Owner's Manual

LXP-5

Effects
Processing
Module

lexicon

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Unpacking and Inspection

After unpacking the LXP-5, save all packing materials in case you ever need to ship the unit. Thoroughly inspect the LXP-5 and packing materials for signs of damage. Report any shipment damage to the carrier at once; report equipment malfunction to your dealer.

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.

Lexicon Part #070-07332 Rev 1

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Table of Contents

Introduction

Congratulations on your purchase of the LXP-5 Effects Processing Module! You are about to experience superb sound quality, a full range of pitch shifting, delay and reverb effects, fast intuitive editing of preset sounds, and an industry-leading MIDI implementation.

The LXP-5 offers a rich and distinctive palette of special effects, including 128 programs to get you started — 64 preset effects programs and an additional 64 programs stored in RAM user memory locations. Each program has up to five variable parameters that you can adjust for subtle or dramatic changes in the program's sound, and you can store as many as 128 customized programs in user memory. All of the LXP-5 functions are accessible from the front panel, or via MIDI, providing truly world-class flexibility and control. From pitch shifting to stereo delays and flanging, the LXP-5 delivers superior performance. Whether you are a producer, engineer, or musician—whether you work on stage or in the studio—the LXP-5 will quickly become an indispensible part of your sound.

We're confident you'll find that the LXP-5's unique combination of state-of-the-art sound and extraordinary versatility is exactly what you're looking for. A Quick Reference card provides the basics of operation in a compact format to get you up and running as quickly as possible — but 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, program descriptions, and complete MIDI Implementation data — all the information you need to access the full power of the LXP-5.

1. Installing the LXP-5

Unpacking

After unpacking the LXP-5, save all packing materials in case you ever need to ship the unit. Thoroughly inspect the LXP-5 and packing materials for signs of damage. Report any shipment damage to the carrier at once. The following accessories are included with the LXP-5:

1. Quick Reference card
2. Owner's Manual
3. Power pack (USA Part # 470-07345)
4. Warranty card (USA only)

Mounting

The LXP-5 measures 8.5"W x 1.7"H x 9.5"d (215.9 x 43.2 x 241.3 mm). The optional rack mounting kit (A-LXP-R) handles one or two units in a single rack space. Whatever mounting method you use, make sure that the LXP-5 is securely screwed into the rack adapter – "friction fit" or double-stick tape installations may allow units to loosen during transportation, resulting in damage.

The maximum ambient operating temperature is 35°C (95°F). Provide adequate ventilation if the LXP-5 is mounted in a closed rack with heat-producing equipment such as synthesizer modules, effects units, or power amplifiers. Avoid mounting the LXP-5 directly above power amplifiers.

Power

Connect the LXP-5 power pack to an appropriate AC wall socket, and the cable end to the LXP-5 power connector. The LXP-5 must be used only with the supplied power pack. Voltage requirements are printed on the power pack. The LXP-5 has no power switch – it can be left on all the time. To keep the power plug from working loose from the rear of the unit during transport, you may wish to apply a small amount of silicone sealer to the plug after inserting it.

LXP-5 Front Panel Controls

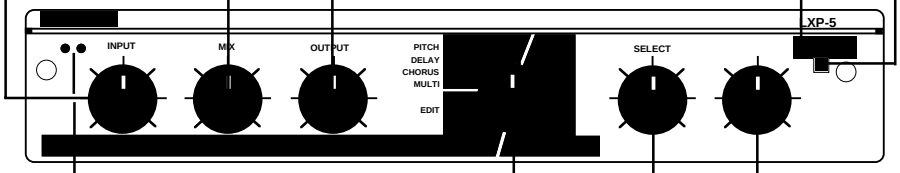
Input
Sets the audio input level.

Mix
Controls the ratio of dry (source) to wet (effect) signal present at the LXP-5 outputs. (Turn the control all the way to the left for 100% dry/ 0% wet.)

Output
Controls the signal level sent to the LXP-5 outputs.

Learn
This button is used to store and edit programs, to learn patches and, with an external MIDI device, to select MIDI channel.

Learn LED
Confirms that power is on, and blinks in red or green at different rates to indicate LXP-5 status.



Level Indicators
The left LED indicates signal present; the right flashes red when the signal is -3dB from peak overload.

Function and Select
Used for selection of factory presets, User memories, Bypass and three edit modes.

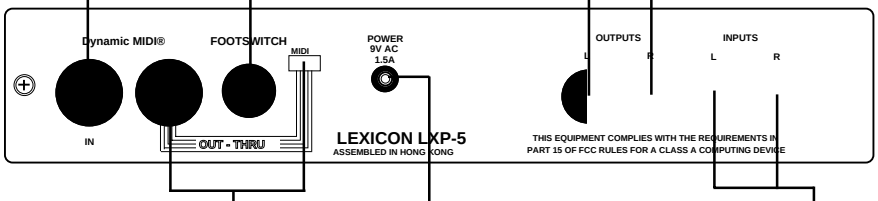
Adjust
Used to adjust program parameter(s), or to adjust the selected parameter in Edit Mode.

LXP-5 Rear Panel Connections

MIDI IN
Receives MIDI information from other MIDI equipment such as master keyboard controllers, MIDI foot controllers, sequencers and synthesizers.

Footswitch
Connector for toggle (Push on/push off) or momentary contact footswitch.

Outputs (L and R)
Single-ended (unbalanced) stereo outputs provide +4dBu nominal output level.



MIDI THRU (OUT)
With the recessed slide switch set for MIDI THRU, any MIDI data received is sent without change. The recessed slide switch can also be set for MIDI OUT.

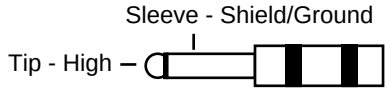
Power
Accepts power from the supplied power pack.

Inputs (L and R)
Single-ended (unbalanced) inputs accept levels from -25 to +20dBu. Input impedance is 50 kilohms in stereo, 25 kilohms in mono.

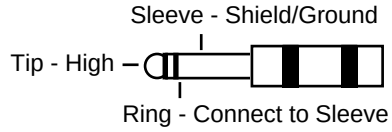
Audio Connections

This section outlines several connection possibilities for the LXP-5. Because each sound system is unique, we recommend experimentation to arrive at the best configuration for your system. Always check connections for proper impedance, polarity, and levels.

Audio connections to the LXP-5 are unbalanced, and should be made with high quality shielded cables with 1/4" tip-sleeve phone jacks at the LXP-5 end. The connectors must be wired as shown below:

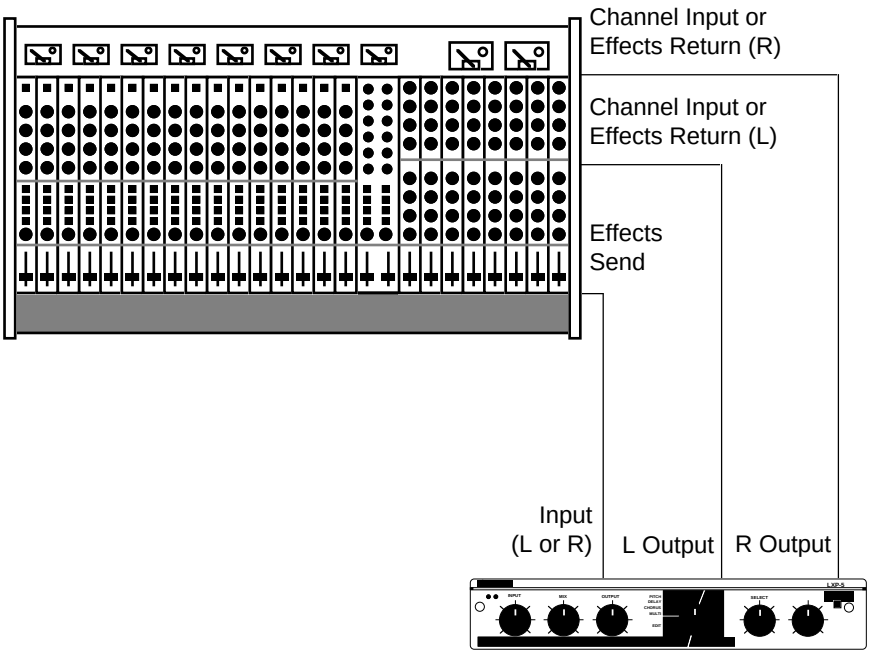


If only 1/4" tip-ring-sleeve phone jacks are available, they must be wired as shown:



Mono or stereo?
The LXP-5 produces wonderful stereo effects from either mono or stereo signal sources. For mono sources, use either of the two input connectors; the dry signal appears (along with the stereo effects) in mono at both output connectors. For instruments and sources with stereo outputs, use both inputs. We recommend using both LXP-5 outputs whenever possible but, if mono output is required, you can use just one of the two output connectors. When only one output is used, the left and right signals are summed internally .

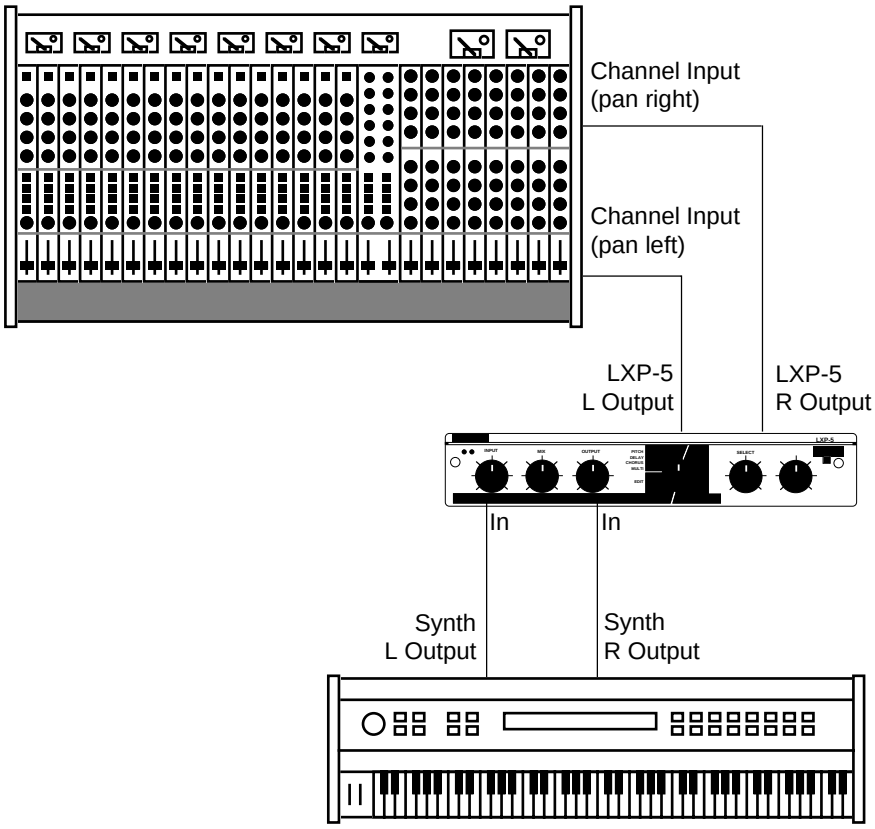
Some of the examples on the following pages use stereo instruments and amplification systems, others use mono. Feel free to adapt the examples to your specific requirements.



Connection to a mixing console's effects sends

If you will be using an LXP-5 as your primary effects unit, and your system includes a console with one or more auxiliary (effects) sends, connect the LXP-5 as shown above. In most applications, it is preferable to connect the LXP-5 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.

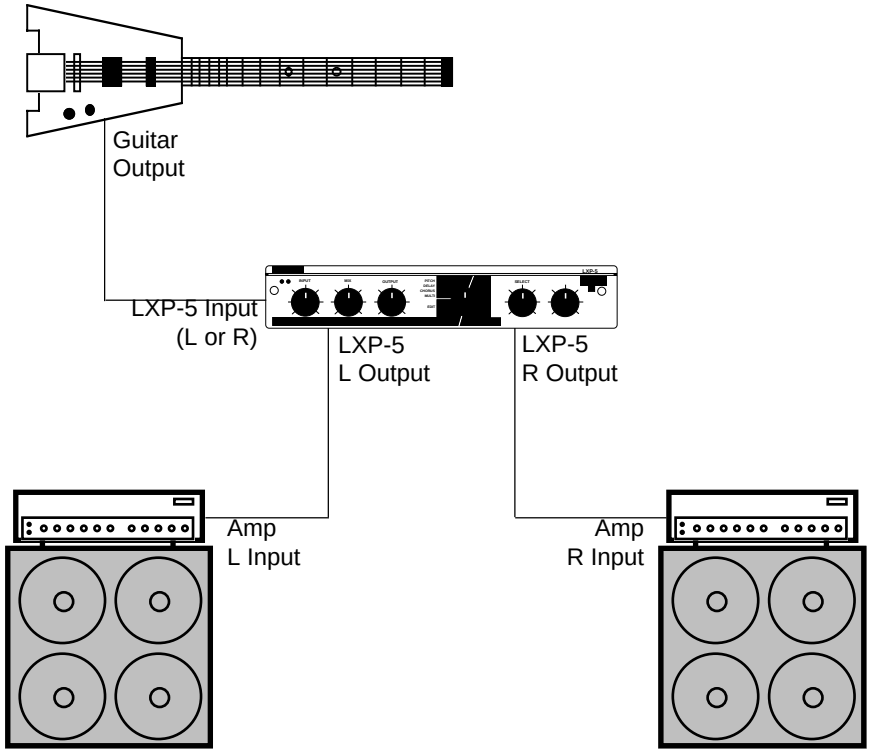
In this configuration the console controls are used to set the amount of effect heard—the LXP-5 front panel MIX control should be set fully clockwise for 100% wet.



Connection between instrument and console

In some applications (such as when an LXP-5 is used for a single instrument) it may be desirable to patch the LXP-5 between the instrument and console. This makes it possible to keep the LXP-5 up on stage with other MIDI gear, rather than in the console effects rack, making MIDI control much easier.

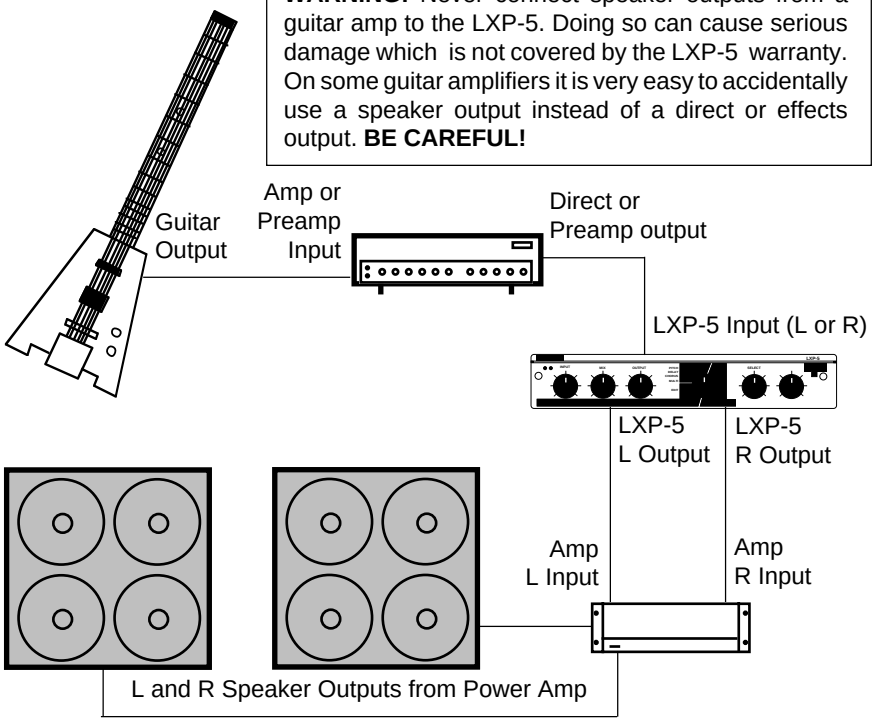
In this configuration, the LXP-5 front panel MIX control is used to set the balance between wet and dry sound.



Connection between instrument and amplifier

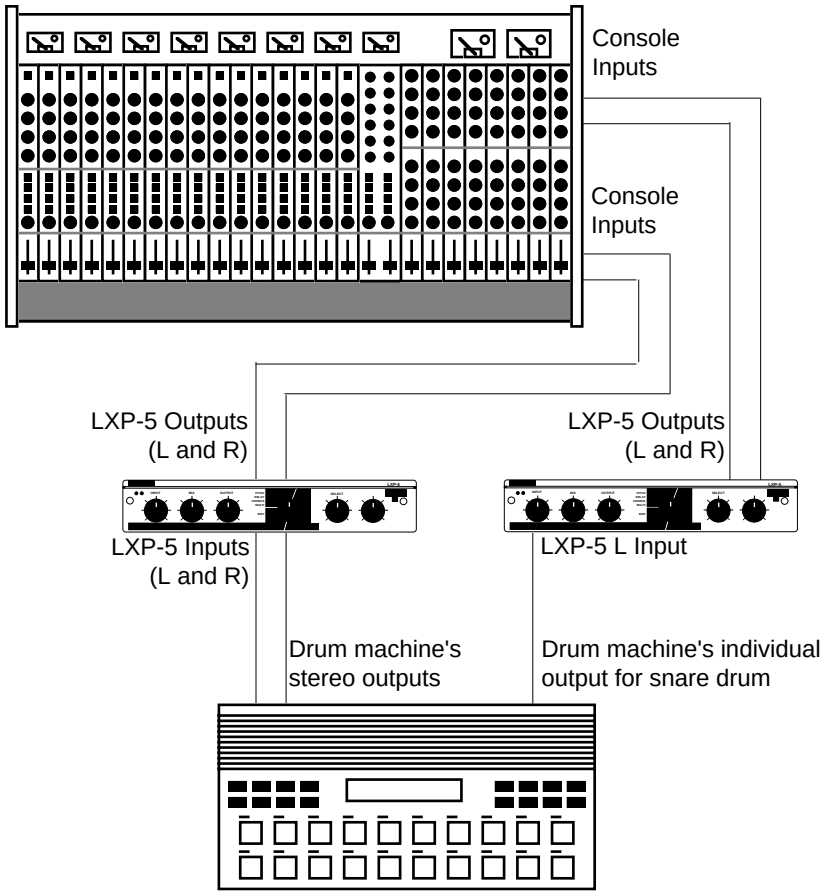
For a very spacious guitar sound, connect the LXP-5 between a guitar and two amp and speaker stacks. The only problem with this setup is that if you use overdrive distortion created by the amplifier, changing settings on the LXP-5 also affects the quantity and quality of your distortion. If you use a separate distortion box, you can get around this problem by connecting it before the LXP-5. If you prefer amplifier-generated distortion, try the setup shown on the next page.

WARNING! Never connect speaker outputs from a guitar amp to the LXP-5. Doing so can cause serious damage which is not covered by the LXP-5 warranty. On some guitar amplifiers it is very easy to accidentally use a speaker output instead of a direct or effects output. **BE CAREFUL!**



Connection between instrument preamp and power amplifier(s)
If you use overdrive distortion, it's usually better to create the overdrive *before* sending the signal to the LXP-5 to ensure that the effects don't change the quantity and quality of your distortion. In this setup, you need a guitar preamplifier or a guitar amp with a direct output. Feed this signal to either of the LXP-5 inputs, and then on to a stereo power amp or a pair of guitar amps. (A few guitar amplifiers become unhappy if they are operated without speakers connected. Consult the amp manufacturer for details.)

You can use the effects send and return connectors on a mono guitar amp to obtain similar results. Adjust the LXP-5 output level so that the amp produces the same output with the LXP-5 as it does without it.



Connection between drum machine and console

Using two LXP-5 units between your drum machine and console can make your drum machine sound much more exciting, since it allows you to process the all-important snare drum separately from the rest of the mix. Make sure you remove the snare from the drum machine's main stereo mix.

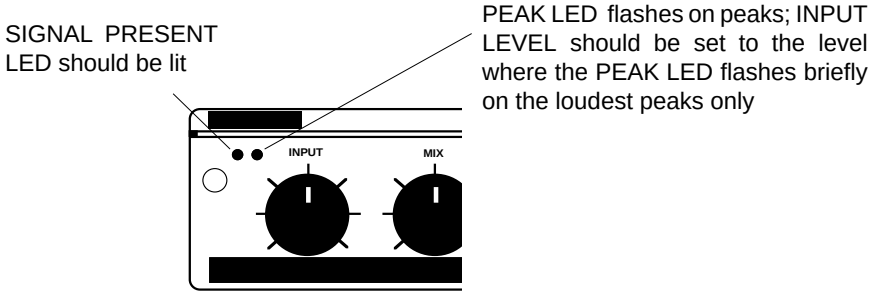
2. Front Panel Operation

Setting audio levels

The wide range of adjustment available with the LXP-5 INPUT and OUTPUT LEVEL controls allow it to be used with virtually any kind of equipment found in the studio or on the road.

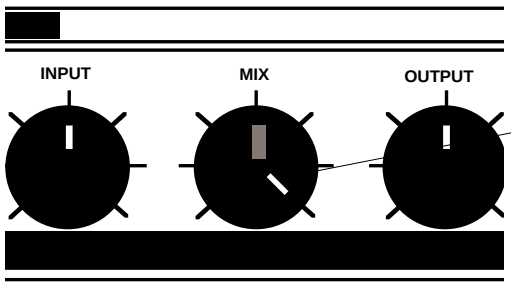
To set audio levels:

1. Turn the LXP-5 INPUT and OUTPUT LEVEL controls all the way down (fully counterclockwise).
2. Set the instrument output, preamp output, or effects send that feeds the LXP-5 input(s) to a nominal level. With an instrument, this should be your loudest normal playing level; with a preamp output or console, adjust the output(s) or effects send(s) to produce the highest level possible with the least amount of noise. If the output you are using doesn't have a level control, don't worry about it!
3. While sending audio to the LXP-5, gradually turn up the INPUT LEVEL control until the green SIGNAL PRESENT LED lights. Continue to advance INPUT LEVEL until the red PEAK LED just flashes on the loudest peaks. If it flashes continously, reduce INPUT LEVEL slightly.This ensures the best possible signal-to-noise ratio and dynamic range.



Note: If the PEAK LED flashes with no input present (i.e., during reverb delay line feedback, it indicates processor overload is occurring.

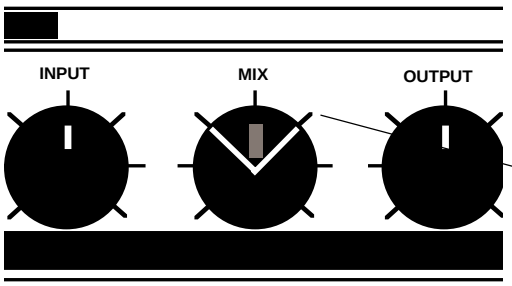
4. If the LXP-5 inputs are connected to a console effects send, and the outputs are connected to console channel strip inputs, set the console's input level trim and fader to a setting typically used for line level inputs. Then set the MIX control fully clockwise (100% effect) and gradually turn up the LXP-5 OUTPUT LEVEL control until the right amount of audio is present at the console.



MIX setting to use when the LXP-5 is patched to console effects send(s)

5. If you are using an instrument amplifier or preamplifier, start with the LXP-5 MIX control straight up (50% effect). Gradually increase the OUTPUT LEVEL control until the audio level heard from the amplifier is approximately the same as when the LXP-5 is not connected.

   The best setting for MIX depends on which program you are using, and to a great extent, your personal taste; feel free to experiment.



When using an instrument amplifier or preamplifier, the ideal MIX setting is generally somewhere in this range

LED signals

The front panel LEARN indicator is a bicolor (red/green) LED that performs several functions:

Register Store: success or failure
The LEARN LED will blink at a 6 Hz rate for approximately 2 seconds — in green to indicate succesful register storage, red to indicate failure to store to a register.

MIDI Data Present
The LEARN LED will flicker (in whatever its current color) to indicate LXP-5 recognition of incoming MIDI messages. System Common messages, non-LXP-5 SysEx messages and any message on channels other than the selected channel will not activate the LED.

Parameter Editing Status
When not receiving MIDI, or indicating storage success, the LED will tell you two things about the parameter editing status of the sound you are running:

1. *Has the selected parameter been changed from the stored value?*
   If the selected parameter matches the stored value, the LED will be green. Otherwise it will be red.

2. *Do the knobs correctly indicate the sound that is running?*
   If the knobs are accurate the LED will be steady. If the knobs are *not* accurate (for example, after loading a program or changing the selected parameter via MIDI), the LED will blink.

	GREEN	**RED**
LED Steady	Parameter Unchanged Knobs Accurate	Parameter Changed Knobs Accurate
LED Blinks	Parameter Unchanged Knobs Inaccurate	Parameter Changed Knobs Inaccurate

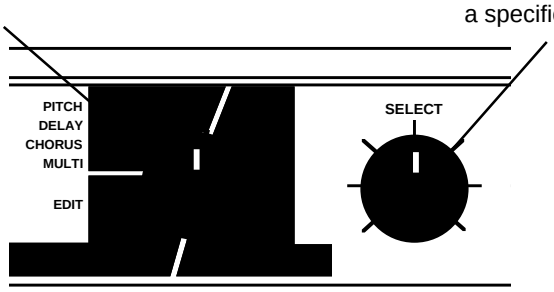
Presets and User Programs

Selecting LXP-5 preset programs

Any one of 64 preset effects programs can be selected by turning the FUNCTION and SELECT knobs on the front panel. To select a preset, first turn FUNCTION to one of the four available preset types: PITCH, DELAY, CHORUS or MULTI(-effect). Then, turn SELECT to one of the 16 presets within the chosen type.

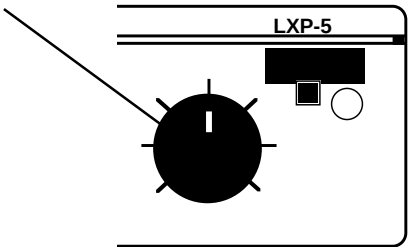
Use FUNCTION to select a preset type.

Use SELECT to choose a specific preset.



Once a preset has been chosen, the sound can be modified with the ADJUST knob. Program parameters can be altered in Edit mode, described later in this chapter.

Use ADJUST to change the sound of the preset.



LXP-5 Presets

PITCH			
MIN	**1**	Fourth Down	Pitch Interval
2	**2**	Fifth Up	Pitch Interval
3	**3**	Octave Down	Pitch Interval
4	**4**	Two Octaves Down	LFO Rate
5	**5**	Octave Up	LFO Rate
6	**6**	Tunnel Up	Dly 2,3-crs,Rvb Bal,Pitch Adj
7	**7**	Tunnel Down	Dly 2,3-crs,Rvb Bal,Pitch Adj
8	**8**	Glissando Up	Dly 2,3-crs,Decay Time,Pitch Intrvl
9	**9**	Glissando Down	Dly 2,3-crs,Decay Time,Pitch Intrvl
10	**10**	Diminished	Dly 2,3-crs,Decay Time
11	**11**	Suspended	Dly 2,3-crs,Decay Time
12	**12**	Low Octave	Pitch Interval
13	**13**	Mid Octave	Pitch Interval
14	**14**	High Octave	Pitch Interval
15	**15**	Semitune	Pitch Adjust
MAX	**16**	Fine Tune	Pitch Adjust

DELAY			
MIN	**17**	Echo Delay	Dly 1,2-crs,Rvb Bal
2	**18**	Stereo Delay	Dly 1,2-crs,Rvb Bal,Fbk 1
3	**19**	Slap Echo	Decay Time,Dly 2-crs,Fbk 1
4	**20**	Mid Slap	Decay Time,Dly 1,2-crs,Fbk 1
5	**21**	Stereo Slap	Decay Time,Dly 1,2-crs
6	**22**	Diffuse Echo	Decay Time,Dly 1,2-crs,Fbk 1
7	**23**	Image Delay	Decay Time,Dly 1,2-crs,Fbk 1
8	**24**	Bounce Delay	Dly 1,2-crs,Fbk 1
9	**25**	Bounce Loop	Dly 1,2-crs,Fbk 1
10	**26**	Ambient Loop	Dly 1-crs,Fbk 1
11	**27**	Echo Loop	Dly 1-crs,Fbk 1
12	**28**	Filter Delay	Dly 1-crs,Fbk 1
13	**29**	Robot 1	Dly 1-fin,Dly 2-crs,Fbk 1
14	**30**	Robot 2	Dly 1-fin,Dly 2-crs,Fbk 1
15	**31**	Short Delay	Dly 1-crs
MAX	**32**	Long Delay	Dly 1-crs

CHORUS			
MIN	**33**	Chorus	Pitch Adj,Dly 3-crs
2	**34**	Ambient Image	Dly 3-crs,Decay Time,Rvb Time
3	**35**	Comb Ambience	Dly 2,3-crs,LFO Rate
4	**36**	Ambient Detune	Dly 2,3-crs,LFO Rate
5	**37**	Dry Detune	Dly 2,3-crs,LFO Rate
6	**38**	Slap Detune	Dly 1,3-crs,LFO Rate
7	**39**	Resonant Sweep	Dly 1,3-crs,LFO Rate
8	**40**	Diffuse Sweep	Dly 1,3-crs,LFO Rate
9	**41**	Slap Sweep	Dly 1,3-crs,LFO Rate
10	**42**	Echo Detune	Dly 1,3-crs,LFO Rate
11	**43**	Step Detune	Dly 3-crs
12	**44**	Roto Motion	LFO Rate,Patch 3 (LFO to Dly 2-fin)
13	**45**	Roto Slap	LFO Rate,Patch 3 (LFO to Dly 2-fin)
14	**46**	Slow Res. Sweep	Rvb Bal,Patch 3 (LFO to Dly 2-fin)
15	**47**	Slap Flange	Rvb Bal,Patch 3 (LFO to Dly 2-fin)
MAX	**48**	Diffuse Flange	LFO Rate,Patch 3 (LFO to Dly 2-fin)

MULTI			
MIN	**49**	Strange Room	Dly 2-crs,Pitch Adj,Fbk 2
2	**50**	Down Room	Pitch Adj,Fbk 2
3	**51**	Ambient Slap	Dly 2-crs,Decay Time
4	**52**	Slow Rise	Dly 2-crs,Fbk 2,Hicut
5	**53**	Slow Fall	Dly 2-crs,Dly 3-fin,Fbk 2,Locut
6	**54**	Octave Room	Fbk 2,Hicut,Decay Time
7	**55**	Zoom	Fbk 2,Pitch Interval
8	**56**	Bounce Fourth	Dly 2-crs,Fbk 1,Bass Mult,Dcy Time
9	**57**	Slap Room	Dly 2-crs,Fbk 1,Bass Mult,Dcy Time
10	**58**	Echo Room	Dly 2-crs,Fbk1,Rvb Bal,Decay Time
11	**59**	Dark Closet	Treble Decay,Hicut,Decay Time
12	**60**	Small Bright	Decay Time
13	**61**	Medium Bright	Decay Time
14	**62**	Medium Dark	Decay Time
15	**63**	Large Bright	Dly 2-crs,Decay Time
MAX	**64**	Huge Room	Dly 2-crs,Decay Time

User Memory

The LXP-5 contains 128 memory locations divided among 8 User Memory Banks as follows.

USER 1	1-16	**USER 5**	65-80
USER 2	17-32	**USER 6**	81-96
USER 3	33-48	**USER 7**	97-112
USER 4	49-64	**USER 8**	113-128

NOTE: All User programs are volatile — storing a new program will overwrite the previously stored program.

When shipped from the factory, THE LXP-5 contains a duplicate set of the Preset programs at locations 1-64 (available at FUNCTION settings: USER 1-4).

Sixty-four *different* programs are provided at locations 65-128. These programs make use of both ADJUST Knob patches and MIDI patches (described in Chapters 3 and 4). These User presets, provided in User Banks 5-8, are shown in the following tables.

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USER BANK 5			
MIN	**65**	Doppler Room	Knob: Decay Time
2	**66**	Knot	Knob: Decay Time
3	**67**	Octave Back	Knob: Fbk 2, Decay Time
4	**68**	Pan Delay Verb	Knob: Feedback 2
5	**69**	After Pitch	Knob: Fbk 2; MIDI Velocity: Dly 2
6	**70**	Velodelay	Knob: Fbk 2; MIDI Aftertouch: Pitch Adjust
7	**71**	Shimmer	Knob: Decay Time
8	**72**	Little Pan	Knob: Decay Time
9	**73**	Pan Echo	Knob: Decay Time
10	**74**	Spread Echo	Knob: Decay Time
11	**75**	Trade Off	Knob: Delay 1-coarse
12	**76**	Veloverb	Knob: Rvb Bal MIDI Velocity: Rvb Time
13	**77**	Plate Chorus	Knob: Reverb Balance
14	**78**	Drum Teel	Knob: Feedback 2
15	**79**	Infinite Reverb	Knob: Decay Time
MAX	**80**	Infinite Loops	Knob: Delay 1-coarse

USER BANK 6			
MIN	**81**	Clocked Descend*	Knob: Pitch Interval;MIDI Clock: Fbk 2
2	**82**	Clocked Slap*	Knob: Fbk 2; MIDI Clock: Delay 2-coarse
3	**83**	Clocked Rvb Flange*	Knob: Rvb Bal; MIDI Clock: Dcy, LFO Rate
4	**84**	Shimmer Cave	Knob: Delay 2-coarse, Delay 3-coarse
5	**85**	Vibrato Scale	Knob: LFO-Pitch Scaling
6	**86**	Random Flange	Knob: LFO-Delay 2 Scaling
7	**87**	Mystery Pitch	Knob: Pitch Adjust
8	**88**	Two Octave Delay	Knob: Dly 1-crs, Dly 3-crs, Rvb Bal
9	**89**	Doppler Flange	Knob: Feedback 1
10	**90**	Stadium	Knob: Delay 2-coarse, Feedback 2
11	**91**	Vibra Verb	Knob: Decay Time, Delay 2-coarse
12	**92**	Wait Frash	Knob: Decay Time
13	**93**	Chromatic	Knob: Decay ; MIDI Pitch Bend: Pitch Adjust
14	**94**	Doppler Mod	Knob: Delay 2-coarse; Decay Time
15	**95**	Dark Chorus Verb	Knob: Delay 2-coarse; Feedback 2
MAX	**96**	Bent	Knob: Decay Time; MIDI Velocity: Dly 2-crs

***Drum Machine Program — requires MIDI Clock input**

USER BANK 7			
MIN	**97**	Animal Orchestra*	Knob: Decay , Dly 2-crs, Bass Multiply; MIDI Last Note: Pitch Interval, Treble Decay
2	**98**	Stavid*	Knob: Decay ; MIDI Last Note: Pitch Interval, Treble Decay
3	**99**	Note Spread*	Knob: LFO-Dly 2,3-Scaling MIDI Last Note: Delay 2,3
4	**100**	Mono Drum Delay**	Knob: Reverb Bal,ance Delay 2-coarse; MIDI Clock: Delay 1-coarse
5	**101**	Stereo Drum Delay**	Knob: Delay 2,3-coarse MIDI Clock: Delay 2,3
6	**102**	Octave Vibrato	Knob: Pitch Interval
7	**103**	Shaky Five	Knob: LFO Rate, Feedback 2
8	**104**	Ganged Echo	Knob: Delay 2,3-coarse
9	**105**	Ambecho	Knob: Decay Time
10	**106**	Jaco Chorus	Knob: Pitch-Fine
11	**107**	Double Up	Knob: Feedback 2
12	**108**	Canyon Echo	Knob: Delay 1,2-coarse
13	**109**	Spiral Echo	Knob: Delay 1,2-coarse, Pitch Adjust
14	**110**	Ho Drum	Knob: Pitch Adjust
15	**111**	Body Snatchers	Knob: LFO Rate
MAX	**112**	Glass House	Knob: Treble Decay, Hicut, Bass Multiply

***Apply MIDI input from keyboard for best results**
****Drum Machine Program — requires MIDI Clock input**

USER BANK 8			
MIN	**113**	Velo Ripple	Knob: Dly 2-crs; MIDI Velocity: Fbk 2
2	**114**	Keycend	Knob: Dly 2,3-crs; MIDI Last Note: Pitch Adjust (Notes above middle C ascend; notes below descend)
3	**115**	Key Delayverb*	Knob: Ptch Adj; MIDI Last Note: Dly2-crs, Fbk 2, Dcy Time (Last Note affects Dly/Fbk and reverb)
4	**116**	Sustain Pedal Loop	Knob: Delay 1-coarse; MIDI Sustain Pedal: Input Level, Fbk 1 (Pedal On will cause infinite loop and mute audio input to loop)
5	**117**	Note Flange	Knob: Reverb Balance; MIDI LAST Note: Delay 1-fine, Feedback 1 (Last Note controls flange)
6	**118**	Afterflange	Knob: Fbk 1; MIDI Aftertouch: Dly 1-fine (Aftertouch controls flange)
7	**119**	Phase Flange	Knob: Delay 1-fine
8	**120**	Phase Pedal	Knob: Delay 1,2-fin; MIDI Sust Pdl: Dly 1-fin (Pedal has phase effect on audio)
9	**121**	Huge Fourth	Knob: Treble Decay, Delay 2-fine
10	**122**	Upper Noted	Knob: Pitch Adjust; MIDI Last Note: Dly 2-crs, Fbk 2 (Last Note causes upper notes to have a delayed effect with feedback)
11	**123**	Detune Loop	Knob: Ptch Adj; MIDI Sust Ped: Input Lvl (An almost infinite loop — input level is muted by sustain pedal)
12	**124**	Sky	Knob: Feedback 2
13	**125**	Phasecho	Knob: Delay 2-fine
14	**126**	Feedback Sampler**	Knob: Feedback 1; MIDI Last Note: Pitch
15	**127**	Ambient Sampler**	Interval; MIDI Volume: Output Level Knob: Feedback 1: MIDI Last Note: Pitch
MAX	**128**	Sampler**	Interval; MIDI Volume: Output Level

***Apply MIDI input from keyboard for best results**
**** Set Knob from MIN to MAX to cause current audio to loop continuously.**

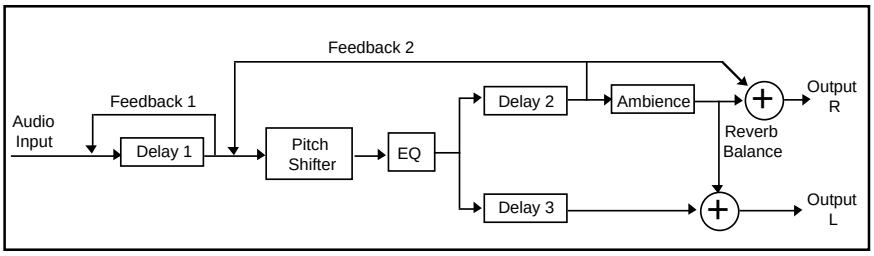
Creating your own sounds

The LXP-5 contains two algorithms which are used to create its many different and interesting sounds:

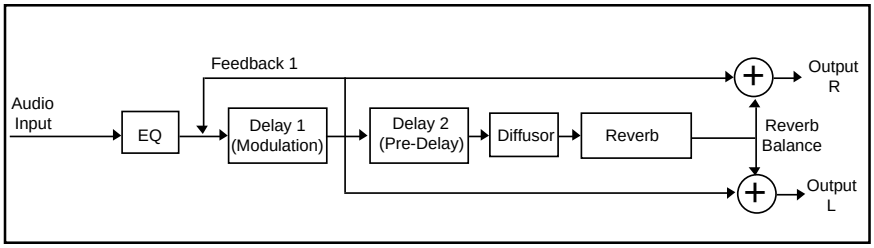
Pitch/Delay which includes a digital delay line, pitch shifter, EQ and ambience

Delay/Reverb which includes a digital delay line, EQ and reverb.

Pitch/Delay Block Diagram



Delay/Reverb Block Diagram



The available parameters for each preset are determined by the algorithm used. All PITCH, DELAY, CHORUS and MULTI presets 49-56 use the Pitch/Delay Algorithm. MULTI presets 57-64 use the Delay/Reverb algorithm.

Editing a preset

The easiest way to start creating your own sounds is by editing one of the 64 LXP-5 preset programs.

Use FUNCTION and SELECT to choose a preset you would like to change.

Put the LXP-5 into Edit mode by holding the LEARN button in while turning FUNCTION to EDIT A or B, then releasing the LEARN button. (The parameters available at EDIT C are discussed in *Chapter 3: MIDI Operation.)*

Turn SELECT to the parameter you wish to edit. The parameter value can now be modified with the ADJUST knob. (Move ADJUST to a new setting to activate it.)

The following tables show all of the parameters available at FUNCTION settings EDIT A and EDIT B. The algorithm used for each parameter is also shown, with the available range of values, and the appropriate setting of the SELECT knob.

Parameters available at EDIT A

SELECT Position	PARAMETER Name	Range Pitch/Delay	Range Delay/Reverb
MIN	Delay 1-Coarse	0-983 ms	0-630.8 ms (1)
2	Delay 1-Fine	0-61.5 ms	0-61.5 ms (1)
3	Feedback 1	0-100%	0-100%
4	Delay 2-Coarse	0-307.2 ms	0-307.2ms (2)
5	Delay 2-Fine	0-19.2 ms	0-19.2 ms (2)
6	Feedback 2	0-99%	NA
7	Delay 3-Coarse	0-307.2 ms	NA
8	Delay 3-Fine	0-19.2 ms	NA

	PARAMETER Name	Range Pitch/Delay
9	Pitch Base Select	MIN-4=Bypass/5-8=down 2 Oct/ 9-12= down 1 Oct/13-MAX=Unison
10	Pitch Interval	0-15 semitones up from Pitch Base (3)
11	Pitch Adjust	Interval value approx. ±1 semitone (4)
12-15	Inactive	
MAX	Global Patches: Enable/Disable	MIN-6=Disable all 7-11=Re-enable single patch 12-MAX=Re-enable all

(1) Maximum Delay 1 time is Coarse + Fine (634.9 ms)
(2) Maximum Delay 2 time is Coarse + Fine (177.9 ms)
(3) Total Pitch Shift Range is from 2 Oct down -1 Oct up
(4) Inactive at ADJUST knob position 9

Parameters available at EDIT B

SELECT Position	PARAMETER Name	Range Pitch/Delay	Range Delay/Reverb
MIN	Decay Time	0.5-12 sec	0.5 sec-infinity
2	Treble Decay	320Hz-full range	320Hz-full range
3	Bass Multiply	x0.3-x2.5(5)	x0.3-x2.5(5)
4	Size	8-26 meters	8-53.5 meters
5	Diffusion	0-100%	0-100%

SELECT Position	PARAMETER Name	Range Pitch/Delay and Delay/Reverb
6	High Cut Filter	320Hz-full range
7	Low Cut Filter	full range-1350Hz

SELECT Position	PARAMETER Name	Range Pitch/Delay and Delay/Reverb
8	Reverb Balance	100/0%-0/100%
9	Output Balance	100% left-100% right
10	Output Level	0-100%
11	Input Level	0-100%
12	LFO Rate	0.066-5Hz

SELECT Position	PARAMETER Name	Range
13	ADJUST Knob Destination	See Edit C: Patch Destination
14	Select Algorithm	MIN-6=Delay/Reverb; 7-11=Pitch/Delay; 12-MAX=Bypass
15	Footswitch Mode	MIN-4=Defeat Input;5-8=Defeat Output;9-12=Bypass;
MAX	Memory Write-Protect	13-MAX=Memory Increment MIN-8=Off;9-MAX=On

(5) x1.0 at ADJUST knob position 9

Once a parameter has been chosen, its value can be edited by turning ADJUST. Finer control of parameter values may be accessed via MIDI (see *Chapter 3: MIDI Operation*).

Special notes regarding parameters

Delay parameters have both a coarse and a fine range. The maximum delay available is the sum of the largest coarse and fine values.

Pitch parameters are used together in the following manner:

Pitch Base/Select is used to select the base octave. Pitch Interval and Pitch Adjust parameter values will be added to the base octave. You can choose a base of unison, one octave down or two octaves down. Selecting Bypass will remove the pitch shifter from the Pitch/Delay algorithm, and eliminate its small processing delay.

Pitch Interval provides an adjustment range of more than an octave. Its parameter value is added to the selected base octave. For example, to adjust pitch between one octave down and unison, set the Pitch Base/Select parameter to one octave down, then use the Pitch Interval parameter to adjust the pitch from one octave down to one major 3rd up.

Pitch Adjust is used to fine tune the pitch between Pitch Interval parameter settings. The Pitch Adjust parameter will be added or subtracted from the Pitch Interval parameter value.

Size is shown in meters. The smallest value approximates one side of a room. Cube this value to get the approximate room volume.

Infinite Reverb and Infinite Loops Both algorithms allow you to create "infinite" effects.

The Pitch/Delay algorithm's Delay 1 can be used as a loop sampler, controlled by Feedback 1. Any Pitch/Delay preset can use the loop sampling feature; simply choose a length for Delay 1, and set Feedback 1 to 100% to start recirculation and lock out any further input. To precisely cue the end of the loop, set MIX to *Dry* and listen to the input. Assigning Feedback 1 to ADJUST is helpful, since toggling between MIN and MAX is an easy, 1-click operation. (See *Choosing ADJUST knob destination*, later in this chapter.) Once your loop is captured, experiment with changing Delay 1 to shorten it.

The Delay/Reverb algorithm will do infinite reverberation. For infinite reverb to be truly infinite and stable, you must properly set the following four reverb parameters to the settings shown:

Decay Time:	Infinite
Treble Decay:	Full bandwidth
Bass Multiply:	X1.0
Size:	Maximum

The User preset, *Infinite Reverb (User 5: Select 15)*, does this and leaves Decay Time controlled by the front panel ADJUST knob.

When incoming audio exceeds an internally fixed threshold level, it is gated into the reverberator. While the gate is open, the Decay Time is set one step below infinite to prevent cumulative overloading. You will hear earlier sounds decay away as you layer on new ones. When you finish adding sounds, you may completely shut the gate by turning down the front panel INPUT control, or by linking a MIDI controller to the Input parameter.

If you need to clean out the reverberator, adjust Decay Time to MIN briefly, then return it to MAX to re-enable infinite reverberation. If there is too much of a "loopy" quality, set Decay Time one step below MAX very briefly to restart a 30 second randomizing process. You will notice a slight level drop at each restart.

Reverb Balance, Output Level and Output Balance interact. The Output and Reverb Balance parameters are like conventional pan pots, with a 3 dB loss in the center position. When set at 100%, Output Level contributes 6 dB of gain to override these losses and provide the best signal-to-noise ratio. This limits the effect of thebalance controls to their extremes. If you want smooth dynamic pans, lower the Output Level to between 50% and 100% to reduce the overrride action.

Editing Additional Parameters

To edit another parameter, simply turn FUNCTION and/or SELECT to a new parameter and use ADJUST to change the parameter values.

Choosing ADJUST Knob Destination

After creating a sound, you can customize your effect by assigning as many as five parameters to the ADJUST knob. This allows you to recall a program, and modify the chosen parameters with the ADJUST knob without going back into Edit mode.

Assignment of ADJUST must be done while in Edit mode. Turn FUNCTION to EDIT B and SELECT to position 13. The following table shows the parameters which can be assigned to ADJUST:

FUNCTION	SELECT	ADJUST	Assigned Parameter
EDIT B	13	MIN	Delay 1 — Coarse
		2	Feedback 1
		3	Delay 2 — Coarse
		4	Feedback 2
		5	Delay 3 — Coarse
		6	Pitch Interval
		7	Decay Time
		8	Treble Decay
		9	Size*
		10	High Cut Filter
		11	Low Cut Filter
		12	Reverb Balance
		13	Input Level
		14	Output Level
		15	Output Balance
		MAX	LFO Rate

* Altering the *Size* parameter in real-time will cause the LXP-5 to mute briefly.

If a parameter is chosen which is unavailable in the selected program, ADJUST will have no audible effect. If a parameter is not selected for ADJUST while in Edit mode, it will maintain its current parameter assignment.

Storing a new sound

After creating a new sound, you may want to save it for future use in one of the LXP-5's 128 memory locations. New entries will overwrite any program stored at that location, so be careful not to store into a location that contains a setup you want to save. (In addition to listing the factory-loaded contents of the User memory (page 2-9), we have provided a chart for you to record your own program entries at the end of this manual.)

Hold the LEARN button in while turning FUNCTION to USER 1-8 and SELECT to the appropriate position. Release the LEARN button. The LEARN LED will flash green to indicate a successful store.

The LXP-5 will not perform a store instruction if memory write-protect is enabled, or if you accidentally try to save into a Preset location. If the sound was *not* stored, the LEARN LED will flash red.

If FUNCTION is set to one of the EDIT positions, the sound will be put into the edit buffer.

Memory Write-Protect

Memory Write-Protect is a feature that lets you prohibit the overwriting of User programs. Memory Write-Protect is accessed by setting FUNCTION to EDIT B and SELECT to MAX. Turning ADJUST to positions MIN through 8 will turn Memory Write-Protect OFF; positions 9 through MAX will turn Write-Protect ON. Note that, whether on or off, this function affects *all 128 User programs.*

Recalling a stored program

To recall a program, simply turn FUNCTION and SELECT to the appropriate positions. The setup is automatically recalled and ADJUST may be used to modify the sound.

Editing a User program

A User program can be modified in the same way as a Preset. First, turn FUNCTION and SELECT to recall the desired program. Enter Edit mode by holding the LEARN button in while turning FUNCTION to EDIT A or B. Release the LEARN button and turn SELECT to a specific parameter. ADJUST will now modify the parameter value.

To edit another parameter, simply turn FUNCTION and/or SELECT to the positions corresponding to the desired parameter, and use ADJUST to change parameter values.

If a parameter is chosen which is unavailable in the selected program, ADJUST will have no audible effect.

Assign the parameters you find most useful to the ADJUST knob so that these assignments will be stored with the program. After editing a User program, the new sound can be stored at the same location (overwriting the original program) or at a different location.

Using Bypass Mode

Setting FUNCTION to BYPASS puts the LXP-5 in Bypass mode. This mode stops the LXP-5 from doing any signal processing by passing the wet portion of the signal through the unit unchanged. Be sure to have the Mix control at the 100% wet position (fully clockwise) when using Bypass.

Note: Bypass can be stored in a User memory location. Bypass can also be activated in Algorithm Select mode or as a footswitch function (See Footswitch Operation).

Changing Algorithms

Another way to modify programs is by choosing the LXP-5's other algorithm. For example, you might like the sound of a program that uses the Delay/ Reverb algorithm, but want to add pitch shifting. To change algorithms:

1. Recall the program that you want to modify.

2. Put the LXP-5 into Edit mode. (Hold in LEARN while turning FUNCTION to EDIT B, then release LEARN.)

3. Turn SELECT to position 14

4. Turn ADJUST to any position between MIN and 5. to select Delay/ Reverb; turn to any position between 6 and 10 for Pitch/Delay. (Turning ADJUST to any position between 11 and MAX will select Bypass mode.)

Remember, while in Edit mode, you can modify other parameters, reassign ADJUST, and/or save the new sound.

NOTE:Because you are limited to the parameters associated with the new algorithm your sound may change when algorithms are switched.

Footswitch operation

When a footswitch (optional) is connected to the rear panel FOOTSWITCH connector, four user programmable functions are available. These functions are selected by turning FUNCTION to EDIT B , SELECT to 15 and ADJUST to one of the positions shown on the following table.

FUNCTION	SELECT	ADJUST	Footswitch Function
EDIT B	15	MIN-4	Defeat Input
		5-8	Defeat Output
		9-12	Bypass
		13-MAX	Memory Increment

A push on/push off footswitch is useful for the Defeat and Bypass functions; a momentary type footswitch should be used for the Memory Increment function.

Defeat Input, Defeat Output and Bypass all affect the *wet* signal output of the digital signal processor (DSP) only. The *dry* signal, as set by the front panel MIX control, is unaffected.

Defeat Input mutes the input to the DSP, allowing the effect the decay naturally to silence.

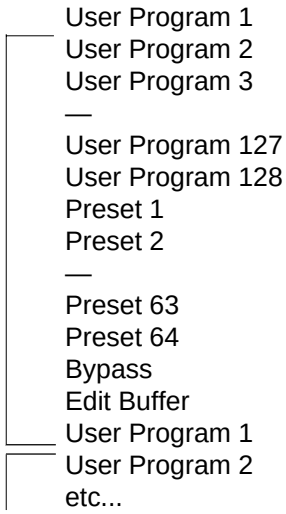
Defeat Output mutes the effect output quickly.

Bypass alters the DSP program so that the effect is also dry.

If programs or parameters are changed while Defeat or Bypass is activated, the effect will assume the new values when Defeat or Bypass is released. If no changes are made, the wet sound will return to its original settings.

Memory Increment

This footswitch function allows you to step sequentially through registers, presets, Bypass mode and the edit buffer. Every time the footswitch contacts are closed, the memory is incremented in the following order:



The starting point in the sequence is determined by the program selected.

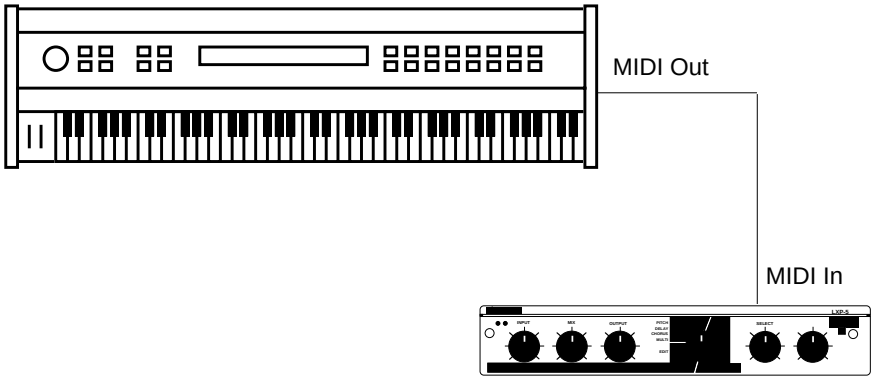
3. MIDI Operation

All LXP-5 parameters can be accessed from the unit's front panel. Using MIDI, however, offers easier access and more precise control. To get you started, this chapter starts with simple MIDI applications, and works up to more complex ones.

Accessing Programs

Up until now, you have used the front panel knobs to save and recall programs. You can also use MIDI to access these programs. All you need is a device which can send MIDI Program Change messages, such as a MIDI-equipped synthesizer, master keyboard controller, foot controller, sequencer, or the LEXICON MRC, MIDI Remote Controller (Version 2.0 or higher — you'll need Version 3.0 to access other LXP-5 functions).

A typical MIDI setup is shown below. Connect the MIDI output of the controller to the MIDI input of the LXP-5, using a standard MIDI cable.



Selecting a MIDI channel

Before you can use the LXP-5 with a MIDI controller, both units must be set to the same MIDI channel. To set the LXP-5 MIDI channel:

1. Set the controller you will be using (keyboard, foot controller, etc.) to any MIDI channel (1-16). The LXP-5 has no OMNI mode — it responds to only one channel at a time.
2. While holding down the LXP-5 front panel LEARN button, send a complete MIDI message from the controller. This might be a note on a keyboard, a sustain pedal, etc. — anything *but* a Program Change message. The Running Status messages sent by some controllers will not cause a channel change, since these messages do not contain channel information. If you encounter difficulties with Running Status, send a Note message followed by a Pitch Bend message. This will interrupt any Running Status.
3. On release of the LEARN button, the LXP-5 sets itself to the channel you just used.

Loading a program

To load a program:

1. Connect your MIDI controller to the LXP-5, and set them to the same MIDI channel.
2. Send a MIDI Program Change message (0-127) from the controller.

Note: Some instruments use a program numbering system that starts with 0 instead of 1. Check your owner's manual to see if your instrument uses numbers 0-127 or 1-128.

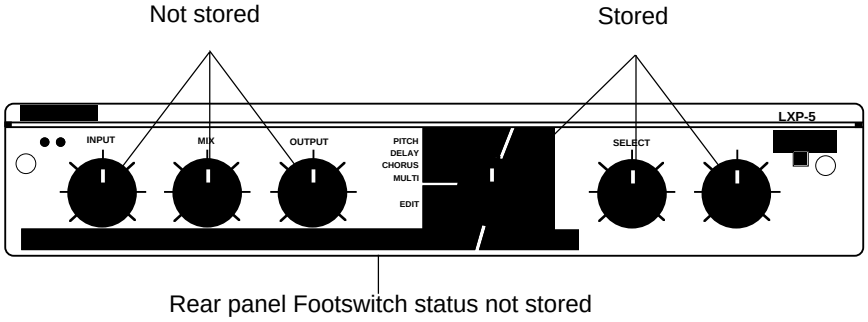
Storing a program

After editing a Preset program with the front panel knobs, you can store the edited program in any of the 128 LXP-5 User memory locations:

1. Connect your MIDI controller and the LXP-5, and set them to the same MIDI channel.
2. While holding down the LXP-5 front panel LEARN button, send a MIDI Program Change message from your MIDI controller. On most synthesizers, selecting a new voice accomplishes this.
3. Release the LEARN button.The edited program is saved at the location specified by the Program Change message. The LEARN indicator flashes green at a fast rate for about two seconds to indicate success. Flashing red will alert you to an error. If this happens, check to make sure Memory Write-Protect is OFF.

Note: When the LEARN button is pressed, the LXP-5 will change MIDI Channels to match incoming Program Change messages.

4. When you save a program, all parameter values are stored, but the settings of the front panel audio controls (Input, Mix, and Output) are not.



5. The LXP-5 does not perform any checking to see if a location is already in use before storing. When you store a program, always make sure that the location you choose doesn't contain anything you want to keep.

Living with controller quirks
Some synthesizers and controllers cannot send the full range of MIDI program change messages (0-127). With them, you can't access all the registers in the LXP-5. Others may appear to be able to send only 32, but actually have a bank mode that *does* let you send all 128 program change messages. If in doubt, see the manual for your controller.

Patches and Dynamic MIDI®

Some extremely useful effects can be created by controlling the LXP-5's variable parameters remotely in real time. Almost all of the controllers found on a MIDI keyboard or foot controller (pitch benders, mod wheels, sliders, switches, breath controllers, foot pedals and footswitches) can be used to adjust the LXP-5's parameters. We refer to this real time remote control capability as Dynamic MIDI®.

To use Dynamic MIDI®, you *patch* a MIDI controller to the parameter you want to control. You may patch a separate controller to each parameter, or patch a single controller to control up to four parameters at once. Three types of patches are used in the LXP-5: general purpose patches, an ADJUST knob patch and global patches.

General Purpose Patches
Four general purpose patches are available in the LXP-5. These patches use a MIDI controller, a front panel knob or the low frequency oscillator (LFO) as *sources* to control one of the LXP-5 parameters, known as patch *destinations*. A controller *threshold* is used along with a positive or negative *scale factor* to calculate *offset*. (Offset = [Source Value - Threshold] x Scale Factor). The last calculated offset is stored with the patch so that, on recall, the parameter will have this value until the controller is moved. Four general purpose patches may be stored with any program by using the front panel controls or MIDI SysEx.

ADJUST Knob Patch

The front panel ADJUST knob can be assigned to as many as five parameters. This patch may be stored with a program in addition to the four general purpose patches. The usefulness and implementation of this patch is discussed in *Chapter 2: Front Panel Operation: Choosing ADJUST knob destination.*

Global Patches

Each of the LXP-5's 23 parameters can be patched directly to any single MIDI controller. When a MIDI controller is specified as a global patch source, its value will be applied directly to the assigned parameter and will remain in effect regardless of what program is recalled. If a parameter which is the *Destination* of a global patch is also the *Destination* of the ADJUST knob patch, the parameter value will be set to the latest value received from whichever controller or knob was moved last.

Creating a Dynamic MIDI® Patch

There are three methods that can be used to create a patch. Some methods do not apply to all types of patches, and some are more convenient in certain instances. The table below shows which methods can be used for ADJUST knob, general purpose and global patches:

Patch Type	Method of Creating a Patch		
	EDIT MODE	MIDI LEARN	MIDI SYSEX
Adjust Knob	X		X
General Purpose	X	X	X
Global			X

Creating an ADJUST Knob Patch using Edit Mode

Refer to *Chapter 2: Front Panel Operation: Choosing ADJUST knob destination.*

Creating a General Purpose Patch using Edit Mode

Edit Mode lets you create a general purpose patch by using the front panel of the LXP-5. First set up the LXP-5 by recalling a program and modifying any parameters to obtain the desired sound. Place this setup in the edit buffer (if it is not already there) by holding in the LEARN button while turning FUNCTION to EDIT C, then releasing LEARN. If you are already in Edit mode, just turn FUNCTION to EDIT C, then turn SELECT to make the appropriate assignment:

	Patch 1	Patch 2	Patch 3	Patch 4	Patch Assignment
SELECT Settings	MIN	5	9	13	**Source**
	2	6	10	14	**Threshold**
	3	7	11	15	**Destination**
	4	8	12	MAX	**Scale**

Before turning SELECT, you must decide which of the four general purpose patches (numbered 1-4) you want to set up. Each patch contains Control Source, Threshold Level, Control Destination and Scale Factor assignments.

Control Source is the MIDI controller you wish to use to modify the parameter in the Control Destination. For example, if you want to use a mod wheel to control delay time, you would assign the mod wheel as the Control Source and one of the Delay 1, 2 or 3 parameters as the Control Destination.

Threshold value and Scale Factor A patch calculates an Offset value from the Control Source value, Threshold value and Scale Factor. (Offset = [Control Source - Threshold] x Scale Factor). Therefore, the Threshold value and Scale Factor are used to determine the sensivity and range of the controller.

Choose a **Threshold value** that will let you control the part of the parameter you want to work with. For example, if you are using a MIDI controller to control a feedback parameter, but are only interested in a range of 70-100%

feedback, you can set the threshold value high enough so the controller will bottom out at 70% and top out at 100%. Sixteen Threshold values from 0 to 127 are available when using Edit mode to create a patch. If MIDI SysEx data is used to create a patch, any value from 0 to 127 may be used for Threshold level.

Scale Factor defines the relationship between movement of the MIDI controller and the corresponding change it causes in the parameter setting. Choosing a low Scale Factor (under x1) will limit the range of control over the parameter. Choosing a high Scale Factor (x2) allows a controller with a limited range, such as a keyboard, to have access to most or all of the parameter values. A Scale Factor of x1 should give you access to the same parameter values as the front panel ADJUST knob if a controller with a full range (0-127) is used. A positive Scale Factor will make the parameter value increase with an increasing controller value; a negative Scale Factor will make the parameter value decrease with an increasing controller value.

The last calculated Offset value is stored with the patch so that, on recall of the program, the parameter will have this value until the controller is moved.

Once one of the four patches and its parameter is chosen by the SELECT knob, ADJUST may be used to assign Control Source, Control Destination, Threshold Level and Scale Factor:

Patch Assignments available via ADJUST

ADJUST Knob Position	CONTROL SOURCE
MIN	Patch Off
2	Adjust Knob
3	LFO Rate
4	Last Note
5	Low Note
6	High Note
7	Last Velocity
8	Chnl Aftertouch
9	MIDI Clock
10	Mod Wheel
11	Breath Control
12	Foot Control
13	Data Entry
14	Volume
15	Sustain Pedal
MAX	Pitch Wheel

ADJUST Knob Position	CONTROL DESTINATION
MIN	Delay 1 - Coarse
2	Feedback 1
3	Delay 2 - Coarse
4	Feedback 2
5	Delay 3 - Coarse
6	Pitch Interval
7	Decay Time
8	Treble Decay
9	Size*
10	High Cut Filter
11	Low Cut Filter
12	Reverb Balance
13	Input Level
14	Output Level
15	Output Balance
MAX	LFO Rate

ADJUST Knob Position	THRESHOLD LEVEL
MIN	0
2	8
3	17
4	25
5	34
6	42
7	51
8	59
9	68
10	76
11	85
12	93
13	102
14	110
15	119
MAX	127

ADJUST Knob Position	SCALE FACTOR
MIN	x(-2.0)
2	x(-1.0)
3	x(-0.8)
4	x(-0.6)
5	x(-0.4)
6	x(-0.3)
7	x(-0.2)
8	x(-0.1)
9	x 0.1
10	x 0.2
11	x 0.3
12	x 0.4
13	x 0.6
14	x 0.8
15	x 1.0
MAX	x 2.0

Altering the *Size* parameter in real-time will cause the LXP-5 to mute briefly.

After a patch is created, it can be saved in a register. Up to four general purpose patches may be created and saved in each memory location.

Creating a General Purpose Patch using MIDI Learn Mode

This method of creating a patch is fairly simple but it limits you to one active general purpose patch at a time. To create a patch:

1. First set up the LXP-5 for the desired sound by recalling a program, or by creating a new sound. (If ADJUST is already patched to the desired parameter, skip to Step 4.)

2. Put the LXP-5 into Edit mode by holding in the LEARN button and turning FUNCTION to EDIT B. Release the LEARN button.

3. Turn FUNCTION and SELECT so that the desired parameter is being edited by ADJUST.

4. Using a standard MIDI cable, connect LXP-5 MIDI IN to the MIDI OUT port of the controller you wish to use.

5. Press and hold in the LEARN button while moving the MIDI controller you want to patch. You don't have to move the controller through its entire range — just move it enough for the LXP-5 to identify what controller you are using. For example, if you are patching a mod wheel on a keyboard, move the mod wheel slightly.

6. Continue to hold the LEARN button in while turning ADJUST to set the scale factor. This will set the controller's range of effectiveness. Position 8 corresponds to zero scale, MIN corresponds to full negative scale; MAX corresponds to full positive scale. The ADJUST knob must be moved at least one click to record a scale factor.

7. Release the LEARN button. The position of the ADJUST knob at the moment the LEARN button is released will be used to determine the scale factor. If you moved more than one MIDI controller while holding in the LEARN button, the last one moved will be used. Note: if the LXP-5 was in Edit mode while setting up the patch, the last parameter assigned will be used as the Control Destination.

8. Set ADJUST to the desired base parameter value. This will be the parameter value when the Control Source is zero. If you want access to the full range of parameter adjustment, set ADJUST to MIN.

The MIDI controller will now be patched to the desired parameter, and you can store this patch with the program if you like.

This patch can be cleared by holding in the LEARN button, turning the ADJUST knob (without operating a MIDI controller), then releasing the LEARN button.

Notes:

- If FUNCTION or SELECT is moved while the LEARN button is pressed, the patch will not be created and the new setup will be loaded immediately.
- This general purpose patch will be saved as Patch 1, overwriting any existing Patch 1 information; other patches will not be affected.
- A controller key press (Note On) is interpreted as Note Velocity for the Control Source.
- A controller key release (Note Off, or Velocity zero) which is not preceded by any aftertouch messages is interpreted as Note Number for the Control Source.
- Aftertouch messages, followed by an optional Note Off, are interpreted as Aftertouch for the Control Source.
- One or more MIDI clocks present while the LEARN button is pressed is interpreted as MIDI Tempo Period as the Control Source. This is true even if other controller messages are sent while pressing the LEARN button. Therefore, no MIDI clocks should be present when clearing a patch.

Using programmable controllers

When you patch a MIDI controller to an LXP-5 parameter, you don't need to worry about which controller code is sent by the particular controller. When you move the controller during patch assignment, the LXP-5 examines the incoming data, and automatically sets itself to match the controller you are moving.

Some MIDI units allow you to assign any controller code you like to their footpedals, footswitches, and other programmable switches and sliders. From the LXP-5's point of view, it doesn't matter what controller code you assign — it responds correctly to anything you send it. **However, if there are other devices in your system on the same MIDI channel, you should assign a controller number that is not used on the other devices.**

Creating Patches using MIDI SysEx

Patches can also be created using LXP-5 MIDI System Exclusive data. This is perhaps the most complicated but also the most flexible way of creating patches to control the LXP-5.

A device that is programmed to transmit LXP-5 SysEx data is needed, such as the Lexicon MRC MIDI Remote Controller (with Rev. 3.0 or higher software). The MRC allows you to edit up to eight parameters for each program giving you much greater creative potential. Programs can be stored in the MRC, making it a powerful control center for systems that include one or more LXP-1s and/or LXP-5s. Many of these functions may also be available in software packages for popular personal computer systems. See your Lexicon dealer for details.

Chapter 4 provides the information necessary for programming LXP-5 MIDI SysEx data.

Assigning Switches as Control Sources

In addition to continuous controllers, you can patch switches and use them to choose between two parameter values.

The LFO Control Source
The LXP-5 contains a low frequency oscillator (LFO). Its output can be used as a Control Source with any parameter. The output of the LFO is a sinusoid with peak values from 0 to 127, and a rate adjustable from 0.066 Hz to 5 Hz.

Feel free to experiment with parameters to determine which you find are useful with the LFO as their Control Source.

Using MIDI Clock as a Control Source
MIDI tempo period patches may be made by using a MIDI clock as a Control Source for one of the LXP-5's delay parameters. This gives you the ability to make *sync delay* setups where delay times are related to LXP-5 delay parameters. Under these circumstances the following conditions will apply:

1. The delay time is not dependent upon the base parameter value. Only the MIDI tempo period and patch information will affect it.

2. In order to preserve an acceptable rhythmic relationship, when the calculated delay value exceeds the maximum delay value permissible by the LXP-5, it will be repeatedly cut in half until it is within the stated delay parameter range.

3. When enabling a patch from MIDI LEARN Mode, the MIDI patch scale is related to the effective note duration of the delay as shown in the following table:

ADJUST Knob Position	NOTE DURATION	SCALE VALUE
MIN	Half Note	0
2	Dotted Quarter	1
3	Half Triplet	2
4	Quarter Note	3
5	Dotted Eighth	4
6	Quarter Triplet	5
7	Eighth Note	6
8	Dotted Sixteenth	7
9	Eighth Triplet	8
10	Sixteenth	9
11	Sixteenth Triplet	10
12	Thirty-second	11

Disabling a Global Patch

Global patches can be disabled from the front panel of the LXP-5. To do this, simply turn FUNCTION to EDIT A, turn SELECT to position MAX, and set ADJUST according to the following table:

ADJUST Knob Position	GLOBAL PATCH EDIT
MIN - 6	Disables all global patches
7 - 11	Re-enables a global patch after moving associated MIDI controller
12 - MAX	Re-enables all global patches immediately

This feature can only disable and re-enable all existing global patches. It cannot be used to create new global patches.

Note: The global patch sources for parameters 0-22 are intitialized at the factory to correspond to MIDI controllers 8-30. The LXP-5 is shipped with global patches *disabled*.

4. MIDI Implementation Data

The information contained in this chapter is intended to assist experienced programmers in developing software for use with the LXP-5.

LXP-5 System Exclusive (SysEx) implementation can be divided into two basic categories: Data and Event Requests, and Data Transmit and Receive.

Data and Event Requests

Data Requests prompt the LXP-5 to transmit specified data. Event Requests prompt the LXP-5 to store the data currently in the edit buffer to a specific memory location (register), or to retrieve stored data and place it in the edit buffer.

Data Requests

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0011 nnnn(bin)	n = MIDI Channel 0-15
4	0eee eeee	e =event code: 60h = active setup data 61h = one register 62h = param data 64h = all registers
5	0ppp pppp	p = register number 0 - 127 for e = 61 = param number for e = 62, e = 65 above; else present but ignored
6	F7 (hex)	End of SysEx message

Event Requests

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0110 nnnn(bin)	n = MIDI Channel 0-15
4	0eee eeee	e = event code: 70h = store current edit to register 71h = recall program to edit buffer
5	0ppp pppp	p = register number 0 - 127
6	F7 (hex)	End of SysEx message

Transmit/Receive Data

Data is identical in format whether transmitted as a response to a Data Request or received as a Data Dump.

When the front panel ADJUST knob is assigned to a parameter and turned, the LXP-5 will transmit a parameter change message reflecting the new position of the knob (See *Parameter Adjust* for the format.). The transmitted parameter number will reflect the specific parameter to which the knob is assigned. Changing a parameter in Edit mode will also cause a parameter change mesage to be sent. Recalling a program with the front panel FUNCTION or ADJUST knobs will cause the appropriate program parameter change message to be sent.

Two LXP-5s can be slaved together by connecting a cable from the MIDI OUT jack of the *master* to the MIDI IN jack of the *slave*. Additional LXP-5s can be slaved to the same master by connecting a cable from the MIDI THRU port of one unit to the MIDI IN port of the next unit.

Remember, since one jack serves as both MIDI THRU and MIDI OUT on the LXP-5, be sure the rear panel switch is in the appropriate position.

All LXP-5s must be set to the same MIDI Channel.

Active Setup Data

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0000 nnnn(bin)	n = MIDI Channel 0-15
4	5E (hex)	data byte count (94)
5	0vvv vvvv(bin)	7-bit data
	.	
	.	
	.	
98	0vvv vvvv	
99	0sss ssss	sumcheck of data bytes
100	F7 (hex)	End of SysEx message

Stored (Single Program) Data

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0001 nnnn(bin)	n = MIDI Channel 0-15
4	0ppp pppp	p = register number 0 - 127
5	39 (hex)	data byte count (57)
6	0vvv vvvv	7-bit data
	.	
	.	
	.	
62	0vvv vvvv	
63	0sss ssss	sumcheck of data bytes
64	F7 (hex)	End of SysEx message

Parameter Adjust

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0010 nnnn(bin)	n = MIDI Channel 0-15
4	0ppp pppp	p = parameter number 0 - 127
5	0vvv vvvv	7-bit data
6	F7 (hex)	End of SysEx message

All User Data

Byte	Value	Description
0	F0 (hex)	System Exclusive
1	06	Lexicon ID
2	05	LXP-5 ID
3	0100 nnnn(bin)	n = MIDI Channel 0-15
4	39 (hi) (hex)	data byte count
5	00 (lo)	(7296 = 0x1c80 = 0x3900 in 7-bit)
6	0vvv vvvv(bin)	7-bit data
	.	
7301	0vvv vvvv	
7302	0sss ssss	sumcheck of data bytes
7303	F7 (hex)	End of SysEx message

Data Dump Contents

Single Program and All User Data Dump

The Single Program and All User Data dump share the same format. The Single Program dump sends all of the stored parameters for the selected setup; the All User Data dump sends all 128 copies of the stored programs. Remember, all LXP-5 parameter data is 7-bits wide. The format is shown on the following page.

Data Byte #	Data Param #	Data Description
0	66	Program (Algorithm) ID
1 - 23	0 -22	Microcode Parameters
24 - 34	31 - 41	Name (11 characters)
35	42	Reserved
36	43	Knob Patch Destination
37 - 41	44 - 48	General Purpose Patch 1 Parameters
42 - 46	49 - 53	General Purpose Patch 2 Parameters
47 - 51	54 - 58	General Purpose Patch 3 Parameters
52 - 56	59 - 63	General Purpose Patch 4 Parameters

Active Setup Dump

The Active Setup data dump sends all the parameters for the current setup as well as the global parameters. The format is:

Data Byte #	Data Param #	Data Description
0	66	Program (Algorithm) ID
1 - 23	0 - 22	Microcode Parameters
24 - 31	23 - 30	Knob Mechanism Parameters
32 - 42	31 - 41	Name (11 characters)
43	42	Reserved
44	43	Knob Patch Destination
45 - 49	44 - 48	General Purpose Patch 1 Parameters
50 - 54	49 - 53	General Purpose Patch 2 Parameters
55 - 59	54 - 58	General Purpose Patch 3 Parameters
60 - 64	59 - 63	General Purpose Patch 4 Parameters
65	64	Register Number
66	65	Preset Number
67	66	Program (Algorithm) ID
68	67	Footswitch mode
69	68	Memory Write Protect
70	69	Global Patch Enable
71 - 93	70 - 90	Global Patch Sources

Parameter Definitions

All LXP-5 parameters are 7-bits wide. Unipolar parameter values range from 0 to 127; bipolar parameter values (Patch Scale and Offset) use two's complement and range from -64 to +64. The most significant bit (MSB) always equals zero.

All parameters are accessible by Parameter Change messages. There are two major parameter classifications: Program parameters and System parameters.

Program Parameters
Generally, the values of these parameters will change when each new setup is loaded. Typically this means that the values of these parameters are stored as part of a program. Similarly, when a new setup is retrieved all of its stored program parameters are retrieved with it.

Most program parameters are accessible via the front panel ADJUST knob and MIDI SysEx. A SysEx change of one of these parameters will overwrite any existing value set by a previous knob change and vice-versa (a knob change will overwrite any existing value set by a previous SysEx change).

The knob mechanism parameters are used to provide an extra degree of control over the microcode parameters. For instance, six of them are used to provide coarse/fine control over delay time from Edit mode.

System Parameters
System parameters are not associated with any particular program. These parameters include Footswitch mode, Memory Write-Protect, global patch sources, and Preset and User memory location numbers.

Parameter Map

Param #	Data
0 - 22	Microcode Parameters
23 - 30*	Knob Mechanism Parameters
31 - 41	Name (11 characters)
42	Reserved
43	Adjust Knob Patch Destination (microcode param # 0 - 22)
44 - 48	MIDI General Purpose Patch 1 (see below)
49 - 53	MIDI General Purpose Patch 2 (see below)
54 - 58	MIDI General Purpose Patch 3 (see below)
59 - 63	MIDI General Purpose Patch 4 (see below)
64*	Memory location (0 - 127)
65*	Preset # (0 - 65; 0-63=Preset Table, 64=Bypass, 65=Edit buffer, 127=Memory location)
66	Algorithm ID (1 - 3; 1=Delay/Reverb, 2=Pitch/Delay, 3=Bypass)
67*	Footswitch Mode (0 - 127; 0 & 4-127=Defeat Input, 1=Defeat Output, 2=Bypass, 3=Memory Increment)
68*	Memory Write Protect (nonzero = write protected)
69	Global Patch Enable (0=global patches disabled, 1=global patches ignored on setup recall until Source controller is moved, 2=global patches active immediately on setup recall
70 - 92*	MIDI Global Patch Sources

*Not stored during program save.

General Purpose Patch Parameter Map:

Param #				
Patch 1	Patch 2	Patch 3	Patch 4	Data
44	49	54	59	Patch Source (0 - 127, see below)
45	50	55	60	Patch Threshold (0 - 127)
46	51	56	61	Patch Destination (microcode param # 0-22)
47	52	57	62	Patch Scale Factor (-64 to +64, 2's complem.)
48	53	58	63	Patch Offset

MIDI Patch Sources (General Purpose and Global):

Control #	Function
0 - 31	Continuous controller 0 - 31
32 - 63	Switches 0 - 31
64	Last note played
65	Last note's velocity
66	Channel aftertouch value
67	Pitch bend value
68	MIDI tempo period
69	Front panel Adjust knob
70	LFO value
71	Lowest note held
72	Highest note held

Global patch parameter numbers 70-92 correspond to microcode parameter numbers 0-22. Therefore, if you want to globally patch the front panel ADJUST knob to decay time (microcode parameter 11) you would use the global patch parameter number of 81 (70+11). Its data value would be 69, corresponding to the ADJUST knob control number.

The MIDI patch Offset values are generated internally by the equation:

Offset = [Source-Threshold] x Scale Factor

where Source equals the value of the specified controller.

This calculated Offset value is added to the stored (base) value of the specified destination parameter. The sum of the offset and base values is the number used by the audio processor and the parameter transmit routines. The programmer should be aware that the offset values are internally updated continuously — therefore if the programmer changes the offset value externally it will be over-written shortly thereafter. The offset parameters are most useful when read to determine the MIDI patch contribution to the parameter values transmitted by the LXP-5.

NOTE: When the LXP-5 *receives* a parameter change, the received value is used as the new base parameter value. However, when the LXP-5 *transmits* a parameter value, this value equals the sum of the base parameter value and any applicable MIDI patch offsets.

LXP-5 Microcode Parameter Map and Definitions

	LXP-5		Algorithm Range	
Param #	Global Patch	Parameter Name	Pitch/Delay	Delay/Reverb
0	70	Delay 1 - Coarse	0 - 127	0 - 77
1	71	Delay 1 - Fine	0 - 127	0 - 127
2	72	Feedback 1	0 - 127	0 - 127
3	73	Delay 2 - Coarse	0 - 126	0 - 69
4	74	Delay 2 - Fine	0 - 127	0 - 127
5	75	Feedback 2	0 - 126	N/A
6	76	Delay 3 - Coarse	0 - 126	N/A
7	77	Delay 3 - Fine	0 - 127	N/A
8	78	Pitch Base/Select	0 - 3	N/A
9	79	Pitch Interval	0 - 36	N/A
10	80	Pitch Adjust	0 - 127	N/A
11	81	Decay Time	0 - 14	0 - 15
12	82	Treble Decay	0 - 15	0 - 15
13	83	Bass Multiply	0 - 31	0 - 31
14	84	Size	0 - 25	0 - 63
15	85	Diffusion	0 - 100	0 - 100
16	86	High Cut Filter	0 - 15	0 - 15
17	87	Low Cut Filter	0 - 31	0 - 31
18	88	Reverb Balance	0 - 127	0 - 127
19	89	Output Balance	0 - 127	0 - 127
20	90	Output Level	0 - 127	0 - 127
21	91	Input Level	0 - 127	0 - 127
22	92	LFO Rate	0 - 127	0 - 127

N/A = Not Available with this algorithm.

All microcode parameters in the LXP-5 are 7-bits and have a fixed MIDI control range. Most parameters are unipolar and have a maximum range of 0 to 127 (00 to 7F hex). The bipolar parameters have a maximum range from -64 to +63 and use two's complement for their data word. MSB always equals zero.

All microcode parameters are accessible via MIDI SysEx. These parameters can also be controlled through the front panel ADJUST knob and Dynamic MIDI®. Note that some parameters can be adjusted to a finer degree using MIDI SysEx or Dynamic MIDI® than when controlled with the ADJUST knob.

Knob Mechanism Parameters

Param #	Description		
23	Delay 0 Coarse Edit Knob	27	Delay 1 Fine Edit Knob
24	Delay 0 Fine Edit Knob	28	Reserved
25	Reserved	29	Delay 2 Coarse Edit Knob
26	Delay 1 Coarse Edit Knob	30	Delay 2 Fine Edit Knob

Delay Parameters

Parameter	#	Range: Pitch/Delay	Range: Delay/Reverb	Increment	Resolution
Delay 1 - Coarse	**0**	**0 - 1.0404 sec**	**0 - 630.8 msec**	**≈8.2 msec**	**128 steps P/D 78 steps D/R**
Provides a coarse adjustment of mono delay time.					
Delay 1 - Fine	**1**	**0 - 8.1 msec**	**0 - 8.1 msec**	**64 usec**	**128 steps**
Function: Provides a fine adjustment of mono delay time by adding to the Delay 1-Coarse value.					
Feedback 1	**2**	**0 - 100%**	**0 - 100%**	**≈0.79%**	**128 steps**
Adjusts positive feedback around the mono delay. In Pitch/Delay, 100% feedback automatically cuts the input, and can be used as a manual, or MIDI controlled, delay line sampler. In Delay/Reverb, 100% feedback does not cut the input, but continues to add it in. There is also a slight high frequency rolloff through the gliding delay mechanism of Delay/Reverb-Delay 1.					
Delay 2 - Coarse	**3**	**0 - 322.5 msec**	**0 - 176.6 msec**	**2.56 msec**	**127 steps P/D 70 steps D/R**
Provides a coarse adjustment of two-channel delay time.In Delay/Reverb, provides a pre-delay adjustment for the reverb. In Pitch/Delay provides a reverb pre-delay and adjusts the right channel.					
Delay 2 - Fine	**4**	**0 - 2.5 msec**	**0 - 2.5 msec**	**≈20 usec**	**128 steps**
Provides a fine adjustment of right channel delay time by adding to the Delay 2-Coarse value.					
Feedback 2	**5**	**0 - 99%**	**NA**	**≈0.79%**	**127 steps**
Adjusts feedback around the pitch shifter and left channel delay.					
Delay 3 - Coarse	**6**	**0 - 322.5 msec**	**NA**	**2.56 msec**	**127 steps**
Provides a coarse adjustment for left channel delay.					
Delay 3 - Fine	**7**	**0 - 2.5 msec**	**NA**	**≈. 20 usec**	**128 steps**
Provides a fine adjustment for left channel delay by adding to the Delay 3-Coarse value.					

Pitch Parameters (Pitch/Delay only)

Parameter	#	Range	Increment	Resolution
Pitch Base/Select	**8**	**0=Defeat; 1=Down 2 octaves; 2=Down 1 octave; 3=Unison**	**one octave**	**NA**
Function: Used to select the base octave from which you shift up from using Pitch Interval. Generally speaking, you should select 1 (down 2 octs.) and use Pitch Interval to get 36 semitones when using MIDI.. Select 0 (Defeat) bypasses the pitch shifter.				
Pitch Interval	**9**	**Two octaves down thru one octave up (36 semitones)**	**one semitone**	**37 steps**
Function: Adjusts the pitch shift from two octaves down (Pitch Base/Select=1; Pitch Interval=0) to almost one octave up (actually maj 7th + 47 cents).Note the pitch shifter may not cross the unison boundary perfectly.				
Pitch Adjust	**10**	**-64/+63 arbitrary units**	**From ≈ 4 cts./step at +1 oct. to 25 cts./step at -2 oct.**	**128 steps**
Function: Provides a fine adjustment of pitch for detuning. The MIDI value 0-127 is interpreted as being centered on 64.				

Reverb Parameters

Parameter	#	Range: Pitch/Delay	Range: Delay/Reverb	Increment	Resolution
Decay Time	**11**	**0.5-12 seconds**	**0.5 sec.-infinity**	**varies min. is 0.1 sec.**	**15 steps P/D 16 steps D/R**
Function: Adjusts mid reverb time. Infinite reverb is available in Delay/ Reverb algorithm only.					
Treble Decay	**12**	**320 Hz to full range**	**320 Hz to full range**	**logarithmic**	**16 steps**
Function: Provides an adjustment of the low pass filter within the reverb. Maximum setting gives a flat response through the filter section.					
Bass Multiply	**13**	**x0.3 to x2.5**	**x0.3 to x2.5**	**linear**	**32 steps**
Function: Provides control over bass reverb time.					
Size	**14**	**8 - 26 meters**	**8 - 53.5 meters**	**linear**	**26 steps P/D 64 steps D/R**
Function: Adjusts the room size. The range is for one side of a room; cube these values to get the approximate room volume.					
Diffusion	**15**	**0 - 100%**	**0 - 100%**	**1%**	**101 steps**
Function: Softens the attack of percussive sounds in the reverberator.					

Equalization Parameters

Parameter	#	Range: Pitch/Delay	Range: Delay/Reverb	Increment	Resolution
High Cut Filter	**16**	**320 Hz to full range**	**320 Hz to full range**	**logarithmic**	**16 steps**
Function: Provides adjustment of high frequency roll-off. Maximum setting gives flat response through the filter section.					
Low Cut Filter	**17**	**Full range to 1350 Hz**	**Full range to 1350 Hz**	**logarithmic**	**32 steps**
Function: Provides adjustment of low frequency roll-off. Minimum setting gives flat response through the filter section.					

Level Parameters

Note: The Reverb Balance and Output Balance parameters each act like a conventional pan circuit with a 3 dB loss when set to a 50/50 mix. To insure the best signal to noise ratio, the Output Level parameter includes 6 dB of gain to offset these losses. As a result, however, the panning will be very sharp when the Output Level is set at maximum (100%). A smoother pan can be achieved by reducing the Output Level 3 dB (about 70%).

Parameter	#	Range: Pitch/Delay	Range: Delay/Reverb	Increment	Resolution
Reverb Balance	**18**	**100% effects/ 0% reverb to 0% effects/ 100% reverb**	**100% effects/ 0% reverb to 0% effects/ 100% reverb**	**Follows sine/ cosine curves**	**128 steps**
Function: Adjusts the mix of reverb with delay effects.					
Output Balance	**19**	**100% left to 100% right**	**100% left to 100% right**	**Follows sine/ cosine curves**	**128 steps**
Function: Provides a pan control for the wet output.					
Output Level	**20**	**0 - 100%**	**0 - 100%**	**≈ 0.79%**	**128 steps**
Function: Adjusts the output level of the signal processor.					
Input Level	**21**	**0 - 100%**	**0 - 100%**	**≈ 0.79%**	**128 steps**
Function: Adjusts the input level to the signal processor.					
LFO Rate	**22**	**0.066 - 10 Hz**	**0.066 - 10 Hz**	**logarithmic approximation**	**128 steps**
Function: Adjusts the frequency of the low frequency oscillator.					

MIDI Implementation Chart

Lexicon LXP-5
Effects Processing Module Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	1 1-16	1 1-16	 Memorized
Mode	Defaullt Messages Altered		 Mode 3	
Note Number	 True Voice	X	0 - 127	Used as controller
Velocity	Note ON Note OFF	X X	O X	
After Touch	Keys Channels	X X	X O	
Pitch Bender		X	O	
Control Change		X	0 - 127	
Program Change	 True #	X	0 - 127 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	Used as controller
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	X X X X	X X X O	

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO **O : Yes**
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO **X : No**

5. Specifications

Audio Inputs (2)
Level: -25 dBu minimum
(0 dBu=0.775 Vrms)
Impedance:
Stereo: 50 kΩ unbalanced
Mono: 25 kΩ unbalanced
Connectors: 1/4" phone jacks (L or R may be used for mono input)

Audio Outputs (2)
Level: +4 dBu nominal, +18 dBu maximum
Impedance:
600 Ω unbalanced
Connectors: 1/4" phone jacks

Mute Protection
removes unwanted transients during power up/down, or any power interruption

Static Protection

Frequency Response
Wet: 20 Hz - 15 kHz, + 1.0, -1.5 dB
Dry: 20 Hz - 20 kHz, ± 0.1 dB

Dynamic Range
85 dB, typical, 20 Hz to 20 kHz bandwidth

Total Harmonic Distortion (THD)
Wet: < 0.02% @ 1 kHz
Dry: < 0.01% @ 1 kHz

Encoding
16-bit linear PCM

Sampling Frequency
31.25 kHz

Memory
64 presets with 128 user registers available

Dynamic MIDI®
5 pin DIN connectors provided for MIDI IN and MIDI OUT (THRU) (MIDI OUT or THRU may be selected by rear panel switch) LEARN button and status indicator provided on front panel

Footswitch
1/4" phone jack for connection to any on/off toggle switch. Functions include: Input defeat, Output defeat, Bypass, Preset/user register, Memory Step

Signal Level Indicators
Green Signal Present LED
Red Processed Signal Overload LED

Front Panel Controls
Input Level Adjust
Dry/Wet Mix Adjust
Output Level Adjust
Function and Select Controls (used for selecting a preset, user register, or edit parameter)
Adjust Control (used to modify a preset/register or adjust a specific parameter)

RFI Shielding
Complies with FCC Class A requirements for computer equipment

Power Requirements
9 VAC, 1.5 A from supplied wall transformer
5.0 mm/2.5 mm connector provided on rear panel

Dimensions
8.5" W x 1.7" H x 9.5" D (215.9 x 43.2 x 241.3 mm)

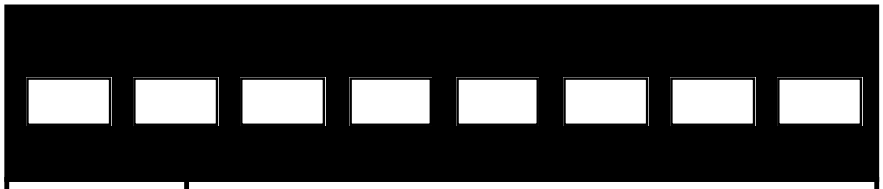
Weight
4.5 lb (2.05 kg)
Shipping weight:
5.0 lb (2.27 kg)

Environment
Operating temperature:
32° - 95°F (0° - 35°C)
Storage temperature:
-22° - 167°F (-30° - 75°C)
Humidity:
95% maximum without condensation

Specifications subject to change without notice

User Memory Record of Contents

This page may be copied as needed for documenting the sounds stored in LXP-5 User memory.



SELECT Knob Position	PROGRAMS	
	#	Name
MIN		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
MAX		

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Printed in U.S.A.