300L

Digital Effects/
LARC Interface

Owner's
Manual

Lexicon

Unpacking and Inspection

After unpacking the 300L, save all packing materials in case you ever need to ship the unit. Thoroughly inspect the unit and packing materials for signs of damage. Report any shipment damage to the carrier at once; report equipment malfunction to your dealer.

Precautions

The Lexicon 300L is a rugged device with extensive electronic protection. However, you should observe the same reasonable precautions that apply to any piece of audio equipment.

- Always use the correct line voltage. Refer to Chapter 1 of this manual for power requirements.
- Don't install the unit in an unventilated rack, or directly above heat-producing equipment such as power amplifiers. Maximum ambient operating temperature is 35°C (95°F).
- Never attach audio power amplifier outputs directly to any of the units connectors.
- Before turning the unit on or off, mute your monitor speakers to avoid possible damage from transients.
- To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Notice

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designated to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the computer with respect to the receiver
Move the computer away from the receiver
Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.

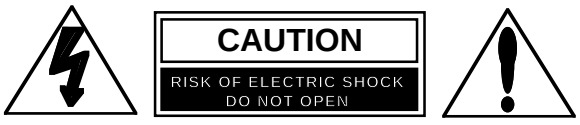
If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to identify and Resolve Radio/TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

This triangle, which appears on your component, alerts you to the presence of uninsulated, dangerous voltage inside the enclosure... voltage that may be sufficient to constitute a risk of shock.



This triangle, which appears on your component, alerts you to important operating and maintenance instructions in this accompanying literature.

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Lexicon Part #070-10673 Rev 1

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Introduction

Congratulations on your purchase of the 300L Digital Effects System with LARC Remote Interface! The 300L not only contains the finest sounds, as you've come to expect from Lexicon, it incorporates new functions that satisfy the needs of today's audio production.

Analog and Digital Audio Interfacing
For both analog and digital use the 300L takes full advantage of recent advances in converter technology and combines them with flexible digital interfacing.

The A/D and D/A converters use oversampling techniques to minimize low-level distortion and provide linear phase characteristics. 64x oversampling Delta/Sigma conversion is used in the A/Ds; 8x oversampling is used in the D/As. The result is sonic transparency without the artifacts normally encountered in conversion.

The digital I/O simplifies interfacing with both the AES/EBU professional and the EIAJ consumer format. XLR, RCA and Optical connectors are provided for both input and output. The digital inputs of the 300L will automatically accept and lock to any AES/EBU/SPDIF format; the 300L's digital output format is user-selectable for feeding either professional or consumer equipment. This allows for format conversion as well as using the high quality A/D converters to feed digital recorders. Control of additional Channel Status information is provided as well.

Dual DSP Architechture
The 300L utilizes two proprietary high performance DSP engines. The configuration of these engines can be determined by the end-user to suit a particular audio application. The Single Setup configuration unites both DSP engines. Two “split” configurations: Dual Mono and Cascade, allow each DSP engine to run a special program especially designed for “Split “ applications. The Single algorithms include: Random Hall, Random Ambience, Rich Plate, Stereo Pitch Shift, and Stereo Adjust. The “split" algorithms include: Dual Delays, Chamber, Mono Pitch Shift, Compressor, a special mastering dither program called PONS (Psychoacoustically Optimized Noise Shaping), and a less extensive version of Stereo Adjust.

Comprehensive Effects Automation
The 300L makes effects automation available in three different ways. If you use time code, the 300's Event List and Time Code Reader add a new twist to effects processing. Each entry in the 50-item list contains a time code value and a 300L effect preset/register number, allowing incoming time code to trigger setup and effect changes, as well as setup and effect parameter glides. For changing effects in music or changing rooms and environments for film and video, the 300L's time code capability opens new avenues to all time code users.

Dynamic MIDI® is included for real-time performance control and effects automation. All parameters in the 300L can be patched to most MIDI controllers, allowing full control from remote devices. For full MIDI automation all parameter changes can be recorded on any sequencer. For additional control, complete System Exclusive information is available.

Lexicon Sound

Even with the best functions and features, the heart of any signal processor is its sound. The 300L contains the very best of the Lexicon Sound — with new refinements such as dynamic size parameters in the Reverb and Ambience algorithms. We have also included stereo and mono pitch shifting, both straight delay and modulated delay effects, a mastering algorithm with precision level/balance controls and equalization. These sounds, combined with analog and digital audio I/O, time code based effect change, an internal LFO, and full MIDI automation result in a system that provides new creative options each time you use it.

We're confident you'll find that the 300L's combination of state-of-the-art sound and extraordinary versatility, combined with the convenience of remote control is exactly what you're looking for — to make sure you don't miss out on anything, we'd like you to read this manual. It provides a thorough explanation of both front panel and MIDI operation, digital and analog interfacing, descriptions of the effects and presets, and complete MIDI Implementation data — all the information you need to access the full power of the 300L.

1

Installing the 300L

Mounting

Before rack-mounting the 300L, you may want to remove the four rubber feet attached to the bottom of the chassis. Gently pry off the black plastic buttons in the center of each foot, then remove the foot itself.

The 300L measures 19"W x 3.50"H x 13.9"D (483 x 90 x 353 mm). It uses two EIA-standard rack spaces and can be mounted on any level surface or in a standard 19 inch (483 mm) rack. Whatever mounting method you use, make sure that the 300L is securely screwed into the rack adapter If the 300L is mounted in a rack or road case, support the rear of the chassis to prevent possible damage from mechanical shock and vibration.

Power Requirements

The 300L is equipped with a 3-pin IEC power connector and detachable cord, providing chassis grounding to the AC mains line. Plug the female end of the power cord into the 300, and the male end into a wall outlet.

The 300L is internally wired to operate at 100, 120, or 230 VAC. The operating voltage set at the factory is marked on a label attached to the rear panel. Check the label *before* applying power to the unit.

If the voltage must be changed, refer a qualified technician to the Voltage Changeover procedure in the 300L Service Manual.

The Rear Panel

Digital Inputs and Outputs

Inputs

Three connectors are provided for digital input:

AES/EBU professional format (1):
3-pin female XLR

S/PDIF EIAJ CP-340 consumer format (2):
unbalanced coaxial RCA
optical (fiber-optic)

One of these connectors may be selected for digital input.

Outputs

Output format can be AES/EBU or S/PDIF. Output always goes to all three digital outputs.

Digital interfaces conform to AES 3-1992 (ANSI S4.40-1992). Input/output impedance levels of the AES/EBU connectors comply with the CCITT V.11 EIA RS-422A.

Time Code In

3-pin female XLR connector for input of SMPTE (Drop or Non-drop), EBU, or FILM time code formats. (Electronically balanced, 100mV p-p minimum)

Analog Inputs and Outputs

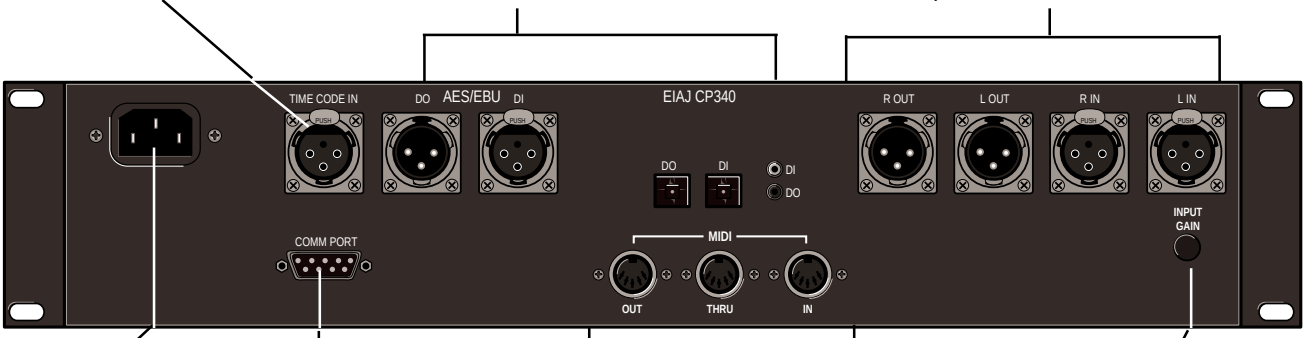
3-pin XLR connectors, electronically balanced.

Either pin 2 or pin 3 can be used as high but, to maintain polarity when transferring data to the digital domain, pin 2 high convention is used by Lexicon.

Pin 1 and either pin 2 or pin 3 of each output *must* be grounded for unbalanced operation.

Input impedance is 50kΩ unbalanced, and 100kΩ balanced. Inputs accept input levels from -14dBu to +20dBu.

Output impedance is 75Ω, and levels up to +18dBu are possible.



AC Power

Standard 3-pin IEC power connector.

Communications Port

DE9 LARC connector.

MIDI Connectors

Out: Transmits MIDI data to other equipment.

Thru: Passes any MIDI data received without change.

In: Receives MIDI information from other MIDI equipment such as Host keyboard controllers, MIDI foot controllers, sequencers and synthesizers.

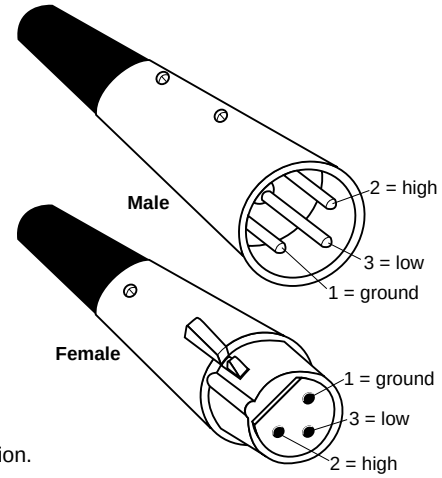
Input Gain

2-position (In/Out) switch for matching input gain to the source being used.
In = +16dB; Out = 0dB.

Connectors, Cables and Configurations

Connectors

Signal	Mating Connector	Description
L and R Analog Audio Input	XLR A3M	Active balanced, pin 2 high +2dBu min; +20dBu max at 0dB setting
L and R Analog Audio Output	XLR A3F	Active balanced; pin 2 high -2dBu to +18dBu at full scale output
AES/EBU Digital Input	XLR A3M	Balanced RS-422 pin 2 high
AES/EBU Digital Output	XLR A3F	Balanced RS-422 pin 2 high
S/PDIF EIAJ CP340 Consumer Digital Input and Output	RCA	Unbalanced 75Ω
S/PDIF EIAJ CP340 Consumer Digital Audio Optical Input and Output		EIAJ Consumer Digital Audio format
Time Code Input	XLR A3M	Active balanced RS-422; pin 2 high, 100mV p-p minimum
MIDI In MIDI Out MIDI Thru	5-pin DIN	Standard MIDI Interface



Pin 2 high by convention.

Cables

Analog Audio I/O and Time Code

For best performance, maintain balanced connections, and use high-quality, low-capacitance, twisted-shielded pair cable.

When connecting to single-ended, unbalanced devices, connect the low side to signal ground at the unbalanced piece of equipment.

For mono connection, connect the left and right input channels in parallel.

Be careful to keep input and output to all channels wired consistently. Out-of-phase wiring can produce audible effects.

AES/EBU Digital Audio I/O

This interface requires balanced connections using high-quality, low-capacitance, controlled-impedance, data communication, twisted-shielded pair cable. **It will not work reliably if microphone cable is used.**

SPDIF (EIAJ CP340) Consumer Digital Audio I/O

This interface is unbalanced but, because it carries digital signals, it requires the use of 75Ω RG-59 coaxial cable.

SPDIF (EIAJ CP340) Consumer Digital Audio Optical I/O

Use commercially-available, consumer audio optical cable assemblies.

MIDI IN, OUT and THRU

Use standard 5-pin DIN MIDI cable asemblies, available from your local dealer.

Below are recommended manufacturer's part numbers for cable and cable assemblies. In some cases, two types are specified: one with an overall braid shield for heavy use, and one with a foil shield for permanent installation.

Analog Audio and Time Code
Belden 8412 (microphone cable with braided shield)
Belden 9461 (foil shield)

AES/EBU
Belden 9271 (foil shield)
Gotham GAC-2 AES-FRU
Maximum recommended length: 100 ft (30M)

S/PDIF (EIAJ CP340) Consumer Digital Audio
Belden 9259 (22 AWG conductor, .242 O.D.)
Belden 8218 (27 AWG conductor, .150 O.D.)
Maximum recommended length: 32 ft (10M)

S/PDIF (EIAJ CP340) Consumer Digital Audio Optical
Toshiba TOCP174y
Sony POC-15
Maximum recommended length: 16 ft (5M)

About the LARC

Main Display
Shows names and values for all selections.

Headroom Indicator
+12 dBm indicates analog or digital clipping. Proper input level is with +12 dB and ovld LEDs *unlit*.

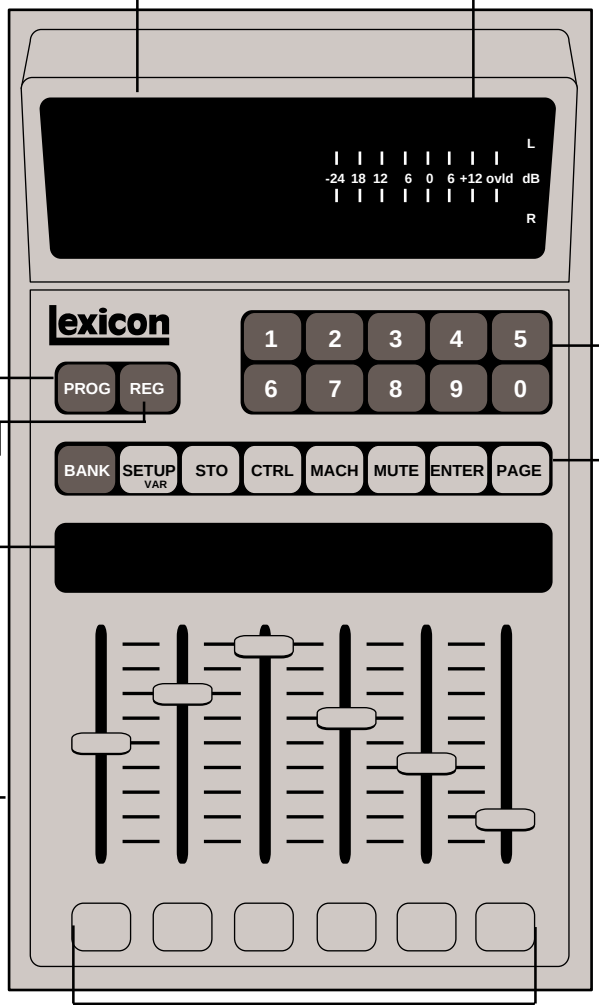
Numeric Keypad
Press one of these keys to load a program selected with PROG or REG. Also used to select pages.

Program Select
Press to enter Program mode. Press repeatedly to scroll through presets in a bank.

Register Select
Press to enter Register mode. Press repeatedly to scroll through registers in a bank.

Slider Display Line
Shows abbreviated names of the parameters currently under the control of the sliders. Full name appears in the Main Display.

Control Sliders
Adjust parameter values.



Function Keys

Bank scrolls through groups of programs or registers.

SETUP brings you to the tope level of the user interface.

STO stores edited setups and program registers.

CTRL toggles in and out of the control mode.

MACH toggles between machines when Split or Cascade setups are selected.

MUTE toggles the removal and restoration of processed audio from the outputs.

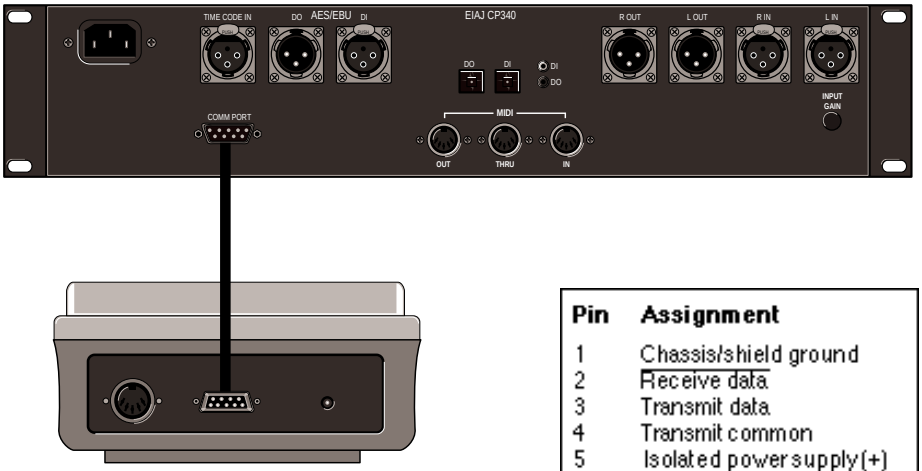
ENTER loads selected setups.

PAGE steps through pages of setup and program parameters.

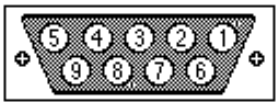
Slider Display Keys
Show parameter name and value in main display. Press twice to engage vernier (fine) adjustment mode when available.

How to Interface the LARC

The 300L rear panel COMM PORT connector interfaces to the Lexicon Alphanumeric Remote Control (LARC) via a flexible 50-ft cable (supplied). The pin assignments for the connector are shown to the right.



Pin	Assignment
1	Chassis/shield ground
2	Receive data
3	Transmit data
4	Transmit common
5	Isolated power supply (+)
6	Receive common
7	Receive data
8	Transmit data
9	Isolated power supply gnd



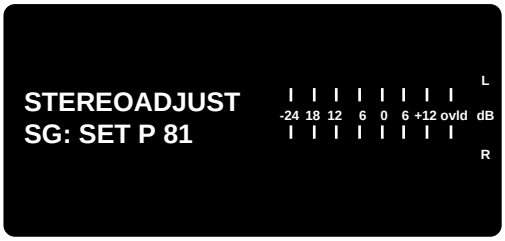
LARC Connectors

Wiring diagram for the 300L COMM PORTconnector.

Setting Analog Audio Levels

When shipped from the factory, the 300L is set for Analog I/O configuration. Once you have connected the analog inputs and outputs, you should set up the analog input (pre A/D converter) and analog output (post D/A converter) levels. First, you will need to select a Setup which represents a digital “straight wire” through the box. To do this, press the SETUP key, then use the PRE slider to select Setup Preset 81.

The upper display should read:



Press ENTER to load the setup. Press CTRL, then press PAGE, followed by the number 9. This will display Control Mode Page 9. The lower display will show:

The I/O structure of the box is specified such that if a +11dBu signal is input into the box, full scale conversion will occur. This is indeed true if the LFT (left) input and RT (right) input sliders are set to 0dB. In fact, with the Output sliders set to 0dB, you should read exactly the same, +11dBu. In practice, analog I/O interface levels vary widely with various console types. The Input and Output controls on page 9 allow the 300L to be optimized for use throughout the analog world.

With the Left and Right sliders fully attenuated to -10dB, the 300L can look at signals as high as +21dBu. For those of you who like to “blast” through an analog console, this full attenuation may be a requirement.

If your console typically sends a +4dBu signal when the send meters read 0VU, the 300L’s input will be left with only 7dB before converter saturation. This is not good. A common rock and roll soution would be a quick trim of the send host by -7or -10 dB to give the system a little more “breathing room”. Some analog engineers often refer to this “breathing room” as headroom. Technically , there is no such thing as headroom in a digital system. When the converter goes to full scale, overload will occur. Although the rock ‘and roll solution will usually work, but we suggest you trim the inputs to the 300L.

To do this, move the LFT and RT input sliders to the required settings. You may need to “null” these sliders at their mid-travel points in order to “grab” the default value of +0dB. Attenuate them one at a time and make sure they are matched. Pressing the buttons under each of the active sliders will interrogate the current values.

Input levels between -1.5dBu and -2.9dBu will reference to 0 on the LARC meters. You will find your own region of optimization.

On the output side, if +11dBu isn't quite enough oomph! for the return inputs (which is rarely the case) you may need to crank up the outputs. If you have attenuated the inputs, as in the above example, the output will not be at unity gain so you will have to boost the output sliders by the same amount. Grab each slider individually and match the outputs.

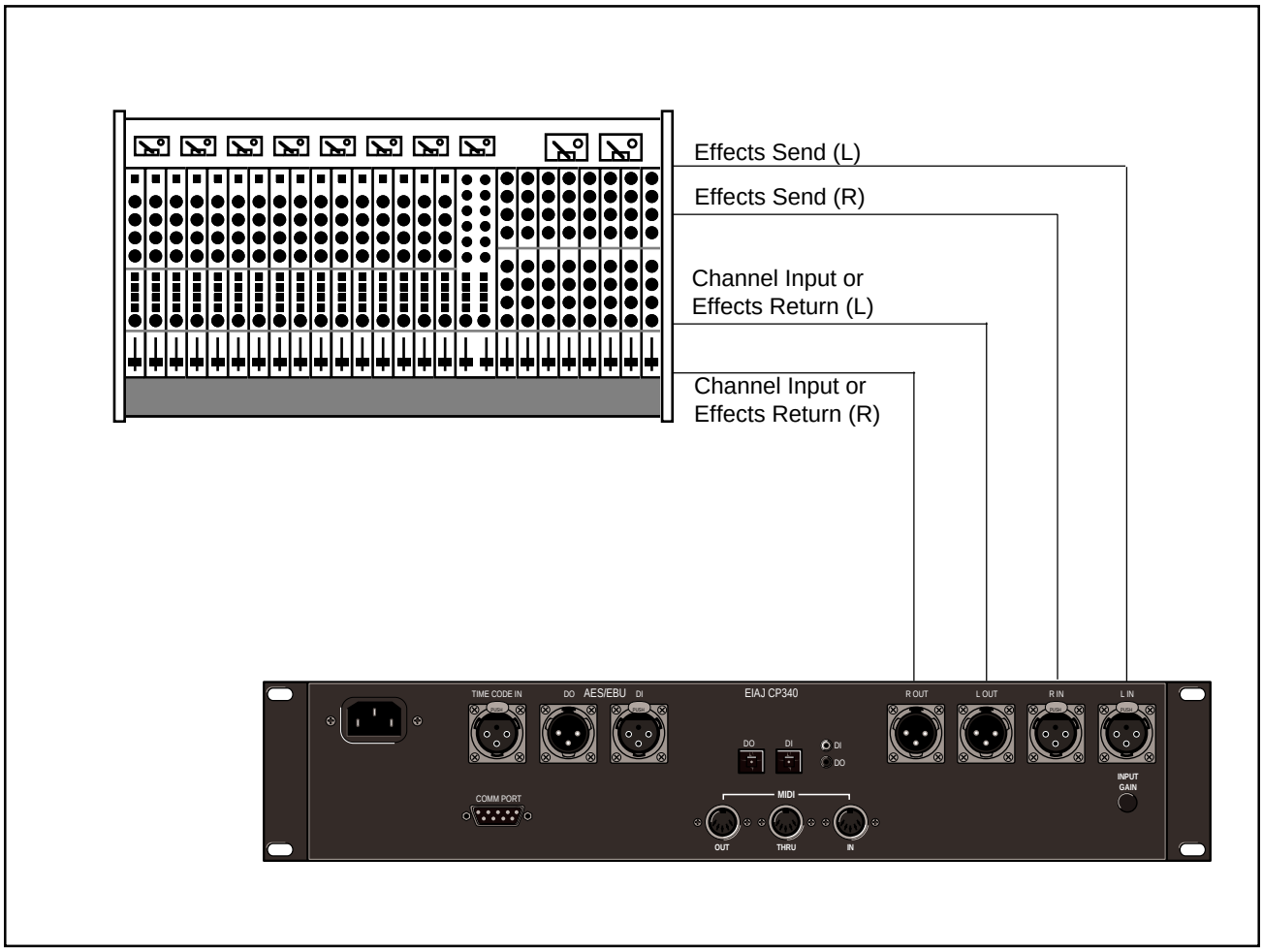
A note on metering reverberation programs

Most Setups have the meters set for EFX-OUT. What we have described above is getting the input and outputs "environmentally" matched.

As you start running reverb programs, you will see a natural attenuation on the meters. This is perfectly normal. If the LARC overload LEDs do light up, DSP overload is occurring. This is usually linked to someone's "aggressive analog behavior", but there may be other times when an effect running in a delay program has too much feedback and cross-feedback. A common pre-mastering mistake is to run close to the edge going into an EQ process before going digitally into a DAT. Boosting high or low frequencies is likely to overload the DSP output. Be aware!

Configurations

Connection to a mixing console's effects sends

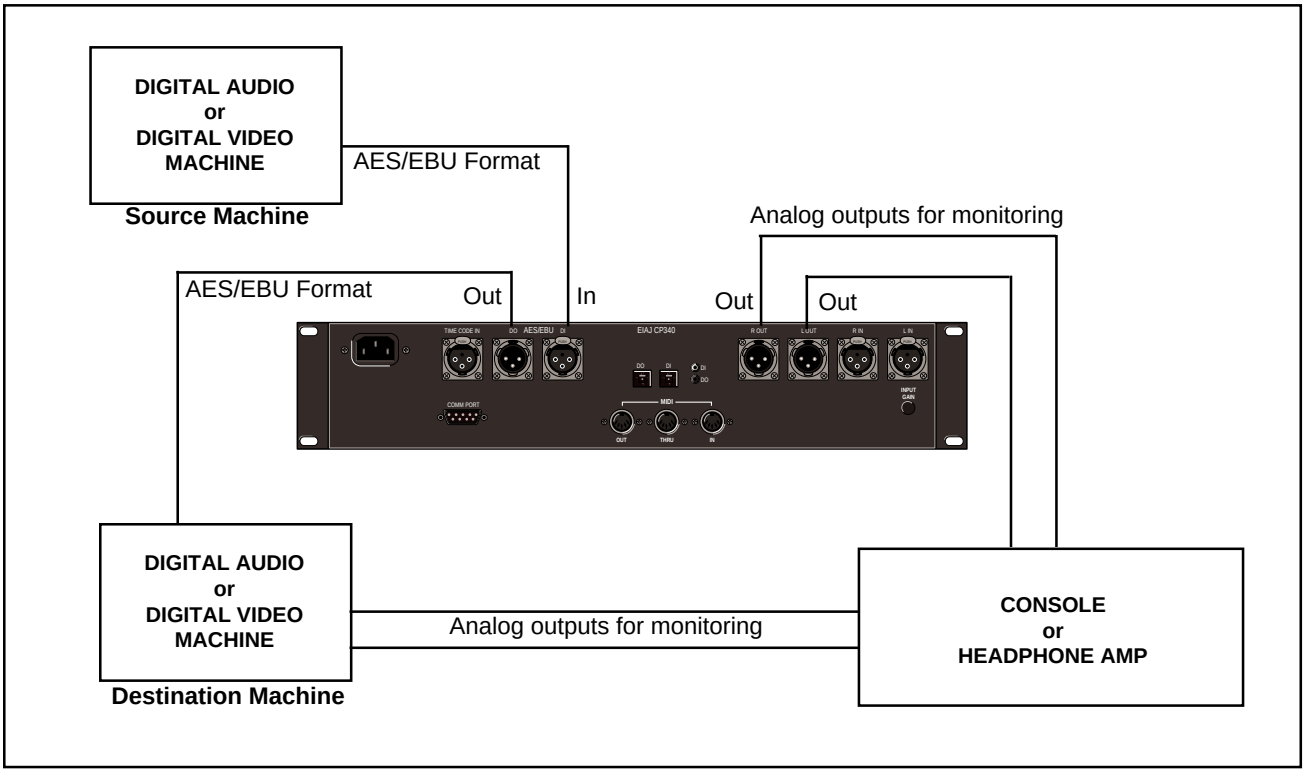


If you will be using a 300L as your primary effects unit, and your system includes a console with one or more auxiliary (effects) sends, connect the 300L as shown above. In most applications, it is preferable to connect the 300L outputs to two of the console's input channel strips, panned full left and right, rather than the effects returns. This allows the greatest flexibility in routing and equalization.

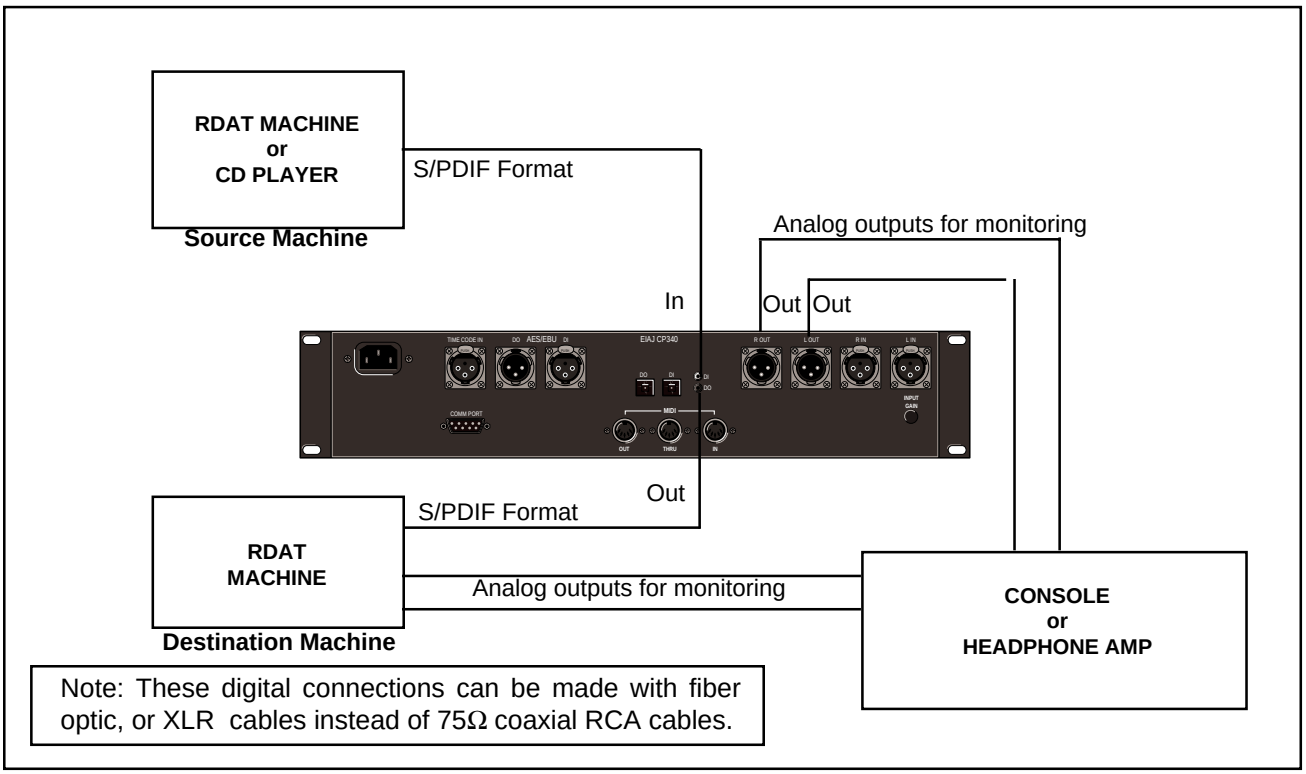
In this configuration the console controls are used to set the amount of effect heard—the 300L's MIX control should be set for 100% wet. If you are using only one effects send, connect the left and right inputs of the 300L in parallel.

The following diagrams give a few examples of various possible configurations for interfacing to digital equipment.

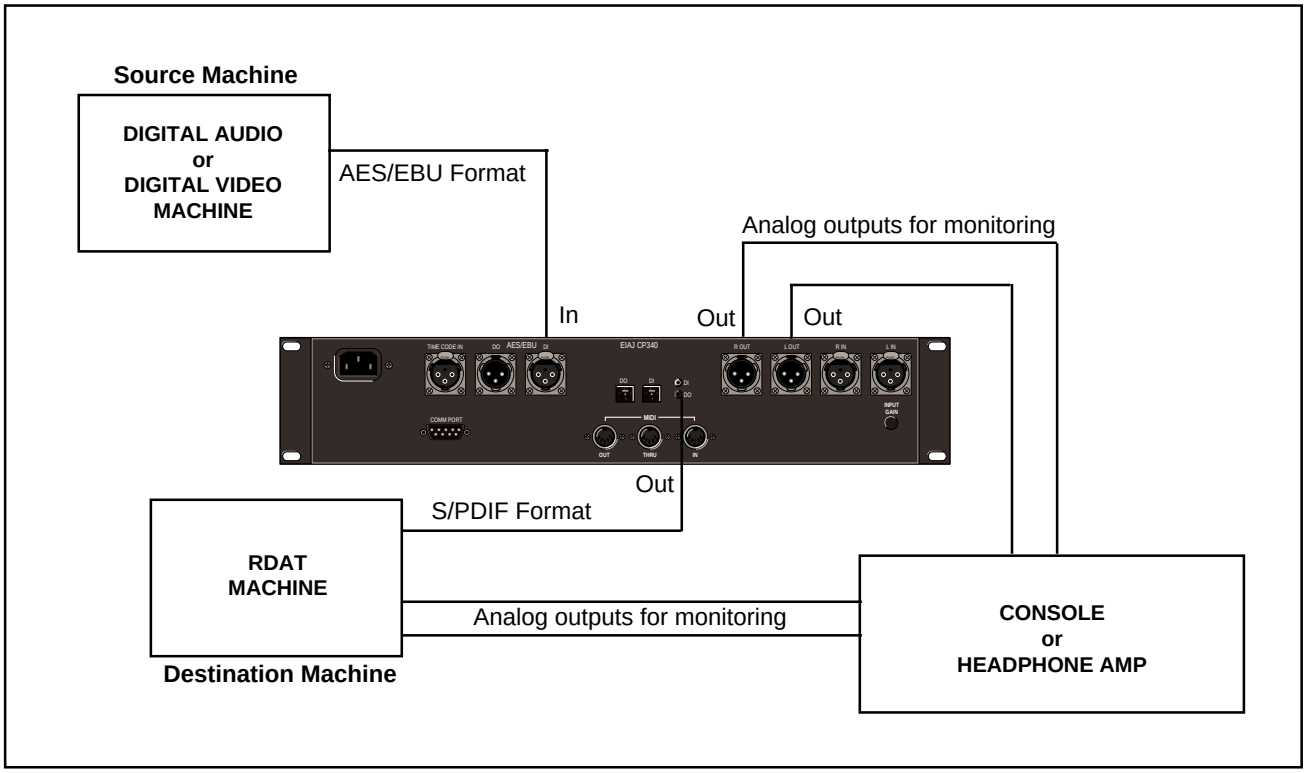
AES/EBU to AES/EBU



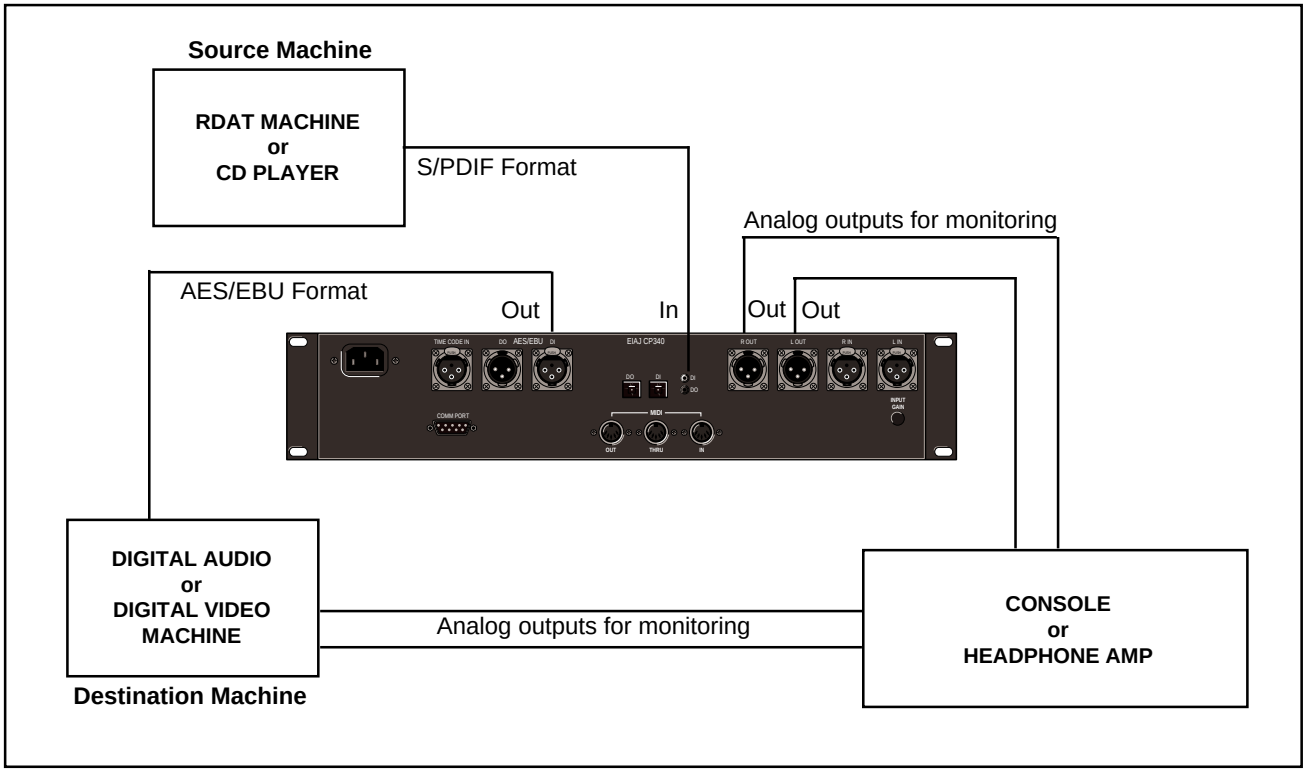
S/PDIF to S/PDIF



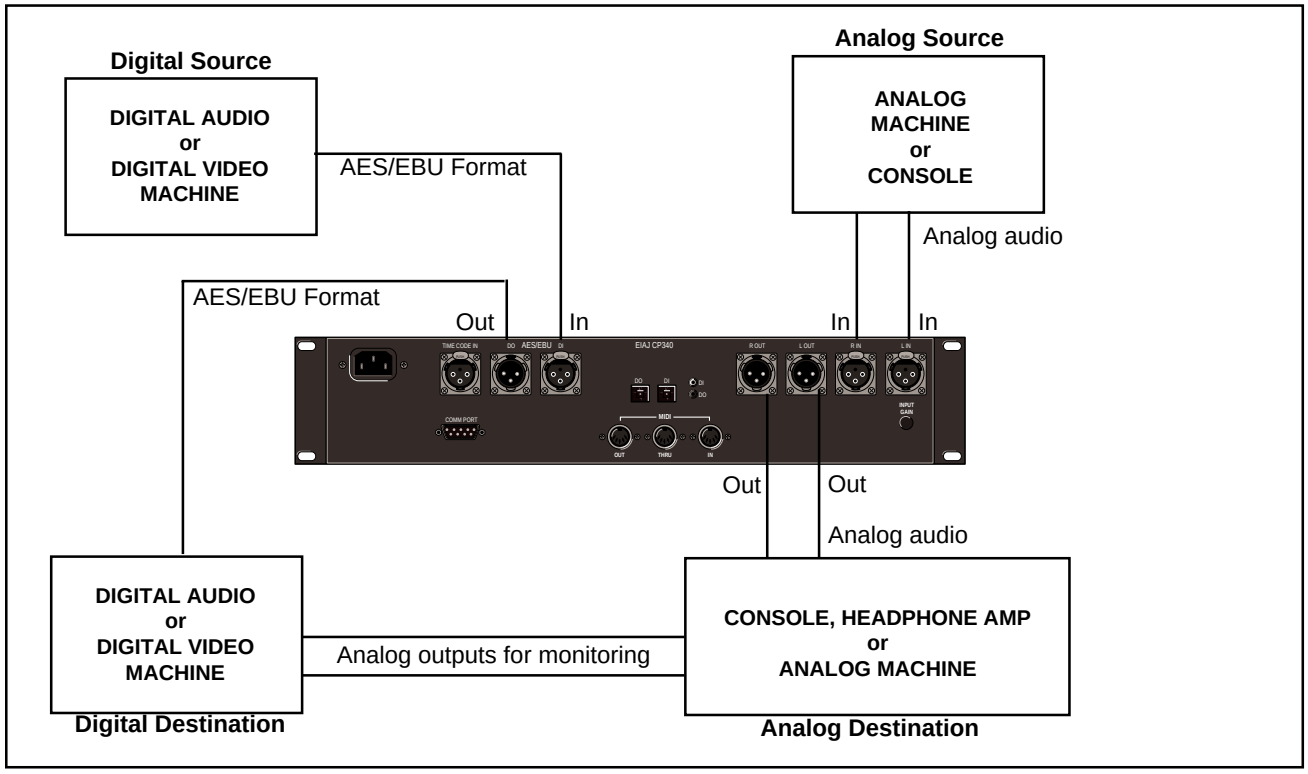
AES/EBU to S/PDIF Conversion



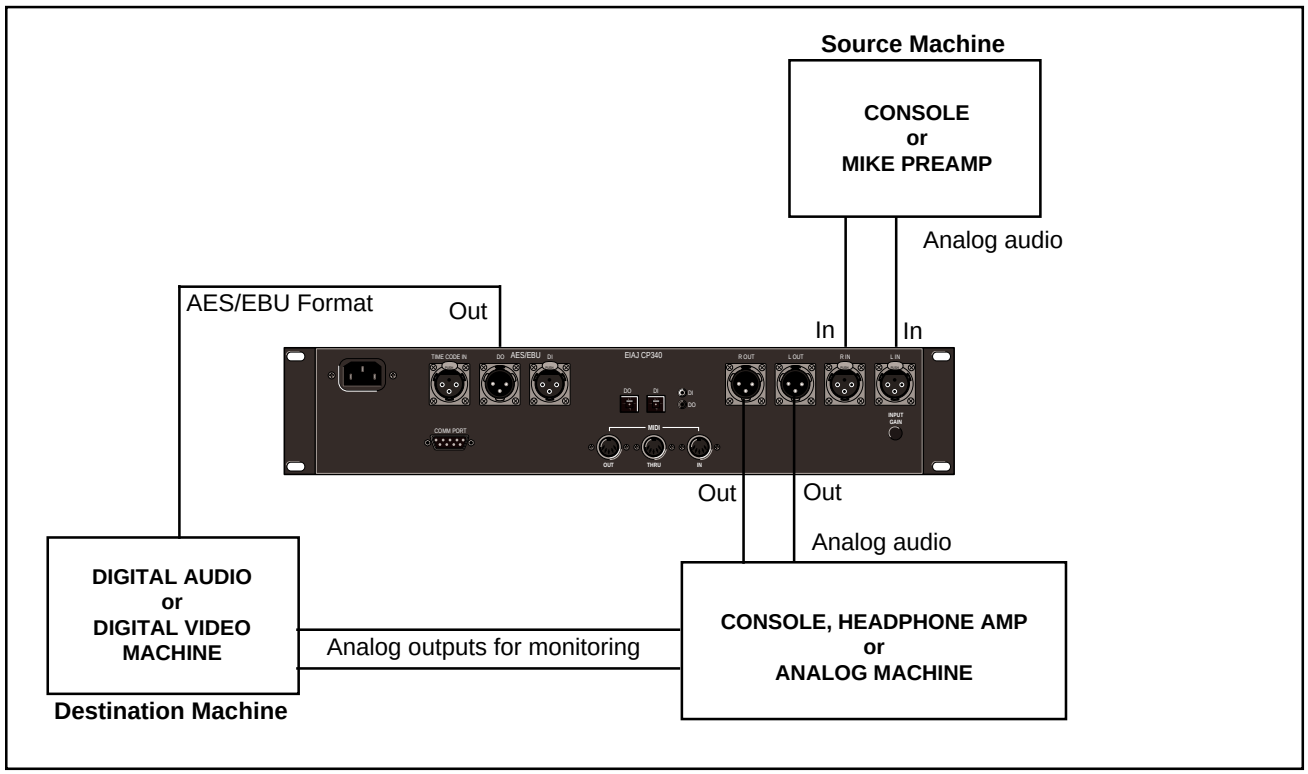
S/PDIF to AES/EBU Conversion



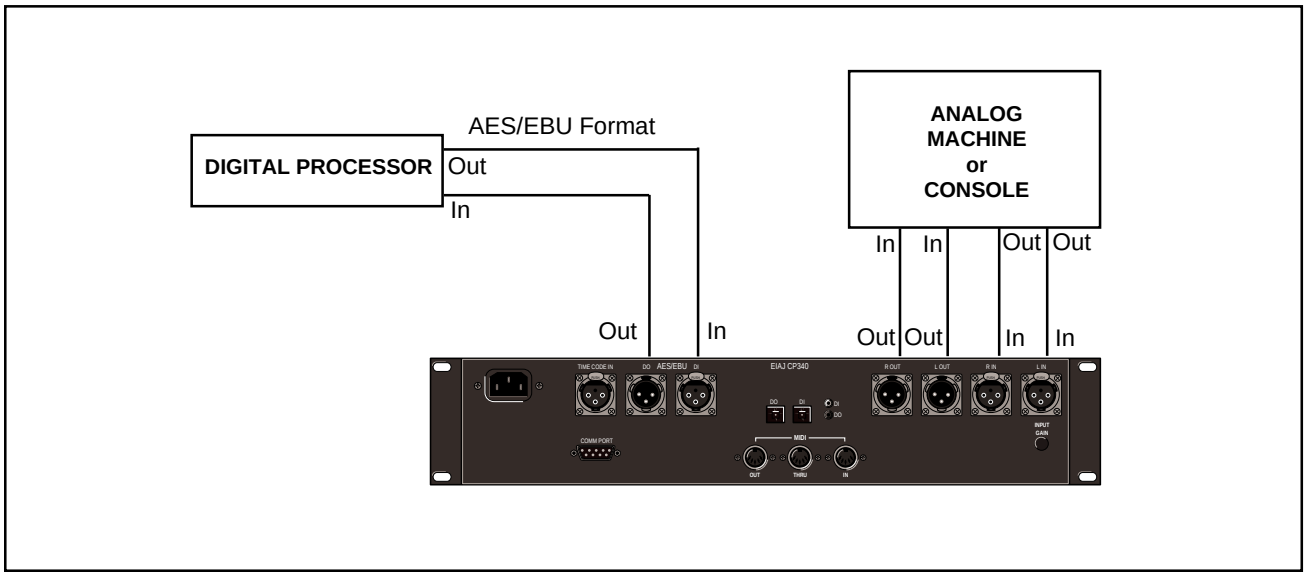
ANALOG I/O and
AES/EBU to AES/EBU



ANALOG I/O and
AES/EBU Digital Output



ANALOG In
with Digital Patch Point
to ANALOG Out



2

System Overview

Terms used in this manual

In discussing 300L operation, the following terms are used.

Algorithm

The 300L contains eleven *algorithms*. An algorithm is a set of instructions that tells the 300L's audio processors how to process the input signal. One algorithm produces pitch shift effects, another produces reverberation, etc. Algorithms are stored inside the 300L on ROM (Read-only memory) chips.

Configuration

The 300L can deliver two effects (one from each machine) simultaneously. The manner in which the two machines relate to each other is called the *configuration*. The machines can be used with independent inputs and outputs (Dual Mono configuration), they can share the same stereo input signal (Single configuration), or the outputs of one machine can be fed into the input of another (Cascade configuration).

Effect

An *effect* consists of an algorithm, the parameter values which create a specific sound, four associated patches, and an identifying name.

Machine

The 300L contains two processing modules, called *Machine* A and *Machine* B. Although both machines can run simultaneously, only one can be accessed from the front panel at any given time. A dedicated function key labeled MACH allows front panel selection of either Machine A or Machine B.

Pages

Because effects (and other modes of operation) have more parameters than can be displayed at one time, parameters are grouped into several *pages*. You move between pages by pressing the dedicated function key labeled PAGE.

Parameter

Each algorithm has a set of *parameters* (controls) that uniquely characterize it. The settings of the parameters can be changed to create radically different sounds from a single algorithm.

Patch

A *patch* is a routing assignment that allows one of the 300L's parameters to be driven by a source controller (LFO, footswitch, mod wheel, etc.)

Register/Preset

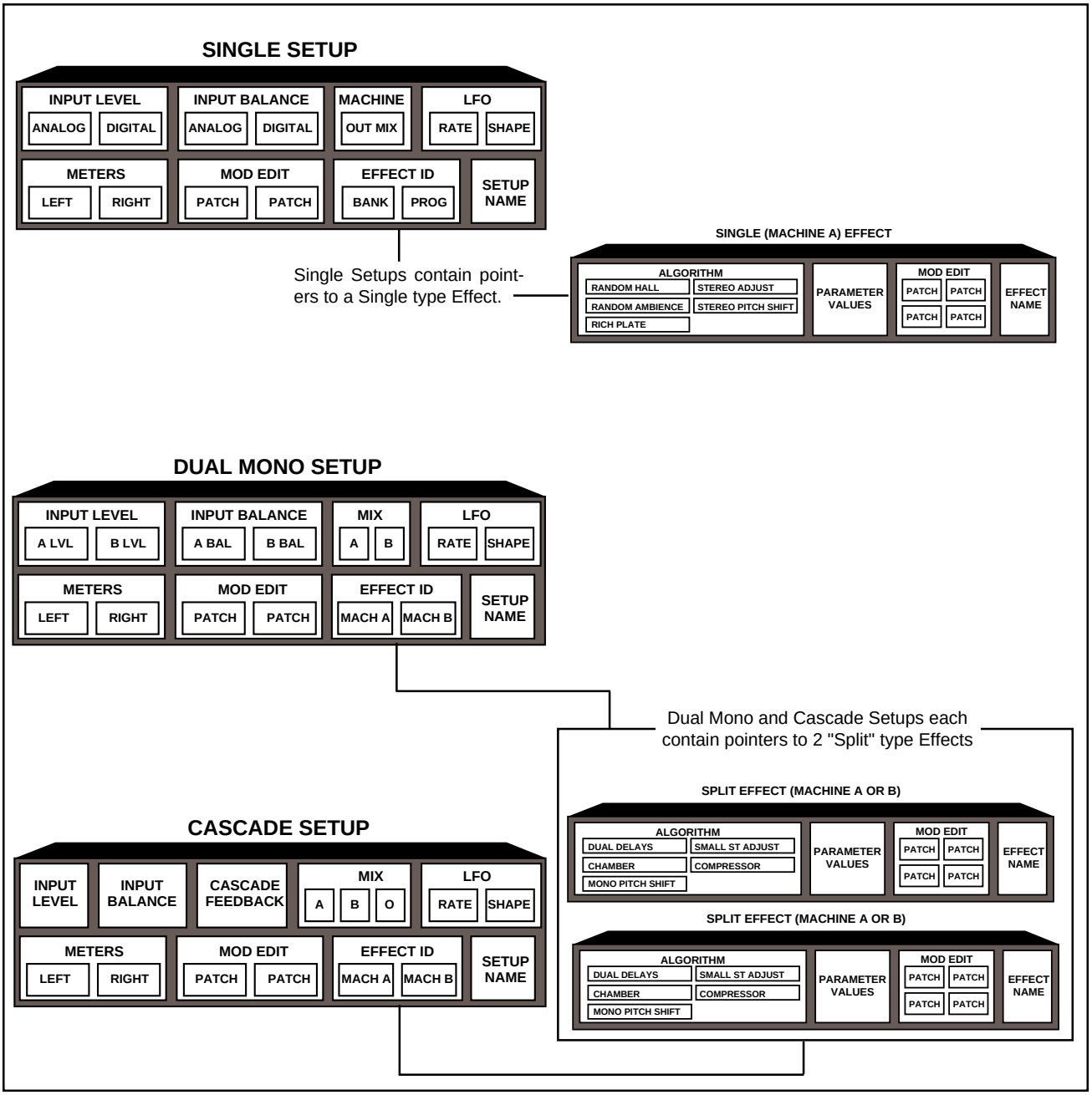
Registers are simply memory locations where you can store your own setups and effects. *Presets* are factory-installed setups and effects. The presets cannot be overwritten, but they can be modified and stored as custom setups in the registers. Registers and presets are differentiated on the 300L display by the initial R (Register) or P (Preset) before their number.

Effect programs: 160 effect programs are installed in the 300L to give you a wide variety of sounds to use as is, or to use as a starting point when creating your own sounds. (50 effect registers are provided for storage.)

Setup presets: 150 setup presets provide a convenient starting point for selection of effect combinations. (50 setup registers are provided for storage.)

Setup

A *setup* consists of a internal I/O routing configuration, an identifying name, and pointers for one or two effect programs.There are three basic types of setups: Single, Dual Mono and Cascade.



Operating Modes

The 300L is always in one of the following four operating modes:

Setup (preset or register) Select Mode
Program Preview Mode
Register Preview Mode
Control Mode

The 300L always powers up in its last operating state.

Each mode, and the paths for entering and exiting it are described below.

Setup Select Mode
Press SETUP.

This mode allows you to:
- View the machine currently being addressed by the LARC
- Display the program or preset currently running in the machine
- View and/or alter parameters

Program Preview Mode
Press PROG.
Press BANK to view program banks.
Press PROG to view programs in the bank.

This mode allows you to:
- Select factory programs

Register Preview Mode
Press REG.
Press BANK to view register banks
Press REG to view programs in the bank

This mode allows you to:
- Select, store, and recall programs from registers

Control Mode
Press CTRL. To exit, press CTRL again.

This mode allows you to:
- View system status
- Alter input and set digital operation
- Address the register transporter
- Transmit MIDI Program Change messages
- Enable MIDI SysEx Automation
* Transmit MIDI Bulk Dumps
- Enable time code
- Edit time code Event List

Checking Your System's Status

Press CTRL to enter Control Mode. Press PAGE, then press 1. Move slider 1 (**SEL**) on Page one of the control program for a quick display of the following information:

- INPUT TYPE
- SAMPLE RATE
- DIG CONNECT
- OUTPUT TYPE
- PATCH POINTS
- OUTPUT FORMAT
- I/O EMPHASIS
- EMPHASIS IN
- SCMS
- BYPASS MODE
- LOAD MODE
- MIDI AUTOMATION
- MIDI CHANNEL
- SYSTEM: MACH A, B
- MIDI MAP MODE
- TIME CODE
- CURRENT SETUP
- CURRENT EFFECT(S)

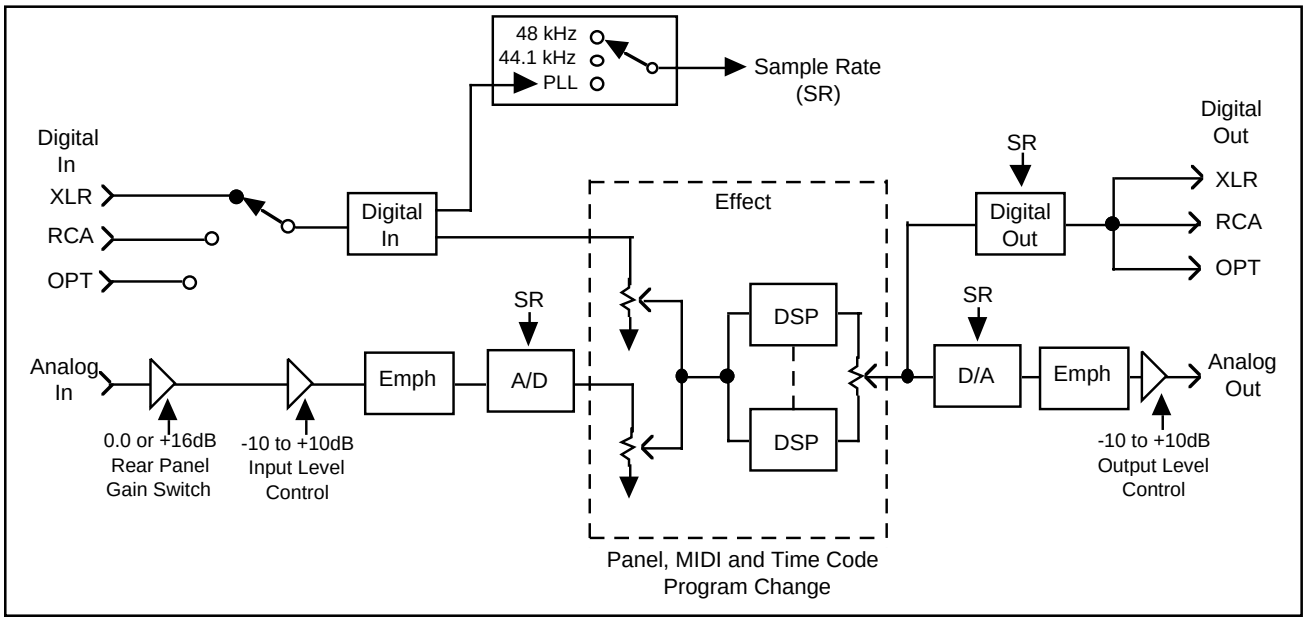
300L Power-Up State

Normally if power is lost, or turned off, and then restored, the 300L will return to its last previous state.

System Overview

The 300L presents you with an incredible number of choices — all of which can be made from the LARC. Although you could certainly operate the 300L by setting each I/O configuration and effect parameter by hand each time you use it, you probably wouldn't enjoy it — so we've tried to organize the 300L so that its considerable flexibility doesn't become an obstacle. Before digging into the details of operation presented in this manual, you may find this brief overview useful.

The block diagram shown below illustrates the basic flow of audio through the 300L. Analog and/or digital audio enters on the left. Each is conditioned and translated as required and, in the case of digital audio, a sample clock is extracted. The resultant digital audio streams are sent to effect processing, then converted to appropriate analog and digital outputs (on the right).



As you can see from the figure, the 300L has a rich set of I/O capabilities, with many choices available to the user, including:

Sample Rate
Analog or Digital Input connector
Digital and Analog Emphasis/De-emphasis
Digital Output format (AES or SPDIF)
Digital Copy (SCMS) and Emphasis bit manipulation
Processor Configuration

The I/O organization is part of the 300L's Control Mode. Other items which form part of the global operaton of the box are: Time Code event list viewing and editing, MIDI Mapping Tables, Purge functions for User Registers,Copy Tools, and Bypass button functions.

By far the most important aspect of the 300L is the Setup and its association to the digital effect(s) that you want to use. The 300L has three types of Setups: Single, Dual Mono, and Cascade. Each is strikingly different and together they provide incredible audio possibilities.

Each Setup includes pointers to one or more effects along with other items such as machine input(s) and source balance(s), the relationship between wet (effect) and dry (input) mixing for each machine, meter functions, LFO rates and shapes, and a naming function. In addition, there are two(2) modulation patches which can link source controllers to two Setup parameters.

To simplify the choice among the many possible effect and system routings, the 300L is shipped with 150 Setup Presets. (The organization of the Setup Presets is shown to the side.) These factory presets cannot be overwritten, but can be modified and stored as user setups in any of 50 setup registers.

Audio effects, of course, are what the 300L is all about, and a total of 160 Effect Programs are provided for loading into the three Setup types. Five algorithms can be loaded into Single setups: Random Hall, Random Ambience, Rich Plate, Stereo Pitch Shift, and Stereo Adjust. Six different algorithms can be loaded into the "Split" setups (Dual Mono and Cascade): Dual Delays, Split Chamber, Mono Pitch Shift, Compressor, PONS, and Small Stereo Adjust. (The organization of the Effect Banks is also shown to the side.)

Each algorithm has its own control parameters. Random Hall, for example, has 28. An effect can also activate as many as 4 patches, each linking a source controller to a parameter. This CONTROL function is intrinsically mapped as an extension of the EDIT function. Saving either saves the other. (The Effect Presets cannot be overwritten, but can be modified and stored as custom effects in any of 50 effect registers.)

In summary, the 300L is organized into setups and effects. Setups are collections of many decisions, including DSP routing, Input levels, Source, Balances, LFO Rate and Shape, and pointers to an effect or effects. These selections are grouped together, named and stored so they can be called up with a single user action. Each effect contains an algorithm, a complete set of parameters, and 4 patches. As with setups, effects can be loaded, copied, edited, named, and stored, as well as dumped and recalled via MIDI.

Setup Presets

The Setup Presets are organized as follows:

001-100 = Single Setups
101-125 = Dual Mono Setups
126-150 = Cascade Setups

Single Setups use one effect running in a single unified machine (both DSP engines working as one).

Dual Mono and Cascade can be thought of as “split” configurations, and are capable of simultaneously running two different (or identical) effects.

Banks

Effect Programs

Effect Programs are organized as follows:

Single Effects (Banks 1-0)

BANK 1 HALLS
BANK 2 ROOMS
BANK 3 CHAMBERS
BANK 4 AMBIENCE
BANK 5 DIALOG
BANK 6 INSTRUMENT
BANK 7 LIVE SOUND
BANK 8 PLATES
BANK 9 STEREO ADJUST
BANK 0 STEREO SHIFT

These can only be loaded into Single Setups (0-100).

Split Effects (Banks 11-16)

BANK 11 DELAYS
BANK 12-MOD EFFECTS
BANK 13 SPLIT REV 1
BANK 14 SPLIT REV 2
BANK 15 MONOSHIFT
BANK 16 MASTERING

These can only be loaded into “Split” Setups (101-150).

The 300L's Control Mode provides access to general global parameters and miscellaneous functions. Selecting Control mode does not interrupt the audio operation of the 300.

There are 9 Control mode pages:

1. Input type select (analog and/or digital), analog sample rate select, digital lock, digital input connector type, digital input format display and digital output format selection.
2. SCMS detect and select, digital emphasis detect and select
3. Effect load select (Bypass, Mute) and Bypass function (Input mute, Bypass), Copy Protect, Purge (Delete) Tools for Time Code Event List,All Registers, All Effects, MIDI Map Table, and return to Factory Initialization.
4. Copy Tools for setups, effects, and MIDI Mod edits
5. MIDI Mode
6. MIDI Map Table
7. Time Code Mode
8. Event List Management
9. Analog I/O gain controls

Note: The 300L Digital Effects System is shipped from the factory running in an Analog Input, 48kHz mode with Setup Preset S:P1 SINGLE running Program Bank 1, Program 1.

If you are already familiar with the operation of the 300L and wish to change the Input to a Digital Type, simply enter Control mode and make your selections.

If you have no previous experience with the 300L, we suggest you remain in the analog mode and read on...

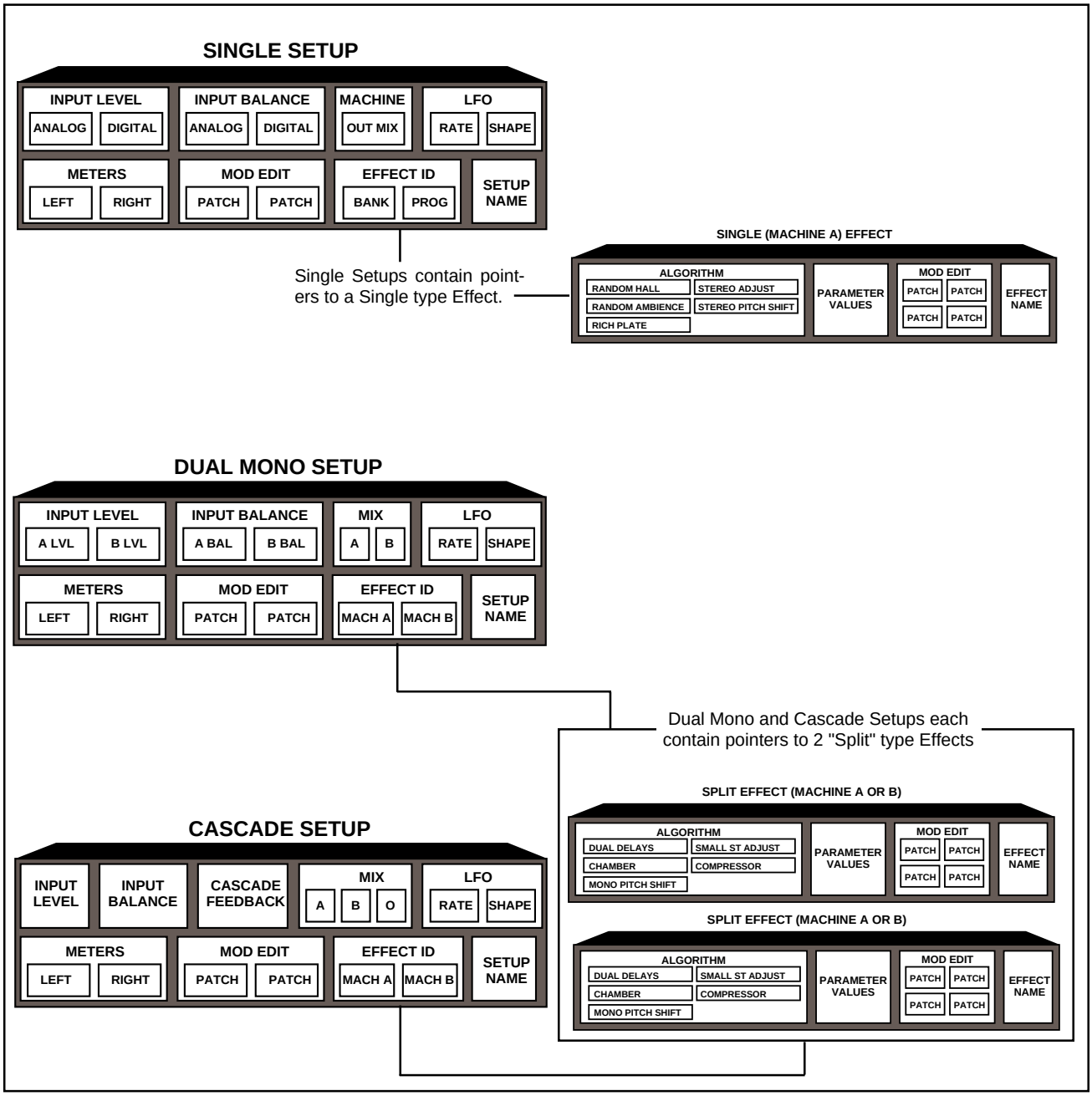
3

System Operation

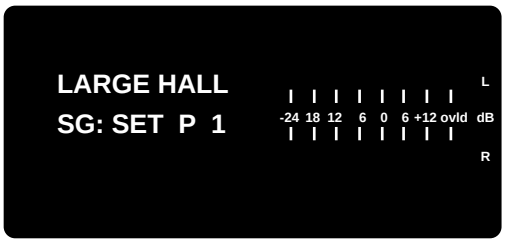
Getting Started

When shipped, the 300L defaults to an Analog In, 48K sample rate state. It also loads Setup Preset 1 Large Hall, with the Random Hall Effect *Large Hall* (Bank 1 Program 1).

The Setup determines the internal I/O routing configuration, and contains pointers for one or two effects. The three Setup types: SINGLE, DUAL MONO, and CASCADE are shown below along with the effect types available to each.



When the 300L is first powered up, the upper LARC display should read:



The slider displays should read:

SETUP:	PRE	REG	SOFT

indicating that the unit is in Setup mode. If your unit is not in Setup mode, press the SETUP key. This simple keystroke will always take you to the top level of the user interface.

Use the Setup PREset slider or enter a preset number via the numeric keypad to cue a new setup into the display window. The cued setup number will blink. Press ENTER to load the displayed Setup — and the Effect(s) associated with it. The upper LARC display will flash "LOADING" while the Setup loads, and "LOADED" once Setup loading is complete. This process can take several seconds when the Setup includes reconfiguration of machines, I/O, etc.

The REG slider accesses 50 Setup Registers where you can store your customized setups. Move the REG slider or press the button beneath the slider, then enter a register number via the numeric keypad to cue a nd display a new register. Press ENTER to load the displayed register. A quick "double-click" of the button below the PRE or REG slider will put the slider into a fine resolution mode. The slider will then cue up + or – x presets from its current position. Double click again to exit the fine mode.

SoftSlider

In the Setup mode, the rightmost slider (labeled SOFT) is designated as a soft controller. Setup and/or Effect parameters can be patched to this slider for easy access to the most useful parameters of any given effect. We have already designed Soft Slider patches for all of the Single setups, and for most of the Dual Mono and Cascade setups. For example, most of the Hall programs have RTM (reverb decay) patched to the SoftSlider, while Chorus or Flange types of sounds may have the LFO rate or feedbacks patched to the SoftSlider.

Selecting Analog and/ or Digital Input

The 300L, as shipped from the factory, is set to run Analog In at 48kHz. To change the Analog Sampling rate, to Client-lock the 300L to an external digital device, or to external system word clock, press CTRL to enter the 300L Control mode. The first page defines the input and output structures of the 300L.

This page allows you to view the current status of the box, (STA), define sample clock speed (CLK), specify a digital Input connector (DIN), and select Input type (INP), output type (OUT) and digital output format (OFMT).

STA System Status (View only)
This slider lets you view (but not change) the current status of the system parameters.

CLK Analog Clock Rate
Press the button under the slider to show the current analog clock sample rate. Use the slider to select a new clock sample rate. If a Digital clock has been selected to Host the 300L, the display will show the current sample rate.

DIN Digital Input Connection
Before setting the 300L to receive Digital Word Clock, use this slider to designate one digital input connector (XLR, RCA or Optical) as the Host for the system. You can have all three connector ports occupied, but only one can be selected as a Host and audio source.

INP Analog, Digital, or Both
Identify the type of connector which will be receiving digital clock (via DIN), then select the Input type here. In SINGLE Setups there are three choices: ANALOG, DIGITAL, or ANAlog + DIGital. Use the slider to select the type of input you wish to use. If you select DIGITAL, and the system is properly locked, the display field will briefly show “AES” or “SPDIF” to indicate the format of the incoming signal. If the system does not detect valid word clock, or is not properly locked to incoming word clock,a "BAD DIGITAL WORD CLOCK" message will be displayed as shown below. If you get this message, check all your cables, and other settings.

When you are running a Dual-Mono setup, the selections are: ANALOG, DIGITAL, ANA-A DIG-B, ANA-B DIG-A. CASCADE Setups can be ANALOG or DIGITAL.

OUT Output Types and Patch Points

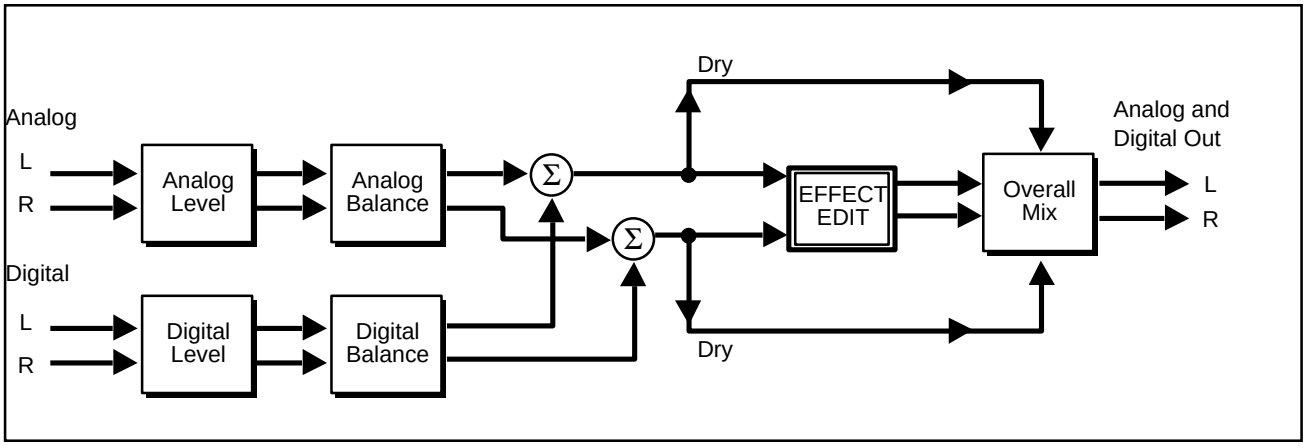
Typically the 300L operates with both analog and digital outputs active. However in the Dual-Mono and Cascade there are other options. When ANALOG inputs are selected, the DIGITAL inputs and outputs are available as patch points, either pre or post processing. When the DIGITAL inputs are selected, the ANALOG inputs and outputs are available. In Cascade operation, the patch point resource becomes available mid-DSP as well. The OUT slider gives you access to the patch points. Similar to a “half - normalled” patch bay on a mixing console, the outputs are always active. Selecting a patch point with this slider effectively breaks the normal and requires a return input in order for the unit to continue passing audio.

OFMT Selecting the Digital Output Format

This slider allows you to select AES Professional or S/PDIF (Sony/Phillips Digital InterFace) Consumer asdigital output formats.

Single Setups

Single Setups (1-100) configure both DSP engines with microcode which enables them to function as a unified engine. Both analog and digital inputs can be utilized simultaneously. Each type of input (A or D) has a source *Level* and *Balance* control. The Level control varies the input level to the DSP engine for each type of input; Analog or Digital. The Balance controls determine what ratio of Left/Right balance feeds the DSP engine. The Setup signal path is shown below.



(Analog and digital input levels and balances are located on Page 2 of the Setup mode. From the Setup display, press PAGE to view Page 2.)

ANA:	LVL	BAL	DIG:	LVL	BAL

Example Virtually all Single Setups have Balance set to 50%. This means an equal proportion of Left and Right input signal is passed into the (Single) Effect.

1. Press the button below the ANA: BAL slider (Analog Balance).
2. Pull the slider down to let more of the Left input pass through.
3. Advance the slider to allow more of the Right channel to pass through.
4. Return the parameter to 50%, allowing proper stereo to pass to the DSP effect.

Before the signal passes into the loaded effect, a post input level and post balance is picked off and bypasses the effect. This is the *Dry* signal path. The Dry signal and the Wet DSP effect signal are summed and proportionally mixed by the control labeled OMIX (Overall Mix). This control is on the next Page. (Press PAGE once.) The resulting mix is passed out both analog and digital.

NOTE: Most studio applications assume a 100% Wet mix. Most SINGLE Setups are set with OMIX at 100% Wet. However, it is possible that some pre-fade sends to the 300L will require the mix to be set to another value.

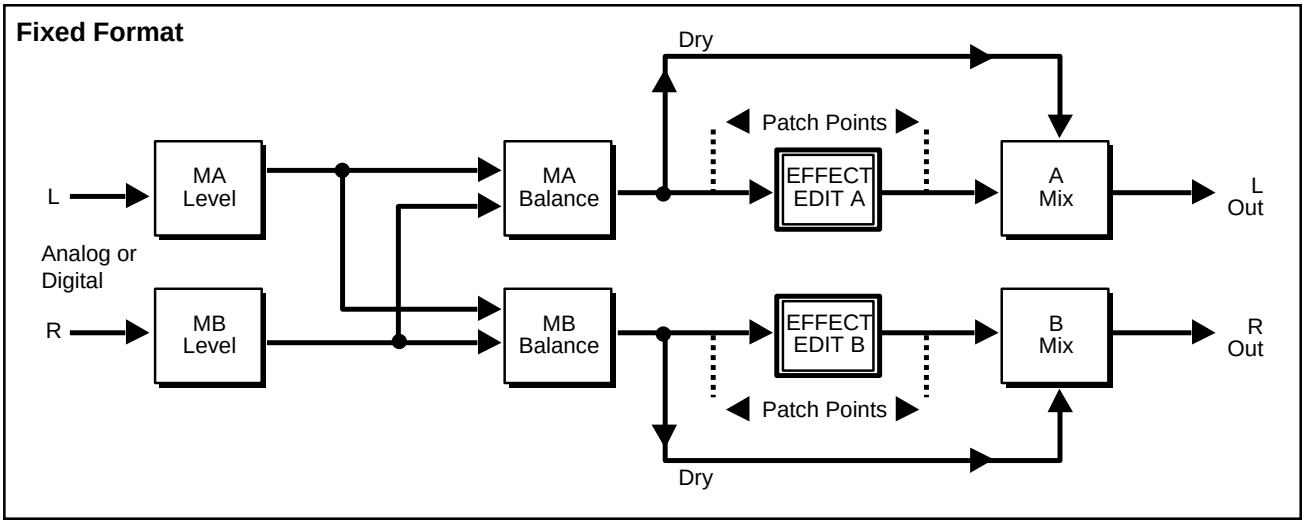
Dual Mono Setups

Return to the top level of the User Interface by pressing the SETUP key.

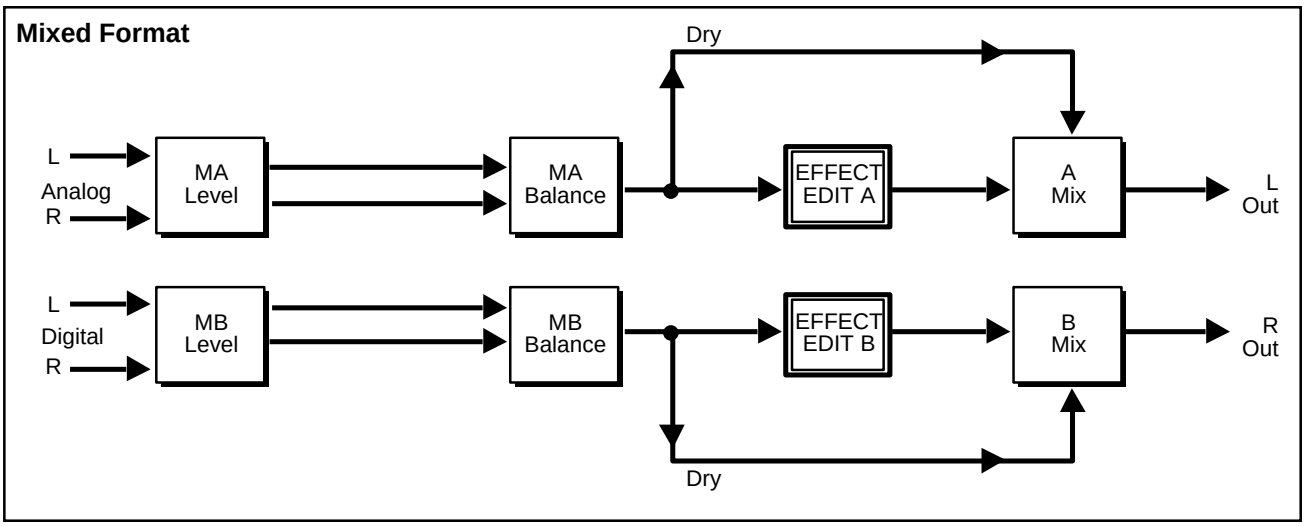
Dual Mono Setups (Setup Presets101-125) are “Split” configurations. Advance the PRE slider to “cue up” different Dual Mono Setups. As in the Single Setups, the upper display of the LARC shows the name of the selected Setup and its corresponding preset number. In Dual-Mono and Cascade setups the top line of the display will show the two types of effects loaded in the Setup. In Dual Mono configurations each DSP engine, Mach A and Mach B, can run special split effect algorithms and programs.

Analog and/or Digital formats can be sent into the 300L. When only one input type (analog *or* digital) is specified, we refer to the format as "Fixed."

When Analog is selected as the main Input source, the Digital I/O port can be placed in a pre or post effect patch point. Conversely, if the Digital input is selected as the main input source, Analog I/O connections can be used as a patch point, as described in *Selecting Analog and/or Digital Input*.



When *both* Analog and Digital are specified to operate as MAIN Inputs, we refer to it as "Mixed Format." The Mixed format gives you the option of using the left, right, or summed mono input signals of each type of input(Analog or Digital). In this format, patch points are given up. The parameters for determining what blend of Left/Right is passed to each Machine (A and B), are "MA: BAL" and "MB: BAL", located on Page Two of the Setup mode.



If you want to input both analog and digital audio into a Dual-Mono setup(Mixed format), press CTRL to enter the Control mode. Page One sets the input and output configuration for the current setup. The INP slider will scroll you through the available selections: ANALOG or DIGITAL as well as ANA-L DIG-R and ANA-R DIG L. In mixed format, analog audio feeds the Input to Machine A, digital audio feeds the Input to Machine B , or vice-versa.

Machine A audio comes out Analog left (and digital left)

Machine B audio comes out Digital right (and analog right)

Setup Balances

Most Dual Mono setups have the MA: BAL and MB: BAL set to Left-CHannel and Right CHannel respectively. This assumes a fixed format type of audio configuration. If you elect to work in a Mixed format, all Dual Mono setups will require individual adjustment of ABAL and BBAL to 50%. This ensures that both left and right sources will be mixed to mono before being passed to each DSP engine. When working in a Fixed format (with only analog or digital Dual Mono inputs), each machine has its own level control. The output of each level adjustment is split to each source balance control.

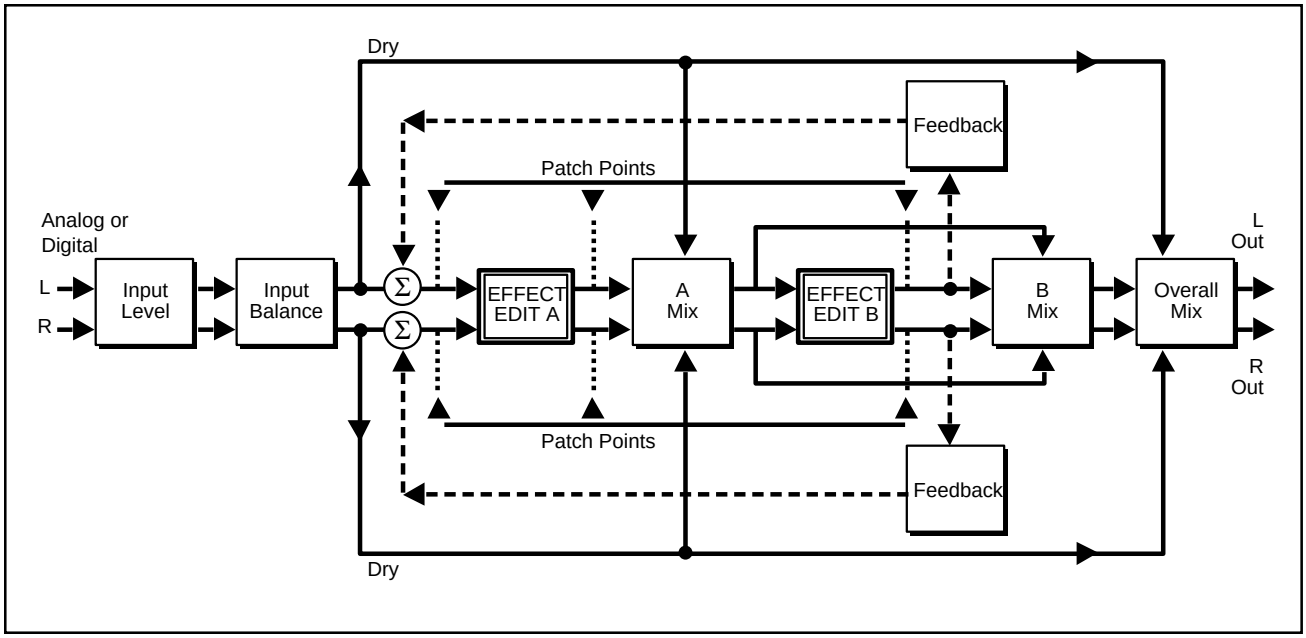
Most Dual Mono Setup Presets default to MA: BAL panned to LEFT ONLY, and MB: BAL panned to RIGHT ONLY. (Level and Balance controls are located on Page Two of the Setup mode.)

*Working in a fixed dual mono mode, if you had, for example, a piano in the left input and a voice in the right input and both Balances were set to 50%, a summed input with equal amounts of piano and voice would be passed to each DSP engine.

A dry signal is picked off before the signal passes into each Split DSP Effect. The mono wet output of each DSP effect sums with the dry signal and is proportionally mixed under the MIX controls: AMIX and BMIX. The third Setup page contains AMIX and BMIX. Continuing with the above example, if both AMIX and BMIX were set to 0%WET, you could use AIN and BIN as level controls, mixing two independent signals to mono as part of an analog or digital process.

Cascade Setups

Cascade Setups are another type of “Split” configuration. They are numbered 126-150 in Setup mode. While in Setup mode, you can use the PREset slider to locate the Cascade Setups. Pressing ENTER will load two split type programs: one in Machine A, the other in Machine B.



On Page 1 of the Control mode INPut slider, there are two input selections available when running Cascade Setups: Analog or Digital. If Analog is selected as the main input type, then the Digital Input can be used as a patch point — either Pre-Machine A, Mid A - B, or Post Machine B. (See *Output Types and Patch Points elsewhere in this chapter.)* As in the other setups, there are Input level and source Balance Controls. Cascade setups, however, have three mix controls. AMIX proportions the dry signal to A's wet signal. BMIX proportions the resulting A output with Machine B's output. OMIX takes the resulting A+B mix and blends(mixes) it with the dry signal which is picked off before EFFECTA. Cascade setups also include an overall feedback control which routes the B output back to Machine A's input. **Be careful!! This parameter can wipe out tweeters, woofers and ears if used too liberally.**

If the sum of the feedback parameters in EFFECT A , EFFECT B and the above-mentioned overall Feedback parameter is greater than 100%, runaway feedback will occur.

For example, assume Machine A is running a Dual delay effect with Delay1 Feedback set to 40% and Delay3 Feedback set to 40%. Machine B is running a Mono Shift program with the feedback parameter set to 40%. The total amount of feedback in the system is 80%. So far, so good.... that is until you add more than 20% Cascade Feedback. BE CAREFUL!!!!

CASCADE Setups offer an amazing number of effect combinations: Chambers into Delays, Pitch Shifts into Chambers, Flanges into Delays, Reverbs into Compressor, etc. You experiment, name, and store new combinations into User Setup Registers. Remember, Input levels, Source Balances, Mix Balances, Feedback amounts, LFO type, and, of course, the two effects are part of the storable Setup.

Setup Select Mode

Setup Select mode allows you to select and run Setup Presets and Registers.

The Setup Presets

The 300L is shipped with 150 Setup Presets, as well as 50 user Setup Registers for storing your modified Setups. The Setup Presets, listed below, provide a convenient starting point for selecting the audio DSP routing along with an effect(s)you want to use. Virtually all Setup Presets have SoftSlider assignments made to them. Moving the SoftSlider will change the most useful aspect of a Setup's sound characteristic. See Chapter 5 for complete descriptions of each preset.

Single Setup Presets

Setup#	Setup Name	SoftSlider	Effect: Bank Program
P1	LARGE HALL	DECAY	MA: B1P1 LARGE HALL
P2	MEDIUM HALL	DECAY	MA: B1P2 MEDIUM HALL
P3	SMALL HALL	DECAY	MA: B1P3 SMALL HAL
P4	SYNTH HALL	LIVENESS	MA: B1P4 SYNTH HALL
P5	DANCE HALL	LIVENESS	MA: B1P5 DANCE HALL
P6	SOLO HALL	DECAY	MA: B1P6 SOLO HALL
P7	CHURCH	DEPTH	MA: B1P7 CHURCH
P8	GOTHIC HALL	DEPTH	MA: B1P8 GOTHIC HALL
P9	GATED HALL	SIZE	MA: B1P9 GATED HALL
P10	DEEP END	HOW DEEP?	MA: B1P0 DEEP END
P11	ROOMS	SIZES	MA: B2P1 ROOMS
P12	REHURSAL ROOM	PADDING	MA: B2P2 REHURSALROOM
P13	STUDIO A	LIVENESS	MA: B2P3 STUDIO A
P14	STUDIO B	LIVENESS	MA: B2P4 STUDIO B
P15	STUDIO C	LIVENESS	MA: B2P5 STUDIO C
P16	LARGE ROOM	LIVENESS	MA: B2P6 LARGE ROOM
P17	SMALL ROOM	LIVENESS	MA: B2P7 SMALL ROOM
P18	BEDROOM	REFLEXIONS	MA: B2P8 BEDROOM
P19	W.C.	DECAY	MA: B2P9 W.C.
P20	INVERSE ROOM	DURATION	MA: B2P0 INVERSE ROOM
P21	CHAMBER	DECAY	MA: B3P1 CHAMBER
P22	BRICK WALL	DIFFUSION	MA: B3P2 BRICK WAL
P23	OIL DRUM	TUNING	MA: B3P3 OIL DRUM
P24	WIDE CHAMBER	DECAY	MA: B3P4 WIDE CHAMBER
P25	FAT CHAMBER	DECAY	MA: B3P5 FAT CHAMBER
P26	CHUNKY	CHUNK	MA: B3P6 CHUNKY
P27	HOMEROOM	DECAY	MA: B3P7 HOMEROOM
P28	OPEN WIDE	DECAY	MA: B3P8 OPEN WIDE
P29	WET SUIT	DECAY	MA: B3P9 WET SUIT
P30	BASEMENT	LIVENESS	MA: B3P0 BASEMENT
P31	AMBIENCE	SIZES	MA: B4P1 AMBIENCE
P32	MARBLE FOYER	SLAP LEVEL	MA: B4P2 MARBLE FOYER
P33	LARGE AMB.	HIGH CUT	MA: B4P3 LARGE AMB.
P34	MEDIUM AMB.	HIGH CUT	MA: B4P4 MEDIUM AMB.
P35	SMALL AMB.	HIGH CUT	MA: B4P5 SMALL AMB.
P36	V SMALL AMB.	HIGH CUT	MA: B4P6 V SMALL AMB.
P37	HEAVY AMB.	REVERB LVL	MA: B4P7 HEAVY AMB.
P38	BRIGHT AMB.	REVERB LVL	MA: B4P8 BRIGHT AMB.
P39	SMOOTH AMB.	HOW SMOOTH?	MA: B4P9 SMOOTH AMB.
P40	WAVE AMB.	HOW LONG?	MA:B4P0 WAVE AMB.
P41	IN A ROOM	HOW BIG?	MA: B5P1 IN A ROOM
P42	STAIRWELL	# OF FLOORS	MA:B5P2 STAIRWELL
P43	CAR INTERIOR	WINDOW DN/UP	MA:B5P3 CAR INTERIOR
P44	MEETING ROOM	LIVENESS	MA: B5P4 MEETING ROOM
P45	LIVING ROOM	LIVENESS	MA: B5P5 LIVING ROOM
P46	POWDER ROOM	DECAY	MA: B5P6 POWDER ROOM
P47	FULL CLOSET	HOW FULL?	MA: B5P7 FULL CLOSET
P48	PODIUM	DISTANCE	MA: B5P8 PODIUM
P49	STUDIO D	HIGH CUT	MA: B5P9 STUDIO D
P50	OFFICE	LIVENESS	MA: B5P0 OFFICE
P51	LIVEDRUMROOM	IMPACT	MA: B6P1 LIVEDRUMROOM
P52	ON STAGE	LIVENESS	MA: B6P2 ONSTAGE
P53	GUITAR CAVE	DECAY	MA: B6P3 GUITAR CAVE

Single Setup Presets cont'd.

Setup#	Setup Name	SoftSlider	Effect: Bank Program
P54	DRUM CAVE	DECAY	MA: B6P4 DRUM CAVE
P55	BALLROOM	SIZE / SHAPE	MA: B6P5 BALLROOM
P56	SCORE STAGE	LIVENESS	MA: B6P6 SCORE STAGE
P57	DRUM GATE	DURATION	MA: B6P7 DRUM GATE
P58	LE GATE!	HIGH CUT	MA: B6P8 LE GATE!
P59	THIN LIZZY	SIZZLE	MA: B6P9 THIN LIZZY
P60	BAND IN ROOM	LIVENESS	MA: B6P0 BAND IN ROOM
P61	SPACE & EKOZ	BLEND	MA: B7P1 SPACE & EKOZ
P62	VOCAL STAGE	DECAY	MA: B7P2 VOCAL STAGE
P63	WAVE O WALLS	DECAY	MA: B7P3 WAVE O WALLS
P64	BRAND “X”	DECAY	MA: B7P4 BRAND “X”
P65	HANGAR	HIGH CUT	MA: B7P5 HANGER
P66	EARLY REFLEX	SPACING	MA: B7P6 EARLY REFLEX
P67	STAGE SLAP	PREDELAY	MA: B7P7 STAGE SLAP
P68	HUGE SPACE	DECAY LEVEL	MA: B7P8 HUGE SPACE
P69	VOCAL SHEEN	SPACE	MA: B7P9 VOCAL SHEEN
P70	ALMOST VERB	PREDELAY	MA: B7P0 ALMOST VERB
P71	RICH PLATE	DECAY	MA: B8P1 RICH PLATE
P72	GLOSSY PLATE	DECAY	MA: B8P2 GLOSSY PLATE
P73	WARM PLATE	DECAY	MA: B8P3 WARM PLATE
P74	PERC PLATE	SIZE	MA: B8P4 PERC PLATE
P75	CONTEM-PLATE	DECAY	MA: B8P5 CONTEM-PLATE
P76	EKO PLATE	EKO DELAY	MA: B8P6 EKO PLATE
P77	5K HALL	DECAY	MA: B8P7 5K HALL
P78	ROUND PLATE	DECAY	MA: B8P8 ROUND PLATE
P79	SALAD PLATE	DECAY	MA: B8P9 SALAD PLATE
P80	VOX PLATE	DECAY	MA: B8P0 VOX PLATE
P81	STEREOADJUST	LEVEL	MA: B9P1 STEREO ADJUST
P82	STEREO DELAY	DELAY	MA: B9P2 STEREO DELAY
P83	3 FRAME DLY	FINE DELAY	MA: B9P3 3 FRAME DLY
P84	4 FRAME DLY	FINE DELAY	MA: B9P4 4 FRAME DLY
P85	PHASE INVERT	PHASE	MA: B9P5 PHASE INVERT
P86	MS DECODE	MATRIX M/S	MA: B9P6 MS DECODE
P87	TELEPHONE	LEVEL	MA: B9P7 TELEPHONE
P88	MULTI CANYON	DEPTH	MA: B9P8 MULTI CANYON
P89	LFO PANNER	LFO SPEED	MA: B9P9 LFO PANNER
P90	THIN EKOZ	FEEDBACK	MA: B9P0 THIN EKOZ
P91	STEREO SHIFT	SHIFT DN/UP	MA: B0P1 STEREO SHIFT
P92	OCTAVE DOWN	FINE PITCH	MA: B0P2 OCTAVE DOWN
P93	VOX CHORUS	SPLIT SHIFT	MA: B0P3 VOX CHORUS
P94	POLE FLANGE	FEEDBACK	MA: B0P4 POLE FLANGE
P95	BULKIE ROLL	DELAY	MA: B0P5 BULKIE ROLL
P96	MR. BIG	FINE PITCH	MA: B0P6 MR. BIG
P97	ZORCH!	FEEDBACK	MA: B0P7 ZORCH!
P98	GOING, GOING	FEEDBACK	MA: B0P8 GOING, GOING
P99	GTR CHORUS	FINE PITCH	MA: B0P9 GTR CHORUS
P100	FADE DOWN	FINE PITCH	MA: B0P0 FADE DOWN

Dual Mono Setup Presets

Setup #	Setup Name	SoftSlider	Mach A Effect	Mach B Effect
P101	DM: REV/REV	INPUT PAN	MA:B13P1 CHAMBER	MB:B13P2 KEY CHAMBER
P102	DM: REV/DLY	INPUT PAN	MA:B11P3 DRUM CHAMBER	MB:B12P8 LFO:FAZE DELAYS
P103	DM: REV/PCH	INPUT PAN	MA:B13P4:GUITAR ROOM	MB:B15P2: GUIT SHIFT
P104	DM: REV/COMP	INPUT PAN	MA:B14P9 PLATE	MB:B16P1 EZ COMP 2:1
P105	DM: DLY/DLY	LFO RATE	MA:B12P3 CHORUS	MB:B12P4 CHORUS+EKOZ
P106	DM: DLY/PCH	DELAY MACH A	MA: B11P1 BASIC DELAY	MB: B15P7 SKY DOWN
P107	DM: DLY/COMP	SPACE MACH A	MA: B11P4 SPACE EKOZ	MB: B16P2 DRUMCOMP3:1
P108	DM: PCH/PCH	INPUT PAN	MA:B15P3 UP SHIFT	MB:B15P8 ECHO DOWN
P109	DM: PCH/COMP	INPUT PAN	MA:B15P6 VOCAL SHIFT	MB:B16P3 VOICE OVER
P110	DM: COMP/COMP	INPUT PAN	MA:B16P5 SMAKO!	MB:B16P5 SMAKO!
P111	DM: SLOW SPIN	LFO RATE	MA:B12P8 LFO:FAZEDLYS	MB:B12P3 CHORUS
P112	DM: WIDEFLANG	LFO RATE	MA:B12P1 OVERTHETOP1	MB:B12P2 OVERTHETOP2
P113	DM: X-TRAFFIC	DELAY MACH B	MA:B12P4 CHORUS+EKOZ	MB:B12P0 SKY DELAYS
P114	DM: GEAR UP	INPUT PAN	MA:B15P3 UP SHIFT	MB:B15P5 EKO SHIFT
P115	DM: TWO ROOMS	INPUT PAN	MA:B13P0 JOE'S GARAGE	MB:B13P8 BASEMENT
P116	DM: TWO HALLS	INPUT PAN	MA:B14P7 RECITAL HALL	MB:B14P1 BIG HALL
P117	DM: DELAYS	DELAY SPACE	MA:B11P2 SLAP ECHO	MB:B11P0 VOX DOUBLER
P118	DM: REVPAN	DECAY TIME	MA:B13P7 "U"CHAMBER	MB:B13P6 "L"CHAMBER
P119	DM: UP&DOWN	DELAY	MA:B15P9 HALFSTEPSUP	MB:B15P0 HALFSTEPSDN
P120	DM: MYGUITAR	INPUT PAN	MA:B15P2 GUIT SHIFT	MB:B12P6 ENV:PEAK
P121	DM: ENVSPOOGE	INPUT PAN	MA:B12P6 ENV:PEAK	MB:B12P7 ENV:PHAZER
P122	DM: FLNG&DLYS	DELAY MACH B	MA:B12P5 NEGATIVEFLNG	MB:B11P4 SPACE EKOZ
P123	DM: DLY DAZE	DELAY	MA:B11P6 3 VOICE DLYS	MB:B11P5 PINGOPONGO
P124	DM: CLUSTERS	DELAY MACH B	MA:B12P4 CHORUS+EKOZ	MB:B11P6 3 VOICE DLYS
P125	DM: 2 FLANGES	INPUT PAN	MA:B12P2 OVERTHETOP2	MB:B15P7 SKY DOWN

Cascade Setup Presets

Setup #	Setup Name	SoftSlider	Mach A Effect	->	Mach B Effect
P126	CC: REV ->DLY	DELAY SPACE	MA:B13P1 CHAMBER	->	MB:B11P3 STEREO SLAPS
P127	CC: DLY ->REV	SLAP & SIZE	MA:B11P2 SLAP ECHO	->	MBB13P9 JOE'S B&G
P128	CC: REV->PCH	DECAY MACH A	MA:B13P7 "U"CHAMBER	->	MB:B15P2 GUIT SHIFT
P129	CC: PCH->REV	BMIX	MA:B15P7 SKY DOWN	->	MB:B13P3 DRUM CHAMBER
P130	CC: REV->COMP	THRESHOLD	MA:B13P4 GUITAR ROOM	->	MB:B16P4 COMP 4 VERB
P131	CC: COMP->REV	NONE	MA:B16P2 DRUM COMP 3:1	->	MB:B13P8 BASEMENT
P132	CC: DLY->PCH	LFO RATE	MA:B12P3 CHORUS	->	MB:B15P1 SHIFT IT!
P133	CC: PCH->DLY	DELAY SPACE	MA:B15P6 VOCAL SHIFT	->	MB:B11P5 PINGOPONGO
P134	CC: DLY->COMP	DELAY SPACE	MA:B11P6 3 VOICE DLY	->	MB:B16P1 EZ COMP 2:1
P135	CC: SLAPS	SPACE	MA:B16P9 SPATIAL EQ	->	MB:B11P3 STEREO SLAPS
P136	CC: PCH->COMP	LFO RATE	MA:B15P2 GUIT SHIFT	->	MB:B16P5 SMAKO!
P137	CC: SURRVERB	SPATIAL EQ	MA:B14P7 RECITAL HALL	->	MB:B16P9 SPATIAL EQ
P138	CC: V3COMP	NONE	MA:B16P6 SMALL ST ADJ	->	MB:B16P1 EZ COMP 2:1
P139	CC: EQ/DITHER	NONE	MA:B16P6 SMALL ST ADJ	->	MB:B16P0 PONS
P140	CC: FILT DLYS	DLY/BANDPASS	MA:B11P4 SPACE EKOZ	->	MB:B16P8 FILTER PASS
P141	CC: JETVERB	LFO RATE	MA:B14P3 GREAT HALL	->	MB:B12P5 NEGATIVEFLNG
P142	CC: BIGBRICKS	DIFFUSION	MA:B14P4 BIG BRICKS	->	MB:B16P2 DRUM COMP 3:1
P143	CC: REV->EKOZ	RVB LEVEL	MA:B14P1 BIG HALL	->	MB:B12P4 CHORUS+EKOZ
P144	CC: REV->KORUS	RVB LEVEL	MA:B13P5 BIG & SHORT	->	MB:B12P3 CHORUS
P145	CC: OVER!TOP	LFO RATE	MA:B12P1 OVERTHETOP1	->	MB:B12P2 OVERTHETOP2
P146	CC: GUITAR XP	LFO RATE	MA:B12P9 LFO:PAN&FAZE	->	MB:B12P8 LFO:FAZEDLYS
P147	CC: EKO->FAZE	AMIX	MA:B15P5 EKO SHIFT	->	MB:B12P7 ENV:PHAZER
P148	CC: VERB->DOWN	B MIX	MA:B14P7 RECITAL HALL	->	MB:B15P8 ECHO DOWN
P149	CC: THE SKY	DELAYS	MA:B15P7 SKY DOWN	->	MB:B12P0 SKY DELAYS
P150	CC: SPINOLA	LFO RATE	MA:B12P3 CHORUS	->	MB:B16P7 PANOLA

Setup Select

To enter Setup mode, simply press the LARC key labeled SETUP. This mode has six pages of controls:

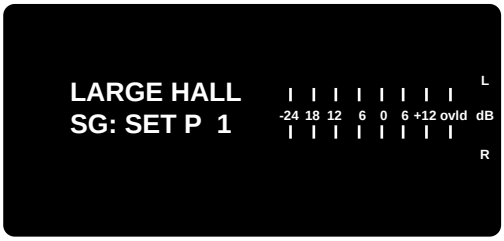
Page 1 represents the top level of the User Interface. It allows you to select Setup PREsets or REGisters, and to modify SoftSlider values. The Setup is identified as SG: (SINGLE), DM: (DUAL MONO) or CC: (CASCADE).

The 6 LARC sliders are primarily used to adjust parameter values. At the top level of the User Interface, the slider labeled SOFT can be used as a single or multi-parameter controller linking one or more parameters within Setups and Effects.

Example

Load Setup Preset SG:P1 LARGE HALL, which contains a single effect (Large Hall), with the MID RT parameter mapped to the SoftSlider.

The LARC should display:



Press the button below the SOFTSlider. The LARC will now display:

The display changes to show the label associated with the SoftSlider plus the stored value. Advance the SoftSlider and the sound of the effect will change. If you want to return to the original sound press the button under the PRE slider, then press ENTER.

Page 2 provides adjustment for analog and digital level and source balance into the unified DSP engine. Simply press the key under the label of the control you want to adjust and move the slider. As you adjust the slider, a long text message will be shown in the display.

(The specific items available on this page are determined by the type of Setup (Single, Dual Mono or Cascade) which is loaded.)

Single Setups have only one adjustable parameter on Page 3: OMIX. This control adjusts the proportion of “wet” signal to “dry” signal. Most SINGLE Setup Presets have OMIX set to “WET” (100% wet effects). Dual Mono has 2 MIX parameters; AMIX and BMIX, and Cascade has 3 MIX parameters; AMIX, BMIX, and OMIX.

Page 4 contains the LFO (Low Frequency Oscillator). The LFO is a control generator which is designed to modulate patched Effect or Setup parameters. The LFO has a shape and a rate (speed) function. The shape can be SINEusoidal, TRIANGLE, SQUARE, or RANDOM. Rate is adjustable from Off to 9.96Hz.

The action of the meters is also determined on this page. The choices are:

For Single Setups:

ANA IN (Analog In) for either Left or Right channel

DIG IN (Digital In) for either Left or Right channel

FX-OUT for either Left or Right channel (commonly referred to as the WET BUS)

For Dual-Mono Setups:

L INPUT

R INPUT

L FX OUT (for Mach A)

R FX OUT (for Mach B)

For Cascade Setups:

Input

Mid-Point

Output

Note: If you choose Left Meter or Right Meter as Patch sources when making MIDI/MOD Patches, you are essentially linking the ballistics of the meter to the assigned destination.

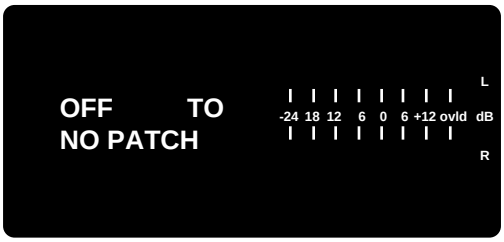
Page Five is the MIDI/MOD patch page for Setup parameters. As an example, try patching the LFO to a Balance parameter as follows:

1. Load Setup Preset 1 Large Hall, as described on the previous page.
2. Press PAGE followed by the number 5. The UPPER display should read:

The lower displays over the slider will read:

Slider 1 (SEL) addresses the patch you are creating. Advancing the slider will address either Patch #1 or Patch #2. For this example, pull the slider down to create patch #1.

Slider 2 (SRC) assigns a control source which will drive the destination parameter. Press the button directly under the slider to display:



Advance the slider and the top display line will scroll through all the available MIDI and non-MIDI source controllers. (The last source selection is **LFO**.)

Slider 3 (DEST) behaves in the same way. This slider determines what Setup parameter (the DESTination) will be controlled by the LFO. For this example, slowly advance the slider until the display shows **ANALOG BAL** (Analog Balance).

Press the button under the SCL slider to display:

Sliders 4 and 5 work together to yield the overall control mechanism to the selected destination parameter (in this example, Analog Balance). For this example, we will not change these controls.

Slider 6 (VAL) allows you to set the displayed parameter value to the source controller's current value. Note that changing VAL will, in most cases, require you to modify the scale value.

Go to Page 4 (press PAGE, followed by number 4) and set the LFO rate to 1.00 Hz. To view the parameter being modified, go to Page 2 and press the button under slider 3, ANA: BAL. This is the basic model for making MIDI/MOD patches in the 300L.

To disable the patch, press SETUP, press the button under the PRE slider, then press ENTER to re-select the Setup, thereby restoring the original settings.

Page 6 is a dedicated page for naming the Setup with as many as 12 characters. The two active sliders are sliders 1 and 6. Slider 1 selects the character. Slider 6 changes the character. We strongly encourage you to rename setups whenever storing a setup.

Storing a Setup

If you make changes to any of the setup parameters, and want to save your changes into a Setup Register, press STOre. The display will show:

The top line of the display shows the name of the Register slot where the modified Setup will be stored. If “AVAILABLE” is displayed, the register is empty.The bottom line, which shows the register location where your setup will be stored, will flash to indicate you are in the middle of a store routine. If you want to store the setup into a different register than the one displayed, use the REGister slider to select a different location. Press STOre again. The display will briefly read:

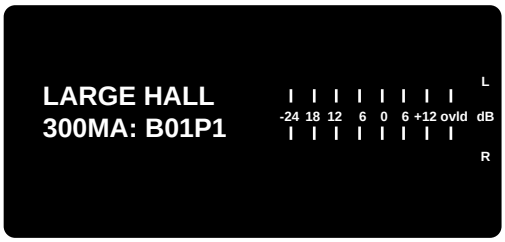
Then will revert to the previous display (LARGE HALL SG: SET R 1).

This store process also saves the effect which is part of the Setup.

Note: The 300L has a memory protection feature which enables or disables copying data into any of the systems internal registers, be it Setup, Program, Time Code, or MIDI. When Copy Protect is ON, all storing functions are inhibited. Control mode, Page 3, Slider 1 will allow you set Copy Protect ON or OFF. For more details, see the section describing Control mode at the end of this chapter.

Working with the Effect Programs

The 300L is shipped with 160 Effect programs within the Setups described earlier. Sooner or later you will want to alter the sounds of these effects to more perfectly fit your requirements. To do this, load, for example Setup P1 LARGE HALL, then press the PROG button. The upper display will show:



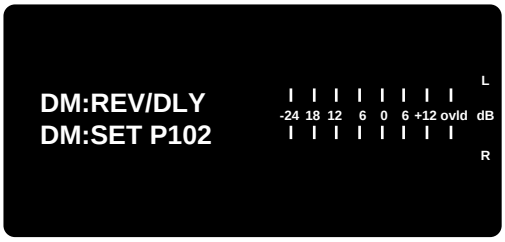
This display tells you the name of the Effect Program which is currently in the Setup, identifies the 300L and the Machine(in this case Machine A), along with the Bank and Program location. At the same time the legends over the sliders will change to show a page of effect parameters. The algorithms and their parameters are described in detail in Chapter 4. We've chosen the first page of Random Hall parameters to show here as an example:

Pressing any of the buttons directly below the sliders will display the current value of the selected parameter. In this example, pressing the button under the RTM slider will display:

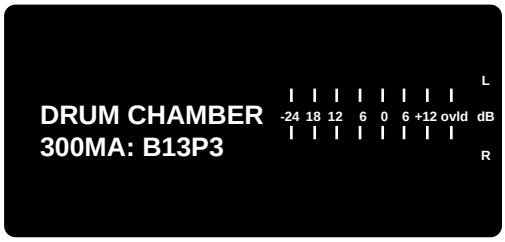
Moving the slider will change the value of the mid reverb time. (Depending on the original starting position of the slider, it may be necessary to "null" the slider before it assumes control of the parameter.) Parameters can be adjusted over their entire range with the slider. The PAGE key is used to access additional parameter pages.

When you select a new page, any previous edits remain intact. If a new Setup or Effect Progam is loaded, however, edits will be lost unless you have stored them.

In Split Setups, effects are loaded into both Machine A and Machine B. Use the MACH button to toggle between Machine Effects.For example load Setup 102 DM: REV/DLY. To do this press the SETUP key then move the PRE slider until the upper display reads:

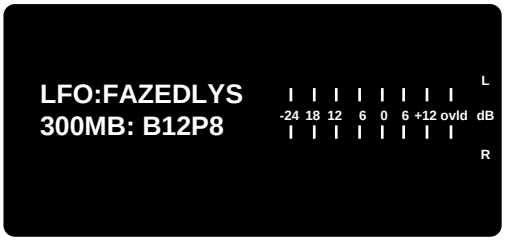


Press ENTER, then press PROG. The upper display will show:



The display over the sliders will change to:

If you press MACH, the upper display will read:



and the displays over the sliders will change to:

Press the MACH key again to revert to Machine A.

The MIDI Patch Page and the Naming Page

The last two pages in any Effect Program or Register are always the MIDI Patch Page, and the Naming Page. As these are identical in every algorithm, they are not shown with the other effect parameters in Chapter 4. Both of these pages are shown below for reference. The use of these pages is discussed elsewhere in detail.

Storing Individual Effect Registers

The 300L has 50 registers available to store edited versions of the preset effects. After you have made the changes you want to an effect's parameters, you can store the changed version into an Effect Register by pressing STOre.The following display will appear:

The display will show the current bank and register location is available, in this example, B01R1. Unless you choose another location, this is where the modified effect will be stored. The message "STORED" will be displayed briefly to indicate that the store operation was completed. To choose a different location, for example, B01R5, press REG repeatedly until the display shows that location, then press STOre.

If you wish to store the modified effect in Machine B press the MACH button. The upper display will change so that the lower line reads: **300MB: B10P5.** Press STOre and the display will change again to show:

If you press STOre again, the message "STORED" will be displayed briefly to indicate that a store operation was successfully completed to this location.

When you store an effect, it still has the same name as the original effect. To avoid confusion, you can assign names to registers. For convenience, a naming page is included in Effect Edit mode. To rename a register, follow the same procedure described for naming a Setup.

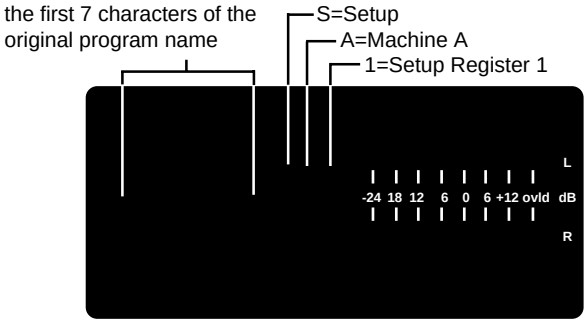
Note

The following store procedures apply *only* to effect Registers. Once you have modified and stored these effects, you must store them into a Setup Register. To do this, press SETUP, then press STOre. The upper display will show:

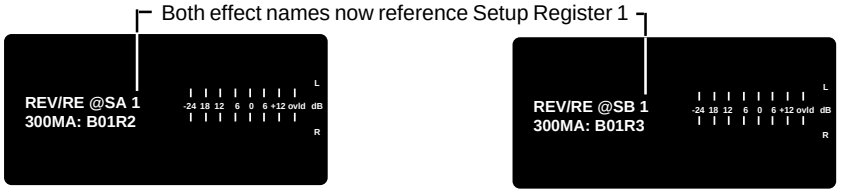
Press STOre again. The message "STORED" will be displayed briefly to indicate that a successful store operation was completed.

Automatic Storing of Modified Effects

If you have modified the effect(s) running in the Setup and wish to skip storing the effect or effects into specific Effect Registers, simply press the SETUP key to return to the top level and press STOre. Select a Setup Register with the REG slider, then press STOre again. The 300L will automatically store the modified Effect into an available register, and then complete the Setup store. This process will take approximately 2 seconds. The newly stored effect will be found with its original name, truncated to allow the Setup Register ID number to be added at the end as an identifier. See the example below.



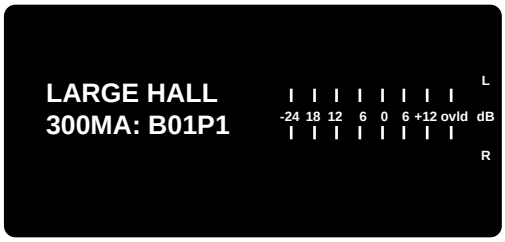
If both effects in a split Setup have been modified, two effect registers will be created, each with a machine identifier (A or B). Both effect registers will indicate the same Setup register location, as shown in the example below.



Using Banks and Programs

The BANK and PROG keys can be used to load a new Effect (or Effects) into a Setup. This is perfectly legal to do, but may seem counter-intuitive to the direct Setup Select operation. For those familiar with 224XL or 480L operation, this may seem more logical.

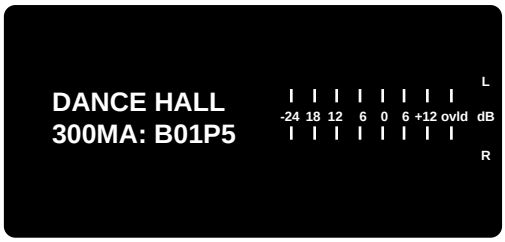
Load Setup 1, LARGE HALL. The name of the effect which is loaded into that setup is also “Large Hall”. If you press PROG, the display will show:



indicating the Machine (MA), Bank (B1) and Program location (P1) for that Effect.

To load a different Effect into the Setup, press PROG repeatedly to locate the Effect you want from that Bank. There are 10 Effects per Bank.

For example press PROG until the display reads:



The Bank and Program location will flash to indicate that DANCE HALL is *not* the Effect currently running in the current Setup. To *load* DANCE HALL (and make it the currently running Effect) press 5 (for Program 5). The display will briefly show: “PROGRAM LOADED”, then revert back to display of the DANCE HALL Bank and Program location without any flashing.

To go to another Bank, or to simply view the names of the different Banks, press BANK repeatedly. All of the Banks will be shown sequentially. You can also press BANK, then press a specific number key to display a particular Bank. For example, press BANK, then press 5. The display will show:

This display identifies DIALOG as the name of the Bank. The Bank and Program location will flash to indicate the displayed Bank and Program location currently running. If you are running a Single Setup, only Banks 1-0 and the Effects continned in them are displayed and made available.

If you are lost, and don't remember which Bank and Program is currently running, press MACH to restore the display of the currently running Bank and Program.

Remember, to *load* a Program after selecting a Bank, you must press PROG, then enter a number. For example, to load WAVE AMB., in Bank 4 at program location 0:

1. Press BANK
2. Press 4
3. Press PROG
4. Press 0

The display will read as follows (without flashing, as this is now the currently running Effect.:

If you've modified an Effect and want to store it into an Effect Register, press STOre. The display will show:

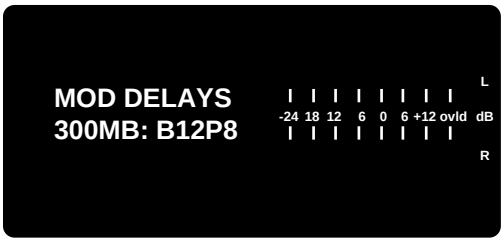
The location for storing (B01R1 in this example) will be flashing. To select a different register to store to, for example, Bank 5, Register 9, press BANK, then press 5, then press REG repeatedly until the display shows:

To store to the displayed location, press the STOre key again. The message "STORED" will be displayed briefly before the display reverts to showing the currently running effect.

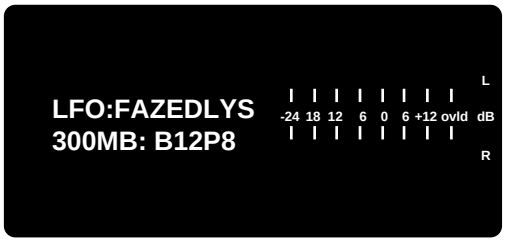
Banks and Programs in Split Configurations

You must be running a “Split” Setup (101 or higher) in order to load any of the Effects in Banks 11-16. As an example, press SETUP, then use the PREset slider to locate Setup Preset 102 (REV / DLY). This is a Dual Mono setup with different Effects running in each machine. Press PROG, then press BANK to identify the Bank running in one of the Machines. Press MACH to display Machine A. The display will show:

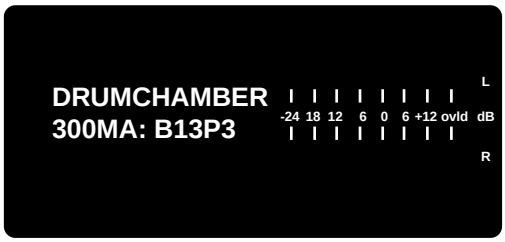
Press MACH to display the Bank running in the other Machine (Machine B in this example):



To see the Effect running in each Machine, press PROG, then press MACH (without pressing BANK). Press MACH again to view the second Machine and its Effect. To continue with the example above, press PROG . The display will show:

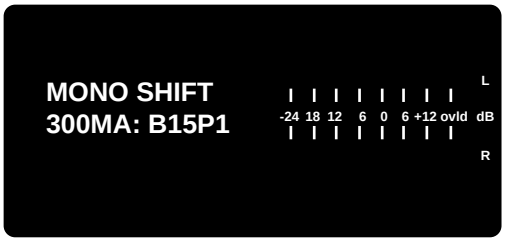


Press MACH to display the Effect currently running in the other Machine (Machine A in this example).

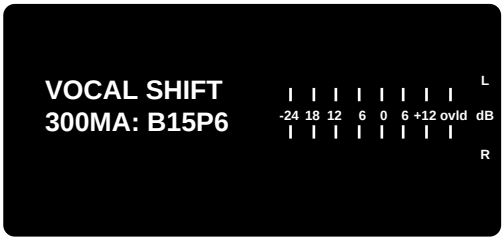


Now, suppose you want to load two entirely different effects into each machine. For this example, we'll load a mono shift effect from Bank 15 into Machine A and a reverb effect from Bank 14 into Machine B.

Press BANK, then press 1, then press 5 (Bank 15). The display will show the Mono Shift Bank:



Press PROG repeatedly to display the Vocal Shift Program:



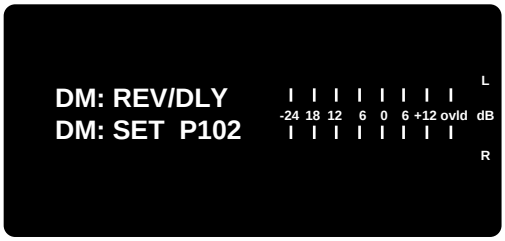
Press 6 to load this Effect into Machine A.

Press MACH to select Machine B. Press BANK, then press 1, then press 4 (Bank 14). The display will show:

Press PROG repeatedly to display "BIG BRICKS" (Program 4).Now, press 4 to load BIG BRICKS into Machine B.

Note that, when running "split" setups, only Banks 11-16 and the programs contained in them are displayed and made available.

With both Effects loaded, you can now modify each Effect to suit your own needs. Once you've done this, you should store each Effect into its own Effect Register. To do this, you can follow the store procedure discribed earlier for the SINGLE Effect — performing the procedure once for each Machine, OR you can store both of effects as part of a Setup. To do this, press SETUP. The display will show:



Press PAGE, then press 6 to display the Setup naming page. Use the SELect and CHG (change) sliders to enter the name "VOX/BRIX".

Press the STOre key. The display will show:

Press the STOre key again to save the Setup with the two modified Effects, and automatically store each effect into its own Effect Registers. (Much easier!)

Banks and Programs

Single Effects (Banks 1-10)

BANK 1 HALLS

B1P1	LARGE HALL
B1P2	MEDIUM HALL
B1P3	SMALL HALL
B1P4	SYNTH HALL
B1P5	DANCE HALL
B1P6	SOLO HALL
B1P7	CHURCH
B1P8	GOTHIC HALL
B1P9	GATED HALL
B1P0	DEEP END

BANK 2 ROOMS

B2P1	ROOMS
B2P2	REHURSALROOM
B2P3	STUDIO “A”
B2P4	STUDIO “B”
B2P5	STUDIO “C”
B2P6	LARGE ROOM
B2P7	SMALL ROOM
B2P8	BEDROOM
B2P9	W.C.
B2P0	INVERSE ROOM

BANK 3 CHAMBERS

B3P1	CHAMBER
B3P2	BRICK WALL
B3P3	OIL DRUM
B3P4	WIDE CHAMBER
B3P5	FAT CHAMBER
B3P6	CHUNKY
B3P7	HOMEROOM
B3P8	OPEN WIDE
B3P9	WET SUIT
B3P0	BASEMENT

BANK 4 AMBIENCE

B4P1	AMBIENCE
B4P2	MARBLE FOYER
B4P3	LARGE AMB
B4P4	MEDIUM AMB
B4P5	SMALL AMB
B4P6	V SMALL AMB
B4P7	HEAVY AMB
B4P8	BRIGHT AMB
B4P9	SMOOTH AMB
B4P0	WAVE AMB

BANK 5 DIALOG

B5P1	IN A ROOM
B5P2	STAIRWELL
B5P3	CAR INTERIOR
B5P4	MEETING ROOM
B5P5	LIVING ROOM
B5P6	POWDER ROOM
B5P7	FULL CLOSET
B5P8	PODIUM
B5P9	STUDIO “D”
B5P0	OFFICE

BANK 6 INSTRUMENT

B6P1	LIVE DRUM ROOM
B6P2	ON STAGE
B6P3	GUITAR CAVE
B6P4	DRUM CAVE
B6P5	BALLROOM
B6P6	SCORE STAGE
B6P7	DRUM GATE
B6P8	LE GATE!
B6P9	THIN LIZZY
B6P0	BAND IN ROOM

BANK 7 LIVE SOUND

B7P1	SPACE & EKOZ
B7P2	VOCAL STAGE
B7P3	WAVE O WALLS
B7P4	BRAND “X”
B7P5	HANGAR
B7P6	EARLY REFLEX
B7P7	STAGE SLAP
B7P8	HUGE SPACE
B7P9	VOCAL SHEEN
B7P0	ALMOST VERB

BANK 8 PLATES

B8P1	RICH PLATE
B8P2	GLOSSY PLATE
B8P3	WARM PLATE
B8P4	PERC PLATE
B8P5	CONTEM-PLATE
B8P6	EKO PLATE
B8P7	5K HALL
B8P8	ROUND PLATE
B8P9	SALAD PLATE
B8P0	VOX PLATE

BANK 9 STEREO ADJUST

B9P1	STEREO ADJUST
B9P2	STEREO DELAY
B9P3	3 FRAME DLY
B9P4	4 FRAME DLY
B9P5	PHASE INVERT
B9P6	MS DECODE
B9P7	TELEPHONE
B9P8	MULTI CANYON
B9P9	LFO PANNER
B9P0	THIN EKOZ

BANK 10 STEREO SHIFT

B10P1	STEREO SHIFT
B10P2	OCTAVE DOWN
B10P3	VOX CHORUS
B10P4	POLE FLANGE
B10P5	BULKIE ROLL
B10P6	MR. BIG
B10P7	ZORCH!
B10P8	GOING,GOING
B10P9	GTR CHORUS
B10P0	FADE DOWN

Split Effects (Banks 11-16)

BANK 11 DELAYS

B11P1	BASIC DELAY
B11P2	SLAP ECHO
B11P3	STEREO SLAPS
B11P4	SPACE EKOZ
B11P5	PINGO PONGO
B11P6	3 VOICE DLYS
B11P7	DUCKED EKOZ
B11P8	CANYON EKOZ
B11P9	PAN DELAYS
B11P0	VOX DOUBLER

BANK 12-MOD EFFECTS

B12P1	OVERTHETOP 1
B12P2	OVERTHETOP 2
B12P3	CHORUS
B12P4	CHORUS+EKOZ
B12P5	NEGATIVEFLNG
B12P6	ENV:PEAK
B12P7	ENV:PHAZER
B12P8	LFO:FAZEDLYS
B12P9	LFO:PAN&FAZE
B12P0	SKY DELAYS

BANK 13 SPLIT REV 1

B13P1	CHAMBER
B13P2	KEY CHAMBER
B13P3	DRUM CHAMBER
B13P4	GUITAR ROOM
B13P5	BIG & SHORT
B13P6	“L”CHAMBER
B13P7	“U”CHAMBER
B13P8	BASEMENT
B13P9	JOE’S B&G
B13P0	JOE’S GARAGE

BANK 14 SPLIT REV 2

B14P1	BIG HALL
B14P2	GREAT ROOM
B14P3	GREAT HALL
B14P4	BIG BRICKS
B14P5	DRUM ROOMS
B14P6	DELAY ROOM
B14P7	RECITAL HALL
B14P8	BIG BATHROOM
B14P9	PLATE
B14P0	SIZZLECITY

BANK 15 MONOSHIFT

B15P1	SHIFT IT!
B15P2	GUIT SHIFT
B15P3	UP SHIFT
B15P4	DOWN SHIFT
B15P5	EKO SHIFT
B15P6	VOCAL SHIFT
B15P7	SKY DOWN
B15P8	ECHO DOWN
B15P9	HALFSTEPSUP
B15P0	HALFSTEPSDN

BANK 16 MASTERING

B16P1	EZ COMP 2:1
B16P2	DRUM COMP 3:1
B16P3	VOICE OVER
B16P4	COMP 4 VERB
B16P5	SMAKO!
B16P6	SMALL ST ADJ
B16P7	PANOLA
B16P8	FILTER PASS
B16P9	SPATIAL EQ
B16P0	PONS

MIDI/Modulation Patching

MIDI/Modulation patching allows you establish dynamic relationships between Setup and Effect parameters and either MIDI controllers (Mod Wheel, Pitch Bend, etc.)or internal controllers (LFO, Display Meters). Mod patches are used to create or modify Dynamic MIDI patches. To use Dynamic MIDI, you assign a MIDI controller to a setup parameter or to an effect parameter. Two Setup patches are available in Setup mode. Four patches are available in any Effect which is running in a Setup.

The following procedure is used to create a mod patch in either a Setup or an Effect .

To create a patch to a Setup, press SETUP, press PAGE, then press 5. To create a patch to an Effect, press PROG, then press PAGE until the following display appears.

The lower display shows:

SEL (Select): This slider is used to select a patch operation. There are 2 for Setups and 4 for each Effect.

SRC (Source): This is used to select the controller (source) that you want to control the 300L parameter. Choices include external MIDI controllers, internal controllers such as the LFO, Meter, or SoftSlider. The available source controllers are listed to the side.

DST (Destination): This slider allows you to select which parameter you want the designated source to control. The choices will include all of the parameters of the currently running algorithm.

SCL (Scale): This slider sets the effective control range of the source. Scaling can be set from -200% to +200%. When Scale is set to 100%, the full range of the controller will cover the full range of the selected parameter. Setting a negative value will give the controller inverse control of the parameter values.

THR (Threshold): This slider sets a threshold below which the controller will have no effect on the parameter. (1-127)

VAL (Value): Pressing the button directly below the VAL slider will display the current parameter value. The slider lets you match the value of the destination parameter to the source controller's current value. This is provided as a convenience for setting parameters when making mod patches.

OFF
CNTLR- 0
MODWHEEL
BREATH
CNTLR-3
FOOTPED
PORTATIME
VOLUME
CNTLR-9
PAN
EXPRESSN
CNTLR-12-15
GPCNTRL1-4
CNTRL20-31
SUSTAIN
PORTA SW
SOSTENSW
SOFTPED
SWITCH68-79
GP CNTRL5-8
SWITCH84-95
PITCHWHL
AFTERTCH
LASTNOTE
LAST VEL
MIDI CLK
SOFTSLID
L-METER
R-METER
LFO

Available "Source" selections

Note: Be extremely careful when creating patches while a MIDI device is connected. If you accidentally send a MIDI Program Change before saving the patches in a register, the patches will be lost. To avoid this possibility, you may want to set the MIDI Host Channel (in Control Mode) to OFF, or unplug the MIDI cable from the 300L rear-panel MIDI IN connector.

Control Mode

Control mode provides access to general global parameters and miscellaneous functions including certain aspects of the audio configuration. Selecting Control mode does not interrupt the audio operation of the 300L.

There are nine Control mode pages:

- Analog and Digital audio selection
- Emphasis and SCMS
- Copy Protect (on, off), Bypass/Mute, Program Load, Memory Purge
- Offline Copy Tools
- MIDI Automation, Dumps, and Channel
- MIDI Maps
- Time Code Snap and View
- Time Code Event List and Edit /Add / Delete
- Input/Output Gain

Each of these pages is described below.

Page One Analog and Digital Audio Selection

Page One allows you to view the status of the box (STA), to define clock speed (CLK), Digital Input connector (DIN), Input type (INP), Output type (OUT) and Digital Output Format (OFMT).

STA (System Status)

The STAtus slider allows you to view the operational status of the system. Advancing the slider scrolls through the status of: Input type, current clock speed, digital output format, SCMS output status, audio mute status, copy enable or disable, digital input connector, output type, I/O emphasis, digital emphasis, bypass mode, load mode, automation, MIDI channel assignments for Machines A and B, Map mode, Timecode mode, Current Setup, Current effect for Machine A and B.

CLK (Changing the Analog Clock Rate)

This slider allows selection of the analog sampling rate. Press the button under the slider to show the current rate. Use the slider to select a new clock sample rate. If Digital clock has been selected to Host the 300L this display will show the current sample rate. If valid clock is not present, the message "!BAD DIGITAL WORD CLOCK!" will be displayed.

DIN (Digital Input Connector)
Specifying the Digital Input connector should be done before setting the 300L to receive Digital Word Clock. Use the slider to specify XLR, RCA, or OPT connector. All three connector ports can be occupied, but only one can be selected to be the audio source for the system.

INP (Input — Analog and/or Digital)
Before moving this slider, be sure to identify the type of input connector which will be receiving digital clock with the DIN controller. In SINGLE and CASCADE Setups there are three choices: ANALOG, DIGITAL, or ANA + DIG. If you select DIGITAL, and the system is properly locked, the Input field will briefly display either "AES" or "SPDIF". If the system is not properly locked to the incoming word clock, the message "!BAD DIGITAL WORD CLOCK!" will be displayed. If you see this message, check your cables.

When a Dual-Mono setup is running, the selections are: ANALOG, DIGITAL, ANA-A DIG-B, and ANA-B DIG-A.

When a Cascade Setup is running, the selections are ANALOG or DIGITAL.

OUT (Output Types and Patch Points)
The 300L is typically operated with active analog and digital outputs. In the Dual-Mono and Cascade modes, however, there are other options. When ANALOG inputs are selected, the DIGITAL outs and ins are available as patch points, either pre or post processing. Likewise, when DIGITAL inputs are selected, the ANALOG outs and ins are available as patch points. Cascade setups have the patch point resource available mid - DSP as well. The OUT slider accesses the patch points. Similar to a "half-normalled" patch bay on a mixing console, the outputs are always active. Selecting a patch point effectively breaks the normal and requires a return input in order for the unit to continue passing audio.

OFMT (Digital Output Format)
This slider allows you to select AES (professional) or SPDIF (Sony/Phillips Digital Interface) (consumer) as digital output formats.

Page Two
Emphasis and SCMS

Page 2 in the Control mode allows you to set the Analog I/O emphasis and de-emphasis curves, the digital emphasis bit and the SCMS output bit. Only sliders 2, 5 and 6 are active.

ANA:EMPH (Analog emphasis)
Slider 2 sets analog emphasis and de-emphasis. This function is tied only to the converters. As an example, if, when using the 300L as an A to D, you acoustically set emphasis ON, make sure you set DIG: EMPH to YES with slider 5.

DIG: EMPH (Digital Output Emphasis bit)
Slider 5 sets the digital ouput emphasis bit ON or OFF. The top line indicates the status of the digital input emphasis bit.

SCM (Serial Copy Management System)
If you have selected S/PDIF as the output format, this slider will allow you select from among three levels of Copy Protection. The choices are: MULTI-COPY, ONE COPY, OR NO COPY. The factory default setting is MULTI-COPY.

Page Three
CopyProtect (on, off), Bypass/Mute, Program Load, Memory Purge

COPY PROTECT
Set this slider to OFF to allow copy functions to work. Select ON to protect register locations. The factory default is ON.

BYP (Bypass)
This slider lets you determine the action of MUTE button: INPUT MUTE or BYPASS DRY. In split Setups, the MUTE button affects both machines. With INPUT MUTE selected, pressing the MUTE button will cause the message: “AUDIO MUTED” to be displayed briefly. With BYPASS DRY selected, pressing MUTE will cause the message: “AUDIO BYPASS” to be displayed. The factory default setting is INPUT MUTE.

LOAD (Program Load)
This control allows you to determine to behavior of the 300L on program load: BYPASS DRY or MUTE. The factory default is MUTE. Note: On configuration changes, audio is muted regardless of selection.

PURGE
This slider allows you to perform five types of memory purges: Setup Registers, Effect Registers, MIDI Map, Time Code Event List, or Total Purge. Select the type of purge you want, then press STO to purge your selection. **Be careful! These functions permanently erase user information.**

Page Four
Offline Copy Tools

Page 4 is an”offline” copy page that allows you to copy Setups, or Effects from one location to another.

Slider 1 lets you to select Setups, or Effects to copy. You selection is shown on both the upper and lower LARC display.

SRC (Source)
Depending on the selection made with Slider 1, the SRC slider scrolls through all the Setup, and Effect locations. Presets are listed first, followed by Registers.

DEST (Destination)
This slider allows you to select the Register location where the copy will be stored.

Page Five
MIDI: Automation, Dumps and Channel Selection

AUTO (Automation)
This slider allows you to specify mapping of MIDI non-registered parameters, System Exclusive messages or Program Change messages from the 300L. The button below the AUTO slider allows you to view the current MIDI Automation mode. Advancing the slider scrolls through the four possible states: OFF, Non-Registered parameters, SysEx, and Program Change. When AUTO is set to OFF, the 300L will not output MIDI data.

DMP (Dumps)
This slider allows you to select one of four types of Data dumps: All Registers, Current Setup (including Effect), MIDI Map, and Time Code Event List. Select the type of dump you want, then press the STOre key.

DLY (Dump Speed)
Slider 3 sets the effective speed of MIDI dumps. This function is designed to facilitate dumps to receiving devices which cannot deal with vast amounts of MIDI data coming inquickly. The choices are 2, 50, 100 and 200ms.

CHL (System Parameters MIDI Channel)
Selects the MIDI channel (1-16, OMNI) for System parameters, including all bulk dump and SysEx messages, as well as Setup, Preset and Register recall.

CHL (Machine A MIDI Channel)
Selects the MIDI channel for Machine A: 1-16, OMNI

CHL (Machine B MIDI Channel)
Selects the MIDI channel for Machine B: 1-16, OMNI.

All generic MIDI and non-registered parameter messages follow the machine channel assignment.

Page Six
MIDI: Maps

Page 6 is a dedicated page for selecting and making MIDI program maps.

MAP
Slider 1 selects a Map mode: OFF, FIXED, or MAP to any of the 128 MIDI Map program slots. Setting this control to either OFF or FIXED, disables the TYPE and SEL sliders — these sliders are active only when this control is set to one of the 128 slot locations.

TYPE
Slider 3 selects Effect Machine A, Effect Machine B, or Setup for the current map slot.

SEL (Select Table)
This slider scrolls the available choices for the type selected with slider 3 for the current map slot. See Chapter 7 for additional MIDI information.

Page Seven Time Code: Snap and View

This page provides the top level of control for Time Code Automation.

OFF
This slider selects Time Code modes: OFF (Time Code reception disabled), VIEW (view the running event list), and SNAP (enter an event into the list). When SNAP is selected, the button below the SNAP slider is active and will “snap” entries into the list. (This occurs if time code is running or not).

CLR (Clear)
Pressing the button below the CLR slider will clear the last snapped event from the list.

Page Eight Time Code: Event List and Time Code Edit/Add/Delete

This page allows editing of the event list.

EDIT
Slider 1 lets you select any event to EDIT, ADD, or DELete from the event list. Your selection is shown on the upper display.

TC (Time Code Offset)
Slider 2 allows you to adjust a plus or minus 4 second offset to the currently displayed edit event (1-50). Pressing the button below the the TC slider drops you into a sub page which allows you to enter a time code via the numeric keypad or to assign Hours: Minutes: Seconds: and Frames via the associated sliders.

EXIT
Press the button under the EXIT slider to return to the Event Edit page.

TYPE
This slider selects between Setups and Effects for either Machine A or Machine B, and parameter glides for MA:, MB:, or Setups.

SEL
The SEL slider allows you to select the actual Setup or Effect.

To return to the main Edit Page, press the button under the EDIT slider. For additional information on Time Code, see Chapter 6.

Page Nine
Input/Output Gains

This page provides the controls for setting the analog Input and Output Gains before and after the converters. Only sliders 2 and 3 (LFT and RT input gain) and sliders 5 and 6 (LFT and RT output gain) are active.

IN: LFT
Sets the input gain for the left channel

IN: RT
Sets the input gain for the right channel.

OUT: LFT
Sets the output gain for the left channel

OUT: RT
Sets the output gain for the right channel.

4

The Algorithms and their Parameters

Single Setup Algorithms

Random Hall

General Description

The 300L incorporates the results of a great deal of research into acoustics and reverberation. Reverberation, or reflected sound energy, gives recorded music a sense of being performed in a real acoustic location.

In the 300L, the Size, Spread and Shape controls allow adjustment of the buildup and decay of the initial part of the reverberation envelope. Shape controls the shape of the envelope, while Spread and Size set the time over which this shape is active.

In the Random Hall program, Size acts as a Host control for the apparent size of the space being created by the 300L. Both Spread and Reverb Time vary *linearly* with the setting of Size. Thus maximum reverb time and spread require high settings of Size. To find an appropriate reverb sound, start with a preset with a similar sound to what you want to end up with. Simply varying Size is often sufficient to arrive at the exact sound you are seeking.

Once a size has been selected, Spread and Shape are used to adjust the shape and duration of the initial reverb envelope, which together provide the major sonic impression of room size.

When SHAPE is at minimum, the reverberation envelope builds up very quickly to a maximum amplitude, and then dies away quickly at a smooth rate. This envelope is characteristic of small reverberation chambers and reverberation plates. There are few (if any) size cues in this envelope, so it is ineffective in creating ambience. With this Shape setting, Spread has no effect. The density is set by the size control, and the rate of decay is set by Reverb Time. This reverberation envelope is typical of many of the popular digital reverberators of the last few years.

As Shape is raised to about 1/8 of its range, the initial sharp attack of the reverberation is reduced, and reverberation builds more slowly. The envelope then sustains briefly before it begins to die away at the rate set by Reverb Time. Spread has little or no effect on this shape.

When Shape is at 1/4 of its range, buildup is even slower and the sustain is longer. Now Spread affects the length of both the buildup and the sustain. As a rough estimate, the sustain will be approximately the time value indicated by the Spread display (in milliseconds).

As Shape is raised further, the buildup and sustain remain similar, but now a secondary sustain appears in the envelope, at a lower level than the first. This secondary plateau simulates a very diffused reflection off the back wall of a hall, and is effective in creating a sense of size and space. This reflection becomes stronger and stronger, reaching an optimal loudness when Shape is at about 1/2 of its range.

The highest Shape settings are typically used for effects. Near the top of the scale the back wall reflection becomes stronger than the earlier part of the envelope, resulting in an inverse sound.

Note that none of these shape effects are audible unless Reverb Time is set short enough. Generally, Reverb Time should be set to a value of about 1.2 seconds for small rooms, and up to 2.4 seconds or so for halls. Size should also be set to a value appropriate to the desired hall size (note, however, that small sizes color the reverberation).15 meters makes a very small room, and 38 meters is useful for a large hall.

Used with care Shape and Spread allow the 300L to produce superior ambience—a sound which is spacious and has great depth—without the long reverberation of a church.

Random Delays

The Random Hall algorithm in the 300L incorporates random delay elements. These elements have several effects. First, there is a reduction of long-lived modes in the reverberant decay, which makes the decay less metallic and reduces the apparent reverb time. The random elements also improve the steady-state timbre of the program.

The speed at which the delay elements move is controlled by Spin. Values of Spin which are higher than about 38 can cause audible pitch wobble in very critical material (such as classical guitar or piano) and can also cause noise on pure tones. This noise is not audible in speech, however, and, for mixed music or speech, values up to 48 will give an improved sound. Wander is typically set to about 10ms at larger settings of Size. Smaller values of Wander should be used when smaller Sizes are used.

Creating a Realistic Sound

When you set out to create a sound, the first and most important decision is how big a space you want. The best way to start is to listen to several presets and choose the one which sounds closest to what you have in mind. If necessary, use Size to make a slightly larger or smaller sound, as needed.

Next use Reverb Time to fine-tune the amount of time the reverberation takes to die away at the end of musical phrases. Actual halls vary a great deal in their actual Reverb Time values. The setting of Bass Multiply is also critical in matching the sound of an existing hall. An ideal concert hall would have a Bass Multiply setting of 1.2. It is rare when actual physical spaces exceed 1.5. Many (if not most) good recording environments have values of Bass Multiply of 1.0 or less, so a value of 0.8 could be tried when attempting to match an existing hall.

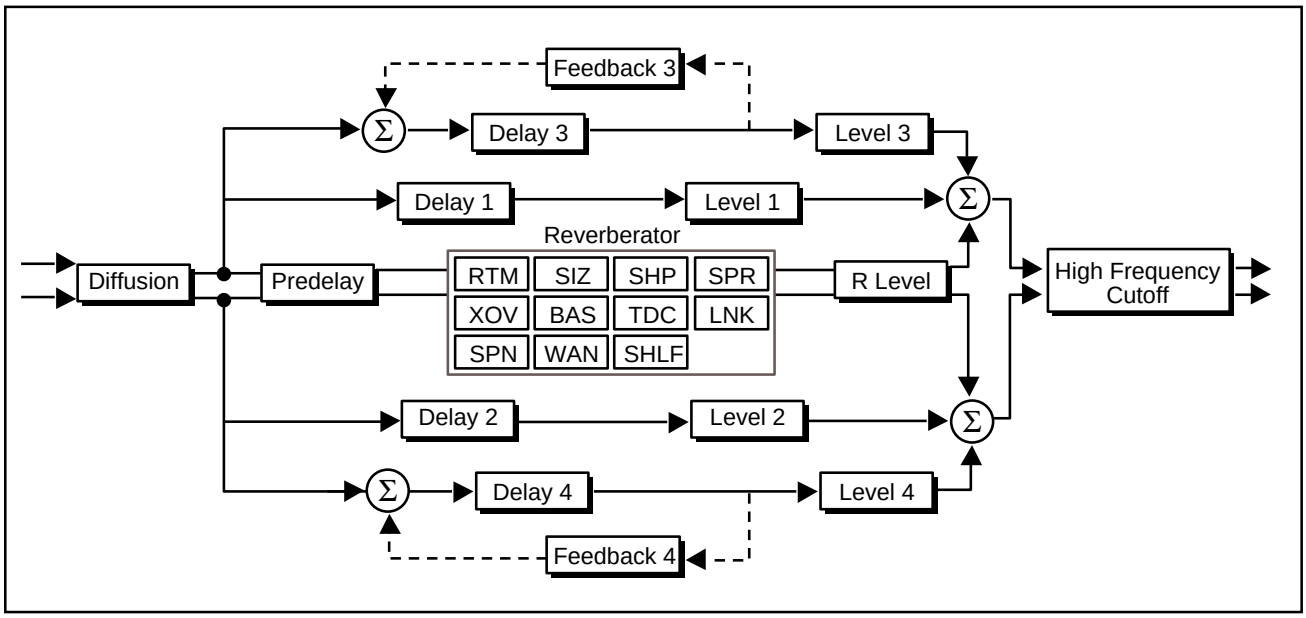
There are two additional controls to deal with. Shape and Spread adjust the effective reverb time when the music is running. Higher values of Shape and Spread produce a longer effective reverb time. Longer effective reverb times give greater spaciousness to the sound.

The 300L reverberation algorithm offers the option of adding early reflections (pre-echoes) which have been made into diffused clusters of pre-echoes. The density of the cluster is set by the Diffusion control. We recommend that these pre-echoes be used with caution, unless you are trying to match the sound of the reverberation to a particular location where such reflections are strong.

Random Hall Parameters

PAGE ONE					
RTM*	**SHP**	**SPR***	**SIZ**	**HFC**	**PDLY**
.24-64.17S	0-255	0-255	4.0-39.4METERS	0.1-26.5KHZ, FLAT	0-1000MS
BAS	**XOV**	**TDC**	**DIF**	**LNK**	**RLVL**
0.2X-4.0X	0.1-26.5KHZ	0.5-21.2KHZ	0-99	LINK/UNLINK	OFF, -48DB-UP FULL
PAGE THREE					
SPN	**WAN**	**RTM**	**SHLF**		
0-48	0µS-37.1MS	.24-64.17S	OFF, -48DB-UP FULL		
PAGE FOUR					
DL1	**LV1**	**DL2**	**LV2**	**RTM**	**RLVL**
0-1000MS	OFF-24.0DB-UP FULL	0-1000MS	OFF-24.0DB-UP FULL	.02-64.17S	OFF-48DB-UP FULL
PAGE FIVE					
DL3	**LV3**	**FB3**	**DL4**	**LV4**	**FB4**
0-2800MS	OFF-24.0DB-UP FULL	-93 TO +93%	0-2800MS	OFF-24.0DB-UP FULL	-93 TO +93%

* Parameter ranges are dependent on settings of SIZ and LNK.



Random Hall Page One

RTM (Mid-Frequency Reverb Time) RTM sets the reverb time for mid-frequency signals. Because low-frequency reverb time (BAS) is a multiplier of RTM, RTM acts as a Host control for the reverb time.

SHP (Shape) SHP and SPR work together to control the overall ambience of the reverberation created by the 300L. SHP determines the contour of the reverberation envelope. With SHP all the way down, reverberation builds explosively, and decays quickly.

SPR (Spread)

SPR works together with SHP to control the duration of the initial ambience created by the 300L. Low SPR settings result in a rapid onset of reverberation at the beginning of the envelope, with little or no sustain. Higher settings spread out both the buildup and sustain.

As SHP is advanced, reverberation builds up more slowly and sustains for the time set by SPR. With SHP in the middle, the buildup and sustain of the reverberation envelope emulates a large concert hall (assuming that SPR is at least halfway up, and that SIZ is suitably large—30 meters or larger.)

SIZ (Size)

SIZ sets the rate of buildup of diffusion after the initial period (which is controlled by DIF). It also acts as a Host control for RTM and SPR. The SIZ control changes a reverb sound from very large to very small. Generally, you should set the SIZ control to approximate the size of the acoustic space you are trying to create, before adjusting anything else. The size in meters is roughly equal to the longest dimension of the space. Moving SIZ while a signal is present may cause audible transients on critical material.

The apparent size of the space created is actually a combination of the settings of the SIZ, SHP, and SPR controls. Small acoustic spaces are characterized by a rapid buildup of diffusion. However, both small and large spaces frequently have an uneven buildup of initial reverberation. This uneven buildup is controlled by the SPR and SHP controls.

HFC (High Frequency Cut)

HFC sets the frequency above which a 6 dB/octave low-pass filter attenuates the processed signal. It attenuates both pre-echoes and reverberant sound. High frequencies are often rolled off with this parameter, resulting in more natural sounding reverberation. HFC is typically set betwen 2kHz and 6kHz.

PDLY (Predelay)*

PDLY adjusts an additional time delay between the input of signal and the onset of reverberation. The control is not intended to mimic the time delays in natural spaces. In real rooms the build-up of reverberation is gradual, and the initial time gap is usually relatively short. Natural spaces are best emulated by setting SHP at a middle value and adjusting SPR for the desired effective initial reverb envelope.

Additional delay added with the PDLY control can increase the initial time gap slightly, emulating a situation where reverberant pick-up microphones are located much further from the source than the main microphones. If more than about 30ms of pre-delay is added, this additional delay can add clarity with some music, but it can also sound unnatural. Large pre-delays can be useful for slap-echo effects.

* A quick "double-click" on the slider button will allow you to control this delay with more resolution. To exit this "fine control" mode, double-click on the button again.

Random Hall Page Two

BAS (Bass Multiply) BAS sets the reverb time for low-frequency signals, as a multiplier of the RTM parameter. For example, if BAS is set to 2X, and RTM is set to two seconds, the low frequency reverb time will be four seconds. For a natural-sounding hall ambience, we recommend values of 1.5X or less.

XOV (Bass Crossover) XOV sets the frequency at which the transition from RTM to BAS takes place. XOV should be set at least two octaves higher than the low frequency you want to boost. For example, to boost a signal at 100 Hz, set XOV to 400 Hz (This setting works well for classical music). XOV works best around 400 for boosting low frequencies, and around 1.5 kHz for cutting low frequencies.

TDC (Treble Decay) TDC sets the frequency above which sounds decay at a progressively faster rate. It filters all the sound except the pre-echoes. When set relatively low, it gives a darker tone to the reverberation, simulating the effect of air absorption in a real hall. TDC also helps keep the ambience generated by the program from muddying the direct sound.

DIF (Diffusion) DIF controls the degree to which initial echo density increases over time. High settings of DIF result in high initial buildup of echo density, and low settings cause low initial buildup. Echo density is also affected by SIZ; smaller spaces will sound denser. To enhance percussion, use high settings of diffusion. For clearer and more natural vocals, mixes, and piano music, use low or moderate settings of diffusion.

LNK (Link) When LNK is set, the reverb time and spread values scale linearly as the SIZ control is varied. For some special effects, RTM and SPR can be unlinked.

RLVL (Reverb Level) RLVL sets the amount of reverberation in the processed signal. It is normally FULL, but may be reduced for effects where the pre-echoes should dominate.

Random Hall Page Three

SPN (Spin) SPN affects the movement of the reverberation tail. The object of SPN (and WAN) is to continuously alter the timbre of the reverberant sound. This makes the result more natural, without making the position of instruments unstable. SPN should typically be 20 or higher. High values may make the pitch of piano or guitar unstable.

WAN (Wander) WAN sets the distance in time that the early reflections will move. For best results WAN should be about 10ms at larger sizes, and 5ms for smaller sizes.

RTM (Mid-Frequency Reverb Time) RTM sets the reverb time for mid-frequency signals. Because low-frequency reverb time (BAS) is a multiplier of RTM, RTM acts as a Host control for the reverb time.

SHLF

SHLF modifies the low-pass characteristic of the rolloff control, turning it into a shelving filter. SHL sets the gain of an output path which is mixed with the output of HFC to form the main reverberant output. Both the pre-echoes and the reverberation are affected. For example, if SHLF is set to -6dB, frequencies below approximately HFC/2 will be boosted by 3.5dB; above approximately HFC x 2, the response will be flat.

SHLF provides a method for making the spectral content of the reverberation match the ideal spectrum for musical acoustics in rooms. For this application, HFC should be set between 700 and 1.5kHz, with SHLF set between -12 and -6dB.

A note about Pre-Echoes

Pages Four and Five contain four pre-echo taps with delay and level controls. The taps are fed directly to the output wet signal rather than into the reverberator.

Pre-echoes can best be understood by visualizing a stage where the early reflections are the sounds emanating from the rear and side stage walls directly after the sound from the stage. Usually the rear stage wall reflection is earlier and louder than those from the two side walls. The pre-echoes are actually clusters of echoes, with the density of the cluster set by DIF.

The pre-echo delay parameters change the perceived locations of reflecting surfaces surrounding the source. Level adjusts the loudness of the reflection. For each of the LV (Pre-echo level) parameters, there is a corresponding DL (pre-echo delay) parameter. Each of these sets the delay time in ms for one of the pre-echoes. These are not affected by PDLY, so pre-echoes can be placed to occur before or after the reverberation starts.

Random Hall Page Four

The DL pre-echo delay parameters have a resolution of 2 milliseconds.

The LV pre-echo level parameters have sixteen steps, calibrated in decibels.

The FB feedback parameters (for Delays 3 and 4 only) are adjustable in 6% increments from -93% to +93%.

DL1*, LV1

Pre-Echo 1, one second maximum to left channel.

DL2*, LV2

Pre-Echo 2, one second maximum to right channel.

* A quick "double-click" on the DL1 or DL2 slider button will allow you to control the delay with more resolution. To exit this fine control mode, double-click on the button again.

RTM (Mid-Frequency Reverb Time)

RTM sets the reverb time for mid-frequency signals. Because low-frequency reverb time (BAS) is a multiplier of RTM, RTM acts as a Host control for the reverb time.

RLVL (Reverb Level) RLVL sets the amount of reverberation in the processed signal. It is normally FULL, but may be reduced for effects where the pre-echoes should dominate.

Random Hall Page Five

DL3*, LV3, FB3 Pre-Echo 3, 2.8 seconds maximum to left channel, with feedback.

DL4*, LV4, FB4 Pre-Echo 4, 2.8 seconds maximum to right channel, with feedback.

* A quick "double-click" on the DL3 or DL4 slider button will allow you to control the delay with more resolution. To exit this fine control mode, double-click on the button again.

Random Ambience

General Description

The 300L's Random Hall effects are designed to add a cushion of reverberance to recorded music, while leaving the clarity of the direct sound unaffected. Random Ambience is different. It is intended to become a part of the direct sound — to give it both better blend and a definite position in space. Random Ambience gives warmth, spaciousness and depth to a performance without coloring the direct sound at all.

Random Ambience generates primarily the strong reflections which appear in the first few hundred milliseconds of the reverberation process. These early reflections constitute the primary audible effect, giving you the impression of a hall surrounding you while the music is playing. To avoid any coloration from these strong reflections, the time delays and amplitudes are random functions.

Random Ambience is very useful for adding a room sound to recorded music or speech. It is particularly easy to match a studio recording of dialog to a typical room environment. In music recording, using Random Ambience is an effective way of realistically adding distance to a close-miked signal. If an ensemble has been recorded with close-mikes and pan pots, Ambience can provide the missing blend and depth. The apparent position of the instruments is preserved in the reverb while the apparent distance is increased. Random Ambience is also useful in matching a closely miked accent microphone to the overall ambience of a recording. This allows a soloist to be increased in level without changing the apparent distance. Random Ambience can be used in a recording situation any time a close-miked sound is undesireable.

Set Size to the desired room size. Reverb Level adjusts the amplitude of reverberation defined by Reverb Time, and can be trimmed to get exactly the effect you need.

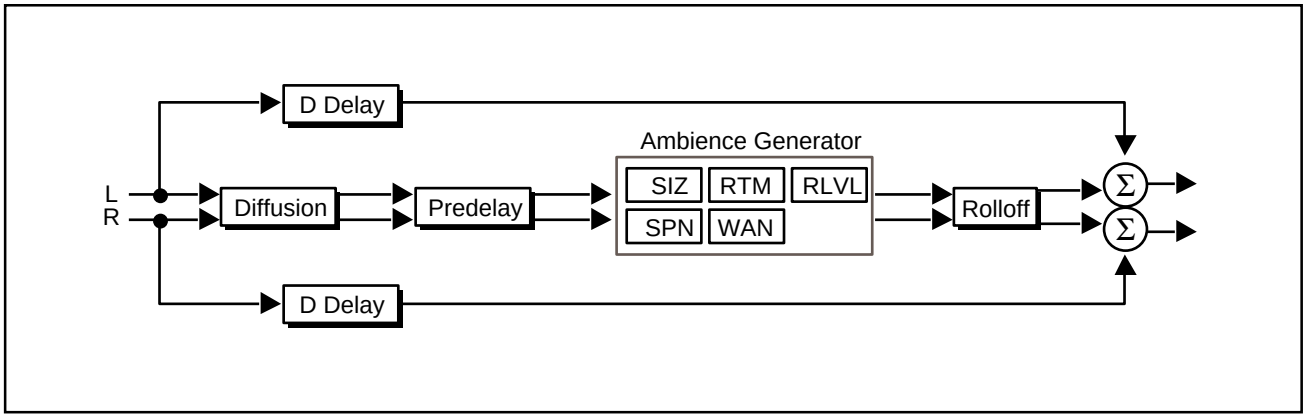
To use the algorithm with a console, it is best to use a stereo send to the 300L, carefully matching the panning of the various close-miked sources to their positions in the mix. Leave the Mix control at 100%. The apparent distance of each source can be controlled by the level of its feed.

Random Ambience Parameters

PAGE ONE					
RT*	**RVL**	**SIZ**	**ROL**	**DIF**	**PDLY****
.24-64.17SEC	OFF, -48TO-1DB, UP FULL	4.0-39.4M	0.5KHZ-21.2KHZ	0-99	0-99.877MS
PAGE TWO					
SPN	**WAN**	**DDLY**			
0-48	0µS-37.1MS	0-99.877MS			

* Parameter range is dependent on setting of SIZ.

** Parameter range is dependent on setting of Sample Rate.



Random Ambience Page One

RT (Reverb Time) This control adjusts the reverberation time of the independent reverberator. The range of action is limited. Be careful — both long and short reverb times may sound unnatural. If a much longer or shorter reverb time than the preset provides is desired, SIZ should be changed first.

RVL (Reverb Level) RVL sets the amount of reverberation in the processed signal. It should normally be set between -6 and -12dB.

SIZ (Size) SIZ allows you to vary the apparent size of the space over a wide range. SIZ is the most dramatic control, and must be selected to match the music or program material. It should be the first control that you adjust to tailor the desired space. SIZ also affects the reverb time, in a similar way to the standard reverb programs.

ROL (Hi Freq Rolloff) ROL sets the frequency above which a 6 dB/octave low-pass filter attenuates the processed signal. High frequencies are often rolled off with this parameter, resulting in a more natural sounding acoustic space.

DIF (Diffusion)

DIF controls the degree to which initial echo density increases over time. High settings of DIF result in high initial buildup of echo density; low settings cause low initial buildup. Echo density is also affected by SIZ; smaller spaces will sound denser. To enhance percussion, use high settings of DIF. For clearer, more natural vocals, mixes, and music, use low or moderate settings.

PDLY (Pre-Delay)

PDLY adds an additional delay to the reflections and to the reverberation. This control may be useful in a sound reinforcement situation, or for ambience effects.

Random Ambience Page Two

SPN (Randomization)

SPN affects the movement of many of the delay taps. The object of SPN (and WAN) is to continuously alter the timbre of the reverberant sound. This makes the result more natural, without making the position of instruments unstable. SPN should typically be 20 or higher. High values may make the pitch of piano or guitar unstable.

WAN (Wander)

WAN sets the distance in time that the early reflections will move. For best results WAN should be about 10ms at larger sizes.

DDLY (Dry Delay)

DDLY provides a delay for the "dry" audio path.

Rich Plate

General Description

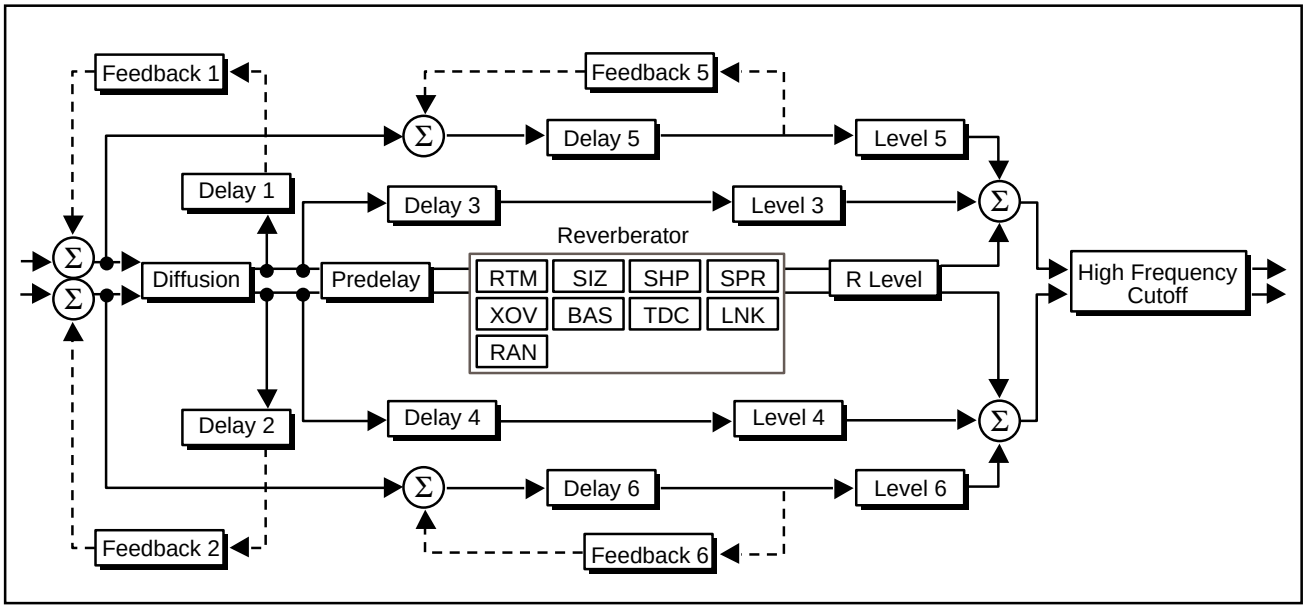
The Rich Plate program is denser, smoother, and more colored than other reverb programs. When used with the SIZ control at around 16 meters, the sound is dense and tight — ideal for percussion. Larger sizes and longer reverb times are suitable for vocals and brass.

The Rich Plate program has five control pages with 28 adjustable parameters, shown below.

Rich Plate Parameters

PAGE ONE					
RTM*	**SHP**	**SPR***	**SIZ**	**HFC**	**PDLY**
0.24-64.17SEC	0-255	0-255	4.0-39.4M	0.1-26.5KHZ, FLAT	0-1000MS
PAGE TWO					
BAS	**XOV**	**TDC**	**DIF**	**LNK**	**RLVL**
0.2X-2.0X	0.1-26.5KHZ	0.5-21.2KHZ	0-99	LINK/UNLINK	OFF, -48DB-UP FULL
RAN	**-**	**DL1**	**FB1**	**DL2**	**FB2**
NONE, 1-98%,MAX	-	0-2000MS	-60% TO 60%	0-2000MS	-60% TO 60%
PAGE FOUR					
DL3	**LV3**	**DL4**	**LV4**	**RTM**	**RLVL**
0-1000MS	OFF-24.0DB, UP FULL	0-1000MS	OFF-24.0DB, UP FULL	.24-64.17SEC	OFF, -48DB-UP FULL
PAGE FIVE					
DL5	**LV5**	**FB5**	**DL6**	**LV6**	**FB6**
0-2800MS	OFF,-24.0DB-UP FULL	-93% TO 93%	0-2800MS	OFF,-24.0DB-UP FULL	-93% TO 93%

* Parameter ranges are dependent on settings of SIZ and LNK.



Rich Plate Page One

RTM (Reverb Time)

This control adjusts the reverberation time of the independent reverberator. The range of action is limited. Be careful — both long and short reverb times may sound unnatural. If a much longer or shorter reverb time than the preset provides is desired, SIZ should be changed first.

SHP (Shape)

SHP and SPR work together to control the overall ambience of the reverberation created by the 300L. SHP determines the contour of the reverberation envelope. With SHP all the way down, reverberation builds explosively, and decays quickly.

As SHP is advanced, reverberation builds up more slowly and sustains for the time set by SPR. Plates characteristically have small values of SHP and SPR.

SPR (Spread)

SPR works together with SHP to control the duration of the initial ambience created by the 300L. Low SPR settings result in a rapid onset of reverberation at the beginning of the envelope, with little or no sustain. Higher settings spread out both the buildup and sustain.

SIZ (Size)

SIZ allows you to vary the apparent size of the space over a wide range. SIZ is the most dramatic control, and must be selected to match the music or program material. It should be the first control that you adjust to tailor the desired space. SIZ also affects the reverb time, in a similar way to the standard reverb programs.

HFC (High Frequency Cut)

HFC sets the frequency above which a 6 dB/octave low-pass filter attenuates the processed signal. It attenuates both pre-echoes and reverberant sound. High frequencies are often rolled off with this parameter, resulting in more natural sounding reverberation.

PDLY* (Pre-Delay)

PDLY adds an additional delay to the reflections and to the reverberation. This control may be useful in a sound reinforcement situation, or for ambience effects.

* A quick "double-click" on the slider button will allow you to control this delay with more resolution. To exit this "fine control" mode, double-click on the button again.

Rich Plate Page Two

BAS (Bass Multiply)

BAS sets the reverb time for low-frequency signals, as a multiplier of the RTM parameter. For example, if BAS is set to 2X, and RTM is set to two seconds, the low frequency reverb time will be four seconds. For a natural-sounding plate reverb, we recommend values of 1.0x or less.

XOV (Bass Crossover) XOV sets the frequency at which the transition from RTM to BAS takes place. XOV should be set at least two octaves higher than the low frequency you want to boost. For example, to reduce a signal at 100 Hz, set XOV to 400 Hz (This setting works well for pop music).

TDC (Treble Decay) TDC sets the frequency above which sounds decay at a progressively faster rate. It filters all the sound except the pre-echoes. When set relatively low, it gives a darker tone to the reverberation.

DIF (Diffusion) DIF controls the degree to which initial echo density increases over time. High settings of DIF result in high initial buildup of echo density; low settings cause low initial buildup. Echo density is also affected by SIZ; smaller sizes will sound denser. To enhance percussion, use high settings of DIF. For clearer, more natural vocals, mixes, and music, use moderate settings.

LNK (Link) When LNK is set, the RTM and SPR values scale linearly as the SIZ control is varied. For some special effects, RTM and SPR can be unlinked.

RLVL (Reverb Level) RLVL sets the amount of reverberation in the processed signal. It is normally FULL, but may be reduced for effects where the pre-echoes should dominate.

Rich Plate Pages Three, Four & Five

These pages provide control over three stereo delay pairs. All three are summed with the output of the reverberator. Many, many different echo combinations are possible.

RAN (Randomness) RAN sets the rate of the randomization process. Plates should generally use low amounts of randomization.

DL1* , DL2* DL1 and DL2 (0ms-2000ms) are recirculating delay lines assigned to the left(1) and right (2) channel inputs. The path of either is picked off after the diffusor with the amount of recirculation defined by the adjustment of FB1 (for DL1) and FB2 (for DL2). DL1 and DL2 are the **only** delays which feed back (recirculate) into the reverberator, as well as into the other delay lines.

* A quick "double-click" on the DL1 or DL2 slider button will allow you to control the delay with more resolution. To exit this "fine control" mode, double-click on the button again.

FB1 , FB2 FB1 and FB2 determine the amount of recirculation passed back through to the left and right inputs.

DL3* , DL4*

DL3 (0ms-1000ms) and DL4 (0ms-1000ms) are also picked off after the diffusor. The level of each is controlled by LV3 and LV4, respectively.

* A quick "double-click" on the DL3 or DL4 slider button will allow you to control the delay with more resolution. To exit this "fine control" mode, double-click on the button again.

LV3, LV4

LV3 and LV4 determine the loudness of DL3 and DL4.

DL5* , DL6*

DL5 (0ms-2800ms) and DL6 (0ms-2800ms) allow you to build non-diffused recirculating echoes independent of the reverberator. Each has a feedback control (FB5 and FB6).

* A quick "double-click" on the DL5 or DL6 slider button will allow you to control the delay with more resolution. To exit this "fine control" mode, double-click on the button again.

FB5, FB6

FB5 and FB6 provide feedback control for DL5 and DL6.

LV5, LV6

LV5 and LV6 determine the loudness of DL5 and DL6. These are undiffused pre-echoes.

Stereo Adjust

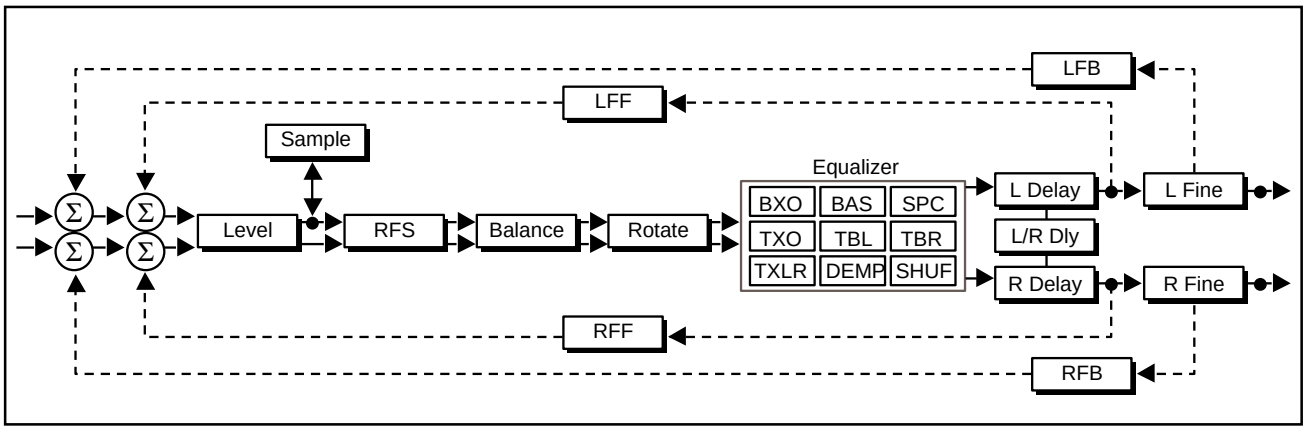
General Description

The Stereo Adjust algorithm offers fine adjustments of level and equalization during digital mastering. Its stereo digital fader permits 0.25dB trimming and provides full fades to digital zero at the end of a track. Its two sets of shelving treble EQ can be set for different 3dB points and gains. BAS and SPEQ permit adjustment of stereo width, enhancing the spaciousness and depth of the recording.

Stereo Adjust Parameters

PAGE ONE					
LVL	**BAL**	**ROT**	**BAS**	**TRB**	**SPEQ**
OFF,-72.00DB TO +12.00DB	L+3 TO R+3	L+3 TO R+3	CUT, -18 TO +6DB	CUT, -18 TO +6DB	CUT, -6.00 TO +6.00DB
PAGE TWO					
DLY	**BXO**	**TXO**	**TXLR**	**TBL**	**TBR**
0-5000MS	0.1-26.5KHZ	0.1-26.5KHZ	0.1-26.5KHZ	CUT, -18DB - +6DB	CUT, -18DB - +6DB
PAGE THREE					
SAM	**DEMP**	**RFS**	**DC**	**DCL**	**DCR**
OFF, ON	OFF, ON	+L+R,+L-R,+R+L,-R+L	RESET, MANUAL, AUTO	-99 TO +99%	-99 TO +99%
PAGE FOUR					
LDL	**LFB**	**RDL**	**RFB**	**-**	**SHUF**
0-5000MS	-99 TO +99%	0-5000MS	-99 TO +99%	-	0-10
PAGE FIVE					
LFD*	**LFF**	**RFD***	**RFF**		
0-10.417MS	-99 TO +99%	0-10.417MS	-99 TO +99%		

* Parameter ranges are dependent on setting of Sample Rate.



Stereo Adjust Page One

LVL (Host Level)

LVL is a stereo level control, with both channels equally attenuated or boosted. From -12 to +12dB the fader moves in .25 dB increments. Below -12dB it moves in .50 dB increments. Below -60 dB the calibration comes in larger steps, finally dropping to zero output at -72 dB.

BAL (Balance)

BAL implements a sine/cosine balance adjustment. Balance is smoothly adjusted over a wide range, with excellent resolution in the critical area around zero. The display indicates the actual channel gains as the control is varied.

ROT (Rotate)

ROT is similar to BAL, but it treats stereo information somewhat differently. Any signal panned to the center (mono) will be treated by ROT exactly as it would be treated by BAL. However, if a signal is panned full right and the control is moved toward the right, instead of simply being attenuated (as BAL would do) the right channel is inverted in phase and added to the left channel. A stereo image appears to rotate when this control is used. Ambient information is preserved, and both channels appear to retain equal loudness.

If stereo material is recorded with a coincident pair of figure-of-eight microphones, moving the ROT slider is exactly equivalent to rotating the microphone pair. Other microphone arrays and multimicrophone setups do not rotate perfectly, but using this control is frequently preferable to simply adjusting balance. The display shows the actual channel gains for a continually panned source.

BAS (Bass EQ)

BAS is a 6dB/octave shelving EQ control with a range of +6 dB boost and -18dB cut. It moves in .5 dB steps from +6 to -6 dB. The crossover point is adjusted with BXO. BAS acts on both stereo channels equally.

TRB (Treble EQ)

TRB is a 6 dB/octave shelving EQ controls with a range of +6 dB boost and -18dB cut. It moves in .50 dB steps from +6 to -6 dB. The crossover point is adjusted with TXO. TRB acts on both stereo channels equally.

SPEQ (Spatial EQ)

SPEQ sets the amount of a crossfeed between channels. The signal first goes through a 6 dB/octave low-pass filter whose frequency is set with BXO.

When SPEQ is set positive (above 0) the crossfeed has a negative sign. When SPEQ is set negative (below 0), the crossfeed has a positive sign. When the control is set to either maximum or minimum, the gain in the crossfeed circuit is unity.

The result of this control is to change the separation of low frequency stereo signals. When the control is raised, low frequencies in the sum (mono) channel are reduced, and low frequencies in the difference (stereo) channel are raised. With the control at maximum, low frequency mono signals are completely removed. This represents an extreme setting which should seldom be needed in practice.

With material which has stereo bass information, or which contains some reverberation, the effect of raising SPEQ is to increase the sense of spaciousness and depth of the sound. It is particularly useful on material recorded with panpots, or coincident and semi-coincident microphone technique.

When most of the bass in a recording is in the sum (mono) channel, raising SPEQ may reduce the bass level. This effect can be compensated for by raising the overall bass level with BAS. Since both controls use the same BXO setting,

this compensation will be quite accurate as long as SPEQ is set to less than 3 dB boost.

Stereo Adjust Page Two

DLY (Host Delay)

DLY controls a 5-second stereo delay line, with coarse resolution. Separate mono and fine controls are on Page Five. This is a post-processing full-level delay, and is always in the circuit. This is a ganged stereo control with the display showing both left and right delay values.

BXO (Bass Crossover)

BXO sets the crossover point for BAS. When BAS is set to full cut, the level is -3 dB at the frequency set with BXO.

TXO (High Frequency Cutoff)

TXO sets the crossover point for TRB. When TRB is set to full cut, the level is -3 dB at the frequency set with this control.

TXLR (Independent Treble Crossover)

TXLR sets the crossover point for TBL and TBR. When either is set to full cut, the level is -3 dB at the frequency set with this control.

TBL, TBR (Independent Treble Boost/Cut)

These controls allow independent adjustment of left and right treble. They may be used together with the stereo adjustments to create a 12 dB/octave cut or boost. Note that the 3 dB frequencies can be different from the stereo set.

Stereo Adjust Page Three

SAM (1/2 sample)

When this control is on, the left channel is delayed relative to the right by 11µsec (1/2 sample). This control specifically corrects for the timing error between channels caused by consumer digital systems (e.g. the Sony PCM-F1 and its progeny) that time-share single analog converters. Turning on this delay time aligns the left channel audio data for compatibility with professional systems.

DEMP (De-emphasis On/Off)

When DEMP is On, the incoming signal is digitally de-emphasized. This should not be used unless the material has been emphasized in the record process—such as a PCM-F1 tape. Note that the emphasis bit in the incoming signal can be turned off from Control Mode, Page Five, Slider 2.

When digital de-emphasis is applied, the CD mastering lab must be informed that the tape is not emphasized, and the CD emphasis bit should be manually set to Off. Mastering labs are happy to do this, but they *must* be informed!

RFS (Right Channel Flip 'n' Swap)

RFS is used for digitally correcting problems you used to be able to fix (or create) by switching analog cables around. The normal setting is +L to the left output and +R to the right output. Other settings should only be used when correcting some problem created previously in the recording process.

+L+R = Normal Routing
+L-R = Right Channel polarity inverted (flipped)
+R+L = Left and Right Channels swapped
-R+L = Right flipped and swapped with Left

DC (DC Offset Nulling)

This control provides three choices: RESET, MANUAL ADJUST and AUTO ADJUST. RESET disables all DC adjustment. AUTO ADJUST enables routines for correcting DC offset from material recorded through analog-to-digital converters that are not properly trimmed for DC. MANUAL ADJUST allows slider selection of offset values.

DCL and DCR (Left and Right Channel DC Offset)

Replaces any previously obtained value with the value set here via the slider. The display indicates the percent of the correction.

Stereo Adjust Pages Four and Five

These pages provide controls to give individual channel control over the 5-second post-equalization delay line.

LDL* (Left Channel Coarse)

5-second mono control in coarse steps for the left channel. DLY + LDL must not total more than 5,000 milliseconds.

* A quick "double-click" on the slider button will allow you to control this delay with double the resolution. To exit this fine contro" mode, double-click on the button again.

RDL* (Right Channel Coarse)

5-second mono control in coarse steps for the right channel. DLY + RDL must not total more than 5,000 milliseconds.

* A quick "double-click" on the slider button will allow you to control this delay with double the resolution. To exit this fine control mode, double-click on the button again.

Fine Sample Delays
These can be used for subtle time alignment adjustments. The 300L will correctly display the resulting time shift as a function of the sampling rate. As many as 500 samples can be added to any stereo/coarse delay setting for a maximum possible delay per channel of 5 seconds + 500 samples.

48 kHz = 20.833 microseconds per sample
44.1 kHz = 22.676 microseconds per sample

LFD* (Left Channel Fine)

500-sample, 2 samples per step, mono fine adjust for the left channel.

* A quick "double-click" of the slider button will allow you to control the delay in single sample increments. To exit the extra-fine mode, double-click on the slider button.

RFD* (Right Channel Fine)

500-sample, 2 samples per step, mono fine adjust for the right channel.

* A quick "double-click" of the slider button will allow you to control the delay in single sample increments. To exit the extra-fine mode, double-click on the slider button.

LFB, RFB, LFF and RFF

Two feedback paths are available per channel: overall and fine. Overall feedback is the total delay of DLY + L(R)DL + L(R)FD, and is useful for long echo effects.

Fine Feedback (LFF and RFF) is only around the Fine Delay and can be used for very short delay effects and coloration.

All feedback gains are adjustable in 1% increments from -99% to +99%. If the magnitudes of both feedback gains for a channel sum to more than 100%, that channel will overload.

On the 300L, overall and fine are differentiated by the following labels:

LFB = Overall Left Channel Feedback
LFF = Fine Left Channel Feedback
RFB = Overall Right Channel Feedback
RFF = Fine Right Channel Feedback

SHUF (Binaural Shuffler)

SHUF controls a spatial equalizer designed to make recordings from a dummy head, or closely-spaced omni microphones, more suitable for loudspeaker reproduction. Due to the close spacing of the microphones, there is very little difference between the two stereo channels below about 300Hz. The shuffler restores the low frequency separation by first matrixing the L and R signals into L+R and L-R, bass-boosting the L-R channel, then rematrixing back to L and R. The effect is to convert small time differences (which are not audible in loudspeaker reproduction) between the two microphones into level differences, which are audible. The effect can be dramatic.

The frequency below which the boost acts is set by the SHUF control. A setting of 5 will give a 3dB L-R boost at about 150Hz; a setting of 10 will be 3dB up at 250Hz. Response rises at 6dB/octave below this frequency. More than 18dB of gain can be obtained at 20Hz when SHUF is set to 10.

This control has been optimized for true binaural recordings, where the difference signal at low frequencies is minimal. If it is used on ordinary stereo material, or with binaural material to which reverberation has been added, excessive low frequency difference signals can result. On such material, it is better to use the SPEQ control which will achieve a similar result.

The SHUF control varies from 0 (shuffler off) to a maximum of 10. While theory would suggest a setting of 10 for a dummy head, a setting of 5 appears to be more useful in practice. The setting is very much a matter of taste. If closely spaced microphones are used, the setting will scale inversely with the microphone distance in centimeters. For a spacing of 15cm, try a shuffler setting of 5. For a spacing of 30cm, try a setting of 3. For a spacing of 7cm, try a setting of 10.

Stereo Pitch Shift

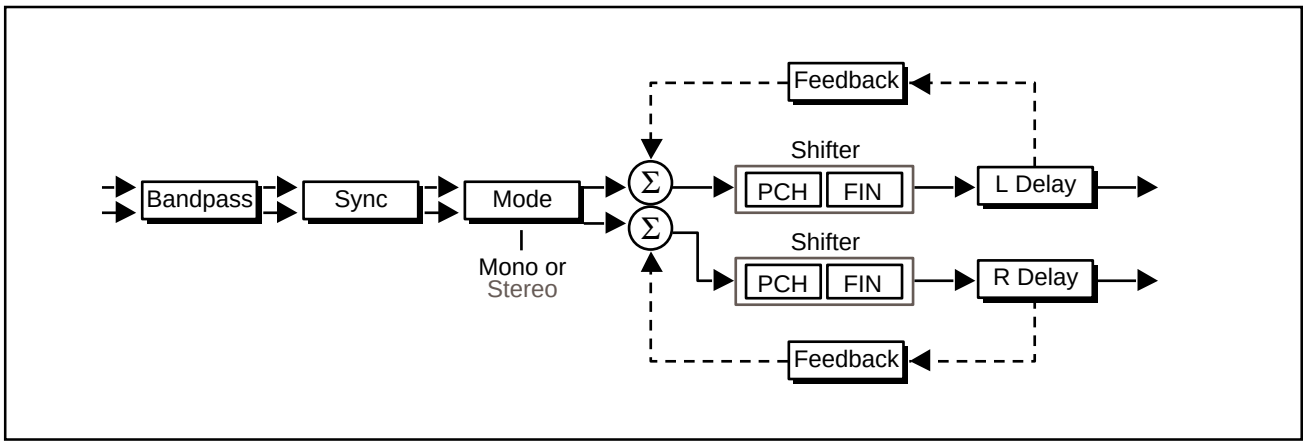
General Description

Stereo Pitch Shift is a stereo or two-channel mono pitch shifter with several useful effects, including delay, feedback, and glide. These are independently adjustable for each channel. The pitch shifter in the 300L includes a pitch detection feature which automatically adjusts the period of the splices to match the pitch of incoming signals. This feature greatly reduces the artifacts associated with pitch shift. In stereo mode both channels are linked, and the sum of the two channels (L & R) is used in the pitch detector. In mono mode each channel splices independently. In either case it takes about 40 ms for the pitch detector to obtain an optimal pitch value. Setting the LDL and RDL controls to this value will give the smoothest pitch shift. Shorter values can be used for special effects, or when extra delay cannot be tolerated.

There are two interacting controls for pitch described below: Pitch Interval, and Fine Pitch. Adjusting any pitch control activates a display that shows the musical interval, and any fine adjustment in cents.

Stereo Pitch Shift Parameters

PAGE ONE					
MOD	**SNC**	**PCH**	**FIN**	**PCH**	**FIN**
MONO/STEREO	OFF/ON	-2 OCT TO +MAJ7+96¢		-2 OCT TO +MAJ7+96¢	
PAGE TWO					
LDL	**FBL**	**RDL**	**FBR**	**-**	**BNPS**
0-510MS	NONE-98%, MAX	0-510MS	NONE-98%, MAX	-	OFF/ON



Stereo Pitch Shift Page One

MOD (Mode)

MOD selects stereo or mono mode. In stereo the two channels are linked, pitch shifting by the same amount and splicing at the same time.

SNC (Synchronization)

SNC is only active in Stereo mode. This control forces an exact sync of the two channels when the control is turned from Off to On. When SNC is On, there is an automatic re-syncing any time the two channels differ in phase by about 10 samples. This can occur if PCH, LDL, or RDL is changed. Re-syncing can cause a small click in the output. If the pitch shifter is being used to manually pitch-correct classical music, it may be better to set SNC to Off. There is an automatic sync tracking feature which will keep the two channels locked to within 2 samples. If precise synchronization is desired, the LDL and RDL controls should be set to the same value, SNC should be set from On, and then the pitch should not be changed. The two channels will remain precisely synchronized, even though both are continually changing the splice length in response to the incoming pitches.

PCH (Pitch Interval)

The leftmost PCH control adjusts the pitch interval of both channels in stereo mode, and the left channel in mono mode. The second PCH control is only active in mono mode, where it adjusts the right channel. The exact tuning can be altered by the fine pitch control, and the exact pitch shift in intervals and cents is displayed. The fine control must be set to the exact middle of its range if perfect pitch intervals are to be obtained.

In the long display, Fine Pitch is shown by the number of cents added to, or subtracted from, the semitone intervals. Remember that Pitch Interval will produce exact intervals only if Fine Pitch is centered.

FIN (Fine Pitch)

The leftmost FIN control acts on both channels together in stereo mode, and the left channel in mono mode. It adjusts pitch continuously over a range of a few hundred cents, and is additive to the PCH controls. If PCH is set to the middle of its range the leftmost FIN control can be used to set very small values of pitch shift, producing a chorusing effect.

The second FIN control is only active in mono mode, where it adjusts the right channel.

Stereo Pitch Shift Page Two

LDL, RDL (Left and Right Delays)

LDL adjusts the length of a delay line in series with the left input. The range is zero to 510ms in 2ms steps.It also affects the delay of any feedback which is applied. In stereo mode the two delays must be set to the same value, or the signals will not be in phase. Optimal pitch shift occurs when LDL is about 40ms.

RDL is the same as LDL, except that it affects the right channel.

FBL, FBR (Left and Right Feedback)

FBL and FBR control the amount of positive feedback from the output of the echo delay line to the input of the pitch shifter. The control is adjustable from 0 to +99%. Some very useful arpeggiated effects can be obtained by combining pitch shift, delay, and feedback.

BNPS (Bandpass Filter)

BNPS is a bandpass filter which rolls off the frequency responce of the audio before the splicing algorithm. The -3dB point is 100 Hz. The purpose of the bandpass filter is to give the pitch shifter *less* information than it actually needs to decide when to make the splice. Typically, this will improve the performance of the pitch shifter, especially for vocal applications.

"Split" Setup Algorithms

Dual Delays

General Description

The Dual Delay algorithm consists of 2 types of delay lines: Gliding Flange delays and Fixed delays. This is a true stereo algorithm. (If run in a Dual Mono Setup, however, it will be mono.)

Two independent flange base delays are available, each with a 20ms range in single sample steps. There is also a ganged stereo gliding flange delay. There are two flange gain controls which vary the overall amount of flange effect.

The stereo gliding flange delay is typically modulated by the internal LFO. Setting the flange gains very high will cause an “over the top” type of flange to occur as the flange glide delays cross over the base delay pointers. The outputs of the flange delays are fed to the delay left and delay right lines which are 2.5 seconds long. Once into these delay lines, you can create many different delay effects. There are two programmable taps on each delay line. DL1 (left) and DL2 (right) can be programmed anywhere along this 2.5 second path. There will, however, be no apparant delay unless a feedback value is assigned to the delay values via FB1 and FB2. All Pass filters, or diffusors, in line with the feedback paths are labeled APD1 (All Pass Delay) and APD2. The amount of diffusion is set by AP1 and AP2. When AP is turned high and FB1 is adjusted away from the 0% value, each feedback loop will be rediffused.

DL3 and DL4 are cross feedback delay lines. They are also adjustable anywhere along the 2.5 second delay line. DL3 feeds from the left delay position to the input of the right delay line. The same is true with DL4 feeding into the left delay line. The feedback parameters adjust the amount (level) passed into the destination delay lines.

The last pair of delay pointers (LDL and RDL) can be thought of as independently adjustable post delays. These can be adjusted anywhere along the 2.5 second delay line.

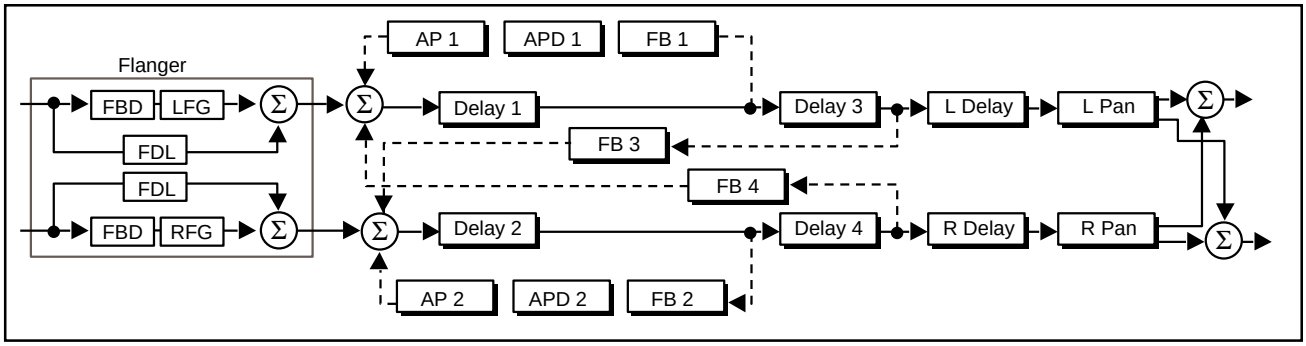
The output of each delay line can be positioned anywhere in the stereo pan field. LPAN adjusts the position of the left delay loop; RPAN positions the output of the right delay loop.

Note: The intensity of the OVER THE TOP and ENVELOPE presets can be increased by sending the effect a "prefade" signal from your console.

Dual Delays Parameters

PAGE ONE				
FDL* 0-19.947MS	**FBD*** 0-19.947MS	**FBD*** 0-19.947MS	**LFG** -99% TO +99%	**RFG** -99% TO +99%
PAGE TWO				
DL1* 0-2498.917MS	**FB1** -99% TO +99%	**DL2*** 0-2498.917MS	**FB2** 0-99%	
PAGE THREE				
AP1 0-191	**APD1*** 0-9.963MS	**-** -	**AP2** 0-191	**APD2*** 0-9.963MS
PAGE FOUR				
DL3* 0-2498.917MS	**FB3** -99% TO +99%	**DL4*** 0-2498.917MS	**FB4** -99% TO +99%	
PAGE FIVE				
LDL* 0-2498.917MS	**LPAN** L, 0-98%R/L, R	**-**	**RDL*** 0-2498.917MS	**RPAN** L, 0-98%R/L, R

* Parameter ranges are dependent on setting of Sample Rate.



Dual Delays Page One

FDL (Flange Delay) FDL is a separate 20 ms ganged gliding stereo delay line.

FBD (Left and Right Flange Base Delays) The FBD controls are base delays which get summed with the stereo ganged flange delay.These base delays are adjustable throughout a 20 millisecond range.

LFG and RFG (Left and Right Flange Gain) LFG and RFG are flange gains which are adjustabe as a feed forward amplifier loop (+99% positive value) or feedback amplifier loop (-99% negative value).

Dual Delays Page Two

DL1 and DL2 set the delay values for the respective left to left and right to right feedback loops

DL1*, DL2*

* A quick "double-click" on the DL1 or DL 2 slider button will allow you to control the delay with more resolution. To exit this fine control mode, double-click on the button again.

FB1 and FB2 set the gain of feedback for each of the delay lines. Available values range from -99% to +99% gain.

FB1, FB2

Dual Delays Page Three

APD1 and APD2 are diffusors (All Pass Delays) in series with the feedback loops associated with DL1 and DL2. Their controls range from 0 to 10 ms. These controls essentially “tune” the diffusor delay line.

APD1, APD2 (All Pass Left and Right Delays)

AP1 and AP2 are gains associated with the diffusors. You can think of them as controlling the amount of diffusion.

AP1, AP 2 (All Pass Left and Right Gain)

Dual Delays Page Four

DL3 controls the delay time which cross-feedbacks to the input of DL2. DL4 controls the delay time which cross-feedbacks to the input of DL1.

DL3*, DL 4*

* A quick "double-click" on the DL3 or DL 4 slider button will allow you to control the delay with more resolution. To exit this fine control mode, double-click on the button again.

FB3 and FB4 control the gain of the cross- feedbacks going with each of their respective delay lines.

FB3, FB4

Dual Delays Page Five

LDL sets the left channel delay line's time. RDL sets the right channel delay line's time.

LDL*, RDL*

* A quick "double-click" on the LDL or RDL slider button will allow you to control the delay with more resolution. To exit this fine control mode, double-click on the button again.

LPAN adjusts the left delay channel pan placement. RPAN adjusts the right delay channel pan placement

LPAN, RPAN

Chamber

General Description

The Chamber program provides several presets which can be loaded into any Dual Mono or Cascade setup. In the Dual Mono setups it passes audio Mono In-Mono Out. In the Cascade setups, audio is routed Mono In-Stereo Out. The Chamber program can simulate many different types of acoustic spaces or mechanical devices.

The Chamber algorithm is great on anything. Sizes of 25 and larger set a lower acoustic density. SHP and SPR help create the illusion of larger spaces while using short reverb times. As in the Random Hall algorithm, the LNK parameter couples SIZ to the RTM and SPR. Unlink provides a method of setting stable RTM and SPR values, then adjusting SIZ to set the right density and “tuning”. Chamber is bright by design, so you may want to use lower values of RTC — maybe even as low as 1.0kHz or 500Hz.

The randomization circuit in Chamber is designed to reduce coloration and/or frequency nodes caused by low frequency input. If you want to create your own special Chambers or Halls, you should keep RAN set to 80 or 90.

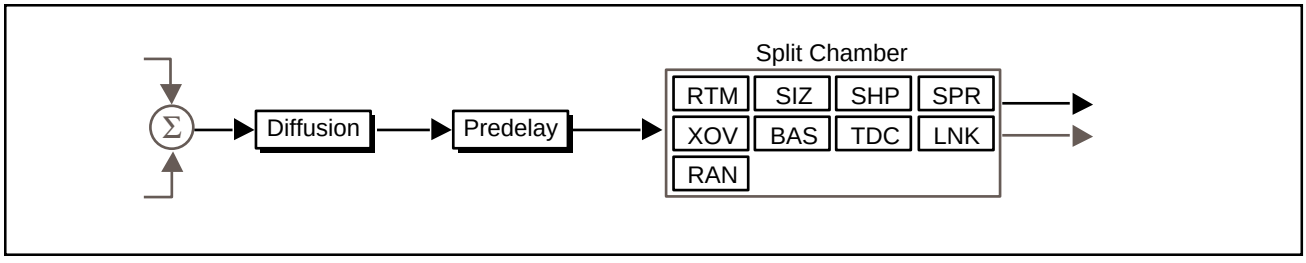
Typically, SIZs of 14-24 meters with RTCs higher than 3.4kHz will emulate bright sounding metal plates. Remember to set SHP and SPD to extremely low values to maintain the explosiveness of the reverb decay. Because plates are very diffuse, any preset mimicking a plate should have DIF set relatively high (70-80), while BAS is kept to some value less than 1.2kHz.

DIF and PDL precede the reverberator. When Chamber programs are loaded into Dual Mono setups, the audio will be Mono In-Mono Out. When loaded into Cascade setups, audio is routed summed Mono In-Stereo Out.

Chamber Parameters

PAGE ONE					
RTM*	**BAS**	**XOV**	**SIZ**	**TDC**	**PDLY**
.19-51.50S	0.2-4.0X	0.1-26.5KHZ	4.0-66.4M	0.5-21.2KHZ	0-1000MS
PAGE TWO					
RAN	**DIF**	**SHP**	**SPR***	**LNK**	
NONE,0-98%,UP FULL	0-99	0-255	0-255	LINK/UNLINK	

* Parameter ranges are dependent on settings of SIZ and LNK.



Chamber Page One

RTM (Mid-Frequency Reverb Time)

RTM sets the reverb time for mid-frequency signals. Because BAS is a multiplier of RTM, RTM acts as a Host control for the reverb time.

BAS (Bass Multiply)

BAS sets the reverb time for low-frequency signals, as a multiplier of the RTM parameter. For example, if BAS is set to 2x, and RTM is set to two seconds, the low frequency reverb time will be four seconds. For a natural-sounding hall ambience, we recommend values of 1.2x or less.

XOV (Bass Crossover)

XOV sets the frequency at which the transition from RTM to BAS takes place. XOV should be set at least two octaves higher than the low frequency you want to boost. For example, to boost a signal at 100 Hz, set XOV to 400 Hz (This setting works well for classical music). XOV works best around 400 for boosting low frequencies, and around 1.5 kHz for cutting low frequencies.

SIZ (Size)

SIZ sets the rate of buildup of diffusion after the initial period (which is controlled by DIF). It also acts as a Host control for RTM and SPR. The SIZ control changes a reverb sound from very large to very small. Generally, you should set the SIZ control to approximate the size of the acoustic space you are trying to create, before adjusting anything else. The size in meters is roughly equal to the longest dimension of the space. Moving SIZ while a signal is present may cause audible transients on critical material.

The apparent size of the space created is actually a combination of the settings of the SIZ, SHP, and SPR controls. Small acoustic spaces are characterized by a rapid buildup of diffusion. However, both small and large spaces frequently have an uneven buildup of initial reverberation. This uneven buildup is controlled by the SPR and SHP controls.

TDC (Reverb Treble Cutoff)

TDC sets the frequency above which sounds decay at a progressively faster rate. When set relatively low, it gives a darker tone to the reverberation, simulating the effect of air absorption in a real hall. TDC also helps keep the ambience generated by the program from muddying the direct sound.

PDLY* (Pre-Delay)

PDLY adjusts an additional time delay between the input of signal and the onset of reverberation. The control is not intended to mimic the time delays in natural spaces. In real rooms the build-up of reverberation is gradual, and the initial time gap is usually relatively short. Natural spaces are best emulated by setting SHP at a middle value and adjusting SPR for the desired initial reverb envelope.

Additional delay added with the PDLY control can increase the initial time gap slightly, emulating a situation where reverberant pick-up microphones are located much further from the source than the main microphones. If more than

about 30ms of pre-delay is added, this additional delay can add clarity with some music, but it can also sound unnatural. Large pre-delays can be useful for slap-echo effects on vocal tracks.

* A quick "double-click" on the slider button will allow you to control this delay with more resolution. To exit this fine control mode, double-click on the button again.

Chamber Page Two

RAN (Randomization) RAN sets the amount of randomization within the reverb process. Acoustically it is similar to the Spin control in Random Hall.

DIF (Diffusion) DIF controls the degree to which initial echo density increases over time. High settings of DIF result in high initial buildup of echo density; low settings cause low initial buildup. Echo density is also affected by SIZ; smaller spaces will sound denser. To enhance percussion, use high settings of DIF. For clearer, more natural vocals, mixes, and music, use low or moderate settings.

SHP (Shape) SHP and SPR work together to control the overall ambience of the reverberation created by the 300L. SHP determines the contour of the reverberation envelope. With SHP all the way down, reverberation builds explosively, and decays quickly.

As SHP is advanced, reverberation builds up more slowly and sustains for the time set by SPD. With SHP in the middle, the buildup and sustain of the reverberation envelope emulates a large concert hall (assuming that SPR is at least halfway up, and that SIZ is suitably large—30 meters or larger.)

SPR (Spread) SPR works together with SHP to control the duration of the initial ambience created by the 300L. Low SPR settings result in a rapid onset of reverberation at the beginning of the envelope, with little or no sustain. Higher settings spread out both the buildup and sustain.

LNK (Link) When LNK is set, the reverb time and spread values scale linearly as the SIZ control is varied. For some special effects, RTM and SPR can be unlinked.

Mono Pitch Shift

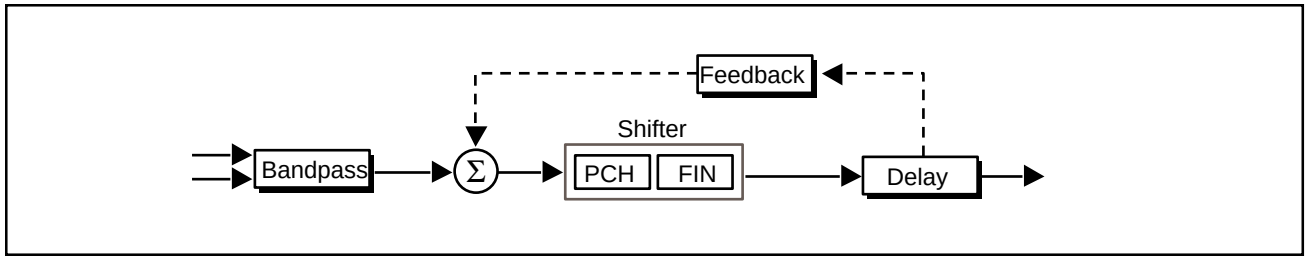
General Description

The Mono Pitch Shift Algorithm has several useful effects, including delay, feedback, and glide. The pitch shifter in the 300L includes a pitch detection feature which automatically adjusts the period of the splices to match the pitch of incoming signals. This feature makes the splicing intelligent, and greatly reduces the artifacts associated with pitch shift. It takes about 40 ms for the pitch detector to obtain an optimal pitch value. Setting the DLY control to this value will give the smoothest pitch shift. Shorter values can be used for special effects, or when extra delay cannot be tolerated.

There are two interacting controls for pitch described below: Pitch Interval, and Fine Pitch. Adjusting any pitch control activates a display that shows the musical interval, and any fine adjustment in cents.

Mono Pitch Shift Parameters

PAGE ONE					
PCH	**FIN**	**DLY**	**FBK**	**-**	**BNPS**
-2OCT TO MAJ7+96¢		0-510MS	NONE-98%, MAX	-	OFF/ON



Mono Pitch Shift Page One

PCH

PCH adjusts pitch interval. The exact tuning can be altered by FIN, and the exact pitch shift in intervals and cents is displayed. FIN must be set to the exact middle of its range if perfect pitch intervals are to be obtained. Fine pitch is shown by the number of cents added to, or subtracted from, the semitone intervals. Remember that PCH will produce exact intervals only if FIN is centered.

FIN

FIN adjusts pitch continuously over a range of a few hundred cents, and is additive or subtractive to the PCH control.

DLY

DLY adjusts the length of a delay line from zero to 510ms in 2ms steps.Optimal pitch shift occurs when DLY is about 40ms.

FBK

FBK controls the amount of positive feedback from the output of the delay line to the input of the pitch shifter. The control is adjustable from 0 to ±99%. Some very useful arpeggiated effects can be obtained by combining pitch shift, delay, and feedback.

BNPS

BPS is a band-pass filter which rolls off the frequency responce of the audio before the splicing algorithm. The -3dB point is 100 Hz. The purpose of the band-pass filter is to give the pitch shifter *less* information than it actually needs to decide when to make the splice. Typically, this will further improve the performance of the pitch shifter.

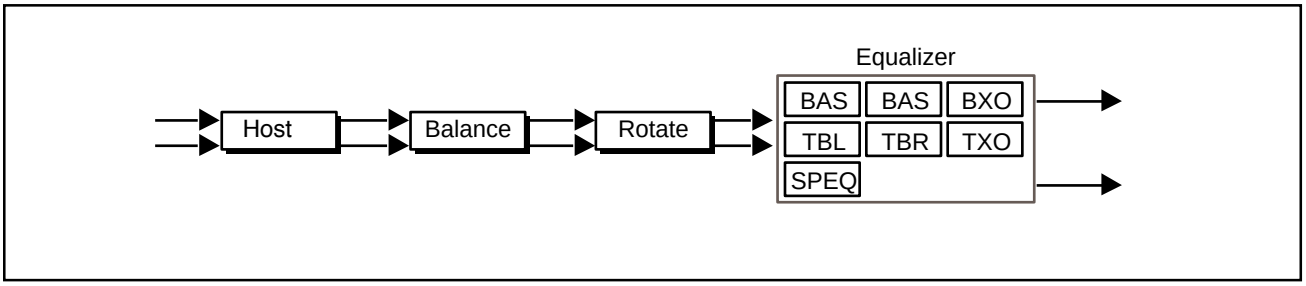
Small Stereo Adjust

General Description

The Small Stereo Adjust algorithm is a scaled-down version of Stereo Adjust with some of the specialized features omitted. It is designed to be put in Cascade Setups ahead of PONS or Compressors.

Small Stereo Adjust Parameters

MST	**BAL**	**BAS**	**BAS**	**BXO**	**SPEQ**
OFF, -72.05DB TO +12DB	L+3 TO R+3	CUT, -18DB - +6DB	CUT, -18DB - +6DB	0.1-26.5KHZ	CUT, -6.00 TO +6.00DB
PAGE TWO					
TXO	**TBL**	**TBR**	**ROT**		
0.1-26.5KHZ	CUT, -18DB - +6DB	CUT, -18DB - +6DB	L+3 TO R+3		



Stereo Adjustments Page One

MST (Host Fader)

MST is a stereo level control, with both channels equally attenuated or boosted. From -12 to +12dB the fader moves in .25 dB increments. Below -12dB it moves in .50 dB increments. Below -60dB the calibration comes in larger steps, finally dropping to zero output at -72dB.

BAL (Balance)

BAL implements a sine/cosine balance adjustment. Balance is smoothly adjusted over a wide range, with excellent resolution in the critical area around zero. The display indicates the actual channel gains as the control is varied.

BAS (EQ Shelving)

These are 6dB/octave shelving EQ controls with a range of +6 dB boost and -18dB cut. They move in .50 dB steps from +6 to -6 dB. The crossover point is adjusted with TXO.

BXO (Bass Crossover)

BXO sets the crossover point for the BAS controls. When these are set to full cut, the level is -3 dB at the frequency set with BXO.

SPEQ (Spatial EQ)

SPEQ sets the amount of a crossfeed between channels. The signal first goes through a 6 dB/octave low-pass filter whose frequency is set with BXO. When SPEQ is set positive (above 0) the crossfeed has a negative sign. When SPEQ is set negative (below 0), the crossfeed has a positive sign. When the control is set to either maximum or minimum, the gain in the crossfeed circuit is unity.

The result of this control is to change the separation of low frequency stereo signals. When the control is raised, low frequencies in the sum (mono) channel are reduced, and low frequencies in the difference (stereo) channel are raised. With the control at maximum, low frequency mono signals are completely removed. This represents an extreme setting which should seldom be needed in practice.

With material which has stereo bass information, or which contains some reverberation, the effect of raising SPEQ is to increase the sense of spaciousness and depth of the sound. It is particularly useful on material recorded with panpots, or coincident and semi-coincident microphone technique.

When most of the bass in a recording is in the sum (mono) channel, raising SPEQ may reduce the bass level. This effect can be compensated for by raising the overall bass level with the BAS controls. Since both controls use the same BXO setting, this compensation will be quite accurate as long as SPEQ is set to less than 3 dB boost.

Small stereo Adjust Page Two

TXO (Independent Treble Crossover)

TXO sets the crossover point for TBL and TBR. When either is set to full cut, the level is -3 dB at the frequency set with TXO.

TBL, TBR (Left and Right Treble Boost/Cut)

These controls allow independent adjustment of left and right treble.

ROT (Rotate)

ROT is similar to BAL, but it treats stereo information somewhat differently. Any signal panned to the center (mono) will be treated by ROT exactly as it would be treated by BAL. However, if a signal is panned full right and the control is moved toward the right, instead of simply being attenuated (as BAL would do) the right channel is inverted in phase and added to the left channel. A stereo image appears to rotate when this control is used. Ambient information is preserved and both channels appear to retain equal loudness.

If stereo material is recorded with a coincident pair of figure-of-eight microphones, moving the ROT slider is exactly equivalent to rotating the microphone pair. Other microphone arrays and multimicrophone setups do not rotate perfectly, but using this control is frequently preferable to simply adjusting balance. The display shows the actual channel gains for a continually panned source.

Compressor

General Description

The Compressor algorithm is a true digital compressor which will run in either Dual Mono or Cascade Setups. In Dual Mono Setups, it configures to mono in mono out; in Cascade Setups it configures as a true stereo effect. The compressor can be described as an upwards averaging compressor. Digital compressors, like analog compressors, decrease audio above a given threshold. Unlike analog compressors, they increase gain below the threshold. The result from either analog or digital compression is exactly the same — less dynamic range.

As shown in the following diagram, the audio path takes two routes. One path goes through a predelay mechanism which delays the audio a maximum of 48 ms. The other path sends control information (dependent on the settings of slope, threshold, attack and release) to “digital VCA’s” labeled MAX COMP GAIN and EXP GAIN. As the signal crosses the threshold point, both Compressor Gain and Expansion Gain vary constantly. Compressor Gain determines the maximum amount of gain increase below the threshold; Expansion Gain determines the maximum amount of gain attenuation below the threshold. Note, there are separate thresholds for compression and expansion.

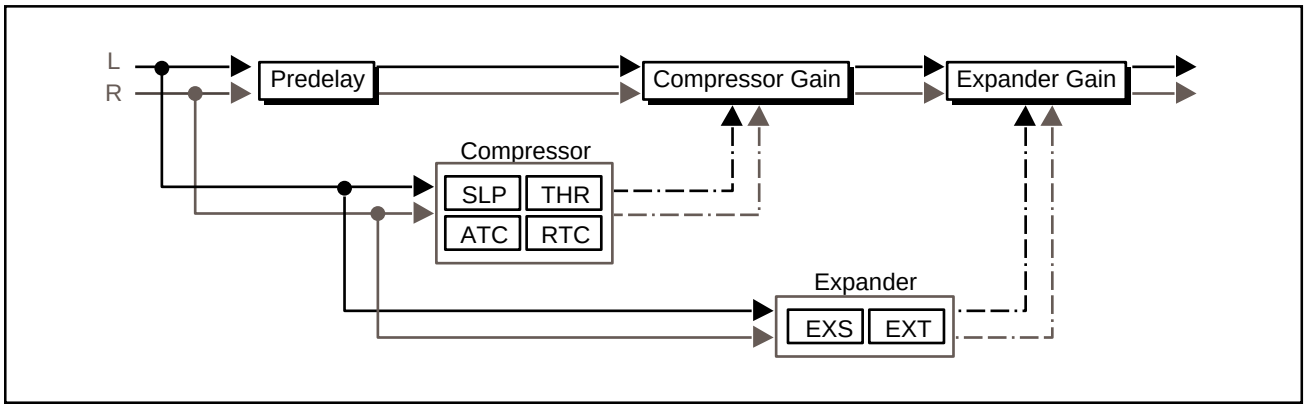
Generally, digital compression requires lower threshold settings than analog compression. The reason for this is that there is no such thing as headroom in a digital system — dBfs (Digital Full scale [0VU]) is the maximum level audio. Audio dynamics below full scale, however, can be manipulated and modified.

The whole purpose of a digital compressor is to maintain peaks while compressing lower level audio signals upwards. If you think about it in terms of the most significant and least significant bits, you would never want to reduce the most significant bits — you want to increase the least sigificant bits.

Adding some pre-delay gives the control mechanism time to react before the audio reaches the digital VCA. Of course, the more predelay you add, the more “out of sync” the audio will become. Attack constants should be kept to short values (7,15, or 30ms). A good starting point for release time is 91 or 114 ms.

Compressor Parameters

PAGE ONE					
THR	**SLP**	**GAIN**	**ATC**	**RTC**	**DLY**
0 to -40DB	1.0-99.99:1	0 to +24DB	7-960MS	16-4000MS	0-48MS
PAGE TWO					
EXT	**EXS**	**EXG**			
0 to -70DB	1.0-99.99:1	0 to -24DB			



Compressor Page One

THR (Threshold) THR sets the level at which compression starts.

SLP (Slope) SLP controls the slope of the gain reduction curve or the ratio of input level versus output level.

GAIN GAIN adjusts the gain of low level signals (below the compression threshold).

ATC (Attack Time Constant) ATC adjusts the attack time constant.

RTC (Release Time Constant) RTC allows adjustment of the release time constant.

DLY (Look Ahead Delay) DLY sets the predelay of the audio before the digital VCA.

Compressor Page Two

EXT sets the threshold at which the expander starts to work. **EXT (Expansion Threshold)**

EXS controls the slope of the expander circuit. **EXS (Expansion Slope)**

EXG sets the amount of negative gain. **EXG (Expansion Gain)**

PONS

General Description

Dither is a low-level pseudo-random signal which is added to digital audio to reduce quantization noise, in effect, by replacing it with a "nicer sounding" noise. It is possible to filter the quantization noise in such a way that almost all of the noise within the frequency range where human hearing is most acute is shifted to higher frequencies. This is called psychoacoustically optimized noise shaping (PONS) because it takes advantage of the variations in the ear's sensitivity to noise within the 20 Hz - 20 kHz range.

PONS Parameters

PAGE ONE	
DITH	**GAIN**
OFF/ON	0-254

PONS Page One

DITH allows you to turn the PONS dither function on or off. If set to OFF, dither noise is still present, but without noise shaping. **DITH (Dither)**

This control allows you to vary the amount of dither gain (with PONS on or off) added to the signal. **GAIN (Dither Gain)**

5

The Presets

The Setup Presets

The 300L is shipped with 150 Setup presets (100 Single Setups, and 25 each of the two split setup types), as well as 50 setup registers for storing your modified Setups.

Single Setup (and Effect) Presets

Single Effects are only available in Single-type Setups. Therefore, the descriptions (and the names) of the Setup and Effect presets are identical.

Single Setup Presets

Setup#	Setup Name	SoftSlider	Effect: Bank Program
P1	LARGE HALL	DECAY	MA: B1P1 LARGE HALL
P2	MEDIUM HALL	DECAY	MA: B1P2 MEDIUM HALL
P3	SMALL HALL	DECAY	MA: B1P3 SMALL HAL
P4	SYNTH HALL	LIVENESS	MA: B1P4 SYNTH HALL
P5	DANCE HALL	LIVENESS	MA: B1P5 DANCE HALL
P6	SOLO HALL	DECAY	MA: B1P6 SOLO HALL
P7	CHURCH	DEPTH	MA: B1P7 CHURCH
P8	GOTHIC HALL	DEPTH	MA: B1P8 GOTHIC HALL
P9	GATED HALL	SIZE	MA: B1P9 GATED HALL
P10	DEEP END	HOW DEEP?	MA: B1P0 DEEP END
P11	ROOMS	SIZES	MA: B2P1 ROOMS
P12	REHURSAL ROOM	PADDING	MA: B2P2 REHURSALROOM
P13	STUDIO A	LIVENESS	MA: B2P3 STUDIO A
P14	STUDIO B	LIVENESS	MA: B2P4 STUDIO B
P15	STUDIO C	LIVENESS	MA: B2P5 STUDIO C
P16	LARGE ROOM	LIVENESS	MA: B2P6 LARGE ROOM
P17	SMALL ROOM	LIVENESS	MA: B2P7 SMALL ROOM
P18	BEDROOM	REFLEXIONS	MA: B2P8 BEDROOM
P19	W.C.	DECAY	MA: B2P9 W.C.
P20	INVERSE ROOM	DURATION	MA: B2P0 INVERSE ROOM
P21	CHAMBER	DECAY	MA: B3P1 CHAMBER
P22	BRICK WALL	DIFFUSION	MA: B3P2 BRICK WAL
P23	OIL DRUM	TUNING	MA: B3P3 OIL DRUM
P24	WIDE CHAMBER	DECAY	MA: B3P4 WIDE CHAMBER
P25	FAT CHAMBER	DECAY	MA: B3P5 FAT CHAMBER
P26	CHUNKY	CHUNK	MA: B3P6 CHUNKY
P27	HOMEROOM	DECAY	MA: B3P7 HOMEROOM
P28	OPEN WIDE	DECAY	MA: B3P8 OPEN WIDE
P29	WET SUIT	DECAY	MA: B3P9 WET SUIT
P30	BASEMENT	LIVENESS	MA: B3P0 BASEMENT
P31	AMBIENCE	SIZES	MA: B4P1 AMBIENCE
P32	MARBLE FOYER	SLAP LEVEL	MA: B4P2 MARBLE FOYER
P33	LARGE AMB.	HIGH CUT	MA: B4P3 LARGE AMB.
P34	MEDIUM AMB.	HIGH CUT	MA: B4P4 MEDIUM AMB.
P35	SMALL AMB.	HIGH CUT	MA: B4P5 SMALL AMB.
P36	V SMALL AMB.	HIGH CUT	MA: B4P6 V SMALL AMB.
P37	HEAVY AMB.	REVERB LVL	MA: B4P7 HEAVY AMB.
P38	BRIGHT AMB.	REVERB LVL	MA: B4P8 BRIGHT AMB.
P39	SMOOTH AMB.	HOW SMOOTH?	MA: B4P9 SMOOTH AMB.
P40	WAVE AMB.	HOW LONG?	MA:B4P0 WAVE AMB.
P41	IN A ROOM	HOW BIG?	MA: B5P1 IN A ROOM
P42	STAIRWELL	# OF FLOORS	MA:B5P2 STAIRWELL
P43	CAR INTERIOR	WINDOW DN/UP	MA:B5P3 CAR INTERIOR
P44	MEETING ROOM	LIVENESS	MA: B5P4 MEETING ROOM
P45	LIVING ROOM	LIVENESS	MA: B5P5 LIVING ROOM
P46	POWDER ROOM	DECAY	MA: B5P6 POWDER ROOM
P47	FULL CLOSET	HOW FULL?	MA: B5P7 FULL CLOSET
P48	PODIUM	DISTANCE	MA: B5P8 PODIUM
P49	STUDIO D	HIGH CUT	MA: B5P9 STUDIO D
P50	OFFICE	LIVENESS	MA: B5P0 OFFICE
P51	LIVEDRUMROOM	IMPACT	MA: B6P1 LIVEDRUMROOM
P52	ON STAGE	LIVENESS	MA: B6P2 ONSTAGE
P53	GUITAR CAVE	DECAY	MA: B6P3 GUITAR CAVE

Single Setup Presets cont'd.

Setup#	Setup Name	SoftSlider	Effect: Bank Program
P54	DRUM CAVE	DECAY	MA: B6P4 DRUM CAVE
P55	BALLROOM	SIZE / SHAPE	MA: B6P5 BALLROOM
P56	SCORE STAGE	LIVENESS	MA: B6P6 SCORE STAGE
P57	DRUM GATE	DURATION	MA: B6P7 DRUM GATE
P58	LE GATE!	HIGH CUT	MA: B6P8 LE GATE!
P59	THIN LIZZY	SIZZLE	MA: B6P9 THIN LIZZY
P60	BAND IN ROOM	LIVENESS	MA: B6P0 BAND IN ROOM
P61	SPACE & EKOZ	BLEND	MA: B7P1 SPACE & EKOZ
P62	VOCAL STAGE	DECAY	MA: B7P2 VOCAL STAGE
P63	WAVE O WALLS	DECAY	MA: B7P3 WAVE O WALLS
P64	BRAND “X”	DECAY	MA: B7P4 BRAND “X”
P65	HANGAR	HIGH CUT	MA: B7P5 HANGER
P66	EARLY REFLEX	SPACING	MA: B7P6 EARLY REFLEX
P67	STAGE SLAP	PREDELAY	MA: B7P7 STAGE SLAP
P68	HUGE SPACE	DECAY LEVEL	MA: B7P8 HUGE SPACE
P69	VOCAL SHEEN	SPACE	MA: B7P9 VOCAL SHEEN
P70	ALMOST VERB	PREDELAY	MA: B7P0 ALMOST VERB
P71	RICH PLATE	DECAY	MA: B8P1 RICH PLATE
P72	GLOSSY PLATE	DECAY	MA: B8P2 GLOSSY PLATE
P73	WARM PLATE	DECAY	MA: B8P3 WARM PLATE
P74	PERC PLATE	SIZE	MA: B8P4 PERC PLATE
P75	CONTEM-PLATE	DECAY	MA: B8P5 CONTEM-PLATE
P76	EKO PLATE	EKO DELAY	MA: B8P6 EKO PLATE
P77	5K HALL	DECAY	MA: B8P7 5K HALL
P78	ROUND PLATE	DECAY	MA: B8P8 ROUND PLATE
P79	SALAD PLATE	DECAY	MA: B8P9 SALAD PLATE
P80	VOX PLATE	DECAY	MA: B8P0 VOX PLATE
P81	STEREOADJUST	LEVEL	MA: B9P1 STEREO ADJUST
P82	STEREO DELAY	DELAY	MA: B9P2 STEREO DELAY
P83	3 FRAME DLY	FINE DELAY	MA: B9P3 3 FRAME DLY
P84	4 FRAME DLY	FINE DELAY	MA: B9P4 4 FRAME DLY
P85	PHASE INVERT	PHASE	MA: B9P5 PHASE INVERT
P86	MS DECODE	MATRIX M/S	MA: B9P6 MS DECODE
P87	TELEPHONE	LEVEL	MA: B9P7 TELEPHONE
P88	MULTI CANYON	DEPTH	MA: B9P8 MULTI CANYON
P89	LFO PANNER	LFO SPEED	MA: B9P9 LFO PANNER
P90	THIN EKOZ	FEEDBACK	MA: B9P0 THIN EKOZ
P91	STEREO SHIFT	SHIFT DN/UP	MA: B0P1 STEREO SHIFT
P92	OCTAVE DOWN	FINE PITCH	MA: B0P2 OCTAVE DOWN
P93	VOX CHORUS	SPLIT SHIFT	MA: B0P3 VOX CHORUS
P94	POLE FLANGE	FEEDBACK	MA: B0P4 POLE FLANGE
P95	BULKIE ROLL	DELAY	MA: B0P5 BULKIE ROLL
P96	MR. BIG	FINE PITCH	MA: B0P6 MR. BIG
P97	ZORCH!	FEEDBACK	MA: B0P7 ZORCH!
P98	GOING, GOING	FEEDBACK	MA: B0P8 GOING, GOING
P99	GTR CHORUS	FINE PITCH	MA: B0P9 GTR CHORUS
P100	FADE DOWN	FINE PITCH	MA: B0P0 FADE DOWN

Single Setups (and Programs)

P1 LARGE HALL **SoftSlider: DECAY 64**
Used as a great standard reference point. The hall size is big, with a gentle bloom in the reverberation envelope. The first set of pre-echoes located on page 4, are set to 14 and 20ms, but the levels are set to OFF. Set these levels to taste if you want to add some initial reflections.

P2 MEDIUM HALL **SoftSlider: DECAY 64**
Similar to Large Hall, but the size is not as big (29.3) and the reverb time is proportionately shorter. The same arrangement exists for the pre-echoes.

P3 SMALL HALL **SoftSlider: DECAY 64**
An even smaller version, a bit denser — good for general reverb fill.

P4 SYNTH HALL **SoftSlider: LIVENESS 50**
A very diffuse, medium-sized room with a long RT value. The SoftSlider advances Spread, Delay 1 Level, Delay 2 Level, and Hi-Cut Rolloff.

P5 DANCE HALL **SoftSlider: LIVENESS 50**
Medium bright hall. 1.4 seconds of reverb time. Super on “backing” vox. Great for the whole band. The SoftSlider is patched to Spread, HiCut, PreDelay.

P6 SOLO HALL **SoftSlider: DECAY 64**
A medium size hall with more impact and less Diffusion. Great on solo voice or instrument.

P7 CHURCH **SoftSlider: DEPTH 64**
This preset is big and spread out. There are 2 close in pre-echoes and 2 longer and softer delays which have low recirculation added. The SoftSlider controls Spread, Treble Decay, and the delay times for Pre-Echoes 3 and 4.

P8 GOTHIC HALL **SoftSlider: DEPTH 50**
Suitably large space (29.8M) filtered medium bright, as in a space made of rock and stone. A hefty sound is an understatement! Smaller sizes make beefy dense spaces. The SoftSlider controls Mid Rt, Shape and Spread.

P9 GATED HALL **SoftSlider: SIZE 64**
If one existed, this might be it. Very diffused, strong, and abrupt.

P10 DEEP END **SoftSlider: HOW DEEP? 64**
This preset actually goes from the Deep End to Deeper. The SoftSlider advances Size, Delay 3 time and Delay 4 time.

P11 ROOMS **SoftSlider: SIZES 64**
This preset links Room Size to the SoftSlider. As you advance the SoftSlider, Room Size will go from its initial value of 17.5M up to24.8M and down to 9.6M. These rooms are diffuse and very articulate sounding. Lower values of SIZE tend to be more resonant sounding. Good for dialog reads.

P12 REHURSALROOM **SoftSlider: PADDING 64**
This is a dense, brashy-sounding space with the listener in the back of the room. Rolling off the high-cut filter will put the carpeting on the walls as you advance the SoftSlider. Room Size is set to 15.2M, so the sound is very tight. Good on vocals and mix fill.

P13 STUDIO “A” **SoftSlider: LIVENESS 50**
This preset sounds like the “big” rooms ($125/hour). The SoftSlider is patched to Delay Levels 3 and 4, as well as to the Rolloff and Treble Decay parameters. Advancing the slider increases all of these parameters, making the studio brighter and more reflective. Very stereo sounding!

P14 STUDIO “B” **SoftSlider: LIVENESS 60**
A smaller Studio area than Studio A. The SoftSlider is patched to Treble Decay, Spread, and Hi Cut Rolloff. Advancing the slider makes the Studio more reflective and live.

P15 STUDIO “C” **SoftSlider: LIVENESS 50**
Cut your dialog and scratch vox in here. The SoftSlider interacts similar to the “B” room making things more reflective.

P16 LARGE ROOM **SoftSlider: LIVENESS 64**
Characteristic size (19.1M) with a fast randomization. The SoftSlider modifies HiCut, Spread and Shape without changing the Room Size. Very natural sounding

P17 SMALL ROOM **SoftSlider: LIVENESS 50**
Short, quick room which is great for adding resonance to a voice. Like Large Room the Liveness changes without changing the Room Size.

P18 BEDROOM **SoftSlider: REFLEXIONS 64**
Short and brighter than Small Room. The SoftSlider turns up all 4 pre-echoes and increases the stereo nature of the sound.

P19 W.C. **SoftSlider: DECAY 64**
Stand up in the water closet. Bright, reflective, and non-diffuse. SoftSlider controls the decay.

P20 INVERSE ROOM **SoftSlider: DURATION 60**
Let's face it - this ain't real. The SoftSlider changes the Room Size and delay times for pre-echoes 3 and 4.

P21 CHAMBER **SoftSlider: DECAY 64**
Imagine a chamber with a reflective plaster finish. The SoftSlider is patched to the Mid Rt parameter. Advancing the slider increases the decay value.

P22 BRICK WALL **SoftSlider: DIFFUSION 65**
This preset is wide and abrupt sounding, gated in nature The SoftSlider changes the diffusion characteristics.

P23 OIL DRUM **SoftSlider: TUNING 64**
Round and booooomy. All of the pre-echoes are utilized to present strong reflections from the original source. The SoftSlider changes the Size and Spread parameters.

P24 WIDE CHAMBER **SoftSlider: DECAY 64**
Similar size (23.6M) with a "wider" shape and spread. Pre-echoes are added for wall strength. A good starting point for pop sounds. The SoftSlider modifies Mid Rt.

P25 FAT CHAMBER **SoftSlider: DECAY 64**
A medium space (22.5M) with a mildly exaggerated bottom end. A bigger envelope with a short RT which can be modified with the SoftSlider.

P26 CHUNKY **SoftSlider: CHUNK 50**
A little bit bigger and longer RT — great on "chunky" guitars. The SoftSlider changes the Room Size and crossover point to "beef up the timbre of the reverb envelope.

P27 HOMEROOM **SoftSlider: DECAY 50**
Small room size, bright with little diffusion. A pair of pre-echoes helps to streghten the initial attack. The SoftSlider is patched to Mid Rt decay.

P28 OPEN WIDE **SoftSlider: DECAY 64**
Brick Wall's big sister, with a longer RT and a pair of pre-echoes for impact. The SoftSlider maps to Mid Rt decay.

P29 WETSUIT **SoftSlider: DECAY 64**
Great for when you want to go surfing in delay effects. The SoftSlider controls Mid Rt decay and Delay 3 and 4 Feedback levels.

P30 BASEMENT **SoftSlider: LIVENESS 50**
Short, boomy and bright. The SoftSlider will modify the liveness.

P31 AMBIENCE **SoftSlider: SIZES 64**
A great sounding starting point. Wonderful for soloists. The SoftSlider controls Room size and randomization content.

P32 MARBLE FOYER **SoftSlider: SLAP LEVEL 64**
A very realistic hotel or apartment foyer area. TheSoftSlider changes the Mix and Dry Delay proportions to create a single hard reflection after the onset of the main reverb effect.

P33 LARGE AMB. **SoftSlider: HIGH CUT 60**
Standard ambience preset. Great for setting the soloist into a natural-sounding space. Use the SoftSlider to adjust the rolloff characteristics of the sound.

P34 MEDIUM AMB. **SoftSlider: HIGH CUT 60**
Similar characteristics, but smaller sound. SoftSlider contols the rolloff of high frequencies.

P35 SMALL AMB. SoftSlider: HIGH CUT 60
Smaller still, but a little brighter. The SoftSlider adjusts the brightness.

P36 V SMALL AMB. SoftSlider: HIGH CUT 64
The smallest - room size is set to 6.2M.

P37 HEAVY AMB. SoftSlider: REVERB LVL 90
A medium size (23.1M) with more than a moderate amount of reverb tail. Very diffused — works great on anything. The SoftSlider is conncted to ReverbLevel.

P38 BRIGHT AMB. SoftSlider: REVERB LVL 64
Add some of this to short staccato sounds. The SoftSlider modifies the Reverb Level output.

P39 SMOOTH AMB. SoftSlider: HOW SMOOTH? 80
Very diffuse and natural-sounding. Good sounding room environment for dialog work

P40 WAVE AMB. SoftSlider: HOW LONG? 50
This preset has a longer and louder reverb tail than most other Ambience sounds. The SoftSlider raises the level of the reverb tail making the hole event sound longer. This will add a beautiful space on strings.

P41 IN A ROOM SoftSlider: HOW BIG? 50
Definitely short and abrupt. Very realistic for ADR work. The SoftSlider varies the Room Size between 6 and 19 Meters.

P42 STAIRWELL SoftSlider: #OF FLOORS 60
About 14 stories up and very “fluttery” sounding. Moving the SoftSlider from its preset value of 60 will move you higher or lower into the concrete building.

P43 CAR INTERIOR SoftSlider: WINDOW UP/DN 56
Not much explanation nessessary here, except that the SoftSlider is attached to Spin, which “waffles” the audio around.

P44 MEETING ROOM SoftSlider: LIVENESS 64
Hotel-like. Predelay is set to 25.2ms – the wet mix sounds like the microphone is towards the back of the room. The SoftSlider modifies Size, Rolloff, and Diffusion.

P45 LIVING ROOM SoftSlider: LIVENESS 50
A little bigger room with a faster attack. The RT is shorter, but higher in amplitude than in Meeting Room.

P46 POWDER ROOM SoftSlider: DECAY 64
Complete with mirrors. Use the SoftSlider to control the Reverb time in the room. Use a pre-fader and you’re there.

P47 FULL CLOSET SoftSlider: HOW FULL? 64
Dull and crammed full of clothes. The SoftSlider modifies the Size and High Frequency rolloff. As in Powder Room, use a pre-fader send and utilize only the returns in the mix.

P48 PODIUM SoftSlider: DISTANCE 50
Picture a person at a podium making a speech. The SoftSlider will add more or less pre-delay Mix to taste to create speech space.

P49 STUDIO “D” SoftSlider: HIGH CUT 60
Very small carpeted “Announcer Booth”.

P50 OFFICE SoftSlider: LIVENESS 62
A little bigger than Studio D. The SoftSlider controls Size, HF Rolloff and Diffusion to add more or less liveness to the sound source.

P51 LIVEDRUMROOM SoftSlider: IMPACT 70
Bright and tight. The SoftSlider is patched to the Shape parameter so that advancing the slider decreases the initial impact of the drum hits. Great for the entire kit.

P52 ON STAGE SoftSlider: LIVENESS 50
This general-fill preset puts you right on stage in the middle of the it all. Advancing the SoftSlider will cause the sound to be more reflective and livelier sounding.

P53 GUITAR CAVE **SoftSlider: DECAY 64**
Solo time with a vengeance. Long predelay with recirculating pre-echoes. Lots of left-right bounce. The SoftSlider has a connection to the Mid Rt parameter.

P54 DRUM CAVE **SoftSlider: DECAY 65**
Cave for drums. Medium sized with a big open bloom. Use the SoftSlider to vary the Mid Rt to suit the tempo of the music.

P55 BALLROOM **SoftSlider: SIZE/SHAPE 60**
Big space with a short RT. Add to your horn track. The SoftSlider will dramatically change the character of the envelope of the reverb.

P56 SCORE STAGE **SoftSlider: LIVENESS 60**
Makes use of a medium size (24.2 meter) with a high amount of diffusion. The SoftSlider controls both the high frequency response as well as the diffusion characteristics. Great on string parts or full orchestra.

P57 DRUM GATE **SoftSlider: DURATION 62**
Loud and dense. Use the SoftSlider to match duration of the gated reverb sound to the tempo of the music. Boom-boom on drums.

P58 LE GATE!!! **SoftSlider: HIGH CUT 64**
Loud and dense. Use the SoftSlider to control the high frequency content of this gated-sounding reverb effect.

P59 THIN LIZZY **SoftSlider: SIZZLE 67**
Medium small size (16.9 Meters) and really bright and long. The SoftSlider controls the treble decay as well as the crossover parameter creating some real timbre magic. Great on cheap cymbals and all guitars.

P60 BAND IN ROOM **SoftSlider: LIVENESS 54**
As the name implies, this preset can emulate a good-sized space with a highly reflective echo content. The SoftSlider will modify the texture. Great to fill in a groove.

P61 SPACE & EKOZ **SoftSlider: BLEND 60**
Combines a little reverb and some discrete echoes. The SoftSlider grabs control of the Room Size and Reverb Level, as well as the levels for Delays 3 and 4. Moving the SoftSlider will create a distinction between the two. Use the SoftSlider between 0-25 for good fill on acoustic rock and roll instruments. SoftSlider range 80-100 is real nice on slow ballad vocals.

P62 VOCAL STAGE **SoftSlider: DECAY 36**
Bright and medium diffused with RT is stopped down shorter (.69 seconds).

P63 WAVE O WALLS **SoftSlider: DECAY 56**
This large-sounding effect preset has emphasized randomization which gives pure-toned instruments a wobbly tonality. The SoftSlider is patched to the Mid Rt decay time.

P64 BRAND 'X' **SoftSlider: DECAY 54**
A little bit of this, a little bit of that and you've got Brand 'X'. The SoftSlider is mapped to the Mid Rt decay parameter. Not bad on anything.

P65 HANGAR **SoftSlider: HIGH CUT 60**
Big, wide, open, enclosed space (38.8M). Very diffuse. Akin to a hangar with two 747's in it.

P66 EARLY REFLEX **SoftSlider: SPACING 50**
Moderately diffuse but very bright — almost a gated sound. A nice short ambience which never gets in the way of the effect. The SoftSlider controls the Room Size modifying the spacing of the early reflections.

P67 STAGE SLAP **SoftSlider: PREDELAY 60**
Use the SoftSlider to streghthen the slap off the back wall and open up the acoustic space. Great on voice and solo.

P68 HUGE SPACE **SoftSlider: DECAY LEVEL 50**
This preset should be used with care, especially if you bring up the reverb level with the SoftSlider. BIG wash on anything!! Accent snare hits.

P69 VOCAL SHEEN **SoftSlider: SPACE 50**
A great “dry addition” to rock and roll vox tracks. The SoftSlider controls Room Size, Reverb time, and Reverb Level. Advance the SoftSlider for slower ballad type tunes.

P70 ALMOST VERB **SoftSlider: PREDELAY 50**
As the name suggests, there’s a fine line here. Somewhat lacking in high frequency content with the SoftSlider mapped to the predelay parameter.

P71 RICH PLATE **SoftSlider: DECAY 48**
An old standard, bright and diffuse. Advancing the SoftSlider controls the reverb time.

P72 GLOSSY PLATE **SoftSlider: DECAY 75**
This preset shines a little differently. Some close in pre-echoes give a strong impact to the original source. Great for stereo horn sources.

P73 WARM PLATE **SoftSlider: DECAY 60**
Not your average bright plate — rather a slightly dull version which will work very well on orchestral tracks, adding point and definition.

P74 PERC PLATE **SoftSlider: SIZE 64**
For drums and the like. Not bad on piano either. Bright and tight with the SoftSlider controlling the Room Size.

P75 CONTEM-PLATE **SoftSlider: DECAY 65**
Bright and splashy-sounding. Should work well to brighten a track without getting too washy-sounding.

P76 EKO PLATE **SoftSlider: EKO DELAY 66**
Combines a sweet combination of recirculating pre-echoes and bright sounding reverb. The SoftSlider is negatively patched to RTIM and Delays 1 and 2.

P77 5K HALL **SoftSlider: DECAY 64**
This preset takes a little getting used to but has that different texture which helps to punch through a mucky mix. Use the SoftSlider to vary the Mid Rt decay.

P78 ROUND PLATE **SoftSlider: DECAY 55**
Soft, but articulate. The SoftSlider is patched to feedback paths surrounding pre-echoes 1 and 2, which feedback into the reverberator.

P79 SALAD PLATE **SoftSlider: DECAY 65**
Smaller than a dinner plate. Very bright, and somewhat thin. Medium RT.

P80 VOX PLATE **SoftSlider: DECAY 60**
This preset is made for adding a presence to the lead vocal track. Use the SoftSlider to match the decay with the tempo and mood of the music.

P81 STEREOADJUST **SoftSlider: LEVEL 98**
Sets you up to fix audio sources. Null preset with controls for EQ, delays, phase and channel swaps, and DC offset removal. The SoftSlider controls the Digital Host Level parameter.

P82 STEREO DELAY **SoftSlider: DELAY 40**
390 ms of delay with the initial SoftSlider preset value. Straight ahead with no feedback.

P83 3 FRAME DLY **SoftSlider: FINE DELAY 70**
100 ms of delay at both operating frequencies.

P84 4 FRAME DLY **SoftSlider: FINE DELAY 70**
133 ms of delay at both operating frequencies.

P85 PHASE INVERT **SoftSlider: PHASE 64**
The right channel is phase reversed to the left. The SoftSlider is mapped to the Right Channel Flip and Swap. 0-32 is stereo in phase. 33-64 is L-R, 65-96 is R,L (channel swap), and 97-127 -R,L. If you put a mono signal into both the left and right inputs and pan the output returns left and right, you’ll definitely twist your head off as well as matrix L-R to the surround channel. NOT MONO COMPATIBLE

NOTE: This phase-reversed mono signal will decode to the surround channel if run through a surround decoder.

P86 MS DECODE **SoftSlider: MATRIX 64**
Take a 2-channel Mid (left input) Side (right input) recording and this program will properly decode to stereo output. The SoftSlider is mapped to the input balance controlling the mix between the mid and side inputs.

P87 TELEPHONE **SoftSlider: LEVEL 100**
No bottom end....AT ALL. The SoftSlider is mapped to the Digital Level Host. If you push it real hard the audio will distort and ring out.

P88 MULTI CANYON **SoftSlider: DEPTH 60**
This preset combines echoes under the control of the SoftSlider. As you advance the SoftSlider, the delays will get longer.

P89 LFO PANNER **SoftSlider: LFO RATE 64**
This preset attaches the LFO to the Stereo Adjust Balance control. Once again, the LFO Rate determines the speed of the pan. The speed of the LFO is set via the SoftSlider. This preset should be used from a pre-fade send source.

P90 THIN EKOZ **SoftSlider: FEEDBACK 51**
Thin Ekoz filters some of the bottom end of the source signal. The SoftSlider controls the amount of feedback through the delay lines.

P91 STEREO SHIFT **SoftSlider: SHIFT UP/DN 64**
Straight ahead stereo pitch shifting with the SoftSlider attached to the Glide parameter. The stored value of the SoftSlider is 64 which, when decreased to zero, will yield an output 2 octaves down; when all the way up, will give an output 1 octave above unison.

P92 OCTAVE DOWN **SoftSlider: FINE PITCH 64**
Just like the name sez.. The SoftSlider controls the stereo (L/R) Fine Pitch parameter.

P93 VOX CHORUS **SoftSlider: SPLIT PITCH 60**
This preset is configured with different preset values of pitch shift for left and right: down 23 cents on the left and down 43 cents on the right. There are also different delays for the left and right with small amounts of feedback for each. Whip this one on either the lead vocal or BG Vox. The SoftSlider raises and lowers the pitch for each chanel inversely. As one channel goes up, the other goes down.

P94 POLE FLANGE **SoftSlider: FEEDBACK 64**
Similar to a “Barber Pole” type flange. Mix 50/50 between source and returns. The SoftSlider increases the feedback routing of the pitch shifter delay line and gives a more aggressive sound.

P95 BULKIE ROLL **SoftSlider: DELAY 50**
Fluffy-sounding chorus effect. Mode is set to Mono so you can independently pitch left or right. When sent to the 300L pre-fader, the return audio has a slow motion movement around the stereo field. The SoftSlider gives quick access to the delay parameters.

P96 MR. BIG **SoftSlider: FINE PITCH 50**
Down 50 cents for that big Big, Big, BIG voice. The SoftSlider controls the fine pitch.

P97 ZORCH! **SoftSlider: FEEDBACK 60**
Up and down with delays and feedback. Nightmare audio. The SoftSlider controls the amount of feedback through the nightmare.

P98 GOING, GOING **SoftSlider: FEEDBACK 64**
Up, Up, Up....in whole steps. The SoftSlider is patched to the amont of feedback delay, which you adjust to suit your taste.

P99 GUITAR CHORUS **SoftSlider: FINE PITCH 64**
Another independent left/right preset except much stronger amounts of shift between the two channels. Don’t use this on anything pretty, make the nasty... nastier.

P100 FADE DOWN **SoftSlider: FINE PITCH 58**
Feedback increases as level decreases. SoftSlider controls the fine pitch

Split Setup Presets

Split Setups are divided into two types: Dual Mono (numbered 101-125 in Setup Select mode), and Cascade (numbered 126-150 in Setup Select mode). Most Dual Mono Setups have the left input feeding Machine A, and the right input feeding Machine B.

Each Split Setup description is followed by a description of the two effects incorporated in the Setup.

Dual Mono Setup Presets

Setup #	Setup Name	SoftSlider	Mach A Effect	Mach B Effect
P101	DM: REV/REV	INPUT PAN	MA:B13P1 CHAMBER	MB:B13P2 KEY CHAMBER
P102	DM: REV/DLY	INPUT PAN	MA:B11P3 DRUM CHAMBER	MB:B12P8 LFO:FAZE DELAYS
P103	DM: REV/PCH	INPUT PAN	MA:B13P4:GUITAR ROOM	MB:B15P2: GUIT SHIFT
P104	DM: REV/COMP	INPUT PAN	MA:B14P9 PLATE	MB:B16P1 EZ COMP 2:1
P105	DM: DLY/DLY	LFO RATE	MA:B12P3 CHORUS	MB:B12P4 CHORUS+EKOZ
P106	DM: DLY/PCH	DELAY MACH A	MA: B11P1 BASIC DELAY	MB: B15P7 SKY DOWN
P107	DM: DLY/COMP	SPACE MACH A	MA: B11P4 SPACE EKOZ	MB: B16P2 DRUMCOMP3:1
P108	DM: PCH/PCH	INPUT PAN	MA:B15P3 UP SHIFT	MB:B15P8 ECHO DOWN
P109	DM: PCH/COMP	INPUT PAN	MA:B15P6 VOCAL SHIFT	MB:B16P3 VOICE OVER
P110	DM: COMP/COMP	INPUT PAN	MA:B16P5 SMAKO!	MB:B16P5 SMAKO!
P111	DM: SLOW SPIN	LFO RATE	MA:B12P8 LFO:FAZEDLYS	MB:B12P3 CHORUS
P112	DM: WIDEFLANG	LFO RATE	MA:B12P1 OVERTHETOP1	MB:B12P2 OVERTHETOP2
P113	DM: X-TRAFFIC	DELAY MACH B	MA:B12P4 CHORUS+EKOZ	MB:B12P0 SKY DELAYS
P114	DM: GEAR UP	INPUT PAN	MA:B15P3 UP SHIFT	MB:B15P5 EKO SHIFT
P115	DM: TWO ROOMS	INPUT PAN	MA:B13P0 JOE'S GARAGE	MB:B13P8 BASEMENT
P116	DM: TWO HALLS	INPUT PAN	MA:B14P7 RECITAL HALL	MB:B14P1 BIG HALL
P117	DM: DELAYS	DELAY SPACE	MA:B11P2 SLAP ECHO	MB:B11P0 VOX DOUBLER
P118	DM: REVPAN	DECAY TIME	MA:B13P7 "U"CHAMBER	MB:B13P6 "L"CHAMBER
P119	DM: UP&DOWN	DELAY	MA:B15P9 HALFSTEPSUP	MB:B15P0 HALFSTEPSDN
P120	DM: MYGUITAR	INPUT PAN	MA:B15P2 GUIT SHIFT	MB:B12P6 ENV:PEAK
P121	DM: ENVSPOOGE	INPUT PAN	MA:B12P6 ENV:PEAK	MB:B12P7 ENV:PHAZER
P122	DM: FLNG&DLYS	DELAY MACH B	MA:B12P5 NEGATIVEFLNG	MB:B11P4 SPACE EKOZ
P123	DM: DLY DAZE	DELAY	MA:B11P6 3 VOICE DLYS	MB:B11P5 PINGOPONGO
P124	DM: CLUSTERS	DELAY MACH B	MA:B12P4 CHORUS+EKOZ	MB:B11P6 3 VOICE DLYS
P125	DM: 2 FLANGES	INPUT PAN	MA:B12P2 OVERTHETOP2	MB:B15P7 SKY DOWN

P101 DM: REV/REV **SoftSlider INPUT PAN 0**
MA: B13P1 CHAMBER **MB:B13P2 KEY CHAMBER**

This setup utilizes two independent reverbs. The left input feeds Machine A; the right input feeds Machine B. Each can, and should, be used independently. Pan the output of each Machine (at the console) to suit the mix. The SoftSlider is patched to the Setup's balance controls. Advancing the SoftSlider will pan the left input stronger into Mach B and pan the right input stronger into Mach A.

MA: B13P1 CHAMBER

A great general purpose reverb tail. The size is set to 28.1M (the largest value is 64M) so the density is rather tight. As you adjust SIZE, the Rt value will also change. If you want to unlink this natural phoenomena, set LINK to Unlink on page 2.

MB:B13P2 KEY CHAMBER

A nice "bloommy" sounding reverb. Diffusion is set midway, so there is some good articulation at the begining of the reverb envelope. Use this on most keyboards, but those with a strong point may require a bit more Diffusion.

P102 DM: REV/DLY SoftSlider INPUT PAN 0
MA:B11P3 DRUM CHAMBER MB:B12P7 LFO: FAZE DELAYS
REV/DLY utilizes a great sounding mono reverb for kick and snare. Machine B runs Faze Delays, getting its signal from the right input. The LFO in the Setup runs at .24Hz with a triangle waveform. The FDLY parameter in Machine B is patched to this LFO. The SoftSlider is patched to the Setups balance controls. Advancing the SoftSlider will pan the left input stronger into Mach B and pan the right input stronger into Mach A.

MA:B11P3 DRUM CHAMBER
Good starting point for acoustic drums. This preset is slightly larger than the standard chamber, but has less Diffusion. Rt is set to 1.0 second at mid frequencies.

MB:B12P7 LFO:FAZE DELAYS
Faze Dlys makes use of the LFO patched to the Flange Glide Delay(FDLY). The base delays are set in different time domains: one side at 1.9ms with a feedforward gain; the other at 5.6 with a negative feed gain. As the Glide passes over each base delay, the phase of each gain is changed. In between, the output is a mixture of each. A great effect on a ripping guitar solo.

P103 DM: REV/PCH SoftSlider INPUT PAN 0
MA:B13P4: GUITAR ROOM MB:B15P2: GUIT SHIFT
This Dual Mono preset will get you set for your guitar tracks. The LFO is set to 0.24. Increase the rate to increase the pitch glide in the Guitar Shift Effect preset. The SoftSlider is patched to the Setup's balance controls. Advancing the SoftSlider will pan the left input stronger into Mach B and pan the right input stronger into Mach A

MA:B13P4 GUITAR ROOM
This is a big, wide-sounding room for your guitars. For heavy rock stuff, you might consider panning "in" the returns, although in this Setup the Room output is in Mono. The room is a little bottom heavy for additional warmth. Could also work well on vocals.

MB: B15P2 GUITAR SHIFT
This preset offers a medium amount of micropitch shift (-14c), along with a small amount of recirculating predelay. Actually, the glide pitch parameter (GLD) is patched to the LFO running in the Setup. The LFO causes the GLD to glide between -14 and -+7 cents. If you turn off the LFO on Setup page 4, then return to program edit and move the GLD parameter to -21c, the preset becomes raunchy sounding on "beefy" guitars.

P104 DM: REV/COMP SoftSlider INPUT PAN 0
MA:B14P9 PLATE MB:B16P1 EZ COMP2:1
This preset utilizes a plate preset on the left input and a compressor preset on the right input. Typically, EZ Comp2:1 should be used at a patch point on the console. If used on an effect send, make sure the fader sends are pre-fade, or a "time phase" error will occur between the fader signal and the return to the console.

MA: B14P9 PLATE
Very bright, very diffuse with an preset reverb time or 1.47 secs.

MB: B16P1 EZ COMP 2:1
An "easy" preset to add to an overall stereo mix or mono or stereo submix. You might need to adjust Threshold to make it work for the particular signal you feed it. Release is set to gently (2:1) fall away after 363ms.

P105 DM: DLY/DLY SoftSlider LFO RATE 50
MA:B12P3 CHORUS MB:B12P4 CHORUS+EKOZ
Think of this preset as the chorus preset for mono sources. Left input feeds Machine A; right feeds Machine B. Both effects have their flange glides attached to the Setup LFO. The LFO is set to 1.44 Hz with a sine waveform. The SoftSlider is mapped to the LFO rate.

MA: B12P3 CHORUS
The Chorus preset makes use of a small variation in the glide delay to modulate the sound. The glide moves between 9.7ms and 11.8ms. Advancing the LFO to values near 1.50Hz to 2.0 Hz, yields a nice chorusing effect. There are no other delay lines, but the output lines are channel-swapped such that the left input passes to the right output and vice-versa. Since this effect is being utilized in a Dual Mono Setup, both delay lines are summed to mono.

MB: B12P4 CHORUS+EKOZ
Makes use of the flange gliding delay (via the Setup LFO) and several longer recurring echoes.

P106 DM: DLY/PCH SoftSlider DELAY MACH A 60
MA: B11P1 BASIC DELAY MB: B15P7 SKY DOWN
This preset incorporates a SoftSlider patch to the left and right output delays in Machine A (Basic Delay). Use the SoftSlider to quickly change the delay requirements for the source feeding Machine A. Machine B (right input) loads a pitch shift program described below.

MA: B11P1 DUAL DELAYS
Baseline effect with the SoftSlider patched to the last two delay lines in the signal path. Advancing the SoftSlider will cause the two post-delays to move in sync out to almost 3000ms.

MB: B15P7 SKY DOWN
This preset tunnels downward due to the liberal amount of delay feedback. If the effect is too heavy, lower the Feedback value. This preset has no Mod Edit patches.

P107 DM: DLY/COMP SoftSlider SPACE MACH A 34
MA: B11P4 SPACE DELAYS MB: B16P2 DRUMCOMP3:1
This preset presents a delay preset to the left effect input/output, and a Drum compressor preset to the right effect input/output. The SoftSlider is attached to the left and right output delays in Space Delays.

MA: B11P4 SPACE DELAYS
This preset incorporates a bit of left-right diffused delays, along with some small delay offset between left and right delay outputs. If the effect is too strong, try lowering feedback levels for delays 3 and 4.

MB: B16P2 DRUMCOMP 3:1
This is a bit more aggressive, with 7dB of boost below the selected threshold. A quick release of 58ms snaps up the volume. As with all compressor presets, Threshold is the critical parameter.

P108 DM: PCH/PCH SoftSlider INPUT PAN 0
MA:B15P3 UP SHIFT MB:B15P8 ECHO DOWN
A true Dual-Mono pitch preset. Advancing the SoftSlider will move the left and right inputs to opposite processors.

MA: B15P3 UP SHIFT
A sweet sounding microshift up +7cents. There is a slight “chorus edge” due to a modest amount feedback around a 0ms delay line.

MB: B15P8 ECHO DOWN
14 cents down with a 272ms recirculating delay line. This program works great either before or after a Reverb preset (in a Cascade Setup).

P109 DM: PCH/COMP SoftSlider INPUT PAN 0
MA:B15P6 VOCAL SHIFT MB:B16P3 VOICE OVER
Send a vocal track into the left input and send a mono prefade vox premix into the right input. The SoftSlider conveniently lets you send the inputs to the opposite processor.

MA: B15P6 VOCAL SHIFT
A short delay line recirculating around a maximum -21 cent pitch shifter. However, the amount of pitch shifting will vary with the input level, going more negative in pitch as the level increases.

MB: B16P3 VOICE OVER
This is a fairly agressive voice compressor, with 7dB of boost below the preset threshold of -17dB. A quick release of 58ms snaps up the volume. As with all compressor programs, Threshold is the critical parameter.

P110 DM: COMP/COMP SoftSlider INPUT PAN 0
MA:B16P5 SMAKO! MB:B16P5 SMAKO
In this Dual Mono Setup any audio (analog or digital) should be sent pre-fade or inserted into console patch points. The SoftSlider controls the input routing from each input to each processor. The default is Left In / Right In to Mach A / Mach B.

MA: B16P5 SMAKO!
A lot of Gain (13dB) with alot of Slope (4 : 1) wtih the Threshold a couple of bits down from Dbfs. Careful !! You may need to adjust Threshold to make it work for the particular signal you're feeding it. The release parameter rips the signal up within 91 ms.

MB: B16P5 Smako!
See MA above.

P111 DM:SLOW SPIN SoftSlider LFO RATE 50
MA:B12P8 LFO:FAZEDLYS MB:B12P3 CHORUS
The LFO is set to 0.88Hz with a Triangle waveform, and is attached to both Machine A and B's Flange Glide Delays. Advancing the SoftSlider will drive the LFO faster and speed things up, but may cause Machine A to pitch too heavily. This preset can be used with either mono or stereo sources, but discrete echoes will appear at the left output.

MA: B12P8 LFO:FAZEDLYS
Faze Dlys makes use of the LFO to the Flange Glide Delay (FDLY). The base delays are set in different time domains: one side at 1.9ms with a feedforward gain; the other at 5.6 with a negative feed gain. As the Glide passes over each base delay, the phase of each gain is changed. In between, the output is a mixture of each. A great effect on a ripping guitar solo.

MB: B12P3 CHORUS
This preset makes use of a small variation in the glide delay to modulate the sound. The glide moves between 9.7ms and 11.8ms. Advancing the LFO to values near 1.50Hz to 2.0 Hz yields a nice chorusing effect. There are no other delay lines, but the output lines are channel-swapped such that the left input passes to the right output and vice-versa. In a Dual Mono Setup, this is ,of course, inaudible.

P112 DM:WIDEFLANG SoftSlider LFO RATE 50
MA:B12P1 OVERTHETOP1 MB:B12P2 OVERTHETOP2
This preset can be used with either two mono sources, or one stereo source. One channel glides with a positive resonance, the other flanges with a negative resonance. This preset sounds extra heavy with pre-fader sends going to each input. The LFO, which is preset to 0.24Hz with a triangle waveform, can be slowed down or sped up with the SoftSlider and ultimately determines the speed of the flange glides in each Machine.

MA: B12P1 OVERTHETOP1
This preset should be used pretty much through the box, i.e. send it a pre-fader signal, then mix only the returns. The Flange Delay is patched to the LFO. When properly modulated, the flange delay glides between 9.5ms and 18ms. The base delays are set to 10ms with a positive feedback gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay.Remember, the LFO lives in the Setup domain, so if you load the effect into a setup where there is no LFO activity, the preset will sound “hollow” and resonant!

MB: B12P2 OVERTHETOP2
Similar to OverTheTop1, except the flange delay glides between .08 ms and 10.7ms. This flange delay is patched to the LFO. The base delays are set to 10ms, with a negative amplifier gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay. The channel outputs are reversed such that the left input will pass through to the right output and vice-versa.Remember, the LFO lives in the Setup domain, so if you load the effect into a setup where there is no LFO activity, the preset will sound “hollow” and resonant!

P113 DM:X-TRAFFIC SoftSlider DELAY MACH B 50
MA:B12P4 CHORUS+EKOZ MB:B12P0 SKY DELAYS
This preset has cross panning (ABAL and BBAL) patched between the source inputs of each Machine. That is, the left input signal will pan between Machine A and Machine B; the right input will do the same thing in the other direction. One idea might be to take a pair of related tracks (say a couple of different sounding keyboards) and auto — “cross traffic” them between Machine inputs. The rate of the input pan is set by the LFO. Remember, the LFO (set to 0.14Hz with a triangle waveform) is also patched to the flange glides in both Machine A and Machine B. The SoftSlider will increase and decrease the Left and Right Delay outputs in Machine B.

MA:B12P4 CHORUS+EKOZ
Chorus+EKOz makes use of the flange gliding delay and several recurring echoes. Real Lexicon meat and potatoes effect.

MB: B12P0 SKY DELAYS
This preset combines a bit of giding delay along with all sets of delays. Delays 1 and 2 are set short with feedback and “tuned” diffusion gains. Delays 3 and 4 are also set short and crossfeed into 2 and 1, respectively. The is a small amount of post delay (LDLY and RDLY), and these two post echoes are patched to the SoftSlider. Use the SoftSlider parameter to adjust post delays to match the tempo. When the SoftSlider is set to 0, Sky Delays is sort of a chorused cluster echo - very similar to a bright resonant small room. Beautiful effect on stacked vocals.

P114 DM: GEARUP SoftSlider INPUT PAN 0
MA:B15P3 UP SHIFT MB:B15P5 EKO SHIFT
The SoftSlider controls the input routing from each input to each processor. The default is Left In / Right In to Mach A / Mach B. The Meters are set to read each of their respective inputs which becomes integral to the way EKO Shift works.

MA: B15P3 UP SHIFT
A sweet sounding microshift up +7cents. There is a slight “chorus edge” due to a modest amount feedback around a 0ms delay line.

MB: B15P5 EKO SHIFT
The Left-Meter is negatively patched to the feedback (FBK) parameter, such that when signal is present, delay feedback is reduced; when the signal disappears, feedback is increased. This is a very interesting effect when the delay fits the beat of the music.

P115 DM:TWOROOMS SoftSlider INPUT PAN 0
MA:B13P0 JOE'S GARAGE MB:B13P8 BASEMENT
Garage band and Basement band. Use with Dual Mono sources and place behind the source. The SoftSlider controls the input routing from each input to each processor. The default is Left In / Right In to Mach A / Mach B.

MA: B13P0 JOE'S GARAGE
Two bays, no waiting. Small and bright. Great for Mono ADR work.

MB: B13P8 BASEMENT
Tight and short. Size is 15.8 meters, and the tonality is fairly resonant sounding. Almost trashy-sounding (low diffusion), and will certainly get so if the Rt is made longer. Explosive on snare drums.

P116 DM:TWOHALLS SoftSlider INPUT PAN 0
MA:B14P7 RECITAL HALL MB:B14P1 BIG HALL
Two mono halls, with the SoftSlider controlling the Input Pans, which default to Left In to Mach A, and Right In to Mach B. Try reversing the returns relative to the sources at the console for a different effect.

MA: B14P7 RECITAL HALL
This medium large (44.5M) space opens sound sources beautifully. Made for string pads and voice. No SoftSlider patches

MB: B14P1 BIG HALL
Big and open sounding. The 44ms of predelay help to separate the stage from the seating area. Real good sounding on ballad vocals. No SoftSlider patches

P117 DM: DELAYS SoftSlider DELAY SPACE 50
MA:B11P2 SLAP ECHO MB:B11P0 VOX DOUBLER
Advancing the SoftSlider Controller will change the characteristics of each Machine preset as described below...

MA: B11P2 SLAP ECHO
Short, slightly recirculating parallel delays with a no diffusion. The Soft Slider lengthens and shortens the Left and Right Post Delays which relates to the slap time. If you decide to increase the feedback amounts on Page 2, you should try adding additional AP Gain as well on Page 3.

MB: B11P0 VOX DOUBLER
The SoftSlider modifies Left and Right Delays 1 & 2. There is also a small amount of cross-feedback via Left and Right Delays 3 and 4. Add Feedback and AP Gain as described in SLAP ECHO. The Left and Right Post Delays are fixed at 53.513 ms.

P118 DM: REVPAN SoftSlider DECAY TIMES 50
MA:B13P7 "U"CHAMBER MB:B13P6 "L"CHAMBER
This preset has two Setup parameters patched to the LFO; ABAL and BBAL. Sources going into Machine A and B will cross pan between them, as in X-Traffic. The LFO is set to 0.12Hz with a triangle waveform. The SoftSlider is patched to both RTM parameters in each of the Chambers.

MA: B13P7 "U" CHAMBER
This preset is shaped liked an upside down "U" with the speaker on top of the wall and a microphone on either side of the wall. The SoftSlider controls the Mid Rt.

MB: B13P6 "L" CHAMBER
L" Chamber mimics the shape of a chamber shaped like that letter. A little bigger than the "U" chamber. Reverb time is patched to the SoftSlider.

P119 DM:UP&DOWN SoftSlider DELAY 50
MA:B15P9 HALFSTEPSUP MB:B15P0 HALFSTEPSDN
Left to Machine A and right to Machine B. Diabolical and horrifying sounding. The SoftSlider controls the Delay Out parameters in each machine Program.

MA: B15P9 HALFSTEPSUP
Just what you think... With the SoftSlider patched to the Delay

MB: B15P0 HALFSTEPSDN(down)
Ditto... With the SoftSlider patched to the Delay

P120 DM:MYGUITAR SoftSlider INPUT PAN 0
MA:B15P2 GUIT SHIFT MB:B12P6 ENV:PEAK
Great stuff for either a mono or stereo guitar. Machine B should get a very strong, if not a total, pre-fade signal.

MA: B15P2 GUITAR SHIFT
This preset offers a strong amount of detune shift, along with a small amount of recirculating delay. Actually, the glide pitch parameter (GLD) is patched to the LFO running in the Setup. The LFO causes the GLD to glide between -14c and -+7 cents. If you turn off the LFO on Setup page 4 then return to program edit and move the GLD parameter to -21c, the preset becomes raunchy sounding on “beefy” guitars.

MB: B12P6 ENV:PEAK
This preset is similar to an OverTheTop type of effect, except the flange delay is patched to the meter balistics. Depending on the dynamics of your guitar playing, you may wish to adjust the scaling parameter which is found on Page 6; Midi Mod patch #1.

P121 DM:ENVSPOOGE SoftSlider INPUT PAN 0
MA:B12P6 ENV:PEAK MB:B12P7 ENV:PHAZER
This preset uses two effects which have meter ballistics patched to the flange glide delays, with a twist: the Machine A Mod Edit patch gets its modulation information from the R-meter; the Machine B flange glide Mod patch is specified to modulate from the ballistics of the L-meter. One input modulates the other.

MA: B12P6 ENV:PEAK
This preset is similar to an OverTheTop type effect except the flange delay is patched to meter ballistics. Some modification of the scaling parameter on the MIDI / Mod Page 6, patch #1 may be nessessary to suit the right Meter ballistics.

MB: B12P7 ENV:PHAZER
This preset makes use of a patch between the L-Meter and the flange glide delay. As signal becomes stronger, the glide delay drops in the time domain, eventually crossing the 5.2ms base delays. As audio signal strength lessens, the glide returns to its preset value of 10ms. Very good on vocals. To make this effect work properly, be sure to drive the 300 to within 12dB of full scale (dBfs). Remember, in this setup the effects are reversed from the meter ballistics which drive them.

P122 DM:FLNG&DLYS SoftSlider DELAY MACH B 40
MA:B12P5 NEGATIVE FLANG MB:B11P4 SPACE EKOZ
This is a true Dual Mono Setup. The Setup LFO is driven by the Left Meter ballistics with a triangle waveform. It drives the flange glide delay (FDLY) in Machine A. The SoftSlider controls the Left and Right Post Delays in Machine B.

MA: B12P5 NEGATIVEFLNG
This is a really stiff flange which goes almost 20ms deep. Flange gain is set extremely negative, so the sound is tunnel-like. The speed of the Setup LFO determines the speed of the flange.

MB: B11P4 SPACE EKOZ
This preset incorporates a bit of multi-diffused long delays along with some small delay offsets between the post delay outputs. To strenghthen the space, increase Feedbacks 3 and 4 on page 4.

P123 DM: DLY DAZE SoftSlider DELAY 50

MA:B11P6 3VOICEDLYS **MB:B11P5 PINGOPONGO**
The SoftSlider affects the delay spacing in both Machine effect presets. Increasing the SoftSlider will make each delay effect longer and longer; decreasing it will make each delay effect shorter. The SoftSlider value is set to 50 when the Setup is selected.

MA: B11P6 3VOICE DLYS
Two taps (Delays 3 and 4) are set with delay ratios of 1:2, meaning that, when one is 200ms, the other is 400ms, or when one is 359, the other is 718ms. This relationship is patched to the SoftSlider.

MB: B11P5 PINGO PONGO
Ping - Pong delays bouncing back and forth. The SoftSlider controls the timing of the bounce.

P124 DM:CLUSTERS **SoftSlider DELAY MACH B 40**
MA:B12P4 CHORUS+EKOZ **MB:B11P6 3VOICE DLYS**
This preset is intended for “dual-mono” use. The LFO is set to a Triangle shape moving at 2.48Hz. The SoftSlider changes the spacing of the delays in Machine B.

MA: B12P4 CHORUS+EKOZ
Chorus+EKOz makes use of the flange gliding delay and several recurring echoes.

MB: B11P6 3VOICE DLYS
Two taps (Delays 3 and 4) are set with delay ratios of 1:2, meaning that, when one is 200ms, the other is 400ms, or when one is 359, the other is 718ms. This relationship is patched to the SoftSlider controller.....

P125 DM:2 FLANGES **SoftSlider INPUT PAN 0**
MA:B12P2 OVERTHETOP2 **MB:B15P7 SKY DOWN**
Two dual mono flange effects. This preset can work nicely with the same signal going to both Machines. Use the SoftSlider to determine which input feeds which processor.

MA: B12P2 OverTheTop2
Similar to OverTheTop1, except the flange delay glides between 0.08 ms and 10.7ms. This flange delay is patched to the LFO. The base delays are set to 10ms with a negative amplifier gain.

MB: B15P7 Sky Down
This preset tunnels downward due to the liberal amount of delay feedback. If the effect is too heavy, lower the feedback amount.

Cascade Setup Presets

Setup #	Setup Name	SoftSlider	Mach A Effect	->	Mach B Effect
P126	CC: REV ->DLY	DELAY SPACE	MA:B13P1 CHAMBER	->	MB:B11P3 STEREO SLAPS
P127	CC: DLY ->REV	SLAP & SIZE	MA:B11P2 SLAP ECHO	->	MBB13P9 JOE'S B&G
P128	CC: REV->PCH	DECAY MACH A	MA:B13P7 "U"CHAMBER	->	MB:B15P2 GUIT SHIFT
P129	CC: PCH->REV	BMIX	MA:B15P7 SKY DOWN	->	MB:B13P3 DRUM CHAMBER
P130	CC: REV->COMP	THRESHOLD	MA:B13P4 GUITAR ROOM	->	MB:B16P4 COMP 4 VERB
P131	CC: COMP->REV	NONE	MA:B16P2 DRUM COMP 3:1	->	MB:B13P8 BASEMENT
P132	CC: DLY->PCH	LFO RATE	MA:B12P3 CHORUS	->	MB:B15P1 SHIFT IT!
P133	CC: PCH->DLY	DELAY SPACE	MA:B15P6 VOCAL SHIFT	->	MB:B11P5 PINGOPONGO
P134	CC: DLY->COMP	DELAY SPACE	MA:B11P6 3 VOICE DLY	->	MB:B16P1 EZ COMP 2:1
P135	CC: SLAPS	SPACE	MA:B16P9 SPATIAL EQ	->	MB:B11P3 STEREO SLAPS
P136	CC: PCH->COMP	LFO RATE	MA:B15P2 GUIT SHIFT	->	MB:B16P5 SMAKO!
P137	CC: SURRVERB	SPATIAL EQ	MA:B14P7 RECITAL HALL	->	MB:B16P9 SPATIAL EQ
P138	CC: V3COMP	NONE	MA:B16P6 SMALL ST ADJ	->	MB:B16P1 EZ COMP 2:1
P139	CC: EQ/DITHER	NONE	MA:B16P6 SMALL ST ADJ	->	MB:B16P0 PONS
P140	CC: FILT DLYS	DLY/BANDPASS	MA:B11P4 SPACE EKOZ	->	MB:B16P8 FILTER PASS
P141	CC: JETVERB	LFO RATE	MA:B14P3 GREAT HALL	->	MB:B12P5 NEGATIVEFLNG
P142	CC: BIGBRICKS	DIFFUSION	MA:B14P4 BIG BRICKS	->	MB:B16P2 DRUM COMP 3:1
P143	CC: REV->EKOZ	RVB LEVEL	MA:B14P1 BIG HALL	->	MB:B12P4 CHORUS+EKOZ
P144	CC: REV->KORUS	RVB LEVEL	MA:B13P5 BIG & SHORT	->	MB:B12P3 CHORUS
P145	CC: OVER!TOP	LFO RATE	MA:B12P1 OVERTHETOP1	->	MB:B12P2 OVERTHETOP2
P146	CC: GUITAR XP	LFO RATE	MA:B12P9 LFO:PAN&FAZE	->	MB:B12P8 LFO:FAZEDLYS
P147	CC: EKO->FAZE	AMIX	MA:B15P5 EKO SHIFT	->	MB:B12P7 ENV:PHAZER
P148	CC: VERB->DOWN	B MIX	MA:B14P7 RECITAL HALL	->	MB:B15P8 ECHO DOWN
P149	CC: THE SKY	DELAYS	MA:B15P7 SKY DOWN	->	MB:B12P0 SKY DELAYS
P150	CC: SPINOLA	LFO RATE	MA:B12P3 CHORUS	->	MB:B16P7 PANOLA

P126 CC:REV ->DLY SoftSlider DELAY SPACE 50
MA:B13P1 CHAMBER MB:B11P3 STEREO SLAPS

This preset passes a reverb effect into a stereo slap delay effect with a delay SoftSlider patch. As the SoftSlider is advanced, the reverb will be additionally delayed through the slap space. AMIX is set to 70% such that some of the Dry input (30%) is passed into the Slap effect as well.

MA: B13P1 CHAMBER

A great general purpose reverb tail. Size is set to 28.1M (the largest value is 64M), so the density is rather tight. As you adjust Size, Rt will also change. If you want to unlink this natural phoenomena, set LINK to unlink(on Page Two).

MB: B11P3 STEREO SLAPS

Stereo left and right slap delays with the SoftSlider patched to left and right Delays 1 and 2 as well and the Left and Right Post Delay outputs.

P127 CC: DLY ->REV SoftSlider SLAP & SIZE 50
MA:B11P2 SLAP ECHO MB:B13P9 JOE'S B&G

Slap Echo feeds the Bar & Grill. Advance the SoftSlider parameter, and the Machine A "slap" effect gets longer, and the reverb Size in Machine B gets bigger. AMIX is set to 50% such that half the Dry signal bypasses the slap effect feeding directly into the reverb. Changing AMIX will add more or less impact to the reverb.

MA: B11P2 SLAP ECHO

Baseline effect with the SoftSlider patched to the last two delay lines in the signal path. Advancing the SoftSlider will cause the two post-delays to move in sync out to almost 3000ms.

MB: B13P9 JOE'S B&G

Live performances in Joe's 14.6M Bar. Advance the SoftSlider and the room size grows into a Bar and Grill.

P128 CC: REV->PCH SoftSlider DELAY MACH A 50

MA: B13P7 "U"CHAMBER **MB: B15P2 GUIT SHIFT**
This preset runs 40% of a reverb effect into a pitch shift program. The remaining 60% of the reverb effect bypasses the pitch shifter, and appears at the stereo output. Modify BMIX to even lesser values if you want to bypass more of the pitch shifter. If BMIX is set to all wet, the reverb will be mono (because the Pitch algorithm is mono in-mono out).

MA: B13P7 "U" CHAMBER
This preset is shaped liked an upside down "U" with the speaker on top of the wall and a microphone on either side of the wall. The SoftSlider controls the Mid Rt.

MB: EB: B15P2 GUITAR SHIFT
This preset offers a medium amount of micropitch shift(-14c), along with a small amount of recirculating predelay. Actually, the glide pitch parameter (GLD) is patched to the LFO running in the Setup. The LFO causes the GLD to glide between -14c and -+7 cents. If you turn off the LFO on Setup page 4 then return to program edit and move the GLD parameter to -21c, the preset becomes raunchy sounding on "beefy" guitars.

P129 CC: PCH->REV **SoftSlider BMIX 50**
MA: B15P7 SKY DOWN **MB: B13P3 DRUM CHAMBER**
This Setup links a tunneling-downward pitch program into a great sounding reverb. Play around with BMIX which is attached to the SoftSlider for a different kind of effect.

MA: B15P7 SKY DOWN
This preset tunnels downward due to the liberal amount of delay feedback. If the effect is too heavy, lower the feedback amount. No SoftSlider patches.

MB: B13P3 DRUM CHAMBER
Good starting point for acoustic drums. This preset is slightly larger than the standard chamber, but has less Diffusion. Rt is set to 1.0 second at mid frequencies. No SoftSlider patches.

P130 CC:REV->COMP **SoftSlider THRESHOLD 50**
MA: B13P4 GUITAR ROOM **MB: B16P4 COMP 4 VERB**
This preset changes the dynamics of the Guitar Room effect preset. If you play around with the compressor preset, you will no doubt, get some strange effects. The SoftSlider is mapped to the Threshold parameter in Mach B.

MA: B13P4 GUITAR ROOM
This is a big, wide-sounding room for your guitars. For heavy rock stuff, you might consider panning "in" the returns. The room is a little bottom heavy for additional warmth. Could also work well on vocals.

MB: B16P4 COMP 4 VERB
This compressor preset was made to work AFTER a reverb effect. The Slope ratio is less than 2:1 with 5dB of gain below the -14dB threshold. The release is set to work fast at 91 ms.

P131 CC:COMP->REV **SoftSlider NONE**
MA: B16P2 DRUMCOMP 3:1 **MB: B13P8 BASEMENT**
Squash it up a little before they (the drums) go into the Basement. If you opt to send pre-fader signals to this Setup, you will need to modify BMIX to some mid value.

MA: B16P2 DRUMCOMP 3:1
This is a bit more aggressive, with 7dB of boost below the selected threshold. A quick release of 58ms snaps up the volume. As with all compressor presets, Threshold is the critical parameter.

MB: B13P8 BASEMENT TIGHT AND SHORT.
Room size 15.8 meters, and the tonality is fairly resonant sounding. Almost trashy-sounding (low diffusion), and will certainly get so if the Rt is made longer.

P132 CC:DLY->PCH **SoftSlider LFO RATE 50**

MA: B12P3 CHORUS **MB: B15P1 SHIFT IT!**

This preset combines a stereo chorus passing into a mono shift program. BMIX is set to 60% meaning some of the stereo chorus bypasses the mono pitch shift. Modify the Glide Pitch (GLD) parameter in Machine B to suit your taste. The LFO is set moderatly fast, to 2.16Hz, with a Triangle shape.

MA: B12P3 CHORUS

This preset makes use of a small variation in the glide delay to modulate the sound. The glide moves between 9.7ms and 11.8ms. Advancing the LFO to values near 1.50Hz to 2.0 Hz yields a nice chorusing effect. There are no other delay lines, but the output lines are channel-swapped such that the left input passes to the right output, and vice-versa. (In a Dual Mono Setup, of course, this is inaudible.)

MB: B15P1 SHIFT IT!

Baseline mono shift program with no pitch shift. Go to the glide parameter (GLD) in Program Edit mode to adjust the amount of mono pitch shifting you want.

P133 CC:PCH->DLY **SoftSlider DELAY SPACE 40**
MA: B15P6 VOCAL SHIFT **MB: B11P5 PINGOPONGO**

This is a very interesting detuned left/right delay effect. The SoftSlider controls the timing of the bouncing delays. The stored value of the SoftSlider parameter is 40. Try with AMIX set to 40% OR try with BMIX set to 60%.

MA: B15P6 VOCAL SHIFT

This preset combines a short delay line recirculating around a maximum -21 cent pitch shifter. However the amount of pitch shifting will vary with the input level, going more negative in pitch as the level increases.

MB: B11P5 PINGO PONGO

Ping - Pong delays bouncing back and forth. The SoftSlider controls the timing of the bounce.

P134 CC: DLY->COMP **SoftSlider DELAY SPACE 50**
MA:B11P6 3VOICE DLY **MB:B16P1 EZ COMP 2:1**

The SoftSlider controls the timing relationships of the 3 voice delay settings in Machine A. The SoftSlider value is stored at 50.

MA: B11P6 3VOICE DLYS

Two taps (Delays 3 and 4) are set with delay ratios of 1:2, meaning that, when one is 200ms, the other is 400ms, or when one is 359, the other is 718ms. This relationship is patched to the Soft knob.

MB: B16P1 EZ COMP 2:1

A nice preset to add to an overall mix. You may need to adjust the Threshold parameter to make it work for the particular signal you're feeding it. Release is set to gently fall away after 363ms.

P135 CC: SLAPS **SoftSlider SPACE 50**
MA: B16P9 SPATIAL EQ **MB: B11P3 STEREO SLAPS**

This effect places a Spatial EQ preset ahead of Machine B, which is running a stereo slap delay program. The SoftSlider controls multiple parameters in each machine. As you advance the SoftSlider the delays will get a bit longer as well as the amount of negative cross-feed between channels. Use with moderatly narrow stereo or mono source.

MA: B16P9 SPATIAL EQ

This preset has 3 SoftSlider patches; Spatial EQ, Left Bass +/-, Right Bass +/-. As you advance or reduce the SoftSlider, the amount of "spaciousness" is increases or decreased.

MB: B11P3 STEREO SLAPS

Stereo left and right slap delays with the SoftSlider patched to left and right Delays 1 and 2 as well and the Left and Right Post Delay outputs.

P136 CC:PCH->COMP **SoftSlider LFO 50**

MA: B15P2 GUITAR SHIFT **MB: B16P5 SMAKO!**
This preset combines a guitar shift effect going into a HARD compressor effect. The LFO controls the Glide Shift parameter (GLD) in Machine A. The LFO rate is set to 0.16Hz with a sine waveform, but can be modified with the SoftSlider. This presets works great with stacked BG Vox as well.

MA: B15P2 GUITAR SHIFT
This preset offers a medium amount of micropitch shift(-14c), along with a small amount of recirculating predelay. Actually, the glide pitch parameter (GLD) is patched to the LFO running in the Setup. The LFO causes the GLD to glide between -14c and -+7 cents. If you turn off the LFO on Setup page 4 then return to program edit and move the GLD parameter to -21c, the preset becomes raunchy sounding on “beefy” guitars.

MB: B16P5 SMAKO!
Alot of Gain (13dB) with alot of Slope (4 : 1) wtih the Threshold a couple of bits down from Dbfs. Careful !! You may need to adjust Threshold to make it work for the particular signal you’re feeding it. The release parameter rips the signal up within 91 ms.

P137 CC: SURRVERB **SoftSlider** **SPATIAL EQ** **60**
MA:B14P7 RECITAL HALL **I** **B:B16P9 SPATIAL EQ**
Machine B (Spatial EQ) has three SoftSlider patches which control the spacial placement of the source audio - in this case, the output of the reverb effect. In a surround mixing environment, advancing the SoftSlider parameter will place more of the reverb into the surround channel - assuming the returns of the 300 are panned hard left and right at the console.

MA: B14P7 RECITAL HALL
This medium large (44.5M) space opens sound sources beautifully. Made for string pads and voice.

MB: B16P9 SPATIAL EQ
This preset is a cut down version of the larger Stereo Adjust program available in Single Setups. This particular preset has the Soft knob patched to three parameters: Spatial EQ (SPEQ), Bass Left (BASL), and Bass Right (BASR) boosts and cuts.

P138 CC:V3COMP **SoftSlider** **NONE**
MA:B16P6 SMALL ST ADJ **MB:B16P1 EZ COMP 2:1**
This is a straight ahead digital stereo compressor setup. Use it in a mix insert point or pre-fade send, or as part of a transfer.

MA:B16P6 SMALL ST.ADJ
This preset is a cut down version of the larger Stereo Adjust program available in Single Setups. Level, Balance, Rotate, separate Left and Right Bass and Treble, along with spatial eq are available to adjust. There are no SoftSlider patches in this preset.

MB:B16P1 EZ COMP 2:1
A soft and easy preset to add to an overall mix. You may need to adjust the Threshold parameter to make it work for the particular signal you’re feeding it. Release is set to gently fall away after 363ms.

P139 CC:EQ>DITHER **SoftSlider** **NONE**
MA:B16P6 SMALL ST ADJ **MB:B16P0 PONS+DITHER**
This Setup preset places the Small St. Adjust ahead of the dither program. Use the stereo adjust parameters to control level, balances and eq. Typically this Setup will be used in a mastering or premastering application.

MA: B16P6 SMALL ST.ADJ
This preset is a cut down version of the larger Stereo Adjust program available in Single Setups. Level, Balance, Rotate, separate Left and Right Bass and Treble, along with spatial eq are available to adjust. There are no SoftSlider patches in this preset.

MB: B16P0 PONS+DITHER
This preset has dither turned on and set to PONS (Psycoacoustically Optimized Noise Shaping), with level of 32. Experiments have shown this to be an optimum starting level of dither.

P140 CC:FILT DLYS **SoftSlider** **BANDPASS** **40**

MA: B11P4 SPACE EKOZ **MB: B16P8 FILTER PASS**

This preset loads two effects, both of which have SoftSlider patches. The SoftSlider has a Setup value of 40. This Setup combines a multi-tap delay program in series with a Bandpass filter program. The resulting audio is then fedback (via the Setup feedback parameter) to Machine A's input. As you move the SoftSlider you will change the post delays in Space Ekoz as well as change the bandpass in Machine B. Tubby and Tight to Long and Lean.

MA: B11P4 SPACE EKOZ

This preset incorporates a bit of left-right diffused delays, along with some small delay offset between left and right delay outputs. If the effect is too strong, try lowering feedback levels for delays 3 and 4.

MB: B16P8 FILTER PASS

This program is meant to reduce the bandwidth of the source audio. The SoftSlider is patch to the Bass crossover and Treble Crossover parameters. When this Program is loaded into another Setup the Bandpass will be set to what ever the SoftSlider value is set to.

P141 CC: JETVERB **SoftSlider LFO RATE 50**
MA: B14P3 GREAT HALL **MB:B12P5 NEGATIVEFLNG**

Take off!!! The long reverb in Machine A (which can be made longer by advancing the SoftSlider parameter) passes into a flange driven by 0.14Hz triangle LFO. The speed of the LFO is also controlled by the SoftSlider.

MA: B14P3 GREAT HALL

The largest room size yet at 64meters. Similar to Great Room, with Spread and Predelay patched to the Soft knob, with the addition of reverb time also patched. Dig Deep!!

MB: B12P5 NEGATIVEFLNG

This is a really stiff flange which goes almost 20ms deep. Flange gain is set extremely negative, so the sound is tunnel-like.

P142 CC:BIGBRICKS **SoftSlider DIFFUSION 50**
MA: B14P4 BIG BRICKS **MB: B16P2 DRUM COMP 3:1**

This Setup really enunciates the Big Bricks preset. 100% of the reverb in Machine A preset feeds into the compressor in Machine B. The SoftSlider controls the Diffusor in Mach A.

MA: B14P4 BIG BRICKS

Real "ratchety" sounding effect. Powerful for non-linear applications. The SoftSlider controls the diffusion characteristics.

MB: B16P2 DRUMCOMP 3:1

This preset amplifies Big Bricks, with 7dB of boost below the selected Threshold. A quick release of 58ms snaps up the volume. As with all compressor presets, Threshold is the critical parameter.

P143 CC:REV->EKOZ **SoftSlider RVB LEVEL 60**
MA: B14P1 BIG HALL **MB: B12P4 CHORUS+EKOZ**

This is a beautiful long lasting effect. Almost half of the input signal passes around Big Hall and feeds directly to the Chorus and EKOz effect in Machine B. Use the SoftSlider to modify reverb content feeding machine B. If you need a pristine effect for a pristine track, this is it!!

MA: B14P1 BIG HALL

Big and open sounding. The 44ms of Predelay helps to separate the stage from the seating area. Real good sounding on ballad vocals.

MB: B12P4 CHORUS+EKOZ

Chorus+EKOz makes use of the flange gliding delay under the control of the Setup LFO plus several recurring long echoes.

P144 CC:REV->KORUS **SoftSlider RVB LEVEL 60**

MA:B13P5 BIG & SHORT **MB:B12P3 CHORUS**

This Setup is a variation of the one above, except that it's a shorter "close in" effect. The SoftSlider controls the amount of reverb effect feeding into Machine B. The LFO is patched itself such that the LFO speed is never contant. Machine B's output is channel-swapped, so don't drive yourself crazy trying to find the backward cabling.

MA: B13P5 BIG & SHORT

This reverb effect is short, almost gated. Big room size set to 54.6M, and Rt set to 0.9 seconds. This preset really opens up a sparse track.

MB: B12P3 CHORUS

This preset makes use of a small variation in the glide delay to modulate the sound. The glide moves between 9.7ms and 11.8ms. Advancing the LFO to values near 1.50Hz to 2.0 Hz yields a nice chorusing effect. There are no other delay lines, but the output lines are channel-swapped such that the left input passes to the right output, and vice-versa.

P145 CC:OVER!TOP **SoftSlider** **LFO RATE** **50**

MA:B12P1 OVERTHETOP1 **MB:B12P2 OVERTHETOP2**

Use pre-fader or in an insert point. One flanger feeds the next. Very heavy duty. The input gain to the Setup is set to -4dB. This is to compensate for the heavy amount of flange gain in both Machines. Since the LFO is in the setup domain, it drives both flange glide delays in each Machine. The speed of the LFO is controlled by the SoftSlider. Remember the outputs of OverThe Top2 are reversed, so don't drive yourself crazy trying to find reversed patch cords!

MA: B12P1 OVERTHETOP1

This preset should be used pretty much through the box, i.e. patched to the LFO. When properly modulated, the flange delay glides between 9.5ms and 18.7ms. The base delays are set to 10ms with a positive feedback gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay.

MB: B12P2 OVERTHETOP2

Similar to OverTheTop1, except the flange delay glides between 0.08 ms and 10.7ms. This flange delay is patched to the LFO. Base delays are set to 10ms with a negative amplifier gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay. The channel outputs are reversed such that the left input will pass through to the right output and vice-versa.

P146 CC: GUITARXP **SoftSlider** **LFO RATE** **50**

EA:B12P9 LFO:PAN&FAZE **EB:B12P8 LFO:FAZE DLYS**

GuitarXP incorporates a left/right panning effect in Machine A into a modulating glide effect with added delays. The LFO (set to 0.20Hz with a triangle waveform) ties it all together. Here're some suggestions: add some extra LDLY (Left delay) and RDLY (Right delay) to Machine B in the Program. Go back to Setup,and reduce BMIX to less than the preset 100% - say, to something like 45%, find the Cascade feedback parameter and add a small (NO MORE THAN 15%) amount of feedback gain, either positive or negative, then store it all in a Setup Register.

MA: B12P9 LFO:PAN&FAZE

This cool wavy preset should be run pre-fader with the Setup LFO at about .20Hz. With a mono or stereo signal attached to both inputs, the acoustic effect is a slow rotation in phase. Clean compressed guitars are the best here.

MB: B12P8 LFO:FAZEDLYS

Faze Dlys makes use of the LFO patched to the Flange Glide Delay(FDL). The base delays are set in different time domains: one side at 1.9ms with a feedforward gain; the other at 5.6 with a negative feed gain. As the Glide passes over each base delay, the phase of each gain is changed. In between, the output is a mixture of each. A great effect on a ripping guitar solo.

P147 CC:EKO->FAZE **SoftSlider** **AMIX** **60**

MA:B15P5 EKO SHIFT **MB:B12P7 ENV:PHAZER**
This Pitch into Gliding delay Setup is great for the “rockers”. Use the SoftSlider to control the amount of echo effect feeding into Machine B.

MA: B15P5 EKO SHIFT
The L-Meter is negatively patched to the feedback (FBK) parameter so that, when signal is present, delay feedback is reduced; when the signal disappears, feedback is increased. This is a very interesting effect when the echo fits the beat of the music. Use the DLY parameter to match the tempo.

MB: B12P7 ENV:PHAZER
This preset makes use of a patch between the envelope detector in the meters and the flange glide delay. As signal becomes stronger, the glide delay drops in the time domain, eventually crossing the 5.2ms base delays. As audio signal strength lessens, the glide returns to its preset value of 10ms. Very good on vocals. To make this effect work properly, be sure to drive the 300 to within 12dB of full scale (dBfs).

P148 CC: VERB>DOWN **SoftSlider BMIX 50**
MA:B14P7 RECITAL HALL **MB:B15P8 ECHO DOWN**
This cascade preset has the net effect of a stereo reverb field followed by delayed mono pitch shift which recirculates downward in pitch. BMIX is controlled by the SoftSlider and is initially set with a relatively low value of 38%. This means that most of the effect at the main output is the reverb effect from Machine A. If you increase BMIX via the soft slider, more of the reverb will pass directly into the mono shift program. Bear in mind, this will cause the reverb to become more mono.

MA: B14P7 RECITAL HALL
This medium large (44.5M) space opens sound sources beautifully. Made for string pads and voice.

MB: B15P8 ECHO DOWN
14 cents down with a 272ms recirculating delay line. In this setup, the reverb echoes downward in pitch into the middle of the mix field ...Very Interesting.

P149 CC: THE SKY **SoftSlider DELAYS 50**
MA:B15P7 SKY DOWN **MB:B12P0 SKY DELAYS**
This setup’s got a little bit of everything. A downward flanging pitch shifter cascading into a dual delay preset with many re-circulating delay clusters. The SoftSlider is patched to the left and right delays (LDLY and RDLY) in Machine B. This Setup also incorporates cascade feedback (from machine B to machine A input) set to -36%. Don’t try to add too much more, you might take off your head. This is definitely a WOWIEE!!- ZOWIEEE!!! effect.

MA: B15P7 SKY DOWN
This preset tunnels downward due to the liberal amount of delay feedback. If the effect is too heavy, lower the feedback.

MB: B12P0 SKY DELAYS
This preset combines a bit of giding delay along with all sets of delays. Delays 1 and 2 are set short with feedback and “tuned” diffusion gains. Delays 3 and 4 are also set short and crossfeed into 2 and 1, respectively. There is a small amount of post delay (LDLY and RDLY), and these two post echoes are patched to the SoftSlider. Use the SoftSlider to adjust the post delays to match the tempo. By itself, Sky Delays is sort of a chorused cluster echo. Very similar to a bright resonant small room. Beautiful effect on stacked vocals.

P150 CC:SPINOLA **SoftSlider LFO RATE 80**

MA:B12P3 CHORUS **MB:B16P7 PANOLA**

This is a sort of “retro” sounding audio effect. The Chorus preset passes into the fast panning Panola effect. Mix post-fader. Kind of like a rotating speaker - only different. The LFO is controlled by the SoftSlider.

MA: B12P3 CHORUS

This preset makes use of a small variation in the glide delay to modulate the sound. The glide moves between 9.7 and 11.8ms. If the LFO is advanced to values near 1.50Hz to 2.0Hz, a nice chorusing effect is achieved. There are no other delay lines, but the output lines are channel swapped such that the left input passes to the right output and vice-versa.

MB: B16P7 PANOLA

This preset is a stereo adjust program with the Balance set to full left. The Balance parameter is patched to the LFO. If loaded into a Setup which has the LFO running, Panola will cause the audio to move between the left and right speakers.

Effect Programs by Bank

For convenient reference, the Split Setup program descriptions are repeated here according to Bank location.

Bank 11 Basic Delays

B11P1 BASIC DELAY Baseline effect with the SoftSlider patched to the Left and Right post delay lines in the algorithm path. Their values are directly linked to the current position of the SoftSlider.

B11P2 SLAP ECHO "In sync" slaps controlled by the position of the SoftSlider. No offsets between channels.

B11P3 STEREO SLAPS Stereo left and right slap delays with the SoftSlider patched to left and right Delays 1 and 2 as well and the Left and Right Post Delay outputs.

B11P4 SPACE EKOZ This program incorporates a bit of left-right diffused delays, along with some small delay offset between left and right delay outputs. If the effect is too strong, try lowering feedback levels for delays 3 and 4.

B11P5 PINGO PONGO Ping-Pong delays bouncing back and forth. The SoftSlider controls the timing of the bounce.

B11P6 3VOICE DLYS Two taps (Delays 3 and 4) are set with delay ratios of 1:2, meaning that, when one is 200ms, the other is 400ms, or when one is 359, the other is 718ms. This relationship is patched to the SoftSlider.

B11P7 DUCKED EKOZ In this program, the amount of recirculating feedback varies with the input level. The SoftSlider is patched to Delays 1 and 2, allowing you to quickly adjust the echoes to match the tempo of the music or program content.

B11P8 CANYON EKOZ The delays in this program are static, but the amount of cross-feedback and output panning is dependent on input level. The outputs are cross-patched to each meter. (The left meter controls the right output pan and the right meter controls the left output pan.)

B11P9 PAN DELAYS This program incorporates two slightly out-of-sync recirculating delays under SoftSlider control, along with output pans mapped to the internal LFO. Use the SoftSlider to match the tempo of the music or program material.

B11P0 VOX DOUBLER The SoftSlider modifies Left and Right Delays 1 & 2. There is also a small amount of cross-feedback via Left and Right Delays 3 and 4. Add Feedback and AP Gain as described in SLAP ECHO. The Left and Right Post Delays are fixed at 53.513 ms.

Bank 12 Mod Delays

B12P1 OVERTHETOP1 This program should be used pretty much through the box, i.e. patched to the LFO. When properly modulated, the flange delay glides between 9.5ms and 18.7ms. The base delays are set to 10ms with a positive feedback gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay.

B12P2 OVERTHETOP2 Similar to OverTheTop1, except the flange delay glides between 0.08 ms and 10.7ms. This flange delay is patched to the LFO. Base delays are set to 10ms with a negative amplifier gain. Over the top cancellation occurs as the glide delay passes over the 10ms base delay. The channel outputs are reversed such that the left input will pass through to the right output and vice-versa.

B12P3 CHORUS A small variation in the glide delay is used to modulate the sound. The glide moves between 9.7ms and 11.8ms. Advancing the LFO to values near 1.50Hz to 2.0 Hz yields a nice chorusing effect. There are no other delay lines, but the output lines are channel-swapped such that the left input passes to the right output, and vice-versa.

B12P4 CHORUS+EKOZ Chorus+EKOz makes use of the flange gliding delay under the control of the Setup LFO plus several recurring long echoes.

B12P5 NEGATIVEFLNG This is a really stiff flange which goes almost 20ms deep. Flange gain is set extremely negative, so the sound is tunnel-like.

B12P6 ENV:PEAK Similar to an OverTheTop type effect except the flange delay is patched to meter ballistics. Some modification of the scaling parameter on the MIDI / Mod Page 6, patch #1 may be nessessary to suit the right Meter ballistics.

B12P7 ENV:PHAZER This program makes use of a patch between the envelope detector in the meters and the flange glide delay. As signal becomes stronger, the glide delay drops in the time domain, eventually crossing the 5.2ms base delays. As audio signal strength lessens, the glide returns to its preset value of 10ms. Very good on vocals. To make this effect work properly, be sure to drive the 300 to within 12dB of full scale (dBfs).

B12P8 LFO:FAZEDLYS Faze Dlys makes use of the LFO patched to the Flange Glide Delay(FDL). The base delays are set in different time domains: one side at 1.9ms with a feedforward gain; the other at 5.6 with a negative feed gain. As the Glide passes over each base delay, the phase of each gain is changed. In between, the output is a mixture of each. A great effect on a ripping guitar solo.

B12P9 LFO:PAN&FAZE This cool wavy preset should be run pre-fader with the Setup LFO at about .20Hz. With a mono or stereo signal attached to both inputs, the acoustic effect is a slow rotation in phase. Clean compressed guitars are the best here.

B12P0 SKY DELAYS A bit of giding delay combined with all sets of delays. Delays 1 and 2 are set short with feedback and "tuned" diffusion gains. Delays 3 and 4 are also set short and crossfeed into 2 and 1, respectively. There is a small amount of post delay (LDLY and RDLY), and these two post echoes are patched to the SoftSlider. Use the SoftSlider to adjust the post delays to match the tempo. By itself, *Sky Delays is sort of a chorused cluster echo. Very similar to a bright resonant small room. Beautiful effect on stacked vocals.

Bank 13
Split Rev 1

B13P1 CHAMBER A great general purpose reverb tail. Size is set to 28.1M (the largest value is 64M), so the density is rather tight. As you adjust Size, Rt will also change. If you want to unlink this natural phoenomena, set LINK to unlink (on Page Two).

B13P2 KEY CHAMBER A nice "bloomy" sounding reverb. Diffusion is set midway, so there is some good articulation at the begining of the reverb envelope. Use this on most keyboards, but those with a strong point may require a bit more Diffusion.

B13P3 DRUM CHAMBER Good starting point for acoustic drums. This preset is slightly larger than the standard chamber, but has less Diffusion. Rt is set to 1.0 second at mid frequencies. No SoftSlider patches.

B13P4 GUITAR ROOM This is a big, wide-sounding room for your guitars. For heavy rock stuff, you might consider panning "in" the returns, although in this Setup the Room output is in Mono.. The room is a little bottom heavy for additional warmth. Could also work well on vocals.

B13P5 BIG & SHORT This reverb effect is short, almost gated. Big room size set to 54.6M, and Rt set to 0.9 seconds. This preset really opens up a sparse track.

B13P6 "L" CHAMBER "L" Chamber mimics the shape of a chamber shaped like that letter. A little bigger than the "U" chamber. Reverb time is patched to the SoftSlider.

B13P7 "U" CHAMBER This preset is shaped liked an upside down "U" with the speaker on top of the wall and a microphone on either side of the wall. The SoftSlider controls the Mid Rt.

B13P8 BASEMENT TIght and short. Size is 15.8 meters, and the tonality is fairly resonant sounding. Almost trashy-sounding (low diffusion), and will certainly get so if the Rt is made longer. Explosive on snare drums.

B13P9 JOE'S B&G Live performances in Joe's 14.6M Bar. Advance the SoftSlider and the room size grows into a Bar and Grill.

B13P0 JOE'S GARAGE Two bays, no waiting. Small and bright. Great for Mono ADR work.

Bank 14 Split Rev 2

B14P1 BIG HALL Big and open sounding. The 44ms of Predelay helps to separate the stage from the seating area. Real good sounding on ballad vocals.

B14P2 GREAT ROOM The SoftSlider advances the Predelay and spreads to open the room up almost to hall proportions. Bass multiply is set to 2.0X to round out the bottom end.

B14P3 GREAT HALL The largest room size yet at 64 meters. Similar to Great Room, with Spread and Predelay patched to the SoftSlider, with the addition of reverb time also patched. Dig Deep!!

B14P4 BIG BRICKS Real “ratchety” sounding effect. Powerful for non-linear applications. The SoftSlider controls the diffusion characteristics.

B14P5 DRUM ROOMS Deep and narrow in shape. The SoftSlider makes the room “shallower” and gated-sounding as you reduce its value.

B14P6 DELAY ROOM This preset offers a nice room reference. The SoftSlider is patched to Predelay. Use this to make a bounce off the back wall effect without changing the Reverb Time.

B14P7 RECITAL HALL This medium large (44.5M) space opens sound sources beautifully. Made for string pads and voice. No SoftSlider patches

B14P8 BIGBATHROOM Bright and clean. Generic WC. Great for solo stuff, or for adding liveness to a track. SoftSlider draws out the Reverb Time.

B14P9 PLATE Very bright, very diffuse with an preset reverb time or 1.47 secs.

B14P0 SIZZLE CITY Small and long type Plate. Very metallic reverb effect. Great for cheap cymbals.

Bank 15 Mono Shift

B15P1 SHIFT IT! Baseline mono shift program with no pitch shift. Go to the glide parameter (GLD) in Program Edit mode to adjust the amount of mono pitch shifting you want.

B15P2 GUITAR SHIFT A medium amount of micropitch shift(-14c), along with a small amount of recirculating predelay. Actually, the glide pitch parameter (GLD) is patched to the LFO running in the Setup. The LFO causes the GLD to glide between -14c and -+7 cents. If you turn off the LFO on Setup page 4 then return to program edit and move the GLD parameter to -21c, the preset becomes raunchy sounding on “beefy” guitars.

B15P3 UP SHIFT A sweet sounding microshift up +7cents. There is a slight “chorus edge” due to a modest amount feedback around a 0ms delay line.

B15P4 DOWN SHIFT This program relies on the left meter to drive the fine pitch downward.

B15P5 EKO SHIFT The L-Meter is negatively patched to the feedback (FBK) parameter so that, when signal is present, delay feedback is reduced; when the signal disappears, feedback is increased. This is a very interesting effect when the echo fits the beat of the music. Use the DLY parameter to match the tempo.

B15P6 VOCAL SHIFT A short delay line recirculating around a maximum -21 cent pitch shifter. However the amount of pitch shifting will vary with the input level, going more negative in pitch as the level increases.

B15P7 SKY DOWN This program tunnels downward due to the liberal amount of delay feedback. If the effect is too heavy, lower the feedback.

B15P8 ECHO DOWN 14 cents down with a 272ms recirculating delay line. This program works great either before or after a Reverb preset (in a Cascade Setup).

B15P9 HALFSTEPSUP Just what you think... With the SoftSlider patched to the Delay

B15P0 HALFSTEPSDN (down) Ditto... With the SoftSlider patched to the Delay

Bank 16
Mastering

B16P1 EZ COMP 2:1 An “easy” preset to add to an overall stereo mix or mono or stereo submix. You might need to adjust Threshold to make it work for the particular signal you feed it. Release is set to gently (2:1) fall away after 363ms.

B16P2 DRUMCOMP 3:1 This is a bit more aggressive, with 7dB of boost below the selected threshold. A quick release of 58ms snaps up the volume. As with all compressor presets, Threshold is the critical parameter.

B16P3 VOICE OVER A fairly aggressive voice compressor, with 7dB of boost below the preset threshold of -17dB. A quick release of 58ms snaps up the volume. As with all compressor presets, Threshold is the critical parameter.

B16P4 COMP 4 VERB This compressor preset was made to work *after* a reverb effect. The Slope ratio is less than 2:1 with 5dB of gain below the -14dB threshold. The release is set to work fast at 91 ms.

B16P5 SMAKO! Alot of gain (13dB) with alot of slope (4:1) with the Threshold a couple of bits down from Dbfs. Careful !! You may need to adjust Threshold to make it work for the particular signal you’re feeding it. The release parameter rips the signal up within 91ms.

B16P6 SMALL ST.ADJ This preset is a cut down version of the larger Stereo Adjust program available in Single Setups. Level, Balance, Rotate, separate Left and Right Bass and Treble, along with Spatial EQ are available. There are no SoftSlider patches in this preset.

B16P7 PANOLA A stereo adjust program with the Balance set to full left. The Balance parameter is patched to the LFO. If loaded into a Setup which has the LFO running, Panola will cause the audio to move between the left and right speakers.

B16P8 FILTER PASS This program is meant to reduce the bandwidth of the source audio. The SoftSlider is patch to the Bass crossover and Treble Crossover parameters. When this Program is loaded into another Setup the Bandpass will be set to what ever the SoftSlider value is set to.

B16P9 SPATIAL EQ A cut down version of the larger Stereo Adjust program available in Single Setups. This particular preset has the Soft knob patched to three parameters: Spatial EQ (SPEQ), Bass Left (BASL), and Bass Right (BASR) boosts and cuts.

B16P0 PONS+DITHER This program has dither turned on and set to PONS (Psycoacoustically Optimized Noise Shaping), with level of 32. Experiments have shown this to be an optimum starting level of dither.

6

Time Code Operation

Using time code

The 300L utilizes time code to trigger Setup and Effect changes. It can also use time code to trigger parameter glides. In order for any of the time code functions to work, a time code source must be plugged into the Time Code Input on the 300L rear panel.

Time code is an electronic signal applied to tape or film which identifies each individual video frame. The ability to uniquely identify any frame provides a reference system for fast and accurate location of any point on the tape. This referencing system maintains its accuracy regardless of changes in playback or editing equipment, allowing precise synchronization of an entire editing system.

Time code identifies each video frame by assigning it a unique “address”. Frames are sequentially identified by hour, minute, second, and frame. For example, a typical timecode address appears as:

09	:	42	:	31	:	07
hours		minutes		seconds		frames

As each frame is advanced, the time code address is increased by one frame “count”. Because the time code signal is locked to advancing video frames, both advance at exactly the same rate.

In the USA, there are two standard frame rates, one for black and white (monochrome) and one for color.

Monochromatic video runs at a rate of 30 frames per second. If a black and white TV program is measured by time code, the program length, time code display, and clock time will all be in synchronization. Color video signals run at a rate of 29.97 frames per second, and clocking a one-hour color program at 30 frames per second will result in a time discrepancy of 3.6 seconds (or 108 frames). In order to correct this discrepancy, a version of time code called SMPTE Drop Frame was developed.

SMPTE Drop Frame Time Code, as its name implies, eliminates frame addresses from the Time Code each hour to allow matching of time code and clock time. Specifically, frame addresses .00 and .01 are eliminated at the end of every minute in an hour, except for minutes: 00,10,20,30,40 and 50. For example, 00.00.59.29 advances to the number 00.01.00.02. **In Drop Frame mode, the frame numbers .00 and .01 do not exist, except for minutes 00, 10, 20, 30, 40 and 50.** Since Drop Frame time code eliminates only frame addresses, the actual video is unaffected. Color video frames continue to progress at the rate of 29.97 per second. Any calculations of program length based on Drop Frame time code will, therefore, agree with standard clock time.

The 300L reads time code in the following formats:

SMPTE NON-DROP SMPTE Standard time code, compatible with a monochromatic frame rate of 30 frames per second

SMPTE DROP FRAME SMPTE Standard Drop Frame time code, compatible with a color frame rate of 29.97 frames per second

EBU Compatible with the European broadcast standard frame rate of 25 frames per second

FILM Compatible with frame rates of 24 frames per second.

The Event List

Using time code to initiate program changes

The 300L allows you to use time code (in any of the recognized formats) to trigger Setup, Effect, and parameter changes.

Up to 50 time code entries can be made on an Event List. Time codes can be entered via the numeric keypad, they can be "snapped" on the fly while time code is running, or they can be selected with dedicated sliders.

To access the Event List simply press the LARC CTRL button to enter Control mode, then use the PAGE button to display page Seven. The upper display will show:

The lower display will show:

Advance the leftmost slider to select VIEW to access the current Event List. The display will show:

Advance the slider again to display:

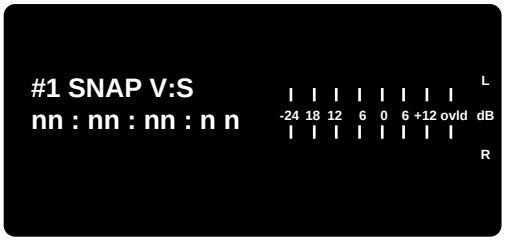
Now, the button below the leftmost slider will snap a timecode event each time it is pressed. The rightmost button will clear the last snapped event from the list. The Event List number (1-50) is shown on the upper display.

The 300L automatically sorts the Event List based on the time code addresses. If you add a new event it will be placed on the list at the appropriate place, and other entries will move in position. If you delete an entry, the remaining entries will retain their relative positions, but will move up one position.

Snapping events

The easiest way to develop a list in the 300L is to SNAP entries into the list. To use the snap function, locate the source machine to the beginning of the section you want to experiment with. Give yourself at least 5 seconds of pre-roll timecode, as you will want to snap the first timecode value ahead of any audio.

Start timecode running and press the button under the SNAP slider to capture the first timecode event. The upper display will show the number of the snapped event, the type of valid time code, and the snapped timecode:



The lower display will show running timecode.

To clear the last snapped event, press the button under the CLR slider. Pressing CLR repeatedly will delete additional list events.

Time code formats are indicated as follows:

V:S	valid SMPTE Non-Drop
V:D	valid SMPTE Drop Frame
V:E	valid EBU
V:F	valid Film

Editing the Event List

Press the PAGE key to go to Page 8. This is the Event Edit page. Editing the list includes editing “snapped” time codes, direct entry of time codes, trimming time codes, adding/deleting events from the list, choosing the type of automation change, and selecting the event.

The EDIT slider has 50 EDIT positions, 50 ADD positions and 50 DEL(delete) positions. Advance the slider to move through all 150 positions.

The TC slider allows you trim the displayed time code for the current event entry by ± 4 seconds. The slider’s null position is at the halfway point.

The button under the TC slider accesses a display page which allows you to enter a new number via the keypad, assign new values for Hours, Minutes, Seconds, or Frames via sliders, or trim the displayed time code again by ± 4 seconds. Press the button below the EXIT slider to return to the Edit page with the newly assigned number displayed. Press STOre to save the edit.

The TYPE slider allows you to define the type of automation event which occurs at the assigned time code number. The choices are:

S:	Setup (This must be the first entry in any Event List.)
MA:	Effect change for Machine A
MB:	Effect change for Machine B (will change only if a split type Setup is running)
PA:	Parameter glide for Machine A
PB:	Parameter glide for Machine B (will change only if a split effect is running in Machine B
PS:	Parameter glide for current running Setup.

The SEL slider allows you to scroll through the items associated with the TYPE of event you define.

For instance, the first event in the list *must* be a Setup. Select **S** with the TYPE slider, then use the SEL slider to select a Setup Preset or Register.

Once you've defined the event edit, press STOre to save your entries. Otherwise, moving the EDIT slider to select another edit event # will clear your edits.

Once the list is edited, you can test it from Page 7. Use slider 1 to select VIEW. Locate your source audio to the 5 second pre-roll area. The upper and lower displays will show:

Rolling timecode will appear over sliders 2-5 and the upper display will change according to the requests of the event list.

Note: You may need to trim the timecode value associated with the first event (Edit #1) to make it occur before the first picture or music.

Trimming Time Codes in the Event List

If you discover an event is too early or late, note the event #, and trim the timecode for that event. To do this, stop timecode, then press PAGE 8, to display the Event Edit page. Use the EDIT slider to select the event number (1-50), then use the TC slider to trim the timecode for that event. Press STOre to save the timecode trim. If you need a trim value which is outside the available range, press the TC slider button, and enter in a new timecode value via the keypad or the sliders. When you are finished, press EXIT, then STOre.

Programming Parameter Glides

Parameter glides can be a very powerful automation feature, allowing, for example, reverb time increases at the end of a commercial, automated fade-outs, EQ changes, or feedback levels.

The last three selections available with the TYPE slider on the Event Edit page are:

MA: GLIDE
MB: GLIDE
S: GLIDE

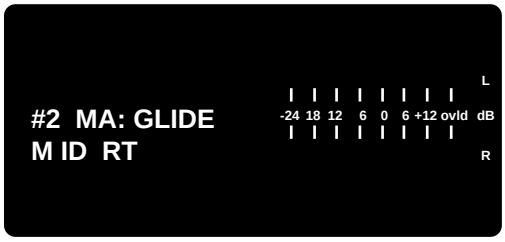
Selecting any of these, causes two additional sliders, labeled VAL and DUR to become active.

All the available parameters for the previously loaded Machine Effect or Setup are available via the SEL slider.

As an example, suppose the first event in the event list is to load Setup 102 REV/DLY.

For event #2, we'll specify a parameter glide for Machine A. To do this, move the TYPE slider until the upper display shows:

Use the SEL slider to select REVERB TIME. The upper display should show:

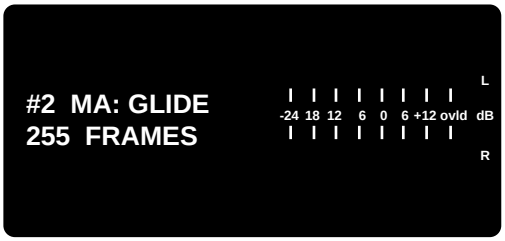


then will revert to the display of time code value after 2 seconds.

Use the VAL slider to set the REVERB TIME you want at the end of the glide. For this example, select a value of 14.21 seconds. The display will show:

then will revert to the display of time code value after 2 seconds.

Use the DUR slider to specify the total number of frames the glide will take. The maximum is 255 Frames(>8 seconds). The display will show:



then will revert to the display of time code value after 2 seconds.

Subsequent button pushes of SEL, VAL or DUR will briefly display your selection.

The next event in the list might be another parameter glide to reduce the reverb time running in Machine A, or a reload of the effect in Machine A, or a parameter glide for Machine B. In fact, you can have a number of glides occurring simultaneously.

The VIEW mode will show the event#, the type of glide, and the parameter value changing to its final value:

Things to Consider About Glides

All parameter glides are based on the effect loaded in the list immediatey preceeding the glide.

For example, let's say that *Medium Hall* is Event #4, and that Event #5 specifies MA:GLIDE, with MID RT moving to a final value of 3.8 seconds over a duration of 18 Frames.

Q What happens if you change Event #4 from Meduim Hall to Vox Chorus?

A Event #5 is now being driven by an algorithm which does not have MID RT as a selectable parameter! A new value will be placed based on the selected algorithm's available parameters. Be careful!!

The proper thing to do is to *delete Event #5*.

Adding an Event

Once you have created an Event List, you can also modify it by adding events with the ADD function.

The ADD function is used to duplicate an event, or to select an event, modify it and add it back into the list.

To duplicate an event, use the EDIT slider to display ADD. (There are 50 ADD slots.) Use this slider to select an event to duplicate. Press STOre to copy the event into the list.

Use the EDIT/ADD/DEL slider to reselect the Event # you duplicated. Assign a new timecode number (on the TC sub-page), press EXIT, then press STOre.

You would typically want to do this to reproduce a Setup, Machine effect, or parameter glide again at a different timecode value.

Duplication can also be used to have several glides occur simultaneously. Once you've snapped the particular timecode when you want the multiple glides to occur, select the event # in the ADD mode and press STOre once for each time you want the time code duplicated. **Return to the Event Edit page and store each event.**

You can also select a particular event in the ADD mode simply to modify its contents (usually to duplicate it at a new time code location). To do this, select the event, modify it, then press STOre. The original event will remain untouched. The modified event will be saved as a new event in the list.

Deleting an Event

To delete an entry from the list, advance the EDIT/ADD/DEL slider to DEL and position the slider to correspond to the event # you wish to delete. Press STOre to delete the selected event # from the list. *If you delete a Setup or Machine effect, make sure that no remaining glide events are dependent upon the deleted item.*

Dumping the list to MIDI storage devices

The Event List can be transferred via MIDI data dumps. On Page 5, slider 2 (DMP) has 4 selections: DUMP ALL REG, DUMP CURRENT, DUMP MIDIMAP, DUMP TC LIST. Leave the slider at TC LIST and press STOre. Your MIDI storage device will then receive the dumped Time Code list.

300L Event List

Event		Effect		
#	Time Code	#	Name	Comment
1	: : :			
2	: : :			
3	: : :			
4	: : :			
5	: : :			
6	: : :			
7	: : :			
8	: : :			
9	: : :			
10	: : :			
11	: : :			
12	: : :			
13	: : :			
14	: : :			
15	: : :			
16	: : :			
17	: : :			
18	: : :			
19	: : :			
20	: : :			
21	: : :			
22	: : :			
23	: : :			
24	: : :			
25	: : :			
26	: : :			
27	: : :			
28	: : :			
29	: : :			
30	: : :			
31	: : :			
32	: : :			
33	: : :			
34	: : :			
35	: : :			
36	: : :			
37	: : :			
38	: : :			
39	: : :			
40	: : :			
41	: : :			
42	: : :			
43	: : :			
44	: : :			
45	: : :			
46	: : :			
47	: : :			
48	: : :			
49	: : :			
50	: : :			

This page may be reproduced as needed for recording any Event List you create.

7

MIDI Operation

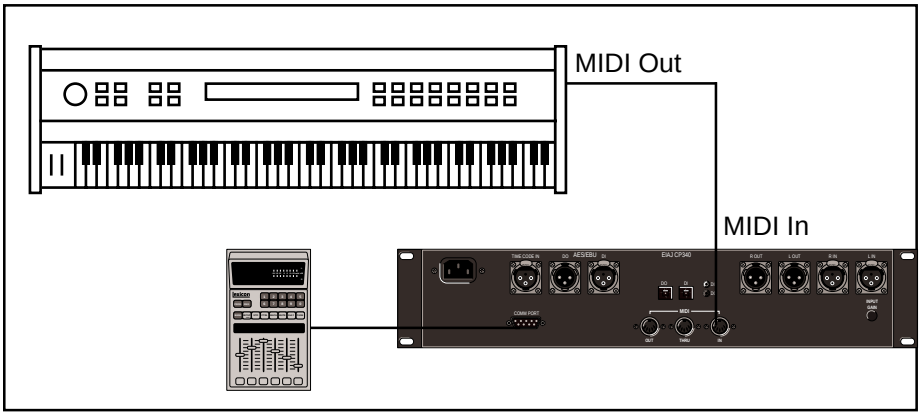
The 300L contains innovative MIDI features that exemplify Lexicon's commitment to using the power of MIDI to provide new functions to our users. In the 300L most of these functions fall into one of four categories:

1. Real-time (Dynamic MIDI®) control of as many as ten of the 300L's variable parameters simultaneously. Two Setup patches can run on the channel specified for System changes, and each machine can have four patches on user-designated Machine channels.
2. Automatic selection of a 300L effect via MIDI Program Change messages.
3. Real-time effects automation using MIDI System Exclusive or Non-registered parameters.
4. Transfer of setups, effects, the Event List and corresponding MIDI table to a computer, other MIDI-compatible device, or to another 300L.

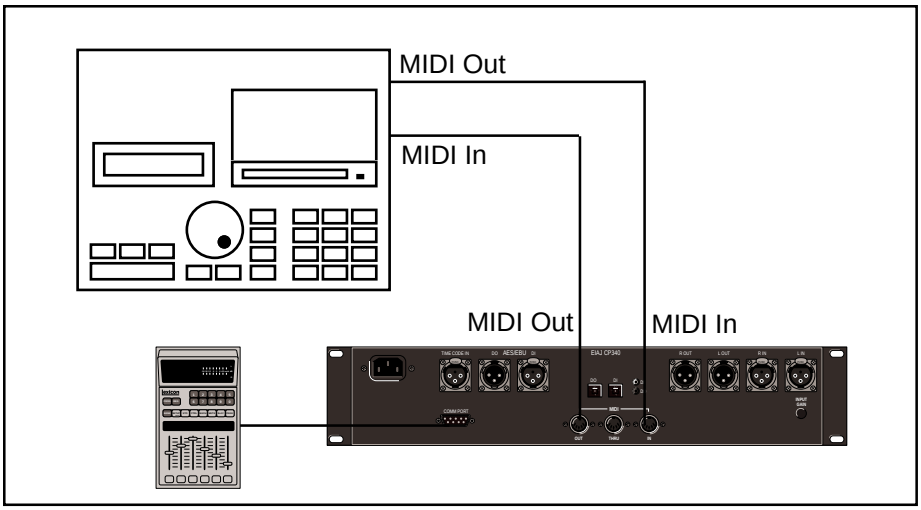
Each of these applications will be discussed in this chapter, but first, let's cover some typical installations.

MIDI Connections

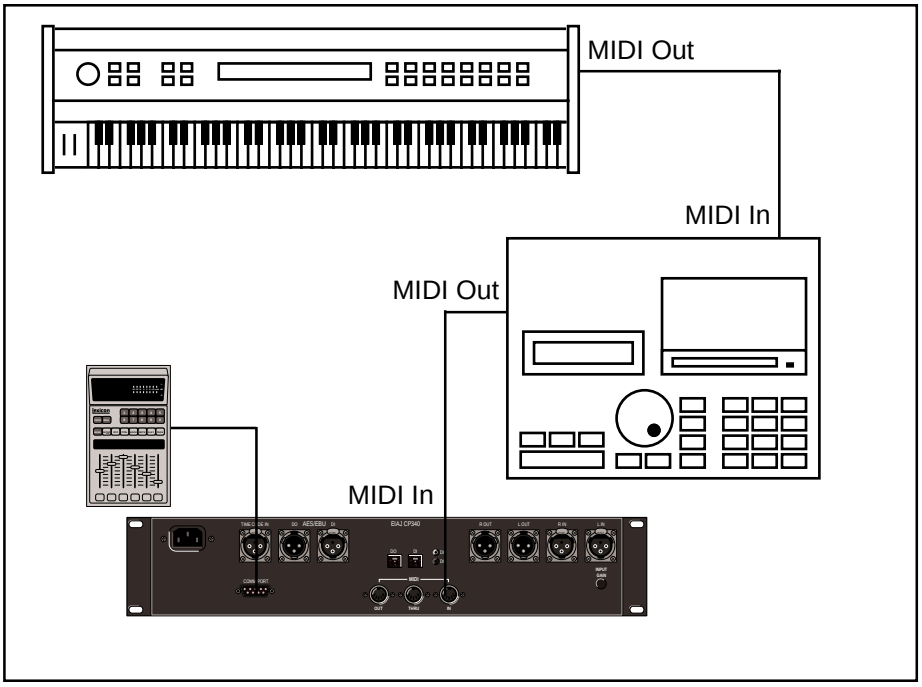
All MIDI connections described in this chapter use the MIDI IN, OUT and THRU connectors located on the rear panel of the 300L. As with any MIDI connection, use only standard MIDI cables, and keep them as short as possible to avoid possible data errors. Fifteen meters is generally accepted as the maximum length that should be used to maintain data integrity.



300L with keyboard



300L with sequencer/computer



300L with sequencer/computer and keyboard

Setting MIDI Channels

The 300L can receive MIDI information on three independent channels: one for Sysex, Dump messages, and Fixed and MAP Program Change requests for Setups, and two channels for Dynamic MIDI MOD patches within each Machine (A and B), as well as Programs and Registers. MIDI Channel assignments are made in Control Mode. To select this function, press CTRL, then press PAGE and press 5, to display the MIDI Automation, Dump, Dump Delay, and Channel sliders.

AUTO	DMP	DLY	CHL	CHL	CHL

Sliders 4,5,and 6 set MIDI channels for the System, Machine A and Machine B, respectively.

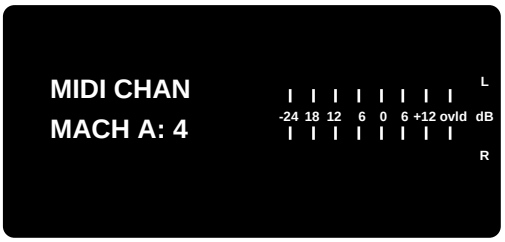
Using Fixed Program Change

You can use MIDI Program Change messages to load either Setups or Machine Effects. Setups are driven by MIDI Program Change messages over the System Channel. MIDI Program Change messages 1-128 sent out over the System Channel will load Setups 1-128. Go to Control mode, page 6, and set the MAP slider to FIXED.

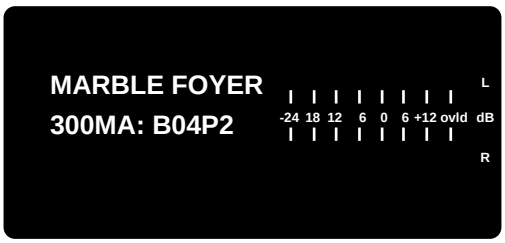
As an example: Set the System Channel to channel 2. Now send Program Change 64 to the 300L on channel 2 from your MIDI control device. If you are at the top level of the SETUP mode (press SETUP if you're not), the display should read:

There is a one-to-one correspondance (fixed) between the MIDI Program Change number and the 300L Setup number.

Now, suppose you have a Setup running, but want to load a new Effect Program over a different MIDI channel, into that Setup. To do this, as an example, set the MIDI Channel for MACHINE A to channel 4. by pressing CTRL, PAGE, then 5. Advance slider 5 until the display reads:



Press PROG before sending any MIDI messages to the 300L. This will allow you to see and confirm new Programs actually being loaded. Now, send Program Change 34 over MIDI Channel 4. The display will show:



This is another FIXED relationship starting at B1P1 LARGE HALL (MIDI Program 1) through B13P8 BASEMENT (MIDI Program 128).

NOTE: If you try to load a Split Effect Program into a currently running Single Setup, or a Single Effect Program into a currently running Split Setup, you will get the message: **CAN'T LOAD IN CONFIG!**

MIDI Program Change numbers are limited to 1-128. As the 300L contains more than 128 Setups and more than 128 Effects, this means that higher Setup and Effect numbers cannot be accepted. If Automation is set to PROG CHANGE and the MAP is set to FIXED, the 300L will display **NOT IN FIX** when Effects numbered over 128 are received.

Using MIDI Maps

To Have Program Change messages load specific Setups or Effects, use the 300L MIDI MAP mode. Press CTRL, PAGE, then 6. If you've been following the examples above, the 300L will be in FIXED mode. Advance the MAP slider slowly so that the upper display reads:

The lower display will show:

The upper display shows the MIDI Program # followed by the type of response (SETUP, MACH A, or MACH B) and the SELected name of the Setup or Effect.

MAP
Advancing the MAP slider will scroll all of the MIDI Map numbers through 128. For your convenience, a MIDI map of factory Setups is stored in the 300L.

TYPE
Use the TYPE slider to select MACH A (effect), MACH B, or the Setup to be changed.

SEL
The SEL slider selects all the available items for the defined type.

Note: for either type of MIDI Program Change — FIXED or MAP, use the System channel to communicate to Setups and the MACH channels to communicate to Machine Effects (Programs or Registers).

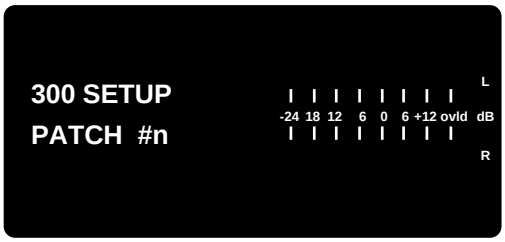
Remember that you can't load Split effects into a currently running Single Setup, or load a Single effect into a Split Setup.

Making Patches

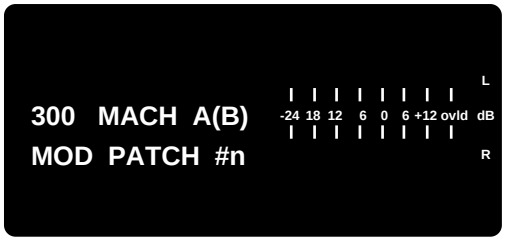
Dynamic MIDI® allows you to patch virtually any MIDI controller to any effect parameter in the 300L. Parameter patches can be made in the SETUP, PROGram or REGister modes. The actual page is determined by the algorithm from which the effect is made. Once in the SETUP, PROG or REG mode, press the PAGE repeatedly until the lower display reads:

To use Dynamic MIDI, you assign MIDI (or Non-MIDI) Source controllers to parameters. The 300L has 2 patches forSetup parameters and 4 patches for each Effect Machine. In Dual Mono and Cascade Setups, each machine can have 4 patches.

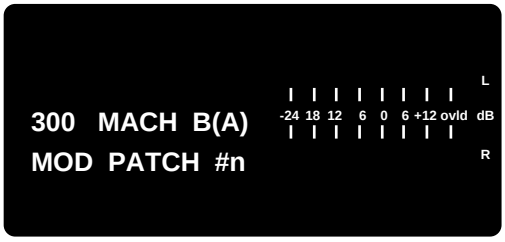
SEL (Select)
This slider defines the current patch. In SETUP mode, this slider will go from 1 to 2. The upper display will read:



In PROG or REG mode,the upper display will read:



If you are currently running a Split Setup, and are in PROG or REG mode, the MACH key is active. Pressing MACH will jump you to the other Machine. Go to the patch page and press the button under the SEL slider. The display will show:



OFF
CNTLR- 0
MODWHEEL
BREATH
CNTLR-3
FOOTPED
PORTATIME
VOLUME
CNTLR-9
PAN
EXPRESSN
CNTLR-12-15
GPCNTRL1-4
CNTRL20-31
SUSTAIN
PORTA SW
SOSTENSW
SOFTPED
SWITCH68-79
GP CNTRL5-8
SWITCH84-95
PITCHWHL
AFTERTCH
LASTNOTE
LAST VEL
MIDI CLK
SOFTSLID
L-METER
R-METER
LFO

Available "Source" selections

SRC (Source)
Use this slider to select the source controller which will control your selected parameter.

DEST (Destination)
Use this slider to select the parameter to be modulated by the controller.

SCL (Scale)
Use this slider to set the effective range of your source controller. Scaling can be set from -200% to +200%. When SCL is set to 100%, the full range of the MIDI controller will correspond to the full range of the selected Destination parameter. Setting a negative value will reduce the parameter value as the controller value increases.

THR (Threshold)
Use this slider to set the point below whcich contoller values will not have an effect on the parameter.

VAL (Value)
This slider lets you conveniently set the parameter value against the current controller value. This obviates the need to go to the actual parameter location.

*NOTE: If the SRC controller is dynamic in nature, like a modulating LFO, setting VAL may be difficult, as you will be trying set the parameter to a moving target. In cases like this, turn the LFO OFF.

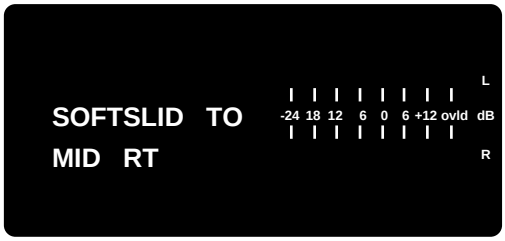
To better understand the 300L MIDI patching system, let's review the Soft Slider patch in Setup #1 LARGE HALL.

1. Press SETUP.
2. Use the PRE slider to select SETUP #1 LARGE HALL.
3. Press the button under the SOFT slider. The display will show:

This shows the name of the parameter the SoftSlider is assigned to, as well as the stored value of the SoftSlider. Keep this value in your head as we proceed with this example.

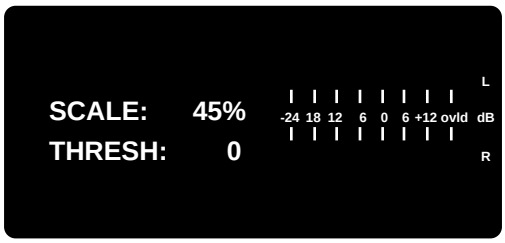
4. Press PROG, PAGE, then 6, to go to page 6 of the LARGE HALL Effect.
5. Press the SEL slider button. The display will show:

6. Press the SRC slider button. The display now gives you 2 pieces of information; the controller source and parameter destination:



Pressing the DEST slider does not change the display.

7. Press SCL or THR to display scale and threshold information.



8. The VAL slider allows you set the parameter value against the current MIDI (or Non-MIDI) controller value.

In this example. that value is 64. If you decide to modify this value, you will effectively be introducing an offset to the original patch. This is perfectly acceptable, but be aware that if you drastically offset the original parameter value, the SoftSlider may very well drive that parameter into an OVER RANGE or UNDER RANGE condition. In most cases, changing the VAL parameter requires changing the Scale value as well.

In this case, the patch is made in the PROGram but controlled in the SETUP. To store any changes you might make with either the SoftSlider or via MIDI, return to SETUP mode, and press STOre. Select the Setup REGister you wish to store into and press STOre again. This will automatically store the modified Machine Effect into its own register as well as storing the Setup information into its own Register.

Real-time MIDI Effects Automation

The 300L can be automated in a number of different ways, depending on your applications, and on the capabilities of your MIDI sequencer.

The six major categories of MIDI Automation are:

1. Using the 300L's System Exclusive transmissions to record and play individual parameter changes.
2. Using the 300L's Non-Registered Parameter transmissions to record and play individual parmeter changes.
3. Using MIDI Program Change messages to load Setups or Effects.
4. Using MIDI Controller information and Dynamic MIDI® patches to record and play parameter changes.
5. Using the 300L's System Exclusive or Non-Registered Parameter messages that are the result of Dynamic MIDI® patches. This allows you to control, record, and play as many as five of the 300L's variable parameters simultaneously.
6. Controlling multiple 300Ls from a single Host 300L.

When using the 300L's Automation capabilities, it is good practice to put the 300L on a different MIDI Channel from those used by other equipment in your system. This avoids the possibility of the 300L responding to commands that aren't really intended for it.

Using Real-time SysEx and Non-Registered Parameters

The 300L will transmit System Exclusive or Non-Registered Parameter messages as you vary any of the available parameters if this function is assigned in automation mode. As you advance the Softslider to vary one of the 300L's effect parameters, MIDI data in the selected output format will be transmitted from the 300L's rear panel MIDI OUT connector as a Program Change. (All parameter values are sent when the effect itself is changed.) This information can be recorded on your sequencer.

To set the automation mode, go to page 5 in Control mode. Press the button under the AUTO slider, then use the slider to select either "SysEx" or "Non-registered Params". There is also an "OFF" setting to prevent unwanted MIDI transmissions.

Once you have selected an automation mode, simply put your sequencer into Record, and change the 300L's parameters to get the sounds you want. When you play the sequence back, the 300 will respond to the recorded information just as it was recorded.

Note: The choice between SysEx or Non-Registered Parameters is determined by your sequencer's capabilities, and your current utilization of its available functions. With a bit of experimentation, and taking into consideration other MIDI data you need to record, you can find the best combination for your equipment.

Note: Program Change messages are transmitted over the SYSTEM channel, when automation is set to PROG CHANGE.

Using Dynamic MIDI® to transmit and receive MIDI Controller Information

Some sequencers cannot record SysEx or Non-Registered Parameter information. In this case, you can use Dynamic MIDI® patches and record the MIDI Controller information used to get the real-time effect changes you want. Simply create the patches you want, and record the Controller information on your sequencer. When the sequence is played back, the 300L's Dynamic MIDI® patches will respond to the recorded Controller commands.

Using SysEx and Dynamic MIDI® Patches

This type of operation gives the best of all the 300L's MIDI capabilities. As previously described, create the patches you want. Set the 300L to one of the Automation modes. Put your sequencer into Record, and use the MIDI Controllers to create the effect parameter changes you need. As you change the effect parameters, the 300L will transmit information to your sequencer in the format you have chosen (System Exclusive or Non-registered Parameters). This allows you to control and record as many as five parameters simultaneously. Again, when you play back the sequence, the 300L will respond just as the changes were recorded.

Controlling Multiple 300Ls

In applications that require more than one 300L to work together, you can use one 300L as a Host, and Client as many 300Ls as you need to the Host. This is done by connecting the MIDI OUT of the Host machine to the MIDI IN of the first Client, then connecting the MIDI THRU of the first Client to the next Client, and so on.

Set the Automation mode on all machines to the same setting, and make sure that all machines are operating on the same MIDI Channel.

Note: If Host and Client machines have different input sources, i.e. a mix of analog and digital, effect changes will not work in SysEx and Non-Registered Parameter modes.

8

Troubleshooting

Troubleshooting

This chapter is intended primarily to help you recognize some common error states which can be corrected from the LARC, or by simple means such as cable replacement. Any error states which are not covered here should be referred to your local dealer for service by a qualified technician.

Low Voltage

In a low-voltage, or "brown-out" condition, the 300L will freeze in its current state. None of the controls will have any effect. When power returns to a normal level the unit will reset itself as though it had just been powered on. If the unit does not reset itself, turn the power OFF, then ON to resume normal operation.

Overheating

Temperature extremes may cause the 300L to exhibit unpredictable behavior. If the unit as been subjected to temperatures below 32°F (0°C) or above 95°F (35°C), it should be turned off and allowed to return to normal temperature before use. The unit may be damaged by exposure to temperatures below -22°F (-30°C) or above 167°F (75°C), or by exposure to humidity in excess of 95%. If a unit exposed to such conditions fails to operate after it returns to a normal operating temperature, contact your local service representative.

Common MIDI Problems

The 300L doesn't respond to MIDI Program Changes.
Check the PARAM MIDI channel on the MIDI Control page in Control mode and check the Table Mode setting on the same page. The Table Mode should be set to FIX or TABLE. Also check MIDI In/Out connections between the units.

The 300L doesn't respond to Controller messages when using Dynamic MIDI®.
Check the PARAM MIDI Channel number on the MIDI Control page in Control mode and check the modulation patches. Also check MIDI In/Out connections between the units.

The 300L doesn't respond to SysEx commands.
Check the SYSTEM MIDI Channel on the MIDI Control page in Control mode.

The 300L does not send MIDI parameter changes.
Check the Automation mode on the MIDI Control page in Control mode. This should be set to SYS EX or NON-REGISTERED PARAMS.

Common Time Code Problems

The 300L does not change effects to incoming time code.
Check your cable connections and the setting of the Event List mode in Control mode. Also check the signal level of the incoming time code. If it is too low, the 300L may not respond.

The 300L will not lock to the incoming time code.
Check the signal level of the incoming time code. If the level is too high or too low, the 300 may not lock to the signal. Also check the wiring of the time code cable. The time code input on the 300L is electronically balanced and, if the cable is not wired with this in mind, the 300L may not lock to the signal.

The 300L changes effects too late.
Trim the time code values using the Edit function on the Time Code Event List page in Control mode.

Common Digital Interfacing Problems

The 300L will not lock onto an incoming digital signal.
Check the cables that you are using. If the signal is coming in through the RCA conector, cable length must be kept to a minimum. If you are using the XLR input, remember that this is a transformer-balanced input, and the cable must be wired with this in mind. DO NOT USE ANALOG AUDIO CABLE TO CONNECT DIGITAL AUDIO.

When using the ANA+DIG input mode, there is no audio output.
If you are using this mode and you are not sending a digital signal to the 300L, audio may not pass through the system. To correct this, choose the ANALOG mode, or enter Effect Edit mode and turn the digital input level all the way down.

The meters do not show any incoming signal.
The meters may be set to read the wrong inputs. Use the Meter page in Setup mode to select the inputs you are using.

Error/Status Messages

Under the described conditions, the following messages will appear on the upper display of the LARC. In some cases, the display may flash briefly as it is overwritten with other error/status messages.

!BAD DIGITAL WORD CLOCK!	Digital input has been selected, but no valid digital input has been detected. Check the digital connector setting and check that your digital source is connected and working.
BOGUS CONFIG	An invalid audio routing configuration was recognized during an attempted Setup load via MIDI.
BOGUS EFFECT	One of the effects contained in a Setup being loaded via MIDI is invalid for the specified configuration.
CAN'T LOAD: REG IS EMPTY	An attempt was made to load an empty user register.
CAN'T LOAD IN CONFIG!	An attempt was made to load an effect which is invalid in the currently specified audio routing configuration. For example, an attempt to load LARGE HALL (which requires the Single configuration) into a Cascade Setup, would initiate this message.
EMPTY REG	A request was made to load a Setup or Effect register which has nothing stored in it.
MAPTABLE OFF	Automation is set to Program Change mode, but the MIDI Map Table is off.
MIDI ERROR	An error occurred during MIDI transmission or reception. (This message may occur even when the unit is operating properly. For example, with Program Change Automation enabled, the 300L will attempt to transmit effects that are not mapped if the Setup is mapped. In this instance, the Setup will load properly and this message will be displayed.)
NO BANK REGS MATCH CONFIG	An attempt was made to investigate an empty bank, or a bank whose registers are all invalid for the current configuration.
NOT IN FIXED	Program change messages outside MIDI range (>128) were received while Automation was set to Program Change mode and the MIDI Map Table was set to Fixed.
PGM OFF MAP	Program change messages which are not in the map were received while Automation was set to Program Change mode and the MIDI Map Table was set to Map.
STORE/COPY DISABLED	An attempt was made to store, copy or load with the store/copy functions disabled.
STORE EFFECT FIRST	An attempt was made to store a Setup containing modified Effects, but no effect registers were "available". Each Setup contains a reference to one (Single) or two (Dual Mono and Cascade) effects. When you store a setup whose effect(s) have been edited, the 300L tries to automatically store the edited effects into "available" registers, changing the effect name so the last characters show the "containing" setup. If there are no "available" effect registers, this message is displayed. To continue, you must explicitly sore the effect(s) (by overwriting previously used effect registers), then store the setup.
TIMECODE DISABLED	Event List Snap mode was requested with time code disabled.
VAL: LOAD PROG	MID RT or SPR has been assigned a target value in an Event Edit List, but there is a mismatch between the current program location and the location pointed to by the glide. As all glide requests point to a previous Setup or event triggered in the list, use the Edit slider to move back through the list until you identify the most recent setup or program load. Note the location (the Setup number, or the Bank and program number), return to Setup or Program mode, and load that location. Return to Control mode and finish the Event List.

9

MIDI Implementation Chart

MIDI Implementation Details are available to assist experienced programmers in developing software for use with the 300L. These can be obtained from your dealer, or directly from Lexicon. Request: Model 300 MIDI Implementation Details.

MIDI Implementation Chart

Lexicon 300L
Digital Effects System

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	1 1-16, OMNI	1 1-16, OMNI	Mach A, Mach B, and System on separate channels; Memorized
Mode	Defaullt Messages Altered		Mode 1, 3	
Note Number	True Voice	X	0 - 127	Used as controller
Velocity	Note ON Note OFF	X X	O v=1-127 X	Used as controller
After Touch	Keys Channels	X X	X X	
Pitch Bender		X	O	MSB only
Control Change	0-95	X	OX 0-99	Controllers can be patched to control effects parameters
	96 97 98 99	OX OX OX OX	OX OX O O	Data Increment Data Decrement N-RPN N-RPN
Program Change	True #	O	O 0 - 127 O 0 - 127	
System Exclusive		O	O	
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	O X	as Controller
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	X X X X	X X X X	
Notes	If Channel is set to OFF, 300L will not recognize any messages			

Mode 1: OMNI ON, POLY
Mode 2: OMNI ON, MONO
Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO

O : Yes
X : No

10

300L Specifications

300 Specifications

Audio Input and A/D Conversion

Input Channels (2)	Balanced XLR, pin 2 "high"
Input Impedance	50kΩ, unbalanced; 100kΩ, balanced
Full Scale Input Level	Gain switch in 0dB position: +2dBu minimum; +20dBu maximum Gain switch in +16dB position: -14dBu minimum; +4dBu maximum
Common Mode Rejection	DC to 2kHz: 60dB minimum; 2kHz to 20kHz: 40dB minimum
Frequency Response	48kHz sample rate: 10Hz to 21.5kHz, ±0.2dB 44.1kHz sample rate: 10Hz to 20kHz, ±0.2dB 32kHz sample rate: 10Hz to 14.5kHz, ±0.2dB
Phase Linearity	±5 degrees, 10Hz to 20kHz
Delay	(Frequency Independent) From Analog Input to Digital Output: 0.75mS
Crosstalk	80dB maximum, 10Hz to 20kHz
Signal to Noise Ratio	90dB minimum, A-weighted
Total Harmonic Distortion	0.01% maximum, 10Hz to 20kHz
SMPTE Intermodulation Distortion	0.01% maximum
Dynamic Range	90dB minimum
Pre-emphasis	15µs (±0.9µs) and 50µs (±3µs)
Gain Control	20dB in 0.1dB increments

D/A Conversion and Analog Output

Output Channels (2)	Balanced XLR, pin 2 "high"
Output Impedance	75Ω
Full Scale Output Level	-2dBu to +18dBu
Frequency Response	48kHz sample rate: 10Hz to 21.5kHz, ±0.2dB 44.1kHz sample rate: 10Hz to 20kHz, ±0.2dB 32kHz sample rate: 10Hz to 14.5kHz, ±0.2dB
Phase Linearity	±5 degrees, 10Hz to 20kHz
Delay	(Frequency Independent) From Digital Input to Analog Output: 1.8mS
Crosstalk	90dB maximum, 10Hz to 20kHz
Signal-to-Noise Ratio	100dB minimum, A weighted
Total Harmonic Distortion	0.01% maximum, 10Hz to 20kHz
SMPTE Intermodulation Distortion	0.01% maximum
Dynamic Range	90dB minimum
De-emphasis	15µs (±0.9µs) and 50µs (±3µs)
Gain Control	20dB in 0.1dB increments

Unless otherwise specified, specifications presume 48kHz sample rate, Emphasis off, Gain switch at 0dB, and Gain Control at unity (0dB)

Analog Input to Analog Output (48kHz sampling rate)

Frequency Response	48kHz sample rate: 10Hz tp 21.5kHz, ±0.2dB
Crosstalk	80dB maximum, 10Hz to 20kHz
Signal-to-Noise Ratio	90dB minimum, A-weighted
Total Harmonic Distortion	0.01% maximum, 10Hz to 20kHz
SMPTE Intermodulation Distortion	0.01% maximum
Dynamic Range	90dB minimum

Digital Audio Interfaces

AES/EBU professional digital audio interface	Balanced female XLR digital input; Balanced male XLR digital output Conforms to AES 3-1992 (ANSI S4.40-1992). Both input and output are transformer-coupled. Input/output levels and impedance comply with CCITT V.11 and EIA RS-422A.
EIAJ CP-340/SPDIF consumer digital audio interface	Unbalanced coaxial "RCA" type digital input and output; SPDIF compatible Optical (fiber optic) type digital input and output
Sample Frequency	Host: 48kHz+5Hz Client: 42 kHz to 50kHz 44.1 kHz ±5Hz

Control Interfaces

Time Code Input	Balanced female XLR, EIA-422 input, 100mV p-p minimum. Formats supported::

	Speed Range
SMPTE (Drop or Non-drop)	0.75 to 1.18
EBU	0.80 to 1.33
Film	0.82 to 1.33

MIDI Interface	5-pin DIN connectors provided for MIDI IN, MIDI OUT, and MIDI THRU

LARC (Lexicon Alphanumeric Remote Control)

Controls	Four mode-select buttons (BANK, PROG, SETUP, REG) used with ten numeric select buttons (1 to 0); a page select button (PAGE); a load key (ENTER); a control program key (CTRL); a machine-select key (MACH); two auxiliary control buttons (MUTE, STO); six sliders for smoothcontrol of up to 128 parameters per program with associated display-select buttons
Display	Two lines of 12 alphanumeric LEDs for interactive display; additional line of 24 alphanumeric LEDs (sixgroups of four for each slider); dual 16-position LED headroom indicator (calibrated -24 to +12 dBm with overload warning)
Connector Type	DE9
Cable	50-ft extra-flexible cable; cables can be linked
Operating Distance	Up to 100 feet when powered from mainframe; up to1000 feet possible with optional remote power source for LARC

General

Dimensions	19.0"W x3.5"H x13.6"D (483x89x346mm) 19" rack mount standard, 2U high
Weight	Net weight:18.9 lbs (8.6 kg) Shipping weight: 24.5 lbs (11.1 kg)
Power Requirements	100/120/230 VAC (-10%, +5%) 50-60 Hz 3-pin IEC power connector
Power Consumption	75 VA maximum
Environment	Operating Temperature: 32° to 95°F (0° to 35° C) Storage Temperature: -22° to 167°F (-30° to 75°C) Humidity: 95% max without condensation
Safety Approvals	CLA approval

Specifications subject to change without notice.

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Lexicon Part #070-10673 Rev 1