

FIG. 1: On startup, GigaStudio's improved user interface displays the new MIDI Mixer (top), QuickSound area (center), and Keyboard (bottom). In this example, a stacked instrument appears in slot 4.



TASCAM GigaStudio 3 Orchestra (Win)

The sky's the limit with Tascam's latest software sampler. By David Rubin

When GigaStudio debuted in the late '90s as GigaSampler, it soon spawned a plethora of gigantic multidisc sample libraries. Unfettered by the RAM restrictions of hardware samplers, developers began churning out stunningly realistic instruments for the disk-streaming software sampler and quickly established it as the new 600-pound gorilla in the world of sampling.

Nevertheless, GigaStudio was not without its shortcomings. Its user interface was often frustrating, the

With a high-end Pentium 4, you can reasonably expect to get hundreds of notes of polyphony.

program supported only its own plug-in format, and various technical limitations forced developers to employ workarounds for complex instruments. Moreover, GigaStudio was more of a sample-playback instrument than a true

sampler, because you couldn't actually record directly into the program. Standalone and plug-in programs from several other companies began to offer stiff competition to GigaStudio, and the sire of software sampling started to look a little long in the tooth.

Finally, after what seemed like an interminable wait, the much-anticipated GigaStudio 3 (GS3) has arrived, and it's a doozy. Tascam has listened to its hardcore users and introduced an extensive redesign and expansion of the program. GS3 supports direct sampling; 24-bit, 96 kHz audio; VST plug-ins; and ReWire connectivity. What's more, the user interface has been vastly improved, and the program now boasts a number of sophisticated new features. In fact, thanks to its Audio Capture tool (which renders performances to disk), and other features that I'll discuss shortly, GS3 has blurred the line between sampler and digital-audio workstation.

For this review, I'll cover Tascam's top-of-the-line GigaStudio 3 Orchestra version, but keep in mind that two entry-level versions—GigaStudio 3 Ensemble and GigaStudio 3 Solo—are also available. (These versions lack several high-end features; see [Web Clip 1](#).) It's also important to note that all of the GigaStudio versions

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support only Windows XP with Service Pack 1. As of this writing, Tascam does not recommend using GigaStudio 3 Orchestra with any other version of Windows.

Interface Remodeling

GS3's new user interface preserves many familiar elements and also introduces several important renovations. Longtime GigaStudio users should feel right at home with the program's three-part opening screen (see Fig. 1). At the top, the MIDI Mixer provides 16 slots for loading instruments into the corresponding MIDI channels. The eight Port tabs let you switch to additional groups of 16 for a total of 128 possible instruments loaded at once.

In the center section, the QuickSound area presents hierarchical drive/folder/file displays along with keyword and file-name search capabilities. You can load any instrument by simply dragging it into any MIDI Mixer slot. Or you can select a slot and double-click on an instrument in the QuickSound display to load it.

At the bottom of the screen, the Keyboard shows the selected Instrument's range in white keys and enables you to trigger notes by clicking on the onscreen keys. A slider on the left lets you specify a Velocity level for mouse-clicked keys, or with the Auto function active, you can change the Velocity on the fly based on where you click on the keys from front to back.

FIG. 2: The four-part QuickEdit window allows you to make a number of nondestructive changes that affect how an instrument sounds and responds.



GigaStudio's innovative keyswitching function is still available. It lets you switch in real time from one sample layer to another by playing specially programmed



FIG. 3: GS3's revamped DSP Station functions like a mixing board with mute and solo buttons, faders, inserts, and level meters.

keys (they're now labeled and tinted green on the Keyboard) that are outside of the instrument's playing range. While performing with a multilayer violin patch, for example, keyswitching could let you quickly change from pizzicato to spiccato to tremolo without breaking your stride. Brass and woodwind libraries often use keyswitching to change from legato to staccato.

One of the things that I found most annoying about the old GigaStudio was that its confined user interface left me continually adjusting borders between sections in an effort to see what I needed to see. Fortunately, those problems have been largely banished from the current version, which offers substantially more flexibility in juggling various parts of the program.

For starters, the QuickSound and Keyboard sections can now be undocked and converted into separate, floating, resizable windows. Toolbar buttons let you instantly toggle any of the components on and off. That is especially great news for dual-monitor users, because they can drag windows onto a second monitor to spread things out. For example, you could drag the QuickSound window onto its own monitor and fill the screen with library listings and subdirectories for some really serious browsing.

Dedicated QuickSound toolbar buttons let you show or hide the window's three panes, which now include the Loaded Instruments list (a separate tab in the old GigaStudio). A handy Maximize button lets you temporarily expand the QuickSound window to full-screen size if you don't have the luxury of a second monitor.

More MIDI

Although its essential functions remain mostly the same, the MIDI Mixer has undergone substantial plastic surgery, and in the process, it has acquired considerable new powers. The 16 Instrument (channel) slots for each Port are now arranged in a single vertical column with

enough width to accommodate long preset names. Each instrument's parameters—such as mute, solo, volume, fine-tuning, panning, and output channels—are aligned in a single strip next to the Instrument slot. The Volume, Tune, and Pan controls have small horizontal sliders for making adjustments. Each control also supplies a tiny button that opens a large pop-up menu for reassigning the slider to other MIDI controller messages.

The new MIDI Mixer has a cleaner, more efficient design that makes it easier to correlate parameters with instruments. But the really big news is not immediately obvious: GigaStudio now lets you load more than one patch per MIDI channel for creating layered instruments. A button in the QuickSound window activates GigaStudio's new Stack Mode, which allows you to drag as many instruments as you want into any of the Instrument slots.

Each time you drag in a new instrument (or load one by double-clicking on it), the main channel slot expands downward, creating gray-colored subchannel slots to accommodate the added instruments. The original slot then becomes the master slot, and its parameter sliders control the layered sound as a whole. Each of the instrument layers has a complete set of its own sliders, which can be independently assigned as needed. You can mute and solo individual layers as well as the entire instrument. If you start running out of space, you can hide the subchannels by clicking on a button in the Master channel slot.

When I stated earlier that the new MIDI Mixer with its eight Ports could handle up to 128 instruments, that wasn't strictly accurate. With Stack Mode activated, the number could be in the hundreds, depending on your CPU's capabilities and your available resources. Stack Mode makes it easy to create (and keep track of) layered drum sounds, solo woodwind ensembles, doubled string sections, and many complex instruments. That is a major improvement to the program, and it has been implemented especially well.

To create layered sounds in GigaStudio 160 (without actually merging the sounds beforehand), you had to assign different instruments to the same MIDI channel on different Ports and then link the Ports so they would play together. That option is still available in the new GigaStudio, albeit with twice the number of Ports. By linking Ports and stacking instruments, you can create some monstrously convoluted setups with enough controls to keep you busy for days fine-tuning the mix. When you arrive at the perfect combination, you can save the whole extravaganza as a Performance file for instant recall in the future.

GigaStudio has always had the ability to save an entire environment as a GigaStudio Performance (GSP) file. But now the program offers another powerful option: the Instrument Performance (GSI) file. Instead of capturing the entire GigaStudio setup, GSI files apply

only to individual instruments. That includes instrument layer combinations, controller assignments and settings, embedded plug-in effects, and so forth.

GSI files add an unprecedented level of flexibility to the program because you can save elaborate instrument configurations and combine them however you want in new GigaStudio setups. For example, if you create a favorite layered drum sound with the individual layers volume-adjusted and panned to various positions, you can now instantly load that instrument to any MIDI channel in any GigaStudio setup that you want. You can even combine multiple GSI files into a



FIG. 4: Changing a channel strip to Wide View mode reveals a full set of dynamics and EQ controls with graphic displays.

larger setup and save the whole shebang as a GSP file without losing the original GSI capabilities.

Quick Access

Another major MIDI Mixer enhancement is lurking just beneath the surface. Clicking the green Q button in any selected instrument opens the new QuickEdit utility (see Fig. 2). The four-part QuickEdit window provides direct access to an assortment of parameter controls that affect how an instrument sounds and responds when played.

Click on a key in the dedicated Keyboard section, and the corresponding sample appears in the waveform display above. (Surprisingly, you can zoom in way past the single-cycle level, even for the top note of a piccolo!) Color-coded envelope, filter, and LFO curves with grab handles are superimposed on the waveform,

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and you can adjust them by dragging with the mouse or by turning the virtual knobs in the Articulation section at the top of the window. (You can't, however, enter values directly into the display fields.)

The Articulation section comes fully stocked with sound-shaping tools, including global volume (attenuation), panning, and fine tuning; amplitude, filter, and pitch envelopes (AHDSR style with adjustable pre-attack level); a MIDI-controlled filter (lowpass, highpass, bandpass, or band reject) with a graphic display; and an LFO section with separate sets of frequency and depth controls for amplitude, filter, and pitch. GigaStudio also allows internal as well as external control over the LFO depth.

Above the waveform display, a set of horizontal bar-graph indicators lets you view and make adjustments to an instrument's programmed control sources (called Dimensions) such as Velocity splits, release triggers, keyswitch and pedal assignments, and MIDI controllers. GigaStudio 160 was often hampered by its paltry 32 available Dimensions. The new GigaStudio takes a quantum leap forward by allowing up to 256 Dimension assignments per instrument, which will no doubt make a number of sample-library developers much happier.

GS3's new QuickEdit utility should not be confused with the original built-in Instrument Editor, which still exists (with some improvements) in the current version. The Instrument Editor is where the

various samples and controllers are organized and mapped along with specific parameter settings that define an instrument. In other words, the Instrument Editor is where an instrument is created (and altered), and the results are permanently saved as a GIG file.

The real-time changes made in the QuickEdit window, on the other hand, are totally non-destructive and are saved as part of a GSP or GSI file. QuickEdit adds an adjustment overlay that doesn't change the original GIG file and is readily available for modification. And you can have a QuickEdit window open for every instrument in the current session, including the individual patches in a stacked instrument.

Busy Station

Another part of GigaStudio that has been dramatically revamped is the DSP Station (see Fig. 3).

PRODUCT SUMMARY

TASCAM GigaStudio 3
Orchestra

software sampler
\$ 599

OVERALL RATING (1 THROUGH 5): 4.5

PROS: Improved user interface. Flexible layering capability. Unlimited polyphony. Support for 24-bit, 96 kHz audio. Direct sample recording. Support for VST plug-ins and ReWire. Powerful real-time editing of patches. Built-in convolution-based reverb. Expanded mixer. Intelligent MIDI utility. Bundled collection of sampled instruments.

CONS: Supports only Windows XP with Service Pack 1. Cannot import most other sampler formats.

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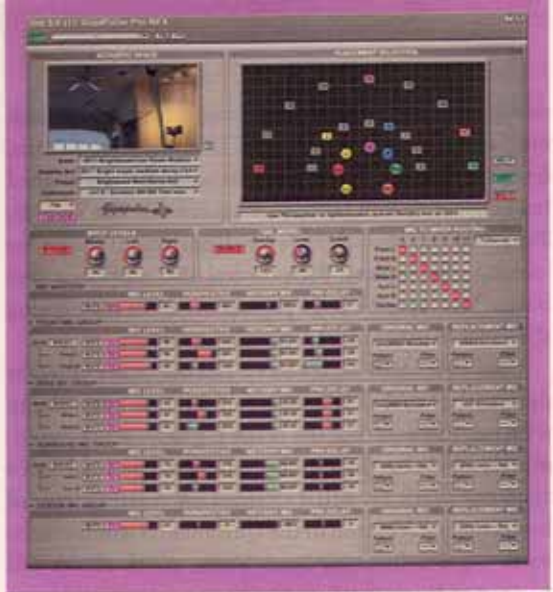


FIG. 5: The powerful new GigaPulse Pro brings convolution-based reverb to GigaStudio 3. In the Placement grid, you can configure from one to seven mic positions with various impulse-response placements.

It's the clearinghouse for all of the sampler's elaborate mixing, processing, and routing capabilities. With the default setup, you can toggle between the MIDI Mixer and the DSP Station by clicking on a button in the toolbar. You can also undock the DSP Station and make it a resizable floating window.

As with the previous version, the current DSP Station is designed to mimic a hardware mixing board replete with mute and solo buttons, faders, inserts, and level meters. The default setup supplies 16 stereo channel strips with linked faders, but you can unlink any of the faders to adjust the left and right channels separately, and you can display fewer channel strips if you want.

Compared with its predecessor, the new DSP Station has been greatly improved and sports a more refined look and feel with additional controls. For example, each channel strip now has a Position and Width knob for changing the perceived stereo spread of an instrument and for repositioning it within the mix. (Mono samples get standard pan controls.)

As with the new MIDI Mixer, the DSP Station has acquired several powerful features that lie just out of sight until needed. Clicking the tiny triangle at the top of any channel strip replaces the strip's default graphics with a large panel packed with knobs, sliders, graphs, and buttons (see Fig. 4).

This Wide View option includes the original channel-strip controls and adds an Insert section with slots for applying up to four stereo effects. An Aux Sends section lets you set up as many as eight pre- or post-fader aux busses per instrument. As with all of the controls in the DSP Station, right-clicking on an Aux Send level knob opens a MIDI Automation dialog box where you can assign an external MIDI controller for manual or automated control.

The Dynamics section adds a compressor/limiter to the channel strip. The Curve graph shows the gain response as you adjust the threshold, ratio, and output-gain controls. A 4-band equalizer with a graphic display lets you independently mix and match any of six types of EQ: parametric, notch, lowpass, highpass, low shelf, and high shelf.

The Wide View option can be applied to any or all of the channel strips, but because it takes up roughly the space of eight strips, it can easily make your DSP Station a bit unwieldy. Once you've set all of your controls, however, you can revert to Narrow View, where Insert, Dynamics, and EQ buttons let you turn those effects off and on without changing views.

Aside from the Input tab, three other tabs at the bottom of the DSP Station window let you view dedicated faders and controls for adjusting groups, aux sends, and the output masters. These other displays have similar Wide and Narrow View options.

Spatial Delivery

As I mentioned earlier, GigaStudio now supports VST plug-ins as well as its own NFX-format effects. GigaStudio 160 owners will be happy to learn that they don't have to abandon their old plug-in settings or Performances, because GS3 comes with the same Reverb, Chorus, Multi Tap Delay, and EQ Contour plug-ins as its predecessor.

The effects, which seem to have undergone only minor cosmetic changes, integrate very well with the program, delivering a tight performance and smooth response with little latency. The VST effects that I tried also worked fine, although I experienced noticeably more latency with those than with the NFX effects. As an added bonus, if you have a soundcard that supports GSIF-2, you can process the audio directly from any of the hardware inputs.

One of the things about GS3 Orchestra that has generated the most buzz in recent months is the addition of GigaPulse Pro, Tascam's new convolution-based reverb (see Fig 5). GigaPulse Pro is an NFX plug-in that employs impulse-response recordings and microphone modeling to generate some pretty impressive reverb effects for stereo and surround-sound systems.

Much of the GigaPulse screen is devoted to a large Placement Selection display with an array of round and square buttons superimposed over a grid (for most studio spaces), a photo (for some interior spaces), or a front-panel graphic (for hardware emulation). For the acoustic spaces, the round buttons represent the microphone channels, and the square buttons represent different locations where the impulse responses were generated.

You can reconfigure the reverb's character and an instrument's placement in the sound field by clicking on a mic button and then selecting one of the numbered impulse-response placement buttons. Each time you

it should serve nicely as the primary processor for most projects. I only wish that the program had even more presets to choose from. (According to Tascam, a collection of new downloadable impulse response files is in the works.) Sample libraries (such as Larry Seyer's *Acoustic Drum Library*) are already being released with their own dedicated impulse responses to maximize the playback experience.

High Performance

In addition to GS3's support for 24-bit, 96 kHz sampling rates, the program now boasts unlimited polyphony. The polyphony is limited only by your CPU's horsepower and hard-drive speed. With a high-end Pentium 4 and a separate, fast drive for your samples, you can reasonably expect to get hundreds of notes of polyphony. (Tascam claims that many users have reported polyphony levels well beyond 400 notes.) That makes it feasible for the first time to assemble and play back large-scale orchestral arrangements on a single machine.

And speaking of orchestral arrangements, a feature that has become popular with several high-quality orchestral libraries has now been integrated into GigaStudio. The program's new Intelligent MIDI (iMIDI) utility enhances realism by applying performance-related algorithms (many of them based on the Vienna Symphonic Library Performance Tool) to specially programmed patches.

With iMIDI, you can filter MIDI data, create more-convincing legato lines, perform repetitions with changing samples, automatically alternate sounds (such as down-bow and up-bow), produce amplitude-matched release samples (for smoother and more realistic reverb tails), and apply various performance rules to incoming MIDI.

Tascam has also greatly improved GigaStudio's connectivity. Aside from its new support for VST plug-ins and its ability to convert Akai samples, the program now

supports ReWire (slave mode) with as many as 64 channels. That makes it much easier to use GigaStudio on the same computer as your favorite sequencer or DAW. And if you drag a General MIDI file into the MIDI Mixer, GS3 can automatically load the appropriate instruments from a General MIDI library (such as Tascam's Conexant GM500). It can even launch your favorite sequencer for playback.

GigaStudio 3 makes it easy to import standard WAV files and map them across the keyboard, which makes it a viable tool for triggering Foley, sound effects, and music clips when working to picture. And GS3's new recording feature makes it a snap to record your own samples and assign them to keys and zones.

I found few things to complain about in GS3 Orchestra. The program's exclusive support for Windows XP (SP1) could be a problem for some users, and the 300-page manual is poorly edited and incomplete in some areas. The Instrument Editor window might also benefit from the kind of face-lift that the rest of the program has received, and I still wish that GigaStudio could import additional sampler formats. However, none of these complaints is of the make-or-break variety. On the plus side, GS3 Orchestra comes with a generous collection of instruments from various sample libraries (see [Web Clip 2](#) for a description).

All in all, GigaStudio 3 Orchestra is an impressive package. Its high-end audio quality, flexible routing and processing capabilities, advanced performance features, sophisticated editing tools, powerful search functions, and streamlined user interface make it once again the indisputable gold standard in software  samplers.

Having successfully sampled the sound of one hand clapping, contributing editor David Rubin is now trying to figure out where to position it in the sound field of life.