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MOTU PREVIEWS ADJUSTABLE PPQ, EFFECTS AUTOMATION, DRUM EDITOR AND APPLE G4/VELOCITY ENGINE SUPPORT IN DIGITAL PERFORMER AT AES

107th AES CONVENTION, JACOB JAVITS CENTER, NY - September 24, 1999. Mark of the Unicorn, Inc. (MOTU) demonstrated several audio sequencing milestones, soon to be released in Digital Performer, MOTU's flagship audio sequencer for Macintosh. Highlights included adjustable PPQ (parts per quarter note) resolution, beat-based effects automation, support for Apple Computer's new G4 processor and Velocity Engine, and a new MIDI Drum Editor window.

Adjustable PPQ Timing Resolution with MTS - MIDI Time Stamping

"We've taken MIDI sequencing precision to a new level," said Jim Cooper, MOTU's marketing director. "Digital Performer now has an internal timing resolution of about 2 trillion PPQ. This allows Digital Performer users to nudge a MIDI event by a little as one one-hundred millionth of a quarter note. And Digital Performer's new hardware-based MIDI Time Stamping technology delivers this ultra high precision with sub-millisecond timing accuracy. Practically speaking, we've turned DP's unmatched timing resolution into a wide range of useful features that DP users can take advantage of every day."

For example, users can now choose any desired PPQ timing resolution and use it throughout the program. Other MIDI sequencers have a fixed PPQ resolution, usually in the range of 384 to 960 PPQ. Recently, some sequencers have achieved twice that resolution (1920). Digital Performer now allows the user to freely change to any resolution they want between 2 and 10,000 PPQ, with up to four decimal places. For example, Digital Performer users could choose 480 PPQ, a resolution they're familiar with from previous versions, but add two decimal places (480.00) to achieve 100 times the resolution. Users who switch to Digital Performer from other sequencers can use the PPQ they're familiar with, such as 960 or 1920. Regardless of the resolution chosen, live MIDI data is recorded

with a very high degree of internal resolution that is much greater than the PPQ values available in other programs.

To record and play back MIDI data as accurately as possible, MOTU has developed a new hardware-based MIDI streaming technology called MIDI Time Stamping (MTS). MTS is now shipping in MOTU's new line of rack-mountable USB MIDI interfaces, and it delivers MIDI data from Digital Performer to synthesizers, samplers, drum machines and other MIDI devices with sub-millisecond timing accuracy - as accurately as a third of a millisecond for every single MIDI event, according to MOTU.

Tempo/beat-based Plug-in Automation

MOTU previewed other significant audio sequencing advancements in Digital Performer at AES, including beat/tempo-based plug-in automation. All of Digital Performer's fifty (50) included audio and MIDI plug-in effects can now be fully automated in real time. Users can change presets on the fly, and even adjust parameters smoothly with sample-accurate ramp automation (which prevents zipper noise and other artifacts produced by the buffer-quantized automation in other systems). Digital Performer's effects automation also includes discrete event automation, such as changing an LFO from a sine wave to a square wave, and stair-step automation for parameters that require it. Users can also lock many parameters to a musical beat value that follows the current tempo of the sequence. For example, Digital Performer's new stereo delay plug-in allows users to choose quarter, eighth, or sixteenth note automation separately for its left and right channel delay paths to create complex polyrhythmic stereo delay effects. Triplet/swing rhythms are also supported, as are beat values from a 64th note up to a whole note. Parameters that have been locked to beats stay in perfect time with the sequencer's tempo, and they even follow tempo changes, both instantaneous and gradual alike. Multiple effects parameters can be viewed and edited graphically in each track, and five advanced automation modes are provided, including Touch, Overwrite, Latch, Trim Touch and Trim Latch.

Digital Performer's effects automation implementation is exceptionally deep, with other advanced features like mute/bypass/solo/send automation, and the ability to free up system resources when plug-ins are bypassed (either manually or with automation). MOTU also demonstrated complete support for the HUI mixing control surface from Mackie Designs, of Woodinville, WA. Effects can be activated, adjusted, bypassed and otherwise handled from HUI's buttons, knobs and sliders with dynamic visual feedback from the software on-screen in real time.

Drum Editor Window

MOTU also previewed a new MIDI Drum Editor window in Digital Performer, with advanced features like support for multiple tracks and playback destinations for an individual drum kit in one window. Users can, for example, assemble a single drum kit with sounds from across several sound modules, samplers and drum machines. The window also allows users to individually mute, solo, quantize, groove quantize, time shift and otherwise non-destructively manipulate individual drum sounds, even if the notes reside in the same MIDI track, giving users a whole new level of control and flexibility in their drum programming.

Digital Performer's drum editor is filled with many advanced features, such as the ability to vertically zoom the display of any drum instrument independently. Four grid modes are provided per instrument: a basic on/off grid, a bar-graph style display that shows the velocity of each note as a vertical bar, a Velocity and duration mode that shows both the velocities and durations of notes, and "free" mode, which displays notes' actual positions and durations with respect to the grid.

Among the Drum Editor's many innovations is the unique Pattern Tool, which allows users to select performance styles for a particular type of percussion instrument and them "paint" them in one easy stroke. For example, the user could select a conga drum pattern and drag quickly across 2 bars to insert a conga part. Users can program their own patterns and even copy patterns from their own music or favorite drum sequence libraries. For example, the user might program a drum fill, copy it as a pattern, and then apply it through the drum part over different instruments.

Support for Apple Computer's new G4 Processor with Velocity Engine

MOTU announced at AES that it is accelerating Digital Performer to take advantage of Apple Computer's new G4-based Power Macintosh computers, equipped with Apple's ground-breaking Velocity Engine vector processing. The Velocity Engine boosts the performance of certain computationally intense operations, such as the DSP processing found in eVerb and many of Digital Performer's other native real-time effects plug-ins. MOTU reports dramatic gains for some plug-ins in the amount of processing available to users.

All of the new Digital Performer features previewed at AES will ship Fall, 1999.