

# KEYBOARD Reports

## E-MU Emulator X Studio

SOFTWARE SAMPLER AND AUDIO INTERFACE BUNDLE (PC)

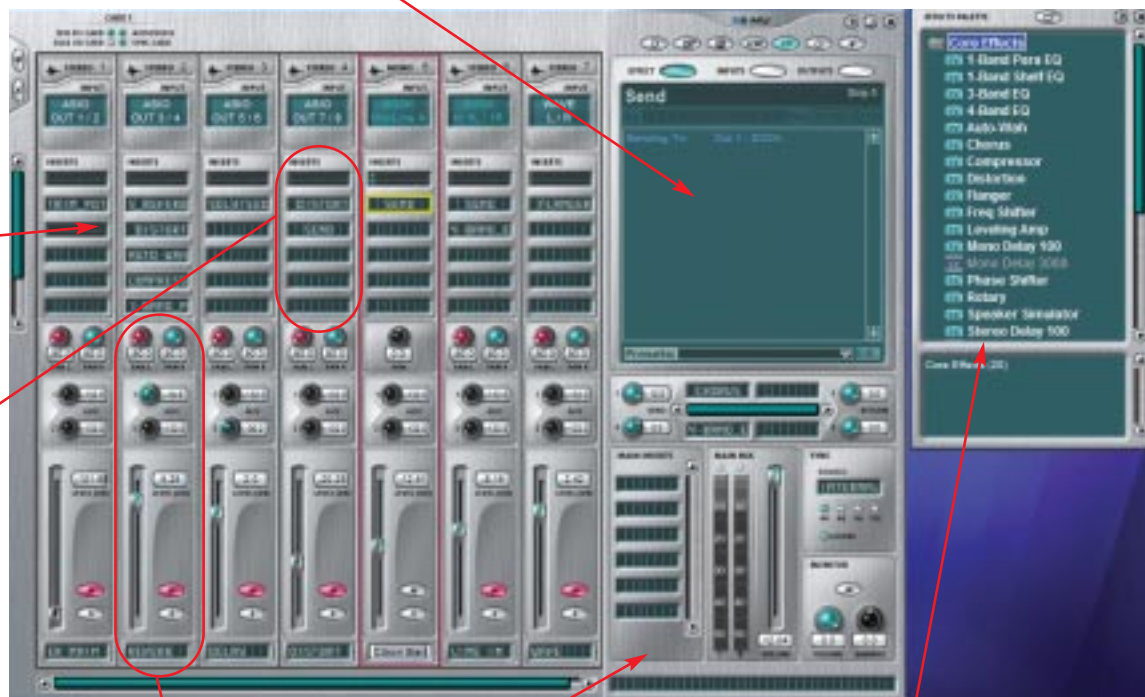


The TV screen is used to edit the parameters of any effect that is loaded into a channel strip, and to graphically route the inputs and outputs of the AudioDock.

The rear panel is impressively packed with I/O options.

The left side of the PatchMix DSP interface is dedicated to the creation and routing of each audio input and output through various channel strips.

Unlimited insert points can be loaded up with many different included effect combinations.



Volume, pan, mute, solo, and two aux sends.

PatchMix's master section offers more sends, another unlimited insert list, output bus metering, and more.

The effects palette comes stocked with a huge assortment of customizable effects.

by Michael Prager

It seems this might be the year that software sampling heads for the nearest Fight Club to duke it out for your money. While we all know that soft "samplers" like the MOTU MachFive, Steinberg HALion, and Native Instruments Kontakt have a long list of perks, can they really be considered a platform or total solution? While some of these apps require a host application, others that claim to be a

platform don't really supply a decent hardware counterpart, leaving a user to tempt fate in choosing one of dozens of audio card solutions. Not to mention the fact that none of these soft samplers actually, uh, *sample*.

After a long silence, E-MU reemerges and now offers what may be the first true software sampler. (We'll let them and TASCAM have a scrap over whether Emulator X or Giga 3 was first.) The Emulator X Studio is a package that

bundles the Emulator X soft sampler, an audio interface with breakout box, and a suite of audio applications for a price that may shock you.

### Overview

The E-MU 1010 PCI card is the hub of the entire system. It supplies a pair of S/PDIF and ADAT connections, as well as a convenience FireWire port. An EDI port is also supplied to connect the 1010 to the AudioDock breakout box, and it includes an ASIO 2 driver, which

Software sampling bundle with audio routing software and dedicated audio hardware.

**Pros:** Excellent integration of hardware and software. Easy to understand graphic interface. Outstanding audio quality.

**Cons:** Pretty heavy system requirements. No REX 2 support. No Mac version.

**E-MU Systems, [www.emu.com](http://www.emu.com), 877-742-6084, 831-438-1921**

**\$599 (Studio bundle), \$299 (Emulator X bundle)**

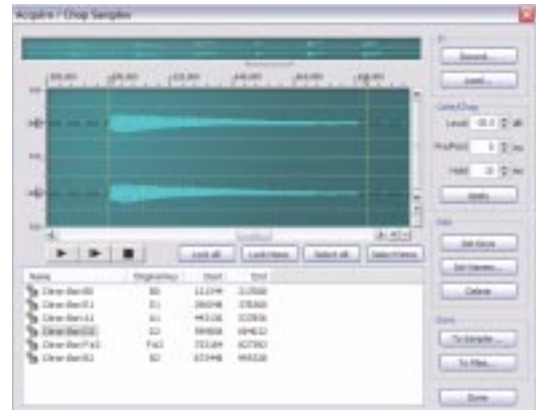
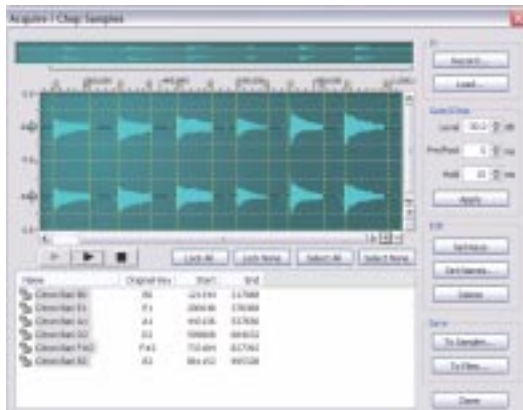
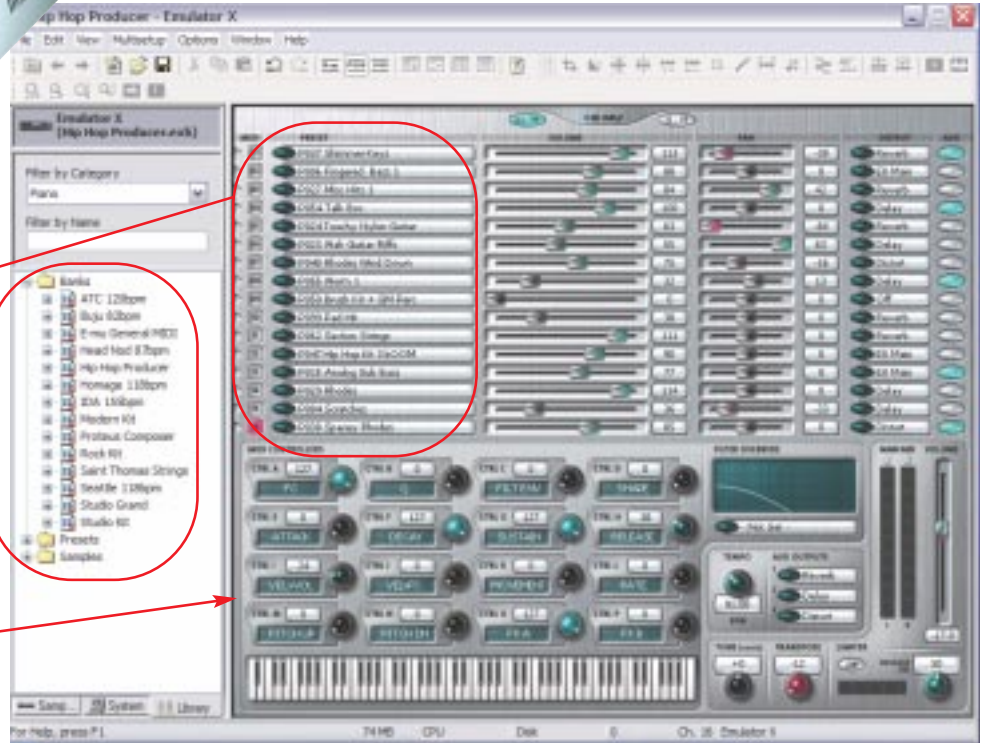


The heart of the system, the 1820 AudioDock M breakout box, is intended to serve not only the Emulator X app, but all your musicmaking apps.

As a VSTi, you get 16 channels, but in standalone mode up to 32 channels let you multitrack, layer, or split to your heart's content.

The "tree" is dedicated to locating, loading, and organizing your samples and patches.

The MIDI control patchbay offers a tweaker's paradise of options for realtime control.



On the left, a continuous recording has been chopped into multisamples. In the dialog below the waveform display, Emulator X accurately detected the pitch of each note and noted it in the sample filename. On the right, "Citron Bari D2" is magnified for further editing.

excels at low-latency monitoring. Zero-latency hardware monitoring is also available through the 1820m. What's equally impressive about the 1010 is its ability to do any standard sampling rate, all the way up to 192kHz. There are some limitations to recording at 192kHz, which are explained in greater detail in the manual.

Also included is a sync daughter card that connects easily to the 1010 by way of a serial

cable. I was very surprised at the wide variety of synchronization formats supported on the daughter card, which include Word Clock, SMPTE, and MTC. I was also happy to find that the manual included a very complete and comprehensive appendix on accessing the sync functions of the daughter card, as this is sometimes left out of the picture entirely. E-MU even goes so far as to lay out example sync

setups that should take the guesswork out of integrating this functionality into your studio.

In the box is a driver installation CD, which also includes installers for the PatchMix DSP program, and bundled copies of Cubase VST 5.1 (minus the silly dongle), WaveLab Lite, and SFX Lite. Also included are the Emulator X program installation and four accompanying sampling CDs.

## Vital Stats

<b>Version reviewed</b>	1.01
<b>System requirements</b>	Intel Pentium III or AMD K6 or higher, 1.4GHz or faster (Pentium 4 at 2.4GHz or faster recommended); Intel, AMD, or 100% compatible motherboard & chipset; 512MB System RAM (1GHz or greater recommended); 7200 RPM hard disk; 200MB of free hard disk space for minimum installation (3GB needed for full installation); Windows 2000 SP 4, Windows XP SP 1 or greater; PCI 2.1-compliant slot for E-MU 1010 PCI card; adjacent PCI slot for E-MU 0202 I/O daughter card; CD-ROM or DVD-ROM drive; X VGA Video (1024 X 768)
<b>Hardware</b>	1010 PCI card, sync daughter card, 1820 M breakout box
<b>audio inputs</b>	2 mic pres (48V phantom power, up to 40dB of gain); 6 balanced 1/4" ins; stereo RIAA turntable in (w/ground lug); coaxial S/PDIF in (switchable to AES/EBU); ADAT in (switchable to optical S/PDIF or AES/EBU)
<b>audio outputs</b>	8 balanced 1/4" outputs; 4 stereo 1/8" speaker outs (configurable from stereo to 7.1); coaxial S/PDIF out; ADAT out (switchable to optical S/PDIF); front-panel optical S/PDIF out, stereo headphone output
<b>MIDI I/O</b>	2 pair; one each on front and back panels
<b>other connections</b>	Word Clock in, out; SMPTE in, out; MTC out; FireWire convenience port
<b>sample rates/resolutions</b>	44.1, 48, 96, 192kHz; 16-, 24-bit
<b>Software</b>	Emulator X
<b>operation</b>	Stand-alone or VSTi, streaming or from RAM
<b>sample editing</b>	pitch detection, gate/chop, time compression/expansion, pitch change, reverse, fade, sample rate conversion, cut/copy/paste, bit reduction
<b># of multibr parts</b>	32
<b># of velocity-switched levels</b>	128
<b># of layers/zones</b>	unlimited
<b>max. polyphony</b>	unlimited (CPU dependent)
<b>filter types</b>	54
<b>syncable functions</b>	LFOs, envelopes, sample start, sample delay, patch cords
<b>Effects</b>	1-band parametric EQ, 1-band shelf EQ, 3/4-band EQ, auto-wah, chorus, compressor, distortion, flanger, frequency shifter, leveling amp, mono delay, phase shifter, rotary, speaker simulator, stereo delay, vocal morpher
<b>File compatibility</b>	EOS, E11X, Esi, Giga, Akai 1000/3000/5000, HALion 1 & 2, EXS24, SoundFont 2.1, .WAV, AIFF

## Installation

From a hardware point of view, the 1010 and daughter card are very easy to understand and install. One thing in particular I like is that the breakout box doesn't require an external power cable, as this is handled internally from the DSP cards themselves. All that's needed to make this happen is a single power cable from the computer's power supply. In fact, if you find that you can't spare a power cable, E-MU supplies a power splitter that saves you a trip down to the computer store. After finishing the installation, I started up the computer to install the drivers. Once XP detected the hardware, I popped the Driver CD in and installed the drivers without significant complications.

Next up was the installation of the bundled software. But before I could begin, I had to go to the Microsoft website to download the latest Windows XP Service Pack, as this is a requirement for the bundled software. After a half-hour of downloading and installing

(you gotta love cable modems), I restarted my computer and was ready to fly.

On the "Important!" leaflet that comes with the installer CD, E-MU alerts us to a problem with InstallShield (not an E-MU product) and offers instructions on how to avoid it. Blowing off these instructions will result in your seeing a spurious kernel error dialog that's scary but actually innocuous. (The bug actually brings up the wrong dialog box. There is no kernel error.) I loaded up the whole shebang; free apps, sample library, and all. It's a pretty big install.

## User Interface

In order to fully comprehend the inner workings of the Emulator X Studio, you need to understand that it's governed by a combination of two programs, PatchMix DSP and Emulator X.

PatchMix DSP is the control panel for the hardware component of the studio bundle. It serves two main purposes: audio/effect routing

and synchronization. I've had experience with a number of software mixers, and I found the graphic interface easy to navigate and understand. One of the coolest features of the tight integration of the hardware and PatchMix is its ability to patch insert points to a DAW application, such as the included Cubase VST. Signal routings not otherwise possible are no-brainers. Excellent.

A quick click on the FX button in the upper right corner of the interface will bring up a palette of different instrument and effect categories, such as guitar, vocal, equalization, and reverb. These categories include both single insert effects and presets of different effect combinations (*i.e.* compression, EQ, delay, chorus). Once an effect or combination of effects is selected, it is merely a matter of dragging and dropping from the palette to the insert point.

The attribute that really sold me on PatchMix is how easy it was to alter and customize the graphic interface of the mixer to fit my needs. And if this doesn't do it for you, E-MU supplies a variety of mixer setups that include each supported sampling rate (44.1, 48, 96, and 192kHz).

Although the Emulator X includes extensive audio streaming capabilities, E-MU offers the option of disengaging this function for users wanting to conserve their hard drive resources and play samples from RAM. Another notable feature here is the ability to utilize alternate audio interfaces with an ASIO driver. Unfortunately, the PCI card serves as a kind of dongle, so laptops are frozen out.

### Sounds

As mentioned earlier, the Emulator X package includes four sample discs. *Producers* is a giant grab bag of meat-and-potatoes sounds that covers lots of bases. Among its goodies is the entire Proteus 2000 soundset presented complete with all original controller mapping. It's always a matter of taste, but there's so much here you're bound to find lots to like.

Beat Shop offers a respectable assortment of multi-stylistic drum kits and loops, all recorded with a little room ambience and plenty of velocity-switching for added realism. If you've ever used Sonic Reality's outstanding *Interactive Drum Kits and Snares*, you'll have a good idea what to expect from these loops and kits. Some of the snares are a little dark, maybe, but that's easily remedied either within Emulator X or by routing the snare to its own 1820m output and seasoning it to taste externally.

The two-disc *Grand Piano* set is full of gorgeous piano samples. Rich in texture, with glassy top-end and clear mids, it was nonetheless hard to get any of Emulator X's 23 velocity curves

to feel right when using a synth-action controller (and hey, here's a praise within a dig for offering so *many* curves). A piano-weighted action fared quite a bit better.

### Expansion

Although I was bummed to find that there's no REX 2 support, I was glad to see that E-MU supplies a cool file-conversion software app, which supports several sampler formats, perhaps sexiest among them GigaStudio. Akai MPC2/3000 and Creamware Pulsar are listed in the manual as convertible but these conversions are not yet functional. Look for an update to be available by the time you read this. To my delight, the conversion process itself was nearly effortless and swift with some old Akai and E-MU libraries. I did get mixed results with different titles. In one case, I converted a bunch of stereo Akai drum loops, imported them and found that they were all panned hard left, even while the channels' pan parameter was set dead center. Afraid that this was a converter-related problem, I imported a few more loops from another Akai collection and couldn't reproduce the problem, so I chalk it up to a problem with the sample library itself. As a helpful feature, the manual offers advice and tips for each particular platform, and even suggests the possibility of importing older samples from floppies, which will certainly appeal to any old-school samplehead. You'll be able to go on using those beloved libraries you've had for years.

### In Use

After installation and setup, I was primed and ready to give the Emulator X a taste test, so I started Cubase VST, imported a few MIDI files, and configured the Emulator X to be used as a VSTi. In the first round of testing, I wanted to see how easy it was to load patches and banks, so I made use of the Library page of the Tree to locate and load one of the many supplied sample banks. I didn't immediately see the banks in the Tree, so I used the Update Library function to have the Emulator search my system for the installed sounds. Lo and behold, in under a minute I found myself looking at an impressive assortment of banks, including loops, drum kits, pianos, etc. At this point, it was simply a matter of dragging the preset into the sampler icon at the top of the Tree, at which time the bank loaded quickly. You can also use the Open button at the top of the interface to browse and load banks.

In standalone mode Emulator X offers 32 MIDI channels, but VST allows only 16. Multiple plug-in instantiations get around this. Every

MIDI channel includes its own set of global parameters, such as volume, pan, and output; but looking more closely, I also noted that each MIDI channel has its own set of MIDI controllers (16 of them) and its own Filter Override, which contains several presets. In addition, the Main Mix in the lower right corner provides auxiliary global parameters, such as tuning, transposition, tempo, and even a limiter.

The real meat of the Emulator X can be found in its editing capabilities. It's here that E-MU really delivers a solid one-two punch by providing three sub modules by which to edit. The Voices and Zones module lists and maps the included samples within a patch. Within this module, I was easily able to perform some intricate tuning and panning alterations to the samples.

The Voice Processing module offers LFOs, filters, and envelopes, not to mention a modulation-routing section called "Cords" as in patch cords, and the modular-synth metaphor is apt. Borrowed from E-MU's recent hardware synths, it offers a lot of flexibility.

Of course, Emulator X provides a wave editor, which includes numerous offline editing functions such as normalizing, fades, looping, sample rate conversion, and so forth. Honestly, I could go on and on about every little editing feature of the Emulator X, but the well-written manual will probably have an answer for just about every conceivable question.

One improvement I might like to see here is a velocity-sensitive virtual keyboard. A little visual feedback in the form of animated keys would help too. We're used to seeing this now, so it causes a moment of concern when clicking on a key gives no visual feedback.

Sampling from anywhere inside or outside your computer is equally easy since PatchMix is part of the picture. It's in PatchMix that you set up your inputs, and its flexibility allows for some pretty interesting input paths. Sampling is just this easy: Choose Acquire Sample from the File menu, click Record, then Select Input. You're now recording. Multisampling is handled automatically; as long as you leave a little silence between notes, Emulator X can chop up your recording for you. I'm told that at Musikmesse, an E-MU clinician demoed this capability by multisampling several notes on a Hohner Melodica and then playing a finished basic patch seconds later. So, I reached for a cool Citron baritone guitar, plugged it into the first mic/line input of the AudioDock, and selected Acquire Samples from the File pull-down menu. The Acquire/Chop Samples window was the first stop on the short journey from silence to samples. Clicking the Record button

brought up the Record Audio window, from which I was easily able to assign an input source, monitor with low latency, and make my recording. As I recorded, I was awestruck by the pristine quality of the preamps and audio converters. E-MU trumpets the fact that these are the same converters used in Digidesign's quintuple-digit-priced Pro Tools HD systems.

After finishing my recording, I found myself back where I began, looking at the Acquire/Chop Samples window with a stereo waveform displayed. This is where it gets cool: Simply by clicking and dragging the mouse over the waveform, I could set start and end points for each of the samples I wanted to derive from my recording. From there, I clicked Set Keys and Emulator X quickly (and accurately) guessed the pitch of each sample — each open string of the guitar. I batch-named the samples by clicking the Set Names button and checking the "include original pitch" box. The Build Preset tools made it easy (and automatic, at my choosing) to lay my new samples out across the keys. It wasn't quite as fast as the Messe demo, but I went from powered-off PC to playing an original sample in minutes. Working this way certainly keeps your mind on the music.

### Conclusions

It comes as a strange coincidence that as I wrote this review, I was preparing to begin work on my new book for Course Technology that covers sampling and software synthesis. After reviewing this bundle, the Emulator X Studio will most certainly earn a spot in the book. For \$599, the Studio bundle offers an inconceivable assortment of hardware and software that will meet the needs of both beginner and professional musicians alike. Even better, E-MU offers an alternative bundle with just the 1010 and 0202 cards for \$299.

But why isn't there a Mac version of this bundle? The Emulator X and a fast G5 would be a match made in heaven for many a virtual studio.

Using the Emulator X is a real delight. Its ability to make sampling painless and blindingly fast and its seamless, CPU-friendly integration with PatchMix DSP put it well ahead of most other soft samplers. I'm interested to see if and how TASCAM will rise to the challenge presented here with their new version of GigaStudio later this year. That shootout will be a tough contest, but for now, the Emulator X is the new Sheriff in town, and wears a Key Buy badge. ■

*Michael Prager is a musician and writer based in Southern California.*