

# Lexicon PCM96

Lexicon's long-awaited latest processor, which is not included in some console's effects package or in a DAW front-end's bells and whistles, harks back to the firm's past but has an unmistakable go at interfacing to the future. **JON THORNTON** is in the room...



Lexicon has long been synonymous with high-end studio reverb, with flagship models such as the 480L and more recently the 960L earning rack space and admiration in studios the world over. Not forgetting the other end of the marketplace, the company has also produced a steady stream of lower cost models, making its expertise in synthesised digital reverb and effects available to those without the fiscal wherewithal to stump up the significant amount of cash needed to acquire a 960L. But between these two extremes, there's been little development in the way of new products for some time now. Instead, potential mid-range customers have had no real choice other than the PCM90 and PCM91, which are essentially updated versions of the PCM80 and PCM81 — designs that are more than a decade old.

In one way this is completely understandable when the signal processing landscape has shifted as dramatically as it has done towards plug-ins, there were obviously some significant decisions for a hardware manufacturer like Lexicon to make. Assuming that abandoning hardware development entirely and focussing on plug-in creation isn't an option, the choices are either to develop a plug-in-based solution running on dedicated hardware that streams to and from a DAW like SSL's Duende, or to carry on with the dedicated hardware box route. The answer is that the new PCM96 is effectively both of these solutions in a single unit — the question is whether it really is the best of both worlds or whether it just sits on the fence...

Unpacking the 1U shows that there's certainly been a huge cosmetic shift from the PCM90/91 — the rather austere black has been replaced by a warm silver finish. Also changed for the better is the user interface. Much as I love the sound of the PCM80/90, I always find navigating around them deeply unintuitive. Here, a bright and easy to read (though still rather small) OLED display manages to give a lot more information, and most operations can be easily accessed by one large and three smaller push-to-click rotary encoders. Six dedicated pushbuttons, a Compact Flash card slot and basic LED metering for left and right signal input complete the front panel.

On the rear panel, audio I-O comprises a pair of balanced inputs and outputs for analogue connectivity, and an AES input and output for digits — all on XLRs. The unit can operate at sample rates of 44.1, 48, 88.2 or 96kHz. Clock can be derived either internally or externally from the AES input or a separate Word-clock input on BNC. A pair each of FireWire ports and Ethernet ports finish things off round the back,

giving remote control capability and (in the case of the FireWire ports) audio streaming options to and from a DAW — more of which later.

Internally, the PCM96 features a single dedicated processor that can be configured to share its power between up to four virtual machines. Each of these machines can then run a preset based on the available algorithms. The simplest configuration to understand is what Lexicon terms 'Super Stereo', in which all available DSP is given over to a single stereo algorithm. Other variants include 'Super Mono' — the DSP here is split between two separate machines, each running a different (mono) algorithm — 'Cascade Stereo' using two virtual machines each running a stereo algorithm connected serially and some other variants. This is quite powerful, as entire presets can be saved storing the appropriate configuration, with each virtual machine populated by the desired algorithm. The limitation here is that in conventional operation, a maximum of two channels of physical input and output can be used to address the unit. There's no way, for example, to divide the processor into two separate stereo virtual machines with independent input and outputs.

Lexicon provides some useful system presets making use of the various permutations to get you started, or you can start from scratch and build your own. This is probably the most confusing part of the PCM96's operation — but once you get the hang of the fact that a 'system preset' defines the configuration of virtual machines, and that then each machine can have its own 'machine preset' loaded into it, the rest is plain sailing.

Editing machine presets is straightforward enough — the three smaller rotary encoders on the front panel are mapped to the parameters in each preset that you are most likely to want to tweak. Pushing the first of these encoders banks through a total of nine of these 'soft row' parameters. It wouldn't be a Lexicon, though, if there weren't a vast array of parameters available to tweak in each algorithm to fine tune the sound and any of these can be freely assigned to the 'soft row' bank for editing.

The algorithms themselves are all new, although some of them are deliberate recreations of some of the older Lexicon reverbs. On offer are Chamber, Random Delay, Hall, Random Hall, Plate, Dual Delay, Resonant Chords, Chorus/Flange, Concert Hall, Room and Signal Generator. A quick audition of some of the machine presets in each of these areas very quickly reveals a sound that is classically Lexicon — lush and rich with plenty of complexity and realism for what is, after all, synthesised reverb. The new Hall algorithms provide

an excellent contrast to the (vintage sounding) Concert Hall algorithms. They sound richer and smoother during the decay phase coupled with a very gentle and unobtrusive initial build-up.

Most impressive though is the Room algorithm. Although the PCM96 doesn't use convolution in its processing, the Room algorithms are modelled on actual impulse responses taken from a number of real rooms and spaces. If necessary, a reverb tail can then be added to these early reflections. The result is a collection of very useful and convincing ambiances that are equally at home in music and post applications. In terms of editing and tweaking, existing Lexicon users will feel right at home, particularly those who are familiar with the 300L or 480L. There's the same wide range of parameters with familiar names and actions, plus a couple of newer additions. Most notable among these are much more flexible multimode filtering options at various stages in the algorithms, allowing greatly enhanced tailoring of the tonal characteristics of the reverbs, and a parameter that allows the perceived stereo width of the reverb tail to be altered via matrix processing.

So far, the discussion has centred around using the PCM96 as a conventional standalone box. However for DAW-centric users there is another possibility, which brings the FireWire and Ethernet connectivity of the unit into play. Accompanying software (Mac only) installs a number of components. The first is a control panel application that appears in System Preferences. This allows you to define the communication interface required (Ethernet or FireWire), and acts as the tool to perform firmware updates. Also installed is a PCM96 plug-in, in both Audio Unit and VST formats. Pro Tools users (as per this review) can also install an RTAS wrapper to allow its use, although it should run natively in Nuendo and Logic.

The simplest option with the plug-in is to use it as a GUI remote for the unit. In this mode, instantiating it in Pro Tools will tell you which of the available inputs of the device it is mapped to (either left or right for a mono instance, or both for a stereo instance). The plug-in window then gives complete control of loading machine presets and fine-tuning of parameters, always remembering that the actual audio will need to be routed to and from the DAW separately. As soon as the plug-in is instantiated, the front panel display of the PCM96 switches to 'Application Lockout', and stays that way until the DAW program quits or the PCM96 is power cycled.

Ethernet or FireWire can be used for this remote control functionality, but if FireWire is chosen for control, you can also set (in the Control Panel

software) audio to be streamed between DAW and the PCM96 over the same FireWire connection. This method of operation effectively makes the PCM96 work like a plug-in using remote DSP — à la Duende. There are advantages and disadvantages to this approach. Latency is an obvious issue, although automatic delay compensation in Pro Tools more or less nails this. And in this mode there is no way to use the cascaded machine configurations of the PCM96 for serial processing. On the plus side, it does allow up to four simultaneous audio streams to and from the unit in any combination of stereo or mono virtual machines, overcoming the limitation that exists when using the PCM96 with the analogue or AES I-O.

In either of these two plug-in modes, the GUI is simple and clear, with a set of expanding windows and tabs to access and adjust all parameters — overall a much quicker experience than using the front panel controls. This experience is tempered a little by some niggles and stability issues, despite upgrading the unit's firmware and the plug-in software to the latest versions before commencing the review. First on the list here is the fact that it takes some time for the computer to properly see the PCM96 — you often need to go through several cycles of inserting the plug-in and then removing it before Pro Tools acknowledges that the device actually exists. Once communication is established things are generally fine so this might not be as big an issue had I not experienced a significant number of cases of Pro Tools unexpectedly quitting on an otherwise very stable system. It's hard to identify exactly what caused these, but they seemed to be generally related to activating the plug-in or duplicating a track including inserts. When it happens, going through the process of rebooting both Pro Tools and the PCM96, and then re-establishing communication puts a serious dent in

your workflow.

So, at the moment, we seem to have a story of two halves. As a standalone box, the PCM96 is more than worthy of its illustrious badge in terms of its sound and performance, and marks a huge step forward in general user friendliness and flexibility. For anybody wanting that big Lexicon sound for significantly less money than a 960L the PCM96 is an excellent choice. On the other hand, using it in conjunction with a DAW lacks a little in stability — it's certainly not the best of both worlds yet. The good news is that software is software, and I'm sure that the remaining stability issues can and will be sorted out in the near future. And you can, of course, simply ignore that layer of functionality in the meantime and enjoy what is a simply lovely sounding stereo reverb. ■

**PROS** A dedicated reverb that fills an obvious gap in the Lexicon range; variety and quality of presets on offer; user interface a huge improvement over PCM80/90; flexibility of standalone or DAW integrated operation.

**CONS** Display could be a little bigger; only two simultaneous channels of I-O in standalone mode; plug-in mode stability needs improvement.

#### Contact

##### LEXICON, US:

Website: [www.lexiconpro.com](http://www.lexiconpro.com)

UK, Sound Technology: +44 1462 480000