Lexicon

STUDIO SERIES

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DIGITAL EFFECTS PROCESSOR

PCM-80

PCM-80 DIGITAL EFFECTS PROCESSOR

The new PCM-80 is the next generation of signal processing from Lexicon. Taking its heritage from the legendary PCM-70, it features all of the phenomenal sound and powerful control you've come to expect from Lexicon, while offering significantly more than its predecessor.

The PCM-80 maintains Lexicon's highest standards for sonic clarity, and its extraordinary processing power provides a platform which yields the finest reverb and effects available in its price class.
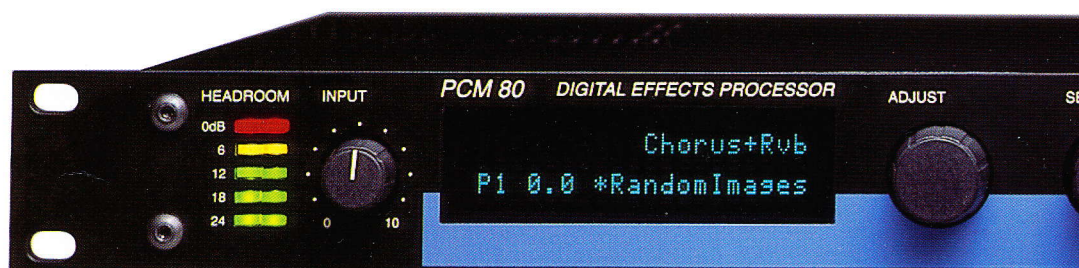
THE SOUNDS: REDEFINING EFFECTS

Within the PCM-80 is a comprehensive blend of sounds, from beautiful and lush to completely wild effects. The PCM-80 offers 200 presets for a wide range of applications – from musical uses, both performance and recording, (for example *Prime Blue, Env Notches, RotoWood*, and a range of tempo-based delay programs) to effects designed specifically for sound effects and video post production (such as *Into Tunnel* or *Superball*) or even dance remixing (*AdjustToFreeze, V-Eliminate*). And for fans of the classic sounds, we have included updated versions of many of the great effects from the Legendary PCM-70 as well, like *Tiled Room* and *Concert Hall*.

To create the effects, all-new algorithms have been designed for the PCM-80. They are grouped into two general classes: *4-Voice* and *6-Voice*.

The 4-voice algorithms, *Concert Hall, Plate, Chamber, Inverse* and *Infinite*, each combine a specific type of reverb with a 4-voice stereo 'effect toolbox', called the Reverb Shell. This provides 'post processing' for the reverb. For example, it is possible to take an inverse reverb, and assign a modulated delay to detune the reverb (we call it *Ghost Flange*).

The 6-voice algorithms, *Glide>Hall, Chorus+Reverb, Multiband+Reverb, Res 1>Plate* and *Res 2>Plate*, each combine a specific type of reverb with a specialized 6-voice stereo effect. In these algorithms you can combine, for example, the shimmer of a multi-voice chorus with a lush reverb tail (as in our *Wet Chorus*).

Most significantly, the PCM-80 has been designed to offer these extensive effects possibilities without compromise. The new hardware platform in the PCM-80 ensures that you'll always enjoy Lexicon quality reverb *and* Lexicon quality effects.

THE INTERFACE

Considerable effort went into providing you with a processor that is as comfortable to operate as it is to hear. At the top operating level, you simply load the desired program, and we have assigned an immediately-useful parameter to the Adjust Knob. For example, if you load the preset *Concert Hall*, the adjust knob controls the reverb decay time.

The next level was designed for professionals who want to further customize programs, but do not have time to wade through the myriad of controls which we offer. In this mode, the ten most logical parameters in a given effect have been provided for easy customization.

Finally, for sound designers, there is a further editing mode which allows access to the PCM-80's full editing matrix.

There is a user-assignable soft row, where you can store your own favorite parameters, plus the full editing matrix. It is in this mode that the user can access the extensive modulation and patching aspects of the PCM-80.

DYNAMIC PATCHING™

When we introduced the PCM-70, one of its many exciting features was the invention of *Dynamic MIDI™*, which ushered in a whole new approach to controlling effects. With the PCM-80, we've taken that concept to a whole new level, providing unprecedented control over your effects. From modulating sounds to altering the attack and decay characteristics of the sound, to producing unusual and ethereal spaces, *Dynamic Patching* gives the effects in the PCM-80 a very unique set of capabilities.

Dynamic Patching makes it possible to go way beyond simple modulation effects. You can create modulation sweeps which move in time with music, or wildly moving effects which have a life of their own. In the PCM-80 you have the power to make your effects come alive as a vital part of your work.

The Dynamic Patching matrix maps data from any of 143 possible control sources to any effect parameter. These sources include 126 different MIDI controllers, and external sources such as footswitches and footpedals. Internal controllers include *Tempo* (both internal Tap and external MIDI clock), *LFOs* (Sine, Cosine, Square, Triangle, Pulse, Sawtooth), *Time Switches, Latch, AR Generator*, and Left and Right *Envelope Followers*. Up to ten patches can be created per effect.

Where all of these controllers really turn the PCM-80 into an instrument, however, is the way they allow you to control effects parameters. In a conventional patch scaling configuration, you have a Maximum and Minimum value, and you can modulate between them. In the PCM-80's Dynamic Patching matrix, you can set *up to 8 points* (see diagram), allowing very complex and mind-altering modulation paths.

TIME SWITCHES

Another unique feature of the PCM-80 is its *Time Switches*. Like an LFO, Time Switches modulate effect parameters. Unlike an LFO, they do not run constantly – they only run when you tell them to. Thus you can create a modulation sweep that is triggered by a footswitch. Or, you could have it triggered on every 8th beat of the music, locked to tempo via MIDI. Or you could have it triggered every time you hit a certain note. The possibilities are staggering. Two time switches are provided within the PCM-80s extensive Dynamic Patching matrix.

TEMPO CONTROL

In recent Lexicon processors, we have implemented powerful *tap-tempo control* over delay lines. Like *JamMan* and *Vortex*, the PCM-80 offers not only a tap tempo control, but also rhythmic variations on the tap.

In the PCM-80, the tempo can also be 'dialed-in' – you can set the tempo in beats-per-minute. The PCM-80 also lets you generate MIDI clock from your tap, as well as receive MIDI tempo from an external sequencer or drum machine. One other feature unique to the PCM-80 is the ability to have the tempo control LFO speeds and Time Switch controls. Thus all of your modulations can be synchronized with your music.

Dynamic Patching goes well beyond average processors…

…and you can apply it to almost any effect parameter.

Furthermore, you can set independent rhythmic values per parameter within the same program. Tempos can be read as both Rhythmic value and Absolute Time value.

For long delay *aficionados*, maximum delay time is 2.6 seconds of stereo.

With optional SIMMs, the PCM-80 is expandable to an incredible 42 seconds of full-bandwidth stereo delay.

DYNAMIC SPATIALIZATION

Another radical new concept in the PCM-80 is its dynamic spatialization processors. Two independent spatial processors allow you to place effects virtually anywhere between your loudspeakers – or even beyond them. Most significantly, they allow you to locate the effects *dynamically*, thus creating different spaces that change along with the music.

For example, when playing sustained chords through *Steered Rear*, the PCM-80 *automatically* steers the reverb *around* you (into full rear in surround sound) when the input audio decays past the threshold.
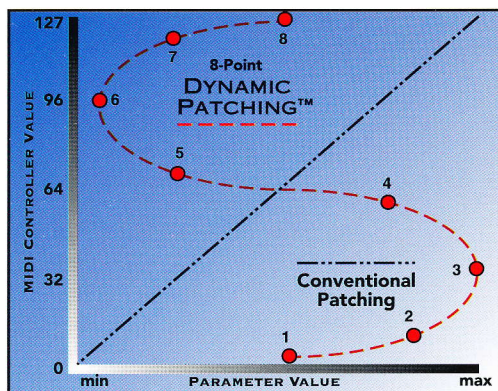
MEMORY CARD SLOT

The PCM-80 has been designed to carry on Lexicon's tradition of creating products with staying power. To that end, we have added an industry-standard *PCMCIA card slot*. This will be used for additional memory for storing programs, and transporting them to another facility. PCMCIA cards will also be able to house new algorithms and sounds that we'll develop in the future. Either way, you'll find the PCM-80 will be a vital part of your effects rack for a long time.
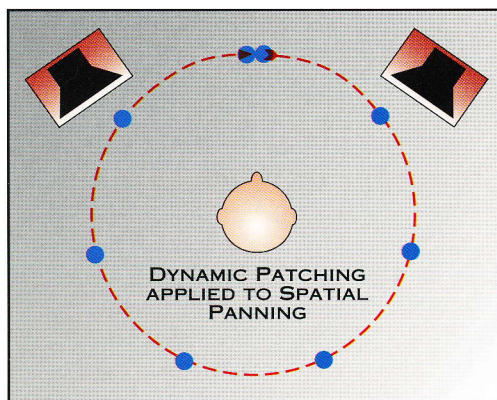
MORE POWER, MORE SOUNDS

The PCM-80 is based on a new hardware platform featuring the very latest in proprietary digital signal processing. It is a true stereo processor with balanced analog interfacing,
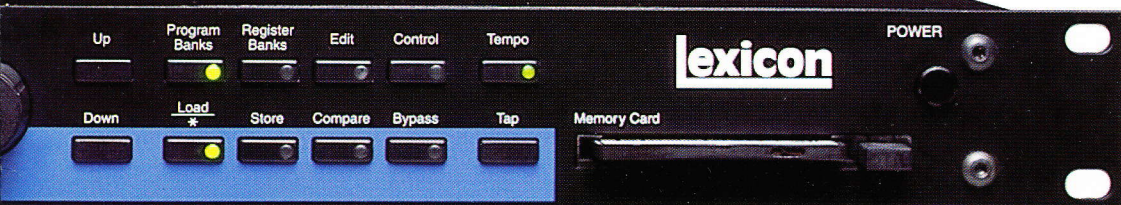
PCM 80

and extremely quiet 18-bit A-D conversion. We have also included a digital interface – and you can mix the analog and digital inputs together.

The PCM-80's versatile new hardware platform features two powerful DSP processors. The first is the *Lexichip II*, the latest generation of Lexicon's famous proprietary VLSI chip, which runs our reverberation programs. Running concurrently with the Lexichip II is a *Motorola 56002™*, a very powerful DSP engine in its own right. A proprietary 24-bit digital audio bus between these two processors is controlled by another custom Lexicon chip, facilitating communication between the two processors and bringing Lexicon effects processing to a whole new level.

This DSP platform has provided us the flexibility to create the all new algorithms that comprise the PCM-80. It enables us to create true multi-effects that are never compromised by a lack of processing power.

THE NEXT CLASSIC

The PCM-80's brilliant new sounds, dynamic patching, and its extremely powerful multiple DSP architecture present a new classic among Lexicon effects processors. It is everything you expected it to be, and more. There's even a universal 100–240v power supply – just plug in anywhere and go!

Experience the power of the PCM-80 today at your authorized Lexicon dealer. It'll be your effects platform for many years to come.

SPECIFICATIONS

Audio Input

Connectors:	¼ in T/R/S phone jacks (2)
Impedance:	
0dB/BAL switch position:	100kΩ, balanced
–20dB/UNBAL switch position:	50kΩm unbalanced
Levels:	
0dB/BAL switch position:	–2dBu min full scale, +20dBu max
–20dB/UNBAL switch position:	–22dBu min full scale, 0dBu max

Audio Output

Connectors:	¼ in T/R/S phone jacks (2)
Impedance:	125Ω, each side, balanced
Levels:	+18dBm max, full scale (+4dBu setting)
	+4dBm max, full scale (–10dBu setting)
Muting:	Relays provided for output muting during power on/off

Analog Audio Interface

Frequency Response:	10Hz to 20kHz ±0.5dB
Crosstalk:	–55dB max, 10Hz to 20kHz
S/N Ratio:	90dB min, 20kHz bandwidth
THD:	0.008% max, 10Hz to 20kHz
Dynamic Range:	90dB min, 20kHz bandwidth
Sample Rates:	44.1kHz, 48kHz

Digital Audio Interface

Connectors:	Coaxial, RCA Type
Format:	EIAJ CP-340
	S/PDIF consumer audio interface
Sample Rates:	44.1kHz, 48kHz
Conversion Data Path:	18 bits
DSP Data Path:	20/24 bits

Audio Memory Configuration

Base Memory:	Two 256KB x 18 DRAMs
Memory Expansion:	Two SIMM sockets provided for either 1MB x 9, 4MB x 9, or 16MB x 9, 70nsec DRAM modules

External Memory Card

Connector:	Accepts PCMCIA Type 1 cards,
Standards:	PCMCIA 2.0/JEIDA 4.0
Card Format:	Supports up to 1MB SRAM

Control Interface

MIDI:	5-Pin DIN for MIDI IN, OUT, THRU
Footswitch:	¼ in T/R/S phone jack for 2 independent momentary footswitches
Footpedal:	¼ in T/R/S jack (Z=10kΩ–100kΩ)

General

Dimensions:	19.0 in W x 1.75 in H x 12.0 in D (483 x 45 x 305 mm), 19 in rack mount standard, 1U high
Weight:	Net 6.4 lbs (2.9 kg)
Power Requirements:	100–240v ac, 50–60 Hz, 35 W, 3-pin IEC power connector
RFI/ESD:	Conforms to FCC class B EN55022 Class B (CE), IEC 801-2, IEC 801-3

Environment:

Operating Temperature:	32° to 104°F (0° to 40°C)
Storage Temperature:	–22° to 167°F (–30° to 70°C)
Humidity:	Max 95% non-condensing

All specifications are subject to change without notice. All products indicated by a trademark or registration symbol are trademarked and/or registered by their respective manufacturers.
Studio Photo: Tom Gatlin; Courtesy of Masterfonics, Nashville, TN.

Rear Panel Connections

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HEARD IN ALL THE RIGHT PLACES

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