blues
- Pink Floyd
- Led Zeppelin
- Tangerine Dream
- R.E.M.
- Air…

THE B - ELECTRIC ORGAN

Classic B with or without Leslie
The Classic B combined with a Leslie cabinet is certainly one of the most well-known and widely recognized electric keyboard sounds. Originally designed for churches as an alternative to pipe organs, this legendary organ gradually became a standard in jazz, blues, rock and gospel music.

Used by:
- Jimmy Smith
- Rick Walkerman (Yes)
- Rick Wright (Pink Floyd)
- Tony Banks (Genesis)
- Ray Manzarek (The Doors)
- And many more…

Drawbar settings
Electric Keys provides a large selection of drawbar settings. Each preset name includes its drawbar settings, arranged as nine digits, each with a setting from 0 to 8.

Mic and Amp variations
Presets are also supplied for various mic, amp and DI configurations.

“Fast” (Fst) presets
Most of the Classic B presets are provided in two variations: normal and “fast” (Fst). The normal preset provides mod wheel control for applying varying amounts of Leslie; push the mod wheel all the way up for maximum Leslie.
The “fast” version of each preset provides maximum Leslie on all samples, with no mod wheel control. So if you want to play with full-on Leslie, choose the fast version of the preset, which has fewer samples and will load faster. If you need Leslie control, load the normal (non-fast) version of the preset.

**Release samples**
Some Classic B presets have release samples. For details, see the complete preset list shown in the section called “The B Electric Organ” on page 69.
APPENDIX A

Presets

CLASSIC ELECTRIC ORGANS

Note: some presets have reverb samples that can be cross-faded using mod wheel. If so, their preset name ends with Rev.

1960 Electric Organ
1960 - 8+2 Vib
1960 - 8+2 Vib Rev
1960 - 8+4+2 Vib
1960 - 8+4+2 Vib Rev
1960 - 8+4 Vib
1960 - 8+4 Vib Rev
1960 - 8 Bass 1C
1960 - 8 Bass 2C
1960 - 8 Vib Bass 1A
1960 - 8 Vib Bass 1B
1960 - 8 Vib Bass 2A
1960 - 8 Vib Bass 2B
1960 - 8 Vib Rev

Doors Electric Organ
Doors - 000808
Doors - 008008
Doors - 008080
Doors - 080008
Doors - 080080
Doors - 800008
Doors - 800080
Doors - 800800
Doors - 808000
Doors - 808080
Doors - 808800
Doors - 808880
Doors - 808888
Doors - 880008
Doors - 880080
Doors - 880088
Doors - 880800
Doors - 880880
Doors - 880888
Doors - 880888 no Vib

Italian Combo

The Green Tabs presets have two layers (handles) that you can switch between using mod wheel.

ItComb - Green Tabs
ItComb - Green Tabs 4
ItComb - Green Tabs 8
ItComb - Green Tabs 16
ItComb - Green Tabs All
ItComb - Pedal f
ItComb - Pedal mf
ItComb - Pedal p
ItComb - Wh - All Tabs
ItComb - Wh - Bass 16
ItComb - Wh - Flute 4
ItComb - Wh - Flute 8
ItComb - Wh - Piccolo 4
ItComb - Wh - Strings 4
ItComb - Wh - Strings 8
ItComb - Wh - Strings 16
ItComb - Wh - Trumpet 8

Italian Doors

ItDoors - 000808
ItDoors - 008008
ItDoors - 008080
ItDoors - 080008
ItDoors - 080080
ItDoors - 800008
ItDoors - 800080
ItDoors - 800800
ItDoors - 808000
ItDoors - 808080
ItDoors - 808800
ItDoors - 808880
ItDoors - 808888
ItDoors - 880008
ItDoors - 880080
ItDoors - 880088
ItDoors - 880800
ItDoors - 880880
ItDoors - 880888
ItDoors - 880888 no Vib

Italian ElkOrgan

ElkOrg - Down1
ElkOrg - Down2
ElkOrg - Down4
ElkOrg - Down5
ElkOrg - Down7
ElkOrg - Up1
ElkOrg - Up2
ElkOrg - Up4
ElkOrg - Up5
ElkOrg - Up6
ElkOrg - Up7
ElkOrg - Up8

Japanese Electric Organ

JapEOrg - Click Dry
JapEOrg - Click Fast
JapEOrg - Click Slow
JapEOrg - Pr1
JapEOrg - Pr1 Vib (with Leslie)
JapEOrg - Pr1 Vib Fast
JapEOrg - Pr2
JapEOrg - Pr2 Vib (with Leslie)
JapEOrg - Pr2 Vib Fast
JapEOrg - Pr3
JapEOrg - Pr3 Vib (with Leslie)
JapEOrg - Pr3 Vib Fast

CLASSIC ELECTRIC PIANOS

1975 - Mk I
EP Mk I 1975 Full
EP Mk I 1975 Light
EP Mk I 1975 Loud
EP Mk I 1975 Soft

1979 - Mk I
EP Mk I 1979 Full
EP Mk I 1979 Light
EP Mk I 1979 Loud
EP Mk I 1979 Soft

1980 - Mk II
EP Mk II 1981 Full
EP Mk II 1981 Light
EP Mk II 1981 Loud
EP Mk II 1981 Soft

1984 - Mk V
EP Mk V 1984 Full
EP Mk V 1984 Light
EP Mk V 1984 Loud
EP Mk V 1984 Soft

ELECTRO-MECHANICAL KEYBOARDS

Clavibes
Guitarkeys
Piano-Electro
Planet M

FUNKY CLAVS

D-Clav
D-Clav CA
D-Clav CB
D-Clav DA
D-Clav DB

E-Clav Custom
E-Clav BD
E-Clav CA
E-Clav CB

Model C
C-Clav 1
C-Clav 2
### JAPANESE CPIANOS

<table>
<thead>
<tr>
<th>Presets</th>
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<tbody>
<tr>
<td>CPiano 10</td>
</tr>
<tr>
<td>CPiano 10 Tone 1</td>
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<tr>
<td>CPiano 10 Tone 2</td>
</tr>
<tr>
<td>CPiano 10 Tone Mix</td>
</tr>
<tr>
<td>CPiano 30</td>
</tr>
<tr>
<td>CPiano 30 Harpsichord</td>
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<tr>
<td>CPiano 30 Piano 1</td>
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<tr>
<td>CPiano 30 Piano 2</td>
</tr>
<tr>
<td>CPiano 30 Piano 3</td>
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<tr>
<td>CPiano 80</td>
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<tr>
<td>CPiano 80 Full</td>
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<tr>
<td>CPiano 80 Light</td>
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<tr>
<td>CPiano 80 Loud</td>
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<tr>
<td>CPiano 80 Soft</td>
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### KEYBOARD BASS

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<th>Presets</th>
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<tbody>
<tr>
<td>Analog Pedal Bass</td>
</tr>
<tr>
<td>Analog Pedal - Bass 1</td>
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<tr>
<td>Analog Pedal - Bass 2</td>
</tr>
<tr>
<td>Analog Pedal - Tuba 1</td>
</tr>
<tr>
<td>Analog Pedal - Tuba 2</td>
</tr>
<tr>
<td>Analog Pedal - Var 1</td>
</tr>
<tr>
<td>Analog Pedal - Var 2</td>
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<tr>
<td>Analog Pedal - Var 3</td>
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<tr>
<td>EPiano Bass</td>
</tr>
<tr>
<td>EPiano Bass Custom 1</td>
</tr>
<tr>
<td>EPiano Bass Custom 2</td>
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<tr>
<td>K-Bass</td>
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<tr>
<td>KBass 1 - Sine</td>
</tr>
<tr>
<td>KBass 1 - Triangle</td>
</tr>
<tr>
<td>KBass 2 - Strings</td>
</tr>
<tr>
<td>KBass 2 - Tuba</td>
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<tr>
<td>KBass 3 - Bass</td>
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<tr>
<td>KBass 3 - Gtr</td>
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<td>KBass 3 - Str</td>
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### RARE & BONUS KEYBOARDS

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<tr>
<td>Cheap Digital Keyboard</td>
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<tr>
<td>Cheap KB - Harpsichord</td>
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<td>Cheap KB - Organ</td>
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<td>Cheap KB - Strings</td>
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### GS Sounds

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<td>GS - Glassy</td>
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<td>GS - Log Synth</td>
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<td>GS - Marimbell</td>
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<tr>
<td>GS - Ominous Strings</td>
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<tr>
<td>GS - Poly Brass</td>
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<td>GS - Relax Bells</td>
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<td>GS - Space Piano</td>
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<td>GS - Strings</td>
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<td>GS - Times</td>
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### Keyboard Computer

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<tr>
<td>KC - Clav</td>
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<tr>
<td>KC - EOrgan</td>
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<td>KC - EPiano</td>
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<td>KC - Strings</td>
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### Lambda Keys

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<td>Lmbd - Chorus</td>
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<tr>
<td>Lmbd - Chorus + Strings</td>
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<td>Lmbd - Chorus + Strings</td>
</tr>
<tr>
<td>Lmbd - Clav</td>
</tr>
<tr>
<td>Lmbd - Custom</td>
</tr>
<tr>
<td>Lmbd - EPiano 1</td>
</tr>
<tr>
<td>Lmbd - EPiano 2</td>
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<tr>
<td>Lmbd - Harmonics</td>
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<tr>
<td>Lmbd - Organ</td>
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<td>Lmbd - Piano</td>
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<td>Lmbd - Strings</td>
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### Log Piano & Strings

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<tr>
<td>Log - Piano Strings</td>
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<tr>
<td>Log - Strings</td>
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<tr>
<td>Log - Viola</td>
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### REED ELECTRIC PIANOS

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<td>W200 Piano</td>
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<td>W200 Piano Full</td>
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<td>W200 Piano Loud</td>
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<td>W200 Piano Soft</td>
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<tr>
<td>W270 Butterfly</td>
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<td>W270 Butterfly Full</td>
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<td>W270 Butterfly Light</td>
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<td>W270 Butterfly Soft</td>
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### STRINGS MACHINES

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<td>Cheap Strings</td>
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<td>Cheap String - Strings</td>
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<td>Cheap String - Tutti</td>
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<td>Cheap String - Violin</td>
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### Cheezy Strings

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<tr>
<td>Cheezy - Ensemble</td>
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### Classic Strings Machine

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</tr>
<tr>
<td>Str Machine - Cello</td>
</tr>
<tr>
<td>Str Machine - Full On</td>
</tr>
<tr>
<td>Str Machine - Horn</td>
</tr>
<tr>
<td>Str Machine - Trumpet</td>
</tr>
<tr>
<td>Str Machine - Violin</td>
</tr>
</tbody>
</table>

### Cruma Strings

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruma - 8'</td>
</tr>
<tr>
<td>Cruma - 8' + 16'</td>
</tr>
<tr>
<td>Cruma - 16'</td>
</tr>
</tbody>
</table>

### Italian Strings

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ItaStr - Strings</td>
</tr>
<tr>
<td>ItaStr - Violincello</td>
</tr>
<tr>
<td>ItaStr - Violincello Str</td>
</tr>
</tbody>
</table>

### Japanese Strings

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>JpSt - Cello 1+2 md 1</td>
</tr>
<tr>
<td>JpSt - Cello 1+2 md 2</td>
</tr>
<tr>
<td>JpSt - Cello 1 Flat</td>
</tr>
<tr>
<td>JpSt - Cello 1 md 1</td>
</tr>
<tr>
<td>JpSt - Cello 1 md 2</td>
</tr>
<tr>
<td>JpSt - Cello 2 Flat</td>
</tr>
<tr>
<td>JpSt - Cello 2 md 1</td>
</tr>
<tr>
<td>JpSt - Cello 2 md 2</td>
</tr>
<tr>
<td>JpSt - Tutti Violin md 1</td>
</tr>
<tr>
<td>JpSt - Tutti Violin md 2</td>
</tr>
<tr>
<td>JpSt - Viola + Violin 2 md 1</td>
</tr>
<tr>
<td>JpSt - Viola + Violin 2 md 2</td>
</tr>
<tr>
<td>JpSt - Viola Flat</td>
</tr>
<tr>
<td>JpSt - Violin 1 Flat</td>
</tr>
<tr>
<td>JpSt - Violin 2 Flat</td>
</tr>
</tbody>
</table>

### Melody Strings

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melody - Bass</td>
</tr>
<tr>
<td>Melody - Cello</td>
</tr>
<tr>
<td>Melody - Perc</td>
</tr>
<tr>
<td>Melody - Perc+Bass</td>
</tr>
<tr>
<td>Melody - Viola</td>
</tr>
</tbody>
</table>

### Polyphonic Strings

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly Str - Brass 1</td>
</tr>
<tr>
<td>Poly Str - Brass 2</td>
</tr>
<tr>
<td>Poly Str - Chorus 1</td>
</tr>
<tr>
<td>Poly Str - Chorus 2</td>
</tr>
<tr>
<td>Poly Str - Pipe 1</td>
</tr>
<tr>
<td>Poly Str - Pipe 2</td>
</tr>
<tr>
<td>Poly Str - Strings 1</td>
</tr>
<tr>
<td>Poly Str - Strings 2</td>
</tr>
</tbody>
</table>

### S-Orchestra

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-Orch - Cello</td>
</tr>
<tr>
<td>S-Orch - Violin</td>
</tr>
</tbody>
</table>

### VP Strings & Choirs

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP - Choirs 4' Ens</td>
</tr>
<tr>
<td>VP - Choirs 4' Solo</td>
</tr>
<tr>
<td>VP - Choirs 8' Ens</td>
</tr>
<tr>
<td>VP - Choirs 8' Solo</td>
</tr>
<tr>
<td>VP - Choirs All Ens</td>
</tr>
<tr>
<td>VP - Choirs All Solo</td>
</tr>
<tr>
<td>VP - Strings Ens</td>
</tr>
<tr>
<td>VP - Strings Solo</td>
</tr>
</tbody>
</table>

### TAPE SAMPLER

<table>
<thead>
<tr>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic Tron - Cello</td>
</tr>
<tr>
<td>Classic Tron - Flute 1</td>
</tr>
<tr>
<td>Classic Tron - Flute 2</td>
</tr>
<tr>
<td>Classic Tron - Guitar</td>
</tr>
<tr>
<td>Classic Tron - Violin 1</td>
</tr>
<tr>
<td>Classic Tron - Violin 2</td>
</tr>
</tbody>
</table>
THE B ELECTRIC ORGAN

Use the mod wheel to apply Leslie to presets marked with *les*. Presets marked with RS have release samples.

1 - The B Leslie Loud
With MD41
MD 204545132 (les)  
MD 204545132 Fst  
MD 532000002 (les + RS)  
MD 532000002 Fst  
MD 540202113 (les)  
MD 540202113 Fst  
MD 544500000 (les)  
MD 544500000 Fst  
MD 800000000 (les + RS)  
MD 800000000 Fst  
MD 800000000 (les)  
MD 800000000 Fst  
MD 808104000 Fst  
MD 808104000 (les)  
MD 808104000 Fst  
MD 808104000 (les)  
MD 808104000 Fst
With U87
U87 800000000 (les + RS)  
U87 800000000 Fst  
U87 800000000 (les)  
U87 888888888 (les)  
U87 888888888 Fst  
U87 888888888 (les + RS)  
U87 888888888 Fst
With U67
U67 800000000 Fst  
U67 800000000 (les)  
U67 800000000 Fst  
U67 800000000 (les)  
U67 800000000 Fst  
U67 888888888 Fst  
U67 888888888 (les)  
U67 888888888 Fst

2 - The B Leslie Soft
With C414
C414 000878080 (les)  
C414 000878080 Fst  
C414 000878080 (les)  
C414 000878080 Fst  
C414 000878080 (les)  
C414 000878080 Fst  
C414 327643222 Fst  
C414 327643222 (les)  
C414 512481420 (les + RS)  
C414 512481420 Fst  
C414 800000000 (les)  
C414 800000000 Fst  
C414 800000000 (les)  
C414 800000000 Fst  
C414 800000000 (les)  
C414 800000000 Fst  
C414 800000000 (les)  
C414 800000000 Fst
With U67
U67 800000000 (les + RS)  
U67 800000000 Fst  
U67 800000000 (les)  
U67 888888888 (les)  
U67 888888888 Fst  
U67 888888888 (les + RS)  
U67 888888888 Fst

3 - The B Amp, Guitar
AMP Bassman  
AMP ICM800 A  
AMP ICM800 B  
AMP Matchless  
AMP FLEX  
AMP Soldano A  
AMP Soldano B  
AMP Soldano C  
AMP Soldano D  
AMP Twin A  
AMP Twin B  
AMP Vox AC30

4 - The B w Vibrato
VIB 800000000 (les)  
VIB 800000000 Fst  
VIB 800000000 (les)  
VIB 800000000 Fst  
VIB 800000000 (les)  
VIB 800000000 Fst  
VIB 888888888 Fst  
VIB 888888888 (les)  
VIB 888888888 Fst

5 - The B DI
DI 000487458  
DI 008800000  
DI 015111388  
DI 204545132 (RS)  
DI 542021132 (RS)  
DI 544500000  
DI 800000000  
DI 800005210 (RS)  
DI 808000008  
DI 808000008 (les)  
DI 851044848  
DI 888888888

6 - The B Pedal
Pedal DI  
00-DI Pedal  
08-DI Pedal  
44-DI Pedal  
80-DI Pedal  
88-DI Pedal
Pedal Leslie Loud  
00-Ped Hard (les)  
00-Ped Hard Fst  
08-Ped Hard Fst  
44-Ped Hard (les)  
44-Ped Hard Fst  
80-Ped Hard (les)  
80-Ped Hard Fst  
88-Ped Hard (les)  
88-Ped Hard Fst
Pedal Leslie Soft  
00-Ped Soft (les)  
00-Ped Soft Fst  
08-Ped Soft (les)  
08-Ped Soft Fst  
44-Ped Soft (les)  
44-Ped Soft Fst  
80-Ped Soft (les)  
80-Ped Soft Fst  
88-Ped Soft (les)  
88-Ped Soft Fst

7 - The B Mono
With C414
C414 000808000 (les)  
C414 000808000 Fst  
C414 327645222 (les)  
C414 512481420 (les)  
C414 808104000 (les)  
C414 808104000 Fst  
C414 808880008 (les)  
C414 808880008 Fst  
C414 888888888 (les)  
C414 888888888 Fst
With U67
U67 800000000 (les)  
U67 800000000 Fst  
U67 800000000 (les)  
U67 800000000 Fst  
U67 800000000 (les)  
U67 800000000 Fst  
U67 800000000 (les)  
U67 800000000 Fst
With U87
U87 800000000 (les)  
U87 800000000 Fst  
U87 800000000 (les)  
U87 800000000 Fst

APPENDIX A: PRESETS
APPENDIX B  

Combis

CLASSIC ELECTRIC ORGANS

Basics
EOrgan AutoPan
EOrgan Chorus
EOrgan Delay
EOrgan Drive
EOrgan Overdrive
EOrgan Phase
EOrgan Reverb
EOrgan True Stereo
EOrgan Vinyl Detune
EOrgan Wha Wheel

Combined
1960 with Bass
CombHone
Double Doors
ELeslie
Get an hair
H Comb
HaM Steel Drumz
Italian Combi's White & Pedal
Jap EOrg Click
Lambdacorda
Najet Chou Organ
Phili Sawtooth
Space Door
Wheel Morisson

CLASSIC ELECTRIC PIANOS

Basics
EPiano Auto Pan
EPiano Chorus
EPiano Delay
EPiano Drive
EPiano Overdrive
EPiano Phase
EPiano Reverb
EPiano True Stereo
EPiano Vinyl Detune
EPiano Wha Wheel

Combined
Analog Electric
Cherrish My Rhod
Drunky EP
Dyno My Wurly
EK10 Revival
Expensive Old Road
Expressive Road
FM Loudness
Glassy Click
Mark Drives
Ominous Dyno
Sawtooth Unison
Space Road Wah
Sweet Roadsamont

ELECTRO-MECHANICAL KEYBOARDS

Basics
Clavibes Drive
Clavibes Reverb
Clavibes Vinyl Detune
Guitarkeys Delay
Guitarkeys Phase
Piano Electro Chorus
Piano Electro Overdrive
Piano Electro Wha Wheel
Planet M Auto Pan

Combined
Clavi Flute
German Duo
Glassy Choirs
Guitar KFuzz
Harry Bow
Lonely Planet
Mechanical Keys
PStrings
Space Electro P
Xmas Clavibes Bells

FUNKY CLAVS

Basics
Clav Auto Pan
Clav Chorus
Clav Delay
Clav Drive
Clav Overdrive
Clav Phase
Clav Reverb
Clav True Stereo
Clav Vinyl Detune
Clav Wha Wheel

Combined
Attaklav One
Attaklav Two
Clastar
Clav Amp Pan
Clav and Organ
Clear Strings
Clav Clav Wha Wheel
Clytharet
Dirty Crunch Clavitar
Electro Key
Sweepy Clav
Twelve Strings Clav

JAPANESE CPIANOS

Basics
CPiano Auto Pan
CPiano Chorus
CPiano Delay
CPiano Drive
CPiano Overdrive
CPiano Phase
CPiano Reverb
CPiano True Stereo
CPiano Vinyl Detune
CPiano Wha Wheel

Combined
A CP Road
CeP10 Hard Phase
CP Bass
CP Brass Fusion
CP78 Drive & HaM
CP97 EP Wah
CPiano Strings Delay
Romance CP
Space Cheap
Sparkling CP
Tropical Keys

KEYBOARD BASS

Basics
Bass Auto Pan
Bass Chorus
Bass Delay
Bass Drive
Bass Overdrive
Bass Phase
Bass Reverb
Bass True Stereo
Bass Vinyl Detune
Bass Wha Wheel

Combined
Analog Tube Wah
Bass Invaders
Bassy Fluty
Clockwork
Electric Sub 1
Electric Sub 2
EPiano Analog Bass
KBass Sine
Side Analog Bass
TB Like
Wah Short
RARE & BONUS KEYBOARDS

Basics
Cheap KB Drive
GS FM Piano Reverber
GS Marimbell Delay
KC Clav Vinyl Detune
KC EOrgn Overdrive
KC Epiano Chorus
Log Strings True Stereo
Log Strings Wha Wheel
Piano Lambda Auto Pan
Strings Lambda Phase

Combined
Fake Sparkling EP
FM Bellz
FM Piano Harmonics
Jarry Strings
JarrYves Ensemble
KC Sunshine
Lambda Tines
Loganistic
Not so Cheap
Perfect Pad
Piano Duet Stereo
Ring my Bell
Sawtooth Stack
String Analog

REED ELECTRIC PIANOS

Basics
Reed Auto Pan
Reed Chorus
Reed Delay
Reed Drive
Reed Overdrive
Reed Phase
Reed Reverber
Reed True Stereo
Reed Vinyl Detune
Reed Wha Wheel

Combined
1960 Wurli
Cheezy W
Clav & Reed
GloW200
Hawaiian Reed
Mercy Mercy Butterfly
Norah Dreams
Reed Choirs
W Duo
W270 and B Organ
Wurlifyfull

STRING MACHINES

Basics
Strings Auto Pan
Strings Chorus
Strings Drive
Strings Overdrive
Strings Phase
Strings Reverber
Strings True Stereo
Strings Vinyl Detune
Strings Wha Wheel

Combined
Blue Grand
Bony and Glide
Chamber Flat
Cheezy Fifth
Cruma 8’-16’
Get Down On It
My Pad Machine
Orchestrix
Phase Strings
Pipe & Ride
Porta Mentos
S-Orch-Tutti
Strings Corda
Super VP
VP Lush Strings

TAPE SAMPLER

Basics
Tape Auto Pan
Tape Chorus
Tape Delay
Tape Drive
Tape Overdrive
Tape Phase
Tape Reverber
Tape True Stereo
Tape Vinyl Detune
Tape Wha Wheel

Combined
Bell and Flute
Cello Tron
Combo Flute
Flutotron
Flutzy Ham
HQ Chorus
Large Mellow
M400 String Stack
Tape Digital
Tape of Tree

THE B - ELECTRIC ORGAN

Basics
B Auto Pan
B Chorus
B Drive
B Overdrive
B Phase
B Reverber
B True Stereo
B Vinyl Detune
B Wha Wheel

Combined
Attack Mono Ham
Bali Beats Water
Christmas Eve
Dorothy
Fading Roundabout
Freddy Leslie
Full Oleg
Ghost in Paradise
Hammy Serge
Mac Adams
The B and Pedal Hard

XTRA Splits
B-EP Bass
Cheezy Butterfly
Electro EP & Pedal
Fields of Rhodes
Gtr Bass & CPiano 30
Keys next Doors
MelloBass
Ominous and Bass
Perc & Full
Planet M Bass
Split Brassy
Split Machine
Split Strings
Strings Detune
APPENDIX C Troubleshooting

OVERVIEW
Electric Keys FAQ ........................................... 73
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ELECTRIC KEYS FAQ

When I try to copy the “.ufs” file to my hard drive, I get an error message and it won’t copy successfully. What should I do?
First, make sure that you have enough free disk space; the Electric Keys .ufs files are approximately 4 GB each. Next, check the format of your hard drive. The .ufs files cannot be copied to a FA T32 formatted hard drive, as the FA T32 format has a 4 GB file size limit.

For Macs, you should copy the .ufs files to a hard drive formatted as Mac OS Extended (also called HFS+) or Mac OS Extended (Journaled). To check the format of your drive, go to /Applications/Utilities and launch Disk Utility. Select the drive from the list on the left, and check the Format item in the info strip along the bottom of the window. Mac OS Extended (Journaled) is the default drive format for OS X.

For Windows, you should copy the .ufs files to a hard drive formatted as NTFS. To check the format of your drive, go to My Computer, right-click the drive, and choose Properties. In the Properties window, check the File system item. NTFS is the default file system for Windows XP.

How do I make Electric Keys work in my sequencer?
Electric Keys is an audio instrument plug-in. You will call Electric Keys up in your sequencer on an audio track, aux track, or instrument track, depending on how your sequencer handles virtual instruments. Electric Keys will provide 2-channel (stereo) output.

To get MIDI into Electric Keys, you need a MIDI track (or instrument Track). The MIDI or Instrument Track must be record-enabled in order to receive MIDI from an external source into Electric Keys.

For complete setup details, see chapter 5, “The Electric Keys Plug-in” (page 23).

I get “missing samples” messages or other problems when I try to load presets from the “Classic Electric Pianos” bank.

Due to its size, the Classic Electric Pianos bank is divided into two separate UFS files on disk. These two UFS files must be placed together in the same folder. If not, you will experience errors when trying to load some Classic Electric Piano presets. The solution is to simply place the two UFS files in the same folder on your hard drive. You must place the actual files in the same folder (not aliases to the files).

I have my preset loaded, but I don’t hear anything.
If you are playing notes from an external controller, make sure the MIDI track or instrument track in your host software is record-enabled. For other MIDI troubleshooting tips, see “MIDI troubleshooting” on page 75.
The keyboard in Electric Keys is flashing, so it’s receiving MIDI data successfully, but I still don’t hear any sound.

It’s time to check audio. See “Audio troubleshooting” on page 76.

When I play on my keyboard, there’s a delay before I hear a note.

In order to get the fastest possible response from Electric Keys, you’ll need to set the sample buffer of your audio hardware driver to a low number. Experiment with this setting to get the best response and computer performance. For complete details, see “Managing latency” on page 24. Also refer to the section in chapter 5, “The Electric Keys Plug-in” that refers to your host software.

How do I get Electric Keys to send each part to a different audio output?

Electric Keys does not support multiple audio outputs, so you cannot assign each part to a separate audio output. The two parts provided are meant for layering two sounds together. If you need to send different Electric Keys instruments to separate outputs, simply instantiate a second instance of the plug-in in your host software.

Why is the output of Electric Keys distorted?

It is possible for Electric Keys to output more than unity gain, depending on its settings. Keep an eye on the output level of the Electric Keys track and attenuate that signal if it gets too hot.

How do I record the audio output of Electric Keys?

Most sequencers have a freeze for bounce function that renders the output of Electric Keys as an audio file. If your sequencer doesn’t have this feature, bus the output of the Electric Keys track to another audio track, and record the audio output of Electric Keys onto that track.

Everything is working fine, except that intermittently, samples don’t play for no apparent reason. Why?

Check your polyphony setting for the part. If you’re sure the part has more than enough voices, are you running Mac OS X? If so, how many samples have you loaded into Electric Keys? As a general rule of thumb, you shouldn’t load more than about 70% of the total amount of RAM your computer has (±10%). For example, if your computer is equipped with 1 GB, don’t load more than around 700 MB of samples into Electric Keys.

Because of Mac OS X’s built-in memory management features, there is potentially an unlimited amount of “virtual RAM”, but when Mac OS X runs out of real RAM, it starts caching the overflow to disk. This can wreak havoc on Electric Keys performance. Unfortunately, Mac OS X doesn’t provide any means for applications to know — or report to the user — that it has run out of real RAM, so there is no way for Electric Keys to alert you if Mac OS X is caching Electric Keys samples to disk. Therefore, if you are loading lots of sample data, you need to keep an eye on how much RAM they use up. There are third-party utilities available that can help you keep tabs on your RAM usage.

IMPROVING PERFORMANCE

See “Conserving CPU resources” on page 24 and “Managing latency” on page 24 for tips on how to get the best performance from Electric Keys.

GENERAL TROUBLESHOOTING

Troubleshooting is always simplest and most effective when the exact problem can be specified clearly and concisely. If you are surprised by an error message or by seemingly erratic behavior in the program, take a moment to jot down the relevant details: exactly what the error message said (including any error ID numbers), what actions were done on-screen just before the problem occurred, what kind of file you were working with,
how you recovered from the problem, and any unusual conditions applying during the occurrence of the problem. This may not enable you to solve the problem at once, but will greatly aid in isolating the problem should it reoccur.

If the problem you are encountering seems inconsistent, try to determine what the necessary pattern of actions are that will cause it to occur. Genuine bugs in application software like Electric Keys are almost always consistent in their manifestation: the same set of actions under the same conditions invariably brings about the same results. Determining the exact cause of a bug often requires experiments that replicate the problem situation with one factor changed: choosing a different (smaller) preset, opening Electric Keys in a different host application, etc.

Isolate the problem…
One of the best troubleshooting techniques is to try to isolate the problem. If you can whittle down a complicated setup or scenario to a much simpler case, chances are you’ll zero in on the problem more quickly. For example, you could try running Electric Keys in a different host application to see if the problem persists. If it does, it may have to do with the actual samples, presets, and/or performances being used.

Simplify your setup…
One of the most common causes of problems is a conflict with other software in the system. Run Electric Keys by itself, with no other plug-ins or virtual instruments, and see if the problem you are having still happens.

Check the ‘Read Me First’…
It’s human nature to blow right past the Read Me First, but you’ll probably be glad you took the time. If you experience problems with Electric Keys, check the Read Me notes that ship with the current version you are using.

If you cannot open a particular Electric Keys project or session in your host application…
First try opening other existing files, or a new file, to be sure Electric Keys is working at all. If other files work fine, try temporarily removing the Electric Keys plug-in, or disable audio in your host application. If other files also exhibit similar behavior, then you know that the problem is not specific to one file.

MIDI TROUBLESHOOTING
The most important tool for tracking down MIDI input problems is the keyboard at the bottom of the Electric Keys window. If there is a hardware problem, or if your channel assignments are wrong, the problem should be apparent by looking at the keyboard, which won’t flash when you try to play Electric Keys.

In order for external MIDI to get to Electric Keys, the MIDI track or Instrument track must be record-enabled. A quick test to determine whether MIDI is reaching the track is to hit record and tap a few notes on your controller. If no MIDI appears in the track, check that your controller and MIDI interface are set up properly. If MIDI data does show up in the track, and your sequencer uses a separate MIDI and audio track for virtual instruments, make sure the MIDI track output is assigned to Electric Keys and is assigned to a part that has a preset sound ready to go.

If Electric Keys is unable to play any MIDI data…
Does your host software receive MIDI data from your MIDI controller? Does MIDI play back successfully to other MIDI instruments? If the answer is no to either question, double-check your
cable connections and MIDI controller settings. See if your controller registers in the MIDI system management software on your computer, if any (Audio MIDI Setup).

If you are trying to play Electric Keys from your MIDI controller, make sure that the Electric Keys MIDI track or instrument track in your host software is record-enabled.

Often only A/B tests will reveal the source of the problem. It may be necessary to switch your MIDI cables, and if possible, to try using a different MIDI interface or synthesizer for input/output. The easiest way to test if MIDI data is actually getting to Electric Keys is to look at the MIDI activity LEDs in the Part list.

**AUDIO TROUBLESHOOTING**

In order for audio to be heard from Electric Keys, the output of the audio, aux, or instrument track in your host software must be sent to an output that is connected to speakers or headphones. Can you play back any pre-recorded audio? That’s always a good way to check that the rest of the audio system is set up correctly. In some cases, a sequencer requires an available voice for Electric Keys playback. Make sure all outputs and voice assignments are correct for the Electric Keys track.

If you still don’t hear sound, check the following things:

- Make sure the volume is turned up on the part you are playing, as well as Electric Keys’s global volume setting.
- Make sure that the appropriate faders are up in your host application.
- Make sure you have cables connected to the correct plugs on the outputs of your audio hardware.

**PREVENTING CATASTROPHE**

*Keep up-to-date backups of your Electric Keys sounds folder, so that you always have copies of the most recent work you have done. Almost any software problem is survivable as long as you have kept backups of your work.*

*Keep plenty of free space on your hard drives. This will prevent the computer from running out of disk space.*

**TECHNICAL SUPPORT**

We are happy to provide customer support to our registered users. If you haven’t already done so, please take a moment to complete the registration card in the front of the manual and send it in to us, or visit motu.com to register online. When we receive your card, you’ll be properly registered for technical support.

Registered users who are unable, with their dealer’s help, to solve problems they are encountering with Electric Keys may contact our technical support department in one of the following ways:

- Technical support phone: (617) 576-3066
- Tech support fax: (617) 354-3068
- Tech support online: motu.com/support
- Web site (for information, tech support database and downloads): www.motu.com

Technical support is staffed Monday through Friday 9 a.m. to 6 p.m., Eastern Time.

If you decide to contact technical support, please have your Electric Keys manual at hand, and be prepared to provide the following information to help us solve your problem as quickly as possible:

- **The serial number of the program.** This is printed on the cardboard page (at the front of the manual) that holds the registration card. (If you purchased Electric Keys as an upgrade, your
manual won’t have this cardboard page. Instead, MOTU will have notified you separately of your serial number.) Be sure to retain this page in the manual for your reference. You must be able to supply this number to receive technical support.

- **The version of Electric Keys you are working with.**
- **The system software** you are using to run the computer.
- **The host application software** you are using to run Electric Keys.
- **A brief explanation of the problem**, including the exact sequence of actions that cause it, and the contents of any error messages that appear on the screen. It is often very helpful to have brief written notes to refer to.
- **The pages in the manual** that refer to the parts of the program that you are having trouble with.

We’re not able to solve every problem immediately, but a quick call to us may yield a suggestion for a problem that you might otherwise spend hours trying to track down.

Our technical support telephone line is dedicated to helping registered users solve their problems quickly. In the past, many people have also taken the time to write to us with their comments, criticism and suggestions for improved versions of our software. We thank them; many of those ideas have been addressed in this version of Electric Keys. If you have features or ideas you would like to see implemented in our music software, we’d like to hear from you. Please log on to motu.com/suggestions, or write to the Electric Keys Development Team, MOTU Inc., 1280 Massachusetts Avenue, Cambridge, MA 02138.

Although we do not announce release dates and features of new versions of our software in advance, we will notify all registered users immediately by mail as soon as new releases become available. If you move or otherwise change your mailing address, please send us a note with your change of address so that we can keep you informed of future upgrades and releases.
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