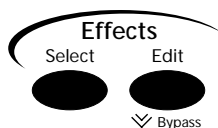# 4   Effects

Overview of the ASR-X Pro Effects

The ASR-X Pro contains an ENSONIQ ESP2 digital signal processing chip that simultaneously provides two effects for each sequence: an insert effect and a global reverb. One track in each sequence—called the insert control track—can be endowed with some special abilities relating to the sequence's insert effect. These concepts are explained in this overview. Each of the 16 tracks in a sequence can be routed to either of these effects, left un-processed—or *dry*—or sent to one of the auxiliary outputs that are available when an X-8 output expansion board has been installed in the ASR-X Pro. The procedures for taking advantage of these features appear elsewhere in this chapter, unless otherwise noted.

Effects
Select   Edit

⌄ Bypass

Insert Effects

Insert effects are powerful, highly programmable effects. There are 40 insert effects in the ASR-X Pro, any one of which can be selected for use with any sequence:

01 Parametric EQ	15 Chorus→Rev	29 ResVCF→DDL
02 Hall Reverb	16 Flanger→Rev	30 Dist→VCF→DDL
03 Large Room	17 Phaser→Rev	31 Pitch Detuner
04 Small Room	18 EQ→Reverb	32 Chatter Box
05 Large Plate	19 Spinner→Rev	33 Formant Morph
06 Small Plate	20 DDL→Chorus	34 RotarySpeaker
07 NonLinReverb1	21 DDL→Flanger	35 Tunable Spkr
08 NonLinReverb2	22 DDL→Phaser	36 Guitar Amp
09 Gated Reverb	23 DDL→EQ	37 Dist→DDL→Trem
10 Stereo Chorus	24 Multi-Tap DDL	38 Comp→Dist→DDL
11 8-VoiceChorus	25 Dist→Chorus	39 EQ→Comp→Gate
12 Rev→Chorus	26 Dist→Flanger	40 EQ→Chorus→DDL
13 Rev→Flanger	27 Dist→Phaser	
14 Rev→Phaser	28 Dist→Auto Wah	

Insert effects can be manipulated in real time, allowing exceptionally musical control of their behavior (see "Insert Effect Real-Time Modulation Parameters" later in this chapter).

Tip: See "Insert Effect Parameters" in the ASR-X Pro User's Guide for a description of each insert effect's parameters.

The Insert Control Track

In each sequence, one track can be designated as the insert control track. The insert control track has some special properties:

• Any sound that has been programmed to use an insert effect will automatically install that insert effect into the sequence when the sound is selected for use by the insert control track.

• The insert control track can be used to manipulate the sequence's insert effect in real time. In addition, when an external MIDI device is being used with the ASR-X Pro, MIDI messages received on the insert control track's MIDI channel can also manipulate the insert effect.

Global Reverb

Global reverbs are top-quality programmable reverb effects. There are eight global reverbs, any of which can be selected for use in any sequence:

01 SmoothPlate	05 Small Room
02 Large Hall	06 Reflections
03 Small Hall	07 Bright
04 Big Room	08 Huge Place

FX Busses: How Sounds are Sent to the Effects

Each track and each pad in the ASR-X Pro has its own FX Bus parameter for assigning its sound to one of the FX busses (for "effect busses"). The FX busses are the means by which sounds travel to an effect. There are five FX busses in an ASR-X Pro as it's shipped from the factory:

- the insert FX bus
- the light reverb FX bus
- the medium reverb FX bus
- the wet reverb FX bus
- the dry FX bus

The insert FX bus directs a sound to the sequence's insert effect.

The light reverb, medium reverb and wet reverb busses all direct a sound to the global reverb.

Three busses are provided for this purpose so that each can be set to send a different amount of sound into the global reverb, resulting in three different degrees of reverb available for each sound.

A sound assigned to the dry FX bus will remain un-processed.

There is a sixth option available when assigning a sound to an FX bus, though it's not an FX bus. A "Prog" value is provided that allows the different keys in an ASR-X Pro drum kit to retain their individual FX bus routings.

Chapter 2 describes the method for editing track parameters such as the FX Bus parameter. Chapter 3 describes how to edit the FX Bus parameter for a pad.

Note: When an X-8 output expansion board has been installed, an additional four stereo busses—AuxOut1, AuxOut2, AuxOut3 and AuxOut4—are available. These busses send a track and its sound directly to one of the auxiliary outputs. You can also use these stereo busses as eight mono busses by panning tracks hard left or right (see Chapter 2).

Tip: The ASR-X Pro can automatically select FX busses for sounds as they are assigned to tracks. See Chapter 7.


The Alt Bus

The ASR-X Pro can automatically select an appropriate effect for a sound when it's selected for a track by reading the setting of the sound's Alt Bus parameter—see Chapter 7 to learn about the AutoSelect FXBus parameter, which enables this feature. See Chapter 3 to learn about setting the Alt Bus parameter. The Alt Bus is also used by standard sounds on tracks or pads whose FX Bus parameter is set to "Prog."

Selecting and Editing a Sequence's Effects

Selecting and editing a sequence's insert effect or global reverb involves the same simple pair of techniques, regardless of the effect being edited.

To Select an Effect

1. Press the Select button in the Effects section of the ASR-X Pro front panel.
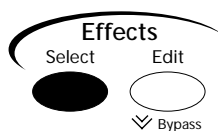
2. To select an insert effect, turn the Parameter knob so that the Insert Effect display appears:

This shows that you're on the insert effect selection display

```
Insert Effect=
    33 Formant Morph
```

The currently selected insert effect

To select a global reverb, turn the Parameter knob so that the Global Reverb display appears:

This shows that you're on the global reverb selection display

```
Global Reverb=
    01 User Settings
```

This reflects the current global reverb settings

3. Turn the Value knob to select the insert effect or global reverb you desire.

To Edit an Effect

1. Press the Edit button in the Effects section of the ASR-X Pro front panel.
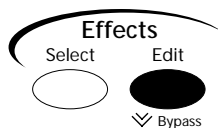
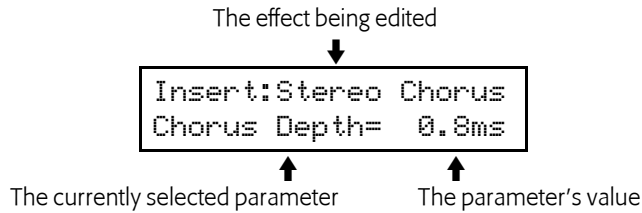2. To edit the insert effect, turn the Parameter knob until the display shows:

```
Effects:
Edit insert effect?
```

To edit the global reverb, turn the Parameter knob until the display shows:

```
Effects:
Edit global reverb?
```

3. When you've selected the type of effect you'd like to edit, press the Yes button.
4. Turn the Parameter knob to select any of the parameters available for the effect you're editing.

The left-most parameters provide settings that determine the context in which the effect operates (see "Insert Effect and Global Reverb Context Parameters" below). These are followed by parameters relating to the effect itself—the top line of each of these displays shows the name of the effect being edited:

The effect being edited

```
Insert:Stereo Chorus
Chorus Depth=  0.8ms
```

The currently selected parameter   The parameter's value

At the end of the parameter list for each insert effect is a set of parameters that enable and control real-time modulation for the effect. See "Insert Effect Real-Time Modulation Parameters" below.

5. Turn the Value knob to change the setting of any parameter .

Tip: For a listing of all of the effect parameters available in the ASR-X Pro, see later in this chapter.

Insert Effect and Global Reverb Context Parameters

In addition to the parameters provided for sound sculpting, each insert effect and global reverb also contains parameters that allow you to determine how the effect will fit into the sequence in which it's being used.

Each insert effect contains these context parameters:

*   Insert FX Bus: Input Mix—This parameter allows you to establish the amount of insert effect you want to apply to any sounds routed to the insert FX bus. This is expressed as a wet/dry balance, with "dry" describing sounds prior to being processed by the insert effect, and "wet" describing the output of the insert effect. This parameter can be set anywhere from "Full Dry" to "Full Wet."
*   Insert FX Bus: GlobalReverb Amt—The insert FX bus mix (described above) can be fed into the global reverb, so that reverb can be added to sounds processed by the insert effect. This parameter determines the amount of insert FX bus signal sent to the global reverb, and can be set anywhere from 0 to 127.

Each global reverb contains these context parameters:

*   LightReverb FX Bus: Global Reverb Amt—This parameter sets the amount of signal sent to the global reverb from the light reverb FX bus. This parameter may be set anywhere from 0 to 63.
*   MediumReverb FX Bus: Global Reverb Amt—This parameter sets the amount of signal sent to the global reverb from the medium reverb FX bus. This parameter may be set anywhere from 32 to 95.
*   WetReverb FX Bus: Global Reverb Amt—This parameter sets the amount of signal sent to the global reverb from the wet reverb FX bus. This parameter may be set anywhere from 64 to 127.
*   Reverb: (selected reverb's name) Return Level—This parameter sets the level of the global reverb output. This can be used as an overall global reverb control that simultaneously raises or lowers the reverb volume for all of the reverb FX busses. Settings from 0 to 127 are available.

Insert Effect Real-Time Modulation Parameters

The ASR-X Pro insert effects can be manipulated in real time, providing the opportunity for animated, expressive effect processing. This manipulation is achieved through the modulation of insert effect parameter settings, using a control device of your choosing on the selected sequence's insert control track. Each insert effect provides a set of parameters that allow you to set up real-time control of the effect.

Note: While a single track in each sequence—the insert control track—controls the real-time modulation of an insert effect, the changes made to the insert effect will be applied to any sounds routed to the insert FX bus.

- Insert: Mod Src—This parameter allows you to select a device with which the insert effect will be controlled. A wide range of devices is supported:

Off	There will be no effect modulation.
FullModAmt	The parameter being modulated will be set to its maximum amount.
Velocity	The parameter being modulated will respond to the quickness, or hardness, of keystrikes from the pads or received via MIDI.
Vel+Pressure	The parameter being modulated will respond to the quickness, or hardness, of keystrikes from the pads or received via MIDI, combined with received MIDI poly or channel pressure messages.
+PosMIDIkey#	The parameter being modulated will use the MIDI note number from the most recently struck pad or most recently received MIDI keystrike as its value setting, with 0 being interpreted as the lowest note of the MIDI range and 127 as the highest .
-NegMIDIkey#	The parameter being modulated will use the MIDI note number from the most recently struck pad or most recently received MIDI keystrike as its value setting, with 127 being interpreted as the lowest note of the MIDI range and 0 as the highest.
Pressure	The parameter being modulated will respond to received MIDI poly or channel pressure values.
PitchWheel	The parameter being modulated will respond to received MIDI pitch bend values.
ModWheel	The parameter being modulated will respond to received MIDI mod wheel (MIDI controller #1) values.
Wheel+Press	The parameter being modulated will respond to a combination of received MIDI mod wheel and poly or channel pressure values
FootPedal	The parameter being modulated will respond to received MIDI foot pedal (MIDI controller #4) values.
Sustain	The parameter being modulated will respond to sustain pedal presses produced by a foot switch connected to the ASR-X Pro or received via MIDI.
Sostenuto	The parameter being modulated will respond to sostenuto pedal presses produced by a foot switch connected to the ASR-X Pro or received via MIDI.
SysCTRL1-4	System Controllers 1-4 are system-wide user-designated real-time modulators (see Chapter 7 for further information).

- Insert: Mod Src Min and Insert: Mod Src Max—These two parameters allow you to establish a range of values from the control device to which the insert effect will respond. Each of these may be set anywhere from 000% to 100%.

- Insert: Mod Dest—This parameter allows you to choose the insert effect parameter you'd like to manipulate.

- Insert: Mod Dest Min and Insert: Mod Dest Max—These two parameters allow you to set limits for the amount of change that can be made to the setting of the parameter being modulated. If the Mod Dest Min value is set above than the Mod Dest Max value, response to the control device will be inverted: lower control device values will raise the parameter's setting, and vice versa.

Note: To control an insert effect in real time using an external MIDI device, make sure to set your external control device to the same MIDI channel as the sequence's insert control track.
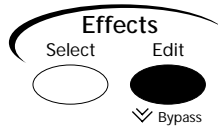
Setting a Sequence's Insert Control Track

You can designate any of a sequence's 16 tracks as the Insert Control Track, or you can turn the Insert Control Track feature off for the selected sequence.

To Set the Insert Control Track

1. Press the Edit button in the Effects section of the ASR-X Pro front panel.

Effects
Select   Edit

⌄ Bypass

2. Turn the Parameter knob until the display shows:

```
Effects:
InsertCntrlTrack= 01
```

The number you see here may be different

3. Turn the Value knob to select an insert control track for the currently selected sequence, or select "off" to disable the feature.

Bypassing a Sequence's Effects

There may be times at which you'll find it useful to temporarily silence a sequence's insert effect or global reverb in order to hear a sound—or sounds—without the effect with which they're associated. This is accomplished by *bypassing* the effects. The ASR-X Pro provides three methods of achieving this:

*   You can quickly bypass both the insert effect and global reverb by rapidly double-clicking on the Effect section's Edit button.
*   If either "Edit insert effect?" or "Edit global reverb?" are displayed, you can press the Edit Effect button a second time to bypass the displayed effect.
*   You can use the Bypass parameter to bypass the insert effect, the global reverb, or both.

When an effect is bypassed, *BYPD* appears on all of the displays with which the effect is associated. If both effects are bypassed "*ALL-BYPASS*" is shown.

To Use the Bypass Parameter for Bypassing Effects

1. Press the Edit button in the Effects section of the ASR-X Pro front panel.

Effects
Select   Edit
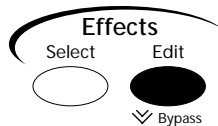
⌄ Bypass

2. Turn the Parameter knob until the display shows:

```
Effects:
Bypass=        None
```
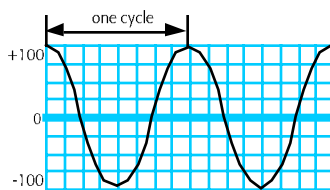
The setting you see here may be different

3. Turn the Value knob to select the effect, or effects, you'd like to silence.
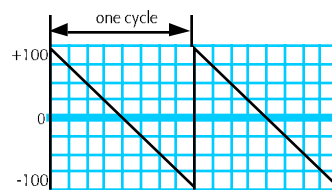
LFO Wave Shapes

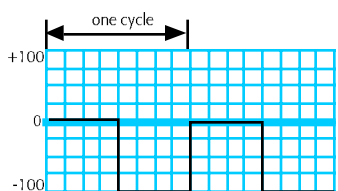Many insert effects have an LFO Shape parameter that determines how the LFO signal will rise or fall. There are eight possible values:
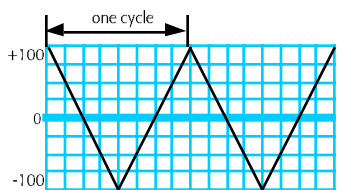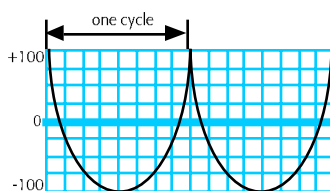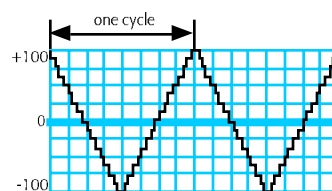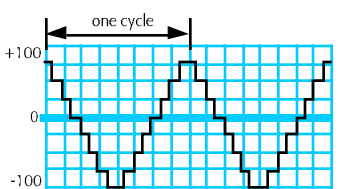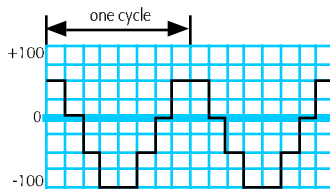

TRIANGLE
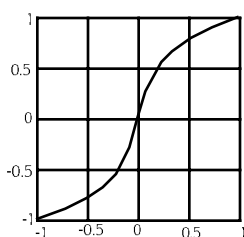

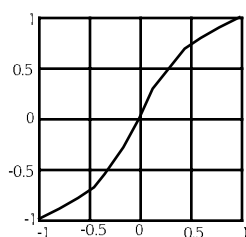SINE

SAWTOOTH

SQUARE

ASYM

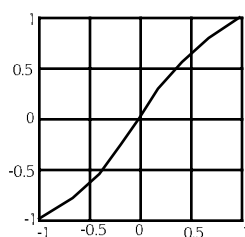16-STEP

8-STEP

4-STEP

Distortion Curves

Many distortion-based insert effects have a Dist Curve parameter that determines the type of clipping produced by the distortion. There are five possible distortion curves:
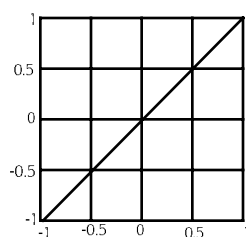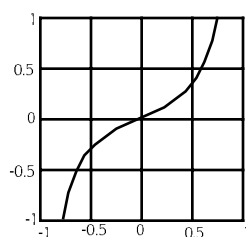

Soft

Medium 1

Medium 2

Hard

Buzz