DXR ELITE

DESIGNED AND MANUFACTURED IN THE USA

USER'S GUIDE

ART DXR Elite User's Guide Contents

Fill in the following information for your reference:

Date of purchase _____

Purchased from _____

Serial number _____

426-5004-101

Introduction

Thank you for purchasing a DXR Elite—and congratulations: You now own one of the most sophisticated pieces of audio signal-processing technology available. Offering a level of processing resolution and sound quality of units that can cost thousands of dollars, the DXR Elite uses specially designed integrated circuits and a straightforward user interface that quickly and easily gives you access to all of its features.

Features

- 128 studio delay and delay-based effect presets
- Stereo inputs and outputs
- Easy programming
- MIDI In and Out/Thru
- Programmable external switch functions
- Real-time control of two parameters per bank via MIDI
- MIDI mapping
- Short, medium, and long dual delays
- Long dual/stereo delays
- Dual offset regenerated delays
- Dual doubling delays
- Short, medium, long, and longer stereo offset delays
- Stereo choruses
- Stereo flangers
- Dual/stereo multi-tap delays
- Designed and manufactured in the United States of America

The DXR Elite provides you with 128 of the finest studio-quality delays and delay-based effects, including flanging, chorusing, multi-tap delay, vibrato, and doubling. It operates in stereo and dual-channel modes, plus it's incredibly simple to use. You can use your DXR Elite with either mono or stereo input sources and send the outputs to either mono or stereo equipment. ART designed a combination of powerful processing and ease of use into the DXR Elite. We strongly suggest that you read and refer to this manual while getting used to your new processor.

Quick Start Instructions

You've unpacked your DXR Elite and you're in a hurry to get it up and running. You probably would rather play with it than read the manual (at least, right now). Fair enough. But check out the basics, outlined here, just to get your DXR Elite on line. It should take only a couple of minutes for you to read through them, and then you'll be ready to fire up your DXR Elite. Refer to this section if you have any difficulty. And later, when you want to get into more of the details of your DXR Elite, check out the rest of the manual.

Quick Setup

Insert the supplied AC adapter's plug into the input labeled PWR on the DXR Elite's back panel.

Turn the Input and Output knobs to their full counterclockwise positions. Turn these knobs up only after all other setup steps are done.

With a mixer: Connect two cords with 1/4" plugs between your mixer's reverb sends and the DXR Elite's Line Inputs. Connect two more cords between the DXR Elite's Line Outputs and your mixer's returns.

Straight into an amp: If you're patching the DXR Elite into a guitar (or other instrument) amplifier, use one cord between the instrument and the DXR Elite's left Line Input. Run a second cord from the left Line Output to the amp's input. If the amp has stereo input capabilities, connect another cord between the DXR Elite's right Line Out and the amp's second-channel input. You can also plug a second output from your instrument (or the output from another instrument) into the DXR Elite's right Line In.

In an amp's effects loop: If you're patching the DXR Elite into a guitar (or other instrument) amplifier's effects loop, and it's mono, use one cord between the amp's effects send jack and the DXR Elite's left Line Input. Run a second cord from the left Line Output to the amp's Effects Return jack. (If the amp has stereo returns, use another cord to connect the DXR Elite's right Line Output to the amp's other effects return jack.)

For fixed installation in a P.A. system: If you're patching the DXR into a P.A. system to delay one channel in order to time-correct multiple speaker configurations, run one of the mixer's main outputs directly into a power amp and its speakers. Run another main output to the Left Line In of the DXR. Then connect the DXR's Left Line Out to a second power amp and its speaker(s).

Note: If you need further help doing your initial hook-up, refer to the diagrams and information on pages 32 through 38.

Plug the DXR Elite's AC adapter into the wall socket (the DXR Elite is now powered up). Now turn on your mixer or amp and your monitor amplifier.

Make sure that your mixer's or amp's send level control is turned up and that signal is being sent to the DXR Elite. Turn the DXR Elite's Input knob clockwise until the DXR Elite's Signal LEDs glow. If the DXR Elite's Clip LED glows constantly, turn down its Input level—the Clip LED should only glow when a really loud instantaneous signal reaches the DXR Elite.

Now turn up the DXR Elite's Output level, and raise the return level on your mixer or amp. You should be hearing the DXR Elite's effect. If not, check your connections and your monitor amp (you did remember to turn it on, didn't you?).

Select program banks with the Bank selector button (just to the right of the display) and presets with the Preset knob (on the far left side of the panel). For a list of the presets, arranged according to bank and number, see page 27.

Hammer your keyboard. Wail on your guitar. Mix your entire album. And, of course, try all of the presets. Don't hold back. And when you're ready, check out the rest of this manual.

Installation

The DXR Elite may be used in a variety of setups including: mixing consoles with effects send and return facilities, and in the effects loop of an instrument or P.A. amplifier. Self-contained in an all-steel, single-height 19" rack-mount enclosure, the DXR Elite is designed for continuous professional use. Because the unit is compact and lightweight, mounting location is not critical. However, for greater reliability we recommend that you not place the DXR Elite on top of power amps, tube equipment, or other sources of heat.

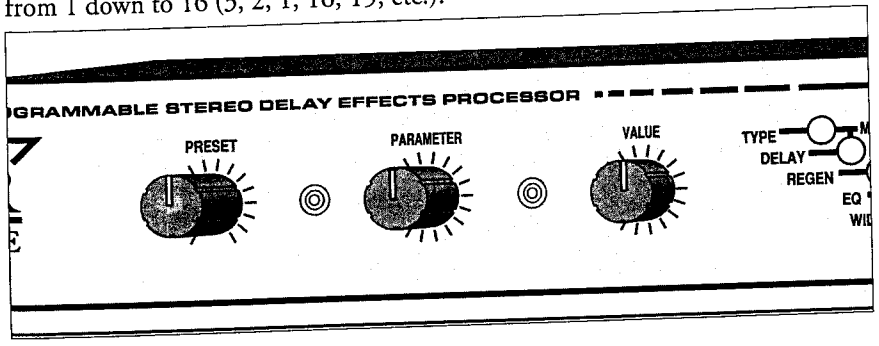
Powering The DXR Elite

The DXR Elite is powered by an external AC adapter. Always make sure that its output jack is securely plugged into the rear of the DXR Elite, and that the adapter is held firmly in an electrical outlet. Never operate the DXR Elite or AC adapter in the rain or in wet locations. If the AC adapter's cord is ever cut, discontinue using it and replace the adapter with a new one. To prolong its life, unplug the adapter when the DXR Elite is not in use. Alternatively, if the DXR Elite is mounted in a rack, plug the adapter into a switched power strip so that you can conveniently turn it off with your other gear. Refer to the label on the adapter for proper operating voltages.

FRONT PANEL CONTROLS & INDICATORS

Preset

The Preset selector knob on the left side of the front panel selects from the 16 preset programs of studio-quality delay and delay-based effects combinations in each Bank. Note that it doesn't stop turning once you reach the first or sixteenth Preset, so it continues counting up from 16 to 1 (13, 14, 15, 16, 1, 2, etc.) and from 1 down to 16 (3, 2, 1, 16, 15, etc.).



Parameter & Value

The Parameter knob selects a preset's adjustable parameters, indicated by one or two LEDs glowing in the diagonal slash of indicators. Whenever you turn the knob, one or two LEDs in the indicator slash glows and the numeric display changes from showing the current preset number to showing a parameter's value. You can scroll through the parameters, plus access MIDI and Utility functions (for details on these modes, see page 39). Turning the Value knob changes the selected parameter. Any changes you make with the Value knob can be saved in a preset by pressing the Store button twice to store it in the same location; to store a preset elsewhere in the Bank, press Store once, turn the Preset knob to the location in which you wish to store the preset, and then press Store again.

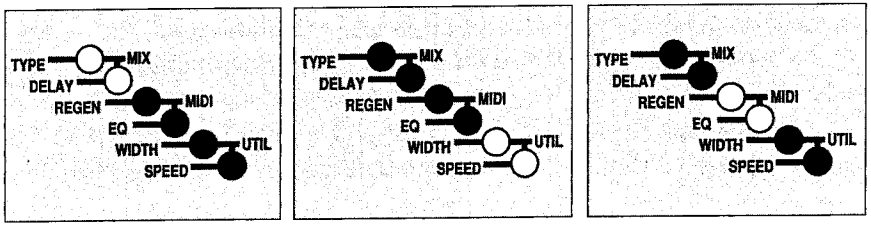
Note: You can store preset changes within a Bank, but you cannot store them in a different Bank from the one in which the preset originated. This makes it easier to organize your presets. Refer to the section titled MIDI Program Table on page 45 for details on remapping presets.

Note: About four seconds after you quit turning the Parameter or Value knob, if no other knobs are turned, the display returns to showing the preset number. Turning the Parameter or Value knob returns the display to showing the current Parameter and Value.

LED Parameter Indicators

When you turn the Parameter knob, the "slash" of LEDs in the middle of the panel tells you which parameters can be changed via the Value knob. When only one LED glows, the label to its *left* tells you which parameter is selected (EQ, Delay, etc.). When two LEDs glow together, the text to the *right* of the LEDs tells you which parameters can be changed by turning the Value knob. The Mix function (two uppermost LEDs glowing simultaneously) affects the wet/dry mix

Mix *Utility Mode* *MIDI Mode*



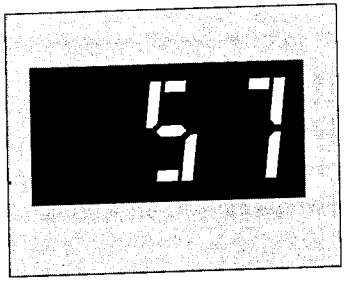
(0 for fully dry, 100 for fully wet, with 50 an even mix of both). When the two LEDs next to "Util" are lit, then the Utility Mode is active. When the two LEDs next to "MIDI" are lit, then MIDI Mode is active. Utility and MIDI modes are explained on page 39.

Note: To obtain the strongest effect from flanging, chorusing, and ping-pong presets, set the Mix to full effect (100). If you employ the DXR Elite in a mixer's reverb send/return loop, you'll probably want to either use the Dry Kill Function via the Soft-Key (refer to the information on programming the Soft-Key on pages 9 and 41) or turn the mix control to its effects-only setting, since you'll already have plenty of dry signal in the mixer to work with. If you patch the DXR Elite into one of the mixer's input-channel effects loops, though, you will likely need to use the DXR Elite's mix control, since most mixers are configured so that the channel's entire signal passes through this loop. Consult your mixer's manual for further information.

Note: When the DXR Elite is placed in a guitar or other instrument amp's effects loop, it may be necessary for some dry signal to be present in the DXR Elite's output. (Consult the amp's manual to determine the correct setting.)

Numeric Display

In Preset Mode, this display shows a 1-, 2-, or 3-digit letter/number combination that corresponds to the preset currently in use. When you're editing parameters or are in the MIDI/Utility mode, the "slash" LED display tells you what values or parameters you are modifying, and the numerical display indicates the value.

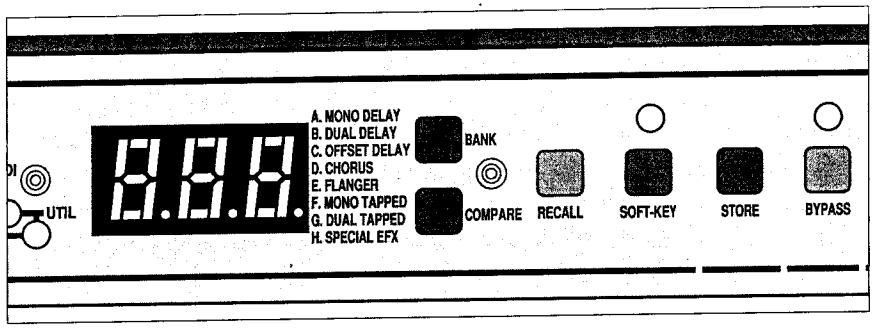


Bank Advance Button

The Bank button selects the next higher Bank each time you depress it. The corresponding Bank letter (A through H) shows in the display's left digit. Holding the button down makes the Bank's letter flash; this means that if you continue holding the button down and turn the Preset knob clockwise, you can rapidly advance through the Banks (A, B, C, D, etc.). Holding the button and turning the Preset knob counterclockwise steps downwards through the Banks (F, E, D, C, etc.). Only after you release the button is the new preset loaded into the processor.

Compare

When you adjust the parameters in a Preset, you can compare the edited and unedited preset by pressing the Compare button, which toggles between the two settings. You can also toggle between two Presets selected by the Recall button by pushing the Compare button. For example: If you were using Preset A6 in a song and needed to switch to Preset G12 for the second verse, first recall Preset A6 and then G12 (see the section on the Recall button). Now each time you press Compare, you automatically switch between Presets A6 and G12.



Recall

The Recall button gives you a way to jump from one preset to any other preset, regardless of which Bank it's in. Select a preset and then press Recall. The display blinks on and off. Now select any other preset using the Bank selector button and/or the Preset knob. Press Recall again, and the new Preset is now active.

Soft-Key

The Soft-Key can be assigned to any of three functions: Dry Kill, Repeat Hold, and Tapped Time Entry. When you push the Soft-Key switch, the LED above it glows, letting you know that its function is activated. Pushing it again disengages the function and turns off the LED.

To change the Soft-Key's function, turn the Parameter knob until you reach Utility mode (the two LEDs with Util to the right of them will glow). When

you see a dash (—) in the left digit of the display followed by "dr," "rH," or "tt," you're in the part of Utility mode where you can change the Soft-Key's function. Turn the Value knob to select "dr" for Dry Kill, "rH" for Repeat Hold, or "tt" for Tapped Time Entry. (The DXR Elite's factory setting is for Dry Kill, "dr.") These settings are global, meaning that the way you program the Soft-Key works the same way for all presets in the DXR Elite.

Here's a description of the three options available through the Soft-Key:

Dry Kill: Dry Kill stops all direct signal from passing through the DXR Elite, allowing only the sound altered by the signal-processing circuitry to exit through the Line Outputs. This is especially useful when the DXR Elite is patched into a mixer's reverb loop, since using Dry Kill makes it unnecessary to individually change the wet/dry mix in every preset to 100.

Repeat Hold: The second option is Repeat Hold, which makes the DXR Elite's delays act like a never-ending tape loop. When you push the button, whatever is passing through the DXR Elite is held in its memory and repeated. Long delay settings create loops that you can play along with, while short ones can be used as sounds that you can add to recordings or performances to add flavor. Extremely short delay times sound like buzzes, but you may find them useful, too. Cool rhythms can be produced by using Dual Delay and Offset Delay programs with long delay times and then hitting the Repeat Hold. Note that Repeat Hold doesn't work for Banks D and E, which are devoted to chorus and flanging sounds.

Note: When you deactivate the Repeat Hold function after storing a sound, the sound will continue to be processed. That is, if a delay preset has regeneration, then after you turn off Repeat Hold, the sound will be regenerated until it dies away.

Note that Repeat Hold can be activated using either the Soft-Key button or a footswitch plugged into the DXR Elite's Ext. Footswitch jack. For information on programming the Soft-Key and the Ext. Switch jack for this and other functions, see page 39.

Tapped Time Entry: When you tap on the Soft-Key in Tapped Time Entry mode, the first time you tap the button activates the mode. The circuitry then

counts the time between that tap and the next time you tap the key and the one after that (the Numeric Display advances through the numbers 1, 2, and 3 as you tap the switch). It then averages out the time between taps on the Soft-Key, and it sets the delay length to that time (the delay time is shown in the Numeric Display).

In Bank B, the left and right delay times are set identically when you tap in the time via the Soft-Key. In Bank C, only the left delay time is set, although the right delay time is changed, too. However, the right delay time is offset from the left delay time by whatever offset amount is programmed into the preset. For example, if you tap in a 419 ms time, the 419 ms delay will be set for the left side, and if a 50 ms offset is programmed into the preset, then the right channel's delay time will be 369 ms. If you wish to store this altered preset, the DXR Elite's processor rounds the amounts off to the next lowest delay time in its memory. In this case, where Bank C is used, it would round off 419 ms to 400 ms.

Note: Tapped Time Entry, available in Banks A, B, and C, can be performed using either the Soft-Key button or a footswitch plugged into the DXR Elite's Ext. Footswitch jack. For information on programming the Soft-Key and the Ext. Switch jack for this and other functions, see page 39.

Note: Tapped Time Entry does not work with Banks D through H. The display will flash "- - -" (three dashes) signifying that Tapped Time Entry is not accepted.

Store

Once you've made changes to a preset, you can store the altered preset in its original location, or any location within its Bank. This simplifies finding it later, since it keeps flanging presets with flanging presets, dual delays with dual delays, etc. After making changes using the Parameter and Value knobs, depress the Store button. The program number will blink rapidly. If you want to store the changed program there, push Store again. The blinking stops, and your preset is stored.

If you want to save the preset in a different location, follow this procedure: Press Store, and when the numbers blink, turn the Preset knob to the location number where you want to store it. Then press Store again. The blinking will stop, and the DXR Elite will indicate that the new preset in the new location is active.

Note: You can organize your custom presets by placing them all in, for example, preset 16 on each Bank. Then to go from one to the next, you simply depress the Bank selector to go from Bank to Bank.

Restoring Presets To Original Factory Settings

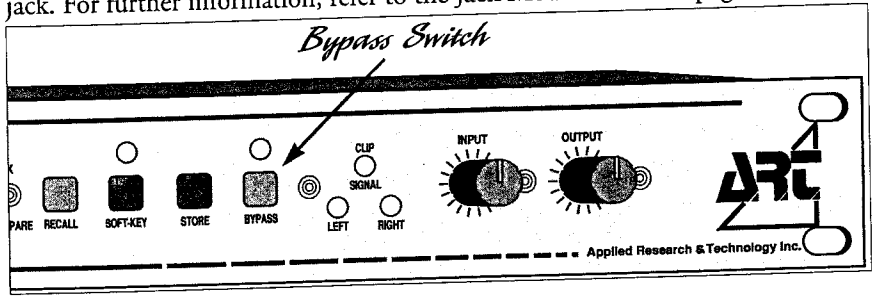
If you want to restore *all* presets to their factory settings, press the Bank, Soft-Key, and Bypass buttons simultaneously. (The Numerical Display will go through a routine that lasts a few seconds before showing "A1.") Remember: Only do this if you want to restore *all* of the settings to their factory values. It erases all customized presets in the DXR Elite. If you have favorite customized presets, either scroll through their parameters and write them down, or use the MIDI Full Dump feature to offload your presets to a MIDI storage device before implementing a full reset. (See page 48 for information on DXR Elite MIDI functions.)

Bypass

When the Bypass switch is depressed, all "wet" (processed) signal is blocked from reaching the outputs, leaving only the dry signal. Pressing the Bypass button kills the effects signal in the mix. The LED above the Bypass switch glows continuously whenever the bypass mode is engaged. Pressing Bypass again returns the preset to active status.

You can program the Bypass to work in two different ways: either as a bypass of the *input* signal or as a bypass of the *output* signal. See page 40 for information onWet Kill Type selection.

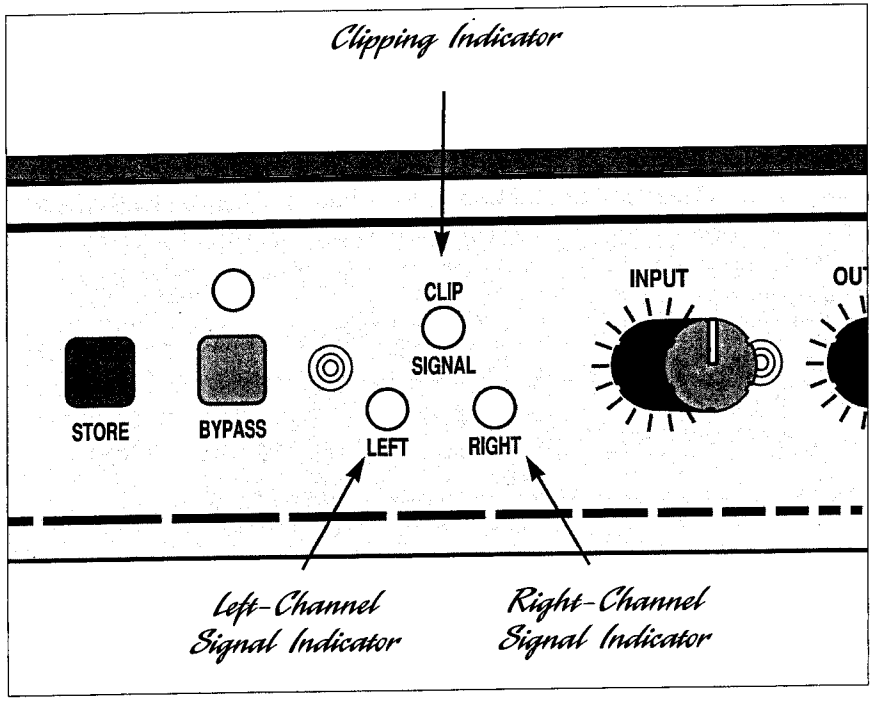
Another way to bypass the unit is to use the Ext. Switch jack on the rear panel. Most footswitches will work with the DXR Elite, as long as they can be connected by a cord that has a 1/4" phone plug for insertion into the Ext. Switch jack. For further information, refer to the Jack Mode section on page 40.



Note: Activating Bypass while Dry Kill is selected (via the Soft-Key) stops all direct and all effect-processed signal from reaching the output. This can be used as a mute function—perfect for turning off all sound when you take a break or tune up. When you exit the Bypass mode, the Dry Kill function acts normally; if it's activated, it will allow only the effect-enhanced signal to reach the DXR Elite's output.

Clip & Left Channel/Right Channel Signal LEDs

Three front-panel LED indicators show the status of the input signal level as it enters the DXR Elite's digital processor. The Left Channel and Right Channel Signal LEDs indicate the presence of an audio signal. If the Clip LED is lit, it



indicates that the digital processor is getting too much input, resulting in undesirable distortion, also known as clipping. For maximum dynamic range, the Signal LEDs should be on most of the time, with the Clip LED briefly flashing only on transients (high-energy bursts, such as loud snare drum hits).

Input

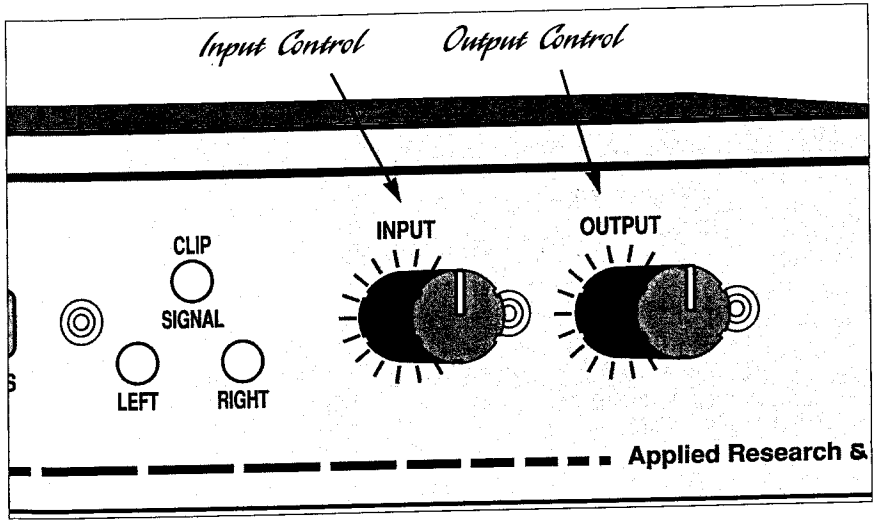
The Input knob lets you govern the signal intensity reaching the DXR Elite's input circuitry so that you can set the optimum level. This is important, since a signal's level at this stage has a bearing on the signal-to-noise ratio and the amount of distortion present in the final output. A little experimentation will give you a good feel for the controls. Too little signal results in a disproportionate amount of noise, while too much (indicated by a constantly glowing Clip LED) sounds distorted and gritty. Use the Signal and Clip LEDs to help guide you, but use your ears, too.

Note: The Input knob's setting is global, meaning that it affects the DXR Elite's input level, regardless of what program is engaged.

Output

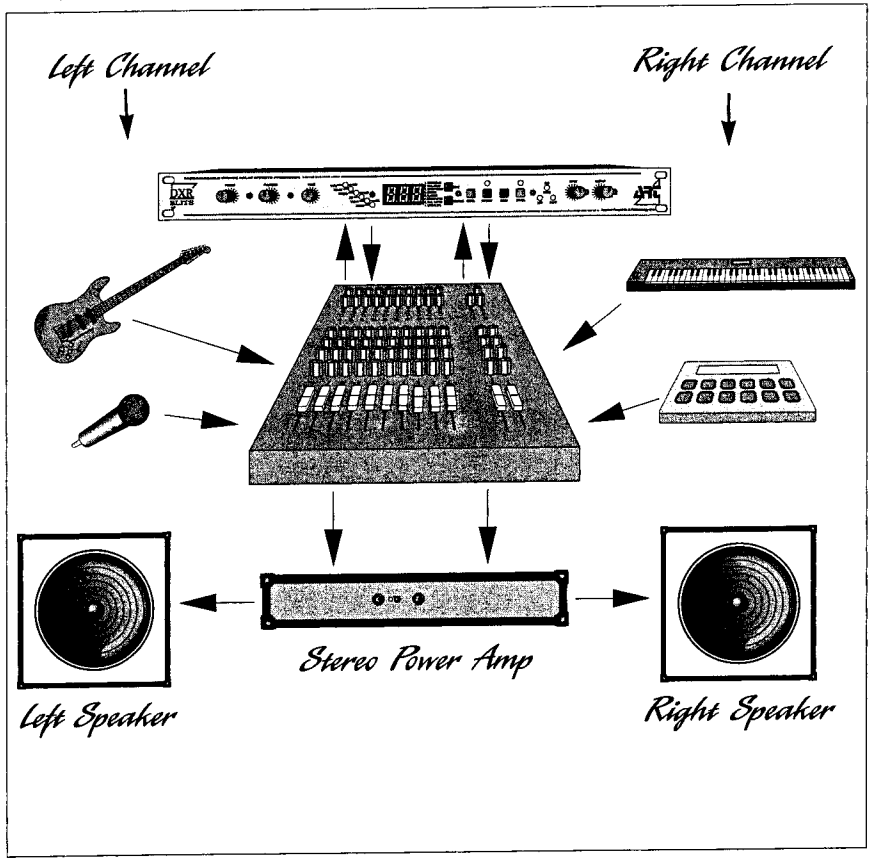
The Output control governs the amount of signal leaving the DXR Elite. Depending on the type of equipment connected to the unit, and its input needs, it's almost mandatory to experiment in order to find the optimum level. Check your other equipment's manual for hints on setting appropriate input levels, or follow the tips outlined in the section above. Use your ears as a guide, too.

Like the Input knob, the Output knob's setting is global, meaning that it affects the DXR Elite's output level, regardless of what preset is engaged.



DUAL & STEREO OPERATION

The DXR Elite is designed so that many of its presets operate in Dual (two discrete channels) mode. When in Dual mode, each channel functions separately from the other, offering a wider variety of effects. Notice in the preset list on pages 32 through 38 that some presets contain the word "Dual" in their name, indicating that the two channels are processed separately (that is, with isolated left and right audio paths). When used with a mixer, your DXR Elite becomes a very powerful tool for processing multiple instruments. (Two different Delay or Tapped Delay treatments can be used simultaneously in Banks B and G.) For a single instrument that has stereo outputs feeding into the DXR Elite's two Line Inputs, different Delay and Tapped Delay treatments on the left and right channels, using the



Presets in Banks B and G, can provide extra size and presence, and an illusion of movement.

The DXR Elite's other mode, Stereo, works in the following manner: The DXR Elite's input section mixes both inputs into a mono signal for processing, but the output signal is in stereo. The two dry signal paths (left and right) pass through their respective sides without being mixed. For example, if you plug the output from a keyboard into the left channel and a guitar into the right channel, their dry signals will appear in the left and right channels, respectively. However, the effect reaching both outputs along with the dry signal (depending on the Mix knob's setting) will be a combination of the two input signals. So if you are using, say, stereo chorus, then you will hear chorused guitar and keyboard on both channels.

Every Bank but Banks D and E offers dual processing. Dual Delay time is available in banks A, B, C, F, G, and H up to 1 second. When delay times in these banks exceed 1 second, the processor automatically sums the inputs to provide up to 2 seconds of delay time.

INPUTS & OUTPUTS

Despite the DXR Elite's sophistication, it's easy to interface the unit with other equipment. All inputs and outputs are located on the rear panel. Standard 1/4" inputs and outputs make patching simple. Note: For best audio quality, always use high-quality cables.

Because the DXR Elite is designed for line-level or instrument operation, we don't recommended plugging microphones directly into it. Instead, either use a preamp, a mixer, or an amp's preamp section to boost the level first (use the effects loop output or reverb send from a mixer or amp). The higher signal level from a preamp or effects loop assures an optimum signal-to-noise ratio in the DXR Elite, keeping hiss and distortion to a minimum.

Line In L & R

The Left and Right Line inputs are single-ended (unbalanced) with an impedance of 500k ohms. Two modes of operation are available: Dual and Stereo. In Dual mode, the left and right channels are processed separately. In Stereo mode, the inputs are summed (added together) and stereo imaging is produced in the DXR Elite's circuitry, creating a stereo image in the Left and Right output channels. If only one input is used, plug into the left channel; then the signal is automatically routed to both channels' inputs, regardless of whether the DXR Elite's program is Dual or Stereo. However, if you send two separate signals to the Left and Right inputs (for example, guitar to the Left and keyboard to the Right), the DXR Elite will mix them and process them as one signal when Stereo programs are selected. If a Dual mode program is selected, then the two signals will not be mixed, and they will be processed separately.

Note: When two separate signals are sent to the DXR Elite's inputs and a Stereo program is selected, the processed, or wet, signal (flanged, chorused, delayed, etc.) will contain sound from both sources. The dry signals will remain separate; that is, the dry signal coming into the Left input will only go to the Left output, and the dry signal coming into the Right input will be present only at the Right output.

Note: Programs that provide Dual Offset Delay and Dual Multi-Tap Delay are most effective if you use both outputs panned left and right.

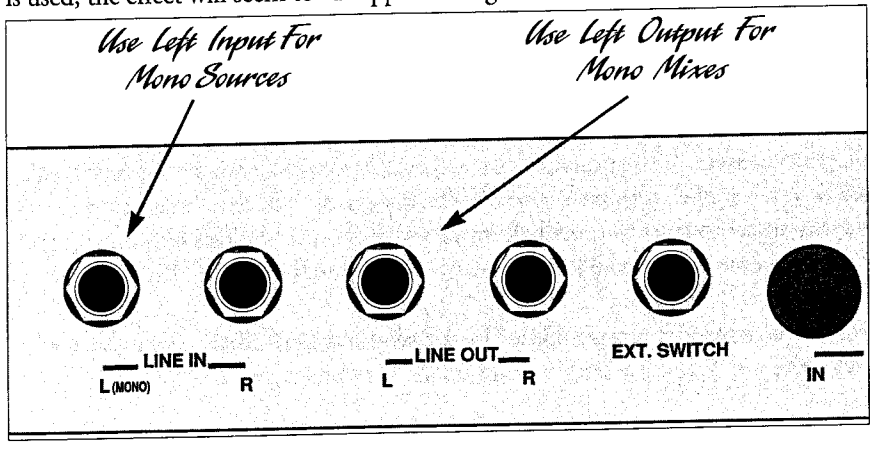
Line Out L & R

The Left and Right Line Outputs are single-ended (unbalanced) with a source impedance of 1k ohm, and can provide a stereo or mono output. When two separate signals are applied to the inputs and Dual program is selected, the resulting outputs are separately processed. That is, the left and right channels behave as if they were treated by two separate signal processors. If both outputs are used and the DXR Elite receives a mono input signal, a stereo image is produced. If you're only supplying the DXR Elite with a mono input, use the DXR Elite's Left input. And if you use only one output, choose the Left output, because using this output jack alone with either a mono or stereo input provides a signal combining the processed information from both outputs.

Note: When only the Left Line Out is used, the effect's output is a processed combination of both the left and right input signals (the outputs are summed).

In addition, regardless of whether the DXR Elite is operating in a Stereo or Dual program, if two separate inputs are used, then the dry signal at each output will be the same as its respective input (that is, Left dry in = Left dry out, Right dry in = Right dry out).

Also note that the Inverted Flanger, Inverted Chorus, and Analog Chorus programs create an extra-wide sound as a result of inverting the signal's phase by 180 degrees on the right channel. So if these outputs are combined, the effects from both channels cancel each other. Therefore, if only one output jack (the left one) is used, the effect will seem to "disappear" altogether.



If you're only using one input and don't want an output that contains the combined effects from both channels, you can do the following: (1) Plug the cord coming from your audio source (mixer's reverb send, keyboard's output, etc.) into the DXR Elite's Left Line In. (2) Connect a cord between the DXR Elite's Left Line Out to wherever you want the signal to go (mixer's reverb return, an amp, etc.). (3) Insert a dummy plug into the DXR Elite's Right Line In. You can use a 1/4" phone plug with or without a cord attached as a dummy plug. By using a dummy plug in this way, the Left Line Out has only the left channel's effects. (4) If you don't want Inverted effects (some Flanger and Chorus programs) to cancel each other, then use a dummy plug in the Right Line Out.

If you want to use only the right channel instead of the left, follow the same directions, but run your signal through the DXR Elite's Right Line In and Right Line Out and place the dummy plug into the Left Line in.

Ext. Switch

The Ext. Switch (external switch) jack allows you to perform a variety of switching functions from a free-standing remote footswitch or the Bypass footswitch portion of an ART X-15 Ultrafoot.

A footswitch and any 2-conductor cable with 1/4" phone plugs may be used with this jack. The DXR Elite can be configured to accept three different types of footswitch: push/push (toggle), momentary normally closed, and momentary normally open. To access these options, turn the Parameter knob until you reach Util (Utility mode) and a "t" appears in the left digit of the display. Then turn the Value knob to select one of these switch-type options:

to	push/push (toggle)
nC	momentary open, normally closed
no	momentary closed, normally open

To use the Bypass output from an X-15 Ultrafoot to control any of the DXR Elite's footswitchable functions, connect the two units with a standard cord (shielded or unshielded) with 1/4" phone plugs at each end. Check your X-15's manual for setting its correct function.

The Ext. Switch can be programmed to provide Dry Kill, Wet Kill, Compare Preset, Next Preset, Time entry, and Repeat Hold functions. See page 39 for

information on programming the Ext. Switch in Utility Mode to access these functions.

MIDI In & MIDI Out/Thru

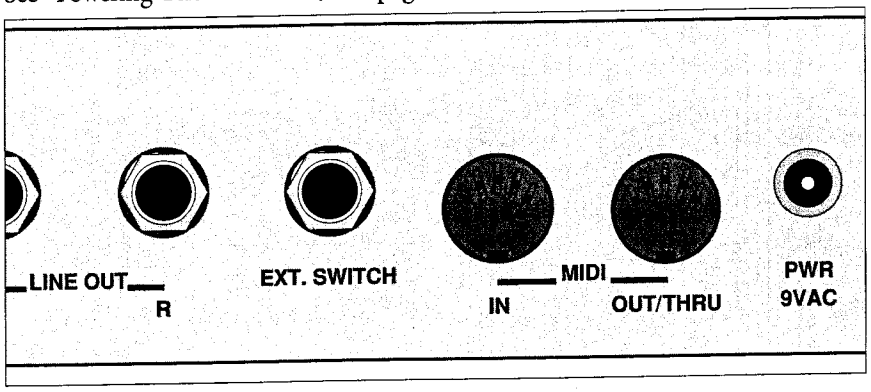
The jack labeled MIDI In receives the MIDI signal containing MIDI Program Change messages or real-time control for up to two parameters per Bank. It enables you to "talk" to the DXR Elite from an external source such as an X-11 or X-15 Ultrafoot, a computer equipped with MIDI ports and associated software, or a sequencer

The MIDI Out/Thru jack operates in two ways. As a MIDI Out, it transmits MIDI information from the DXR Elite to other MIDI-controllable gear such as sequencers, synthesizers, etc. As a MIDI Thru, it passes the information reaching the MIDI In, acting as a relay. The factory default for this jack is MIDI Thru. To change it to a MIDI Out, see the section on page 43 called MIDI Parameters.

Note: The MIDI Thru function is created through software. It therefore acts like a MIDI Merger, and all MIDI Mergers impart a small but noticeable delay. This is no problem when you are passing data such as a Program Change command through the system, but it can cause difficulty with equipment that is critically time-sensitive, such as synchronizers, drum machines, etc. If you plan to pass time-sensitive MIDI data along to other equipment, we suggest that you do not pass it through the DXR Elite's MIDI In and MIDI Thru.

Power Input

See "Powering The DXR Elite," on page 6.



The DXR Elite's Adjustable Parameters

Each of the DXR Elite's eight preset Banks has its own set of adjustable parameters. Here they are, arranged by Bank and showing the range of adjustment options for each one, followed by a description of how they work:

Bank A Mono Delay

Displayed Parameter	Range
Delay	1ms—2s
Regen	0—99
EQ	0.08kHz—15.6kHz, Bypass
Mix	0—100

Bank B Dual Delay

Displayed Parameter	Range
Delay L	1ms—1s
Delay R	1ms—1s
Regen L	0—99
Regen R	0-99
EQ L	0.08kHz—15.6kHz, Bypass
EQ R	0.08kHz—15.6kHz, Bypass
Mix L	0—100
Mix R	0—100

Bank C Offset Delay

Displayed Parameter	Range
Delay	20ms—2s
Delay offset (R channel)	0ms—500ms
Regen	0—99
EQ	0.08kHz—15.6kHz, Bypass
Mix	0—100

Bank D Chorus

Displayed Parameter	Range
Type	1—3
Delay	4ms—66ms
EQ	0.08kHz—15.6kHz, Bypass
Width	0—99
Speed	0.00—16.9 Hz
Mix	0—100

Bank E Flanger

Displayed Parameter	Range
Type	1—2
Regen	0—99
EQ	0.08kHz—15.6kHz, Bypass
Width	0—99
Speed	0.00—16.9 Hz
Mix	0—100

Bank F Mono Tapped Delay

Displayed Parameter	Range
Delay	1ms—2s
Taps	1—23
Regen	0—99
EQ	0.08kHz—15.6kHz, Bypass
Mix	0—100

Bank G Dual Tapped Delay

Displayed Parameter	Range
Delay L	1ms—1s
Delay R	1ms—1s
Taps L	1—9
Taps R	1—9
Regen L	0—99
Regen R	0—99
EQ L	0.08kHz—15.6kHz, Bypass
EQ R	0.08kHz—15.6kHz, Bypass
Mix L	0—100
Mix R	0—100

Bank H Special EFX

Displayed Parameter	Range
Type	1—9
Type	Ping-Pong On, Ping-Pong Off
Delay	1ms—2s
Taps	2—23
Regen	0—99
EQ	0.08kHz—15.6kHz, Bypass
Mix	0—100

Description Of Parameters

Delay time. This is the amount of delay, which is displayed in milliseconds (thousandths of a second) up to 990, and then displayed in hundredths of seconds from 1.00 second to 2.00 seconds. Note that some Banks allow for separate Delay settings for left and right channels.

In Bank B and Bank G, the maximum Delay time is 1000ms (1s) per channel, adjustable in the following increments:

Range	Resolution
0 ms to 75 ms	1 ms steps
80 ms to 400 ms	5 ms steps
410 ms to 1000 ms	10 ms steps

In Banks A, F, and H, Delay time is greater (up to 2000 ms, or 2 s), and times above 1000 ms are adjustable in the following increments:

Range	Resolution
1020 ms to 2000 ms	20 ms steps

In Bank C, Delay time is adjustable in 20 ms increments over the range of 20 ms to 2000 ms.

Offset time. This is the amount of offset between the left and right channels, in milliseconds. Note that the offset time can't be larger than the delay time. If the offset is greater, then the delay time in the right channel will automatically be reset to a value equal to the left channel. Offset values can be adjusted in the following increments:

Range	Resolution
0 ms to 75 ms	1 ms steps
80 ms to 400 ms	5 ms steps
410 ms to 500 ms	10 ms steps

Ping-Pong. Available in Bank H, Ping-Pong sends each tap in alternation to the left and right channels.

Regen. This is short for "regeneration," another word for feedback, where a portion of a signal is sent from the output back through the input to be processed again. This is commonly used to control the number of repeats in a delay before the signal dies away, plus it can intensify flanging. Note that some Banks allow for separate regeneration settings for left and right channels.

Taps. A tap is a subdivision of a delay. That is, if a delay time is set to 1 second, multiple delays lasting less than a second can be created (example: 4 even taps of

250 ms each). The Taps parameter allows the user to set the number of taps in a delay. Note that some Banks allow for separate Taps settings for left and right channels. In Bank F, you can select from 1 to 23 taps, while in Bank H, the range is from 2 to 23 taps. The DXR Elite provides you with many tap options; see "Type (Special Taps)" on page 26 for more information on this powerful feature.

EQ. This sets the cutoff frequency for the low-pass filter. Adjustable from .08kHz (80 Hz) to 15.6kHz, it only allows frequencies below the cutoff frequency to pass through the filter. Since the EQ is inside the regeneration path, it's possible to recreate the sound of vintage analog delays and tape echo units, where each subsequent echo has less treble than the preceding one. The EQ can also be bypassed, allowing the full audio spectrum to pass through unfiltered. Note that some Banks allow for separate EQ settings for left and right channels.

Mix. The wet/dry (effect/straight) signal mix is set by this, from 0 (dry only) to 50 (equal parts wet and dry signals) to 100 (wet only). The most intense chorusing and flanging sounds are obtained by setting the Mix to 100. Note that some Banks allow separate left- and right-channel wet/dry mixing.

Speed. This sets the modulation speed of the chorus and flanging. Slow settings give more subtle sweeping effects, while faster settings create vibrato.

Width. This sets the amount of the modulation. Low settings keep the effect subtle, while high settings can detune chorusing

Type (Chorus). There are three types of Chorus, all configured for mono input/stereo output. These are:

1	Normal Chorus	Both outputs have the same amount of Chorus effect
2	Inverted Chorus	The right output is inverted by 180 degrees from the left output for a thicker, more expansive sound
3	Analog Chorus	Wet and dry signals are filtered to reproduce the sonic characteristics of vintage analog chorus units

Type (Flanger). There are two types of Flanger, both configured for mono input/stereo output. These are:

1	Normal Flanger	Both outputs have the same amount of Flanger effect
2	Inverted Flanger	The right output is inverted by 180 degrees from the left output, providing a thicker, more expansive sound

Type (Special Taps). Tapped delay is most often a number of even divisions of a Delay time. For example, with a 2-second Delay time and 4 taps, the time is divided by 4, spacing each tap (individual delay) 500 ms from each subsequent one. The DXR Elite's Special EFX Bank, Bank H, allows you to select different spacings for the taps, enabling you to produce some very dramatic effects.

You can choose among 9 different types of Taps in Bank H. Each has its own spacing (time between taps) and slope (change in loudness):

Type	Slope	Tap Spacing
1	Flat	Linear
2	Forward	Linear
3	Reverse	Linear
4	Flat	Increasing
5	Forward	Increasing
6	Reverse	Increasing
7	Flat	Decreasing
8	Forward	Decreasing
9	Reverse	Decreasing

Here are more detailed descriptions of Slope and Tap Spacing:

Slope

Flat	All taps' output levels are equal
Forward	Each subsequent tap has less output level
Reverse	Each subsequent tap's output level is increased

Tap Spacing

Linear	Taps are equally spaced throughout the total delay time
Increasing	Taps are initially close together, but the time between them gradually increases
Decreasing	Taps are initially far apart, but the time between them gradually decreases

DXR Elite Preset List

Programs are organized into 8 banks, each with 16 presets. Each line of the following list is laid out as follows ("Dual" means two fully independent channels, while "Mono" denotes a summed mono input and stereo output):

Bank Name (Bank A-H)

Preset Left Channel (or mono) process Right Channel process

The Bank Name is selected with the Bank Switch; the preset is selected with the Preset knob. Abbreviations and descriptions in the list include:

Analog	The great sound of the classic analog yellow chorus boxes that everyone knew and loved in the '70s
Detune	Places the modulated signal out of tune with the incoming signal. The greater the width, the more out of tune it sounds.
Dual	The left and right channels are processed separately, and the signals from the left and right channels neither mix at the input nor are combined at the output.
Inverted	Inverted means that the right channel's wet output is 180 degrees out of phase with the left channel
ms	milliseconds (1/1000ths of 1 second)
Narrow	Limited sweep range
Normal	The left and right channels are in phase
Offset	The left and right outputs have different delay times
regen	Regeneration, or feedback
s	seconds
Stereo	Both input signals are combined and processed as a combined sound. The effect-enhanced sound appears at both the left and the right outputs. The input mono signals follow from input to output (Left dry input = Left dry output; Right dry input = Right dry output).
tap	Tapped delay (subdivisions of the total delay time)
Vibrato	subtle or heavy bending of the pitch in steady rhythm
Watery	Warbling modulation sound

Mono Delays (Bank A)

1	20 ms, 0% regen	20 ms, 0% regen
2	75 ms, 0% regen	75 ms, 0% regen
3	125 ms, 0% regen	125 ms, 0% regen
4	225 ms, 7% regen	225 ms, 7% regen
5	250 ms, 16% regen	250 ms, 16% regen
6	350 ms, 0% regen	350 ms, 0% regen
7	400 ms, 0% regen	400 ms, 0% regen
8	500 ms, 0% regen	500 ms, 0% regen
9	650 ms, 5% regen	650 ms, 5% regen
10	750 ms, 10% regen	750 ms, 10% regen
11	850ms, 0% regen	850ms, 0% regen
12	1.0 s, 0% regen	1.0 s, 0% regen
13	1.2 s, 0% regen	1.2 s, 0% regen
14	1.5 s, 0% regen	1.5 s, 0% regen
15	1.7 s, 0% regen	1.7 s, 0% regen
16	2.0 s, 0% regen	2.0 s, 0% regen

Note: Presets 13 through 16 have summed inputs.

Dual Delays (Bank B)

1	85 ms, 11% regen	15 ms, 0% regen
2	125 ms, 0% regen	250 ms, 0% regen
3	270 ms, 14% regen	280 ms, 18% regen
4	270 ms, 0% regen	325 ms, 0% regen
5	440 ms, 0% regen	220 ms, 0% regen
6	500 ms, 10% regen	80 ms, 0% regen
7	500 ms, 15% regen	250 ms, 0% regen
8	500 ms, 5% regen	400 ms, 6% regen
9	750 ms, 0% regen	150 ms, 0% regen
10	440 ms, 10% regen	220 ms, 27% regen
11	750 ms, 0% regen	180 ms, 0% regen
12	1.0 s, 0% regen	1.0 s, 30% regen
13	105 ms, 0% regen	150 ms, 40% regen
14	260 ms, 2% regen	300 ms, 2% regen
15	1.0 s, 0% regen	1 ms, 0% regen
16	500 ms, 20% regen	750 ms, 15% regen

Offset Delays (Bank C)

	Left Channel	Right Channel Offset
1	200 ms	50 ms, 0% regen
2	300 ms	100 ms, 0% regen
3	320 ms	200 ms, 0% regen
4	420 ms	50 ms, 0% regen
5	500 ms	100 ms, 0% regen
6	500 ms	250 ms, 0% regen
7	600 ms	100 ms, 0% regen
8	760 ms	250 ms, 0% regen
9	800 ms	400 ms, 0% regen
10	940 ms	230 ms, 0% regen
11	1.0 s	250 ms, 0% regen
12	200 ms	175 ms, 5% regen
13	600 ms	50 ms, 3% regen
14	300 ms	50 ms, 6% regen
15	440 ms	140 ms, 3% regen
16	2.0 s	150 ms, 38% regen

Stereo Chorus (Bank D)

1	Slow, wide
2	Watery
3	Wide, medium
4	Slow, narrow
5	Wide, inverted
6	Thick chorus
7	Modulated chorus
8	Inverted slow
9	Detune
10	Inverted analog
11	Inverted medium vibrato
12	Detuned analog
13	Analog, fast vibrato
14	Inverted, medium
15	Warble chorus
16	Narrow detune

Stereo Flanger (Bank E)

1	Slow, subtle
2	Inverted slow
3	Inverted fast
4	Thick
5	Inverted watery
6	Almost stuck
7	Inverted wide
8	Pedal flange
9	Vibrato flange
10	Dramatic sweep
11	Stuck flange
12	Fast vibrato
13	Wide subtle
14	High-end sweep
15	Warble flange
16	Pull out of tune

Mono Tapped Delay (Bank F)

1	250 ms, 3 taps
2	385 ms, 3 taps
3	410 ms, 3 taps
4	520 ms, 4 taps
5	650 ms, 4 taps
6	710 ms, 4 taps
7	960 ms, 3 taps
8	1.0 s, 4 taps
9	1 ms, 1 tap
10	1.24 s, 4 taps
11	1.5 s, 4 taps
12	250 ms, 2 taps
13	375 ms, 4 taps
14	390 ms, 3 taps
15	760 ms, 5 taps
16	50 ms, 2 taps

Note: Presets 10 and 11 have summed inputs.

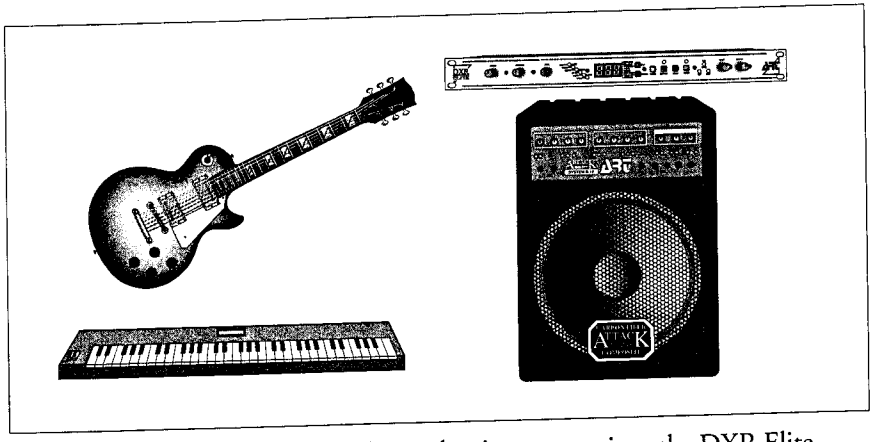
Dual Tapped Delays (Bank G)

1	75 ms, 3 taps	75 ms, 2 taps
2	100 ms, 2 taps	125 ms, 3 taps
3	150 ms, 1 tap	175 ms, 3 taps
4	175 ms, 3 taps	325 ms, 3 taps
5	250 ms, 2 taps	375 ms, 3 taps
6	440 ms, 4 taps	500 ms, 3 taps
7	500 ms, 2 taps	450 ms, 3 taps
8	550 ms, 1 tap	600 ms, 3 taps
9	750 ms, 4 taps	500 ms, 3 taps
10	880 ms, 4 taps	440 ms, 4 taps
11	900 ms, 3 taps	800 ms, 2 taps
12	1.0 s, 1 tap	1.0 s, 4 taps
13	500 ms, 2 taps	250 ms, 3 taps
14	500 ms, 2 taps	150 ms, 1 tap
15	410 ms, 4 taps	185 ms, 2 taps
16	700 ms, 1 tap	300 ms, 3 taps

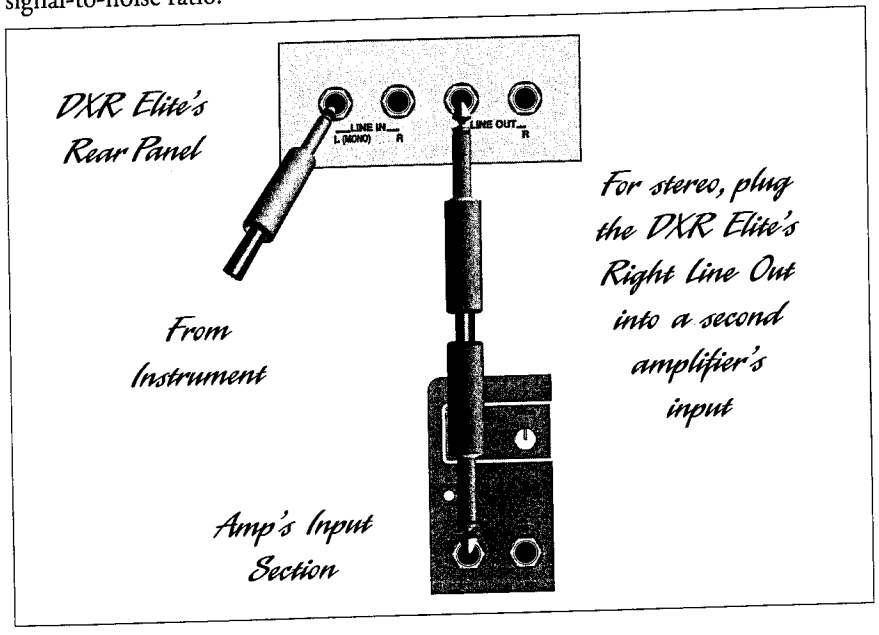
Special Tapped Delays (Bank H)

1	500 ms, 10 taps
2	275 ms, 20 taps
3	1.0 s, 23 taps
4	810 ms, 4 taps
5	500 ms, 4 taps
6	820 ms, 8 taps
7	285 ms, 2 taps
8	930 ms, 2 taps
9	580 ms, 8 taps
10	900 ms, 21 taps
11	500 ms, 5 taps
12	295 ms, 4 taps
13	700 ms, 16 taps
14	7 ms, 12 taps
15	250 ms, 9 taps
16	400 ms, 23 taps

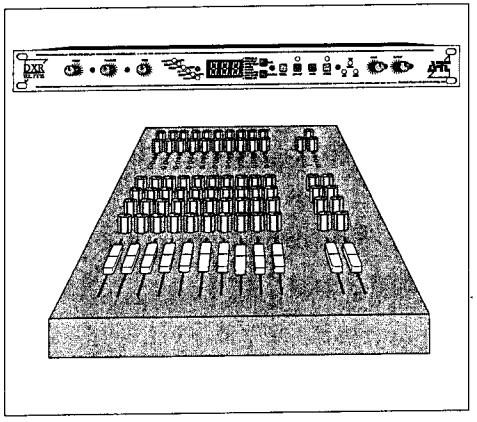
PLUGGING DIRECTLY INTO A DXR ELITE AND AMP



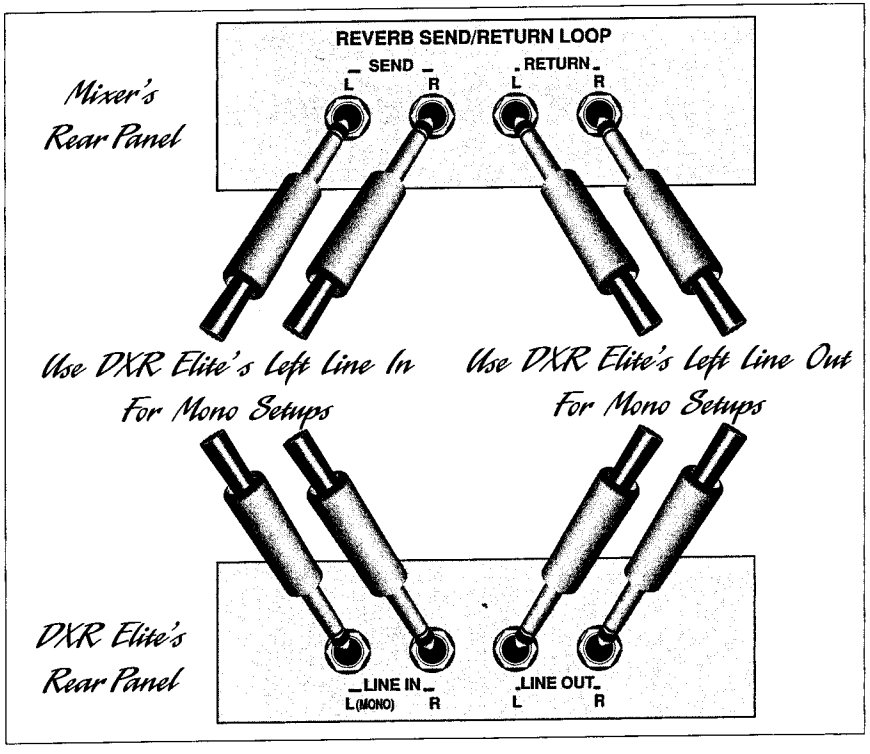
When plugging a guitar, keyboard, or other instrument into the DXR Elite, make sure that there is sufficient signal level coming from the instrument. Pay attention to the Signal LEDs on the DXR Elite's front panel, and use the DXR Elite's Input knob and the instrument's volume control to get the best level and signal-to-noise ratio.



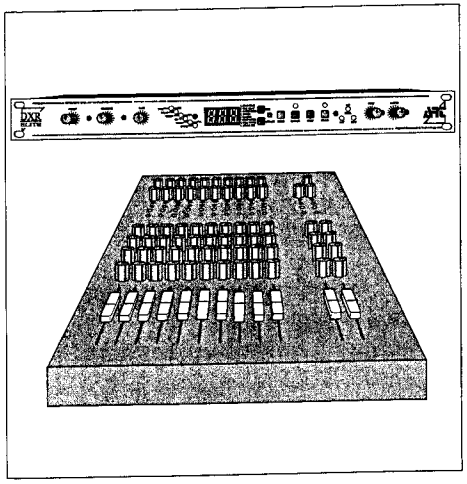
PATCHING THE DXR ELITE INTO A MIXER'S SEND/RETURN LOOP



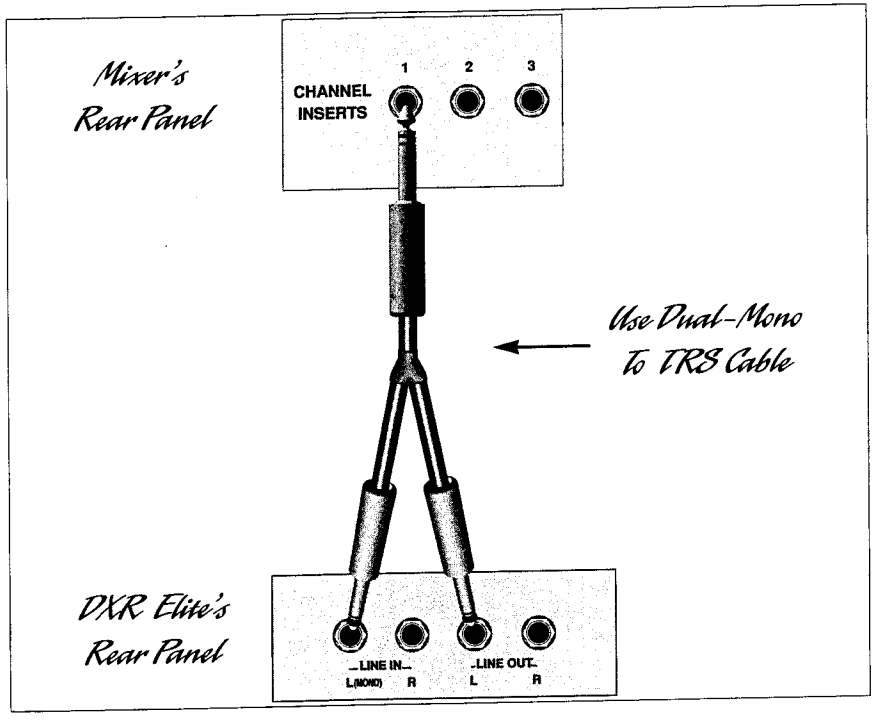
To connect the DXR Elite into the send/return loop of a mixer, follow the diagram below. If the mixer has only one input and one output (mono), connect them to the DXR Elite's Left Line In and Left Line Out only. If the mixer has two reverb return jacks for stereo operation, you may connect a second cord between the DXR Elite's Right Line Out and the mixer's second return jack.



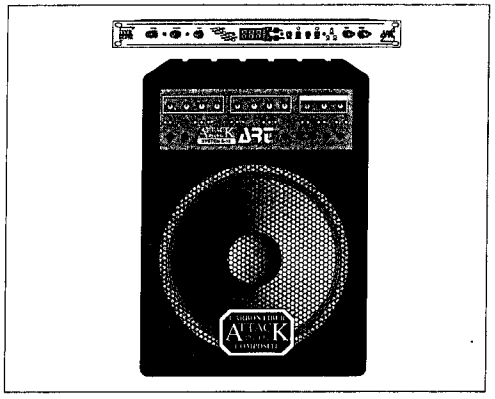
PATCHING THE DXR ELITE INTO A MIXER'S INPUT CHANNEL LOOP



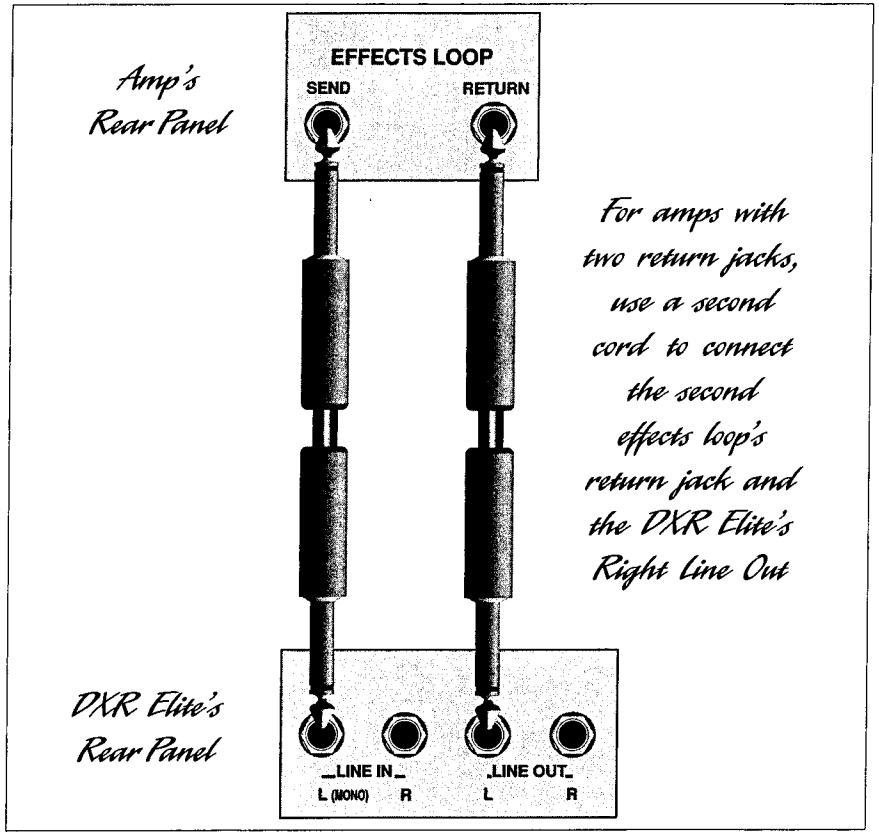
Some mixers are designed to accommodate effects on each input channel via "channel inserts," or "patch points." These often consist of a single 1/4" phone jack acting as both send and return, requiring a dual-mono-to-TRS (tip/ring/sleeve) plug configuration. Check your mixer's owner's manual to determine which plug of the dual-mono-to-TRS cable acts as a send, and which acts as a return. If the mixer has individual send and return jacks, simply use two standard cables.



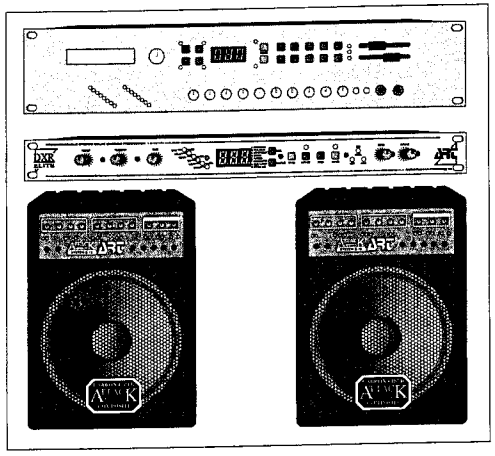
USING THE DXR ELITE IN AN AMP'S EFFECTS LOOP



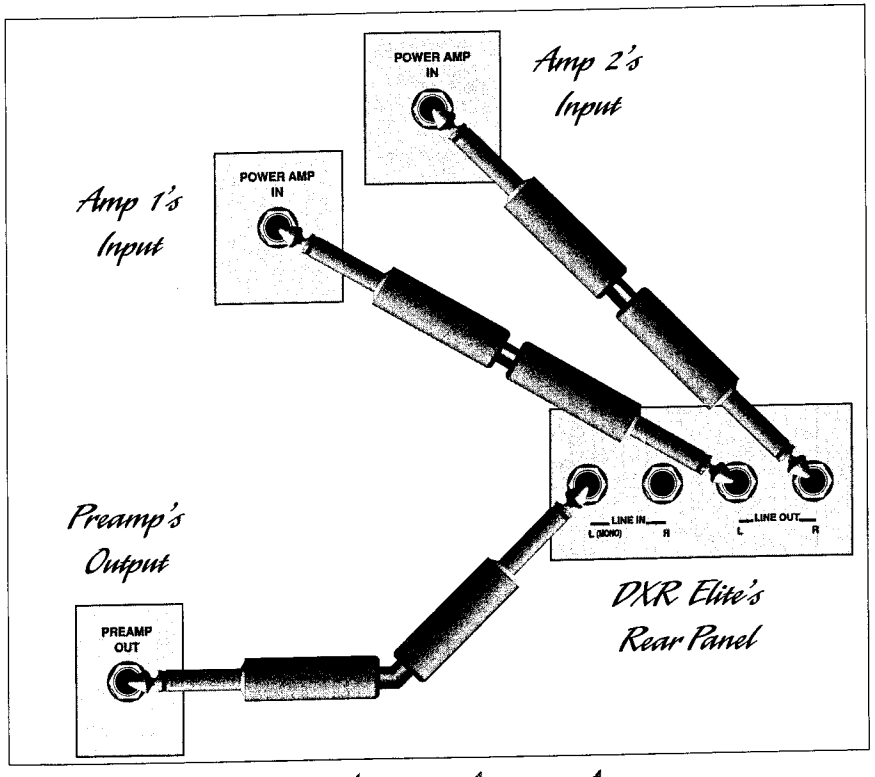
Patch the DXR Elite into the effects loop of an instrument amplifier as shown below (for mono setups, use the DXR Elite's Left Line In and Left Line Out jacks). If the amp has two effects-loop return jacks for stereo operation, you may connect a second cord between the DXR Elite's Right Line Out and the amp's second return jack.



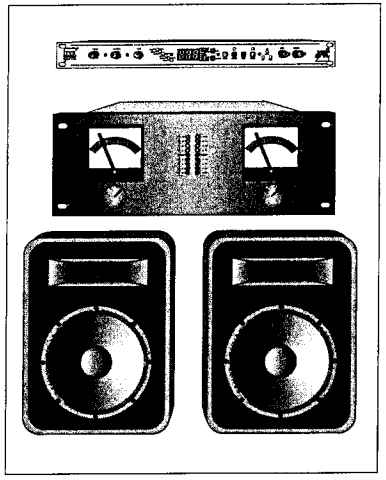
USING THE DXR ELITE IN STEREO WITH A PREAMP & TWO AMPS



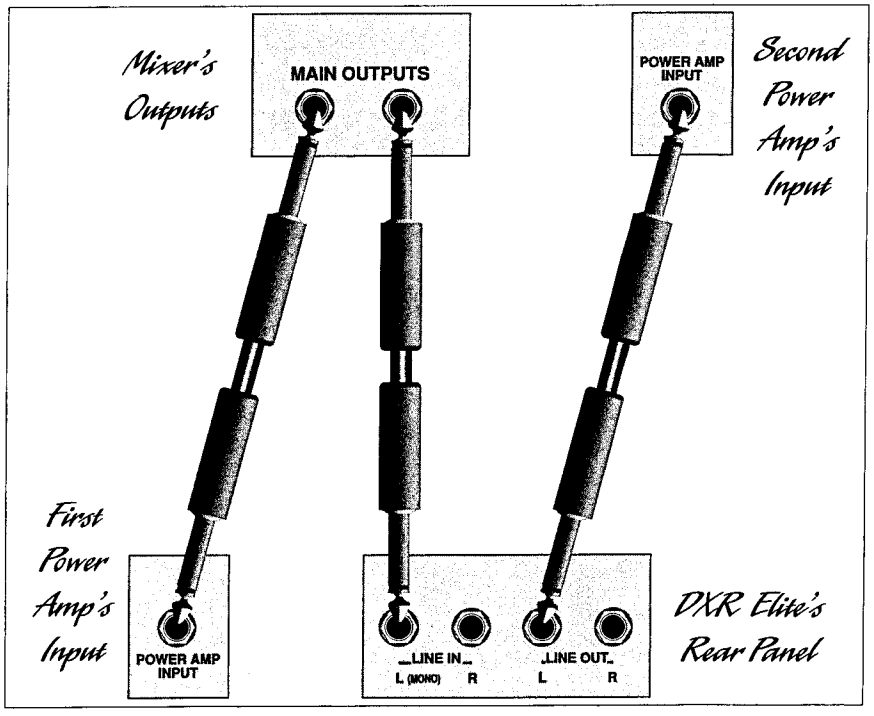
Patch the line output from a preamp such as an ART SGX 2000 into the DXR Elite's Left Line In (if the preamp has stereo outputs, patch the second into the DXR Elite's Right Line In). Connect the DXR Elite's Line Outs to the power amp inputs of two instrument amplifiers. You can also plug directly into the amps' front-panel inputs, but you will need to adjust the DXR Elite's output level and the amps' gain controls accordingly.



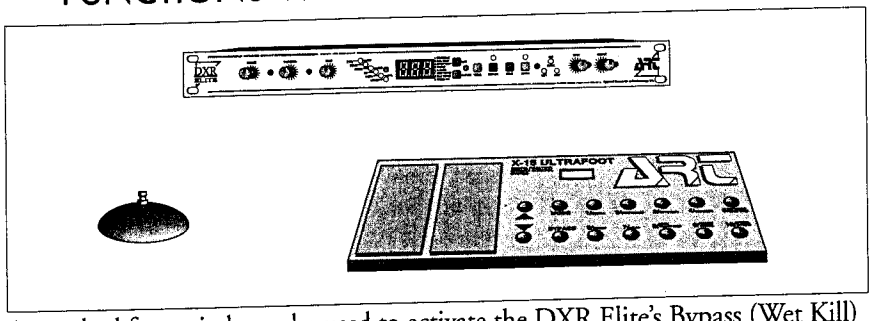
USING THE DXR ELITE IN A P.A. FOR FIXED-DELAY APPLICATIONS



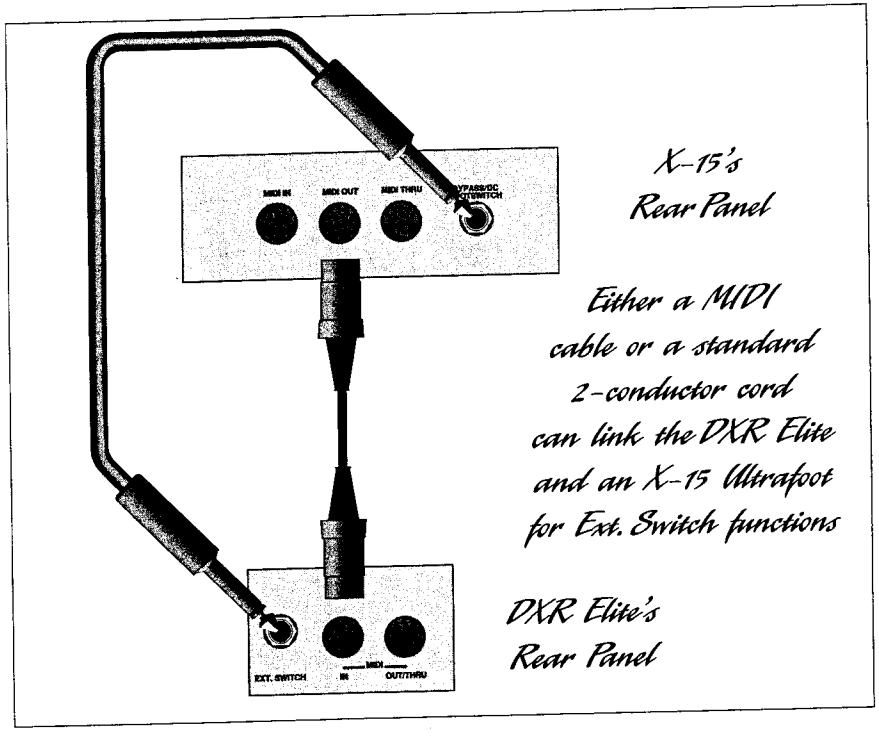
Patch one of the mixer's main outputs directly into a power amp and its speaker(s). Run another main output to the Left Line In of the DXR Elite. Then connect the DXR Elite's Left Line Out to a second power amp and its speaker(s). Use delay programs without regeneration, and select presets' delay times according to this formula: 1 foot of distance = approximately 1.1 ms of delay time. If a second delay is necessary, patch the DXR Elite's Right Line Out to a third power amp and its speaker(s), and select offset delay presets. Always set the mix fully wet (100) to eliminate the dry signal.



CONTROLLING THE DXR ELITE'S EXT. SWITCH FUNCTIONS WITH A FOOTSWITCH OR X-15



A standard footswitch can be used to activate the DXR Elite's Bypass (Wet Kill) or other switching operations through its programmable Jack functions. In addition, the X-15 Ultrafoot's Bypass output can be connected to the DXR Elite's Ext. Switch input. If you are using MIDI control, the DXR Elite and the X-15 are factory configured with default settings that allow bypassing.



X-15's Rear Panel

Either a MIDI cable or a standard 2-conductor cord can link the DXR Elite and an X-15 Ultrafoot for Ext. Switch functions

DXR Elite's Rear Panel

Utility & MIDI Modes

Turning the Parameter knob steps you through the various parameters for the currently selected preset, and turning the Value knob changes the current parameter's setting.

Turning the Parameter knob past the parameters takes you into Utility mode (indicated by two LEDs in the slash labeled Util glowing simultaneously). Turning the knob further places you in MIDI mode (indicated by the two LEDs labeled MIDI glowing). Both of these modes work globally.

Give it a try! Turn the Parameter knob slowly clockwise. After the Mix parameter of the preset, you'll enter the Utility parameters, followed by the MIDI parameters. If you switch Banks, you'll find that the Preset parameters change, but the Utility and MIDI parameters stay the same.

Each Utility and MIDI parameter has an associated letter code that appears in the first digit of the numeric display, informing you which Utility or MIDI parameter you have selected. These letter codes contain two letters; each Utility code is shown in the following chart:

UTILITY PARAMETER CODES

Letter Code	Function	Values	
E	Wet Kill Type	ob	Output Bypass (default)
		ib	Input Bypass
J	Jack Mode	dr	Dry kill (default)
		Et	Wet kill
		CP	Compare Preset
		nP	Next Preset
		rH	Repeat Hold
		tt	Tapped Time Entry
t	Jack Type	to	Toggle (default)
		nC	Normally Closed
		no	Normally Open
– (hyphen)	Soft-Key Mode	dr	Dry kill (default)
		rH	Repeat Hold
		tt	Tapped Time entry

Here's what these options mean.

Wet Kill Type

Wet Kill, as its name implies, is a way of cutting out the "wet," or effect-enhanced, sound from the signal path. Wet Kill can be accessed via the Ext. Footswitch; it's necessary to program the Ext. Footswitch for Wet Kill mode to use the function. The two Wet Kill options, Output Bypass and Input Bypass, are both useful, but you may prefer one over the other. When the Output Bypass setting is selected, stepping on a footswitch tells the DXR Elite to block all of the effect from reaching the outputs, leaving only a dry signal. However, any signal entering the DXR Elite is being processed. So if you're playing your guitar or keyboard, etc., and step on the footswitch for Output Bypass Wet Kill, then all processed sound stops coming out instantly. If the DXR is set to produce long, regenerated delays, you can step on the footswitch again and hear the echoes trailing off.

If the Wet Kill Type is set to Input Bypass, then when you step on the footswitch any sound in the processor will come out, but no more will enter the DXR Elite's processing circuitry. Here's how this can be useful. If you're using the DXR Elite as an echo behind a solo, then when you reach the end of the solo, you hit the footswitch and the echoes trail off, and whatever you play from then on seems to emerge from the echoes without any echoes of the new notes you play. Experiment with both of types of Wet Kills; you'll probably find many uses for both types.

Note: When Wet Kill is activated by a footswitch, the LED above the front-panel Bypass switch glows continuously.

Jack Mode

You can program the Ext. Switch jack on the DXR Elite's rear panel so that you can perform a number of different switching operations with a stand-alone footswitch or the Bypass switch built into ART's X-15 Ultrafoot. Make sure you set the Jack Type to match the type of footswitch you're using. Here are your Jack Mode options:

Dry Kill stops the dry signal from reaching the DXR Elite's outputs. This can be an effect in itself. If you're using, say, a long delay sound that repeats, you can

activate Dry Kill—via the Soft-Key or a footswitch plugged into the Ext. Switch jack—and then leave a trail of echoes without the initial sound coming through. Dry Kill is extremely useful in intense chorus and flanging presets, too, because it eliminates the dry sound, making the effects more apparent.

Wet Kill is the opposite of Dry Kill; it stops the processed (wet) signal from reaching the output. (See Wet Kill Type, page 40 for more explanation of how Wet Kill works.)

Compare Preset acts like the front-panel Compare switch. See page 9 for an explanation of this function.

Next Preset lets you advance through the DXR Elite presets of your own selection. You must edit the MIDI Program Table (MTP) to program a number of presets in the order of your choice to step through via a footswitch. For more on this, see the section covering the MIDI Program Table, page 45.

Note: When you perform a factory reset of all programs, Next Preset data reverts to its factory setting, too (mapped 1:1).

Repeat Hold makes the DXR Elite's delays act like a never-ending tape loop. For further information, see Soft-Key Repeat Hold on page10.

Tapped Time Entry tells the circuitry to set a delay time based on the average time between three taps on a footswitch. This works in the same way as Tapped Time Entry via the Soft-Key. See page 10 for more information.

Soft-Key Mode

You can program the Soft-Key to operate in one of the three following modes:

- Dry Kill
- Repeat Hold
- Tapped Time entry (Banks A, B, and C only)

See page 9 for a complete description of the three Soft-Key modes and how they operate.

Jack Type

You can program the Ext. Switch jack to perform a number of functions when a footswitch is plugged into it. The DXR Elite can accommodate three different footswitch configurations. A toggle switch is the type that is turned on by clicking it one time and turned off by clicking it again. The others are *momentary* switches that change their state only when you depress them. When the pressure is off, these switches return to their normal states. A normally closed switch is opened when you step on it, and a normally open switch is closed when you step on it. If you're not sure if a switch is normally open or closed, experiment by setting the DXR Elite's Jack Type to one way to see if it works. If it doesn't, try the other way.

Note: A momentary switch is preferable to a toggle switch for most Jack Mode functions.

The Global Nature Of Utility & MIDI Settings

Utility and MIDI parameters are set globally. That is, regardless of how they're set, they affect every program in the DXR Elite.

MIDI Parameters

When you enter MIDI mode (the two LEDs in the slash light up to tell you that's where you are), the Numeric Display provides you with information in a similar fashion to when the Utility mode is entered. The first digit (far left) contains a letter or number that tells you what function is selected. The two remaining digits tell you the value. If a value exceeds 99, then the letter code disappears, and a three-digit number fills the display. When you stop turning the knob, the letter reappears in the far left position, followed by the first two digits of the three-digit number. If you turn the Value knob one click, the three-digit number is displayed again. Turning past that one click changes the value.

MIDI PARAMETER CODES

Letter Code	Function	Values
Defaults are shown in parentheses.		
t	MIDI thru	off, on (on)
c	System channel	off, 01 to 16 (01)
o	Omni mode	off, on (off)
L	Volume controller	Controller No. 0—120 (MC7)
1	Controller one	Controller No. 0—120 (MC4)
2	Controller two	Controller No. 0—120 (MC11)
d	Dry kill controller	Controller No. 0—120 (MC70)
b	Wet kill controller	Controller No. 0—120 (MC84)
r	Repeat hold controller	Controller No. 0—120 (MC71)
F	Dump all settings	- -
P	MIDI Program Table	- -

Here is an explanation of each letter code:

Letter Code	Function	Explanation
t	MIDI Thru	This function allows you to change the DXR Elite's MIDI Out into a MIDI Thru, which echoes what comes into the MIDI In jack. When this parameter is on, the unit merges its own messages with the incoming MIDI stream. When this parameter is off, only the DXR Elite's own messages exit through the MIDI Out (dumping only).
c	System channel	System channel either makes the unit ignore MIDI entirely (when the value "off" is set) or selects a specific channel—1 through 16—to send and receive MIDI messages on.
o	Omni mode	Turning Omni mode on causes the unit to respond to Program Change and Controller Change messages on any channel. System Exclusive messages are not affected by this parameter; they must always be sent on the system channel.

Letter Code	Function	Explanation
L	volume controller	This acts as an overall output volume control for the DXR Elite.
1 & 2	1st & 2nd controller	These are controllers that affect in real time one of two parameters per bank. The parameters are:

Bank	1st Controller	2nd Controller
Bank A	Regeneration	Mix
Bank B	Left mix	Right mix
Bank C	Regeneration	Mix
Bank D	Speed	Mix
Bank E	Speed	Regeneration
Bank F	Regeneration	Mix
Bank G	Left mix	Right mix
Bank H	Mix	(Nothing)

d	Dry Kill	This toggles the Dry Kill function on and off via MIDI.
b	Wet Kill	This toggles the Wet Kill function on and off via MIDI.
r	Repeat Hold	This toggles the Repeat Hold function on and off via MIDI.
F	Dump settings	Unlike the other MIDI parameters, this performs an immediate function, rather than setting a value. When "F" appears in the window, if you turn the Value knob one tick clockwise, the DXR dumps all of its memory to the MIDI Out jack.
P	MIDI Program Table	The MPT is intended to "map" incoming MIDI Program Change messages to Bank and Preset numbers. An explanation of its functions follows:

THE MIDI PROGRAM TABLE (MPT)

The MPT's primary job is to map incoming MIDI Program Change messages to Bank and Preset numbers. Why would you want to do this? For example, you might want to make the DXR Elite change to a specific preset when you recall a specific patch on a synthesizer. Most synthesizers send out a MIDI Program Change message indicating which patch has been recalled. You can then use the MPT to map that patch number to a desired preset number in the DXR Elite.

By default, the MPT has a one-to-one mapping. That is, when the DXR Elite receives a Program Change message of 0 (zero), it recalls Bank/Preset A1. A Program Change message of 1 recalls Bank/Preset A2, and so on, in order up to Program Change number 127, which recalls Bank/Preset H16.

This can be changed by entering MPT editing mode. To enter this mode, turn the Parameter knob fully clockwise until you see "P- -" in the display. In MPT editing mode, you use the Value knob to select the incoming Program Change number and the Preset knob to select the corresponding internal Bank/Preset to recall.

Example: Let's say you want to have the DXR Elite recall Bank/Preset F7 whenever Program Change 4 is received. First, rotate the Value knob until you see "3" in the display (note: the first decimal point LED flashes to remind you that you are editing the incoming Program Change number). Then, rotate the Preset knob until you see "F7" in the display (the second decimal point LED flashes to remind you that you are editing the mapped preset number). Now, whenever the DXR Elite receives Program Change number 4, it will recall preset F7.

Note: Changes in the MIDI Program Table are global, meaning that they affect every Preset in the DXR Elite. The MIDI Program Table's value range is 0 to 127. When you make MPT changes, you do not have to save them; they are automatically saved in memory.

Next Preset Selection

The MIDI Programming Table has another purpose, unrelated to MIDI. Using the footswitch, you can step through a list of favorite presets. Press the

footswitch when you are on a MIDI Program Table entry that has a favorite preset. The leftmost decimal point will blink, indicating this MPT table entry will be in the list of recallable presets from the footswitch. To arrange your presets for Next Preset selection, follow the procedure in the MIDI Program Table section for a full description.

Note: To use a footswitch to recall presets via Next Preset mode, you must program the Ext. Switch jack for Next Preset selection. See the section on Jack Mode, page 40, for details.

Loading Presets From A Remote Source

If you have saved the contents from your DXR Elite in another MIDI device, you can load the data into your DXR Elite or another DXR Elite by connecting a MIDI cable between the other device's MIDI Out and the DXR Elite's MIDI In, and then performing a Full Dump from the other device. The DXR Elite will accept the data at any time; you don't need to set any parameters or values on the DXR Elite for it to accept the data transfer.

MIDI Controllers & Numbers

Here's a list of MIDI Controllers and their numbers, which will help you avoid conflicts if you control the DXR Elite and other MIDI gear in the same setup. The DXR Elite displays controller numbers in hexadecimal. Don't panic! The following table lists hexadecimal numbers, their equivalent decimal numbers, and the common uses for these controller numbers in MIDI. The DXR Elite's default controller parameters are intended to work with the X-15's default values. No changes to either unit should be necessary. Connect a MIDI cable from the X-15's MIDI Out to the DXR Elite's MIDI In, and you're ready to go.

Decimal	Hexadecimal	Controller Description
0	00	Reserved for Bank Select
1	01	Mod Wheel
2	02	Breath Controller
3	03	Undefined
4	04	Foot Controller
5	05	Portamento Time
6	06	Data Entry (MSB)

Decimal	Hexadecimal	Controller Description
7	07	Main Volume
8	08	Balance
9	09	Undefined
10	0A	Pan
11	0B	Expression Controller
12-15	0C-0F	Undefined
16-19	10-13	General Purpose Numbers 1-4
20-31	14-1F	Undefined
32	20	Reserved for Bank Select
33-63	21-3F	LSB For Values 0-31
64	40	Damper Pedal (Sustain)
65	41	Portamento
66	42	Sostenuto
67	43	Soft Pedal
68	44	Undefined
69	45	Hold 2
70-79	46-4F	Undefined
80-83	50-53	General Purpose Numbers 5-8
84-90	54-5A	Undefined
91	5B	External Effects Depth
92	5C	Tremolo Depth
93	5D	Chorus Depth
94	5E	Celeste (Detune) Depth
95	5F	Phaser Depth
96	60	Data Increment
97	61	Data Decrement
98	62	Non-Registered Parameter Number LSB
99	63	Non-Registered Parameter Number MSB
100	64	Registered Parameter Number LSB
101	65	Registered Parameter Number MSB
102-120	66-78	Undefined

MIDI IMPLEMENTATION IN THE DXR ELITE

Channel Voice Messages

The DXR Elite ignores all Channel Voice messages via MIDI, except Control Change and Program Change messages. These messages are only acted upon when the DXR Elite's MIDI channel matches the incoming Channel Voice message or the DXR Elite is set to Omni On mode.

Program Change

Presets can be changed via MIDI with a Program Change message. The default is a one-to-one mapping of Program Change request number to preset number, but this may be changed by the user.

Channel Mode Messages

The DXR Elite responds to the Omni On and Omni Off Channel Mode messages. These must match the DXR Elite's MIDI channel to be recognized.

System Exclusive (SysEx) Messages

The following chart shows the SysEx messages in the DXR Elite:

Byte	Value (in hex)	Description
1	10	Start of SysEx message
2	1a	ART manufacturer's ID
3	0x	MIDI channel
4	17	DXR Elite product ID
5	??	Function ID
. . .	??	Data
(last)	F7	End of SysEx message

The function ID is taken from one of the following:

Unit Handshake	
Inbound	41
Outbound	01

This function ID may be used to see if an DXR Elite is present on a channel of a MIDI network. There are no data bytes associated with this message.

Parameter Exchange	
Inbound	4b (request)
Inbound	0b (receive)
Outbound	0b (send)

This function ID is used to send or receive the operating state of the DXR Elite.

There are no data bytes in the inbound request for a Parameter Exchange request.

Unit Status	
Inbound	4d
Outbound	0d

This function ID can be used to check the DXR Elite's operating status. There are no data bytes in the inbound message, and two data bytes in the outbound message. The value of the Unit Status is in the second byte, which is the version number of the software.

Other MIDI Notes

- The DXR Elite ignores inbound Active Sensing messages.
- The DXR Elite does not generate Active Sensing messages.
- The System Reset message is ignored.

ART DXR Elite Specifications

Dimensions		1.75" H x 19" W x 4.25" D, all-steel case
Weight		4 lbs., 7.6 oz
Connections		Stereo In/Out 1/4" phone
Presets		128
Input impedance		500k ohms
Output impedance		1k ohm
Maximum input level		>+14dBv
Maximum output level		>+14dBv
Dynamic range	wet	>80dB (A-weighted)
Total harmonic distortion (THD)	dry	<.015% @ 1kHz
	wet	<.04% @ 1kHz
Channel separation		>65dB
Safety compliance		U.L. Listed

ART retains a policy of constant product improvement. Therefore, specifications are subject to change without notice.

Designed and manufactured in the United States of America.

Applied Research & Technology, Inc.
215 Tremont Street
Rochester, NY 14608

(716) 436-2720
(716) 436-3942 (FAX)

OUR NEW AREA CODE IS 585

WARRANTY & SERVICE INFORMATION

LIMITED WARRANTY

Warranty service for this unit will be provided by Applied Research & Technology, Inc. in accordance with the following warrant statement.

Applied Research & Technology, Inc. (ART) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of one year from the date of purchase. Applied Research & Technology, Inc. will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

EXCLUSIONS: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

ART shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may also have other rights which vary from state to state.

For units purchased outside the United States, service will be provided by an authorized distributor of Applied Research & Technology, Inc.

DXR ELITE

Service

The following information is provided in the unlikely event that your unit requires service.

1) Be sure that the unit is the cause of the problem. Check to make sure the unit has power supplied, all cables are connected correctly, and the cables themselves are in working condition.

2) If you find the unit to be at fault, write down a description of the problem, including how and when the problem occurs.

3) Call the factory for a Return Authorization (RA) number.

4) Pack the unit in its original carton or a reasonable substitute. The packing box is not recommended for a shipping carton. Put the packaged unit in another box for shipping. Print the RA number clearly under the address.

5) Include with your unit: a return shipping address (we cannot ship to a P.O. Box), a copy of your purchase receipt, a daytime phone number, and a description of the problem.

6) Ship only your unit and its power supply (keep your manual!) to:
APPLIED RESEARCH & TECHNOLOGY, INC.
215 TREMONT STREET
ROCHESTER, NY 14608
ATTN: REPAIR DEPARTMENT
OUR NEW AREA CODE IS 585
RA # _____

7) Contact our customer service department at (716) 436-2720 for your Return Authorization number or questions regarding repairs. Customer Service hours are 8:30 AM to 5:00 PM Eastern Time, Monday through Friday.

Customer Service

You may contact ART's Customer Service Department between the hours of 8:30 AM and 5:00 PM Eastern Time Monday through Friday. The Customer Service Department will answer technical questions about ART products and provide information concerning service.

52 ART 52

USER REGISTRATION CARD

MODEL # _____ SERIAL # _____
NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
PHONE (OPTIONAL) _____
DEALER _____
CITY _____ STATE _____
PURCHASE DATE _____
INTENDED USE: ☐ STUDIO ☐ HOME STUDIO ☐ PA
INSTRUMENT: ☐ GUITAR ☐ KEYBOARD ☐ OTHER _____
☐ COMMERCIAL/FIXED INSTALLATION ☐ BROADCAST
☐ OTHER _____
WHAT OTHER PIECE OF AUDIO EQUIPMENT DO YOU PLAN ON PURCHASING IN THE NEXT 12 MONTHS _____
WHAT NEW PRODUCTS WOULD YOU LIKE TO SEE FROM ART _____
COMMENTS ON THIS PURCHASE _____
WHAT MAGAZINES DO YOU SUBSCRIBE TO OR READ _____