



# SWEETNOTES

MUSIC TECHNOLOGY DIRECT

EARLY SUMMER 1998 ISSUE

## MOTU HARD DISK BREAKTHROUGH!

### INSIDE THIS ISSUE:

#### Opcode Studio Vision 4.0

If you want every aspect of music production, including MIDI, CD-quality digital audio and QuickTime video, integrated into one musical



**Mark of the Unicorn** (you and I know them as MOTU) recently dropped a bombshell with their announcement of a new hard disk recording system for Windows 95 and Power Macintosh called the **2408**. It's our cover story this issue for a good reason: Sweetwater's pre-orders for the 2408 already match some of the most successful products we've ever shipped!

Why does MOTU call it the 2408? And why is it such a bombshell? Fair questions. Simply put, the 2408 core system offers hard disk recording with 24 simultaneous inputs and outputs to and from your computer, hence the "24" part of its name. The "08" part refers to the number of analog inputs and outputs offered by the system. But the core system is also chock full of digital I/O, offering up to 24 simultaneous channels of Alesis ADAT optical and Tascam TDFI digital I/O

with two stereo pairs of S/PDIF outputs, stereo main outs, and a headphone jack (with volume knob) on the front panel for good measure. The system is also expandable. You can connect up to three single rack space 2408 I/O units to its PCI audio card for up to 72 input and output connections!

Okay, so we're talking about an impressive amount of I/O here. But what's the bombshell? You get all of this, plus workstation software for the Mac and drivers for today's most popular Windows programs and many other features we haven't even mentioned yet — for under \$1,000! What's more, it not vaporware — it's shipping right now!

**Is the 2408 for you?** Before we dive into explaining all the cool stuff this system can do, some of you may be wondering exactly how the 2408 might fit into your existing

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environment that's amazingly powerful and easy to use, **Studio Vision Pro 4.0** might be exactly what you're looking for. This new version implements over 100 of the most requested features by musicians and engineers world wide. — **SEE PAGE 2**

#### Mackie's HUI Interface

If you make your living using Digidesign's Pro Tools System, Mackie's new fully-interactive workstation controller, the **HUI** — short for Human User Interface — will significantly boost your productivity and creativity with its innovative "hands-on" design for enhanced tracking and mixing. Look ma, no more adjusting faders on the screen! — **SEE PAGE 3**

## YAMAHA'S AFFORDABLE DIGITAL MIXER

Seems hard to believe, but it was almost four years ago that **Yamaha** amazed the professional audio industry with the introduction of the ProMix 01, the first digital mixer providing pro quality sonic performance and memory of all settings at an unbelievable price. That was only the beginning. Answering market demand for application-specific mixers, Yamaha stunned the market again with the 02R and 03D digital mixers. Providing top-quality audio and a very impressive list of features, these mixers have found their way into numerous high-level projects including the 1998 Grammy Award-winning James Taylor "Hourglass" CD.



Now the company has just released the 24-channel **01V Digital Mixer** at the landmark price of only \$1999 (that's list, of course). As the successor to the ProMix 01, the 01V is a low-priced production powerhouse that will meet the needs of any professional digital audio applications well into the future. Wayne Hrabak, Marketing Manager of Yamaha's Pro Audio Group told us, "While the 01V retains all the popular ProMix 01 features, including

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#### Alesis Unveils 20-Bit ADAT

Studio professionals know that every single bit of information actually doubles the resolution of any digital audio, resulting in detailed, full-spectrum recordings that sound absolutely stunning. Introducing the new line of **Alesis Type II** 20-bit multitrack recorders: The **XT20**, the affordable **LX20** and the **ADAT-PCR** Interface Card. — **SEE PAGE 3**

**Plus: Emagic's Logic Audio line, Oram Pro Update, TC Electronic's FireworX processor ... and much more inside!**

# STUDIO VISION PRO TURNS 4.0

On March 23rd 1998, **Opcode Systems** set a new industry standard of excellence for professional music and audio design with the release of **Studio Vision Pro 4.0**. Every aspect of music production — MIDI, CD-quality digital audio and QuickTime video — are integrated into one musical environment that's clear, powerful and easy to use.

This release implements over 100 of the most frequently requested features from the professionals who use Studio Vision Pro. Some of the changes are major functional improvements, like full support for ProTools|24 in 24-bit mode and a stereo audio DSP menu. Other changes are more subtle, but result in unprecedented convenience.

## Digital Audio Enhancements

Studio Vision Pro 4.0 is compatible with ProTools 24 and its TDM support has also been significantly enhanced: You can record directly from anywhere in the TDM chain including from Sample

to work with a variety of audio formats. Bring digital audio directly into your tracks from .AIF, .AU, .WAV files, QuickTime movies or even standard audio CDs. Integrate drum loops, synth hits, ethnic percussion or vocal snippets from sample CDs, textures and ambience from sound effect CDs, audio files from the Internet or Windows PCs — Studio Vision Pro brings it all together.

## Edit your music

The Tracks Overview section of the Tracks Window is a fast, intuitive way to arrange your music and generally view all your digital audio and MIDI tracks in one environment. In version 4.0, the "Strip Chart" (a graphic window borrowed from Studio Vision's Graphic Editing Window used to draw in edits for all MIDI parameters) is included under the Tracks Overview section and has really been beefed up. First of all, it's *vertically* scaleable (a long time feature request)

making quick visual edits much more accurate. Secondly, it's applicable to multiple tracks (whatever tracks you select from the Tracks Overview window by "shift clicking"). And lastly, some new oscillating tools have been added to impose sine, sawtooth, square, and triangle wave shapes over the selected continuous controller. The period of the waveform is completely user definable. This gives you an easy way, for instance, to make a track's volume oscillate in sync to a song's tempo in any way that you can imagine — a cycle every beat, or every measure, or every 2 measures, etc.

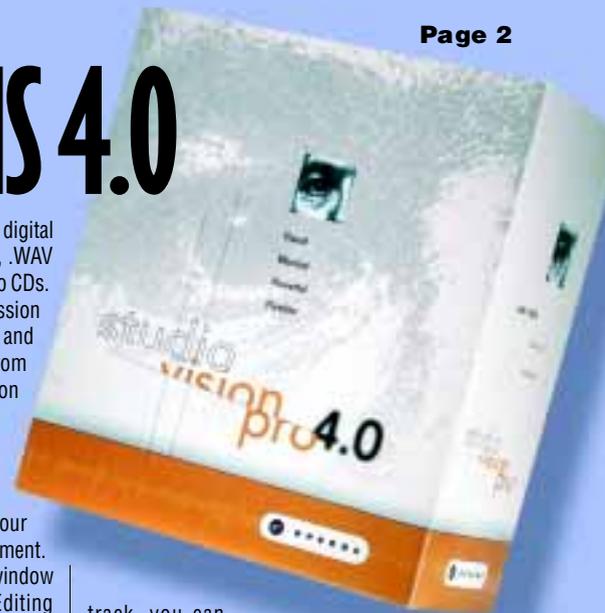
A new edit window has been added to the graphic, list, and notation edit windows: the Pulse Edit Window (see Figure 2). This is the perfect environment to compose drum and percussion tracks by painting rhythmic values onto a matrix display with a drawing tool called the "Magic Drumstick." You can even "paint-in" the velocity of each note by varying the height

of the drum stick in the matrix. The Pulse Edit Window also gives you "single click" ability to send any sound to any device in your entire MIDI rig.

All the above edit windows give you instant audio feedback with scrub and audition features, on-the-fly editing while your music is playing, and easy drag and drop editing with Studio Vision Pro's smart cursor that changes function automatically depending on what you want to do.

## Make it Groove

Studio Vision Pro 4.0's Play Quantize allows you to quantize your music on playback without affecting the original notes. There is a deep control of parameters to get exactly the feel you want out of each track. When you're done tweaking the feel of a



track, you can save that quantize filter as your own custom "quantize template" which can be selected from a pop-up menu at any time. You can even apply different quantize filters to individual tracks. The Groove Quantize feature allows you to graft the feel of a huge variety of custom drum grooves to your own tracks. You can also create new quantizing grooves from new tracks.

## Add effects

Eliminate racks of effects and processing gear, cable spaghetti and patch bays. Once you record a digital audio track into Studio Vision Pro, it can stay digital right up until the sound comes out of your listener's speakers. Studio Vision Pro is compatible with an endless variety of Adobe Premiere, Audio Suite, and TDM Plug-ins. Also make sure you check out Opcode's new line of **fusion: EFFECTS** Plug-ins including **fusion: VOCODE** (and **Fusion: VOCODE TDM**), **fusion: FILTER**, and **fusion: VINYL**.

In the area of input effects, version 4.0 features a new arpeggiator that can use the new playback quantize filters for its rhythm. Complete with up, down, random, alternate, and latch mode, this killer arpeggiator can run even when the sequence isn't playing. Everything you create with the arpeggiator can be recorded directly into Studio Vision Pro.

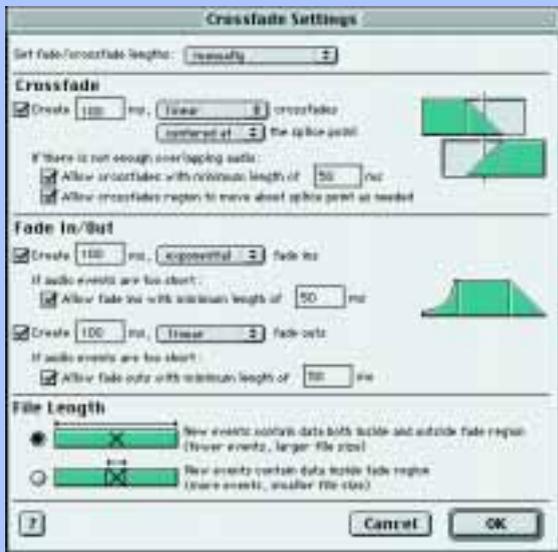


Figure 1: Studio Vision Pro's Crossfades Window

Cell. The extensive DSP Menu is completely compatible with all audio files (mono, stereo, interleaved and linked pairs) and features a great Crossfades command (see Figure 1) to eliminate pops and clicks resulting from cutting and pasting different tracks together. The Premiere Plug-in architecture also accommodates stereo files.

The new DSP Preferences dialog box allows you to set default naming and folder locations for any or all DSP functions. You can also easily create your own suffixes and prefixes for audio files created in the DSP menu. The graphic representation of waveforms is now completely scaleable vertically as well as horizontally for more precise visual edits. All editing functions work the same way with digital audio as they do with MIDI, so you can work with your music without having to change mental gears.

## Import audio

Studio Vision Pro 4.0 has an unsurpassed ability

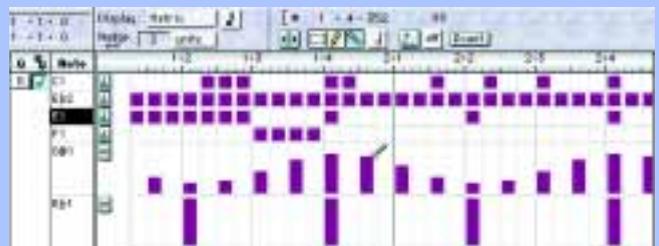


Figure 2: The Pulse Edit Window lets you "paint in" rhythmic values

## Import QuickTime Movies

The integrated QuickTime Digital Video Window makes Studio Vision Pro 4.0 an excellent scoring tool for any moving picture project from feature films and documentaries to industrial videos and TV commercials. Import the QuickTime soundtrack right into Studio Vision Pro and edit and process it like

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# ALESIS 20-BIT RECORDING SYSTEMS

Is the 16-bit audio format just not good enough for you any more? Too "Lo-Fi" for your ears? Truth is, most musicians and recording engineers would prefer all the bits they can get their hands (and rotary tape heads) on, which is why **Alesis** (a company noted for giving musicians what they need) introduced the **ADAT Type II Systems**.

The brand new Alesis **ADAT-XT20** 20-Bit Digital Audio Recorder (\$2999 list) sets a lofty new standard in audio quality for affordable professional recorders while remaining completely compatible with the huge foundation of over 110,000 ADATs in use world wide. Using ADAT Type II — which is the only modular digital multitrack recording format that writes 20 bits to tape — the XT20 raises the measure of sonic excellence that ADAT recorders have established since their introduction in 1991. The XT20 improves upon the capabilities of earlier models of ADAT and other digital recording formats by recording eight tracks of true, linear 20-bit digital audio onto tape, without using external converters or multiplexers. Rather than just the 25% increase you might expect, the jump from 16-bit to 20-bit recording provides audio quality that's an astounding sixteen times more detailed than the 16-bit sound of compact discs, resulting in a wider dynamic range and lower quantization distortion. To complement its 20-bits-to-tape capabilities, the XT20 uses the latest ultra-high fidelity 20-bit oversampling digital converters.

The XT20 uses the same ADAT Optical Digital Interface and ADAT Synchronization Interface as other ADATs, so it may be easily integrated into an existing system. For advanced production work, the XT20 provides the same built-in digital editing features (Track Copy, Tape Offset and Track Delay) and 10-point autolocator/10-key numerical input system as the ADAT-XT. It also offers a solid, six-pound, die-cast aluminum chassis that's designed for heavy-duty applications. To get your signal to and from tape, the XT20 provides both a servo-balanced 56-pin ELCO connector and unbalanced -10dBV inputs and outputs on phono (RCA) connectors. For direct digital connection, the ADAT Optical Digital Interface carries up to eight tracks at once completely in the digital domain.

You're going to want to know more about this great-sounding machine (no surprise there), so we suggest that you call your friendly, knowledgeable Sweetwater



Sales Engineer immediately. And yes, XT20s are in stock right now!

For musicians, home studio owners, or users of other ADAT models wishing to supplement (or upgrade!) an existing system, the Alesis **ADAT-LX20** 20-Bit Digital Audio Recorder (\$2249 list) provides an economical solution for capturing the power of the award-winning ADAT recording format. Even though the LX20 is less expensive than all other types of ADAT, past or present, it offers the same 20-bit ADAT Type II digital recording format as the Alesis XT20 and M20 recorders.

The LX20 is compatible with all ADAT recorders and peripheral devices. Using the same ADAT Optical Digital Interface and ADAT Synchronization Interface as other ADATs, the LX20 may be used to add another eight tracks to an existing system. The unit also offers five specialized locate points (used with its Auto Play, Auto Return, Auto Record and Auto Loop functions) that are designed to help you record quickly and easily. For standard analog interfacing, like connecting to a mixer, the LX20 includes sixteen unbalanced -10dBV ins and outs on RCA connectors. The LX20 also offers the ADAT Optical Digital Interface, which carries up to eight tracks at once completely in the digital domain and allows you to connect to other ADATs in a system or any other device that uses this innovative transfer protocol.

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## HUI

### Hands-On Human User Interface for Digital Audio Workstations

Back when Pro Tools 4.0 was still in alpha form, industry giants **Digidesign** and **Mackie Designs** (you may have heard of them) formed a joint project to combine Pro Tools' enhanced capabilities with Mackie's mixing console expertise. The **HUI (Human User Interface** — pronounced "Hewey") is the result.

Digidesign's new 4.1 release of **Pro Tools** represents a quantum leap forward in workstation software. Among its many new features is the ability to bidirectionally interface with many more types of external hardware . . . hardware such as Mackie's HUI. This complete hardware workstation console has the user-friendly features and ergonomics that Mackie is renowned for, including instantly touch-updatable 100mm motorized faders, transport controls, DAE Plug-ins control, keyboard shortcuts, window buttons — even built-in Mackie quality mic preamps! What used to take multiple mouse moves and clicks can now be done at the push of a single button. Instead of individually adjusting "faders" on-screen (which can be too slow for live recording applications), Pro Tools 4.1 users can now enjoy hands-on tracking and mixing with touch-updatable motorized faders.

With full automation control and recall capabilities, HUI is anything but a conventional fader pack. For serious professionals who work day in and day out with Pro Tools, HUI can significantly boost productivity through direct hands-on control.

The Human User Interface is organized into seven parts (which you can

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# Mark of the Unicorn 2408: The Next Hard Disk Recording Breakthrough

— *Continued from Page 1* studio. Many of you already have (or are thinking about getting) a computer. You should definitely read on because the 2408 turns your Mac or PC into a powerful multitrack hard disk recorder and audio workstation with many features formerly available only in systems costing thousands of dollars more.

Many of you have at least one ADAT, DA-88 or similar recording or mixing device that supports the ADAT or TDIF I/O formats. If you've ever dreamed about unleashing the power of a complete audio workstation on the tracks in these devices with sample-accurate

any active output. The list price of additional 2408 I/O units is \$695.

When it comes to synchronization, the 2408 is sample-accurate. Each PCI-324 card has an ADAT SYNC IN connector that allows it to synchronize to all of the ADATs connected to it with single-sample accuracy. If you transfer some audio from an ADAT into the computer and back to the ADAT, it will be recorded precisely at its original location, down to the sample. Sample-accurate ADAT sync can be achieved without a separate synchronizer of any kind. If you have a MIDI Timepiece AV, Digital Timepiece, or Alesis BRC, you can drive



digital transfer between them (so that there's no signal degradation), the 2408 could be just the thing. Even if you've been thinking about other types of non-computer based recording systems, like Mini-Disc recorders and stand-alone hard disk recorders, the 2408 offers so much that you may want to look at the benefits of a computer-based system.

The 2408 actually cuts across several product categories and price ranges. For example, even if you've been considering spending considerably more (or even less) than \$1,000 for an audio card, the 2408 changes the playing field enough that we highly recommend taking a closer look at it. The 2408 offers so much at this price point that you may just want to invest a few hundred dollars more than you were planning to spend on a less expensive card. If you've been looking at systems with higher price tags, look again. With 24 channels of digital I/O, expansion and sample-accurate sync, the 2408 may provide what you need for significantly less money.

**System components:** A core 2408 system ships with the following components: A one-rack space I/O unit; a PCI-324 audio card (Mac and PC compatible); **AudioDesk** workstation software for Macintosh on CD-ROM (see screen shot at right); Mac OS Sound Manager driver on CD-ROM for stereo I/O with any Sound Manager compatible audio software; Windows audio Wave driver on CD-ROM for multi-channel I/O with any Windows audio program that supports multi-channel Wave drivers.

**2408 I/O Gozintas and Comezouts:** If you take a look at the accompanying picture of the 2408's rear panel (above), you'll notice that MOTU has packed an impressive number of connectors on this single space rack unit. There are three pairs of 8-channel ADAT optical connectors, three Tascam 8-channel TDIF connectors, a bank of 8 gold-plated analog RCA (unbalanced -10 dB) ins/outs, a stereo pair of S/PDIF connectors, an extra S/PDIF stereo out (labelled DAT), a pair of balanced +4 dB 1/4" TRS jacks that serve as main outputs, an "Audio Wire" jack (for connection to the PCI-324 audio card), and a pair of standard word clock BNC connectors. Whew! This one I/O box lets you actually connect up to three ADATs, three DA88s, two S/PDIF devices, and eight analog ins and outs. If you count the main outs and the front-panel headphone jacks, that's 58 input connections and 64 output connections!

The main outputs, as well as the DAT S/PDIF connector and the headphone output on the front panel all match analog outputs 1 and 2. By mixing everything to these outputs (via software), you can monitor everything through the headphones, a pair of speakers connected to the main outs, or even record the stereo mix to DAT. Nice touches.

**PCI-324 audio card – Expansion and Sync:** We're always hungry for more ins and outs, right? The 2408 serves up a large helping of expansion possibilities. A core system ships with a single 2408 I/O unit connected to a PCI-324 audio card. But the PCI-324 card actually has three Audio Wire sockets on it, allowing you to connect up to three 2408 I/Os. Whoa! That's nine ADATs, nine DA-88s, and 24 full channels of analog, with any nine banks of eight (72 inputs and outputs) active at any given time. The 324 card serves as a "nerve center" for all of these devices, allowing you to freely route any active input to

the whole rig from the transport controls in your MMC-compatible computer software.

While the 2408 hardware is capable of sample-accurate sync, the software you are using on your host computer needs to support it, too. Initially, AudioDesk and **Digital Performer** will support sample-accurate sync with the 2408. AudioDesk zooms in to the sample level (one screen pixel equals one sample) so you can see in detail just how tight the sync is. For example, you can place an audio region in a track in AudioDesk, record it into the ADAT, record it back into an adjacent track in AudioDesk, zoom in to the sample level and see the waveforms exactly aligned with one another. With audio software from other companies, you can transfer tracks to and from an ADAT or DA88 as a simple ADAT

optical or TDIF transfer with no additional sync gear (the 2408 clocks to the digital input from the tape deck). If you want to be able to transfer audio back and forth, maintaining its position in each track, the best solution is a MIDI Timepiece AV or Digital Timepiece.

**Software compatibility:** AudioDesk provides all of the features you would expect in an advanced workstation package, including stereo tracks, 16- or 24-bit recording, sample-accurate sync, automated virtual mixing, multi-track waveform editing with graphic mix automation, 32-bit effects processing, stereo time-stretching and pitch shifting, scrubbing, trimming, spotting, crossfades, support for third-party effects Plug-ins (in MOTU Audio System and Adobe Premiere formats), and more. The 2408 is also fully compatible with MOTU's flagship audio sequencer Digital Performer in case you need to do MIDI sequencing along with your digital audio recording.

MOTU made the wise choice of using today's current affordable crop of 20-bit A/D/A converters for the 2408. While 24-bit converters are still much too expensive for a product under \$1,000, the converters in the 2408 provide signal-to-noise and dynamic range specs that are considerably better than those used in the expensive, "high-end" systems everyone

was using just a few years ago. The analog ins and outs are unbalanced -10 dB RCA connectors; if you need +4 balanced analog I/O, you can use your ADAT, DA88, digital mixer, or any other device that connects optically or via TDIF. The main outs are balanced +4 TRS. The 2408 has a 24-bit internal data bus, so regardless of what you hook up to it, it will carry all 24-bits to the computer. What happens to all those 24 bits once they reach the computer? It depends on the host software you are using. If it is capable of recording 24-bit audio (AudioDesk and Digital Performer are), then you can do 24-bit recording.

Hard disk recording has already made a significant impact on audio recording, and its presence in the industry is growing faster than almost any other type of product. The 2408 represents the next big step in the progress of this technology by bridging the tape-based world with the emerging world of hard disk recording. Compare the total cost of the 2408 and a computer with some of the stand-alone hard disk recorders out there, and the prices are almost equal, but imagine all the other things you can do with a computer!

Obviously, we wish we had several more pages to devote to the 2408, but for additional info and special package pricing, please call your Sweetwater Sales Engineer today!



**FACTORY AUTHORIZED! WE FIX YOUR GEAR RIGHT AND ON TIME WITH NO EXCUSES!**

**By Chuck and Brenda Surack  
Owners, Sweetwater Sound**

Some people may have the idea that since we're around all this incredible music technology all the time, we don't get all that excited now by NAMM Shows or new equipment arriving. That's just not the case. When the first Yamaha digital mixer appeared here at Sweetwater, we were among the group that couldn't wait to open the box and get the unit set up in one of our demo rooms.

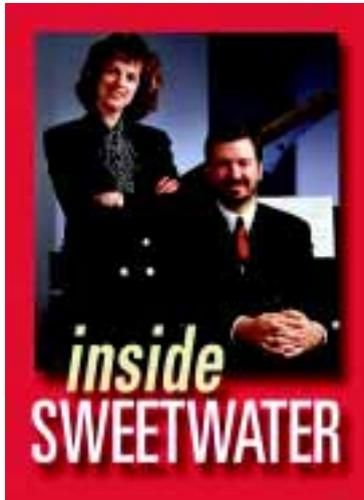
Yes, despite all the years in this business, we still get that tingle every time the first piece of any new gear arrives. Like you, we find it a rush to open the carton, smell that distinctive combination of metal, plastic and electronics (like that new car smell, only better), lift the unit out of the box, then give it the old "once over."

Why do we bring this up? Because right now is a particularly exciting time for the industry and for Sweetwater: All sorts of Yamaha equipment has been arriving over the last 30 days or so; Mackie monitors and HUIs (see photo) are finally here in adequate supply; truly beautiful (and highly playable) guitars from the biggest names in the business are making their way into our warehouse; and the latest generation of digital multitracks are now starting to ship.

We still remember how awesome it was when that very first 16-bit machine showed up at our original warehouse. Today, our new warehouse is actually far larger than the entire Sweetwater building was when that first ADAT arrived. But it's not 16-bit machines anymore — 20 and 24-bit multitracking is now possible, in many cases for less money than you would have spent for one of the original multitracks.

You might remember the debates about analog vs. digital quality in those early days. Clearly, digital is the medium of choice for today's musician. And if you thought those 16-bit recorders sounded great (and they still do, of course), you're going to absolutely flip over the sound of these new machines. By going from 16 to 20 bits, you are getting much greater sonic detail since each additional bit actually doubles the number of values that can be recorded. A 20-bit recorder can then record an amazing 16 times more audio data! Knowing this, you're sure to want to check out all the articles in this issue on the newest digital multitracks.

Have you received your new **1998 Sweetwater Equipment Directory**? Chances are that you have, because the feedback we're getting via phone, fax and e-mail has been tremendous. We're not surprised at your response — we knew we had a winner even as we were planning and designing this special publication. With all the information, specs and features listed for thousands of



items, we knew it would become a veritable encyclopedia for musicians around the world.

The thing that *did* come as a shock was receiving over a dozen requests (and that's just so far) from schools around the country actually asking for copies of the Directory to use as "textbooks" on modern music technology. That's understandable when you stop and think about it, since every facet of music production is included. Students can gain a great

deal of insight into what goes into recording music in today's studios just by reading the product descriptions, as well as the special reference sections we included, like "State-Of-The-Studio 1998" and "GearTalk."

Frankly, we're pretty jazzed about this concept. Helping young people gain an appreciation for all types of music and an active interest in recording technology is something we wholeheartedly support. Which is one reason why many cartons of Directories have now been shipped out to classrooms across the country. With all the "doom and

gloom" we hear in the media, we think it's great that there are teachers out there who want to give young people a unique opportunity to learn about something that will certainly enrich their lives. We're proud to do our share in getting students this head start.

As mentioned earlier, the first shipments of

Yamaha gear hit our warehouse just after the Spring Issue of *Sweet Notes* shipped, and our phone lines have been lighting up like Christmas trees ever since. Seems like an awful lot of you are happy about Sweetwater getting the full line of Yamaha products. That's probably one of the main reasons that March sales were the strongest in our company's history — and that's saying a lot.

Over and over our sales staff heard people say that they just couldn't get the technical assistance and knowledgeable advice they needed to choose specific Yamaha products from other dealers. That's just one reason we created our unique Sweetwater University concept: To keep all our Sales Engineers fully informed and completely up-to-date on all the newest products from companies like Yamaha, Digidesign, Mackie, Roland, Kurzweil and many others. Which means when you call, they have the answers to even your toughest questions.

The year is off to a great start for our company and our hundreds of thousands of customers, and we aim to make absolutely sure the rest of 1998 lives up to this most excellent beginning.



**Mackie HUIs, monitors and mixers are arriving daily**



**Q:** Most of my samplers, synths, effects, etc. rely on embedded DSP applications to operate. There is a lot of talk in the software industry about Year 2000 compliance (or lack thereof) for embedded applications. My question is: Is there a possibility that some of my systems will stop working as year 2000 rolls around? I haven't seen any discussion regarding the fact that a lot of audio equipment uses the same embedded technologies that are currently being investigated/upgraded/fixed in other industries to meet these standards.

**A:** The year 2000 issue does not affect any computer based music equipment that we are aware of. Most of this type of equipment does not use or have a date clock.

**Q:** What is the difference between a single coil and humbucker style pickup? And what's all the fuss about when comparing them?

**A:** Aha! Finally a guitar question! Electronically speaking, a single coil pickup consists of (surprise) a single coil of wire wrapped around six magnetic poles. While this results in a bright, detailed sound, it also tends to act like an antenna, attracting many different kinds of noise fields, so single coil pickups almost always produce some amount of hum — even quite loudly at times (under lots of fluorescents or near a computer, for example).

The humbucker style pickup has two coils linked in series, but out of phase. This configuration causes the two coils to cancel each other out, eliminating or "bucking" the hum. The result is a much quieter pickup. Tonally speaking, the humbucker pickup is characterized as having a fatter, warmer sound as compared to a single coil.

Which is better is a personal matter: Some players find that the stinging tone of a single coil cuts through a mix better and has more high frequency harmonic content. Others like the buttery smooth richness and darker tones of a humbucker.

**Q:** How often should I clean my ADAT?

**A:** Alesis recommends that they be wet cleaned every 250 head hours. This includes the tape path and transport drive parts. Belts, idlers, etc. should be inspected for wear and replaced if necessary. We find that this keeps the sync time on rewind nice and quick. It also keeps the natural deposits of tape oxide from causing head error problems. If enough dirt collects you will get an ERROR 7 in the display. The idea is to prevent this before it happens!

Note: Unless you are properly trained by Alesis, you should never attempt wet cleaning yourself! Be careful when using cleaning tapes in your machine — most of these operate on the principle of sanding the dirt away, which unfortunately also

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A company long known for setting precedents in music software technology, **Emagic** has once again risen to the challenge by streamlining and simplifying its already impressive software and hardware product line. Unveiled at the 1998 NAMM show were three new software packages: **Logic Audio Platinum** (\$799 list), **Logic Audio Gold** (\$499 list), **Logic Audio Silver** (\$299 list) and **MicroLogic AV** (\$99 list).

All of Emagic's programs — even the \$99 MicroLogic AV — now include digital audio and real-time native effects, ActiveX support for Windows and VST Plug-in support for the MacOS. Another amazing feat is that all Emagic programs are available in identical versions for both the MacOS and Windows 95 operating systems! Emagic redefines cross platform compatibility.

**Logic Audio Platinum** version 3.1 is Emagic's "top of the line" professional recording solution, one that has gained critical international acclaim for its highly musical real-time editing, unsurpassed timing at 960 PPO, seamless integration of audio and MIDI, user configureability and overall flexibility. Logic Audio Platinum supports the following dedicated hardware right out of the box: All of Digidesign's current DAE-supported hardware including **ProTools III/24 TDM** systems, the **Korg 1212 I/O**, **Audiowerk8**, Apple Sound Manager, any Windows95 compatible soundcard, **Yamaha CBX** series, **Akai DR8/16** and **Soundscape SSHDR-1** (note: some of these hardware systems are platform specific).

The coolest feature to mention is that Logic Audio Platinum can record and playback to and from multiple hardware systems *at the same time*. For instance, you can run up to 24 tracks to the Audiowerk8 on your PC and at the same time get up to 32 additional audio tracks from your regular 16-bit Windows95 sound card. Or how about running Digidesign's PTJ24 system and adding an Audiowerk8 for an additional 24 tracks and eight separate outputs. Only limited by CPU and SCSI performance, you can have any combination of "Multiple Hardware" with a maximum of 96 audio tracks, all running at the same time! This is a huge technical accomplishment that's sure to please studio owners needing to expand their current systems without spending a fortune.

There are close to 100 new impressive and musical features, the most significant of which is the addition of real-time CPU based DSP. Examples: Variable quality reverb, chorus, flanger, delay; various EQs such as high/low pass and pole pass filtering, full parametric, sweep and shelving. All DSP effects have a variety of mono, mono to stereo and full stereo settings. In addition to the CPU-based DSP, Emagic adds up to eight "Plug-in" style inserts and sends per track, all of which can be routed to up to eight independent busses. Logic Audio also includes support of Adobe Premiere and Digidesign Audio Suite Plug-in formats. Late breaking news from the Frankfurt Music Messe show saw Emagic announce full support of Steinberg's real-time VST Plug-in format for the MacOS and the ActiveX real-time Plug-in format for all Windows95 computers.

Emagic has pioneered many ground breaking concepts for Integrating MIDI sequencing with digital audio and DTP quality score output. One of the most significant is **Screen Sets**. Screen Sets is the key to liberating a user from predefined architectures common in other programs. With Screen Sets, the user essentially custom-designs the program to fit their own personal working style. In essence, you have 90 programmable monitors called (oddly enough) screen sets. In each, you can have any combination of edit windows sized and configured to your specific edit application and fully recallable with just one keystroke.

Besides Logic Audio Platinum's wide array of real-time MIDI sequencing capabilities and integrated **Stereo Sample Editor** (with the now-famous **Digital Factory**), it also boasts a truly spectacular integrated **Score Editor**. Logic Audio's Scoring features stands up amazingly well against many of the dedicated "Score Only" applications available these days. Other new Platinum features worth mentioning are: Punch On the Fly, Continuous Audio Cycle Record, Point to Point Automation (on top of the audio waveform), Repeat and Pause functions for audio recording and mixer automation enhanced with Update,

Replace, Merge and Punch Out Soft Fade Time. Other enhancements include: Real-time Non-Destructive Crossfades, Bounce To Disk with any supported hardware, direct support of Interleaved Stereo files and an automatic mixer function called the "Adaptive Mixer."

In addition to all this (yes, folks, there's more!), Logic Audio Platinum includes a free copy of **Bias Peak SE** that is totally interactive with Logic Audio. With one key command you can export any audio region from Logic Audio to Bias Peak and then dump it to any supported sampler. For Windows95 users, a free



*Logic's elegant Adaptive Mixer Screen: It's all the information you need to mix your next hit!*

copy of **Cool Edit Pro LE** is also included.

**Logic Audio Gold** is identical to Logic Audio Platinum with only a few exceptions. Medium priced digital audio hardware like Korg's 1212, Emagic's Audiowerk8 and Digidesign's Audiomedia cards are fully supported. Only one of these systems can be used simultaneously with your built in AVMMME capabilities. In other words, instead of the totally open-ended multiple hardware support you get with Logic Audio Platinum, Gold allows for "Dual" audio hardware support for a maximum track potential of 48. You still get a myriad of editing options like Event, Hyper, Score and Matrix. This package is the perfect integrated powerhouse front end for any project studio in the land.

**Logic Audio Silver** is the intermediate step in the Logic Audio Series. Based on Platinum's feature set, Silver was carefully put together and makes entering the world of serious computer based music production extremely easy. Silver separates itself from the multitudes of so-called consumer oriented music software. Even though Silver does not include the multiple hardware support option, it *does* support Audiowerk8, Audiomedia III, MacOS AV or any Multimedia-

compatible soundcard using up to 24 tracks of digital audio. Add built-in real-time DSP effects with a slew of upgrade options and the Sample Editor with time compression/expansion and pitch shifting and you have a winner for only \$299 list.

**MicroLogic AV** is the inexpensive, multifunctional, entry level program of the Logic series. With up to 16 audio tracks, easy real-time effects, the integrated stereo sample editor and virtual General MIDI mixing consoles, MicroLogic AV is perfect for beginners just starting to get into computer-based

recording. MicroLogic AV works with Mac AV or any Windows95 supported soundcard and is a real-time steal at a mere \$99 list.

In addition to their software lineup, Emagic continues to experience great success with their **Audiowerk8 Home Studio Kit** (\$799 list) a cross-platform compatible PCI card with two analog inputs, eight individual outputs and stereo digital I/O (S/PDIF), and the **Unitor8 Interface** (Mac and PC compatible, \$799 list) which is an 8 in 8 out MIDI interface that also includes VITC read and write, S-video in/out for real-time SMPTE burn and new Accelerated MIDI Communication Protocol technology.

We wish we had a lot more space to tell you everything about these phenomenal products, but all we can say is call your Sales Engineer now for more information and your special pricing on Emagic hardware and software!

*All four Logic Audio Packages from Emagic*



**emagic new products '98**

# Analog and Digital Technology Comes Together in the dbx DDP

Mention the **dbx** name and chances are most people will think "dynamics processors." That's not surprising, since the company has been producing some of the highest quality — and most affordable — compressors, gates, de-essers and limiters for decades. Now dbx introduces the ultra versatile new **DDP** at the astounding list price of just \$599.95!

The dbx DDP offers you the processing power of the very latest digital technology, along with the great sounds you know and want from the analog world. With digital (as we all know) you have more precise

(PeakStop or Peak-StopPlus), de-essing and EQ (both in-path and sidechain) are available in the DDP in any order you want. The possibilities are virtually limitless.

The LCD display shows you all the information you need to know, complete with a digital meter that will blow your socks off, featuring peak and average levels at the same time. The effects of your entire setup are displayed visually in the form of a graphical curve on the right side of the display, mak-



The 8-step analog LED ladders show you exactly what is coming in and going out of the DDP (XLR and 1/4" balanced connectors are standard). Metering on the display shows the effects of the processing on the signal in real time. Audio performance is also top shelf,



control and more extended parameters than you could ever have with analog processing. The DDP offers you a true stereo processor, coupled with dbx True RMS Power Summing, or two independent mono units, giving you the versatility and power of processors costing many times more (hey, we're not kidding here). Gating, compression (yes, with OverEasy, all-new VariKnee, or good ol' hard knee thresholds), limiting

ing it a snap to set up even the most challenging of systems. In fact, it works right out of the box, no Ph.D. required, with 50 great factory preset setups to help you get started. The DDP's operating system offers you the ability to refine and save presets to your liking then name and save them for later recall.

Wide ranging gain controls allow for both +4 and -10 operation, without any effort on your part.

with ultra-wide range 24bit A/D and D/A converters with dbx TYPE IV Conversion System featuring TSE (Tape Saturation Emulation) right on board. Digital input/output is also available as an option, giving you the ability to go all-digital.

Want to know more? Pick up the phone and call your Sweetwater Sales Engineer for complete details and (of course) your special pricing on the dbx DDP!

## Stomp It! Offers Pro CD Labeling System

Burning your own CDs? It's easier than ever and more affordable, but once you've created a disc, you need to know what's on it, right? Enter a nifty little product called **CD Stomper** (\$69.95 list)

Now if you've ever tried to affix a label onto a CD, you know it's almost impossible to get the darn thing applied in the correct position, so your applicator is the most important part of any CD labeling system. CD Stomper's uniquely-designed applicator perfectly centers labels every time. It's easy to use and there's virtually zero chance of error. Its low profile allows easy storage and the spring action means there's no need to handle sticky labels. A non-abrasive bottom surface is provided for rubbing the label onto your CD after it's applied.



The CD Stomper Kit includes the latest Design Studio software, a complete stand alone design and print application with alignment and print registration built in. This remarkable software will even (dig this!) retrieve TOC (table of contents) information right off your CD! It works with Windows 95, 3.1 or NT, or with any Mac. You even get lots of pro quality artwork that can be used to make your labels look super. 100 labels with adhesive integrity are included and they're laser and inkjet ready. There's also die-cut perforated paper included as part of the package for both jewel box and tray card inserts.

So what are you waiting for? Make your CDs look as good as they sound with CD Stomper!

## Sound Effects that SCREAM!

**CONCEPT: FX** from the slightly strange (but very talented) people at **F7 Sound** (\$49.95 list) is a CD-ROM that features 195 original, royalty-free sound effects in both AIFF and WAV formats. Each sound file is included at 44.1, 22.05, and 11.025 kHz sample rates for broadcast, multimedia, and Internet production.

CONCEPT: FX works on both Mac and PC platforms, as well as with any sampler that supports these two formats (and many of them do these days). You can use the CONCEPT: FX sound files for film, video, multimedia, computer games, Web sites, live performance, music projects, radio or anything else that calls for distinctive sound effects. It's also a great addition to any existing sound effects library. Best of all, once you buy this disc, the sounds are yours to use forever — royalty-free! What this means is that there are no additional fees in case your album goes double platinum.

You probably have enough breaking glass and car horns in your effects library, right? Well imagine metallic textured ambiances followed by in-your-face static hits, thunderous explosions, churning low rumbles, swarms of cyberbirds, simulated drones, warning sounds, mutated chatter and many other sounds too unusual to describe. A few of the wild effects on the CD include "Alien Science Project," "Analog Insect Wings," "Cheezie Drive Coil X," "Iguana Scrape," the appropriately-named "One Inch Speaker" and ever-popular "Orbital Rattle Tail" (well, we said these F7 folks are just a bit strange . . .).

As far as the sonic quality of the sounds, everything on CONCEPT: FX is of the highest pro quality, recorded on DAT, edited completely in the digital domain, then mastered to CD-ROM. This disc was made for use by professionals in today's demanding professional production environment. Call us now for more information and your special Sweetwater price on CONCEPT: FX!



# ANALOG IS ALIVE AND WELL

## ORAM PRO UPDATE

Oram consoles and modules are popping up everywhere. Over in Rockville, Maryland, a longtime Sweetwater customer, Steve Bishop of MusicMedia recently installed a BEQ-24. He was so pleased that he sent us the photo below and a letter describing his new relationship with Oram.

Steve writes: "We designed MusicMedia to be an extremely effective musical production facility which services artists doing material ranging from Broadway to rock and country to rap. We also fulfill all the musical needs for the Troika Organization, a theatrical production company which produces national and international tours.



Steve Bishop at the controls of Starship Oram . . .

"I chose the **Oram BEQ-24** because, well, Chuck wouldn't sell me anything else . . . really! But now I fully understand the benefits these consoles offer and share his excitement. The Oram desk simply sounds world class. It has a huge amount of headroom and an extremely low noise floor. The EQ section is extremely musical and sensitive, and who could go wrong with 30 Aux Sends?

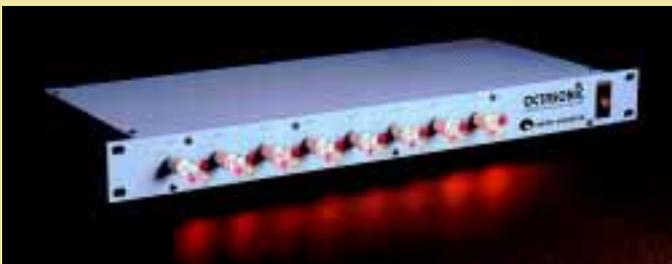
"Most importantly of all, every one of our clients has been ecstatic about their mix. The final products have been warm

and richly detailed. This analog board is sonically superior to anything else in its price class."

**In Other News:** By now, just about everyone has seen the hit movie, "Titanic." Some of you may have even seen it more than once. The film garnered an amazing 14 Academy Award nominations — and won 11! — including (not surprisingly) "Best Sound" and "Best Sound Effects."

One person who's certainly happy about this is Chris Boyes, the man who did the Sound Design (on an Oram **BEQ Series 24** console) for the film at Skywalker Sound and walked away with an Oscar for his efforts. Chris sums up the Oram with a few well chosen words: "It's quieter than digital — with headroom that goes on for days. I love this board. In its class, nothing comes close!" Obviously, when working on a picture with such a huge budget, Chris could have selected *any* console for "Titanic," but it was the Oram that had the clear advantage thanks to its superior design, amazing sonics and superb British EQ. By the way, Chris also owns (and loves) the Oram **Hi-Definition EQ** module!

Speaking of modules, let's talk for a minute about Oram's single rack space **Octasonic** (\$000 list). If you've ever thought about having eight channels of Oram quality mic preamps available without the huge console attached, this is the box for you. Incredibly, John Oram somehow managed to lift eight channels right out of his big boards and fit them into this compact unit. Demand has



been so great that we've been selling these modules by the boatload (really — a boat stops by and picks them up every other Tuesday). Okay, all kidding aside, you have to think about what a perfect

product this would be for location sound recording, live sound or even broadcast work (matched with an Octamix 8-channel mixer, of course). Gosh, what will these Oram people come up with next? Maybe we'll save that news for our next issue . . .

# TURN UP THE HEAT WITH FIREWORX!

By Daniel Fisher, Director of Soundware Engineering

As a programmer for high-end keyboards, I've become accustomed to being able to modulate any parameter of a sound from a long list of internal and external controllers whose response and tracking could also be manipulated. Usually, when I play with an effects processor, I find myself wishing that it also featured this same flexibility and control. Now my wish has finally been answered with a box called the **FireworX Studio Multi-Effects Processor** (list \$2195). It's the newest and most powerful processor yet created by **TC Electronic**, the high-end signal processor company responsible for the Finalizer Plus, M5000, G-Force, and the legendary Stereo Chorus/Flanger foot pedal.

After 20 years of manufacturing pristine, straight-ahead effects, TC has decided that it's "time to get weird!" With more than 20 different algorithms, 20 modulation sources, full Tempo control and nearly infinite routing possibilities, FireworX may be the most radical sounding signal processor you'll ever use.



Want to breathe some fire into your music? Get ready for an explosive new multi-effects processor!

The architecture of this one rack space device features an 8x8 grid where you can place any of the following effect modules: Vocoder, Dual Pitch Shifters, Ring Modulator, Formant (vowel) Filter, Multi-Pole Resonant Filters, Reso-Chord Filters, Multi-Tap Delays, Reverse Delays, Phase Shifter, Distortions, Cruncher, Compressors, Limiters, Expander/Gates, Surround Panners, Stereo Enhancer, and more plus the Stereo Reverbs, Choruses and Flangers that have made the company famous.

As if that weren't enough, FireworX has features that are so unique that at times it acts more like a synthesizer than just an effects processor. For example, you can insert a Synth module with a Sine, Saw Triangle or Square Wave, then add Pulse Width Modulation. Now make the Frequency track your MIDI Notes. Don't have a MIDI keyboard? No problem. FireworX has powerful Pitch Detection and Envelope Detection tools that allow it to follow your guitar lead, trumpet, voice, or even your vintage analog synth.

Add two Envelope Generators, two ADSR Generators, two LFOs, plus White/Pink Noise and Fractal Noise Generators and you've got a synthesizer whose pitch and effects will follow you as you play. Now can you see the fireworks? As an example of its power, I was able to program it to recreate "On The Run" from Pink Floyd's "Darkside of the Moon" without anything else plugged into it!

FireworX is the first processor powerful enough to be considered its own instrument. It also promises to be an excellent addition to your digital studio as it has so many professional level Input and Output choices. The I/Os include: AES/EBU (XLR), S/PDIF (RCA), Tascam TOS-Link (coaxial), ADAT (optical), plus analog I/Os via balanced XLRs (at +4 or -10dB) which go to 24-bit, 48kHz A/D and D/A converters for uncompromised sound quality.

If this small introduction to FireworX has your adrenaline pumping, call your Sweetwater Sales Engineer for more information and a price that will start the FireworX's Grand Finale!

Great Job! Great People! Great Pay! Careers are available now on the Sweetwater team! Call us at (219) 432-8176

## PUTTING THE ANALOG TOUCH TO DIGITAL

# MACKIE HUI

—Continued from Page 3 probably make out from the picture). In the upper-left corner is an assign section where internal mix bus and physical hardware I/O assignments are made. The main part of HUI is composed of eight assignable channel strips with "big console"-grade, 100mm motorized faders and Mackie's innovative new V-Pot rotary controls. In the upper-right corner of the interface is a vacuum fluorescent alphanumeric display for controlling the parameters of DAE-compatible Plug-ins. Next, below the DSP section is a switch matrix for assigning channel status and/or global session attributes. The lower right-hand section, with keypad and jog wheel, dedicated keys, and even extra cursor controls, is dedicated to transport/locate functions.

The lower left contains a keyboard shortcut section bank and selector buttons to switch between various Pro Tools screens. And shoehorned in the middle of all this is a complete analog control room section with three sets of speaker/headphone controls and built-in talkback mic. Trim controls for the two integrated mic preamplifiers and talkback mic are on the back.

This is all pretty cool, but those obsessive Mackie engineers couldn't stop. If you had a couple of studio-grade microphone preamps, they reasoned, you'd have it all and might not even need a Mackie analog mixer. So, being the fanatical tech types they are, they went ahead and added two of the company's renowned high-headroom low noise preamps with balanced XLR inputs. Beginning to see why HUI blows a mere fader pack into the weeds?

Finally, what the heck is a V-Pot? Well, even the megabuck automated consoles never fully solved the problem of controlling and recalling a rotary control value via automation. Until now, that is. A V-Pot consists of a free-rotating encoder with eleven LED segments in the surrounding collar

(yeah, it goes to 11!) It's damped, so you fine tune with it just like you would adjust a standard rotary pan or EQ pot. The exact V-Pot value is precisely displayed on-screen or via HUI's Display screen. The V-Pot's LED pattern coarsely reflects parameter values, varying according to the parameters it's displaying. For example, a volume value can wrap clockwise from the 8 O'clock position, whereas a narrow parametric EQ value would start at 12 O'clock and wrap equally. Depending on DAE implementation, a value can also be shown as a single, movable point. A dedicated LED at the bottom of each V-Pot shows activity or function, such as automation or assignment status.

If you make your living using Pro Tools, Mackie's HUI interface can dramatically add to your productivity. Once you've used it for even a short time, you'll wonder how you ever got along with just a mouse. So call us right now to find out more about HUI. Your Sales Engineer will be glad to give you our special Sweetwater pricing, making this fantastic product an even better value!

## ALESIS 20-BIT SYSTEMS

— Continued from Page 3 As the first PCI-format computer interface card to carry the Alesis name, the **ADAT-PCR** (\$499 list) is designed to be the nonlinear recording and editing solution for ADAT users. The ADAT-PCR integrates the world of computer-based hard disk recording with the huge base of ADAT-format multitrack recorders, allowing you to have the best of both worlds at a very affordable cost. Using the PCR, you can send eight tracks of audio into your computer with up to 24-bit resolution and sample-accurate synchronization to ADAT, then use the software-based editing interface (which is included) for intricate audio manipulation, then transfer the edited tracks back into your ADAT system. You can also use the PCR to add another eight tracks to a recording system that will record and play back in perfect sync with ADAT digital tape recorders.

The reason that the ADAT-PCR can do this is that it's the only PCI card currently made that offers both inputs and outputs for the ADAT Optical Digital Interface and inputs and outputs for the ADAT Synchronization Interface on one device, allowing for digital audio transfer as well as sample-accurate synchronization between ADATs and computers. The synchronization control allows the computer to act as a "virtual ADAT," either commanding or receiving commands from an ADAT or controller (such as the BRC, allowing SMPTE time code synchronization of the hard disk), and adding another eight recording tracks to any ADAT system.

Of course, the PCR is also compatible with any of the hundreds of products by Alesis and third-party companies that use the ADAT Optical and Sync interfaces on their gear. To let you take advantage of the strengths of computer-based audio and music projects, the PCR includes powerful software for sequencing, digital recording and editing. Combined with ADATs, the PCR offers everything you expect from both nonlinear and linear digital recording in one seamlessly integrated system. The ADAT-PCR is compatible with both Windows and Power Macintosh platforms.

Call us here at Sweetwater for more information and your special pricing on all these powerful new products from Alesis.



By Daniel Fisher, Director of Soundware Engineering

This year, Spring started blossoming here in Ft. Wayne as far back as early March (thanks, El Nino!). Exciting things have also been blooming here at Sweetwater with unprecedented levels of growth, sales and new products. One example is our Soundware Development Facility, which is now forging dealer relationships for overseas distribution of our award winning CD-ROM libraries. Many of these distributors, as well as some of our newest employees, were introduced to Sweetwater at our booth during the most recent NAMM Show in Los Angeles (see photo below).

Winter NAMM went so well that we've decided to double our show space for the upcoming Summer NAMM in Nashville (July 10, 11 and 12). If you will be in the Nashville area then, please make sure to stop by and say hi. (If you don't have access to the NAMM Show, call us and we'll schedule a time to meet with you.)

This Spring is also personally exciting for me, as my first full-length publication for *Keyboard Magazine* is finally out. If you happen to own a Kurzweil or are considering joining the "VAST ranks" (a smart move) you'll want to make sure to get the May '98 Issue of *Keyboard* and check out the K2000/K2500 Hot Tips article.

The May Issue is actually a perfect barometer of Sweetwater's growth. You can find the word "Sweetwater" scattered 44 times throughout this issue in articles, sidebars, ads and listings (Waldo bets you can't find all 44!). There's also bunch of Kurzweil downloads and more text to be found at "[keyboardmag.com](http://keyboardmag.com)".

In other developments, Soundware is pleased to announce a new format for our Young Chang Stereo Grand Piano for the K2000/K2500. After the glowing review it received in the December '97 issue of *Electronic Musician* ("The Young Chang tone is superb, the mono compatibility is very good, crossfades between velocity strikes are smooth, and the timbre is uniform across the entire keyboard. . .") we were swamped with calls for both the Grand Piano CD-ROM, as well as the floppy versions.

Due to the large number of floppies needed to hold the 16 meg Stereo Piano we've decided to make life easier and put it on its own "mini" CD-ROM. As a bonus, we've also decided to include the 13 meg stereo version as well as the 8 meg mono version of our Young Chang Virtual Grand. If you bought these three floppy sets separately, it would cost you \$227, but for a limited time we will offer this disc for only \$99! To fill out the space, we've also included demos of our entire library as well as the complete 1998 Product Directory in PDF format. Ask your Sales Engineer for more details.

Well, that's all for now — it's time to get back to work. See you next issue. Keep makin' music!



**WE HAVE ALL THE HOTTEST PRODUCTS FROM ALL MAJOR MANUFACTURERS . . . IN STOCK!**

# Yamaha's Affordable Digital Mixers

— *Continued from Page 1* snapshot storage, instant reset of all functions, motorized faders, on-board dynamics, parametric EQ and digital effects, it includes some significant advances to meet the needs of today's recording and production professionals. This mixer reflects our ability to bring great value to the market using our own DSP technology plus 10 years of digital mixer experience."

**VERSATILE ARCHITECTURE.** The Yamaha 01V provides 24 full-featured channels, two stereo effect returns, six busses, six aux sends plus direct outputs on channels 1-16. It offers balanced connectors for all

ins and outs, with parallel 1/4" and XLR inputs, mic preamps and 48-volt phantom power on channels 1-12. The primary input channels (1-16) each feature the same 4-band parametric EQ and limiter/compressor/gate found in the Yamaha 02R, plus a 250 ms delay line (300 ms of delay on analog outs). In addition, four analog OMNI-SEND outputs can be programmed to output any of the busses, aux 1-4 or channel direct outs.

A new OPTION I/O card slot allows the installation of any of three new MINI digital I/O cards. These optional cards facilitate interface to all the popular 8-channel digital multitrack recorders, work stations and signal processing equipment in Alesis ADAT, Tascam TDIF, or AES/EBU digital formats. The optional digital format I/O cards are available for just \$299 list.

**EXPANDABLE AND USER-FRIENDLY.** With the prevalence of affordable digital 8-track recorders, Yamaha recognized that the 01V needed to be fully expandable to accommodate more inputs. Using the new "01V Link" feature, solo systems and mix functions of two 01Vs can be seamlessly synchronized to create a single digital mixing system with 48 inputs and four stereo effect returns mixing to a common stereo bus.

A host of user-friendly features have been included to make the unit easy to operate. Dedicated solo keys on each channel and front-panel controls for EQ and PAN provide immediate access to some of the mixer's most important functions. A new high density 320 x 80 backlit LCD display graphically depicts all mixer settings and automatically shows the current setting whenever a control is manipulated. Using the rear-panel RS422 TO-HOST connection or the MIDI connections, the 01V can interface directly with computers and function as a control surface for outboard devices such as the new Yamaha DS2416 digital mixing card, MIDI controllable products, and recorder transports, while retaining its functionality as a professional digital mixer.

Powered by the same 32-bit DSP, the 01V is sonically identical to the 02R. Additionally, two of the latest generation 32-bit Yamaha digital effect processors are installed to provide effect performance equivalent to that of the superb Yamaha ProR3 Reverb unit.

**SNAPSHOT AND DYNAMIC AUTOMATION CAPABILITY.** The 01V can store and instantly recall all mixer settings in 99 snapshot memories, allowing the user to return at any time to a previous mix for modi-

fications. Separate memory "libraries" are included for storage of EQ, dynamics, and effects settings. In addition to snapshot capability, any external MIDI sequencer can be used to record real-time movement of the 01V's motorized faders, EQ settings and other parameters, allowing automation of complete mixes.

## DSP FACTORY

The **Yamaha DS2416**, also known as the DSP Factory (ship date this summer) transforms a standard PC into a professional digital multitrack recording and mixing system at the astonishingly low price of just \$999. The DS2416 actually offers the full mixing power

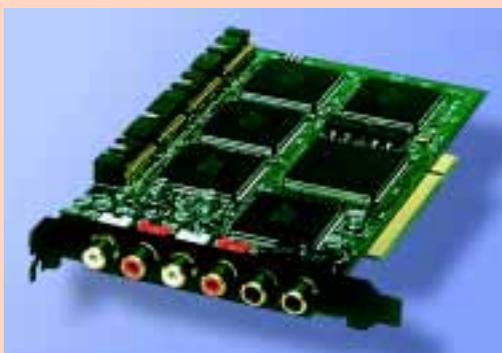
of Yamaha's awesome 02R digital mixer, complete with 24 channels of digital mixing, on-board digital effects and dynamics processors and much more, plus 16 tracks of hard disk recording with up to 32-bit resolution.

Unlike many other audio cards, the DS2416 relies on its own processing power and not the computer's CPU,

which makes all functions of the card available simultaneously to provide a level of flexibility and performance previously not possible. A built-in audio-streaming engine provides 16 tracks of recording/playback of 32-bit audio to and from the computer's disk drive. The first release of the DS2416 supports the Windows 95 platform. Installed in the PCI card slot, the DS2416 is controlled using any software from the world's leading developers of MIDI and hard disk recording applications. This lets you either stay with the software you're already familiar with, or select one which best suits your needs.

The DS2416 is the most convenient and affordable way for musicians, sound designers and audio production professionals to add non-linear recording, with its inherent creative advantages in editing and instant access to audio data to their existing systems. It's ideal for the musician already using a PC for sequencing of MIDI instruments, as well as for anyone looking to augment or replace a tape-based recording system. Stereo digital and 20-bit analog inputs and outputs allow you to record and mix to a wide range of digital and analog two-channel audio devices. DS2416 cards can be linked to create a larger system, with expansion cards separately available which permit multiple-channel digital and analog input and output options. The card includes two effect processors equal in quality to the company's REV500 plus 26 dynamics processors. All features are available all the time.

For more information about the Yamaha 01V and DSP Factory (and all the other amazing Yamaha products), plus your special low pricing, call your Sweetwater Sales Engineer immediately. He or she will be glad to tell you much more about these amazing products and how they can integrate with the existing equipment in your studio to provide a complete digital audio recording environment that just a few years ago would have cost you many thousands of dollars more.



*Incredible, but true! Add the power of Yamaha's 02R digital mixer to your computer (plus digital recording) with the DS2416*

# STUDIO VISION PRO

— *Continued from Page 2* any other digital audio. Video, MIDI and audio stay locked together with a single transport and will even scrub for frame-accurate placement of sound effects and music hits. Then export your movie with your new soundtrack, complete with added narration, music, sound effects, whatever — impressive! OMS (Open MIDI System) is the backbone of Studio Vision Pro's complete integration into even the most complex studios. Add an Opcode hardware interface like a Studio 5, Studio 64X, Studio 128X or Studio 64XTC to bring MIDI instruments, multitracks and video decks into your system. With total integration designed in, Studio Vision Pro 4.0 will take you anywhere you want to go.

Need to know more? Just call your Sales Engineer for more information on all the great Opcode software plus your special low Sweetwater pricing.

**The Studio 128X** is the latest product in Opcode's impressive cross-platform interface technology. As its name implies, it is a 128 MIDI channel, multiport interface that reads and writes all formats of longitudinal SMPTE. In fact, it incorporates some of the best features Opcode's best selling interfaces, the Studio 4 and 8 Port/SE, with a \$70 price reduction to boot!

It's fully cross-platform, so it connects to and works with both Macintosh and PC computers (it even automatically detects Mac or PC operation). There are 8 MIDI INs and 9 MIDI OUTs with support for 128 MIDI channels, plus a THRU port for easy modem or printer hookup. There's an integral MIDI Patchbay with 8 user programmable patchbay configurations selectable from the front panel or



your computer or by a patch change. The 128X reads/writes all formats of SMPTE and converts to MTC and passes/routes MMC commands. You also get a Footswitch/Trigger Input and the ability to output Beat Clock as a master timing signal without a computer. The Studio 128 has a list price of \$429, but call us here at Sweetwater for your special pricing right now.

## Q&A

— *Continued from Page 5* slowly sands your head away, too! Here at Sweetwater, we're factory certified to handle any ADAT cleaning (or any other tape-based system, for that matter).

**Q:** I'm not a pro by any means, but I need a meter to check my cables and speakers. What do you recommend?

**A:** Modern Digital Multi Meters (DMMs) can be expensive and have a very high input impedance, usually >2 meg ohm/volt; some are >20 meg ohm/volt. These sensitive meters will often "read" 60-70 volts on an AC outlet which is turned OFF. You don't need this kind of performance, so your best solution is a simple cord/cable tester like the Digitech Model 210 which lists for only \$79.95 (call for your Sweetwater special pricing). It will allow you to do a "go/no-go" test on any quarter inch or XLR cable with complete confidence.

By Jim Miller

I'm writing these words on a 727 jet somewhere over (I think) Tennessee. Presently, we're cruising at an altitude of over 30,000 feet, and like most of the other passengers, I'm hoping the plane stays in the air long enough to get us to our destination. I'm also crossing my fingers that the battery in my ancient Powerbook 170 doesn't die on me, but heck, I'll settle for the "not crashing" part.

See, I'm heading back home after my yearly trip to Sweetwater up in Fort Wayne, Indiana, and I'm still recovering from what I saw. Actually, my last visit was a bit less than a year ago, but man, have things changed since then. While there's a new state-of-the-art sales facility for my friends in the sales department, some very nice new demo rooms and a service department that any other retailer would die for, what totally blew me away was the new warehouse. It's huge (bigger than the entire existing Sweetwater building was just a few years ago) and it's filled (and folks, I mean *filled*) with mountains of new gear. Row after row of the latest synths, multitracks, mics, mixers, PA systems, processors and tons more — everything we musicians need to make music.

However, as you might guess if you've read the last three or four issues of **Sweet Notes**, what literally blew me away was the guitars! Stacks and stacks of Gibsons, Paul Reed Smiths, G&Ls,

Epiphones, Takamines . . . incredible! I saw a sunburst **Gibson ES335** that was as nice as any guitar the company has ever built. I saw a **Takamine** Limited Edition **Santa Fe** model that any guitarist would love to play. And the **Paul Reed Smiths**, well, they were simply awe-inspiring. Just when I thought I had already seen the most amazing guitars, lo and behold, there was a **Santana** model in a stunning black cherry finish. Surely there couldn't be a more incredible instrument than this.

Then I saw the **Artist III** model. With a spectacular dark cherry sunburst finish and one of the most amazing, tight flame maple tops I've ever seen, this was singularly the most gorgeous guitar I've ever laid eyes on. For a second or two I thought someone would have to take me to the emergency room. Finally my head stopped spinning and I began to catch my breath. I took a photo of this instrument and we'll print it here, but believe me, no photo could ever do this instrument justice.

I've played a lot of guitars over the years, owned quite a few (some would say too many), but this has to be the holy grail of guitars. So let me say right now to the person who will end up calling Sweetwater and owning this guitar (as soon as this issue hits the mail): Do I envy you!

Meanwhile, what happened next was almost as mind-boggling as my encounter with that PRS Artist. One of my Sweetwater Sales Engineer buddies told me that some customers said they were actually afraid to buy a guitar from any dealer other than a local music store. The reason? They wanted to pick the guitars up and compare them before buying.

Excuse me? What local dealer has dozens of Gibsons or Paul Reed Smiths (or any other brand) hanging up side-by-side in all the different colors and finishes? I mean, right in front of me were stacks of PRS models in everything from Emerald Green to Vintage Yellow. Off to my right were so many G&Ls that I lost count after about 30.

I'll make this brief: I've bought many guitars in my life, but without exception, the ones I now own came to me through the mail. Why? Because I can decide exactly what model I want, what finish I'm looking for and what options (if any) I might choose. Go to your local PRS dealer and ask how long it will take to get a **Custom 22**

with wide/fat neck, a 10-top, tremolo and abalone bird inlays in a tortoise shell finish and see what they say. Go ahead and ask, but don't expect that it'll be any time soon. Call up Sweetwater: *It's here now!*

As always, every purchase you make from the company is backed by their **Best Value Guarantee**. So if you're not happy, just send it back — no hassles. But look, I know the sales people at Sweetwater (at least many of them), and they're not going to ship you *any* instrument unless they are absolutely certain that you're gonna love it. So to those of you out there who think only a local guitar dealer can fill your needs . . . well, do yourself a huge favor and think again!

Well, enough about guitars — at least for now. I mentioned last issue that one of the items that really impressed me at the NAMM Show was the **Roland VS-1680**. Well okay, just who *wouldn't* be impressed by a 16-track, 24-bit Digital Studio Workstation that carries a list price of about \$3,000? Just between you and I, there was a time when hard disk recording didn't appeal to me at all. I felt like tape was the only way to go. Of course, this was because I grew up in the old analog world, where tape was our only option, so it felt more comfortable to me. But during the last year or so, I've been doing more and more recording on my Mac, and I have definitely grown to love the versatility of random access editing. You can

cut, copy and paste audio anywhere you want with pinpoint precision.

So now that I have this new respect for hard disk recorders, it's only natural that the VS-1680 would look very good to me. One obvious advantage is its 16 tracks, since you never, *ever* seem to have enough tracks. The 24-bit recording mode with its massive headroom and ultra wide dynamic range is also a great selling point, as are the superior onboard 20-bit D/A and A/D converters. But what really grabs me about the 1680 — and the entire Roland VS line which includes the VS-880 and VS-840 — is the fact that this is as close to "plug and play" as you're ever going to get. You don't have to connect to an external mixer, a patchbay or any outboard processors to make great music.

I don't know about you, but the way my own studio is set up, I have to constantly repatch and reconfigure everything before I can lay down the first track. That's a royal pain in the butt! Most times when some musical idea strikes me, I just don't do anything with it because it's just too hard to start the recording process; by the time I'm up and ready to go, the inspiration is gone. But with the VS-Series, you have a self-contained workstation with integral mixer and effects that you can crank up at a moment's notice. While some might not consider this the most *professional* way to work, it's perfect for me! I just want to get that riff

(or melody or drum beat or whatever) recorded so that it's not lost forever. And given the audio quality of the VS-Series (and in particular the 1680), I'd *never* have to apologize for how my recordings sound.

I'm pretty sure the editor has a feature story in the works on the VS-1680, but trust me on this one, you should call Sweetwater immediately to get more details and place your order. When these units start shipping (and it could be right now!), you'll find there's a long line ahead of you if you procrastinate. Don't say I didn't warn you.



The PRS craftsmen just can't stop building incredible guitars like this gorgeous Artist III



TECH NOTES



5335 BASS RD, FT. WAYNE, IN 46808

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BULK RATE  
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**THIS ISSUE**



### Special Digital Recording Issue

MOTU 2408 : Breakthrough in hard disk recording  
YAMAHA 01V and DSP FACTORY: Affordable Digital Mixers  
OPCODE STUDIO VISION PRO 4.0: Over 100 New Features  
EMAGIC LOGIC AUDIO and MUCH MORE!

# COME JOIN OUR WINNING TEAM



As you probably know by now, Sweetwater Sound has been growing at a record pace over the last few years, which means we're constantly working to improve our level of service. It's important that all our customers *always* get the best value from us. Naturally, this unprecedented growth means we have to reach out in search of the best people we can possibly find to be part of delivering the "Sweetwater Difference."

Why should you consider a career with Sweetwater? Simple: We offer one of the highest salaries in the industry combined with a benefits package that cannot be beat, plus excellent opportunities for advancement. What's more, our people get to live in a community with outstanding quality of life — clean air, low real estate prices, almost non-existent crime — but with all the conveniences of the "big city." We are specifically recruiting for positions in sales, technical support, desktop publishing and electronic repair. We also have great jobs for folks who love guitars in our brand new division, Custom Select Premium Direct Luthiers. What special talent do you have that might thrive at Sweetwater Sound?

Consider the possibilities then give us a call. We'd appreciate the opportunity to speak with you. Isn't it time to play on the winning team? Of course, all inquiries will be held in the strictest confidence.

*Great people. Great jobs. Great pay.*  
Call (800) 222-4700 and ask for the Career Center  
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